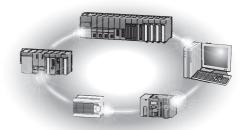


Programmable Controller

CC-Link System Compact Type Remote I/O Module User's Manual



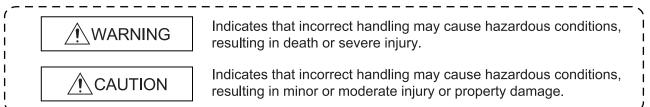
• SAFETY PRECAUTIONS •

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product. For the safety precautions of the programmable controller system, refer to the user's manual for the CPU module used.

In this manual, the safety precautions are classified into two levels: " MARNING " and " CAUTION".



Under some circumstances, failure to observe the precautions given under "ACAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

• In the case of a communication failure in the network, the status of the error station will be as follows:

(1) All inputs from remote I/O stations are turned off.

(2) All outputs from remote I/O stations are turned off.

Check the communication status information and configure an interlock circuit in the sequence program to ensure that the entire system will operate safely.

Incorrect output or malfunction due to a communication failure may result in an accident.

• Outputs may remain on or off due to a failure of a remote I/O module. Configure an external circuit for monitoring output signals that could cause a serious accident.

- Use the module in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm (3.94 inches) or more between them. Failure to do so may result in malfunction due to noise.

[Installation Precautions]

- Do not directly touch any conductive parts of the module. Doing so can cause malfunction or failure of the module.
- Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- Securely connect the cable connectors. Poor contact may cause malfunction.

[Wiring Precautions]

• Shut off the external power supply for the system in all phases before wiring. Failure to do so may result in electric shock or cause the module to fail or malfunction.

- Individually ground the FG terminal of the programmable controller with a ground resistance of 100Ω or less. Failure to do so may result in electric shock or malfunction.
- Tighten any unused terminal screws within the specified torque range (0.42 to 0.50N•m). Failure to do so may cause a short circuit due to contact with a solderless terminal.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Tighten the terminal screw within the specified torque range. Undertightening can cause short circuit, fire, or malfunction. Overtightening can damage the screw and/ or module, resulting in drop, short circuit, fire, or malfunction.
- When fixing the CC-Link dedicated cable and the power cable through the pipes for transmission or power supply line of the waterproof type remote I/O module, securely tighten the nuts with a wrench. Undertightening can cause water intrusion, resulting in failure. (AJ65SBTW□-16□ only.)
- Tighten the communication adapter mounting screw or the waterproof cap within the specified torque range. Undertightening can cause short circuit, fire, or malfunction. Overtightening can damage the screw or the cap, resulting in short circuit or malfunction. (AJ65FBTA□-16□ only.)
- This product meets IP67 standard under the condition that the waterproof plugs, waterproof caps, and communication adapter are all installed. (AJ65FBTA□-16□ only.)
- Do not connect the cable to an incorrect connector. The I/O connector, communication connector, and power connector have the same interface. Doing so can cause malfunction or failure of the module. (AJ65FBTA□-16□ only.)

[Wiring Precautions]

- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact.
- Do not install the control lines together with the communication cables, or bring them close to each other. Failure to do so may cause malfunctions due to noise.
- When an overcurrent caused by an error of an external device or a failure of the programmable controller flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable connected to the terminal block, loosen the terminal screw. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.

[Starting and Maintenance Precautions]

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Shut off the external power supply for the system in all phases before cleaning the module or retightening the terminal screws or module mounting screws. Failure to do so may result in electric shock.
- Set the sink/source selector switch after shutting off the power supply at all phases. Failure to do so may result in failures or malfunctions in the opponent device.

- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Do not drop or apply strong shock to the module. Doing so may damage the module.
- Shut off the external power supply for the system in all phases before mounting or removing a module. Failure to do so may cause the module to fail or malfunction.
- After the first use of the product, do not mount/remove the terminal block to/from the module more than 50 times (IEC 61131-2 compliant).
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

[Disposal Precautions]

• When disposing of this product, treat it as industrial waste.

• CONDITIONS OF USE FOR THE PRODUCT •

(1) MELSEC programmable controller ("the PRODUCT") shall be used in conditions;

i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries. MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi Electric representative in your region.

(3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

REVISIONS

* The manual number is given on the bottom left of the back cover.

Print Date	* Manual Number	Revision
June 1998	SH(NA)-4007-A	First printing
Nov. 1998	SH(NA)-4007-B	Additional model AJ65SBTB1-8D, AJ65SBTC4-16D, AJ65SBTW4-16D, AJ65SBTB1-8T, AJ65SBTC4-16DT, AJ65SBTW4-16DT Addition
		Section 7.3, 7.4 Correction Section 1.1, 1.2, 1.4, Chapter 2, 4, 5, 6, Section 7.1, Appendix 1
Apr. 1999	SH(NA)-4007-C	Addition Contents, Section 8.2.2
June 1999	SH(NA)-4007-D	Additional model AJ65SBTB1-32T1, AJ65SBTCF1-32D, AJ65SBTCF1-32T, AJ65SBTCF1-32DT
Nov. 1999	SH(NA)-4007-E	Addition Section 1.4, 4.1.6, 4.1.7, 4.4, 5.1.8, 5.1.9, 5.1.10, 5.1.11, 5.3, 6.1, 6.4, 7.4, Appendix 1.6, 1.7, 1.8
		Correction Section 1.1, 1.2, 1.3, 1.5, 1.6, Chapter 2, Chapter 3, Section 4.2.1, 4.3.1, 6.2.1, 6.3.1, Section 7.1, 7.4, 8.2.1, Appendix 1 Additional model AJ65SBTB1-32DT, AJ65SBTCF1-32D, AJ65SBTCF1-32T,
		AJ65SBTCF1-32DT, AJ65SBTB2-8A, AJ65SBTB2-16A, AJ65SBTB2-8R, AJ65SBTB2-16R, AJ65SBTB2-8S, AJ65SBTB2-16S
Dec. 1999	SH(NA)-4007-F	Addition Section 1.2, 4.1.6, 4.1.7, 5.1.8, 5.1.9, 5.1.10, 5.1.11
Mar. 2000	SH(NA)-4007-G	Additional model AJ65SBTB2N-8A, AJ65SBTB2N-16A, AJ65SBTB3-8D, AJ65SBTB3-16D, AJ65SBTB2-8T, AJ65SBTB2-16T, AJ65SBTB2N-8R, AJ65SBTB-16R, AJ65SBTB2N-8S, AJ65SBTB2N-16S, AJ65SBTB32-8DT, AJ65SBTB32-16DT, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB1-32DT1 Addition Section 4.1.8, 4.1.9, 4.1.10, 4.1.11, Section 5.1.12, 5.1.13, 5.1.14, 5.1.15,
Oct. 2000	SH(NA)-4007-H	5.1.16, 5.1.17, Section 6.1.1, 6.1.3, 6.1.4, 6.1.5, 6.1.6, Appendix 1.9, 1.10 Additional model AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, AJ65VBTCU2-8T, AJ65VBTCU2-16T, AJ65VBTCF1-32DT1 Addition Section 4.5, 5.4, 6.5, 7.2.3, 7.2.4, Appendix 1.13 Correction Section 1.1, 1.4, 1.5, Chapter 2, Section 4.3.1, 7.1 Deletion AJ65SBTB2-8A, AJ65SBTB2-16A, AJ65SBTB2-8R, AJ65SBTB2-16R, AJ65SBTB2-8S, AJ65SBTB2-16S

Print Date	* Manual Number	Revision
Jan. 2001	SH(NA)-4007-I	Additional model
		AJ65FBTA4-16D, AJ65FBTA4-16DE, AJ65FBTA42-16DT,
		AJ65FBTA42-16DTE Addition
		Section 1.6, 7.4, Appendix 1.14
		Correction
		Section 1.2, 1.4, 1.5, Chapter 2,3, Section 4.5.2, 5.3.1, 5.4.1, 5.4.2, 6.5.1,
1 1 0004		7.1, Appendix 1.13
Jul. 2001	SH(NA)-4007-J	Additional model
		AJ65FBTA2-16T, AJ65FBTA2-16TE
		Correction Section 1.2, 1.4, 1.5, 4.1.6, 4.1.7, 4.2.1, 4.2.2, 4.3.1, 6.2.1, 6.2.2, 6.3.1,
		6.5.1, 6.6.1, 6.6.2, 7.2.3, Appendix 1.14
Sep. 2001	SH(NA)-4007-K	Additional model
		AJ65SBTB1-16DT2, AJ65SBTB1-32DT2
		Correction
lan 2002		Section 1.4, 6.1.1, 8.2.1, Appendix 1.13
Jan. 2002	SH(NA)-4007-L	
		AJ65SBTB1-8T1, AJ65SBTB2-8T1, AJ65SBTB2-16T1, AJ65SBTC1-32T1, AJ65SBTB1-16DT3, AJ65SBTB1-32DT3, AJ65SBTB32-8DT2,
		AJ65SBTB32-16DT2, AJ65SBTC4-16DT2, AJ65SBTC1-32DT2,
		AJ65SBTC1-32DT3
		Section 1.3, 1.4, 1.5, 5.5.2, 6.1.1, 7.7, 8.2.1, Appendix 1.13
		Changed item numbers Section 5.1.4 to Section 5.1.9 \rightarrow Section 5.1.5 to Section 5.1.10
		Section 5.1.10 to Section 5.1.13 \rightarrow Section 5.1.13 to Section 5.1.16
		Section 6.1.5 to Section $6.1.6 \rightarrow$ Section $6.1.9$ to Section $6.1.10$
Dec. 2002	SH(NA)-4007-M	Section 6.2.2 to Section 6.2.3 \rightarrow Section 6.2.3 to Section 6.2.4
		Correction Section 2, Section 4 to Section 6, Section 8.2.1
May 2003	SH(NA)-4007-N	
		Section 1.3, 1.6
Jun. 2004	SH(NA)-4007-O	Additional model
		AJ65VBTS3-16D, AJ65VBTS3-32D, AJ65VBTS2-16T, AJ65VBTS2-32T,
		AJ65VBTS32-16DT, AJ65VBTS32-32DT, AJ65VBTCE3-8D, AJ65VBTCE3-16D, AJ65VBTCE2-8T, AJ65VBTCE2-16T,
		AJ65VBTCE3-16D, AJ65VBTCE2-81, AJ65VBTCE2-101, AJ65VBTCE32-16DT
		Addition
		Section 1.6.1 to 1.6.3, 4.5.3 to 4.5.5, 5.4.3 to 5.4.5, 6.5.2 to 6.5.4, 7.8, 7.9
		Appendix 1.15, 1.16
		Correction Chapter 1, 2, Section 4.4.1, 4.5, 5.1, 5.4, 6.1, 6.5, 6.2.2, 6.4.1, 6.5.1, 7.2 to
		7.4
Oct. 2004	SH(NA)-4007-P	Correction
		Section 1.1, 1.3 to 1.5, Chapter 2, 3, 4 to 6, Section 7.1, 7.4.2, 7.6, 7.7,
		7.9.2, APPENDIX

Print Date	* Manual Number	Revision
May 2005	SH(NA)-4007-Q	Additional model
		AJ65VBTCE3-32D, AJ65SBTC4-16DN, AJ65SBTC4-16DE,
		AJ65VBTCE32-32DT
		Addition
		Section 4.3.3, 4.4.3, 4.4.4, 6.3.2
		SAFETY PRECAUTION, About Manuals, Compliance with the EMC and Low Voltage Directives, Section 1.1, 1.2, 1.4, 1.5, Chapter 2,
		Chapter 4 to 6, Section 7.1, 7.5, 7.7, 7.8.2, 7.9.2, Appendix 1.1, 1.2, 1.4,
		1.5 to 1.10, 1.14
		Changed item numbers The order of section numbers has been changed in Chapters 4 through 6
Sep. 2005	SH(NA)-4007-R	
000.2000		Correction
		Chapter 4, through 6 have been changed for the external connection
Sep. 2006	SH(NA)-4007-S	diagrams
3ep. 2000	3H(INA)-4007-3	Additional model
		AJ65SBTB1B-16TE1, AJ65SBTB1-32TE1, AJ65SBTB1-32DTE1
		Addition
		Section 5.1.13, 5.1.14, 6.1.13
		Correction
		SAFETY PRECAUTION, Section 1.2, 1.4, Chapter 2, Section 7.1, 8.2.1,
		8.2.2, Appendix 1.8
		F.G symbol is generally revised.
		Changed item numbers
		Section 5.1.13 \rightarrow Section 5.1.15
		Section 5.1.14 \rightarrow Section 5.1.16
		Section 5.1.15 \rightarrow Section 5.1.17
1		Section 5.1.16 \rightarrow Section 5.1.18
Jan. 2007	SH(NA)-4007-T	Additional model
		AJ65SBTB3-16D5, AJ65SBTB1-32D5
		Addition
		Section 4.1.8, 4.1.11
		Correction
		Section 1.2, 1.4, Chapter 2, Section 5.1.17, 5.1.18, 8.2.2
		Chapter 4 to 6 have been changed for specifications and external
		connection diagrams.
		Changed item numbers
		Section 4.1.8 \rightarrow Section 4.1.9
		Section 4.1.9 \rightarrow Section 4.1.10

Print Date	* Manual Number	Revision
Mar. 2007	SH(NA)-4007-U	Additional model
		Additional model AJ65DBTB1-32D, AJ65DBTB1-32T1, AJ65DBTB1-32R, AJ65DBTB1-
		32DT1, AJ65DBTB1-32DR
		Addition
		Section 4.1.12, 5.1.19, 5.1.20, 6.1.14, 6.1.15, 7.10, 7.10.1, 7.10.2, 7.10.3, 7.10, 4, 7, 11, Appendix 1, 15
		7.10.4, 7.11, Appendix 1.15
		Correction
		Section 1.2, 1.3, 1.4, 1.5, Chapter 2, Section 4.3.1, 5.1.17, 5.1.18, 6.4.1,
Son 2007		6.4.2, 6.6.1, 6.6.2, 7.1
Sep. 2007	SH(NA)-4007-V	Additional model
		AJ65SBTB32-16DR, AJ65SBTB3-16KD, AJ65SBTB1-32KD,
		AJ65SBTB32-16KDT2, AJ65SBTB32-16KDT8, AJ65SBTB1-32KDT2,
		AJ65SBTB1-32KDT8
		Addition
		Section 4.1.8, 4.1.11, 6.1.9, 6.1.10, 6.1.11, 6.1.15, 6.1.17, Appendix 1.16
		Correction
		Section 1.2, 1.3, 1.4, Chapter 2, Section 6.6.3, 7.1
		Changed item numbers
		Section 4.1.8 \rightarrow Section 4.1.9
		Section 4.1.9 \rightarrow Section 4.1.10
		Section 4.1.10 \rightarrow Section 4.1.12
		Section 4.1.11 \rightarrow Section 4.1.13
		Section 4.1.12 \rightarrow Section 4.1.14
		Section 6.1.9 \rightarrow Section 6.1.12
		Section 6.1.10 \rightarrow Section 6.1.13
		Section 6.1.11 \rightarrow Section 6.1.14
		Section 6.1.12 \rightarrow Section 6.1.16
		Section 6.1.13 \rightarrow Section 6.1.18 Section 6.1.14 \rightarrow Section 6.1.19
		Section 6.1.14 \rightarrow Section 6.1.19 Section 6.1.15 \rightarrow Section 6.1.20
Oct. 2007	SH(NA)-4007-W	
001. 2007		Additional model
		AJ65SBTB32-16KDR
		Addition
		Section 6.1.12
		Correction
		Section 1.2, 1.4, Chapter 2
		Changed item numbers
		Section 6.1.12 \rightarrow Section 6.1.13
		Section 6.1.13 \rightarrow Section 6.1.14
		Section 6.1.14 \rightarrow Section 6.1.15
		Section 6.1.15 \rightarrow Section 6.1.16
		Section 6.1.16 \rightarrow Section 6.1.17
		Section 6.1.17 \rightarrow Section 6.1.18
		Section 6.1.19 \rightarrow Section 6.1.20
		Section 6.1.20 \rightarrow Section 6.1.21

Print Date	* Manual Number	Revision
Oct. 2008	SH(NA)-4007-X	Additional model
		AJ65VBTCFJ1-32DT1
		Addition
		Section 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 4.4.1, 4.4.5, 5.2.1, 5.2.2, 5.3.1,
		5.3.1, 6.5.3
		Correction
		Section 1.3
Jan. 2010	SH(NA)-4007-Y	This manual was revised in accordance with IEC 60617.
		AJ65VBTCE3-16DE, AJ65VBTCE3-32DE
		SAFETY PRECAUTION, Section 1.3.1, 1.4, 1.6.2, 1.7, 4.3.2, 4.3.3, 7.1, 7.2.3, 7.2.4, 7.5, 7.7
		Correction
		CONDITIONS OF USE FOR THE PRODUCT, Section 4.3.4, 4.3.5
Mar. 2011	SH(NA)-4007-Z	This manual was revised in accordance.
Dec. 2011	SH(NA)-4007-AA	Additional model
		AJ65VBTCE3-16TE, AJ65VBTCE3-16DTE, AJ65VBTCE3-32DTE
		Addition
		Section 5.3.3, 6.3.2, 6.3.4
		Correction
		Chapter 3, Section 1.3.1 to 1.3.3, 1.4, 1.5, 4.6.3, 5.1.19, 6.1.1, 6.1.2,
		6.1.7 to 6.1.12, 6.1.20, 6.2.1, 6.2.2, 6.3.1, 6.3.3, 6.4.1, 6.4.2, 6.6.1 to 6.6.3, 7.1, 7.2.2, 7.8.2, 8.1
		Changed item numbers
		Section $6.3.2 \rightarrow$ Section $6.3.3$
Jun. 2012	SH(NA)-4007-AB	Addition
		Appendix 2
		Correction
		ABOUT MANUALS, COMPLIANCE WITH EMC AND LOW VOLTAGE
		DIRECTIVES, Chapter 2, 3, Section 1.5, 1.6.2, 6.5.3, 7.2.1, 7.6, 7.7, 8.2.1,
Nov. 2012	SH(NA)-4007-AC	Appendix 1.11
1101.2012		Correction Section 4.6.1, 4.6.2, 5.5.1, 5.6.1, 5.6.2, 6.2.2, 6.5.2, 6.6.1, 6.6.2
Jun. 2013	SH(NA)-4007-AD	Correction
	, ,	Section 8.2.1, 8.2.2
Dec. 2013	SH(NA)-4007-AE	Correction
		Section 4.1.1 to 4.1.14, 4.4.3, 4.4.4, 4.4.6, 4.4.7, 4.5.1, 5.1.1 to 5.1.20,
		5.4.3, 5.4.4, 5.5.1, 6.1.1 to 6.1.21, 6.4.1 to 6.4.6, 6.5.1 to 6.5.3

Print Date	* Manual Number	Revision
Oct. 2014	SH(NA)-4007-AF	Correction
		About Manuals, Section 1.3.2, 1.6.2, 1.7, Chapter 2, 4, 5, 6, Section 7.2.1,
		7.2.6, 7.5, 7.7, 7.8.2, Appendix 1, 2
Mar. 2017	SH(NA)-4007-AG	Correction
		Section 1.3.2
Jul. 2018	SH(NA)-4007-AH	Correction
		Section 1.3.2, 1.5, 4.2.1, 4.2.2, 4.4.2, 4.6.3, 5.1.11, 5.1.12, 5.1.14, 5.2.1,
		5.2.2, 5.6.2, 6.1.19, 6.2.1, 6.2.2, 6.6.2, 6.6.3, 7.1, 7.6, 7.8.2, 8.2.2, Appendix 1.13
Jul. 2022	SH(NA)-4007-AI	
		Correction CONDITIONS OF USE FOR THE PRODUCT, Section 1.3.3, 1.5, 1.6.1,
		7.2.1, 8.2.2
		Japanese Manual Version SH 2207 Al

Japanese Manual Version SH-3307-AL

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INTRODUCTION

Thank you for purchasing the MELSEC-A series programmable controllers. Before using this product, please read this manual carefully and develop familiarity with the functions and performance of the MELSEC-A series programmable controller to handle the product correctly. Make sure that the end users read this manual.

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ABOUT MANUALS

The following manuals are also related to this product. Order each manual as needed, referring to the following list.

Relevant manuals

Manual name	Manual number (model code)
CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the AJ61BT11 and A1SJ61BT11 (Sold separately)	IB-66721 (13J872)
CC-Link System Master/Local Module Type AJ61QBT11/A1SJ61QBT11 User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the AJ61QBT11 and A1SJ61QBT11 (Sold separately)	IB-66722 (13J873)
MELSEC-Q CC-Link System Master/Local Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the QJ61BT11N (Sold separately)	SH-080394E (13JR64)
MELSEC-L CC-Link System Master/Local Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the LCPU with built-in CC-Link and LJ61BT11 (Sold separately)	SH-080895ENG (13JZ41)
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup) Specifications, procedures before operation, system configuration, wiring, and communication examples of the CC-Link system master/local module (Sold separately)	SH-081269ENG (13JX10)
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application) Functions, parameter settings, programming, troubleshooting, I/O signals, and buffer memory of the CC- Link system master/local module (Sold separately)	SH-081270ENG (13JX19)

COMPLIANCE WITH EMC AND LOW VOLTAGE DIRECTIVES

(1) Method of ensuring compliance

To ensure that Mitsubishi Electric programmable controllers maintain EMC and Low Voltage Directives when incorporated into other machinery or equipment, certain measures may be necessary. Please refer to one of the following manuals.

- User's manual for the CPU module or head module used
- Safety Guidelines

(This manual is included with the CPU module, base unit, or head module.)

The CE mark on the side of the programmable controller indicates compliance with EMC and Low Voltage Directives.

(2) Additional measures

To ensure that this product maintains EMC and Low Voltage Directives, please refer to one of the manuals listed under (1).

MEMO

1 OVERVIEW

This manual describes the specifications of the compact remote I/O module (hereinafter referred to as the "compact remote I/O module") used as the remote I/O station of the CC-Link system.

1.1 Features

The following are the features of the compact remote I/O module:

(1) The remote I/O module is reduced in size yet retains all the functions of the conventional module

The conventional remote I/O module has furthermore been reduced in size. [External dimension (comparative example)]

	Compact remote I/O module		Conventional remote I/O module			
Module model name	AJ65SBTB1-8 🗍	AJ65SBTB1-16 AJ65SBTB2-8 AJ65SBTB2N-8 AJ65SBTC1-32 AJ65SBTC4-16 AJ65SBTCF1-32 AJ65SBTB3-8 AJ65SBTB32-8	AJ65SBTB1-32 AJ65SBTB2-16 AJ65SBTB2N-16 AJ65SBTB3-16 AJ65SBTB32-16	AJ65BTB1-16 🛄	AJ65BTB2-16 🗋	AJ65BTC1-32 🗔
Height	50 (1.97)		65 (2.56)			
Width	87.3 (3.44)	118 (4.65)	179 (7.04)	151.9 (5.98)	197.5 (7.78)	165.0 (6.5)
Depth	40 (1.57)		46 (1.81)			

Unit :mm (inch)

(2) More models in the compact remote I/O module lineup The compact remote I/O modules for the CC-Link system is divided into six types including terminal block type, one-touch connector type, waterproof-type, FCN connector type, spring clamp terminal block type, and sensor connector (e-CON) type.

In addition, the number of I/O points is divided into three types (8 points, 16 points, and 32 points), allowing the user to select a module that is most appropriate for the environment and objective.

(3) 4-wire compact remote I/O module featuring easy connection of a 4-wire sensor

A 4-wire sensor can be easily connected via the common pin provided on each plug without installing a relay terminal block.

For a 4-wire compact remote I/O module, one sensor is connected to each plug. Therefore, sensors can be exchanged by plug, reducing work steps.

(4) Terminal block connection provides easy connection of 2-wire and 3-wire sensors or loads

Since the terminal block connection allows connection of 2-wire and 3-wire sensors or loads, common connections are not needed and it makes connection easier.

- (5) Wiring work can be minimized
 - (a) Terminal-block module The number of wiring steps can be dramatically reduced by adopting the use of self-tightening screws on the terminal block.
 - (b) One-touch connector module, connector module The number of wiring steps can be dramatically reduced by adopting use of the pressure-displacement wire-connection method (soldering, peeling of shield and screwing not necessary).
 - (c) FCN connector module The number of wiring steps can be dramatically reduced by adopting 40-pin connector for I/O part.
 - (d) Spring clamp terminal block module The number of wiring steps can be dramatically reduced by adopting spring clamps (screwing not necessary).

<Terminal-block module> <One-touch connector module, connector module> Self-tightening screw is used Connector Round solderless terminal The round solderless terminal can be connected simply by loosening the screw on the terminal block. Soldering, peeling of the shield and screwing are unnecessary Each of the individual wires can be securely connected Push simply by pressing the side surface of the connector plug after the wires are inserted into the connector. <FCN connector module>> <Spring clamp terminal block type > FCN connector Square shaped hole Circular shaped hole

> (6) Waterproof remote I/O modules with improved resistance against water and oil

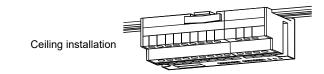
The waterproof remote I/O module, low profile waterproof remote I/O module adopts a protection structure compatible with IP67, providing even safer usage in areas in which water and oil are present.

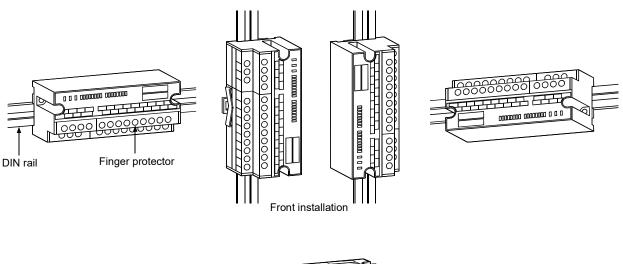
Tool

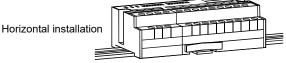
(7) Up to a maximum of 64 remote I/O modules can be connected In the CC-Link system, a maximum of 64 remote I/O modules can be connected per master station. Since each remote I/O module occupies 32 points, a maximum of 2048 link

points can be set.(8) Modules can be exchanged without stopping the CC-Link system

- With the adoption of a two-piece terminal block for the CC-Link cable connection, modules may be exchanged without stopping the CC-Link system.
- (9) Direct installation to the machine is feasible The terminal-block remote I/O module may be installed directly to the machine, since the charged area is protected by a finger protector in the upper area of the terminal block.
- (10) The module can be installed in six orientations The compact remote I/O module can be installed in six different orientations. (Restrictions may apply to some installation orientations.) The module can also be installed using the DIN rail.







(11) Transistor output module with improved protection functions The transistor output module is designed to achieve an even greater degree of module protection by adopting overload protection, overheat protection and overvoltage protection as standard. As a result, the programmable controller system's reliability is further improved.

1.2 Identifying the Compact Remote I/O Module Type

AJ65DBTD - DD I/O specifications 100 V AC input A : D,DN: 24 V DC input (Positive/negative common shared type, or positive common input) 5 V DC input (Positive/negative common shared type) D5: R : Contact output module Triac output S : Transistor output 24 V DC input (Negative common input) DE : DTE : 24 V DC input (Negative common input), transistor output (source output) combined TE,TE1: Transistor output (Source output) 24 V DC input (Positive common input), transistor output - DT : (sink output) combined DR: 24 V DC input (Positive/negative common shared type), contact output module KD : With response speed switching function, 24V DC input (Positive/negative common shared type) KDT2 : With response speed switching function, 24V DC input (Positive common input), transistor output (sink output) combined KDT8: With response speed switching function, 12V DC input (Positive common input), transistor output (sink output) combined KDR: With response speed switching function, 24V DC input (Positive/negative common shared type), contact output module Number of I/O points 8: 8 points 16: 16 points 32: 32 points External load A2 : With 8 M12 waterproof connector, Output, 2-wire type. With 8 M12 waterproof connector, Input, 2 to 4-wire type. connection method A4 : A42 : With 8 M12 waterproof connector, Input, 2 to 4-wire type/ Output, 2-wire type. B1 : 1-wire terminal block, 1-common type 1-wire terminal block, 2-common type B1B: B2,B2N:2-wire terminal block Terminal Block, Input, 3-wire type/Output, 2-wire type. B32 : C1: 1-wire one-touch connector C4 : 4-wire one-touch connector 1-wire FCN connector CF1: CFJ1: 1-wire FCN connector, common power supply type CU2: 2-wire one-touch connector CU3: 3-wire one-touch connector W4: 4-wire waterproof connector S2: 2-wire spring clamp terminal block S3: 3-wire spring clamp terminal block Spring clamp terminal block, Input, 3-wire type/Output, 2-wire type. S32: CE2: 2-wire sensor connector(e-CON) CE3: 3-wire sensor connector(e-CON) CE32: Sensor connector(e-CON), Input, 3-wire type/Output, 2-wire type. Cable specification – T : Twisted cable(CC-Link dedicated cable) F : Module type Low profile waterproof S : Compact type Connector type compact V : D : A2C form

The following shows how to identify the type of a compact remote I/O module:

1.3 Precautions for use of remote I/O modules

This section describes the precautions for use of remote I/O modules applicable in the CC-Link system and their specifications.

- This is a remote I/O module designed specifically for the CC-Link system. Do not connect the module to other data-link systems, such as the MELSECNET/MINI.
- 32 points are assigned per station for a compact remote I/O module. For 16-point modules the 16 points in the second half and for 8-points module the 24 points in the second half remain empty but are not usable.
- Do not install the main circuit lines, high-voltage cables, and load cables other than those connected to the programmable controller together.
 If doing so, the remote I/O module (especially, AJ65SBTB1-16D1, AJ65SBTB1-32D1, AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, and AJ65SBTC1-32D1) will be susceptible to noise, surge, and induction.
- When a mechanical contact, such as a relay, is connected to the AJ65SBTB1-16D1, AJ65SBTB1-32D1, AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, or AJ65SBTC1-32D1, chattering may be input as a signal.

1.3.1 Input module

(1) Input response time and pulse width

The input module may take noise for inputs due to the signal pulse width. The pulse width of the AJ65SBTB1-32KD, AJ65SBTB3-16KD, or AJ65SBTB32-16KD is as shown in the following table depending on the response speed set by the input response speed switching switch. In case of setting the response speed, fully consider the operating environment.

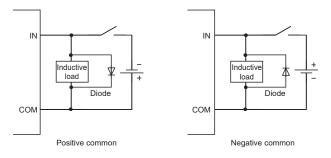
Response speed setting value (ms)	Minimum value of pulse width that can take noise for inputs (ms)
0.2	0.006
1.5	0.8
5	3
10	6

When setting "0.2ms" as the response speed under an environment with noise, an input signal line (including a common line) should be 3m or less.

- (2) Precautions when using the DC input module
 - (a) Measures against back EMF

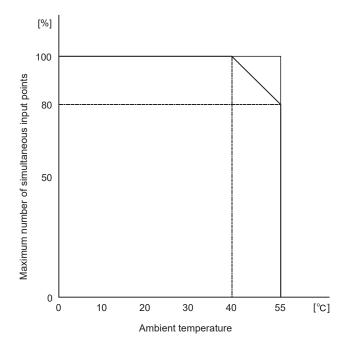
When an inductive load is connected, connect a diode to the load in parallel. Use a diode that meets the following conditions.

- Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage.
- Forward current is equal to or more than 2 times as large as the load current.

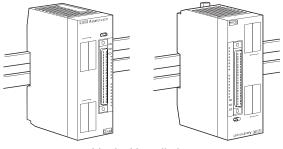


(3) Precautions when using the AJ65SBTC1-32D or AJ65SBTC1-32D1 The maximum number of simultaneous input points of the AJ65SBTC1-32D or AJ65SBTC1-32D1 varies depending on the ambient temperature. Refer to the derating curve below

Derating curve for the AJ65SBTC1-32D or AJ65SBTC1-32D1



- (4) Precautions when using the AJ65VBTCF1-32DT1 The maximum number of simultaneous input points of the AJ65VBTCF1-32DT1 changes according to the installation orientation.
 - 1) Installation orientations without limits
 - When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

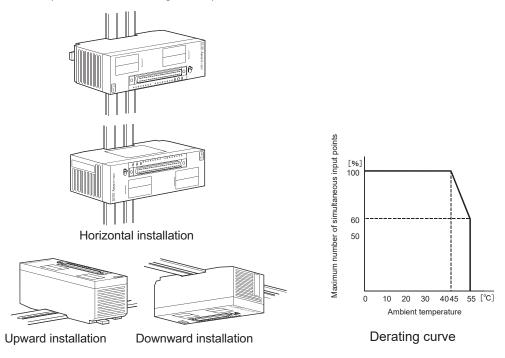


Vertical installation

2) Installation orientations with limits

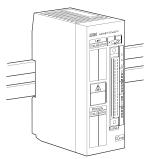
When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 60% at an ambient temperature of 55° C.

(Refer to the derating curve.)



- (5) Precautions when using the AJ65VBTCFJ1-32DT1 The maximum number of simultaneous input points of the AJ65VBTCFJ1-32DT1 changes according to the installation orientation.
 - Vertical installation (basic) When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 65% at an ambient temperature of 55°C.

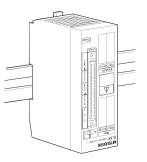
(Refer to the derating curve (1).)



Vertical installation (basic)

 For installations other than front installation (basic orientation) When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 40% at an ambient temperature of 55°C.

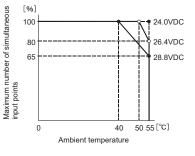
(Refer to the derating curve (2).)



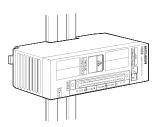
Vertical installation (upside down)



Downward installation



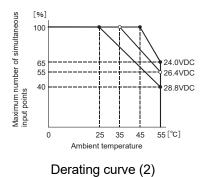
Derating curve (1)



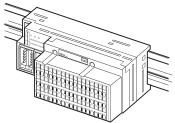
Horizontal installation



Upward installation



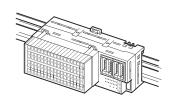
- (6) Precautions when using the AJ65VBTS3-16D The maximum number of simultaneous input points of the AJ65VBTS3-16D changes according to the installation orientation.
 - Installation orientations without limits When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.



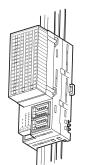
Vertical installation (basic)

- 2) Installation orientations with limits
 - When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 75% at an ambient temperature of 55°C.

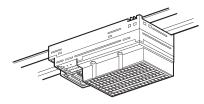
(Refer to the derating curve)



Vertical installation (upside down)



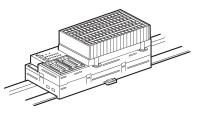
Horizontal installation (upside down)



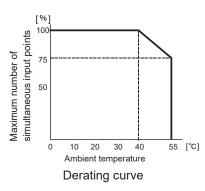
Downward installation



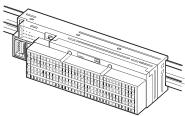
Horizontal installation (basic)



Upward installation



- (7) Precautions when using the AJ65VBTS3-32D or AJ65VBTS32-32DT The maximum number of simultaneous input points of the AJ65VBTS3-32D or AJ65VBTS32-32DT changes according to the installation orientation.
 - 1) Installation orientations without limits When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

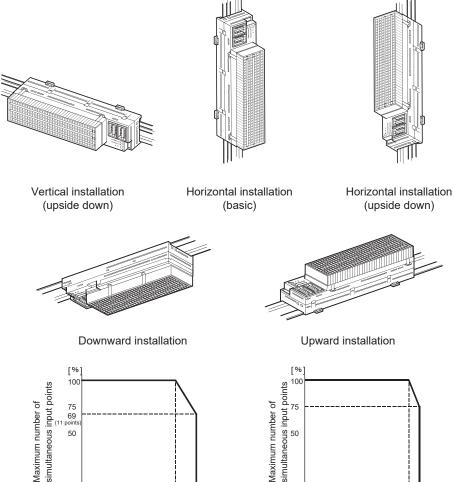


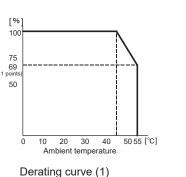
Vertical installation (basic)

2) Installation orientations with limits

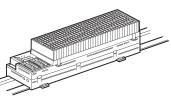
When the module is mounted as shown below, the maximum number of simultaneous input points of the AJ65VBTS3-32D is reduced to 69% (11 points/common) at an ambient temperature of 55°C. (Refer to the derating curve (1).)

That of the AJ65VBTS32-32DT is reduced to 75%. (Refer to the derating curve (2).)

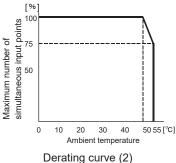




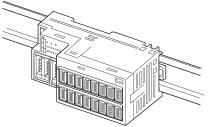
Maximum number of



Upward installation



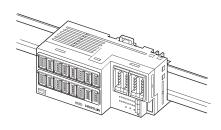
- (8) Precautions when using the AJ65VBTCE3-16D or AJ65VBTCE3-16DE The maximum number of simultaneous input points of the AJ65VBTCE3-16D or AJ65VBTCE3-16DE changes according to the installation orientation.
 - Installation orientations without limits When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

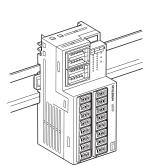


Vertical installation (basic)

 Installation orientations with limits When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 62.5% at an ambient temperature of 55°C.

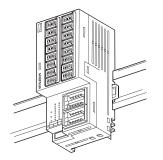
(Refer to the derating curve.)



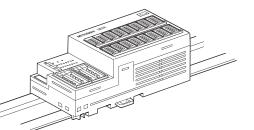


Horizontal installation (basic)

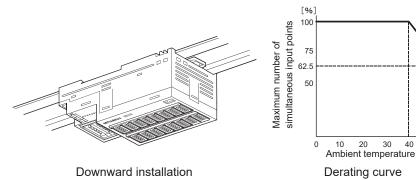
Vertical installation (upside down)



Horizontal installation (upside down)

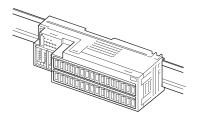


Upward installation



50 55 [°C]

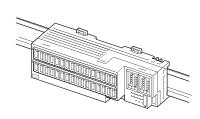
- (9) Precautions when using the AJ65VBTCE3-32D or AJ65VBTCE3-32DE The maximum number of simultaneous input points of the AJ65VBTCE3-32D or AJ65VBTCE3-32DE changes according to the installation orientation.
 - Installation orientations without limits When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

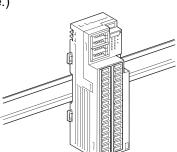


Vertical installation (basic)

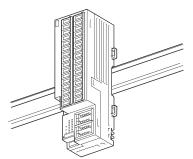
 Installation orientations with limits When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 75% at an ambient temperature of 55°C.

(Refer to the derating curve.)

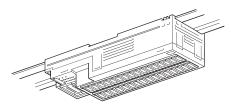




Vertical installation (upside down)



Horizontal installation (upside down)

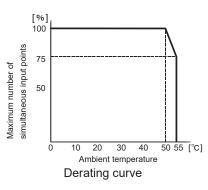


Downward installation

Horizontal installation (basic)



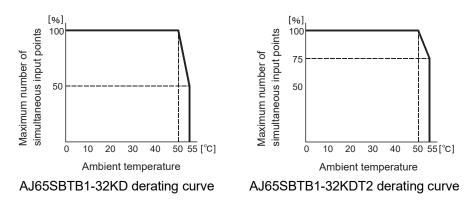
Upward installation



(10) Precautions when using the AJ65SBTB1-32KD or AJ65SBTB1-32KDT2 The maximum number of simultaneous input points of the AJ65SBTB1-32KD or AJ65SBTB1-32KDT2 changes according to the input voltage and ambient temperature.

If the input voltage is higher than 26.4V, the maximum number of simultaneous input points is as shown in the following figures.

(If the input voltage is 26.4V or lower, derating is not required.)



(11) Precautions when using a 3-wire or 4-wire module When supplying power from a 3-wire or 4-wire module to

When supplying power from a 3-wire or 4-wire module to an external device, such as a sensor, total current must be equal to or less than the value of "supply current for connected device" specified for the module.

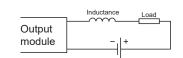
1.3.2 Output module

- Maximum switching frequency when the module drives inductive load The output must be on for one second or longer and off for one second or longer.
- (2) Load for connection

When connecting a counter or timer that has a DC-DC converter to a transistor output module (maximum load current 0.1A) as a load, select an output module whose maximum load current is larger than inrush current of the load. Selecting an output module by average current of the load may cause a failure of the module because inrush current flows at a constant frequency at power-on or during operation due to the connected load.

If an output module needs to be selected by average current of the load, take either of the following actions to reduce an influence from inrush current.





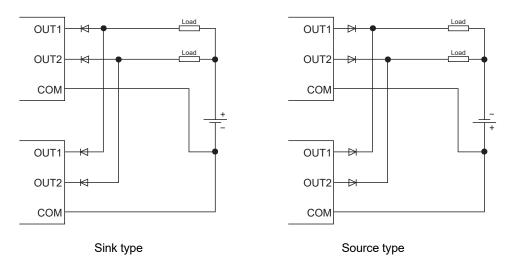
- Connecting a resistor to the load in series
- · Connecting an inductor to the load in series

(3) Precaution for using the transistor output module(a) Action against reverse current

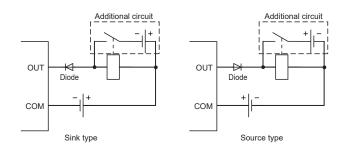
If a transistor output module is wired as shown below, reverse current flows in an output element, causing a failure of the element.

When wiring a transistor output module, connect a diode as shown below.

• When connecting transistor output modules in parallel



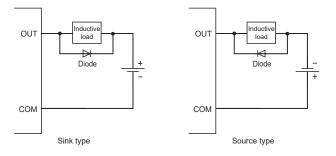
• When incorporating an additional circuit parallel to a transistor output module



(b) Measures against back EMF

When an inductive load is connected, connect a diode to the load in parallel. Use a diode that meets the following conditions.

- Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage.
- Forward current is equal to or more than 2 times as large as the load current.



(4) Modules that require an external short-circuit protection circuit The following modules have no short-circuit protection function. Configure a shortcircuit protection circuit external to the programmable controller when they are used.

• AJ65SBTB1-8T1	• AJ65SBTB2-8T1	• AJ65SBTB1-16T1	• AJ65SBTB2-16T1
• AJ65SBTB1B-16TE1	• AJ65VBTS2-16T	• AJ65SBTB1-32T1	• AJ65SBTB1-32TE1
• AJ65DBTB1-32T1	• AJ65VBTS2-32T	• AJ65SBTC1-32T1	
• AJ65SBTB32-8DT2	• AJ65SBTB1-16DT2	• AJ65SBTB1-16DT3	• AJ65SBTB32-16DT2
• AJ65SBTB32-16KDT2	• AJ65SBTB32-16KDT8	• AJ65SBTB1-32DT2	• AJ65SBTB1-32KDT2
• AJ65SBTB1-32DT3	• AJ65SBTB1-32KDT8	• AJ65SBTB1-32DTE1	• AJ65DBTB1-32DT1
• AJ65VBTS32-16DT	• AJ65VBTS32-32DT	• AJ65SBTC4-16DT2	• AJ65SBTC1-32DT2
• AJ65SBTC1-32DT3			

(5) Precautions when using a 3-wire module

When supplying power from a 3-wire module to an external device, such as a sensor, the total current value must be equal to or less than the value of "supply current for connected device" specified for the module.

(6) Precautions for using the contact output module

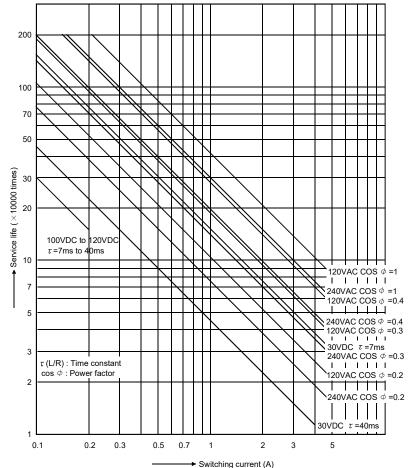
When using the contact output module, consider the following.

- Relay life
- Effects to relay life due to connected load
- Measures against back EMF
- (a) Relay life

Applicable module: AJ65SBTB2N-8R, AJ65SBTB2N-16R,

AJ65DBTB1-32R, AJ65DBTB1-32DR

The relay life depends on the operating environment. Select a module according to the operating environment. The relay lives shown below are the actual service values, not the guaranteed values. Replace the module well in advance since the actual switching life may be shorter than the one shown below.



Operating environment	Switching life
Rated switching voltage/current, rated load	100 thousand times
200VAC 1.5A, 240VAC 1A (COS ϕ =0.7)	100 thousand times
200VAC 1A, 240VAC 0.5A (COS ϕ =0.35)	100 thousand times
24VDC 1A, 100VDC 0.1A (L/R=7ms)	100 thousand times

1 - 16

POINT

When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered. Therefore, it is recommended to use a triac output module.

(b) Effects to relay life due to connected load

The actual relay life may be significantly shortened compared to the one shown above, depending on the type of a load connected and the characteristics of inrush current.

Also, the inrush current may cause contact welding.

Take the following measures to prevent shortening of the relay life and the contact welding.

- Select a load so that the inrush current will be within the rated current of the module.
- Connect an external relay that can withstand the inrush current.

The following table shows the relation between the load and the inrush current. Select a load so that the inrush current (i) and the rated current (io) will be within the rated switching current specified for the output module used. The inrush current may flow for a longer time depending on the load.

me infusit current may now for a longer time depending on the load.					
Load type	Signal waveform diagram	Inrush current (i)/rated current (io)	Signal waveform diagram	Inrush current (i)/rated current (io)	
Inductive load	Load of a solenoid i i io i: Inrush current io: Rated current 0.07 to 0.1 seconds	Approx. 10 to 20 times	Load of an electromagnetic contactor i Inrush current i 0.017 to 0.033 seconds (1 to 2 cycles)	Approx. 3 to 10 times	
Lamp load	Load of an incandescent bulb	Approx. 3 to 10 times	Load of a mercury lamp i i i i i i i i i i i i i	Approx. 3 times ^{*1}	
Lampioau	Load of a fluorescent i i io i: Inrush current io: Rated current Within 10 seconds	Approx. 5 to 10 times			
Capacitive load	Capacitive load ^{*2}	Approx. 20 to 40 times			

- (c) Measures against back EMF
 - Configure a contact protection circuit for extending the contact life, preventing noise when the contact is cut off, and suppressing the generation of carbide and nitric acid due to arc discharge.
 - An Incorrect contact protection circuit may cause contact welding.
 - Also, when using the contact protection circuit, the recovery time may be long. The following table shows the representative examples of the contact protection circuit.

	Circuit example	Method for selecting elements	Remarks
Capacitor + Resistor method (CR method)	Capacitor Inductive Resistor	Refer to the following for constants of the capacitor and resistor. Note that the following values may differ depending on a nature of the load and a variation of characteristics of it.	If a load is from a relay or solenoid, the recovery time delays. A capacitor suppresses electric discharge while a contact is off, and a resistor restricts a flow of current
	Capacitor Resistor	 Capacitor 0.5 to 1 (μF) against contact current of 1A Resistor 0.5 to 1 (Ω) against contact voltage of 1V Use a capacitor whose withstand voltage is 200 to 300V. In AC circuit, use a capacitor having no polarity. 	while a contact is on.
Diode method	Diode A Inductive	 Use a diode that meets both conditions shown below. Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage. The forward current is equal to or more than 2 times as large as the load current. 	The recovery time is later than the CR method.
Diode + Zener diode method	 Diode ℤ Zener Diode ℤ	Use zener voltage for the zener diode equal to or more than the power supply voltage.	The diode method is effective when the recovery time is too late.

*1: When using AC power, impedance of CR must be larger enough than that of the load. (prevention of a malfunction due to leak current from the CR)

(To the next page)

Inductive

load

Capacitor

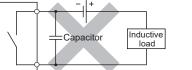
	Circuit example	Method for selecting elements	Remarks
Varistor method	Varistor Inductive load	 Select a cut voltage (Vc) for the varistor to meet the following condition. Vc > power voltage × 1.5(V) Vc > power voltage × 1.5(V) × √2 (When using AC power) This method is not effective when the Vc is too high 	The recovery time delays slightly.



(1) Avoid providing contact protection circuits shown below.

These circuits are effective for preventing an arc at shut-off. However, the contact welding may occur because the charge current flows to capacitor when the contact turns on or off.

A DC inductive load is usually harder for switching than a resistor load, but if a proper protection circuit is configured, the performance will be similar to the resistor load.



(2) A protection circuit must be provided closely to a load or contact (module). If their distance is far, the protection circuit may not be effective. Appropriate distance is within 50cm.

(7) Precautions for using the triac output module

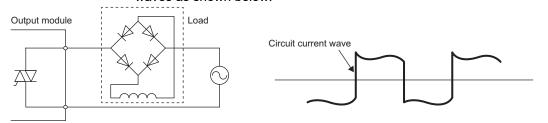
Because of characteristics of a triac, a sudden change of voltage or current may cause unstable operations of a triac used for the triac output module. Whether the voltage or current change causes a problem differs depending on an individual part (each triac), thus check the following when using the triac output module.

(a) Checking of the load current

When the current consumption is equal to or smaller than the minimum load current and the margin is low by using an inductive load such as a solenoid valve, a triac may not turn on or off properly. In that case, an action such as connecting a bleeder resistance is required.

For detail on actions, refer to Section 8.2.2.

(b) Precautions on a full-wave rectifier load The load current of a full-wave rectifier load forms waves similar to rectangular waves as shown below.



A triac may not operate properly if the current forms rectangular waves associated with sudden current changes. To avoid it, use a load with which the load current does not form rectangular waves.

(c) Measures for connecting an inductive load

To connect an inductive load, take measures to reduce noise to the side where the load is connected as shown below.

	Circuit example	Method for selecting elements	Remarks
Varistor method	Output module Varistor Varistor	Select a cut voltage (Vc) for the varistor to meet the following condition. • Vc > Power supply voltage \times 1.5(V) $\times \sqrt{2}$ This method is not effective when the Vc is too high.	The recovery time delays slightly.
Capacitor + Resistor method (CR method)	Output module Capacitor Resistor	Refer to the following for constants of the capacitor and resistor. Note that the following values may differ depending on a nature of the load and a variation of characteristics of it. • Capacitor: 0.5 to 1 (μF) against load current of 1A • Resistor: 0.5 to 1(Ω) against power supply voltage of 1V Use a capacitor whose withstand voltage is equal to or more than the rated voltage. Use a capacitor having no polarity.	If a load is from a relay or solenoid, the recovery time delays.

(d) Measures for connecting an inductive load (when installing a contact between the load and the output terminal)

To install a contact (such as an interlock) between the load and the output terminal, take measures to reduce noise as shown below.

Though measures (varistor method, capacitor + resistor method) are normally taken to the load side, in some cases, it is more efficient to take the measures to the module side considering the contact effect.

	Circuit example	Method for selecting elements	Remarks
Varistor method	• Measure taken to the load side Output module Contact Varistor	Select a cut voltage (Vc) for the varistor to meet the following condition. • Vc > Power supply voltage × $1.5(V) \times \sqrt{2}$ This method is not effective when the Vc is too high.	The recovery time delays slightly.
	• Measure taken to the module side Output module Contact Varistor Inductive Inductive		

1.3.3 Modules with protection functions

This section describes the protection functions of the following modules.(1) Modules with overload protection function, overvoltage protection function, and overheat protection function

	AJ65SBTB1-8T, AJ65SBTB1-16T, AJ65SBTB1-32T, AJ65SBTB2-8T, AJ65SBTB2-16T,								
Output module	AJ65SBTC1-32T, AJ65SBTCF1-32T, AJ65VBTCU2-8T, AJ65VBTCU2-16T, AJ65VBTCE2-								
	8T, AJ65VBTCE2-16T								
	AJ65SBTB1-16DT, AJ65SBTB1-32DT, AJ65SBTB1-16DT1, AJ65SBTB1-32DT1,								
I/O combined module	AJ65SBTB32-8DT, AJ65SBTB32-16DT, AJ65SBTC4-16DT, AJ65SBTC1-32DT,								
	AJ65SBTC1-32DT1, AJ65SBTW4-16DT, AJ65SBTCF1-32DT, AJ65VBTCF1-32DT1,								
	AJ65VBTCE32-16DT, AJ65VBTCE32-32DT								
	(2) Modules with overload protection function and overheat protection function								
Output module	AJ65SBTB1-8TE, AJ65SBTB1-16TE, AJ65FBTA2-16T, AJ65FBTA2-16TE,								
	AJ65VBTCE3-16TE								
I/O combined module	AJ65FBTA42-16DT, AJ65FBTA42-16DTE, AJ65VBTCE3-16DTE, AJ65VBTCE3-32DTE								

Function	Description
Common to protection functions	 When an overcurrent continues to flow and generates overheat, overheat protection is activated. The functions are provided for protecting only the circuits inside the module. A load error may deteriorate output elements or discolour the module case or printed circuit board due to increase in temperature within the module. If a load error occurs, turn off the corresponding output immediately and eliminate the error cause.
Overload protection function	 When the output module detects an overcurrent, the current limiter^{*1} is activated to limit the output current. The overload protection function of the following modules is activated under the condition of 1 to 3A per point and limits the output current. AJ65SBTB1-8TE, AJ65SBTB1-16TE, AJ65VBTCE2-8T, AJ65VBTCE2-16T, AJ65VBTCE3-16TE, AJ65VBTCU2-8T, AJ65VBTCU2-16T, AJ65SBTCF1-32T, AJ65VBTCE3-16DT, AJ65VBTCE3-16DTE, AJ65VBTCE32-32DT, AJ65VBTCE3-32DTE, AJ65SBTCF1-32DT, AJ65VBTCE32-32DT1, AJ65VBTCFJ1-32DT1 The overload protection function of the following modules is activated under the condition of 1 to 6A per point and limits the output current. AJ65SBTB1-8T, AJ65SBTC1-32T, AJ65SBTB1-16T, AJ65SBTB2-16T, AJ65SBTB1-8T, AJ65SBTC1-32T, AJ65SBTB1-16T, AJ65SBTB32-8DT, AJ65SBTB1-32T, AJ65SBTC1-32T, AJ65SBTB32-16DT, AJ65SBTB32-8DT, AJ65SBTB1-32T, AJ65SBTC1-32T, AJ65SBTB32-16DT, AJ65SBTB32-8DT, AJ65SBTB1-32DT1, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, AJ65SBTC4-16DT, AJ65SBTW4-16DT The overload protection function of the following modules is activated under the condition of 5 to 14A per point and limits the output current. AJ65FBTA2-16TE, AJ65FBTA42-16DTE The overload protection function is automatically reset when the load current drops to the rated value.
Overvoltage protection function	 This function protects elements from an abrupt surge caused when a coil load is used.

Function	Description
Overheat protection function	 The overheat protection function of the following modules is activated in units of two points. AJ65SBTB1-8TE, AJ65SBTB1-16TE, AJ65VBTCE3-16TE, AJ65VBTCE3- 16DTE, AJ65VBTCE3-32DTE (For example, when this function is activated for either Y0 or Y1 output signal, Y0 and Y1 simultaneously turn off. When the overheat condition continues, the heat is conducted to other loads and the corresponding protection functions may also be activated.) If this function is activated while an output signal is on, the voltage oscillates between 0V and the load voltage. When the load voltage is 24VDC, the average voltage during oscillation is approximately 7VDC. (The voltage does not oscillate when an output signal is off.) To ensure that output turns off when the overheat protection function becomes activated, use an external load that turns off at higher than 7VDC under overheat protection function other than the above, the function is activated in units of one point. When this function becomes activated, an output signal turns off. The overheat protection function is automatically reset when the temperature falls below the pre-set value.
*	1: The limiter is a function that limits an overcurrent to a certain current value

to keep it flowing.

1.4 Specification List

Specification list for each compact remote I/O module is shown below.

Model	Input format	No. of points per module	Insulation method	Rated input voltage	nput current		ration tage OFF voltage		esponse ne ON → OFF	Input display	External connection	Common connection	Internal current consumption	External dimensions	Reference	
AJ65SBTB1-8D		8 points			Approx.	14V or	6V or	1.5ms	or less			8 points 1 common	30mA	* 1	4.1.3	
AJ65SBTB1-16D					7mA	more	less	1.0110					35mA		4.1.5	
AJ65SBTB1-16D1		16 points			Approx. 5mA	15V or more	3V or less	() The or less		16 points 1 common	40mA	*2	4.1.6			
AJ65DBTB1-32D					Approx. 5mA	15V or more	5V or less	10ms	or less		1-wire	1 common	45mA	*3	4.1.14	
AJ65SBTB1-32D	DC input				Approx.	14V or more	6V or less	1.5ms	or less		terminal block		45mA		4.1.10	
AJ65SBTB1-32KD	(Positive/ Negative				7mA	14V or more	5.5V or less	*	14				75mA	*3	4.1.11	
AJ65SBTB1-32D1	common)	32 points			Approx. 5mA	15V or more	3V or less	0.2ms	or less			32 points	50mA	^3	4.1.12	
AJ65SBTB1-32D5					Approx. 4mA	3.5V or more	1.5V or less	4.5				1 common	35mA		4.1.13	
AJ65SBTC1-32D							14V or more	6V or less	1.5ms	or less		1-wire		45 4		4.4.6
AJ65SBTC1-32D1							15V or more	3V or less	0.2ms	or less		one-touch connector		45mA		4.4.7
AJ65SBTC4-16D			<u>io</u>							display	4-wire one-touch	10 i-t-	35mA		4.4.2	
AJ65SBTC4-16DN	DC input (Positive common)		Photocoupler insulation	24VDC	Approx. 5mA		6V or less							*2	4.4.3	
AJ65SBTC4-16DE	DC input (Negative common)	16 points				14V or more				LED dis	connector	16 points 1 common			4.4.4	
AJ65SBTW4-16D			Photo					1.5ms	or less		4-wire waterproof connector		120mA	*4	4.6.3	
AJ65SBTCF1-32D	DC input (Positive/	32 points									1-wire FCN connector	32 points 1 common	45mA	*2	4.5.1	
AJ65SBTB3-8D	negative common)	8 points			Approx.	14V or	6V or					8 points 1 common	40mA	*2	4.1.4	
AJ65SBTB3-16D	1				7mA	more	less				3-wire		45mA		4.1.7	
AJ65SBTB3-16KD		16 points			Approx. 7mA	14V or more	5.5V or less	*	14		terminal block	16 points 1 common	50mA	*3	4.1.8	
AJ65SBTB3-16D5]	to points			Approx. 4mA	3.5V or more	1.5V or less	1.5ms	or less			r common	30mA		4.1.9	
AJ65VBTCU3-8D1	DC input (Positive	8 points			Approx.	15V or	3V or	0.0===		Ì	3-wire	8 points 1 common	35mA	* 5	4.4.1	
AJ65VBTCU3-16D1	common)	16 points		5mA	more	less	0.2ms or less			one-touch connector	16 points 1 common	40mA	*6	4.4.5		
AJ65SBTB2N-8A		8 points		100 to	Approx.	80V or	30V or	20	or less		2-wire	8 points 1 common	35mA	*2	4.1.1	
AJ65SBTB2N-16A	AC input	16 points		120VAC 50/60Hz	7mA	more	less	ZUINS	UI IESS		terminal block	16 points 1 common	40mA	* 3	4.1.2	

(1) Input module

 DIOCK
 1 common
 4011/4

 * 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

 * 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

 * 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch)

 * 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

* 12 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

 $\ast\,$ 14 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less

(Depending on the input response speed setting value)

* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch) * 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch) * 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch) * 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

Model	Input	No. of points per module	Insulation method	Rated input voltage	urrent	Operation voltage			esponse ne	Input display	External	Common	Internal current consumption	External dimensions	Reference
Model	format	No. of per m	Insulation	Rated volta	Input current	ON voltage	OFF voltage	$\begin{array}{c} \text{OFF} \rightarrow \\ \text{ON} \end{array}$	$\begin{array}{c} \text{ON} \rightarrow \\ \text{OFF} \end{array}$	Input c	connection	connection	Inter curr consur	Exte dimen	Refer
AJ65FBTA4-16D	DC input (Positive common)				Approx.						2 to 4-wire		10	*7	4.6.1
AJ65FBTA4-16DE	DC input (Negative common)	16 points			7mA						waterproof connector	16 points	40mA	-1-7	4.6.2
AJ65VBTS3-16D			ocoupler insula		Approx. 5mA						Spring	1 common	35mA	* 8	4.2.1
AJ65VBTS3-32D		32 points		24VDC		14V or more	-			ay	clamp terminal block 3-wire type		40mA	*9	4.2.2
AJ65VBTCE3-8D	DC input (Positive common)	8 points						1.5ms	or less	D display		8 points 1 common	30mA	* 10	4.3.1
AJ65VBTCE3-16D	common)	16 points								LED	Sensor	16 points 1 common	35mA	* 11	4.3.2
AJ65VBTCE3-32D		32 points									connector (e-CON)	32 points 1 common	40mA	* 12	4.3.3
AJ65VBTCE3-16DE		16 points									3-wire type -	16 points 1 common	35mA	* 11	4.3.4
AJ65VBTCE3-32DE	(Negative common)	32 points										32 points 1 common	40mA	* 12	4.3.5

* 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) * 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) * 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch) * 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch) * 12 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch) * 13 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch) * 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

* 14 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less (Depending on the input response speed setting value)

		oints ule	5 -	7 ⁰		num load		esponse	± >	sor			al tion	al	e		
Model	Output format	No. of points per module	Insulation	Rated load voltage		urrent 1 common	$\frac{\text{tir}}{\text{OFF}} \rightarrow \text{ON}$	ne ON → OFF	Output display	Surge suppressor	External connection	Common connection	Internal current consumption	External	Reference		
AJ65SBTB1-8T		8 points				2.4 A					1-wire	8 points 1 common	35mA	* 1	5.1.1		
AJ65SBTB1-16T	Transistor	16 points			0.5 A	3.6 A	-				terminal block	16 points 1 common	50mA	*2	5.1.5		
AJ65SBTB1-32T	output * 14 (sink type)					4.8 A							65mA	*3	5.1.9		
AJ65SBTC1-32T	(Sink type)	32 points			0.1 A	3.2 A					1-wire one-touch connector	32 points 1 common	60mA	*2	5.4.3		
AJ65SBTB1-8T1		8 points 16 points				2.4 A					1 wire	8 points 1 common	35mA	* 1	5.1.2		
AJ65SBTB1-16T1	Transistor				0.5 A	3.6 A					1-wire terminal	16 points 1 common	50mA	*2	5.1.6		
AJ65DBTB1-32T1	output * 13		Ľ			8 A					block		65mA	* 12	5.1.19		
AJ65SBTB1-32T1	(sink type)	00 m a inta	llatic			4.8 A		1.5ms or less			1	32 points	65mA	*3	5.1.10		
AJ65SBTC1-32T1		32 points	Photocoupler insulation	12/24 VDC	0.1 A	3.2 A	0.5ms or less			Zener diode	1-wire one-touch connector	1 common	60mA	*2	5.4.4		
AJ65SBTB1-8TE	Transistor output * 13 (source type)			8 points	otocol	100	0.1 A	0.8 A				diodo		8 points 1 common	35mA	* 1	5.1.11
AJ65SBTB1-16TE		16 points	Phe		0.1 A	1.6 A					1-wire	16 points 1 common	50mA	*2	5.1.12		
AJ65SBTB1B- 16TE1		16 points	nts			4 A			play		terminal block	8 points 1 common	50mA	*3	5.1.13		
AJ65SBTB1- 32TE1		32 points			0.5 A	4.8A			LED display			32 points 1 common	65mA	*3	5.1.14		
AJ65SBTB2-8T	Transistor	8 points	;		0.5 A	2.4 A						8 points 1 common	45mA	*2	5.1.3		
AJ65SBTB2-16T	output * 14 (sink type)	16 points				3.6 A						16 points 1 common	55mA	*3	5.1.7		
AJ65SBTB2-8T1	Transistor output * 12	8 points			0.5 A	2.4 A					2-wire	8 points 1 common	45mA	*2	5.1.4		
AJ65SBTB2-16T1	(sink type)	16 points			0.5 A	3.6 A					terminal block	16 points 1 common	55mA	*3	5.1.8		
AJ65SBTB2N-8R		8 points	Relay insulation			4 A					DIOCK	8 points 1 common	85mA	* 2	5.1.15		
AJ65SBTB2N-16R	Contact output	16 points	Relay in	24VDC 240VAC	2 A	8 A	10ms or less	12ms or less		None		16 points 1 common	120mA	* 3	5.1.16		
AJ65DBTB1-32R		F	32 points	sulation	sulation		4 A					1-wire terminal block	8 points	80mA	* 12	5.1.20	
AJ65SBTB2N-8S	Triac output	8 points	Photocoupler insulation	100 to 240VAC	0.6 A	2.4 A	1ms	1ms + 0.5		CR	2-wire terminal	1 common	55mA	*2	5.1.17		
AJ65SBTB2N-16S	* 16	16 points	Photo	240VAC 50/60Hz	0.0 A	4.8 A	or less	cycle or less		Absorber	block	32 points 1 common	85mA	*3	5.1.18		

(2) Output module

* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch) * 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

* 8: 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) * 9: 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) * 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71)(D)mm (inch) * 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

* 12 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

* 13 : Leakage current when the transistor output is OFF (0.1mA or less)

* 14 : Leakage current when the transistor output is OFF (0.25mA or less)

* 15 : Leakage current when the transistor output is OFF (0.3mA or less)

* 16 : Leakage current when the triac output is OFF 1.5mA rms or less (100VAC rms 60Hz), 3mA rms or less (200VAC rms 60Hz)

Model	Output	vo. of points per module	Insulation	Rated load voltage	Maxir cı	num load urrent	Output r	esponse ne	Output display	Surge suppressor	External	Common	Internal current consumption	External	Reference
format	format	No. of per m	Insul	Ra Io	1 point	1 common	$\begin{array}{c} OFF \rightarrow \\ ON \end{array}$	$ON \rightarrow OFF$	Out	ıddns nS	connection	connection	Inte cur consui	Exte dimer	Refei
AJ65SBTCF1-32T	Transistor	32 points				3.2 A	0.5ms or less	1.5ms or less			1-wire FCN connector	32 points 1 common	60mA	*2	5.5.1
AJ65VBTCU2-8T	output * 13 (sink type)	8 points			0.1 A	0.8 A	1ms	1ms			2-wire one-touch	8 points 1 common	35mA	* 5	5.4.1
AJ65VBTCU2-16T						1.6 A	or less	or less		Zener diode	connector		40mA	* 6	5.4.2
AJ65FBTA2-16T	Transistor output * 14 (sink type)	16 points	Photocoupler insulation	12/24 VDC	0.5 A	4.0 A	0.5ms or less	ms 1ms			2-wire waterproof		50mA	* 7	5.6.1
AJ65FBTA2-16TE	Transistor output * 15 (source type)				1.0 A 0.5 A				LED display		connector	16 points 1 common	50mA	*7	5.6.2
AJ65VBTS2-16T											Spring		45mA	* 8	5.2.1
AJ65VBTS2-32T	Transistor output * 12	32 points	Photocoup								clamp terminal block 2-wire type		60mA	* 9	5.2.2
AJ65VBTCE2-8T	(sink type)	8 points				0.8 A	1ms				Sensor connector	8 points 1 common	35mA	* 10	5.3.1
AJ65VBTCE2-16T							or less	or less			(e-CON) 2-wire type				5.3.2
AJ65VBTCE3- 16TE	Transistor output * 13 (source type)	16 points			0.1 A	1.6 A					Sensor connector (e-CON) 3-wire type	16 points 1 common	45mA	* 11	5.3.3

* 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71)(D)mm (inch)

* 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

* 12 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

* 13 : Leakage current when the transistor output is OFF (0.1mA or less)

 \ast 14 : Leakage current when the transistor output is OFF (0.25mA or less)

 \ast 15 : Leakage current when the transistor output is OFF (0.3mA or less)

* 16 : Leakage current when the triac output is OFF 1.5mA rms or less (100VAC rms 60Hz), 3mA rms or less (200VAC rms 60Hz)

* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

 $*~7:60~(2.36)~(W)\times200~(7.87)~(H)\times48~(1.89)~(D)mm~(inch)$

* 8: 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) * 9: 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

(3) Combined I/O module

In the combined I/O module, the input side and the output side are structure as a pair.

ion	Madal	Input	of points module	ation	input age	urrent		ation age	Input re tin	sponse 1e	isplay	External	Common	nal ent nption	rnal sions	ence
Division	Model	format	No. of per mo	Insulation method	Rated input voltage	Input current	ON voltage	OFF voltage	$\begin{array}{c} \text{OFF} \rightarrow \\ \text{ON} \end{array}$	$\stackrel{\text{ON}}{\text{OFF}} \rightarrow$	Input display	connection	connection	Internal current consumption	External dimensions	Reference
	AJ65SBTC1-32DT						14V or more	6V or less	1.5ms	or less						6.4.3
	AJ65SBTC1-32DT1		16				15V or more	3V or less	0.2ms	or less		1-wire	32 points 1 common	50 4		6.4.4
	AJ65SBTC1-32DT2		points			14V or more	6V or less	1.5ms	or less		one-touch connector	(shared with output)	50mA	* 1	6.4.5	
	AJ65SBTC1-32DT3					Approx. 5mA	15V or more	3V or less	0.2ms	or less						6.4.6
	AJ65SBTC4-16DT											4-wire one-touch	16 nainta	40mA	1	6.4.1
	AJ65SBTC4-16DT2		8									connector	16 points 1 common	401174		6.4.2
	AJ65SBTW4-16DT	DC input (Positive	points				14V or	6V or	1.5ms	orless		4-wire waterproof connector	(shared with output)	90mA	* 3	6.6.3
	AJ65SBTB1-16DT	common)	8 points			Approx.	more	less	1.000	01 1655			16 points 1 common (shared with output)	50mA	* 1	6.1.3
	AJ65SBTB1-32DT		16 points		24	ΫmA							32 points 1 common (shared with output)	32mA	* 2	6.1.13
	AJ65SBTB1-16DT1		8 points		24 VDC			3V or	0.2ms	orloss			16 points 1 common (shared with output)	55mA	* 1	6.1.4
	AJ65SBTB1-32DT1			ation		Approx. 5mA	15V or more	less	0.20 0.	01 1633			32 points 1 common (shared with output)	60mA	* 2	6.1.14
ę	AJ65DBTB1-32DT1		16 points	insula				5V or less	10ms	or less	olay	1-wire	16 points 1 common	55mA	* 5	6.1.20
Input side	AJ65SBTB1-32DTE1	DC input (Negative common)		Photocoupler insulation				0) (==			LED display	terminal block	32 points 1 common (shared with output)	50mA	* 2	6.1.19
	AJ65SBTB1-16DT2		8 points	Photo		Approx. 7mA	14V or more	6V or less	1.5ms	or less	_		16 points 1 common (shared with output)	50mA	* 1	6.1.5
	AJ65SBTB1-32DT2		16					F F V a a					32 points 1 common (shared	60mA	*2	6.1.15
	AJ65SBTB1-32KDT2		points					5.5V or less	*	11			with output)	65mA		6.1.16
	AJ65SBTB1-16DT3		8 points			Approx. 5mA	15V or more	3V or less	0.2ms	or less			16 points 1 common (shared with output)	55mA	* 1	6.1.6
	AJ65SBTB1-32DT3		16			_							32 points	60mA		6.1.17
	AJ65SBTB1-32KDT8	DC input	points		12 VDC	Approx. 11mA	5.6V or more	2.4V or less	*	11			1 common (shared with output)	65mA	*2	6.1.18
	AJ65SBTB32-8DT	(Positive common)	4 points										8 points 1 common (shared with output)	45mA	* 1	6.1.1
	AJ65SBTB32-16DT		8 points	nts 24 Approx. 14V VDC 7mA mo	14V or	6V or less	1.5ms	or less		Input 3-wire	16 points 1 common (shared with output)	50mA	* 2	6.1.7		
	AJ65SBTB32-8DT2		4 points		more					Output 2-wire terminal	8 points 1 common (shared with output)	45mA	* 1	6.1.2		
	AJ65SBTB32-16DT2											block	16	50mA		6.1.8
1	AJ65SBTB32-16KDT2		8 points					5.5V or less	*	11			16 points 1 common (shared	55mA	* 2	6.1.9
	AJ65SBTB32-16KDT8				12 VDC	Approx. 11mA	5.6V or more	2.4V or less	*	11			with output)	55mA		6.1.10

* 1 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 2 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 3 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

* 4 : 41 (1.61) (W) × 115 (4.53) (H) × 67 (2.64) (D)mm (inch)

* 5 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch) * 6 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch) $\begin{array}{l} * \ 7 & : \ 137 \ (5.39) \ (W) \times 50 \ (1.97) \ (H) \times 51.5 \ (2.03) \ (D)mm \ (inch) \\ * \ 8 & : \ 222 \ (8.74) \ (W) \times 50 \ (1.97) \ (H) \times 51.5 \ (2.03) \ (D)mm \ (inch) \end{array}$

* 9 : 100 (3.94) (W) × 50 (1.97) (H) × 41.5 (1.63) (D)mm (inch)

* 10 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

* 11 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less (Depending on the input response speed setting value)

1 OVERVIEW

MELSEC-A

Division	Model	Input format	No. of points per module	Insulation method	Rated input voltage	input current	Oper volt		Input re tim		lisplay	External	Common	Internal current consumption	External dimensions	Reference
Divis	Widdei	πρατιοπηαι	No. of per m	Insul	Rated volta	Input o	ON voltage	OFF voltage	$\overset{\text{OFF}}{\underset{\text{ON}}{\rightarrow}}$	$\stackrel{\text{ON}}{\text{OFF}} \rightarrow$	Input display	connection	connection	Inter curr consur	Exte dimen	Refer
	AJ65SBTB32-16DR		8			A 19 19 19 1	14V or	6V or less	1.5ms or less	or less		Input 3-wire Output	8 points	85mA		6.1.11
	AJ65SBTB32- 16KDR	DC input (Positive/	o points			Approx. 7mA	more	5.5V or less	*	11		2-wire terminal block	1 common	100mA	* 2	6.1.12
	AJ65DBTB1-32DR	negative common)					15V or more	5V or less	10ms o	or less		1-wire terminal block		60mA	* 5	6.1.21
	AJ65SBTCF1-32DT		16 points			Approx. 5mA	14V or more	6V or less	1.5ms	or less		1-wire	16 points 1 common		* 1	6.5.1
	AJ65VBTCF1-32DT1		F				451/	3V or				one-touch			* 4	6.5.2
	AJ65VBTCFJ1- 32DT1	DC input (Positive		E			15V or more	less	0.2ms	or less		connector		50mA		6.5.3
	AJ65FBTA42-16DT	common)		sulati		Approx.					УE	2 to 4-wire	8 points		* 6	6.6.1
Input side	AJ65FBTA42-16DTE	DC input (Negative common)	8 points	Photocoupler insulation	24 VDC	7mA					LED display	waterproof connector	1 common (Shared with output)	45mA		6.6.2
-	AJ65VBTS32-16DT			Photocc							В	Spring clamp terminal	16 points 1 common (shared with output)	40mA	* 7	6.2.1
	AJ65VBTS32-32DT	DC input	16 points				4.0.7	0.4				block 3-wire type	16 points 1 common	50mA	* 8	6.2.2
	AJ65VBTCE32-16DT	(Positive common)	8 points			Approx.	14V or more	6V or less	1.5ms	or less			16 points 1 common (shared with output)	40mA	* 9	6.3.1
	AJ65VBTCE32-32DT		16 points			5mA						Sensor connector	32 points 1 common (shared with output)	45mA	* 10	6.3.3
	AJ65VBTCE3-16DTE	DC input (Negative	8 points									(e-CON) 3-wire type	16 points 1 common (shared with output)	40mA	* 9	6.3.2
	AJ65VBTCE3-32DTE	common)	16 points										32 points 1 common (shared with output)	45mA	* 10	6.3.4

*7 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch) *8 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

* 10 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

* 2 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

* 3 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch) * 9 : 100 (3.94) (W) × 50 (1.97) (H) × 41.5 (1.63) (D)mm (inch)

* 4 : 41 (1.61) (W) × 115 (4.53) (H) × 67 (2.64) (D)mm (inch)

* 1 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

 \ast 11 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less (Depending on the input response speed setting value)

* 5 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch) * 6 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

(b) Output side

Division	Model	Output	No. of points per module	Insulation method	Rated load voltage		num load urrent	Ou respon	iput se time	display	Surge suppressor	External	Common	nternal current consumption External dimensions Reference				
Divis	Model	format	No. of per m	Insul	Rated	1 point	1 common	OFF → ON	$\stackrel{\text{ON}}{\text{OFF}} \rightarrow$	Output display	suppr	connection	connection	Internal current consumption External dimensions Reference				
	AJ65SBTC1-32DT	Transistor																
	AJ65SBTC1-32DT1	output * 13 (sink type)	16			0.44	1.01					1-wire	32 points					
	AJ65SBTC1-32DT2	Transistor	points			0.1A	1.6A					one-touch connector	1 common (shared with input)					
	AJ65SBTC1-32DT3	output * 12 (sink type)																
	AJ65SBTC4-16DT	Transistor output * 13 (sink type)	-									4-wire one-touch	16 points					
	AJ65SBTC4-16DT2	Transistor output * 12 (sink type)	8 points		24		2.4A					connector	1 common (shared with input)					
	AJ65SBTW4-16DT			-	VDC							4-wire waterproof connector	10					
	AJ65SBTB1-16DT	Transistor	8 points										1 common (shared with input)					
	AJ65SBTB1-32DT	output * 13 (sink type)	16 points	-			3.6A						1 common (shared with input)					
	AJ65SBTB1-16DT1						8 points				2.4A						1 common (shared with input)	
	AJ65SBTB1-32DT1			Photocoupler insulation		0.5A	3.6A						1 common (shared with input)					
side	AJ65DBTB1-32DT1	Transistor output * 12 (sink type)	16 points		12/24 VDC			4A	0.5ms		display	_	1-wire	16 points 1 common				
Output side	AJ65SBTB1-32DTE1	Transistor output * 12 (source type)					3.6A	or less	1.5ms or less	LED dis	Zener diode		32 points 1 common (shared with input)	See input side				
	AJ65SBTB1-16DT2		8 points	РЧ	24		0.5A	0.5A	0.5A	0.5A	2.4A						16 points 1 common (shared with input) 32 points 1 common (shared with input) 16 points 1 common (shared with input) 32 points 1 common (shared with input) 16 points 1 common (shared with input) 16 points 1 common (shared with input) 32 points 1 common (shared with input)	
	AJ65SBTB1-32DT2		16		VDC						3.6A							
	AJ65SBTB1-32KDT2	Transistor output * 12	points	-									(shared with input)					
	AJ65SBTB1-16DT3	(sink type)	8 points				2.4A						1 common					
	AJ65SBTB1-32DT3		16				3.6A											
	AJ65SBTB1-32KDT8		points		12 VDC		3.0A						(shared with input)					
	AJ65SBTB32-8DT	Transistor output * 13	4 points				1.2A						1 common (shared with input)					
	AJ65SBTB32-16DT	(sink type)	8 points				2.4A						16 points 1 common (shared with input)					
	AJ65SBTB32-8DT2		4 points		24 VDC		1.2A					Input 3-wire Output 2-wire	8 points 1 common (shared with input)					
	AJ65SBTB32-16DT2	SBTB32-16KDT2							terminal block	16 points								
	AJ65SBTB32-16KDT2						2.4A						1 common (shared with input)					
	AJ65SBTB32-16KDT8				12 VDC													

 \ast 12 : Leakage current when the transistor output is OFF (0.1mA or less)

* 13 : Leakage current when the transistor output is OFF (0.25mA or less)

* 14 : Leakage current when the transistor output is OFF (0.3mA or less)

1 OVERVIEW

MELSEC-A

Division	Model	Output format	No. of points per module	nsulation method	Rated load voltage		num load urrent		tput se time	display	Surge suppressor	External	Common	current nption	External dimensions	Reference
Divis	WOdel	Output ionnat	No. of per m	Insulation method	Ratec volta	1 point	1 common	OFF → ON	$\stackrel{\text{ON}}{\text{OFF}} \rightarrow$	Output display	urg Sur	connection	connection	Internal current consumption	Exte dimen	Refer
	AJ65SBTB32-16DR		8	ay ation	24							Input 3-wire Output 2-wire	4 points			
	AJ65SBTB32-16KDR	Contact output	points	Relay insulation	VDC 240	2A	4A	10ms or less	12ms or less		None	terminal block	1 common			
	AJ65DBTB1-32DR		16 points		VAC							1-wire terminal block	8 points 1 common			
	AJ65SBTCF1-32DT	Transistor	16		12/24 VDC			0.5ms or less	1.5ms or less			1-wire	16 points			
	AJ65VBTCF1-32DT1 AJ65VBTCFJ1- 32DT1	output *12 (sink type)	points			0.1A	1.6A	1ms or less	1ms or less			FCN connector	1 common			
0	AJ65FBTA42-16DT	Transistor output * 13 (sink type)			24	0.5A	2.4A	0.5ms	1.5ms	~		2-wire waterproof	8 points 1 common			
Output side	AJ65FBTA42-16DTE	Transistor output * 14 (source type)	8 points	^o hotocoupler insulation	VDC	1.0A		or less	or less	ED display		connector	(shared with input)	See	input	side
0	AJ65VBTS32-16DT			coupler i		0.5A	4.0A				Zener diode	Spring clamp terminal	16 points 1 common (shared with input)			
	AJ65VBTS32-32DT	Transistor	16 points	Photo	12/24 VDC							block 2-wire type	16 points 1 common			
	AJ65VBTCE32-16DT	output * 12 (sink type)	8 points				0.8A	1ms	1ms			Sensor connector	16 points 1 common (shared with input)			
	AJ65VBTCE32-32DT		16 points		24	0.1A	1.6A	or less	or less			(e-CON) 2-wire type	32 points 1 common (shared with input)			
	AJ65VBTCE3- 16DTE	Transistor output * 12	8 points		VDC	0.171	0.8A					Sensor connector	16 points 1 common (shared with input)			
	AJ65VBTCE3- 32DTE	(source type)	16 points				1.6A					(e-CON) 3-wire type	32 points 1 common (shared with input)			

 \ast 12 : Leakage current when the transistor output is OFF (0.1mA or less)

* 13 : Leakage current when the transistor output is OFF (0.25mA or less)

 \ast 14 : Leakage current when the transistor output is OFF (0.3mA or less)

1.5 Parts Sold Separately

Plugs for one-touch connector type modules are sold separately. Please purchase them as necessary.

	Mitsubishi model name	Part model name (manufacturer)	Speci	fications		Color of the cover
			Applicable cable size (core)	Applicable cable size (diameter)	Maximum rated current	
	A6CON-P214	33104-6000FL (3M Japan Limited)	0.14 to 0.2mm ²	φ 1.0 to 1.4mm	2A * 5	Transparent
Plug for one-touch connector * 1	A6CON-P220	33104-6100FL (3M Japan Limited)	(26 to 24 AWG)	<i>ϕ</i> 1.4 to 2.0mm	24 * 3	Yellow
	A6CON-P514	33104-6200FL (3M Japan Limited)	0.3 to 0.5mm ²	<i>ϕ</i> 1.0 to 1.4mm	3A * 5	Red
	A6CON-P520	33104-6300FL (3M Japan Limited)	(22 to 20 AWG)	<i>ϕ</i> 1.4 to 2.0mm	54 * 5	Blue
One-touch connector for	A6CON-L5P	35505-6000- BOM GF (3M	Communication line 0.5mm ² (20 AWG)	¢ 2.2 to 3.0mm		Red
communication * 2		Japan Limited)	Shielded cable 0.5mm ² (20 AWG)			
One-touch connector for power	A6CON-PW5P	35505-6080-A00 GF (3M Japan Limited)	0.75mm ² (0.66 to 0.98mm ²) (18 AWG) Wire diameter: 0.16mm or	¢ 2.2 to 3.0mm	74.5	Gray
supply and FG * 2 * 4	A6CON-PW5P- SOD	35505-6180-A00 GF (3M Japan Limited)	more Insulating coating material: PVC (heat-resistant)	<i>∲</i> 2.0 to 2.3mm	7A * 5	Blue
Dustproof cap * 1	A6CAP-DC1		(AJ65SBTWD-16D	」 □ only)		_
Waterproof cap * 1	A6CAP-WP1		Protection construction (AJ65SBTW□-16		—	_
waterproof cap * 1	A6CAP-WP2		Protection of degree (AJ65FBTA□-16□			
	A6CON1		Soldering type (Straigh		—	
FCN connector	A6CON2		Crimp-contact type (Strai		—	—
	A6CON3		Pressure-displacement type	,	—	—
	A6CON4		Soldering type (Straight-out/d	liagonal-out type)		
Online connector for communication * 3	A6CON-LJ5P	35720-L200-B00 AK (3M Japan Limited)	_		—	—
Online connector for power supply $*3$	A6CON-PWJ5P	35720-L200-A00 AK (3M Japan Limited)	_		—	_
One-touch connector plug with terminating	A6CON-TR11		With terminating resist	tor (110Ω)	—	—
resistor (1 piece)	A6CON-TR11N		With terminating resistor (110	$\Omega\Omega$) (built-in type)		_
Metal installation fitting for the	A6PLT-J65V1	_	For modules with a wid (AJ65VBTCU□-8□, AJ65\ AJ65VBTCU-68 10 M4 ×8 SWPW attached ho	/BTCU□-32□, 3□)	_	_
connector type module (set of 5)	A6PLT-J65V2	_	For modules with a wid (AJ65VBTCU⊡- 10 M4 ×8 SWPW attached ho	16□)	_	—

*1 The A6CON-P and A6CAP- 11 (manufactured by Mitsubishi) are available in packs of 20 pieces.

*2 The A6CON-□5P (manufactured by Mitsubishi) is available in packs of 10 pieces.

*3 The A6CON-□J5P (manufactured by Mitsubishi) is available in packs of 5 pieces.

 ${\rm *4}\,$ Check the outside diameter of an applicable cable and select a connector.

 $\pm 5\,$ Keep the current within the allowable range of the connected cable.

	Mitsubishi			Anglinghla maghula		
	model name			Applicable module		
	A6CVR-8	Input : Output : Repeater :	AJ65SBTB1-8D AJ65SBTB1-8T AJ65SBT-RPT	AJ65SBTB1-8TE	AJ65SBTB1-8T1	
		Input :	AJ65SBTB1-16D AJ65SBTC4-16D	AJ65SBTB1-16D1 AJ65SBTC4-16DN	AJ65SBTC1-32D AJ65SBTC4-16DE	AJ65SBTC1-32D1 AJ65SBTB3-8D
	A6CVR-16	Output :	AJ65SBTB2-8A AJ65SBTB1-16T AJ65SBTB1-16TE	AJ65SBTB2N-8A AJ65SBTC1-32T AJ65SBTB2-8R	AJ65SBTB1-16T1 AJ65SBTB2-8S	AJ65SBTB2-8T AJ65SBTB2N-8R
Protective		Combined :	AJ65SBTB2N-8S AJ65SBTC1-32DT AJ65SBTB1-16DT1 AJ65SBTC1-32DT3	AJ65SBTB2-8T1 AJ65SBTC1-32DT1 AJ65SBTB1-16DT2 AJ65SBTC4-16DT2	AJ65SBTC4-16DT AJ65SBTB32-8DT AJ65SBTB1-16DT3	AJ65SBTB1-6DT AJ65SBTC1-32DT2 AJ65SBTB32-8DT2
cover for the		Optical Repeater		AJ65SBT-RPG		
compact type remote I/O		Input :	AJ65SBTB1-32D AJ65SBTB3-16D	AJ65SBTB1-32D1	AJ65SBTB2-16A	AJ65SBTB2N-16A
module (10 pieces)	A6CVR-32	Output :	AJ65SBTB1-32T AJ65SBTB2-16S	AJ65SBTB1-32T1 AJ65SBTB2N-16R	AJ65SBTB2-16T AJ65SBTB2N-16S	AJ65SBTB2-16R AJ65SBTB2-16T1
		Combined :	AJ65SBTB1-32DT AJ65SBTB1-32DT3	AJ65SBTB1-32DT1 AJ65SBTB32-16DT2	AJ65SBTB1-32DT2	AJ65SBTB32-16DT
	A6CVR-VCE8	Input : Output :	AJ65VBTCE3-8D AJ65VBTCE2-8T			
	A6CVR-VCE16	Input : Output : Combined :	AJ65VBTCE3-16D AJ65VBTCE2-16T AJ65VBTCE32-16DT	AJ65VBTCE3-16DE AJ65VBTCE3-16TE AJ65VBTCE3-16DTE		
	A6CVR-VS16	Input : Output : Combined :	AJ65VBTS3-16D AJ65VBTS2-16T AJ65VBTS32-16DT	<u>,</u>		
DIN adapter	A6DIN1C	Input : Output : Combined :	AJ65DBTB1-32D AJ65DBTB1-32T1 AJ65DBTB1-32DT1	AJ65DBTB1-32R AJ65DBTB1-32DR		
Common terminal block	A2CCOM-TB	Input : Output : Combined :	AJ65DBTB1-32D AJ65DBTB1-32T1 AJ65DBTB1-32DT1	AJ65DBTB1-32R AJ65DBTB1-32DR		

1.6 Recommended Connection Device List

1.6.1 Recommended connection devices for low profile waterproof remote I/O module

The following shows communication devices needed for use of the low profile waterproof type remote I/O module (AJ65FBTA \Box -16 \Box).

(1) Communications Module Waterproof Plug (Male / Female) ··· 4-pin / 5-pin can be used.

(a) For LINK In Side (Female)

Model name	Maker	Specifications	Connection cable diameter
ELKA 4012 PG9	HIRSCHMANN	M12-4-pin Female Straight Type	φ6.0 to 8.0mm
ELKA 5012 PG9	HIRSCHMANN	M12-5-pin Female Straight Type	φ6.0 to 8.0mm
CM02A-8DP5S(03)	DDK Ltd.	M12-4-pin Female Straight Type	φ7.2 to 7.9mm
ELWIKA 4012 PG9	HIRSCHMANN	M12-4-pin Female Right-angle Type	φ6.0 to 8.0mm
ELWIKA 5012 PG9	HIRSCHMANN	M12-5-pin Female Right-angle Type	φ6.0 to 8.0mm

Model name	Maker	Specifications	Connection cable diameter
ELST 4012 PG9	HIRSCHMANN	M12-4-pin Male Straight Type	φ6.0 to 8.0mm
ELST 5012 PG9	HIRSCHMANN	M12-5-pin Male Straight Type	φ6.0 to 8.0mm
CM02A-8DJ5P(03)	DDK Ltd.	M12-4-pin Female Straight Type	φ7.2 to 7.9mm
ELWIST 4012 PG9	HIRSCHMANN	M12-4-pin Male Right-angle Type	φ6.0 to 8.0mm
ELWIST 5012 PG9	HIRSCHMANN	M12-5-pin Male Right-angle Type	φ6.0 to 8.0mm

(2) Power Supply Module - Waterproof Plug (Female) · · · 5-pin only can be used.

Model name	Maker	Specifications	Connection cable diameter
ELKA 5012 PG7		M42 E min Formala Straight Type	φ4.0 to 6.0mm
ELKA 5012 PG9	HIRSCHMANN	M12-5-pin Female Straight Type	φ6.0 to 8.0mm
ELWIKA 5012 PG7		M12 5 nin Ferrele Dight engle Ture	φ4.0 to 6.0mm
ELWIKA 5012 PG9	HIRSCHMANN	M12-5-pin Female Right-angle Type	φ6.0 to 8.0mm

(3) I/O connector waterproof plug (male) ··· 4-pin/5-pin can be used. The plug for LINK OUT side (male) mentioned in Section (1) (b) can be used.

(4) I/O Connector Y Branch Connector

Model name	Maker	Remarks
SAC-3P-M12Y		
SAC-5P-M12Y	PHOENIX CONTACT GmbH & Co. KG	
XS2R series	OMRON Corporation	
VA-4YG-2	CORRENS Corporation	

(5) CC-Link Cable

Model name	Maker	Remarks
FA-CBL series		CC-Link dedicated cable with waterproof connector
Cable with M12 Connector	Shinwa Co.,Ltd	The CA series cannot be used.

1.6.2 Recommended connection devices for low profile sensor connector (e-CON) remote I/O module

The following shows communication devices needed for use of the sensor connector (e-CON) remote I/O module (AJ65VBTCE \Box - $\Box\Box$).

For how to wire the sensor connector (e-CON), refer to the catalog of the corresponding maker.

		Sp	Specifications							
Model name	Maker	Applicable cable size (core)	Applicable cable size (diameter)	Maximum rated current	the cover					
ECN-A014R		0.08 to 0.20mm ² (28 to 24 AWG)	φ0.9 to 1.0mm		Red					
ECN-A004Y		0.20 to 0.30mm ² (24 to 22 AWG)	φ1.0 to 1.15mm		Yellow					
ECN-A024BL	(Mitsubishi	(22 l0 20 AVVG)		φ1.15 to 1.3mm		Blue				
ECN-M014R	Electric System	0.44.45.0.0000002	φ0.8 to 1.0mm	2A * 2	Red					
ECN-M024Y	Service Co., Ltd.)	$0.14 \text{ to } 0.30 \text{mm}^2$	φ1.0 to 1.2mm		Yellow					
ECN-M034OR		(26 to 24 AWG)	φ1.2 to 1.6mm		Orange					
ECN-M044GN		0.20 to 0.50 mm ²	φ1.0 to 1.2mm		Green					
ECN-M054BL		0.30 to 0.50mm ² (22 to 20 AWG)	φ1.2 to 1.6mm		Blue					
ECN-M064GY		(22 10 20 AWG)	φ1.6 to 2.0mm		Gray					

(1) I/O sensor connector (e-CON) plug *1

*1 The ECN- $\Box\Box\Box$ is available in packs of 20 pieces.

*2 Keep the current within the allowable range of the connected cable.

