RFID Interface Module
Model
ECLEF-V680D2

User's Manual
(Hardware)

CC-Link IE Field

Model	ECLEF-V680D2
50CM-D180189-B(1607)MEE	

9704201-7D

●SAFETY PRECAUTIONS●

(Always read these precautions prior to use.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to ensure that the product is used correctly.
The precautions presented in this manual are concerned with this product only.
For programmable controller system safety precautions, refer to the user's manual of the master module used.
In this manual, the safety precautions are ranked as "WARNING" and "CAUTION."

⚠WARNING	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 minor injury and/or property damage.

Note that failure to observe the ⚠CAUTION level instructions may lead to a serious consequence according to the circumstances. Always follow the precautions of both levels because they are important to personal safety.
Please keep this manual in an easy-to-access location for future reference, and be sure to deliver the manual to the end user.

[Design Precautions]

⚠ WARNING

- If a data link communication error occurs, the data of the master module will be retained. Using the communication status information, configure an interlock circuit in the sequence program to ensure that the system will operate safely.
- When the module is disconnected due to a communication failure in the network or the CPU module is in the STOP status, all outputs are held or turned off according to the parameter setting.
  Configure an interlock circuit in the program to ensure that the entire system will always operate safely even in such a case. If not, an accident may occur due to an incorrect output or malfunction.
- Outputs may remain on or off due to a failure of the module. Configure an external circuit for monitoring output signals that could cause a serious accident.
- Any of the remote I/O signals marked "Use prohibited" are used by the system. Do not use these signals. In the unlikely event such a signal is used (ON/OFF), the function of the module cannot be guaranteed.

⚠ CAUTION

- When installing the RFID interface module and amplifier/antenna cables, do not bundle the cables with or install the cables close to the main circuit, power lines, or the like. Be sure to separate the cables and lines by about 100mm or more. Failure to do so will cause noise, resulting in malfunction.
- When storing the product, be sure to observe the defined storage ambient temperature and humidity. Failure to do so will lead to module malfunction and failure.
- Look the control panel so that only those who are trained and have acquired enough knowledge of electric facilities can open control panel.
- Install the emergency stop switch outside the control panel so that workers can operate it easily.

Requirements to compliance with the Low Voltage Directive
The module operates at the rated voltage of 24VDC.
The Low Voltage Directive is not applied to the modules that operate at the rated voltage of less than 50VAC and 75VDC.

1. OVERVIEW

This manual describes the specification, names of parts, installation, wiring connection with the other side equipment, etc. of the RFID Interface Module Compatible with Omron V680 Series for the ECLEF-V680D2 Type CC-Link IE Field Network (hereinafter "RFID interface module"), which is used as an intelligent device station for the CC-Link IE Field Network.

Once you have opened the product package, verify that the package contains the following.

Item	Quantity
RFID interface module	1
Connector for unit power source/FG *1	1
Dustproof cover for Ethernet connector	1
Dustproof cover for aerial connection connector	1
Ferrite core	1
User's Manual (Hardware Edition) (this document)	1

*1 Supplied with the product

2. GENERAL SPECIFICATION

Item	Specifications					
Operating ambient t emperature	0 to 55℃					
Storage ambient temperature	-25 to 75℃					
Operating ambient humidity	5 to 95%RH, non-condensing					
Storage ambient humidity	5 to 95%RH, non-condensing					
Vibration resistance	JIS B 3502 and IEC 61131-2 compliant		Frequency	Acceleration	Amplitude	Sweep Count
		With intermittent vibration	5 to 8.4Hz	-	3.5mm	10 times each in X, Y, Z directions
			8.4 to 150Hz	9.8m/s²	-	
		With continual vibration	5 to 8.4Hz	-	1.75mm	-
			8.4 to 150Hz	4.9m/s²	-	
Impact resistance	JIS B 3502 and IEC 61131-2 compliant (147m/s²; 3 times each in X, Y, and Z directions)					
Operating environment	Free of corrosive gasses					
Operating altitude *1	0 to 2000m					
Installation location	Inside control panel *2					
Overvoltage category *3	II					
Pollution degree *4	2					
Equipment class	Class I					

*1. Do not use or store the RFID interface module under pressure higher than the atmospheric pressure of altitude 0m. Doing so may cause malfunction.
*2. If the environment satisfies the operating ambient temperature, operating ambient humidity and other conditions, the module can be used even outside the control panel.
*3. 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 the 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.
*4. This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used.
Pollution degree 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.

