# MITSUBISHI

# Type A0J2 (Input/Output unit)

# User's Manual



Mitsubishi Programmable Logic Controller

# SAFETY CAUTIONS



(Read these precautions before using.)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in this manual. Also pay careful attention to safety and handle the module properly.

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

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



Depending on circumstances, procedures indicated by  $\triangle$  CAUTION may also be linked to serious results.

In many 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. [System Design Precautions]

<ul> <li>Safety circuits should be installed external to the programmable controller to ensure that the system as a whole will continue to operate safely in the event of an external power supply malfunction or a programmable controller failure. Erroneous outputs and operation could result in an accident.</li> </ul>
<ol> <li>The following circuitry should be installed outside the programmable controller: Interlock circuitry for the emergency stop circuit protective circuit, and for reciprocal operations such as forward/reverse, etc., and interlock circuitry for upper/lower positioning limits, etc., to prevent machine damage.</li> </ol>
<ul> <li>2) When the programmable controller detects an abnormal condition, processing is stopped and all outputs are switched OFF. This happens in the following cases:</li> <li>When the power supply module's over-current or over-voltage protection</li> </ul>
<ul> <li>device is activated.</li> <li>When an error (watchdog timer error, etc.) is detected at the PC CPU by the self-diagnosis function.</li> </ul>
Some errors, such as input/output control errors, cannot be detected by the PC CPU, and there may be cases when all outputs are turned ON when such errors occur. In order to ensure that the machine operates safely in such cases, a failsafe circuit or mechanism should be provided outside the programmable controller. Refer to the CPU module user's manual for an example of such a failsafe circuit.
<ol> <li>Outputs may become stuck at ON or OFF due to an output module relay or transistor failure. An external circuit should therefore be provided to monitor output signals whose incorrect operation could cause serious accidents.</li> </ol>
<ul> <li>If an excessive current flows continuously for a long time at an output module, for example due to a current exceeding the rating or shorting of the load, smoke may be generated and fire may be caused; for this reason a safety circuit such as a fuse must be provided externally.</li> </ul>
• A circuit should be installed which permits the external power supply to be switched ON only after the programmable controller power has been switched ON. Accidents caused by erroneous outputs and motion could result if the external power supply is switched ON first.

[System Design Precautions]

<ul> <li>Do not bundle control lines or communication wires together with main circuit or power lines, or lay them close to these lines. As a guide, separate the lines by a distance of at least 100 mm, otherwise malfunctions may occur due to noise.</li> </ul>		
<ul> <li>When controlling items like lamp load, heater or solenoid valve using an output module, large current (approximately ten times greater than that present in normal circumstances) may flow when the output is turned OFF to ON. Take measures such as replacing the module with one having sufficient rated current.</li> </ul>		

#### [Cautions on Mounting]

	Use the PC in an environment that conforms to the general specifications in the manual. Using the PC in environments outside the ranges stated in the general specifications will cause electric shock, fire, malfunction, or damage to/deterioration of the product.			
•	Extension cables should be securely connected to base unit and module connectors. Check for loose connection after installation. A poor connection could result in contact problems and erroneous inputs/outputs.			
	Do not directly touch the electrically conductive areas and electronic parts. Direct touch can cause malfunctions and failure of the module.			

[Cautions on Wiring]

DANGER

- Switch off the external power supply before starting installation and wiring work. Failure to do so could result in electrical shocks and equipment damage.
- After installation and wiring is completed, be sure to attach the terminal cover before switching the power ON and starting operation. Failure to do so could result in electrical shocks.

CAUTION Be sure to ground the FG and LG terminals, carrying out at least class 3 grounding work with a ground exclusive to the PC. Otherwise there will be a danger of electric shock and malfunctions. Carry out wiring to the PC correctly, checking the rated voltage and terminal arrangement of the product. Using a power supply that does not conform to the rated voltage, or carrying out wiring incorrectly, will cause fire or failure. Outputs from multiple power supply modules should not be connected in parallel. Failure to . do so could cause the power supply module to overheat, resulting in a fire or module failure. Tighten the terminal screws to the stipulated torque. Loose screws will cause short circuits, fire, or malfunctions. Make sure that no foreign matter such as chips or wiring offcuts gets inside the module. It will cause fire, failure or malfunction.

[Cautions on Startup and Maintenance]

 $\langle D \rangle$ DANGER • Do not touch terminals while the power is ON. This will cause malfunctions. • Switch the power off before cleaning or re-tightening terminal screws. Carrying out this work while the power is ON will cause failure or malfunction of the module. CAUTION • Do not disassemble or modify any module. This will cause failure, malfunction, injuries, or fire. • Switch the power OFF before mounting or removing the module. Mounting or removing it with the power ON can cause failure or malfunction of the module. • When replacing fuses, be sure to use the prescribed fuse. A fuse of the wrong capacity could cause a fire. • Always make sure to touch the grounded metal to discharge the electricity charged in the electricity charged in the body, etc., before touching the module. Failure to do say cause a failure or malfunctions of the module. [Cautions on Disposal]

<ul> <li>Dispose of this product as industrial waste.</li> </ul>	

#### REVISIONS

\*The manual number is given on the bottom left of the back cover.

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#### 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.

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#### 1. GENERAL DESCRIPTION

This manual describes specifications and handling procedures of I/O units, extension power supply unit, cables, and fuse of Type A0J2CPU generalpurpose programmable controller. The A0J2 I/O units are available in 28 points (16 inputs, 12 outputs), 56 points (32 inputs, 24 outputs), 32 points (inputs only), 24 points (outputs only), and their combinations. Various I/O types are also available.

For details, refer to Chapter 2.

All I/O units are furnished with a standard I/O cable for unit-to-unit mountings (A0J2C01).

#### POINTS

- (1) I/O units described in this manual are indicated A0J2-E [[]] [].
- (2) When the A series extension base unit is used for the A0J2CPU system, refer to the User's Manual for specifications of the I/O units which will be loaded into the base unit.

#### 2. SPECIFICATIONS

This chapter describes the specifications of I/O units, extension power supply unit, cables, and fuse used for the A0J2CPU system.

#### 2.1 I/O Unit Specifications

This section describes the precautions for selection and the specifications of I/O units to be used for the A0J2CPU system.

#### 2.1.1 Precautions for I/O unit selection

- (1) For output units, it is recommended to use a triac output unit for a load which is frequently opened and closed, and inductive L loads that have a large capacity or low power factor. (If relay output is used, service life should be shortened.)
- (2) For output units, the maximum opening and closing frequencies should be 1 second ON and 1 second OFF when the inductive L load is driven.
- (3) The wiring of output unit with a fuse must satisfy the following values. If the values are not satisfied, protection cannot be provided by the fuse. In such a case, install a protection fuse outside the unit.

Load Voltage Item	100/200 VAC Load
Wiring length	3 m (118 inch) or more
Cable size	2 mm <sup>2</sup> (14 AWG) or less
Short-circuit current	
Transformer capacity	2 kVA or less

However, since protection cannot be provided against overload, install a fuse outside the unit per point for the purpose of protection. (4) For the relay life of relay output unit, refer to the diagram shown below.

The characteristics of relay are as shown below. Howerer, make selection in consideration of the description in above (2). Applicable unit types are AOJ2-E24R, AOJ2E-E24R, AOJ2-E28AR,

AOJ2-E28DR, AOJ2E-E28DR, AOJ2-E56AR, AOJ2-E56DR and AOJ2E-E56DR.



POINT	
(1) When using the module for the application in	-
frequently switched, the relay life span should Therefore, it is recommended to use a triac ou	
(2) The relay life curve shows the value based on	
guaranteed. Therefore, make sure to allow for	-
The relay life span differs according to the sp	ecifications as follows:
Rated switching voltage, current load	200 thousand operations
200V AC 1.5A, 240V AC 1A (COS $\phi$ =0.7)	200 thousand operations
200V AC 0.75A, 240V AC 0.5A (COS $\phi$ =0.35)	200 thousand operations
24V DC 1A, 100V DC 0.1A (L/R=7ms)	200 thousand operations
(3) Relay life is substantially affected by the load characteristics.	type and inrush current
The inrush current may cause the contact wel	
consideration should be given to it as well as	constant current.
(a) Inductive load	
When the inductive load such as electroma solenoid is shut off, high counter-electrom	•
between the contacting materials to produc	-
Consideration should be made especially v	•
low, as it may decrease the life period.	-
In addition, make sure to consider the cont	
current equivalent to 5 to 15 times of const	ant current flows when
the module is powered on. (b) Lamp load	
Make sure to consider the contact melting,	as the inrush current
equivalent to 10 to 15 times of constant cu	
circuit.	
(c) Capacitive load	
Make sure to consider the contact melting	
condenser is used in a load circuit, as the i to 20 to 40 times of constant current may fl	-
Also, pay full attention to the wire capacity routed.	
104604.	

(5) When the A0J2E-ECICIT (Transistor Type) or A0J2E-ECICIS (Triac Type) output unit is used, the number of simultaneous ON points changes depending on the conditions of output current and ambient temperature. Therefore, select the number of simultaneous ON points, referring to the figure below.











#### 2.1.2 Unit type

This section describes I/O unit types.

The last letters of the I/O unit type indicate I/O specifications.



