MITSUBISHI

PROGRAMMABLE CONTROLLER

MELSEC-A

User's Manual

Data link unit for A77GOT type A7GT-J71AP23/R23 (Hardware)

INTRODUCTION

Thank you for choosing the Mitsubishi MELSEC-A Series of General Purpose Programmable Controllers. Please read this manual carefully so that the equipment is used to its optimum. A copy of this manual should be forwarded to the end User.

About Manuals

The following manuals are also related to this product. Please order those that you require by referring to the table below.

Detailed Manuals

Manual Name	Manual Number (Model Code)
SW3NIW-A8GOTP Graphic Settings Software Package Operating Manual (Monitor Screen Creation Manual) (Packaged with the software package)	IB-66794 (1DM175)

Related Manuals

Manual Name	Manual Number (Model Code)
Type MELSECNET, MELSECNET/B Data Link System Reference Manual	IB-66350 (13JF70)
A870GOT Graphic Operation Termina User's Manual (Packaged with the A870GOT)	IB-66628 (1DM050)

Cautions on Safety

(Please read before using the module)

In order to handle this product correctly, thoroughly read this manual and the detailed manuals introduced in it, and pay due attention to safety.
Note that the cautions here apply to this product in isolation.
For details on safety of the PC system as a whole, refer to the user's manual for the CPU unit.
The cautions in this cautions on safety are classified into two ranks, "DANGER" and "CAUTION", according to their importance.

⬦ DANGER	A warnig given when improper operation could result in a dangerous situation causing death or serious injuries.
⚠ CAUTION	A caution given when improper operation could result in a dangerous situation causing moderate or injuries, and physical damage to the module, etc.

Even failure to observe a caution marked ! CAUTION may bring about a serious accident depending on the situation. Do not fail to follow the cautions.
Retain this manual for consultation whenever necessary, and provide a copy to the end user.

[Cautions on Design]

⬦ DANGER

- When there is a communication fault in the data link system, the following happens at the faulty station. Using the communications status information, create an interlock circuit in the sequence program to ensure that the system will operate safely despite such faults.

  (1) The data link data that existed before the fault is retained.

  (2) All outputs of MELSECNET (II,/B,/10) remote I/O stations go OFF.

  For details on the method for confirming the faulty station and the operating status when a communication fault occurs, see the manual for the relevant data link.

⚠ CAUTION

- Do not bundle the control wire and the communication cable with the main circuit or power line or keep them close to one another. Keep the control wire and the communication cable at least 100 mm away from the main circuit or power line: otherwise, noise or malfunctions will occur.

[Cautions on Installation]

⚠ CAUTION

- Use the PC in the environment specified in the General Specifications section in this manual. Using it in an environment which does not meet the general specifications could cause electric shock, fire or malfunctions, and damage or deterioration of the module.

- Fit the A7GT-J71AP23/R23 to its installation position on the GOT by sliding it along the guides provided for the mounting screws, then secure it with the unit mounting screws. If the unit is not mounted correctly, it may malfunction, develops faults, or fail.

[Cautions on Wiring]

⬦ DANGER

- Always switch off all power supply phases externally before attempting installation or wiring work. If all power supply phases are not switched off, there will be a danger of electric shock or damage to the product.

⚠ CAUTION

- Take all possible measures to prevent chips or wire scraps from entering the module. Entry of foreign material will cause fire, failure or malfunctions.

- Correctly solder connectors for coaxial cables. If the soldering is not completed correctly, malfunctions may occur.

[Cautions on Start-Up and Maintenance]

⬦ DANGER

- Do not touch the terminals while they are live. This will cause malfunctions.

- Switch the power off before cleaning the module or retightening the terminal screws. If the power is left on, the module will break down or malfunction.

⚠ CAUTION
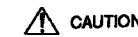
- Read the manual carefully and confirm safety before attempting operations such as program changes, forced output, RUN, STOP, PAUSE, etc., during operation. Incorrect procedure could damage the machine or cause accidents.

- Do not disassemble or tamper with the module. This will cause failure, malfunctions, injuries or fire.

- Switch the power off before installing or removing the module. If the power is left on, the module will break down or malfunction.

- Always make sure to touch the grounded metal to discharge the electricity charged in the body, etc., before touching the module. Failure to do so may cause a failure or malfunctions of the module.

[Cautions on Disposal]

⚠ CAUTION

Dispose of the module as industrial waste.

1. GENERAL DESCRIPTION

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This user's manual gives the specifications, switch settings, and method for installing the A7GT-J71AP23/A7GT-J71AR23 Data Link Units to the A77GOT-S5/A870GOT Graphic Operation Terminal (hereinafter abbreviated to GOT).

