





JAPANESE

ENGLISH CL1Y4-R1B2

CC-Link/LT Remote I/O Module

Please read this manual thoroughly before starting to use the product and handle the product properly.

User's Manual



MODEL	CL1Y4-R1B2
MANUAL Number	JY997D04301G
Date	April 2015

OSAFETY PRECAUTIONS

(Read these precautions before using)

Please read this manual carefully and pay special attention to safely in order to handle this product properly. Also pay careful attention to safely and handle the module properly.

These precautions apply only to Mitsubishi equipment. Refer to the user's manual of the CPU module to use for a description of the PLC system safety

These SAFETY PRECAUTIONS classify the safety precautions into two categories: "WARNING" and "CAUTION".



Procedures which may lead to a dangerous condition MARNING and cause death or serious injury if not carried out properly



Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.

Depending on circumstances, procedures indicated by ACAUTION may also be linked to serious results.

In any case, it is important to follow the directions for usage

Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

IDESIGN PRECAUTIONS

/ WARNING

- . Configure an interlock circuit in a sequence program so that the system operates on the safety side using the communication status information in the event the data link falls into a communication problem. Otherwise, erroneous output and malfunction may result in accidents.
- Remote input and output can not be switched ON or OFF when a problem occurs in the remote I/O modules. Therefore build an external monitoring circuit that will monitor any input signals that could cause a serious accident.

↑CAUTION

- Do not have control cables and communication cables bundled with or placed near by the main circuit and/or power cables. Wire those cables at least 100mm(3.94 inch) away from the main circuit and/or power cables. It may cause malfunction due to noise interference.
- Use the module and the flat cable dedicated to CC-Link/LT without applying any force on them Otherwise, such cables may be broken or fail

INSTALLATION PRECAUTIONS

⚠ CAUTION

- Use the module in an environment that meets the general specifications contained in this manual. Using this module in an environment outside the range of the general specifications could result in electric shock, fire, erroneous operation, and damage to or deterioration of the product.
- Do not directly touch the module's conductive parts. Doing so could cause malfunction or trouble in the module
- Tighten the module securely using DIN rail or installation screws within the specified torque range.
- If the screws are too lose, the module may drop from its installation position, short circuit, or malfunction. If the screws are too tight, the screws may be damaged, which may cause the module to drop from its installation position or short circuit.
- Install the module on a flat surface
- If the mounting surface has concave and/or convex, an excessive force may be applied on the module, and nonconformity may be caused.

IWIRING PRECAUTIONS

∴ WARNING

Perform installation and wiring after disconnecting the power supply at all phases externally. If the power is not disconnected at all phases an electric shock or product damage may result.

♠CAUTION

- Terminal screws which are not to be used must be tightened always. Otherwise there will be a danger of short circuit against the bare solderless terminals
- Do not perform wiring to an idle terminal "NC" outside the product. The product may be damaged by such external wiring.
- Perform correct wiring for the module according to the product's rated voltage and terminal arrangement. Connecting to a power supply different from rating or miss-wiring may cause fire, product failure or malfunction.
- Fix terminal screws securely within the regulated torque. Loose terminal
- screws may cause fire and/or malfunction. If the terminal screws are too tight, it may cause short circuit, equipment
- failures, or erroneous operation due to damage of the screws. Make sure foreign objects do not get inside the module, such as dirt and wire chips. It may cause fire, product failure or malfunction.
- Attach a warning label (hazard symbol 417-IEC-5036) concerning the electric shock to the location

[STARTING AND MAINTENANCE PRECAUTIONS]

⚠ WARNING

- Do not touch the terminals when the power is ON. It may cause an electric shock or malfunction
- Perform cleaning the module or retightening of terminal screws after turning OFF the all external power supply for sure. Failure to do so may cause failure or malfunction of the modules

/!\CAUTION

- Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or fire.
- The module case is made of resin; do not drop it or subject it to strong shock A module damage may result
- Make sure to switch all phases of the external power supply OFF before installing or removing the module to/from the panel. Failure to do so may cause failure or malfunction of the modules.