Example:





### 2.1.3 Specifications of Type A0J2-E32A input unit

Input Specifications						
Input points		32 points				
Insulation system	······	Photocoupler				
Rated input voltage		100 to 120 VAC, 50/60 Hz				
Rated input current		10 mA (100 VAC, 60 Hz)				
Operating voltage rang		85 to 132 VAC (50/60 Hz ± 5 %)				
ON voltage/ON current		80 VAC or higher/6 mA or higher				
OFF voltage/OFF curre	ent	40 VAC or lower/4 mA or lower				
Inrush current		Max. 300 mA, within 0.3 ms (132 VAC)				
Input impedance		Approx. 10 kΩ (60 Hz), approx. 12 kΩ (50 Hz)				
Response time	OFF→ON	15 ms or less (6 ms TYP.)				
	ON→OFF	35 ms or less (16 ms TYP.)				
Common wiring system	<b>n</b> .	16 points/common (common terminal: TB17, TB34)				
Operation indicator		Provided (LED lit when input enabled)				
Internal current consu	mption (5 VDC)	105 mA (TYP. all points ON)				
External connection sy	ystem	36-point terminal block connector (M3 x 6 mm screws)				
Applicable wire size	· .	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg·cm (68.25 N·cm) [6.06 lb·inch])				
Applicable solderless	terminal	1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A				
Weight kg (lb)		0.68 (1.5)				
		External connection diagram				
IN Terminal Inpu No. Signal TB1 X00	No   / Extern	nat Input Ipment				
TB2 X01		Internal power supply (5 VDC)				
TB3 X02						
TB4 X03						
TB5 X04		LED indicator				
TB6 X05						
TB7 X06						
TB8 X07		Photocoupler				
TB9 X08						
TB10 X09						
TB11 X0A						
TB12 X0B		Сом1				
TB13 XOC						
TB14 XOD		L_ TB18				
TB15 XOE						
TB16 XOF						
TB17 COM1						
TB18 X10						
TB19 X11						
TB20 X12		TROO				
TB21 X13						
TB22 X14						
TB23 X15						
TB24 X16						
TB25 X17						
TB26 X18						
TB27 X19						
TB28 X1A						
TB29 X1B						
,TB30 X1C						
TB31 X1D						
TB32 X1E						
TB33 X1F						
TB34 COM2						
TB35 NC						
TB36 FG						
	,					

## 2. SPECIFICATIONS

MELSEC-A

#### 2.1.4 Specifications of Type A0J2-E32D input unit

		Input Spe	cifications	
Input points		32 points		
Insulation system		Photocoupler		
Rated input voltage		12 VDC	24 VDC	······
Rated input current		3 mA	7 mA	
Operating voltage re	ange	10.2 to 26.4 VDC (ripple ratio:	within 5 %)	
ON voltage/ON curr	ent	9.5 VDC or higher/2.6 mA or h	ghər	
OFF voltage/OFF c	urrent	6 VDC or lower/1.0 mA or lower		
Input resistance		Approx. 3.4 kΩ		
Input form		Sink input (input current outflow form)		
Responce time	OFF→ON	10 ms or less (6 ms TYP.)		
	ON→OFF	10 ms or less (7.5 ms TYP.)		
Common wiring system		16 points/common (common terminal: TB17, TB34)		
<b>Operation indicator</b>		Provided (LED lit when input enabled)		
Internal current consumption (5 VDC)		105 mA (TYP. all points ON)		
External connection system		36-point terminal block connector (M3 x 6 mm screws)		
Applicable wire size		0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg·cm (68.25 N·cm) [6.06 lb·inch])		
Applicable solderless terminal		1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A		
Weight kg (lb)		0.63 (1.39)		



#### 2.1.5 Specifications of Type A0J2E-E32D input unit

		Input Specificatio	ne				
Input points		32 points					
Insulation system		Photocoupler	Photocoupler				
Rated input voltage		12 VDC 24 VDC					
Rated input current		3 mA 7 mA					
Operating voltage ran	ge	10.2 to 26.4 VDC (ripple ratio: within 5	%)				
ON voltage/ON curren	t	9.5 VDC or higher/2.6 mA or higher					
OFF voltage/OFF curr	ent	6 VDC or lower/1.0 mA or lower					
Input resistance		Approx. 3.4 kΩ	Approx. 3.4 kΩ				
Input form		Source input (input current inflow form)					
Responce time	OFF→ON	5.5 ms (TYP.)					
	ON→OFF	6.0 ms (TYP.)					
Responce time	OFF→ON	0.5 ms or less					
(high speed mode) (upper 8 points only)	ON→OFF	1.0 ms or less					
Common wiring system	n	16 points/common (common terminal: TB17, TB34)					
Operation indicator		Provided (LED lit when input enabled)					
Internal current consu	mption (5 VDC)	105 mA (TYP. all points ON)					
External connection s	ystem	36-point terminal block connector (M3 x 6 mm screws)					
Applicable wire size		0.75 to 2 mm <sup>2</sup> (applicable tightening to	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg·cm (68.25 N·cm) [6.06 lb·inch])				
Applicable solder less	terminal	1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.2	1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A				
Weight kg (lb)		0.61 (1.34)					
		External connection d	agram				





\*For only upper 8 points, high or low speed can be selected using DIP switches. Set after removing the top cover.

#### 2.1.6 Specifications of Type A0J2E-E24R output unit

				Output Specifications				
Output points	·····			24 points				
Insulation syste	nn		·····	Photocoupler				
Rated switching	g voltage,	current		24 VDC 2 A (resistance load)/point, 5 A/common 240 VAC 2 A (cos¢ = 1)/point, 5 A/common				
Min. switching lo	oad			5 VDC/1 mA				
Max. switching	voltage			264 VAC, 125 VDC				
Max. switching f	frequency			3600 times/hour				
	N	lechanica	d	20 million times or more				
				Rated switching voltage, current load 200 thousand times or more				
Life	l e	Electrical		200 VAC 1.5 A, 240 VAC 1 A (coso = 0.7) 200 thousand times or more				
				200 VAC 1A, 240 VAC 0.5 A (cose = 0.35) 200 thousand times or more				
				24 VDC 1A, 100 VDC 0.1 A (L/R = 7 ms) 200 thousand times or more				
Parata time		DFF→ON		10 ms or less				
Responce time		ON→OFF		12 ms or less				
External supply	power		Voltage	24 VDC ±10 % (ripple voltage 4 Vp-p less)				
(relay coil drivin	ig power)		Current	230 mA (24 VDC all points ON)				
Noise suppressi	ion			None				
Common wiring	system			8 points/common (common terminal: TB9, TB19, TB29)				
Operation indica				Provided (LED lit when output enabled)				
Internal current	consumpt	tion (5 VD	C)	145 mA (TYP. all points ON)				
External connec	ction syste	em.		36-point terminal block connector (M3 x 6 mm screws)				
Applicable wire				0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg·cm (68.25 N·cm) [6.06 lb·inch])				
Applicable solde	erless terr	ninal		1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A				
Weight kg (lb)				0.71 (1.56)				
				External connection diagram				
Terminal No. TB1 Y	Dutput Signal No. /20		External equipm					
TB2 Y	/21							
	(22		гl	┶╘┼╌╌┥╍╍╍╌┐┌┝╉╌┐ (┢) │ │				
	/23		į	S LED indicator				
	/24 /25		L.					
	/26		ŢĹ					
TB8 Y	(27		£(					
TB9 C	COM1		г	COM1 Photocoupler				
	10		Г	TB11				
	/28		1	S				
	/29 /2A		<u>ا</u> لم	TB18				
	/2B		L					
	/2C		L-4	COM2				
	/2D		ſ					
	′2E		Г.	L TB21				
	'2F		1	S				
	COM2							
TB20 N TB21 Y	1C '30							
	30 /31		L(	COM3				
	32		<b></b>					
	33			TB34				
	'34		L±	{ }				
	'35			твз5				
	'36 '77	_						
	'37 :OM3							
TB30 N								
TB30 N								
TB32 N		-						
TB33 N								
	4 VDC	_						
	4 GDC							
TB36 F0	G							

#### 2.1.7 Specifications of Type A0J2-E24S output unit

		Output Specifications				
Output points		24 points				
Insulation system		Photocoupler				
Rated load voltage		100 to 240 VAC, 40 to 70 Hz				
Max. load voltage		264 VAC				
Max, load current		0.6 A/point, 2.4 A/common				
Min. load voltage, c	urrent	24 VAC 100 mA, 100/240 VAC 10 mA				
Max. inrush current		20 A-10 ms or less, 8 A-100 ms or less				
Leakage current at	OFF	1.5 mA (120 VAC 60 Hz), 3 mA (240 VAC 60 Hz)				
Max. voltage drop a	at ON	1.5 V or lower (0.1 to 0.6 A), 1.8 V or lower (0.1 A or lower), 2.0 V or lower (10 to 50 mA)				
Response time	OFF→ON	1 ms or less				
	ON→OFF	0.5 cycle + 1 ms or less				
Fuse rating		Fast melting fuse 3.2 A (1 common/pce) HP-32				
Fuse blow indicator		Provided (LED lit and signal output when fuse blown)				
Noise suppression		CR absorber (0.022 μF + 47 Ω)				
Common wiring sys	tem	8 points/common (common terminal: TB9, TB19, TB29)				
Operation indicator		Provided (LED lit when output enabled)				
Internal current con	sumption (5 VDC)	400 mA (TYP. all points ON)				
External connection	system	36-point terminal block connector (M3 x 6 mm screws)				
Applicable wire size	)	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg·cm (68.25 N·cm) [6.06 lb-inch])				
Applicable solderles	ss terminal	1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A				
Weight kg (lb)		0.70 (1.54)				
		External connection diagram				

