MITSUBISHI

GT15 CC-Link IE Field Network Communication Unit

User's Manual

GT15-J71GF13-T2

Thank you for purchasing the GOT1000 Series.

Prior to use, please read both this manual and detailed manual thoroughly to fully understand the product.

MODEL	GT15-J71GF13-T2-U
MODEL CODE	1D7ME6
IB(NA)-0800473-B(1106)MEE	

GRAPHIC OPERATION TERMINAL GOT1000

●SAFETY PRECAUTIONS●

(Always read these precautions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The precautions given in this manual are concerned with this product.
In this manual, the safety precautions are ranked as "DANGER" and "CAUTION".

⚠ DANGER	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the ⚠ CAUTION level may lead to a serious accident according to the circumstances.
Always follow the precautions of both levels because they are important to personal safety.
Please save this manual to make it accessible when required and always forward it to the end user.

[INSTALLATION PRECAUTIONS]

⚠ DANGER

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing this unit to/from the GOT.
  Not doing so can cause a unit failure or malfunction.

⚠ CAUTION

- Use this unit in the environment that satisfies the general specifications described in the User's Manual for the GOT used.
  Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When installing this unit to the GOT, fit it to the connection interface of the GOT and tighten the mounting screws in the specified torque range.
  Undertightening can cause a drop, failure or malfunction.
  Overtightening can cause a drop, failure or malfunction due to screw or unit damage.
- Do not directory touch the conductive part or electronic components of the unit.
  This may cause the unit to fail or malfunction.

[DESIGN PRECAUTIONS]

⚠ DANGER

- If a communication fails in data link, the faulty station holds the data link data generated before the communication error. Create an interlock circuit in the sequence program using the communication status information in order that the system will operate safely.
  Failure to do so may cause mis-outputs or malfunctions, resulting in accidents.
  Check the faulty station and the operation status during communication error by referring to the relevant manuals.
- Some failures of cable or communication unit may cause the GOT to keep the outputs on or off.
  Create an external circuit for monitoring output signals that may lead to serious accidents.
  Failure to do so may cause mis-outputs or malfunctions, resulting in accidents.
- If a communication error (including cable disconnection) occurs during monitoring, the communication between the GOT and programmable controller CPU may be interrupted and the GOT may be inoperative.
  For bus connection : The programmable controller CPU is down and the GOT is inoperative.
  For other than above: The GOT is inoperative.
  When configuring a system including the GOT, the possibility of GOT communication error must be considered; make sure the operation significant for the system will be performed by switches on devices other than the GOT.
  Failure to do so may cause mis-outputs or malfunctions, resulting in accidents.

⚠ CAUTION

- Do not bunch the control wires or communication cables with the main circuit or power wires, or lay them close to each other.
  As a guide, separate the lines by a distance of at least 100mm (3.94 inches) otherwise malfunctions may occur due to noise.

[WIRING PRECAUTIONS]

⚠ DANGER

- Be sure to shut off all phases of the external power supply used by the system before wiring.
  Failure to do so may cause electric shock, product damage or malfunctions.

⚠ CAUTION

- Be careful not to let foreign matter such as dust or wire chips get inside the unit. This may cause a fire, failure or malfunctions.
- Make sure to securely connect the cable to the connector of unit.
  Incorrect connection may cause malfunctions.
- Make sure to fix communication cables and power cables to the unit by ducts or clamps. Failure to do so may cause damage of the unit or the cables due to accidental pull or unintentional shifting of the cables, or malfunctions due to poor contact of the cables.
- Do not hold the cable by hand and pull it out from the unit.
  When removing the cable from the unit, make sure to hold the connector by hand and pull it.
  Failure to do so may cause malfunctions or damage to the unit or cable.

[STARTUP AND MAINTENANCE PRECAUTIONS]

⚠ DANGER

- Do not touch the connector while power is on.
  Failure to do so may cause electric shock or malfunctions.
- Before starting cleaning, always shut off GOT power externally in all phases.
  Not doing so can cause a unit failure or malfunction.