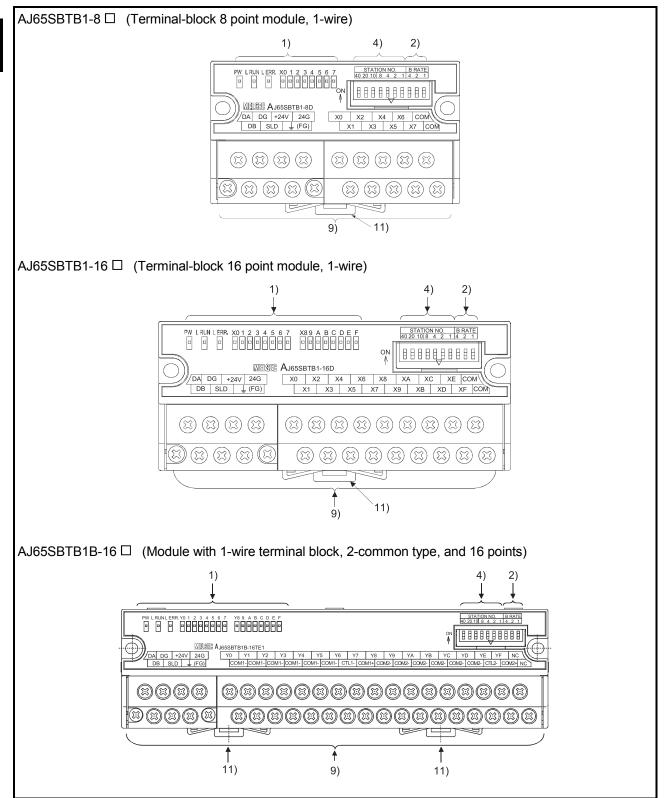
1.7 About the Generic, Abbreviated and Technical Terms Used in This Manual

Generic/abbreviated/ technical term	Description					
Master/local module	Generic term for the AJ61BT11, A1SJ61BT11, AJ61QBT11, A1SJ61QBT11, QJ61BT11, QJ61BT11, QJ61BT11N, L26CPU-BT, L26CPU-PBT, LJ61BT11, and RJ61BT11 CC-Link system naster/local modules					
Compact remote I/O module	Generic term for the AJ65SBT□□-□□ CC-Link system compact remote I/O modules					
Conventional remote I/O module	Generic term for the AJ65BT $\Box \Box$ - $\Box \Box$ CC-Link system remote I/O modules					
Remote I/O module	Generic term for the AJ65BT					
Input module	Generic term for the AJ65SBT□□-□A/D(1) remote I/O modules					
Output module	Generic term for the AJ65SBT□□-□R/T /T1/TE remote I/O modules					
Combined module	Generic term for the AJ65SBT□□-□DT(1) remote I/O modules					
Waterproof type remote I/O module	Generic term for the AJ65SBTW4-16□ remote I/O modules					
Low profile waterproof type remote I/O module	Generic term for the AJ65FBTA \Box -16 \Box remote I/O modules					
Spring clamp terminal block type remote I/O module	Generic term for the AJ65VBTS□-□□ remote I/O modules					
Sensor connector (e-CON) type remote I/O module	Generic term for the AJ65VBTCE \Box - \Box remote I/O modules					

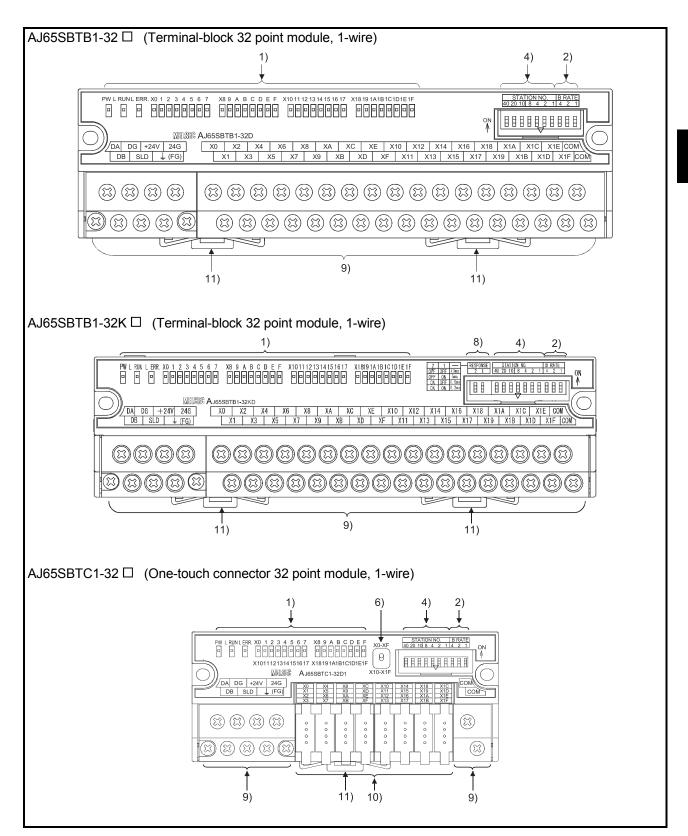
The abbreviated and technical terms used in this manual are listed below:

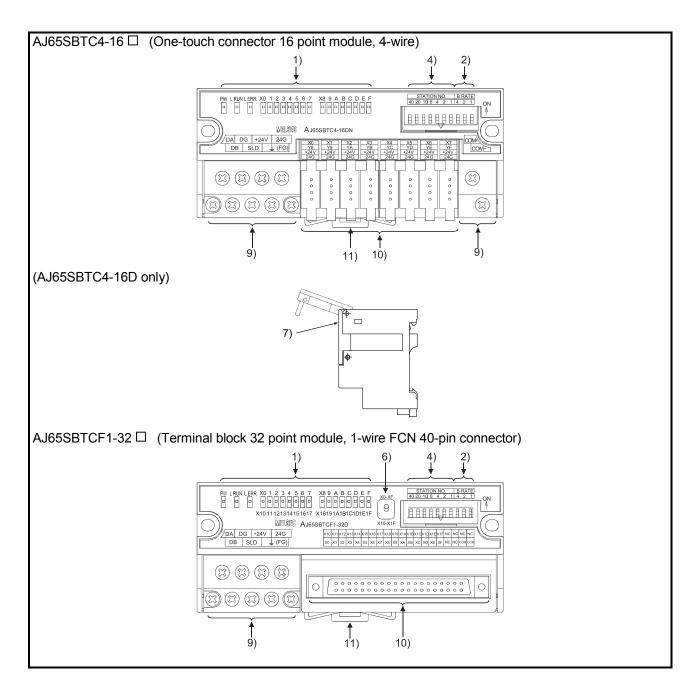
2 NAMES AND SETTINGS FOR EACH PART

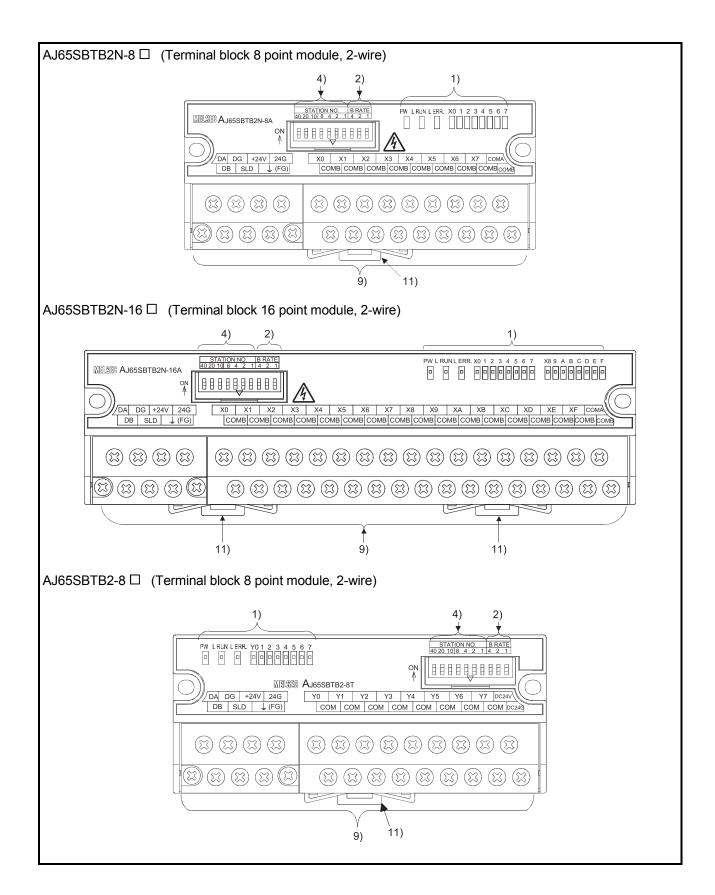
The names and settings for the components of the compact remote I/O module are shown below:

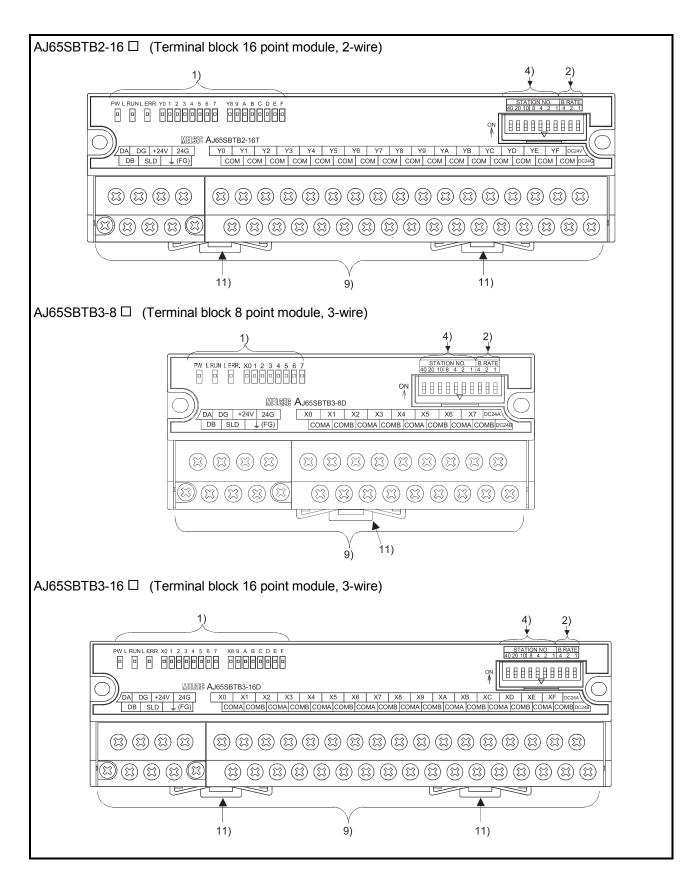


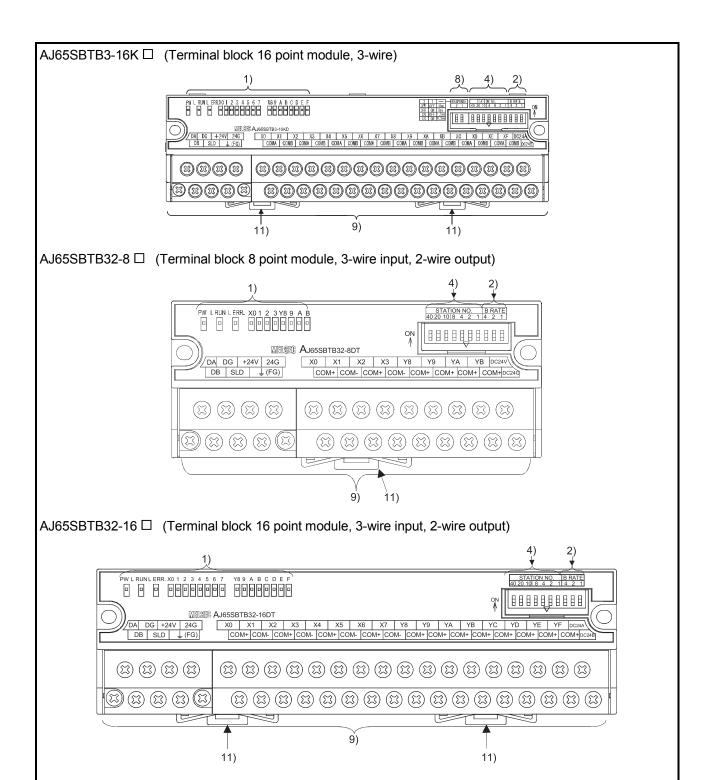
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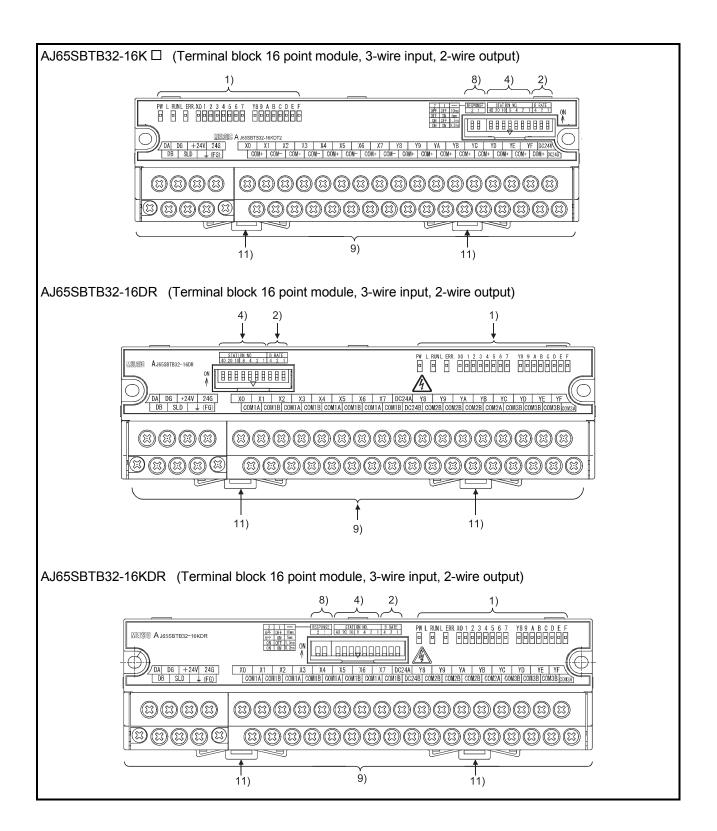




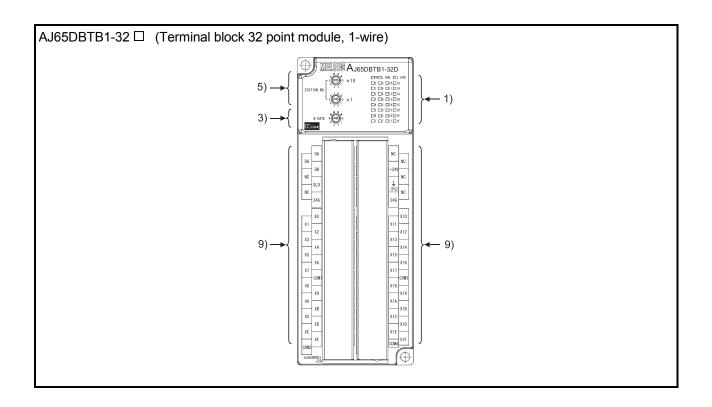








2 NAMES AND SETTINGS FOR EACH PART



2 NAMES AND SETTINGS FOR EACH PART

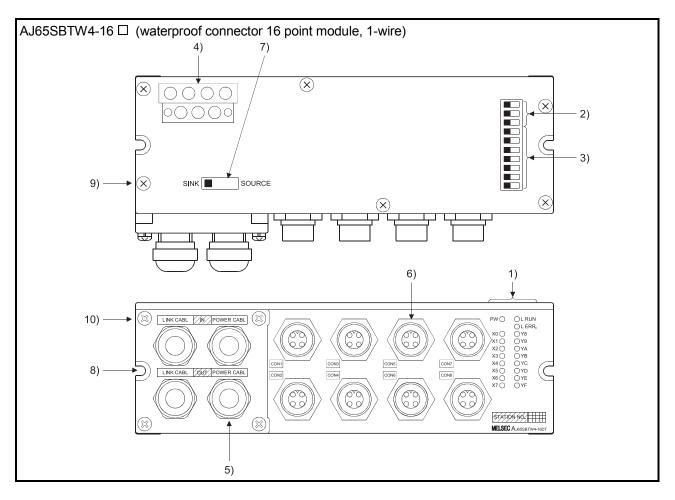
No.	Item		Description							
1)	Operation status indicator LED	LED	name	Details						
		P	On: Power being supplied							
				Off: No power supplied						
			L RUN On: Normal communication							
			Off: No communication (timeout error)							
		On: Communication error								
				Flashing reg	ularly:					
				The station	n number o	r transmis	sion speed switch	n setting		
				is changed	while pow	er is on.				
		LE	RR.	Flashing irreg	gularly:					
				The termin	ating resis	tor setting	is incorrect.			
				The modul	le or CC-Li	nk dedicat	ed cable is affecte	ed by		
		noise.						2		
				Off: Normal of	communica	ition				
		X0 t	to 1F	On: Input/out	tput ON					
		Y0 t	to 1F	Off: Input/output OFF						
2)	Transmission speed setting									
,	switch		Setting	Switch status			Transmission			
			-	4	2	1	speed			
			0	OFF	OFF	OFF	156kbps			
			1	OFF OFF	OFF ON	ON OFF	625kbps 2.5 Mbps			
			3	OFF	ON	ON	5.0 Mbps			
			4	ON	OFF	OFF	10 Mbps			
		Set the tr	ansmissio	n speed within	the above	range.				
3)	Transmission speed setting									
	switch		Setting	Transmissi	ion speed					
			0	156k						
			<u>1</u> 2	625k						
			3							
			4	10 M						
		Set the tr	ansmissio	n speed within	the above	range.				

No.	Item		Description									
4)	Station number setting switch	Select "10", "20", c	or "40" fo	or the ter	ns place							
		Select "1", "2", "4", or "8" for the ones place.										
		Set the station number within the range of 1 to 64. ^{*1}										
		Station										
		number	40	20	10	8	4	2	1			
		1	OFF	OFF	OFF	OFF	OFF	OFF	ON			
		2	OFF	OFF	OFF	OFF	OFF	ON	OFF			
		3	OFF	OFF	OFF	OFF	OFF	ON	055			
		4	OFF :	OFF :	OFF :	OFF :	OFF :	OFF :	OFF			
		10	OFF	OFF	ON	OFF	OFF	OFF	OFF			
		11	OFF	OFF	ON	OFF	OFF	OFF	ON			
		:	:	:	:	:	:	:	:			
		64	ON	ON	OFF	OFF	ON	OFF	OFF	J		
		(Example) Setting	the stati	ion numb	per to 32	2:						
		Station		Tens place	;		Ones	place				
		number	40	20	10	8	4	2	1			
		32	OFF	ON	ON	OFF	OFF	ON	OFF	l		
6) 7)	Indication selector switch ^{*2} Sink/source switch (For AJ65SBTC1-16D only)	• Use "×10" for the tens place. • Use "×1" for the ones place. When the switch is set to "X0-XF", LEDs indicate the ON/OFF status of X0 to XF. When the switch is set to "X10-X1F", LEDs indicate the ON/OFF status of X10 to X1F. Switches the input type (sink or source). Open the module top cover to set the switch. <when for="" setting="" sink="" type=""></when> <when for="" setting="" source="" type=""></when> 										
			SINK				SINK					
8)	Input response speed switch		tting 0	2 OF		atus 1 OFF	Input I	response s 10ms	peed			
8)	Input response speed switch		0	2	F	1 OFF ON	Input i		peed			
8)	Input response speed switch		0 1 2	2 OF OF	F F N	1 OFF ON OFF	Input	10ms 5ms 1.5ms	peed			
8)	Input response speed switch		0 1 2 3	2 OF OF	F F N	1 OFF ON	Input i	10ms 5ms	peed			
,		Default: 2 (1.5ms)	0 1 2 3 2	2 OF OF ON	F F N	1 OFF ON OFF ON		10ms 5ms 1.5ms 0.2ms	·			
8) 9) 10)	Input response speed switch Terminal block Connector		0 1 2 3 2 module	2 OF OF ON	F F N	1 OFF ON OFF ON		10ms 5ms 1.5ms 0.2ms	·			

*1 A unique station number should be set.

 ± 2 The switch setting is reflected/held at power-on.

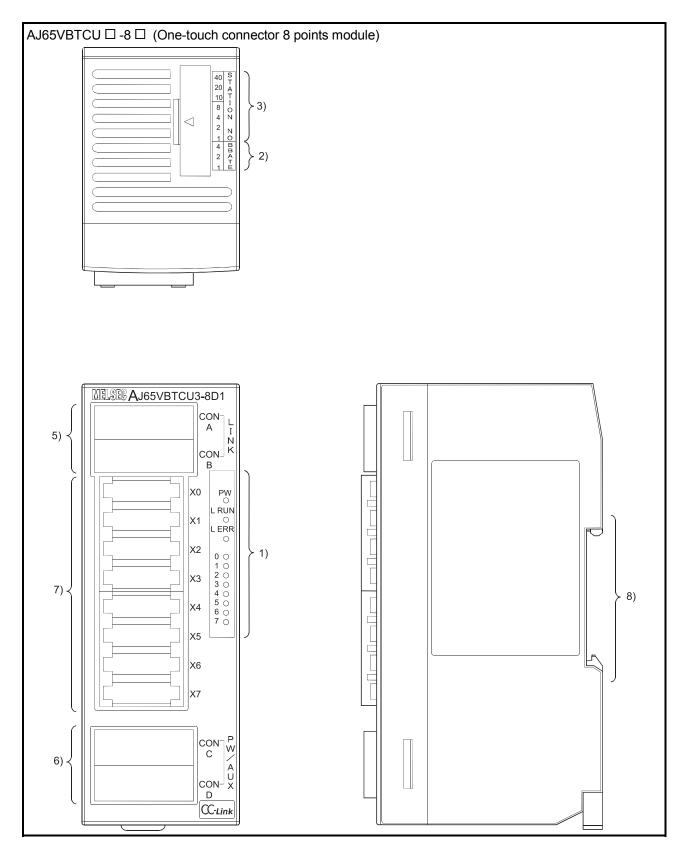
When it is changed while power is on, turn off the power and then on again.

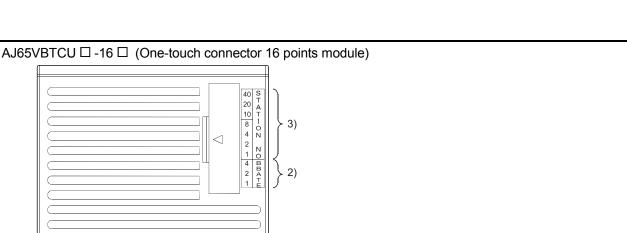


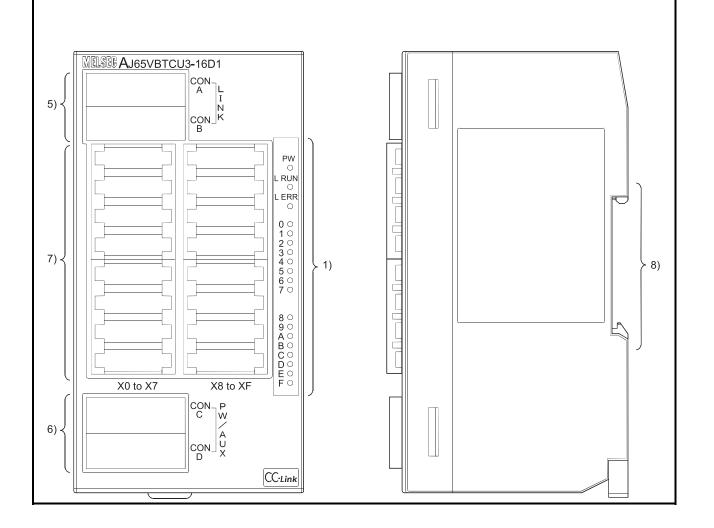
No.	Item		Description
1)	Operating status indicator LED	LED name	Details
		PW	On: Power being supplied Off: No power supplied
		L RUN	On: Normal communication Off: No communication (timeout error)
		L ERR.	On: Communication error Flashing regularly: The station number or transmission speed switch setting is changed while power is on. Flashing irregularly: The terminating resistor setting is incorrect. The module or CC-Link dedicated cable is affected by noise. Off: Normal communication
		X0 to 7	On: Input/output ON
		Y8 to F	Off: Input/output OFF

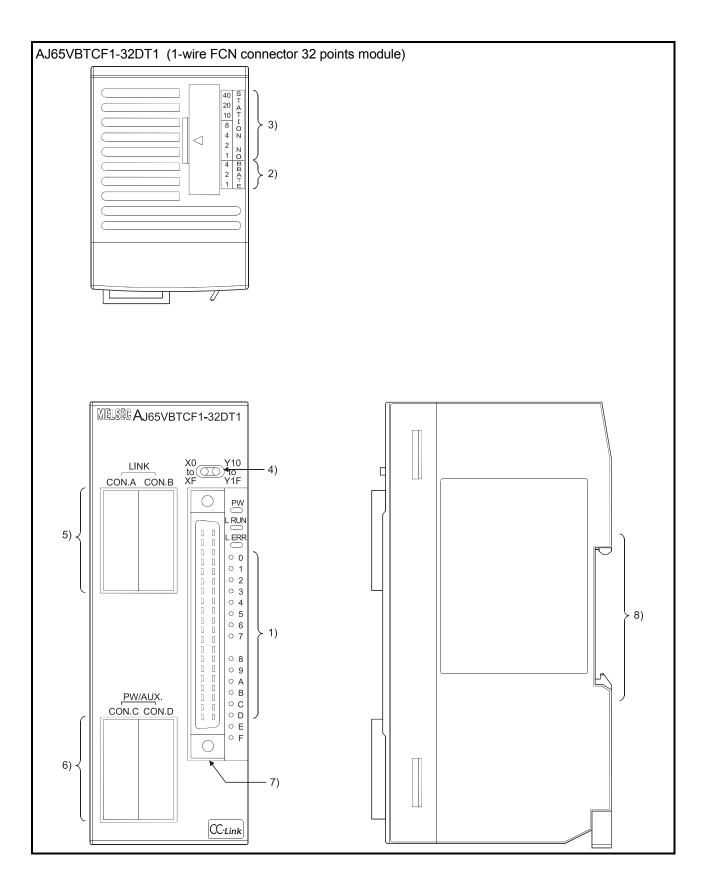
No.	Item	Description										
2)	Transmission speed setting switch					Switch state	JS	1	Transmissi	on		
			Setting	9	4	2	1		speed			
			0		OFF	OFF	OFI		156kbps			
			1		OFF OFF	OFF ON	ON OFI		625kbps 2.5 Mbps			
			3		OFF	ON	ON		5.0 Mbps			
			4		ON	OFF	OF		10 Mbps			
		Set the	transmiss	ion spee	ed withir	n the abo	ve range	e.				
		Open th	ne module	top cov	er to se	t the tran	smissior	n speed				
3)	Station number setting switch		'10", "20",			•						
			'1", "2", "4'					*1				
		Set the	station nu	mber wi	thin the	range of	1 to 64	•				
			Station		Tens plac	e		Ones	place	1		
		-	number	40	20	10	8	4	2	1	-	
			1 2	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF ON	ON OFF	-	
			3	OFF	OFF	OFF	OFF	OFF	ON	UFF	-	
			4	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
			:	:	:	:	:	:	:	:	-	
		-	<u>10</u> 11	OFF OFF	OFF OFF	ON ON	OFF OFF	OFF OFF	OFF OFF	OFF ON	-	
			:	:	:	:	:	:	:	:	-	
			64	ON	ON	OFF	OFF	ON	OFF	OFF		
		(Examp	ole) Setting	g the sta	tion nur	nber to 3	2:					
			Station		Tens plac	9		Ones	place	•]	
			number	40	20	10	8	4	2	1	4	
		L	32	OFF	ON	ON	OFF	OFF	ON	OFF	T	
			ne module									
4)	Terminal block		al block fo		-							
5)	Pipe for transmission or power		r connectir	ng a trar	ismissio	n cable o	or a pow	er supp	ly cable	to the		
	supply line	termina		4								
		-	the termi	-		nnect a t	ransmis	sion cap	on cable or a power supply			
						h with the	nroduo	t to tho	unusodu	aina		
6)	Waterproof connector for I/O		a waterpro roof conne						unuseu	oipe.		
6)			an optiona		-			the uni	ised			
			oof conne				501710		1000			
7)	Sink/source switch		es the inpu		ink or e							
7)	(For AJ65SBTW4-16D only)		ne module	••••••			ch					
			< When s					ettina fo		tvne >		
					SOURCE	, , , ,			Jource	upc -		
				L								
						- Switch	→					
				Г	SINK		s	INK				
8)	Metal fitting	FG tern	ninal for m	odule.								
9)	Module top-cover installation											
0,	screw (M3)		_ ·									
10)	Module front-cover installation	Refer to	Section 7	7.1 for tig	ghtening	g torque v	alue for	⁻ installa	tion scre	ews.		
,	screw (M3)											

*1 A unique station number should be set.







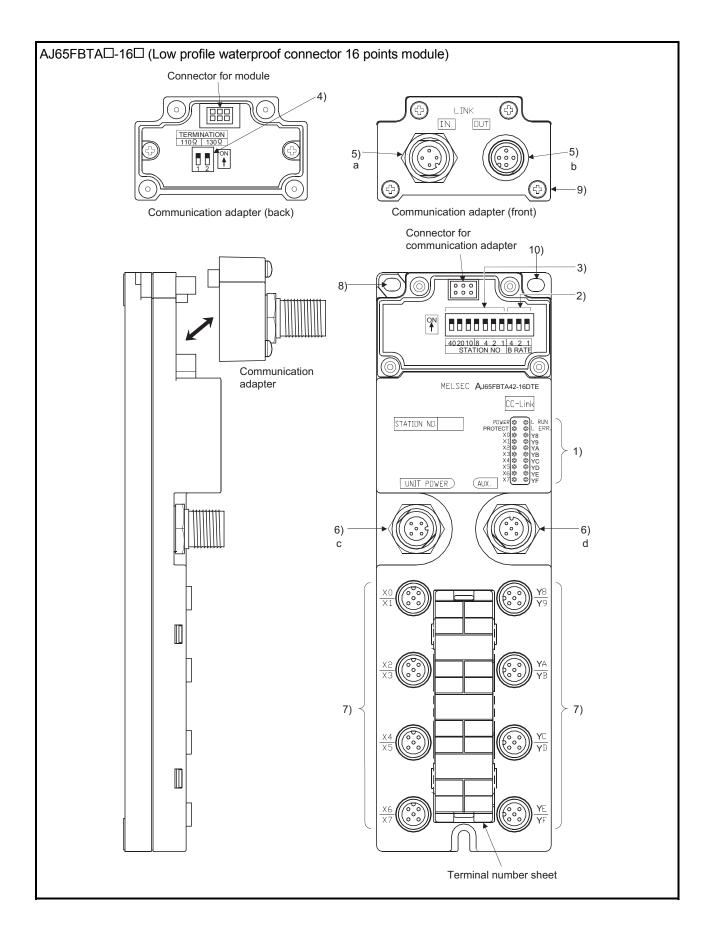


No.	Item	Description										
1)	Operating status indicator LED	LED	name	Details								
				On: Power being supplied								
		ŀ	PW	Off: No power supplied								
				On: Normal communication								
			RUN	Off: No communication (timeout error)								
				On: (Commun	ication e	ror					
				Flas	ning regu	larly:						
				Th	e station	number	or trans	missior	speed s	witch s	etting	
				is	changed	while po	wer is o	n.	·		Ũ	
		LE	ERR.	Flas	ning irreg	jularly:						
				Th	e termina	ating resi	stor set	ting is ir	ncorrect.			
						e or CC-L		-		iffected	by	
				no	ise.						-	
				Off: I	Normal c	ommunic	ation					
			. –	On: Input/output ON								
		0	to F	Off: Input/output OFF								
2)	Transmission speed setting switch											
		Setting				Switch statu			Transmissi	on		
			0		4 OFF	2 OFF	1 OFI	=	speed 156kbps			
			1		OFF	OFF	ON		625kbps			
			2		OFF	ON	OF		2.5 Mbps			
			3		OFF ON	ON OFF	ON		5.0 Mbps			
		Set the		00.000					10 Mbps			
2)	Station number patting quitch		<u>transmissi</u> 10", "20", (.				
3)	Station number setting switch		10,20,0 1", "2", "4"			-						
			station nur			-		*1				
							1 10 04.				-	
			Station number	40	Tens plac 20	e 10	8	One: 4	s place 2	1		
			1	OFF	OFF	OFF	OFF	OFF	OFF	ON		
			2	OFF	OFF	OFF	OFF	OFF	ON	OFF	4	
		∣ ┣	3	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	ON OFF	OFF	-	
			:	:	:	:	:	:	:	:		
			10	OFF	OFF	ON	OFF	OFF	OFF	OFF	4	
		∣ ┣	11	OFF	OFF	ON :	OFF	OFF :	OFF :	ON	-	
			64	ON	ON	OFF	OFF	ON	OFF	OFF		
		(Examp	le) Setting	the sta	ation nun	nber to 3	2:					
		Ē	Station		Tens place	e		One	s place		ן ך	
			number	40	20	10	8	4	2	1		
		C	32	OFF	ON	ON	OFF	OFF	ON	OFF		

*1 A unique station number should be set.

No.	Item	Description
4)	Indication selector switch ^{*2}	When the switch is set to "X0-XF", LEDs indicate the ON/OFF status of X0 to XF. When the switch is set to "Y10-Y1F", LEDs indicate the ON/OFF status of Y10 to Y1F.
5)	Connector for communication	 One-touch connector for communication line. When carrying out wiring, connect two optional one-touch connector plugs for communication (A6CON-L5P) at top and bottom. When changing the module online, connect the optional online connectors (A6CON-LJ5P) between the connector and plugs. When the module is used at either end of the CC-Link system, attach an optional one-touch connector plug with terminating resistor (110Ω) (A6CON-TR11(N)).
6)	Connector for power supply and FG	One-touch connector for module power supply line, I/O power supply line, and FG. When carrying out jumper wiring, connect two optional one-touch connector plugs for power supply and FG at top and bottom. Two different types (A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch connector plugs for power supply and FG. When not carrying out jumper wiring, also connect the plugs (for safety and dust prevention). When changing the module online, connect the optional online connectors (A6CON-PWJ5P) between the connector and plugs.
7) 8)	Connector DIN rail hook	Connector for I/O signals. Hook to install the module to the DIN rail or connector type Metal installation fitting (option). When mounting the module to a DIN rail, push in the DIN rail hook until it clicks.

*2 To operate the indication selector switch, do not use a tool such as a screwdriver. Doing so may damage the switch.



2 NAMES AND SETTINGS FOR EACH PART

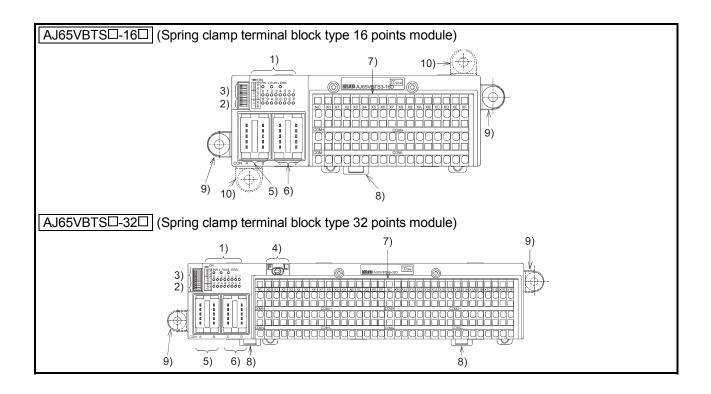
No.	Item				De	escription					
1)	Operating status indicator	LED name				D	etails				
	LED		On	: Power being	supplied	ł					
		POWE	Οff	Off: No power supplied							
			On	: Any protection		• •					
		PROTE		(The blown fuse was detected in the master module.)							
			Off: Normal operation								
		L RUN		: Normal comn : No communic			ror)				
				: Communicati			101)				
			-	shing regularly							
				The station nun		transmiss	sion spee	d switch	setting i	s changed	
		L ERR		vhile power is o							
			r la	shing irregular							
				The terminating					d by noi	20	
				: Normal comn				is anecie		50.	
		X0 to X									
		Y0 to Y		: Input/output C	N						
		X0 to X		: Input/output C							
		Y8 to Y	F								
2)	Transmission speed setting										
	switch	s	etting		1	n status	4	Tra	nsmissio	n speed	
			0	4 OFF		2 FF	1 OFF		156kbp	20	
			1	OFF	-	FF	OFF		625kbp		
			2	OFF)N	OFF		2.5 Mb		
			3	OFF	C	N	ON		5.0 Mb		
			4 ON OFF OFF 10 Mbps						DS		
		Set the tra	et the transmission speed within the above range.								
		Remove t	he com	nunication ada	pter to s	set the tra	ansmissio	on speed	. (Defau	It: all OFF)	
3)	Station number setting	Select "10)", "20",	or "40" for the t	ens pla	ce.					
	switch			', or "8" for the							
				mber within the			4. ^{*1}				
				the station nu							
				Tens place			Ones	place			
		Statio	n numbei	40	20	10	8	4	2	1	
			10	ON	OFF	ON	OFF	OFF	OFF	OFF	
		Remove	he com	munication ada	pter to s	set the st	ation nun	nber. (De	efault: all	OFF)	
4)	Terminal resistor setting	Used to s	et the te	rminating resis	tor.						
	switch			IP switch				Contents			
			1	2							
			OFF	OFF				ninating re			
				OFF				minating			
			OFF ON	ON ON				minating			
		R		UN			Selli		licu		
		(Default:	all OFF)								

*1 A unique station number should be set.

2 NAMES AND SETTINGS FOR EACH PART

No.	Item				Description		
5)	Waterproof connector for						
	transmission line ^{*2}			Printing	Description		
			а	LINK	Connector (male, 4 pins) for the IN-side (master station side) transmission line		
			b	LINK OUT	Connector (female, 5 pins) for the OUT-side transmission line. Attach a waterproof cap (accessory) to the unused connector. (Tightening torque range:0.29 to 0.34N•m)		
					(Tightening torque range:0.29 to 0.34N•m)		
6)	Waterproof connector for			[
	power line ^{*2}			Printing	Description		
			с	UNIT POWER	Connector (male, 5 pins) for supplying power to the module		
			d	AUX.	Connector (male, 5 pins) for supplying power to loads		
7)	Waterproof connector for	Wa	aterproof	connectors for I/C) signals.		
	I/O ^{*2}	Att	ach an c	ptional waterproof	cap (A6CAP-WP2) to the unused waterproof connector.		
		(Ti	ghtening	torque range: 0.2	9 to 0.34N•m)		
8)	FG terminal	FC	e termina	l for module			
9)	Communication adapter mounting screw		Jsed to mount or remove a communication adapter while the module is online. Tightening torque range: 0.42 to 0.58N•m)				
10)	Module mounting hole	Sc	rew hole	s for mounting the	module (2-4.5 × 6, M4 screw)		
		(Ti	ghtening	torque range: 0.7	8 to 1.18N•m)		

*2 Waterproof connector (compliant with IEC 60947-5-2, M12)



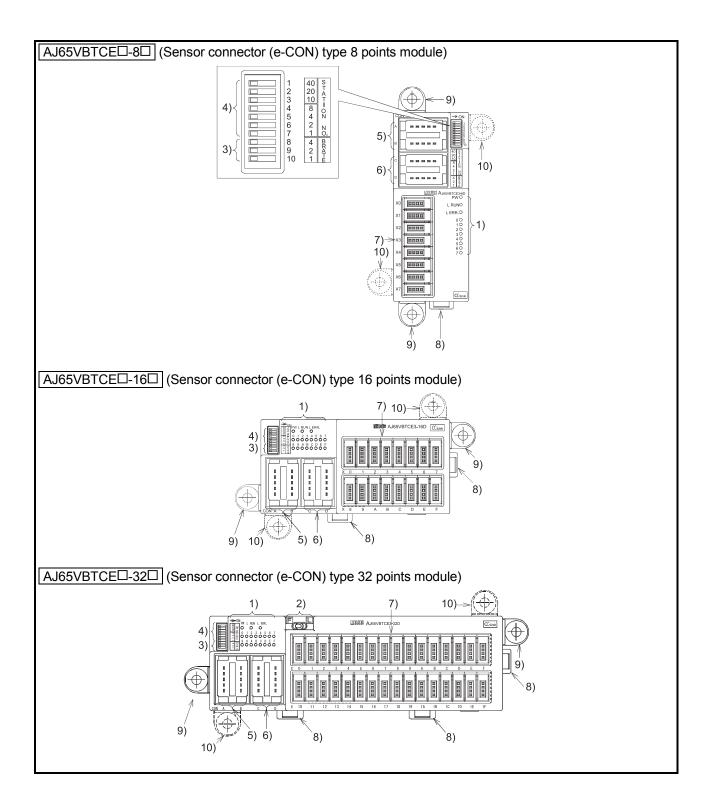
No.	Item					Descript	ion					
1)	Operating status indicator LED	LED	name		Details							
		-		On: Power being supplied								
		F	PW		Off: No power supplied							
				On: Normal communication								
		LI	RUN	Off: N	No comm	nunicatio	n (timeo	ut error)			
					Commun	ication e	rror					
			On: Communication error Flashing regularly:									
					e station	•	or trans	mission	speed s	witch se	ettina	
					changed				000000		oun g	
		I F	ERR.		ning irreg							
					e termina	-	stor set	tina is ir	correct			
					e module	-		-		iffected	hv	
					ise.	0.00-1		.salou (~,	
				_	Normal c	ommunic	ation					
					nput/out							
		0	to F		nput/out							
2)	Transmission and a atting switch			01.1	πραιλουι							
2)	Transmission speed setting switch					Switch statu	IS		Transmissio	on		
			Setting		4	2	1		speed			
			0		OFF	OFF	OF		156kbps			
			1		OFF OFF	OFF ON	ON		625kbps			
			3		OFF	ON	OF		2.5 Mbps 5.0 Mbps			
			4		ON	OFF	OF	F	10 Mbps			
		Set the t	transmissi	on spe	ed withir	the abo	ve rang	e.				
3)	Station number setting switch	Select "	10", "20", o	or "40"	for the te	ens place).					
		Select "	1", "2", "4"	, or "8"	for the c	nes plac	e.					
		Set the	station nur	nber w	vithin the	range of	1 to 64	*1				
			Station		Tens place				s place		1	
			number	40	20	10	8	4	2	1		
			1	OFF	OFF	OFF	OFF	OFF	OFF	ON	_	
		-	2 3	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	ON ON	OFF	-	
			4	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
		[:	:	:	:	:	:	:	:		
		-	10	OFF	OFF	ON	OFF	OFF	OFF	OFF	-	
			11 :	OFF :	OFF :	ON :	OFF :	OFF :	OFF :	ON :	1	
			64	ON	ON	OFF	OFF	ON	OFF	OFF]	
		(Exampl	le) Setting	the sta	ation nun	nber to 3	2:					
		Ē	Station		Tens place	e		Ones	place		7	
		<u>L</u>	number	40	20	10	8	4	2	1]	
		C	32	OFF	ON	ON	OFF	OFF	ON	OFF		

*1 A unique station number should be set.

No.	Item	Description
4)	Indication selector switch ^{*2}	When the switch is set to "F", LEDs indicate the ON/OFF status of the first 16 points. When the switch is set to "L", LEDs indicate the ON/OFF status of the latter 16
		points.
5)	Connector for communication	One-touch connector for communication line.
		When carrying out wiring, connect two optional one-touch connector plugs for
		communication (A6CON-L5P) at top and bottom.
		When changing the module online, connect the optional online connectors
		(A6CON-LJ5P) between the connector and plugs.
		When the module is used at either end of the CC-Link system, attach an
		optional one-touch connector plug with terminating resistor (110 $\!\Omega$) (A6CON-
		TR11(N)).
6)	Connector for power supply and	One-touch connector for module power supply line, and FG.
	FG	When carrying out jumper wiring, connect two optional one-touch connector
		plugs for power supply and FG at top and bottom. Two different types
		(A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch
		connector plugs for power supply and FG.
		When not carrying out jumper wiring, also connect the plugs (for safety and
		dust prevention).
		When changing the module online, connect the optional online connectors
		(A6CON-PWJ5P) between the connector and plugs.
7)	2-piece spring clamp terminal block	2-piece terminal block for I/O signals.
8)	DIN rail hook	Hook to install the module to the DIN rail or connector type Metal installation
		fitting (option). When mounting the module to a DIN rail, push in the DIN rail
		hook until it clicks.
9)	Mounting bracket (accessory)	Used to install the module to a control panel.
10)		

*2 To operate the indication selector switch, do not use a tool such as a screwdriver. Doing so may damage the switch.

2 NAMES AND SETTINGS FOR EACH PART



No.	Item					Descrip	tion				
1)	Operating status indicator LED	LED	name			•	Deta	ails			
.,			ÞW		Power be		olied				
					Off: No power supplied						
		1	L RUN On: Normal communication								
				Off: N	lo comm	unicatio	n (timeo	ut error)		
				On: C	Communi	ication e	rror				
				Flash	ning regu	larly:					
			The station number or transmission speed switch setting								
				is o	changed	while po	wer is o	n.			
		LE	ERR.	Flash	ning irreg	ularly:					
				Th	e termina	ating resi	istor sett	ing is ir	ncorrect.		
				Th	e module	e or CC-l	_ink ded	icated of	cable is a	ffected	by
				noi							,
				Off: N	Normal co	ommunio	cation				
					nput/outp						
		0	to F		nput/outp						
2)	Indication selector switch ^{*1}	When th	ne switch is				te the O	N/OFF	status of	f the first	t 16
_/		points.		5 001 10	· ,						
		•	ne switch is	s sat ta)e indica	ta tha O		etatue of	the latt	or 16
		points.	IC SWILCH I	5 301 10					Status OI		
		points.									
3)	Transmission speed setting switch				S	Switch state	JS		Transmissi	on	
			Setting		4	2	1		speed	011	
			0		OFF	OFF	OF	=	156kbps		
			1		OFF	OFF	ON	1	625kbps		
			2		OFF	ON	OF	-	2.5 Mbps	;	
			3		OFF	ON	ON		5.0 Mbps		
			4		ON	OFF	OFI		10 Mbps		
			transmissi					Э.			
4)	Station number setting switch		10", "20", o								
		Select "	1", "2", "4"	, or "8"	for the o	nes plac	e.				
		Set the	station nur	nber w	ithin the	range of	¹ to 64.	*1			
		Γ	Station		Tens place	9		One	s place		
			number	40	20	10	8	4	2	1	
		[1	OFF	OFF	OFF	OFF	OFF	OFF	ON	
		-	2	OFF	OFF	OFF	OFF	OFF	ON	OFF	-
		-	3 4	OFF OFF	OFF OFF	OFF OFF	OFF OFF	OFF OFF	ON OFF	OFF	-
		∣ ┠	4	:	:	:	:	:	:	:	1
			10	OFF	OFF	ON	OFF	OFF	OFF	OFF]
		[11	OFF	OFF	ON	OFF	OFF	OFF	ON	
		-	:	:	:	:	:	:	:	:	
		(Evomol	64 Io) Sotting	ON tho str		OFF	OFF 2.	ON	OFF	OFF	J
		(Example) Setting the station number to				۷.				,	
			Station		Tens place				s place		-
		 	number	40	20	10	8	4	2	1	-
		L	32	OFF	ON	ON	OFF	OFF	ON	OFF	1
L											

*1 A unique station number should be set.

No.	Item	Description
5)	Connector for communication	One-touch connector for communication line.
		When carrying out wiring, connect two optional one-touch connector plugs for
		communication (A6CON-L5P) at top and bottom.
		When changing the module online, connect the optional online connectors
		(A6CON-LJ5P) between the connector and plugs.
		When the module is used at either end of the CC-Link system, attach an
		optional one-touch connector plug with terminating resistor (110 Ω) (A6CON-
		TR11(N)).
6)	Connector for power supply and	One-touch connector for module power supply line, I/O power supply line, and
	FG	FG.
		When carrying out jumper wiring, connect two optional one-touch connector
		plugs for power supply and FG at top and bottom. Two different types
		(A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch
		connector plugs for power supply and FG.
		When not carrying out jumper wiring, also connect the plugs (for safety and
		dust prevention).
		When changing the module online, connect the optional online connectors
		(A6CON-PWJ5P) between the connector and plugs.
7)	Connector for I/O	Connector for I/O signals.
8)	DIN rail hook	Hook to install the module to the DIN rail or connector type Metal installation
		fitting (option). When mounting the module to a DIN rail, push in the DIN rail
		hook until it clicks.
9)	Mounting bracket (accessory)	Used to install the module to a control panel.
10)		(Can be attached in two different ways, 9) and 10).)
		Holding fixtures for screw installation are removal.

3 GENERAL SPECIFICATIONS

The following table lists the general specifications of the compact type remote I/O module.

Item			Specifica	ations				
Operating ambient temperature	0 to 55°C * ⁶							
Storage ambient temperature	-20 to 75°C * ⁶							
Operating ambient humidity	10 to 90% RH, non-condensing (The waterproof type remote I/O module is compliant with IP67. * ⁴)							
Storage ambient humidity		1	0 to 90% RH, no	on-condensing				
			Frequency	Constant acceleration	Half amplitude	Sweep count		
	Compliant with JIS B 3502 and	Under intermittent	5 to 8.4Hz	-	3.5mm	10 times each		
Vibration resistance		vibration	8.4 to 150Hz	9.8m/s ²	—	in X, Y, Z directions		
	IEC 61131-2	Under	5 to 8.4Hz	_	1.75mm			
		continuous vibration	8.4 to 150Hz	4.9m/s ²	—	_		
Shock resistance		Compliant with JIS B 3502 and IEC 61131-2 (147 m/s ² , 3 times each in 3 directions X, Y, Z)						
Operating atmosphere	No corrosive gases							
Operating altitude * ³	0 to 2000m							
Installation location	Inside a control			ol panel * ⁵				
Overvoltage category * ¹	II or less							
Pollution degree * ²			2 or le	ess				

*1 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises.

Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300V is 2500V.

- *2 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.
- *3 Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0m. Doing so may cause malfunction. When using the programmable controller under pressure, please consult your local Mitsubishi representative.
- *4 This applies only when all waterproof connectors are being used or when waterproof caps are attached to unused waterproof connectors or pipes. (Only the AJ65SBTW□-16□ has pipes.)
- *5 The module can be used in an environment other than inside a control panel if the conditions such as the operating ambient temperature and humidity are satisfied.
- *6 For the waterproof type remote I/O module (AJ65SBTWD-16D only), the operating ambient temperature and storage ambient temperature will be as follows.

Ite	Specifications	
Operating ambient temperature	0 to 45°C	
	Not wired (individual product)	-20 to 65°C
Storage ambient temperature	Wired (after cable installation)	-10 to 55°C

REMARK

To ensure that the product maintains EMC and Low Voltage Directives, certain measures may be necessary. Please refer to the user's manual for the CPU module used.

MEMO

This chapter describes the specifications for a input module that can be connected to the CC-Link system.

4.1 Terminal Block Type Input Module

4.1.1 AJ65SBTB2N-8A 100VAC input module

	_	Туре	AC input module		
Item			AJ65SBTB2N-8A	Appear	rance
Number of	input points		8 points		
Isolation m	nethod		Photocoupler		
Rated inpu	it voltage/rated	frequency	100 to 120VAC, 50/60Hz		
Rated inpu	it current		Approx. 7mA (at 100VAC, 60Hz)		
Operating	voltage range		85 to 132VAC (50/60Hz ±3Hz, ripple ratio: within 5%)		
Max. numb	per of simultane	eous input	100% (at 110VAC)		
points		·	60% (at 132VAC)		
Max. inrusl	h current		200mA within 1ms (at 132VAC)		
ON voltage	e/ON current		80VAC or higher/3.5mA or higher		
OFF voltag	ge/OFF current		30VAC or lower/1.7mA or lower		
Input resist	tance		Approx.15kΩ at 60Hz, approx.18kΩ at 50Hz		
Response	time	OFF→ON	20ms or less (at 100VAC, 60Hz)		
·		ON→OFF	20ms or less (at 100VAC, 60Hz)		
Wirina met	thod for commo		8 points/common (2-wire, terminal block type)		
, e	occupied stati		32-point assignment/station (8 points used)		
	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
		Current	35mA or lower (at 24VDC and all points ON)		
Noise imm	unity	Guildin	Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,	x0 1 2 3 4	
	lanity		noise frequency 25 to 60Hz (noise simulator condition)		
			Fast transient/burst immunity test IEC 61000-4-4:1kV		
Withstand	voltage		1780VACrms for 3 cycles between all AC external terminals and ground		[™] (m)
	renage		(2000m above sea level)		D(0) = M
			500VAC for 1 minute between all DC external terminals and ground		
Insulation r	resistance		10M Ω or higher between all AC external terminals and ground (500VDC		
			insulation resistance tester)		
			10M Ω or higher between all DC external terminals and ground (500VDC		
			insulation resistance tester)		
Weight			0.20kg		
External	Communicati	on part,	7-point two-piece terminal block	B2N-8A	- (5~2)
connection	module powe	er supply part	[Transmission circuit, module power supply, FG]	BTB2N	8
system			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	DG B1	
			Applicable solderless terminal: 2 or less		
	I/O power su	pply part,	18-point direct-mount terminal block		
	I/O part		[I/O power supply, I/O signal]		
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
Module mo	ounting screw		M4 screw with plain washer finished round		
			(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations	_	
Applicable			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_	
Applicable	solderless terr	ninal	• RAV1.25-3 (compliant with JIS C 2805)		
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
Wire	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire] Copper		
	Temperature	rating	75°C or more		
Accessory		i dunig	User's manual	-	

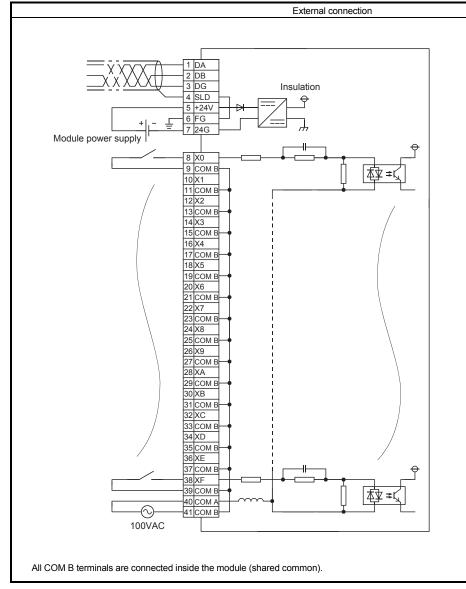
External connection Terminal number Signal name TB1 DA TB2 DB 1 DA 2 DB 3 DG 4 SLD 5 +24V 6 FG тв3 DG XXX TB4 SLD Insulation 9 TB5 +24V ₽ TB6 ⊥_ (FG) 7 + 7 24G TB7 24G Module power supply TB8 X0 8 X0 9 COM B --TB9 COM B ſ र्षे⊉ ≠८ TB10 9 COM B 10 X1 11 COM B 12 X2 13 COM B 14 X3 15 COM B 16 X4 17 COM B 18 X5 X1 COM B TB11 TB12 X2 TB13 COM B TB14 X3 TB15 COM B TB16 X4 19 COM B 18 X5 19 COM B 20 X6 21 COM B TB17 COM B TB18 X5 9 TB19 COM B 22 X7 _ TB20 X6 23COM B ▲⊉ ≠८ 24 COM A 25 COM B TB21 COM B \odot TB22 X7 100VAC COM B TB23 TB24 COM A TB25 COM B All COM B terminals are connected inside the module (shared common).

4.1.2 AJ65SBTB2N-16A 100VAC input module

		Туре	AC input module		
Item			AJ65SBTB2N-16A	Appea	arance
Number of	input points		16 points		
Isolation m	ethod		Photocoupler		
Rated inpu	t voltage/rated fr	equency	100 to 120VAC, 50/60Hz		
Rated inpu			Approx. 7mA (at 100VAC, 60Hz)		
	voltage range		85 to 132VAC (50/60Hz ±3Hz, ripple ratio: within 5%)		
	per of simultaneo	us input	100% (at 110VAC),		
points			60% (at 132VAC)		
Max. inrusł	n current		200mA within 1ms (at 132VAC)		
ON voltage	e/ON current		80VAC or higher/5mA or higher		
*	e/OFF current		30VAC or lower/1.7mA or lower		
Input resist			Approx.15k Ω at 60Hz, approx.18k Ω at 50Hz		,
Response		OFF→ON	20ms or less (at 100VAC, 60Hz)		
		ON→OFF	20ms or less (at 100VAC, 60Hz)		
Wiring met	hod for common		16 points/common (2-wire, terminal block type)	289 A B C D E F B B B B B B B B B B B B B B B B B B B	1 60 m
v	occupied station		32-point assignment/station (16 points used)		1 ¹⁰ m
Module pov	•	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	x01234567	W ML
		Current	40mA or lower (at 24VDC and all points ON)		
Noise imm	unity	ourient	Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,		
	unity		noise frequency 25 to 60Hz (noise simulator condition)		
			Fast transient/burst immunity test IEC61000-4-4:1kV	W R	
Withstand	voltage		1780VACrms for 3 cycles between all AC external terminals and ground (2000m above		
	renage		sea level)	X7 MB CO	
			500VAC for 1 minute between all DC external terminals and ground	X6 MB CO	
Insulation r	resistance		10M Ω or higher between all AC external terminals and ground (500VDC insulation	X5 MB CO	
			resistance tester)	MBCO	
			$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation		
			resistance tester)		
Weight			0.25kg		
External	Communication	i part,	7-point two-piece terminal block		
connection	module power s	supply part	[Transmission circuit, module power supply, FG]		
system			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	-16A	
			Applicable solderless terminal: 2 or less	BTB2N SLD	1 W M
	I/O power supp	ly part,	34-point direct-mount terminal block	AJ655	
	I/O part		[I/O power supply, I/O signal]		
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
Module mo	ounting screw		M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal		nal	• RAV1.25-3 (compliant with JIS C 2805)		
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
14/:	Matarial		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire	Material	ting	Copper 75°C or more		
Accessory	Temperature ra	ung	User's manual		
าเเธออบไ y			User s manual		

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

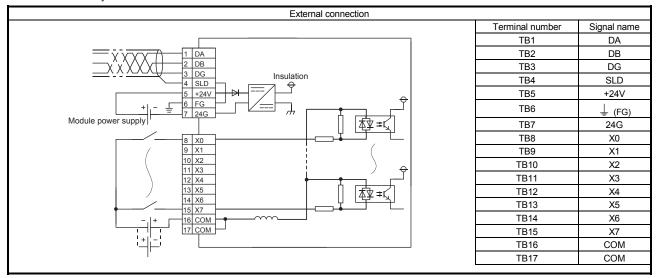
*



Terminal number	Signal name
TB1	DA
TB2	DB
TB3	DG
TB4	SLD
TB5	+24V
TB6	⊥_ (FG)
TB7	24G
TB8	X0
TB9	COM B
TB10	X1
TB11	COM B
TB12	X2
TB13	COM B
TB14	X3
TB15	COM B
TB16	X4
TB17	COM B
TB18	X5
TB19	COM B
TB20	X6
TB21	COM B
TB22	X7
TB23	COM B
TB24	X8
TB25	COM B
TB26	X9
TB27	COM B
TB28	XA
TB29	COM B
TB30	XB
TB31	COM B
TB32	XC
TB33	COM B
TB34	XD
TB35	COM B
TB36	XE
TB37	COM B
TB38	XF
TB39	COM B
TB33	COM A
TB40	COM B
1041	

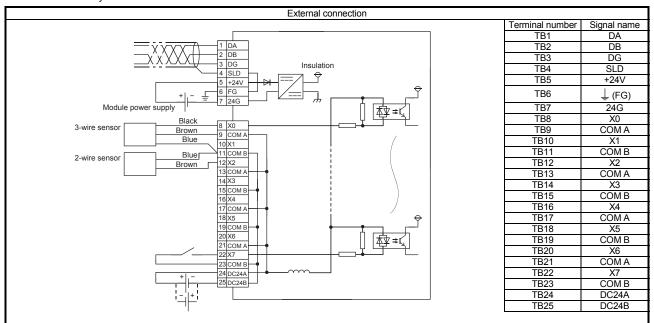
4.1.3 AJ65SBTB1-8D 24VDC input module (positive common (sink), negative common (source) loading)

	_	Туре	DC input module			
Item			AJ65SBTB1-8D		Appea	rance
Number of	input point	S	8 points			
Isolation method			Photocoupler	ĺ		
			24VDC	ĺ		
Rated input	t current		Approx. 7mA	ĺ		
Operating v	voltage ran	ge	19.2 to 26.4VDC (ripple ratio: within 5%)	Í		
Max. numb	er of simul	taneous	100%	ĺ		
input points	3			l		
ON voltage	/ON currer	nt	14VDC or higher/3.5mA or higher	ĺ		
OFF voltag	e/OFF curr	rent	6VDC or lower/1.7mA or lower	1_		
Input resista	ance		Approx. 3.3kΩ	l (r		
Response t	time	OFF→ON	1.5ms or less (at 24VDC)			
		ON→OFF	1.5ms or less (at 24VDC)	1		
Wiring meth	hod for con	nmon	8 points/common (2 points) (1-wire, terminal block type)	ÍШ		
Input type			Positive/negative common shared type (sink/source shared type)	1 11		
Number of	occupied s	tations	32-point assignment/station (8 points used)	í II	X X X X X X X X X X X X X X X X X X X	
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	í II		
		Current	30mA or lower (at 24VDC and all points ON)	i II		
Noise immu	unity		Noise voltage 500Vp-p, noise width 1µs,	i II		
	-		noise frequency 25 to 60Hz (DC type noise simulator condition)	1	Z≪ o ≻⊡	
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground	Í	ω <u> </u>	
Insulation re	esistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	$\left \right $	Iff. X0 1 2 3 4 5 6 7 Image: International content of the second seco	
Protection of	degree		IP2X	í II	R. X0 1 	
Weight			0.14kg	i II	l≝	L D.O.L
External	Communi	cation part,	7-point two-piece terminal block [Transmission circuit, module power supply, FG]	i II		$\left[\sum_{i=1}^{n} \right]$
connection	module po	ower supply	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	1		0-01
system	part		Applicable solderless terminal: 2 or less	1		
	I/O power	supply	10-point direct-mount terminal block [I/O power supply, I/O signal]			E E
	part,		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	L.		
	I/O part		Applicable solderless terminal: 2 or less	ł		
Module mo	unting scre	ew	M4 screw with plain washer finished round			
			(tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations			
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	ł		
Applicable solderless terminal		torminal	• RAV1.25-3 (compliant with JIS C 2805)	ł		
Applicable soldeness terminal		ciiiiidi	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	ĺ		
			• V2-MS3, RAP2-3SL, TGV2-3N	1		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	ĺ		
Wire	Material		Copper			
-	Temperati	ure rating	75°C or more	ĺ		
Accessory			User's manual	Ì		



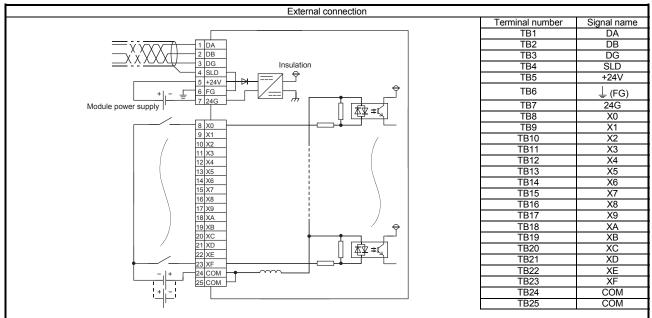
4.1.4 AJ65SBTB3-8D 24VDC input module (positive common (sink), negative common (source) loading)

Туре			DC input module		
Item			AJ65SBTB3-8D	Appea	arance
Number of input points			8 points	11	
Isolation method			Photocoupler		
Rated input voltage			24VDC		
Rated input voltage Rated input current			Approx. 7mA		
Operating voltag	ge range		19.2 to 26.4VDC (ripple ratio: within 5%)		
Max. number of	simultaneou	us input	100%		
points		•			
ON voltage/ON of			14VDC or higher/3.5mA or higher		
OFF voltage/OFI	F current		6VDC or lower/1.7mA or lower		
Input resistance			Approx. 3.3kΩ		
Response time		OFF→ON	1.5ms or less (at 24VDC)		L : 10:0
		ON→OFF	1.5ms or less (at 24VDC)		(5%) =
Wiring method for	or common		8 points/common (3-wire, terminal block type)		1 10.01
Input type			Positive/negative common shared type (sink/source shared type)		(32) ~
Supply current for			1.0A or lower/common		
Number of occup			32-point assignment/station (8 points used)		
Module power su	upply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	<u>Z</u> 40	1 60
	Current		40mA or lower (at 24VDC and all points ON)		
Noise immunity	Noise immunity		Noise voltage 500Vp-p, noise width 1µs,	Maintain Maintain	$ O^{*}O = W$
			noise frequency 25 to 60Hz (DC type noise simulator condition)		10.01
Withstand voltag			500VAC for 1 minute between all DC external terminals and ground		
Insulation resista	ance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	AJ65SBTB3-8D COMA COM	
			insulation resistance tester)	MA X	
Protection degre	e		IP2X		
Weight			0.18kg		
	ommunicatio		7-point two-piece terminal block [Transmission circuit, module power supply, FG]	x01234567 000000000000000000000000000000000000	
	odule power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		(32)
system			Applicable solderless terminal: 2 or less	* ×01 2 3 4 ■ ■ ■ ■ ■ ■ [Mills +24V 24G	- (50)
) power sup) part	ριγ part,	18-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	×== +2+	
1/0	part		Applicable solderless terminal: 2 or less		
Module mounting	a scrow		M4 screw with plain washer finished round		
	ig sciew		(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal		al	RAV1.25-3 (compliant with JIS C 2805)		
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire Ma	aterial		Copper		
Ter	emperature r	ating	75°C or more		
Accessory			User's manual	l	



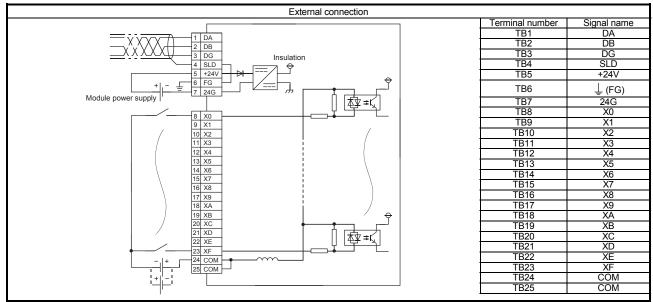
4.1.5 AJ65SBTB1-16D 24VDC input module (positive common (sink), negative common (source) loading)

	_	Туре	DC input module		
Item			AJ65SBTB1-16D	Appea	rance
Number of input points			16 points		
Isolation method			Photocoupler		
Rated input voltage			24VDC		
Rated inpu	it current		Approx. 7mA		
Operating	voltage rang	е	19.2 to 26.4VDC (ripple ratio: within 5%)		
Max. numb	per of simulta	aneous input	100%		
points		-			
	e/ON current		14VDC or higher/3.5mA or higher		
OFF voltag	ge/OFF curre	ent	6VDC or lower/1.7mA or lower		
Input resist	tance		Approx. 3.3kΩ	COM COM	
Response	time	OFF→ON	1.5ms or less (at 24VDC)		0.01
		ON→OFF	1.5ms or less (at 24VDC)		
Wiring met	hod for com	mon	16 points/common (2 points) (1-wire, terminal block type)	STATION NO. B RATE 02.00101 10.2 14.2 14.2 03.0101 10.0 14.2 14.2 14.2 03.0101 10.0 10.0 10.0 10.0 10.0 03.0101 10.0 10.0 10.0 10.0 10.0 10.0 03.0101 10.0	
Input type			Positive/negative common shared type (sink/source shared type)		
Number of	occupied st	ations	32-point assignment/station (16 points used)	XA H H 4020	
Module por	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		- (5%)
		Current	35mA or lower (at 24VDC and all points ON)	Z≪ ∞	
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,		I = 1(5°č) P//
			noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	x89 A B C D E F 0 0 0 0 0 0 0 0 SBTB1-16D x1 x3 x5	$= (\Sigma_{\alpha})$
Insulation r	resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC		
			insulation resistance tester)	B1-16 X2 X2 X2 X	
Protection	degree		IP2X		
Weight	-		0.18kg		
External	Communic		7-point two-piece terminal block	x01 2 3 4 5 6 7 □ □ □ □ □ □ □ □ □ □ □ MRISC AJOI	
	module po	wer supply	[Transmission circuit, module power supply, FG]	3456 0005	
system	part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	2 3 4 MB(24G (FG)	
		augely part	Applicable solderless terminal: 2 or less 18-point direct-mount terminal block [I/O power supply, I/O signal]		
	I/O power s	supply part,	M3×5.2 screw(tightening torgue range: 0.59 to 0.88N•m)		
	i/O part		Applicable solderless terminal: 2 or less	비술 티의	0.0
Module mo	ounting screv	N	M4 screw with plain washer finished round		
Module mounting screw		, v	(tightening torque range: 0.78 to 1.08N•m)		- (5.2)
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	$\parallel ((\bigcirc)) \mid$	
Applicable solderless terminal		erminal	RAV1.25-3 (compliant with JIS C 2805)	$(___) \smile (__$	
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire	Material		Copper		
	Temperatu	ire rating	75°C or more		
Accessory			User's manual		



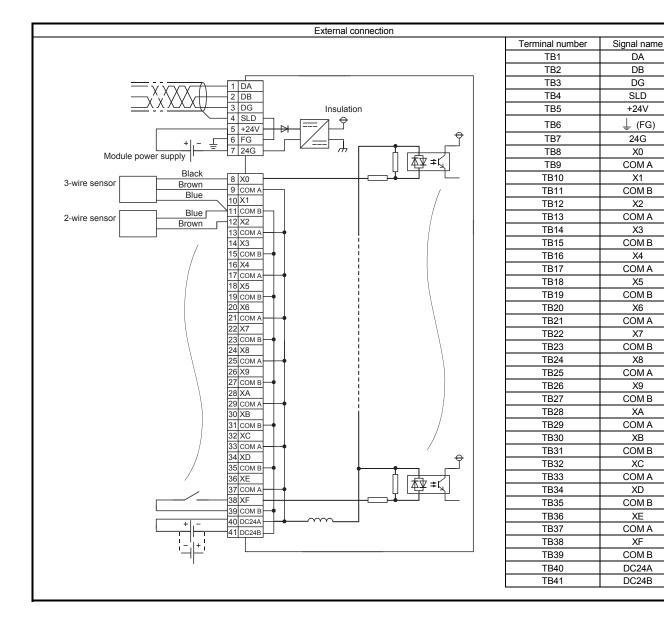
4.1.6 AJ65SBTB1-16D1 24VDC input module (positive common (sink), negative common (source) loading)

Туре		Туре	DC input module		
Item			AJ65SBTB1-16D1	Appearance	
Number of	input point	S	16 points		
Isolation method			Photocoupler		
Rated input voltage			24VDC		
Rated input	t current		Approx. 5mA		
Operating v	voltage ran	ge	19.2 to 26.4VDC (ripple ratio: within 5%)		
Max. numb	er of simul	taneous input	100%		
points					
ON voltage			15VDC or higher/3mA or higher		
OFF voltag	e/OFF curi	rent	3VDC or lower/0.5mA or lower		
Input resista	ance		Approx. 4.7kΩ		
Response t	time	OFF→ON	0.2ms or less (at 24VDC)		
		ON→OFF	0.2ms or less (at 24VDC)		
Wiring meth	hod for con	nmon	16 points/common (2 points) (1-wire, terminal block type)		
Input type			Positive/negative common shared type (sink/source shared type)		
Number of	occupied s	tations	32-point assignment/station (16 points used)	XA 81020	
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	L₽ ■Ľ≈	
		Current	40mA or lower (at 24VDC and all points ON)	N	
Noise immu	unity		Noise voltage 500Vp-p, noise width 1µs,		
			noise frequency 25 to 60Hz (DC type noise simulator condition)	×	
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground	×2×	
Insulation r	esistance		10M Ω or higher between all DC external terminals and ground (500VDC	x89 A B C D E F a a a b C D E F a a a a a a a a a a a a a a a a a a a	
			insulation resistance tester)		
Protection of	degree		IP2X	39 A 8781- X1 X2	
Weight			0.18kg	AJ658BTB1-16D1 x0 x0 x0 x1 x3	
External		cation part,	7-point two-piece terminal block	× A∪6	
		ower supply	[Transmission circuit, module power supply, FG]		
system	part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	3 4 5 6 0 0 0 0 1 4 6 6 1 4 6 1 4 6 1 6	
			Applicable solderless terminal: 2 or less		
		supply part,	18-point direct-mount terminal block [I/O power supply, I/O signal]	x x01	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less	0"	
Module mo	ounting scre	ew	M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal		terminal	• RAV1.25-3 (compliant with JIS C 2805)	$[_] \bigcirc [$	
		(Crimina)	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire	Material		Copper		
	Temperat	ure rating	75°C or more		
Accessory		5	User's manual		



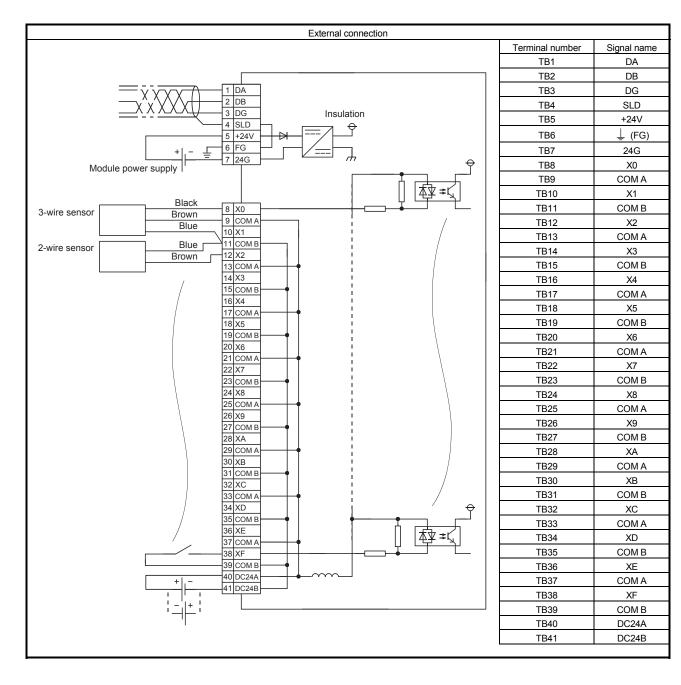
4.1.7 AJ65SBTB3-16D 24VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module			
Item			AJ65SBTB3-16D		Appearance	
Number of	input points		16 points			
Isolation method			Photocoupler			
Rated inpu	it voltage		24VDC			
Rated inpu	it current		Approx. 7mA			
Operating	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)			
Max. numb	per of simultaneous	input points	100%			
	e/ON current		14VDC or higher/3.5mA or higher			
OFF voltag	ge/OFF current		6VDC or lower/1.7mA or lower			
Input resist	tance		Approx. 3.3kΩ	ПОЛ		
Response	time	OFF→ON	1.5ms or less (at 24VDC)			
		ON→OFF	1.5ms or less (at 24VDC)			
Wiring met	hod for common		16points/common (3-wire, terminal block type)	<u></u>		
Input type			Positive/negative common shared type (sink/source shared type)		@ @ /	
	rent for connected	device	1.0A or lower/common			
	occupied stations		32-point assignment/station (16points used)	XB COM		
Module por	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	A XA		
		Current	45mA or lower (at 24VDC and all points ON)	X9 IA CON		
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,	X8 VB COP		
	,		noise frequency 25 to 60Hz (DC type noise simulator condition)	X7 MA CO		
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground			
Insulation r	resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation		8	
			resistance tester)	X4 MB CO		
Protection	degree		IP2X		1 W m	
Weight			0.25kg	x8 A B C D E F 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		
External	Communication p	oart,	7-point two-piece terminal block [Transmission circuit, module power supply, FG]	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1 W mh	
connection	module power su	pply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
system			Applicable solderless terminal: 2 or less			
	I/O power supply	part,	34-point direct-mount terminal block [I/O power supply, I/O signal]	2 3 4 5 6 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	SED THE		
			Applicable solderless terminal: 2 or less			
Module mounting screw			M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)		- B	
			Mountable with a DIN rail in 6 orientations]	
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)			
Applicable	solderless termina	I	• RAV1.25-3 (compliant with JIS C 2805)			
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]			
			• V2-MS3, RAP2-3SL, TGV2-3N			
	A A A A A		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]			
Wire	Material		Copper 75°C or more			
Accessory	Temperature ratir	iy	User's manual			
ALLESSOLY			User s manual			



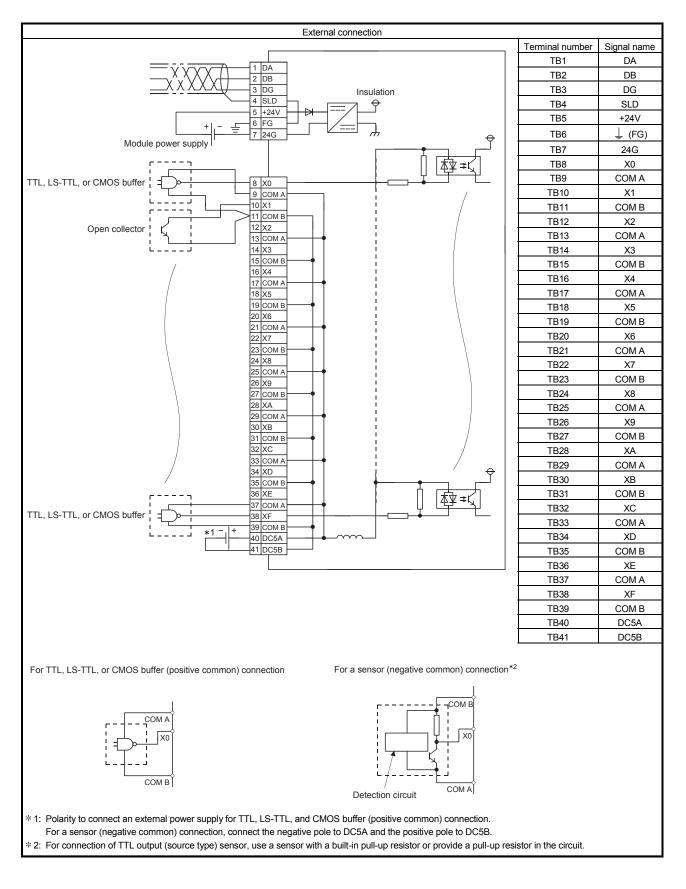
4.1.8 AJ65SBTB3-16KD 24VDC input module (positive common (sink), negative common (source) loading)

	_	Туре	1		DC input modu	le		
Item			AJ65SBTB3-16KD			Appea	rance	
Number of	input points		16 points					
			Photocoupler					
Rated input	it voltage		24VDC					
Rated input	it current		Approx. 7mA					
Operating v	voltage range		20.4 to 28.8VDC (ripp	le ratio: within 5%)				
Max. numb	per of simultan	eous input points	100%					
ON voltage	e/ON current	• •	14VDC or higher/4m/	or higher				
OFF voltag	e/OFF curren	t	5.5VDC or lower/1.7n	nA or lower				
Input resist	tance		Approx. 3.0kΩ				S ← O	
Response	time	Input response speed	0.2ms	1.5ms	5ms	10ms		99889988888888888888 98888888888888888
		OFF→ON	0.2ms or less	1.5ms or less	5ms or less	10ms or less		S S L
		ON→OFF	0.2ms or less	1.5ms or less	5ms or less	10ms or less		s @r
Wiring met	hod for comm	on	16 points/common (3-	wire, terminal block ty	vpe)	•		I 🏽 🕲 h
Input type			Positive/negative com	mon shared type (sin	k/source shared type)			
Supply curr	rent for conne	cted device	1.0A or lower/commo	n			38 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	
Number of	occupied stati	ions	32-point assignment/s	32-point assignment/station (16 points used)				
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripp	20.4 to 26.4VDC (ripple ratio: within 5%)				
		Current	50mA or lower (at 24VDC and all points ON)				1 X8	
Noise imm	unity		Noise voltage 500Vp-	Noise voltage 500Vp-p, noise width 1µs,				
			50mA or lower (at 24VDC and all points ON) Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)					0
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground				X5 MA 0	0
Insulation r	resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)				3 X4 00/18 00	
Protection	dearee		IP2X					
Weight			0.26kg					
External connection system	Communication part, on module power supply part		7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less			01 2 3 4 5 6 7 789 A B C D E F 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
	I/O power supply part, I/O part		M3×5.2 screw (tighter	Aspoint direct-mount terminal block [I/O power supply, I/O signal] VI3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less				
Module mounting screw		M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations						
Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)						
Applicable solderless terminal		• RAV1.25-3 (complia	int with JIS C 2805)					
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N					
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]			wire]		
Wire	Material		Copper					
	Temperature	rating	75°C or more					
Accessory			User's manual					



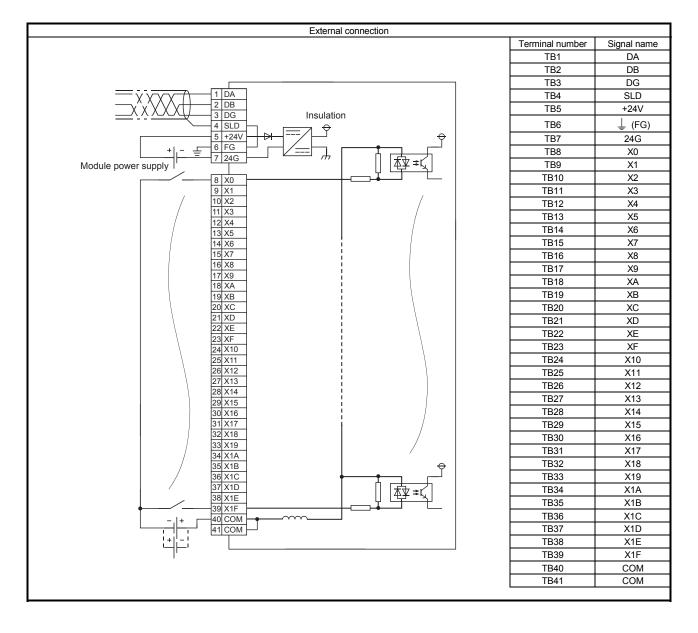
4.1.9 AJ65SBTB3-16D5 5VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module		
Item			AJ65SBTB3-16D5		irance
Number of	input points		16 points		
Isolation method			Photocoupler		
Rated input	it voltage		5VDC		
Rated input	it current		Approx. 4mA		
Operating v	voltage range		4.25 to 6VDC (ripple ratio: within 5%)		
Max. numb	per of simultane	ous input	100%		
points					H
ON voltage	e/ON current		3.5VDC or higher/2mA or higher		
OFF voltag	e/OFF current		1.5VDC or lower/1mA or lower	B RATE B RATE DCSA	
Input resist	tance		Approx. 1.0kΩ		
Response	time	OFF→ON	1.5ms or less (at 5VDC)		
		ON→OFF	1.5ms or less (at 5VDC)	A 20	
Wiring met	hod for commo	n	16 points/common (3-wire, terminal block type)	N~ ×C	l 🖀 🛛 🧄
Input type			Positive/negative common shared type (sink/source shared type)		
Supply curr	rent for connect	ed device	1.0A or lower/common	COMA	I S OF
Number of	occupied statio	ns	32-point assignment/station (16 points used)	X	
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	X9	
		Current	30mA or lower (at 24VDC and all points ON)	19 X8	
Noise immunity			Noise voltage 500Vp-p, noise width 1µs,	X7 0	
	,		noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	COMB	
Insulation r	resistance		$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC insulation		
			resistance tester)	0MB X4	
Protection of	degree		IP2X	W X3	
Weight	-		0.25kg	X8 9 A B C D E F 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
External	Communicatio	on part,	7-point two-piece terminal block [Transmission circuit, module power supply, FG]		
connection	module power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	6 7 X8 9 A	
system			Applicable solderless terminal: 2 or less	X01234567 □□□□□□□□□□□ □□□□□□□ 000000000000000000000000000000000000	
	I/O power sup	ply part,	34-point direct-mount terminal block [I/O power supply, I/O signal]	2 3 4 5 2 3 4 5 2 46 2 46 7 60	
I/O part			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
Module mounting screw			M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal		inal	• RAV1.25-3 (compliant with JIS C 2805)		
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
Wire	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire] Copper		
vvile	Temperature r	atina	75°C or more		
Accessory	remperature i	aung	User's manual		
, 1000330i y					



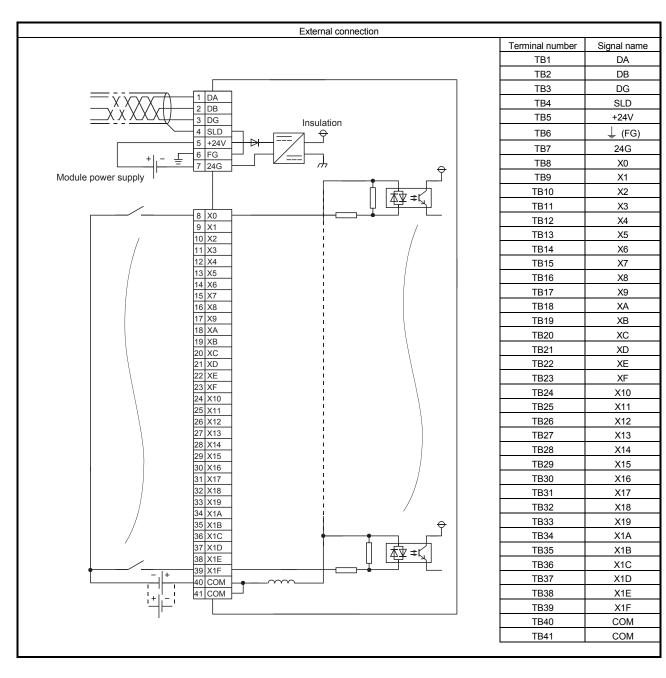
4.1.10 AJ65SBTB1-32D 24VDC input module (positive common (sink), negative common (source) loading)

Type DC input module Item AJ65SBTB1-32D Appex Mumber of input points 32 points S2 points S2 points Isolation method Photocoupler Rated input voltage 24VDC Rated input current Approx. 7mA Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%) Max. number of simultaneous input points 100% Max. number of simultaneous input points 100% SMDC or lower/1.7mA or lower OPF voltage/OFF current 6VDC or lower/1.7mA or lower No voltage/OFF current 6VDC or lower/1.7mA or lower OPF voltage/OFF current 6VDC or lower/1.7mA or lower Number of occupied stations 32 points/common (2 points) (1-wire, terminal block type) Input resistance Approx. 3.8k2 Nodule power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Imput resistance Nodule power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Imput resistance Imput resistance Noise voltage 500V/>P, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Imput resistance Imput resistance Imput resistance Imput resistance Imput resistance Imput	
Isolation method Photocoupler Rated input voltage 24VDC Rated input current Approx. 7mA Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%) Max. number of simultaneous input points 100% ON voltage/OR current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 1.5ms or less (at 24VDC) Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voitage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground Insulation resistance 10MΩ or higher power supply, FG] Weight 0.25kg External Communication part, I/O part 32-point direct-mou	arance
Isolation method Photocoupler Rated input voltage 24VDC Rated input current Approx. 7mA Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%) Max. number of simultaneous input points 100% ON voltage/OR current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 1.5ms or less (at 24VDC) Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voitage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground Insulation resistance 10MΩ or higher power supply, FG] Weight 0.25kg External Communication part, I/O part 32-point direct-mou	
Rated input current Approx. 7mA Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%) Max. number of simultaneous input 100% points 00N voltage/ON current OFF voltage/OFF current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Number of occupied stations 32 points (common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.258 g External Communication part, ropint tirect-mount terminal b	
Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%) Max. number of simultaneous input points 100% Max. number of simultaneous input points 100% ON voltage/ON current 14VDC or higher/3.5mA or higher OFF voltage/OFF current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF ->ON Input resistance Approx. 3.3kΩ Response time OFF ->ON Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Noise immunity Noise voltage 500Vp.p. noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground Insulation resistance 0.25kg External connection system Communication part, I/O power supply part I/O power supply part, I/O part 7-point two-piece terminal block [I/O power supply, I/O signal] I/O part M3×5.2 screw (tightening torque range: 0.59 to 0.88N+m) Applicable solderless terminal: 2 or less	
Max. number of simultaneous input 100% points 100% ON voltage/ON current 14VDC or higher/3.5mA or higher OFF voltage/OFF current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF ->ON Input resistance Approx. 3.3kΩ Response time OFF ->ON Input resistance Approx. 3.3kΩ Response time OFF ->ON Input resistance Approx. 3.3kΩ Module power supply Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Zerrent Communication part, module power supply part, M2plicable solderless terminal: 2 or less I/O power supply part, M2 34-point direct-mo	
points I4VDC or higher/3.5mA or higher OFF voltage/OFF current 6VDC or lower/1.7mA or lower input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance ON→OFF Input type ON→OFF Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground (500VDC insulation resistance IPP2X Weight 0.25kg Weight 0.25kg External communication part, common part, common part, system 7-point two-piece terminal block [// power supply, I// 0 signal] I/O power supply part, l/O part 34-point direct-mount terminal block [// power supply, I// 0 signal] I/O part 34-point direct-mount terminal 2 or less	
ON voltage/ON current 14VDC or higher/3.5mA or higher OFF voltage/OFF current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF→ON Input resistance Approx. 3.3kΩ Number of occupied stations 32 points/common (2 points) (1-wire, terminal block type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise voltage 500VP-p, noise width 1µs, noise frequency 25 to 60H2 (DC type noise simulator condition) Noise immunity Noise voltage 500VP-p, noise width 1µs, noise frequency 25 to 60H2 (DC type noise simulator condition) Weight 0.25kg Protection degree IP2X Weight 0.25kg I/O power supply part, More best terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.	
OFF voltage/OFF current 6VDC or lower/1.7mA or lower Input resistance Approx. 3.3kΩ Response time OFF→ON 1.5ms or less (at 24VDC) ON→OFF ON→OFF 1.5ms or less (at 24VDC) Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Vol power supply part, 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O power supply part, 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part 34-point d	
Input resistance Approx 3.3kΩ Response time OFF→ON 1.5ms or less (at 24VDC) ON→OFF 1.5ms or less (at 24VDC) Wring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise frequency 25 to 60Hz (DC type noise simulator condition) Noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Farmal Communication part, module power supply part, Noplicable solderless terminal: 2 or less I/O power supply part, I/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part 34-point direct-mount terminal: 2 or less	
Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Lower supply part, system Applicable solderless terminal: 2 or less I/O power supply part, l/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part Max5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	(12)
Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Lower supply part, system Applicable solderless terminal: 2 or less I/O power supply part, l/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part Max5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg Lower supply part, system Applicable solderless terminal: 2 or less I/O power supply part, l/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part Max5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
Wiring method for common 32 points/common (2 points) (1-wire, terminal block type) Input type Positive/negative common shared type (sink/source shared type) Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg I/O power supply part, system Applicable solderless terminal: 2 or less I/O part 34-point direct-mount terminal block [//O power supply, I/O signal] I/O part M3×5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
Number of occupied stations 32-point assignment/station (32 points used) Module power supply Voltage 20.4 to 26.4VDC (ripple ratio: within 5%) Current 45mA or lower (at 24VDC and all points ON) Noise immunity Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition) Withstand voltage 500VAC for 1 minute between all DC external terminals and ground Insulation resistance 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Protection degree IP2X Weight 0.25kg External connection system Communication part, noise lesterinal: 2 or less I/O power supply part, l/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
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Weight 0.25kg External connection system Communication part, module power supply part, l/O power supply part, l/O part 7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) I/O power supply part, l/O part 34-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
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I/O power supply part, 34-point direct-mount terminal block [I/O power supply, I/O signal] I/O part M3×5.2 screw(tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
Module mounting screw M4 screw with plain washer finished round	I M P
(tightening torque range: 0.78 to 1.08N•m)	
Mountable with a Din fail in 6 orientations	
Applicable DIN rail TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable solderless terminal • RAV1.25-3 (compliant with JIS C 2805)	
[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
• V2-MS3, RAP2-3SL, TGV2-3N	
[Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire] Wire Material	
Wire Material Copper Temperature rating 75°C or more 75°C or more	
Accessory User's manual	



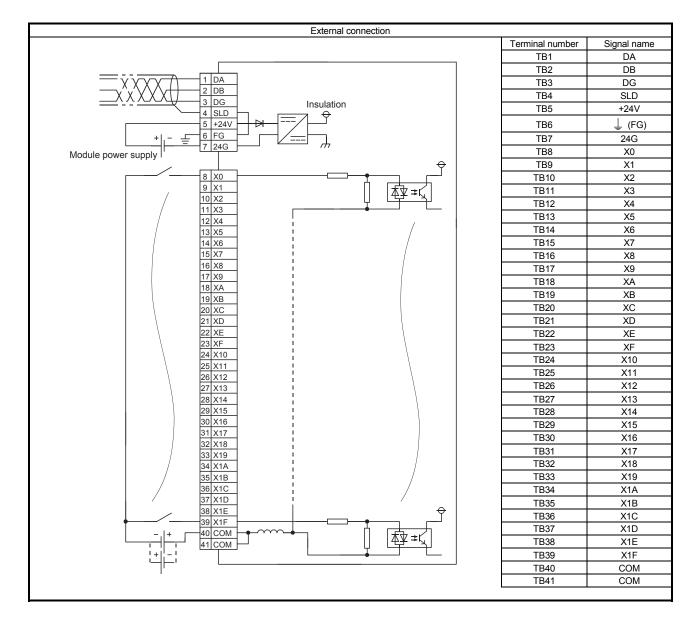
4.1.11 AJ65SBTB1-32KD 24VDC input module (positive common (sink), negative common (source) loading)

	_	Туре			DC input mo	dule		
Item			AJ65SBTB1-32KD			Appearance		
Number of input points			32 points					
			Photocoupler				1	
Rated input			24VDC				1	
Rated input	t current		Approx. 7mA				1	
Operating v	/oltage range		20.4 to 28.8VDC (rip	ple ratio: within 5%)			1	
	er of simultane	eous input	100% (at 26.4VDC),					
points		•		· · · ·				
ON voltage	ON current		14VDC or higher/4m	A or higher				
OFF voltag	e/OFF current		5.5VDC or lower/1.7r	mA or lower				
Input resista	ance		Approx. 3.0k Ω					$ \odot $
		Input response speed	0.2ms	1.5ms	5ms	10ms		
Response t	time	OFF→ON	0.2ms or less	1.5ms or less	5ms or less	10ms or less		
		ON→OFF	0.2ms or less	1.5ms or less	5ms or less	10ms or less		18 @h
Wiring meth	hod for commo		32 points/common (1					
Input type		-			nk/source shared type	5)		
	occupied stati	ons	32-point assignment/			,	3 X14 000 000 000 000 000 000 000 000 000 0	
Module pov		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)					
•	,	Current	75mA or lower (at 24VDC and all points ON)					
Noise immunity			Noise voltage 500Vp-p, noise width 1µs,					
	-		noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground					
Insulation r	esistance		$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC insulation				B	
			resistance tester)					
Protection of	degree		IP2X					
Weight	1		0.26kg			X8 9 A B C D E F ada a b C D E F ada a b a c D E F ada a c D E F		
External	Communicati	on part,	7-point two-piece terminal block [Transmission circuit, module power supply, FG]				9 A B 11-32KC	I S SL
connection	module powe	er supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)					
system			Applicable solderless				x0 1 2 3 4 5 6 7 a a 5 6 7 a a 5 6 7 M33%8 Auess +24V 246 T x0	
	I/O power su	oply part,			ower supply, I/O sign	al]	2 3 4 MBU MBU Fe)	
	I/O part		M3×5.2 screw (tighte	0 1 0	59 to 0.88N•m)		××	
		Applicable solderless						
Module mounting screw			M4 screw with plain washer finished round					
			(tightening torque range: 0.78 to 1.08N•m)					
Applicable DIN rail		Mountable with a DIN rail in 6 orientations						
Applicable bliv rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715) • RAV1.25-3 (compliant with JIS C 2805)				4		
Applicable soldeness terminal		· · ·	,	2 to 16 AWG) strande	d wire]			
		 V2-MS3, RAP2-3SI 	•					
			 V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire] 					
Wire	Material		Copper			1		
	Temperature	rating	75°C or more]	
Accessory			User's manual					



4.1.12 AJ65SBTB1-32D1 24VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module		
Item			AJ65SBTB1-32D1	Appearance	
Number of	input points		32 points		
Isolation m	ethod		Photocoupler		
Rated input voltage			24VDC		
Rated inpu	t current		Approx. 5mA		
Operating	voltage rang	e	19.2 to 26.4VDC (ripple ratio: within 5%)		
Max. numb	per of simulta	aneous input	100%		
points					
ON voltage	e/ON current		15VDC or higher/3mA or higher		
OFF voltag	ge/OFF curre	ent	3VDC or lower/0.5mA or lower		
Input resist	ance		Approx. 4.7kΩ		
Response	time	OFF→ON	0.2ms or less (at 24VDC)		
		ON→OFF	0.2ms or less (at 24VDC)		
Wiring met	hod for com	mon	32 points/common (2 points) (1-wire, terminal block type)		
Input type			Positive/negative common shared type (sink/source shared type)		
Number of	occupied sta	ations	32-point assignment/station (32 points used)		
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
		Current	50mA or lower (at 24VDC and all points ON)		
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,		
			noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand voltage			500VAC for 1 minute between all DC external terminals and ground		
Insulation resistance			10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester) Image: Constraint of the set of the		
			insulation resistance tester)		
Protection	degree		IP2X		
Weight			0.25kg		
External	Communic	ation part,	7-point two-piece terminal block [Transmission circuit, module power supply, FG]		
connection	module por	wer supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
system			Applicable solderless terminal: 2 or less		
		supply part,	34-point direct-mount terminal block [I/O power supply, I/O signal]		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
Module mo	ounting screw	v	M4 screw with plain washer finished round		
			(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail Applicable solderless terminal			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
		erminal	• RAV1.25-3 (compliant with JIS C 2805)		
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire	Material		Copper		
	Temperatu	re rating	75°C or more		
Accessory		- 5	User's manual		



4.1.13 AJ65SBTB1-32D5 5VDC input module (positive common (sink), negative common (source) loading)

Туре			DC input module	
Item			AJ65SBTB1-32D5	Appearance
Number of	input points		32 points	
Isolation method			Photocoupler	
Rated inpu	it voltage		5VDC	
Rated inpu	it current		Approx. 4mA	
Operating	voltage range		4.25 to 6VDC (ripple ratio: within 5%)	
Max. numb	per of simultaneo	us input	100%	
points		-		
ON voltage	e/ON current		3.5VDC or higher/2mA or higher	
OFF voltag	ge/OFF current		1.5VDC or lower/1mA or lower	
Input resist	tance		Approx. 1.0kΩ	
Response	time	OFF→ON	1.5ms or less (at 5VDC)	
		ON→OFF	1.5ms or less (at 5VDC)	
Wiring met	thod for common		32 points/common (1-wire, terminal block type)	
Input type			Positive/negative common shared type (sink/source shared type)	
Number of	occupied station	S	32-point assignment/station (32 points used)	
Module po	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
		Current	35mA or lower (at 24VDC and all points ON)	
Noise imm	unity	•	Noise voltage 500Vp-p, noise width 1µs,	
			noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation r	resistance		10M Ω or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	
Protection	degree		IP2X	
Weight			0.26kg	
External	Communication	n part,	7-point two-piece terminal block	
connection	module power s	supply part	[Transmission circuit, module power supply, FG]	
system			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
	I/O power supp	ly part,	34-point direct-mount terminal block [I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
Module mounting screw			M4 screw with plain washer finished round	
			(tightening torque range: 0.78 to 1.08N•m)	
			Mountable with a DIN rail in 6 orientations	
Applicable DIN rail Applicable solderless terminal			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
		nal	• RAV1.25-3 (compliant with JIS C 2805)	
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
			• V2-MS3, RAP2-3SL, TGV2-3N	
	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Temperature ra	ating	Copper 75°C or more	
Accessory		ung	User's manual	-
-008501y			USCI S Manual	

External connection Terminal number Signal name TB1 DA 1 DA TB2 DB 2 DB твз DG 3 DG Insulation 4 SLD TB4 SLD 9 5 +24V TB5 +24V 6 FG ፲ 7 24G TB6 ⊥_ (FG) Module power supply TB7 24G र्षेय ≉। TB8 X0 тв9 X1 8 X0 Open collector (positive common) 9 X1 TB10 X2 10 X2 TB11 Х3 11 X3 TB12 X4 12 X4 13 X5 TB13 X5 14 X6 15 X7 TB14 X6 TB15 X7 16 X8 17 X9 TB16 X8 18 XA TB17 X9 19 XB TB18 XA 20 XC TB19 XB 21 XD 22 XE TB20 XC 23 XF TB21 XD 24 X10 TB22 XE 25 X11 26 X12 TB23 XF 27 X13 X10 TB24 28 X14 X11 TB25 29 X15 30 X16 X12 **TB26** 31 X17 TB27 X13 32 X18 TB28 X14 33 X19 TB29 X15 34 X1A 35 X1B **TB30** X16 36 X1C TB31 X17 37 X1D ∡ұ ≠ TB32 X18 38 X1E 39 X1F TB33 X19 40 COM TB34 X1A *1 41 COM **TB35** X1B **TB36** X1C **TB37** X1D TB38 X1E TB39 X1F TB40 COM TB41 COM For TTL, LS-TTL, or CMOS buffer (positive common) connection For a sensor (negative common) connection *2 X0 XO =[L _ _ СОМ COM Detection circuit * 1: Polarity to connect an external power supply for TTL, LS-TTL, and CMOS buffer (positive common) connection. For a sensor (negative common) connection, connect the negative pole to COM. 2: For connection of TTL output (source type) sensor, use a sensor with a built-in pull-up resistor or provide a pull-up resistor in the circuit.

4.1.14 AJ65DBTB1-32D 24VDC input module (positive common (sink), negative common (source) loading)

	Туре	DC input module	
Item		AJ65DBTB1-32D	Appearance
Number of input p	oints	32 points	
Isolation method		Photocoupler	
Rated input voltag	e	24VDC	
Rated input curren	nt	Approx. 5mA	
Operating voltage	range	20.4 to 31.2VDC (ripple ratio: within 5%)	
Max. number of si	multaneous input	100% (at 26.4VDC)	
points			
ON voltage/ON cu	rrent	15VDC or higher/3mA or higher	
OFF voltage/OFF	current	5VDC or lower/1.5mA or lower	
Input resistance	1	Approx. 4.7kΩ	
Response time	OFF→ON	10ms or less (at 24VDC)	STATION NO. 5321 21 21 21 21 21 21 21 21 21 21 21 21 2
	ON→OFF	10ms or less (at 24VDC)	
Wiring method for	common	16 points/common (2 points) (1-wire, terminal block type)	B RATE
Input type		Positive/negative common shared type (sink/source shared type)	
Number of occupie	ed stations	32-point assignment/station (32 points used)	
Module power	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	45mA or lower (at 24VDC and all points ON)	DB +24V
Noise immunity		Noise voltage 500Vp-p, noise width 1µs,	NC SLD (76) NC
		noise frequency 25 to 60Hz (DC type noise simulator condition)	246
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground	X0 X1 X10
Insulation resistan	се	$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC	X2 X12
		insulation resistance tester)	X3 X13 X14
Protection degree		IP2X	X5 X6 X15 X16
Weight		0.6kg	X7 CON1 Z CON3
External connection	on system	50-point terminal block	X8 X18 X19
		[Transmission circuit, module power supply, FG, I/O power supply, I/O signal]	
		M3.5×7 screw (tightening torque range: 0.68 to 0.92N•m)	xc x1c
		Applicable solderless terminal: 2 or less	XD X1D X1D X1D X1D
Module mounting	screw	M4 screw with plain washer finished round	COM2 XF
Applicable solderless terminal		(tightening torque range: 0.78 to 1.08N•m)	
		• R1.25-3.5 (compliant with JIS C 2805)	
		[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
		• RAV2-3.5 (compliant with JIS C 2805)	
14/:	Matarial	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Material	Copper 75°C or more	
	Temperature		
Accessory	rating	User's manual	
	h.		
Part sold separate	iy	A6DIN1C, A2CCOM-TB	

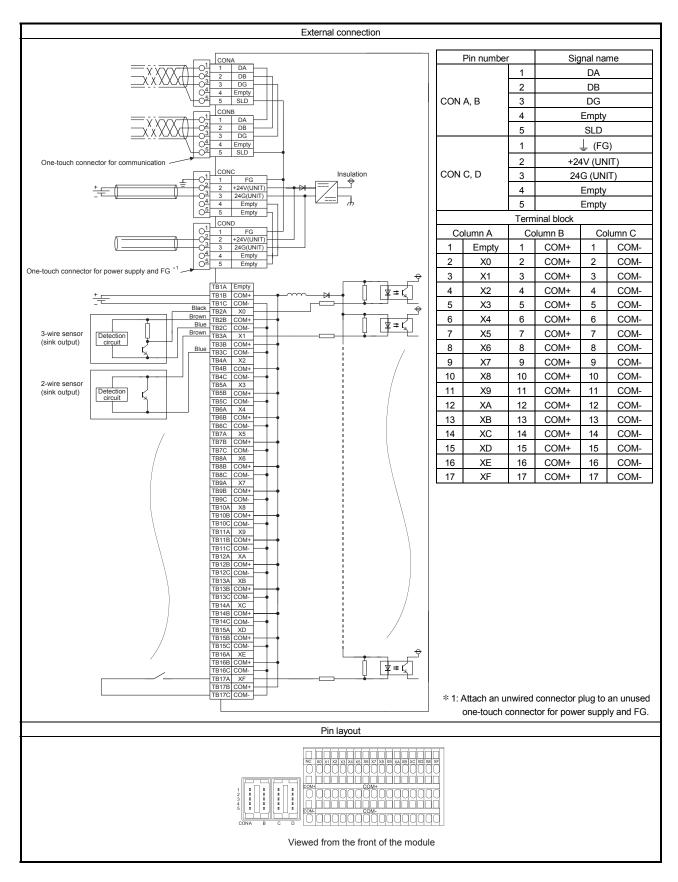
External connection							
Terminal	Signal		Terminal	Signal			
number	name		number	name			
TB1	DA		TB26	Empty			
TB2	DG		TB27	Empty			
TB3	DB		TB28	+24V			
TB4	Empty		TB29	Empty			
TB5	SLD	$= \sqrt{2 DG}$ $\frac{2 DG}{3 DB}$ $= \sqrt{2 V V}$ $\frac{2 DG}{3 DB}$ $\frac{2 DG}{2 V V}$ $\frac{2 V V}{28}$ $\frac{2 V V V}{28}$ $\frac{2 V V V}{28}$	TB30	⊥ (FG			
TB6	Empty		TB31	Empty			
TB7	24G		TB32	24G			
TB8	X0	7 24G 32	TB33	X10			
TB9	X1	A A A A A A A A A A A A A A A A A A A	TB34	X11			
TB10	X2		TB35	X12			
TB11	X3	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	TB36	X13			
TB12	X4	12 X4 X14 37	TB37	X14			
TB13	X5	13 X5 X15 38 14 X6 X16 39	TB38	X15			
TB14	X6		TB39	X16			
TB15	X7		TB40	X17			
TB16	COM1		TB41	COM3			
TB17	X8		TB42	X18			
TB18	X9		TB43	X19			
TB19	XA	23 XE X1E 48	TB44	X1A			
TB20	XB		TB45	X1B			
TB21	XC		TB46	X1C			
TB22	XD		TB47	X1D			
TB23	XE		TB48	X1E			
TB24	XF		TB49	X1F			
TB25	COM2		TB50	COM4			

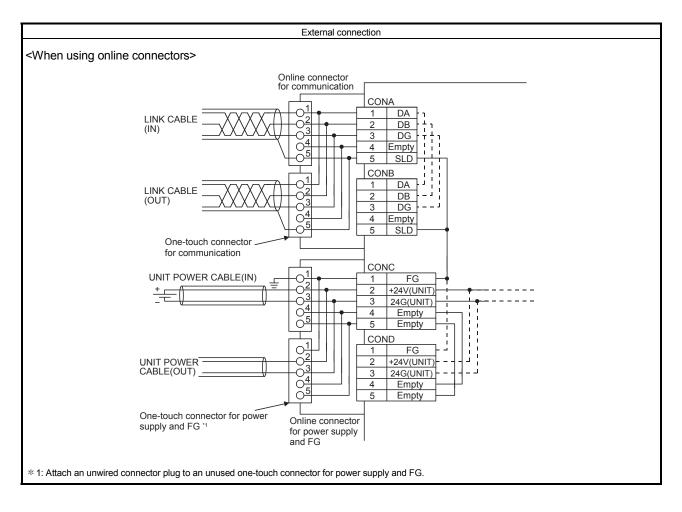
4.2 Spring Clamp Terminal Block Type Input Module

4.2.1 AJ65VBTS3-16D 24VDC input module (positive common (sink type))

Item	Туре	DC input module	Appograpco
		AJ65VBTS3-16D 16 points	Appearance
Number of i Isolation me		Photocoupler	-
Rated input		24VDC	-
			-
Rated input		Approx. 5mA	-
Operating voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	-
Max. number of simultaneous input points		100% or 75% (Refer to Section1.3.)	
ON voltage/ON current		14VDC or higher/3.5mA or higher	
OFF voltage/OFF current		6VDC or lower/1.7mA or lower	
Input resistance		Approx. 4.7kΩ	_
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring method for common		16 points/common (3-wire, spring clamp terminal block type)	
Input type		Positive common (sink type)	
	ent for connected	1.0A or lower/common	
device			
	occupied stations	32-point assignment/station (16points used)	
Module	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
power supp		35mA or lower (at 24VDC and all points ON)	
Noise immu	mity	Noise voltage 500Vp-p, noise width 1 μ s,	
MARIE - LE - LE - LE - LE		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand w	•	500VAC for 1 minute between all DC external terminals and ground	
Insulation resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
		resistance tester)	
Protection degree		IP1XB	
Weight		0.24kg	
External	Communication	One-touch connector for communication [Transmission circuit]	
connectio	part	5-pin IDC plug is sold separately: A6CON-L5P	
n system		<optional></optional>	
		Online connector for communication: A6CON-LJ5P	
	Power supply	One-touch connector for power supply and FG [Module power supply, FG]	
	part	5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<optional></optional>	
		Online connector for power supply: A6CON-PWJ5P	
	I/O part	2-piece spring clamp terminal block [I/O power supply, I/O signals]	
Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable	Connector for	Applicable cable:	
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector for	0.66 to 0.98mm ² (18 AWG)	
	power supply and	[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]	
	FG	Wire diameter: 0.16mm or more	
		Insulating coating material: PVC (heat-resistant)	
	Spring clamp	Stranded wire 0.08 to 1.5mm ² (28 to 16 AWG) $*$ ¹	
	terminal block for I/O	Wire strip length: 8 to 11mm	
	Applicable	TE0.5 [Applicable wire size: 0.5mm ²]	
	solderless	TE0.75 [Applicable wire size: 0.75mm ²]	
	terminal	TE1 [Applicable wire size: 0.9 to 1.0mm ²]	
		TE1.5 [Applicable wire size: 1.25 to 1.5mm ²]	
		TGV TC1.25-9T [Applicable wire size: 0.3 to 1.65mm ²]	
		TGWV TC1.25-T9 [Applicable wire size: 0.3 to 1.65mm ²]	
Accessory		User's manual, Holding fixtures for screw installation	1

* 1: Insert one wire per terminal.