3. PERFORMANCE SPECIFICATIONS

Item			Specifications
CC-Link IE Field Network side	Station type		Inteligent device station
	Cyclic transmission	RX points	32 points
		RY points	32 points
		RWr points	16 points to 1024 points (Variable) (*1)(*2)
		RWw points	16 points to 1024 points (Variable) (*1)(*2)
	Maximum data amount writable/ loadable with one ID command		8 bytes to 1016 bytes (Variable)
	Station Number		1 to 120
	Communication cable		Ethernet cable that meets the specifications of 1000BASE-T Straight cable in Category 5e or higher (with a double shield, STP)
	Connector used		RJ45 connector
RFID side	Connectable antenna		OMRON RFID system V680 series: Separate amplifier type: V680-HA63A+V680-HS☐☐ / V680-HA63B+V680-HS☐☐; Built-in amplifier type: V680-H01-V2
	ID tag		OMRON RFID system V680 series: 1kbyte: V680-D1KP☐☐; 2kbytes: V680-D2KF☐☐, V680S-D2KF☐☐; 8kbytes: V680-D8KF☐☐, V680S-D8KF☐☐; 32kbytes: V680-D32KF☐☐
	Number of connectable antennas		2 antennas *3
External power supply			24V DC (ripple rate: 5% or less) Allowable voltage range: 20.4 to 28.8VDC (24V DC -15%, +20%) Current consumption:0.60A
Noise resistance			DC-type noise voltage 500Vp-p, noise width 1μs, based on a noise simulator with a noise frequency of 25 to 60Hz
Withstand voltage			All DC external terminals – Ground: 500V AC, 1 minute
Insulation resistance			All DC external terminals – Ground: 500V DC, Insulation resistance equal to or more than 10 MΩ by insulation resistance tester
Protection degree			IP2X
Outer dimensions			70(H)×180(W)×55(D)[mm]
Weight			0.3kg
Applicable wire size	For power supply		Core 0.3 to 1.5mm² (22 to 16 AWG) Terminal hole size 2.8mm×2.0mm *4

[Installation Precautions]

⚠ WARNING

- Shut off the external power supply (all phases) used in the system before mounting or removing a module. Failure to do so may result in electric shock or cause the module to fail or malfunction.

⚠ CAUTION

- 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.
- Securely fix the module with a DIN rail.
- Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.
- Securely connect the cable connectors. Poor contact may cause malfunction.

[Wiring Precautions]

⚠ WARNING

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

⚠ CAUTION

- Individually ground the FG terminal of the programmable controller with a ground resistance of 100 ohms or less. Failure to do so may result in electric shock or malfunction.
- Fully mount the antenna cable to the module connector. After mounting, check for separation. Insufficient contact results in the risk of erroneous input and output.
- 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.
- When connecting a cable, first verify the connection interface type and then connect the cable properly. Connecting a cable to a wrong interface or miswiring a cable results in the risk of module and external device malfunction.
- Use a bar-shaped crimping terminal for wiring to a unit power source/FG.
  If a cable inserted into the insertion opening has been stripped, it cannot be properly clamped.
- Tighten the terminal screws within the specified torque range.If a terminal screw is too loose, a short circuit or malfunction may result.If a terminal screw is too tight, screw and/or module damage may occur, resulting in a short circuit or malfunction.
- When removing a communication cable or power cable connected to the module, do not pull the cable section. For cables with connectors, hold the connector of the section connected to the module during removal. To disconnect the cable, push in the open/close button with a flathead screwdriver. With the button pushed in, pull out the wire.
  Pulling a cable while it is connected to the module results in the risk of module and cable damage as well as malfunction due to a poor cable connection.
- Do not insert or remove an antenna cable with the power ON. Doing so results in the risk of failure.
- 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.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- When installing the RFID interface module with an amplifier/aerial connection cable or a communication cable, do not bundle them with or get them closer to the main circuit or the power line. Keep them away from the main circuit or the power line for more than 100 mm as a measure. Otherwise a noise may cause them to malfunction.
- 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.
- Do not connect the power supply in reverse. Doing so results in risk of failure.
- Install our sequencer inside the control panel. The replacement of the unit and the wiring work must be performed by a maintenance worker well trained in the electric shock protection. For the wiring procedure, see the "6. WIRING" section of this manual.