[DISPOSAL PRECAUTIONS]

⚠ CAUTION

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

[TRANSPORTATION AND MAINTENANCE PRECAUTIONS]

⚠ CAUTION

- During transportation avoid any impact as the module is a precision instrument. Doing so could cause trouble in the module.
- If is necessary to check the operation of module after transportation, in case of any impact damage.

■Notification of CE marking

This notification does not guarantee that an entire mechanical module produced in accordance with the contents of the notification comply with the following standards. Compliance to EMC standards of the entire mechanical module should be checked by the user / manufacturer. Compliance to LVD standards of the entire mechanical module should be checked by the user / manufacturer.

This product is designed for use in industrial applications

 Authorized Representative in the European Community: Mitsubishi Electric Europe B.V. Gothaer Str. 8, 40880 Ratingen, Germany

Standards with which this product complies

Type: Programmable Controller (Open Type Equipment) Remote I/O module Models : Products manufactured:

from November 1st, 2002 to April 30th, 2006 are compliant with EN61000-6-4 and EN61131-2:1994+A11:1996+A12:2000 after May 1st, 2006 are compliant with EN61131-2:2007

Electromagnetic Compatibility Standards (EMC)	Remark	
EN61000-6-4:2001	Compliance with all relevant aspects of	
Electromagnetic compatibility	the standard.	
-Generic standards - Emission standard	(Radiated Emissions and Mains	
for Industrial environment	Terminal Voltage Emissions)	

Electromagnetic Compatibility Standards (EMC)	Remark	
EN61131-2:1994/A11:1996/A12:2000 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (RF Immunity, Fast transients, ESD and Damped oscillatory wave)	
EN61131-2: 2007 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (Radiated Emissions, Conducted Emissions, Radiated electromagnetic field, Fast transient burst, Electrostatic discharge, High-energy surge, Voltage drops and interruptions, Conducted RF and Power frequency magnetic field)	

Low Voltage Standards (LVD)	Remark			
	The equipment has been assessed as a component for fitting in a suitable enclosure which meets the requirements of EN61131-2:1994 + A11:1996 + A12:2000, :2007			
For more details please contact the local Mitsubishi Electric sales site.				

- · Notes For compliance to EMC LVD regulation.
- It is necessary to install the CL1 series module in a shielded metal control
- Use this product in Zone A^{*1} as defined in EN61131-2.

The terminal and the wiring for the output signals and load power supply can be used in zone B*1.

*1 Zone defined in EN61131-2

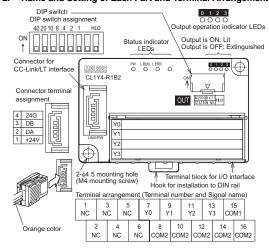
Separation defined in EN61131-2 for EMC LVD regulation decided depending on condition in industrial setting.

- Zone C = Factory mains which is isolated from public mains by dedicated transformers.
- Zone B = Dedicated power distribution which is protected by secondary surge protection. (300V or less in the rated voltage is assumed)
- Zone A = Local power distribution which is isolated from dedicated power distribution by AC/DC converters, isolation transformers, etc. (120V or less in the rated voltage is assumed.)

1. Outline of Product

This product is a terminal block type output module connected to CC-Link/LT. This product has four output points (relay output).