⚠ CAUTION

- Do not disassemble or modify any unit.
  This will cause failure, malfunction, injuries, or fire.
- Do not touch the conductive areas and electronic parts of this unit directly.
  Doing so can cause a unit malfunction or failure.
- Make sure to externally shut off all phases of the power supply before cleaning the unit and retightening unit mounting screws.
  Failure to do so may cause the unit to fail or malfunction.
  Loose tightening may cause a fall of the unit, short circuits, or malfunctions.
  Overtightening may damage the screws and/or the unit, resulting in a fall of the unit, short circuits or malfunctions.
- Make sure to touch the grounded metal to discharge the electricity charged in the body, etc., before touching the unit.
  Failure to do so may cause a failure or malfunctions of the unit.

[DISPOSAL PRECAUTIONS]

⚠ CAUTION

- Dispose of this product as industrial waste.

[TRANSPORTATION PRECAUTIONS]

⚠ CAUTION

- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of the User's Manual for the GOT used, as they are precision devices.
  Failure to do so may cause the unit to fail.
  Check if the unit operates correctly after transportation.

Manuals

The following shows manuals relevant to this product.

Detailed Manual

Manual name	Manual number (Model code)
GT16 User's Manual (Hardware) (Sold separately)	SH-080928ENG (1D7MD3)
GT15 User's Manual (Sold separately)	SH-080528ENG (1D7M23)
GOT1000 Series Connection Manual (Mitsubishi Products) for GT Works3 (Sold separately)	SH-080868ENG (1D7MC2)

Relevant Manuals

For relevant manuals, refer to the PDF manuals stored in the CD-ROM for the drawing software used.

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Compliance with the EMC and Low Voltage Directives

To configure a system meeting the requirements of the EMC and Low Voltage Directives when incorporating the Mitsubishi GOT (EMC and Low Voltage Directives compliant) into other machinery or equipment, refer to "EMC AND LOW VOLTAGE DIRECTIVES" of the General Description included with the GOT used. The CE mark, indicating compliance with the EMC and Low Voltage Directives, is printed on the rating plate of the GOT.

Compliance with the Radio Waves Act (South Korea)

This product complies with the Radio Waves Act (South Korea).
Note the following when using the product in South Korea.

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으으로 합니다.
(The product is for business use (Class A) and meets the electromagnetic compatibility requirements.
The seller and the user must note the above point, and use the product in a place except for home.)

Packing List

After unpacking the box, check that the following products are included.

Model	Product	Quantity
GT15-J71GF13-T2	CC-Link IE Field Network communication unit	1
	Mounting screw set (4 screws, 4 stickers)	1
	Extension interface relay board	1

1. OVERVIEW

This manual explains the GT15 CC-Link IE Field Network communication unit (hereinafter referred to as CC-Link IE communication unit).
The CC-Link IE communication unit allows the GOT1000 series to function as an intelligent device station on the CC-Link IE Field Network.
Refer to the User's Manual for the GOT used for GOT to which this unit can be installed.
When using the CC-Link IE Field Network connection, make the communication setting to perform communication with programmable controllers.
For details of the CC-Link IE Field Network connection, refer to the GOT1000 Series Connection Manual (Mitsubishi Products) for GT Works3.

2. SPECIFICATIONS

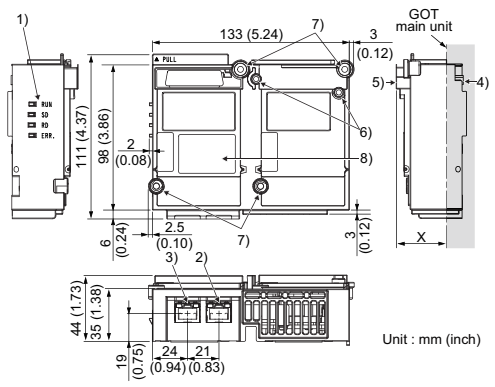
The general specifications of the CC-Link IE communication unit are the same as those of the GOT.
For the general specifications of the GOT, refer to the User's Manual for the GOT used.
The performance specifications of the CC-Link IE communication unit are indicated below.