[Startup and Maintenance Precautions]

⚠ WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block screws or connector screws. Failure to do so may cause the module to fail or malfunction.

⚠ CAUTION

- Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.
- Be sure to shut off all phases of the external power supply used by the system before module installation to or removal from the panel. Failure to do so results in the risk of module failure and malfunction.
- After the first use of connectors, the number of connections/disconnections is limited to 50 times. (in accordance with IEC 61131-2)
- The module case is made of plastic. Do not drop the case or expose the case to strong impact. Doing so results in the risk of module damage.
- Before handling the module or connection cables, 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.
- When cleaning, do not use thinner, benzene, acetone, or kerosene. Doing so results in the risk of module damage.
- Do not insert water or wire through the gaps in the case. Doing so results in the risk of fire or electric shock.
- This product cannot be used as a detector for physical protection. Erroneous output or malfunction may result in an accident.
- When installing or removing the antenna from the amplifier, first turn OFF the module power supply. Failure to do so results in the risk of module failure and malfunction.
- Installation of multiple antennas may result in a decrease in communication performance due to mutual interference.
  Refer to the description of mutual interference between antennas in the antenna user's manual.
- In the unlikely event that you feel something is wrong with the product, stop using the product immediately, turn OFF the power supply, and consult with your local Mitsubishi service center or representative. Continued use as is results in the risk of module failure and malfunction.
- Do not use the product in locations where chemical products and oil are scattered. Doing so results in the risk of module failure and malfunction.
- When using the product, be sure to observe the defined ambient temperature and humidity. Failure to do so results in the risk of module failure and malfunction.
- Do not touch any connectors when the module is powered. Doing so results in the risk of module malfunction caused by the static electricity in your body.
- Startup and maintenance of a control panel must be performed by qualified maintenance personnel with knowledge of protection against electric shock. Lock the control panel so that only qualified maintenance personnel can operate it.

[DISPOSAL PRECAUTIONS]

⚠ WARNING

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

Item		Specifications			
		Model name	Applicable wire size	Tool for the bar-shaped crimping terminal	Manufacturer
Applicable solderless terminal	For power supply	TE 0.5-8, TE 0.5-10	0.3 to 0.5mm²	NH-79	NICHIFU Co., Ltd
		TE 0.75-8, TE 0.75-10	0.75mm²		
		TE 1.0-8, TE 1.0-10	0.9 to 1.0mm²		
		TE 1.5-8, TE 1.5-10	1.25 to 1.5mm²		
		AI 0.34-8TQ	0.3mm²	CRIMPFOX6	PHOENIX CONTACT GmbH & Co. KG
		AI 0.5-8WH, AI 0.5-10WH	0.5mm²		
		AI 0.75-8GY, AI 0.75-10GY	0.75mm²		
		AI 1-8RD, AI 1-10RD	1.0mm²		
		AI 1.5-8BK, AI 1.5-10BK	1.5mm²		
Applicable DIN rail		TH35-7.5Fe, TH35-7.5AI (compliant with IEC 60715)			

*1 Given 1024 points, the maximum number of units connectable is eight.
*2 If the master unit is QD77GF16, given 1024 points, the maximum number of units connectable is one. A ring-type transmission channel method cannot be used.
*3 Only one unit of an amplifier built-in antenna can be connected to Channel 1 side.
*4 To connect a cable to the connector for the unit power supply and the FG, use a rod type crimp terminal. Use one cable for each cable entry. Do not insert multiple cables. If two or more cables are inserted, it may cause a contact failure.