Terminal	OUT Output
No.	Signal No.
TBI	Y20
TB2	Y21
T83	Y22
TB4	Y23
TB5	Y24
TB6	Y25
TB7	Y26
TB8	Y27
TB9	COM1
TB10	NC
TB1 1	Y28
TB12	Y29
TB13	Y2A
TB14	Y2B
TB15	Y2C
TB16	Y2D
TB17	Y2E
TB18	Y2F
TB19	COM2
T820	NC
TB21	Y30
TB22	Y31
1823	. Y32
TB24	Y33
TB25	Y34
TB26	Y35
TB27	Y36
TB28	Y37
TB29	сомз
TB30	NC
TB31	NC
TB32	NC
TB33	NC
TB34	NC
TB35	NC
TB36	FG



#### 2.1.8 Specifications of Type A0J2-E24T output unit

				Output Specifications					
Output point	5			24 points					
Insulation sy	vstem			Photocoupler					
Rated load v	oltage			12/24 VDC					
Operating lo	ad voltage	range		10.2 to 30 VDC					
Max. load cu	irrent			0.5 A/point, 4 A/common					
Max. inrush	current			4 A-10 ms or shorter					
Leakage cur	rent at OFF			0.1 mA or lower					
Max. voltage	Max, voltage drop at ON			0.9 V (TYP.) 0.5 A, 1.5 V (MAX) 0.5 A					
Daamana ti				2 ms or less					
Response til	me	ON→OFF		2 ms or less (resistance load)					
Eutomal aus			Voltage	12/24 VDC (10.2 to 30 VDC)					
External sup	piy power		Current	23 mA (TYP. 24 VDC 8 points/common ON)					
Noise suppre	ession			Varistor (52 to 62 V)					
Common wir	ing system			8 points/common (common terminal: TB9, TB19, TB29)					
Operation in	dicator			Provided (LED lit when output enabled)					
Internal curre	ent consum	ption (5 VD	C)	145 mA (TYP. all points ON)					
External con	nection sys	tem		36-point terminal block connector (M3 x 6 mm screws)					
Applicable w	ire size			0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg cm (68.25 N cm) [6.06 lb inch])					
Applicable se	olderless to	rminal		1.25-3, 1.25-YS3A, 2-S3, 2-YS3A,					
				V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A					
Weight kg (lk	)			0.68 (1.5)					
				External connection diagram					
	our								
Terminal	Output								
No.	Signal No	<u>.</u>							
TB1	Y20								
TB2 TB3	Y21 Y22		External	output					
TB4	Y23		equipm						
TB5	Y24		-	TB1 Varistor Transistor					
TB6	Y25		Ы						
TB7	Y26		i						
TB8	Y27	_	l l r						
TB9 TB10	COM1 12/24 VDC		П						
TB11	Y28		<b>↓</b> +						
TB12	Y29	-	L.						
TB13	Y2A		-						
TB14	Y2B								
TB15	Y2C		i	\$ ¦					
TB16	Y2D			TB18					
TB17 TB18	Y2E Y2F		T I						
TB19	COM2		<b>∳</b> +						
TB20	12/24 VDC		L	TB20					
TB21	Y30		F	TB20					
TB22	Y31		гl						
TB23	¥32	_	i	s i i i i i i i i i i i i i i i i i i i					
TB24	Y33	_	цг	TB28					
TB25 TB26	Y34 Y35		P-L						
TB20 TB27	Y35	-	<b>↓</b> +						
TB28	Y37		L						
TB29	COM3	-1		ТВЗО					
TB30	12/24 VDC								
TB31	NC								
TB32	NC	_							
TB33	NC								
TB34 TB35	NC								
TB35 TB36	NC FG								
		<b>_</b> _							

# 2. SPECIFICATIONS

# MELSEC-A

#### 2.1.9 Specifications of Type A0J2E-E24R output unit

			Output Specifications					
Output points			24 points					
Insulation system			Photocoupier					
Rated switching voltag	e, current		24 VDC 2 A (resistance load)/point, 5 A/common 240 VAC 2 A (cose = 1)/point, 5 A/common					
Min. switching load			5 VDC/1 mA					
Max. switching voltage			250 VAC, 125 VDC					
Max. switching frequer	icy		3600 times/hour					
	Mechanica	<u>.</u>	20 million times or more					
1.14-			Rated switching voltage, current load 200 thousand times or more					
Life	Electrical		200 VAC 1.5 A, 240 VAC 1 A (cose = 0.7) 200 thousand times or more					
			200 VAC 1A, 240 VAC 0.5 A (cos¢ = 0.35) 200 thousand times or more					
<u></u>			24 VDC 1A, 100 VDC 0.1 A (L/R = 7 ms) 200 thousand times or more					
Responce time	OFF→ON		10 ms or less					
	ON→OFF		12 ms or less					
External supply power (relay coil driving power	arl	Voltage	24 VDC ±10 % (ripple voltage 4 Vp-p less)					
		Current	220 mA (24 VDC all points ON)					
Noise suppression			Varistor (387 to 473 V)					
Fuse Fuse blow indication			Provided (8 A) MF51NM8 Not provided					
			8 points/common (common terminal: TB9, TB19, TB29)					
Common wiring system Operation indicator			Provided (LED lit when output enabled)					
Internal current consul	motion (5.VF		145 mA (TYP. all points ON)					
External connection sy			36-point terminal block connector (M3 x 6 mm screws)					
Applicable wire size		·· · · ·	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg-cm (68.25 N-cm) [6.06 lb-inch])					
Applicable solderless	erminal		1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-YS3A					
Weight kg (lb)			0.75 (1.65)					
			External connection diagram					
tuo								
Terminal Output	Signal	External out	utput OUT					
TB1 Y20		equipment						
TB2 Y21 TB3 Y22			Noise Internal power supply (5 VDC)					
TB4 Y23			TB1 suppression					
TB5 Y24		1						
TB6 Y25		i _	TB8					
TB7 Y26 TB8 Y27		<b>+</b>						
TB9 COM1		L						
TB10 NC		(	COM1 Photocoupler					
TB11 Y28		Ы						
TB12 Y29 TB13 Y2A								
TB14 Y2B								
TB15 Y2C								
TB16 Y2D TB17 Y2E		La						
TB18 Y2F		、 ~						
TB19 COM2		րլ						
TB20 NC			S					
TB21 Y30 TB22 Y31		1						
TB23 Y32		T-L						
TB24 Y33		L.(						
TB25 Y34			Сомз					
TB26 Y35 TB27 Y36			TB34					
TB28 Y37		+	±1p=					
T829 COM3			TB35					
TB30 NC								
TB31 NC TB32 NC								
TB33 NC								
TB34 24 VDC								
TB35 24 GDC								
TB36 FG								
1      1     1								

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# 2.1.10 Specifications of Type A0J2E-E24T output unit

	· · · · · · · · · · · · · · · · · · ·		Output Specifications						
Output points			24 points						
Insulation system			Photocoupler						
Rated load voltage		··· · · · · · · · · · · · · · · · · ·	12/24 VDC						
Operating load voltag	je range		10.2 to 26.4 VDC						
Max. load current		·····	0.8 A/point, 0.6 A/point (60 % ON, 55 ° C)						
Max. inrush current			No limit (short protect)						
Leakage current at O	FF		1.0 mA or lower						
Max. voltage drop at	ON		1.0 V (TYP.) 0.8 A, 1.5 V (MAX) 0.8 A						
Response time	OFF-→ON	1	0.5 ms or less						
	ON→OFF	· · · · · · · · · · · · · · · · · · ·	1.5 ms or less						
External supply powe	rt	Voltage	12/24 VDC (10.2 to 26.4 VDC)						
		Current	200 mA (24 VDC all points ON)						
Noise suppression			Surge absorbing diode						
Protect			Provided (thermal protect, short protect)						
Protect detection ind	cation		None						
Protect reset			Automatic reset (reset when thermal protect is cancelled.) Thermal protection is detected in two-point units. This means that if, at any terminal, thermal protection is actuated at an even-numbered device number and the output is turned OFF, the output of the next odd number device number is also turned OFF simultaneously. Conversely, if thermal protection is actuated at an odd-numbered device number and the output is turned OFF, the output of the preceding even numbered device number is also turned OFF simultaneously.						
Common wiring syste	m		8 points/common (common terminal: TB9, TB19, TB29)						
Operation indicator			Provided (LED lit when output enabled)						
Internal current const	umption (5 VI	DC)	145 mA (TYP. all points ON)						
External connection s	ystem		36-point terminal block connector (M3 x 6 mm screws)						
Applicable wire size			0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg-cm (68.25 N-cm) [6.06 lb-inch])						
Applicable solderless	terminal		1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A						
Weight kg (lb)			0.73 (1.61)						
			External connection diagram						
OUT           No.         No.           181         Y20           1B2         Y21           1B3         Y22           1B4         Y23           1B5         Y24           1B6         Y25           1B7         Y26           1B8         Y27           1B9         12/24 VC           1B10         0 V           1B11         Y28           1B12         Y29           1B13         Y2A           1B14         Y28           1B15         Y2C           1B17         Y2E           1B18         Y2F           1B18         Y2F           1B19         12/24 VC           1B17         Y2E           1B18         Y2F           1B19         12/24 VC		External ou equipme							
TB21         Y30           TB22         Y31           TB23         Y32           TB24         Y33           TB25         Y34           TB26         Y35           TB27         Y36			L TB19 COM2 TB20 L TB21						