2. Name and Setting of Each Part and Terminal Arrangement



Name	Description				
	PW ON while the power is supplied.				
	L RUN	ON while normal operation is executed.			
Status indicator LED	L ERR.	new setting becomes valid when the power is turned OFF once, then ON again.) Flickering at a intermittent interval: When a terminal resistor is not attached or whe the module or a connection cable is affected by noise			
Output operation indicator LEDs	ON while the output is ON. Extinguished while the output is OFF. Output operation indicator				
Interface	Connector for CC-Link/LT communication line/module power supply (24G/DB/DA/+24V)				
Terminal block for I/O interface	Terminal block to connect output signals and load power supply				
	Set the 10's digit of the station No. using "STATION NO. 10", "STATION NO. 20" and "STATION NO. 40". Set the 1's digit of the station No. using "STATION NO. 1", "STATION NO. 8". FSTATION NO. 4" and "STATION NO. 8". FSATOR default = All bits are OFF. Make sure to set the station No. in the range from 1 to 64. If any station No. outside the range from 1 to 64 is set, it is regarded as an error and the L ERR. LED lights.				
DIP switch	Example: When setting the station No. to "32", set the DIP switch as follows.				
		ation 10's digit 1's digit			
		No. 40 20 10 8 4 2 1 32 OFF ON ON OFF OFF ON OFF			
	Holds the output (when an error has occurred ON: Holds the output. OFF: Clears the output.				
3. Installation					

The CL1Y4-R1B2 can be installed to DIN rail or directly installed using mounting screws.

Each installation procedure is described below

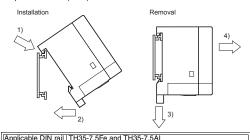
3.1 Installation to DIN rail

Align the upper DIN rail installation groove in the module with the DIN rail 1), and press the module in that status 2).

When removing the module, pull the hook downward for installation to DIN rail 3), then remove the module 4).

DIN rail mounting screw pitch

When installing the module to the DIN rail, tighten the mounting screws at the pitch of 200mm(7.87") or less



3.2 Direct installation

Screw-tighten the module by attaching M4 screws to the upper and lower mounting holes (two holes in all) provided in the module.

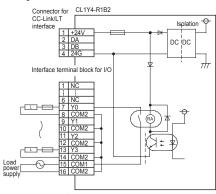
Install the module so that the clearance of 1 to 2mm (0.04" to 0.08") is assured for each module.

Applicable screw M4 × 0.7mm(0.03") × 16mm(0.63") or more (Tightening torque range: 0.78 to 1.08 N·m)	
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4. Wiring

4.1 External wiring

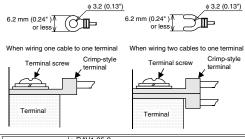
The output terminals of the CL1Y4-R1B2 can be used with the AC or DC



Wire nothing to the NC terminal (idle terminal)

4.2 Crimp-style terminal

For I/O wiring, use crimp-style terminals of the following dimensions.



Applicable crimp-	RAV1.25-3 V1.25-3 (manufactured by JST Mfg. Co., Ltd.) 1.25-3 and TG1.25-3 (manufactured by NICHIFU Co., Ltd.)
Applicable wire size	0.3 to 1.25 mm ²

Use a crimp-style terminal in a status in which no force is applied on the

4.3 Module terminal screw

Tighten the terminal screws (M3 screws) on the terminal block with a tightening torque of 0.42 to 0.58 N·m. Do not tighten terminal screws exceeding the specified torque. Failure to do so may cause short circuit, equipment failures, or malfunctions.

5. Specifications

5.1 General specifications

Item	Specification			
Ambient working temperature	0 to 55°C (32 to 131°F)			
Ambient storage temperature	-25 to 75°C	(-13 to 167°F)	
Ambient operating humidity	5 to 95%RH: Dew condensation shall not be considered.			
Ambient storage humidity	5 to 95%RH	: Dew conder	nsation shall no	ot be considered.
	When intern	nittent vibratio	on is present	Number of times of sweep
	Frequency	Acceleration	Half amplitude	
	10 to 57Hz	-	0.075mm	
Vibration resistance (*1)	57 to 150Hz	9.8m/s ²	-	10 times in each of
resistance (*1)	When contin	uous vibratio	n is present	X, Y and Z directions
	Frequency	Acceleration	Half amplitude	(for 80 min)
	10 to 57Hz	-	0.035mm	
	57 to 150Hz	4.9m/s ²	-	
Impact resistance (*1)	147 m/s², 3 times in each of X, Y and Z directions			
Operating atmosphere	Corrosive gas shall not be present.			
Operating altitude	2,000m(6561'8") or less (*2)			
Installation place	Inside control panel (*3)			
Over-voltage category	II or less (*4)			
Degree of contamination	2 or less (*5)			
Notes:				

- *1 The criterion is shown in IEC61131-2.
- *2 The module cannot be used in an environment pressurized above the atmospheric pressure which can be generated around the altitude of 0 m. If the module is used in such an environment, it may fail.
- *3 The module can be used in any environment even outside the control panel as far as the requirements of the ambient operating temperature, the ambient operating humidity, etc. are satisfied.
- *4 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.