4. MOUNTING AND INSTALLATION

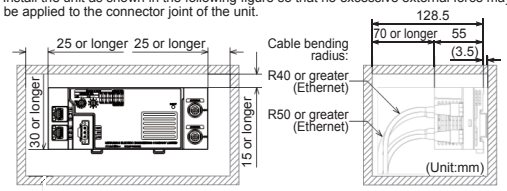
4.1 Usage Precautions

(1) The RFID interface module case is made of plastic. Do not drop the case or expose the case to strong impact.
(2) Before touching the module, be sure to touch grounded metal or the like to release the static electricity from your body.

4.2 Installation Environment

(1) Use a DIN rail to install the module.
(2) Do not install the I/O module to the place where:
- Ambient temperature is outside the range of 0 to 55℃;
- Ambient humidity is outside the range of 5 to 95% RH;
- Condensation occurs due to rapid temperature change;
- Corrosive gas or combustible gas is present;
- Conductive powder such as dust and iron powder, oil mist, salinity, or organic solvent is filled;
- The RFID interface module is exposed to direct sunlight;
- A strong electric field or strong magnetic field is generated; and
- The RFID interface module is subject to vibration and shock.

(3) When installing an RFID interface module in a structure, make sure to keep the following distance between the RFID interface module and its surrounding structure or parts so as to ensure good ventilation and facilitate the module replacement.
(4) Install the unit as shown in the following figure so that no excessive external force may be applied to the connector joint of the unit.

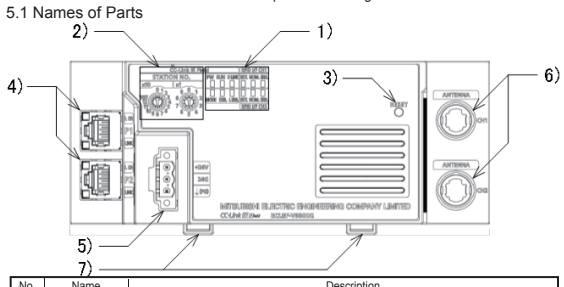


(5) Also refer to the User's Manual of your CPU unit as well.

5. PART NAMES AND SETTINGS

This section describes about the names of parts and settings.

5.1 Names of Parts



No.	Name	Description
1)	Indicaters LED	Indicaters LED
2)	Station number setting switch	A rotary switch for the following setting and test. • Station Number Setting • Unit Test When operating the station number setting switch, use a flathead screwdriver with 3.5mm or less width of the tip. (1) Station number setting • The hundreds and tens places of the station number are set with x10. • The ones place of the station number is set with x1. • Set the station number from 1 to 120. (2) Test mode setting Configure the following settings to perform the H/W unit test.

Station number ×10	Station number ×1	Test details
TEST	0	Unit test
	1	Communication test
	2	Noise level measurement

Product Application

(1) This Mitsubishi Electric Engineering Company Limited (hereinafter referred to as "MEE") product shall be used in applications that will not lead to a major accident even in the unlikely event any failure or defect should occur in the product in which this Mitsubishi product is incorporated, and shall be systematically provided with external backup and fail-safe functions that operate in the event of any failure or defect.
(2) This MEE product has been designed and manufactured as a general purpose product for general industry applications and the like.
Thus, the product shall be excluded from use in special equipment, system, and other applications such as those listed below. If used in such applications, Mitsubishi shall not bear any responsibility whatsoever for the quality, performance, and safety of the Mitsubishi product (including but not limited to non-performance of main obligation, defect liability, quality assurance liability, tort liability, and product liability):
- Applications in which the public could be greatly affected such as the applications of the nuclear and other power plants operated by the respective power companies
- Applications in which a special quality assurance system is required, such as the applications of railway companies or government or other public offices
- Use in aircraft, medical applications, railway applications, incineration and fuel devices, passenger vehicles, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected

Note that such an application of the Mitsubishi product may be permitted as determined by Mitsubishi if the user accepts that the application is to be limited and a special quality is not to be required (a quality that exceeds the general specifications). For details, please consult with Mitsubishi.