ς

TB28

COM3

**TB30** 

H<u>|+ TB29</u>

L

TB28 T829

TB30

T831

TB32

TB33 TB34

TB35 TB36

NC

NC NC NC NC FG

Y37 12/24 VDC 0 V

# 2.1.11 Specifications of Type A0J2E-E28AR I/O unit

<b></b>		Innu	ut Specifications			Outpu	Specifications
Input points			16 points	Output points			12 points
Insulation sys	tem		Photocoupler	Insulation system	em		Photocoupler
Rated input v			100 to 120 VAC 50/60 Hz				24 VDC 2 A (resistance load)/point,
Rated input c			10 mA (100 VAC, 60 Hz)	Rated switchin	g vo	Itage,	5 A/common
Operating vo		e	85 to 132 VAC (50/60 Hz ±5 %)	current			240 VAC 2 A (cos¢ = 1)/point, 5 A/common
ON voltage/C			80 VAC or higher/6 mA or higher	1.			
OFF voltage/			40 VAC or lower/4 mA or lower	Min. switching	load		5 VDC/1 mA
	,		Max. 300 mA	Max. switching	vol	age	264 VAC, 125 VDC
Inrush curren	t		within 0.3 ms (132 VAC)	Max. switching	frec	luency	3600 times/hour
Input impeda	nce		Approx. 10 kΩ (60 Hz), Approx. 12 kΩ (50 Hz)		Me	chanical	20 million times or more
Response	OFF-ON 1		15 ms or less (6 ms TYP.)				Rated switching voltage, current load 200 thousand times or more
time	ON→C	DFF	35 ms or less (16 ms TYP.)	Life	EI	ectrical	200 VAC 1.5 A, 240 VAC 1 A (cos¢ = 0.7) 200 thousand times or more
Common wiri	ng system	1	16 points/common (common terminal: TB17)	]			200 VAC 1 A, 240 VAC 0.5 A (cos¢= 0.35) 200 thousand times or more
Operation inc	licator		Provided (LED lit when input enabled)				24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) 200 thousand times or more
				Response		F→ON	10 ms or less
				time	0	I→OFF	12 ms or less
				External supply power		Voltage	24 VDC ±10 % (ripple voltage 4 Vp-p less)
		:		relay coil driving power	)	Current	125 mA (24 VDC all points ON)
				Noise suppres	sion		None
				Common wirin	g sy:	stem	8 points/common (common terminal: TB26) 3 points/common (common terminal: TB31) Independent contact (common terminal: TB33)
				Operation indi	cato		Provided (LED lit when output enabled)
Internal curre consumption External con	(5 VDC) nection sy	stem	140 mA (TYP. all points ON) 36-point terminal block connector (M3 x 6 m				
Applicable w Applicable so			0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A	7 kg-cm (68.25 k	1.CUU	le.os in inclu	
terminal Weight kg (lk	•		0.68 (1.5)				
Weight kg (is	<u>,</u>			nnection diagram	n	·····	
	ferminat	Signal					
T		X00		~ <u> </u>			
I I		X01 X02	External input equipment	-			Internal power supply (5 VDC)
Ę		X03			R	€ <del>•</del> -¦⊢•	Ă III
Į		X04 X05					Photocoupler LED indicator
IN II	38	X06 X07			•		
T	39	X08 X09				Ľ	<u>'</u> ''''''''
I	311	X0A X0B	External output equipmen		_		Internal power supply (5 VDC)
I	313	XOC					
		X0D X0E					· · · · ·
T	316 317	X0F COM1		TB25	- Г	a a l t (BA)-1	LED indicator
T	318	Y20					
I	319 320	Y21 Y22			-		Photocoupler
		Y23 Y24					Photocoupler O
	323	Y25 Y26	]	TB30	-		
I	325	Y27			-		
T	327	COM2 NC			-		
	329	Y28 Y29		ТВЗЗ			
T	330	Y2A COM3		твз4			
I	332	Y2B		+1 - TB35			
T	334	COM4 24 VDC		-1 <b></b>			
T	335	24 GDC FG					
				L			

#### 2.1.12 Specifications of Type A0J2-E28AS I/O unit

	i i	nput Specifications		c	output Specifications	
Input points		16 points	Output points	1	12 points	
Insulation sys	tem	Photocoupler	Insulation sys	tem	Photocoupler	
Rated input vo	oltage	100 to 240 VAC, 40 to 70 Hz				
Rated input cu	urrent	10 mA (100 VAC, 60 Hz)	Max. load vol	tage	264 VAC	
Operating volt	age range	85 to 132 VAC (50/60 Hz ±5 %)	Max. load cur	rent	0.6 A/point, 2.4 A/common	
ON voltage/OI	N current	80 VAC or higher/6 mA or higher			24 VAC 100 mA	
OFF voltage/C	OFF current	40 V or lower/4 mA lower	Min. load volt	age, current	100/240 VAC 10 mA	
Inrush current		Max. 300 mA within 0.3 ms (132 VAC)	Max. inrush c	urrent	20 A 10 ms or less, 8 A 100 ms or less	
Input impedan	ce	Approx. 10 kΩ (60 Hz), Approx. 12 kΩ (50 Hz)	Leakage curre	ent at OFF	1.5 mA (120 VAC 60 Hz), 3 mA (240 VAC 60 Hz)	
Response	OFFON	15 ms or less (6 ms TYP.)			1.5 V or lower (0.1 to 0.6 A),	
time	ON→OFF	35 ms or less (16 ms TYP.)	Max. voltage	drop at ON	1.8 V or lower (0.1 A or lower), 2.0 V or lower (10 to 50 mA)	
Common wirin	g system	16 points/common (common terminal: TB17)	Response	OFF→ON	1 ms or less	
Operation indi	cator	Provided (LED lit when input enabled)	time	ON→OFF	0.5 CYCLE + 1 ms or less	
			Fuse rating Fuse blow indicator Noise suppression		Fast-melting fuse 3.2 A (1 common/pce) HP-32	
					Provided LED lit and signal output when fuse blown	
					CR absorber (0.022 μF + 47 Ω)	
			Common wiring system		8 points/common (common terminal: TB26) 4 points/common (common terminal: TB33)	
			Operation indi	cator	Provided (LED lit when output enabled)	
Internal curren consumption (		260 mA (TYP. all points ON)			· · · · · · · · · · · · · · · · · · ·	
External conne	action system	36-point terminal block connector (M3 x 6 mm	screws)		······	
Applicable wire	e size	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7	kg.cm (68.25 N.c	cm) [6.06 lb-incl	h])	
Applicable sole terminal	derless	1.25-3, 1.25-YS3A, 2-S3, 1-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A			······································	
Weight kg (lb)		0.68 (1.5)			· · · · · · · · · · · · · · · · · · ·	
		External conn	ection diagram			



.