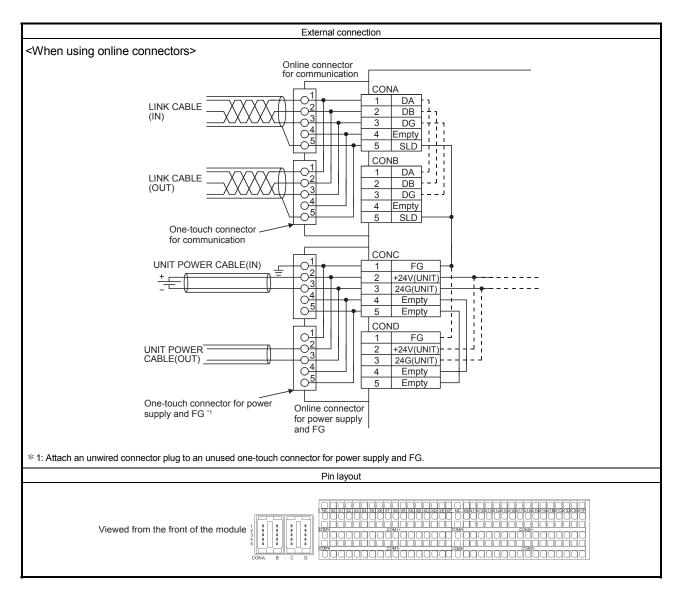


4.2.2 AJ65VBTS3-32D 24VDC input module (positive common (sink type))

	Туре	DC input module	
Item		AJ65VBTS3-32D	Appearance
Number of i	input points	32 points	
Isolation me	ethod	Photocoupler	
Rated input	voltage	24VDC	
Rated input	current	Approx. 5mA	
Operating v	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numb	er of simultaneous	100% or 69% (Refer to Section1.3.)	
input points			
ON voltage	/ON current	14VDC or higher/3.5mA or higher	
OFF voltage	e/OFF current	6VDC or lower/1.7mA or lower	
Input resista	ance	Approx. 4.7kΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring meth	nod for common	16 points/common (3-wire, spring clamp terminal block type)	
Input type		Positive common (sink type)	
Supply curr	ent for connected	2.0A or lower/common	
device			
Number of	occupied stations	32-point assignment/station (32 points used)	
Module	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
power supp	ly Current	40mA or lower (at 24VDC and all points ON)	
Noise immu	unity	Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	voltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re	esistance	$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
		resistance tester)	
Protection of	legree	IP1XB	
Weight		0.41kg	
External	Communication	One-touch connector for communication [Transmission circuit]	
connection	part	5-pin IDC plug is sold separately: A6CON-L5P	
system		<optional></optional>	
	-	Online connector for communication: A6CON-LJ5P	
	Power supply	One-touch connector for power supply and FG [Module power supply, FG]	
	part	5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<optional> Online connector for power supply: A6CON-PWJ5P</optional>	
	I/O part	2-piece spring clamp terminal block [I/O power supply, I/O signals]	
Appliachia			
Applicable [Connector for	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715) Applicable cable:	
Applicable wire size	communication	Applicable cable: FANC-110SBH, FA-CBL200PSBH, CS-110	
WIIC 312C	Connector for	0.66 to 0.98mm ² (18 AWG)	
		[0.06 to 0.98mm ² (18 AWG) [02.2 to 3.0mm (A6CON-PW5P), 02.0 to 2.3mm (A6CON-PW5P-SOD)]	₩0 °0°0 ==== == 0
	FG	Wire diameter: 0.16mm or more	
		Insulating coating material: PVC (heat-resistant)	
	Spring clamp	Stranded wire 0.08 to 1.5mm ² (28 to 16 AWG) * ¹	
	terminal block for	Wire strip length: 8 to 11mm	
	I/O		
	Applicable	TE0.5 [Applicable wire size: 0.5mm ²]	
	solderless	TE0.75 [Applicable wire size: 0.75mm ²]	
	terminal	TE1 [Applicable wire size: 0.9 to 1.0mm ²]	
		TE1.5 [Applicable wire size: 1.25 to 1.5mm ²]	
		TGV TC1.25-9T [Applicable wire size: 0.3 to 1.65mm ²]	
		TGWV TC1.25-T9 [Applicable wire size: 0.3 to 1.65mm ²]	1
Accessory		User's manual, Holding fixtures for screw installation	

* 1: Insert one wire per terminal.

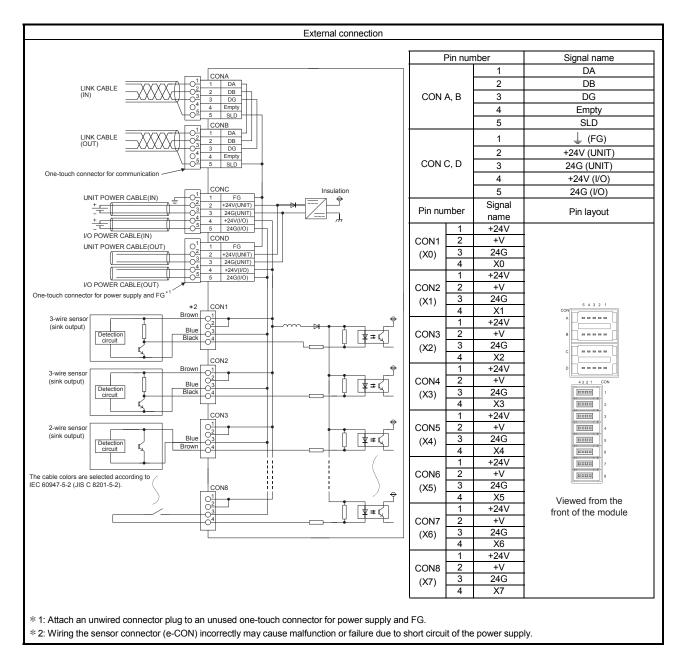
External connection _____NA 1 DA 2 DB 3 DG 4 Emptv 5 C Pin number Signal name LINK CABLE . (IN) 1 DA DB 2 3 CON A, B DG 1 DA 2 DB 3 DG LINK CABLE 4 Empty (OUT) 5 SLD One-touch connector for communication ⊥ (FG) 1 CONC UNIT POWER CABLE(IN) 1 FG 2 +24V(UNIT) 3 24G(UNIT) 4 Empty 5 Empty Ŷ 2 +24V (UNIT) <u>+</u>=[CON C, D 24G (UNIT) 04 3 4 Empty COND FG +24V(UNI 24C(UNI UNIT POWER CABLE(OUT) 5 2 Empty () =3 24G(UNI 4 Empty 5 Empty Terminal block 04 Column A Column B Column C One-touch connector for power supply and FG*1 TB1A Empty TB1B COM1+ TB1C COM1+ TB2A X0 TB2B COM1+ TB2C COM1+ TB2B COM1+ TB2B COM1+ TB3B COM1+ TB3B COM1+ TB4A X2 TB4B COM1+ TB4B COM1+ 1 Empty 1 COM1+ 1 COM1-| ≢ ≠ ८, ы *= 2 X0 2 COM1+ 2 COM1--Black 3 X1 3 COM1+ 3 COM1-प्र≠८ू 4 X2 4 COM1+ 4 COM1-3-wire sensor (sink output) Detection circuit COM1+ COM1-Х3 5 5 5 Blu Ę, 6 X4 6 COM1+ 6 COM1-TB4B TB4C TB5A TB5B TB5C TB6A TB6B TB6B TB6C TB7A TB7B 7 7 COM1-COM1+ 7 X5 COM1-X3 COM1-COM1-X4 COM1+ X6 8 COM1+ 8 COM1-2-wire sensor (sink output) Detection circuit 8 9 X7 9 COM1+ 9 COM1-10 X8 10 COM1+ 10 COM1-COM1+ 11 X9 11 COM1+ 11 COM1-COM1-COM1+ COM1-X6 COM1+ COM1+ COM1-X7 12 XA 12 COM1+ 12 COM1-TB7C TB8A TB8B TB8C COM1+ 13 COM1-13 XB 13 14 XC 14 COM1+ 14 COM1-TB9A TB9B TB9C X7 OM1 15 XD 15 COM1+ 15 COM1-OM1 X8 16 XE 16 COM1+ COM1-16 17 XF 17 COM1+ 17 COM1-OM1 OM1 X9 18 Empty 18 COM2+ 18 COM2-B COM1 C COM1 A XA B COM1 19 X10 19 COM2+ 19 COM2-20 X11 20 COM2+ 20 COM2-XB COM1 COM1 21 X12 21 COM2+ 21 COM2-22 22 COM2+ 22 COM2-X13 23 COM2+ 23 COM2-X14 23 TB14A TB14E OM 24 X15 24 COM2+ 24 COM2-XD 20M1 20M1 X16 COM2+ 25 COM2-25 25 26 X17 26 COM2+ 26 COM2-XE COM1 COM1 XF COM1 **४**≠८ 27 X18 27 COM2+ 27 COM2-28 X19 28 COM2+ 28 COM2-29 X1A 29 COM2+ 29 COM2-COM1 Empty OM2+ ⊻ ≠ ८ 30 X1B 30 COM2+ 30 COM2-Þ ÷e 31 31 COM2+ 31 COM2-X1C X10 Г 32 X1D COM2+ 32 32 COM2-COM2+ COM2-X11 ľ **४**≠८ 3-wire sensor (sink output) Detection circuit 33 X1E 33 33 COM2+ COM2-Blue 34 X1F 34 COM2+ 34 COM2-X12 X13 Detection 2-wire sensor (sink output) COM2+ COM2-X14 COM2+ COM2-X15 COM2-X16 X17 X18 COM2+ COM2-X19 COM2-X1A COM2+ COM2-X1B COM2+ COM2-X1C COM2 COM2 X1D COM2 COM2 X1E COM2 COM2 X1F ⊻ ≠ ८ TB34B COM2+ TB34C COM2-* 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

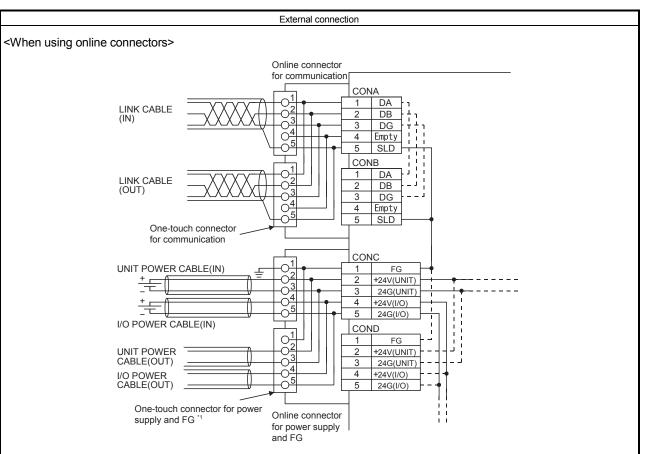


4.3 Sensor Connector (e-CON) Type Input Module

4.3.1 AJ65VBTCE3-8D 24VDC input module (positive common (sink type))

	Туре	DC input module	
Item		AJ65VBTCE3-8D	Appearance
Number of input points		8 points	
Isolation method		Photocoupler	
Rated input		24VDC	
Rated input		Approx. 5mA	
	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
	er of simultaneous	100%	
input points			
ON voltage/	ON current	14VDC or higher/3.5mA or higher	
	e/OFF current	6VDC or lower/1.7mA or lower	
Input resista		Αρριοχ. 4.7κΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
	od for common	8 points/common (3-wire, sensor connector (e-CON) type)	
Input type		Positive common (sink type)	
	ent for connected	1.0A or lower/common	
device			
	occupied stations	32-point assignment/station (8 points used)	
Module pow		20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	30mA or lower (at 24VDC and all points ON)	
Noise immu		Noise voltage 500Vp-p, noise width 1µs,	
	Tity	noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
Insulation re	SISIGNUE	resistance tester)	MELSEC AJ65VBTCE3-8D PW O
Protection d	ogroo	IP1XB	
	egree	0.10kg	X1 DDDD LERR.O
Weight External	Communication		
connection	part	One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P	
system	part	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	X3 40 50
System		Online connector for communication: A6CON-LJ5P	60
	Power supply	One-touch connector for power supply and FG	
	part	[Module power supply, I/O power supply, FG]	X5 DDCD
	pure	5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	
		Online connector for power supply: A6CON-PWJ5P	X7 EEEE
	I/O part	Sensor connector (e-CON) [I/O signals]	
		4-pin IDC plug is sold separately. * 1	
Applicable [DIN rail	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	$\neg (\bigcirc)$
	Connector for	Applicable cable:	1
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector for	0.66 to 0.98mm ² (AWG18)	1
	power supply and	[\$2.2 to 3.0mm (A6CON-PW5P),	
	FG	φ2.0 to 2.3mm (A6CON-PW5P-SOD)]	
		Wire diameter: 0.16mm or more	
		Insulating coating material: PVC (heat-resistant)	
	Connector for I/O	Sensor connector (e-CON).	1
		Applicable connector plugs are sold separately. * ¹	
		(applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	
Accessory		User's manual, Holding fixtures for screw installation	7

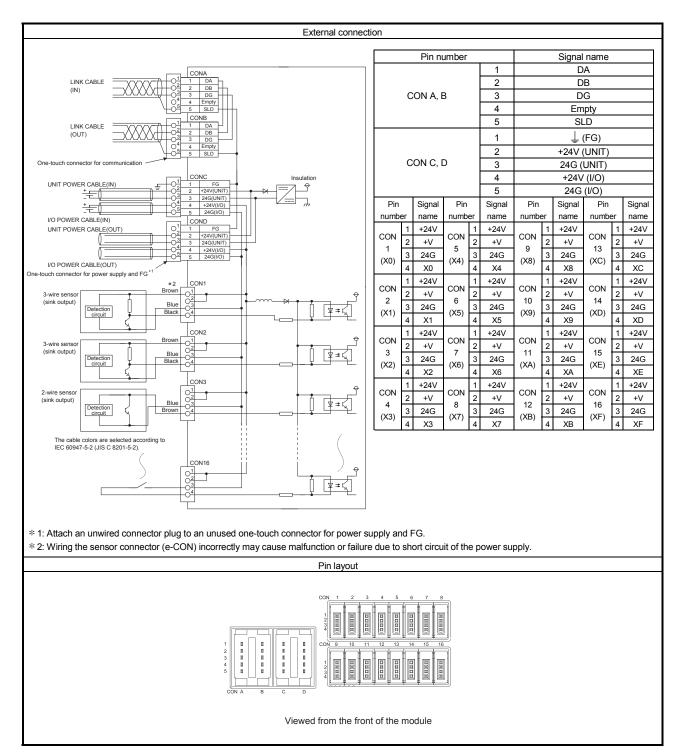


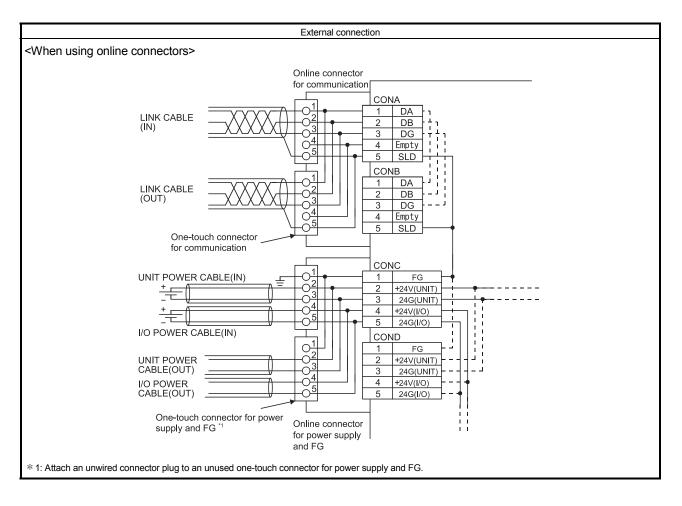


^{* 1:} Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

4.3.2 AJ65VBTCE3-16D 24VDC input module (positive common (sink type))

	Туре	DC input module	
Item		AJ65VBTCE3-16D	Appearance
Number of ir	nput points	16 points	
Isolation me	thod	Photocoupler	
Rated input	voltage	24VDC	
Rated input	current	Approx. 5mA	
Operating vo	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numbe	er of simultaneous	100% or 62.5% (Refer to Section 1.3.)	
input points			
ON voltage/	ON current	14VDC or higher/3.5mA or higher	
OFF voltage	/OFF current	6VDC or lower/1.7mA or lower	
Input resista	nce	Approx. 4.7kΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring methe	od for common	16 points/common (3-wire, sensor connector (e-CON) type)	
Input type		Positive common (sink type)	
Supply curre	ent for connected	1.0A or lower/common	
device			
Number of o	ccupied stations	32-point assignment/station (16 points used)	
Module	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
power suppl	y Current	35mA or lower (at 24VDC and all points ON)	
Noise immu	nity	Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand vo		500VAC for 1 minute between all DC external terminals and ground	
Insulation re	sistance	$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
		insulation resistance tester)	
Protection d	egree	IP1XB	
Weight		0.10kg	
External	Communication	One-touch connector for communication [Transmission circuit]	
connection	part	5-pin IDC plug is sold separately: A6CON-L5P <optional></optional>	
system		Online connector for communication: A6CON-LJ5P	
	Power supply	One-touch connector for power supply and FG	
	part	[Module power supply, I/O power supply, FG]	
		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<optional></optional>	
		Online connector for power supply: A6CON-PWJ5P	
	I/O part	Sensor connector (e-CON) [I/O signals]	
		4-pin IDC plug is sold separately. *1	
Applicable D	DIN rail	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)]
Applicable	Connector for	Applicable cable:	
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector for	0.66 to 0.98mm ² (18 AWG)	
	power supply	[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)]	
	and FG	Wire diameter: 0.16mm or more	
	-	Insulating coating material: PVC (heat-resistant)	4
	Connector for	Sensor connector (e-CON).	
	I/O	Applicable connector plugs are sold separately. * ¹	
		(applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	4
Accessory		User's manual, Holding fixtures for screw installation	

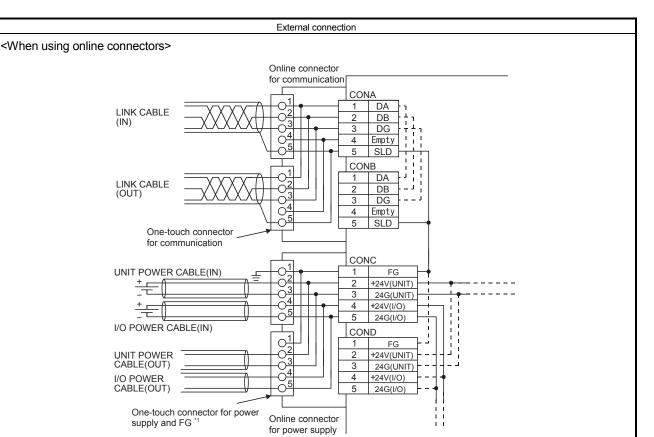


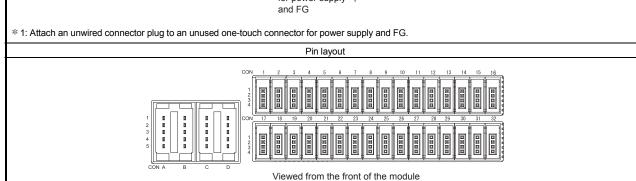


4.3.3 AJ65VBTCE3-32D 24VDC input module (positive common (sink type))

	Туре	DC input module	
Specificatio	n	AJ65VBTCE3-32D	Appearance
Number of i	nput points	32 points	
Isolation me	ethod	Photocoupler	
Rated input	voltage	24VDC	
Rated input	current	Approx. 5mA	
Operating v	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numbe	er of simultaneous	100% or 75% (Refer to Section1.3.)	
input points			
ON voltage/	ON current	14VDC or higher/3.5mA or higher	
OFF voltage	e/OFF current	6VDC or lower/1.7mA or lower	()
Input resista	ince	Approx. 4.7kΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring meth	od for common	32 points/common (3-wire, sensor connector (e-CON) type)	
Input type		Positive common (sink type)	
Supply curre device	ent for connected	2.0A or lower/common	
Number of o	occupied stations	32-point assignment/station (32 points used)	
Module pow	ver Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	40mA or lower (at 24VDC and all points ON)	
Noise immu	nity	Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re	esistance	$10 M \Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Protection d	egree	IP1XB	
Weight		0.16kg	
External connection system	Communication part	One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P <optional> Online connector for communication: A6CON-LJ5P</optional>	
	Power supply part	One-touch connector for power supply and FG [Module power supply, I/O power supply, FG] 5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD <optional> Online connector for power supply: A6CON-PWJ5P</optional>	
	I/O part	Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1	
Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable I	Connector for	Applicable cable:	
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	<u> </u>
	Connector for	0.66 to 0.98mm ² (18 AWG)	1
	power supply and FG	[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)] Wire diameter: 0.16mm or more	
		Insulating coating material: PVC (heat-resistant)	
	Connector for I/O	Sensor connector (e-CON). Applicable connector plugs are sold separately. * ¹ (applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	
Accessory		User's manual, Holding fixtures for screw installation	

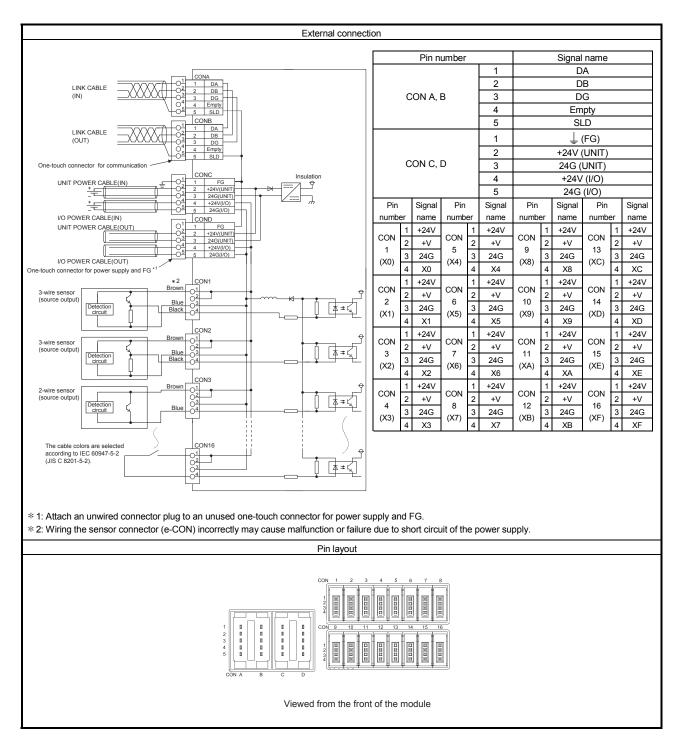
External connect	ion								
		Pin num	nber			Si	gnal nam	е	
				1			DA		
				2			DB		
	CON A, B			3			DG		
				4			Empty		
CONA				5			SLD		
				1			⊥_ (FG)		
(IN) $\begin{array}{c c} \hline & & & \\ \hline \\ \hline$				2			24V (UNIT	/	
	CON C, D		-	3			4G (UNIT)	
			-	4 5			24V (I/O)		
(OUT) $2 DB$ 4 J DG 4 J DG	Pin S	Signal	Pin	э Signal	Pin	1	anal Pi	n	Signal
\bigcirc^4 4 Empty \bigcirc^5 5 SLD		-	number	name	numb		me num		name
One-touch connector for communication	1 +	+24V	1	+24V		-	24V	1	+24V
UNIT POWER CABLE(IN)	CON 2	+V	CON 2	+V	CON	2 +	V CON	2	+V
$\begin{array}{c} + \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\$	(X0)	24G	9 (X8) 3	24G	17 (X10)		4G (X18) 3	24G
	4	X0	4		(,,,,,)		10	4	
I/O POWER CABLE(IN)	CON	+24V C	CON 1	+24V	CON			1	+24V
	2 2	+V	10 2	+V	18		-V 26	2	+V
	(X1) 3	24G (2	(X9) <u>3</u>	24G X9	(X11)	<u> </u>	4G 11 (X19) 3	24G X19
I/O POWER CABLE(OUT)		+24V	4	+24V			24V	4	+24V
One-touch connector for power supply and FG *1 *2 CON1	CON 2	+V C	CON 2	+V	CON		-V CON	2	+V
3-wire sensor	3 (X2) 3	24G	11 3	24G	19 (X12)	3 2	4G (X1A	、3	24G
(sink output)	(^2) 4	X2 (/	XA) 0 4	XA	(/12)	4 X	12 (٨1/	4	X1A
	CON	+24V	CON 1	+24V	CON			1	+24V
	4 2	+V	12 2	+V	20		-V 28	2	+V
(sink output) $Blue \bigcirc 3^2$	(X3) 3	24G X3	XB) 3	24G XB	(X13)	<u> </u>	4G 13 (X1E) 3	24G X1B
		+24V	4	+24V			13 24V	4	+24V
	CON 2	+V C	CON 2	+V	CON		-V CON	2	+V
2-wire sensor (sink output)	5 3	24G	13 XC) 3	24G	21	3 2	4G (X1C	3	24G
(sink output)	(X4) 4	X4 (/	XC) 4	XC	(X14)	4 X	14 (X1C	·) 4	X1C
	0011	+24V	CON 1	+24V	CON	<u> </u>		1	+24V
The cable colors are selected according	6 2	+V	14 2	+V	22		-V 30	2	+V
to IEC 60947-5-2 (JIS C 8201-5-2).		24G ()	XD) 3	24G	(X15)		4G (X1D) 3	24G
		X5 +24V	4	XD +24V			15 24V	4	X1D +24V
	CON 2	+V C	CON 2	+V	CON		V CON	2	+V
	7 3	24G	15 3	24G	23		1G 31	3	24G
Τ	(X6) 4	X6 ()	(XE) 4	XE	(X16)	4 X	16 (X1E) 4	X1E
	CON 1 +	+24V	CON 1	+24V	CON			1	+24V
	8 2	+V	16 2	+V	24		-V 32	2	+V
	(X7) 3	24G ()	XF) 3	24G	(X17)		4G (X1F) 3	24G
	4	X7 `	4	XF		4 X	17 `	<i>′</i> 4	X1F
 * 1: Attach an unwired connector plug to an unused one-touch connector for power st * 2: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure 			of the p	ower su	pply.				

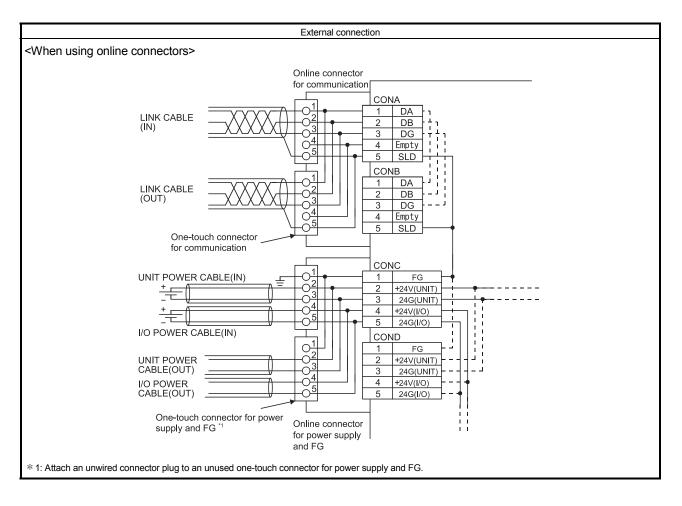




4.3.4 AJ65VBTCE3-16DE 24VDC input module (negative common (source type))

	Туре	DC input module	
Item		AJ65VBTCE3-16DE	Appearance
Number of input points		16 points	
Isolation me	thod	Photocoupler]
Rated input voltage		24VDC	7
Rated input		Approx. 5mA	
Operating vo	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numbe	er of simultaneous	100% or 62.5% (Refer to Section1.3.)	
input points			
ON voltage/	ON current	14VDC or higher/3.5mA or higher	
OFF voltage	OFF current	6VDC or lower/1.7mA or lower	
Input resista	nce	Approx. 4.7kΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring meth	od for common	16 points/common (3-wire, sensor connector (e-CON) type)	
Input type		Negative common (source type)	
Supply curre device	ent for connected	1.0A or lower/common	(\rightarrow)
	occupied stations	32-point assignment/station (16 points used)	
Module	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
power suppl		35mA or lower (at 24VDC and all points ON)	
Noise immu	-	Noise voltage 500Vp-p, noise width 1µs,	
	linty	noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand vo	oltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
		insulation resistance tester)	
Protection d	egree	IP1XB	
Weight	<u> </u>	0.11kg	
External	Communication	One-touch connector for communication [Transmission circuit]	
connection	part	5-pin IDC plug is sold separately: A6CON-L5P	
system		<optional></optional>	
		Online connector for communication: A6CON-LJ5P	
	Power supply	One-touch connector for power supply and FG	
	part	[Module power supply, I/O power supply, FG]	
		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<pre><optional></optional></pre>	
		Online connector for power supply: A6CON-PWJ5P	-
	I/O part	Sensor connector (e-CON) [I/O signals]	
		4-pin IDC plug is sold separately. * 1	_
Applicable D		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_
Applicable	Connector for	Applicable cable:	
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	4
	Connector for	0.66 to 0.98mm ² (18 AWG)	
	power supply	[\u03c62.2 to 3.0mm (A6CON-PW5P), \u03c62.0 to 2.3mm (A6CON-PW5P-SOD)]	
	and FG	Wire diameter: 0.16mm or more	
	Connector for	Insulating coating material: PVC (heat-resistant) Sensor connector (e-CON).	-
	I/O	Applicable connector (e-CON).	
	00	(applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	
Accessory	1	User's manual, Holding fixtures for screw installation	1

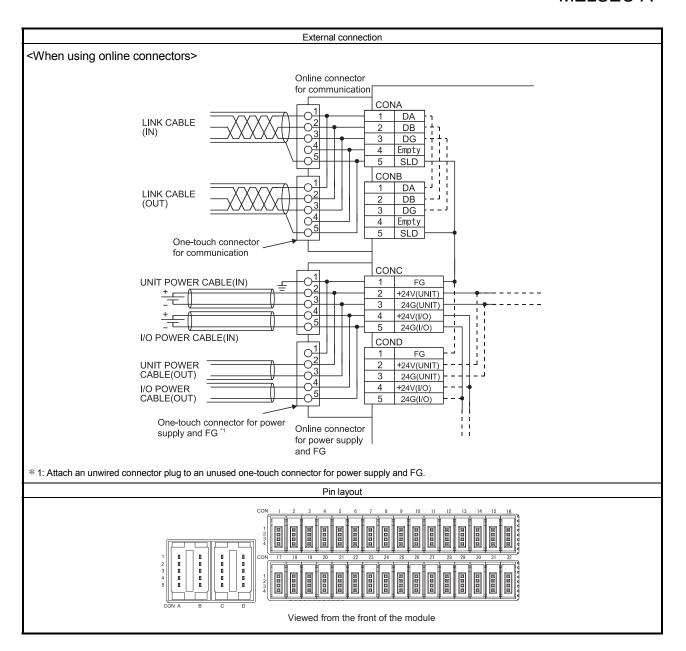




4.3.5 AJ65VBTCE3-32DE 24VDC input module (negative common (source type))

	Туре	DC input module	
Specification		AJ65VBTCE3-32DE	Appearance
Number of input points		32 points	
Isolation me	thod	Photocoupler	
Rated input	voltage	24VDC	
Rated input	current	Approx. 5mA	
Operating v	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numbe input points	er of simultaneous	100% or 75% (Refer to Secion1.3.)	
ON voltage/	ON current	14VDC or higher/3.5mA or higher	
OFF voltage	e/OFF current	6VDC or lower/1.7mA or lower	
Input resista	ince	Approx. 4.7kΩ	
Response	OFF→ON	1.5ms or less (at 24VDC)	
time	ON→OFF	1.5ms or less (at 24VDC)	
Wiring meth	od for common	32 points/common (3-wire, sensor connector (e-CON) type)	
Input type		Negative common (source type)	
Supply curre	ent for connected	2.0A or lower/common	
	occupied stations	32-point assignment/station (32 points used)	
Module pow	ver Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	40mA or lower (at 24VDC and all points ON)	
Noise immu	nity	Noise voltage 500Vp-p, noise width 1µs,	
	,	noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Protection d	egree	IP1XB	
Weight	0	0.16kg	
External connection system	Communication part	One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P <optional> Online connector for communication: A6CON-LJ5P</optional>	
	Power supply part	One-touch connector for power supply and FG [Module power supply, I/O power supply, FG] 5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD <optional> Online connector for power supply: A6CON-PWJ5P</optional>	
	I/O part	Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. *1	
Applicable [DIN rail	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	\bigcirc
Applicable wire size	Connector for communication	Applicable cable: FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector for power supply and FG	0.66 to 0.98mm ² (18 AWG) [¢2.2 to 3.0mm (A6CON-PW5P), ¢2.0 to 2.3mm (A6CON-PW5P-SOD)] Wire diameter: 0.16mm or more Insulating coating material: PVC (heat-resistant)	
	Connector for I/O	Sensor connector (e-CON). Applicable connector plugs are sold separately. * ¹ (applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	
Accessory		User's manual, Holding fixtures for screw installation	

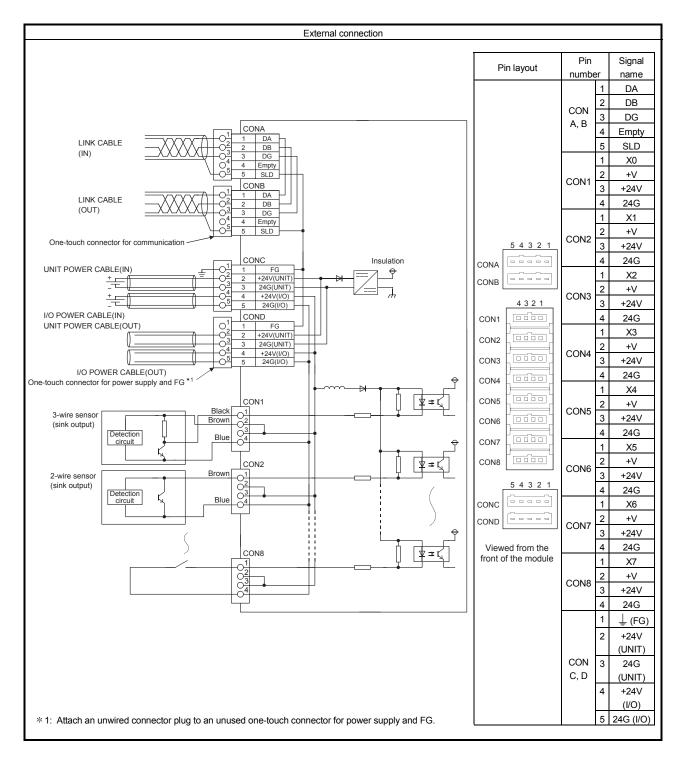
External connecti	on						
	Pin	number			Signa	Iname	
			1)A	
			2		[)B	
	CON A, B		3		D)G	
			4			npty	
			5			LD	
			1		-	(FG)	
	CON C, D		2			(UNIT) (UNIT)	
	00110,2		4			(I/O)	
			5			(I/O)	
	Pin Signa	al Pin	Signal	Pin	Signal	Pin	Signal
(OUT) $O_{1}^{4} = \frac{2}{4} \frac{DB}{DG}$	number name	- I	name	numb	r i	numbe	
One-touch connector for communication	CON 1 +24	CON	+24V	CON	1 +24V	CON	1 +24V
	1 3 24G	9 3	+V 24G	17	2 +V 3 24G	25	2 +V 3 24G
	(X0) 3 24G	(X8) 4	24G X8	(X10)	4 X10	(X18)	4 X18
	1 +24\	/1	+24V		1 +24V		1 +24V
I/O POWER CABLE(IN)	CON 2 +V	CON 2 10	+V	CON 18	2 +V	CON 26	2 +V
	(X1) 3 24G	(X9) 3	24G	(X11)	3 24G	(X19)	3 24G
1/O POWER CABLE(OUT)	4 X1	4	X9		4 X11		4 X19
One-touch connector for power supply and FG *1	CON 2 +V	/ CON 2	+24V +V	CON	1 +24V 2 +V	CON	1 +24V 2 +V
*2 CON1 3-wire sensor	3 3 240	11 3	24G	19	3 24G	27	3 24G
(source output) Blue 3	(X2) 3 24G 4 X2	(XA) 4	XA	(X12)	4 X12	(X1A)	4 X1A
	CON 1 +24		+24V	CON	1 +24V	CON	1 +24V
CON2	4 2 +V	12 2	+V	20	2 +V	28	2 +V
3-wire sensor (source output) Detection ↓ Blue 02 Blue 02 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	(X3) 3 24G 4 X3	(XB) 3	24G XB	(X13)	3 24G 4 X13	(X1B)	3 24G 4 X1B
	1 +24		+24V		4 ×13 1 +24V		4 ×1B 1 +24V
	CON 2 +V	CON 2	+V	CON	2 +V	CON	2 +V
(source output) $\bigcirc 2^{-3}$	5 (X4) 3 24G	13 (XC) 3	24G	21 (X14)	3 24G	29 (X1C)	3 24G
	4 X4	4	XC	(7(14)	4 X14	(/(10)	4 X1C
The cable colors are selected according to	CON 1 +24	CON	+24V +V	CON	1 +24V	CON	1 +24V
IEC 60947-5-2 (JIS C 8201-5-2).	6 3 24G	14 3	+v 24G	22	2 +V 3 24G	30	2 +V 3 24G
	(X5) 3 24G	(XD) 4	XD XD	(X15)	4 X15	(X1D)	4 X1D
	1 +24\		+24V		1 +24V		1 +24V
	CON 2 +V	CON 2 15	+V	CON 23	2 +V	CON 31	2 +V
	(X6) 3 24G	(XE) 3	24G	(X16)	3 24G	(X1E)	3 24G
	4 X6	4	XE	. ,	4 X16		4 X1E
	CON 2 +V	/ CON 2	+24V +V	CON	1 +24V 2 +V	CON	1 +24V 2 +V
	8 3 24G	16 3	24G	24	3 24G	32	3 24G
	(X7) 4 X7	(XF) 4	XF	(X17)	4 X17	(X1F)	4 X1F
 * 1: Attach an unwired connector plug to an unused one-touch connector for power su * 2: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure 		cuit of the p	oower su	pply.			

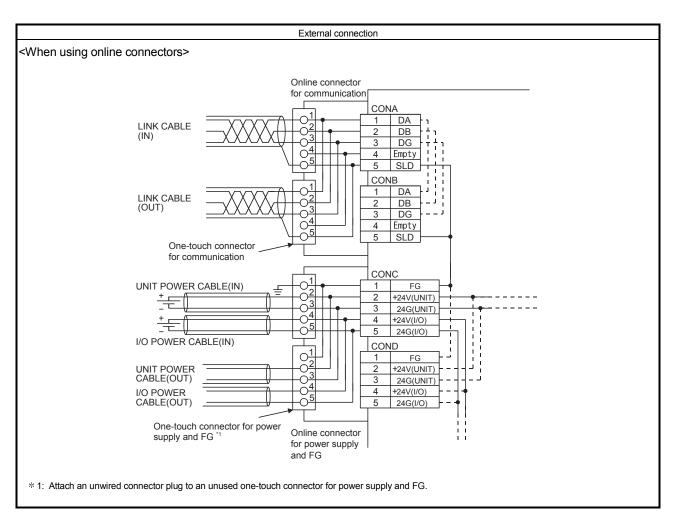


4.4 One-Touch Connector Type Input Module

4.4.1 AJ65VBTCU3-8D1 24VDC input module (positive common (sink type))

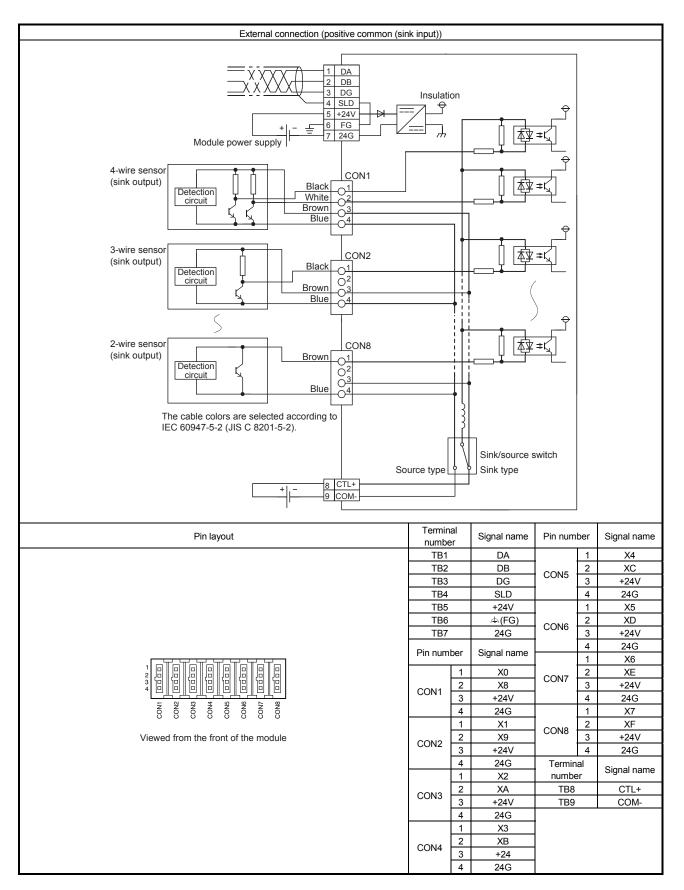
		Туре	DC input module	
Item			AJ65VBTCU3-8D1	Appearance
Number of	input po	ints	8 points	
Isolation m	ethod		Photocoupler	
Rated inpu	it voltage	•	24VDC	
Rated inpu	t current		Approx. 5mA	
Operating	voltage r	ange	19.2 to 26.4VDC (ripple ratio: within 5%)	
Max. numb	per of sim	nultaneous	100%	
input points	S			_
ON voltage	e/ON cur	rent	15VDC or higher/3mA or higher	_
OFF voltag	ge/OFF c	urrent	3VDC or lower/0.5mA or lower	
Input resist	ance		Approx. 4.7kΩ	
Response	time	OFF→ON	0.2ms or less (at 24VDC)	
		ON→OFF	0.2ms or less (at 24VDC)	MELSEC AJ65VBTCU3-8D1
Wiring met	hod for o	common	8 points/common (3-wire, one-touch connector type)	
Input type			Positive common (sink type)	
Supply curi device	rent for c	connected	1.0A or lower/common	
Number of	occupie	d stations	32-point assignment/station (8 points used)	
Module pov	wer	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply		Current	35mA or lower (at 24VDC and all points ON)	
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,	
	-		noise frequency 25 to 60Hz (DC type noise simulator condition)	X2 0
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation r	resistanc	e	10M Ω or higher between all DC external terminals and ground (500VDC insulation	X3 2 0
			resistance tester)	
Protection	degree		IP1XB	
Weight			0.15kg	X5 X5
External	Commu	unication part	One-touch connector for communication [Transmission circuit]	
connection	ı		5-pin IDC plug is sold separately.	X6
system			<optional></optional>	X7
			Online connector for communication: A6CON-LJ5P	
	Power	supply part	One-touch connector for power supply and FG	
			[Module power supply, I/O power supply, FG]	
			5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	C W
			<optional></optional>	
	1/O part		Online connector for power supply: A6CON-PWJ5P One-touch connector for I/O	
	I/O part		4-pin IDC plug is sold separately.	CC-Link
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable		tor for	Applicable cable:	4
wire size		nication	FANC-110SBH, FA-CBL200PSBH, CS-110	
1111 0 0120	-	ctor for power	0.66 to 0.98mm ² (18 AWG)	7
		and FG	[\phi2.2 to 3.0mm (A6CON-PW5P), \phi2.0 to 2.3mm (A6CON-PW5P-SOD)]	
			Wire diameter: 0.16mm or more	
			Insulating coating material: PVC (heat-resistant)	
	Connec	ctor for	φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	1
	I/O		[Applicable wire size: 0.14 to 0.2mm ²]	
			φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)	
			[Applicable wire size: 0.3 to 0.5mm ²]	1
Accessory			User's manual	

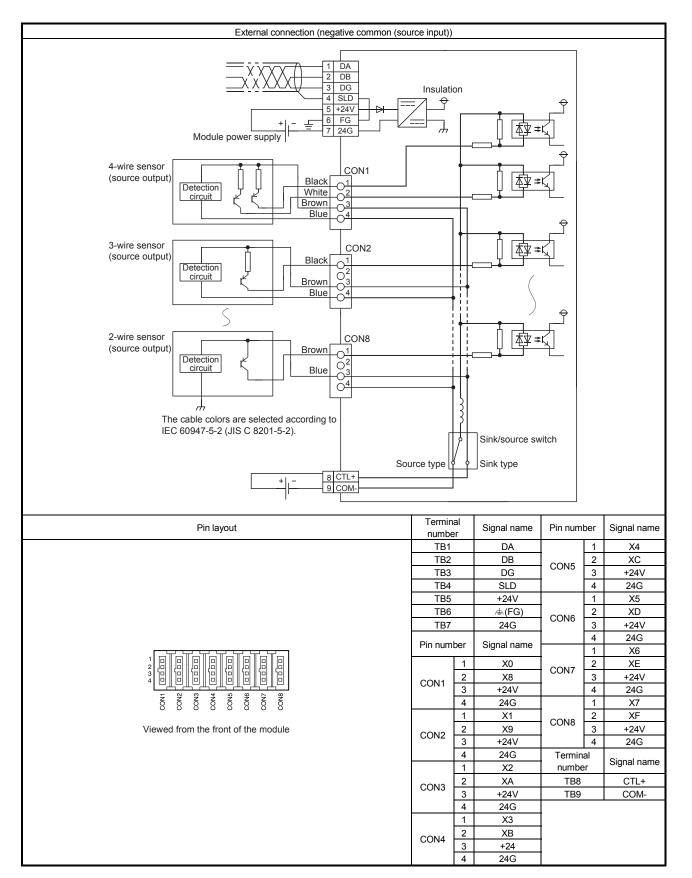




4.4.2 AJ65SBTC4-16D 24VDC input module (positive common (sink), negative common (source) loading)

		_	Туре	DC input module				
ltem				AJ65SBTC4-16D	Appearance			
Number of input points				16 points				
Isolation method				Photocoupler				
Rated input	it voltage			24VDC				
Rated input	it current			Approx. 5mA				
Operating v	voltage range	е		19.2 to 26.4VDC (ripple ratio: within 5%)				
Max. numb	per of simulta	ineous input p	points	100%				
ON voltage	e/ON current			14VDC or higher/3.5mA or higher				
OFF voltag	ge/OFF curre	nt		6VDC or lower/1.7mA or lower				
Input resist	tance			Approx. 4.7kΩ				
Response	time	OF	F→ON	1.5ms or less (at 24VDC)				
-		ON	I→OFF	1.5ms or less (at 24VDC)				
Wiring met	hod for comr	mon		16 points/common (4-wire, one-touch connector type)				
Input type				Positive/negative common shared type (sink/source shared type)				
				(Selected using the switch.)				
Number of	occupied sta	ations		32-point assignment/station (16 points used)				
Module pov	wer supply	Vol	tage	20.4 to 26.4VDC (ripple ratio: within 5%)				
		Cu	rrent	35mA or lower (at 24VDC and all points ON)				
Noise imm	unity			Noise voltage 500Vp-p, noise width 1µs,				
	-			noise frequency 25 to 60Hz (DC type noise simulator condition)				
Withstand	voltage			500VAC for 1 minute between all DC external terminals and ground				
Insulation r	resistance			10M Ω or higher between all DC external terminals and ground (500VDC				
				insulation resistance tester)				
Protection	degree			IP2X				
Weight				0.15kg				
External	Com	munication p	oart,	7-point two-piece terminal block				
connection	n mod	ule power su	pply part	[Transmission circuit, module power supply, FG]				
system				M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
				Applicable solderless terminal: 2 or less				
	I/O p	ower supply	part	2-point direct-mount terminal block				
				[I/O power supply]				
				M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
				Applicable solderless terminal: 2 or less				
	I/O p	bart		Dedicated one-touch connector [I/O signals]				
				4-pin IDC plug is sold separately.	4			
ivioaule mo	ounting screw	v		M4 screw with plain washer finished round				
				(tightening torque range: 0.78 to 1.08N•m)				
Applicable DIN rail				Mountable with a DIN rail in 6 orientations	-			
Applicable		tion part	Applicable	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	-			
Applicable wire size	Communica module pov	•	Applicable solderless	RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm ²]				
WIIC SIZE	part	ver suppry	terminal	• V2-MS3, RAP2-3SL, TGV2-3N				
	I/O power s	unnly nart	(Criminal	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]				
		αρριγ ραιτ	1	41.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	-			
				[Applicable wire size: 0.14 to 0.2mm ²]				
1	I/O part			41.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)				
				ψ				
				[Applicable wire size: 0.3 to 0.5mm ²]				

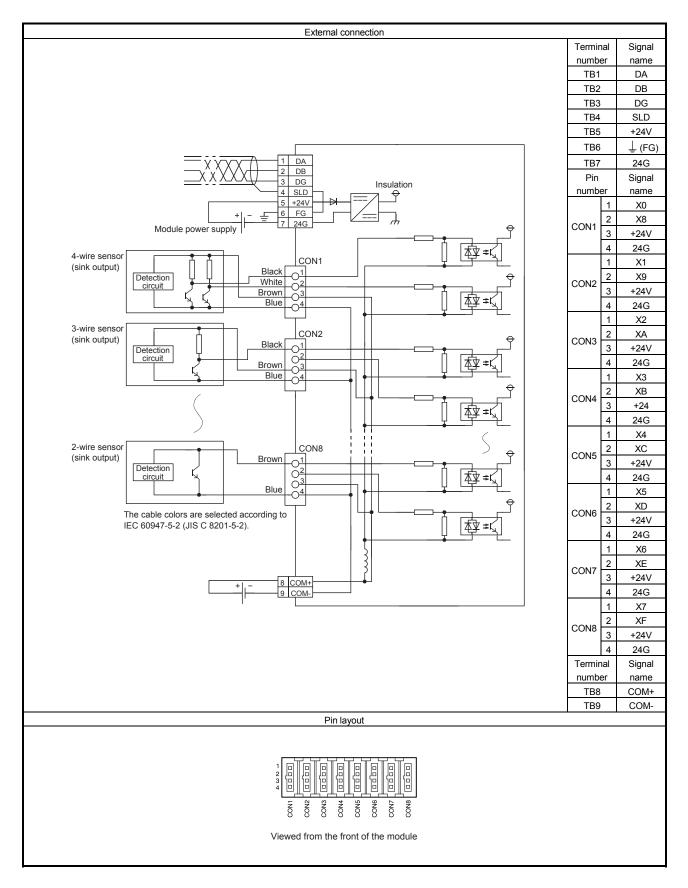




4.4.3 AJ65SBTC4-16DN 24VDC input module (positive common (sink type))

			Туре	DC input module				
Specification			- ype	AJ65SBTC4-16DN	Appearance			
Number of input points				16 points				
Isolation met				Photocoupler				
Rated input v				24VDC	•			
Rated input of				Approx. 5mA	•			
Operating vo				19.2 to 26.4VDC (ripple ratio: within 5%)				
	r of simultaneous ir	input poi	nts	100%				
ON voltage/0		input po.		14VDC or higher/3.5mA or higher	•			
Ŭ	/OFF current			6VDC or lower/1.7mA or lower				
Input resistar				Approx. 4.7kΩ				
Response tin		DFF→OI	N	1.5ms or less (at 24VDC)				
		N→OF		1.5ms or less (at 24VDC)				
Wiring metho	od for common		•	16 points/common (4-wire, one-touch connector type)				
Input type				Positive common (sink type)				
	ent for connected de	evice		1.0A or lower/common	1			
	ccupied stations			32-point assignment/station (16 points used)				
Module powe		/oltage		20.4 to 26.4VDC (ripple ratio: within 5%)				
		Current		35mA or lower (at 24VDC and all points ON)				
Noise immur				Noise voltage 500Vp-p, noise width 1μ s,				
				noise frequency 25 to 60Hz (DC type noise simulator condition)				
Withstand vo	oltage			500VAC for 1 minute between all DC external terminals and ground				
Insulation res				$10M\Omega$ or higher between all DC external terminals and ground (500VDC				
				insulation resistance tester)				
Protection de	egree			IP2X				
Weight	0			0.15kg				
External	Communication p	oart,		7-point two-piece terminal block				
connection	module power sup		t	[Transmission circuit, module power supply, FG]				
system				M3×5.2 screw (tightening torque range:0.59 to 0.88N•m)				
				Applicable solderless terminal: 2 or less				
	I/O power supply	part		2-point direct-mount terminal block				
				[I/O power supply]				
				M3×5.2 screw (tightening torque range:0.59 to 0.88N•m)				
				Applicable solderless terminal: 2 or less				
	I/O part			Dedicated one-touch connector [I/O signals]				
				4-pin IDC plug is sold separately.				
Module mou	nting screw			M4 screw with plain washer finished round				
				(tightening torque range: 0.78 to 1.08N•m)				
A I' =				Mountable with a DIN rail in 6 orientations				
Applicable D		. 1		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)				
	Communication par			• RAV1.25-3 (compliant with JIS C 2805)				
	module power supp							
l/	/O power supply pa	art	terminal	• V2-MS3, RAP2-3SL, TGV2-3N				
	/O port			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire] \$\overline{1.0}\$ to 1.4 (A6CON-P214), \$\overline{1.4}\$ to 2.0 (A6CON-P220)				
1/	I/O part			φ1.0 to 1.4 (AbCON-P214), φ1.4 to 2.0 (AbCON-P220) [Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]				
				41.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)				
				[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]				
Wire	Material							
-	Material Temperature rating			Copper 75°C or more	+ +			

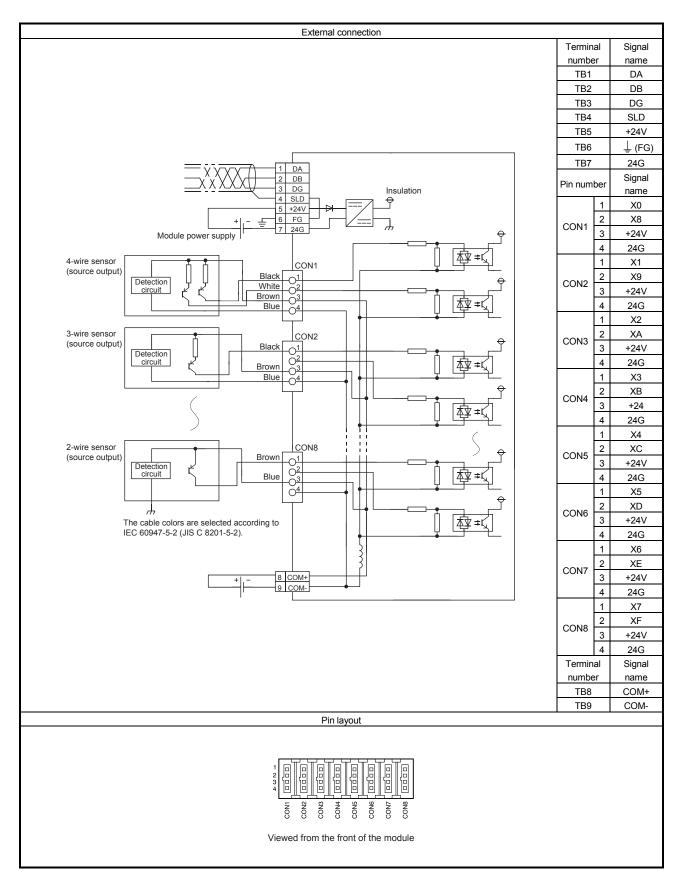
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



4.4.4 AJ65SBTC4-16DE 24VDC input module (negative common (source type))

			Туре	DC input module	· · · · · · · · · · · · · · · · · · ·				
Specificatio	on			AJ65SBTC4-16DE	Appearance				
Number of	input points			16 points					
Isolation me				Photocoupler	1				
Rated input				24VDC	1				
Rated input				Approx. 5mA	1				
	voltage range			19.2 to 26.4VDC (ripple ratio: within 5%)	1				
	er of simultaneou	s input po	oints	100%	1				
	/ON current			14VDC or higher/3.5mA or higher	1				
	e/OFF current			6VDC or lower/1.7mA or lower	1				
Input resista				Approx. 4.7kΩ	1				
Response t	time	OFF→	NC	1.5ms or less (at 24VDC)	1				
•		ON→O		1.5ms or less (at 24VDC)	1				
Wiring meth	hod for common			16 points/common (4-wire, one-touch connector type)	1				
Input type				Negative common (source type)	1				
	rent for connected	device		1.0A or lower/common]				
	occupied stations			32-point assignment/station (16 points used)					
Module pov		Voltage)	20.4 to 26.4VDC (ripple ratio: within 5%)					
		Current	t	35mA or lower (at 24VDC and all points ON)					
Noise immu	unity			Noise voltage 500Vp-p, noise width 1µs,					
				noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand v	voltage			500VAC for 1 minute between all DC external terminals and ground					
Insulation r	esistance			10M Ω or higher between all DC external terminals and ground (500VDC					
				insulation resistance tester)					
Protection of	degree			IP2X					
Weight				0.15kg					
External	Communication	ı part,		7-point two-piece terminal block					
connection	module power s	supply pa	irt	[Transmission circuit, module power supply, FG]					
system				M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)					
				Applicable solderless terminal: 2 or less					
	I/O power supp	ly part		2-point direct-mount terminal block					
				[I/O power supply]					
				M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)					
	1/O mant			Applicable solderless terminal: 2 or less					
	I/O part			Dedicated one-touch connector [I/O signals] 4-pin IDC plug is sold separately.					
Modulo mo	unting scrow			M4 screw with plain washer finished round					
	unting screw			(tightening torque range: 0.78 to 1.08N•m)					
				Mountable with a DIN rail in 6 orientations					
Applicable	DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	1				
	Communication p	part	Applicable	• RAV1.25-3 (compliant with JIS C 2805)	1				
				[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]					
	I/O power supply		terminal	• V2-MS3, RAP2-3SL, TGV2-3N					
	s perior ouppiy	F	-	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]					
	I/O part		•	φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	1				
				[Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]					
				φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)					
				[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]					
Wire	Material			Copper					
	Temperature rating			75°C or more					
Accessory				User's manual					

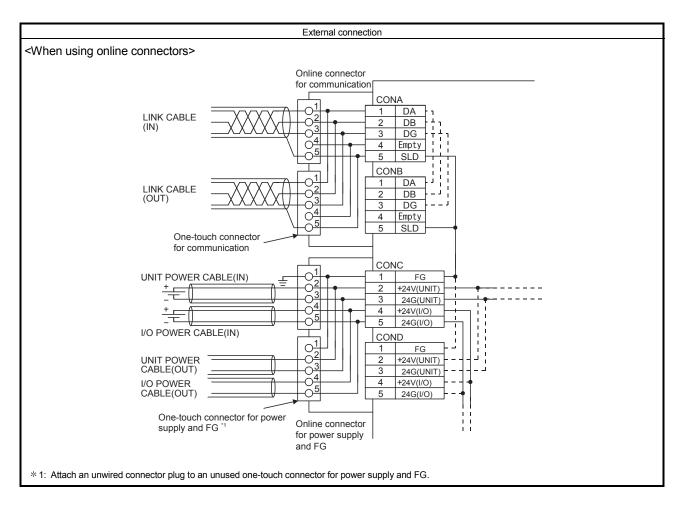
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



4.4.5 AJ65VBTCU3-16D1 24VDC input module (positive common (sink type))

/	Туре	DC input module	
Item		AJ65VBTCU3-16D1	Appearance
Number of input points		16 points	
Isolation method		Photocoupler	
Rated input voltage		24VDC	
Rated input current		Approx. 5mA	-
Operating voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	
	er of simultaneous	100%	
input points			
ON voltage/	ON current	15VDC or higher/3mA or higher	
	e/OFF current	3VDC or lower/0.5mA or lower	-
Input resista		Αρριοχ. 4.7kΩ	
Response ti		0.2ms or less (at 24VDC)	
iveshouse m	ON→OFF	0.2ms or less (at 24VDC)	
\\/:			
ě	od for common	16 points/common (3-wire, one-touch connector type)	MELSEG AJ65VBTCU3-16D1
Input type		Positive common (sink type)	
	ent for connected	1.0A or lower/common	A L
device			
	occupied stations	32-point assignment/station (16 points used)	
Module pow	Ŭ	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	40mA or lower (at 24VDC and all points ON)	
Noise immu	nity	Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand vo	oltage	500VAC for 1 minute between all DC external terminals and ground	
Insulation re	sistance	10M Ω or higher between all DC external terminals and ground (500VDC	
		insulation resistance tester)	
Protection d	egree	IP1XB	
Weight		0.19kg	
External	Communication	One-touch connector for communication [Transmission circuit]	
connection	part	5-pin IDC plug is sold separately.	
system		<optional></optional>	
		Online connector for communication: A6CON-LJ5P	X0~X7 X8~XF F °
	Power supply	One-touch connector for power supply and FG	
	part	[Module power supply, I/O power supply, FG]	
		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
		<optional></optional>	
		Online connector for power supply: A6CON-PWJ5P	D CC-Link
	I/O part	One-touch connector for I/O	
		4-pin IDC plug is sold separately.	
Applicable D	DIN rail	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable	Connector for	Applicable cable:	
wire size	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector for	0.66 to 0.98mm ² (18 AWG)	
	power supply	[\phi2.2 to 3.0mm (A6CON-PW5P), \phi2.0 to 2.3mm (A6CON-PW5P-SOD)]	
	and FG	Wire diameter: 0.16mm or more	
		Insulating coating material: PVC (heat-resistant)	
	Connector for	φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	
	1/O	[Applicable wire size: 0.14 to 0.2 mm ²]	
		φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)	
		[Applicable wire size: 0.3 to 0.5 mm ²]	
Accessory		User's manual	

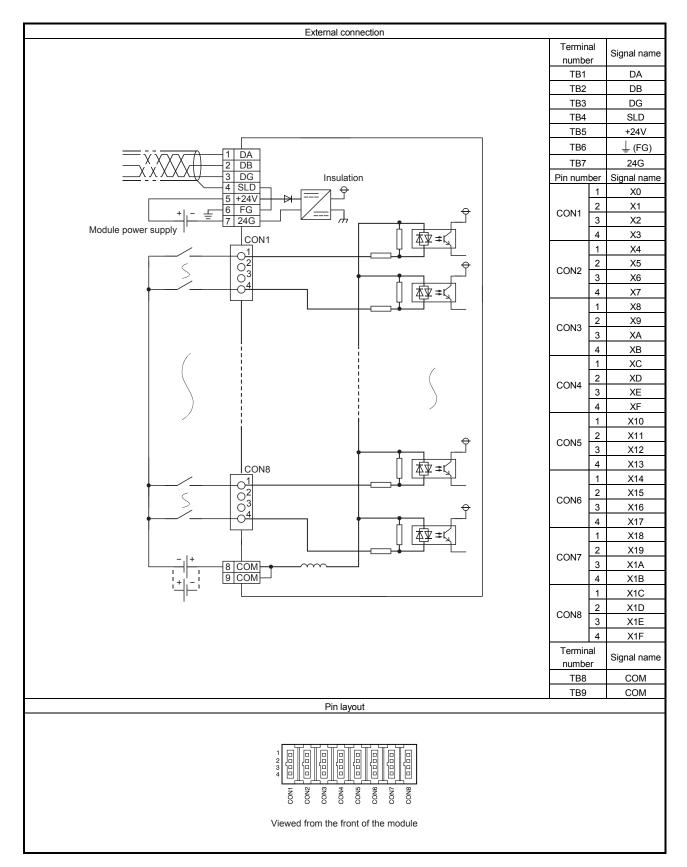
External connection			
	Pin layout	Pin	Signal name
	- I intrayout	number 1	DA
		CON 3	DG
		A, D 4	
		CON 2	X0
		1 3	+24V
		4	X1
CONA		CON 2 2 3	
LINK CABLE O_{3}^{1} D_{4}^{1} O_{3}^{1} O_{3}		4	-
$\begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $		CON 2 3 3	
		4	24G
LINK CABLE $\begin{array}{c} 2 \\ (OUT) \end{array}$		CON 2	2 +V
Ore-touch connector for communication		4 3	24G
CONC		CON 2	
UNIT POWER CABLE(IN) $= O_2^1 + 2424/(UNIT)$ $= O_3^2 + 2424/(UNIT)$ $= O_3^2 + 2424/(UNIT)$		5 3	
+ $ -$	54321	1 CON 2	X5
		6 3	+24V
$ \begin{array}{ c c c c c } \hline O_{\pm}^{4} & \pm 24V(UNT) \\ \hline O_{\pm}^{4} & 4 & \pm 24V(UO) \\ \hline O_{\pm}^{4} & 4 & \pm 24V(UO) \\ \hline \end{array} $	CONB 4321 4321	4	X6
I/O POWER CABLE(OUT)		CON 2 7 3	+24V
One-touch connector for power supply and FG ⁺¹		4	
3-wire sensor $\begin{array}{c c} CON1 \\ Black \\ P \\ Brown \\ 2 \end{array}$		CON 2 8 3	
(sink output)	CON4 CON5 CON5 CON5 CON5	4	24G
		CON 2 9 3	+V
2-wire sensor (sink output)		4	24G
		CON 2	+V
	5 4 3 2 1 CONC	10 <u>3</u> 4	
	COND	CON 2	
	Viewed from the front of the module	11 <u>3</u> 4	+24V 24G
		1 CON 2	XB
		12 3	+24V
		1 CON 2	XC
		13 3	+24V
		4	XD
		CON 2 14 3	+24V
		4	XE
		CON 2 15 3	+V
		4	24G
		CON 2	2 +V
		16 <u>3</u>	
		1	= (- /
* 1: Attach an unwired connector plug to an unused one-touch connector for power supply		CON 2 C, D 3	24G (UNIT)
and FG.		4	



4.4.6 AJ65SBTC1-32D 24VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module			
Item			AJ65SBTC1-32D	Appearance		
Number of	input points		32 points			
Isolation method			Photocoupler			
Rated inpu	it voltage		24VDC			
Rated input current			Approx. 5mA			
Operating	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)			
			80%			
ON voltage/ON current			14VDC or higher/3.5mA or higher	1		
OFF voltage/OFF current			6VDC or lower/1.7mA or lower	1		
Input resistance			Approx. 4.7kΩ	1		
Response	time	OFF→ON	1.5ms or less (at 24VDC)	1		
		ON→OFF	1.5ms or less (at 24VDC)	1		
Wiring met	thod for common		32 points/common (2 points) (1-wire, one-touch connector type)	1		
Input type			Positive/negative common shared type (sink/source shared type)			
	occupied stations		32-point assignment/station (32 points used)			
	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)			
		Current	45mA or lower (at 24VDC and all points ON)			
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,			
			noise frequency 25 to 60Hz (DC type noise simulator condition)			
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground			
Insulation i			$10M\Omega$ or higher between all DC external terminals and ground (500VDC			
			insulation resistance tester)			
Weight			0.16kg			
External	Communication pa	art.	7-point two-piece terminal block			
connection	module power sup		[Transmission circuit, module power supply, FG]			
system			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
-			Applicable solderless terminal: 2 or less			
	I/O power supply p	part	2-point direct-mount terminal block			
			[I/O power supply]	2001234567 2001234567 X101123141516173 MBL888 Aust MBL888 Aust M		
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
			Applicable solderless terminal: 2 or less			
	I/O part		Dedicated one-touch connector [I/O signals]			
			4-pin IDC plug is sold separately.			
Module mo	ounting screw		M4 screw with plain washer finished round			
			(tightening torque range: 0.78 to 1.08 N•m)			
			Mountable with a DIN rail in 6 orientations			
Applicable			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	4		
	Communication pa	· · · ·	RAV1.25-3 (compliant with JIS C 2805)			
wire size	module power sup		[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]			
	part	terminal	• V2-MS3, RAP2-3SL, TGV2-3N			
	I/O power supply p	part	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4		
	I/O part		φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)			
			[Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]			
			φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)			
			[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]	-		
Wire	Material		Copper	4		
Temperature rating			75°C or more	4		
Accessory			User's manual			

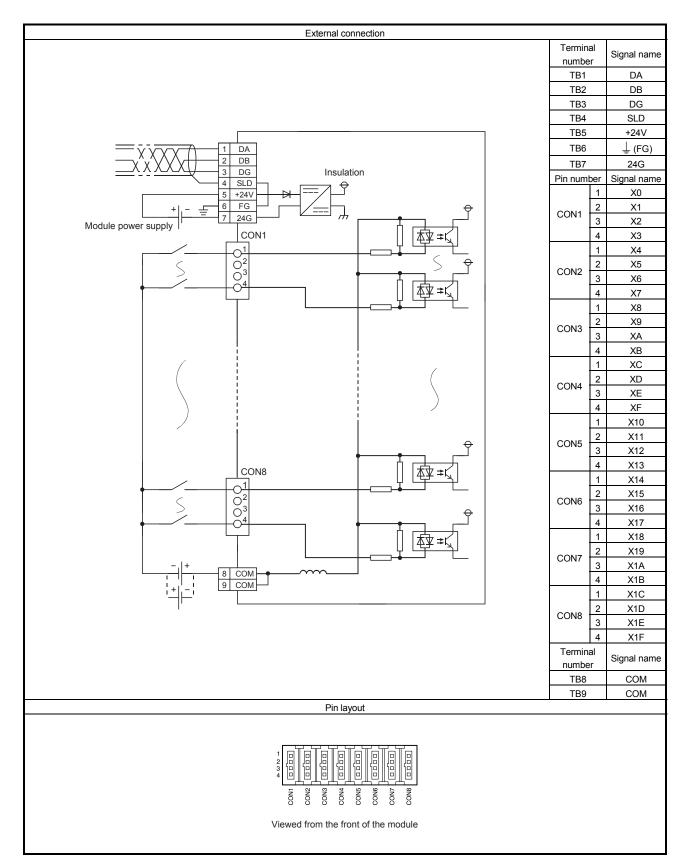
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



4.4.7 AJ65SBTC1-32D1 24VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module			
Item			AJ65SBTC1-32D1	Appearance		
Number of	input points		32 points			
Isolation method			Photocoupler			
Rated input voltage			24VDC	Ĭ		
Rated input	t current		Approx. 5mA			
Operating v	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Ţ		
Max. numb	per of simultaneous inpu	it points	100%]		
ON voltage	e/ON current		15VDC or higher/3mA or higher			
OFF voltage/OFF current			3VDC or lower/0.5mA or lower			
Input resist	ance		Approx. 4.7kΩ			
Deeneneed	time	OFF→ON	0.2ms or less (at 24VDC)			
Response	ume	ON→OFF	0.2ms or less (at 24VDC)			
Wiring met	hod for common		32 points/common (2 points) (1-wire, one-touch connector type)			
Input type			Positive/negative common shared type (sink/source shared type)			
Number of	occupied stations		32-point assignment/station (32 points used)			
	•	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)			
Modulepow	ver supply	Current	45mA or lower (at 24VDC and all points ON)			
			Noise voltage 500Vp-p, noise width 1µs,			
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)			
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground			
			10M Ω or higher between all DC external terminals and ground (500VDC			
Insulation r	resistance		insulation resistance tester)			
Protection of	degree		IP2X			
Weight	*		0.16kg			
External	Communication part,		7-point two-piece terminal block	XI31314 XI314 XI31 XI314 XI314		
connection		oart	[Transmission circuit, module power supply, FG]			
system	inocale ponel cappiy part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
-			Applicable solderless terminal: 2 or less			
	I/O power supply part		2-point direct-mount terminal block			
			[I/O power supply]			
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
			Applicable solderless terminal: 2 or less			
	I/O part		Dedicated one-touch connector [I/O signals]			
			4-pin IDC plug is sold separately.			
Module mo	ounting screw		M4 screw with plain washer finished round			
			(tightening torque range: 0.78 to 1.08N•m)			
			Mountable with a DIN rail in 6 orientations	<u>_</u>		
Applicable	DIN rail	1	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_		
Applicable	Communication part,	Applicable	RAV1.25-3 (compliant with JIS C 2805)			
wire size	module power supply	solderless	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]			
	part	terminal	• V2-MS3, RAP2-3SL, TGV2-3N			
	I/O power supply part		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4		
	I/O part		φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)			
			[Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]			
			φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)			
			[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]	4		
Wire	Material		Copper	4		
Temperature rating			75°C or more	4		
Accessory			User's manual			

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



4.5 FCN Connector Type Input Module

4.5.1 AJ65SBTCF1-32D 24VDC input module (positive common (sink), negative common (source) loading)

		Туре	DC input module		
Item			AJ65SBTCF1-32D	Appea	rance
Number of	input points		32 points		
Isolation method			Photocoupler	•	
Rated input voltage			24VDC	1	
Rated input	t current		Approx. 5mA	•	
Operating	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	•	
Max. numb	per of simultaneou	is input points	100%	1	
ON voltage	e/ON current		14VDC or higher/3.5mA or higher	1	
OFF voltag	ge/OFF current		6VDC or lower/1.7mA or lower	•	
Input resist	ance		Approx. 4.7kΩ	•	
Response	time	OFF→ON	1.5ms or less (at 24VDC)	1	
		ON→OFF	1.5ms or less (at 24VDC)	1	
Wiring met	hod for common		32 points/common (1-wire, FCN connector type)		
Input type			Positive/negative common shared type (sink/source shared type)		
Number of	occupied stations	3	32-point assignment/station (32 points used)	S T	
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		0 0 0
		Current	45mA or lower (at 24VDC and all points ON)	X1F NC	0 0
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,	40 20 11d 8 4 2 40 20 11d 8 4 2	0 0
	-		noise frequency 25 to 60Hz (DC type noise simulator condition)		0 0 0
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	9 XX	000
Insulation r	resistance		10M Ω or higher between all DC external terminals and ground (500VDC	20-XF CO XIE X0-XF CO XIE X0-XF	
			insulation resistance tester)		
Protection	degree		IP2X	X8 9 A B C D E F C D E F D D D D D D D <thd <="" d<="" td=""><td></td></thd>	
Weight			0.15kg	B C B C 1810	00
External	Communication	part,	7-point two-piece terminal block	6 7 × 89 A B . 6 7 × 89 A B . 6 1 × 18191A181 1617 × 18191A181 A J658TCE1-132D A J658TCE1-132D A J658TCE1-132D	$ \circ $
connection	module power s	upply part	[Transmission circuit, module power supply, FG]	065587	
system			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	5 6 7 51617 AJ65	
			Applicable solderless terminal: 2 or less	2 3 4 1 1213 141 MEUSEG (FG)	
	I/O power supply	y part,	40-pin connector [I/O power supply, I/O signal]		10701
	I/O part		(A6CON1, A6CON2, A6CON3, A6CON4)	ERR X0 7 7101 X101 SLD	
Module mo	ounting screw		M4 screw with plain washer finished round		
			(tightening torque range: 0.78 to 1.08N•m)		- 0.0
			Mountable with a DIN rail in 6 orientations		
Applicable			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable		Applicable	• RAV1.25-3 (compliant with JIS C 2805)		
wire size	part,	solderless	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
	module power	terminal*1	• V2-MS3, RAP2-3SL, TGV2-3N		
	supply part		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
	I/O power supply	у рап,	• 0.08 to 0.3mm ² (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) ^{*2}		
	I/O part		 0.08 to 0.2mm² (28 to 24 AWG) stranded wire (A6CON2) 0.08mm² (28 AWG) stranded wire,		
Wire	Matorial				
vviie	Material	ing	Copper 75°C or more		
Amerikasist	Temperature rat	IIIG	75°C or more		
Applicable		odulo	A6TBXY36, A6TBXY54, A6TBX70		
	ock conversion m	ouule	Llear's manual		
Accessory			User's manual		

*1 For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*2 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

External connection					
	Pin layout	Termina	l number	Signa	l name
		TI	B1	[)A
		TI	B2	[)B
		TI	B3	C	G
$ \underbrace{- 4 \text{ SLD}}_{\text{SLD}} \xrightarrow{\text{Insulation}}_{\text{SLD}} \xrightarrow{\text{Insulation}}_$		TI	B4	S	LD
		TI	B5	+2	24V
		TI	B6	Ť	(FG)
Module power supply Module power supply	0	TI	B7	2	4G
	\bigcirc	Pin	Signal	Pin	Signal
B19 X1	A1 00 B1 A2 00 B2	number	name	number	name
B18 X2 B17 X3	A3 00 B3 A4 00 B4 A5 00 B5	B20	X0	A20	X10
B16 X4	A5 00 B5 A6 00 B6 A7 00 B7	B19	X1	A19	X11
B15 X5	A8 00 B8 A9 00 B9	B18	X2	A18	X12
B14 X6 B13 X7	A10 O O B10 A11 O O B11	B17 B16	X3 X4	A17 A16	X13 X14
B12 X8	A12 O O B12 A13 O O B13	B15	 X5	A10	X14
B11 X9 B10 XA	A14 O O B14 A15 O O B15	B13	X6	A14	X16
B10 XA B9 XB	A16 O O B16 A17 O O B17 A18 O O B18	B13	X7	A13	X10 X17
B8 XC	A18 O O B18 A19 O O B19 A20 O O B20	B12	X8	A12	X18
B7 XD B6 XE		B11	X9	A11	X19
B5 XF	0	B10	XA	A10	X1A
	Viewed from the	B9	XB	A9	X1B
A19 X11 A18 X12	front of the module	B8	XC	A8	X1C
A17 X13	module	B7	XD	A7	X1D
A16 X14 A15 X15		B6	XE	A6	X1E
A14 X16		B5	XF	A5	X1F
A13 X17		B4	Empty	A4	Empty
A12 X18 A11 X19		B3	Empty	A3	Empty
		B2	COM	A2	Empty
		B1	COM	A1	Empty
$\begin{array}{c c} A8 X1C \\ A7 X1D \\ \hline \end{array}$					

4.6 Waterproof Type Input Module

4.6.1 AJ65FBTA4-16D 24VDC input module (positive common (sink type))

	Туре	DC input module	
Item		AJ65FBTA4-16D	Appearance
Number of input points		16 points	
Isolation method		Photocoupler	
Rated input voltage		24VDC	
Rated input current		Approx. 7mA	
Operating voltage range		20.4 to 26.4VDC (ripple ratio: within 5%)	
Max. number of simultaneo	ous input points	100%	
ON voltage/ON current		14VDC or higher/3.5mA or higher	MELSEC ARSTITAT-60
OFF voltage/OFF current		6VDC or lower/1.7mA or lower	
Input resistance		Approx. 3.3kΩ	STATUM MC. PAVG () A AA STATUM MC. STATUM ACTION STATUM STATUM ACTION STATUM STATUM STATUM ACTION STATUM S
Response time	OFF→ON	1.5ms or less (at 24VDC)	지 100 00 100 지 100 00 100 지 100 00 10 10 지 100 00 10 10
	ON→OFF	1.5ms or less (at 24VDC)	UNIT POWER AUX.
Wiring method for commor	ı	16 points/common (2- to 4-wire, waterproof connector type)	
Input type		Positive common (sink type)	
Supply current for connected	ed device	1.0A of lower/common	
Number of occupied station	าร	32-point assignment/station (16 points used)	
Module power supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
	Current	40mA or lower (at 24VDC and all points ON)	
Noise immunity		Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation resistance		$10 M\Omega$ or higher between all DC external terminals and ground (500VDC	
		insulation resistance tester)	
Protection degree		IP67	
Weight		0.40kg	
Accessory		User's manual	
Optional item		Waterproof cap: A6CAP-WP2 (20 pieces)	
Other connecting devices		Refer to Section 1.6.1.	

External connection							
	Pin layout		Connec	tor for co	omm	nunica	ation
		Pi num		.INK IN		LI	NK OUT
		1		SLD			SLD
		2		DB			DB
		3		DG			DG
		4		DA			DA
		5	1	No pins			Empty
Terminating resistor			Conne	ctor for p	owe	er sup	oply
setting switch	LINK IN	Pi num	UNI	T POWE	R		AUX.
ř	Male	1	+24	4V(UNIT)	+)	24V(I/O)
	(20 o1)	2		Empty			Empty
	30 04	3	24	G(UNIT))	2	4G(I/O)
		4		Empty			Empty
Module mounting screw (FG)	LINK OUT	5		<u> </u>			⊥_ (FG)
, j	Female		C	Connector for		or I/O	
AUX.	$\left(\left(\begin{pmatrix} 10 & 02 \\ 4 & 05 \\ 0 & 03 \end{pmatrix} \right) \right)$	Pi	n Sig	gnal	Pi	n	Signal
		num	ber na	ime i	num	ber	name
Connector for I/O	UNIT POWER/AUX.		1 +2	24V	Ļ	1	+24V
\bigcirc_{4}^{2} \bigcirc_{4}^{2} \bigvee_{2}^{3} \bigcirc_{2}^{2}	Male	X0		(1	<u>X8</u> X9	2	X9
4-wire sensor		<u>X0</u> X1				3	24G
				(0	Ļ	4	X8
				npty		5	Empty
	I/O connector	-		24V	Ļ	1	+24V
	(10 of) Feinale	X2		(3)	XA XB	2	XB
(sink output) \square \square Black $\land A$	(4° ° ° 3	<u>X2</u> X3			KB	3	24G
				(2	ł	4	XA
	Front view			npty		5	Empty
				24V (5	┢	1	+24V XD
		<u>X4</u> X5		4G 2		2	24G
2-wire sensor (sink output) Brown 4		X5		4 <u>6</u>)	KD -	4	Z4G XC
Detection 2 $4 \neq 1$		†		npty	1	5	Empty
				24V	┢──╁	1	+24V
		†		(7	t	2	XF
		<u>X6</u> X7		4G 3	KE KF	3	24G
		~		(6)		4	XE
				npty	t	5	Empty
	·						

4.6.2 AJ65FBTA4-16DE 24VDC input module (negative common (source type))

	Туре	DC input module	
Item		AJ65FBTA4-16DE	Appearance
Number of input points		16 points	
Isolation method		Photocoupler	1
Rated input voltage		24VDC	
Rated input current		Approx. 7mA	
Operating voltage range		20.4 to 26.4VDC (ripple ratio: within 5%)	
Max. number of simultane	eous input points	100%	
ON voltage/ON current		14VDC or higher/3.5mA or higher	MELSEC AJ65FBTA4-16DE
OFF voltage/OFF current		6VDC or lower/1.7mA or lower	
Input resistance		Approx. 3.3kΩ	51/41 LUN NUL & & & & & & & & & & & & & & & & & & &
Response time	OFF→ON	1.5ms or less (at 24VDC)	
	ON→OFF	1.5ms or less (at 24VDC)	UNIT PUVER) (AUX. XTO OXF
Wiring method for commo	on	16 points/common (2- to 4-wire, waterproof connector type)	
Input type		Negative common (source type)	
Supply current for connect	cted device	1.0A or lower/common	
Number of occupied station	ons	32-point assignment/station (16 points used)	
Module power supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
	Current	40mA or lower (at 24VDC and all points ON)	
Noise immunity		Noise voltage 500Vp-p, noise width 1µs,	
Withstand voltage		noise frequency 25 to 60Hz (DC type noise simulator condition) 500VAC for 1 minute between all DC external terminals and ground	
Insulation resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Protection degree		IP67	
Weight		0.40kg	
Accessory		User's manual	
Optional item		Waterproof cap: A6CAP-WP2 (20 pieces)	
Other connecting devices	;	Refer to Section 1.6.1.	<u> </u>

External connection						
	Pin layout	Co	nnector for	comn	nunica	ation
		Pin number	LINK IN		LINK	OUT
		1	SLD		SL	D
		2	DB		D	В
		3	DG		D	G
		4	DA		D	A
		5	No pins		Em	pty
			onnector fo	r pow	er sup	ply
		Pin	UNIT		AL	IX.
O 1 setting switch		number	POWER			
	LINK IN	1	+24V		+24V	′(I/O)
Insulation	Male	2	(UNIT)		Em	pt.
		2	Empty 24G		Em	μιγ
		3	(UNIT)		24G	(I/O)
Module mounting screw (FG)	LINK OUT	4	Empty		Em	pty
	Female	5	⊥_ (FG)		1	FG)
AUX. = 1	$\begin{pmatrix} \begin{pmatrix} 10 & 02 \\ 4 & 05 & 3 \end{pmatrix} \end{pmatrix}$		Connec	tor for		
		Pin	Signal	Р		Signal
	UNIT POWER/AUX.	number	name	num	nber	name
\forall $ _{\frac{1}{2}}$	Male	1	+24V		1	+24V
4-wire sensor (source output)	$\left\langle \left(\begin{pmatrix} 2^{\circ} & \circ 1 \\ 3^{\circ} & \circ 5 \\ 3^{\circ} & \circ 4 \end{pmatrix} \right) \right\rangle$	X0 2	X1	¥8	2	X9
		X0 X1 3	24G	<u>X8</u> X9	3	24G
	I/O connector	4	X0		4	X8
	Female	5	Empty		5	Empty
(source output)	$\left(\left(\begin{array}{c}1^{\circ}&\circ^{02}\\4^{\circ}&\circ^{5}&3\end{array}\right)\right)$	1	+24V		1	+24V
		$\frac{X2}{X3}$ 3	X3	XA XB	2	XB 24G
	Example 1	X3 3	24G X2	XB	3	Z4G XA
	Front view	5	Empty		5	Empty
		1	+24V		1	+24V
2-wire sensor		2	X5		2	XD
(source output)		$\frac{X4}{X5}$ 3	24G	XC XD	3	24G
		4	X4		4	XC
		5	Empty		5	Empty
		1	+24V		1	+24V
		2	X7	VE	2	XF
		X6 X7 3	24G	XE XF	3	24G
		4	X6		4	XE
		5	Empty		5	Empty

4.6.3 AJ65SBTW4-16D 24VDC input module (positive common (sink), negative common (source) loading)

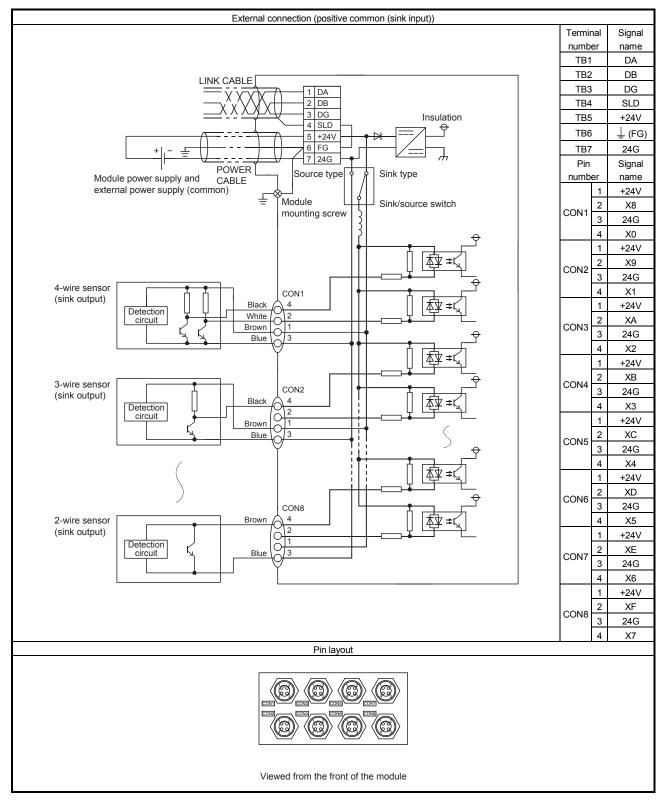
		Туре	DC input module	
Item			AJ65SBTW4-16D	Appearance
Operating a	ambient tempera	ature	0 to 45°C	
Storage am	ibient temperatu	ıre	-20 to 65°C ^{*1*3}	
Storage ambient temperature Number of input points Isolation method			16 points	
Isolation method			Photocoupler	
Rated input voltage			24VDC	
Rated input current			Approx. 5mA	
Operating voltage range			20.4 to 26.4VDC (ripple ratio: within 5%)	
Max. numb points	Max. number of simultaneous input		100%	
ON voltage	/ON current		14VDC or higher/3.5mA or higher	
OFF voltage	e/OFF current		6VDC or lower/1.7mA or lower	
Input resista	ance	r	Approx. 4.7kΩ	
Response t	ime	OFF→ON	1.5ms or less (at 24VDC)	
псезропвет	line	ON→OFF	1.5ms or less (at 24VDC)	
Wiring meth	nod for commor	1	16 points/common (4-wire, waterproof connector type)	
			Same as that for the module power supply	
Input type			Positive/negative common shared type (sink/source shared type)	
			(Selected using the switch.)	
Number of	occupied statior	าร	32-point assignment/station (16 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pov	ver supply	Current	35mA or lower (at 24VDC and all points ON),	
			excluding input current for I/O part	
Noise immu	unity		Noise voltage 500Vp-p, noise width 1µs,	SNOD SNOD
			noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	/oltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation re	esistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	CONS
Protection of	degree		IP67	
Weight			0.70kg	
External co	nnection systen	1	7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Waterproof connector [compliant with IEC 60947-5-2, M12, male, 4 pins, IP67]	
			(connector for I/O) <optional> Dustproof cap: A6CAP-DC1 (20 pieces), waterproof cap: A6CAP-WP1 (20 pieces)</optional>	1. 100 POWER
	Module top-cov screw (M3)	er mounting	0.54 to 0.64N•m	
lightening	Module front-co screw (M3)	ver mounting	0.54 to 0.64N•m	
torque range ^{*2} Module mounting screw (M4 with plain washer finished round)		•	1.27 to 1.47N•m	
	Nut for pipe		0.99 to 1.48N•m	ļ
Applicable wire size	Communication module power I/O power supp	supply part,	Applicable cable size: ϕ 5.0 to 8.0mm • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm ²] • V2-MS3, RAP2-3SL, TGV2-3N	
	Osman attaction 1/0		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	ł
Accordent	Connector for I/	U	-	4
Accessory			User's manual, waterproof plug (2 pieces)	I

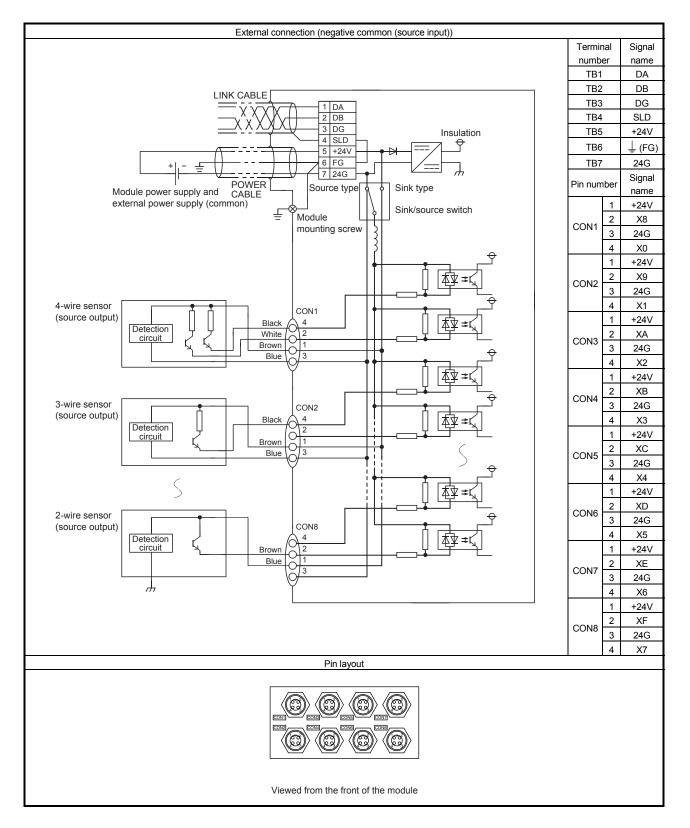
 \ast 1: Store the wired module in the ambient temperatures of -10 to 55°C.

* 2: Do not apply an excessive force (39N or more) to the connected cable at the inlet of the pipe.

 \pm 3: To use the wired module that has been stored exceeding the ambient temperature of 55°C, retighten the nuts.







This chapter describes the specifications for an output module that can be connected to the CC-Link system.