Manuals

The details of this product are described in the following optional manuals.
Please thoroughly understand the functions and performance of this product for proper use.
The PDF file of the latest manual is also available from our website for FA-related products (MEEFAN).
MEEFAN: www.mee.co.jp/sales/fa/meefan/

Detailed manuals

Manual Title	Manual Number	Standard Price
ECLEF-V680D2 RFID Interface Module User's Manual (Details)	50CM-D180190	¥3,000

EMC AND LOW VOLTAGE DIRECTIVES

Compliance to the EMC Directive, which is one of the EU Directives, has been a legal obligation for the products sold in European countries since 1996 as well as the Low Voltage Directive since 1997. Manufacturers who recognize their products are compliant to the EMC and Low Voltage Directives are required to attach a "CE mark" on their products.

Sales representative in EU member states

Authorized representative in EU member states is shown below.
Company name: Mitsubishi Electric Europe B.V.
Address: Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany

Measures to comply with the EMC Directive

The EMC Directive specifies that "products placed on the market must be so constructed that they do not cause excessive electromagnetic interference (emissions) and are not unduly affected by electromagnetic interference (immunity)".
This section summarizes the precautions on compliance with the EMC Directive of the machinery constructed with the module.
These precautions are based on the requirements and the standards of the regulation, however, it does not guarantee that the entire machinery constructed according to the descriptions will comply with abovementioned directives.
The method and judgment for complying with the EMC Directive must be determined by the person who constructs the entire machinery.

(1) EMC Directive related standards

(a) Emission requirements

Specifications	Test item	Test details	Standard value
EN61131-2: 2007	CISPR16-2-3 Radiated emission *2	Radio waves from the product are measured.	• 30M to 230MHz QP: 40dBμV/m (10m in measurement range) *1 • 230M to 1000MHz QP: 47dBμV/m (10m in measurement range)
	CISPR16-2-1, CISPR16-1-2 Conducted emission *2	Noise from the product to the power line is measured.	• 150k to 500kHz QP:79dB, Mean: 66dB *1 • 500k to 30MHz QP:73dB, Mean: 60dB

*1 QP: Quasi-peak value, Mean: Average value
*2 The module is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel. The tests were conducted with the module installed in a control panel.

(b) Immunity requirements

Specifications	Test item	Test details	Standard value
EN61131-2: 2007	EN61000-4-2 Electrostatic discharge immunity *1	Immunity test in which electrostatic is applied to the cabinet of the equipment.	• 8kV Air discharge • 4kV Contact discharge
	EN61000-4-3 Radiated, radio-frequency, electromagnetic field immunity *1	Immunity test in which electric fields are irradiated to the product.	80% AM modulation@1kHz • 80M-1000MHz: 10V/m • 1.4G-2.0GHz: 3V/m • 2.0G-2.7GHz: 1V/m
	EN61000-4-4 Electrical fast transient/burst immunity *1	Immunity test in which burst noise is applied to the power line and signal line.	• AC/DC main power: 2kV • RFID, communication: 1kV
	EN61000-4-5 Surge immunity *1	Immunity test in which lightning surge is applied to the power line and signal line.	• AC power line: 2kV CM, 1kV DM • Communication: 1kV *3
	EN61000-4-6 Immunity to conducted disturbances, induced by radio-frequency fields *1	Immunity test in which high frequency noise is applied to the power line and signal line	0.15M-80MHz, 80% AM modulation @1kHz, 10Vrms *2
	EN61000-4-8 Power-frequency magnetic field immunity *1	Immunity test in which the product is installed in inductive magnetic field	50Hz/60Hz, 30A/m
	EN61000-4-11 Voltage dips and interruption immunity *1	Immunity test in which power supply voltage is momentarily interrupted	• Apply at 0%, 0.5 cycles and zero-cross point • 0%, 250/300 cycles (50/60Hz) • 40%, 10/12 cycles (50/60Hz) • 70%, 25/30 cycles (50/60Hz)

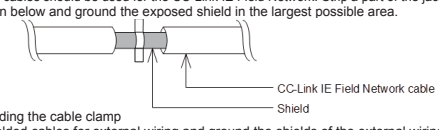
*1 The module is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel. The tests were conducted with the module installed in a control panel.
*2 The communication with the ID tag may be blocked due to immunity in the vicinity of the RFID's carrier frequency (13.56 MHz).
*3 Use antenna cable of 30m or shorter.