#### 2.1.13 Specifications of Type A0J2-E28DR I/O unit

	inn	ut Specifications				Oute	ut Casalilastiana
Input points		16 points				Outp	ut Specificationa
Input points	tem	Photocoupler		Output points		<del></del> .	12 points
Rated input vo				Insulation syst	em	·····	Photocoupler
Rated input cu		12 VDC 3 mA	24 VDC 7 mA	Rated switchin	ng vo	bitage,	24 VDC 2 A (resistance load)/point, 5 A/common
Operating volt				current	-		240 VAC 2 A (cos¢ = 1)/point, 5 A/common
		10.2 to 26.4 VDC (rip		+			
ON voltage/OI		9.5 VDC or higher/2.6		Min. switching			5 VDC/1 mA
OFF voltage/C		6 VDC or lower/1.0 m	A or lower	Max. switching			264 VAC, 125 VDC
Input resistant	CO	Approx. 3.4 kΩ		Max. switching	r		3600 times/hour
Input form	T	Sink input (input curr	ent outflow form)	-	M	echanical	20 million times or more
Response time	OFF→ON	10 ms or less (6 ms T	ዣP.)	_			Rated switching voltage, current load 200 thousand times or more
	ON→OFF	10 ms or less (7.5 ms	TYP.)	Life	E	ectrical	200 VAC 1.5 A, 240 VAC 1 A (cos¢ = 0.7) 200 thousand times or more
Common wirin	g system	16 points/common (common terminal: TE	317)				200 VAC 1 A, 240 VAC 0.5 A (cos¢ =0.35) 200 thousand times or more
Operation indi	cator	Provided (LED lit when input er	nabled)				24 VDC 1 A,100 VDC 0.1 A (L/R = 7 ms) 200 thousand times or more
				Response	OF	F→ON	10 ms or less
				time	0	N→OFF	12 ms or less
				External		Voltage	24 VDC ±10 %
				supply power		voitage	(ripple voltage 4 Vp-p or less)
				drivng power	)	Current	125 mA (24 VDC all points ON)
				Noise suppres			None
				Common wiring	g sy:	stem	8 points/common (common terminal: TB26) 3 points/common (common terminal: TB31) Independent contact (common terminal: TB33)
				Operation indic	ator		Provided (LED lit when output enabled)
Internal curren (5 VDC)	t consumption	130 mA (TYP. all poin	ts ON)	•			
External conne	ction system	36-point terminal block	k connector (M3 x 6 m	m screws)			
Applicable wire	ə sizə	0.75 to 2 mm <sup>2</sup> (applica	able tightening torque:	7 kg·cm (68.25 N	·cm)	[6.06 lb-inch])	
Applicable solo	ieriess	1.25-3, 1.25-YS3A, 2-		,			· · · · · · · · · · · · · · · · · · ·
terminal		V1.25-3, V1.25-YS3A,	V2-S3, V2-YS3A				····
Weight kg (lb)		0.68 (1.5)	Externel ea				
			External co	nnection diagram	1		
180 180 180 180 185 185 185 185 185 185 185 185 185 185	X02 X03 X04 X05 X06 X07 X08 0 X09 1 X09 1 X0A 2 X09	Extern	al input equipment I output equipment				Photocoupler Photocoupler LED indicator LED indicator (5 VDC)
181 181 181 181 181 182 182 182 182 182	4 X00 5 X0E 5 X0F 7 CCM1 8 Y20 9 Y21 0 Y22 1 Y23 2 Y24 9 Y23 4 Y26 5 Y27 5 COM2 7 NC 8 Y28 0		• • • •	S L TB25 COM2 TB28 S L TB20 COM2 TB23 COM4 TB33 COM4 TB33 COM4 TB33 COM4 TB33 COM4 TB33 COM4 TB33 COM4 TB33 COM4 COM5	<b>↓</b>		LED indicator Photocoupler

#### 2.1.14 Specifications of Type A0J2-E28DS I/O unit

	to	out Specifications		1	0	utput Specifications
Input points		16 points		Output points		12 points
Insulation sys	tem	Photocoupler		Insulation syst		Photocoupler
Rated input vo		12 VDC	24 VDC	Rated load vol		100 to 240 VAC, 40 to 70 Hz
Rated input cu		3 mA	7 mA	Max. load volt		264 VAC
Operating volt		10.2 to 26.4 VDC (ripple ratio: within 5 %	)	Max. load curr	-	0.6 A/point, 2.4 A/common
ON voltage/Ol OFF voltage/C		9.5 VDC or higher/2.6 i 6 VDC or lower/1.0 mA		Min. load volta	ige, current	24 VAC 100 mA, 100/240 VAC 10 mA
Input resistand		Approx. 3.4 kΩ		Max. inrush cu	urrent	20 A 10 ms or less, 8 A 100 ms or less
Input form		Sink input (input current outflow for	orm)	Leakage curre		1.5 mA (120 VAC 60 Hz), 3 mA (240 VAC 60 Hz)
<b>D</b>	OFF-→ON	10 ms or less (6 ms TY				1.5 V or lower (0.1 to 0.6 A),
Response time	ON→OFF	10 ms or less (7.5 ms ]		Max. voltage o	Irop at ON	1.8 V or lower (0.1 A or lower), 2.0 V or lower (10 to 50 mA)
Common wirin	ig system	16 points/common (cor	nmon terminal: TB17)	Response	OFF→ON	1 ms or less
Operation indi	icator	Provided (LED lit when	input enabled)	time	ON→OFF	0.5 CYCLE + 1 ms or less
				Fuse rating		Fast-melting fuse 3.2 A (1 common/pce) HP-32
				Fuse blow indi		Provided LED lit and signal output when fuse blown
		1		Noise suppres	sion	CR absorber (0.022 μF + 47 Ω)
				Common wirin	g system	8 points/common (common terminal: TB26) 4 points/common (common terminal: TB33)
				Operation indi	cator	Provided (LED lit when output enabled)
Internal curren consumption (			260 mA (TYP. all point	ts ON)		· · · · · · · · · · · · · · · · · · ·
External conn	ection system		36-points terminal bloc	ck connector (M3	x 6 mm screws	s)
Applicable wir	e size		0.75 to 2 mm <sup>2</sup> (applica	ble tightening to	rque: 7 kg·cm (	68.25 N·cm) [6.06 lb·inch])
Applicable sol terminal	derless		1.25-3, 1.25-YS3A, 2-3 V1.25-3, V1.25-YS3A,	53, 1-YS3A, V2-S3, V2-YS3/	1	
Weight kg (lb)			0.65 (1.43)	12.00, 12.100	<u> </u>	· · · · · · · · · · · · · · · · · · ·
		<b>4</b>		ection diagram		· · · · · · · · · · · · · · · · · · ·
18         18<	X01           X02           X03           X04           X05           X06           X07           X08           0         X09           1         X0A           2         X0B           3         X0C           4         X0D           5         X0E           6         X0F           7         COM1           8         Y20           9         Y21           0         Y22           1         Y23           2         Y24           3         Y25           4         Y25           5         Y27           6         COM2           7         NC           8         Y28           9         Y28	External inpredupment	- + TB17 COM1	(5 V	Pho Pho Triac	LED indicator
TB3 TB3 TB3	4 NC		L			K