5.1 Terminal Block Type Output Module

5.1.1 AJ65SBTB1-8T transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65SBTB1-8T	Appearance
Number of	f output points		8 points	
Isolation method			Photocoupler	
Rated load voltage			12/24VDC	
Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	
Operating load voltage range Max. load current			0.5A/point, 2.4A/common	
Max. load current Max. inrush current			1.0A, 10ms or less	
Max. inrush current Leakage current at OFF			0.25mA or lower	7
	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	7
Output typ	° .		Sink type	7
Protection			Overload protection, overvoltage protection, overheat protection	1
		OFF→ON	0.5ms or less	-1
Response	time	ON→OFF	1.5ms or less (resistive load)	-1
Extornal p	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
output par		Current	15mA or lower (TYP. 24VDC/common), excluding external load current	
Surge sup		Guilent	Zener diode	
	thod for common		8 points/common (1-wire, terminal block type)	
Number of	f occupied station	1	32-point assignment/station (8 points used)	
Module po	ower supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
		Current	35mA or lower (at 24VDC and all points ON)	
Noise imm	nunity		Noise voltage 500Vp-p, noise width 1µs,	
			noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation	resistance		10M Ω or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	
Protection	degree		IP2X	
Weight			0.14kg	
			7-point two-piece terminal block	
	Communication	•	[Transmission circuit, module power supply, FG]	
External	module power s	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection	n		Applicable solderless terminal: 2 or less	
system	10		10-point direct-mount terminal block	
	I/O power supp I/O part	iy part,	[I/O power supply, I/O signal]	
	i/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
				-
Modulo m	ounting screw		M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)	
	Canting SCIEW		Mountable with a DIN rail in 6 orientations	
Applicable	Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	-1
, hhirenie			• RAV1.25-3 (compliant with JIS C 2805)	-1
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
Applicable	solderless termin	nal	• V2-MS3, RAP2-3SL, TGV2-3N	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Material		Copper	-1
	Temperature ra	tina	75°C or more	1
Accessory			User's manual	-1
, 10003301 y				

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

External connection Terminal number Signal name TB1 DA TB2 DB 1 DA 2 DB 3 DG 4 SLD 5 +24V тв3 DG Insulation TB4 SLD 9 TB5 +24V 6 FG 7 24G 1 + Module power supply TB6 <u>↓</u> (FG) 9 TB7 24G Load 8 Y0 TB8 Y0 ע≠ב R 9 Y1 10 Y2 11 Y3 12 Y4 13 Y5 ¥ I TB9 Y1 TB10 Y2 TB11 Y3 13 Y5 14 Y6 15 Y7 16 CTL+ 17 COM-Ŷ TB12 Y4 Load TB13 Y5 R External power supply for output part + Ъ TB14 Y6 本 \rightarrow TB15 Y7 TB16 CTL+ Load power supply TB17 COM-Constant-voltage circuit Load ----External power supply for output part and load power supply (common) 16 CTL+ 17 COM-

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5.1.2 AJ65SBTB1-8T1 transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65SBTB1-8T1	Appearance
Number of	output points		8 points	
Isolation method			Photocoupler	7
Rated load voltage			12/24VDC	-
Rated load voltage Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	-
Operating load voltage range Max. load current			0.5A/point, 2.4A/common	7
Max. load current Max. inrush current			1.0A, 10ms or less	7
Leakage c	urrent at OFF		0.1mA or lower	7
Max. voltag	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Output type	e		Sink type	
Protection	function		None	7
_		OFF→ON	0.5ms or less	
Response	time	ON→OFF	1.5ms or less (resistive load)	7
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	7
output part		Current	15mA or lower (TYP. 24VDC/common), excluding external load current	7
Surge supp	pressor		Zener diode	
	thod for common		8 points/common (1-wire, terminal block type)	
Number of	occupied station	S	32-point assignment/station (8 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module po	wer supply	Current	35mA or lower (at 24VDC and all points ON)	
			Noise voltage 500Vp-p, noise width 1µs,	
Noise imm	iunity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
			10M Ω or higher between all DC external terminals and ground (500VDC	
Insulation r	resistance		insulation resistance tester)	
Protection	degree		IP2X	
Weight			0.14kg	
			7-point two-piece terminal block	
	Communication	part,	[Transmission circuit, module power supply, FG]	
External	module power s	upply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection			Applicable solderless terminal: 2 or less	
system			10-point direct-mount terminal block	
System	I/O power suppl	y part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
			M4 screw with plain washer finished round	
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)	
			Mountable with a DIN rail in 6 orientations	_
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_
			• RAV1.25-3 (compliant with JIS C 2805)	
Applicable	Applicable solderless terminal		[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
			• V2-MS3, RAP2-3SL, TGV2-3N	
Wire	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
wile		ing	Copper 75°C or more	
A	Temperature rat	ung		
Accessory			User's manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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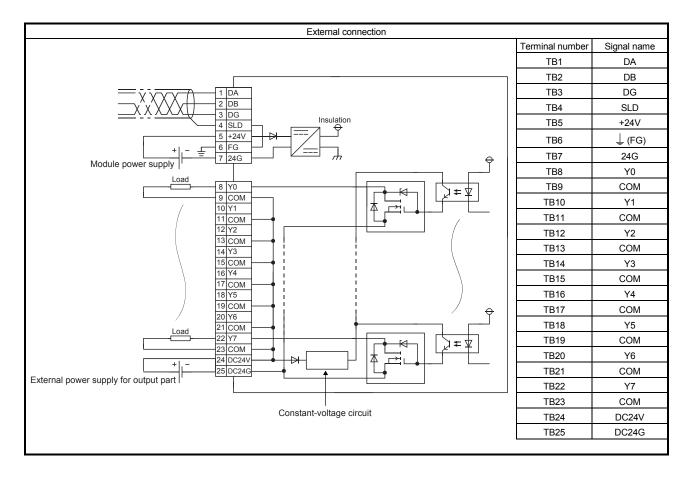
External connection Terminal number Signal name TB1 DA TB2 DB 1 DA 2 DB тв3 DG Х 3 DG 4 SLD 5 +24V Insulation TB4 SLD 9 TB5 +24V 6 FG 7 24G Module power supply Ē \mathbb{L} TB6 <u>↓</u> (FG) Ĵ TB7 24G Load TB8 Y0 8 Y0 9 Y1 10 Y2 11 Y3 12 Y4 ≱≉⊻ TB9 Y1 本 ⊥→ TB10 Y2 TB11 Y3 13 Y5 TB12 Y4 14 Y6 15 Y7 Load TB13 Y5 ז≠ע 16 CTL+ 17 COM-External power supply for output part TB14 Y6 7₩ **→+**| 本 TB15 Y7 L TB16 CTL+ Load power supply TB17 COM-Constant-voltage circuit Load External power supply for output part and load power supply (common) -16 CTL+ 17 COM-+|

5.1.3 AJ65SBTB2-8T transistor output module (sink type)

		Туре	Transistor output module		
Item			AJ65SBTB2-8T	Appea	arance
Number of	output points		8 points		
Isolation method			Photocoupler	1	
Rated load voltage			12/24VDC	1	
Rated load voltage Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	1	
Operating load voltage range Max. load current			0.5A/point, 2.4A/common	1	
Max. load current Max. inrush current			1.0A, 10ms or less	1	
	urrent at OFF		0.25mA or lower	1	
	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	1	
Output type			Sink type	1	
Protection			Overload protection, overvoltage protection, overheat protection	1	
_		OFF→ON	0.5ms or less	1	
Response	time	ON→OFF	1.5ms or less (resistive load)		
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	1 ()),	
output part	,	Current	17.8mA or lower (TYP. 24VDC/common), excluding external load current		
Surge sup		ounon	Zener diode		
	thod for common		8 points/common (2-wire, terminal block type)		
	occupied station		32-point assignment/station (8 points used)		
	occupied station	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
Module po	wer supply	Current	45mA or lower (at 24VDC and all points ON)		$ \cap \cap $
		ourient	Noise voltage 500Vp-p, noise width 1µs,		
Noise imm	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)	3	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	<u> </u>	
	Ŭ		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	- > -	
Insulation I	resistance		insulation resistance tester)	58BTB2-8T	
Protection	dearee		IP2X	Au658B182-81	
Weight	009.00		0.18kg		
Wolght			7-point two-piece terminal block	YOU 2 3 4 5 6 7 COL 2 3 4 5 6 7 MININS A MININS A L 240 240 240	
	Communication	n part.	[Transmission circuit, module power supply, FG]	2 3 2 MISI 24G	
	module power	•	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	R. Y01	
External			Applicable solderless terminal: 2 or less		
connection			18-point direct-mount terminal block		10-01
system	I/O power supp	ly part,	[I/O power supply, I/O signal]		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		· · · · · · ·
			M4 screw with plain washer finished round		
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations	4	
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	4	
			RAV1.25-3 (compliant with JIS C 2805)		
Applicable	solderless termi	nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
Applicable soldeness terminal			• V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4	
Wire	Material			4	
	Temperature ra	ating	75°C or more	4	
Accessory			User's manual		

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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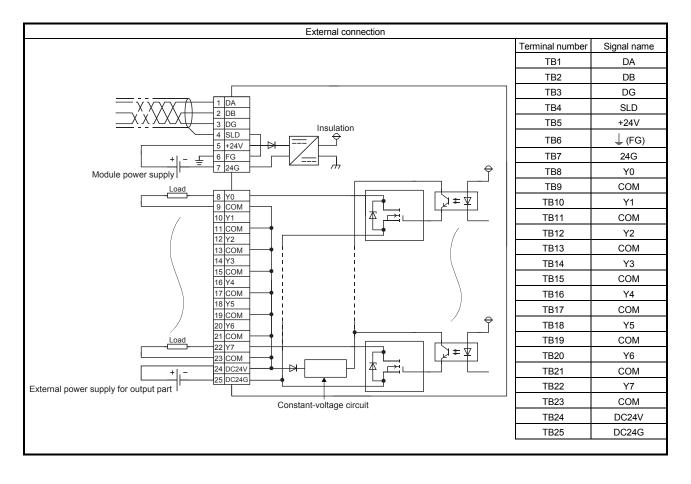


5.1.4 AJ65SBTB2-8T1 transistor output module (sink type)

		Туре	Transistor output module		
Item			AJ65SBTB2-8T1	Appear	ance
Number of	output points		8 points		
Isolation method			Photocoupler	1	
Rated load	voltage		12/24VDC	1	
Rated load voltage Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	1	
Operating load voltage range Max. load current			0.5A/point, 2.4A/common	1	
Max. load current Max. inrush current			1.0A, 10ms or less		
Leakage cu	urrent at OFF		0.1mA or lower		
Max. voltag	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	1	
Output type	8		Sink type		
Protection	function		None	1	
-		OFF→ON	0.5ms or less		
Response	time	ON→OFF	1.5ms or less (resistive load)		
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		
output part		Current	17.8mA or lower (TYP. 24VDC/common), excluding external load current	M PC24	
Surge supp			Zener diode		
	hod for common		8 points/common (2-wire, terminal block type)		
×.	occupied station		32-point assignment/station (8 points used)		$()^{-}()$
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
Module pov	wer supply	Current	45mA or lower (at 24VDC and all points ON)		10.01
			Noise voltage 500Vp-p, noise width 1µs,		
Noise imm	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)	3	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground		
			10M Ω or higher between all DC external terminals and ground (500VDC		
Insulation r	resistance		insulation resistance tester)	3TB2-6	
Protection	degree		IP2X		
Weight	*		0.18kg		
·			7-point two-piece terminal block	2 3 4 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Communication	n part,	[Transmission circuit, module power supply, FG]	1 24	
External	module power :	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	ERR. Y0	0-0 1 - 1
connection			Applicable solderless terminal: 2 or less		
system			18-point direct-mount terminal block		10.01
System	I/O power supp	ly part,	[I/O power supply, I/O signal]		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less	_	
			M4 screw with plain washer finished round		
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations	4	
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	4	
			• RAV1.25-3 (compliant with JIS C 2805)		
Applicable	solderless termi	nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	• V2-MS3, RAP2-3SL, TGV2-3N		
\A/iro	Motorial		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4	
Wire	Material	a that as	Copper 75°C or more	4	
A	Temperature ra	aung		4	
Accessory			User's manual		

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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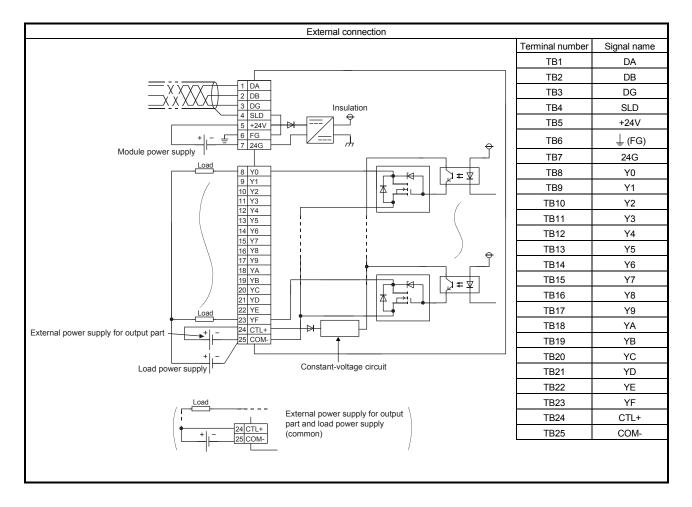


5.1.5 AJ65SBTB1-16T transistor output module (sink type)

		Туре	Transistor output module		
Item			AJ65SBTB1-16T	Appear	ance
Number of c	output points		16 points		
Isolation method			Photocoupler	_	
Rated load voltage			12/24VDC		
Rated load voltage Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)		
Operating load voltage range Max. load current			0.5A/point, 3.6A/common		
Max. load current Max. inrush current			1.0A, 10ms or less		
Leakage cu	rrent at OFF		0.25mA or lower		
Max. voltage	e drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Output type			Sink type		
Protection fu	unction		Overload protection, overvoltage protection, overheat protection		
D		OFF→ON	0.5ms or less		
Response ti	me	ON→OFF	1.5ms or less (resistive load)		
External Pov	wer supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		
output part		Current	30mA or lower (TYP. 24VDC/common), excluding external load current		020 1 2 1
Surge suppr	ressor	•	Zener diode		
Wiring meth	od for common	1	16 points/common (1-wire, terminal block type)		$()^{-}()$
Number of c	occupied station	IS	32-point assignment/station (16 points used)		
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		0.0
Module pow	er supply	Current	50mA or lower (at 24VDC and all points ON)		0.01
			Noise voltage 500Vp-p, noise width 1µs,		
Noise immu	nity		noise frequency 25 to 60Hz (DC type noise simulator condition)	⊱	$\Omega_{\alpha} = V$
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground	Y1 Y2 Y5	
			10M Ω or higher between all DC external terminals and ground (500VDC	19 19 19 19 19 19 19 19 19 19 19 19 19 1	$()^{-}()$
Insulation re	esistance		insulation resistance tester)	×10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Protection d	egree		IP2X	Auesstrat-ter Yo Y2 Y2 Auesstrat-ter Y2 Y2 Y2 Y3 Y3 Y3 Y3 Y3 Y3 Y3 Y3 Y3 Y3	
Weight	-		0.18kg		
			7-point two-piece terminal block	23 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Communication	on part,	[Transmission circuit, module power supply, FG]	+ (Fermine 1 = 2	1001
External	module powe	r supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	R. Y01	
connection			Applicable solderless terminal: 2 or less		(520)
system			18-point direct-mount terminal block		10-01
System	I/O power sup	oply part,	[I/O power supply, I/O signal]		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
			M4 screw with plain washer finished round		
Module mou	inting screw		(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable E	Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_	
			• RAV1.25-3 (compliant with JIS C 2805)		
Applicable s	olderless termi	nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
Wire	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire] Copper		
VVIIC	Temperature	rating	75°C or more		
Accord	remperature	rauny			
Accessory			User's manual		

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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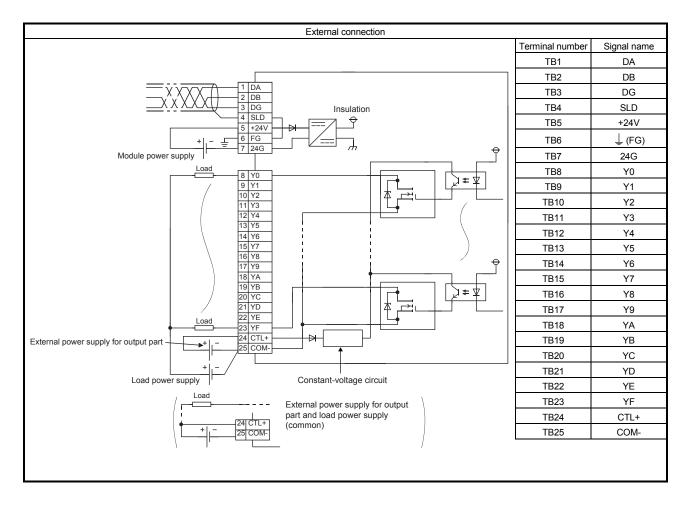


5.1.6 AJ65SBTB1-16T1 transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65SBTB1-16T1	Appearance
Number of	foutput points		16 points	
Isolation method			Photocoupler	7
Rated load	d voltage		12/24VDC	7
Operating	load voltage rang	e	10.2 to 26.4VDC (ripple ratio: within 5%)	7
Max. load	current		0.5A/point, 3.6A/common	7
Max. inrus	h current		1.0A, 10ms or less	7
Leakage c	urrent at OFF		0.1mA or lower	7
Max. volta	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	7
Output typ	e		Sink type	7
Protection			None	7
_		OFF→ON	0.5ms or less	7
Response	time	ON→OFF	1.5ms or less (resistive load)	
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
output parl		Current	30mA or lower (TYP. 24VDC/common), excluding external load current	
Surge sup			Zener diode	
	thod for common		16 points/common (1-wire, terminal block type)	
•	f occupied station	s	32-point assignment/station (16 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module po	wer supply	Current	50mA or lower (at 24VDC and all points ON)	
		ouncil	Noise voltage 500Vp-p, noise width 1µs,	
Noise imm	iunity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Withotana	voltage		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
Insulation	resistance		insulation resistance tester)	
Protection	dearee		IP2X	
Weight	augree		0.18kg	
rroigin			7-point two-piece terminal block	
	Communication	part	[Transmission circuit, module power supply, FG]	
	module power s	. ,	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
External			Applicable solderless terminal: 2 or less	
connection	ו		18-point direct-mount terminal block	
system	I/O power supp	ly part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
			M4 screw with plain washer finished round	
Module mounting screw			(tightening torque range: 0.78 to 1.08N•m)	
			Mountable with a DIN rail in 6 orientations	
Applicable	Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
			RAV1.25-3 (compliant with JIS C 2805)	
Applicable	solderless tormin	nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
Applicable solderless terminal		a	• V2-MS3, RAP2-3SL, TGV2-3N	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	_
Wire	Material		Copper	4
	Temperature ra	ting	75°C or more	4
Accessory			User's manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

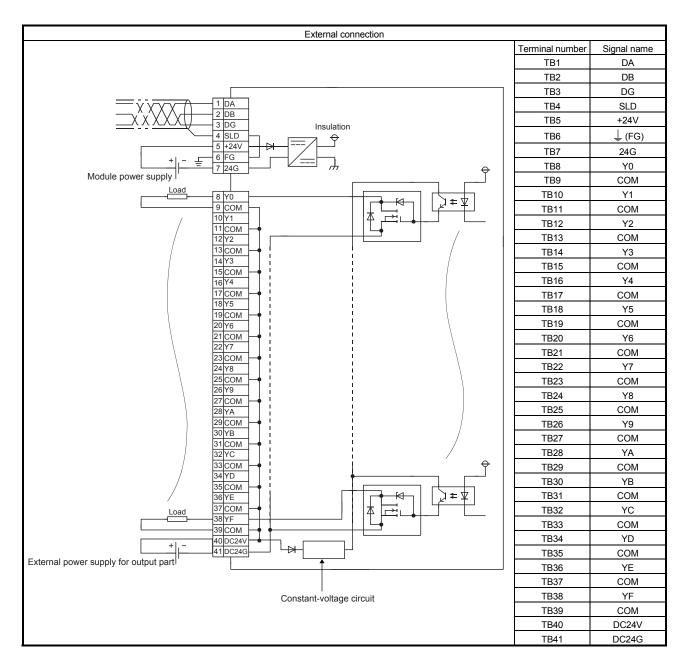
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5.1.7 AJ65SBTB2-16T transistor output module (sink type)

Туре			Transistor output module		
Item	item		AJ65SBTB2-16T	Appearance	
Number of	output points		16 points		
Isolation method			Photocoupler		
Rated load voltage			12/24VDC		
	load voltage range	е	10.2 to 26.4VDC (ripple ratio: within 5%)		
Max. load			0.5A/point, 3.6A/common		
Max. inrusl	h current		1.0A, 10ms or less		
Leakage c	urrent at OFF		0.25mA or lower		
Max. volta	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Output type	e		Sink type		
Protection	function		Overload protection, overvoltage protection, overheat protection		
D	41	OFF→ON	0.5ms or less		
Response	time	ON→OFF	1.5ms or less (resistive load)		
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		
output part	t	Current	24.2mA or lower (TYP. 24VDC/common), excluding external load current		
Surge sup	pressor		Zener diode		
Wiring met	thod for common		16 points/common (2-wire, terminal block type)		
Number of	occupied stations	6	32-point assignment/station (16 points used)		
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
Module po	wer supply	Current	55mA or lower (at 24VDC and all points ON)		
			Noise voltage 500Vp-p, noise width 1µs,		
Noise imm	lunity		noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground		
			$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation		
Insulation I	resistance		resistance tester)		
Protection	degree		IP2X		
Weight	-		0.25kg		
			7-point two-piece terminal block		
	Communication	part,	[Transmission circuit, module power supply, FG]		
External	module power s	upply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
connection			Applicable solderless terminal: 2 or less		
system			34-point direct-mount terminal block		
	I/O power supply	y part,	[I/O power supply, I/O signal]		
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
Module mounting screw			M4 screw with plain washer finished round		
			(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal			 RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire] 		
		al	• V2-MS3, RAP2-3SL, TGV2-3N		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]		
Wire	Material		Copper		
	Temperature rat	ina	75°C or more		
Accessory			User's manual		

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

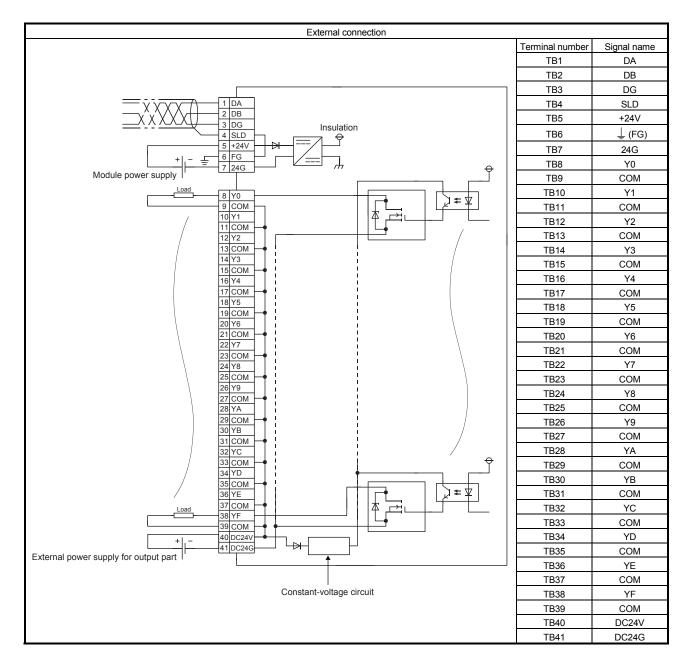


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5.1.8 AJ65SBTB2-16T1 transistor output module (sink type)

Туре			Transistor output module			
Item			AJ65SBTB2-16T1	Appearance		
Number of output points			16 points			
Isolation method			Photocoupler			
Rated load voltage			12/24VDC			
Operating l	oad voltage range	9	10.2 to 26.4VDC (ripple ratio: within 5%)			
Max. load c	current		0.5A/point, 3.6A/common			
Max. inrush	n current		1.0A, 10ms or less			
Leakage cu	urrent at OFF		0.1mA or lower			
Max. voltag	je drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A			
Output type	9		Sink type			
Protection f	function		None			
		OFF→ON	0.5ms or less		$0^{-}0^{-}$	
Response t	ume	ON→OFF	1.5ms or less (resistive load)			
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)			
output part		Current	24.2mA or lower (TYP. 24VDC/common), excluding external load current		@ ₩	
Surge supp	pressor		Zener diode			
Wiring meth	hod for common		16 points/common (2-wire, terminal block type)			
Number of	occupied stations	;	32-point assignment/station (16 points used)	20M TB	1 Com P	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)			
Module pov	wer supply	Current	55mA or lower (at 24VDC and all points ON)			
			Noise voltage 500Vp-p, noise width 1µs,			
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)			
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground			
			10M Ω or higher between all DC external terminals and ground (500VDC insulation			
Insulation re	esistance		resistance tester)	COM		
Protection of	degree		IP2X			
Weight			0.25kg		6	
			7-point two-piece terminal block	*** * * * * * * * * * * * * * * * * *		
	Communication	part,	[Transmission circuit, module power supply, FG]	7 189 A B C	(3°) $=$ 1	
External	module power su	upply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
			Applicable solderless terminal: 2 or less	24V 24G 14 5 6 7 24V 24G 000 000 000 000 0000000000000000000	L P	
system			34-point direct-mount terminal block	23 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Jyotom	I/O power supply	O power supply part, [I/O power supply, I/O signal]			B WP	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
			Applicable solderless terminal: 2 or less			
Module mounting screw			M4 screw with plain washer finished round			
			(tightening torque range: 0.78 to 1.08N•m)			
			Mountable with a DIN rail in 6 orientations			
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)			
Applicable solderless terminal			• RAV1.25-3 (compliant with JIS C 2805)			
		al	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]			
			• V2-MS3, RAP2-3SL, TGV2-3N			
Wiro	Matorial		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]			
Wire Material			Copper			
VVIIC	Temperature rati	20	75°C or more			

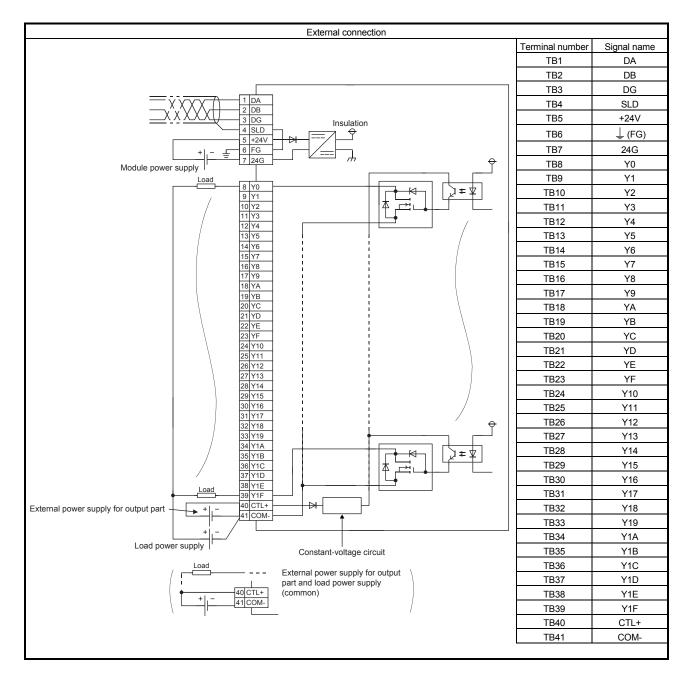
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



5.1.9 AJ65SBTB1-32T transistor output module (sink type)

Туре			Transistor output module		
Item			AJ65SBTB1-32T	Appea	irance
Number of output points			32 points		
Isolation method			Photocoupler		
Rated load voltage			12/24VDC	1	
Operating I	oad voltage rang	е	10.2 to 26.4VDC (ripple ratio: within 5%)	1	
Max. load o	current		0.5A/point, 4.8A/common		
Max. inrush	n current		1.0A, 10ms or less		
Leakage cu	urrent at OFF		0.25mA or lower		
Max. voltag	ge drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Output type	e		Sink type		
Protection f	function		Overload protection, overvoltage protection, overheat protection		
Response 1	timo	OFF→ON	0.5ms or less		
i veshorise i	ume	ON→OFF	1.5ms or less (resistive load)		
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		W ML
output part		Current	50mA or lower (TYP. 24VDC/common), excluding external load current		
Surge supp	oressor		Zener diode	4	
Wiring metl	hod for common		32 points/common (1-wire, terminal block type)	112 × 112	
Number of	occupied stations	5	32-point assignment/station (32 points used)	13 13	
Madula		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	×12	
Module pov	wer supply	Current	65mA or lower (at 24VDC and all points ON)		
	unity		Noise voltage 500Vp-p, noise width 1µs,		
Noise immi	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground		
Insulation r	osistanco		$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC		
Insulation	esistance		insulation resistance tester)	×9 ×4	
Protection of	degree		IP2X		
Weight	•		0.25kg		
External connection	Communication part, module power supply part		7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less 34-point direct-mount terminal block	6 7 Y89 A B C D	
system	I/O power supply part, I/O part		[I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	0 1 2 3 4 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Module mounting screw			M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations		
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
Applicable solderless terminal		al	 RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire] V2-MS3, RAP2-3SL, TGV2-3N 		
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4	
Wire	Material	•	Copper 75°C or more	4	
A	Temperature rat	ing	75°C or more	4	
Accessory			User's manual		

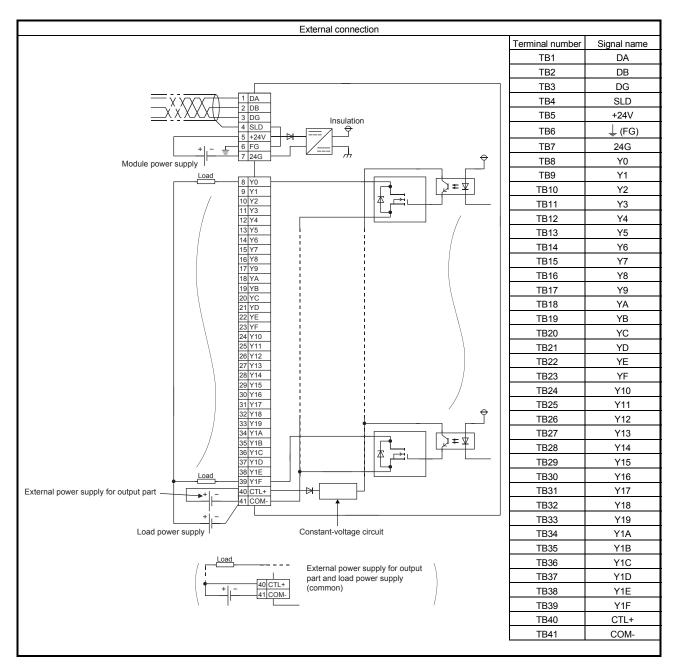
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



5.1.10 AJ65SBTB1-32T1 transistor output module (sink type)

Number of c				
	Item		AJ65SBTB1-32T1	Appearance
	Number of output points		32 points	
Isolation method			Photocoupler	7
Rated load voltage			12/24VDC	7
Operating Ic	bad voltage rang	ge	10.2 to 26.4VDC (ripple ratio: within 5%)	7
Max. load ci	urrent		0.5A/point, 4.8A/common	
Max. inrush	current		1.0A, 10ms or less	
_eakage cu	irrent at OFF		0.1mA or lower	
Max. voltage	e drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Output type			Sink type	
Protection fu	unction		None	
Response ti	imo	OFF→ON	0.5ms or less	
kesponse li	inte	ON→OFF	1.5ms or less (resistive load)	
External pov	wer supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
output part		Current	50mA or lower (TYP. 24VDC/common), excluding external load current	
Surge suppi	ressor		Zener diode	
Niring meth	nod for common	1	32 points/common (1-wire, terminal block type)	
Number of c	occupied statior	IS	32-point assignment/station (32 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pow	ver supply	Current	65mA or lower (at 24VDC and all points ON)	
			Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	inity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Nithstand v	voltage		500VAC for 1 minute between all DC external terminals and ground	
noulation re	nintanan		10M Ω or higher between all DC external terminals and ground (500VDC	
nsulation re	esistance		insulation resistance tester)	
Protection d	legree		IP2X	
Neight			0.25kg	
			7-point two-piece terminal block	
	Communication	n part,	[Transmission circuit, module power supply, FG]	
External	module power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection			Applicable solderless terminal: 2 or less	
system			34-point direct-mount terminal block	
	I/O power supp	oly part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
Module mounting screw			M4 screw with plain washer finished round	
			(tightening torque range: 0.78 to 1.08N•m)	
Applicable DIN roll			Mountable with a DIN rail in 6 orientations	
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable solderless terminal		nal	 RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire] V2-MS3, RAP2-3SL, TGV2-3N 	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Nire	Material		Copper	-1
-	Temperature ra	atina	75°C or more	7
Accessory			User's manual	1

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



5.1.11 AJ65SBTB1-8TE transistor output module (source type)

	<u> </u>	Туре	Transistor output module	
ltem			AJ65SBTB1-8TE	Appearance
Number of output points			8 points	
Isolation method			Photocoupler	
Rated load	d voltage		12/24VDC	
Operating	load voltage rang	е	10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load	current		0.1A/point, 0.8A/common	
Max. inrusl	h current		1.0A, 10ms or less	
Leakage c	urrent at OFF		0.1mA or lower	
Max. voltag	ge drop at ON		0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	
Output type	е		Source type	
Protection	function		Overload protection, overheat protection	
Response	timo	OFF→ON	0.5ms or less	
Response	ume	ON→OFF	1.5ms or less (resistive load)	
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
output part	t	Current	15mA or lower (TYP. 24VDC/common), excluding external load current	
Surge sup	pressor		Zener diode	
Wiring met	thod for common		8 points/common (1-wire, terminal block type)	
Number of	foccupied stations	6	32-point assignment/station (8 points used)	
Modulo po	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
		Current	35mA or lower (at 24VDC and all points ON)	
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,	
	lainty		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation i	resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	
Weight	1		0.14kg	
			7-point two-piece terminal block	
	Communication	• •	[Transmission circuit, module power supply, FG]	
External	module power s	ирріу рап	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection	1		Applicable solderless terminal: 2 or less 10-point direct-mount terminal block	
system	I/O power supply	v nart	[I/O power supply, I/O signal]	
	I/O part	, part,	M3×5.2 screw (tightening torgue range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
	-		M4 screw with plain washer finished round	
Module mo	Module mounting screw		(tightening torque range: 0.78 to 1.08N•m)	
J			Mountable with a DIN rail in 6 orientations	
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)	
			RAV1.25-3 (compliant with JIS C 2805)	
Applicable solderless terminal		al	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Material		Copper	_
	Temperature rat	ing	75°C or more	_
Accessory			User's manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

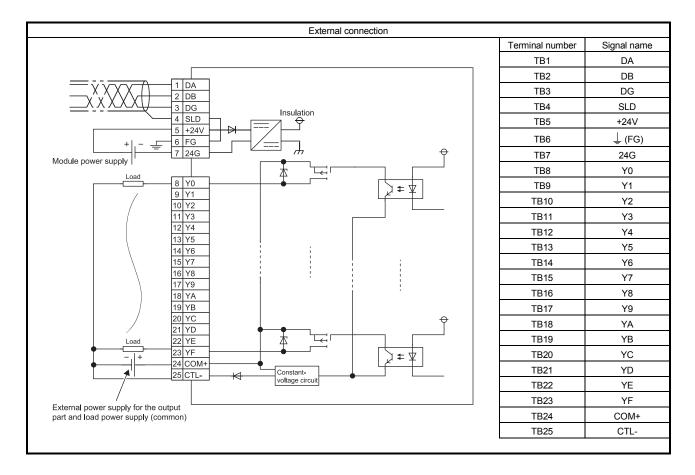
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External connection Terminal number Signal name TB1 DA 1 DA 2 DB TB2 DB χχ ТВ3 DG 3 DG Insulation 4 SLD 5 +24V TB4 SLD 9 ₽ TB5 +24V 6 FG <u> </u> (FG) +| _ 7 TB6 7 24G Ŷ Module power supply TB7 24G Ę 本 TB8 Y0 Load 8 Y0 9 Y1 10 Y2 ŧ \mathbf{T} TB9 Y1 TB10 Y2 11 Y3 TB11 Y3 12 Y4 13 Y5 Ŷ TB12 Y4 14 Y6 15 Y7 다 本 TB13 Y5 Load ≱≠⊈ TB14 Y6 + 16 COM+ Constant-voltage circuit TB15 Y7 17 CTL- \blacksquare TB16 COM+ TB17 CTL-/ External power supply for the output part and load power supply (common)

5.1.12 AJ65SBTB1-16TE transistor output module (source type)

		Туре	Transistor output module		
ltem	item		AJ65SBTB1-16TE	Appearance	
Number of output points			16 points		
Isolation method			Photocoupler	1	
Rated load v	/oltage		12/24VDC	1	
Operating lo	ad voltage rang	е	10.2 to 26.4VDC (ripple ratio: within 5%)	1	
Max. load cu	urrent		0.1A/point, 1.6A/common	1	
Max. inrush	current		1.0A, 10ms or less]	
Leakage cur	rent at OFF		0.1mA or lower		
Max. voltage	e drop at ON		0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A		
Output type			Source type		
Protection fu	Inction		Overload protection, overheat protection		
Boononao tir	m o	OFF→ON	0.5ms or less		
Response tir	ille	ON→OFF	1.5ms or less (resistive load)		
External pov	ver supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		
output part		Current	30mA or lower (TYP. 24VDC/common), excluding external load current		
Surge suppr	ressor		Zener diode		
Wiring metho	od for common		16 points/common (1-wire, terminal block type)		
Number of o	ccupied stations	8	32-point assignment/station (16 points used)		
Module pow	or cupply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
Nouule pow	el supply	Current	50mA or lower (at 24VDC and all points ON)		
Noise immur	nity		Noise voltage 500Vp-p, noise width 1µs,		
	inty		noise frequency 25 to 60Hz (DC type noise simulator condition)		
Withstand vo	oltage		500VAC for 1 minute between all DC external terminals and ground		
Insulation re	sistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC		
inculation re	olotarioo		insulation resistance tester)		
Weight	1		0.18kg		
			7-point two-piece terminal block		
	Communicatio		[Transmission circuit, module power supply, FG]		
External	module power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
connection			Applicable solderless terminal: 2 or less 18-point direct-mount terminal block		
system	I/O power supp	olv nart	[I/O power supply, I/O signal]		
	I/O part	ory part,	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less		
			M4 screw with plain washer finished round	1	
Module mou	inting screw		(tightening torque range: 0.78 to 1.08N•m)		
	-		Mountable with a DIN rail in 6 orientations		
Applicable D	IN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)		
			RAV1.25-3 (compliant with JIS C 2805)		
Annlicable s	olderless termin	al	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
Applicable solderless terminal			• V2-MS3, RAP2-3SL, TGV2-3N		
I			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4	
Wire	Material			4	
	Temperature r	ating	75°C or more	4	
Accessory			User's manual		

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

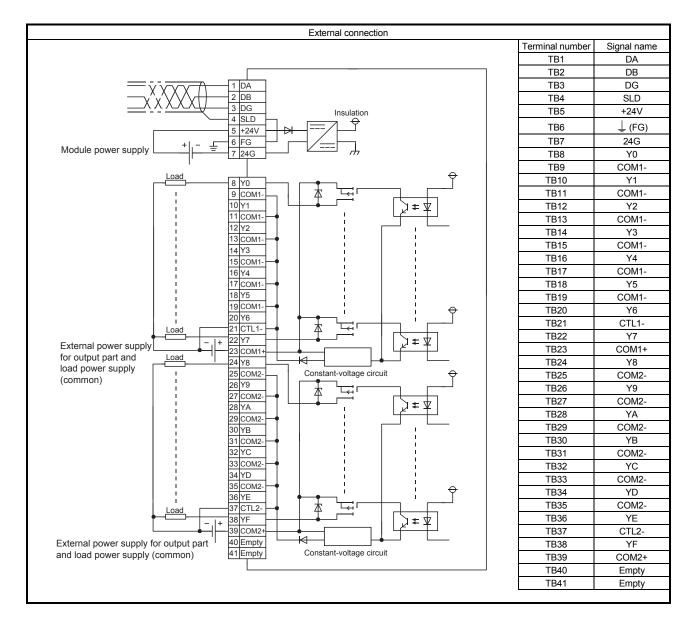


5.1.13 AJ65SBTB1B-16TE1 transistor output module (source type)

		Туре	Transistor output module	
Item			AJ65SBTB1B-16TE1	Appearance
Number of c	output points		16 points	
Isolation method			Photocoupler	-
Rated load voltage			12/24VDC	7
Operating lo	ad voltage rang	ge	10.2 to 26.4VDC (ripple ratio: within 5%)	7
Max. load cu			0.5A/point, 4A/common	7
Max. inrush	current		1.0A, 10ms or less	7
Leakage cui	rrent at OFF		0.1mA or lower	7
Max. voltage	e drop at ON		0.5VDC or lower (TYP.) 0.5A, 0.8VDC or lower (MAX.) 0.5A	
Output type			Source type	
Protection fu	unction		None	
		OFF→ON	0.5ms or less	
Response ti	me	ON→OFF	1.5ms or less (resistive load)	
External pov	ver supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
output part		Current	10mA or lower (TYP. 24VDC/common), excluding external load current	
Surge suppr	ressor	•	Zener diode	
Wiring meth	od for common		8 points/common (1-wire, terminal block type)	
Number of c	occupied station	IS	32-point assignment/station (16 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pow	er supply	Current	45mA or lower (at 24VDC and all points ON)	
		•	Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	nity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground	
			10M Ω or higher between all DC external terminals and ground (500VDC	
Insulation re	sistance		insulation resistance tester)	
Protection d	egree		IP2X	
Weight			0.26kg	
			7-point two-piece terminal block	
	Communicati	on part,	[Transmission circuit, module power supply, FG]	
External	module powe	r supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection			Applicable solderless terminal: 2 or less	
system			34-point direct-mount terminal block	
.,	I/O power sup	oply part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
			M4 screw with plain washer finished round	
Module mounting screw			(tightening torque range: 0.78 to 1.08N•m)	
			Mountable with a DIN rail in 6 orientations	
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	-
Applicable solderless terminal			• RAV1.25-3 (compliant with JIS C 2805)	
		nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N	
			 V2-MS3, RAP2-3SL, LGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire] 	
Wire	Material		Copper	
	Temperature	rating	75°C or more	1
Accessory	. onporatale		User's manual	1
NUCCOSOLI Y			User s manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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5.1.14 AJ65SBTB1-32TE1 transistor output module (source type)

		Туре	Transistor output module	
Item			AJ65SBTB1-32TE1	Appearance
Number of	output points		32 points	
Isolation m			Photocoupler	-
Rated load			12/24VDC	-
Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	-1
Operating load voltage range Max. load current			0.5A/point, 4.8A/common	-1
Max. load current Max. inrush current			1.0A, 10ms or less	-1
lax. inrush current .eakage current at OFF			0.1mA or lower	-1
Ŭ	ge drop at ON		0.5VDC or lower (TYP.) 0.5A, 0.8VDC or lower (MAX.) 0.5A	
Output type	2 1		Source type	
Protection			None	
TOLECLION	Idifiction	OFF→ON	0.5ms or less	
Response	time	ON→OFF	1.5ms or less (resistive load)	
	ower ownels for		10.2 to 26.4VDC (ripple ratio: within 5%)	
	ower supply for	Voltage		
output part		Current	15mA or lower (TYP. 24VDC/common), excluding external load current	
Surge supp			Zener diode	
	hod for common		32 points/common (1-wire, terminal block type)	
Number of	occupied stations		32-point assignment/station (32 points used)	
Module pov	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
•		Current	60mA or lower (at 24VDC and all points ON)	
Noise imm	unity		Noise voltage 500Vp-p, noise width 1µs,	
			noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation r	resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	
Protection	degree		IP2X	
Weight	1		0.26kg	
			7-point two-piece terminal block	
	Communication	•	[Transmission circuit, module power supply, FG]	
External	module power s	upply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
connection	1		Applicable solderless terminal: 2 or less	
system	1/0		34-point direct-mount terminal block	
	I/O power supply	y part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
			Applicable solderless terminal: 2 or less	
Madula ma	unting corour		M4 screw with plain washer finished round	
wodule mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations	
Applicable	DIN roll			
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
			RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
Applicable	solderless termin	al	• V2-MS3, RAP2-3SL, TGV2-3N	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Material		Copper	
	Temperature rat	ina	75°C or more	
Accordence			User's manual	4
Accessory			User 5 manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*

MELSEC-A

Signal name

DA

DB

DG

SLD

+24V

<u></u> (FG)

24G

Y0

Y1

Y2

Y3

Y4

Y5

Y6

Y7

Y8

Y9

YA

YΒ

YC

YD YE

YF

Y10

Y11

Y12

Y13 Y14

Y15 Y16

Y17

Y18

Y19

<u>Y1A</u>

Y1B

Y1C

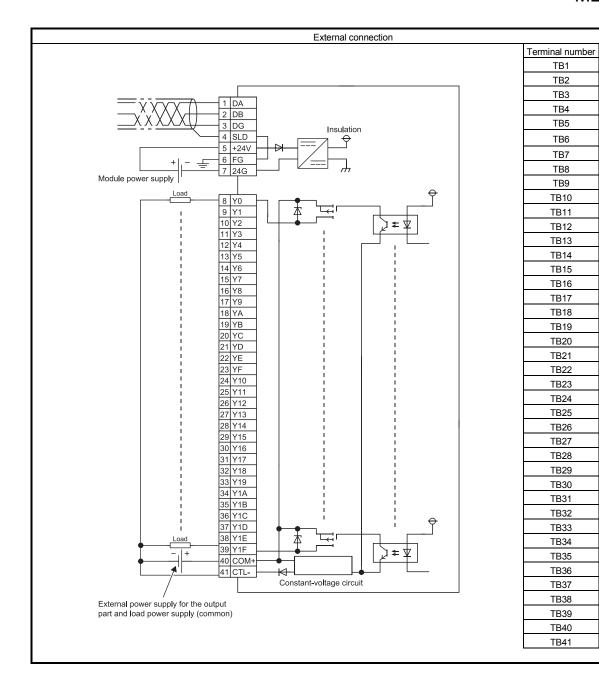
Y1D

Y1E

Y1F

COM+

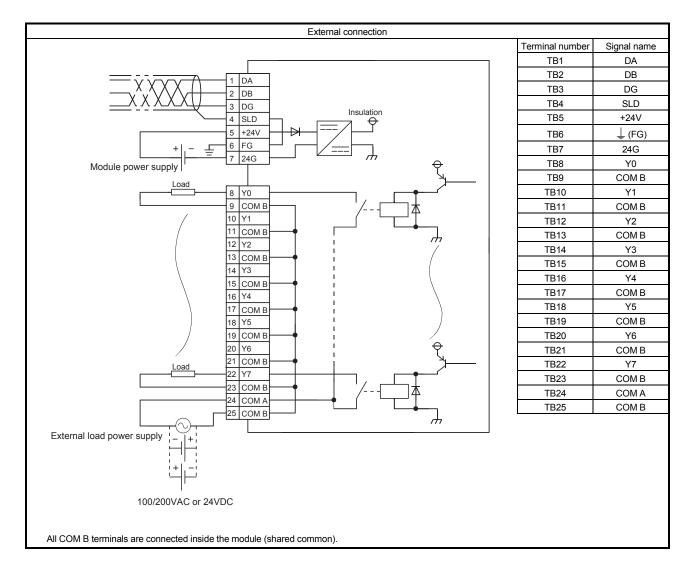
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5.1.15 AJ65SBTB2N-8R contact output module

	_	Туре	Contact output module	
Item			AJ65SBTB2N-8R	Appearance
Number of	output points		8 points	
Isolation m	ethod		Relay	
			2A/point, 4A/common	7
Rated load voltage/current Min. switching load		t	at 24VDC (resistive load) or 240VAC (coso=1)	
Min. switch	ning load		5VDC, 1mA	
Max. switch	hing voltage		264VAC, 125VDC	
Response time		OFF→ON	10ms or less	
Response	ume	ON→OFF	12ms or less	
	Me		20 million times or more	
			Rated switching voltage/current load: 100 thousand times or more	
Life		Electrical	200VAC 1.5A, 240VAC 1A (cos	
		Electrical	200VAC 1A, 240VAC 0.5A (cos	
			24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more	
Max. switch	hing frequency		3600 times/hour	
Surge supp	oressor		None	
Wiring met	hod for commo	n	8 points/common (2-wire, terminal block type)	
Number of	occupied static	ons	32-point assignment/station (8 points used)	
Madula		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pov	wer supply	Current	85mA or lower (at 24VDC and all points ON)	vol 1 1 1 vol 1 3 1 6 vol vol 1 3 1 6 vol vol vol vol 1 1 1 vol v
			Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,	
Noice imm	upity		noise frequency 25 to 60Hz (noise simulator condition)	
Noise imm	unity		Fast transient/burst immunity test	
			IEC61000-4-4:1kV	
			2830VACrms for 3 cycles between all AC external terminals and ground	
Withstand	voltage		(2000m above sea level)	
			500VAC for 1 minute between all DC external terminals and ground	
			$10M\Omega$ or higher between all AC external terminals and ground (500VDC	
Insulation r	resistance		insulation resistance tester)	
			$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
M/aight			insulation resistance tester)	I 6< INUI (↔) (I
Weight			0.25kg	
	Communicatio	on nart	7-point two-piece terminal block [Transmission circuit, module power supply, FG]	
	module power		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
External	modulo porto	ouppiy pure	Applicable solderless terminal: 2 or less	
connection	1		18-point direct-mount terminal block	
system	I/O power sup	ply part,	[I/O power supply, I/O signal]	
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)	
	-		Applicable solderless terminal: 2 or less	
			M4 screw with plain washer finished round	
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)	
			Mountable with a DIN rail in 6 orientations	_
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_
			RAV1.25-3 (compliant with JIS C 2805)	
Applicable	solderless term	ninal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
FF			• V2-MS3, RAP2-3SL, TGV2-3N	
14/1-1	N 4 - 4 - 2 - 2		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Material		Copper 75°C or more	
A	Temperature	rating	75°C or more	
Accessory	ccessory		User's manual	

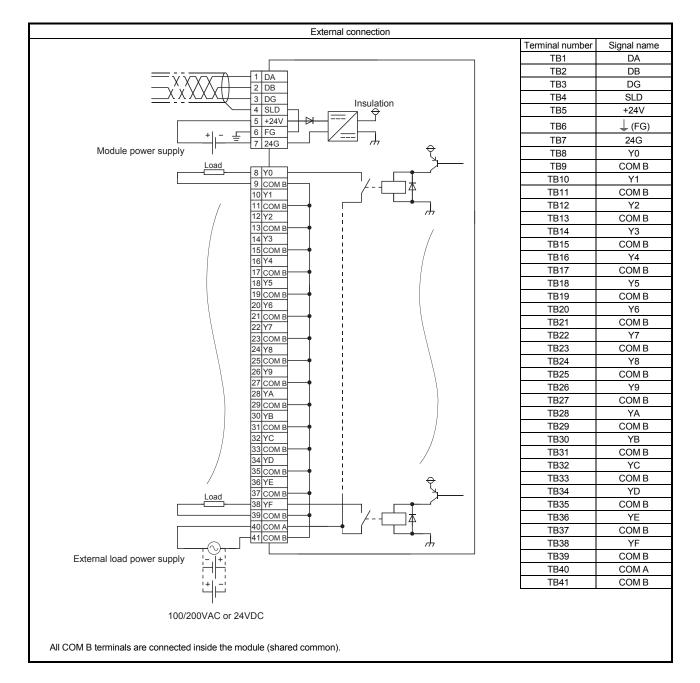
* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



5.1.16 AJ65SBTB2N-16R contact output module

	_	Туре	Contact output module			
Item			AJ65SBTB2N-16R	Appearance		
Number of	output points		16 points			
Isolation m	lethod		Relay			
			2A/point, 8A/common	7		
Rated load	l voltage/currer	ht	at 24VDC (resistive load) or 240VAC (coso=1)			
Min. switch	ning load		5VDC, 1mA			
Max. switcl	hing voltage		264VAC, 125VDC			
Response	timo	OFF→ON	10ms or less			
Response	une	ON→OFF	12ms or less			
		Mechanical	20 million times or more			
			Rated switching voltage/current load: 100 thousand times or more			
Life		Electrical	200VAC 1.5A, 240VAC 1A (coso=0.7): 100 thousand times or more			
		Liectrical	200VAC 1A, 240VAC 0.5A (coso=0.35): 100 thousand times or more			
			24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more			
Max. switcl	hing frequency	1	3600 times/hour			
Surge supp	pressor		None			
Wiring met	hod for commo	on	16 points/common (2-wire, terminal block type)			
Number of	occupied stati	ons	32-point assignment/station (16 points used)			
Modulo po	wer supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)			
	wei suppiy	Current	120mA or lower (at 24VDC and all points ON)			
			Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,			
Noise imm	unity		noise frequency 25 to 60Hz (noise simulator condition)			
	unity		Fast transient/burst immunity test			
			IEC 61000-4-4:1kV			
			2830VACrms for 3 cycles between all AC external terminals and ground (2000m			
Withstand	voltage		above sea level)			
			500VAC for 1 minute between all DC external terminals and ground			
			$10M\Omega$ or higher between all AC external terminals and ground (500VDC insulation			
Insulation r	resistance		resistance tester) $10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation			
			resistance tester)			
Weight			0.35kg			
Wolgin			7-point two-piece terminal block			
	Communicati	on part.	[Transmission circuit, module power supply, FG]			
	module powe	•	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
External			Applicable solderless terminal: 2 or less			
connection			34-point direct-mount terminal block			
system	I/O power su	pply part,	[I/O power supply, I/O signal]			
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)			
			Applicable solderless terminal: 2 or less			
			M4 screw with plain washer finished round			
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)			
			Mountable with a DIN rail in 6 orientations	4		
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	4		
			• RAV1.25-3 (compliant with JIS C 2805)			
Applicable	solderless terr	minal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]			
			• V2-MS3, RAP2-3SL, TGV2-3N			
Wire	Material		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	+		
VVIIC	Temperature	rating	Copper 75°C or more	1		
Accessory	Tremperature	rauny		1		
Accessory			User's manual			

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

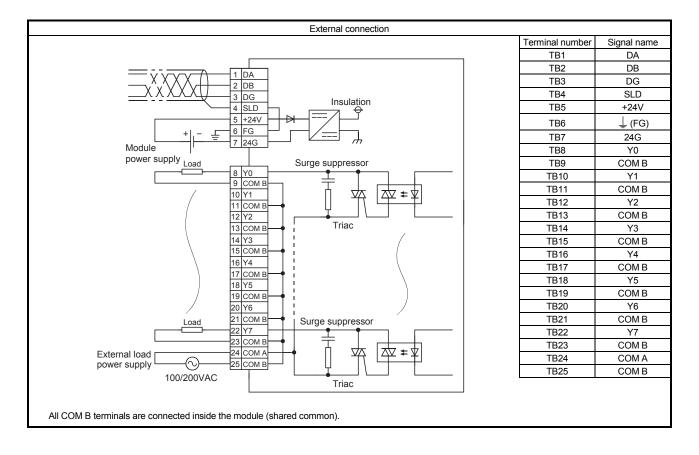


5.1.17 AJ65SBTB2N-8S triac output module

		Туре	Triac output module		
Item			AJ65SBTB2N-8S	Appea	rance
Number of	f output points		8 points		
Isolation m	nethod		Photocoupler		
Rated load			100 to 240VAC, 50/60Hz ±5%	1	
	ge distortion ratio	0	Within 5%	1	
Max. load		-	264VAC	1	
Max. load			0.6A/point, 2.4A/common		
	in. load voltage/current ax. inrush current		50VAC 100mA, 100VAC 10mA, 240VAC 10mA	1	
	Č –		25A, 10ms or less	1	
			1.5mArms or lower (at 100VACrms, 60Hz),	1	
Leakage ci	current at OFF		3mArms or lower (at 200VACrms, 60Hz)		
Max. voltad	ge drop at ON		1.5VACrms or lower (at 0.6A)	1	
		OFF→ON	1ms or less	1	
Response	time	ON→OFF	Total of 1ms and 0.5 cycles or less		
Surge supp	pressor		CR absorber $(0.01\mu\text{F} + 47\Omega)$		
	thod for common	1	8 points/common (2-wire, terminal block type)		
	f occupied station		32-point assignment/station (8 points used)		
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)		
Module por	ower supply	Current	55mA or lower (at 24VDC and all points ON)		
		Guirein	Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,	Y0 1 2 Y0 1 2 V6 Y	
			noise frequency 25 to 60Hz (noise simulator condition)	CON LER	
Noise imm	nunity		Fast transient/burst immunity test		I D.O.I
			IEC61000-4-4:1kV		
			2830VACrms for 3 cycles between all AC external terminals and ground		
Withstand	voltage		(2000m above sea level)		0.07
	renage		500VAC for 1 minute between all DC external terminals and ground		
			10M Ω or higher between all AC external terminals and ground (500VDC		
			insulation resistance tester)		
Insulation r	resistance		10M Ω or higher between all DC external terminals and ground (500VDC		
			insulation resistance tester)		
Weight			0.25kg	S 0N 1 (FG)	
			7-point two-piece terminal block	B2N-85	
	Communication	n part,	[Transmission circuit, module power supply, FG]	Auesseteanes Maxim Auesseteanes Date 1-24V	0.01
Extornal	module power		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
External connection			Applicable solderless terminal: 2 or less		
system	'		18-point direct-mount terminal block		
5,00011	I/O power supp	oly part,	[I/O power supply, I/O signal]		· · · · · · · · · · · · · · · · · · ·
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)		
			Applicable solderless terminal: 2 or less	4	
			M4 screw with plain washer finished round		
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)		
			Mountable with a DIN rail in 6 orientations	4	
Applicable DIN rail			TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	4	
			• RAV1.25-3 (compliant with JIS C 2805)		
Applicable solderless terminal		nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]		
			• V2-MS3, RAP2-3SL, TGV2-3N		
\A/iro	Motoric		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	4	
Wire	Material		Copper 75°C or more	4	
	Temperature ra	ating	75°C or more	4	
Accessory	Accessory		User's manual		

* For apr

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

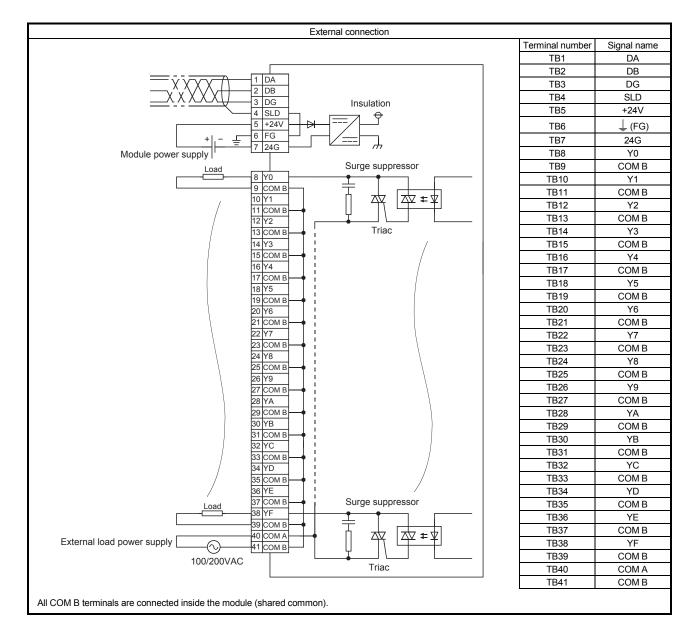


5.1.18 AJ65SBTB2N-16S triac output module

		Туре	e Triac output module				
ltem			AJ65SBTB2N-16S	Appearance			
Number of	f output points		16 points				
Isolation m	nethod		Photocoupler				
Rated load	d voltage		100 to 240VAC, 50/60Hz ±5%				
Load volta	ge distortion rati	0	Within 5%				
Max. load			264VAC				
Max. load current			0.6A/point, 4.8A/common				
Min. load voltage/current			50VAC 100mA, 100VAC 10mA, 240VAC 10mA				
Max. inrus	sh current		25A, 10ms or less				
			1.5mArms or lower (at 100VACrms, 60Hz),				
Leakage c	current at OFF		3mArms or lower (at 200VACrms, 60Hz)				
Max. volta	ge drop at ON		1.5VACrms or lower (at 0.6A)				
		OFF→ON	1ms or less				
Response	time	ON→OFF	Total of 1ms and 0.5 cycles or less				
Surge sup	pressor	•	CR absorber (0.01 μ F + 47 Ω)				
	thod for commo	า	16 points/common (2-wire, terminal block type)				
	f occupied statio		32-point assignment/station (16 points used)				
	•	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)				
Module po	Nodule power supply		85mA or lower (at 24VDC and all points ON)				
		Current	Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,				
			noise frequency 25 to 60Hz (noise simulator condition)				
Noise imm	nunity		Fast transient/burst immunity test				
			IEC 61000-4-4:1kV				
		2830VACrms for 3 cycles between all AC external terminals and ground (2000m					
Withstand	voltage	above sea level)					
			500VAC for 1 minute between all DC external terminals and ground				
			$10M\Omega$ or higher between all AC external terminals and ground (500VDC insulation				
Inculation	resistance		resistance tester)				
Insulation	resistance	$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation					
			resistance tester)				
Weight			0.35kg				
			7-point two-piece terminal block				
	Communicatio		[Transmission circuit, module power supply, FG]				
External	module power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
connectior	n		Applicable solderless terminal: 2 or less				
system			34-point direct-mount terminal block				
-	I/O power sup	ply part,	[I/O power supply, I/O signal]	A Jesser			
	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
	1		Applicable solderless terminal: 2 or less				
Modulo			M4 screw with plain washer finished round				
	ounting screw		(tightening torque range: 0.78 to 1.08N•m)				
Applicable DIN rail			Mountable with a DIN rail in 6 orientations TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)				
, thhirdnie			• RAV1.25-3 (compliant with JIS C 2805)				
			[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]				
Applicable solderless terminal		inal	 V2-MS3, RAP2-3SL, TGV2-3N 				
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]				
Wire	Material		Copper				
-	Temperature r	ating	75°C or more				
Accessory		0	User's manual				
			ever e manadi				

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*



5.1.19 AJ65DBTB1-32T1 transistor output module (sink type)

	Туре	Transistor output module	
Item		AJ65DBTB1-32T1	Appearance
Number of output points		32 points	
Isolation method		Photocoupler	
Rated load voltage		12/24VDC	
Operating load voltage rang	ge	10.2 to 31.2VDC (ripple ratio: within 5%)	
Max. load current		0.5A/point, 8A/common (2A/terminal)	
Max. inrush current		1.2A, 10ms or less	
Leakage current at OFF		0.1mA or lower	
Max. voltage drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Output type		Sink type	
Protection function		None	
	OFF→ON	0.5ms or less	
Response time	ON→OFF	1.5ms or less (resistive load)	
External power supply for	Voltage	10.2 to 31.2VDC (ripple ratio: within 5%)	
output part	Current	50mA or lower (at 24VDC and all points ON), excluding external load current	
Surge suppressor		Zener diode	
Wiring method for common	l	32 points/common (4 points) (1-wire, terminal block type)	
Number of occupied station	IS	32-point assignment/station (32 points used)	
	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	DB +24V
Module power supply	Current	65mA or lower (at 24VDC and all points ON)	
		Noise voltage 500Vp-p, noise width 1µs,	246
Noise immunity		noise frequency 25 to 60Hz (DC type noise simulator condition)	Y0 Y10
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground	Y1 Y1 Y11 Y12
		10M Ω or higher between all DC external terminals and ground (500VDC	Y3 Y4 Y14
Insulation resistance		insulation resistance tester)	Y5 Y6 Y16
Protection degree		IP2X	Y7 Y17 Y17 OTM3
Weight		0.7kg	Y8 Y9 Y9
		50-point terminal block	
External connection system	_	[Transmission circuit, module power supply, FG, I/O power supply, I/O signal]	
External connection system	1	M3×7 screw (tightening torque range: 0.68 to 0.92N•m)	YE YID YID
		Applicable solderless terminal: 2 or less	CON4
Module mounting screw		M4 screw with plain washer finished round	
Module mounting screw		(tightening torque range: 0.78 to 1.08N•m)	·
		• R1.25-3.5 (compliant with JIS C 2805)	
Applicable solderless termi	nal	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]	
· • • • • • • • • • • • • • • • • • • •		• RAV2-3.5 (compliant with JIS C 2805)	
	1	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
	Material	Copper	
Wire		75°C or more	
A	rating		
Accessory		User's manual	
Part sold separately		A6DIN1C, A2CCOM-TB	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*

		External connection		
Terminal	Signal		Terminal	Signal
number	name		number	name
TB1	DA		TB26	Empty
TB2	DG		TB27	Empty
TB3	DB		TB28	+24V
TB4	Empty		TB29	CTL+
TB5	SLD		TB30	⊥_ (FG
TB6	Empty	X X SID 6 Empty Constant-voltage circuit CTLG 31	TB31	CTLG
TB7	24G	7 24G 24G 32 Module	TB32	24G
TB8	Y0	power supply	TB33	Y10
TB9	Y1		TB34	Y11
TB10	Y2		TB35	Y12
TB11	Y3		TB36	Y13
TB12	Y4	$\left(\begin{array}{c c} 9 & Y1 \\ 10 & Y2 \\ 11 & Y3 \\ 12 & Y4 \end{array}\right) \left(\begin{array}{c c} x & y & y \\ x & y \\ y \\ 12 & y \\ y$	TB37	Y14
TB13	Y5	12 Y4 13 Y5	TB38	Y15
TB14	Y6	$\varphi \varphi$ i $ \gamma_{16} _{39}$	TB39	Y16
TB15	Y7		TB40	Y17
TB16	COM1		TB41	COM3
TB17	Y8		TB42	Y18
TB18	Y9	20 YB 21 YC	TB43	Y19
TB19	YA		TB44	Y1A
TB20	YB		TB45	Y1B
TB21	YC		TB46	Y1C
TB22	YD		TB47	Y1D
TB23	YE		TB48	Y1E
TB24	YF		TB49	Y1F
TB25	COM2		TB50	COM4

5.1.20 AJ65DBTB1-32R contact output module

		Туре	Contact output module	
Item			AJ65DBTB1-32R	Appearance
Number of output p	oints		32 points	
Isolation method			Photocoupler	
			2A/point, 4A/common (2A/terminal)	
Rated load voltage	/current		at 24VDC (resistive load) or 240VAC (coso=1)	
Min. switching load			5VDC, 1mA]
Max. switching volt	age		264VAC, 125VDC	
	OFF→	NC	10ms or less	
Response time	ON→O	FF	12ms or less	
	Mechar	nical	20 million times or more	
			Rated switching voltage/current load: 100 thousand times or more	
Life	F lashis	-1	200VAC 1.5A, 240VAC 1A (coso=0.7): 100 thousand times or more	
	Electric	ai	200VAC 1A, 240VAC 0.5A (coso=0.35): 100 thousand times or more	
			24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more	
Max. switching freq	uency		3600 times/hour	MELSEG AJ65DBTB1-32R
Surge suppressor		-	None	
External power sup	ply for	Voltage	24VDC ±10% (ripple ratio: 4Vp-p or lower)	
output part (CTL+ and CTLG to	erminals)	Current	180mA or lower (at 24VDC and all points ON)	
Wiring method for a	common		8 points/common (1-wire, terminal block type)	
Number of occupie	d stations		32-point assignment/station (32 points used)	
M. 1.1.	. \	/oltage	20.4 to 26.4VDC (ripple ratio: within 5%)	DG NC +24V
Module power supp	oly C	Current	80mA or lower (at 24VDC and all points ON)	
Noise immunity			Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs,	
Noise immunity			noise frequency 25 to 60Hz (noise simulator condition)	
			1500VAC for 1 minute between all AC external terminals and ground	Y1
Withstand voltage			500VAC for 1 minute between all DC external terminals and ground	Y2 Y3
			$10 \text{M}\Omega$ or higher between all AC external terminals and ground (500VDC	Y5 Y14 Y15
Insulation resistance	<u>`</u>		insulation resistance tester)	Y7 Y8 Y16 Y17
insulation resistance			$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
			insulation resistance tester)	Y19 Y19
Protection degree			IP1X	YA YB YIB
Weight			0.7kg	YC YD YIC YIC
			50-point terminal block	YE YE YE
			[Transmission circuit, module power supply, FG,	
External connection	n system		I/O power supply, I/O signal]	
			M3.5×7 screw (tightening torque range: 0.68 to 0.92N•m)	
			Applicable solderless terminal: 2 or less	4
Module mounting s	crew		M4 screw with plain washer finished round	
			(tightening torque range: 0.78 to 1.08N•m)	4
			• R1.25-3.5 (compliant with JIS C 2805)	
Applicable solderless terminal		al	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire] • RAV2-3.5 (compliant with JIS C 2805)	
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	
Wire	Materia	ı	Copper	1
*****	Temper		75°C or more	1
	rating	ດເບເບ		
Accessory	raung		User's manual	1
-				4
art sold separately			A6DIN1C, A2CCOM-TB	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

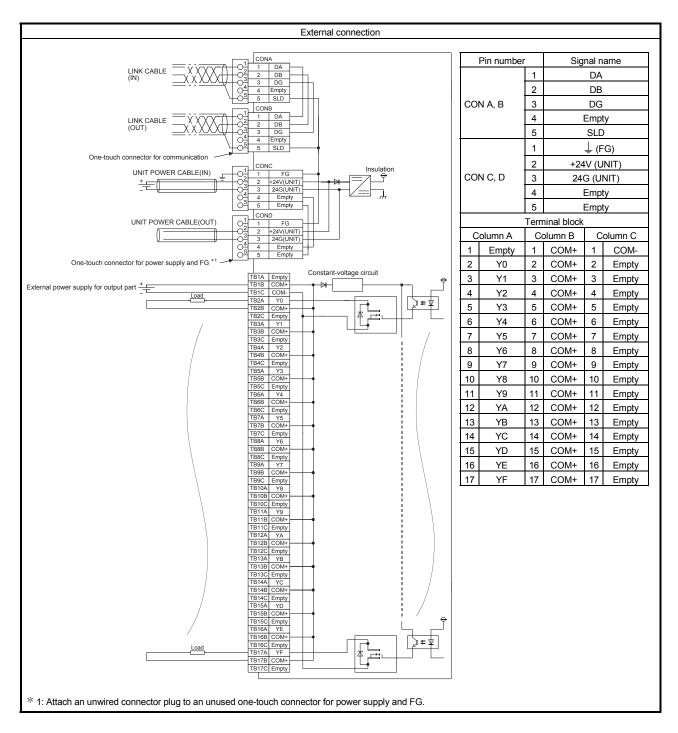
		External connection		
Terminal	Signal		Terminal	Signal
number	name		number	name
TB1	DA		TB26	Empty
TB2	DG		TB27	Empty
TB3	DB		TB28	+24V
TB4	Empty		TB29	CTL+
TB5	SLD	2 DG 3 DB V X X V V 2 DG 3 DB V X X V V V 2 DG CTL+ + +24V 28 CTL+ + +24V 28	TB30	⊥_ (FG
TB6	Empty	$-\sqrt{\sqrt{2}}$	TB31	CTLG
TB7	24G		TB32	24G
TB8	Y0	7 24G 22G 32	TB33	Y10
TB9	Y1	Module power supply	TB34	Y11
TB10	Y2		TB35	Y12
TB11	Y3	$\begin{pmatrix} 9 & Y1 \\ 10 & Y2 \\ \hline \end{pmatrix}$	TB36	Y13
TB12	Y4	$11 Y3 \\ 12 Y4 $	TB37	Y14
TB13	Y5		TB38	Y15
TB14	Y6	$ \begin{array}{c c} Load & 14 Y6 \\ \hline \\ 15 Y7 & $	TB39	Y16
TB15	Y7		TB40	Y17
TB16	COM1	$\begin{array}{c c} \hline \hline$	TB41	COM3
TB17	Y8		TB42	Y18
TB18	Y9		TB43	Y19
TB19	YA	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	TB44	Y1A
TB20	YB		TB45	Y1B
TB21	YC		TB46	Y1C
TB22	YD		TB47	Y1D
TB23	YE		TB48	Y1E
TB24	YF		TB49	Y1F
TB25	COM2		TB50	COM4

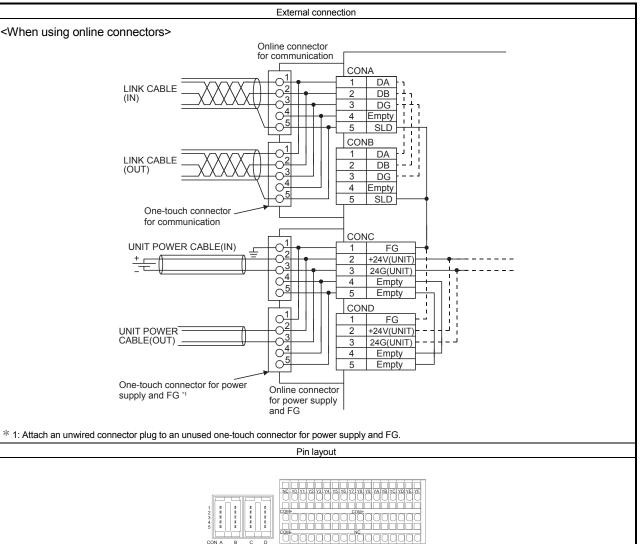
5.2 Spring Clamp Terminal Block Type Output Module

5.2.1 AJ65VBTS2-16T transistor output module (sink type)

	_	Туре	Transistor output module	
Item			AJ65VBTS2-16T	Appearance
Number of	Number of output points Isolation method		16 points	
Isolation me	ethod		Photocoupler	
Rated load	voltage		12/24VDC	
Operating load voltage range			10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load current			0.5A/point, 4A/common	
Max. inrush current			1.0A, 10ms or less	
Max. Inrush current Leakage current at OFF		F	0.1mA or lower	
Max. voltag	e drop at C	N	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Output type			Sink type	
Protection f	unction		None	
_		OFF→ON	1ms or less	
Response t	ime	ON→OFF	1ms or less (resistive load)	
External po	wer	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
supply for o		Current	30mA or lower (at 24VDC and all points ON), excluding external load current	
Surge supp			Zener diode	1. 비금:5월 5월 59.
Wiring meth		imon	16 points/common (2-wire, spring clamp terminal block type)	
Number of			32-point assignment/station (16 points used)	
Module pov		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	-	Current	45mA or lower (at 24VDC and all points ON)	
oupp.y		ourront	Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	inity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground	
Withotana V	onago		$10M\Omega$ or higher between all DC external terminals and ground (500VDC	
Insulation re	esistance		insulation resistance tester)	
Protection of	legree		IP1XB	
Weight			0.24kg	
			One-touch connector for communication [Transmission circuit]	
	Commu	nication part	5-pin IDC plug is sold separately: A6CON-L5P	
			<optional></optional>	
External			Online connector for communication: A6CON-LJ5P	
connection			One-touch connector for power supply and FG [Module power supply, FG]	
system	Power s	upply part	5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
			<pre><optional></optional></pre>	
	10		Online connector for power supply: A6CON-PWJ5P	
Annlinghing	I/O part		2-piece spring clamp terminal block [I/O power supply, I/O signals]	
Applicable [TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
	Connector		Applicable cable:	
	communic	alion	FANC-110SBH, FA-CBL200PSBH, CS-110	
	Connector	for notice	0.66 to 0.98mm ² (18 AWG)	
		for power	[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)]	
	supply and	JFG	Wire diameter: 0.16mm or more Insulating coating material: PVC (heat-resistant)	\sim
Applicable	Spring cla	mp terminal	Stranded wire 0.08 to 1.5mm ² (28 to 16 AWG) * 1	-
wire size	block for I/		Wire strip length: 8 to 11mm	
		~	TE0.5 [Applicable wire size: 0.5mm ²]	1
			TE0.5 [Applicable wire size: 0.5mm ²]	
	Applic	ahle	TE1 [Applicable wire size: 0.9 to 1.0mm ²]	
		less terminal		
	Soluel	Cos (Cirrinida	TGV TC1.25-9T [Applicable wire size: 0.3 to 1.65mm ²]	
			TGWV TC1.25-T9 [Applicable wire size: 0.3 to 1.65mm ²]	
Accessory	- 1		User's manual, Holding fixtures for screw installation	1
, 1000330i y	ccessory			

* 1: Insert one wire per terminal.





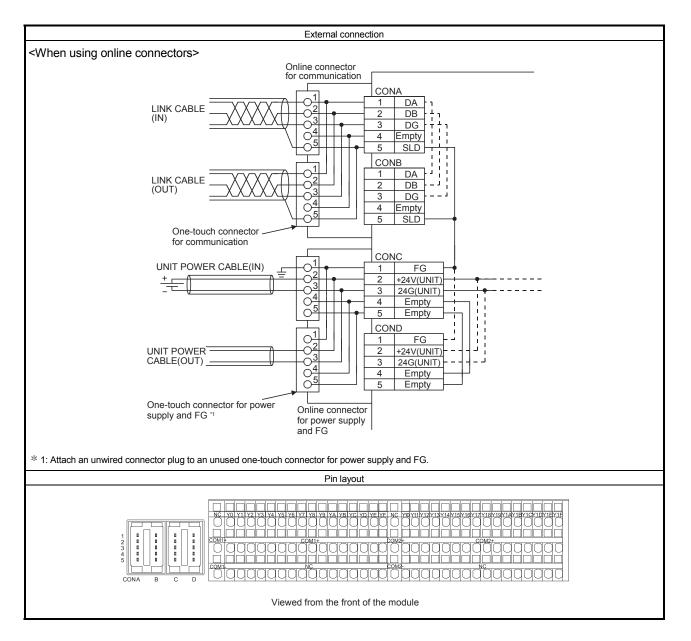
Viewed from the front of the module

5.2.2 AJ65VBTS2-32T transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65VBTS2-32T	Appearance
Number of c	output poin	ts	32 points	
Isolation me	thod		Photocoupler	
Rated load	voltage		12/24VDC	
Operating load voltage range Max. load current		e range	10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load current			0.5A/point, 4A/common	
Max. inrush current			1.0A, 10ms or less	
Leakage current at OFF		F	0.1mA or lower	
Max. voltage	eakage current at OFF /ax. voltage drop at ON		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Output type	0		Sink type	
Protection fu	unction		None	
		OFF→ON	1ms or less	
Response ti	me	ON→OFF	1ms or less (resistive load)	
External pov	wer	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
supply for o		Current	30mA or lower (at 24VDC and all points ON), excluding external load current	- 11 11 분동부
Surge suppl			Zener diode	
Wiring meth		nmon	16 points/common (2-wire, spring clamp terminal block type)	
Number of c			32-point assignment/station (32 points used)	
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pow	er supply	Current	60mA or lower (at 24VDC and all points ON)	
		Garrent	Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	nity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground	
	onago		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
Insulation re	sistance		resistance tester)	
Protection d	egree		IP1XB	
Weight	0		0.40kg	
<u> </u>			One-touch connector for communication [Transmission circuit]	
	Commu	inication	5-pin IDC plug is sold separately: A6CON-L5P	
	part		<optional></optional>	
External			Online connector for communication: A6CON-LJ5P	
connection			One-touch connector for power supply and FG [Module power supply, FG]	
system	Power e	supply part	5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
	I Ower a	supply part	<optional></optional>	
			Online connector for power supply: A6CON-PWJ5P	
	I/O part		2-piece spring clamp terminal block [I/O power supply, I/O signals]	
Applicable [DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
	Connecto	r for	Applicable cable:	
	communio	cation	FANC-110SBH, FA-CBL200PSBH, CS-110	
			0.66 to 0.98mm ² (18 AWG)	
		r for power	[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)]	
	supply an	d FG	Wire diameter: 0.16mm or more	
			Insulating coating material: PVC (heat-resistant)	
Applicable	Spring cla	•	Stranded wire 0.08 to 1.5mm ² (28 to 16 AWG) * 1	
wire size	terminal b	lock for I/O	Wire strip length: 8 to 11mm	
			TE0.5 [Applicable wire size: 0.5mm ²]	
	Applic	able	TE0.75 [Applicable wire size: 0.75mm ²]	
	solder		TE1 [Applicable wire size: 0.9 to 1.0mm ²]	
	termin	nal	TE1.5 [Applicable wire size: 1.25 to 1.5mm ²]	
			TGV TC1.25-9T [Applicable wire size: 0.3 to 1.65mm ²]	
A			TGWV TC1.25-T9 [Applicable wire size: 0.3 to 1.65mm ²]	-
Accessory			User's manual, Holding fixtures for screw installation	

* 1: Insert one wire per terminal.

External connection										
		Pin number		Si	gnal nan	ne				
	_		1		DA					
			2	DB						
	CON A	CON A, B		DG						
				Empty						
				SLD						
			1		⊥ (FG	3)				
(OUT) $X X X X = \begin{bmatrix} 3 & 3 & DG \\ \hline & 4 & Empty \end{bmatrix}$			2	+2	24V (UN	IT)				
	CON C	;, D	3	24	4G (UNI	T)				
One-touch connector for communication			4		Empty	,				
UNIT POWER CABLE(IN) $=$ $-\frac{1}{2}$ $+\frac{1}{2}$ $+\frac{1}{$			5		Empty					
			Term	ninal block						
	Co	olumn A	Co	olumn B	Co	olumn C				
	1	Empty	1	COM1+	1	COM1-				
	2	Y0	2	COM1+	2	Empty				
One-touch connector for power supply and FG*1	3	Y1	3	COM1+	3	Empty				
TB1A Empty	4	Y2	4	COM1+	4	Empty				
for output part Load TB1C COM1- Constant-voltage circuit	5	Y3	5	COM1+	5	Empty				
	6	Y4	6	COM1+	6	Empty				
TB2C Empty TB3A Y1	7	Y5	7	COM1+	7	Empty				
TB3B COM1+ TB3C Empty	8	Y6	8	COM1+	8	Empty				
TB4A Y2 TB4B COM1+	9	Y7	9	COM1+	9	Empty				
/ TB4C Empty	10	Y8	10	COM1+	10	Empty				
	11	Y9	11	COM1+	11	Empty				
	12	YA	12	COM1+	12	Empty				
	13	YB	13	COM1+	13	Empty				
TB15A YD TB15B COM1+	14	YC	14	COM1+	14	Empty				
TB15C Empty	15	YD	15	COM1+	15	Empty				
	16 17	YE YF	16 17	COM1+ COM1+	16	Empty				
	18		17	COM1+ COM2+	17 18	Empty COM2-				
TB17B COM1+ TB17C Empty	19	Empty Y10	10	COM2+	19	Empty				
External power supply + T1818B COM2+	20	Y11	20	COM2+	20	Empty				
for output part - Load TB18C COM2- Constant-voltage circuit	21	Y12	21	COM2+	21	Empty				
	22	Y13	22	COM2+	22	Empty				
TB20A Y11 TB20B COM2+	23	Y14	23	COM2+	23	Empty				
TB20C Empty TB21A Y12	24	Y15	24	COM2+	24	Empty				
/ TB21B COM2+ / TB21C Empty	25	Y16	25	COM2+	25	Empty				
	26	Y17	26	COM2+	26	Empty				
	27	Y18	27	COM2+	27	Empty				
	28	Y19	28	COM2+	28	Empty				
TB32A Y1D	29	Y1A	29	COM2+	29	Empty				
TB32B COM2+ TB32C Empty	30	Y1B	30	COM2+	30	Empty				
	31	Y1C	31	COM2+	31	Empty				
TB33C Empty TB34A Y1F	32	Y1D	32	COM2+	32	Empty				
TB34B COM2+	33	Y1E	33	COM2+	33	Empty				
	34	Y1F	34	COM2+	34	Empty				
	* 1: A c	ttach an unwi onnector for p	red conn ower su	ector plug to a pply and FG.	an unuse	ed one-touch				

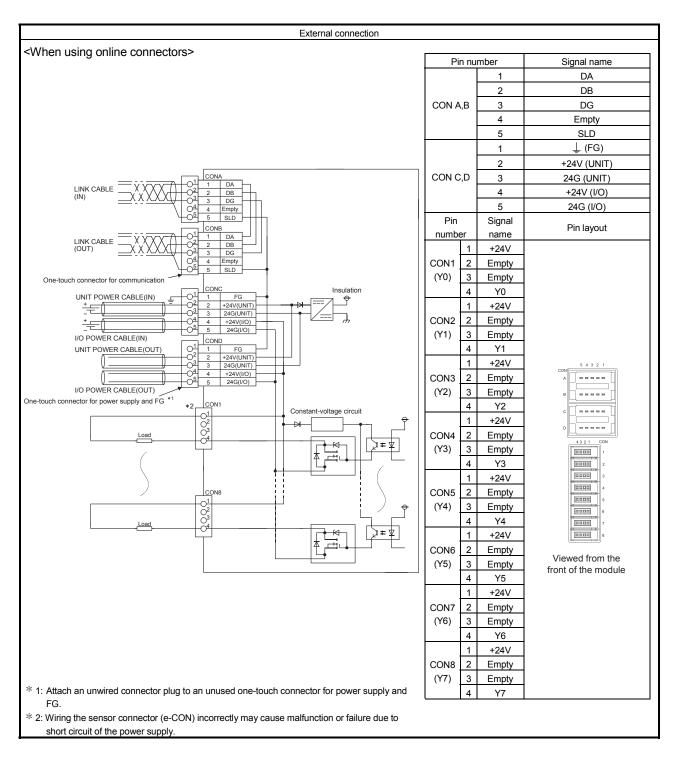


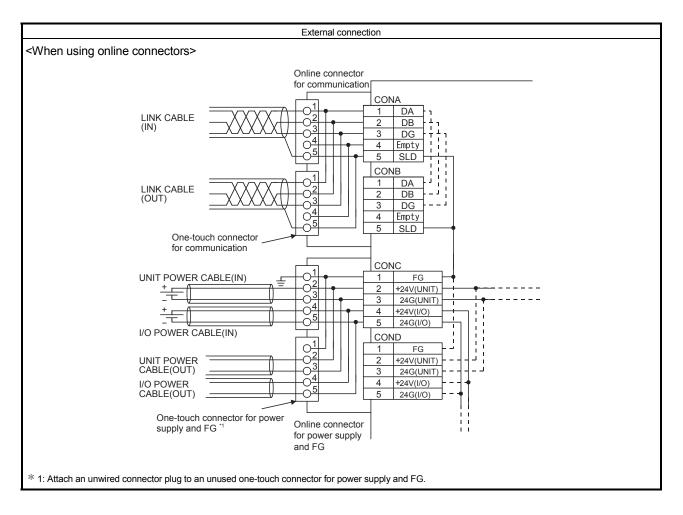
5.3 Sensor Connector (e-CON) Type Output Module

5.3.1 AJ65VBTCE2-8T transistor output module (sink type)

\frown	Туре	Transistor output module	
Item		AJ65VBTCE2-8T	Appearance
Number of c	output points	8 points	
Isolation method		Photocoupler	7
Rated load		12/24VDC	1
	bad voltage range	10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load cu		0.1A/point, 0.8A/common	
Max. inrush		0.7A, 10ms or less	
	rrent at OFF	0.1mA or lower	
	e drop at ON	0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	
Output type		Sink type	
Protection fu		Overload protection, overvoltage protection, overheat protection	-
1101000001111	OFF→ON	1ms or less	-
Response ti	me ON→OFF	1ms or less (resistive load)	
External pov			$-$ ((\bigcirc))
supply for or	utput	10.2 to 26.4VDC (ripple ratio: within 5%)	
part	Current	5mA or lower (at 24VDC and all points ON), excluding external load current	
Surge suppi	ressor	Zener diode	
Wiring meth	od for common	8 points/common (2-wire, sensor connector (e-CON) type)	
Number of c	occupied stations	32-point assignment/station (8 points used)	
Module pow	ver Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	Current	35mA or lower (at 24VDC and all points ON)	
	. 11	Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	nity	noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand v	oltage	500VAC for 1 minute between all DC external terminals and ground	MELSE AJ65VBTCE2-8T PWO
Insulation resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Drotaction d	ograa	IP1XB	
Protection d	legiee		
Weight		0.10kg	
	Communication	One-touch connector for communication [Transmission circuit]	Y3 1000 40 50
	Communication	5-pin IDC plug is sold separately: A6CON-L5P	Y4 0000 70
	part	<optional> Online connector for communication: A6CON-LJ5P</optional>	
External			
External connection		One-touch connector for power supply and FG	Y6
	Power supply	[Module power supply, I/O power supply, FG] 5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	Y7 Incen
system	part	<pre>Optional></pre>	Y7
		Online connector for power supply: A6CON-PWJ5P	
		Sensor connector (e-CON) [I/O signals]	
	I/O part	4-pin IDC plug is sold separately. * 1	
Applicable D)IN rail	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	1
	Connector for	Applicable cable:	1
	communication	FANC-110SBH, FA-CBL200PSBH, CS-110	
-		0.66 to 0.98mm ² (18 AWG)	1
	Connector for	[\u00e92.2 to 3.0mm (A6CON-PW5P), \u00e92.0 to 2.3mm (A6CON-PW5P-SOD)]	
Applicable	power supply and	Wire diameter: 0.16mm or more	
wire size	FG	Insulating coating material: PVC (heat-resistant)	
		Sensor connector (e-CON).	1
	Connector for I/O	Applicable connector plugs are sold separately * 1	
	Connector for I/O	Applicable connector plugs are sold separately. * 1 (applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	

* 1: Refer to Section 1.6.2 for details.



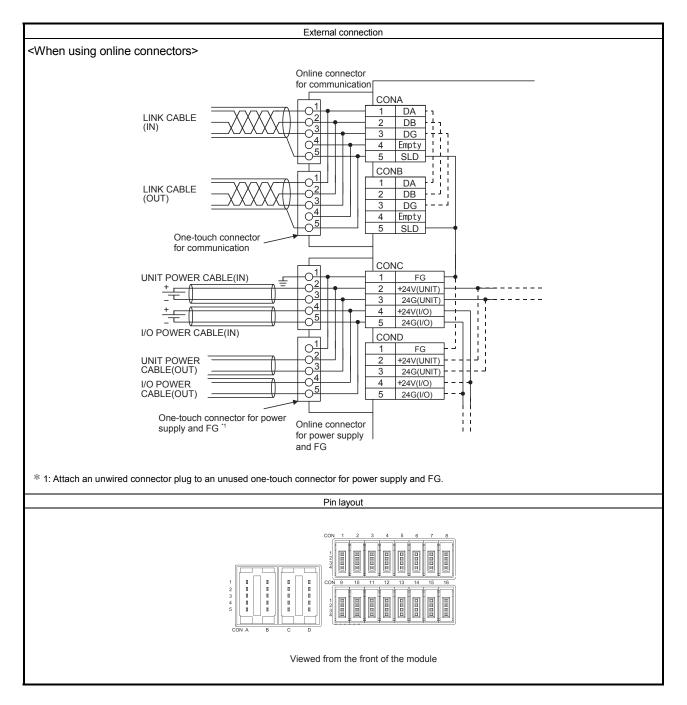


5.3.2 AJ65VBTCE2-16T transistor output module (sink type)

	_	Туре	Transistor output module	Transistor output module				
ltem		<u> </u>	AJ65VBTCE2-16T	Appearance				
Number of output points		ts	16 points					
Isolation method			Photocoupler					
Rated load voltage			12/24VDC					
Operating lo	•	e range	10.2 to 26.4VDC (ripple ratio: within 5%)					
Max. load cu	*		0.1A/point, 1.6A/common					
Max. inrush			0.7A, 10ms or less					
Leakage cu		F	0.1mA or lower					
Max. voltage			0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	-				
ž	e urop at C	//N		-				
Output type			Sink type	-				
Protection fu			Overload protection, overvoltage protection, overheat protection	•				
Response ti	me	FF→ON	1ms or less					
		N→OFF	1ms or less (resistive load)					
External pov supply for or	utput	oltage	10.2 to 26.4VDC (ripple ratio: within 5%)					
part	Cu	urrent	10mA or lower (at 24VDC and all points ON), excluding external load current					
Surge suppi	ressor		Zener diode					
Wiring meth		nmon	16 points/common (2-wire, sensor connector (e-CON) type)					
Number of c			32-point assignment/station (16 points used)					
Module pow		oltage	20.4 to 26.4VDC (ripple ratio: within 5%)					
supply		urrent	45mA or lower (at 24VDC and all points ON)					
			Noise voltage 500Vp-p, noise width 1µs,					
Noise immu	nity		noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand v	oltago		500VAC for 1 minute between all DC external terminals and ground					
VVILIISLAITU V	ullaye							
Insulation re	sistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)					
Drotoction d			IP1XB					
Protection d	egree							
Weight			0.10kg					
	Communication part		One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P <optional></optional>					
			Online connector for communication: A6CON-LJ5P					
External			One-touch connector for power supply and FG					
connection			[Module power supply, I/O power supply, FG]					
system	Power supply part		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD <optional></optional>					
			Online connector for power supply: A6CON-PWJ5P					
	10		Sensor connector (e-CON) [I/O signals]					
	I/O part		4-pin IDC plug is sold separately. * 1					
Applicable D	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	1				
	Connecto	r for	Applicable cable:	1				
	communic		FANC-110SBH, FA-CBL200PSBH, CS-110					
	<u> </u>		0.66 to 0.98mm ² (18 AWG)					
A	Connecto	-	[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]					
	power sup	oply and	Wire diameter: 0.16mm or more					
wire size	FG		Insulating coating material: PVC (heat-resistant)					
wire size				1				
wire size			Sensor connector (e-CON).					
wire size	Connecto	r for	Sensor connector (e-CON).					
wire size	Connector I/O	r for	Sensor connector (e-CON). Applicable connector plugs are sold separately. * 1 (applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)					

* 1: Refer to Section 1.6.2 for details.

External connection							
					1		
	F	Pin nu	Imber		S	<u> </u>	l name
				1			A
			-	2		_)B)G
	CO	on a, e	В	3 4			npty
$\begin{array}{c c} \text{LINK CABLE} & \hline X & \hline X & \hline X & \hline & & \\ \hline & X & X & \hline & & \\ \hline & & X & X & \hline & & \\ \hline & & & X & X & \hline & & \\ \hline \end{array}$				4 5			LD
(11) (11)				1			(FG)
				2		-	(UNIT)
	со	N C, E	D	3			(UNIT)
$(OUT) \qquad X X X X + O_3 + D_6 + O_3 $				4			/ (I/O)
O^4 4 Empty O^5 5 SLD				5		24G	(I/O)
One-touch connector for communication	Pin num	nber	Signal	name	Pin num	ber	Signal name
		1	+24			1	+24V
$\begin{array}{c} + \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\$	CON1	2	Empty		CON9	2	Empty * 1
$+ _{} _{$	(Y0)	3	Empty		(Y8)	3 4	Empty * 2
I/O POWER CABLE(IN)		4	+24	-		4	Y8 +24V
UNIT POWER CABLE(OUT) O_1^{1} F_G O_2^{2} $2 + 24V(UNIT)$	CON2	2	Empty		CON10	2	Empty * 1
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(Y1)	3	Empty		(Y9)	3	Empty * 2
VO POWER CABLE(OUT)	. ,	4	Y			4	Y9
One-touch connector for power supply and FG ^{*3} *4 CON1		1	+24			1	+24V
	CON3	2	Empty		CON11	2	Empty * 1
	(Y2)	3	Empty		(YA)	3	Empty * 2
		4	Y: +24			4	YA +24V
	CON4	2	Empty		CON12	2	+24V Empty * 1
	(Y3)	3	Empty		(YB)	3	Empty * 2
	Ì, í	4	Y		1 ` ´	4	YB
		1	+24			1	+24V
	CON5	2	Empty		CON13	2	Empty * 1
	(Y4)	3	Empty		(YC)	3	Empty * 2
		4	۲4 +24			4	YC +24V
	CON6	2	Empty		CON14	1	+24V Empty * 1
	(Y5)	3	Empty		(YD)	2	Empty * 2
	x - /	4	Y		l` í	4	YD
	1	1	+24	4V		1	+24V
	CON7	2	Empty		CON15	2	Empty * 1
st 1: Since all No.2 pins of CON1 to CON16 are connected inside the module, they cannot be	(Y6)	3	Empty		(YE)	3	Empty * 2
used.		4	Y			4	YE
st 2: Since all No.3 pins of CON1 to CON16 are connected inside the module, they cannot be	CON8	1	+24 Empty		CON16	1 2	+24V Empty * 1
used.	(Y7)	2	Empty		(YF)	2	Empty * 1 Empty * 2
* 3: Attach an unwired connector plug to an unused one-touch connector for power supply and	(,	4	Y		(,	4	YF
FG.	•				•		
* 4: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to							
short circuit of the power supply.							

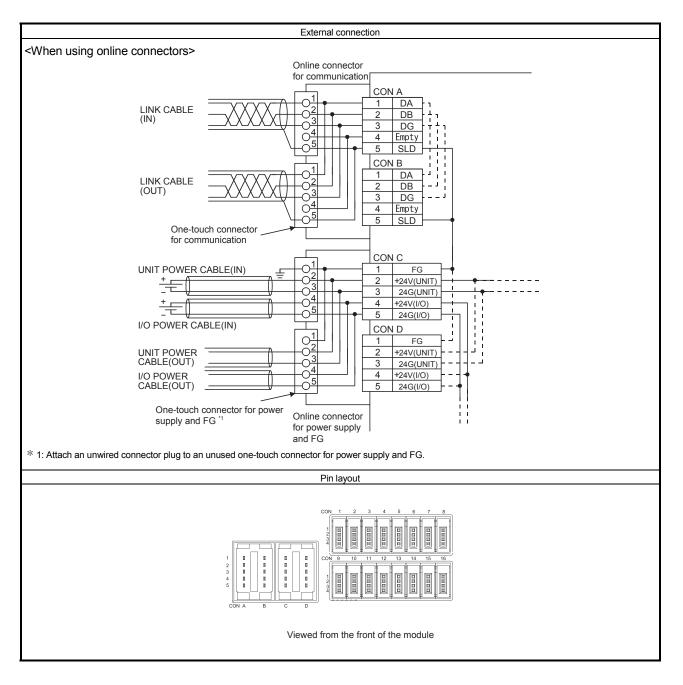


5.3.3 AJ65VBTCE3-16TE transistor output module (source type)

		Туре	Transistor output module	
ltem	/		AJ65VBTCE3-16TE	Appearance
Number of output points		S	16 points	
Isolation method			Photocoupler	
Rated load	voltage		12/24VDC	
Operating lo	oad voltage	range	10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load c	urrent		0.1A/point, 1.6A/common	
Max. inrush	current		0.7A, 10ms or less	
Leakage cu	irrent at OF	F	0.1mA or lower	
Max. voltag	e drop at O	N	0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	
Output type			Source type	
Protection f	unction		Overload protection, overheat protection	
Response t	OF	FF→ON	1ms or less	
Response i	0	N→OFF	1ms or less (resistive load)	
External por supply for o	vc	ltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
part		irrent	11mA or lower (at 24VDC and all points ON), excluding external load current	
Surge supp	ressor		Zener diode	
Supply curred device	ent for conr	nected	1.0A or lower/common	
Wiring meth	nod for com	mon	16 points/common (3-wire, sensor connector (e-CON) type)	
Number of o			32-point assignment/station (16 points used)	
Module pov		ltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply		irrent	45mA or lower (at 24VDC and all points ON)	
			Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)	> 0000 ~ 0000 <
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation re	esistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Protection d	learee		IP1XB	
Weight	logico		0.11kg	
Wolght	Commu part	nication	One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P <optional> Online connector for communication: A6CON-LJ5P</optional>	
External			One-touch connector for power supply and FG	
connection			[Module power supply, I/O power supply, FG]	
system	Power supply part		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD <optional></optional>	
			Online connector for power supply: A6CON-PWJ5P	
	1/0 =====		Sensor connector (e-CON) [I/O signals]	
	I/O part		4-pin IDC plug is sold separately. * 1	
Applicable [DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
	Connector communic	-	Applicable cable: FANC-110SBH, FA-CBL200PSBH, CS-110	
			0.66 to 0.98mm ² (18 AWG)	1
	Connector		[62.2 to 3.0mm (A6CON-PW5P), 62.0 to 2.3mm (A6CON-PW5P-SOD)]	
Applicable	power sup	ply and	Wire diameter: 0.16mm or more	
wire size	FG		Insulating coating material: PVC (heat-resistant)	
	0		Sensor connector (e-CON).]
	Connector	TOP	Applicable connector plugs are sold separately. * 1	
	I/O		(applicable wire size: 0.08 to 0.5mm ² , depending on the connector plug)	
Accessory			User's manual, Holding fixtures for screw installation	

* 1: Refer to Section 1.6.2 for details.