- *5 This index indicates the degree of conductive generating substances in the environment in which the module is used. The degree of contamination 2 indicates that contamination is caused by generation of only non-conductive substances.
- In this degree, however, temporary conduction may be caused by accidental condensation.

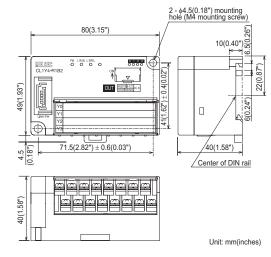
5.2 Output specifications

Item		Specification	
Output method		Relay output	
Number of output points		4	
Insulation method		Mechanical insulation	
Rated load voltage		240V AC/30V DC or less (250V AC or less when the unit does not comply with UL or cUL standards)	
Max. load curre	nt	2A/point 4 A/1 common	
OFF→ON		Approx. 10ms or less	
Response time ON→OFF		Approx. 10ms or less	
Common wiring method		4 points/1 common (5 points) (terminal block two-wire type)	
Internal protection for outputs		Internal protection circuit none Please connect the fuse in the connected load outside.	

5.3 Performance specifications

Item		Specification		
Voltage		20.4 to 28.8V DC (24V DC -15% to +20%) Ripple ratio: Within 5%		
		65mA (when all points are ON)		
supply	Initial current	70mA		
Max. allowable		PS1:1ms		
Number occupie	of stations d	4-, 8- or 16-point mode: 1 station		
Noise durability		DC type: 500 Vp-p AC type: 1,000 Vp-p Noise width: 1 µs Cycle: 25 to 60 Hz (by noise simulator)		
Withstand voltage		AC type: 1,500V AC for 1 min DC type: 500V AC for 1 min		
Isolation resistance		$10~\text{M}\Omega$ or more between primary area (external DC terminal) and secondary area (internal circuit) by 500V DC megger		
Protecti	on class	IP1X		
I/O part	connection method	Connection with terminal block		
Module installation method		DIN rail installation, mounted by screws of type $M4 \times 0.7 mm(0.03") \times 16 mm(0.63")$ or larger Can be installed in six directions		
Mass (weight)		0.11kg (0.22lbs)		
Contact life		200V AC - 1.5 A, 240V AC - 1 A (COSφ = 0.7): 100,000 times or more		
		200V AC - 1 A, 240V AC - 0.1 A (COSφ = 0.35): 100,000 times or more		
		24V DC - 1 A, 100V DC - 0.1 A (L/R = 7 ms): 100,000 times or more		

6. Outside Dimensions



This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

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.

A 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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	St. Petersburg, Russia Tel: +7-812-633-3497		Tel: +61-2-9684-7777
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MITSUBISHI ELECTRIC CORPORATION

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





CL1Y4-R1B2 CC-Link/LT Remote I/O Module

MANUAL Number JY997D04301G
Date April 2015

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MODEL

User's Manual

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CC-Link/LT

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[DESIGN PRECAUTIONS]

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<u>∧</u> WARNING

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- Use the module and the flat cable dedicated to CC-Link/LT without applying any force on them.

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	CARL CLASSES AND A STATE OF

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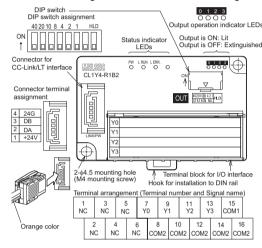
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- *1 Zone defined in EN61131-2
- Separation defined in EN61131-2 for EMC LVD regulation decided depending on condition in industrial setting.
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- Zone A = Local power distribution which is isolated from dedicated power distribution by AC/DC converters, isolation transformers, etc. (120V or less in the rated voltage is assumed.)