#### 2.1.15 Specifications of Type A0J2-E28DT I/O unit

4		input \$	Specifications				Out	put Specificationa
Input points		16	points		Output points			12 points
Insulation syst	tem		otocoupler		Insulation system	em		Photocoupler
Rated input vo			VDC	24 VDC	Rated load vol		· · · · · ·	12/24 VDC
Rated input cu	urrent	3 1		7 mA	Operating load range			10.2 to 30 VDC
Operating volta	age range		.2 to 26.4 VDC ople ratio: within 5 %	»)	Max. load curre	ent		0.5 A/point, 4 A/common
ON voltage/ON	V current		VDC or higher/2.6	· · · · · · · · · · · · · · · · · · ·	Max. inrush cu	rren	:	4 A 10ms or less
OFF voltage/O	·		/DC or lower/1.0 mA	······································	Leakage currer	nt at	OFF	0.1 mA or lower
Input resistanc	:0	Ар	prox. 3.4 kΩ		Max. voltage d	rop	at ON	0.9 V (TYP.) 0.5 A, 1.5 V (MAX) 0.5 A
Input form			nk input put current outflow f	orm)	Response	OF	F→ON	2 ms or less
Response	OFF→ON	10	ms or less (6 ms TY	(P.)	- time	10	I→OFF	2 ms or less (resistance load)
time	ON→OFF	10	ms or less (7.5 ms	TYP.)	External supply	y	Voltage	12/24 VDC (10.2 to 30 VDC)
Common wiring	g system		points/common ommon terminal: TB1	17)	power (relay coil driving power)		Current	23 mA (TYP.24 VDC 8 points/common ON
Operation indic	cator		ovided (LED lit when	input enabled)	Noise suppress	1		Varistor (52 to 62 V)
operation mate		-	MIGO (LED III WIGH	mpor enabled)	1			8 points/common (common terminal: TB2
					Common wiring	g sys	tem	4 points/common (common terminal: TB20 4 points/common (common terminal: TB33
					Operation indic	ator		Provided (LED lit when output enabled)
Internal current	t consumpti	n 12	5 mA (TYP. all points	s ON)				
(5 VDC)			· · · · · ·	•				
External conne				connector (M3 x 6 mm				
Applicable wire				ble tightening torque: 7	kg-cm (68.25 N-ci	m) (6	5.06 lb·inch])	
Applicable sold terminal	derless		25-3, 1.25-YS3A, 2-5 .25-3, V1.25-YS3A,					
Weight kg (lb)			5 (1.43)	TE 00, TE-100A				
weight kg (ib)		0.6	5 (1.43)		ection diagram			
182 183 184 185 186 187	3 X02 4 X03 5 X04 5 X05 7 X06		equipment		[_R	]	Photo	coupler (5 VDC)
TB8	3 X07						ΨΨ	N N
IN 100 TB9 TB1	) X08 10 X09			- + TB17	_ _▶			LED indicator
TB9	X08 0 X09 11 X0A 12 X0E		External outp equipment					
TB9 TB1 TB1 TB1 TB1 TB1 TB1	X08           0         X09           1         X04           12         X06           13         X07           14         X07					[1204	istor	
	X08           10         X09           11         X0A           12         X0E           13         X0C           14         X0E           15         X0E					[ran:	sistor	LED indicator
<b>1</b> 18 18 18 18 18 18 18 18 18 18 18 18 18	X08           10         X09           11         X0A           12         X0E           13         X0C           14         X0E           15         X0E           16         X0F           17         CO	1				[rans		LED indicator
E 189 181 181 181 181 181 181 181 181 181	X08           10         X09           11         X04           12         X08           13         X00           14         X00           15         X06           16         X07           17         C01           18         Y20	1				[ran:	sistor	LED indicator
<b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>	9         X08           10         X09           11         X0A           12         X0E           13         X0C           14         X0E           15         X0E           16         X0F           17         COI           18         Y20           19         Y21	1						LED indicator
	Yes         Yes	1						LED indicator
	P         X08           10         X09           11         X04           12         X08           13         X00           14         X00           15         X08           16         X07           18         Y20           19         Y21           20         Y22           Y24         Y24	1						LED indicator
	P         X08           10         X09           11         X04           12         X02           13         X02           14         X02           15         X06           16         X07           17         CO1           18         Y20           19         Y21           20         Y22           Y11         Y23           Y22         Y24	1		L TB18 L TB18 L TB25 L TB25 TB27				LED indicator
E 189 1911 1911 1911 1911 1911 1911 1911	2         X08           10         X09           11         X04           12         X06           13         X07           14         X06           15         X06           16         X07           17         C01           18         Y20           19         Y21           Y22         Y24           Y23         Y26           Y25         Y27	······································				Frans		LED indicator
	P         X08           10         X09           11         X04           12         X08           13         X00           14         X00           15         X08           16         X07           18         Y20           19         Y21           20         Y22           Y24         Y25           22         Y24           Y25         Y25           Y26         COM	2		L TB17 COM1 COM1 L TB18 L TB25 L TB25 L TB25 COM2 TB27 TB27 TB27				LED indicator
	P         X08           00         X09           11         X04           12         X06           13         X00           14         X01           15         X06           16         X07           17         CO1           18         Y20           Y21         Y23           Y22         Y24           Y23         Y25           Y44         Y26           Y55         Y27           76         C00	······································		L TB17 COM1 COM1 L TB18 L TB25 L TB25 COM2 TB27 TB27 L TB28 COM2 TB27 COM2		Frans		LED indicator
Image: Control of the second	2         X08           10         X09           11         X04           12         X06           13         X07           14         X06           15         X06           16         X07           17         C01           18         Y20           19         Y21           Y22         Y24           Y23         Y25           Y25         Y27           12         Y28           Y27         Y28           Y28         Y28	2		L TB17 COM1 COM1 L TB18 L TB25 L TB26 COM2 TB27 L TB28		frans		LED indicator
	2         X08           00         X09           11         X04           12         X01           13         X02           13         X02           14         X01           15         X06           16         X07           17         C01           18         Y20           19         Y21           Y20         Y22           Y21         Y23           Y22         Y24           Y23         Y25           Y24         Y26           Y25         Y27           Y26         C00           Y27         12/2           Y28         Y28           Y29         Y29           Y29         Y28           Y20         Y28           Y28         Y28           Y29         Y29           Y29         Y29           Y20         Y24	2		L TB17 COM1 COM1 L TB18 L TB25 L TB25 TB27 L TB28 COM2 TB27 L TB28 COM2 TB27 L TB28 COM2 TB28 COM2 TB28				LED indicator
	P         X08           00         X09           11         X04           12         X06           13         X00           14         X01           15         X06           16         X07           17         CO1           18         Y20           Y21         Y23           Y22         Y24           Y23         Y25           Y44         Y26           Y25         Y27           Y26         COM           Y27         Y28           Y28         Y28           Y29         Y28           Y29         Y29           Y28         Y28           Y29         Y28           Y29         Y28           Y29         Y28           Y29         Y28           Y29         Y29           Y29         Y24           Y29         Y24           Y200         Y24           Y21         NC	2		L TB17 COM1 COM1 L TB18 L TB25 L TB25 L TB25 TB27 TB27 L TB28 COM2 TB27 L TB28 L TB28 L TB28 L TB28 L TB28		Frans		LED indicator
E 191 191 191 191 191 191 191 191 191 191	2         X08           10         X09           11         X04           12         X06           13         X07           14         X02           15         X06           16         X07           17         C01           18         Y20           19         Y21           120         Y22           121         Y23           120         Y24           120         Y24           120         Y25           121         Y23           122         Y24           123         Y25           127         12/2           128         Y28           129         Y24           120         Y28           121         NC           127         12/2           128         Y28           121         NC           132         CON	2 4VDC 3		L TB17 COM1 COM1 L TB18 L TB25 L TB25 COM2 TB27 L TB28 COM2 TB27 L TB28 COM2 TB27 L TB28 COM2 TB28 COM2 TB27 L TB28		[ran:		LED indicator
Image: Constraint of the second sec	2         X08           00         X09           11         X04           12         X06           13         X07           14         X01           15         X06           16         X07           17         CO1           18         Y20           19         Y21           Y20         Y22           Y21         Y23           Y22         Y24           Y23         Y25           Y24         Y26           Y25         Y27           122         Y28           Y28         Y28           Y29         Y28           Y29         Y28           Y29         Y28           Y20         Y28           Y27         12/2           Y28         Y28           Y29         Y28           Y200         Y24           Y21         NC           Y28         Y28           Y29         Y28           Y200         Y24           Y21         NC           Y23         Y28      >>>         Y28	2 IVDC		L TB18 L TB18 L TB25 L TB25 L TB25 L TB25 L TB27 L TB27 L TB28 COM2 TB27 L TB28 L TB28 L TB28 L TB28				LED indicator
III         III           III         IIII           III         IIII           III         IIII           IIII         IIII           IIIII         IIIII           IIIIII         IIIII           IIIII         IIIII           IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	P         X08           00         X09           11         X04           12         X06           13         X00           14         X01           15         X06           16         X07           17         CO1           18         Y20           Y21         Y23           Y22         Y24           Y23         Y25           Y24         Y26           Y25         Y27           26         CO1           Y28         Y28           Y29         Y29           Y28         Y28           Y29         Y29           Y29         Y29           Y29         Y29           Y20         Y22           Y29         Y29           Y29         Y29           Y20         Y28           Y29         Y29           Y30         Y24           Y29         Y28           Y20         Y28           Y29         Y29           Y20         Y28           Y29         Y29      >100         Y28	2 4VDC 3		L TB18 L TB18 L TB25 L TB25 L TB25 L TB25 L TB27 L TB27 L TB28 COM2 TB27 L TB28 L TB28 L TB28 L TB28				LED indicator

#### 2.1.16 Specifications of Type A0J2E-E28DR I/O unit

r		Innut 5			1		Quites.	A Chaolillachiana	
L		<u> </u>	pecifications			Outpu	ut Specifications		
Input points		- 1 -	16 points		Output points			12 points	
Insulation syst			otocoupler	Г	Insulation syst	Insulation system		Photocoupler	
Rated input vo			12 VDC         24 VDC           3 mA         7 mA		Rated switchin	Rated switching voltage,		24 VDC 2A (resistance load)/point, 5 A/common	
Rated input cu					current	. · ·		240 VAC 2A ( $\cos \phi = 1$ )/point, 5 A/common	
Operating volt	age range	10	.2 to 26.4 VDC (rip	ple ratio within 5 %)				5 A/common	
ON voitage/ON	l current	9.	5 VDC or higher/2.6	mA or higher	Min. switching	load	đ	5 VDC 1mÅ	
OFF voltage/O		6	/DC or lower/1.0 m	A or lower	Max. switching	- · · ·		250 VAC, 125 VDC	
Input resistance			prox. 3.4 kΩ		Max. switching	j fre	quency	3600 times/hour	
Input form		<u>s</u>	urce input (input cu	urrent inflow form)	4	M	echanical	20 million times or more	
Response time	OFF-→ON	5.	5 ms (TYP.)	····				Rated switching voltage, current load 200 thousand times or more	
	ON-→OFF	6.0	) ms (TYP.)		Life	E	ectrical	200 VAC 1.5 A, 240 VAC 1 A (cos¢ = 0.7) 200 thousand times or more	
Common wiring	g system		points/common ommon terminal: TE	317)				200 VAC 1 A, 240 VAC 0.5 A (cos¢ =0.35) 200 thousand times or more	
Operation indic	cator	Pr	ovided (LED lit whe	n input enabled)				24 VDC 1A, 100 VDC 0.1 A (L/R = 7 ms) 200 thousand times or more	
Responce	OFF-→ON	0.	i ms or less		Response	-	FF→ON	10 ms or less	
time ( high speed )					time	0	N→OFF	12 ms or less	
(mode) (upper 8)	ON→OFF	1.0	) ms or less		External supply power		Voltage	24 VDC ±10 % (ripple voltage 4 Vp-p less)	
points only					(relay coil drivng power)		Current	110 mA (24 VDC all points ON)	
I				· ·	Noise suppres	sion		Varistor (387 to 473 V )	
				Common wiring system			8 points/common (common terminal: TB26) 4 points/common (common terminal: TB32)		
				Operation indic	cato	r -	Provided (LED lit when output enabled)		
					Fuse			Provided (8 A) MF51NM8	
		1	۱ 		Fuse blow indication			Not provided	
internal current consumption (		13	0 mA (TYP. all poin	its ON)					
External conne				k connector (NI3 x 6 mr	m screwel				
Applicable wire				• • • • • • • • • • • • • • • • • • • •		.cm)	[6.06 lb.inch])	······································	
Applicable solo			0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg-cm (68.25 N-cm) [6.06 lb-inch]) 1.25-3, 1.25-YS3A, 2-S3, 2-YS3A,						
terminal		V1	V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A						
Weight kg (lb)		0.;	70 (1.54)	External con	nection diagram	n			
	eminal	Signal	···	For only upper 8 points,	high or low snee	ad ca	an be selected u	ising DIP switches.	
ТВ	No.	Ňo.		op cover.					
TB	2 X0	E	-						
	4 X0	3	1	<i>.</i> )	1		- <del>Q</del> Internal power		
TB TB	6 XQ	5	-		B1		Photocoupler () supply (5 VDC)		
TB	7 XQ	5	7			\$		LED indicator	
TB	9 XO	3	7	TB16					
18 18	11 XO	A					(High) (Low)		
	12 X0	3		External outp		_	Noies	internal power supply (5 VDC)	
ТВ	14 X0		コ	equipment		318	Noise suppression		
	16 XO	-			5	1.0			
ТВ	17 CC	M1				325		LED indicator	
ТВ	TB19 Y21		1		126 DM2				
	TB20 Y22 TB21 Y23		_			B28	<b>⊢</b>	Photocoupler	
TB	TB22 Y24 TB23 Y25					S.			
TB:	24 Y20	<u>;</u>	7		÷۲ ۲	331 132	-		
OUT IB	26 00	M2	-						
TB TB	27 NC		-1						
TB	29 Y29		]						
TB TB	31 Y2	3	1						
TB TB	32 CO	M3				334			
ТВ	34 24	VDC	_		+  <b> </b> -TE	335)			
TB		GDC				1			
			· · · · ·						