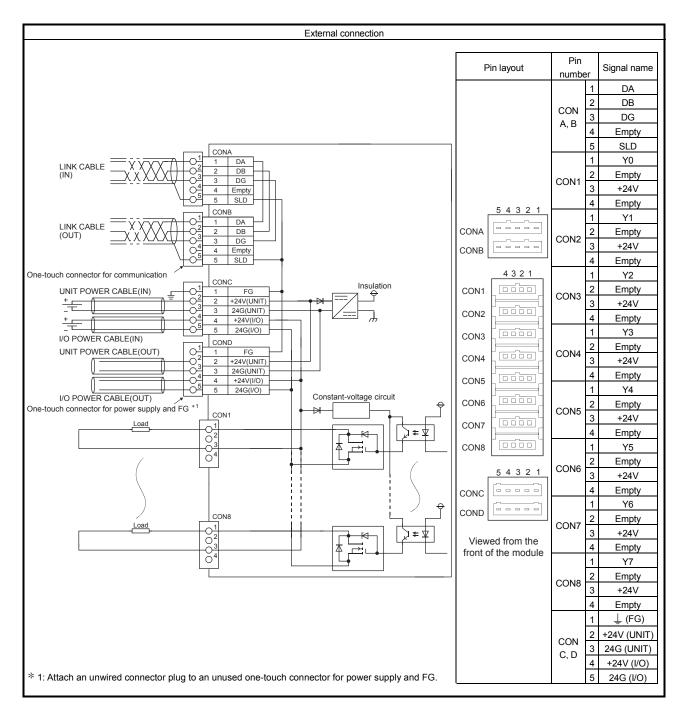
External connection							
	r				1		
		Pin nui	mber		S	<u> </u>	Iname
				1			A
	~~~			2			)B )G
		N A, E	5	3			npty
				4 5			LD
$\begin{array}{c c} \text{LINK CABLE} & X \\ \text{(IN)} & X \\ \hline X \\ X \\$				1			(FG)
$O^4$ <u>4</u> Empty $O^5$ 5 SLD				2	+	-	(UNIT)
	CO	NC, E	)	3			(UNIT)
				4		+24\	/ (I/O)
$(OOT)$ $$ $\land$ $\land$ $\land$ $\bigcirc$ $\bigcirc$ $3$ $$ $\bigcirc$ $3$ $$ $\bigcirc$ $\bigcirc$ $3$ $$ $\bigcirc$ $\bigcirc$ $4$ $$ $\bigcirc$ $\bigcirc$ $4$ $$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $4$ $$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $\bigcirc$ $(OOT)$ $\bigcirc$ $\bigcirc$ $(OOT)$ $\bigcirc$ $\bigcirc$ $(OOT)$ $(O$				5		24G	(I/O)
One-touch connector for communication	Pin num	iber	Signal		Pin num	1	Signal name
CON C Insulation		1	+24			1	+24V
UNIT POWER CABLE(IN) $= 0^{1}$ $1$ FG $\rightarrow$	CON1	2	Empty		CON9	2	Empty * 1
	(Y0)	3 4	24 Y(		(Y8)	3 4	24G Y8
	<u> </u>	4	+24			4	+24V
UNIT POWER CABLE(OUT) $O_1^{1}$ $F_G$	CON2	2	Empty		CON10	2	Empty * 1
	(Y1)	3	24		(Y9)	3	24G
		4	۲ŕ			4	Y9
I/O POWER CABLE(OUT)		1	+24			1	+24V
Constant- voltage	CON3	2	Empty		CON11	2	Empty * 1
circuït	(Y2)	3 4	24 Y2		(YA)	3 4	24G YA
		4	+24			1	+24V
	CON4	2	Empty		CON12	2	Empty * 1
	(Y3)	3	24		(YB)	3	24G
( *1		4	Y	3		4	YB
		1	+24			1	+24V
	CON5	2	Empty		CON13	2	Empty * 1
	(Y4)	3 4	24 Y4		(YC)	3 4	24G
		4	+24			4	YC +24V
	CON6	2	Empty		CON14	2	Empty * 1
	(Y5)	3	24		(YD)	3	24G
		4	Y	5		4	YD
		1	+24			1	+24V
	CON7	2	Empty		CON15	2	Empty * 1
st 1: Since all No.2 pins of CON1 to CON16 are connected inside the module, they cannot be	(Y6)	3	24		(YE)	3	24G
used.		4	Y6 +24			4	YE +24V
* 2: Attach an unwired connector plug to an unused one-touch connector for power supply and	CON8	2	Empty	_	CON16	1	+24V Empty * 1
FG.	(Y7)	3	24		(YF)	2	24G
st 3: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to	` '	4	Y		, í	4	YF
short circuit of the power supply.	•	· · ·			•		

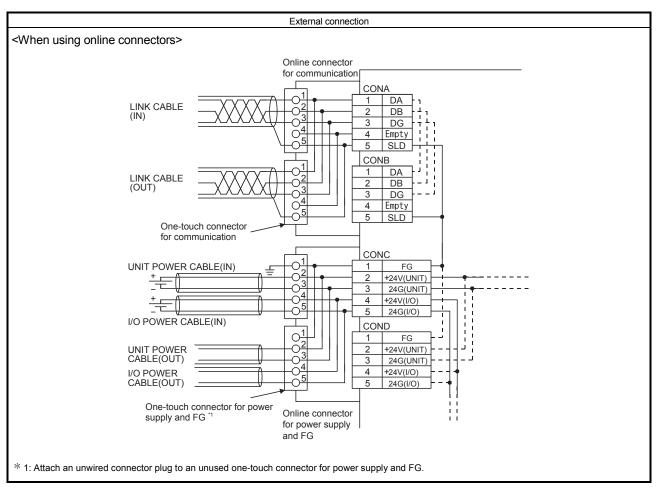


### 5.4 One-Touch Connector Type Output Module

# 5.4.1 AJ65VBTCU2-8T transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65VBTCU2-8T	Appearance
Number of	output points		8 points	
Isolation method			Photocoupler	
Rated load voltage			12/24VDC	
Operating I	oad voltage range	е	10.2 to 26.4VDC (ripple ratio: within 5%)	
Max. load o	current		0.1A/point, 0.8A/common	
Max. inrush	n current		0.7A, 10ms or less	
Leakage cu	urrent at OFF		0.1mA or lower	
Max. voltag	ge drop at ON		0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	
Output type			Sink type	
Protection f			Overload protection, overvoltage protection, overheat protection	
		OFF→ON	1ms or less	
Response	time	ON→OFF	1ms or less (rated load, resistive load)	
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	MELSEG AJ65VBTCU2-8T
output part		Current	5mA or lower (TYP., 24VDC/common)	CON ¬
Surge supp			Zener diode	A
• •	hod for common		8 points/common (2-wire, one-touch connector type)	N K
-	occupied stations	3	32-point assignment/station (8 points used)	
	eccupied etadorie	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Module pov	wer supply	Current	35mA or lower (at 24VDC and all points ON)	YO PW
		ounch	Noise voltage 500Vp-p, noise width 1µs,	Y1 O
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground	Y2 00
With lotaria	Voltago		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
Insulation r	esistance		resistance tester)	
Protection of	degree		IP1XB	Y4 50
Weight			0.15kg	70
	Communication part		One-touch connector for communication	Y5
			[Transmission circuit]	Y6
			5-pin IDC plug is sold separately.	
			<optional></optional>	Y7
External			Online connector for communication: A6CON-LJ5P	
connection			One-touch connector for power supply and FG	
system			[Module power supply, I/O power supply, FG]	
•	Power supply part		5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
			<optional></optional>	
			Online connector for power supply: A6CON-PWJ5P One-touch connector for I/O	CC-Link
	I/O part		4-pin IDC plug is sold separately.	
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
, thhirdnie	Connector for		Applicable cable:	
	communication		FANC-110SBH, FA-CBL200PSBH, CS-110	
	Communication		0.66 to 0.98mm ² (18 AWG)	
	Connector for po	wer supply	[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)]	
Applicable			Wire diameter: 0.16mm or more	
wire size			Insulating coating material: PVC (heat-resistant)	
			φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	
		_	[Applicable wire size: 0.14 to 0.2mm ² ]	
	Connector for I/C	נ	φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)	
			[Applicable wire size: 0.3 to 0.5mm ² ]	
Accessory			User's manual	

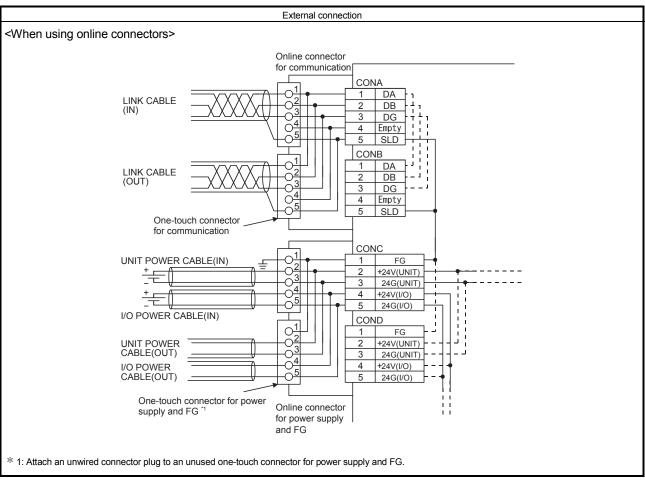




### 5.4.2 AJ65VBTCU2-16T transistor output module (sink type)

		Туре	Transistor output module	
Item			AJ65VBTCU2-16T	Appearance
Number of c	output point	S	16 points	
Isolation method			Photocoupler	
Rated load v	voltage		12/24VDC	]
Operating lo	oad voltage	range	10.2 to 26.4VDC (ripple ratio: within 5%)	]
Max. load cu	urrent		0.1A/point, 1.6A/common	]
Max. inrush	current		0.7A, 10ms or less	]
Leakage cur	rrent at OFI	F	0.1mA or lower	]
Max. voltage	e drop at O	N	0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	]
Output type			Sink type	]
Protection fu	unction		Overload protection, overvoltage protection, overheat protection	
Deeneneet	0	FF→ON	1ms or less	
Response ti	O	N→OFF	1ms or less (resistive load)	
External pov supply for ou	v	oltage	10.2 to 26.4VDC (ripple ratio: within 5%)	
part		urrent	10mA or lower (TYP. 24VDC/common), excluding external load current	
Surge suppr	ressor		Zener diode	MELSEG AJ65VBTCU2-16T
Wiring meth	od for com	mon	16 points/common (2-wire, one-touch connector type)	
Number of c	occupied sta	ations	32-point assignment/station (16 points used)	
Module pow	ver V	oltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
supply	С	urrent	40mA or lower (at 24VDC and all points ON)	
			Noise voltage 500Vp-p, noise width 1µs,	
Noise immu	inity		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand vo	oltage		500VAC for 1 minute between all DC external terminals and ground	
la sul sti su us			$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
Insulation re	esistance		resistance tester)	
Protection d	legree		IP1XB	
Weight			0.19kg	
			One-touch connector for communication	
	Communication		[Transmission circuit]	
	part	outon	5-pin IDC plug is sold separately.	
	P 1		<optional></optional>	
External	-		Online connector for communication: A6CON-LJ5P	
connection			One-touch connector for power supply and FG	
system	Dowor our	anh and	[Module power supply, I/O power supply, FG] 5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD	
	Power sup	opiy part	<pre>&gt;pin iDC plug is sold separately. Accon-PWSP, Accon-PWSP-SOD</pre> <optional></optional>	CC-Link
			Online connector for power supply: A6CON-PWJ5P	
			One-touch connector for I/O	-
	I/O part		4-pin IDC plug is sold separately.	
Applicable D	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	1
	Connector	r for	Applicable cable:	1
	communic		FANC-110SBH, FA-CBL200PSBH, CS-110	
			0.66 to 0.98mm ² (18 AWG)	]
	Connector		[\$2.2 to 3.0mm (A6CON-PW5P), \$2.0 to 2.3mm (A6CON-PW5P-SOD)]	
Applicable	power sup FG	ipiy anu	Wire diameter: 0.16mm or more	
wire size			Insulating coating material: PVC (heat-resistant)	4
			φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)	
	Connector	r for I/O	[Applicable wire size: 0.14 to 0.2mm ² ]	
	Sonneolui	101 1/0	φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)	
			[Applicable wire size: 0.3 to 0.5mm ² ]	4
Accessory			User's manual	

INK CABLE     CON     Fin layout     Pin layout       INK CABLE     Image: Signal name       INK CABLE     Image: Signal	External connection		
LINK CABLE INK CABLE		Pin layout	
CON         2         Entpty           14         4         Empty           1         YE         CON         2         Empty           15         3         +24V         4         Empty           15         3         +24V         4         Empty           1         YE         CON         2         Empty           15         3         +24V         4         Empty           1         YF         CON         2         Empty	LINK CABLE (N) LINK CABLE (N) CONB LINK CABLE (N) CONB LINK CABLE (N) CONB LINK CABLE (OUT) One-touch connector for communication UNIT POWER CABLE(IN) CONC UNIT POWER CABLE(IN) CONC	5 4 3 2 1         CONA         Image: Second	Number         Signal hame           1         DA           2         DB           3         DG           4         Empty           5         SLD           1         Y0           2         Empty           3         +24V           4         Empty           1         Y1           CON         2         Empty           1         Y2           3         +24V           4         Empty           1         Y2           2         Empty           3         +24V           4         Empty           3         +24V           4         Empty           3         +24V           4         Empty           1         Y3           CON         2         Empty           1         Y4           CON         2         Empty           1         Y5           CON         2         Empty           1         Y7         3           2         Empty         3           3         +24V



#### 5.4.3 AJ65SBTC1-32T transistor output module (sink type)

		Туре	Transistor output module				
Item			AJ65SBTC1-32T	Appearance			
Number of output points			32 points				
Isolation me			Photocoupler				
Rated load	voltage		12/24VDC				
	oad voltage range		10.2 to 26.4VDC (ripple ratio: within 5%)				
Max. load c			0.1A/point, 3.2A/common				
Max. inrush			1.0A, 10ms or less				
	rrent at OFF		0.25mA or lower				
-	e drop at ON		0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A				
Output type	•		Sink type				
Protection f			Overload protection, overvoltage protection, overheat protection				
_		OFF→ON	0.5ms or less				
Response t	ime	ON→OFF	1.5ms or less (resistive load)				
External po	wer supply for output	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)				
part		Current	50mA or lower (TYP. 24VDC/common), excluding external load current				
Surge supp	ressor		Zener diode				
	nod for common		32 points/common (1-wire, one-touch connector type)				
, i i i i i i i i i i i i i i i i i i i	occupied stations		32-point assignment/station (32 points used)				
	•	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)				
Module pov	ver supply	Current	60mA or lower (at 24VDC and all points ON)				
		ounon	Noise voltage 500Vp-p, noise width 1µs,				
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)				
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground				
	-		10M $\Omega$ or higher between all DC external terminals and ground (500VDC				
Insulation re	esistance		insulation resistance tester)				
Protection of	legree		IP2X				
Weight	-		0.16kg				
			7-point two-piece terminal block	288 C1-1-81914			
	Communication part, module power supply part		[Transmission circuit, module power supply, FG]	7 Y8 9 A B 1 O O O O O O O O O O O O O O O O O O O			
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
External			Applicable solderless terminal: 2 or less	Model         1234567           Model         123567           Model         123567           Model         123567           Model         12357           Model         123577           Model         123577           Model         123577           Model         123577           Model         123577           Model         1235777           Model         12357777           Model         12357777     <			
connection			2-point direct-mount terminal block				
system	I/O power supply part		[I/O power supply]				
,	I/O part		M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
			Applicable solderless terminal: 2 or less				
			Dedicated one-touch connector [I/O signals]				
			4-pin IDC plug is sold separately.				
Modulo mo	unting screw		M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)				
	unung sciew		Mountable with a DIN rail in 6 orientations				
Applicable I	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)				
http://www.com	Communication part,		• RAV1.25-3 (compliant with JIS C 2805)				
	module power supply	Applicable	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]				
	part	solderless	• V2-MS3, RAP2-3SL, TGV2-3N				
Applicable	I/O power supply part	terminal	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]				
wire size	P. P		φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)				
			[Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]				
	I/O part		φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)				
			[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]				
Wire	Material		Соррег				
	Temperature rating		75°C or more				
Accessory	-		User's manual				

^{*} For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

# 5 SPECIFICATIONS FOR OUTPUT MODULES

#### External connection Terminal Signal name number TB1 DA TB2 DB TB3 DG TB4 SLD DA TB5 +24V DB 2 DG Insulation 3 TB6 4 SLD 9 TB7 24G 5 +24V Signal name 6 FG Pin number ጔ 7 24G 1 Y0 Ŷ Module power supply CON1 Y1 2 CON1 Load $O^{1}$ $O^{2}$ $O^{3}$ Y2 3 ל≉ג 4 Y3 办 Load <u>_0</u>4 1 Y4 2 Y5 CON2 e Y6 3 4 Y7 1 Y8 1 本 2 Y9 CON3 3 YA 4 YB Ŷ 1 YC CON8 2 YD Load -01 CON4 YΕ Õ² ≠ו $\mathbf{A}$ 3 бз 4 YF 办 Load <u>.04</u> 1 Y10 2 Y11 Ŷ CON5 Y12 З 4 Y13 ≠⊉ 1 Y14 本 Y15 2 CON6 3 Y16 External power supply for output part 4 Y17 8 CTL+ Y18 1 9 COM-Y19 2 CON7 Constant-voltage circuit Y1A 3 Load 4 Y1B Load power supply External power supply for output part and load power supply 1 Y1C 8 CTL+ (common) + 2 Y1D 9 COM-CON8 Y1E 3 Y1F Terminal Signal name number CLT+ TB8 COMтв9 Pin layout CON4 CON1 CON2 CON3 CON5 20N6 CON7 CONB Viewed from the front of the module

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### 5.4.4 AJ65SBTC1-32T1 transistor output module (sink type)

	_	Тур	e Transistor output module				
Item			AJ65SBTC1-32T1	Appearance			
Number of	output points		32 points				
Isolation m	nethod		Photocoupler				
Rated load	l voltage		12/24VDC	7			
	load voltage ra	nge	10.2 to 26.4VDC (ripple ratio: within 5%)				
Max. load o	current		0.1A/point, 3.2A/common				
Max. inrusł	h current		1.0A, 10ms or less				
Leakage cu	urrent at OFF		0.1mA or lower				
Max. voltag	ge drop at ON		0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A				
Output type	е		Sink type				
Protection	function		None				
Desserves	1	OFF→ON	0.5ms or less				
Response	time	ON→OFF	1.5ms or less (resistive load)				
External po	ower supply	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)				
for output p		Current	50mA or lower (TYP. 24VDC/common), excluding external load current				
Surge supp	pressor		Zener diode	7			
• 11	thod for commo	on	32 points/common (1-wire, one-touch connector type)				
Number of	occupied stati	ons	32-point assignment/station (32 points used)				
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)				
Module pov	wer supply	Current	60mA or lower (at 24VDC and all points ON)				
			Noise voltage 500Vp-p, noise width 1µs,				
Noise imm	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)				
Withstand	voltage		500VAC for 1 minute between all DC external terminals and ground				
			$10M\Omega$ or higher between all DC external terminals and ground (500VDC				
Insulation r	resistance		insulation resistance tester)				
Protection	dearee		IP2X				
Weight			0.16kg				
- 0 -			7-point two-piece terminal block				
	Communicati	on part,	[Transmission circuit, module power supply, FG]	→ → → → → → → → → → → → → → → → → → →			
	module powe	•	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
			Applicable solderless terminal: 2 or less				
External			2-point direct-mount terminal block	1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1			
connection		anly nort	[I/O power supply]				
system	I/O power sup	ppiy part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
			Applicable solderless terminal: 2 or less				
	I/O part		Dedicated one-touch connector [I/O signals]				
	"O pail		4-pin IDC plug is sold separately.				
			M4 screw with plain washer finished round				
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)				
			Mountable with a DIN rail in 6 orientations	_			
Applicable		1	TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	_			
	Communicati	on					
	part,	Applicable	• RAV1.25-3 (compliant with JIS C 2805)				
	module powe	solderless	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]				
	supply part	terminal	• V2-MS3, RAP2-3SL, TGV2-3N				
Applicable		oply	[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]				
wire size	part			-1			
			φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)				
	I/O part		[Applicable wire size: 0.14 to 0.2mm ² (26 to 24 AWG) stranded wire]				
			φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)				
14/:	Matarial		[Applicable wire size: 0.3 to 0.5 mm ² (22 to 20 AWG) stranded wire]	-1			
Wire	Material		Copper				
	Temperature	rating	75°C or more	-1			
Accessory			User's manual				

#### External connection Terminal Signal name number TB1 DA TB2 DB TB3 DG SLD DA TB4 γ 2 DB TB5 +24V 3 DG Insulation TB6 4 SLD 9 5 +24V TB7 24G 6 FG Signal name Pin number 7 24G P Module power supply 1 Y0 CON1 2 Y1 Loac CON1 3 Y2 לבע $\tilde{O}^2$ õ³ 本 4 Y3 $\rightarrow$ Load <u>. 04</u> 1 Y4 2 Y5 -0 CON2 3 Y6 4 Y7 לבבל Y8 1 厷 2 Y9 CON3 3 YA 4 YB ę 1 YC CON8 2 YD Load $-0^{1}$ CON4 ע ≉ ג $O^2$ $O^3$ 3 YE 本 4 YF Г Load $\cap$ 1 Y10 2 Y11 Ŷ CON5 3 Y12 4 Y13 ≱≠⊄ 1 Y14 本 Ļ 2 Y15 External power supply for output part CON6 3 Y16 4 Y17 8 CTL+ Y18 1 9 COM-Y19 2 CON7 3 Y1A Load power supply Constant-voltage circuit 4 Y1B Load _ _ _ External power supply for output part 1 Y1C and load power supply (common) 8 CTL+ 2 Y1D CON8 + 9 COM-3 Y1E Y1F 4 Terminal Signal name number CLT+ TB8 COMтв9 Pin layout CON4 CON1 CON2 CON3 CON5 20N6 20N7 CONB Viewed from the front of the module

# 5.5 FCN Connector Type Output Module

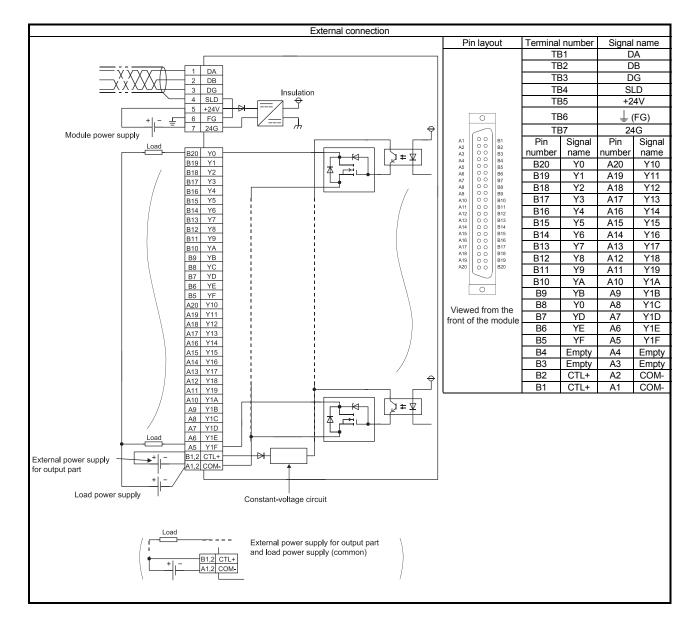
#### 5.5.1 AJ65SBTCF1-32T type transistor output module (sink type)

Item		Туре	Triac output module AJ65SBTCF1-32T	Appea	rance		
	output points		32 points	Лррса	Tarice		
Isolation m			Photocoupler	4			
Rated load			12/24VDC				
		20	10.2 to 26.4VDC (ripple ratio: within 5%)	4			
Dperating load voltage range Aax. load current		Je	0.1A/point, 3.2A/common	+			
Max. inrush			1.0A, 10ms or less	1			
	urrent at OFF		0.1mA or lower	1			
	ge drop at ON		0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A	1			
Output type			Sink type	1			
Protection f			Overload protection, overvoltage protection, overheat protection	1			
_		OFF→ON	0.5ms or less	1			
Response f	time	ON→OFF	1.5ms or less (resistive load)	1			
External po	ower supply for	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	T			
output part		Current	50mA or lower (TYP. 24VDC/common), excluding external load current				
Surge supp			Zener diode		0		
	hod for common	1	32 points/common (1-wire, FCN connector type)	11日日日 11日日 11日日 11日日 11日日 11日日 11日日 1	6.0		
	occupied station		32-point assignment/station (32 points used)		00		
		Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	STATION NO. 40.20 10 8 4.2. 18년 14년 14년 14년 14년 14년 14년 14년 14년 14년 14	0 0		
Module pov	wer supply	Current	60mA or lower (at 24VDC and all points ON)	STATION NG 10 20 10 8 4 B H H H H B H H H H	00		
		ounon	Noise voltage 500Vp-p, noise width 1µs,		00		
Noise immu	unity		noise frequency 25 to 60Hz (DC type noise simulator condition)		°° –		
Withstand v	voltage		500VAC for 1 minute between all DC external terminals and ground				
			$10M\Omega$ or higher between all DC external terminals and ground (500VDC				
Insulation r	esistance		insulation resistance tester)				
Weight			0.15kg	<ul> <li>7 789 A B C D E F うしていたいたいたいたいたいたいたいたいたいたいたいたいたいたいたいたいたいたいた</li></ul>			
			7-point two-piece terminal block	1810 1810	$\square \bowtie \llbracket$		
	Communication	n part,	[Transmission circuit, module power supply, FG]	217 ) 1055			
External	module power	supply part	M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
connection			Applicable solderless terminal: 2 or less	2 3 4 5 日日日 12131416 [FG] (FG)			
system	I/O power supp	oly part,	40-pin connector [I/O power supply, I/O signal]	NULERR Y0 1 2 3 4 NULERR Y0 1 2 3 4 Y10112134 N10112134 MSL88 DG +24V 24G			
	I/O part		(A6CON1, A6CON2, A6CON3, A6CON4)		()^()		
			M4 screw with plain washer finished round				
Module mo	ounting screw		(tightening torque range: 0.78 to 1.08N•m)				
			Mountable with a DIN rail in 6 orientations				
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)				
	Communication	n Applicable	RAV1.25-3 (compliant with JIS C 2805)				
	part,	solderless	[Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]				
	module power	terminal*1	• V2-MS3, RAP2-3SL, TGV2-3N				
Applicable	supply part		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]	_			
wire size			• 0.08 to 0.3mm ² (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) ^{*2}				
	I/O power supp	oly part,	<ul> <li>0.08 to 0.2mm² (28 to 24 AWG) stranded wire (A6CON2)</li> </ul>				
	I/O part		• 0.08mm ² (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire				
			(A6CON3)	4			
Wire	Material		Copper	4			
	Temperature ra	ating	75°C or more	4			
Applicable terminal blo	connector/ ock conversion r	nodule	A6TBXY36, A6TBXY54				
Accessory			User's manual				

*1 For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*2 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

# 5 SPECIFICATIONS FOR OUTPUT MODULES



### 5.6 Waterproof Type Output Module

# 5.6.1 AJ65FBTA2-16T transistor output module (sink type)

	Туре	Transistor output module	
Item		AJ65FBTA2-16T	Appearance
Number of output points		16 points	
Isolation method		Photocoupler	
Rated load voltage		12/24VDC	
Operating load voltage ra	inge	10.2 to 28.8VDC (ripple ratio: within 5%)	
Max. load current		0.5A/point, 4A/common	
Max. inrush current		1.0A, 10ms or less	
Leakage current at OFF		0.25mA or lower	
Max. voltage drop at ON		0.15VDC or lower (TYP.) 0.5A, 0.25VDC or lower (MAX.) 0.5A	MELSEC AJ65FBTA2-16T
Output type		Sink type	
Protection function		Overload protection, overheat protection	3 141107 (ND) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Response time	OFF→ON	0.5ms or less	X300 20 YB X400 30 YC X500 70 YD X400 30 YF
Response line	ON→OFF	1.5ms or less (resistive load)	UNIT POWER) AUX. XTO VE
External power supply	Voltage	10.2 to 28.8VDC (ripple ratio: within 5%)	
for output part	Current	20mA or lower (at 24VDC and all points ON), excluding external load current	
Surge suppressor		Zener diode	
Wiring method for commo	on	16 points/common (2-wire, waterproof connector type)	H <b>NDEE</b>
Number of occupied stati	ons	32-point assignment/station (16 points used)	
Module power supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
	Current	50mA or lower (at 24VDC and all points ON)	
Noise immunity		Noise voltage 500Vp-p, noise width 1µs,	
		noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground	
Insulation resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation	
		resistance tester)	
Protection degree		IP67	
Weight		0.40kg	
Accessory		User's manual	-
Optional item		Waterproof cap: A6CAP-WP2 (20 pieces)	-
Other connecting devices	6	Refer to Section 1.6.1.	

External connection				
	Pin layout	Cor	nnector for comm	unication
		Pin number	LINK IN	LINK OUT
		1	SLD	SLD
		2	DB	DB
		3	DG	DG
		4 5	DA No pipo	DA
			No pins	Empty ar supply
	LINK IN	Pin number	UNIT POWER	AUX.
Terminating resistor	Male	1	+24V(UNIT)	+24V(I/O)
	(20 o1))	2	Empty	Empty
	30 04	3	24G(UNIT)	24G(I/O)
·		4	Empty	Empty
Insulation		5	⊥_ (FG)	⊥_ (FG)
	Female		Connector for	I/O
		Pin	Signal Pi	•
		number	name num	
Module mounting screw (FG) $\overline{\heartsuit}^4$	UNIT POWER/AUX.	1	+24V	1 +24V
	Male	<u>Y0</u> <u>Y1</u> 3	Y1 Empty Y8 Y9	2 Y9 3 Empty
AUX.		Y1 3	Y0	4 Y8
+		5	Empty	5 Empty
	I/O connector	1	+24V	1 +24V
O 2 Constant-voltage circuit ♀	Female	2	Y3	2 YB
	$\left( \left( \begin{pmatrix} 10 & 02\\ 40 & 053 \end{pmatrix} \right) \right)$	<u>Y2</u> Y3 3	Empty YA YB	3 Empty
Connector for I/O		4	Y2	4 YA
		5	Empty	5 Empty
	Front view	1	+24V	1 +24V
		2 <u>Y4</u> <u>75</u> 3	Y5 Empty YC	2 YD
		$\frac{14}{Y5}$ 3	Empty YD Y4	3 Empty 4 YC
		5	Empty	5 Empty
		1	+24V	1 +24V
		2	Y7	2 YF
		<u>Y6</u> Y7 3	Empty YE	3 Empty
		4	Y6	4 YE
		5	Empty	5 Empty

# 5.6.2 AJ65FBTA2-16TE transistor output module (source type)

	Туре	Transistor output module	
Item		AJ65FBTA2-16TE	Appearance
Number of output points		16 points	
Isolation method		Photocoupler	
Rated load voltage		12/24VDC	
Operating load voltage range	ge	10.2 to 28.8VDC (ripple ratio: within 5%)	
Max. load current		1.0A/point, 4A/common	
Max. inrush current		2.0A, 10ms or less	
Leakage current at OFF		0.3mA or lower	
Max. voltage drop at ON		0.15VDC or lower (TYP.) 1.0A, 0.2VDC or lower (MAX.) 1.0A	©
Output type		Source type	MEL SEC AJ65FBTA2-16TE
Protection function		Overload protection, overheat protection (The LED turns on when any protection is activated.)	ALL RAM STATUTON NO. INTERNATION PROVIDENT OF A STATUTON PROVIDENT O
D	OFF→ON	0.5ms or less	
Response time	ON→OFF	1.5ms or less (resistive load)	
External power supply for	Voltage	10.2 to 28.8VDC (ripple ratio: within 5%)	
output part	Current	30mA or lower (at 24VDC and all points ON), excluding external load current	
Surge suppressor		Zener diode	
Wiring method for commor	I	16 points/common (2-wire, waterproof connector type)	
Number of occupied station	าร	32-point assignment/station (16 points used)	
Module power supply	Voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
	Current	50mA or lower (at 24VDC and all points ON)	
Noise immunity		Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground	$\frac{Y4}{Y5} \bigcirc \qquad $
Insulation resistance		$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)	
Protection degree		IP67	
Weight		0.40kg	
Accessory		User's manual	
Optional item		Waterproof cap: A6CAP-WP2 (20 pieces)	
Other connecting devices		Refer to Section 1.6.1.	

# 5 SPECIFICATIONS FOR OUTPUT MODULES

#### External connection Pin layout Connector for communication LINK IN Pin LINK IN LINK OUT 0<u>12</u> numbei 3 Г 1 SLD SLD С Communication 1 $\cap$ 2 DB DB circuit 110 Ω 3 DG DG 130Ω ī DA DA 4 LINK OUT 4 No pins Empty 5 2 -O-Connector for power supply 3 Terminating resistor $\cap$ setting switch Pin UNIT POWER AUX. 5 number LINK IN +24V(UNIT) +24V(I/O) 1 Male ------Empty Empty 2 3 24G(UNIT) 24G(I/O) Insulation UNIT POWER ę 4 Empty Empty <u>+</u>=() ν<u>όl</u>Ξ LINK OUT 5 <u></u> (FG) ጔ 0 Female Connector for I/O 2 0 4 Module mounting Pin Signal Pin Signal 0 screw (FG) numbei name number name 1 Empty 1 Empty UNIT POWER/AUX. Ē AUX. 2 Y1 2 Y9 Male <u>Y0</u> Y1 <u>+</u>= <u>Y8</u> Y9 Constant-3 $\begin{pmatrix} 2^{\circ} & 0^{1} \\ 3^{\circ} & 5^{-4} \end{pmatrix}$ 3 24G 24G voltage circuit 5 002 04 4 Y0 4 Y8 5 5 Empty Empty I/O connector 1 1 Empty Empty Ð Female 10 02 40 05 3 2 2 YΒ Y3 <u>Y2</u> Y3 $\frac{YA}{YB}$ 24G Ę, 3 24G 3 厷 ⋧≠⋭ 4 Y2 4 YA Connector for I/O 5 5 Empty Empty Load 4 Front view 0 木 1 1 Load بۆلة ≱≉⊈ Empty Empty YD 2 Y5 2 0 0 0 <u>Y4</u> Y5 YC YD 3 24G 3 24G 3 5 $\cap$ 4 YC Y4 4 5 Empty 5 Empty 1 Empty 1 Empty 2 2 Y7 YF <u>Y6</u> Y7 YE YF 3 3 24G 24G YE 4 Y6 4 5 Q 5 Empty Empty Γ, I 木 ≥ ≠ ⊈ Load 4 ᄃ 厷 ׂ≱ ≄ ע Load O 5 $\cap$

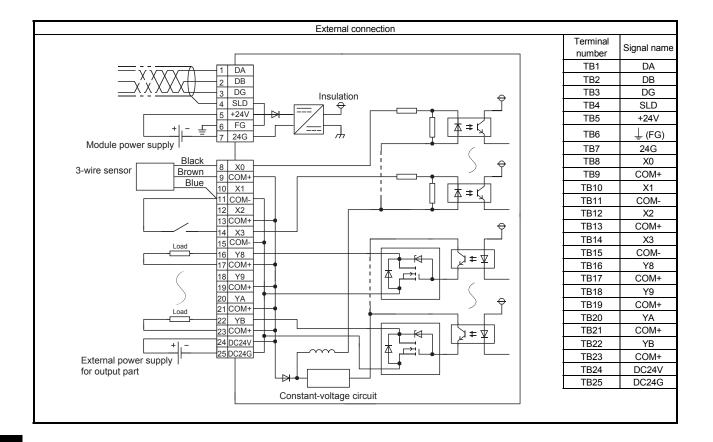
# MEMO


This chapter describes the specifications for a combined module that can be connected to the CC-Link system.

#### 6.1 Terminal Block Type Combined Module

#### 6.1.1 AJ65SBTB32-8DT combined module

	_	Туре				output combined module		
Item				AJ65	SBTB32-8DT		Appearance	
		Inp				Output		
	input points		4 points	Number of outp		4 points		
Isolation me			Photocoupler	Isolation method		Photocoupler		
Rated input	i voltage		24VDC	Rated load volta	age	24VDC		
Rated input	Rated input current Approx. 7mA		•••	Operating load voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)		
	oltage range/		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curre	nt	0.5A/point, 1.2A/common		
Max. numb input points	er of simultar	neous	100%	Max. inrush cur	rent	1.0A, 10ms or less		
ON voltage	ON current		14VDC or higher/ 3.5mA or higher	Leakage curren	t at OFF	0.25mA or lower		
OFF voltage	e/OFF curren	nt	6VDC or lower/ 1.7mA or lower	Max. voltage dr	op at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
				Output type		Sink type		
Input resista	ance		Approx. 3.3kΩ	Protection funct	ion	Overload protection, overvoltage protection, overheat protection		
Deenenee t	OFF	→ON	1.5ms or less (at 24VDC)	Deenenee time	OFF→ON	0.5ms or less		
Response t	Ime ON-	→OFF	1.5ms or less (at 24VDC)	Response time	ON→OFF	1.5ms or less (resistive load)		
				External power	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
				supply for output part	Current	14.6mA or lower (at 24VDC and all points ON), excluding external load current		
Input type			Positive common (sink type)	Surge suppressor Zener diode				
	rent for conne	ected	1.0A or lower/common					
Wiring meth	hod for comm	non	8 points/common (input: 3-wir	e terminal block	type, output: 2-	-wire terminal block type)		
Number of	occupied stat	tions	32-point assignment/station (8	3 points used)		••••		
Module pov	wer Volta	age	20.4 to 26.4VDC (ripple ratio:	within 5%)				
supply	Curr	rent	45mA or lower (at 24VDC and	d all points ON)				
Noise immu	unity		Noise voltage 500Vp-p, noise noise frequency 25 to 60Hz (I	e width 1µs, DC type noise simulator condition)				
Withstand v	/oltage		500VAC for 1 minute between	VAC for 1 minute between all DC external terminals and ground				
Insulation re	esistance		$10M\Omega$ or higher between all E tester)					
Protection of	Jegree		IP2X					
Weight			0.18kg					
External connection	Communica part, module pow supply part		7-point two-piece terminal blo M3×5.2 screw (tightening toro Applicable solderless termina	jue range: 0.59 t	n circuit, modul o 0.88N•m)	e power supply, FG]		
system	I/O power su part, I/O part	upply	18-point direct-mount termina M3×5.2 screw (tightening toro Applicable solderless termina	lue range: 0.59 t l: 2 or less	o 0.88N•m)			
Module mo	unting screw		M4 screw with plain washer fi Mountable with a DIN rail in 6		phtening torque	range: 0.78 to 1.08N•m)		
Applicable I	DIN rail		TH35-7.5Fe, TH35-7.5AI (con	npliant with IEC	60715)			
			• RAV1.25-3 (compliant with	JIS C 2805)				
Applicable :	solderless ter	rminal	[Applicable wire size: 0.3 to • V2-MS3, RAP2-3SL, TGV2-	-3N	,	-		
Wire	Motorial		[Applicable wire size: 1.25 to		14 AVVG) Stran		<u> </u>	
wile	Material Temperature	0	Copper					
	rating	C	75°C or more					
Accessory			User's manual					



6

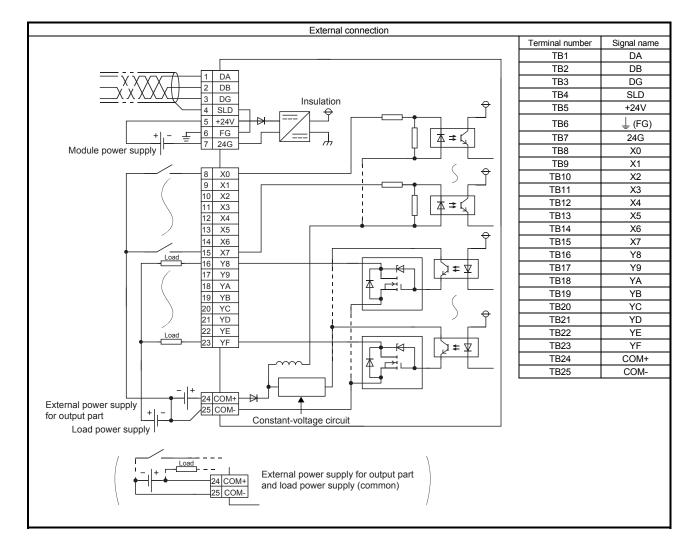
#### 6.1.2 AJ65SBTB32-8DT2 combined module

	Тур	e			r output combined module	1	
Item			AJ65SBT	B32-8DT2		Appearance	
		nput			Output	-	
	input points	4 points	Number of o		4 points	4	
Isolation me		Photocoupler	Isolation met		Photocoupler	-	
Rated input	voltage	24VDC	Rated load v		24VDC	-	
Rated input	current	Approx. 7mA	Operating lo range	ad voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
Operating voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load cu	urrent	0.5A/point, 1.2A/common	1	
Max. number of simultaneous input points		100%	Max. inrush	current	1.0A, 10ms or less	1	
	/ON current	14VDC or higher/3.5mA or higher	Leakage cur	rent at OFF	0.1mA or lower	Ţ	
OFF voltage	e/OFF current	6VDC or lower/1.7mA or lower	Max. voltage	e drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Input resista	ance	Approx. 3.3kΩ	Output type Protection fu	Inction	Sink type None		
	. OFF→ON	1.5ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less	1	
Response t	ime ON→OFF	1.5ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	1	
			External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
			power		14.6mA or lower		
			supply for	Current	(at 24VDC and all points ON),		
			output part		excluding external load current		
Input type		Positive common (sink type)	Surge suppressor Zener diode				
	ent for connected	1.0A or lower/common					
Wiring meth	nod for common	8 points/common (input: 3-wire to	erminal block t	ype, output:	2-wire terminal block type)	L L S S S A	
Number of o	occupied stations	32-point assignment/station (8 p	oints used)				
Module pov	ver Voltage	20.4 to 26.4VDC (ripple ratio: wit					
supply	Current	45mA or lower (at 24VDC and al					
Noise immu	unity	Noise voltage 500Vp-p, noise wi					
Withstand	oltaga	noise frequency 25 to 60Hz (DC					
Withstand v		500VAC for 1 minute between all $10M\Omega$ or higher between all DC					
Ducto etica e	d	tester)					
Protection c	legree	IP2X					
Weight         0.18kg           Communication part,         7-point two-piece terminal block [Transmission circuit, module power supply, FG]           module power         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)						-	
External connection system	supply part I/O power supply	Applicable solderless terminal: 2 18-point direct-mount terminal bl [I/O power supply, I/O signal]					
	part, I/O part	M3×5.2 screw (tightening torque Applicable solderless terminal: 2					
Module mo	unting screw		M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations				
Applicable I	DIN rail	TH35-7.5Fe, TH35-7.5AI (compl	iant with IEC 6	0715)			
Applicable solderless terminal		<ul> <li>RAV1.25-3 (compliant with JIS [Applicable wire size: 0.3 to 1.2</li> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> </ul>	25mm ² (22 to 1	6 AWG) stra	nded wire]		
		[Applicable wire size: 1.25 to 2	.0mm ² (16 to 1	4 AWG) stra	nded wire]		
Wire	Material Temperature rating	Copper 75°C or more				-	
Accessor	remperature ratility					ł	
Accessory		User's manual				I	

#### External connection Terminal number Signal name TB1 DA TB2 DB DA DB TB3 DG 2 TB4 SLD 3 DG Insulation 4 SLD TB5 +24V 5 +24V <u> </u> (FG) TB6 6 FG 7 24G **本** ≠ + TB7 24G Module power supply TB8 X0 TB9 COM+ Black 8 X0 9 COM+ 3-wire sensor TB10 X1 Brown TB11 COM-Blue 10 X1 本 ⇒ | TB12 X2 11 COM-TB13 COM+ 12 X2 13 COM+ TB14 X3 14 X3 TB15 COM-15 COM-**TB16** Y8 Load 16 Y8 **TB17** COM+ ≠⊉ 17 COM+ 18 Y9 TB18 Y9 本 TB19 COM+ 19 COM+ 20 YA TB20 YA 21 COM+ COM+ TB21 Load 22 YB TB22 YB 23 COM+ ≠⊉ TB23 COM+ 24 DC24V 25 DC24G TB24 DC24V 本 $\rightarrow$ +1TB25 DC24G External power supply for output part Constant-voltage circuit

#### 6.1.3 AJ65SBTB1-16DT combined module

		Туре				output combined module		
Item				AJ65SBT	B1-16DT		Арреа	arance
		Inp	put			Output		
Number of	input po	ints	8 points	Number of ou	tput points	8 points		
Isolation me	ethod		Photocoupler	Isolation meth	nod	Photocoupler		
Rated input	voltage	)	24VDC	Rated load vo	ltage	24VDC		
Rated input current		:	Approx. 7mA	Operating load	d voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
Operating v	oltage r	ange	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load cur	rent	0.5A/point, 2.4A/common		
Max. number of simultaneous input points		nultaneous	100%	Max. inrush c	urrent	1.0A, 10ms or less		
ON voltage/ON current		rent	14VDC or higher/3.5mA or higher	Leakage curre	ent at OFF	0.25mA or lower		
OFF voltage	e/OFF c	current	6VDC or lower/1.7mA or lower	Max. voltage	drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Input resista	ance		Approx. 3.3kΩ	Output type Protection fun	ection	Sink type Overload protection, overvoltage	_	
Deeneneet	ina a	OFF→ON	1.5ms or less (at 24VDC)	Response		protection, overheat protection 0.5ms or less		
Response t		ON→OFF	1.5ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)		
				External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
				power supply for output part	Current	17.8mA or lower (at 24VDC and all points ON),		
			1			excluding external load current	- [ - [ - ] [ - ] [	6
Input type			Positive common (sink type)	Surge suppre		Zener diode	NO AN IX	
Wiring meth	nod for c	common	16 points/common (1-wire, termi	inal block type )	)			$  \otimes   \otimes   +$
Number of	occupie	d stations	32-point assignment/station (16	points used)			8 C D E C D	
Module pov	ver	Voltage	20.4 to 26.4VDC (ripple ratio: wi	thin 5%)		V89 A B C D E F 0 0 0 0 0 0 0 0 0 SSBTB1-16DT x1 x3 x6		
supply		Current	50mA or lower (at 24VDC and all points ON)					
Noise immu	unity		Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)				v 🗖 🚊	
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground				X013	
Insulation re	esistanc	e	$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)					
Protection of	learee		IP2X					
Weight			0.18kg					
External		unication part, power supply	7-point two-piece terminal block [Transmission circuit, module po M3×5.2 screw (tightening torque	e range: 0.59 to				
connection system	I/O pov part, I/O part	ver supply	Applicable solderless terminal: 2 18-point direct-mount terminal b [I/O power supply, I/O signal] M3×5.2 screw (tightening torque Applicable solderless terminal: 2	lock e range: 0.59 to	0.88N•m)			
Module mo	unting s	crew	M4 screw with plain washer finis Mountable with a DIN rail in 6 or	hed round (tigh	ntening torq	ue range: 0.78 to 1.08N•m)	1	
Applicable I	DIN rail		TH35-7.5Fe, TH35-7.5Al (compl		0715)			
Applicable s		ss terminal	<ul> <li>RAV1.25-3 (compliant with JIS [Applicable wire size: 0.3 to 1.2 V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2</li> </ul>	C 2805) 25mm ² (22 to 1) 1	6 AWG) stra	-		
Wire	Materia	l	Copper			· · · · · · · · · · · · · · · · · · ·		
		rature rating	75°C or more					
Accessory		Ŭ.	User's manual				7	



#### 6.1.4 AJ65SBTB1-16DT1 combined module

	_	Туре		DC in	put transisto	r output combined module		
Item				AJ65SB	TB1-16DT1		Appea	rance
		Inp	but			Output		
Number of ir	nput poin	ts	8 points	Number of o	utput points	8 points		
Isolation met	thod		Photocoupler	Isolation me	thod	Photocoupler		
Rated input v	voltage		24VDC	Rated load voltage		24VDC		
Deted input surrent			A	Operating lo	ad voltage	19.2 to 26.4VDC		
Rated input current			Approx. 5mA	range		(ripple ratio: within 5%)		
Operating voltage range		nge	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load cu	urrent	0.5A/point, 2.4A/common		
Max. number of simultaneous input points		Itaneous	100%	Max. inrush	current	1.0A, 10ms or less		
ON voltage/0	ON curre	nt	15VDC or higher/3mA or higher	Leakage cur	rent at OFF	0.25mA or lower		
OFF voltage	OFF cur	rrent	3VDC or lower/0.5mA or lower	Max. voltage	e drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
				Output type		Sink type		
Input resista	nce		Approx. 4.7kΩ	Protoction f	Inction	Overload protection, overvoltage		
	<u> </u>			Protection fu	Inclion	protection, overheat protection		
Deenenee tir	C	FF→ON	0.2ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less		
Response tir	C	N→OFF	0.2ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)		
					Vallana	19.2 to 26.4VDC		
				External	Voltage	(ripple ratio: within 5%)		
				power		17.8mA or lower		
				supply for	Current	(at 24VDC and all points ON),		
				output part		excluding external load current		
Input type			Positive common (sink type)	Surge suppr	ressor	Zener diode		
Wiring metho	od for co	mmon	16 points/common (1-wire, termi	nal block type	e)		×	
Number of o	ccupied :	stations	32-point assignment/station (16	points used)				884
Module powe	er V	'oltage	20.4 to 26.4VDC (ripple ratio: wit	hin 5%)				$  \odot  _{\mathfrak{m}}   $
supply	С	Current	55mA or lower (at 24VDC and al	l points ON)			1         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20 </td <td>$\Theta   \otimes$</td>	$  \Theta   \otimes   $
Noise immur	oit (		Noise voltage 500Vp-p, noise width 1µs,					
	inty		noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand vo	oltage		500VAC for 1 minute between a	I DC external	terminals an	d ground	×01 2 3 4 5 6 7 90 90 90 90 90 018 539 Aues +241 246 ×100 1	$\otimes$
Insulation re	eistanco		$10 M\Omega$ or higher between all DC $$	external termi	inals and gro	und (500VDC insulation resistance		
Insulation rea	SISIAIICE		tester)					$  \omega   \otimes  $
Protection de	egree		IP2X					8
Weight			0.18kg					
	Commu	inication	7-point two-piece terminal block					
	part,		[Transmission circuit, module po		-			
External	module	•	M3×5.2 screw (tightening torque	•	o 0.88N•m)			
connection	supply p	part	Applicable solderless terminal: 2				-	
system	I/O pow	er supply	18-point direct-mount terminal bl	ock				
	part,		[I/O power supply, I/O signal]		- 0.001			
	I/O part		M3×5.2 screw (tightening torque		0 U.88N•M)			
	1		Applicable solderless terminal: 2		toning to	up range: 0.79 to 1.09N-m)	-1	
Module mou	inting scr	ew	M4 screw with plain washer finis		utering lord	ue range. 0.70 (0 1.0019•111)		
Applicable	NN roil		Mountable with a DIN rail in 6 or		60715)		4	
Applicable D	IIBT VIIV		TH35-7.5Fe, TH35-7.5AI (compl A DAV(1.25.2 (compliant with US)		007 15)		-	
			RAV1.25-3 (compliant with JIS     [Applicable wire size: 0.3 to 1.2	,		and a wire]		
Applicable so	olderless	terminal	[Applicable wire size: 0.3 to 1.2	•	TO AWG) ST			
			<ul> <li>V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2</li> </ul>		14 A\M/C) etr	anded wire]		
Wire	Materia	1	Copper		1+ AV(G) SU		4	
		ature rating	75°C or more				1	
Accessory	Tremper	ature rauny	User's manual				-1	
10003301 y			usu s manuai					

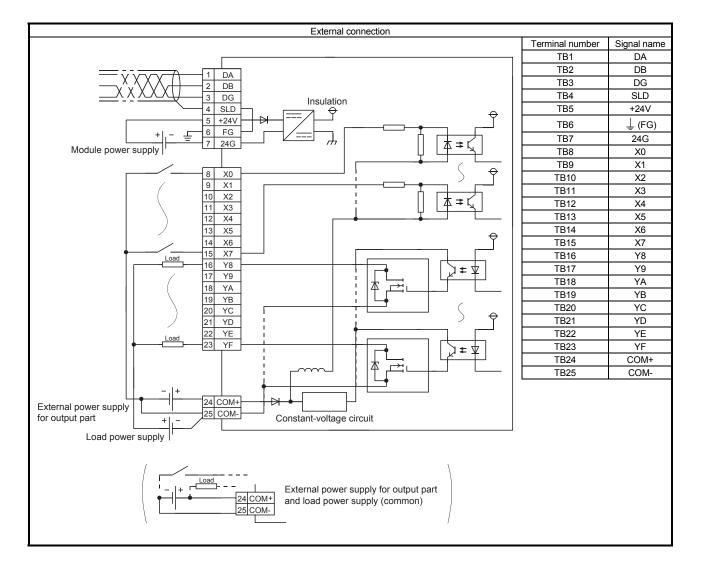
#### External connection Terminal number Signal name TB1 DA TB2 DB 1 DA TB3 DG 2 DB 3 DG TB4 SLD Insulation Ŷ 4 SLD TB5 +24V 9 5 +24V ₽ TB6 6 FG 7 24G + ± ≠ K $\mathbb{A}$ TB7 24G Module power supply TB8 X0 ſ TB9 X1 8 X0 9 X1 10 X2 11 X3 Ą TB10 X2 Х3 TB11 本 \$| TB12 X4 TB13 X5 12 X4 TB14 X6 13 X5 ę 14 X6 TB15 X7 15 X7 Load TB16 Y8 16 Y8 17 Y9 ≱≉ע **TB17** Y9 TB18 YA 18 YA TB19 YB 19 YB ς YC TB20 20 YC Ŷ 21 YD 22 YE TB21 YD TB22 YE Load 23 YF TB23 YF ≱≠⊈ TB24 COM+ TB25 COM-24 COM+ 25 COM-External power supply + for output part Constant-voltage circuit Load power supply Load _ Г External power supply for output part 24 COM+ and load power supply (common) 25 COM-

#### 6.1.5 AJ65SBTB1-16DT2 combined module

	_	Туре		DC inp	ut transistor	output combined module		
Item					B1-16DT2		Appea	arance
		In	put			Output		
Number of i	input poi	nts	8 points	Number of our	tput points	8 points		
Isolation me	ethod		Photocoupler	Isolation meth	od	Photocoupler		
Rated input	voltage		24VDC	Rated load voltage		24VDC	7	
				Operating load	d voltage	19.2 to 26.4VDC		
Rated input current			Approx. 7mA	range	-	(ripple ratio: within 5%)		
Operating voltage range		ange	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curr	rent	0.5A/point, 2.4A/common		
Max. number of simultaneous input points		ultaneous	100%	Max. inrush cu	urrent	1.0A, 10ms or less		
ON voltage	/ON curi	rent	14VDC or higher/3.5mA or higher	Leakage curre	ent at OFF	0.1mA or lower		
OFF voltage	e/OFF c	urrent	6VDC or lower/1.7mA or lower	Max. voltage o	drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
				Output type		Sink type	7	
Input resista	ance		Approx. 3.3kΩ	Protection fun	ction	None		
_		OFF→ON	1.5ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less	-	
Response t	ime	ON→OFF	1.5ms or less (at 24VDC)	time	ON→OFF		┨	· · · · ·
		-		External	Voltage	19.2 to 26.4VDC		
				power supply	5-	(ripple ratio: within 5%)		
				for output	Current	17.8mA or lower		
				part		(at 24VDC and all points ON),		
						excluding external load current		
Input type			Positive common (sink type) Surge suppressor Zener diode					
Wiring meth	nod for c	ommon	16 points/common (1-wire, term	inal block type)			No A No	
Number of	occupied	d stations	32-point assignment/station (16	points used)			X2 X6	$  \Theta   \otimes   $
Module pov	ver	Voltage	20.4 to 26.4VDC (ripple ratio: wi	ithin 5%)			Y89 A B C D E F           789 A B C D E F           789 A B C D E F           780 B C D E F           781 B C D E F           782 B C D E F           782 B C D E F           783 A S C D E F	
supply		Current	50mA or lower (at 24VDC and a	all points ON)			1 6 mt	
	unit.		Noise voltage 500Vp-p, noise width 1µs,					
Noise immu	inity		noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand v	oltage		500VAC for 1 minute between all DC external terminals and ground 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance					
Insulation re	nintana	<b>^</b>						
Insulation is	esistanio	e	tester)					
Protection of	legree		IP2X					
Weight			0.18kg					
	Comm	inication	7-point two-piece terminal block					
		odule power	[Transmission circuit, module po					
External	supply part, inc		M3×5.2 screw (tightening torque		0.88N•m)			
connection	ן גיאאיי		Applicable solderless terminal: 2				_	
	I/O pow	er supply	18-point direct-mount terminal b	lock				
	part,		[I/O power supply, I/O signal]					
	I/O part		M3×5.2 screw (tightening torque	0	).88N•m)			
			Applicable solderless terminal: 2		oning to	renge: 0.79 to 1.001		
Module mo	unting so	crew	M4 screw with plain washer finis		ening torque	e range: 0.78 to 1.08N•M)		
Applicable	DINI!!		Mountable with a DIN rail in 6 or		746)			
Applicable I	JIN Fall		TH35-7.5Fe, TH35-7.5Al (comp		(15)			
			RAV1.25-3 (compliant with JIS     Applicable wire gize: 0.3 to 1	,	ANN(C) atra-	adad wiral		
Applicable	solderles	s terminal	[Applicable wire size: 0.3 to 1.	•	AVVG) Strar	ided wirej		
appilousie (			<ul> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> </ul>					
, pp. ioubio			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]					
	Materia	1	• • •	2.0mm ² (16 to 14	AWG) strar	nded wire]		
Wire	Materia	l rature rating	[Applicable wire size: 1.25 to 2 Copper 75°C or more	2.0mm ² (16 to 14	AWG) strar	nded wire]	-	

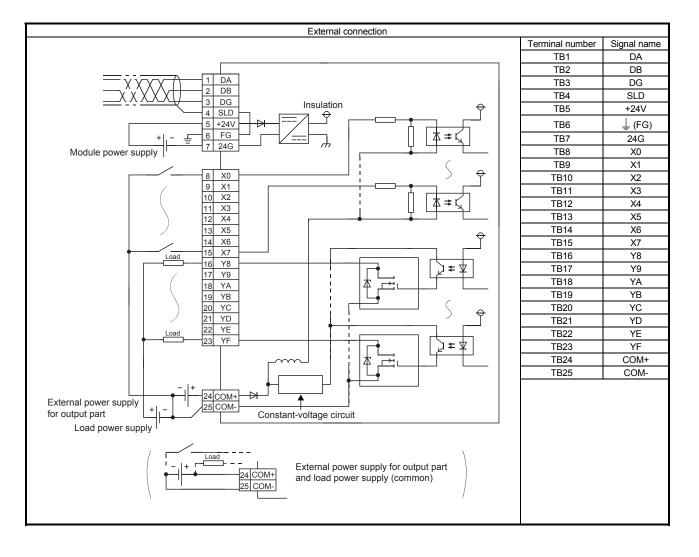
For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*



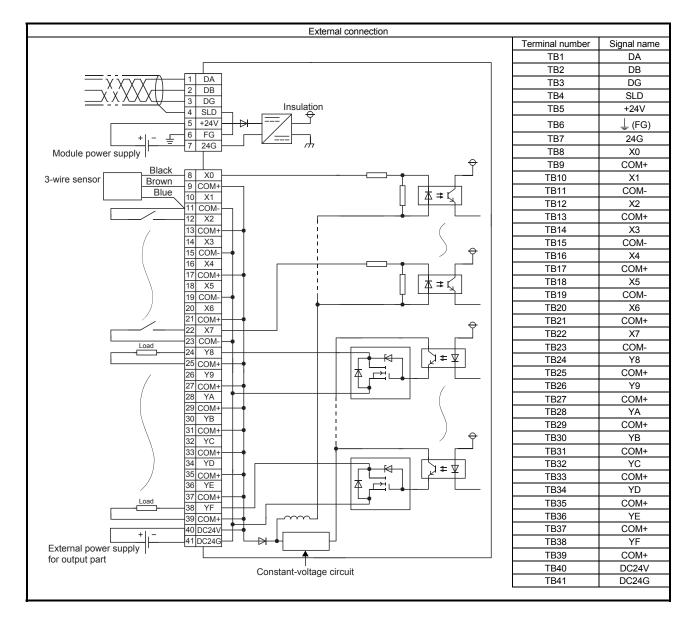
#### 6.1.6 AJ65SBTB1-16DT3 combined module

ltom		Туре		DC input			Δ.	
ltem			-	AJ65SBTB	1-16DT3		Appea	arance
			put			Output		
Number of	input po	pints	8 points	Number of outp	out points	8 points		
Isolation m			Photocoupler			Photocoupler		
Rated input voltage		e	24VDC	Rated load voltage		24VDC		
Rated input current		t	Approx. 5mA	Operating load	voltage	19.2 to 26.4VDC		
		-	·	range		(ripple ratio: within 5%)		
Operating voltage range		_	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curre	ent	0.5A/point, 2.4A/common	_	
Max. number of simultaneous input points		nultaneous	100%	Max. inrush cur	rent	1.0A, 10ms or less		
ON voltage	e/ON cu	rrent	15VDC or higher/3mA or higher	Leakage currer	nt at OFF	0.1mA or lower		
OFF voltag	je/OFF (	current	3VDC or lower/0.5mA or lower	Max. voltage dr	op at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Input resist	ance		Approx. 4.7kΩ	Output type Protection funct	tion	Sink type None		
		OFF→ON	0.2ms or less (at 24VDC)		OFF→ON	0.5ms or less		
Response	time			Response time	-		-	
		ON→OFF	0.2ms or less (at 24VDC)		ON→OFF	1.5ms or less (resistive load) 19.2 to 26.4VDC		
				External news	Voltage	(ripple ratio: within 5%)		
				External power supply for		17.8mA or lower		$  \otimes  _{\bigotimes}  $
				output part	Current	(at 24VDC and all points ON),		
					Current	excluding external load current		
Input type			Positive common (sink type)	Surge suppress	l	Zener diode	BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	
Wiring met	hod for	common	16 points/common (1-wire, termi					
Number of			32-point assignment/station (16					
Module pov		Voltage	20.4 to 26.4VDC (ripple ratio: with					
	wei							
supply		Current	55mA or lower (at 24VDC and a	· · · · ·			7889 A 888781-1 21 X2	00
Noise imm	unity		Noise voltage 500Vp-p, noise wi	-	lator conditiv	20)	A des	
Withstand	voltaga		noise frequency 25 to 60Hz (DC type noise simulator condition) 500VAC for 1 minute between all DC external terminals and ground					
Insulation r	Č.	ce	$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance				MILITRE 2012 3 4 5 6 7 CONTRIPTION 1 2 4 5 6 7 MILITRE 2012 3 4 5 7 MILITRE 2012 3 5 7	
Drotoction	doaroo		tester)					
Protection	aegree		IP2X					
Weight			0.18kg				— LION	
	Comm	unication part,	7-point two-piece terminal block [Transmission circuit, module po					
	module	e power supply	M3×5.2 screw (tightening torque	11.37 3	88N•m)			
External	part		Applicable solderless terminal: 2	-				
connection			18-point direct-mount terminal bl					
system	I/O pov	wer supply	[I/O power supply, I/O signal]	oon				
	part,		M3×5.2 screw (tightening torque	range: 0.59 to 0	.88N•m)			
	I/O par	t	Applicable solderless terminal: 2	-	,			
			M4 screw with plain washer finis		enina toraue	range: 0.78 to 1.08N•m)		
Module mo	ounting s	screw	Mountable with a DIN rail in 6 or		<b>J 1</b>	, <u>,</u>		
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5Al (compl	iant with IEC 607	715)			
			• RAV1.25-3 (compliant with JIS		,			
Applicable	solderle	ess terminal	[Applicable wire size: 0.3 to 1.2 • V2-MS3, RAP2-3SL, TGV2-3N	25mm ² (22 to 16	AWG) stran	ded wire]		
			[Applicable wire size: 1.25 to 2		AWG) stran	ded wire]		
Wire	Materia	al	Copper	,	. /	- <b>a</b>		
	Tompo	erature rating	75°C or more					
	rempe							



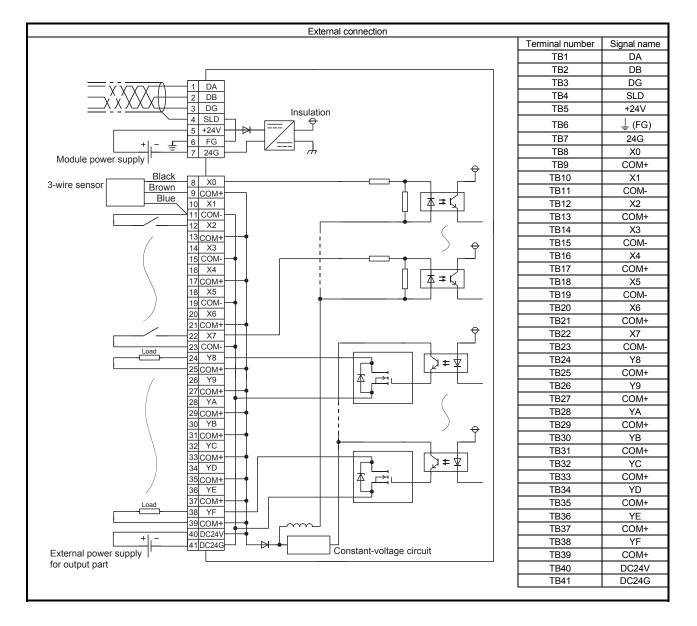
#### 6.1.7 AJ65SBTB32-16DT combined module

ut points od pd litage age range of simultaneous N current DFF current se OFF->ON	nput 8 points Photocoupler 24VDC Approx. 7mA 19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower Approx. 3.3kΩ	AJ65SBTB Number of out Isolation methor Rated load vol Operating load range Max. load curr Max. load curr Max. inrush cu Leakage curre Max. voltage c Output type	eput points od Itage d voltage rent urrent ent at OFF	Output 8 points Photocoupler 24VDC 19.2 to 26.4VDC (ripple ratio: within 5%) 0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	Appearance				
ut points od pd litage age range of simultaneous N current DFF current se OFF->ON	8 points Photocoupler 24VDC Approx. 7mA 19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Isolation meth Rated load vol Operating load range Max. load curr Max. inrush cu Leakage curre Max. voltage c	od Itage d voltage rent urrent ent at OFF	8 points Photocoupler 24VDC 19.2 to 26.4VDC (ripple ratio: within 5%) 0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,					
od Itage Irrent age range of simultaneous N current DFF current xe OFF->ON	Photocoupler 24VDC Approx. 7mA 19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Isolation meth Rated load vol Operating load range Max. load curr Max. inrush cu Leakage curre Max. voltage c	od Itage d voltage rent urrent ent at OFF	Photocoupler 24VDC 19.2 to 26.4VDC (ripple ratio: within 5%) 0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	-				
Itage Irrent age range of simultaneous V current DFF current e OFF->ON	24VDC Approx. 7mA 19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Rated load vol Operating load range Max. load curr Max. inrush cu Leakage curre Max. voltage c	Itage d voltage rent urrent ent at OFF	24VDC 19.2 to 26.4VDC (ripple ratio: within 5%) 0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	-				
age range of simultaneous N current DFF current e OFF→ON	Approx. 7mA 19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Operating load range Max. load curr Max. inrush cu Leakage curre Max. voltage c	rent urrent ent at OFF	19.2 to 26.4VDC (ripple ratio: within 5%) 0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	-				
age range	19.2 to 26.4VDC (ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	range Max. load curr Max. inrush cu Leakage curre Max. voltage c	rent urrent ent at OFF	0.5A/point, 2.4A/common 1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	-				
age range of simultaneous N current OFF current e OFF→ON	(ripple ratio: within 5%) 100% 14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Max. inrush cu Leakage curre Max. voltage c	urrent ent at OFF	1.0A, 10ms or less 0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,	_				
N current DFF current ee OFF→ON	14VDC or higher/3.5mA or higher 6VDC or lower/1.7mA or lower	Leakage curre Max. voltage c	ent at OFF	0.25mA or lower 0.3VDC or lower (TYP.) 0.5A,					
DFF current	6VDC or lower/1.7mA or lower	Max. voltage c		0.3VDC or lower (TYP.) 0.5A,					
e OFF→ON		Ĵ	drop at ON	. , .					
OFF→ON	Арргох. 3.3кΩ	Output type		0.6VDC or lower (MAX.) 0.5A					
OFF→ON	Approx. 3.3kΩ			Sink type					
		D		Overload protection, overvoltage					
		Protection fund	ction	protection, overheat protection					
ON→OFF	1.5ms or less (at 24VDC)	Response OFF→ON		0.5ms or less					
	1.5ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)					
			Voltage	19.2 to 26.4VDC					
		External	Voltage	(ripple ratio: within 5%)					
		power supply		17.8mA or lower					
		for output part	Current	(at 24VDC and all points ON),					
				excluding external load current					
	Positive common (sink type)	Surge suppres	ssor	Zener diode					
for connected	1.0A or lower/common								
for common	16 points/common (input: 3-wire ter	minal block typ	e, output: 2-	-wire terminal block type)					
cupied stations	32-point assignment/station (16 poi	nts used)							
Voltage	20.4 to 26.4VDC (ripple ratio: within	1 5%)							
	Noise voltage 500Vp-p, noise width	1µs,							
у	noise frequency 25 to 60Hz (DC typ								
age	500VAC for 1 minute between all D								
stance	10M $\Omega$ or higher between all DC ext								
	tester)								
	×								
ommunication									
rt module									
wer supply part									
		-							
) power supply	•								
rt			ONIam)						
) part									
			ing torque r	2000: 0.78  to  1.08  loss	+				
ing screw	·		ing loique f	ange. 0.70 to 1.0014•111)					
			5)		1				
-			/						
derless terminal	• V2-MS3, RAP2-3SL, TGV2-3N	,	-,						
		1m ² (16 to 14 A	WG) strand	ed wire]					
aterial		1.2.0.177	2, 30.0.10	<del>-</del> 1	1				
ting									
	User's manual				1				
	for connected for common upied stations Voltage Current / age tance ree mmunication t, module wer supply part power supply rt, part ng screw rail lerless terminal aterial mperature ing	1.0A or lower/common         for common       16 points/common (input: 3-wire terupied stations         32-point assignment/station (16 points/common)       32-point assignment/station (16 points/common)         Voltage       20.4 to 26.4VDC (ripple ratio: within common)         Current       50mA or lower (at 24VDC and all provide stations)         Noise voltage 500Vp-p, noise width noise frequency 25 to 60Hz (DC typerate)         rage       500VAC for 1 minute between all DC exit tester)         tance       10MΩ or higher between all DC exit tester)         ree       IP2X         0.25kg       0.25kg         mmunication rt, module       M3×5.2 screw (tightening torque ra Applicable solderless terminal: 2 or Applicable solderless terminal: 2 or Applicable solderless terminal: 2 or M4 screw with plain washer finisher Mountable with a DIN rail in 6 orien rail         real       TH35-7.5Fe, TH35-7.5AI (compliant events)         erlerless terminal       Copper         v2-MS3, RAP2-3SL, TGV2-3N       [Applicable wire size: 1.25 to 2.0n	Positive common (sink type)         Surge suppression           for connected         1.0A or lower/common         Surge suppression           for common         16 points/common (input: 3-wire terminal block type)         Surge suppression           upied stations         32-point assignment/station (16 points used)         Voltage           Voltage         20.4 to 26.4VDC (ripple ratio: within 5%)         Current           Current         50mA or lower (at 24VDC and all points ON)         Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulatage           age         500VAC for 1 minute between all DC external terminals tester)           ree         IP2X           0.25kg         7-point two-piece terminal block           Max5.2 screw (tightening torque range: 0.59 to 0.8 Applicable solderless terminal: 2 or less           power supply part         Applicable solderless terminal: 2 or less           a4-point direct-mount terminal block           (I/O power supply, I/O signal]           max5.2 screw (tightening torque range: 0.59 to 0.8 Applicable solderless terminal: 2 or less           mg screw         M4 screw with plain washer finished round (tighter Mountable with a DIN rail in 6 orientations           rail         TH35-7.5Fe, TH35-7.5AI (compliant with IEC 6071           * V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 A V2-MS3, RAP2-3SL, TGV2-3N	for connected       1.0A or lower/common         for common       16 points/common (input: 3-wire terminal block type, output: 2- upied stations         32-point assignment/station (16 points used)         Voltage       20.4 to 26.4VDC (ripple ratio: within 5%)         Current       50mA or lower (at 24VDC and all points ON)         Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition age         500VAC for 1 minute between all DC external terminals and ground tester)         ree       IP2X         0.25kg         7-point two-piece terminal block         [Transmission circuit, module power supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         34-point direct-mount terminal block         [I/O power supply, I/O signal]         ng screw       M4 screw with plain washer finished round (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         rail       TH35-7.5Fe, TH35-7.5F4 (compliant with IEC 60715)         • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) strand         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) strand         • V2-MS3, RAP2-3SL, TGV2-3N         [Applic	Positive common (sink type)         Surge suppressor         Zener diode           for connected         1.0A or lower/common         Ion or lower/common         Ion or lower/common           for common         16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)         Ion or lower (at 24VDC (ripple ratio: within 5%)           Current         50m A or lower (at 24VDC and all points UN)         Noise voltage 500Vp-p, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)           age         500VAC for 1 minute between all DC external terminals and ground         10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)           ree         IP2X         0.25kg         0.25kg           mmunication t, module wer supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m) Applicable solderless terminal: 2 or less           power supply part         Applicable solderless terminal: 2 or less           mg screw         M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m) Applicable solderless terminal: 2 or less           mg screw         M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m) Mountable with a DIN rail in 6 orientations           rail         TH35-7.5Fe, TH35-7.5AI (compliant with JIS C 2805)           [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]           v2-MS3, RAP2-3SL, TGV2-3N <t< td=""></t<>				



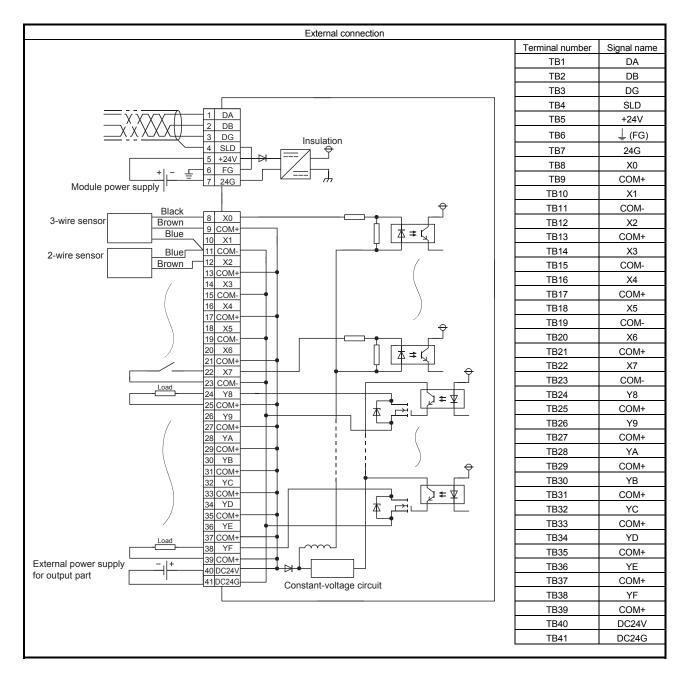
#### 6.1.8 AJ65SBTB32-16DT2 combined module

Itam		Туре				output combined module				
ltem				AJ65SBTE	332-16DT2	Appea	arance			
			nput			Output				
Number of		nts	8 points	Number of out		8 points	_			
Isolation m			Photocoupler	Isolation metho		Photocoupler 24VDC	_			
Rated input	t voltage		24VDC	Rated load vol	, v					
Rated input current Ap			Approx. 7mA	Operating load range	l voltage					
Operating voltage range 19.2 to 26.4VDC (ripple ratio: within 5%				Max. load curr	ent	(ripple ratio: within 5%) 0.5A/point, 2.4A/common				
Max. number of simultaneous input points			100%	Max. inrush cu	irrent					
ON voltage		ent	14VDC or higher/3.5mA or higher	Leakage curre	nt at OFF	0.1mA or lower				
OFF voltag	je/OFF ci	urrent	6VDC or lower/1.7mA or lower	Max. voltage d	lrop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A				
Input resist	ance		Approx. 3.3kΩ	Output type Protection fund	rtion	Sink type None	╡			
	I		1 5ms or less (at 21\/DC)		OFF→ON	0.5ms or less				
Response f	time t		1.5ms or less (at 24VDC)	Response						
		UN→UFF	1.5ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	<u>@\$14164492_144571</u> @\$1416442_144521 BBBBBBBBBBBBBBB volvelvelcom+Ecom+Ecom+Ecom+Ecom			
				Extornal	Voltage	19.2 to 26.4VDC				
				External power supply		(ripple ratio: within 5%) 17.8mA or lower				
				for output part	Current	(at 24VDC and all points ON),				
				ior output part	Current	excluding external load current	(B)			
Input type			Positive common (sink type)	Surge suppres	sor	Zener diode	COM-			
Supply curr	rent for c	onnected	1.0A or lower/common							
device Wiring metl	had for a	ommon	16 points/common (input: 3-wire	l	no output: C	wire terminal black type)		6		
•					pe, ouipui. 2			6		
Number of			32-point assignment/station (16 p					6		
Module pov supply	Ť	Voltage Current	20.4 to 26.4VDC (ripple ratio: with 50mA or lower (at 24VDC and all				x4 x5			
Noise immi	unity		Noise voltage 500Vp-p, noise wid	Noise voltage 500Vp-p, noise width 1μs,						
	unity		noise frequency 25 to 60Hz (DC							
Withstand v	voltage		500VAC for 1 minute between all	100 4 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						
Insulation r	esistance	9	10M $\Omega$ or higher between all DC e tester)							
Protection of	degree		IP2X							
Weight	0		0.25kg		I @ I@P					
	Commu part, mo	nication	7-point two-piece terminal block [Transmission circuit, module pow							
External	power s	upply part	M3×5.2 screw (tightening torque Applicable solderless terminal: 2							
connection			34-point direct-mount terminal blo							
system	I/O pow	er supply	[I/O power supply, I/O signal]							
	part,		M3×5.2 screw (tightening torque	range: 0 50 to 0	88NI•m)					
	I/O part		Applicable solderless terminal: 2	•	.0011-111)					
	1		M4 screw with plain washer finish		nina toraue	range: 0.78 to 1.08N•m)				
Module mo	ounting so	crew	Mountable with a DIN rail in 6 orig							
Applicable	Applicable DIN rail TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)									
RAV1.25-3 (compliant with JIS			<ul> <li>RAV1.25-3 (compliant with JIS)</li> </ul>	C 2805)						
Applicable	solderles	s terminal	[Applicable wire size: 0.3 to 1.2 • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.]		,	-				
Wire	Material		Copper		ning) strant	ueu wiiej				
	Temper		75°C or more							
	rating									
Accessory			User's manual							



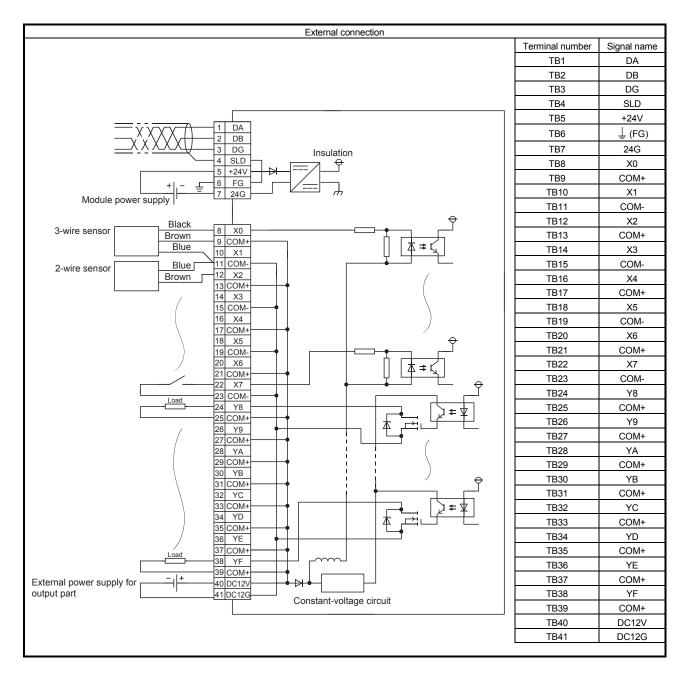
#### 6.1.9 AJ65SBTB32-16KDT2 combined module

Item         Auf6589T82-19KDT2         Appearance           Number of Input points         B points         Number of Output points         B points           Scalation method         Pholocoupler         Isodation method         Pholocoupler           Rated input current         Approx. 7m A         Coperating load voltage         24VDC         Cat to 28.8VDC           Max. number of simultaneous         100%         Max load current         0.5A/point, 2.4A/common           Max. number of simultaneous         100%         Max load current         0.5A/point, 2.4A/common           Notatege/DN current         100%         Max load current         0.5A/point, 2.4A/common           Notatege/DN current         100%         Max load current         0.5A/point, 2.4A/common           Notatege/DN current         0.2ms         1.5ms         Sms         10ms           Response time         CPF -0.0N         0.2ms         1.5ms         Sms         10ms           Current         0.2ms         1.5ms         Sms         10ms         1.5ms		_	Туре					DC i	nput transist	or output combined module					
Input         Output           Institute of input opinis         B points         Number of output points         B points           Isolation method         Photocoupler         Isolation method         Photocoupler           Rated input voltage         24VDC         Rated avaluage         24VDC           Rated input voltage         20.4 to 28.8VDC         (mpot real avaluage         24VDC           Operating voltage range         (20.4 to 28.8VDC         (mpot reals)         Max. kaad current         0.5A/point, 2.4A/common           More number of simultaneous number of simultaneous         100%         Max. insub current         1.0.1 thms or less           OPF voltage/OPF current         5S/VDC or higher/4mA or higher         Leakage current at OFF         0.1mA or lower           OFF voltage/OPF         0.2ms         1.5ms         fms or 10ms         Response         OFF-vON         0.5ms or less         OF-vOFF         0.2ms         f.5ms fms or 10ms         OH-vOFF         1.5ms or less or less         OH-vOFF         0.5ms or less         OH	Item										Appea	rance			
Number of puppints         B points         Number of output points         B points           Station method         Photocoupler         Isolation method         Photocoupler           Rated input voltage         24VDC         Rated lad voltage         24VDC           Rated input current         Approx. 7m A         Operating load voltage         24VDC           Operating voltage range         20.4 to 28.8VDC         (hipple ratio: within 5%)         Max. Instruct of simulaneous         100%           No voltage/ON current         100%         Max. Instruct of simulaneous         0.0% VOC or higher/4mA or higher         1.0A or lower           No voltage/ON current         55/DC or fower/17.7mA or tower         0.4VDC or higher/4mA or higher         0.0 uput type         0.5% for kit type           Response time         input response         OFF-JON         0.5ms or loss         0.5% for tower (IVP.) 0.5A, 0.6VC or higher/4mA or higher           N=upt resistance         Approx. 3.0k0.1         Output type         0.FF-JON         0.5ms or loss         0.5% for tower (IVP.) 0.5A, 0.6VC or higher/4mA or higher           N=upt resistance         0.FF-JON         0.5ms or loss         0.7% for tower         0.7% or 0.0%         0.7% for tower         0.7% for			Inpu	t				1.000021	202 10112 1			, , , , , , , , , , , , , , , , , , , ,	lance		
Isolation method       Photocoupler       Isolation method       Photocoupler         Reled input cutage       AVPOC       Rated avallage       24VPC         Rated input cutage       24VPC       Rated avallage       24VPC         Rated input cutage       20.4 to 28.8VPC       (mpple rate: within 5%)         Operating voltage range       (20.4 to 28.8VPC)       (mput pipe rate: within 5%)         Max. number of simultaneous       100%       Max. insub current       1.0.4.10ms or less         ON voltage/ON current       14VPC or higher/4m.A or       Leskage current at OFF       0.1mA or tower         Notage/ON current       14VPC or higher/4m.A or       Leskage current at OFF       0.1mA or tower         Notage/ON current       15ms       5ma       10ms       Response       OFFON       0.5ms or less       0         operation       0.4portx 3.0k2       Output type       Sink type       0.5m or less (ressitive load)	Number of i	input points						Number of o	utput points						
Reled input current       Approx. 7mA       Operating voltage       24/DC         Rated input current       Approx. 7mA       Operating voltage       20/ to 22.8 VDC (ripple ratio: within 5%).         Operating voltage range       20 to 22.8 VDC (ripple ratio: within 5%).       Max. Now of value ratio: within 5%).         Next, number of simultaneous       100%       Max. inrush current       1.0A, 10ms or less         ON voltage/ON current       1.4VDC or higher/4mA or higher       Leakage current at OFF       0.1mA or lower         OFF voltage/OFF current       S/DC or lower(17/mA or lower       Output type       Output type       OS/NC or lower (MAX.) 0.5.A         OR		<u> </u>	-						<u> </u>						
Rated input current       Approx. 7m.A       Operating load voltage       20 4 to 28 MOC       Operating voltage range       Construction       Operating voltage range       Construction       Construction <thconstruction< th="">       Construction<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Rated load v</td><td>oltage</td><td></td><td></td><td></td><td></td></thconstruction<>								Rated load v	oltage						
Operating voltage range     20 4 to 28.8VDC (rpple faulo: within 5%)     Max. load current     0.5Appoint, 2.4A/common       Max. number of simultaneous     100%     Max. innush current     1.0.A. f0ms or less       Max. number of simultaneous     100%     Max. innush current     1.0.A. f0ms or less       OFF voltage/OFF current     hgbdr     55/0C or lower/1.7mA or     Max. voltage drop of OD     0.3VDC or lower (TYP.) 0.5A.       OFF voltage/OFF current     bgred     Approx. 3.0k.0     Output type     Sink type       Input resistance     Approx. 3.0k.0     Output type     Sink type       OFFON     0.2ms 1.5ms     Sms or 10ms     Response     0/FON     0.5ms or less       OFFON     0.2ms 1.5ms     Sms or 10ms     None     0/OEF     1.5ms or less     0/2 0/0       OFFON     0.2ms 1.5ms     Sms or 10ms     Response     0/OEF     1.5ms or less     0/OEF     1.5ms or less     0/OEF     1.5ms or less     0/OEF     1.5ms or less     0/OEF     0/OEF     1.5ms or less     0/OE     0/ON     0/ON     0/ON     0/					7				, v	20.4 to 28.8VDC	VDC				
Operation votage range       (ripple ratio: within 5%)       Max. Number of simultaneous       100%         Max. number of simultaneous       100%       Max. inush current       1.0A, 10ms or less         ON vottage/OF current       5/SVDC or lower/1.7mA or lower       0.3/DC or lower (TVP.) 0.5A.         OFF vottage/OFF current       5/SVDC or lower/1.7mA or lower       0.3/DC or lower (TVP.) 0.5A.         OPF vottage/OFF current       5/SVDC or lower/1.7mA or lower       0.3/DC or lower (TVP.) 0.5A.         Output resistance       Approx. 3.0K2       Protection function       None         Response time       Imput response       0.2ms       1.5ms       Sms or loss       0.0/DFF         OVOFF       0.2ms       1.5ms       Sms or loss       0/DFON       0.2ms       1.5ms       0/DF         Supply current for connected       0.0OFF       1.5ms for loss       Less or less       0/DFON       0/DF	20.4 to 28.8VDC				C		Ŭ	Ū	(ripple ratio: within 5%)						