(2) Installation in a control panel
The module is open type devices and must be installed inside a control panel. This ensures safety as well as effective shielding of programmable controller-generated electromagnetic noise.
(a) Control panel
- Use a conductive control panel.
- When securing the top or bottom plate using bolts, cover the grounding part on the control panel so that the part will not be painted.
- To ensure electrical contact between the inner plate and control panel, take measures such as covering the bolts so that conductivity can be ensured in the largest possible area.
- Ground the control panel with a thick ground cable so that low impedance can be ensured even at high frequencies.
- Holes in the control panel must be 10cm diameter or less. If the holes are larger than 10cm, radio wave may be emitted. In addition, because radio waves leak through a clearance between the control panel and its door, reduce the clearance as much as possible. The leakage of radio waves can be suppressed by the direct application of an EMI gasket on the paint surface.

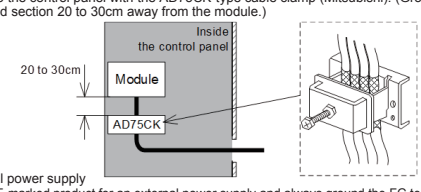
Our tests have been carried out on a control panel having the damping characteristics of 37dB (max.) and 30dB (mean) (measured by 3m method, 30 to 300MHz).

(b) Wiring of power cables and ground cables
Ground the noise filter ground terminal to the control panel using the shortest wire possible (Approx. 10cm).

(3) Cables for the CC-Link IE Field Network
Use shielded cables for the cables which are connected to the module and run out from the control panel. If a shielded cable is not used or not grounded correctly, the noise immunity will not meet the specified value.
(a) Shield treatment
The precautions for using CC-Link IE Field Network cables are described below.
Shielded cables should be used for the CC-Link IE Field Network. Strip a part of the jacket as shown below and ground the exposed shield in the largest possible area.

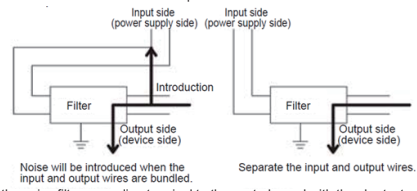


(b) Grounding the cable clamp
Use shielded cables for external wiring and ground the shields of the external wiring cables to the control panel with the AD75CK-type cable clamp (Mitsubishi). (Ground the shield section 20 to 30cm away from the module.)



(4) External power supply
- Use a CE-marked product for an external power supply and always ground the FG terminal.
- Use a power cable of 10m or shorter when connecting it to the module power supply terminal.

(5) Others
(a) Ferrite core
A ferrite core has the effect of reducing radiated noise in the 30MHz to 100MHz band.
It is recommended to attach ferrite cores if external power supply cables coming out of the control panel.
Note that the ferrite cores must be attached at the position closest to the cable hole inside the control panel. If attached at an improper position, the ferrite core will not produce any effect. For the FG terminal on a main module that is connected to the external power supply, the external power supply of an extension module, and CC-Link IE Field Network cables, attach a ferrite core 4cm away from the module.
(b) Noise filter (power supply line filter)
A noise filter is a component which has an effect on conducted noise.
Attaching the filter can suppress more noise. (The noise filter has the effect of reducing conducted noise of 10MHz or less.)
Use a noise filter with the damping characteristics equivalent to those of MA1206 (manufactured by TDK-Lambda Corporation).
Note that a noise filter is not required if the module is used in Zone A defined in EN61131-2.
The precautions for attaching a noise filter are described below.
- Do not bundle the cables on the input side and output side of the noise filter. If bundled, the output side noise will be induced into the input side cables from which the noise was filtered.



- Ground the noise filter grounding terminal to the control panel with the shortest cable possible (approx. 10cm).

