

# MITSUBISHI

## Type A1S-TB32 Terminal Block Adapter for 32-Point Input/Output Module

Mitsubishi General-Purpose Programmable Controller

### User's Manual

Thank you for purchasing the Mitsubishi general-purpose programmable controller MELSEC-A series.

Prior to use, please read this manual thoroughly and familiarize yourself with the product.



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MODEL	A1S-TB32-USERS
MODEL CODE	13JM94
IB(NA)-68976-E (1112)MEE	

#### ● 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 only. 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: "⚠WARNING" and "⚠CAUTION".

**⚠CAUTION** Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

**⚠WARNING** Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠CAUTION" 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.

#### [Installation Precautions]

##### ⚠CAUTION

- Use the product in an environment that meets the general specifications in the user's manual for the CPU module used. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- To mount the product to an I/O module, secure it using two adapter mounting screws. Tighten the screws within the specified torque range. Incorrect mounting may cause drop of the product or malfunction or failure of the I/O module. Undertightening can cause short circuit or malfunction. Overtightening can damage the screws and/or adapter, resulting in drop, short circuit or malfunction.

#### [Wiring Precautions]

##### ⚠WARNING

- Shut off the external power supply for the system in all phases before wiring.

#### [Wiring Precautions]

##### ⚠CAUTION

- Check the rated voltage and terminal layout before wiring to the product, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Use applicable wire and 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 or malfunction.
- Prevent foreign matter such as dust or wire chips from entering the product or the I/O 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.

#### [Startup and Maintenance Precautions]

##### ⚠WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock.
- Shut off the external power supply for the system in all phases before cleaning the module or retightening the terminal screws. Failure to do so may result in electric shock. Overtightening can damage the screw and/or adapter, resulting in drop, short circuit, or malfunction.

##### ⚠CAUTION

- Do not disassemble or modify the product. Doing so may cause failure, malfunction, injury, or a fire.
- Shut off the external power supply for the system in all phases before mounting or removing the product. Failure to do so may cause the I/O module to fail or malfunction.

#### [Disposal Precautions]

##### ⚠CAUTION

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

#### ● CONDITIONS OF USE FOR THE PRODUCT ●

- (1) Mitsubishi 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 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'S USER, 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 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 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 representative in your region.

#### Manuals

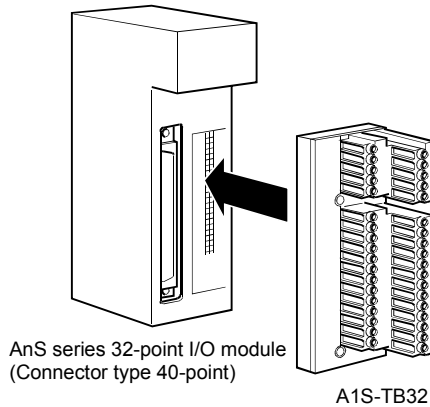
The following manuals are available for the product.

##### Manuals

Manual name	Manual number (model code)
AnS Module Type I/O User's Manual	IB-66541 (13JE81)

## 1. OVERVIEW

This manual describes the specifications and usage of the A1S-TB32 terminal block adapter for 32-point I/O module (hereinafter A1S-TB32). The A1S-TB32 is mounted to a 32-point I/O module and converts the connection type from a connector type to a terminal block type.



## 4. HANDLING PRECAUTIONS

- (1) Do not drop or apply shock to the enclosure of the A1S-TB32 since it is made of resin.
- (2) Tighten the adapter terminal screws or terminal screws within the following torque range.

Type of screw	Tightening torque range
Adapter mounting screw (M2.6 screw)	34 to 46N•cm
Terminal screw (M2.6 screw)	34 to 46N•cm

### Flat blade screwdriver for tightening terminal screws

To tighten terminal screws, use a flat blade screwdriver that satisfies the following requirements.

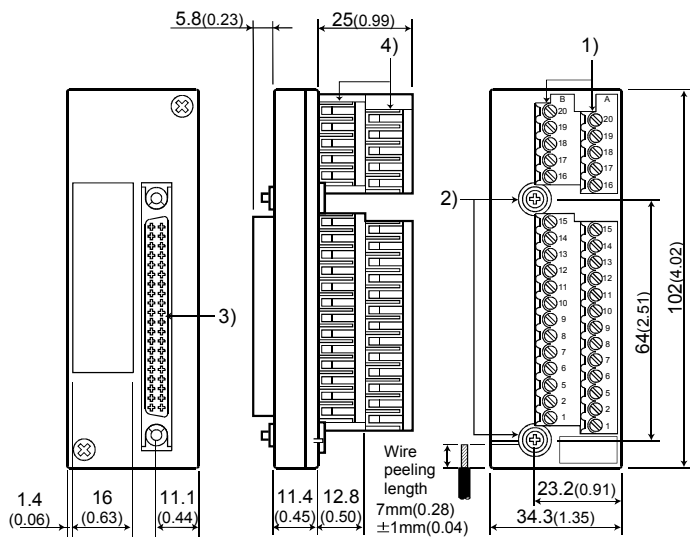
- The handle diameter is 10mm or less.
- The blade end diameter is between 2.5 and 3.3mm.

## 2. PERFORMANCE SPECIFICATIONS

This section describes the performance specifications of the A1S-TB32. For the general specifications, refer to the Type A1SCPUC24-R2/A1SHCPU/A2SHCPU(S1)/A2ASCPU(S1/S30)/A2USHCPU-S1 User's Manual.

Item	Specifications	
Applicable type	A1SX41, A1SX41-S1, A1SX41-S2, A1SX71, A1SY41, A1SY41P, A1SY71	
Applicable wire	Single wire	0.14 to 0.75mm <sup>2</sup> (AWG26 to 18)
	Twisted wire	0.14 to 0.75mm <sup>2</sup> (AWG26 to 18)
	Wire peeling length	7mm (±1mm)
Number of connectable wires	1	
Tensile strength of wire	0.14 to 0.40mm <sup>2</sup> (AWG26 to 21)	20N/wire or more
	0.50 to 0.75mm <sup>2</sup> (AWG20 to 18)	30N/wire or more
	Conditions	Tensile strength when a peeled wire is inserted and tightened at the static torque of 34 to 46N•cm
Maximum allowable voltage	AC250V	
Maximum allowable current	DC3A	
Contact resistance	100mΩ or less	
Weight	0.10kg	

## 3. PART NAMES



Unit: mm (inch)

No.	Name	Application
1)	Terminal screw	Screw for connecting a wire
2)	Adapter mounting screw	Screw for mounting the A1S-TB32 to an I/O module
3)	Connector	Connecting part to an I/O module
4)	Terminal port	Inlet for inserting a wire

## WARRANTY

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

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Specifications subject to change without notice.