Item			Specifications
Max. link device points per network		RWw	8K points (8192 points, 16Kbytes)
		RWr	8K points (8192 points, 16Kbytes)
		RX	16K points (16384 points, 2Kbytes)
		RY	16K points (16384 points, 2Kbytes)
Max. link device points per GOT		RWw	1K points (1024 points, 2Kbytes)
		RWr	1K points (1024 points, 2Kbytes)
		RX	2K points (2048 points, 256 bytes)
		RY	2K points (2048 points, 256 bytes)
Max. sending points per GOT		RWw	Online (Nomal mode):1024 points, 2Kbytes Online (High-speed mode):256 points, 512 bytes
		RY	2K points (2048 points, 256 bytes)
Transmission specifications	Communication speed		1Gbps
	Connection cable		An Ethernet cable that meets the 1000BASE-T standard: Category 5e or higher (double shielded, STP), straight cable
	Max. station-to-station distance		100m (conform to ANSI/TIA/EIA-568-B (category 5e))
	Overall cable distance		In line connection: 12000m (when connecting 1 master station and 120 slave stations) In star connection: depends on the system configuration In ring connection: 12100m (when connecting 1 master station and 120 slave stations)
	Max. number of cascaded stages		20 stages
	Transmission path		Line type, star type (line and star mixed type is also enabled) or ring type
Max. number of connectable stations per network			120
Max. number of networks			239

Item	Specifications
Communication method	Token passing method
Max. transient transmission capacity	1920 bytes
Internal current consumption	0.96A
Weight	0.26kg (0.57lb)

3. PART NAMES AND EXTERNAL DIMENSIONS

3.1 CC-Link IE Communication Unit



Unit : mm (inch)

Dimensions of X when the CC-Link IE communication unit is mounted to the GOT.

GOT	GT16	GT15
15"	33.5 (1.32)	35 (1.38)
12.1"	32 (1.26)	32 (1.26)
10.4"	35 (1.38)	35 (1.38)
8.4"	37 (1.46)	37 (1.46)
5.7"	37 (1.46)	37 (1.46)

Unit : mm (inch)

No.	Name	Description
1)	Indicator LED	Indicates the operating status of the CC-Link IE communication unit.
2)	Connector (PORT1 side)	Connector for connecting an Ethernet cable (There is no restrictions for the connecting order at wiring of PORT1 and PORT2 side connectors)
3)	Connector (PORT2 side)	
4)	Interface connector	Extension connector installed to a front extension unit or the GOT
5)	Extension connector	Extension connector to which a back extension unit is installed
6)	Board fixing screw	Screws for fixing the extension interface relay board
7)	Mounting screw	Mounting screws fixed with a front extension unit or the GOT
8)	Rating plate	-

(1) Indicator LED

A LED indicates the status of the CC-Link IE communication unit and the communication status.
If any communication error occurs, specify the error cause by the [NETWK unit status display] screen of the GOT utility.
Refer to the User's Manual for the GOT used for details on the [NETWK unit status display] screen.

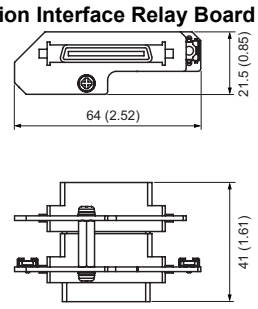
LED name	Status	Description
RUN	On	The unit is in a normal status.
	Off	Hardware failure or WDT error
SD	On	Sending data
	Off	Not sending data
RD	On	Receiving data
	Off	Not receiving data
ERR.	On	Any of the following errors occurs. • An error is detected on all stations. • Station number duplication occurs in the network. • The network parameters are corrupted. • The network parameters (including the reserved station setting, the number of connected devices, and the network number) differ from the actual connection of the devices.
	Blink	A data link error station is detected.
	Off	Normal operation

(2) LED on connector

A LED indicates the link status of the CC-Link IE communication unit and the reception status.