⚠CAUTION
- Do not insert or remove an antenna cable with the power ON. Doing so results in the risk of failure.
- The connector will not lock if you push the ring section. Be sure to hold and push the section that secures the cable.
- The connector cannot be removed by holding and pulling the section that secures the cable.
- Pulling that section results in the risk of breakage and damage. Do not pull the cable with force.

6.5 Precautions for antennas

(1) An amplifier separation type antenna and an amplifier built-in type antenna cannot be used in combination for a single unit.
(2) Up to two antennas of separate amplifier type can be used.
When using one antenna, connect it to channel 1.
(3) Only one amplifier built-in type antenna can be connected to Channel 1.
When using an amplifier built-in type antenna, do not connect it to Channel 2.

5.2 Indicaters LED

Category	No.	LED Name	Color	Description	Lights or blinks	Off
Common	1	PW	Green	Indicates the power supply status.	Power on	Power Off
	2	RUN	Green	Indicates normal operation.	Operating normally in RUN mode.	Fatal error. ・WDT error ・Hardware error
CC-Link IE Field Network	3	D LINK	Green	Indicates the data link status of the RFID interface module.	On: Data link in operation. (cyclic transmission in progress) Flashing: Data link in operation. (cyclic transmission stopped)	Data link not performed. (disconnected)
	4	MODE	Green	Indicates the mode of the RFID interface module.	On: Online mode Flashing: Unit test mode	The unit test is completed.
	5	ERR.	Red	Indicates the error status of the RFID interface module.	On: A module error has occurred. Flashing: A minor error has occurred.	Operating normally.
	6	L ERR.	Red	Data receipt error/ circuit error status	The unit receives abnormal data	The unit receives normal data
	7	P1 L ER	Red	Displays Port 1 data receipt error status	Module received abnormal data, or module performing loopback	Module received normal data, or module not performing loopback
	8	P1 LINK	Green	Port 1 link status	Linkup in progress	Linkdown in progress
	9	P2 L ER	Red	Displays Port 2 data receipt error status	Module received abnormal data, or module performing loopback	Module received normal data, or module not performing loopback
	10	P2 LINK	Green	Port 2 link status	Linkup in progress	Linkdown in progress
RFID	11	BSY.1/2	Green	Indicates the operating status.	Executing ID command or executing TEST mode	Standby
	12	NOM.1/2	Green	Indicates the communication complete status.	ID command normal end or TEST mode normal end	Standby or abnormal end
	13	ERR. 1/2	Red	Indicates whether or not an error exists.	On: Error Flashing: Error occurred during the TEST mode communication test	Normal

6. WIRING

6.1 Wiring Precautions

(1) Do not wire the cables near or bundle the cables with main circuit cables, high voltage lines, or load lines other than those of the programmable controller.
Doing so causes noise and surge impact, resulting in the risk of malfunction.
At the very least, separate the module cables from the above by 100mm or more.
(2) When using a group of equipment, such as inverters, server motors, and the like, be sure to execute class D grounding (type 3 grounding).
Failure to do so results in the risk of magnetic field interference from the main body and cable and malfunction.
(3) Do not invert the external power supply polarities.
The RFID interface module will not operate.
(4) Tighten the module screws, within the ranges described below.
A loose screw results in the risk of a short circuit, module failure, and malfunction.

Screw Type	Tightening Torque Range
Terminal block mounting screw (M2.5 screw)	0.2 to 0.3N・m

6.2 Wiring unit power source/FG

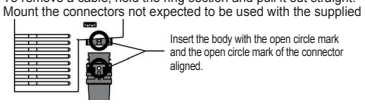
(1) Attach a bar-shaped crimping terminal to a cable peeled off 10 mm from the end.
If a cable inserted into the insertion opening has been stripped, it cannot be properly clamped.
(2) To mount a cable, insert a cable with a bar-shaped crimping terminal into the insertion opening and push it into it.
(3) After pushing it into it, pull the cable lightly to confirm that it has been properly clamped.
(4) To remove the cable, pull out the cable with a bar-shaped crimping terminal pushing in the open/close button of the connector using a flathead screwdriver.