Input points       100%       Max. Innus current       1.0.4, Toms or less         ON voltage/OF current       14/OC or higher/4m. or higher       Leakage current at OFP       0.1mA or lower         OFF voltage/OFF current       55/OC or lower/1.7mA or lower       Max. voltage drop at ON       0.3VD or lower (TVP.) 0.5A.         Output resistance       Approx. 3.0k1       Protection function       None         Response time       Input resistance       Approx. 3.0k1       Protection function       None         ON-OFF       0.2ms       1.5ms       5ms       10ms       Response       OFF-JON       0.5ms or less         ON-OFF       0.2ms       1.5ms       5ms or lons       ON-OFF       1.5ms fms or lons       ON-OFF       0.2ms       1.5ms fms or less       Imput resistance         Number of occupied stations       22-point assignmentifiation (16 points used)       ON-OFF       1.5ms fms or less       Imput resistance       Imput resistance <td colspan="3">Operating voltage range (</td> <td></td> <td></td> <td></td> <td></td> <td>Max. load cu</td> <td>irrent</td> <td>0.5A/point, 2.4A/common</td> <td></td> <td colspan="4"></td>	Operating voltage range (							Max. load cu	irrent	0.5A/point, 2.4A/common					
ON Votage UNP current       higher								Max. inrush	current	1.0A, 10ms or less					
OH + Voltage (OF + current     tower     Max. Voltage drop at ON     0.5VDC or lower (MAX) 0.5Å       Input resistance     Approx. 3.0kQ     Output type     Sink type     Sink type       Response time     Input resistance     0.2ms     1.5ms     Sms     10ms       ON → OFF     0.2ms     1.5ms     Sms     10ms     Obscience       Input type     0.1ms     0.5ms     resso     0.5ms     0.5ms       Suppty current for connected     1.0ms     0.5ms     0.5ms     0.5ms       Suppty current for connected     1.0A or lower/common     Sms     10ms     0.5ms       Wring method for common     1.5ms or less     0.5ms     0.5ms     0.5ms       Suppty current for connected     1.0A or lower/common     10ms     0.5ms     0.5ms       Wring method for common     1.5ms or less     10ms     0.5ms	ON voltage/	/ON curren	nt		or highe	er/4mA (	or	Leakage cur	rent at OFF	0.1mA or lower					
Input resistance     Approx. 3.0kΩ     Output type     Sink type       Response time     Input response speed     0.2ms     1.5ms     5ms     10ms     OFF→ON     0.5ms or less       OFF→ON     0.2ms     1.5ms     5ms or loss     or less     or less <td>OFF voltage</td> <td>e/OFF curr</td> <td>rent</td> <td></td> <td>or lowe</td> <td>er/1.7m/</td> <td>\ or</td> <td>Max. voltage</td> <td>drop at ON</td> <td></td> <td></td> <td></td> <td></td>	OFF voltage	e/OFF curr	rent		or lowe	er/1.7m/	\ or	Max. voltage	drop at ON						
Imput response         Protection function         None           Response time         Input response         0.2ms         1.5ms         Sms         10ms         Response         0FF-ON         0.5ms or less           OFF-ON         0.2ms         1.5ms         Sms or less	Input resista	ance			3.0kΩ					Sink type					
Response time $\frac{1}{\text{pred}}$ $1.5\text{ms}$ $5\text{ms}$ $10\text{ms}$ $10$							r	Protection fu	nction	None					
External power supply for output part       Voltage       10 × 0 z 8 wDC (rippe ratio: within 5%) (rippe ratio: within 5%)         Supply current for connected device       1.0A or lower/common (sink type)       Surge suppressor       Zener diode         Wining method for common       16 points/common (input: 3-wir terminal block type, output: 2-wire terminal block type)       Nower assignmentisation (16 points used)         Module power       Voltage       20.4 to 26.4VDC (ripple ratio: within 5%)       0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Response ti	sp	beed	0.2ms	1.5ms	5ms or	10ms		OFF→ON	0.5ms or less		BBBBBBBB BBBBBBBB BBBBBBBBBB N+   con+   con+			
External power supply for output part       Voltage       10 × 0 z 8 wDC (rippe ratio: within 5%) (rippe ratio: within 5%)         Supply current for connected device       1.0A or lower/common (sink type)       Surge suppressor       Zener diode         Wining method for common       16 points/common (input: 3-wir terminal block type, output: 2-wire terminal block type)       Nower assignmentisation (16 points used)         Module power       Voltage       20.4 to 26.4VDC (ripple ratio: within 5%)       0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0	N→OFF	0.2ms	1.5ms	5ms or	10ms	ume	ON→OFF	1.5ms or less (resistive load)					
output part         Current         (at 24/DC and all points ON), (at 24/DC and all points output activity)           Supply current for connected device         1.0A or lower/common         1         5         5         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6				01 1033	less or less less or les			Extornal	Voltago	19.2 to 28.8VDC					
output part         Current         (at 24/DC and all points ON), (at 24/DC and all points output activity)           Supply current for connected device         1.0A or lower/common         1         5         5         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6									vollage	(ripple ratio: within 5%)		- 45 00 00 00 00 00 00 00 00 00 00 00 00 00	i a 🔍		
output part         Current         (at 24/DC and all points ON), (at 24/DC and all points output activity)           Supply current for connected device         1.0A or lower/common         1         5         5         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6								1							
Supply current for connected device       1.0A or lower/common       10. A or lower/common         Wiring method for common       16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)         Number of occupied stations       32-point assignment/station (16 points used)         Module power       Voltage       20.4 to 26.4VDC (ripple ratio: within 5%)         Noise immunity       Noise voltage 500Vpcp, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Ornmunication part, module power supply part, I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       7-point direct-mount terminal block I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       M4 screw with plain anser finished round (tightening torque range: 0.78 to 1.08N-m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain asher finished round (tightening torque range: 0.78 to 1.08N-m) Applicable solderless terminal: 2 or less         Applicable solderless terminal       10.25 (20:01       <									Current						
Supply current for connected device       1.0A or lower/common       10. A or lower/common         Wiring method for common       16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)         Number of occupied stations       32-point assignment/station (16 points used)         Module power       Voltage       20.4 to 26.4VDC (ripple ratio: within 5%)         Noise immunity       Noise voltage 500Vpcp, noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Ornmunication part, module power supply part, I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       7-point direct-mount terminal block I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       34-point direct-mount terminal block I/O power supply part, I/O part       M4 screw with plain anser finished round (tightening torque range: 0.78 to 1.08N-m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain asher finished round (tightening torque range: 0.78 to 1.08N-m) Applicable solderless terminal: 2 or less         Applicable solderless terminal       10.25 (20:01       <	In much (						t		<u> </u>	-		M 78			
Output       1.0A or lower/common       1.0A or lower/common         Wring method for common       16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)         Number of occupied stations       32-point assignment/station (16 points used)         Module power       Voltage       20.4 to 28 AVDC (inple ratio: within 5%)         Supply       Current       55mA or lower (at 24VDC and all points ON)         Noise voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         *Opplicable solderless terminal: 2 or less         Module power supply part, I/O power supply part, I/O power supply part, I/O power supply part, I/O part       34-point direct-mount terminal block         I/O power supply part, I/O part       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       2 or less         Module mounting screw       M4 screw with JI S-7.5Fe, TH35-7.5AI (compliant with JEC 60715)         * RAV1.25-3 (compliant with JEC 60715)       * RAV1.25-3 (compliant with JEC 60715)         * Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       * V2-MS3, RAP2-3SL, TGV2-3N (Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]						type)	Surge suppr	essor	Zener diode		X7 + C0				
Minimer of occupied stations       32-point assignment/station (16 points used)         Module power       Voltage       20.4 to 26.4 VDC (tipple ratio: within 5%)         Supply       Current       55mA or lower (at 24VDC and all points ON)         Noise immunity       Noise voltage 500Vp-p. noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)         Mitistand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.28fg         Communication part, module power supply, part       7-point two-piece terminal block         (I/ part       7-point two-piece terminal block         (I/ op ower supply)       34-point direct-mount terminal block         (I/ op ower supply)       34-point direct-mount terminal block         (I/ op ower supply)       M3×5.2 screw (tightening torque range: 0.59 to 0.88N+m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with pain washer finished round (tightening torque range: 0.78 to 1.08N+m) Mountable with a DIN rail in 6 orientations         Applicable solderless terminal:       2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N+m) Mountable with a DIN rail in	1 UA or lower/common								1		ă 🖳				
Minimer of occupied stations       32-point assignment/station (16 points used)         Module power       Voltage       20.4 to 26.4 VDC (tipple ratio: within 5%)         Supply       Current       55mA or lower (at 24VDC and all points ON)         Noise immunity       Noise voltage 500Vp-p. noise width 1µs, noise frequency 25 to 60Hz (DC type noise simulator condition)         Mitistand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.28fg         Communication part, module power supply, part       7-point two-piece terminal block         (I/ part       7-point two-piece terminal block         (I/ op ower supply)       34-point direct-mount terminal block         (I/ op ower supply)       34-point direct-mount terminal block         (I/ op ower supply)       M3×5.2 screw (tightening torque range: 0.59 to 0.88N+m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with pain washer finished round (tightening torque range: 0.78 to 1.08N+m) Mountable with a DIN rail in 6 orientations         Applicable solderless terminal:       2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N+m) Mountable with a DIN rail in		nod for com	nmon	16 point	ts/comm	non (inn	ut: 3-wir	e terminal blo	ck type outr	out: 2-wire terminal block type)	— I I		i i i i i i i i i i i i i i i i i i i		
Noise infinuitity       noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Transmission circuit, module power supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         34-point direct-mount terminal block         I/O power supply part,         I/O part         Madule mounting screw         Module mounting screw         Mountable with a DIN rali ii 6 orientations         Applicable DIN rail         TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)         Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]	-					<u>, i</u>									
Noise infinuitity       noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Transmission circuit, module power supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         34-point direct-mount terminal block         I/O power supply part,         I/O part         Madule mounting screw         Module mounting screw         Mountable with a DIN rali ii 6 orientations         Applicable DIN rail         TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)         Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]												1-100.			
Noise infinuitity       noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Transmission circuit, module power supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         34-point direct-mount terminal block         I/O power supply part,         I/O part         Madule mounting screw         Module mounting screw         Mountable with a DIN rali ii 6 orientations         Applicable DIN rail         TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)         Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]						<u>, , , ,</u>		,							
Noise infinuitity       noise frequency 25 to 60Hz (DC type noise simulator condition)         Withstand voltage       500VAC for 1 minute between all DC external terminals and ground         Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Transmission circuit, module power supply, FG]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         34-point direct-mount terminal block         I/O power supply part,         I/O part         Madule mounting screw         Module mounting screw         Mountable with a DIN rali ii 6 orientations         Applicable DIN rail         TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)         Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]			arrent												
Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Todule power supply part, connection system       7-point two-piece terminal block (Transmission circuit, module power supply, FG] (M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         34-point direct-mount terminal block (I/O power supply part, I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable solderless terminal       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         Wire       Material         Copper         Temperature rating       75°C or more	Noise immu	unity						à W/							
Insulation resistance       10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         Protection degree       IP2X         Weight       0.26kg         Todule power supply part, connection system       7-point two-piece terminal block (Transmission circuit, module power supply, FG] (M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         34-point direct-mount terminal block (I/O power supply part, I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable solderless terminal       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         Wire       Material         Copper         Temperature rating       75°C or more	Withstand v	/oltage						1 🛎 🕲 h							
External connection system       Communication part, module power supply       7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module power supply part, I/O power supply, I/O power supply, I/O signal]       34-point direct-mount terminal block         I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more	Inculation re	-													
External connection system       Communication part, module power supply       7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module power supply part, I/O power supply, I/O power supply, I/O signal]       34-point direct-mount terminal block         I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more	Insuiduon re	ธอเอเสทีเดีย			ce teste										
External connection system       Communication part, module power supply       7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module power supply part, I/O power supply, I/O power supply, I/O signal]       34-point direct-mount terminal block         I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more	Protection d	degree													
External connection part, module power supply part       Transmission circuit, module power supply, FG]         Max5.2 screw (tightening torque range: 0.59 to 0.88N•m)       Applicable solderless terminal: 2 or less         VO power supply part, I/O part       34-point direct-mount terminal block         I/O part       34-point direct-mount terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Material       Copper         Temperature rating       75°C or more	Weight	-		v											
External connection system       module power supply part       [Iransmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         34-point direct-mount terminal block       [I/O power supply part, I/O part       34-point direct-mount terminal block         I/O part       M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Paplicable solderless terminal:       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more		Communi	cation part		•	ſ									
External connection system       part       Applicable solderless terminal: 2 or less         I/O power supply part, I/O power supply part, I/O part       34-point direct-mount terminal block         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Paplicable solderless terminal       * RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       * V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more											l				
connection system       34-point direct-mount terminal block [I/O power supply part, I/O part       34-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material       Copper         Temperature rating       75°C or more	External												<u> </u>		
I/O power supply part,       [I/O power supply, I/O signal]         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)         Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       * RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       * V2-MS3, RAP2-3SL, TGV2-3N         Wire       Material       Copper         Temperature rating       75°C or more											-				
I/O part     M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less       Module mounting screw     M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations       Applicable DIN rail     TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)       Applicable solderless terminal     • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]       • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       Wire     Material     Copper       Temperature rating     75°C or more	system		supply part				sinnell	DIUCK							
Applicable solderless terminal: 2 or less         Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material         Copper         Temperature rating       75°C or more			Supply part,					e range: 0.59	to 0.88N•m)						
Module mounting screw       M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations         Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material       Copper         Temperature rating       75°C or more									.5 5.5014 (11)						
Applicable DIN rail       TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)         Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805)         [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N         [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material         Copper         Temperature rating       75°C or more	Module mou	unting scre	ew	M4 scre	w with p	olain wa	sher fin	ished round (t	ightening tor	que range: 0.78 to 1.08N•m)					
Applicable solderless terminal       • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire] • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material       Copper         Temperature rating       75°C or more	Applicable [	DIN rail							60715)						
Applicable solderless terminal       [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]         • V2-MS3, RAP2-3SL, TGV2-3N       [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]         Wire       Material       Copper         Temperature rating       75°C or more	, ppiloubic L				,		· ·								
• V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]       Wire     Material       Copper       Temperature rating     75°C or more						•		. ,		tranded wire]					
Wire Material Copper Temperature rating 75°C or more	Applicable s	solderless	terminal	• V2-M8	53, RAF	2-3SL,	TGV2-3	N	,	-					
Temperature rating 75°C or more	Wire	Material				10 3120.	1.2010		, - ANG) S	แลกษณ พทธา					
Accessory User's manual	-		ure rating												
	Accessory			User's r	nanual										



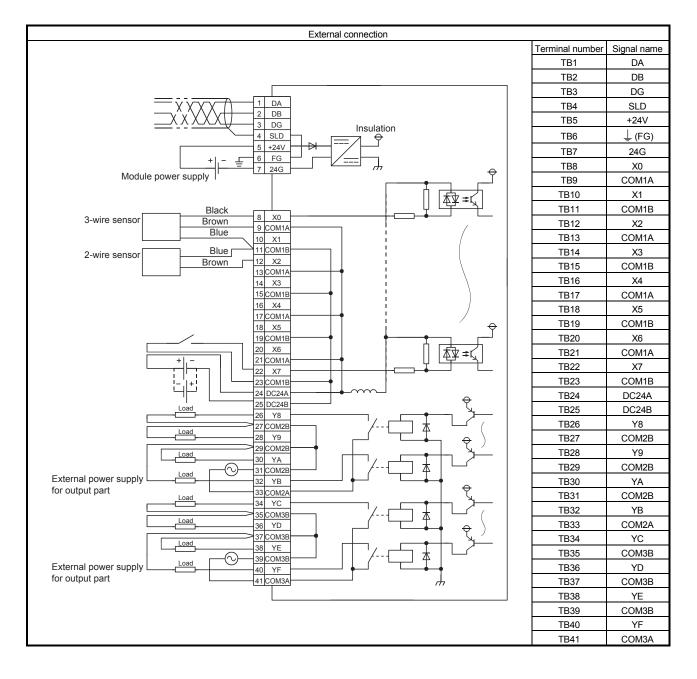
#### 6.1.10 AJ65SBTB32-16KDT8 combined module

Response time OI	opints ge nt range imultaneous urrent current nput response peed	put 8 points Photocou 12VDC Approx. 1 10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c Approx. 1	11mA 4.4VDC tio: withi	n 5%)			/oltage	Photocoupler 12VDC	Appea	arance		
Isolation method Rated input voltage Rated input curren Operating voltage I Max. number of sir input points ON voltage/ON cu OFF voltage/OFF o Input resistance	opints ge nt range imultaneous urrent current nput response peed	8 points Photocou 12VDC Approx. 1 10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c	11mA 4.4VDC tio: withi	n 5%)		Isolation met Rated load v Operating lo	thod voltage	8 points Photocoupler 12VDC	_			
Isolation method Rated input voltage Rated input curren Operating voltage i Max. number of sir input points ON voltage/ON cur OFF voltage/OFF of Input resistance	ge nt range imultaneous urrent current nput response peed	Photocou 12VDC Approx. 1 10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c	11mA 4.4VDC tio: withi	n 5%)		Isolation met Rated load v Operating lo	thod voltage	Photocoupler 12VDC	-			
Isolation method Rated input voltage Rated input curren Operating voltage i Max. number of sir input points ON voltage/ON cur OFF voltage/OFF o Input resistance	ge nt range imultaneous urrent current nput response peed	Photocou 12VDC Approx. 1 10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c	11mA 4.4VDC tio: withi	n 5%)		Rated load v Operating load	/oltage	12VDC				
Rated input curren Operating voltage i Max. number of sir input points ON voltage/ON cu OFF voltage/OFF o Input resistance Response time OI	nt range imultaneous urrent current nput response peed	Approx. 1 10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c	4.4VDC tio: withi or higher	n 5%)		Operating lo						
Rated input curren Operating voltage i Max. number of sir input points ON voltage/ON cu OFF voltage/OFF o Input resistance Response time OI	nt range imultaneous urrent current nput response peed	10.2 to 14 (ripple rat 100% 5.6VDC c 2.4VDC c	4.4VDC tio: withi or higher	n 5%)			ad voltage					
Max. number of sir input points ON voltage/ON cur OFF voltage/OFF of Input resistance	arrent current nput response peed	(ripple rat 100% 5.6VDC c 2.4VDC c	tio: withi or highei	n 5%)				10.2 to 14.4VDC (ripple ratio: within 5%)				
input points ON voltage/ON cur OFF voltage/OFF of Input resistance	urrent current nput response peed	100% 5.6VDC c 2.4VDC c	or highei			Max. load cu	urrent	0.5A/point, 2.4A/common				
ON voltage/ON cui OFF voltage/OFF ( Input resistance	current	2.4VDC c				Max. inrush	current	1.0A, 10ms or less				
OFF voltage/OFF of Input resistance	current	2.4VDC c		r/4mA or	higher	Leakage cur	rent at OFF	0.1mA or lower				
Response time	peed	Approx. 1		′1.7mA o	r lower	Max. voltage	e drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A				
Response time	peed	Approx. 1				Output type		Sink type				
sp Response time OI	peed		1.0kΩ			Protection fu	Inction	None	₹ <u></u>			
. –			1.5ms 1.5ms	5ms 5ms or	10ms 10ms	Response		0.5ms or less		88888888888888888888888888888888888888		
	OFF→ON			time	011 055							
	N→OFF	or less	or less	less	or less			1.5ms or less (resistive load) 10.2 to 14.4VDC				
					External Voltage power supply for		(ripple ratio: within 5%) 10mA or lower (ct 12)/DC and all points (NI)	19 VA				
		[				output part	Current	(at 12VDC and all points ON), excluding external load current				
Input type Positive common (sink type)				be)	Surge suppr	ressor	Zener diode					
Supply current for connected device 1.0A or lower/common									9888888 98888888 988888888888888888888			
Wiring method for							type, output:	2-wire terminal block type)	- × ++++0			
Number of occupie		32-point a				I III IIII IIII IIIII IIIII IIIII IIIII IIII						
Module power supply	Voltage Current	20.4 to 26 55mA or	lower (a									
Noise immunity		Noise vol noise frec		789 A B C D E F 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								
Withstand voltage	•	500VAC										
Insulation resistand	ice	10MΩ or tester)	higher b	R.X01 2 3 4 5 6 7 B.X01 2 3 4 5 6 7 B.X01 2 3 4 5 6 7 M33.58E A.sess +247 246 M33.58E A.sess								
Protection degree		IP2X										
Weight		0.26kg										
part,	le power		screw (tig	ghtening	torque ra	ange: 0.59 to		le power supply, FG]				
	ower supply		screw (tig	ghtening	torque ra	ck [I/O power ange: 0.59 to	11.27	signal]	1			
Module mounting s			v with pla	ain wash	er finishe	ed round (tigh	tening torque	e range: 0.78 to 1.08N•m)	1			
Applicable DIN rail						nt with IEC 60	0715)		7			
Applicable solderle		<ul> <li>RAV1.2 [Applica</li> <li>V2-MS3</li> </ul>	25-3 (cor able wire 3, RAP2	mpliant w e size: 0.3 -3SL, TG								
Wire Materi				size: 1.2	∠ວ ເປ 2.U	mm ² (16 to 14	4 AVVG) Střal					
	ial	Wire Material Copper						1				
Accessory		Temperature rating         75°C or more           Accessory         User's manual										



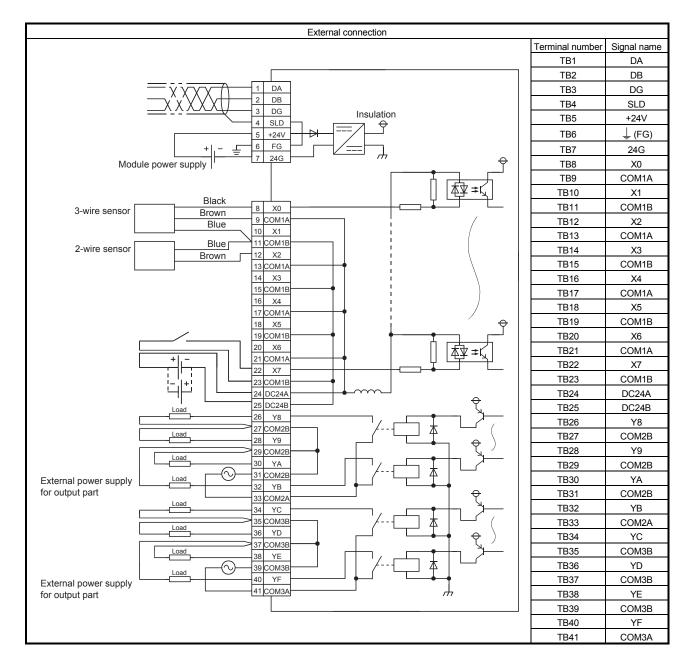
#### 6.1.11 AJ65SBTB32-16DR combined module

	_ 1	ype											
Item		/		AJ65SBTB32-16DR							rance		
		Inp	out				Output		_				
Number of	input points		8 points	Num point	iber of o ts	output	8 points						
Isolation m	ethod		Photocoupler	Isola	ation me	thod	Relay						
Rated input	t voltage		24VDC	ed load v	/oltage	2A/point, 4A/common at 24VDC (resistive load) or 240V/ (cos =1)	AC						
Rated input current			Approx. 7mA	Number of simultaneous ON points			All points						
Operating voltage range			19.2 to 26.4VDC (ripple ratio: within 5%)	Min. switching load			5VDC, 1mA						
Max. numb simultaneo	per of ous input points		100%	Max	. switchi	ng voltage	264VAC, 125VDC						
ON voltage/ON current			14VDC or higher/3.5mA or higher	Mechanical		anical	20 million times or more Rated switching voltage/current lo: 100 thousand times or more 200VAC 1.5A, 240VAC 1A (cos∳=			OM3BICONGA	8		
OFF voltage/OFF current			6VDC or lower/1.7mA or lower	Life Electrical		cal	100 thousand times or more 200VAC 1A, 240VAC 0.5A (cos∳= 100 thousand times or more 24VDC 1A, 100VDC 0.1A (L/R=7r 100 thousand times or more	,	4 2 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 3 4	X0   X1   X2   X3   X4   X5   X6   X7   D22A4   Y8   Y9   YA   Y8   Y6   Y0   YE   YF   Y6   Y0   Y8   Y6   Y7   Y6   Y6   Y6   Y7   Y7   Y6   Y6			
Input resist	tance		Approx. 3.3kΩ	Max. switching frequency		ng	3600 times/hour		xo 1 2 3	(A YE COM2B			
Response	time OFF→		1.5ms or less (at 24VDC)			OFF→ON	10ms or less			COM2E			
Response	Response time ON→OFF		1.5ms or less (at 24VDC)	time		ON→OFF	12ms or less			WZB			
		8 points/common (3-wire, terminal block type)		ng meth mon	od for	4 points/common (2-wire, terminal block type)			A Y8 C24B C0				
Input type			Positive/negative common shared type (sink/source shared type)	Surg	je suppr	ressor	None			X7 DC24 1A COM1B D			
Supply current for connected device		cted	1.0A or lower/common							X6 MIB COM			
Number of	occupied stati	ons	32-point assignment/station (	16 po	oints use	ed)	1	X5 ATA C					
Module pov	wer Voltage	;	20.4 to 26.4VDC (ripple ratio	withi	n 5%)					X4 8 CON			
supply	Curren	t	85mA or lower (at 24VDC an							COMI			
Noise immi	unity		Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1µs, noise frequency 25 to 60Hz (noise simulator condition) 2830VACrms for 3 cycles between all AC external terminals and ground (2000m above sea							X2 X: B COM1A			
Withstand	voltage		2830VACrms for 3 cycles be level) 500VAC for 1 minute betwee		X1 X MIA COM1								
			$10M\Omega$ or higher between all $\lambda$		2 ⁰								
Insulation r	resistance		tester) 10M $\Omega$ or higher between all I tester)	0N 10 20	246 (FG)								
Protection of	degree		IP1X	5DR	44	(B)							
Weight	•		0.28kg						IB32-16DR	SLD +2			
External	Communicati part, module powe supply part		7-point two-piece terminal blo M3×5.2 screw (tightening tor Applicable solderless termina	que ra	ange: 0.				LIERER AJ65SETB3:	DB DB			
system		I/O power supply     34-point direct-mount terminal block [I/O power supply, I/O signal]       part,     M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)										-	
	ounting screw		Mountable with a DIN rail in 6	6 orier	ntations		g torque range: 0.78 to 1.08N•m)		-				
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (con	_		EC 60715)			-				
Applicable terminal	solderless		<ul> <li>RAV1.25-3 (compliant with [Applicable wire size: 0.3 to</li> <li>V2-MS3, RAP2-3SL, TGV2 [Applicable wire size: 1.25 tist]</li> </ul>	1.25r -3N	mm² (22		, <u>-</u>						
Wire	Material		Copper				· •		1				
	Temperature rating		75°C or more										
Accessory	ccessory User's manual								<u> </u>				



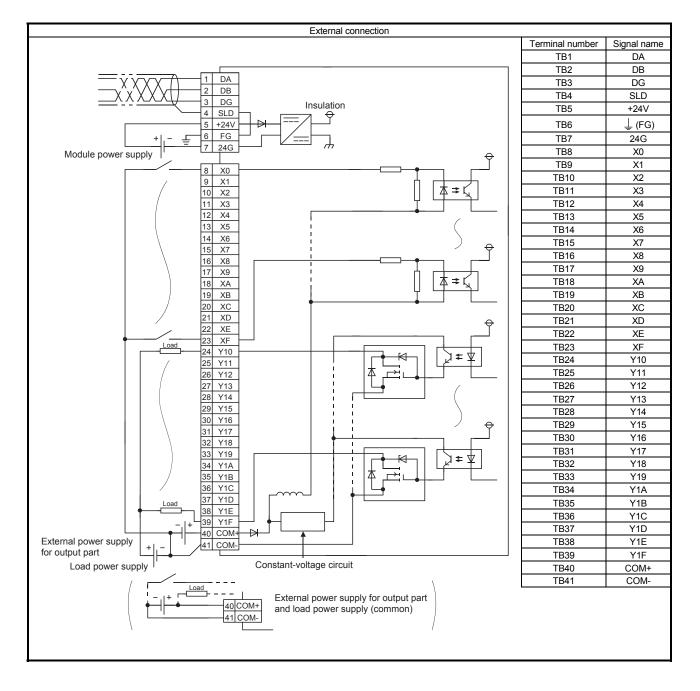
#### 6.1.12 AJ65SBTB32-16KDR combined module

	Туре					[	DC input contac	ct output combined module		
Item							SBTB32-16KE	· · · · ·	Арреа	rance
		Input				1.000	001002 1010	Output	1.0000	
Number of	input points	8 points				Number o	f output points	1		
Isolation m	ethod	Photoco	upler			Isolation r		Relay	1	
Rated input	t voltage	24VDC				Rated loa	d voltage	2A/point, 4A/common at 24VDC (resistive load) or 240VAC (cos =1)		
Rated input current Approx. 7mA					Number o ON points	f simultaneous	All points	]		
Operating v		28.8VDC atio: with			Min. switc	hing load	5VDC, 1mA			
	us input points	100%		//		Max. swite	ching voltage	264VAC, 125VDC	_	
ON voltage	e/ON current	14VDC	or highei	r/4mA or	higher		Mechanical	20 million times or more	4	
	e/OFF current			/1.7mA c	or lower	-		Rated switching voltage/current load: 100 thousand times or more 200VAC 1.5A, 240VAC 1A (cos =0.7):		
Input resist	ance Input response	Approx.			10	Life	Electrical	100 thousand times or more 200VAC 1A, 240VAC 0.5A (cosφ=0.35):		
Response	speed OFF→ON	0.2ms 0.2ms	1.5ms 1.5ms	5ms 5ms or	10ms 10ms	-		100 thousand times or more 24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more	20012 4 5 5 1 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
time	ON→OFF	or less 0.2ms or less	or less 1.5ms or less	less 5ms or less	or less 10ms or less	Max. swite	0	3600 times/hour	XX01 2 3 4 5 6 7 1 M M M M M M M M M M M M M M M M M M M	
Wiring metl	hod for common	8 points/common (3-wire, terminal block type)			Response	OFF→ON	10ms or less			
Input type		Positive/negative common shared type (sink/source shared type)				time	ON→OFF	12ms or less	MIL RUN	88833388885338888888888888888888888888
	Supply current for connected 1.0A or			I.0A or lower/common			ethod for	4 points/common (2-wire, terminal block type)		
device						Surge sup	-			
	occupied stations		-			oints used)				
Module pov supply	wer Voltage Current			(ripple ra		III 5%) Il points ON	.1)		e e	
			ol lower	<u>(1 X2</u> (1 X2 (1 X2						
Noise immu	unity		equency		10 K					
Withstand	voltage	2830VA	Crms for for 1 mi							
Insulation r		10MΩ o	r higher r higher	24V						
Protection of	degree	IP1X		DI SLL	m W					
Weight	Communication	0.29kg								
External	Communication part, module power supply part	M3×5.2	screw (ti		torque r	ange: 0.59	on circuit, modu to 0.88N•m)	ule power supply, FG]		
system	supply part         Applicable soldeness terminal: 2 of less           system         I/O power supply         34-point direct-mount terminal block [I/O power supply, I/O signal]           part,         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)           I/O part         Applicable solderless terminal: 2 of less									
Module mo	ounting screw	M4 scre	w with p		ner finish	ed round (t	tightening torqu	e range: 0.78 to 1.08N•m)	1	
Applicable DIN rail TH35-7.5Fe, TH35-7.5AI (complia					C 60715)		]			
Applicable terminal	solderless	[Applic	able wir	mpliant v e size: 0. 2-3SL, T0	3 to 1.25		o 16 AWG) stra	inded wire]		
Wire	Material					)mm² (16 tơ	o 14 AWG) stra	inded wire]	-	
-	Temperature rating	75°C or	more						1	
		l leor'e n	nanual						T	



#### 6.1.13 AJ65SBTB1-32DT combined module

	_	Туре		DC input	transistor ou	Itput combined module		
Item				AJ65SBTB ²		Appe	arance	
			Input			Output		
Number of	input po	oints	16 points	Number of outp	out points	16 points		
Isolation me			Photocoupler	Isolation metho		Photocoupler		
Rated input voltage			24VDC	24VDC				
· •								
Rated input current			Approx. 7mA	Operating load range	U	(ripple ratio: within 5%)		
19.2 to 2			19.2 to 26.4VDC					
Operating voltage range			(ripple ratio: within 5%)	Max. load curre	ent			
Max. numb	er of sin	nultaneous	100%	Max. inrush cur	ront	1.0A, 10ms or less		
input points	6		100 %	Max. Infusit cu	Tent			
ON voltage	e/ON cur	rent	14VDC or higher/3.5mA or higher	Leakage currer	nt at OFF	0.25mA or lower		
OFF voltag		urrent	6VDC or lower/1.7mA or lower	Max. voltage dr	on at ON	0.3VDC or lower (TYP.) 0.5A,		
OF F VOILAY		unent		wax. voitage ui	op at ON	0.6VDC or lower (MAX.) 0.5A		
				Output type		Sink type		
Input resista	ance		Approx. 3.3kΩ	Protection funct	tion	Overload protection, overvoltage		
		1				protection, overheat protection		
Response t	time	OFF→ON	1.5ms or less (at 24VDC)	Response time	$OFF \rightarrow ON$	0.5ms or less		6
	anno	ON→OFF	1.5ms or less (at 24VDC)		$ON \rightarrow OFF$	1.5ms or less (resistive load)		
				External power	Voltage	19.2 to 26.4VDC	<u>(11 11 11 11 11 11 11 11 11 11 11 11 11 </u>	1 \(\Bar{\Bar{B}}\)
				supply for	voltage	(ripple ratio: within 5%)		1 Con L
				output part	Current	30mA or lower (24VDC/common),	×12 ×8	
						excluding external load current	4 Y15	
Input type			Positive common (sink type)	Surge suppress	sor	Zener diode	V13	
Wiring method for common			32 points/common (1-wire, terminal					
Number of	occupie	d stations	32-point assignment/station (32 poin					
Module pov	wer	Voltage	20.4 to 26.4VDC (ripple ratio: within					
supply		Current	60mA or lower (at 24VDC and all po	,				
Noise immu	unitv		Noise voltage 500Vp-p, noise width	-				
			noise frequency 25 to 60Hz (DC typ					
Withstand v	voltage		500VAC for 1 minute between all D					
Insulation r	esistanc	æ	10M $\Omega$ or higher between all DC extension	ernal terminals a	and ground (	500VDC insulation resistance	2010 A B C D E F 2010 A B C D	1 W Mh
Destantion			tester)					8
Protection of	aegree		IP2X	201234567 000000000000000000000000000000000000				
Weight	Comm	unication	0.25kg	× 1 2 24 2 24 2				
	part,	unication	7-point two-piece terminal block [Transmission circuit, module power					
		e power	M3×5.2 screw (tightening torque rar					
External	supply	-	Applicable solderless terminal: 2 or	-				
connection			34-point direct-mount terminal block					
system	I/O pov	ver supply	[I/O power supply, I/O signal]					
	part,		M3×5.2 screw (tightening torque rar	nge: 0.59 to 0.88	SN•m)			
	I/O par	t	Applicable solderless terminal: 2 or	less				
Modulo mo	unting o	orow	M4 screw with plain washer finished	d round (tightenir	ng torque ra	nge: 0.78 to 1.08N•m)		
Module mounting screw		CIEW	Mountable with a DIN rail in 6 orient					
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant	t with IEC 60715	i)			
			RAV1.25-3 (compliant with JIS C 2	,				
Applicable	solderle	ss terminal	[Applicable wire size: 0.3 to 1.25m	10 m ² (22 to 16 AV	VG) strande	d wire]		
- ppiloubic -	20100110	ee torrinidi	• V2-MS3, RAP2-3SL, TGV2-3N	0				
14/1-11			[Applicable wire size: 1.25 to 2.0m	16 to 14 AV	VG) strande	d wire]		
Wire	Materia		Copper					
	Tempe	rature	75°C or more					
A0000000	rating		Llooria manual					
Accessory			User's manual					



#### 6.1.14 AJ65SBTB1-32DT1 combined module

Itom		Туре				r output combined module		
Item				AJ65SB	TB1-32DT1		Арре	arance
			put			Output	_	
Number of		nts	16 points		utput points		4	
Isolation m	ethod		Photocoupler	Isolation me		Photocoupler	_	
Rated input	t voltage		24VDC	Rated load v	voltage	24VDC	_	
Rated input	t current		Approx. 5mA			19.2 to 26.4VDC (ripple ratio: within 5%)		
Operating v	voltage ra	ange	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load current		0.5A/point, 3.6A/common		
Max. numb input points		ultaneous	100%	Max. inrush	current	1.0A, 10ms or less		
ON voltage/ON current		ent	15VDC or higher/3mA or higher	Leakage cur	rent at OFF	0.25mA or lower		
OFF voltage/OFF current		urrent	3VDC or lower/0.5mA or lower	Max. voltage	e drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
Input resist	ance		Approx. 4.7kΩ	Output type Protection fu	Inction	Sink type Overload protection, overvoltage protection, overheat protection		
Pospence d	timo	OFF→ON	0.2ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less		
Response	ume	ON→OFF	0.2ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)		
				External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)		
				power		24.2mA or lower		
				supply for	Current	(at 24VDC and all points ON),	V16	10 mH
				output part	ounon	excluding external load current	Y13 Y14	
Input type			Positive common (sink type)	Surge suppr	essor	Zener diode		6
Wiring method for common 32 points/common (1-wire, termin								
Number of occupied stations 32-point assignment/station (32 p							18-19-14 XD XC	6
Module pov		Voltage	20.4 to 26.4VDC (ripple ratio: with					6
supply	T	Current	60mA or lower (at 24VDC and all			X9 X9 X9	6	
			Noise voltage 500Vp-p, noise wid				6	
Noise immu	unity		noise frequency 25 to 60Hz (DC t		6			
Withstand v	voltage		500VAC for 1 minute between all	DC external f	terminals and	d ground	2010 A B C D E F V 000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	₩ @ ₩
Insulation r		e				und (500VDC insulation resistance		
Protection	dograa		IP2X				001234567	
Weight	uegree		0.25kg					
weigin	Commu	inication						
	part,		7-point two-piece terminal block [Transmission circuit, module pow	ver supply Fr	31			
	module	power	M3×5.2 screw (tightening torque)				1 ° M	
External	supply p	-	Applicable solderless terminal: 2	-	,			
connection system	I/O pow	er supply	34-point direct-mount terminal blc [I/O power supply, I/O signal]					
	part, I/O part		M3×5.2 screw (tightening torque	•	0.88N•m)			
	I		Applicable solderless terminal: 2 M4 screw with plain washer finish		htenina torau	e range: 0.78 to 1.08N•m)	-	
Module mo	ounting so	crew	Mountable with a DIN rail in 6 orie			<u> </u>		
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5Al (complia	ant with IEC 6	0715)		4	
			• RAV1.25-3 (compliant with JIS	C 2805)				
Applicable	solderles	s terminal	[Applicable wire size: 0.3 to 1.2 • V2-MS3, RAP2-3SL, TGV2-3N	5mm ² (22 to 1	6 AWG) stra			
				0mm ² (16 to 14 AWG) stranded wire]			4	
\A/ire	Materia		Copper				4	
Wire		ature rating	75°C or more					

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

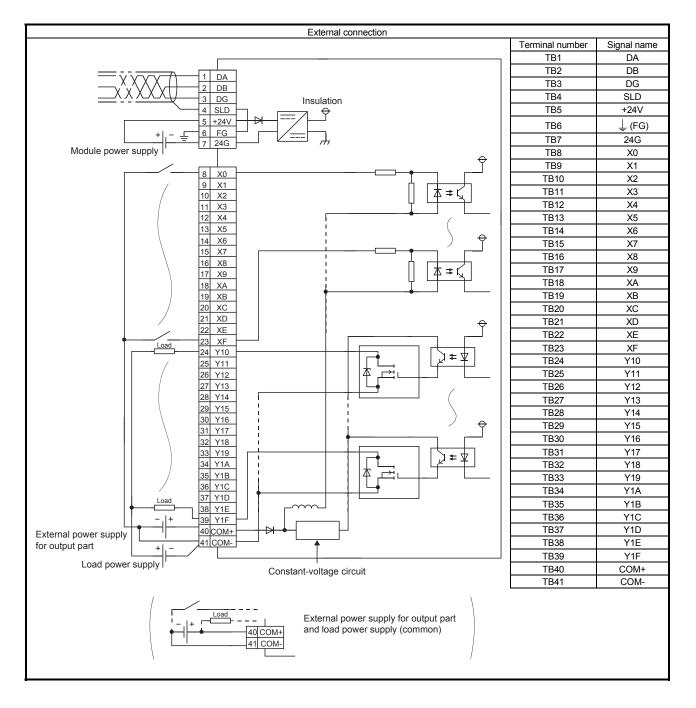
#### External connection Terminal number Signal name TB1 DA TB2 DB DA 1 γ 2 DB 3 DG TB3 DG Х TB4 SLD Insulation SLD 4 9 TB5 +24V 5 +24V ⊳ ╧┥┝ <u> </u>(FG) TB6 6 FG _ ightarrow7 24G TB7 24G Module power supply TB8 X0 8 X0 TB9 X1 9 X1 TB10 X2 本 ≠Ľ 10 X2 Х3 TB11 11 X3 TB12 X4 12 X4 13 X5 TB13 X5 TB14 X6 14 X6 15 X7 Ð X7 TB15 16 X8 TB16 X8 17 X9 TB17 X9 18 XA 19 XB 本 ≠ĭ TB18 XA TB19 XB 20 XC 21 XD 22 XE TB20 XC TB21 XD 23 XF TB22 XE Load 24 Y10 TB23 XF ≉ו R 25 Y11 TB24 Y10 26 Y12 4 TB25 Y11 27 Y13 TB26 Y12 28 Y14 TB27 Y13 29 Y15 30 Y16 TB28 Y14 Ŷ 31 Y17 TB29 Y15 32 Y18 TB30 Y16 33 Y19 ≠נ TB31 Y17 K $\mathbf{A}$ 34 Y1A TB32 Y18 35 Y1B 本 $\rightarrow$ TB33 Y19 36 Y1C Y1A TB34 37 Y1D Load 38 Y1E TB35 Y1B Y1F TB36 39 Y1C 40 COM+ ₽ TB37 Y1D External power supply 41 COM-Y1E TB38 for output part TB39 Y1F Load power supply Constant-voltage circuit TB40 COM+ - -Load . TB41 COM-External power supply for output part 40 COM+ 41 COMand load power supply (common)

#### 6.1.15 AJ65SBTB1-32DT2 combined module

	_	Туре		DC input tr	ansistor out	out combined module		
Item				AJ65SBTB1-3			Appea	arance
			Input			Dutput		
Number of	input po	oints	16 points	Number of output		16 points	1	
Isolation m	· ·		Photocoupler	Isolation method		Photocoupler	1	
Rated inpu		ż	24VDC	Rated load volta		24VDC	1	
. tatou nipu	, ronagi	-	2.1.00	Operating load v	•	19.2 to 26.4VDC		
Rated inpu	t curren	t	Approx. 7mA	range	ollage	(ripple ratio: within 5%)		
Operating	voltage	range	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curren	t	0.5A/point, 3.6A/common		
Max. numb input points		nultaneous	100%	Max. inrush curre	ent	1.0A, 10ms or less		
ON voltage	e/ON cui	rrent	14VDC or higher/3.5mA or higher	Leakage current	at OFF	0.1mA or lower		
OFF voltage/OFF current		current	6VDC or lower/1.7mA or lower	Max. voltage dro	p at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
				Output type		Sink type		
Input resist	ance		Approx. 3.3kΩ	Protection function	on	None		
		OFF→ON	1.5ms or less (at 24VDC)		OFF→ON	0.5ms or less	1   _0,	
Response	time		1.5ms or less (at 24VDC)	Response time	ON→OFF	1.5ms or less (resistive load)		60 60
		0.1. /0.1			0.1. / 0.1.	19.2 to 26.4VDC		
				External power	Voltage	(ripple ratio: within 5%)		1 ⁽¹⁾ (1)
				supply for		30mA or lower		
				output part	Current	(at 24VDC and all points ON),	N <del>~</del> 13	
				output put	ourrent	excluding external load current	716 15 Y	
Input type			Positive common (sink type)	Y14 13 Y				
	bod for	common	32 points/common (1-wire, terminal	Surge suppresso		Zener diode		
Wiring method for common Number of occupied stations			32-point assignment/station (32 poi					
Module pov	wer	Voltage	20.4 to 26.4VDC (ripple ratio: within					
supply		Current	60mA or lower (at 24VDC and all po	,				
Noise imm	unity		Noise voltage 500Vp-p, noise width					
\//ithatand \	valtaga		noise frequency 25 to 60Hz (DC typ 500VAC for 1 minute between all D					
Withstand		2	$10M\Omega$ or higher between all DC ext	× × × × × × × × × × × × × × × × × × ×				
modiation	colotant		tester)					
Protection	degree		IP2X				2241 246 57	
Weight			0.25kg					
	Comm	unication	7-point two-piece terminal block					
			[Transmission circuit, module powe	r supply, FG]			DG + SLD	
External	part, m	supply part	M3×5.2 screw (tightening torque rai	nge:0.59 to 0.88N	•m)		PW L RUN	
connection		sappiy part	Applicable solderless terminal: 2 or	less				- ^W 🕲
system		ver supply	34-point direct-mount terminal block	< C				
5,00011	part,		[I/O power supply, I/O signal]					
	I/O par	t	M3×5.2 screw (tightening torque rai	•	•m)			
		-	Applicable solderless terminal: 2 or				4	
Module mo	ountina s	screw	M4 screw with plain washer finished		g torque rang	ge: 0.78 to 1.08N•m)		
	0		Mountable with a DIN rail in 6 orient				4	
Applicable	DIN rail		TH35-7.5Fe, TH35-7.5Al (complian	,			4	
Applicable solderless terminal			<ul> <li>RAV1.25-3 (compliant with JIS C [Applicable wire size: 0.3 to 1.25m</li> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> </ul>					
			[Applicable wire size: 1.25 to 2.0m	10 10 10 10 10 10 10 10 10 10 10 10 10 1	1			
Wire	Materia	al	Copper				1	
	Tempe	rature	75°C or more					
A	rating		Llaaria manual				4	
Accessory			User's manual				1	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

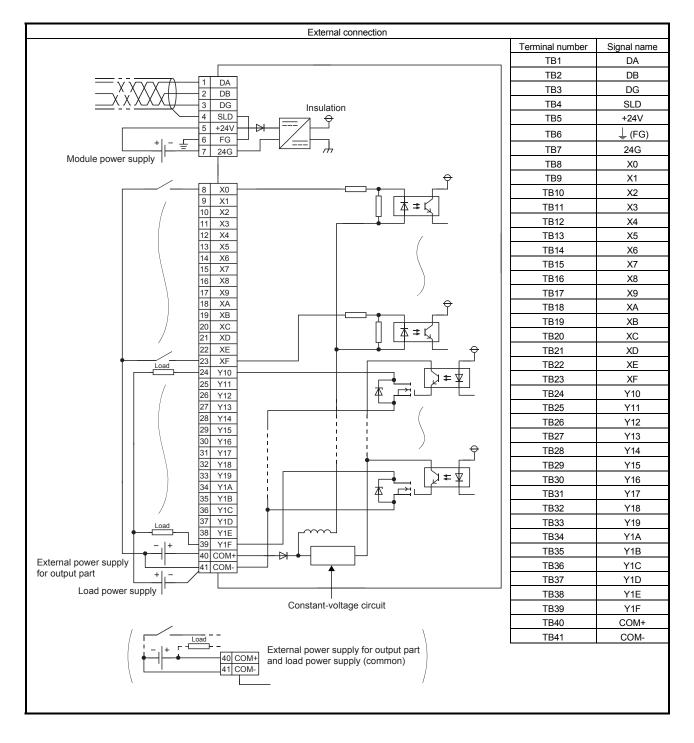
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### 6.1.16 AJ65SBTB1-32KDT2 combined module

	Туре					DC input	transistor ou	Itput combined module		
Item						AJ65SBTB1-	32KDT2		Appea	arance
		Input						Output		
Number of ir	put points	16 points	3			Number of outp		16 points		
Isolation met		Photoco				Isolation metho		Photocoupler		
Rated input		24VDC	apiei			Rated load volt		24VDC		
Rated input	•	Approx.	7mA			Operating load	× ·	20.4 to 28.8VDC		
	current					range		(ripple ratio: within 5%)		
Operating vo			tio: withir			Max. load curre	ent	0.5A/point, 3.6A/common		
Max. numbe input points	r of simultaneous		t 26.4VD 28.8VDC			Max. inrush cui	rrent	1.0A, 10ms or less		
ON voltage/0	ON current	14VDC o	or higher/	4mA or h	igher	Leakage currer	nt at OFF	0.1mA or lower		
OFF voltage	/OFF current	5.5VDC	or lower/	1.7mA or	lower	Max. voltage di	rop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A		
nput resistance		Approx.	3.0kO			Output type		Sink type		
		rippiox.	0.0132	1	1	Protection func	tion	None		
	Input response	0.2ms	1 5ms	5ms	10ms	Response time	OFF→ON	0.5ms or less		
	speed	0.2ms 1.5ms 5ms 10ms			ON→OFF	1.5ms or less (resistive load)		I I IIII		
Response	OFF→ON	0.2ms	1.5ms	5ms or	10ms		Voltage	19.2 to 28.8VDC		
time		or less	or less	less	or less	External power		(ripple ratio: within 5%)		I 🕲 👼 🛛
	ON→OFF	0.2ms or less	1.5ms or less	5ms or less	10ms or less	supply for output part	Current	15mA or lower (at 24VDC and all points ON), excluding external load curren		
Input type	L	Positive	common	(sink type	e)	Surge suppress	sor	Zener diode	22	
Input type         Positive common (sink type)         Surge suppressor         Zen           Wiring method for common         32 points/common (1-wire, terminal block type)         32										
	ccupied stations			ent/statio		<b>,</b> ,,,				
Module pow				(ripple rat						
supply	Current					pints ON)				
Noise immur	nitv	Noise voltage 500Vp-p, noise width 1µs,								00000000000000000000000000000000000000
	ity	noise frequency 25 to 60Hz (DC type noise simulator condition)								
Withstand vo	oltage	500VAC for 1 minute between all DC external terminals and ground								I B B
Insulation re	sistance	$10M\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)							289 A B C D E F 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Protection de	egree	IP2X								I I I I I I I I I I I I I I I I I I I
Weight		0.26kg								
	Communication	7-point ty	wo-piece	terminal	block				XN1 2 3 4 5 6 7           Image           <	
	part,	[Transmi	ission cire	cuit, modu	ule powe	r supply, FG]				
External	module power			-		nge: 0.59 to 0.88	8N•m)			
connection	supply part			ess termi						
system	I/O power supply	-		ount term		ζ.				$\sim 0.0$
-	part,	INO bow		, I/O sign	•					
	I/O part			phtening t ess termi	•	nge: 0.59 to 0.88	sin•m)			
							an tarawa ra	ngo: 0.70 to 1.00 (		
Module mou	nting screw			ain wasne DIN rail ii			ng lorque ra	nge: 0.78 to 1.08N•m)		
Applicable D	pplicable DIN rail TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)									
			25-3 (con							
			•			1000) 1m ² (22 to 16 AV	VG) strande	d wire]		
Applicable solderless terminal				3SL, TG		(	-,	1		
		[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]								
Wire	Material	Copper								
L	Temperature 75°C or more rating									
Accessory		User's m	anual							

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

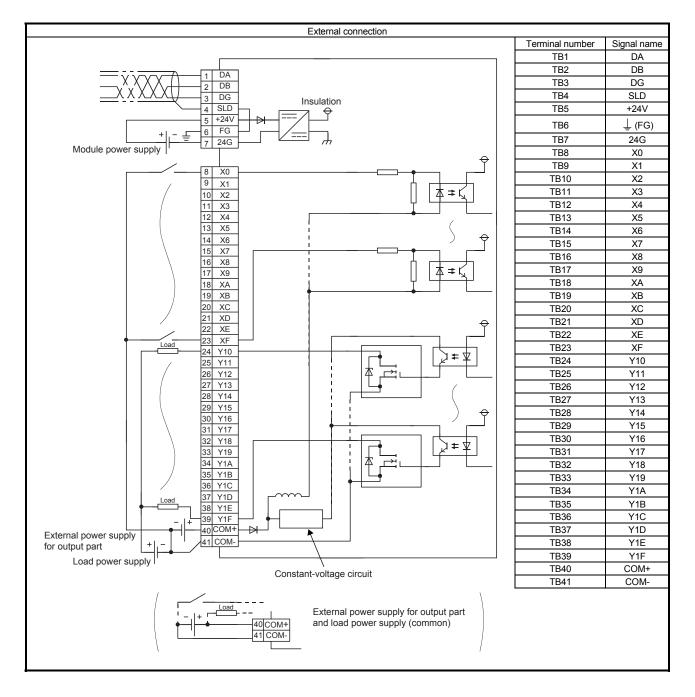


#### 6.1.17 AJ65SBTB1-32DT3 combined module

	_	Туре		DC input	t transistor o	utput combined module		
Item				AJ65SBTB	1-32DT3	·	Appea	arance
		Inp	ut			Output		
Number of i	input poir	nts	16 points	Number of outp	out points	16 points		
Isolation me	ethod	I	Photocoupler	Isolation metho	d	Photocoupler		
Rated input	t voltage	2	24VDC	Rated load volta	age	24VDC		
Rated input	t current		Approx. 5mA	Operating load	voltage	19.2 to 26.4VDC		
. tatoa nipat	t our ont			range		(ripple ratio: within 5%)	_	
Operating v	/oltage ra	nae	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curre	ent	0.5A/point, 3.6A/common		
Max. numb input points		Iltaneous	100%	Max. inrush cur	rent	1.0A, 10ms or less		
			15VDC or higher/3mA or higher	Leakage curren	t at OFF	0.1mA or lower	_	
-			3VDC or lower/0.5mA or lower	Max. voltage dr		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	_	
				Output type		Sink type		
Input resista	ance	/	Approx. 4.7kΩ	Protection funct	tion	None	╡║╻╩╢	
	l l	OFF→ON (	0.2ms or less (at 24VDC)		OFF→ON	0.5ms or less		
Response t	nme –		0.2ms or less (at 24VDC)	Response time	ON→OFF	1.5ms or less (resistive load)		
	P					19.2 to 26.4VDC		
				External power	Voltage	(ripple ratio: within 5%)		10 ML
				supply for		24.2mA or lower		
				output part	Current	(at 24VDC and all points ON),	2 48	
				output puit	ounch	excluding external load current	V14	
Input type			Positive common (sink type)	Surge suppress				
Wiring meth	hod for co	mmon	32 points/common (1-wire, terr			Zener diode		
Number of			32-point assignment/station (3					
Module pov		Voltage	20.4 to 26.4VDC (ripple ratio: v					
supply		Current	60mA or lower (at 24VDC and					
			Noise voltage 500Vp-p, noise	· · · ·				
Noise immu	unity		noise frequency 25 to 60Hz (D					
Withstand v	voltage		500VAC for 1 minute between			1		
						and (500VDC insulation resistance		∞ @ /
Insulation re	esistance	•	tester)					1 W mh
Protection of	degree		IP2X					
Weight	~		0.25kg					
External		nication part, power supply	7-point two-piece terminal bloc [Transmission circuit, module p M3×5.2 screw (tightening torqu	power supply, FG ue range: 0.59 to	-			
connection system	Applicable solderless terminal: 2 or less           I/O power supply part,         34-point direct-mount terminal block           I/O part         [I/O power supply, I/O signal]           M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)           Applicable solderless terminal: 2 or less							
Module mo	Adule mounting screw M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations							
Applicable I	DIN rail		TH35-7.5Fe, TH35-7.5AI (com		0715)		7	
			• RAV1.25-3 (compliant with J				7	
Applicable :	solderles	s terminal	[Applicable wire size: 0.3 to 1	1.25mm ² (22 to 10	6 AWG) stra	nded wire]		
			V2-MS3, RAP2-3SL, TGV2-3					
Miro	Motorial		[Applicable wire size: 1.25 to	2.0mm ² (16 to 14	4 AVVG) stra	naea wirej		
Wire	Material		Copper					
	Temperature rating 75°C or more							

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*

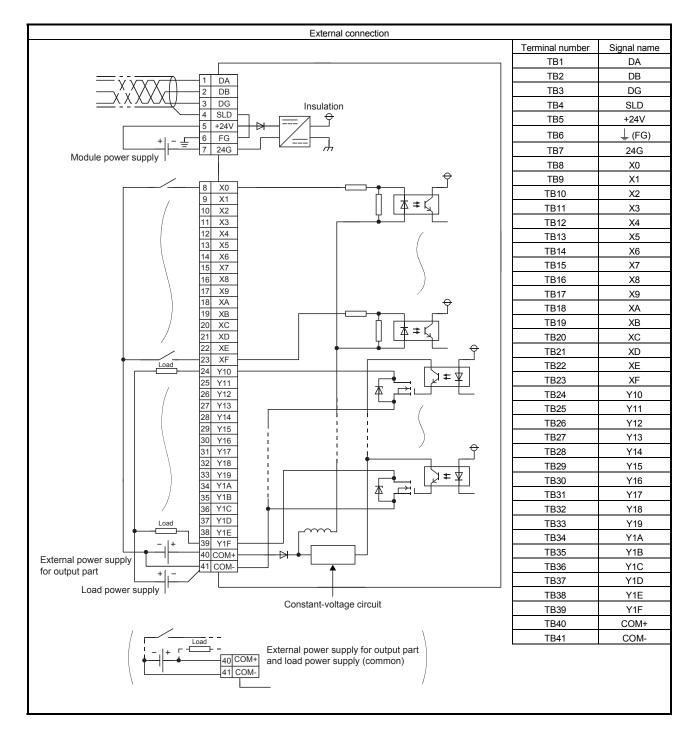


#### 6.1.18 AJ65SBTB1-32KDT8 combined module

		Туре					DC input	t transistor o	output combined module		
Item	_						AJ65SBTB1	-32KDT8		Appea	arance
		Inp	out						Output		
Number of ir	put points		16 point	s			Number of outp	out points	16 points		
Isolation met	hod		Photoco	oupler			Isolation metho	d	Photocoupler		
Rated input v	/oltage		12VDC				Rated load volt	age	12VDC		
Rated input of	current		Approx.	11mA			Operating load range	voltage	10.2 to 14.4VDC (ripple ratio: within 5%)		
Operating vo	ltage range	9		14.4VDC atio: with			Max. load curre	ent	0.5A/point, 3.6A/common		
Max. numbe input points	r of simulta	neous	100%				Max. inrush cur	rent	1.0A, 10ms or less		
ON voltage/0	ON current		5 6VDC	or highe	er/4mA o	r hiaher	Leakage currer	nt at OFF	0.1mA or lower	-	
OFF voltage				Ŭ	/1.7mA c	<u> </u>	Max. voltage dr		0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	1	
							Output type		Sink type	1	
Input resista	nce		Approx.	1.0kΩ			Protection funct	tion	None		<b>,</b>
	Input re speed	esponse	0.2ms	1.5ms	5ms	10ms	-	OFF→ON	0.5ms or less		
Response tir	esponse time OFF→ON		0.2ms or less 0.2ms	1.5ms or less 1.5ms	5ms or less 5ms or	10ms or less 10ms	Response time			Lo State 1 - 2 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	
	ON→C	)FF	or less	or less	less	or less		ON→OFF	1.5ms or less (resistive load) 10.2 to 14.4VDC		
							External power supply for	Voltage	(ripple ratio: within 5%) 15mA or lower	<u>(1) 112 112 112 112 112 112 112 112 112 1</u>	
							output part	Current	(at 12VDC and all points ON), excluding external load current	TISTICTULETETE TISTICTULETETE TISTICTULETETE TISTICTULETETE TISTICTULETETETETETETETETETETETETETETETETETETE	
Input type			Positi	ve comm	non (sink	type)	Surge suppress	sor	Zener diode		
Wiring metho	od for comr	non	32 po	ints/com	mon (1-v	vire, tern	ninal block type)				
Number of o	ccupied sta	itions	32-ро	int assig	nment/st	ation (32	2 points used)				I I I I I I I I I I I I I I I I I I I
Module powe	er Volt	age	20.4 t	o 26.4VI	DC (ripple	e ratio: v	vithin 5%)		X8 0	I I I I I I I I I I I I I I I I I I I	
supply	Cur	rent					all points ON)			I I I I I I I I I I I I I I I I I I I	
Noise immur	nitv			•			vidth 1µs,				I A Bh
							C type noise sim		•	289 A B C D E F 289 A B C D E F 2811-224013 21 7 23 74 X6	I S BI
Withstand vo			10MΩ	2 or high			all DC external to C external termin		d ground und (500VDC insulation resistance		
Desta alla d			tester	)						2240 23 4	
Protection de	egree		IP2X	-							
Weight			0.26k	*	aa tarmi						
(	Communica	ation part,			ece termi		ower supply, FG	:1			
	nodule pov	ver supply			,		le range: 0.59 to	-			
	bart						2 or less	,			
connection					-mount t						
system I	/O power s	upply part	, [l/O p	ower sup	oply, I/O	signal]					
I	/O part		M3×5	.2 screw	(tighteni	ing torqu	e range: 0.59 to	0.88N•m)			
							2 or less			4	
Module mou	nting screw	1					ished round (tigh prientations	Itening torqu	ue range: 0.78 to 1.08N•m)		
Applicable D	IN rail						pliant with IEC 60	0715)			
pp	RAV1.25-3 (compliant with						1				
Applicable solderless terminal		[App	<ul> <li>RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> </ul>								
	[Applicable wire si			vire size:	1.25 to	2.0mm ² (16 to 1	4 AWG) stra	anded wire]			
Wire N	<i>Naterial</i>		Copp							1	
٦	Temperatur	e rating	75°C	or more						4	
Accessory			User's	s manua							

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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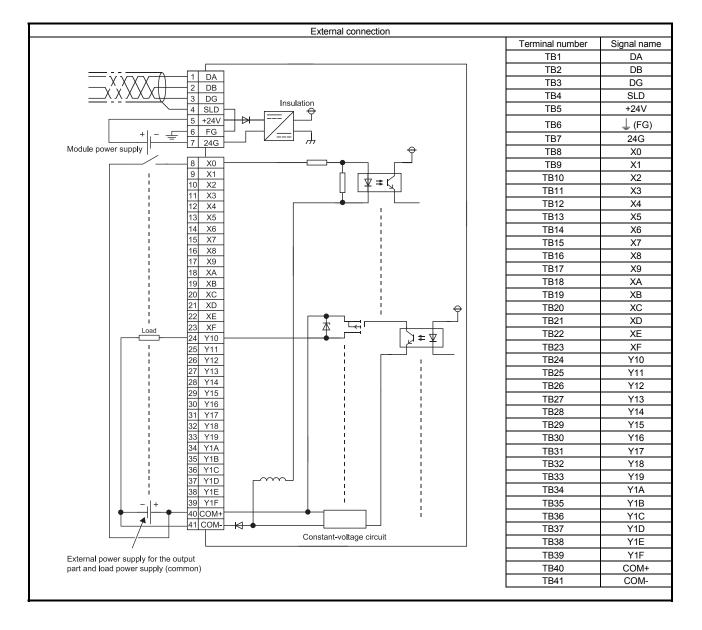


#### 6.1.19 AJ65SBTB1-32DTE1 combined module

14		Туре				output combined module			
Item				AJ65SBTB1-			Appearance		
			iput			Output	_		
Number of i		ints	16 points	Number of outp		16 points	_		
Isolation me			Photocoupler	Isolation method		Photocoupler	_		
Rated input	t voltage		24VDC	Rated load volta	•	24VDC	_		
Rated input	t current		Approx. 7mA	Operating load	voltage	19.2 to 26.4VDC			
				range		(ripple ratio: within 5%)			
Operating v	voltage r	ange	19.2 to 26.4VDC	Max. load current		0.5A/point, 3.6A/common			
· · ·		-	(ripple ratio: within 5%)			• •	-		
Max. number of simultaneous		lultaneous	100%	Max. inrush curi	ent	1.0A, 10ms or less			
nput points		cont	14)/DC or higher/2 EmA or higher			0.1mA or lower			
ON voltage/ON current		rent	14VDC or higher/3.5mA or higher	Leakage curren	t at OFF				
OFF voltage	e/OFF c	urrent	6VDC or lower/1.7mA or lower	Max. voltage dro	op at ON	0.5VDC or lower (TYP.) 0.5A, 0.8VDC or lower (MAX.) 0.5A			
In put registe			Annroy 2.2kg	Output turns			-		
Input resista	ance	OFF→ON	Approx. $3.3k\Omega$	Output type		Source type 0.5ms or less			
Response t	time		1.5ms or less (at 24VDC)	Response time					
		ON→OFF	1.5ms or less (at 24VDC)			1.5ms or less (resistive load) 19.2 to 26.4VDC			
				External power	Voltage	(ripple ratio: within 5%)			
				External power supply for		10mA or lower			
				output part	Current	(TYP. 24VDC/common),			
				output puit	ouncil	excluding external load current			
Input type			Negative common (source type)	Surge suppress	or	Zener diode			
Wiring meth	hod for c	ommon	32 points/common (1-wire, termina		0.				
-			32-point assignment/station (32 po						
			20.4 to 26.4VDC (ripple ratio: with						
supply		Current	50mA or lower (at 24VDC and all	,					
			Noise voltage 500Vp-p, noise wid	· · · · · ·					
Noise immu	unity		noise frequency 25 to 60Hz (DC ty						
Withstand v	/oltage		500VAC for 1 minute between all						
			10M $\Omega$ or higher between all DC ex						
Insulation re	esistanc	e	tester)						
Protection of	degree		IP2X						
Weight			0.26kg						
	Commu	inication	7-point two-piece terminal block						
	part,		[Transmission circuit, module pow	er supply, FG]					
External	module	•	M3×5.2 screw (tightening torque r	-	8N•m)				
connection	supply	part	Applicable solderless terminal: 2 c						
system	I/O pow	er supply	34-point direct-mount terminal blo	ck					
	part,	,	[I/O power supply, I/O signal]		011				
	I/O part		M3×5.2 screw (tightening torque r	-	ioiN•m)				
			Applicable solderless terminal: 2 c				-		
Module me	unting o	Crow/	M4 screw with plain washer finishe						
			Mountable with a DIN rail in 6 orie	ghtening torque range: 0.78 to 1.08N•m)					
Applicable I	DIN rail		TH35-7.5Fe, TH35-7.5Al (complia		5)		-		
					~/		-		
				AV1.25-3 (compliant with JIS C 2805) Applicable wire size: 0.3 to 1.25mm ² (22 to 16 AWG) stranded wire]					
Applicable solderless terminal			<ul> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> </ul>						
			[Applicable wire size: 1.25 to 2.0	mm ² (16 to 14 A	WG) stranc				
Wire	Materia		Copper	·					
	Temper	ature rating	75°C or more						
			User's manual				7		

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*



### 6.1.20 AJ65DBTB1-32DT1 combined module

	Туре		DC inp	ut transistor o	utput combined module	
Item			AJ65DBTB			Appearance
	In	put			Dutput	
Number of inp		16 points	Number of outp		16 points	1
Isolation meth		Photocoupler	Isolation metho		Photocoupler	1
Rated input vo		24VDC	Rated load volt		12/24VDC	-
Rated input cu	-	Approx. 5mA	Operating load	•	10.2 to 31.2VDC	
			range	ge	(ripple ratio: within 5%)	_
Operating vol	tage range	20.4 to 31.2VDC (ripple ratio: within 5%)	Max. load current		0.5A/point, 4A/common (2A/terminal)	
Max. number input points	of simultaneous	100% (at 26.4VDC)	Max. inrush current		1.2A, 10ms or less	
ON voltage/ON current		15VDC or higher/3mA or higher	Leakage currer	nt at OFF	0.1mA or lower	1
OFF voltage/OFF current		5VDC or lower/1.5mA or lower	Max. voltage di	rop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Input resistan	се	Approx. 4.7kΩ	Output type		Sink type	MELSEG AJ65DBTB1-32DT1
			Protection func	tion	None	
Response	OFF→ON	10ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less	
time	ON→OFF	10ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	
		(	External	Voltage	10.2 to 31.2VDC	
			power supply		(ripple ratio: within 5%)	
			for output part	Current	30mA or lower	
					(at 24VDC and all points ON),	DG NC +24V
					excluding external load current	
Input type		Positive common (sink type)	NC 246			
Wiring method	d for common	16 points/common (2 points) (1-	X0 Y10			
Number of oc	cupied stations	32-point assignment/station (32	X1 Y11 X2 Y11 Y12			
Module power	r Voltage	20.4 to 26.4VDC (ripple ratio: wi	X3 X4 Y13 Y14			
supply	Current	55mA or lower (at 24VDC and a	X5 Y15 Y16			
Noise immuni	ty	Noise voltage 500Vp-p, noise w	idth 1µs,			X7 COW1 COW3
		noise frequency 25 to 60Hz (DC	type noise simu	lator conditio	n)	X8 Y18 Y19
Withstand vol	tage	500VAC for 1 minute between a	all DC external te	rminals and g	ground	XA Y1A Y1B
Insulation resi	istance	$10M\Omega$ or higher between all DC	external termina	als and groun	d (500VDC insulation resistance	XC Y1C Y1D
		tester)				XE XF Y1E
Protection deg	gree	IP2X				0.002
Weight		0.65kg				
External conn	ection system	50-point terminal block [Transmission circuit, module po M3.5×7 screw (tightening torque Applicable solderless terminal: 2	e range: 0.68 to 0		ıpply, I/O signal]	
Module moun	ting screw	M4 screw with plain washer finis	shed round (tight	ening torque	range: 0.78 to 1.08N•m)	
Applicable solderless terminal		R1.25-3.5 (compliant with JIS) [Applicable wire size: 0.3 to 1 RAV2-3.5 (compliant with JIS) [Applicable wire size: 1.25 to 2]				
Wire	Material	Copper	<b>,</b>	,		1
-	Temperature	75°C or more			1	
A	rating	Lloor's manual				4
Accessory		User's manual				4
Part sold sepa	arately	A6DIN1C, A2CCOM-TB				

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*

		External connection		
Terminal	Signal		Terminal	Signal
number	name		number	name
TB1	DA		TB26	Empty
TB2	DG		TB27	Empty
TB3	DB		TB28	+24V
TB4	Empty		TB29	CTL+
TB5	SLD		TB30	⊥_ (FG)
TB6	Empty		TB31	CTLG
TB7	24G		TB32	24G
TB8	X0	Constant-voltage     Module     Dever supply	TB33	Y10
TB9	X1		TB34	Y11
TB10	X2		TB35	Y12
TB11	X3		TB36	Y13
TB12	X4		TB37	Y14
TB13	X5	11 X3 12 X4 Y13 36 Y14 37	TB38	Y15
TB14	X6	$13 \times 5$ 14 $\times 6$ $\rightarrow$	TB39	Y16
TB15	X7		TB40	Y17
TB16	COM1		TB41	COM3
TB17	X8		TB42	Y18
TB18	X9	19         XA           20         XB	TB43	Y19
TB19	XA		TB44	Y1A
TB20	XB	23 XE 1 4 Y1E 48 Load	TB45	Y1B
TB21	XC		TB46	Y1C
TB22	XD	24VDC	TB47	Y1D
TB23	XE		TB48	Y1E
TB24	XF		TB49	Y1F
TB25	COM2		TB50	COM4

### 6.1.21 AJ65DBTB1-32DR combined module

/	Туре			DC inpu	t contact out	put combined module			
Item			r	AJ65DBTB			Appearance		
		Input				utput			
Number of i	input points	16 points		er of output poir	nts	16 points			
Isolation me	ethod	Photocoupler	Isolati	on method		Photocoupler			
Rated input	voltage	24VDC	Rated	l load voltage		2A/point, 4A/common (2A/terminal) at 24VDC (resistive load) or 240VAC (cosφ=1)			
Rated input	current	Approx. 5mA	Min. s	witching load		5VDC, 1mA			
Operating v range	voltage	20.4 to 31.2VDC (ripple ratio: within 5%)	Max. :	switching voltage	e	264VAC, 125VDC			
Max. number of simultaneous input points		100% (at 26.4VDC)		Mechanical		20 million times or more			
points ON voltage/ON current		15VDC or higher/3mA or higher	Life Electrical			Rated switching voltage/current load: 100 thousand times or more 200VAC 1.5A, 240VAC 1A ( $cos\phi=0.7$ ): 100 thousand times or more 200VAC 1A, 240VAC 0.5A ( $cos\phi=0.35$ ): 100 thousand times or more 24VDC 1A, 100VDC 0.1A ( $L/R=7ms$ ): 100 thousand times or more			
OFF voltage/OFF 5VDC or current lower		5VDC or lower/1.5mA or lower	Max. switching frequency		ncy	3600 times/hour			
Input resista	ance	Approx. 4.7kΩ	Response time		$OFF \rightarrow ON$	10ms or less	DA NC NC		
Response	OFF→ON	10ms or less (at 24VDC)			$ON \rightarrow OFF$	12ms or less	DB +24V		
time	ON→OFF	10ms or less (at 24VDC)	External power supply for output part		Voltage	24VDC ±10% (ripple ratio: 4Vp-p or lower)	NC SLD (F6) CTLG		
			(CTL+ and CTLG terminals) Current		Current	90mA or lower (at 24VDC and all points ON)	X1 X0 Y11 Y10		
Wiring meth common	nod for	16 points/common (2 points) (1-wire, terminal block type)	Wiring method for common			8 points/common (1-wire, terminal block type)	X2 X3 X4 X5 Y13 Y14 Y14		
Input type		Positive/negative common shared type (sink/source shared type)	Surge	suppressor		None	X7 X7 CON1 X8 Y17 Y16 Y17 Y16 Y17 CON3 Y18		
Number of or stations	occupied	32-point assignment/station (	32 poin	ts used)			XA XB YIA YIB		
Module	Voltage	20.4 to 26.4VDC (ripple ratio:	within	5%)			XC YIC YIC YIC		
power supp	ly Current	60mA or lower (at 24VDC and	d all po	ints ON)			XE XF F F F COMM YIF		
Noise immu		Noise voltage: 1500Vp-p (AC noise frequency 25 to 60Hz (r				dth 1µs,			
Withstand v	voltage	1500VAC for 1 minute between 500VAC for 1 minute between	n all DC	cexternal termin	als and grou	nd			
Insulation re		$10M\Omega$ or higher between all E				00VDC insulation resistance tester) 00VDC insulation resistance tester)			
Protection of	degree	IP1X							
Weight         0.65kg           External connection system         50-point terminal block [Tran M3.5×7 screw (tightening tor Applicable solderless terminal screw in the solderless terminal screw i			ue ran	ge: 0.68 to 0.921		ly, FG, I/O power supply, I/O signal]			
Module mo	unting screw	M4 screw with plain washer fi	nished	round (tightening	g torque ran	ge: 0.78 to 1.08N•m)			
Applicable s terminal	solderless	R1.25-3.5 (compliant with JI [Applicable wire size: 0.3 to RAV2-3.5 (compliant with JI [Applicable wire size: 1.25 tr	1.25mm ² (22 to 16 AWG) stranded wire] S C 2805)						
Wire	Material	Copper		,	,				
	Temperature rating	75°C or more							
Accessory									
Part sold se	t sold separately A6DIN1C, A2CCOM-TB								

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

		External connection		
Terminal	Signal		Terminal	Signal
number	name		number	name
TB1	DA		TB26	Empty
TB2	DG		TB27	Empty
TB3	DB		TB28	+24V
TB4	Empty		TB29	CTL+
TB5	SLD	$= \underbrace{\begin{array}{c} 2 & DG \\ \hline 3 & DB \end{array}}$	TB30	⊥ (FG)
TB6	Empty		TB31	CTLG
TB7	24G		TB32	24G
TB8	X0	7 24G	TB33	Y10
TB9	X1		TB34	Y11
TB10	X2		TB35	Y12
TB11	X3	$\begin{pmatrix} 10 \\ 11 \\ x3 \\ 11 \\ x3 \\ x3 \\ x4 \\ x4 \\ x4 \\ x4 \\ x4 \\ x4$	TB36	Y13
TB12	X4		TB37	Y14
TB13	X5	13 X5 14 X6 14 X6 14 X6	TB38	Y15
TB14	X6		TB39	Y16
TB15	X7		TB40	Y17
TB16	COM1		TB41	COM3
TB17	X8	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	TB42	Y18
TB18	X9		TB43	Y19
TB19	XA		TB44	Y1A
TB20	XB		TB45	Y1B
TB21	XC	24VDC '+ '	TB46	Y1C
TB22	XD		TB47	Y1D
TB23	XE		TB48	Y1E
TB24	XF		TB49	Y1F
TB25	COM2		TB50	COM4

## 6.2 Spring Clamp Terminal Block Type Combined Module

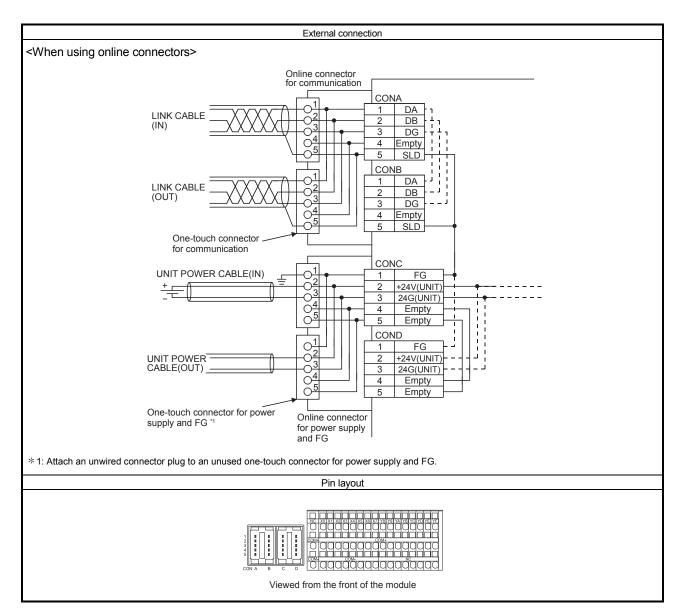
## 6.2.1 AJ65VBTS32-16DT combined module

	Туре		DC	input transisto	or output combined module					
ltem			AJ65VB	TS32-16DT	-	Appearance				
	1	but			Output					
Number of in		8 points	Number of o	· · ·	8 points	1				
Isolation met		Photocoupler	Isolation me		Photocoupler					
Rated input v	voltage	24VDC	Rated load w	Ŭ	24VDC	1				
Rated input of	current	Approx. 5mA	Operating lo range	ad voltage	19.2 to 26.4VDC (ripple ratio: within 5%)					
Operating vo	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load cu	ırrent	0.5A/point, 4A/common					
Max. numbe input points	r of simultaneous	100%	Max. inrush	current	1.0A, 10ms or less					
ON voltage/0	ON current	14VDC or higher/3.5mA or higher	Leakage cur	rent at OFF	0.1mA or lower					
OFF voltage	/OFF current	6VDC or lower/1.7mA or lower	Max voltage	drop at ON	0.3VDC or lower (TYP.) 0.5A,					
Input resistar	nce	Approx. 4.7kΩ	Max. voltage	a drop at ON	0.6VDC or lower (MAX.) 0.5A					
Doononoo tir	OFF→ON	1.5ms or less (at 24VDC)	Output type		Sink type					
Response tir	^{ne} ON→OFF	1.5ms or less (at 24VDC)	Protection fu	Inction	None					
			Response	OFF→ON	1ms or less	$\frown$				
			time	ON→OFF	1ms or less (resistive load)	$( \bigcirc )$				
			Esterni i l		19.2 to 26.4VDC					
			External	Voltage	(ripple ratio: within 5%)					
			power supply for		15mA or lower					
			supply for output part	Current	(at 24VDC and all points ON),	에 비행하는 정말 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이				
			ouiput part		excluding external load current					
Input type		Positive common (sink type)	Surge suppr	essor	Zener diode					
Supply curre device	nt for connected	1.0A or lower/common								
Wiring metho	od for common	16 points/common (input: 3-wire spring clamp termi	nal block type	e, output: 2-wi	ire spring clamp terminal block type)					
Number of o	ccupied stations	32-point assignment/station (16	points used)							
Module powe	er Voltage	20.4 to 26.4VDC (ripple ratio: wi	thin 5%)							
supply	Current	40mA or lower (at 24VDC and all points ON)								
Noise immur	nity	•	ise voltage 500Vp-p, noise width 1µs, ise frequency 25 to 60Hz (DC type noise simulator condition)							
Withstand vo	oltage	500VAC for 1 minute between a								
Insulation rea	sistance	$10M\Omega$ or higher between all DC tester)								
Protection de	egree	IP1XB								
Weight	-	0.24kg								
External	Communication part	One-touch connector for commu 5-pin IDC plug is sold separately <optional> Online connector for</optional>	/: A6CON-L5	Ρ	-					
connection		One-touch connector for power		• •						
system	Power supply part	5-pin IDC plug is sold separately								
		<optional> Online connector for</optional>								
		2-piece spring clamp terminal bl			signals]					
Applicable D		TH35-7.5Fe, TH35-7.5Al (comp	liant with IEC	60715)						
	Connector for	Applicable cable:								
	communication	FANC-110SBH, FA-CBL200PSI	BH, CS-110							
	Connector for	0.66 to 0.98mm ² (18 AWG)		(10000)						
	power supply and	[\$2.2 to 3.0mm (A6CON-PW5P)		nm (A6CON-F	PW5P-SOD)]					
	FG	Wire diameter: 0.16mm or more Insulating coating material: PVC		nt)						
Applicable wire size	Spring clamp terminal block for I/O	Stranded wire 0.08 to 1.5mm ² (2 Wire strip length: 8 to 11mm	•							
Accessory	Applicable solderless terminal	TE0.5 [Applicable wire size: 0.5 TE0.75 [Applicable wire size: 0.7 TE1 [Applicable wire size: 0.9 to TE1.5 [Applicable wire size: 1.2! TGV TC1.25-9T [Applicable wire TGWV TC1.25-T9 [Applicable w User's manual, Holding fixtures	75mm ² ] 1.0mm ² ] 5 to 1.5mm ² ] e size: 0.3 to rire size: 0.3 to	o 1.65mm²]						

* 1: Insert one wire per terminal.

#### External connection Pin number Signal name DA 1 2 DB CONA CON A, B 3 DG 1 DA 2 DB LINK CABLE 4 Empty DB DG Empty <u>(x</u>X) (IN) 5 SLD 4 5 SLD 1 CONB $O_{\alpha}^{1}$ 2 +24V (UNIT) xxXXX 1 DA LINK CABLE 2 3 4 DB DG CON C, D (OUT) 3 24G (UNIT) Empty 4 Empty 5 SLD 5 One-touch connector for communication Empty CONC Insulation Terminal block UNIT POWER CABLE(IN) FG 9 Ē +24V(UNIT) Column A Column B Column C ±=f 2 3 24G(UNIT 4 Empty 5 Empty 24G(UNIT) 1 Empty 1 COM+ 1 COM-2 X0 2 COM+ 2 COM-COND $O_{2}^{1}$ UNIT POWER CABLE(OUT) 3 X1 3 COM+ 3 COM-FG 1 2 +24V(UNIT) 3 24G(UNIT) 4 Empty 5 Empty +24V(UNIT) ∩≚ 4 01 X2 4 COM+ 4 COMõ 04 5 5 Х3 5 COM+ COM-Constant-voltage circuit 6 One-touch connector for power supply and $\mathrm{FG}^{\,*\,1}$ 6 COM+ 6 COM-X4 7 7 COM-TB1A Empty TB1B COM+ TB1C COM-Ŷ X5 7 COM+ ÷E 8 8 COM+ 8 COM-X6 ⊻≠ζ 9 TB2A X0 COM+ X7 9 COM+ 9 COM- TB2B COM+ TB2C COM TB3A X1 TB3B COM+ 10 10 Y8 10 COM+ Empty 11 11 11 Y9 COM+ Empty TB3C COM-TB4A X2 TB4B COM+ TB4C COM-12 Empty YA 12 COM+ 12 13 YΒ COM+ 13 13 Empty TB4C TB5A TB5B 14 YC 14 COM+ 14 Empty X3 COM+ COM-15 YD 15 COM+ 15 Empty TB5C TB6A IB5C COM TB6A X4 TB6B COM+ TB7A X5 TB7B COM+ TB7C COM+ TB8A X6 TB8B COM+ COM+ 16 16 Empty YΕ 16 17 17 17 Empty YF COM+ ¥≠Ç TB8C COM-TB9A X7 TB9B COM+ ę COM-Y8 TB9C Load TB10A TB10B TB10C TB11A ¥, ≱≠⊈ COM+ È Empty Y9 TB11A COM+ TB11C Empty TB12A YA TB12B COM+ TB12B COM+ TB12C Empty TB13A YB TB13B COM+ TB13C Empty TB14A YC TB14B COM+ TB14C Empty TB14C Empty YD TB15A TB15B TB15C TB16A COM+ TB15B COM+ TB15C Empty TB16A YE TB16B COM+ 9 TB16C TB17A ≱≠⊈ Empty YF Ł Load F COM+ TB17B TB17C Empty * 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

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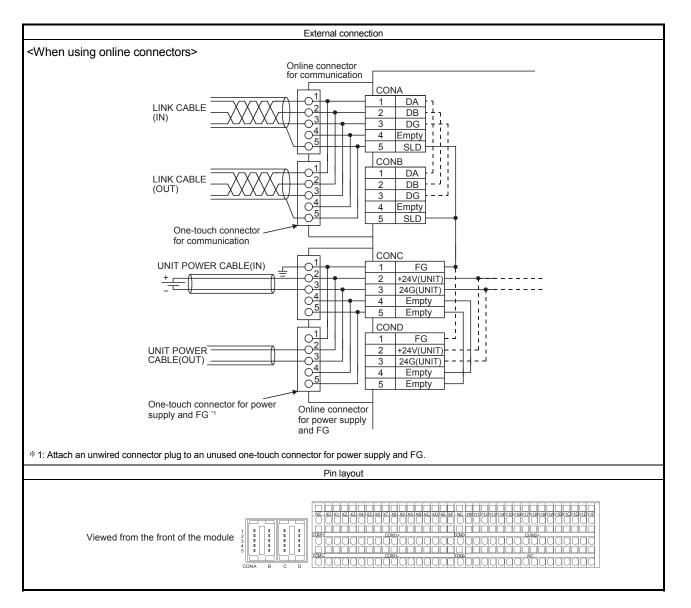


## 6.2.2 AJ65VBTS32-32DT combined module

	Туре		DC inp	ut transistor	output combined module	
Item			AJ65VBT	S32-32DT		Appearance
		nput			Output	-
Number of in		16 points	Number of outp		16 points	-
Isolation met		Photocoupler	Isolation method		Photocoupler	4