LED name	Status	Description
L ER	Off	No error
	On	Target port frame loss
LINK	Off	Link down
	On	Link up

3.2 Extension Interface Relay Board

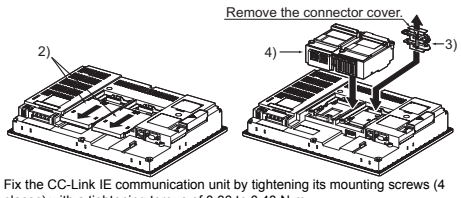


Unit : mm (inch)

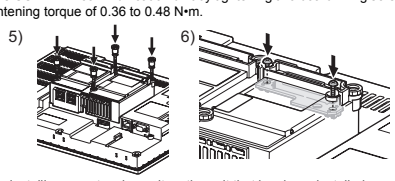
4. INSTALLATION PROCEDURE

The installation procedure for the CC-Link IE communication unit is explained using the GT1685.

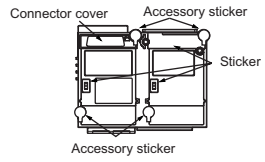
1) Power off the GOT.
2) Remove two extension unit covers of the GOT.
3) Attach the extension interface relay board to the extension interface 2 on the GOT.
   After the installation, detach the connector cover from the extension interface relay board.
   For the GT1655 and the GT155☐, the installation of extension interface relay board is not required.
4) Fit the CC-Link IE communication unit in the GOT case.



5) Fix the CC-Link IE communication unit by tightening its mounting screws (4 places) with a tightening torque of 0.36 to 0.48 N•m.
6) Fix the CC-Link IE communication unit by tightening two board fixing screws with a tightening torque of 0.36 to 0.48 N•m.



7) When installing an extension unit on the unit that has been installed, remove the connector cover and the stickers.
   When not installing an extension unit on the unit that has been installed, in order to avoid receiving electrostatic, stick accessory stickers to cover the top of mounting screws (4 places).
   Keep the connector cover fixed.
   Keep the accessory sticker stuck.

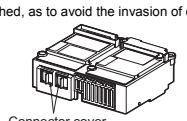


Point

Remove the screws that fixes the extension interface relay board before removing the unit. (Above 6))

5. PRECAUTIONS FOR WIRING CABLES

1) Confirm the followings on the Ethernet cable used.
   • If there is no disconnection
   • If there is no short circuit
   • If there is no connection problem at the connectors
2) Do not use Ethernet cables with broken latches.
   Using Ethernet cables with broken latches may cause cable disconnection or malfunction.
3) When connecting or removing the Ethernet cables to/from the unit, hold the Ethernet cable connector securely with the hands.
4) Connect the Ethernet cable connector and unit connector securely until you hear a click sound.
5) For connecting Ethernet cables to the unit, the bending radius of the cables must be within the specified range.
   For details, check the specifications of the cables to be used.
6) When installing the Ethernet cable, do not touch the cable core of the Ethernet cable connector or unit connector, or let dirt or dust collect on it.
   If oil from the hands, dirt or dust should adhere to the core, the transmission loss will increase, causing a malfunction in the data link.
7) Wire the connector to the Ethernet cable correctly.
   After wiring, perform a loop test or station-to-station test or others to confirm if the setting and wiring of CC-Link IE communication unit have been done properly.
8) For connectors to which Ethernet cables are not connected, keep the accessory connector covers attached, as to avoid the invasion of dirt and dust.



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.

⚠For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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Specifications subject to change without notice.
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