1. Outline of Product

This product is a terminal block type output module connected to CC-Link/LT. This product has four output points (relay output).

2. Name and Setting of Each Part and Terminal Arrangement



Name	Description		
	PW	ON while the power is supplied.	
	L RUN	ON while normal operation is executed.	
Status indicator LED	L ERR.	ON: When a communication error or DIP switch setting error occurred Flickering at a constant interval: When the setting of the DIP switch was changed while the power was supplied (Even while the LED is flickering, the operation continues. The new setting becomes valid when the power is turned OFF once, then ON again.) Flickering at a intermittent interval: When a terminal resistor is not attached or when the module or a connection cable is affected by noise	
Output operation indicator LEDs	ON while the output is ON. Extinguished while the output is OFF. Output operation indicator		
Interface	Connector for CC-Link/LT communication line/module power supply (24G/DB/DA/+24V)		
Terminal block for I/O interface	Terminal block to connect output signals and load power supply		
DIP switch	Set the 10's digit of the station No. using "STATION NO. 10", "STATION NO. 20" and "STATION NO. 40". Set the 1's digit of the station No. using "STATION NO. 4.", "STATION NO. 4" and "STATION NO. 8". Factory default = All bits are OFF. Make sure to set the station No. in the range from 1 to 64. If any station No. outside the range from 1 to 64 is set, it is regarded as an error and the L ERR. LED lights. Example: When setting the station No. to "32", set the DIP switch as follows. Station 10's digit 1's digit 1.5 digit		
	HLD OFF ON ON OFF OFF ON OFF Holds the output (when an error has occurred). ON: Holds the output. OFF: Clears the output.		
3. Installation			

The CL1Y4-R1B2 can be installed to DIN rail or directly installed using Each installation procedure is described below

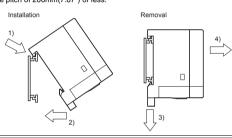
3.1 Installation to DIN rail

Align the upper DIN rail installation groove in the module with the DIN rail 1), and press the module in that status 2).

When removing the module, pull the book downward for installation to DIN rail 3), then remove the module 4).

DIN rail mounting screw pitch

When installing the module to the DIN rail, tighten the mounting screws at the pitch of 200mm(7.87") or less



Applicable DIN rail TH35-7.5Fe and TH35-7.5Al

3.2 Direct installation

Screw-tighten the module by attaching M4 screws to the upper and lower mounting holes (two holes in all) provided in the module.

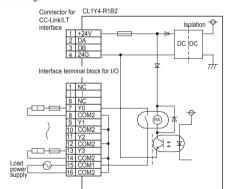
Install the module so that the clearance of 1 to 2mm (0.04" to 0.08") is assured for each module.

M4 × 0.7mm(0.03") × 16mm(0.63") or more Applicable screw (Tightening torque range: 0.78 to 1.08 N·m)

4. Wiring

4.1 External wiring

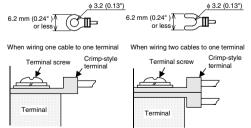
The output terminals of the CL1Y4-R1B2 can be used with the AC or DC load voltage



Wire nothing to the NC terminal (idle terminal)

4.2 Crimp-style terminal

For I/O wiring, use crimp-style terminals of the following dimensions.



RAV1.25-3 V1.25-3 (manufactured by JST Mfg. Co., Ltd.) tyle terminal 1.25-3 and TG1.25-3 (manufactured by NICHIFU Co., Ltd.) Applicable wire size 0.3 to 1.25 mm²

Use a crimp-style terminal in a status in which no force is applied on the

4.3 Module terminal screw

Tighten the terminal screws (M3 screws) on the terminal block with a tightening torque of 0.42 to 0.58 N·m. Do not tighten terminal screws exceeding the specified torque. Failure to do so may cause short circuit, equipment failures, or malfunctions