Rated input v	/oltage	24VDC	Rated load volta	•	12/24VDC 10.2 to 26.4VDC	-
Rated input o	current	Approx. 5mA	range	vollage	(ripple ratio: within 5%)	-
Operating vo	ltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load current		0.5A/point, 4A/common	
Max. number input points	r of simultaneous	100% or 75% (Refer to Section1.3.)	Max. inrush curr	rent	1.0A, 10ms or less	
ON voltage/C	ON current	14VDC or higher/3.5mA or higher	Leakage current at OFF		0.1mA or lower	
OFF voltage/ Input resistar	OFF current	6VDC or lower/1.7mA or lower Approx. 4.7kΩ	Max. voltage dro	op at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
	OFF→ON	1.5ms or less (at 24VDC)	Output type		Sink type	
Response tin	ne ON→OFF	1.5ms or less (at 24VDC)	Protection funct	ion	None	
	•	· · · · · ·		OFF→ON	1ms or less	
			Response time	ON→OFF	1ms or less (resistive load)	
				Voltage	10.2 to 26.4VDC	
			External power	Voltage	(ripple ratio: within 5%)	
			supply for		30mA or lower	
			output part	Current	(at 24VDC and all points ON),	
		16 points/common		I	excluding external load current	
Wiring metho	od for common	16 points/common (3-wire, spring clamp terminal	Wiring method f	or common	16 points/common (2-wire, spring clamp terminal block	
winnig metho		block type)	0		type)	
nput type		Positive common (sink type)	Surge suppress	or	Zener diode	
Supply current for connected 1.0A or lower/common						
Number of o	ccupied stations	32-point assignment/station (32	points used)			
Module powe	er Voltage	20.4 to 26.4VDC (ripple ratio: wi				
supply	Current	50mA or lower (at 24VDC and a	II points ON)			
Noise immun	nity	Noise voltage 500Vp-p, noise wi				
	•	noise frequency 25 to 60Hz (DC			•	
Withstand vo	ltage	500VAC for 1 minute between a				
nsulation res	sistance	$10M\Omega$ or higher between all DC tester)	external terminal	s and groun		
Protection de	egree	IP1XB				
Weight		0.41kg				
	Communication	One-touch connector for commu	inication [Transm	ission circui	t]	
	part	5-pin IDC plug is sold separately			_	
External		<optional> Online connector for</optional>				
connection	Power supply	One-touch connector for power				
system	part	5-pin IDC plug is sold separately		,		
	I/O part	<optional> Online connector for 2-piece spring clamp terminal block</optional>				
Applicable D		TH35-7.5Fe, TH35-7.5AI (compl				
ע פועמטויקע.	Connector for	Applicable cable:		,		
	communication	FANC-110SBH, FA-CBL200PSI	BH, CS-110			
	Connector for	0.66 to 0.98mm ² (18 AWG)				
	power supply	[\$2.2 to 3.0mm (A6CON-PW5P)		(A6CON-PW	/5P-SOD)]	
	and FG	Wire diameter: 0.16mm or more				
		Insulating coating material: PVC	(neat-resistant)			-
Applicable wire size	Spring clamp terminal block for I/O	Stranded wire 0.08 to 1.5mm ² (2 Wire strip length: 8 to 11mm	28 to 16 AWG) *	1		
		TE0.5 [Applicable wire size: 0.5r	mm ² 1			-
		TE0.75 [Applicable wire size: 0.5]	•			
	Applicable	TE1 [Applicable wire size: 0.9 to				
	solderless	TE1.5 [Applicable wire size: 1.25	•			
	terminal	TGV TC1.25-9T [Applicable wire		imm²]		
		TGWV TC1.25-T9 [Applicable w		· · ·		
Accessory		User's manual, Holding fixtures	for screw installa	tion		

* 1: Insert one wire per terminal.

External connection							
	<u> </u>	Pin number		Sia	nal na	ame	
			1	0.9	DA		
			2		DB		
	CON A, B		3		G		
			4		1		
CONA			5		SLD		
			1		⊥ (FG	i)	
(IN) $X X X X J = G_{3}^{2} = D_{3}^{2}$			2		= (UN		
$\bigcirc \frac{9}{5}$ 4 Empty	С	ON C, D	3		G (UN	,	
			4	Empty			
LINK CABLE $X$ $X$ $X$ $X$ $X$ $Z$ $DB$ (OUT) $X$ $X$ $X$ $X$ $X$ $X$ $Z$ $DB$			5		Empty		
$(OOT)$ $\underline{-} \underline{-} \underline{-} \underline{-} \underline{-} \underline{-} \underline{-} \underline{-} $			Ter	minal block			
One-touch connector for communication	С	olumn A	C	Column B	C	Column C	
	1	Empty	1	COM1+	1	COM1-	
$\frac{1}{1} = -\frac{1}{2} + \frac{1}{2} + 1$	2	X0	2	COM1+	2	COM1-	
	3	X1	3	COM1+	3	COM1-	
	4	X2	4	COM1+	4	COM1-	
UNIT POWER CABLE(OUT) $O_{1}^{-1}$ 1 FG + +	5	X3	5	COM1+	5	COM1-	
$O_4^2$ 2 +24V(UNIT) $O_4^3$ 3 24G(UNIT)	6	X4	6	COM1+	6	COM1-	
$\bigcirc \frac{4}{5} \frac{4}{5} = \text{Empty}$	7	X5	7	COM1+	7	COM1-	
One-touch connector for power supply and FG*1	8	X6	8	COM1+	8	COM1-	
	9	X7	9	COM1+	9	COM1-	
	10	X8	10	COM1+	10	COM1-	
TB2B COM1+	11	X9	11	COM1+	11	COM1-	
TB2C COM1- / TB3A X1	12	XA	12	COM1+	12	COM1-	
TB3B COM1+	13	XB XC	13 14	COM1+	13 14	COM1-	
	14 15	XD	14	COM1+ COM1+	14	COM1- COM1-	
	16	XE	16	COM1+ COM1+	16	COM1-	
	17	XE	17	COM1+	17	COM1-	
	18	Empty	18	COM2+	18	COM2-	
TB17B COM1+ TB17C COM1- Constant-voltage circuit	19	Y10	19	COM2+	19	Empty	
External power supply for output part TB18A Empty Constant-voltage circuit	20	Y11	20	COM2+	20	Empty	
Load TB18C COM2-	21	Y12	21	COM2+	21	Empty	
	22	Y13	22	COM2+	22	Empty	
	23	Y14	23	COM2+	23	Empty	
TB20B COM2+ TB20C Empty	24	Y15	24	COM2+	24	Empty	
	25	Y16	25	COM2+	25	Empty	
	26	Y17	26	COM2+	26	Empty	
	27	Y18	27	COM2+	27	Empty	
	28	Y19	28	COM2+	28	Empty	
TB34B COM2+	29	Y1A	29	COM2+	29	Empty	
	30	Y1B	30	COM2+	30	Empty	
	31	Y1C	31	COM2+	31	Empty	
	32	Y1D	32	COM2+	32	Empty	
	33	Y1E	33	COM2+	33	Empty	
	34	Y1F	34	COM2+	34	Empty	
,						nused one-touch	
	CO	onnector for po	ower s	supply and FG	).		



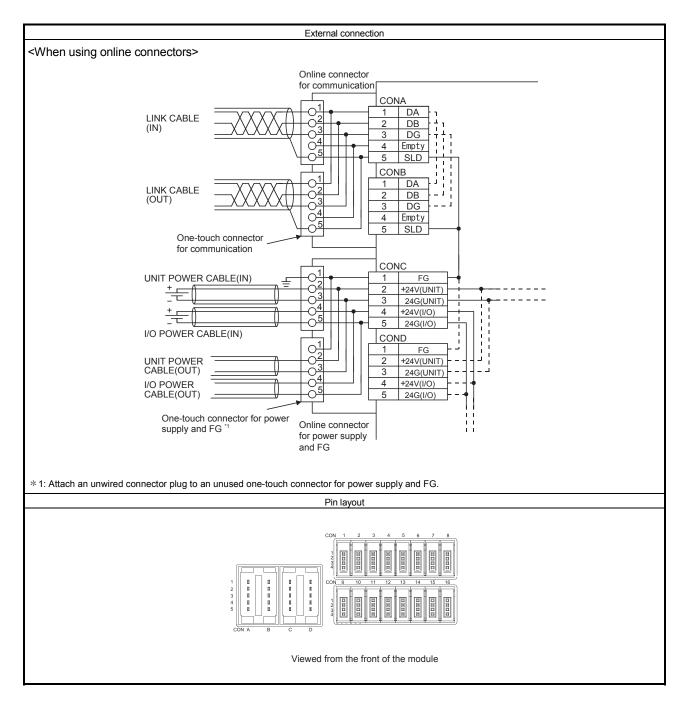
# 6.3 Sensor Connector (e-CON) Type Combined Module

## 6.3.1 AJ65VBTCE32-16DT combined module

$\sim$		Туре		DC i	nput transiste	or output combined module	
Item					CE32-16DT		Appearance
		Inpu	ut		(	Dutput	
Number of i	input p	oints	8 points	Number of output	t points	8 points	_
Isolation me	ethod		Photocoupler	Isolation method Photocoupler			
Rated input	voltag	е	24VDC Rated load voltage 24VDC				
Rated input	ated input current Approx. 5mA		Operating load vo	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)		
Operating v	oltage	range	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load current	t	0.1A/point, 0.8A/common	_
Max. numbe input points		multaneous	100%	Max. inrush curre	ent	0.7A, 10ms or less	
ON voltage/	/ON cu	rrent	14VDC or higher/3.5mA or higher	Leakage current	at OFF	0.1mA or lower	
OFF voltage	e/OFF	current	6VDC or lower/1.7mA or lower	Max. voltage dro	p at ON	0.1VDC or lower (TYP.) 0.1A,	
Input resista	ance		Approx. 4.7kΩ			0.2VDC or lower (MAX.) 0.1A	
	(	OFF→ON	1.5ms or less (at 24VDC)	Output type		Sink type	1
Response ti	ime	ON→OFF	1.5ms or less (at 24VDC)	Protection function	on	Overload protection, overvoltage protection, overheat protection	-
				Response time	OFF→ON	1ms or less	
				Future al 11	ON→OFF Voltage	1ms or less (resistive load) 19.2 to 26.4VDC	
				External power supply for output		(ripple ratio: within 5%) 5mA or lower	
				part	Current	(at 24VDC and all points ON), excluding external load current	
Input type			Zener diode				
	upply current for connected 1.0A or lower/common						
Wiring meth	nod for	common	16 points/common (input: 3-wire sensor connect	tor (e-CON) type,	output: 2-wire	e sensor connector (e-CON) type)	
Number of o	occupie	ed stations	32-point assignment/station (				
Module pow	ver	Voltage	20.4 to 26.4VDC (ripple ratio	: within 5%)			
supply	(	Current	40mA or lower (at 24VDC an	d all points ON)			
Noise immu	unity		Noise voltage 500Vp-p, noise noise frequency 25 to 60Hz (	•	nulator condit	tion)	
Withstand v	voltage		500VAC for 1 minute betwee	n all DC external	terminals and	ground	
Insulation re	esistan	се	10M $\Omega$ or higher between all tester)	DC external termir	nals and grou	ind (500VDC insulation resistance	
Protection d	legree		IP1XB				
Weight			0.11kg				_
	Comm	nunication	One-touch connector for com	munication [Trans	smission circ	uit]	
	part	Iunication	5-pin IDC plug is sold separa				
External	P		<optional> Online connector</optional>				-
connection system	Power	supply part	One-touch connector for pow 5-pin IDC plug is sold separa		• •	ver supply, I/O power supply, FG] PW5P-SOD	
			<optional> Online connector</optional>				_
	I/O part Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1					4	
Applicable [	pplicable DIN rail TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)						-
	Connector for Applicable cable: communication FANC-110SBH, FA-CBL200PSBH, CS-110						
	Connector for					]	
Applicable		supply and	[\u00e92.2 to 3.0mm (A6CON-PW		m (A6CON-P	W5P-SOD)]	
wire size	power FG	suppry and	Wire diameter: 0.16mm or m				
UII C 312C	. 0		Insulating coating material: P	VC (heat-resistan	t)		4
	Connector for I/O Applicable connector plugs are sold separately. * 1						
			(applicable wire size: 0.08 to				
Accessory			User's manual, Holding fixtur				

* 1: Refer to Section 1.6.2 for details.

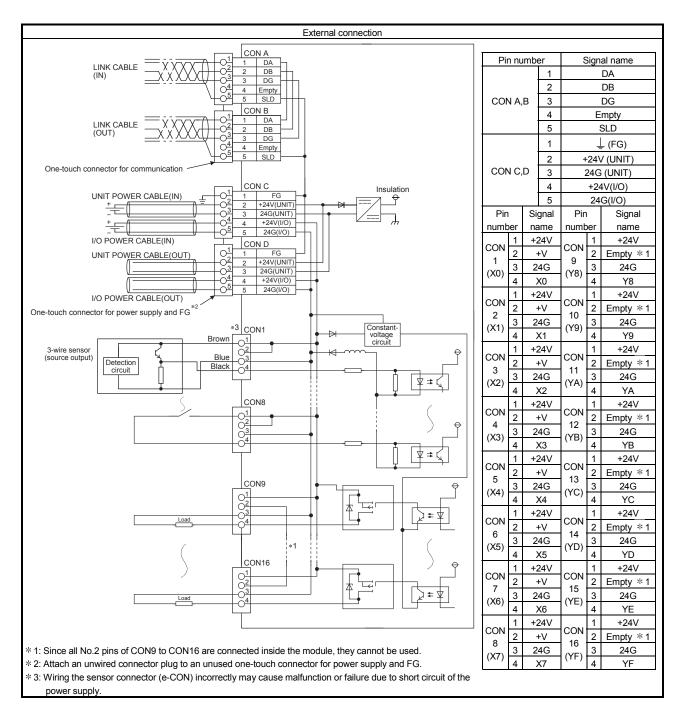
#### External connection Pin number Signal name CONA 1 DA LINK CABLE (IN) DA -O-DB 2 DB DG CON A,B 3 DG $O^{4}$ Empty 4 SLD 5 4 Empty CONB $O^1$ 5 SLD DA LINK CABLE $\tilde{O}^2_3$ (OUT) 2 DB 1 DG õ 2 +24V (UNIT) Empty SLD CON C,D 3 24G (UNIT) One-touch connector for communication 4 +24V(I/O) CONC Insulation 5 24G(I/O) $O_1^1$ FG UNIT POWER CABLE(IN) $-0^{2}$ +24V(UNIT Pin Signal Pin Signal ŧ 2 24G(UNIT) number name number name $O^4_{\overline{r}}$ +24V(I/O) +<u></u> 4 -0-24G(I/O) +24V 1 +24V 1 I/O POWER CABLE(IN) CON CON COND 2 Empty *1 2 +V FG UNIT POWER CABLE(OUT) 9 1 $-0^{2}$ $-0^{3}$ $-0^{4}$ +24V(UNIT) Empty * 2 3 24G 3 (X0) (Y8) 24G(UNIT) +24V(I/O) 4 X0 Y8 4 Ô 24G(I/O) +24V 1 +24V 1 I/O POWER CABLE(OUT) CON CON 2 +V 2 Empty *1 Constant-voltage circuit One-touch connector for power supply and FG \ast3 2 10 CON1 *4 24G 3 Empty *2 3 (Y9) (X1) Brown $O^1$ $O^2$ $O^3$ $O^4$ 3-wire sensor 4 X1 4 Y9 (sink output) Blue 1 +24V 1 +24V Detection ¥ ≠ CON CON Black circuit Empty * 1 +V 2 3 11 Empty *2 3 24G 3 (X2) (YA) CON8 4 X2 4 YA $O_2^1$ +24V CON 1 +24V CON $\mathbf{1}$ 2 2 +V 12 Empty *1 0 -04 4 (YB) 24G 3 Empty *2 3 (X3) 4 X3 YB CON9 +24V 1 +24V $O^1$ $O^2$ $O^3$ 1 CON CON ≠لر 2 +V 2 Empty *1 5 13 <u>4</u> Load 3 24G 3 Empty *2 (X4) (YC) 4 X4 4 YC *2 · •*1 +24V 1 +24V CON CON CON16 +V 2 Empty * 1 2 6 14 $O^1$ Empty * 2 24G 3 3 $O^2$ $O^3$ $O^4$ (X5) (YD) ો≄ 4 X5 4 YD Load +24V 1 +24V CON CON 2 2 +V Empty *1 15 7 24G Empty * 2 3 3 (X6) (YE) 4 X6 4 YE +24V 1 +24V 1 * 1: Since all No.2 pins of CON9 to CON16 are connected inside the module, they cannot be used. CON CON 2 2 +V Empty *1 * 2: Since all No.3 pins of CON9 to CON16 are connected inside the module, they cannot be used. 8 16 3 24G 3 Empty *2 * 3: Attach an unwired connector plug to an unused one-touch connector for power supply and FG. (YF) (X7) X7 4 YF * 4: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short circuit of the 4 power supply.

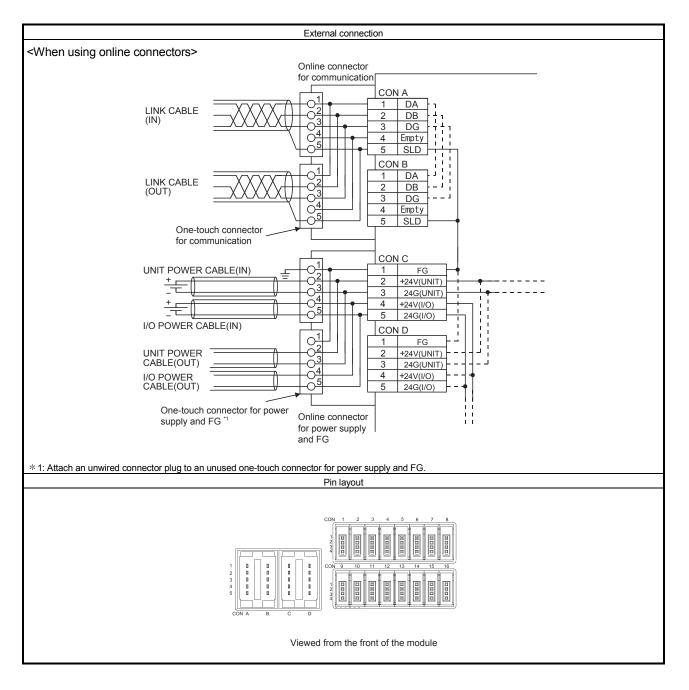


# 6.3.2 AJ65VBTCE3-16DTE combined module

	Туре	2	DCi	input transiste	or output combined module	
Item	Туре			CE3-16DTE	or output combined module	Appearance
	Ing	Sut			Dutput	
Number of i	1	8 points	Number of outpu		8 points	
			Isolation method		Photocoupler	
Rated input	I input voltage 24VDC Rated load voltage		ge	24VDC		
Rated input	ed input current Approx. 5mA		Operating load ve	oltage range	19.2 to 26.4VDC	
Operating v	oltage range	19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load curren	t	(ripple ratio: within 5%) 0.1A/point, 0.8A/common	
Max. numbe input points	er of simultaneous	100%	Max. inrush curre	ent	0.7A, 10ms or less	
• •	ON current	14VDC or higher/3.5mA or higher	Leakage current at OFF		0.1mA or lower	
OFF voltage	e/OFF current	6VDC or lower/1.7mA or lower	Max. voltage dro	p at ON	0.1VDC or lower (TYP.) 0.1A,	
Input resista	ance	Approx. 4.7kΩ		•	0.2VDC or lower (MAX.) 0.1A	
	OFF→ON	1.5ms or less (at 24VDC)	Output type		Source type	
Response t		1.5ms or less (at 24VDC)	Protection function	on	Overload protection, overheat protection	
				OFF→ON	1ms or less	
			Response time	ON→OFF	1ms or less (resistive load)	
			External power	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)	
			supply for output	-	7mA or lower	
			part	Current	(at 24VDC and all points ON), excluding external load current	
Input type	Negative common		Zener diode			
Supply curr device	ply current for connected ice 1.0A or lower/common					
Wiring meth	nod for common	16 points/common (input: 3-wire sensor connec	tor (e-CON) type,	output: 3-wire	e sensor connector (e-CON) type)	
Number of	occupied stations	32-point assignment/station				
Module pov		20.4 to 26.4VDC (ripple ratio	,			
supply	Current	40mA or lower (at 24VDC at	· · · · · ·			
Noise immu	unity	Noise voltage 500Vp-p, nois noise frequency 25 to 60Hz	• •	nulator condit	ion)	
Withstand v	voltage	500VAC for 1 minute betwee	en all DC external	terminals and	ground	
Insulation re	esistance	$10M\Omega$ or higher between all tester)	DC external termin	nals and grou	ind (500VDC insulation resistance	
Protection of	legree	IP1XB				
Weight		0.11kg				
Extornel	Communication part One-touch connector for communication [Transmission circuit] 5-pin IDC plug is sold separately: A6CON-L5P <optional> Online connector for communication: A6CON-LJ5P</optional>					
External connection					ver supply, I/O power supply, FG]	4
system	Power supply part	5-pin IDC plug is sold separate	ately: A6CON-PW	5P, A6CON-F	PW5P-SOD	
	<optional> Online connector for power supply: A6CON-PWJ5P           I/O part         Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1</optional>					
Annlicable	I/O part         Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1           licable DIN rail         TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)					4
	Connector for Applicable cable:					1
	communication	FANC-110SBH, FA-CBL200				
	Connector for	0.66 to 0.98mm ² (18 AWG) [\u00f62.2 to 3.0mm (A6CON-PW	(5D) +2 0 +2 2 2			
Applicable	power supply and	Wire diameter: 0.16mm or n	<i>//</i> 1		vvor-300)]	
wire size	FG	Insulating coating material:		it)		
		Sensor connector (e-CON). Applicable connector plugs	·			
	Connector for I/O	nector plug)				
Accessory	1	(applicable wire size: 0.08 to User's manual, Holding fixtu				4
		See of thankai, Holding lixtu				I

* 1: Refer to Section 1.6.2 for details.



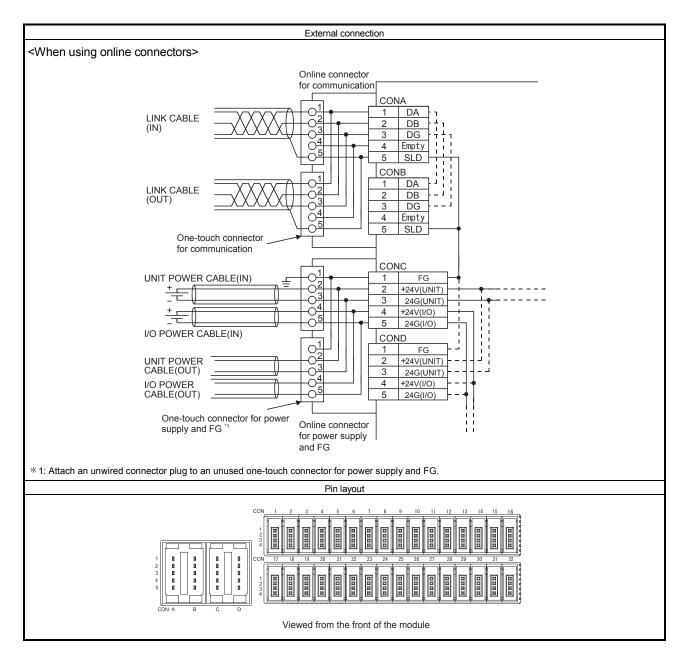


# 6.3.3 AJ65VBTCE32-32DT combined module

Item Number of in		Input	AJ65VE	STCE32-32DT		Appearance
		INDUT				
	and a state		Number		Output	<u> </u>
adation mot		16 points		output points		<u> </u>
lsolation met Rated input v			24VDC	<u> </u>		
valed input v	voitage	24VDC		•	19.2 to 26.4VDC	<u> </u>
Rated input of	ted indut current Addrox, 5mA		Operating lo	bad voltage	(ripple ratio: within 5%)	
Operating vo	ltage range	19.2 to 26.4VDC (ripple ratio: within 5%)			0.1A/point, 1.6A/common	
Max. number simultaneous	r of s input points	100%	Max. inrush current 0		0.7A, 10ms or less	
ON voltage/C	ON current	14VDC or higher/3.5mA or higher	Leakage cu	rrent at OFF	0.1mA or lower	
	OFF current	6VDC or lower/1.7mA or lower	Max. voltag	e drop at ON	0.1VDC or lower (TYP.) 0.1A,	
Input resistar		Approx. 4.7kΩ			0.2VDC or lower (MAX.) 0.1A	
Response	OFF→ON	1.5ms or less (at 24VDC)	Output type		Sink type	
time	ON→OFF	1.5ms or less (at 24VDC)	Protection f	unction	Overload protection, overvoltage protection, overheat protection	
			Response	OFF→ON	1ms or less	
			time	ON→OFF	1ms or less (resistive load)	
			External	Voltage	19.2 to 26.4VDC	
			power		(ripple ratio: within 5%) 10mA or lower	
			supply for output part	Current	(at 24VDC and all points ON),	
		Positive common (sink type)         Surge suppressor         Zener diode				
Input type	nt for connected	Positive common (sink type)				
device		1.0A or lower/common				
Wiring method for common (input: 3-wire sensor connector (e			e-CON) type	outout: 2-wire		
Number of or	ccupied stations	32-point assignment/station (32				
Module powe	· ·	20.4 to 26.4VDC (ripple ratio: with				
supply	Current	45mA or lower (at 24VDC and a	,			
	•	Noise voltage 500Vp-p, noise wi				
Noise immun	hity	noise frequency 25 to 60Hz (DC	type noise sir	nulator condit	lion)	
Withstand vo	oltage	500VAC for 1 minute between a	II DC external	terminals and	l ground	
Insulation res	sistance	0	external termi	nals and grou	Ind (500VDC insulation resistance	
		tester)				
Protection de	egree	IP1XB				
Weight		0.16kg			10	
C	Communication	One-touch connector for commu 5-pin IDC plug is sold separately	•		uitj	
r	part	Optional> Online connector for			15P	
External		One-touch connector for power				
	Power supply	[Module power supply, I/O powe				$\bigcirc$
system p	part	5-pin IDC plug is sold separately		5P, A6CON-F	PW5P-SOD	_
		<optional> Online connector for</optional>	power supply	: A6CON-PW	J5P	
	/O part	Sensor connector (e-CON) [I/O	signals]			
	4-pin IDC plug is sold separately. * 1					<u> </u>
Applicable D		TH35-7.5Fe, TH35-7.5Al (compl	iant with IEC 6	60715)		<u> </u>
	Connector for         Applicable cable:           communication         FANC-110SBH, FA-CBL200PSBH, CS-110					
(		0.66 to 0.98mm ² (18 AWG)				
	connector for	[\$2.2 to 3.0mm (A6CON-PW5P)	, φ2.0 to 2.3m	m (A6CON-P	W5P-SOD)]	
	and FG	Wire diameter: 0.16mm or more				
Insulating coating material: PVC (heat-resistant)						
c	Connector for	A COPERATE CONTRACTOR AND A		. l		
	Connector for /O	Applicable connector plugs are s (applicable wire size: 0.08 to 0.5			postor plug)	

* 1: Refer to Section 1.6.2 for details.

External connection						
	Pin num	nber	Signal name	Pin num	ber	Signal name
		1	DA		1	jgharname ⊥ (FG)
		2	DB		2	+24V (UNIT)
	CON A,B	3	DG	CON – C,D	3	24G (UNIT)
	Л, В	4	Empty	0,0	4	+24V(I/O)
		5	SLD		5	24G(I/O)
	Pin nu		Signal name	Pin nur	1	Signal name
	CON1	1	+24V +V	CON17	1	+24V Empty * 1
	(X0)	3	24G	(Y10)	3	Empty * 2
		4	X0		4	Y10
		1	+24V		1	+24V
	CON2 (X1)	2	+V 24G	CON18 (Y11)	2	Empty * 1
	(7(1)	4	240 X1	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4	Empty * 2 Y11
$\begin{array}{c c} \text{LINK CABLE} & X \\ \text{(IN)} & X \\ \hline X \\ X \\$		1	+24V		1	+24V
$O_{\overline{e}}^{4}$ Empty	CON3		+V	CON19		Empty * 1
	(X2)	3	24G	(Y12)	3	Empty * 2
$\begin{array}{c} \text{LINK CABLE} \\ \hline \\ $		4	X2 +24V		4	Y12 +24V
$(001)$ $\underline{-1}$ $-1$	CON4		+24v +V	CON20	-	Empty *1
	(X3)	3	24G	(Y13)	3	Empty * 2
One-touch connector for communication		4	X3		4	Y13
UNIT POWER CABLE(IN) $= \bigcirc_{2}^{1} 1 FG + \bigcirc_{2}^{1} FG$	001-	1	+24V +V	CONIC	1	+24V Empty * 1
$\begin{array}{c c} + & & & \\ \hline \hline$	CON5 (X4)	3	24G	CON21 (Y14)	2	Empty * 1 Empty * 2
+ $         -$	· · /	4	X4	, í	4	Y14
		1	+24V		1	+24V
	CON6		+V	CON22	_	Empty *1
$\begin{array}{c c} \hline & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$	(X5)	3	24G X5	(Y15)	3	Empty * 2 Y15
I/O POWER CABLE(OUT)		4	+24V		4	+24V
One-touch connector for power supply and FG *4 CON1	CON7	-	+V	CON23	-	Empty * 1
3-wire sensor	(X6)	3	24G	(Y16)	3	Empty * 2
(sink output)		4	X6	-	4	Y16
	CON8	1	+24V +V	CON24	1	+24V Empty * 1
	(X7)	3	24G	(Y17)	3	Empty * 2
		4	X7		4	Y17
		1	+24V		1	+24V
	CON9 (X8)	2	+V 24G	CON25 (Y18)	2	Empty * 1 Empty * 2
CON17 <del>O</del>	(700)	4	24G X8	(110)	4	Y18
		1	+24V		1	+24V
	CON10		+V	CON26	_	Empty * 1
	(X9)	3	24G X9	(Y19)	3	Empty * 2 Y19
		4	+24V		4	+24V
	CON11		+V	CON27	-	Empty * 1
	(XA)	3	24G	(Y1A)	3	Empty *2
		4	XA	-	4	Y1A
	CON12	2 2	+24V +V	CON28	1	+24V Empty * 1
	(XB)	3	24G	(Y1B)	3	Empty * 2
		4	XB		4	Y1B
		1	+24V		1	+24V
	CON13 (XC)		+V	CON29 (Y1C)	2	Empty *1
	(70)	3	24G XC	(110)	3	Empty * 2 Y1C
	-	1	+24V		1	+24V
	CON14	4 2	+V	CON30		Empty *1
	(XD)	3	24G	(Y1D)	3	Empty * 2
		4	XD +24V		4	Y1D +24V
	CON15		+24V +V	CON31		+24V Empty *1
* 1: Since all No.2 pins of CON17 to CON32 are connected inside the module, they cannot be used.	(XE)	3	24G	(Y1E)	3	Empty * 2
<ul> <li>Since all No.2 pins of CON17 to CON32 are connected inside the module, they cannot be used.</li> <li>Since all No.3 pins of CON17 to CON32 are connected inside the module, they cannot be used.</li> </ul>		4	XE		4	Y1E
* 3: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.		1	+24V		1	+24V
4: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short	CON16 (XF)	3 <u>2</u> 3	+V 24G	CON32 (Y1F)	2	Empty * 1 Empty * 2
circuit of the power supply.	(74)	4	XF	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4	Y1F
	·		24			

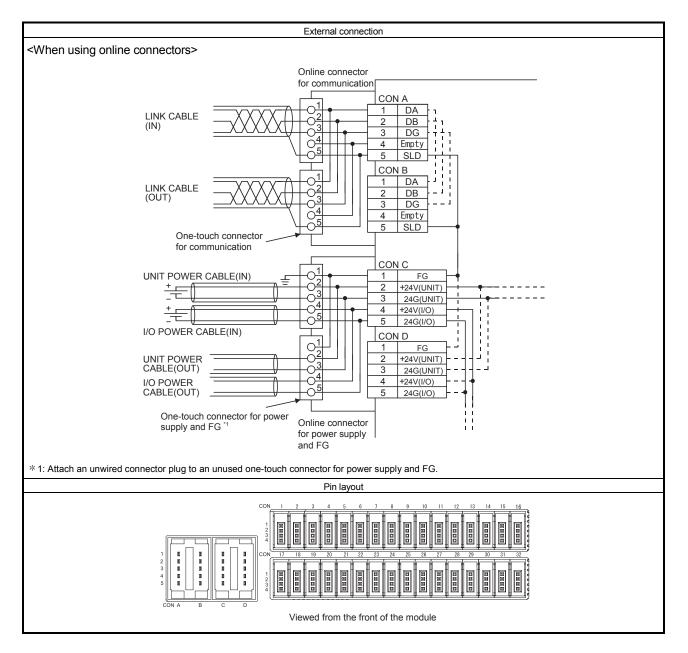


## 6.3.4 AJ65VBTCE3-32DTE combined module

Item	Туре				or output combined module		
Item		Innut	AJ65VE	STCE3-32DTE		Appearance	
Number of		Input	Number of		Output 16 pointo		
Isolation me	input points	16 points Photocoupler		output points			
Rated input		24VDC	Isolation method         Photocoupler           Rated load voltage         24VDC		24VDC		
Nateu input	i vollage	24000	Operating lo	ě	19.2 to 26.4VDC		
Rated input	t current	Approx. 5mA	range	au voltage	(ripple ratio: within 5%)		
Operating v	voltage range	19.2 to 26.4VDC (ripple ratio: within 5%)			0.1A/point, 1.6A/common		
Max. numb simultaneoi	er of us input points	100%	Max. inrush	current	0.7A, 10ms or less		
ON voltage	/ON current	14VDC or higher/3.5mA or higher	Leakage cu	rrent at OFF	0.1mA or lower		
OFF voltag	e/OFF current	6VDC or lower/1.7mA or lower	Max voltag	e drop at ON	0.1VDC or lower (TYP.) 0.1A,		
Input resist	ance	Approx. 4.7kΩ	max. voltag		0.2VDC or lower (MAX.) 0.1A	_	
Doononoo	OFF→ON	1.5ms or less (at 24VDC)	Output type		Source type		
Response time	ON→OFF	1.5ms or less (at 24VDC)	Protection f	unction	Overload protection, overheat protection		
	•		Response	OFF→ON	1ms or less		
			time	ON→OFF	1ms or less (resistive load)		
			Extorrel		19.2 to 26.4VDC		
			External power	Voltage	(ripple ratio: within 5%)		
			supply for		11mA or lower		
			output part	Current	(at 24VDC and all points ON),		
		ſ			excluding external load current		
Input type		Negative common (source type)	Surge supp	ressor	Zener diode		
Supply curr device	ent for connected	2.0A or lower/common					
Wiring meth	nod for common	32 points/common (input: 3-wire sensor connector (e	-CON) type,	output: 3-wire	e sensor connector (e-CON) type)		
Number of	occupied stations	32-point assignment/station (32 p	oints used)		· · · · · ·		
Module pov	ver Voltage	20.4 to 26.4VDC (ripple ratio: with	nin 5%)				
supply	Current	45mA or lower (at 24VDC and all	points ON)				
Noise immu	upity/	Noise voltage 500Vp-p, noise wid	lth 1µs,				
	unity	noise frequency 25 to 60Hz (DC t	type noise sir	nulator condit	ion)		
Withstand v	/oltage	500VAC for 1 minute between all	DC external	terminals and	l ground		
Insulation r	esistance	•	external termi	nals and grou	nd (500VDC insulation resistance		
Protection	dogroo	tester) IP1XB					
Protection of Weight	acylee	0.16kg					
		One-touch connector for commur	nication ITran	smission circi	uit]		
	Communication	5-pin IDC plug is sold separately:	-		· •		
	part	<optional> Online connector for o</optional>			J5P		
External		One-touch connector for power s	upply and FC	3		_ (O)	
connection	Power supply	[Module power supply, I/O power					
system	part	5-pin IDC plug is sold separately:					
		<optional> Online connector for p</optional>		: A6CON-PW	J5P	4	
	I/O part	Sensor connector (e-CON) [I/O si					
A		4-pin IDC plug is sold separately.		20745)			
Applicable	1	TH35-7.5Fe, TH35-7.5Al (complia	ant with IEC (	00715)		4	
	Connector for Applicable cable: communication FANC-110SBH, FA-CBL200PSBH, CS-110						
	pplicable power supply 0.66 to 0.98mm ² (18 AWG) [\overline{0.22 to 3.0mm (A6CON-PW5P), \overline{0.23mm (A6CON-PW5P-SOD)]} Wire diameter: 0.16mm or more						
			ψ2.0 το 2.3M				
	wire size and FG Insulating coating material: PVC (heat-resistant)						
	and FG	Insulating coating material: PVC (	heat-resistar	10)			
Applicable wire size			heat-resistar	1t)		-	
	Connector for	Insulating coating material: PVC ( Sensor connector (e-CON). Applicable connector plugs are so				1	
		Sensor connector (e-CON).	old separatel	y. *1	nector plug)		

* 1: Refer to Section 1.6.2 for details.

External connection						
	Pin nun	nber	Signal name	Pin num	nber	Signal name
		1	DA		1	⊥ (FG)
	0.011	2	DB		2	÷(10) +24V (UNIT)
	CON A,B	3	DG	CON C,D	3	24G (UNIT)
	,=	4	Empty	-,-	4	+24V(I/O)
		5	SLD		5	24G(I/O)
	Pin nu	umber 1	Signal name +24V	Pin nu	mber 1	Signal name +24V
	CON1		+24 v +V	CON17	-	+24v Empty *1
	(X0)	3	24G	(Y10)	3	24G
		4	X0		4	Y10
$\begin{array}{c} \text{LINK CABLE} \\ (\text{IN} $		1	+24V		1	+24V
$\begin{array}{c} \hline (15) \\ \hline \hline \\ \hline $	CON2 (X1)	2	+V 24G	CON18 (Y11)		Empty * 1 24G
	(,	4	X1	(,	4	Y11
		1	+24V		1	+24V
(OUT) $X X X \overline{X} \overline{A} \overline{A} \overline{A} \overline{A} \overline{A} \overline{A} \overline{A} A$	CON3		+V	CON19		Empty * 1
$O^{\frac{4}{9}}$ 4 Empty $O^{\frac{5}{5}}$ 5 SLD	(X2)	3	24G X2	(Y12)	3	24G Y12
One-touch connector for communication		1	+24V		1	+24V
	CON4	-	+V	CON20		Empty *1
UNIT POWER CABLE(IN) $= -O_2^1 + F_G$ $+ F_G$	(X3)	3	24G	(Y13)	3	24G
		4	X3 +24V		4	Y13 +24V
	CON5	-	+24 v +V	CON21		Empty *1
I/O POWER CABLE(IN)	(X4)	3	24G	(Y14)	3	24G
		4	X4		4	Y14
		1	+24V		1	+24V
VOPOWER CABLE(OUT)	CON6 (X5)	2	+V 24G	CON22 (Y15)	2 2 3	Empty * 1 24G
One-touch connector for power supply and FG*2	()	4	X5	()	4	Y15
*3 CON1 Constant-		1	+24V		1	+24V
*3 CON1 Constant- voltage 3-wire sensor	CON7		+V	CON23		Empty * 1
	(X6)	3	24G X6	(Y16)	3	24G Y16
		1	+24V		1	+24V
	CON8	2	+V	CON24	1 2	Empty * 1
CON16	(X7)	3	24G	(Y17)	3	24G
		4	X7 +24V		4	Y17 +24V
	CON9	-	+24 v +V	CON25		Empty *1
	(X8)	3	24G	(Y18)	3	24G
		4	X8		4	Y18
CON17		1	+24V		1	+24V
	CON10 (X9)	) 2	+V 24G	CON26 (Y19)	3 <u>2</u> 3	Empty * 1 24G
	( - )	4	X9	( - /	4	Y19
		1	+24V		1	+24V
(	CON1		+V	CON27		Empty * 1
	(XA)	3	24G XA	(Y1A)	3	24G Y1A
		1	+24V	1	1	+24V
	CON12 (XB)	2	+V	CON28		Empty *1
	(70)	3	24G	(Y1B)	_	24G
		4	XB +24V		4	Y1B +24V
	CON13		+V	CON29		Empty *1
	(XC)	3	24G	(Y1C)	3	24G
	<b> </b>	4	XC		4	Y1C
	CON14	1 1 2	+24V +V	CON30	1	+24V Empty * 1
	(XD)	+ 2	24G	(Y1D)		24G
		4	XD	1	4	Y1D
		1	+24V		1	+24V
* 1: Since all No.2 pins of CON17 to CON32 are connected inside the module, they cannot be used.	CON18 (XE)	5 2	+V 24G	CON31 (Y1E)		Empty *1
* 2: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.	(//_)	4	XE	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4	24G Y1E
* 3: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short		1	+24V		1	+24V
		<u> </u>	+V	CON32	2 2	
circuit of the power supply.	CON16					Empty *1
	CON16 (XF)	3	24G XF	(Y1F)		24G Y1F

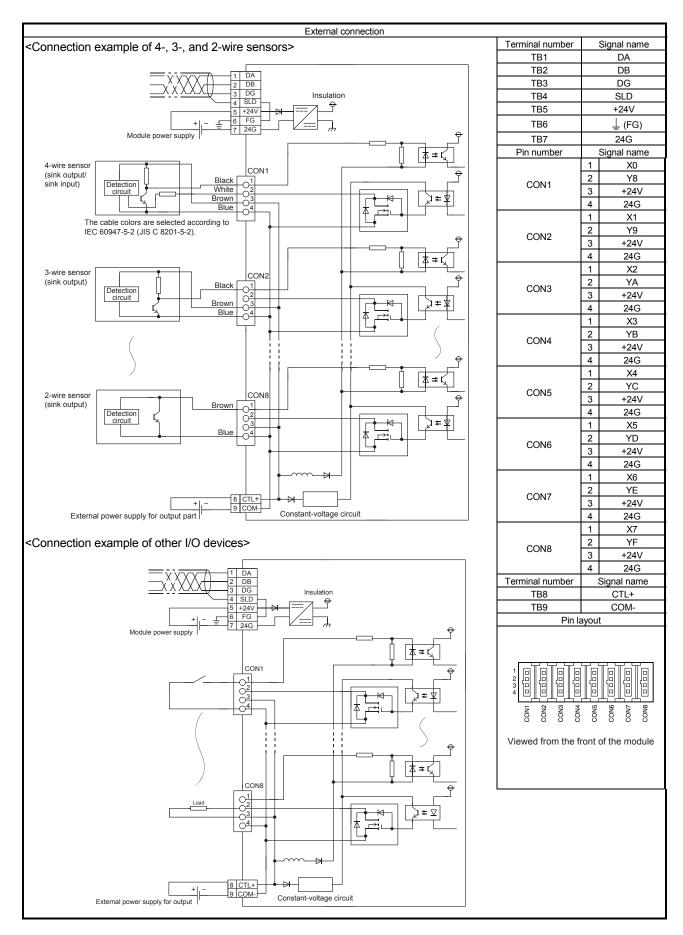


## 6.4 One Touch Connector Type Combined Module

### 6.4.1 AJ65SBTC4-16DT combined module

Item       AJ65SBTC4-16DT         Input       Output         Number of input points       8 points       Number of output points       8 points         Isolation method       Photocoupler       Isolation method       Photocoupler         Rated input voltage       24VDC       Rated load voltage       24VDC         Rated input current       Approx. 5mA       Operating load voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       19.2 to 26.4VDC (ripple ratio: within 5%)         Operating voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       Max. load current       0.5A/point, 2.4A/common         Max. number of simultaneous input points       100%       Max. inrush current       1.0A 10ms or less         ON voltage/ON current       14VDC or higher       Leakage current at OFF       0.25mA or lower         OFF voltage/OFF current       6VDC or lower/1.7mA kas. voltage drop at ON       0.3VDC or lower (TYP.) 0.5A,	Appearance
Number of input points       8 points       Number of output points       8 points         Isolation method       Photocoupler       Isolation method       Photocoupler         Rated input voltage       24VDC       Rated load voltage       24VDC         Rated input current       Approx. 5mA       Operating load voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)         Operating voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       Max. load current       0.5A/point, 2.4A/common         Max. number of simultaneous input points       100%       Max. inrush current       1.0A 10ms or less         ON voltage/ON current       14VDC or higher       Leakage current at OFF       0.25mA or lower         0.5E voltage/QEE current       6VDC or lower/1.7mA       Max. voltage drop at ON       0.3VDC or lower (TYP.) 0.5A,	
Isolation method       Photocoupler       Isolation method       Photocoupler         Rated input voltage       24VDC       Rated load voltage       24VDC         Rated input current       Approx. 5mA       Operating load voltage       19.2 to 26.4VDC (ripple ratio: within 5%)         Operating voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       Max. load current       0.5A/point, 2.4A/common         Max. number of simultaneous input points       100%       Max. inrush current       1.0A 10ms or less         ON voltage/ON current       14VDC or higher       Leakage current at OFF       0.25mA or lower         0.3VDC or lower (TYP.) 0.5A,       Max. voltage drop at ON       0.3VDC or lower (TYP.) 0.5A,	
Rated input voltage       24VDC       Rated load voltage       24VDC         Rated input current       Approx. 5mA       Operating load voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)         Operating voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       Max. load current       0.5A/point, 2.4A/common         Max. number of simultaneous input points       100%       Max. inrush current       1.0A 10ms or less         ON voltage/ON current       14VDC or higher       Leakage current at OFF       0.25mA or lower         OEF voltage/OFE current       6VDC or lower/1.7mA       Max. voltage drop at ON       0.3VDC or lower (TYP.) 0.5A,	
Rated input current       Approx. 5mA       Operating load voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)         Operating voltage range       19.2 to 26.4VDC (ripple ratio: within 5%)       Max. load current       0.5A/point, 2.4A/common         Max. number of simultaneous input points       100%       Max. inrush current       1.0A 10ms or less         ON voltage/ON current       14VDC or higher/3.5mA or higher       Leakage current at OFF       0.25mA or lower         OEF voltage/OEF current       6VDC or lower/1.7mA       Max. voltage drop at ON       0.3VDC or lower (TYP.) 0.5A,	
Rated input current     Approx. smA     range     (ripple ratio: within 5%)       Operating voltage range     19.2 to 26.4VDC (ripple ratio: within 5%)     Max. load current     0.5A/point, 2.4A/common       Max. number of simultaneous input points     100%     Max. inrush current     1.0A 10ms or less       ON voltage/ON current     14VDC or higher     Leakage current at OFF     0.25mA or lower       OEF voltage/OFE current     6VDC or lower/1.7mA     Max. voltage drop at ON     0.3VDC or lower (TYP.) 0.5A,	
Operating voltage range     (ripple ratio: within 5%)     Max. load current     0.5A/point, 2.4A/common       Max. number of simultaneous input points     100%     Max. inrush current     1.0A 10ms or less       ON voltage/ON current     14VDC or higher/3.5mA or higher     Leakage current at OFF     0.25mA or lower       OEF voltage/OEF current     6VDC or lower/1.7mA     Max. voltage drop at ON     0.3VDC or lower (TYP.) 0.5A,	
points     100%     Max. Inrush current     1.0A 10ms or less       ON voltage/ON current     14VDC or higher/3.5mA or higher     Leakage current at OFF     0.25mA or lower       OFE voltage/OFE current     6VDC or lower/1.7mA     Max. voltage drop at ON     0.3VDC or lower (TYP.) 0.5A,	
ON voltage/ON current     higher/3.5mA or higher     Leakage current at OFF     0.25mA or lower       OFF voltage/OFF current     6VDC or lower/1.7mA     Max_voltage drop at ON     0.3VDC or lower (TYP.) 0.5A,	
UEE VOItage/UEE Current I Max voltage drop at ON	
or lower (MAX.) 0.5A	
Input resistance Approx. 4.7kΩ Output type Sink type	
OFF→ON 1.5ms or less (at 24VDC) During for the former of	
Response time ON→OFF 1.5ms or less (at 24VDC) Protection function protection, overheat protection protection, overheat protection	
Response OFF→ON 0.5ms or less	
time ON→OFF 1.5ms or less (resistive load)	3~ 0/1 0
External (ripple ratio: within 5%)	
power supply 13mA or lower for output part Current (at 24VDC and all points ON),	
Input type Positive common (sink type) Surge suppressor Zener diode	
Supply current for connected device 1.0A or lower/common	
Wiring method for common         16 points/common (4-wire, one-touch connector type)	
Number of occupied stations         32-point assignment/station (16 points used)           Voltage         20.4 to 26.4VDC (ripple ratio: within 5%)	
Module power supply Voltage 20.4 to 26.4 VDC (https://www.initiansystem.com/ Current 40mA or lower (at 24VDC and all points ON)	
Noise immunity noise frequency 25 to 60Hz (DC type noise simulator condition)	
Withstand voltage 500VAC for 1 minute between all DC external terminals and ground	
resistance tester)	
Protection degree IP2X	
External connection part, module power supply part displayed by two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less	
I/O power supply part         2-point direct-mount terminal block [I/O power supply]           I/O power supply part         M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)           Applicable solderless terminal: 2 or less	
I/O part         Dedicated one-touch connector [I/O signals]           4-pin IDC plug is sold separately.	
Module mounting screw Module mounting screw Mountable with a DIN rail in 6 orientations	
Applicable DIN rail TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)	
Applicable Communication • RAV1.25-3 (compliant with JIS C 2805)	
Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]	
Suppry part         \$             \$	
Wire Material Copper	
Temperature rating 75°C or more	
Accessory User's manual	

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

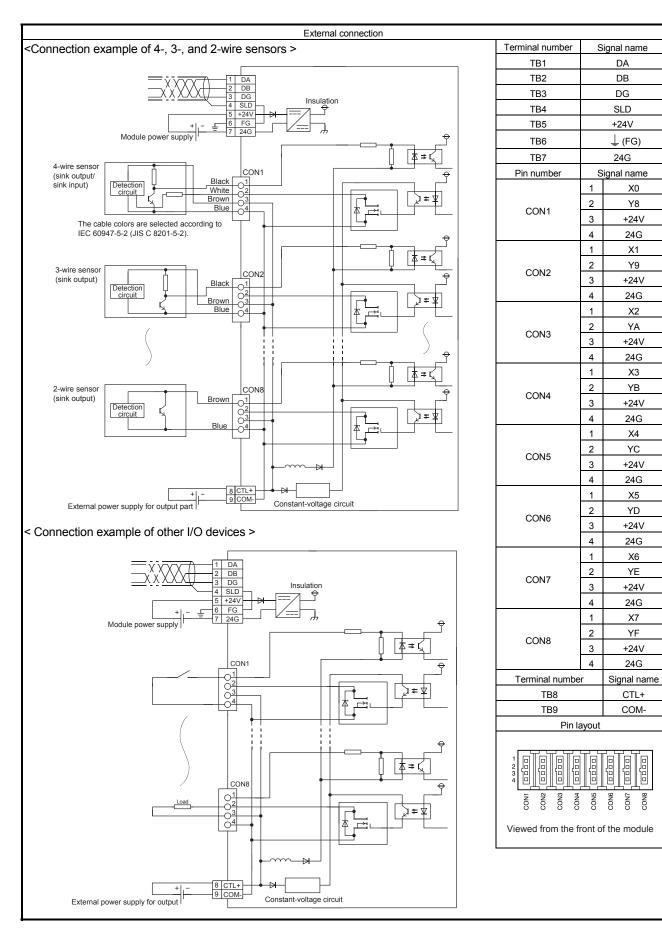


#### 6.4.2 AJ65SBTC4-16DT2 combined module

		Туре		DC	input transis	tor output combined module		
ltem				AJ65SE	BTC4-16DT2		Appearance	
		Input				Output		
Number of i	input points		8 points	Number of points	output	8 points	]	
Isolation me	ethod		Photocoupler	Isolation m	ethod	Photocoupler	1	
Rated input	t voltage		24VDC	Rated load	voltage	24VDC	1	
Rated input	current		Approx. 5mA	Operating load voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)		
Operating v	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load o	current	0.5A/point, 2.4A/common		
Max. numbe points	er of simultaneou	us input	100%	Max. inrush	n current	1.0A, 10ms or less		
ON voltage	/ON current		14VDC or higher/ 3.5mA or higher	Leakage cu OFF	urrent at	0.1mA or lower	1	
OFF voltage	e/OFF current		6VDC or lower/ 1.7mA or lower	Max. voltag ON	je drop at	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	1	
Input resista	ance		Approx. 4.7kΩ	Output type	9	Sink type	1	
Deenenee t	ina a	OFF→ON	1.5ms or less (at 24VDC)	Protection 1	function	None	1	
Response t		ON→OFF	1.5ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less	]	
			<i>`</i>	time	ON→OFF	1.5ms or less (resistive load)	]	
				Extornal	Voltage	19.2 to 26.4VDC		
				External power	vollage	(ripple ratio: within 5%)		
				supply for		13mA or lower		
				output part	Current	(at 24VDC and all points ON),		
			r			excluding external load current		
nput type				Surge supp	pressor	Zener diode		
11.7	ent for connecte	d device	1.0A or lower/common					
	nod for common		16 points/common (4-wire, or					
Number of	occupied stations	1	32-point assignment/station (		ed)			
Module pov	ver supply	Voltage	20.4 to 26.4VDC (ripple ratio:					
nouse por	ioi ouppiy	Current	40mA or lower (at 24VDC and		ON)			
Noise immu	inity		Noise voltage 500Vp-p, noise					
			noise frequency 25 to 60Hz (I					
Nithstand v	voltage		500VAC for 1 minute between					
nsulation re	esistance		$10M\Omega$ or higher between all E resistance tester)					
Protection of	degree		IP2X					
Neight	P		0.15kg					
External connection system	Communication module power s	•	7-point two-piece terminal blo M3×5.2 screw (tightening toro Applicable solderless termina	que range: 0 II: 2 or less				
	I/O power suppl	y part		2-point direct-mount terminal block [I/O power supply] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)				
	I/O part		Dedicated one-touch connect 4-pin IDC plug is sold separat	or [I/O signa	als]			
Module mo	unting screw			nished roun	. 0	torque range: 0.78 to 1.08N•m)	]	
Applicable [	DIN rail		TH35-7.5Fe, TH35-7.5AI (cor				1	
Applicable	Communication		• RAV1.25-3 (compliant with		,		1	
wire size part, module power supply part			• V2-MS3, RAP2-3SL, TGV2-	<ul> <li>[Applicable wire size: 0.3 to 1.25mm² (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> <li>[Applicable wire size: 1.25 to 2.0mm² (16 to 14 AWG) stranded wire]</li> </ul>				
	I/O power supply part	terminal				· ·		
	I/O part		$\phi1.0$ to 1.4 (A6CON-P214), $\phi$ [Applicable wire size: 0.14 to $\phi1.0$ to 1.4 (A6CON-P514), $\phi$ [Applicable wire size: 0.3 to 0	0.2mm² (26 1.4 to 2.0 (A	to 24 AWG) 6CON-P520			
Wire	Material		Copper				_	
	Temperature rat	ting	75°C or more				_	
			User's manual					

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

## 6 SPECIFICATIONS FOR COMBINED MODULES

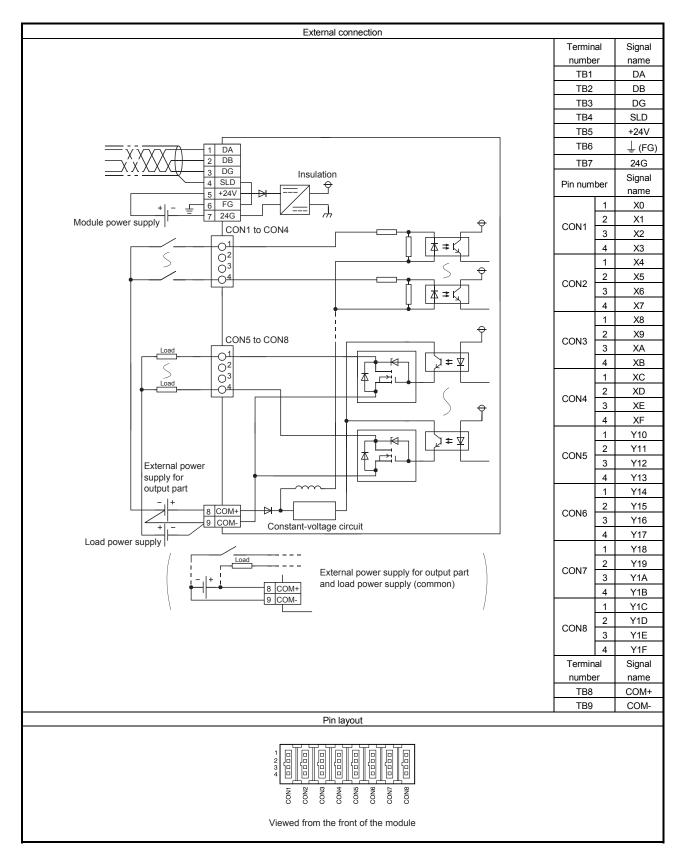


### 6.4.3 AJ65SBTC1-32DT combined module

	_	Туре			DC input tra	ansistor output combined module			
ltem				AJ6	5SBTC1-32	DT	Appearance		
		Input				Output			
Number of i	nput points		16 points	Number of c points	output	16 points			
Isolation me	ethod		Photocoupler	Isolation me	ethod	Photocoupler			
Rated input	voltage		24VDC	Rated load	voltage	24VDC			
Rated input	current		Approx. 5mA	Operating lo range	oad voltage	19.2 to 26.4VDC (ripple ratio: within 5%)			
Operating v	oltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	0.1A/point, 1.6A/common			
Max. numbe points	er of simultaneou	s input	100%	Max. inrush	current	1.0A, 10ms or less			
ON voltage/ON current			14VDC or higher/3.5mA or higher	Leakage cu OFF	rrent at	0.25mA or lower			
OFF voltage	e/OFF current		6VDC or lower/ 1.7mA or lower	Max. voltage ON	e drop at	0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A			
Input resista	ance		Approx. 4.7kΩ	Output type		Sink type			
Deenenee #	ime	OFF→ON	1.5ms or less (at 24VDC)	Protection fu	unction	Overload protection, overvoltage protection, overheat protection			
Response ti	ime	01 055	1.5ms or less	Response	OFF→ON	0.5ms or less			
		ON→OFF	(at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)			
				External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)			
				power supply for		17mA or lower			
				output part	Current	(at 24VDC and all points ON),			
			<b>I</b>	oupurpur		excluding external load current			
Input type			Positive common (sink type)	Surge supp		Zener diode			
	nod for common		32 points/common (1-w	-		ype)			
Number of o	occupied stations		32-point assignment/sta	, j	,				
Module pow	ver supply	Voltage	20.4 to 26.4VDC (ripple		,				
· ·	,	Current	50mA or lower (at 24VE						
Noise immu	inity		Noise voltage 500Vp-p, noise frequency 25 to 6			ator condition)			
Withstand v	voltage		500VAC for 1 minute be						
vviuistariu v	ollage		$10M\Omega$ or higher betwee						
Insulation re	esistance		resistance tester)						
Weight			0.16kg						
External	O		7-point two-piece termin	nal block [Trar	nsmission ci	cuit, module power supply, FG]			
connection	Communication module power su	•	M3×5.2 screw (tightenin	ng torque rang	ge: 0.59 to 0	.88N•m)			
system		יישראיז אמינ	Applicable solderless te						
	10		2-point direct-mount ter	-					
	I/O power supply	/ part	M3×5.2 screw (tightenin Applicable solderless te		-	.00IN•III)			
	I/O part		1.1.			IDC plug is sold separately.	1		
Module mou	unting screw		M4 screw with plain wa		<b>·</b> · ·	,	1		
	-		(tightening torque range						
			Mountable with a DIN ra				1		
Applicable [		r	TH35-7.5Fe, TH35-7.5/	<b>`</b>		15)	4		
Applicable Communication • RAV1.25-3 (compliant with JIS C 28									
	part, module power	Applicable	[Applicable wire size: • V2-MS3, RAP2-3SL,		11⁻ (∠∠ to 16	evve) stranded wirej			
supply part solderless					n ² (16 to 14	AWG) stranded wire1			
	I/O power supply part	terminal		Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]					
	I/O part	I		14) h1 4 to ?		2220)	1		
" o part			Applicable wire size: 0.						
			41.0 to 1.4 (A6CON-P5			· ·			
			[Applicable wire size: 0.		•				
Wire	Material		Copper		· · · · · · · · · · · · · · · · · · ·	,	1		
	Temperature rati	ing	75°C or more				1		
Accessory			User's manual						

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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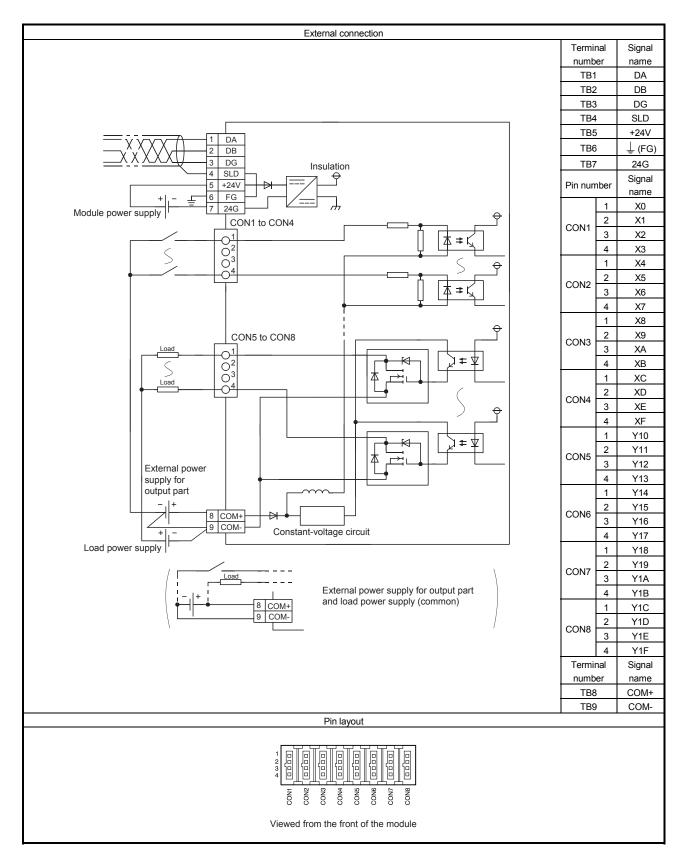


### 6.4.4 AJ65SBTC1-32DT1 combined module

		Туре		_	DC input tr	ansistor output combined module	
ltem				AJ	65SBTC1-32	DT1	Appearance
		Input	I			Output	
Number of	input points		16 points	Number of opoints	output	16 points	
Isolation m			Photocoupler	Isolation me		Photocoupler	
Rated input	t voltage		24VDC	Rated load	voltage bad voltage	24VDC 19.2 to 26.4VDC	
Rated input	t current		Approx. 5mA	range	bad voltage	(ripple ratio: within 5%)	
Operating v	Operating voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	0.1A/point, 1.6A/common	
Max. number of simultaneous input points			100%	Max. inrush	current	1.0A, 10ms or less	
ON voltage	e/ON current		15VDC or higher/ 3mA or higher	Leakage cu OFF	irrent at	0.25mA or lower	
OFF voltag	e/OFF current		3VDC or lower/ 0.5mA or lower	Max. voltag ON	e drop at	0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A	
Input resist	ance		Approx. 4.7kΩ	Output type	•	Sink type	
Response 1		OFF→ON	0.2ms or less (at 24VDC)	Protection f		Overload protection, overvoltage protection, overheat protection	
		ON→OFF	0.2ms or less	Response	OFF→ON	0.5ms or less	
			(at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	
				External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)	
				power		17mA or lower	
				supply for output part	Current	(at 24VDC and all points ON),	
			<b>–</b>	output purt		excluding external load current	
nput type			Positive common (sink type)	Surge supp		Zener diode	
	hod for common		32 points/common (1-w	,		type)	
number of	occupied stations		32-point assignment/sta	· ·			
Module pov	wer supply	Voltage Current	20.4 to 26.4VDC (ripple 50mA or lower (at 24VD				
N		Jourient	Noise voltage 500Vp-p				
Noise immi	unity		noise frequency 25 to 6			ulator condition)	
Withstand v	voltage		500VAC for 1 minute be				
Insulation r	esistance		10M $\Omega$ or higher betwee resistance tester)				
Protection of	degree		IP2X				
Weight	1		0.16kg				
External	Communication	part,				ircuit, module power supply, FG]	
connection system	module power su	upply part	M3×5.2 screw (tightenin Applicable solderless te			J.001111)	
	<u> </u>		2-point direct-mount ter			upply]	
	I/O power supply	/ part	M3×5.2 screw (tightenin			0.88N•m)	
	1/O nort		Applicable solderless te				
Module mo	I/O part unting screw		M4 screw with plain wa			in IDC plug is sold separately.	
			(tightening torque range				
			Mountable with a DIN ra				
Applicable	T		TH35-7.5Fe, TH35-7.5/			715)	
Applicable wire size	Communication part, module power	Applicable	<ul> <li>RAV1.25-3 (complian [Applicable wire size:</li> <li>V2-MS3. RAP2-3SL.</li> </ul>	0.3 to 1.25m		AWG) stranded wire]	
supply part solderless I/O power			[Applicable wire size:				
supply part							
I/O part			φ1.0 to 1.4 (A6CON-P2				
			[Applicable wire size: 0.				
			\u00e91.0 to 1.4 (A6CON-P5 [Applicable wire size: 0.]				
Wire	Material		Copper	.0 10 0.0 mm	122 IU 20 A		
	Temperature rati	ing	75°C or more				
Accessory		-	User's manual				
,			•				

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

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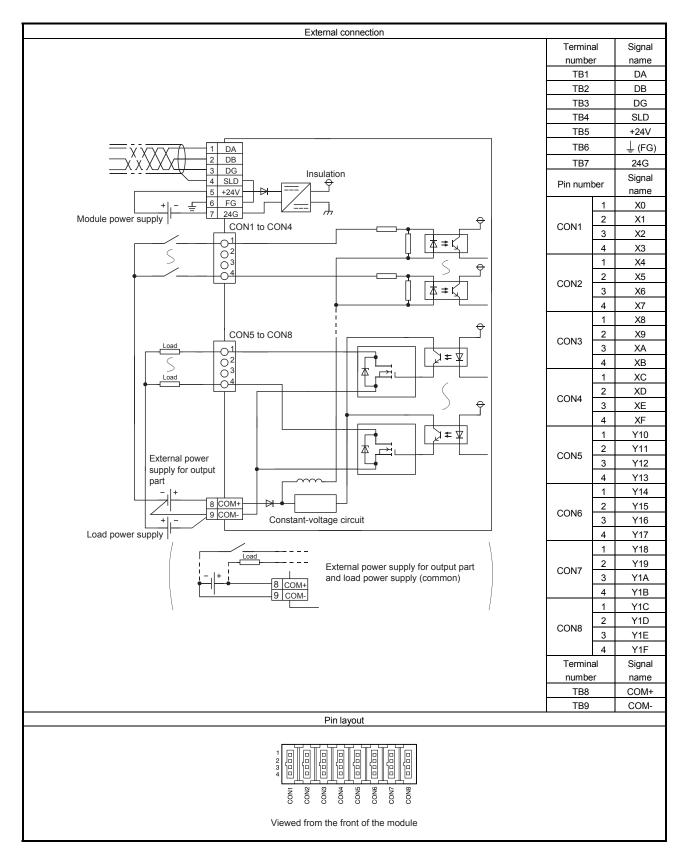


### 6.4.5 AJ65SBTC1-32DT2 combined module

		Туре			DC input trans	sistor output combined module	
ltem				AJ65	SBTC1-32DT	2	Appearance
		Input				Output	-
Number of i			16 points	Number of o	output points	16 points	-
Isolation me			Photocoupler	Isolation me		Photocoupler	4
Rated input	voltage		24VDC	Rated load	voltage	24VDC	-
Rated input	current		Approx. 5mA	Operating lo range	oad voltage	19.2 to 26.4VDC (ripple ratio: within 5%)	
Operating v	oltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	0.1A/point, 1.6A/common	
Max. numb points	er of simultaneou	us input	100%	Max. inrush	current	1.0A, 10ms or less	
()NI voltage/()NI current			14VDC or higher/ 3.5mA or higher	Leakage cu	rrent at OFF	0.1mA or lower	
OFF voltage	e/OFF current		6VDC or lower/ 1.7mA or lower	Max. voltag	e drop at ON	0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A	
Input resista	ance		Approx. 4.7kΩ	Output type		Sink type	1
put rooiou		055 011	1.5ms or less				1
Response t	ime	OFF→ON	(at 24VDC) 1.5ms or less	Protection f	unction	None	
		ON→OFF	(at 24VDC)	Response time	OFF→ON	0.5ms or less	-
					ON→OFF	1.5ms or less (resistive load)	ł
				External	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)	
				power supply for		17mA or lower	
				output part	Current	(at 24VDC and all points ON),	
Input type			Positive common	Surge supp	ressor	excluding external load current Zener diode	
1 31			(sink type)	• • •			
	nod for common		32 points/common (1-wi			pe)	
Number of	occupied station:	s Voltage	32-point assignment/sta 20.4 to 26.4VDC (ripple				
Module pov	ver supply	Current	50mA or lower (at 24VD		,		
		ounch	Noise voltage 500Vp-p,				
Noise immu	unity		noise frequency 25 to 60			tor condition)	30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30         30<
Withstand v	voltage		500VAC for 1 minute be	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Insulation re	esistance		$10M\Omega$ or higher between resistance tester)	200 200 200 200 200 200 200 200 200 200			
Protection of	legree		IP2X				
Weight			0.16kg				
External connection system	Communication module power s		7-point two-piece termin [Transmission circuit, mo M3×5.2 screw (tightenin Applicable solderless ter	odule power g torque ranç minal: 2 or le	ge: 0.59 to 0.8		
	I/O power suppl	y part	2-point direct-mount terr [I/O power supply] M3×5.2 screw (tightenin Applicable solderless ter	g torque ranç minal: 2 or le	ess		
	I/O part					DC plug is sold separately.	4
Module mou	unting screw		M4 screw with plain was (tightening torque range	: 0.78 to 1.08	3N•m)		
Amalia	DINLanii		Mountable with a DIN ra			<u></u>	-
Applicable I Applicable	DIN rail Communication		TH35-7.5Fe, TH35-7.5A • RAV1.25-3 (compliant			ວງ	4
wire size	part, module power supply part	Applicable solderless	[Applicable wire size: (				
	I/O power suppl part	У					
	I/O part		<ul> <li>         φ1.0 to 1.4 (A6CON-P21         [Applicable wire size: 0.3         φ1.0 to 1.4 (A6CON-P51         [Applicable wire size: 0.3         ]         [Applicable wire size: 0.3         ]</li></ul>	14 to 0.2mm ² 4), φ1.4 to 2	2 (26 to 24 AW .0 (A6CON-P5	G) stranded wire] 520)	
Wire	Material		Copper				
	Temperature ra	ting	75°C or more				
			User's manual				

For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

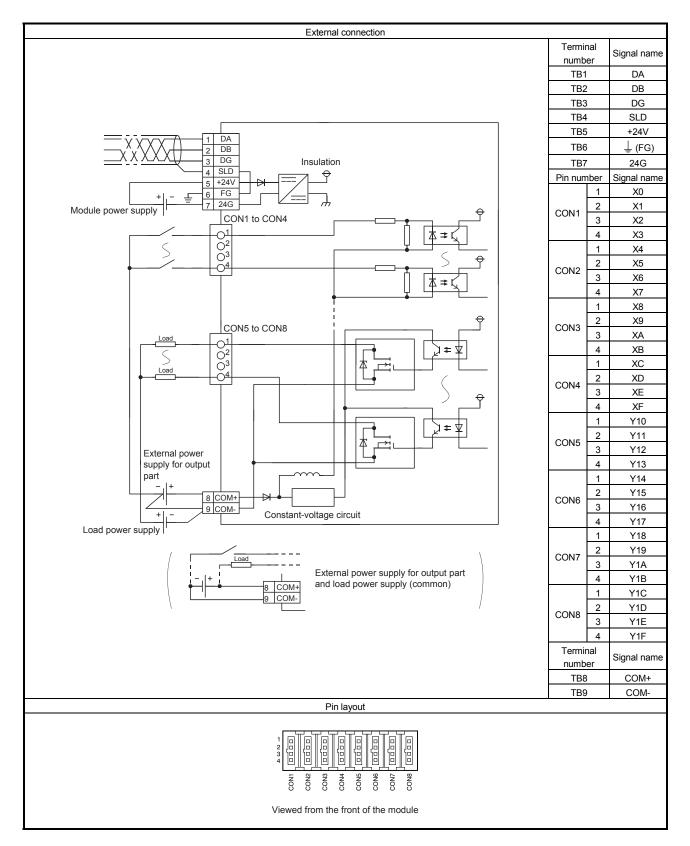
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### 6.4.6 AJ65SBTC1-32DT3 combined module

		Туре			DC input tr	ansistor output combined module	
ltem				AJ6	5SBTC1-32	DT3	Appearance
		Input				Output	_
Number of	input points		16 points	Number of o points	output	16 points	
Isolation me			Photocoupler	Isolation me		Photocoupler	
Rated input	t voltage		24VDC	Rated load	<u> </u>	24VDC	
Rated input	t current		Approx. 5mA	Operating load voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	-
	voltage range		19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	0.1A/point, 1.6A/common	-
points	er of simultaneou	is input	100%	Max. inrush		1.0A, 10ms or less	
ON voltage	e/ON current		15VDC or higher/ 3mA or higher	Leakage cu OFF		0.1mA or lower	
•	e/OFF current		3VDC or lower/ 0.5mA or lower	Max. voltage	•	0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A	_
Input resista	ance	1	Approx. 4.7kΩ	Output type		Sink type	4
Response t	time	OFF→ON	0.2ms or less (at 24VDC)	Protection f	unction	None	_
		ON→OFF	0.2ms or less (at 24VDC)	Response time		0.5ms or less	
				unc	ON→OFF	1.5ms or less (resistive load)	
				External power	Voltage	19.2 to 26.4VDC (ripple ratio: within 5%)	
				supply for output part	Current	17mA or lower (at 24VDC and all points ON), excluding external load current	
Input type			Positive common (sink type)	Surge supp	ressor	Zener diode	
Wiring meth	hod for common		32 points/common (1-wi	re, one-touch	connector	type)	
Number of	occupied stations		32-point assignment/sta		,		
Module pov	wer supply	Voltage Current	20.4 to 26.4VDC (ripple 50mA or lower (at 24VD		/		
		Current	Noise voltage 500Vp-p,		,		
Noise immu	unity		noise frequency 25 to 60				
Withstand v	voltage		500VAC for 1 minute be				
Insulation r	esistance		$10M\Omega$ or higher between resistance tester)				
Protection of	degree		IP2X				
Weight	1		0.16kg	al bla als			
External connection system	Communication module power si		7-point two-piece termin [Transmission circuit, mo M3×5.2 screw (tightenin Applicable solderless ter	odule power g torque ranç rminal: 2 or le	ge: 0.59 to 0	.88N•m)	
	I/O power supply	y part	2-point direct-mount terr [I/O power supply] M3×5.2 screw (tightenin Applicable solderless ter	g torque rang		.88N•m)	
	I/O part					n IDC plug is sold separately.	4
Module mo	ounting screw		1.08N•m)			ening torque range: 0.78 to	
Applicable	DIN roil		Mountable with a DIN ra			71 F \	4
Applicable Applicable	Communication	1	TH35-7.5Fe, TH35-7.5A • RAV1 25-3 (compliant	<u>\</u>		10)	4
wire size							
supply part         \$\phi1.0 to 1.4 (A6CON-P214), \$\phi1.4 to 2.0 (A6CON-P220)           I/O part         \$(Applicable wire size: 0.14 to 0.2mm² (26 to 24 AWG) stranded wire]           \$\phi1.0 to 1.4 (A6CON-P514), \$\phi1.4 to 2.0 (A6CON-P520)           \$(Applicable wire size: 0.3 to 0.5 mm² (22 to 20 AWG) stranded wire]						WG) stranded wire] P520)	
Wire Material Copper							1
	Temperature rat	ing	75°C or more				4
Accessory			User's manual			the table above I les applicable	

* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 6.5 FCN Connector Type Combined Module

## 6.5.1 AJ65SBTCF1-32DT combined module

		Туре	,	[	DC input tran	sistor output combined module		
Item					SBTCF1-32D		Appea	rance
		Input				Output		
Number of	input points		16 points	Number of opoints	output	16 points		
Isolation me	ethod		Photocoupler	Isolation me	ethod	Photocoupler	ĺ	
Rated input voltage 24VD		24VDC	Rated load voltage		12/24VDC	ĺ		
Rated input	Rated input current Approx. 5mA			Operating load voltage range		10.2 to 26.4VDC (ripple ratio: within 5%)		
Operating voltage range			19.2 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	0.1A/point (at all points ON: 0.1A/point), 1.6A/common		
Max. numb points	per of simultaneo	ous input	100%	Max. inrush	o current	1.0A, 10ms or less		
ON voltage	e/ON current		14VDC or higher/ 3.5mA or higher	Leakage cu OFF	irrent at	0.1mA or lower		
OFF voltag	je/OFF current		6VDC or lower/ 1.7mA or lower	Max. voltag ON	e drop at	0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A		
Input resista	ance		Approx. 4.7kΩ	Output type	;	Sink type	Í	
				Protection f		Overload protection, overvoltage protection, overheat protection		
		1	1.5ms or less	Response	OFF→ON	0.5ms or less	i i ≊∪/	
		OFF→ON	(at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	BRATE 2 1 model	
Response t	time		1.5ms or less			10.2 to 26.4VDC	<u>8.57108.04.No. 18.8415</u> 40.87108.04.No. 18.8415 日日日日日日日日日日 19.144-16414-1641644	000000
		ON→OFF	(at 24VDC)	External	Voltage	(ripple ratio: within 5%)		0 0
		<u> </u>	16 points/common	power		30mA or lower	STATION NO 20 10 8 4 2 20 10 8 4 10 10 10 10 10 10 10 10 10 10 10 10 10	00
Wiring meth	hod for common	1	(1-wire, FCN connector	supply for	Current	(at 24VDC and all points ON),		00
			type)	output part	ouncil	excluding external load current		
				Wiring meth	and for	16 points/common	XOX XOX XOX XOX XOX XOX XOX XOX	000
Input type			Positive/negative common shared type (sink/source shared type)	common		(1-wire, FCN connector type)	X69         A         B         C         D         E         F         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I	
Number of	occupied station			Surge suppressor Zener diode			6 7 X89 A B C C 9 6 7 X89 A B C C 5 6 17 Y 18191A1B1C1 AJ65581CF1-32DT 2 405581CF1-32DT 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	occupied station	Voltage	32-point assignment/statio 20.4 to 26.4VDC (ripple ra	<u>, , , , , , , , , , , , , , , , , , , </u>	/		887 C 1816	
Module pov	wer supply	Current	50mA or lower (at 24VDC		,	AJ655		
Noise immu	unity	Guilent	Noise voltage 500Vp-p, no noise frequency 25 to 60H	oise width 1µ	IS,	2 X0 1 2 3 4 5 6 7		
Withstand v	voltage		500VAC for 1 minute betw				R. X0 1 Y10111 P ↓	
Insulation re	Ŭ.					and ground (500VDC insulation		
Protection of	degree		IP2X					
Weight			0.15kg				(III ((O)) []	
External			7-point two-piece terminal	block			~ <u>[</u> ]	
connection	Communication	n part,	[Transmission circuit, mod	lule power su			1	ļ
system	module power :	supply part	M3×5.2 screw (tightening t			38N•m)	1	ļ
	I/O power supp	oly part,	Applicable solderless term 40-pin connector [I/O power	er supply, I/C	) signal]		ŀ	
	I/O part		(A6CON1, A6CON2, A6C				ł	
Module mounting screw M4 screw with plain wash (tightening torque range: ( Mountable with a DIN rail			).78 to 1.08N	l•m)				
Applicable DIN rail TH35-7.5Fe, TH35-7.5AI (d						5)	ł	ļ
Applicable	Communication						†	ļ
wire size	part, module power	solderless terminal ^{*1}	[Applicable wire size: 0.3 • V2-MS3, RAP2-3SL, TG					
	supply part		[Applicable wire size: 1.2	25 to 2.0mm ²	² (16 to 14 A	WG) stranded wire]		
	I/O power supp I/O part	ly part,	<ul> <li>0.08 to 0.3mm² (28 to 22</li> <li>0.08 to 0.2mm² (28 to 24</li> </ul>					
						AWG) single wire (A6CON3)	l	
Wire	Material		Copper		00			
	Temperature ra	ating	75°C or more				l	
Accessory		<b>X</b>	User's manual				l	
	Cessory User's manual							

*1 For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

*2 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

# 6 SPECIFICATIONS FOR COMBINED MODULES

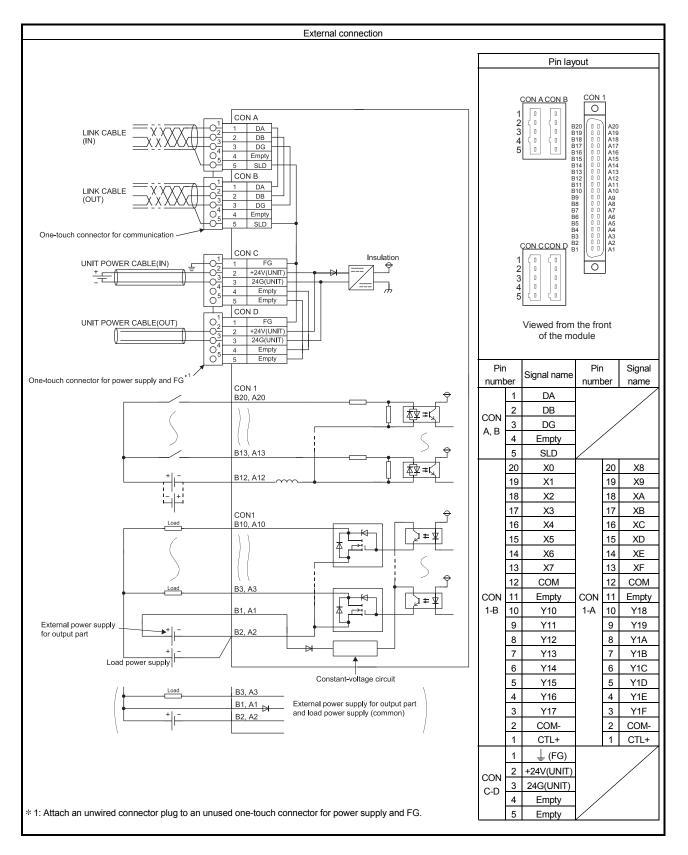
External connection					
Pin la	ayout	Termina	l number	Signal	name
		TE	31	D	A
		TE	32	D	В
		TE	33	D	G
		TE	34	SI	D
$4$ SLD $\phi$		TE	35	+2-	4 V
		TE	36	⊥ (	FG)
Module power supply Module $\frac{1}{124G}$		TE	37	24	łG
$\neg$		Pin	Signal	Pin	Signal
		number	name	number	name
/ B18 X2		B20	X0	A20	X8
B17 X3		B19	X1	A19	X9
B16 X4		B18	X2	A18	XA
B15 X5 B14 X6		B17	X3	A17	XB
B13 X7		B16	X4	A16	XC
A20 X8		B15	X5	A15	XD
		B14	X6	A14	XE
	0 в1	B13 B12	X7	A13	XF
	O B2 O B3	B12 B11	COM Empty	A12 A11	COM Empty
	0 B2 0 B3 0 B4 0 B5 0 B6 0 B7 0 B8	B10	Y10	A10	Y18
	0 B6 0 B7 0 B8	B9	Y11	A9	Y19
	0 89	B8	Y12	A8	Y1A
	O B11 O B12	B7	Y13	A7	Y1B
	O B13 O B14	B6	Y14	A6	Y1C
	O   B16	B5	Y15	A5	Y1D
B7 Y13	O B17 O B18	B4	Y16	A4	Y1E
B0 114 A20 0	O B19 O B20	B3	Y17	A3	Y1F
B5 Y15 B4 Y16	_	B2	COM-	A2	COM-
B3 Y17	$\sim$	B1	CTL+	A1	CTL+
A10 Y18 Viewed					
	e module				
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$					
External power supply					
for output part					
Load power supply					
Load A3 Y1F External power supply for output part					
+I - <u>AB1 CTL</u> + <del>D</del> and load power supply (common)					

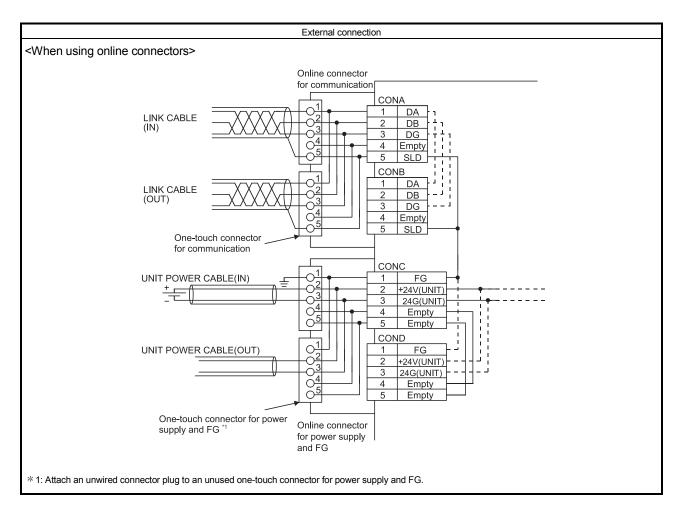
# 6.5.2 AJ65VBTCF1-32DT1 combined module

		Туре			•	r output combined module		
ltem				AJ65VB1	CF1-32DT1		Appearance	
		In	put			Output		
Number of i	input po	ints	16 points	Number of o	utput points	16 points		
solation me	ethod		Photocoupler	Isolation me	thod	Photocoupler		
Rated input	t voltage		24VDC	Rated load w	voltage	12/24VDC		
Rated input	t current		Approx. 5mA	Operating lo	ad voltage	10.2 to 26.4VDC (ripple ratio: within 5%)		
Operating voltage range		ange	19.2 to 26.4VDC (ripple ratio: within 5%)	range Max. load current		0.1A/point, 1.6A/common	-	
Max. number of simultaneous input points		nultaneous	100% or 60% (Refer to Section 1.3.)	Max. inrush current		0.7A, 10ms or less	-	
ON voltage		ront	15VDC or higher/3mA or higher		mant at OFF	0.1mA or lower	-	
			3VDC or lower/0.5mA or lower	Leakage cur	Ient at OFF	0.1mA or lower		
OFF voltage		unent		Max. voltage	e drop at ON	0.1VDC or lower (TYP.) 0.1A,		
nput resista Response ti			Approx. 4.7kΩ		-	0.2VDC or lower (MAX.) 0.1A	-	
tesponse u		OFF→ON	0.2ms or less (at 24VDC)	Output type Protection fu	inction	Sink type Overload protection, overvoltage	-	
		ON→OFF	0.2ms or less (at 24VDC)		OFF→ON	protection, overheat protection 1ms or less	-	
Wiring meth	nod for c	common	16 points/common (1-wire, FCN connector type)	Response time	ON→OFF	1ms or less (rated load, resistive load)		
			L	External	Voltage	10.2 to 26.4VDC (ripple ratio: within 5%)	MELSEG AJ65VBTCF1-32DT1	
				power supply for output part	Current	10mA or lower (at 24VDC and all points ON),		
			Positive/negative common	Wiring metho	od for	excluding external load current 16 points/common		
Input type			shared type (sink/source shared type)	common Surge suppr	essor	(1-wire, FCN connector type) Zener diode		
Number of	occupie	d stations	32-point assignment/station (32 p	oints used)				
Module pov	ver	Voltage	20.4 to 26.4VDC (ripple ratio: with	nin 5%)				
supply		Current	50mA or lower (at 24VDC and all	points ON)				
Noise immu	unity		Noise voltage 500Vp-p, noise wid noise frequency 25 to 60Hz (DC 1		nulator condi			
Withstand v	/oltage		500VAC for 1 minute between all	DC external t	terminals and			
Insulation re	esistanc	e	10M $\Omega$ or higher between all DC e tester)	etween all DC external terminals and ground (500VDC insulation resistance				
Protection of	degree		IP1XB					
Weight			0.16kg					
External connection	Comm	unication part	One-touch connector for commur 5-pin IDC plug is sold separately.	-	smission circ	uit]	CC-Link	
system	Comm	unication part	<optional> Online connector for communicat</optional>	tion: A6CON-L	_J5P			
	Power	supply part	One-touch connector for power s 5-pin IDC plug is sold separately: <optional></optional>	A6CON-PW8	5P, A6CON-F			
	1/0		Online connector for power suppl	/	VJ5P		4	
Applicable	I/O part	l	Connector for I/O (40 pins, M3 so	/	0715)		4	
Applicable I Applicable	Connec	rtor for	TH35-7.5Fe, TH35-7.5AI (complia Applicable cable:		0710)			
vire size		inication	FANC-110SBH, FA-CBL200PSB	H, CS-110			_	
		ctor for power and FG	0.66 to 0.98mm ² (18 AWG) [\phi2.2 to 3.0mm (A6CON-PW5P), Wire diameter: 0.16mm or more					
Insulating coating material: PVC (heat-resistant)           • 0.08 to 0.3mm² (28 to 22 AWG) stranded wire (A6CON1 and A6CON4)*1           • 0.08 to 0.2mm² (28 to 24 AWG) stranded wire (A6CON2)           • 0.08mm² (28 AWG) stranded wire, \u00f60.25mm (30 AWG) single wire (A6CON3)								
Applicable of	connecto	or for I/O	A6CON1 (soldering type), A6COI A6CON4 (soldering type)				1	
							1	

*1 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

## 6 SPECIFICATIONS FOR COMBINED MODULES





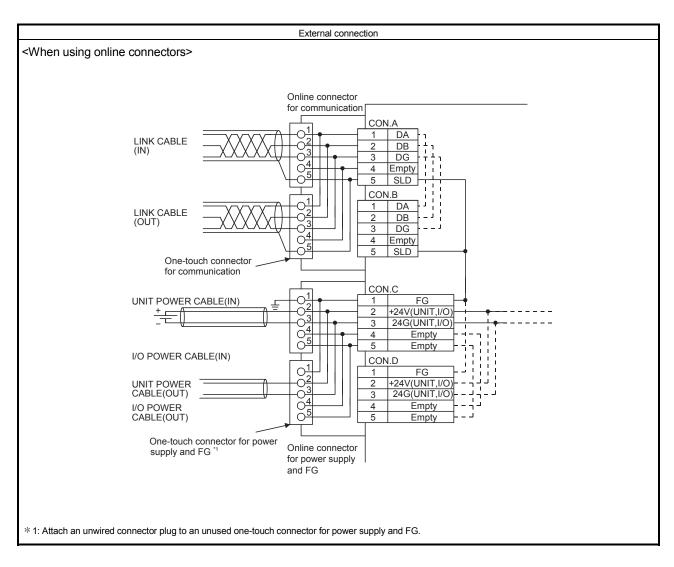
### 6.5.3 AJ65VBTCFJ1-32DT1 combined module

		Туре		DC in	put transisto	r output combined module	i
ltem	_			AJ65VBT	CFJ1-32DT1		Appearance
		Inp	out			Output	
Number of i	input points	s	16 points	Number of o	output points	16 points	
Isolation me	ethod		Photocoupler	Isolation met	thod	Photocoupler	
Rated input	voltage		24VDC	Rated load v	/oltage	24VDC	1
Rated input	current		Approx. 5mA			Same as that for the module power supply	
Dperating voltage range Same as that for the module power supply		Max. load cu	urrent	0.1A/point, 1.6A/common			
Max. number of simultaneous input points		taneous	100% or 40% (Refer to Section 1.3.)	Max. inrush	current	0.7A, 10ms or less	1
ON voltage/		nt	15VDC or higher/3mA or higher	Leakage cur	rent at OFF	0.1mA or lower	1
OFF voltage			3VDC or lower/0.5mA or lower	Lounago our	Torre de OFT	0.1VDC or lower (TYP.) 0.1A,	+
Input resista		CIIL	Approx. 4.7kΩ	Max. voltage	e drop at ON	0.2VDC or lower (MAX.) 0.1A	
Response ti	me		Approx. 4.7 Ksz	Output type		Sink type	+
	OF		0.2ms or less (at 24VDC)	Protection fu	Inction	Overload protection, overvoltage	1
	U)	N→OFF	0.2ms or less (at 24VDC)			protection, overheat protection	+
Input type			Positive common (sink type)	Response time	OFF→ON ON→OFF	1ms or less	ا
				External pov		(rated load, resistive load) Same as that for the module power	MELSEC AJ65VBTCFJ1-32DT1
				for output pa		supply	
				Surge suppr			
Wiring meth	nod for com	nmon	32 points/common (1-wire, FCN c	connector type	e)		O PW
Number of a	occupied st	stations	32-point assignment/station (32 p	oints used)			
Module pow	ver Vo	oltage	20.4 to 28.8VDC (ripple ratio: with	nin 5%)			
supply	Cu	urrent	50mA or lower (at 24VDC and all	points ON), e	excluding exte	ernal load current	
Noise immu	unity		Noise voltage 500Vp-p, noise wid noise frequency 25 to 60Hz (DC t	• •	nulator condi	tion)	CAUTION 242
Withstand v	voltage		500VAC for 1 minute between all			•	Do not supply the external power supply to CON.E
			$10M\Omega$ or higher between all DC e		to CON.E		
Insulation re	esistance		tester)	PW/AUX CON.C CON.D			
Protection d	legree		IP1XB				
Weight	<u> </u>		0.16kg				
	Communio	cation part	One-touch connector for commun 5-pin IDC plug is sold separately: <optional></optional>	A6CON-L5P		CON.E CCLink	
External			Online connector for communicati				
connection system	Power sup	pply part	One-touch connector for power su 5-pin IDC plug is sold separately: <optional></optional>	A6CON-PW	5P, A6CON-I	11.27	
	I/O part		Online connector for power supply		V JOP		ł
Applicable [			Connector for I/O (40 pins, M3 sci TH35-7.5Fe, TH35-7.5AI (complia		0715)		+
	Connector		Applicable cable:		07107		1
	communic Connector		FANC-110SBH, FA-CBL200PSBI 0.66 to 0.98mm ² (18 AWG) [\phi2.2 to 3.0mm (A6CON-PW5P),	†			
Applicable wire size	supply and		Wire diameter: 0.16mm or more Insulating coating material: PVC (		,		
<ul> <li>*0.08 to 0.3mm² (28 to 22 AWG) stranded wire (A6CON1 and A6CON4)^{*1}</li> <li>*0.08 to 0.2mm² (28 to 24 AWG) stranded wire (A6CON2)</li> <li>*0.08mm² (28 AWG) stranded wire, \phi0.25mm (30 AWG) single wire (A6CON3)</li> </ul>							
Applicable of	connector f	for I/O	A6CON1 (soldering type), A6CON A6CON4 (soldering type)				1
Accessory			User's manual				

*1 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

## 6 SPECIFICATIONS FOR COMBINED MODULES

External connection Pin layout CON A DA LINK CABLE 0 DB (IN) DG B1 B1 B1 С Empty 5 SLD CON B DA 1 LINK CABLE DB (OUT) 3 DG  $\cap$ 4 Empty 5 SLD CON One-touch connector for 0 communication CON C Insulation  $O^1$ UNIT POWER CABLE(IN) FG 1 9  $\cap^2$ 2 +24V(UNIT,I/O) +₽ Viewed from the front of the module  $\cap$ 3 24G(UNIT,I/O)  $\tilde{O}^4$ 4 Empty Õ 5 Empty Pin Pin Signal CON D Signal name  $O^1$ number name UNIT POWER CABLE(OUT) number 1 FG  $O^2$ +24V(UNIT,I/O 2 1 DA  $O^3$ 3 24G(UNIT,I/O)  $\bigcirc
^{4}
^{5}$ 2 DB 4 Empty CON 3 DG 5 Empty А, В One-touch connector for Empty 4 power supply and FG *1 CON E^{*2} 5 SLD B20, A20 20 X0 20 X8 19 X1 19 X9 Հ≭Հ 18 18 X2 XA 17 17 XB Х3 16 16 XC X4 B13, A13 15 X5 15 XD 本 ≠ COM-B12, A12 14 X6 14 XE 13 13 X7 XF 12 COM-12 COMę B10, A10 11 11 Empty CON Empty CON Load R  $\mathbf{T}$ E-B 10 E-A Y18 ŧ Y10 10 9 9 Y19 Y11 8 Y12 8 Y1A 7 Y13 7 Y1B Ð 6 6 load B3. A3 Y14 Y1C Кı  $\mathbf{A}$ 5 Y15 5 Y1D \$ 4 4 Y16 Y1E 3 Y17 3 Y1F 2 2 Empty Empty COM+ B1, A1 ₽ 1 COM+ 1 COM+ 1 +24V Constant-voltage circuit 2 (UNIT, I/O) CON 24G C-D 3 (UNIT, I/O) 4 Empty * 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG. 5 Empty * 2: Do not supply power to the CON E.



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## 6.6 Waterproof Type Combined Module

# 6.6.1 AJ65FBTA42-16DT combined module

	Туре		r output combined module			
Item			AJ65FB	TA42-16DT		Appearance
	In	put			Output	
Number of input poin	nts	8 points	Number of o	utput points	8 points	
Isolation method		Photocoupler	Isolation me	thod	Photocoupler	
Rated input voltage	Rated input voltage 24VDC		Rated load v	voltage	24VDC	
Rated input current		Approx. 7mA	Operating lo range	ad voltage	20.4 to 26.4VDC (ripple ratio: within 5%)	
Operating voltage ra	ange	20.4 to 26.4VDC (ripple ratio: within 5%)	Max. load cu	urrent	0.5A/point, 2.4A/common	
Max. number of siminput points	ultaneous	100%	Max. inrush	current	1.0A, 10ms or less	
ON voltage/ON curr	ent	14VDC or higher/ 3.5mA or higher	Leakage cur	rent at OFF	0.25mA or lower	
OFF voltage/OFF cu	urrent	6VDC or lower/1.7mA or lower	Max. voltage	e drop at ON	0.15VDC or lower (TYP.) 0.5A, 0.25VDC or lower (MAX.) 0.5A	MEL SEC AJ65FBTA42-160T
Input resistance	1	Approx. 3.3kΩ	Output type		Sink type	
Response time	OFF→ON ON→OFF	Pro		inction	Overload protection, overheat protection	STATEDOT TOL: X104 00 Y78 X104 00 Y78 X204 00 Y78 X204 00 Y78 X204 00 Y78 X204 00 Y78 X204 00 Y78
		· · · ·	Response	OFF→ON	0.5ms or less	
			time	ON→OFF	1.5ms or less (resistive load)	
			External	Voltage	20.4 to 26.4VDC	
			power	vollage	(ripple ratio: within 5%)	
			supply for		10mA or lower	
			output part	Current	(at 24VDC and all points ON), excluding external load current	
Input type		Positive common (sink type)	Surge suppr	essor	Zener diode	
Supply current for co device	onnected	1.0A or lower/common				
Wiring method for co	ommon	16 points/common (2- to 4-wire, v	vaterproof cor	nnector type)		
Number of occupied	stations	32-point assignment/station (16 p	oints used)			
Module power	Voltage	20.4 to 26.4VDC (ripple ratio: with	nin 5%)			
supply	Current	50mA or lower (at 24VDC and all	points ON)			
Noise immunity		Noise voltage 500Vp-p, noise wic noise frequency 25 to 60Hz (DC	-	nulator condi	tion)	
Withstand voltage 500VAC for 1 minute between				•	]	
Insulation resistance $10M\Omega$ or higher between all DC tester)		external termin	nals and grou	und (500VDC insulation resistance		
Protection degree IP67					1	
Weight 0.40kg						1
Accessory		User's manual				1
Optional item		Waterproof cap: A6CAP-WP2 (20	) pieces)			1
<u> </u>	evices	Refer to Section 1.6.1.	. ,			1

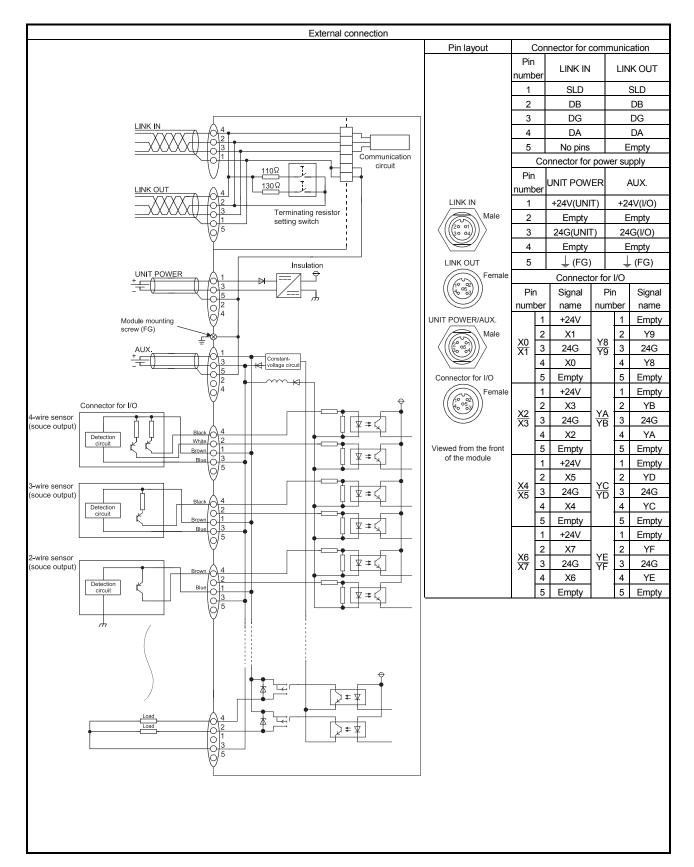
# 6 SPECIFICATIONS FOR COMBINED MODULES

External connection				
	Pin layout	Co	nnector for co	mmunication
		Pin number		LINK OUT
		1	SLD	SLD
		2	DB	DB
		3	DG	DG
		4 5	DA No pins	DA Empty
			onnector for p	
		Pin		
		number		
3 Terminating resistor	(20 o1) Male	1	+24V(UNIT)	. ,
	30 04	2	Empty	Empty
		3	24G(UNIT) Empty	24G(I/O) Empty
Insulation		5	⊥inpty ⊥ (FG)	⊥npty ⊥ (FG)
	Female	, J	Connector	
		Pin	Signal	Pin Signal
$O_{4}^{2}$	UNIT POWER/AUX.	number	-	number name
	Male	1	-	1 +24V
AUX.		X0 2	X1 ,	2 Y9
		X0 X1 4		Y8 Y9 3 Empty 4 Y8
$\bigcirc 5$ $\bigcirc 2$ $\bigcirc 4$ Constant-voltage circuit	Connector for I/O	5		5 Empty
	Female	1		1 +24V
Connector for I/O 4-wire sensor		2	X3	2 YB
(sink output)		$\frac{X2}{X3}$ 3		YA YB 3 Empty
$\begin{array}{c} circuit \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \\ \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$		4		4 YA
	Viewed from the front of the module	5		5 Empty 1 +24V
3-wire sensor	of the module	2		2 YD
(sink output)		X4 X5 3	24G	TD 3 Empty
$\begin{array}{ c c } \hline crcuit \\ \hline crcuit \\ \hline \\ $		4		4 YC
		5		5 Empty
∀        [] [] [] [] [] [] [] [] [] [] [] [] []		1		1 +24V
2-wire sensor (sink output)		X6 X7 3	X7	2YF3Empty
		X7 3		7F 3 Empty 4 YE
		5		5 Empty
				, , , , , , , , , , , , , , , , ,

## 6.6.2 AJ65FBTA42-16DTE combined module

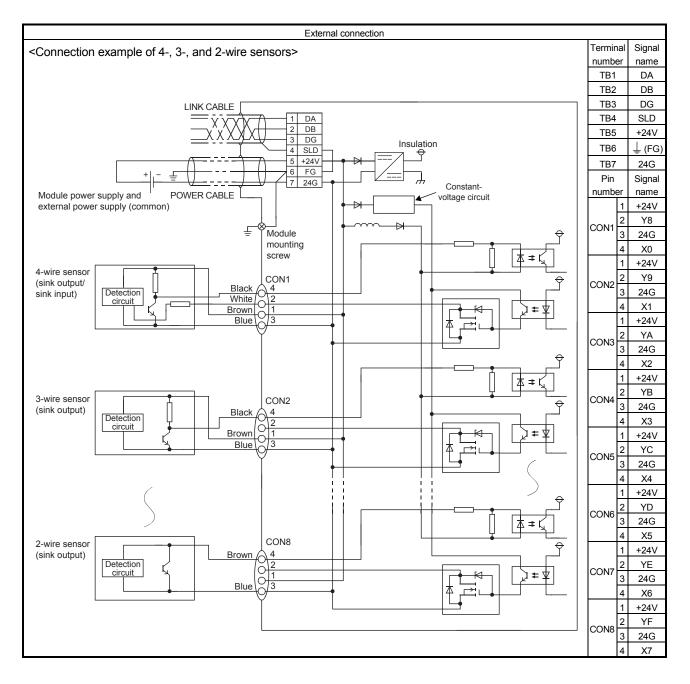
	Туре		DC i	nput transisto	r output combined module	
Item			AJ65FE	BTA42-16DTE		Appearance
	In	put			Output	
Number of input p	oints	8 points	Number of	output points	8 points	1
Isolation method		Photocoupler	Isolation me	· · ·	Photocoupler	1
		24VDC	Rated load	voltage	24VDC	-
				oad voltage	20.4 to 26.4VDC	-
Rated input currer	ıt	Approx. 7mA	range	ouu ronugo	(ripple ratio: within 5%)	
Operating voltage	range	20.4 to 26.4VDC (ripple ratio: within 5%)	Max. load c	urrent	1.0A/point, 4A/common	
Max. number of sin input points	multaneous	100%	Max. inrush	current	2.0A, 10ms or less	
ON voltage/ON cu	rrent	14VDC or higher/ 3.5mA or higher	Leakage cu	irrent at OFF	0.3mA or lower	
OFF voltage/OFF	current	6VDC or lower/1.7mA or lower	Mox volto-	a drap at ON	0.15VDC or lower (TYP.) 1.0A,	
Input resistance		Approx. 3.3kΩ	iviax. voltag	e drop at ON	0.2VDC or lower (MAX.) 1.0A	
Deeree	OFF→ON	1.5ms or less (at 24VDC)	Response	OFF→ON	0.5ms or less	MFL SEC AJ65ERTA42-16DTE
Response time	ON→OFF	1.5ms or less (at 24VDC)	time	ON→OFF	1.5ms or less (resistive load)	MEL SEC AJ66FBTA42-16DTE
					Source type	STATION NO. POVORE C. R.N. POVORE C. R.N. POVORE C. R.N.
			Protection f	unction	Overload protection, overheat protection (The LED turns on when any protection is activated.)	
			External Voltage		20.4 to 26.4VDC (ripple ratio: within 5%)	
			supply for output part	Current	15mA or lower (at 24VDC and all points ON), excluding external load current	
Input type		Negative common (source type)	Surge supp	ressor	Zener diode	
Supply current for device	connected	1.0A or lower/common	Ŭ 11			
		16 points/common	•			
Wiring method for	common	(input: 2- to 4-wire waterproof cor	nector type,	output: 2-wire	e waterproof connector type)	
Number of occupie	ed stations	32-point assignment/station (16 p	oints used)		· · ·	
Module power	Voltage	20.4 to 26.4VDC (ripple ratio: with	nin 5%)			T FWF FWF
supply	Current	45mA or lower (at 24VDC and all	points ON)			
		Noise voltage 500Vp-p, noise wid				
Noise immunity		noise frequency 25 to 60Hz (DC t	ype noise si	mulator condi	tion)	
Withstand voltage 500VAC for 1 minute between a			DC external	terminals and	d ground	
Insulation resistance		°	external term	inals and grou	und (500VDC insulation resistance	
tester)						
Protection degree IP67						4
Weight 0.40kg						4
Accessory		User's manual				4
Optional item		Waterproof cap: A6CAP-WP2 (20	) pieces)			4
Other connecting	devices	Refer to Section 1.6.1.				

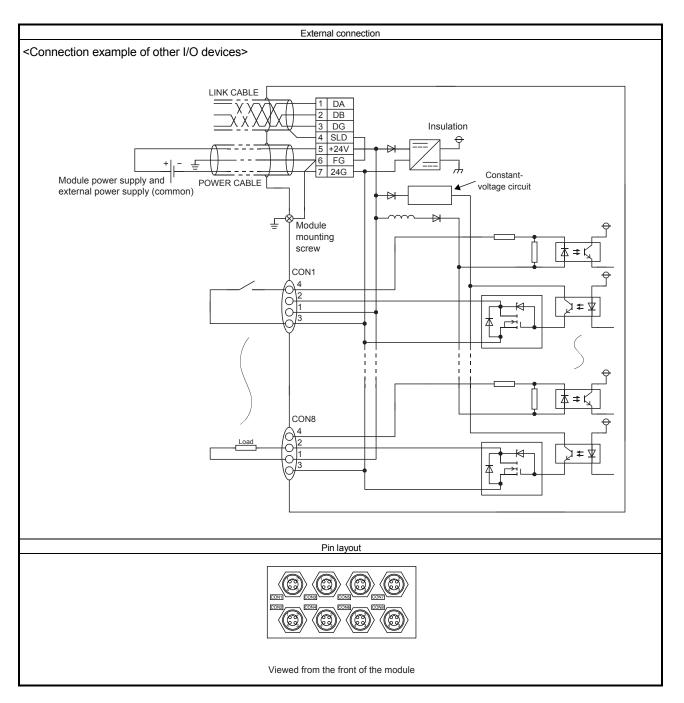
## 6 SPECIFICATIONS FOR COMBINED MODULES



## 6.6.3 AJ65SBTW4-16DT combined module

Туре			DC input transistor output combined module				
Item			AJ65SBTW4-16DT			Appearance	
Input						Output	
Number of input points			8 points	Number of o	utput points	8 points	
			Photocoupler	Isolation me	thod	Photocoupler	
Rated input voltage			24VDC	Rated load voltage		24VDC	