6.3 Wiring of Ethernet Cable

(1) Power off the power supplies of the RFID interface module and the external device.
(2) Push the Ethernet cable into P1 or P2 until you feel a click with careful attention to the orientation of the connector.
When using only one connector in star connection, the connector may be connected either P1 or P2.
When using two connectors in line connection or ring connection, there is no rule in the order of connecting the connectors into P1 and P2.
(3) Mount the connectors not expected to be used with the supplied dustproof cover.
(4) Do not use Ethernet cables with broken latches.

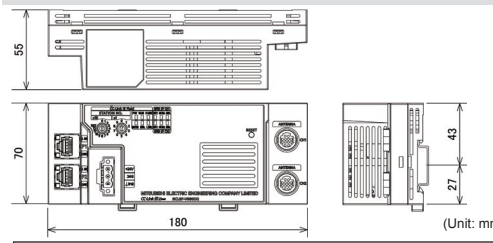
6.4 Inserting and Removing the Antenna and Cable

(1) Hold the section of the connector that secures the cable and insert the connector with the white dot facing upward.
(2) Push connectors straight into the ports until you feel a click.
(3) To remove a cable, hold the ring section and pull it out straight.
(4) Mount the connectors not expected to be used with the supplied dustproof cover.



No.	Name		Description
3)	Reset switch		This is a switch for hardware reset. The switch resets the unit to initialize communications in the event of H/W abnormality.
4)	P1		PORT1 connector for CC-Link IE Field Network (RJ45 connector) Connect an Ethernet cable. There are no restrictions on the connection order of the cables for the P1 connector and P2 connector.
		L ER LED	It displays the status of the CC-Link IE field network error.
		LINK LED	It displays the status of the CC-Link IE field network link.
	P2		PORT2 connector for CC-Link IE Field Network (RJ45 connector) Connect an Ethernet cable. There are no restrictions on the connection order of the cables for the P1 connector and P2 connector.
		L ER LED	(Same as the LEDs of "P1" connector)
		LINK LED	
5)	Connector for power supply and FG		connector to connect the module power supply (24VDC), and FG.
6)	Antenna connector		A connector for antenna connection.
7)	DIN rail hook		A hook for installing the DIN rail.

7. EXTERNAL DIMENSIONS



Product Warranty Details

Please confirm the following product warranty details prior to product use.

Gratis Warranty Terms and Gratis Warranty Range

If any fault or defect (hereinafter referred to as "Failure") attributable to MEE should occur within the gratis warranty period, MEE shall repair the product free of charge via the distributor from whom you made your purchase.

■ Gratis Warranty Period
The gratis warranty period of this product shall be one (1) year from the date of purchase or delivery to the designated place. Note that after manufacture and shipment from MEE, the maximum distribution period shall be six (6) months, and the gratis warranty period after manufacturing shall be limited to eighteen (18) months. In addition, the gratis warranty period for repaired products shall not exceed the gratis warranty period established prior to repair.

■ Gratis Warranty Range
The gratis warranty range shall be limited to normal use based on the usage conditions, methods and environment, etc., defined by the terms and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.

Warranty Period after Discontinuation of Production

(1) MEE shall offer product repair services (fee applied) for seven (7) years after production of the product has been discontinued. Discontinuation of production shall be reported via distributors.
(2) Product supply (including spare parts) is not possible after production has been discontinued.

Exclusion of Opportunity Loss and Secondary Loss from Warranty Liability

Regardless of the gratis warranty period, MEE shall not be liable for compensation for damages arising from causes not attributable to MEE, opportunity losses or lost profits incurred by the user due to Failures of MEE products, damages or secondary damages arising from special circumstances, whether foreseen or unforeseen by MEE, compensation for accidents, compensation for damages to products other than MEE products, or compensation for other work carried out by the user.

Changes in Product Specifications

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

This document is a new publication, effective July 2016.
Specifications are subject to change without notice.
The standard price does not include consumption tax.
Please note that consumption tax will be added at the time of purchase.

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