5. Specifications

5.1 General specifications

Item	Specification			
Ambient working temperature	0 to 55°C (32 to 131°F)			
Ambient storage temperature	-25 to 75°C (-13 to 167°F)			
Ambient operating humidity	5 to 95%RH: Dew condensation shall not be considered.			
Ambient storage humidity	5 to 95%RH: Dew condensation shall not be considered.			
	When interm	nittent vibratio	Number of times of sweep	
	Frequency	Acceleration	Half amplitude	
	10 to 57Hz	-	0.075mm	1
Vibration	57 to 150Hz	9.8m/s ²	-	10 times in each of
resistance (*1)	When contin	uous vibratio	n is present	X, Y and Z directions
	Frequency	Acceleration	Half amplitude	(for 80 min)
	10 to 57Hz	-	0.035mm	
	57 to 150Hz	4.9m/s ²	-	
Impact resistance (*1)	147 m/s², 3 times in each of X, Y and Z directions			
Operating atmosphere	Corrosive gas shall not be present.			
Operating altitude	2,000m(6561'8") or less (*2)			
Installation place	Inside control panel (*3)			
Over-voltage category	II or less (*4)			
Degree of contamination	2 or less (*5)			

- *1 The criterion is shown in IEC61131-2.
- environment pressurized above the *2 The module cannot be used in ar atmospheric pressure which can be generated around the altitude of 0 m. If the module is used in such an environment, it may fail.
- *3 The module can be used in any environment even outside the control panel as far as the requirements of the ambient operating temperature, the ambient operating humidity, etc. are satisfied.
- *4 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. *5 This index indicates the degree of conductive generating substances in the environment in which the module is used. The degree of contamination 2
- indicates that contamination is caused by generation of only non-conductive In this degree, however, temporary conduction may be caused by accidental

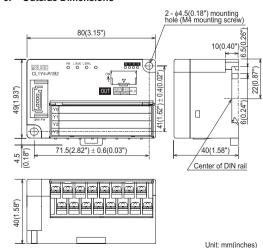
5.2 Output specifications

.2 Output specifications			
Item		Specification	
Output method		Relay output	
Number of outp	ut points	4	
nsulation meth	od	Mechanical insulation	
Rated load voltage		240V AC/30V DC or less (250V AC or less when the unit does not comply with UL or cUL standards)	
Max. load curre	nt	2A/point 4 A/1 common	
Response time OFF→ON		Approx. 10ms or less	
response time	ON→OFF	Approx. 10ms or less	
Common wiring method		4 points/1 common (5 points) (terminal block two-wire type)	
nternal protection for outputs		Internal protection circuit none Please connect the fuse in the connected load outside.	

5.3 Performance specifications

	Item	Specification
	Voltage	20.4 to 28.8V DC (24V DC -15% to +20%) Ripple ratio: Within 5%
Module	Current consumption	65mA (when all points are ON)
supply	Initial current	70mA
очер.,	Max. allowable momentary power failure period	PS1:1ms
Number occupie	of stations d	4-, 8- or 16-point mode: 1 station
Noise di	urability	DC type: 500 Vp-p AC type: 1,000 Vp-p Noise width: 1 µs
Withsta	nd voltage	AC type: 1,500V AC for 1 min DC type: 500V AC for 1 min
Isolation	n resistance	10 $\text{M}\Omega$ or more between primary area (external DC terminal) and secondary area (internal circuit) by 500V DC megger
Protecti	on class	IP1X
I/O part	connection method	Connection with terminal block
Module installation method		DIN rail installation, mounted by screws of type $M4 \times 0.7$ mm(0.03") \times 16mm(0.63") or larger Can be installed in six directions
Mass (w	eight)	0.11kg (0.22lbs)
Contact life		200V AC - 1.5 A, 240V AC - 1 A (COSφ = 0.7): 100,000 times or more 200V AC - 1 A, 240V AC - 0.1 A (COSφ = 0.35): 100,000 times or more
		24V DC - 1 A, 100V DC - 0.1 A (L/R = 7 ms): 100,000 times or more

6. Outside Dimensions



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