			Approx EmA	Operating load voltage		20.4 to 26.4VDC	
Rated input	current		Approx. 5mA	range (ri		(ripple ratio: within 5%)	
Operating v	oltage range		20.4 to 26.4VDC (ripple ratio: within 5%)	Max. load current		0.5A/point, 2.4A/common	
Max. numbe points	er of simultaned	ous input	100%	Max. inrush current		1.0A, 10ms or less	
ON voltage/	ON current		14VDC or higher/ 3.5mA or higher	Leakage cur	rent at OFF	0.25mA or lower	
OFF voltage	e/OFF current		6VDC or lower/ 1mA or lower	Max. voltage	e drop at ON	0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A	
Input resista	ance		Approx. 4.7kΩ	Output type		Sink type	
Response ti	me		1.5ms or less (at 24VDC)	Protection fu	inction	Overload protection, overvoltage protection, overheat protection	
		ON→OFF	1.5ms or less (at 24VDC)		1	r, ,	
				Response	OFF→ON	0.5ms or less	
				time	ON→OFF	1.5ms or less (resistive load)	
				External	Voltage	20.4 to 26.4VDC	83
				power	voltage	(ripple ratio: within 5%)	
				supply for		13mA or lower	
				output part	Current	(at 24VDC and all points ON),	
						excluding external load current	
Input type			Positive common (sink type) Surge suppressor Zener diode				
Wiring method for common		1	16 points/common (4-wire, waterproof connector type)				
			Same as that for the module power supply				
Number of occupied stations			32-point assignment/station	(16 points use	ed)		
Module power supply		20.4 to 26.4VDC (ripple ratio	: within 5%)			_  (8) (8)	
Current		50mA or lower (at 24VDC a	nd all points O	N)			
Noise immunity		Noise voltage 500Vp-p, nois	e width 1µs,				
Noise immunity		noise frequency 25 to 60Hz (DC type noise simulator condition)					
Withstand voltage		500VAC for 1 minute between all DC external terminals and ground					
Inculation re	nintanan		$10 \text{M}\Omega$ or higher between all DC external terminals and ground (500VDC insulation				
Insulation re	esistance		resistance tester)				
Protection d	egree		IP67				R CABI
Weight			0.70kg				Powe
			7-point two-piece terminal block [Transmission circuit, module power supply, FG]				
			M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m),				
Extornel	noction curter	•	Waterproof connector	-			
	nnection system	1	[compliant with IEC 60947-5-2, M12, male, 4 pins, IP67] (connector for I/O part)				
			<pre><optional></optional></pre>				
		Dustproof cap: A6CAP-DC1 (20 pieces), waterproof cap: A6CAP-WP1 (20 pieces)				4	
			Applicable cable size: $\phi 5.0$ t				
Transmission circuit,			<ul> <li>RAV1.25-3 (compliant with</li> </ul>	,			
Applicable			[Applicable wire size: 0.3 to	-			
wire size	module power supply part		• V2-MS3, RAP2-3SL, TGV2-3N				
			[Applicable wire size: 1.25 to 2.0mm ² (16 to 14 AWG) stranded wire]				4
	Connector for				-		4
	Module top-cover		0.54 to 0.64N•m				
	mounting screw (M3)						4
Tightening	Module front-cover		0.54 to 0.64N•m				
torque	mounting scre						
range	Module mount (M4 with plain finished round	washer	1.27 to 1.47N•m				
Nut for pipe			0.99 to 1.48N•m				
	Nut for pipe	Through pipe specifications		Applicable cable size: $\phi$ 5.0 to 8.0 mm			
Through pip		6	Applicable cable size: ∳5.0 t	o 8.0 mm			





# 7 HANDLING OF COMPACT REMOTE I/O MODULES

#### 7.1 Handling and Installation Precautions

This section lists the precautions for handling and installing the compact remote I/O module for the CC-Link system.

<ul> <li>Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.</li> <li>Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.</li> <li>Do not directly touch any conductive part of the module. Doing so can cause malfunction or failure of the module.</li> <li>Do not drop or apply any strong shock to the module. Doing so may damage the module.</li> <li>Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.</li> <li>Tighten the terminal screw within the specified torque range. Undertightening can cause fire or malfunction. Overtightening can damage the screw, resulting in short circuit or malfunction.</li> <li>When disposing of this product, treat it as industrial waste.</li> <li>Use the module in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.</li> <li>Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction. Overtightening can cause drop of the screw, short circuit or malfunction.</li> </ul>	WARNING	<ul> <li>Do not touch any terminal or connector while power is on.</li> <li>Doing so will cause electric shock.</li> </ul>
<ul> <li>Such foreign matter can cause a fire, failure, or malfunction.</li> <li>Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.</li> <li>Do not directly touch any conductive part of the module. Doing so can cause malfunction or failure of the module.</li> <li>Do not drop or apply any strong shock to the module. Doing so may damage the module.</li> <li>Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.</li> <li>Tighten the terminal screw within the specified torque range. Undertightening can cause fire or malfunction. Overtightening can damage the screw, resulting in short circuit or malfunction.</li> <li>When disposing of this product, treat it as industrial waste.</li> <li>Use the module in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.</li> <li>Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction. Overtightening can cause drop of the screw, short circuit or malfunction.</li> </ul>		
		<ul> <li>Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.</li> <li>Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.</li> <li>Do not directly touch any conductive part of the module. Doing so can cause malfunction or failure of the module.</li> <li>Do not drop or apply any strong shock to the module. Doing so may damage the module.</li> <li>Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.</li> <li>Tighten the terminal screw within the specified torque range. Undertightening can cause fire or malfunction. Overtightening can damage the screw, resulting in short circuit or malfunction.</li> <li>When disposing of this product, treat it as industrial waste.</li> <li>Use the module in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.</li> <li>Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction.</li> </ul>
or removing a module to/from a control panel.		
Failure to do so may cause the module to fail or malfunction.		Failure to do so may cause the module to fail or malfunction.

(1) Tighten the module mounting screw or terminal block screw within the following torque range. Overtightening can damage the module case.

<ul> <li>(a) Terminal block type, one-touch connector type, or FCN conne</li> </ul>	ector type
-------------------------------------------------------------------------------------	------------

Screw	Tightening torque range
Module mounting screw (M4 screw with plain washer finished round)	0.78 to 1.08N⋅m
Terminal block screw (M3)	0.59 to 0.88N⋅m
Terminal block installation screw (M3.5)	0.68 to 0.98N⋅m

#### (b) Waterproof type (AJ65SBTW□-16□)

Screw	Tightening torque range
Module top cover mounting screw (M3)	0.54 to 0.64N⋅m
Module front cover mounting screw (M3)	0.54 to 0.64N⋅m
Nut for pipe	0.99 to 1.48N⋅m
Module mounting screw (M4 screw with plain washer finished round)	1.27 to 1.47N⋅m
Terminal block screw (M3)	0.59 to 0.88N⋅m
Terminal block installation screw (M3.5)	0.68 to 0.98N⋅m

(c) Low profile waterproof type (AJ65FBTA□-16□)

Screw	Tightening torque range
Communication adapter mounting screw (M4)	0.42 to 0.58N⋅m
Module mounting screw (M4)	0.78 to 1.18N⋅m
Waterproof cap (A6CAP-WP2)	0.29 to 0.34N·m

#### (d) Spring clamp terminal block type or sensor connector (e-CON) type

Screw	Tightening torque range
Mounting bracket (M4)	0.82 to 1.11N ⋅m

#### POINT

• For a terminal and a screw, avoid adhering to oil.

Doing so may damage the screw.

- When using two solderless terminals, place them with their backs faced.
- If not, a screw cannot be full inserted, resulting in damage to the screw.
- Tighten the terminal screw with an applicable driver.

Failure to do so may damage the screw.

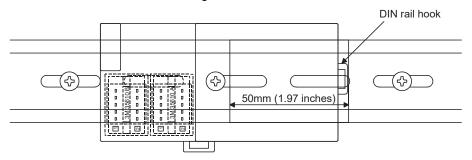
(2) A scratch-resistant film is attached on the surface of the module during transportation.

Remove the film before operation.

- (3) Observe the following points when installing a module to a control panel using a DIN rail.
  - (a) Applicable DIN rail (compliant with IEC 60715) TH35-7.5Fe TH35-7.5Al
  - (b) Mounting pitch When installing a DIN rail to a control panel, keep mounting pitches 200mm (7.87 inches) or less.
  - (c) Area where screws cannot used for Din rail installation When installing the AJ65VBTCE□-16□ and AJ65VBTCE□-32□ to the DIN rail horizontally as shown below, tighten a screw so that a certain distance will be ensured between the screw and the DIN rail hook on the right side of module.

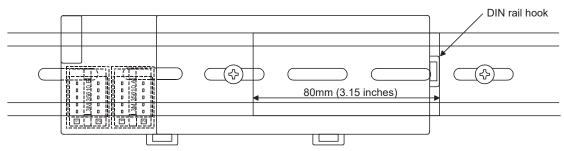
Failure to do so may cause the screw to interfere with the DIN rail hook.

- 1) For AJ65VBTCE□-16□
  - Tighten a screw keeping a distance of 50mm (1.97 inches) or more from the DIN rail hook on the right side of module.



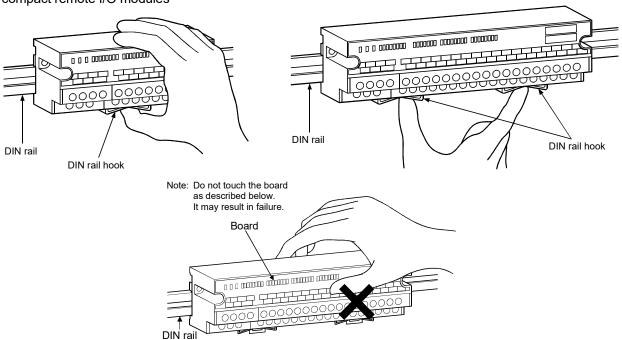
2) For AJ65VBTCE -32

Tighten a screw keeping a distance of 80mm (3.15 inches) or more from the DIN rail hook on the right side of module.

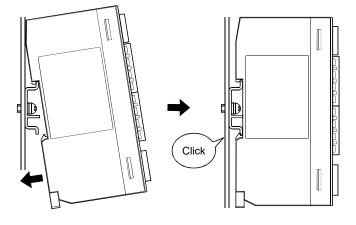


(4) When mounting the compact remote I/O module to a DIN rail, push in the DIN rail hook located at the bottom of the module until it clicks.

For AJ65SBTB1-8  $\Box$ , AJ65SBTB1-16  $\Box$ , AJ65SBTC4-16  $\Box$ , AJ65SBTC1-32  $\Box$ , AJ65SBTCF1-32  $\Box$ , AJ65SBTB2-8  $\Box$ , AJ65SBTB2N-8  $\Box$ , AJ65SBTB32-8  $\Box$ , AJ65VBTS  $\Box$  -16 $\Box$ , AJ65VBTCE  $\Box$  -8  $\Box$ , AJ65VBTCE  $\Box$  -16  $\Box$ compact remote I/O modules For AJ65SBTB1B-16 □, AJ65SBTB1-32 □, AJ65SBTB2-16 □, AJ65SBTB2N-16□, AJ65SBTB3-16□, AJ65SBTB32-16□, AJ65VBTS□-32□, AJ65VBTCE□-32□ compact remote I/O modules

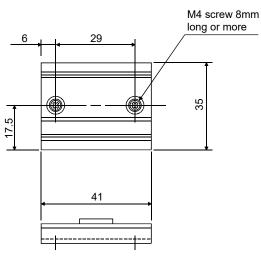


(5) When mounting the compact remote I/O module on the DIN rail, put its upper hook onto the fixing bracket and push the module until it clicks.

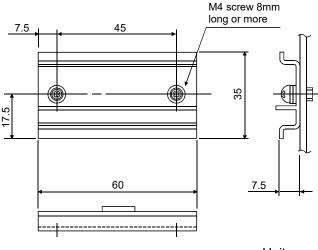


[Mounting dimensions]

(a) A6PLT-J65V1 (For module width 41mm only)



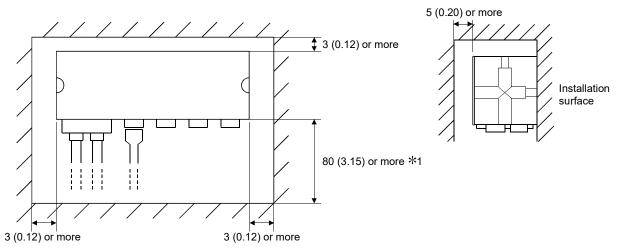
(b) A6PLT-J65V2 (For module width 60mm only)



Unit : mm

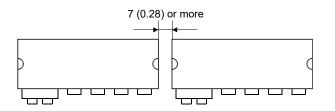
- (6) Do not install the compact remote I/O module to the place where:
  - (a) an ambient temperature is outside the range of 0 to 55°C (0 to 45°C for the waterproof remote I/O module),
  - (b) ambient humidity is outside the range of 10 to 99%RH,
  - (c) condensation occurs due to a sudden temperature change,
  - (d) corrosive gas or combustible gas is present,
  - (e) conductive powder (such as dust and iron powder), oil mist, salinity, or organic solvent is filled,
  - (f) the module is exposed to direct sunlight,
  - (g) a strong electric field or strong magnetic field is generated, and
  - (h) the module is subject to vibration or shock.

- (7) When installing the compact remote I/O module into a panel, etc., provide 60mm (2.36 inches) or more of space between the top and bottom of the module and other structures or parts so that good ventilation and ease of operation when exchanging modules can be secured.
- (8) Install the compact remote I/O module on a level surface. If the surface is uneven, unnecessary force is applied to the printed circuit board, causing malfunction.
- (9) When installing the waterproof-type remote I/O module, provide the space shown in the figure below between the top and bottom of the module and other structures or parts so that good ventilation can be secured and that interference and application of load on the waterproof connector can be prevented. When connecting two modules in parallel, secure 5mm (0.2 inches) of space between them.



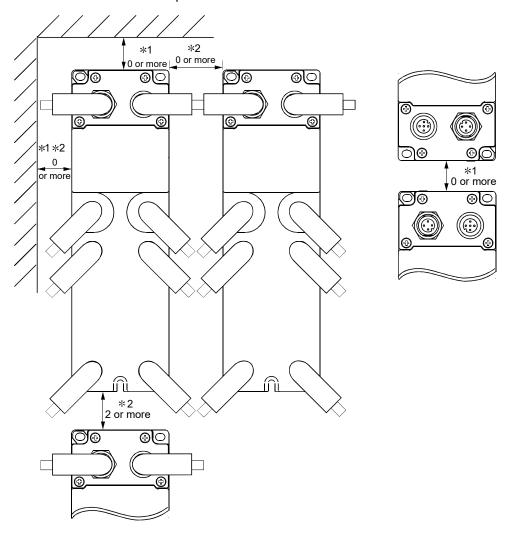
*1 Provide a space so that no load is applied to the cable (the space differs depending on the waterproof connector used).

#### <When two modules are installed in parallel>



Unit : mm (inch)

(10) If a waterproof cap is being installed on the low profile waterproof type remote I/O module, in order to improve ventilation and also to prevent interference, as well as to prevent a load from bearing on the waterproof connector, all the distances shown in the following figures between the module's side surfaces and the structure or parts.



- *1 If you disconnect and connect the communications adapter, set the operating distance using a screwdriver, etc.
- *2 If you are using a right angle type waterproof plug or Y branch connector, set a distance where no load will be brought to bear on the cable.

(11) When installing the sensor connector (e-CON) type modules in parallel, take intervals between the modules as shown below.
(The interval is the sensor for the sensor for Different sens

(The interval is required for the size of a DIN	N rail hook or mounting brackets.)
-------------------------------------------------	------------------------------------

Installation method of the module	Installation orientation of the module	Interval ^{*3}
	Basic, Upside down (vertical installation)	5mm
Using a DIN rail ^{*1}	Basic, Upside down (horizontal installation)	5mm
	Basic, Upside down (vertical installation)	5mm
Using screws ^{*2}	Basic, Upside down (horizontal installation)	15mm

* 1 This is the case when a DIN rail is installed horizontally. Do not apply this interval to the AJ65VBTCE□-8□.

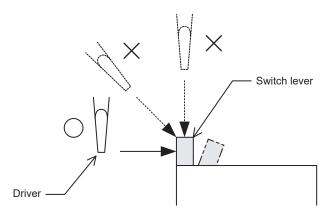
- * 2 This is the case when mounting brackets are attached on the top and bottom sides of the module. If the brackets are attached on the right and left sides of the module, apply the intervals reversely. (The interval for the vertical installation is 15mm and the interval for the horizontal installation is 5mm.)
- * 3 The interval indicates the distance from the modules that are installed on the either side.
- (12) When handling the DIP switch, observe the following:
  - (a) Use a compact driver.

Do not handle the DIP switch with a mechanical pencil or a sharp, such as a pair of tweezers and a needle.

If the lead or lead powder of a mechanical pencil enters into the switch, a failure may result. Or if it drops into a circuit board, an electrical problem may result.

Using a sharp may damage the switch, resulting in failure.

(b) Slide the switch lever one by one horizontally to the intended direction. If the driver pushes the switch lever at an angle or from the right above, the switch may be damaged or transformed due to the pressing load.



### 7.2 Wiring Procedures for One-touch Connector Plugs

#### 7.2.1 List of one-touch connector plugs

	Specifications						
Product name	Mitsubishi model name	Part model name (manufacturer)	Applicable cable	e size (core)	Applicable cable size (diameter)	Maximum rated current	Color of the cover
One-touch connector plug	A6CON-P214	33104-6000FL *5	0.14 to 0.2	2mm ²	φ1.0 to 1.4mm		Transparent
*1, *4	A6CON-P220	33104-6100FL *5	(26 to 24 AWG)		φ1.4 to 2.0mm	2A*7	Yellow
	A6CON-P514	33104-6200FL *5	0.3 to 0.5	mm²	φ1.0 to 1.4mm	04.1.7	Red
	A6CON-P520	33104-6300FL *5	(22 to 20 AWG)		φ1.4 to 2.0mm	3A*7	Blue
One-touch connector plug	A6CON-L5P	35505-6000- B0M GF * 5	Communica 0.5mm² (20		φ2.2 to 3.0mm		
for communication *2, *4			Shielded 0 0.5mm ² (20				Red
One-touch connector plug for power	A6CON-PW5P	35505-6080-A00 GF * 5	0.75mm² (0.66 t (18 AW Wire diameter:	G)	φ2.2 to 3.0mm	· 7A*7	Gray
supply and FG *2, *4, *6	A6CON-PW5P- SOD	35505-6180-A00 GF * 5	more Insulating coating ma PVC (heat-resista	ng material:	φ2.0 to 2.3mm	/A*/	Blue
Online connector for communication *3	A6CON-LJ5P	35720-L200-B00 AK * 5	—	_	_	_	_
Online connector for power supply and FG *3	A6CON-PWJ5P	35720-L200-A00 AK * 5	—	_	_	_	_

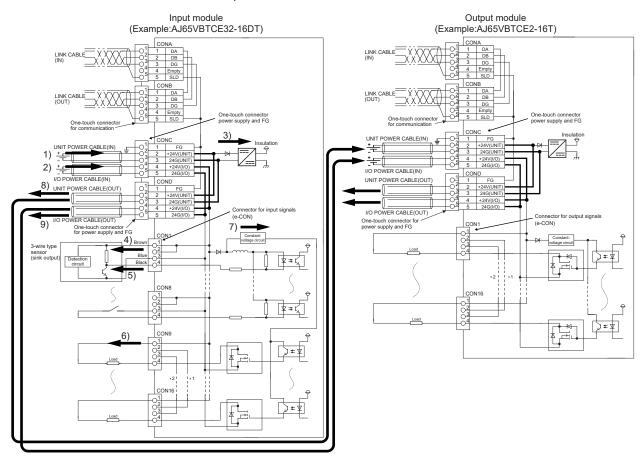
The following table lists one-touch connector plugs applicable to the CC-Link system compact remote I/O module.

*1 The A6CON-P□□□ (manufactured by Mitsubishi) is available in packs of 20 pieces.

- *2 The A6CON-D5P (manufactured by Mitsubishi) is available in packs of 10 pieces.
- *3 The A6CON-DJ5P (manufactured by Mitsubishi) is available in packs of 5 pieces.
- *4 One-touch connector plugs can no longer be used once crimped.
- *5 The manufacturer is 3M Japan Limited.
- *6 Check the outside diameter of an applicable cable and select a connector.
- *7 Keep the current within the allowable range of the connected cable.

#### 7.2.2 Precautions for transition wiring of one-touch connector for power supply and FG

Current flows in the modules when they are transition wired through one-touch connectors for power supply and FG. Design the system so that the current flows in each module equals to or lower than the maximum rated current shown below.



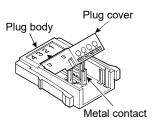
No.	Power port	Connector	Maximum rated current
1)	Module power supply (IN)	One-touch connector for power supply and FG (No.2 and 3 pins of CONC)	7A [*] 1
2)	I/O power supply (IN)	One-touch connector for power supply and FG (No.4 and 5 pins of CONC)	7A ^{* 1}

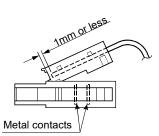
No.	Power supply	Power port (source)	Description	Maximum current consumption
3)	Module power supply	Module power supply (IN)	Power supply for CC-Link modules	Module power supply
4)	Power supply for input device		Power supply for input devices connected, such as sensors	Supply current for connected device
5)	Input current	]	Input signals from input devices	Rated input current
6)	External load power supply	I/O power supply (IN)	Power supply that is consumed by the load	Maximum load current
7)	External power supply for output part		Power supply for output circuits	External power supply for output part current
8)	Module power supply (OUT)	Module power supply (IN) Power supply for the modules and ext devices connected by transition wiring		Depends on the modules
9)	I/O power supply (OUT)	I/O power supply (IN)	Power supply for the modules and external devices connected by transition wiring	and external devices connected

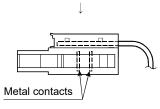
*1 The value of 1) equals to the sum of 3) and 8). The value of 2) equals to the sum of 4), 5), 6), 7), and 9). Design the system so that each value of 1) and 2) equals to or lower than the maximum rated current (7A).

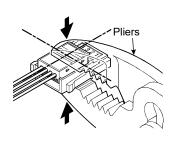
#### 7.2.3 Wiring procedures for the one-touch connector

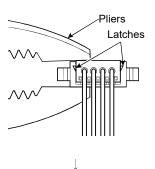
This section describes the wiring procedures for the one-touch connector of the one-touch connector type or connector type compact remote I/O module.











(To the next page)

Check the connector.
 Check that a plug cover is attached to the plug.

Note: Do not press the plug cover firmly into the plug before a cable is inserted. Once crimped, the plug can no longer be used.

2) Insert a cable. (*1)

Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end). Failure to do so may cause an improper crimping.

Note: When inserting the cable, prevent the cable from sticking out from the plug cover end.

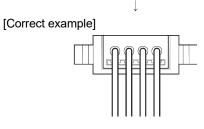
3) Set the plug cover.

After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.

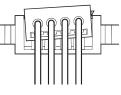
- Crimp the plug cover into the plug.
   Hold the center of the plug cover with pliers and press it vertically into the plug.
- 5) Press the latches into the plug.
   After crimping, press the latches located at both ends of the plug cover into the plug.
   Check that the source is fixed to the plug with the latches

Check that the cover is fixed to the plug with the latches.

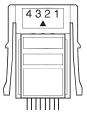
(From the previous page)



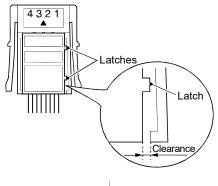
[Wrong example]



[Correct example]



[Wrong example]

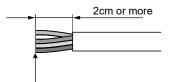


(Wiring completed)

*1 When a cabtyre cable is used:

Strip the cable jacket 2cm or more.

If the wire lengths are not even, trim their ends with nippers to the same length.



Trim the wire ends to the same length

 Check that the plug cover is horizontally-embedded to the plug. Check also that the cover is not floating.

Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the cover is floating, it may result in improper crimping.

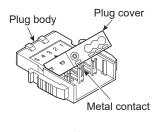
Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

- Check the crimped state from the top.
   Check that there is no clearance between the plug and the cover.
  - Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.

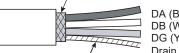
Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

### 7.2.4 Wiring procedures for the one-touch connector for communication

This section describes the wiring procedures for the one-touch connector for communication used for the connector type compact I/O module.

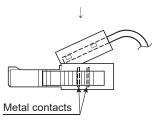


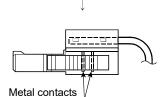
Cut the shield wire, aluminum tape and braid.

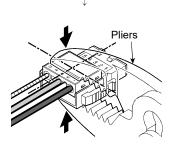


DA (Blue) DB (White) DG (Yellow) Drain wire (AWG20)

Stretch the drain wire and twist it from the base. (3cm in length, 7 times or more)







(To the next page)

- Check the connector.
   Check that a plug cover is attached to the plug.
  - Note: Do not press the plug cover firmly into the plug before a cable is inserted. Once crimped, the plug can no longer be used.
- Prepare a communication cable for connection.
   Strip the cable jacket 3cm or more and perform the processing described on the left.
   If the wire lengths are not even, trim their ends with nippers to

If the wire lengths are not even, trim their ends with nippers to the same length.

3) Insert a cable.

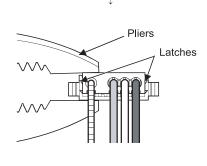
Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end). Failure to do so may cause an improper crimping.

4) Set the plug cover.

After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.

 Crimp the plug cover into the plug.
 Hold the center of the plug cover with pliers and press it vertically into the plug.

#### (From the previous page)



## 6) Press the latches into the plug.

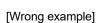
After crimping, press the latches located at both ends of the plug cover into the plug.

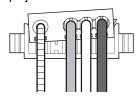
Check that the cover is fixed to the plug with the latches.

- Check the crimped state from the side.
   Check that the plug cover is horizontally-embedded to the plug.
   Check also that the floating part of the cover is within 0.2mm.
  - Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the floating part is 0.2mm or more, it may result in improper crimping. Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)
- Check the crimped state from the top. Check that there is no clearance between the plug and the cover.
  - Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.
    - Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

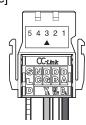
#### 1

[Correct example]

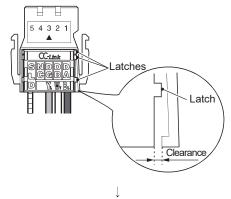




[Correct example]



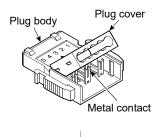
#### [Wrong example]

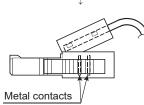


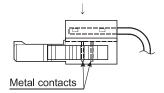
(Wiring completed)

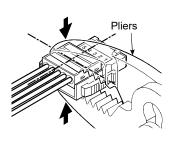
### 7.2.5 Wiring procedures for the one-touch connector for power supply and FG

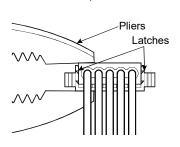
This section describes the wiring procedures for the one-touch connector used for power supply and FG of the connector type compact I/O module.











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 Check the connector. Check that a plug cover is attached to the plug.

Note: Do not press the plug cover firmly into the plug before a cable is inserted. Once crimped, the plug can no longer be used.

2) Insert a cable. (*1)

Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end). Failure to do so may cause an improper crimping.

Note: Use cables applicable to the module.

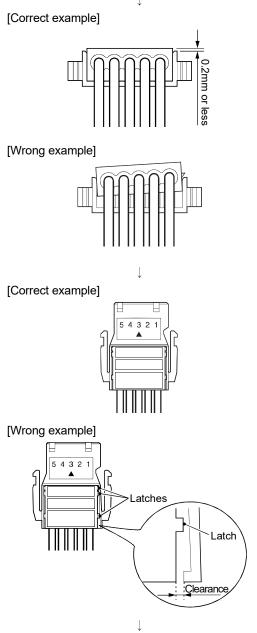
3) Set the plug cover.

After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.

- Crimp the plug cover into the plug.
   Hold the center of the plug cover with pliers and press it vertically into the plug.
- Press the latches into the plug.
   After crimping, press the latches located at both ends of the plug cover into the plug.

Check that the cover is fixed to the plug with the latches.

#### (From the previous page)



6) Check the crimped state from the side.

Check that the plug cover is horizontally-embedded to the plug. Check also that the floating part of the cover is within 0.2mm.

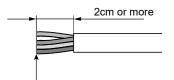
- Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the floating part is 0.2mm or more, it may result in improper crimping. Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)
- Check the crimped state from the top.
   Check that there is no clearance between the plug and the cover.

Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

(Wiring completed)

*1 When a cabtyre cable is used:
 Strip the cable jacket 2cm or more.
 If the wire lengths are not even, trim their ends with nippers to the same length.



Trim the wire ends to the same length

## 7.3 Handling of the Waterproof-type Remote I/O Module

#### 7.3.1 List of dustproof and waterproof caps

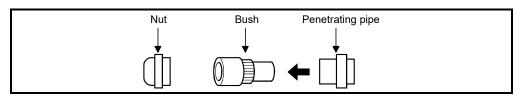
The following table lists the model names of dustproof cap and waterproof cap applicable to the CC-Link system waterproof-type remote I/O module.

	Mitsubishi model name	Specifications
Dustproof cap *1	A6CAP-DC1	
Waterproof cap *1	A6CAP-WP1	Protection of degree IP67

#### 7.3.2 Waterproof plug attachment procedure

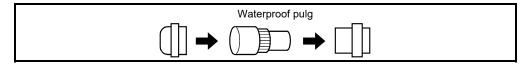
The attachment procedure for the waterproof plug supplied with the AJ65SBTW4-16 $\Box$  is shown below. In order to prevent water leakage, attach a waterproof plug to the penetrating pipe for the transmission and module power-supply lines in the following way.

1) Remove the nut and bushing from the penetrating pipe attached to the module.



2) Insert the waterproof plug into the penetrating pipe and secure it by tightening the nut.

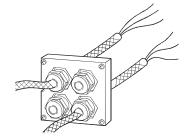
Tightening torque: 0.99 to 1.48N·m



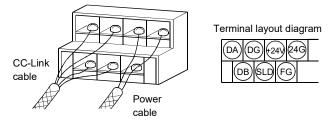
### 7.3.3 Wiring procedure for the terminal block

This section describes the wiring procedure of a terminal block to the waterproof-type remote I/O module.

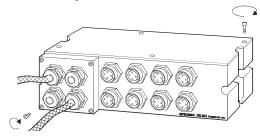
1) Remove the module front cover, and pass the cables through the through pipe for the transmission and module power-supply lines.



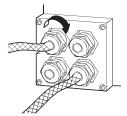
2) Open the module top cover and remove the terminal block, then perform wiring to the terminal block.



3) Secure the terminal block using screws, then fasten the module front and top covers using screws.



4) Tighten the nut* on the through pipe for the transmission and module powersupply lines.



## POINT

- Always install a waterproof plug to the unused through pipe for the transmission and module power-supply lines. (Refer to Section 7.3.2.)
- When wiring the transmission and module power-supply lines, please take care not to apply force in excess of 0.39N·m excessive force to the wiring at the inlet.
- In the event of the ambient temperature exceeding 56 °C after wiring the unit,
- make sure to re-tighten the nuts.

## 7.4 Handling of the Low Profile Waterproof Type Remote I/O Module

### 7.4.1 List of waterproof caps

The model name of the waterproof cap applicable to the CC-Link system low profile waterproof type remote I/O module (AJ65FBTA□-16□) is shown below. The following table lists the model names of waterproof cap applicable to the CC-Link system low profile waterproof type remote I/O module (AJ65FBTA□-16□).

	Mit <del>sub</del> ishi Product Model Name	Use
Waterproof cap (20 pieces, Sold separately)	A6CAP-WP2	For LINK OUT connector and I/O connector

POINT	
• The waterpr	oof cap (A6CAP-WP1) cannot be used.

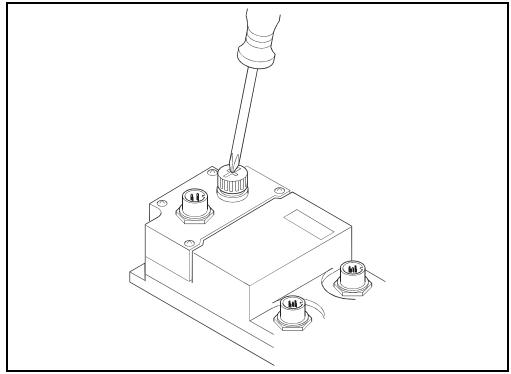
### 7.4.2 Waterproof cap installation method

The installation method for the waterproof caps packed with the product is shown below.

In order to prevent water penetration, install the waterproof caps on the unused Link Out side connectors and I/O connectors using the following method.

1) Insert the waterproof cap in the empty connector on the main module, then tighten it.

Tightening Torque Range: 0.29 to 0.34N·m



## 7.5 Connectors and Tools Used for Connecting the FCN Connector Cables

• When connecting the connector cables by crimp-contact, pressure-displacement or soldering, make sure to use the tools listed in the table below. Attach the connectors securely to the module.

Three types of 40-pin connectors are available for the AJ65 $\square$ BTCF1-32 $\square$  and the AJ65 $\square$ BTCF1J-32 $\square$ ; they are soldering type, pressure-displacement type and crimp-contact type.

Please purchase the required 40-pin connector, and either pressure-displacement or crimp-contact type tool according to the listing below.

#### (1) Connector types

Туре	Model name
Soldering type connector (Straight-out type)	A6CON1
Crimp-contact type connector (Straight-out type)	A6CON2
Pressure-displacement type connector (Flat cable type)	A6CON3
Soldering type connector (Straight-out/diagonal-out type)	A6CON4

### (2) Crimp-contact and pressure-displacement type tools

Туре	Model name Cable size		Manufacturer	
Crimp-contact tool	FCN-363T-T005/H	28 to 24 AWG		
	FCN-367T-T012/H			
	(locator plate)	28 AWG	FUJITSU COMPONENT LIMITED	
Pressure-	FCN-707T-T001/H	(strand cable)		
displacement tool	(cable cutter)	30 AWG		
	FCN-707T-T101/H	(single cable)		
	(hand press)			

## 7.6 Attaching and Removing the Protective Cover for the Compact Remote I/O Module

Covering the front of CC-Link system compact remote I/O module with a protective cover can prevent the following accidents:

- Improper contact to the terminal block or connector.
- Module malfunction resulted from connector drop.

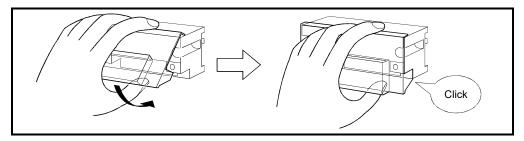
For the model name of the protective cover for the compact remote I/O module, see Section 1.5.

Follow the procedure illustrated below to mount the protective cover on the module.

#### (1) In the case of A6CVR-8/16/32

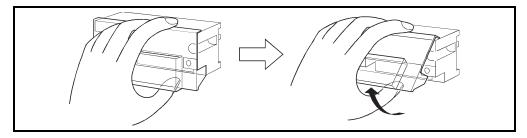
#### <How to mount>

Hook the top of the protective cover onto the top of the remote I/O module, then push the lower part of the cover toward the module until you hear a click sound.



#### <How to remove>

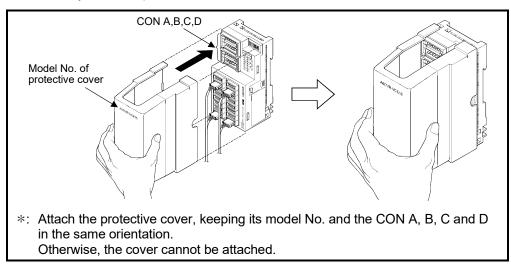
Place your thumb under the protective cover and pull it upwards.



### (2) In the case of A6CVR-VCE8/16

#### <How to mount>

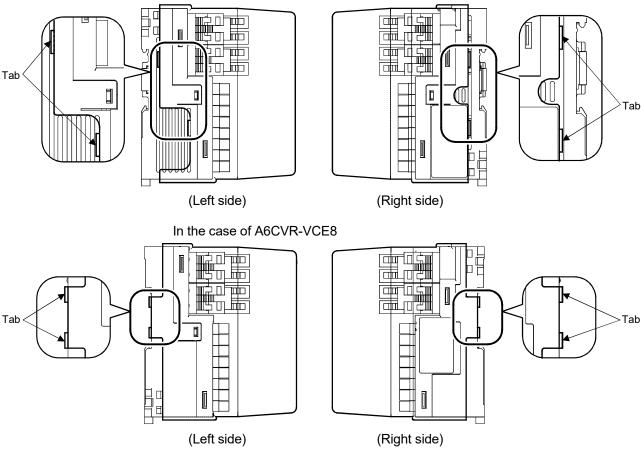
Confirm the orientation of the protective cover as shown in the diagram below. Then, attach the cover straight to the module as shown by the arrow and push in securely until it stops.



Securely fix tabs of the protective cover to the groove of the module as shown below.

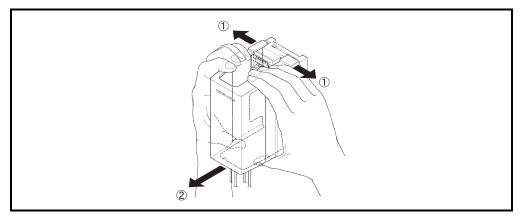
Note that the fixing tab positions vary with the protective cover used.

In the case of A6CVR-VCE16



#### <How to remove>

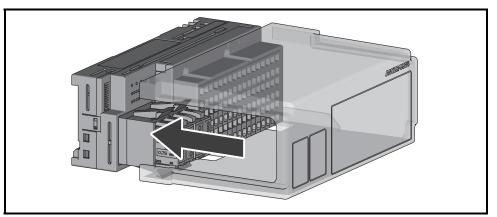
Extend the width of protective cover slightly as shown by the arrow 1). Then, pull it out vertically from the module as shown by the arrow 2).



## (3) In the case of A6CVR-VS16

#### <How to mount>

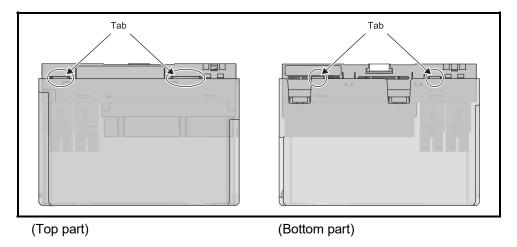
Attach the protective cover as shown below.



Attach the protective cover so that the online connector for communication on the module is opposite to the model name of the protective cover. Do not attach the cover in the direction other than that shown above.

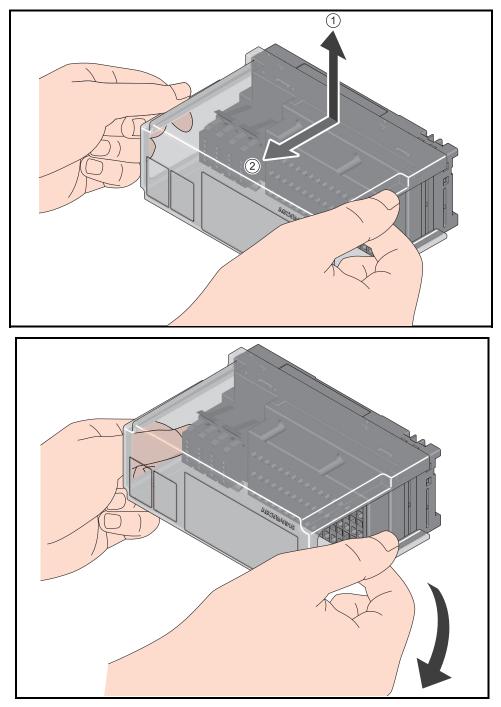
Securely engage tabs of the protective cover with the grooves on the module as shown below.

Note that the locations of tabs vary depending on the protective cover used.



#### <How to remove>

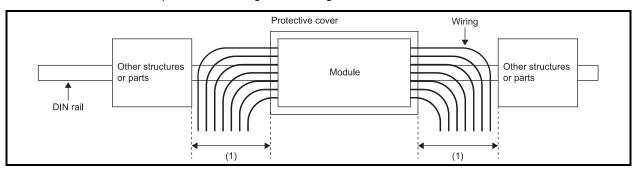
Hold the both ends of the protective cover (top part) as shown below. To disengage the tabs from the module, lift up the protective cover in the direction of arrow [1], and pull it in the direction of arrow [2].



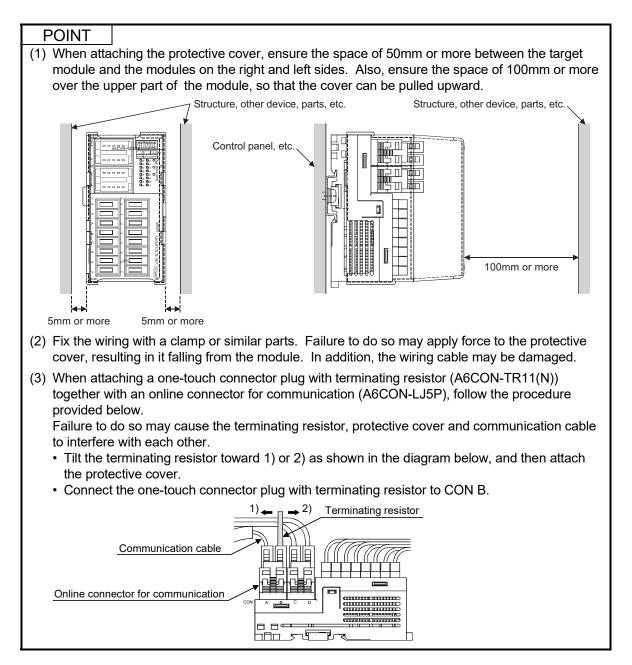
Hold the both ends of the protective cover (bottom part), slightly push it down, and pull it in the direction of arrow [2] as you did for the top part of the cover.

### <Precautions for installing the module>

Using the module with the A6CVR-VS16 (protective cover) attached requires a configuration where cables come out from both sides of the module. Therefore, in such a case, have enough spaces between the module and other structures or parts considering the bending radius of the cables used.



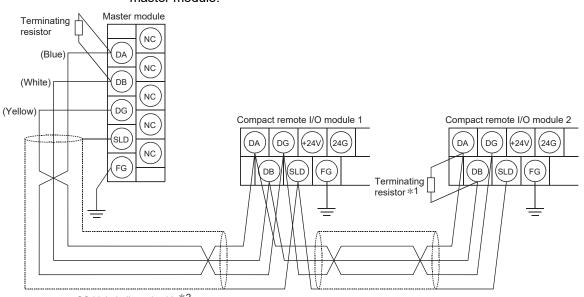
(1) Distance determined considering the bending radius of the cables



## 7.7 Connection Method of CC-Link Dedicated Cable

This section describes how to connect the compact remote I/O module to the master module using CC-Link dedicated cables.

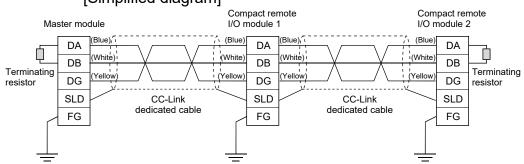
WARNING	<ul> <li>Shut off the external power supply (all phases) used in the system before wiring. Failure to do so may result in electric shock or damage to the product.</li> <li>After wiring, attach the included terminal cover to the module before turning it on for operation. Failure to do so may result in electric shock.</li> <li>Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block screw. Failure to do so may cause the module to fail or malfunction.</li> </ul>
CAUTION	<ul> <li>Do not install the control lines or communication cables together with the main circuit lines or power cables.</li> <li>Keep a distance of 100mm (3.9 inches) or more between them.</li> <li>Failure to do so may result in malfunction due to noise.</li> <li>Individually ground the FG terminal of the programmable controller with a ground resistance of 100Ω or less.</li> <li>Failure to do so may result in electric shock or malfunction.</li> <li>Tighten any unused terminal screws within the specified torque range (0.42 to 0.50N·m).</li> <li>Failure to do so may cause a short circuit due to contact with a solderless terminal.</li> <li>Use applicable solderless terminals and tighten them within the specified torque range. If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.</li> <li>Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly.</li> <li>Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.</li> <li>Securely connect the cable connectors.</li> <li>Poor contact may cause malfunction.</li> <li>Place the cables in a duct or clamp them.</li> <li>If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or medifunction due to poor contact.</li> <li>Do not install the control lines or communication cables together with the main circuit lines or power cables.</li> <li>Failure to do so may result in malfunction due to noise.</li> <li>When disconnecting the cable from the module, do not pull the cable by the cable part.</li> <li>For the cable with connector, loosen the screw first and remove it.</li> <li>Pulling the cable connected to the module may result in malfunction or damage to the module or cable.</li> </ul>



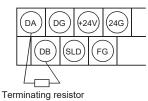
(1) The following figure shows how to connect compact remote I/O modules to a master module.

CC-Link dedicated cable*2

[Simplified diagram]



*1 Connect a terminating resistor to the compact type remote I/O module used as a terminal station as shown below. (Terminating resistors are provided with a master module.)



*2 Use CC-Link dedicated cables in the CC-Link system.

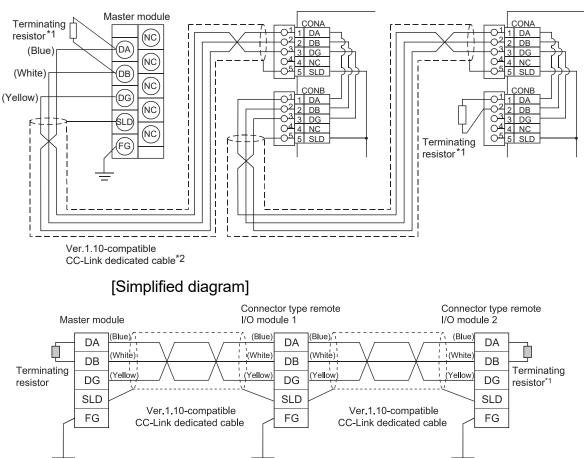
Performance of the CC-Link system cannot be guaranteed if any cables other than the CC-Link dedicated cables are used.

For the specifications and any inquiries on the CC-Link dedicated cables, refer to the following:

CC-Link Partner Association Website: www.cc-link.org

### POINT

Compact remote I/O modules with an input response of 0.2ms are more susceptible to noise interference than other modules. Keep the wiring of the I/O module away from power cables as much as possible.



(2) The following figure shows how to connect connector type remote I/O modules to a master module.

- *1 When a connector type remote I/O module is used as a terminal station, connect a one-touch connector plug with terminating resistor (A6CON-TR11(N)).
- *2 Use CC-Link dedicated cables in the CC-Link system.

Performance of the CC-Link system cannot be guaranteed if any cables other than the CC-Link dedicated cables are used.

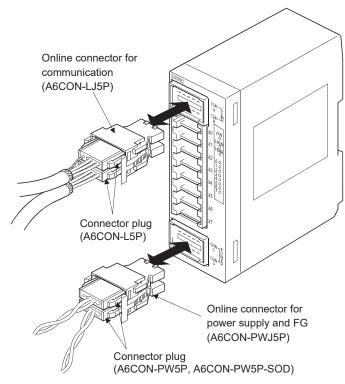
For the specifications and any inquiries on the CC-Link dedicated cables, refer to the following:

CC-Link Partner Association Website: www.cc-link.org

#### POINT

Compact remote I/O modules with an input response of 0.2ms are more susceptible to noise interference than other modules. Keep the wiring of the I/O module away from power cables as much as possible.

(3) The following figure shows how to connect a one-touch connector and online connector to the remote I/O module.



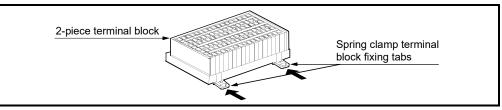
#### POINT

- For a one-touch connector for communication, use Ver.1.10-compatible CC-Link dedicated cables (FANC-110SBH, FA-CBL200PSBH, or CS-110). Ver.1.10-compatible CC-Link dedicated cables other than those above, CC-Link dedicated cables, and CC-Link dedicated high-performance cables are not supported.
- To connect or remove a one-touch connector to/from an online connector, refer to the manual included with the online connector.

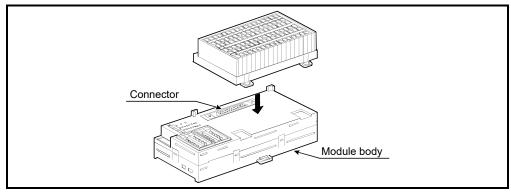
## 7.8 Handling of Spring Clamp Terminal Block Type Remote I/O Module

7.8.1 Installation and removal of the spring clamp terminal block

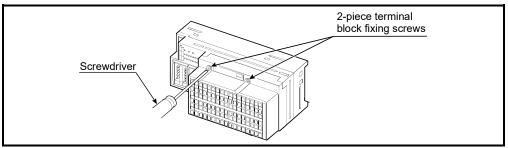
- Installing the spring clamp terminal block
   How to install a 2-piece spring clamp terminal block is shown below.
   Secure the terminal block part using the following method. Incomplete installation may cause fall, short circuit or malfunction.
  - 1) Push the spring clamp terminal block fixing tabs of the 2-piece terminal block in the arrow direction until a click can be heard.



2) Connect the connector (female) of the 2-piece terminal block to the connector (male) of the module body and press it until a click can be heard. Check that both of two fixing tabs are inserted completely.



 Tighten the 2-piece terminal block fixing screws. (Tightening torque range: 0.34 to 0.46N·m)



- (2) Removing the spring clamp terminal block Remove the spring clamp terminal block in reverse order of the above installation
  - 1) Loosen the 2-piece terminal block fixing screws.

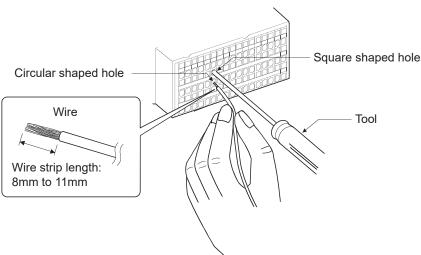
procedure.

- 2) Pull out the spring clamp terminal block fixing tabs.
- 3) Lift the 2-piece terminal block to remove it from the main body.

### 7.8.2 Procedure for wiring the spring clamp terminal block

This section describes the procedure for connecting a cable to the spring clamp terminal block remote I/O module.

- (1) Precaution for connecting or disconnecting cables
  - (a) When inserting two wires into the circular shaped hole of the spring clamp terminal block, use the TGWV TC1.25-T9 (manufactured by NICHIFU Co., Ltd.). Inserting two or more wires without using the TGWV TC1.25-T9 may result in a poor contact to the spring clamp terminal part.
  - (b) Strip the wire according to the specification. If the wire strip length is too long, the exposed conductive part may cause electric shock or short circuit. If the wire strip length is too short, it may result in a poor contact to the spring clamp terminal part.
  - (c) When using a spring clamp terminal block tool, follow the instruction below. Failure to do so may cause damage of the spring clamp terminal part or the terminal block resin part.
    - Use a dedicated tool for a spring clamp terminal block.
    - Do not insert the wire or the bar solderless terminal before inserting the tool into the square shaped hole.
    - Insert the tool vertically into the hole.
- (2) Connecting a cable
  - (a) Insert the tool vertically all the way inside the square shaped hole of the remote I/O module.
  - (b) Insert the wire or the bar solderless terminal into the circular shaped hole, and remove the tool from the hole.
  - (c) Check that the wire or the bar solderless terminal is firmly clamped by pulling it lightly.



- (3) Disconnecting a cable
  - (a) Insert the tool vertically all the way inside the square shaped hole of the remote I/O module.
  - (b) Pull the wire or the bar solderless terminal out of the hole.

Product name	Model name	Applicable wire size	Contact
Tool (dedicated to spring clamp terminal block)	KD-5339	_	Mitsubishi Electric System Service Co., Ltd.
Bar solderless terminal *1	TGV TC1.25-9T TGWV TC1.25-T9*2	0.3 to 1.65mm ²	
Dedicated bar solderless terminal tool	NH65A	_	NICHIFU Co., Ltd.
	TE 0.5	0.5mm ²	
Den estelente estemativa el X4	TE 0.75	0.75mm ²	
Bar solderless terminal *1	TE 1	0.9 to 1.0mm ²	
	TE 1.5	1.25 to 1.5mm ²	NICHIFU Co., Ltd.
Dedicated bar solderless terminal tool	NH79	_	

## (4) Recommended product list

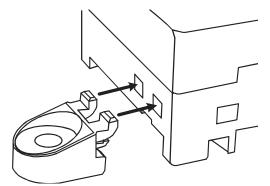
- *1 Use this product when doing the terminal treatment of the wire and inserting it into the spring clamp terminal block.
- *2 Use this product when inserting two wires to one terminal.

### 7.9 Attaching Mounting Brackets to the Module

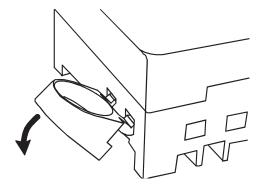
#### 7.9.1 Attachment of mounting brackets

This section describes the procedures for directly installing the AJ65VBTS $-\Box\Box$  or AJ65VBTCE $-\Box\Box$  to a control panel using mounting brackets and screws. If the module is not fixed securely, it can cause drop of the module, short circuit, or malfunction.

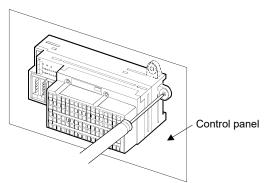
(1) Align the projections of a mounting bracket with the corresponding slots of the module.



(2) Obliquely insert the projections to the slots, and press down the mounting bracket in the direction of an arrow until it clicks.



(3) Screw the mounting bracket to a control panel. (Tightening torque range: 0.82 to 1.11N·m)

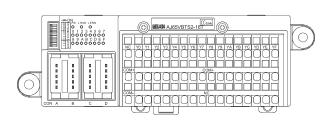


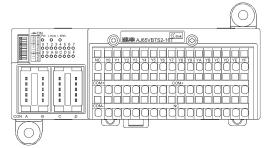
## 7.9.2 Precautions for attaching mounting brackets

The mounting brackets can be attached differently depending on the modules. Attach them to two positions.

(1) AJ65VBTS□-16□

The mounting brackets can be attached as shown below (two different ways).





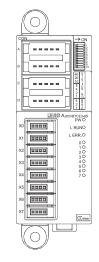
(2) AJ65VBTS□-32□

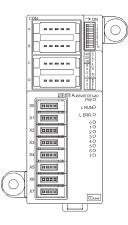
The mounting brackets can be attached as shown below (only one way).



(3) AJ65VBTCE□-8□

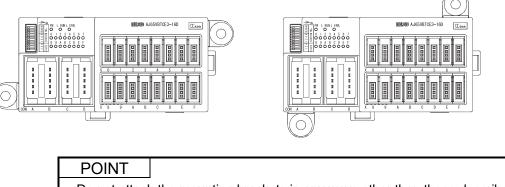
The mounting brackets can be attached as shown below (two different ways).

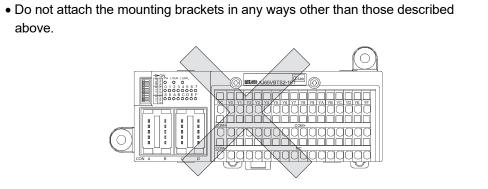




### (4) AJ65VBTCE□-16□, AJ65VBTCE□-32□

The mounting brackets can be attached as shown below (two different ways).





### 7.10 Mounting the DIN Rail Adapter

### 7.10.1 Specifications

The following table shows the specifications of the DIN rail adapter.

Item	A6DIN1C
Mountable module	AJ65DBTB1-32D, AJ65DBTB1-32T1, AJ65DBTB1-32R, AJ65DBTB1-32DT1, AJ65DBTB1-32DR
External dimensions	174mm (6.85 inches) × 68mm (2.68 inches) × 10mm (0.39 inches)
Weight	0.05kg
Applicable DIN rail type (conforms to IEC 60715)	TH35-7.5Fe, TH35-7.5Al, TH35-15Fe

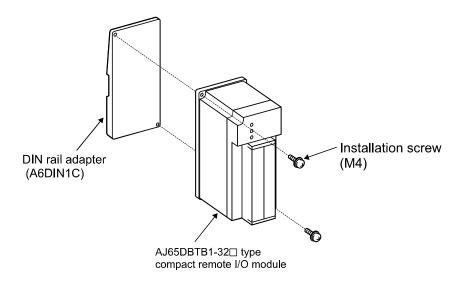
#### 7.10.2 Handling precautions

- (1) The DIN rail adapter is made from resin. Do not drop or apply strong shock to the adapter.
- (2) Mounting pitch

When installing a DIN rail to a control panel, keep mounting pitches 200mm (7.87 inches) or less.

#### 7.10.3 Attaching the DIN rail adapter to the module

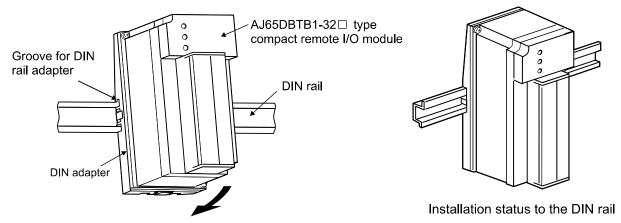
Use two M4 screws (length: 10mm (0.39 inches)) to attach the DIN rail adapter to the AJ65DBTB1-32  $\Box$  type compact remote I/O module. The tightening torque range is 0.78 to 1.18N•m.



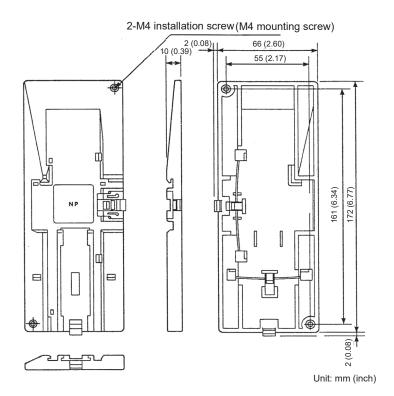
### 7.10.4 Mounting the module to a DIN rail

This section describes how to mount/remove the module to/from a DIN rail.

- (1) Mounting to a DIN rail
  - Mount the module with the DIN rail adapter attached to a DIN rail as follows.
  - (a) Insert the groove for DIN rail adapter into the topside of the DIN rail.
  - (b) Fix the module by pressing it against the DIN rail.



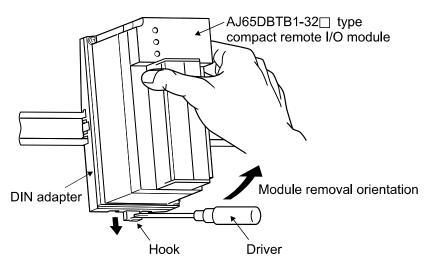
(c) When multiple DIN rail adapters are installed on the DIN rail, even though the gaps among DIN rail adapters are filled, the spaces of 4mm (0.16 inches) are left among the modules.



#### (2) Removing the module from a DIN rail

Remove the module from a DIN rail as follows.

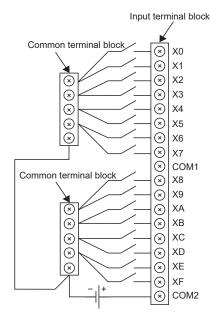
- (a) Pull the hook at the bottom of the DIN adapter downward with flathead screwdriver ( $6 \times 100$ ).
- (b) With the hook pulled out, pull the module forward and remove the module from the DIN rail.



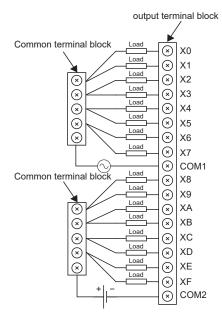
## 7.11 Common Terminal Block

Model				
Item				
Mountable module	AJ65DBTB1-32D, AJ65DBTB1-32T1, AJ65DBTB1-32R, AJ65DBTB1-32DT1, AJ65DBTB1-32DR			
External dimensions	125mm (4.92 inches) × 64mm (2.52 inches) × 13mm (0.51 inches)			
Weight	0.12kg			
64(2.52)				
	13(0.51) 32.5(1.28)			

- (1) Usage example of common terminal block
  - (a) Example of usage for input module, AJ65DBTB1-32D



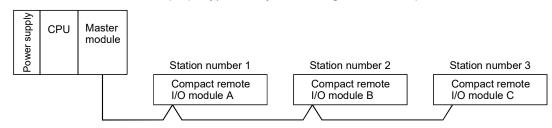
(b) Example of usage for output module, AJ65DBTB1-32R



# **8 TROUBLESHOOTING**

### 8.1 Verifying Errors from LED Status

The following table lists causes and corrective actions for errors indicated by LEDs on the compact remote I/O module when the SW, M/S and PRM LEDs are all off (i.e. the master module is set properly) in the system configuration example shown below.



	LED status							
Master		Rer	note I/O	mo	dule		Cause	Corrective action
module	A B			С				
	PW L RUN L ERR.		PW L RUN L ERR.		PW L RUN L ERR.		Normal	_
	L RUN L ERR.	) * *	PW L RUN <u>L ERR.</u> PW L RUN L ERR.	•	PW L RUN <u>L ERR.</u> PW L RUN L ERR.	•	Since the LEDs on the compact remote I/O module A are all off, the 24V power is not supplied or voltage is low. The compact remote I/O module A is malfunctioning and the LEDs are unstable (all lights are off, in many cases).	Check the voltage of the 24V power supply, and supply the proper power to the compact remote I/O module. Exchange the compact remote I/O module.
TIME LINE or TIME LINE	PW L RUN L ERR.		PW L RUN L ERR.		PW L RUN L ERR.		The L RUN lights on the compact remote I/O module B and beyond are off, indicating the transmission cable between the compact remote I/O module A and B has been disconnected or removed from the terminal block.	Identify the disconnected point by referring to the LED status, and correct it.
	PW L RUN L ERR.		PW L RUN L ERR.		PW L RUN L ERR.		The transmission cable is shorted.	Find the shorted cable among the three transmission cables and repair it.
	PW L RUN L ERR.		PW L RUN L ERR.		PW L RUN L ERR.	• • *	The transmission cable is wired incorrectly.	Verify wiring in the terminal box of the compact remote I/O module and correct.
	PW L RUN L ERR.		PW L RUN L ERR.		PW L RUN L ERR.		The L RUN lights on the compact remote I/O modules A and C are off, indicating the station numbers for A and C are overlapping.	Restart the power supply after the overlapped station numbers for the compact remote I/O modules are corrected.

•: lit,  $\bigcirc$ : unlit,  $\circledcirc$ : flashing, *: lit, flashing or unlit

LED status							
Master	Remote I/O module		Cause	Corrective action			
module	А	В		С			
	PW ● L RUN ● L ERR. ○	PW L RUN L ERR.		PW 0 L RUN 0 L ERR. 0		The L RUN light on the compact remote I/O module B is off, indicating the transmission speed setting for module B is invalid within the setting range (0 to 4).	Restart the power supply after the transmission speed is set correctly.
TIME LINE or TIME	PW ● L RUN ● L ERR. ○	PW L RUN L ERR.		PW ( L RUN ( L ERR. (	-	The L ERR. of the compact remote I/O module C is flashing at fixed intervals, indicating the setting switch for module C has been changed during normal operation.	Return the setting switch of the compact remote I/O module to the original position.
LINE O	PW ● L RUN ○ L ERR. ●	PW L RUN L ERR.		PW 0 L RUN 0 L ERR. 0		The L RUN of the compact remote I/O module A is off and L ERR. of the same module is lit, indicating the setting switch for module A is set out of range (transmission speed: 5 to 9, station number: 65 or greater).	Correct the setting switch of the compact remote I/O module, and restart the power supply.
	PW ● L RUN ● L ERR. ○	PW L RUN L ERR.		PW ( L RUN ( L ERR. (		The L ERR. of the compact remote I/O module B is lit, indicating that module B is being affected by noise. (L RUN may be off.)	Correctly perform grounding of the FGs for the master module and all compact remote I/O modules.
TIME • LINE • or TIME • LINE •	PW ● L RUN ● L ERR. ○	PW L RUN L ERR.		PW L RUN L ERR. 9		The L ERR. lights on the compact remote I/O module B and beyond are lit, indicating the transmission cable is affected by noise in the area between modules A and B. (L RUN may be off.)	Verify the grounding of the SLD of the transmission cable. Separate the wire from the power cable as much as possible (100mm (3.94 inches) or more).
	PW ● L RUN ● L ERR. ○	PW L RUN L ERR.	-	PW L RUN L ERR.		A terminal resistor is not attached. (L RUN may be off.)	Check if a terminal resistor is attached.

lackstyle : lit,  $\bigcirc$  : unlit,  $\circledcirc$  : flashing, * : lit, flashing or unlit

### 8.2 Examples of Errors for Compact Remote I/O Modules

This section explains examples of errors that occur in the input circuit, and the appropriate corrective actions.

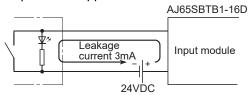
#### 8.2.1 Errors occurring in the input circuit and corrective actions

Examples of errors that occur in the input circuit and corrective actions are explained below:

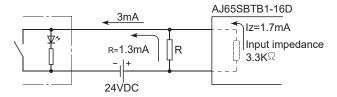
	Error status	Cause	Corrective action
Example 1	Input signals do not turn off.	<ul> <li>Activation via the LED display switch.</li> </ul>	<ul> <li>Connect an appropriate resistor as shown below so that the current flowing along the</li> </ul>
		DC input (sink)	input module becomes lower than OFF
			current.
		Leakage current	DC input (sink)
		$ \qquad \qquad$	
			Resistor Input
			* A calculation example used to obtain the
			resistance value to be connected is shown
<b>-</b>			on the following page.
Example 2	Input signals do not turn off.	Sneak current due to the use of two power     aupplies	
		supplies	<ul> <li>Connect a diode to prevent a sneak current as shown below.</li> </ul>
		DC input	current as shown below.
			DC input
		Input $AT_{-}E1$	
			Input & Lamp E2 + + + E1 module
		E1>E2	
Example 3	Input signals do not turn off.	<ul> <li>Input switch leakage current (driving with a</li> </ul>	Connect the appropriate resistor so that the
		contactless switch).	terminal-to-terminal voltage of the input
			module is below the OFF voltage value.
		AC input	AC input
		Leakage Input	c <del>⊥</del> ∐nput
		module	R module
		Power supply	
		. end. expp.y	0.1 to 0.47μF + 47 to 120Ω (1/2W) is
Evennle 4	Innut aignala da nat turn off	- Driving using a limit quitch with pean lange	recommended for the CR constant.
Example 4	Input signals do not turn off.	Driving using a limit switch with neon lamp.     AC input	<ul><li>Same as Example 3.</li><li>Or, create a completely separate display</li></ul>
			circuit.
		Leakage Input	
		module	
		Power supply	
Example 5	Input signals do not turn off.	Leakage current due to line capacity of the	Same as Example 3.
слатре э	111put signals up not turn on.	Leakage current due to line capacity of the wiring cable.	<ul> <li>Same as Example 5.</li> <li>However, this problem will not occur if the</li> </ul>
		The line capacity "C" of a twisted pair wire is	power supply as shown below is provided
		about C=100PF/m.	at the input device side.
		AC input	AC input
		Leakage Input	
			Input module
		Power supply	Power supply

<Sample calculation for Example 1>

When a switch with LED indicator, giving leakage current of 3mA at maximum when 24VDC power is supplied to the AJ65SBTB1-16D



(1) 1.7mA or less OFF current of the AJ65SBTB1-16D is not satisfied. Hence, connect a resistor as shown below.



(2) Calculate the resistance value R as shown below.

To satisfy 1.7mA or less OFF current of the AJ65SBTB1-16D, connect a resistor which flows 1.3mA or more.

IR: Iz=Z (Input impedance): R

R
$$\leq \frac{lz}{l_R}$$
 × Z (Input impedance) =  $\frac{1.7}{1.3}$  × 3.3=4.31[k Ω]

Supposing that the resistance R is  $3.9k\Omega$ , the power capacity W of resistor R is: W = (Input voltage)  $2 \div R = 26.42 \div 3900 = 0.179$  (W)

- (3) Connect a resistor of 3.9 (k $\Omega$ ) and 1 to 2 (W) to a terminal which may cause an error, since the power capacity of a resistor is selected so that it will be 3 to 5 times greater than the actual power consumption.
- (4) Also, OFF voltage when resistor R is connected will be as follows.

$$\frac{1}{\frac{1}{3.9[k\Omega]} + \frac{1}{3.3[k\Omega]}} \times 3[mA] = 5.36[V]$$

This satisfies 6V or less OFF voltage of AJ65SBTB1-16D.

### 8.2.2 Errors occurring in the output circuit and corrective action

Examples of errors that may occur in the output circuit and the respective corrective action are described below.

(1)	When AJ65SBTB1-16T or AJ65SBTB1-32T is used
-----	---------------------------------------------

the LED dimly lights up even when the output module is turned off. (Example) LED push button manufactured by IDEC CORPORATION:listed below, the output module specification and the leak current specification value during50kΩ in parallel to the LED.	Condition	Cause	Corrective action
CC-Link compact-type remote output moduleCountermeasure (LED0.25mA, respectively (the leak current during OFF is specified as above since an MOS with a built-in protection function and PET transistor output are used.)0.25mA, respectively (the leak current during OFF is specified as above since an MOS with a built-in protection function and PET transistor output are used.)Example 2When a segment LED display device is connected as a load, the display contents sometimes become incorrect.Connect a pull-up res with 5 to 50kΩ and 0 between the 24VDC	the LED dimly lights up even when the output module is turned off. (Example) LED push button manufactured by IDEC CORPORATION: ALFN22211DNR CC-Link compact-type remote output module CC-Link compact-type remote output module CC-Link compact-type remote output module CC-Link compact-type supply When a segment LED display device is connected as a load, the display contents sometimes become incorrect. (Example) M7E digital display unit (height of character 14mm) by Omron, Co.: M7E- 01DBN2 CC-Link compact- type remote output module CC-Link compact- type remote output module	listed below, the output module specification and the leak current specification value during OFF are 24VDC 0.5A and 0.25mA, respectively (the leak current during OFF is specified as above since an MOS with a built-in protection function and PET transistor output are used.) <applicable modules=""> AJ65SBTB1-16T,</applicable>	Connect a pull-up resistor with 5 to 50kΩ and 0.5(W) between the 24VDC power supply and the output

	Condition	Cause	Corrective action
Example 1	Excessive voltage is applied to the output OFF load.	<ul> <li>The load is half-wave rectified internally. (Some solenoids do this process.)</li> <li>CC-Link compact remote triac output module</li> <li>D1</li> <li>D2</li> <li>D2</li> <li>When the polarity of the power supply is         <ul> <li>[1], C is charging. When the polarity is [2], the voltage charged in C + power supply voltage is applied to both ends of D1. The maximum value of the voltage is about 2.2E.</li> </ul> </li> </ul>	<ul> <li>Connect a resistor of several tens KΩ to several hundreds KΩ to both ends of the load.</li> <li>When this type of method is used, no problems will occur in the output elements, but the diode that is built in the load may deteriorate and may be damaged.</li> </ul>
Example 2	The load is not turned OFF. (Triac output)	<ul> <li>Leakage current due to built-in surge suppressor.</li> <li>CC-Link compact remote triac output module</li> <li>Leakage current</li> </ul>	<ul> <li>Connect a resistor to both ends of the load.</li> <li>Caution is required when the wiring distance from the output card to the load is long, since there may be leakage current due to the line capacity.</li> </ul>
Example 3	Time limit changes when the load is a CR type timer. (Triac output)	CC-Link compact remote triac output module CR timer Leakage current	Drive the relay first, and then drive the CR type timer at that contact.     Caution is required as indicated in Example 1 since the internal circuit may be half-wave rectified depending on the timer.

### 8 TROUBLESHOOTING

## MELSEC-A

	Condition	Cause	Corrective action
Example 4	The load is not turned OFF. (Triac output)	<ul> <li>If the load current is insufficient (lower than 25mA), the triac does not operate, causing the load current to flow into a phototriac as shown below.</li> <li>If an inductive load is connected in this condition, the load may not turn off because surge at the time of off is applied to the phototriac.</li> </ul> CC-Link compact remote CC-Link compact remote Virge suppressor Virge suppressor Virge control Phototriac Load Triac	<ul> <li>Connect a resistor to both ends of a load so that the load current is higher than the minimum load current.</li> <li>Resistor</li> <li>Load</li> </ul>

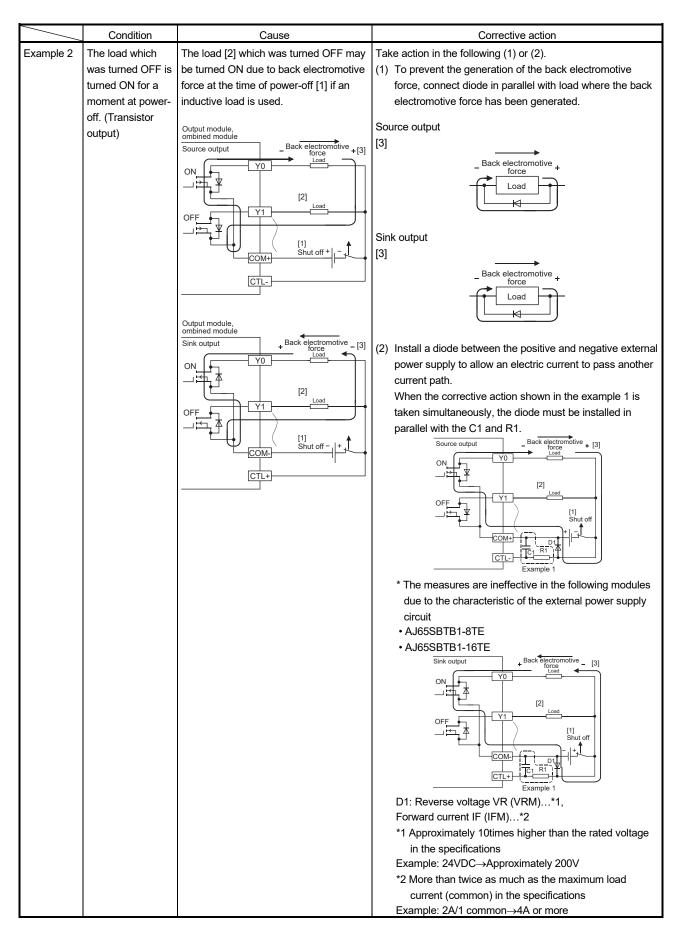
(3) When AJ65AJ65SBTB1-8T, AJ65SBTB2-8T, AJ65SBTB1-16T, AJ65SBTB2-16T, AJ65SBTB1-32T, AJ65SBTC1-32T, AJ65SBTB32-8DT, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB32-16DT, AJ65SBTB1-32DT, AJ65SBTB1-32DT1, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, or AJ65SBTW4-16DT is used

	Condition	Cause	Corrective action
Example 1	The load does not turn Off.	When the load built into the capacitor is connected to the external load, a resonance may occur due to the inductor of the wiring and the load of the capacitor. This may lead to reverse current in output transistor. Due to the reverse current, the protection circuit for output transistor might operate, and the outputs might not be turned on. Note: Such as SSR (Solid state relay) may incorporate a capacitor for countermeasures against noise, etc. When the situation above occurs, confirm if a capacitor is incorporated to the manufacturer.	<ul> <li>Install fast recovery diode (1A, 100V or more) in series with the external load.</li> </ul>

	Condition	Cause	Corrective action
Example 1	When the	Erroneous output due to the stray	(1) When the external power turns ON/OFF, check that the
	external power supply turns on,	capacitance (C) between collector and emitter of photocoupler.	external power supply rising edge must be 10ms or more, and switch the SW1 to the primary side of external power
	the load turns on	There is no erroneous	supply.
	for a moment.	output at normal load. An erroneous output may	Primary side Secondary
		occur at high sensitivity load (such as solid state relay)	SW1 supply programmable controller
		Output module, Combined module	<ul><li>(2) When switching to the secondary side of the external</li></ul>
		Photocoupler	power supply is required, the external power supply rising
			edge connected a condenser must be slow, and measured
			10ms or more.
			Sink output
		voltage drout COM-	
			Load
		<ol> <li>If the external power supply is turned on precipitously, Ic current</li> </ol>	R1
		flows due to the stray capacitance	
		(C) between collector and emitter	COM 24V
		of photocoupler. (2) Ic current flows to the next stage of	Source output
		transister Tr1 gate and Y0 output	Y0
		turns on by 100μs	Load
		SW: External power	
		supply (24V) at On 10ms or less	
			2'4V
		٨	* The measures are ineffective in the following modules due to
		Output Y0	the characteristic of the external power supply circuit • AJ65SBTB1-8TE
		Approx.100 µ s	• AJ65SBTB1-16TE
			R1: Several tens of ohms
			Power capacity $\geq$ (external power supply current ^{*1} ) ²
			$\times$ resistance value $\times$ (3 to 5) ^{*2}
			∧ (5 U 5)
			C1: several hundreds of microfarads 50V *1 Refer to consumption current of the external power supply
			for modules used in this manual.
			*2 Select the power capacity of resistance to be 3 to 5 times lager than the actual power consumption.
			(Example)
			R1=40 $\Omega,$ C1=300 $\mu\text{F}$ Use the below expression to calculated a time constant
			C1×R1=300×10 ⁻⁶ ×40
			=12 × 10³s =12ms
			- 12113

#### (4) When output module, combined module is used

#### 8 TROUBLESHOOTING



### 8 TROUBLESHOOTING

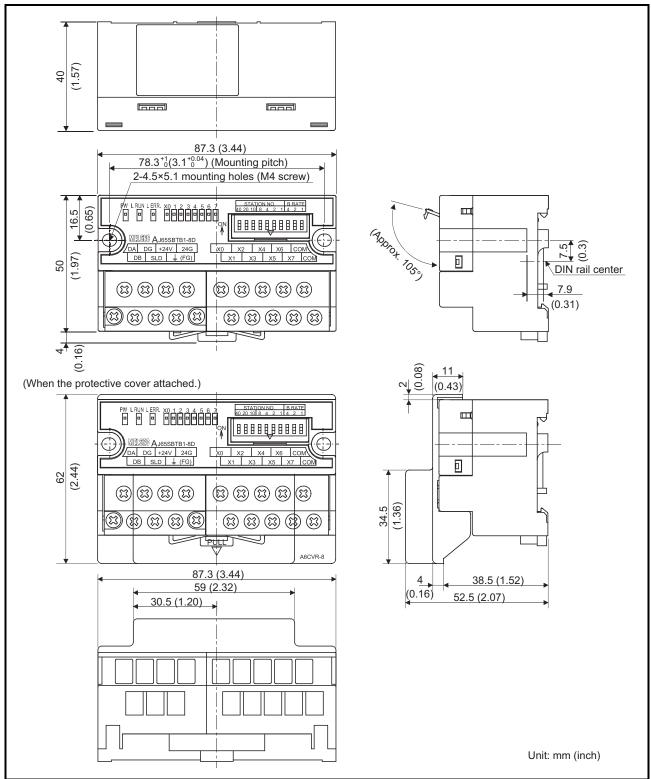
	Condition	Cause	Corrective action
Example 3	The load operates due to powering on the external power supply. (transistor output)	The polarity of the external power supply is connected in reverse. Transistor output module Load Incorrect External power 	Connect the polarity correctly.
Example 4	When an output is turned on, a load connected to the other output is also turned on. (transistor output (source type))	If the wire connecting 0V of an external power supply and a common of a load is cut off or disconnected, the load connected to Y1 is also turned on due to a parasitic circuit of the output element that is off.	Connect the external power supply and loads correctly. To prevent the condition described on the left, connect a diode to each output terminal as shown below.

## **APPENDICES**

Appendix 1 External Dimensions

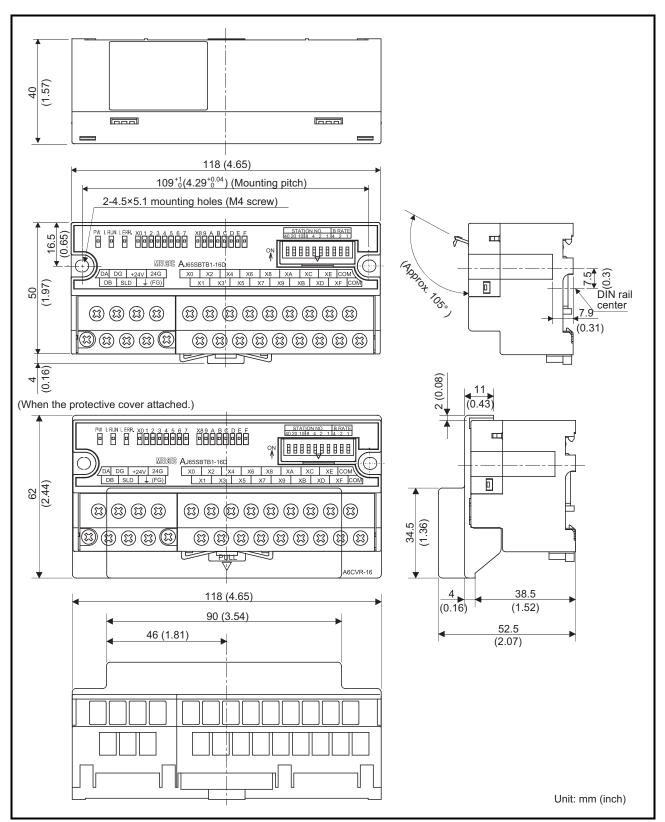
#### Appendix 1.1 AJ65SBTB1-8 remote I/O module

The external dimensions for the AJ65SBTB1-8□ remote I/O module are shown below.



А

#### Appendix 1.2 AJ65SBTB1-16 remote I/O module

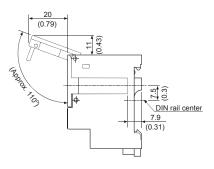


The external dimensions for the AJ65SBTB1-16□ remote I/O module are shown below.

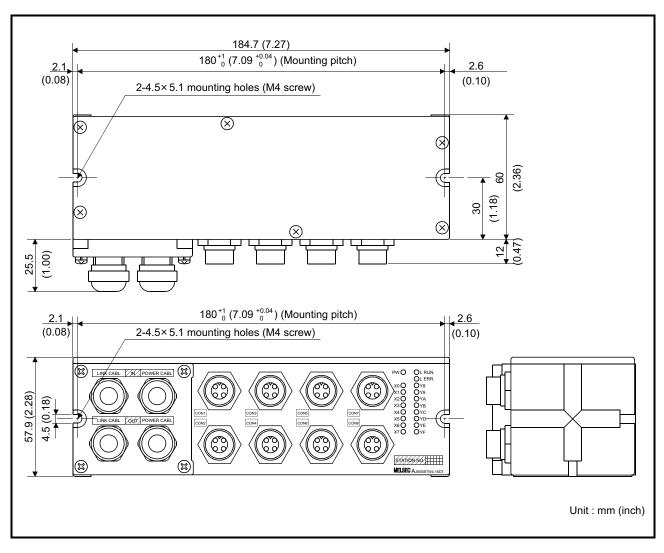
A

### Remark

For AJ65SBTB1-16D, AJ65SBTB1-16T Remote I/O Module of hardware version D or before, side face diagram of the module is as follows.

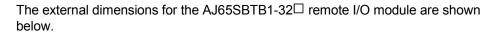


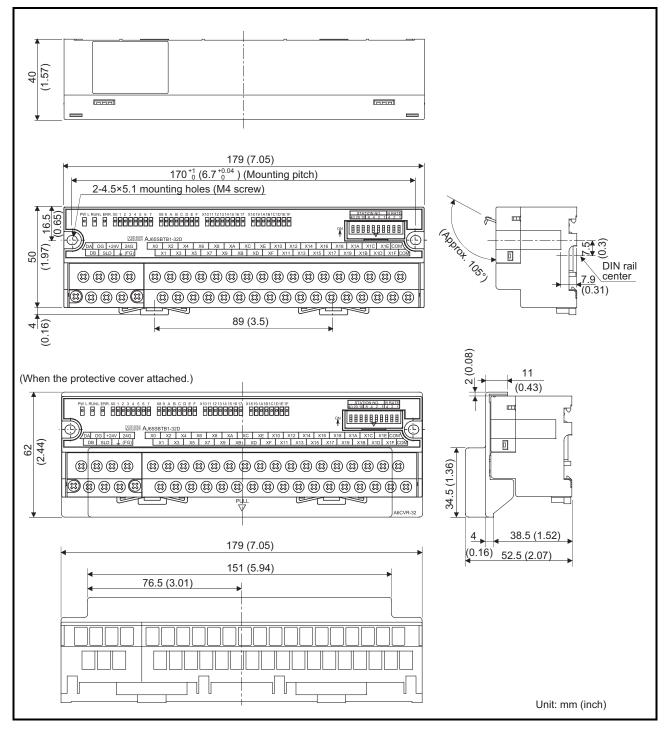
#### Appendix 1.3 AJ65SBTW4-16 remote I/O module



The external dimensions for the AJ65SBTW4-16□ remote I/O module are shown below.

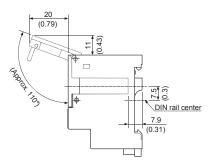
#### Appendix 1.4 AJ65SBTB1-32 remote I/O module



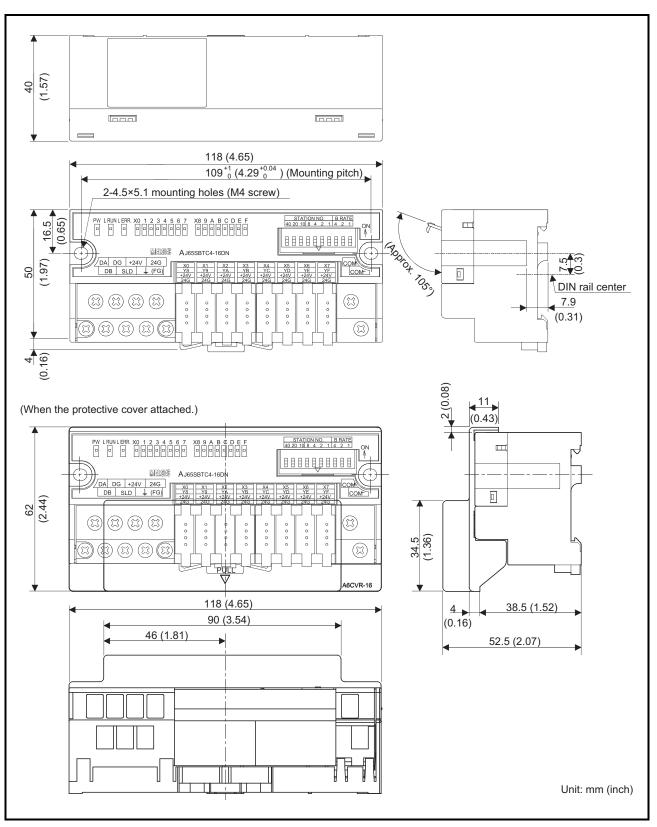


## Remark

For AJ65SBTB1-32D, AJ65SBTB1-32T Remote I/O Module of hardware version D or before, side face diagram of the module is as follows.



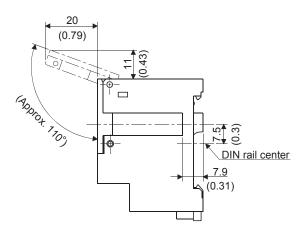
#### Appendix 1.5 AJ65SBTC1-32, and AJ65SBTC4-16 remote I/O module



The external dimensions for the AJ65SBTC1-32 $\Box$ , and AJ65SBTC4-16 $\Box$  remote I/O modules are shown below.

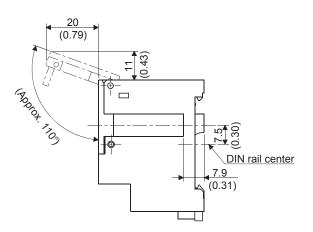
## Remark

(1) For the AJ65SBTC4-16D remote I/O module, the side view of the module is shown below.

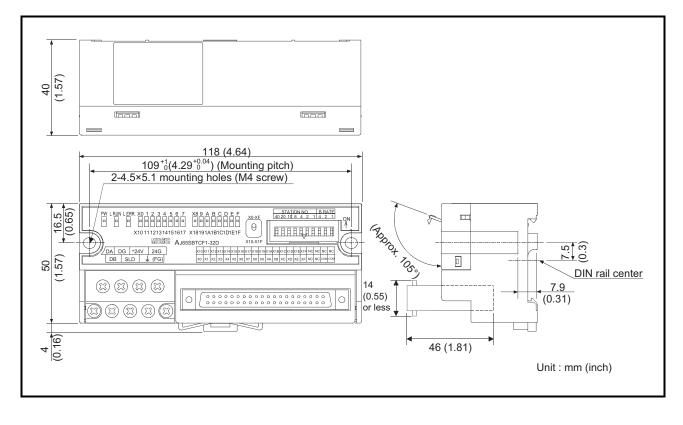


(2) For the modules given in the following table, the side view is shown below.

Model	Hardware Version
AJ65SBTC1-32D	N or before
AJ65SBTC1-32D1	N or before
AJ65SBTC1-32T	Q or before
AJ65SBTC1-32T1	E or before
AJ65SBTC1-32DT	Q or before
AJ65SBTC1-32DT1	Q or before
AJ65SBTC1-32DT2	D or before
AJ65SBTC1-32DT3	D or before
AJ65SBTC4-16DT	J or before
AJ65SBTC4-16DT2	C or before



#### Appendix 1.6 AJ65SBTCF1-32 remote I/O module

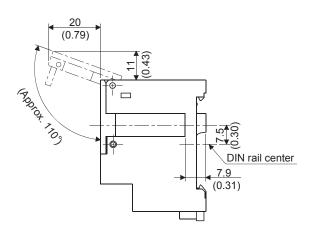


The external dimensions for the AJ65SBTCF1-32□ remote I/O module are shown below.

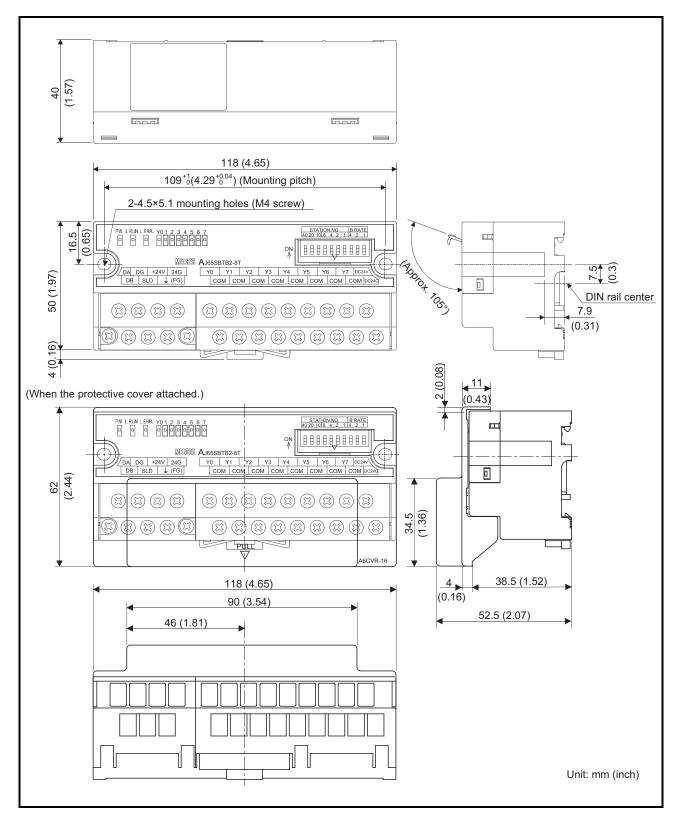
Remark

For the modules given in the following table, the side view is shown below.

Model	Hardware Version	
AJ65SBTCF1-32D	F or before	
AJ65SBTCF1-32T	F or before	
AJ65SBTCF1-32DT	F or before	



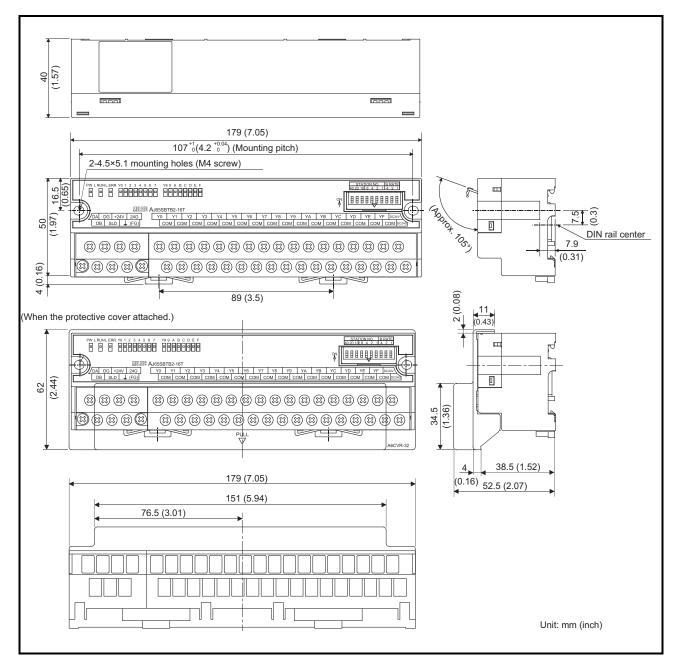
Appendix 1.7 AJ65SBTB2-8, AJ65SBTB3-8, and AJ65SBTB32-8 remote I/O module



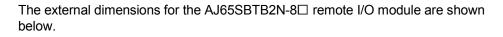
The external dimensions for the AJ65SBTB2-8 $\Box$ , AJ65SBTB3-8 $\Box$ , and AJ65SBTB32-8 $\Box$  remote I/O modules are shown below.

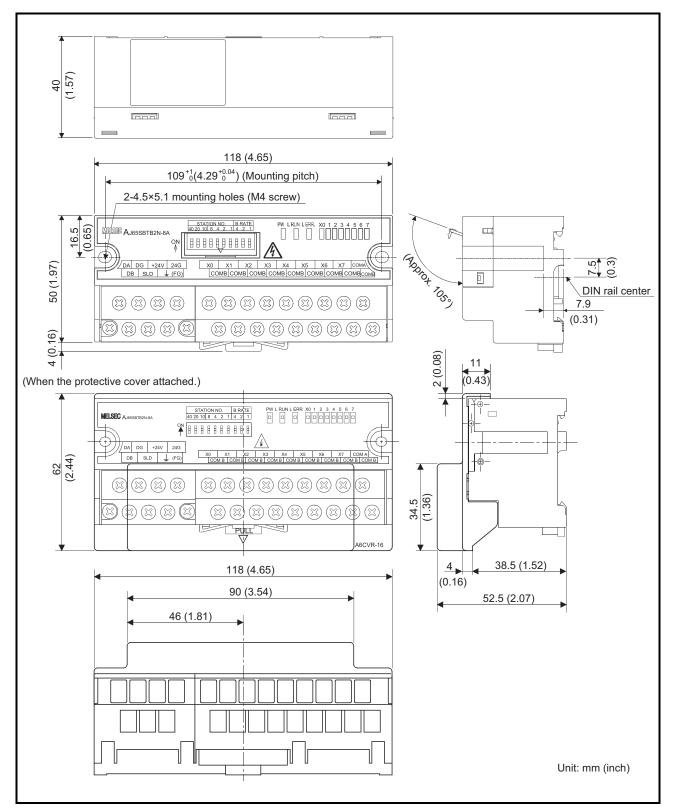
## Appendix 1.8 AJ65SBTB1B-16□, AJ65SBTB2-16□, AJ65SBTB3-16□, and AJ65SBTB32-16□ remote I/O module

The external dimensions for the AJ65SBTB1B-16 $\Box$ , AJ65SBTB2-16 $\Box$ , AJ65SBTB3-16 $\Box$ , and AJ65SBTB32-16 $\Box$  remote I/O modules are shown below.



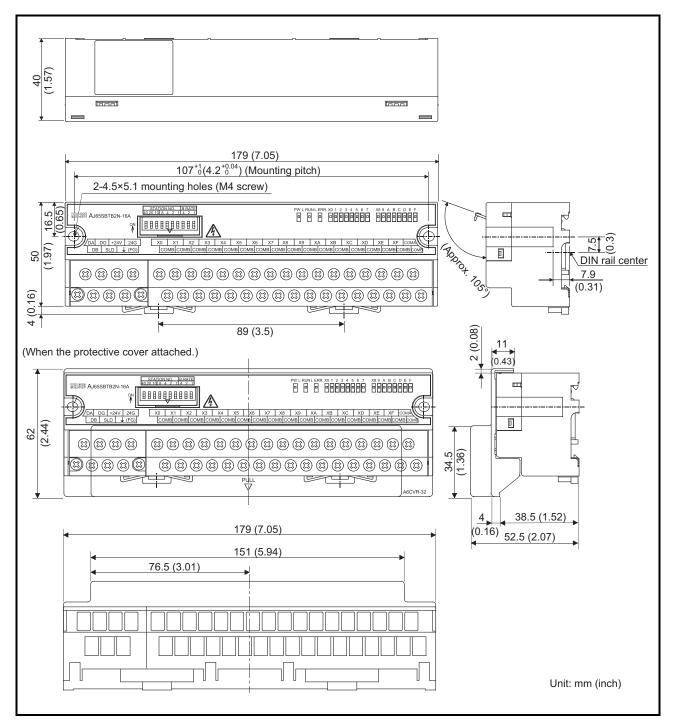
#### Appendix 1.9 AJ65SBTB2N-8 remote I/O module





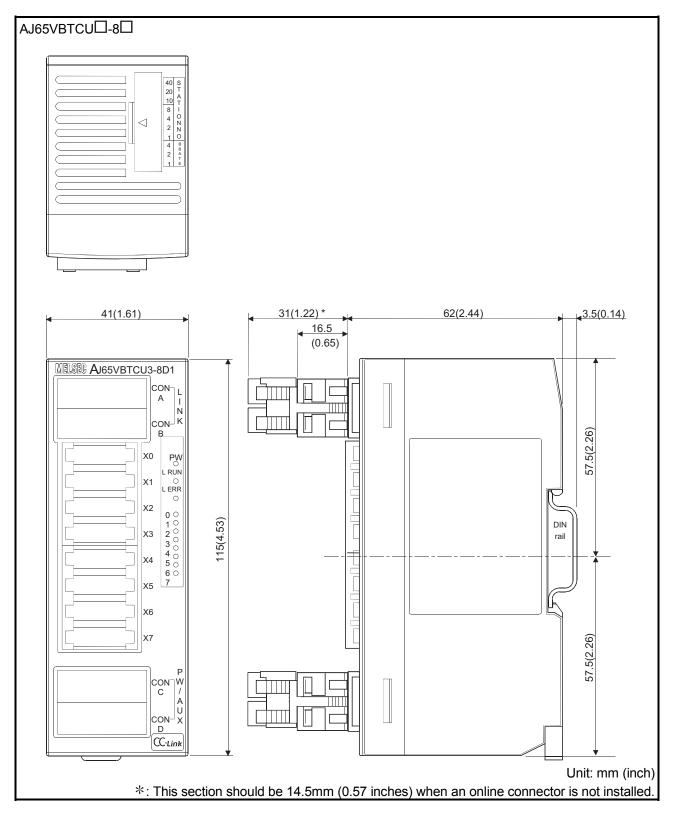
#### Appendix 1.10 AJ65SBTB2N-16 remote I/O module

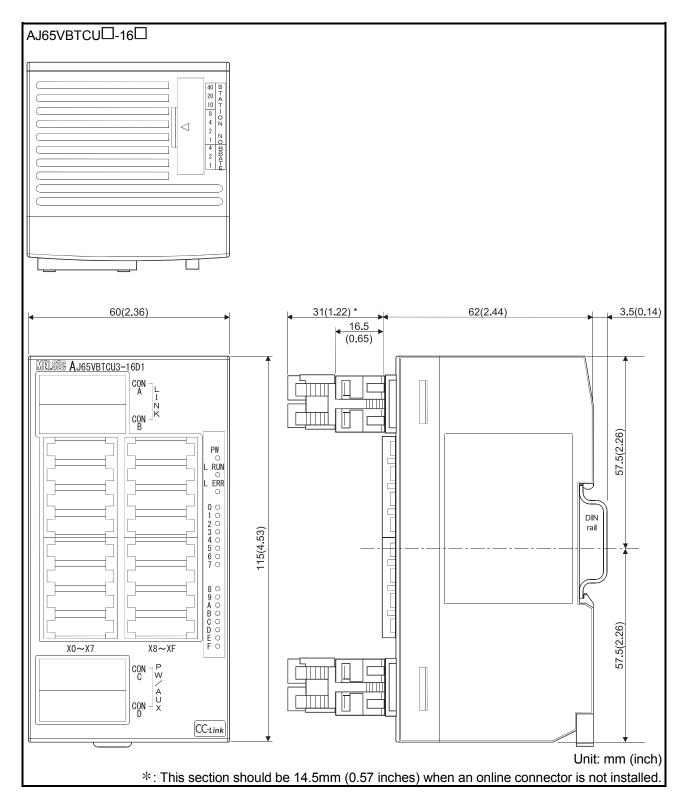
The external dimensions for the AJ65SBTB2N-16□ remote I/O module are shown below.

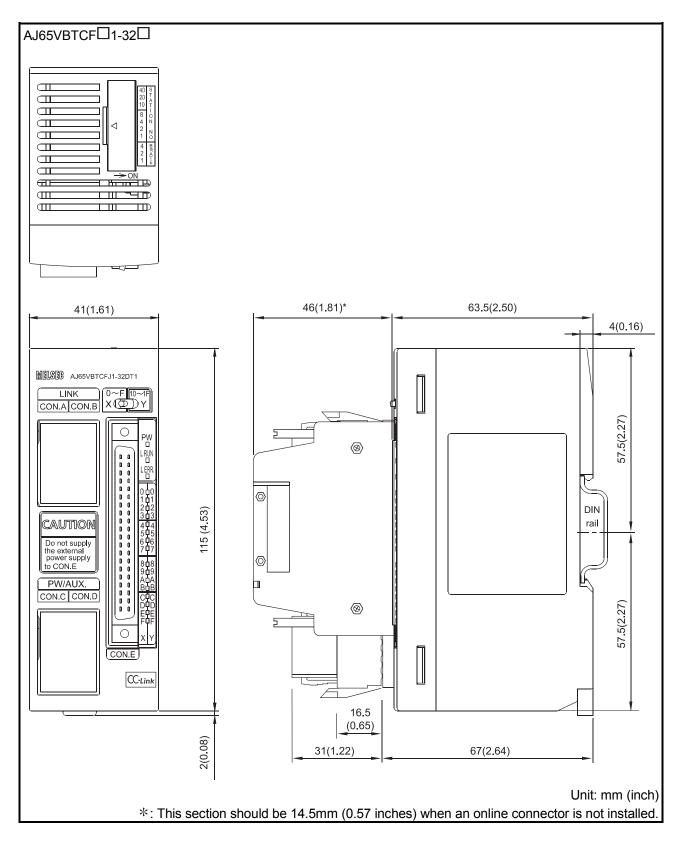


# Appendix 1.11 AJ65VBTCU□-8□, AJ65VBTCU□-16□, and AJ65VBTCF1-32□ remote I/O module

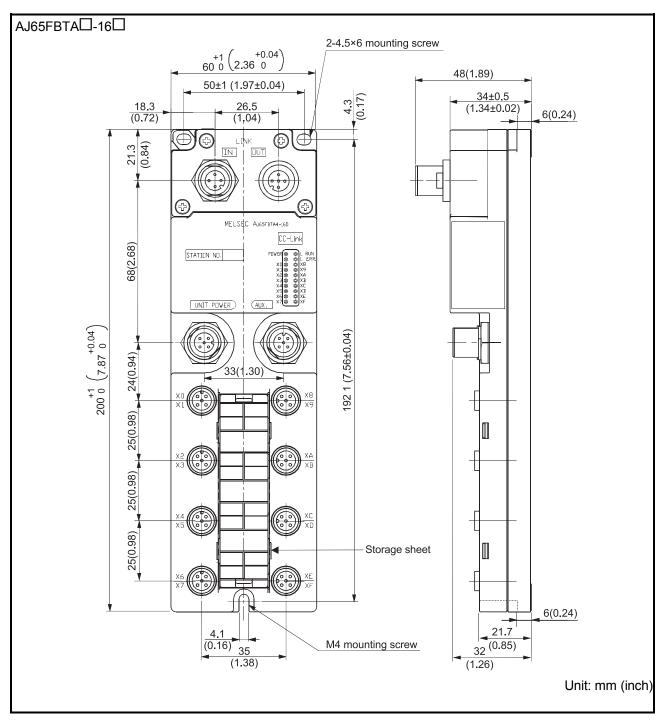
The external dimensions for the AJ65VBTCU $\Box$ -8 $\Box$ , AJ65VBTCU $\Box$ -16 $\Box$ , and AJ65VBTCF1-32 $\Box$  remote I/O modules are shown below.





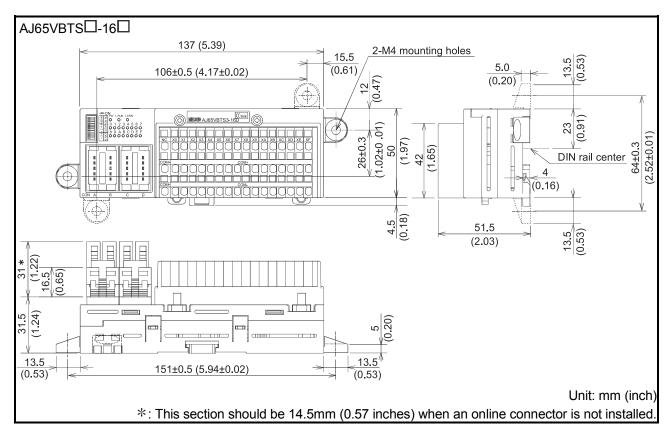


## Appendix 1.12 AJ65FBTA -16 remote I/O module

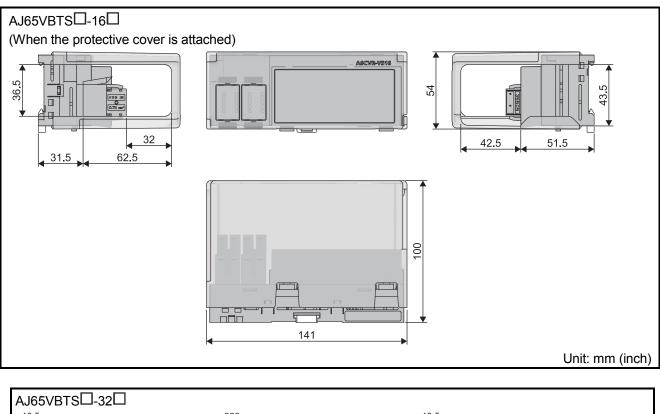


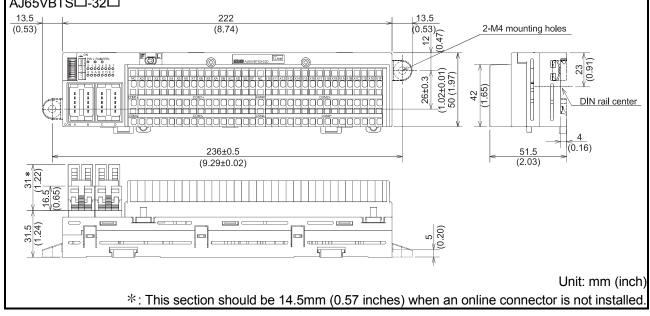
The external dimensions for the AJ65FBTA $\Box$ -16 $\Box$  remote I/O modules are shown below.

#### Appendix 1.13 AJ65VBTS -16, and AJ65VBTS -32 remote I/O module



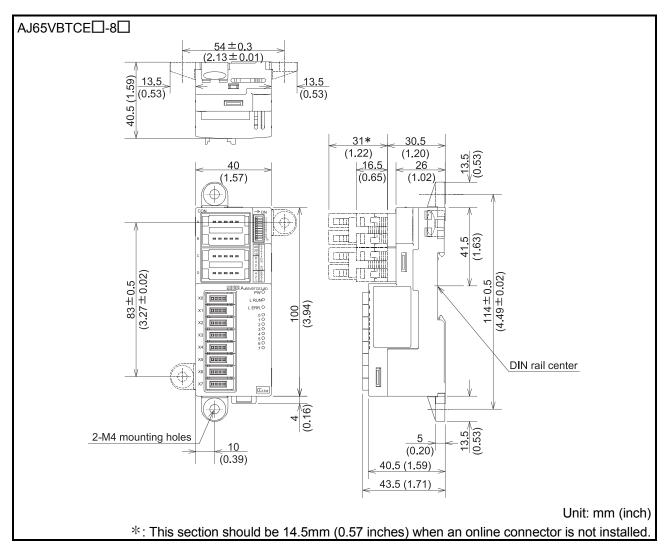
The external dimensions of the AJ65VBTS $\Box$ -16 $\Box$ , and AJ65VBTS $\Box$ -32 $\Box$  remote I/O modules are shown below.

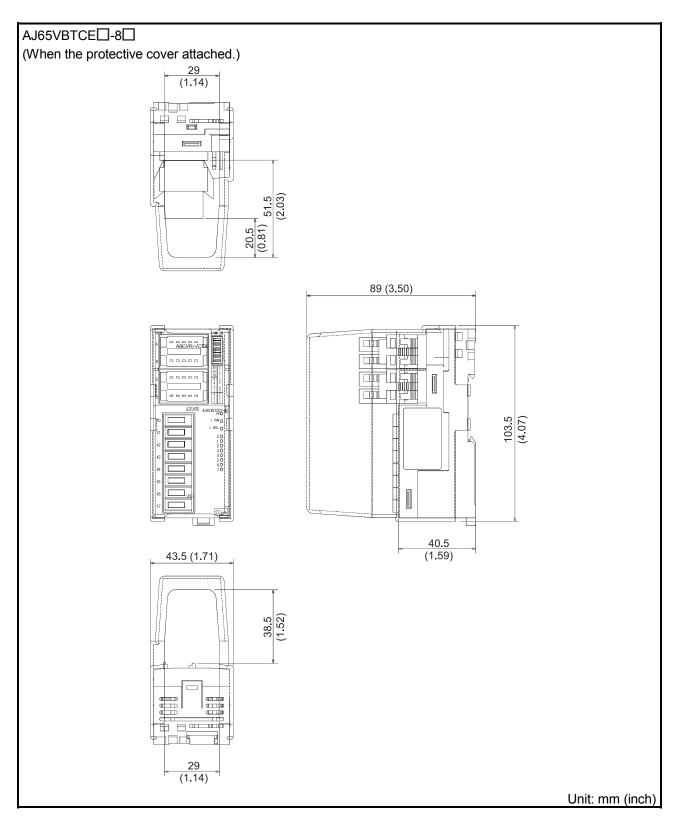


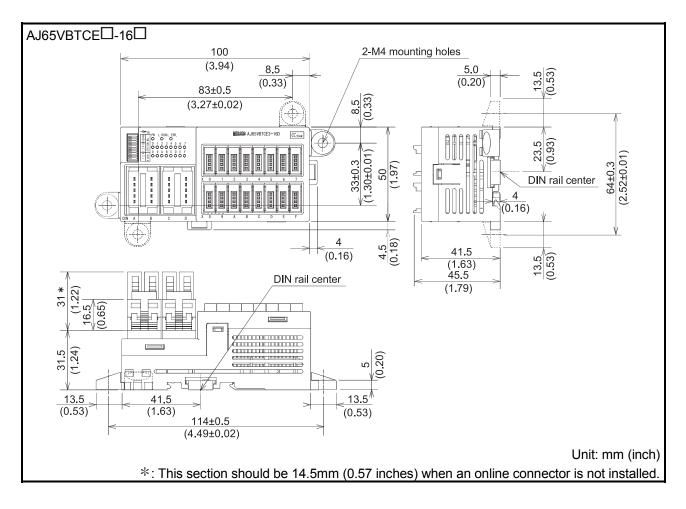


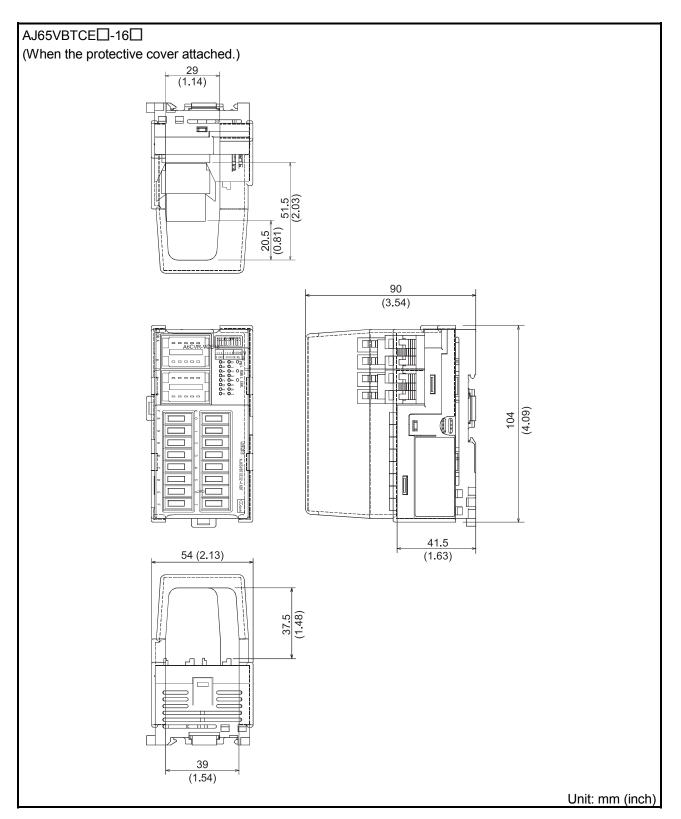
# Appendix 1.14 AJ65VBTCE□-8□, AJ65VBTCE□-16□, and AJ65VBTCE□-32□ remote I/O module

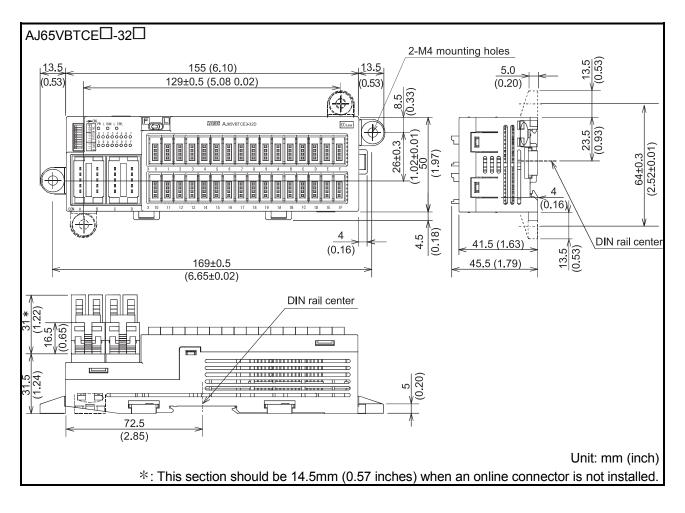
The external dimensions of the AJ65VBTCE $\Box$ -8 $\Box$ , AJ65VBTCE $\Box$ -16  $\Box$ , and AJ65VBTCE $\Box$ -32 $\Box$  remote I/O modules are shown below.



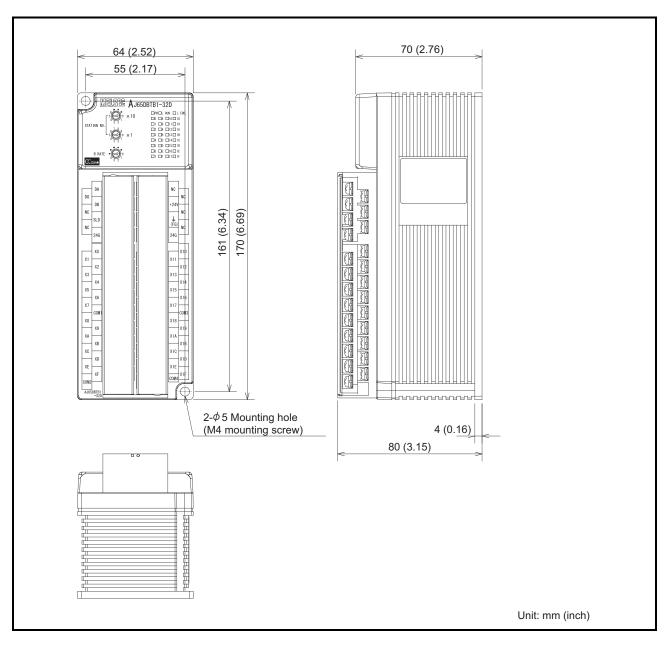








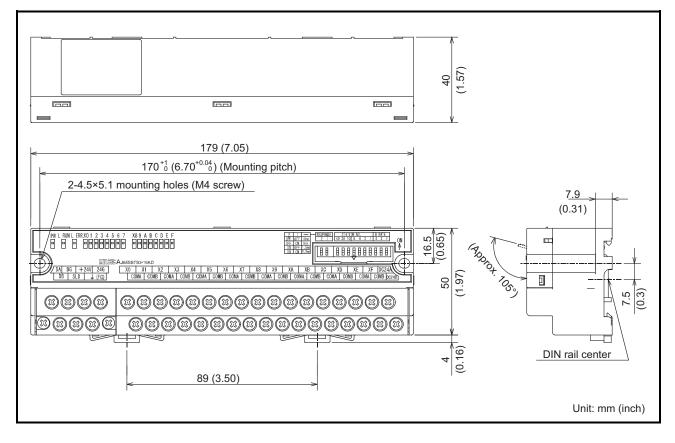
### Appendix 1.15 AJ65DBTB1-32 remote I/O module



The external dimensions of the AJ65DBTB1-32  $\Box$  remote I/O modules are shown below.

## Appendix 1.16 AJ65SBTB1-32K^{III}, AJ65SBTB3-16KD, and AJ65SBTB32-16K^{III} remote I/O module

The external dimensions of the AJ65SBTB1-32K $\Box$  , AJ65SBTB3-16KD, and AJ65SBTB32-16K $\Box$  remote I/O modules are shown below.



#### Appendix 2 CC-Link Versions

There are two versions for CC-Link: Ver.1.00 and Ver.1.10.

#### (1) Difference between Ver.1.00 and Ver.1.10

The original CC-Link version is Ver.1.00 and there are restrictions on the stationto-station cable length. The improved version is Ver.1.10 and there is no restriction on the station-to-station cable length (20cm or longer, in any case). For the maximum overall cable distance of Ver.1.10, refer to the user's manual for the master/local module used.

To enable the station-to-station cable length of 20cm or longer, the following conditions must be met.

- All modules connected in the CC-Link system are Ver.1.10-compatible modules.
- Ver.1.10-compatible CC-Link dedicated cables are used in the entire system.

#### POINT

In a system where both Ver.1.00- and Ver.1.10-compatible CC-Link modules are connected, the specifications of Ver.1.00-compatible module are applied for the maximum overall cable distance and station-to-station cable length. For the maximum overall cable distance and station-to-station cable length of Ver.1.00, refer to the user's manual for the master/local module used.

(2) Checking a version

Ver.1.10-compatible modules have a "CC-Link" logo on the front of the module or on the rating plate.

"CC-Link" logo PW LRUN LERR. CC-Link MELSEC AJ65VBTCE3-16TE 2 3 4 5 Jacco 0 0 0 ۵ ۵ Y0 4 Ū ۵ ۵ Ø ۵ ۵ ۵ Ø ۵ CON AJ CON BJ CON CJ CON DJ Y8 9 A В

(a) On the front of the module

(b) On the rating plate

"CC-Link" logo			
ſ			
	CC-Link		MELSEC
(		ISHI	PASSED
	MODEL		
	DATE ****	* *	
	MITSUBISHI E MADE IN JAPAN		TION BD992C273H03
	CC-	Link logo	

(CC-Link)	MELSEC
MITSUBISHI PASSED	
MODEL	
MODEL	
POWER	
SERIAL	
MITSUBISHI ELECTRIC CORPORATION MADE IN JAPAN	
	BD992C***H**

## MEMO


## WARRANTY

Please confirm the following product warranty details before using this product.

#### 1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.

However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

#### [Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

- [Gratis Warranty Range]
- (1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
  - 1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
  - 2. Failure caused by unapproved modifications, etc., to the product by the user.
  - 3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
  - 4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
  - 5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
  - 6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
  - 7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

#### 2. Onerous repair term after discontinuation of production

- (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
- (2) Product supply (including repair parts) is not available after production is discontinued.

#### 3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

#### 4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to:

- (1) Damages caused by any cause found not to be the responsibility of Mitsubishi.
- (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.
- (3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.
- (4) Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

#### 5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

SH(NA)-4007-AI(2207)MEE MODEL: CC-LINK-S-I/O-U-E MODEL CODE: 13JL72

## MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.