#### 2.1.17 Specifications of Type A0J2E-E28DS I/O unit

	In	put Specifications		Output Specifications				
Input points		16 points	Output points		12 points			
Insulation system		Photocoupler	Insulation syst	tern	Photocoupler			
Rated input voltage		12 VDC 24 VDC		Rated load voltage		100 to 240 VAC, 40 to 70 Hz		
Rated input cu	rrent	3 mA	7 mA	Max. load volt	age	264 VAC		
Hated input content				Max. load curr	ent	0.6 A/point, 0.5 A/point (60 % ON, 55 °C)		
Operating volta	age range	10.2 to 26.4 VDC (ripp	le ratio within 5 %)	Min. load volta	ige, current	24 VAC 100 mA, 100/240 VAC 10 mA		
ON voltage/ON	l current	9.5 VDC or higher/2.6r	nA or higher	Max. inrush cu	rrent	20 A 10 ms or less, 8 A 100 ms or less		
OFF voltage/OFF current		6 VDC or lower/1.0 mA or lower		Leakage current at OFF		1.5 mA (120 VAC 60 Hz), 3 mA (240 VAC 60 Hz)		
Input resistance		Approx. 3.4 kΩ		Max. voltage drop at ON		1.5 V or lower (0.1 to 0.6 A), 1.8 V or lower (0.1 A or lower), 2.0 V or lower (10 to 50 mA)		
Input form		Source input (input current inflow form)		Response	OFF→ON	1 ms or less		
Response OF	OFF-→ON	5.5 ms (TYP.)		time	ON→OFF	0.5 CYCLE + 1 ms or less		
time ON-OFF		6.0 ms (TYP.)		Fuse rating		Fast-melting fuse 3.2 A (1 common/pce) HP-32		
Common wiring system		16 points/common (common terminal: TB17)		Fuse blow indicator		Provided (LED lit and signal output when fuse blown)		
Operation indic	ator	Provided (LED lit when input enabled)		Noise suppression		CR absorber (0.022 μF + 47 Ω)		
Responce time	OFF→ON	0.5 ms or less		Common wiring system		8 points/common (common terminal: TB26 4 points/common (common terminal: TB32		
high speed) mode upper 8 points only } ON-→OFF		1.0 ms or less		Operation indicator		Provided (LED lit when output enabled)		
Internal current (5 VDC)	t consumption	260 mA (TYP. all points ON)						
External conne	ction system	36-point terminal block connector (M3 x 6 mm screws)						
Applicable wire	size	0.75 to 2 mm <sup>2</sup> (applicable tightening torque: 7 kg cm (68.25 N cm) [6.06 lb inch])						
Applicable sold terminal	lerless	1.25-3, 1.25-YS3A, 2-S3, 1-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A						
Weight kg (lb)		0.66 (1.45)						

External connection diagram



\* For only upper 8 points, high or low speed can be selected using DIP switches. Set after removing the top cover.



### 2.1.18 Specifications of Type A0J2E-E28DT I/O unit

!	ut Specifications		[	Aut-	ut Specifications	
Input points	16 points		Output points	Outp	12 points	
Insulation system	Photocoupler		Insulation syste	900	12 points Photocoupler	
Rated input voltage	12 VDC	24 VDC	Rated load volt		10.2 to 26.4 VDC	
Rated input current	3 mA	7 mA	Max. load curre		0.8A/point, 0.7/point (60 % ON, 55 °C)	
Operating voltage range	10.2 to 26.4 VDC (ripple ratio whthin 5 %	%)	Max. inrush cu	rrent	Not limit (short protect)	
ON voltage/ON current	9.5 VDC or higher/2.6	mA or higher	Leakage currer	nt at OFF	1.0 mA or lower	
OFF voltage/OFF current	6 VDC or lower/1.0 m/	A or lower	Max. voltage d	rop at ON	1.0 V (TYP) 0.8 A 1.5 V (MAX) 0.8 A	
Input resistance	Approx. 3.4 kΩ		Response	OFF→ON	0.5 ms or less	
Input form	Source input (input cu	irrent inflow form)	time	ON→OFF	1.5 ms or less	
Response OFF→ON	5.5 ms (TYP.)		External	Voltage	12/24 VDC (10.2 to 26.4 VDC)	
time ON-→OFF	6.0 ms (TYP.)		supply power	Current	100 mA (24 VDC all points ON)	
Common wiring system	16 points/common (common terminal: TB	17)	Noise suppres:	sion	Surge absorbing diode	
Operation indicator	Provided (LED lit when	n input enabled)	Common wiring	g system	8 points/common (common terminal: TB26) 4 points/common (common terminal: TB32)	
OFF→ON	0.5 ms or less		Operation indic	ator	Provided (LED lit when output enabled)	
Responce time high speed mode (upper 8 points only) ON→OFF	1.0 ms or less		Protect		Provided (thermal protect, short protect) Thermal protection is detected in two point units. This means that if, at any ter- minal, thermal protection is actuated at an even-numbered device number and the output is truned OFF, the output of the next odd-numbered device number is also turned OFF simultaneously. Con- versely, if thermal protection is actuated at an odd-numbered device number and the output is turned OFF, the output of the preceding even-numbered device number is also turned OFF simultane- ously.	
			Protect detection	on indication	None	
			Protect reset		Automatic reset (reset when thermal protect is canceled.)	
Internal current consumption (5 VDC) External connection system Applicable wire size Applicable solderless terminal Weight kg (lb)	125 mA (TYP. all point 36-point terminal block 0.75 to 2 mm <sup>2</sup> (applica 1.25-3, 1.25-YS3A, 2-1 V1.25-3, V1.25-YS3A, 0.68 (1.5)	k connector (M3 x 6 mr able tightening torque: S3, 1-YS3A, V2-S3, V2-YS3A		· · · · · · · · · · · · · · · · · · ·		
Terminal No.         Singal           TB1         X00           TB2         X01           TB4         X03           TB5         X04           TB6         X05           TB7         X06           TB1         X06           TB1         X06           TB1         X06           TB1         X06           TB1         X07           TB1         X06           TB1         X07           TB1         X06           TB1         X06           TB1         X06           TB1         X06           TB1         X06           TB1         X06           TB1         X07           TB1         X06           TB1         X06           TB1         X06           TB1         X06           TB2         Y20           TB20         Y22           <	Exte	emaioutput quipment		Photocoupler	DIP switches.	