The A7GT-J71AP23/R23 Data Link Units are installed to the GOT when the GOT is used as a local station in the MELSECNET (II) optical/coaxial data link system.
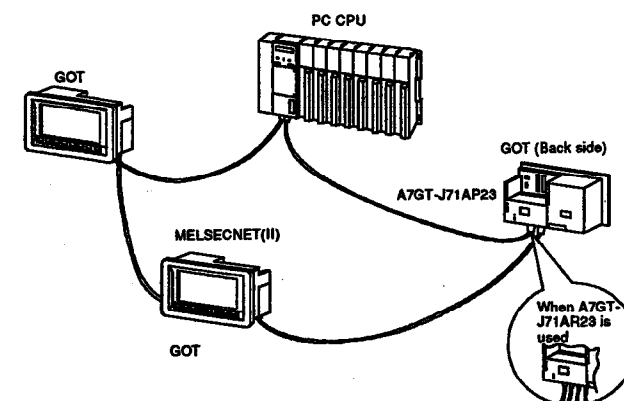
2. PERFORMANCE SPECIFICATIONS

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The performance specifications of the A7GT-J71AP23/R23 are as given in the table below.
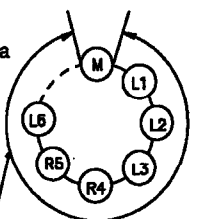
Item			Optical Data Link
Maximum number of link points per station	Input (X)		0 point
	Output (Y)		0 point
MELSECNET mode	Max. link points per system	B	1024 points (128 bytes)
		W	1024 points (2048 bytes)
	Max. link points per station		$\frac{B\,(points) + Y\,(points)}{8} + 2 \times W\,(points) \leq 1024\ bytes$
MELSECNET II mode	Max. link points per system	B	4096 points (512 bytes)
		W	4096 points (8192 bytes)
	Max. link points per station		$\frac{Y\,(points) + B\,(points)}{8} + 2 \times W\,(points) \leq 1024\ bytes$ (First half of link parameters) $\frac{B\,(points)}{8} + 2 \times W\,(points) \leq 1024\ bytes$ (Second half of link parameters)
MELSECNET II composite mode	Max. link points per system	B	4096 points (512 bytes)
		W	4096 points (8192 bytes)
	Max. link points per station		$\frac{Y\,(points) + B\,(points)}{8} + 2 \times W\,(points) \leq 1024\ bytes$ (First half of link parameters) $\frac{B\,(points)}{8} + 2 \times W\,(points) \leq 1024\ bytes$ (Second half of link parameters)
Available station numbers			01 to 64 (as local stations only)
Link refresh timing			Refresh at 100 ms intervals
Detection of link errors			Indicated by the LEDs on the unit
Coefficient of the A7GT-J71AP23/R23 used for calculating the transmission delay time and the link refresh time			L : 100 ms α 2 : 20 ms (standard value) *1
Transmission speed			1.25 MBPS
Transmission method			Half-duplex bit serial transmission
Synchronizing method			Frame synchronizing
Transmission line type			Double loop
Total link distance	A7GT-J71AP23		Max. 10 km (1 km between two stations) *2
	A7GT-J71AR23		Max. 10 km (500 m between two stations) *2
Modulation method			CMI method
Transmission format			Conforms to HDLC (frame method)
Error control method			CRC (Generating polynomial $X^{16} + X^{12} + X^5 + 1$) and retries by time-out control
RAS function			• Diagnosis such as line check of the self station • Loopback when error is detected or cable breaks.
Connectors	A7GT-J71AP23		2-core optical connector plug (CA9003)
	A7GT-J71AR23		BNC connector plug
Cables	A7GT-J71AP23		SI-200/250
	A7GT-J71AR23		3C-2V, 5C-2V or equivalent
Transmission loss (A7GT-J71AP23)			Max. 12 dB/km
Sending level (A7GT-J71AP23)			-17 to -11 dBm (peak)
Receiving level (A7GT-J71AP23)			-32 to -11 dBm (peak)
Weight	A7GT-J71AP23 kg (lb)		0.29 (0.64)
	A7GT-J71AR23 kg (lb)		0.30 (0.66)

*1 Coefficient used for calculation as specified in the MELSECNET, MELSECNET/B Data Link System Reference Manual.

*2 Total link distance is the overall length of the data link system beginning at the send terminal of the master station and ending at the receive terminal of the master station by way of all slave stations in the link.

The maximum link distance is 10 km when fiber-optic cables or coaxial cables are used.

*3 The noise durability, dielectric withstand voltage and insulation resistance depend on the power supply unit.

MELSECNET (II)

Total link distance