# 2.1.19 Specifications of Type A0J2-E56AR I/O unit

	lea	it Spacifications	1		Out	put Specifications			
Input Specifications Input points 32 points			Output points 24 points						
		Photocoupler	Insulation system			Photocoupier			
Insulation syst		100 to 120 VAC 50/60 Hz		Rated switching voltage,		24 VDC 2 A (resistance load)/point, 5 A/common 240 VAC 2 A (cos¢ = 1)/point, 5 A/common			
Rated input current		10 mA (100 VAC, 60 Hz)	Min. switching	load		5 VDC/1 mA	· Aroonanion		
Operating voltage range		85 to 132 VAC (50/60 Hz ±5 %)	Max. switching			264 VAC, 125 \	/DC		
ON voitage/ON	l current	80 VAC or higher/6 mA or higher	Max. switching	, frec	quency	3600 times/hou	r		
OFF voltage/C	FF current	40 VAC or lower/4 mA or lower		Me	chanical	20 million times	s or more		
Inrush current		Max. 300 mA within 0.3 ms (132 VAC)	Life		ectrical		y voltage, current load 200 thousand times or more 240 VAC 1 A (cos¢ = 0.7) 200 thousand times or more		
Input impedan	Ce	Approx. 10 kΩ (60 Hz), Approx. 12 kΩ (50 Hz)		="	ecifical	200 VAC 1A, 24	40 VAC 0.5 A (cos¢ = 0.35) 200 thousand times or more		
Response time	OFF→ON	15 ms or less (6 ms TYP.)				24 VDC 1A, 10	0 VDC 0.1A (L/R = 7 ms) 200 thousand times or more		
·····	ON→OFF	35 ms or less (16 ms TYP.)	Response	OF	F-→ON	10 ms or less			
Common wirin		16 points/common (common terminal: TB17, TB34)	time	0	N→OFF	12 ms or less			
Operation indi	cator sous ON points	Provided (LED lit when input enabled) 60 % (10 points/common) simultaneous ON	External supply power relay coil driving power	}	Voltage Current	1	(ripple voltage 4 Vp-p less) C all points ON)		
			Noise suppres			None			
			Common wirin		etam	8 points/commo			
			Operation indi			(common terminal: TB9, TB19, TB29)			
Internal curren	t		Provided (LED	lit when output enabled)					
consumption (		225 mA (TYP. all points ON)							
External conne		36-point terminal block connector (M3 x 6 r							
Applicable wire		0.75 to 2 mm <sup>2</sup> (applicable tightening torque	: 7 kg·cm (68.25 N	l·cm)	) [6.06 lb-inch]				
Applicable sole terminal	001855	1.25-3, 1.25-YS3A, 2-S3, 2-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A							
Weight kg (lb)		1.10 (2.42)							
······································		External c	onnection diagra	m					
TB1         XXX           TB2         XXX           TB3         XXX           TB4         XXX           TB6         XXX           TB6         XXX           TB6         XXX           TB7         XXX           TB9         XXX           TB10         XXX           TB11         XXX           TB12         XXX           TB13         XXX           TB15         XXX           TB15         XXX           TB16         XX1           TB17         CC           TB18         X11           TB20         X11           TB22         X11           TB23         X11           TB24         X11           TB25         X11           TB26         X11           TB28         X11           TB29         X11           TB28         X11           TB29         X11           TB20         X11           TB28         X11           TB31         X11           TB32         X11           TB33         X1	Input           Signal No           00           11           12           13           14	External input equipment	ower supply (5 VD	Γ	) 	External input equipment TB1 5 TB8 COM3 TB11 5 TB18 COM4 TB19 COM4 TB21 L 5 TB28 COM4 TB21 L 5 TB28 COM5 TB34 TB35 TB34 TB35 TB34 TB35 TB34	Cutput           Signal No.         Me.           Y20         TB1         Me.           Y21         TB2         Y23         TB4           Y22         TB3         Y23         TB4           Y24         TB5         Y25         TB6           Y25         TB6         Y26         TB10           Y26         TB10         Y28         TB11           Y23         TB12         Y24         TB9           NC         TB10         Y28         TB11           Y29         TB12         Y24         TB13           Y29         TB14         Y20         TB15           Y20         TB16         Y22         TB20           Y21         TB20         TB12         Y31         TB22           Y31         TB22         Y32         TB23         Y33         TB24           Y33         TB24         Y34         TB25         Y35         TB29         NC         TB30         NC         TB31         NC         TB32         NC         TB33         24 VDC         TB33         24 VDC         TB34         24 GDC         TB35         FG         TB36         T		
-									

#### 2.1.20 Specifications of Type A0J2-E56AS I/O unit

	put Specifications		Curtes:	ut Specifications	
Input points	32 points	Output points	Outpi	24 points	
Insulation system	Photocoupler	Insulation syste	•m	24 points Photocoupler	
Rated input voltage	100 to 120 VAC 50/60 Hz	Rated load vol		100 to 240 VAC, 40 to 70 Hz	
Rated input current	10 mA (100 VAC, 60 Hz)	Max. load volte		264 VAC	
Operating voltage range	85 to 132 VAC (50/60 Hz ±5 %)	Max. load curre		0.6 point, 2.4 A/common	
ON voltage/ON current	80 VAC or higher/6 mA or higher	Min. load volta		24 VAC 100 mA, 100/240 VAC 10 mA	
OFF voltage/OFF current	40 VAC or lower/4 mA or lower	Max. inrush cu		20 A 10 ms or less, 8 A 100 ms or less	
	Max. 300 mA	Leakage currer	nt at OFF	1.5 mA (120 VAC 60 Hz), 3 mA (240 VAC 60 Hz)	
Inrush current	within 0.3 ms (132 VAC)	Max. voltage d	rop at ON	1.5 V or lower (0.1 to 0.6 A), 1.8 V or lower (0.1A or lower) 2.0 V or lower (10 to 50 mA)	
Input impedance	Approx. 10 kΩ (60 Hz), Approx. 12 kΩ (50 Hz)	Response time	OFF→ON	1 ms or less	
Response OFF>ON	15 ms or less (6 ms TYP.)		ON→OFF	0.5 CYCLE + 1 ms or less	
time ON→OFF	35 ms or less (16 ms TYP.)	Fuse rating		Fast-melting fuse 3.2 A (1 common/pce) HP-32	
Common wiring system	16 points/common (common terminal: TB17, TB34)	Fuse blow indi	cator	Provided (LED lit and signal output when fuse blown)	
Operation indicator	Provided (LED lit when input enabled)	Noise suppress	sion	CR absorber (0.022 μF + 47 Ω)	
Max. simultaneous ON points	60 % (10 points/common) simultaneous ON	Common wiring	j system	8 points/common (common terminal: TB9, TB19, TB29)	
		Operation indic	ator	Provided (LED lit when output enabled)	
Internal current consumption (5 VDC)	460 mA (TYP. all points ON)				
External connection system	36-point terminal block connector (M3 x 6	mm screws) 2 piece	95	· · · · · · · · · · · · · · · · · · ·	
Applicable wire size	0.75 to 2 mm <sup>2</sup> (applicable tightening torque			· · ·	
Applicable solderless terminal	1.25-3, 1.25-YS3A, 2-S3, 1-YS3A, V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A				
Weight kg (lb)	1.10 (2.42)		· · · · · · · · · · · · · · · · · · ·		
Image:	External Input equipment	Photocoupler Internal pow Euse blown LED indicato	OUT al power supply C) Triac wer supply (5 VDC)	TB8         COM3         TB9           TB9         L         NC         TB10           Y28         TB11         Y29         TB12           Y29         TB12         Y28         TB11           Y29         TB12         Y29         TB12           Y29         TB12         Y29         TB12           Y20         TB15         Y20         TB15           Y20         TB16         Y22         TB16           Y20         TB16         Y22         TB17           TB19         Q         Y27         TB18           COM4         Y21         TB22         Y30           TB21         L         Y31         TB22           Y32         TB23         Y32         TB24           Y34         TB25         Y35         TB26           TB29         Y36         TB27         Y37         TB28           COM5         TB29         Y36         TB22         Y37           COM5         TB29         NC         TB30         NC	
TB32         X1E           TB33         X1F           TB34         COM2           TB35         NC           TB36         NC	L			NC         TB32           NC         TB33           NC         TB34           NC         TB35           PG         TB36	

#### 2.1.21 Specifications of Type A0J2-E56DR I/O unit

	inpu	t Specifications							
Input points 32 points				Output Specifications					
			Output points			24 points			
Insulation system		Photocoupler		Insulation syste					
Rated input voltage		12 VDC	24 VDC	Rated switching voltage, current		24 VDC 2 A (resistance load)/point, 5 A/common 240 VAC 2 A (cos¢ = 1)/point, 5 A/common			
Rated input current		3 mA 7 mA		Min. switching	ioad		5 VDC/1 mA		
Operating voltage range		10.2 to 26.4 VDC (ripp	ole ratio: within 5 %)	Max. switching	volt	age	264 VAC, 125	VDC	
ON voltage/ON curre	ent	9.5 VDC or higher/2.6	mA or higher	Max. switching	freq	uency	3600 times/hou	Jr	
OFF voltage/OFF cu	rrent	6 VDC or lower/1.0 m	A or lower	]	Me	chanical	20 million time	s or more	
Inrush resistance		Approx. 3.4 kΩ					Rated switchin	g voltage, current lo 200 thousand time	
Input form		Sink input (input curre	ant outflow form)	Life	Ele	octrical	200 VAC 1.5 A	, 240 VAC 1 A (cost 200 thousand time	
Response	→ON	10 ms or less (6 ms T	YP.)				200 VAC 1A, 2	40 VAC 0.5 A (cos¢ 200 thousand time	
time ON-	→OFF	10 ms or less (7.5 ms	TYP.)				24 VDC 1A, 10	0 VDC 0.1 A (L/R = 200 thousand time	
Common wiring syst	em	16 points/common (common terminal: TB	317, TB34)	Response	OF	F→ON	10 ms or less		
Operation indicator		Provided (LED lit whe	n input enabled)		ON	I>OFF	12 ms or less		
Max. simultaneous (	ON points	60 % (10 points/comm simultaneous ON	non)	External supply power		Voltage	24 VDC ±10 %	(ripple voltage 4 V	p-p less)
				[relay coil [driving power]	_	Current	· · · · · · · · · · · · · · · · · · ·	OC all points ON)	
				Noise suppress	sion		None		
				Common wiring	l sys	stem	8 points/common (common terminal: TB9, TB19, TB29)		29)
				Operation indic	ator		Provided (LED	lit when output ena	bled)
Internal current consumption (5 VDC	;)	230 mA (TYP. all poin	its ON)						
External connection system		36-point terminal bloc	k connector (M3 x 6 m	m screws) 2 piece	95				
Applicable wire size		0.75 to 2 mm <sup>2</sup> (applica	able tightening torque:	7 kg·cm (68.25 N	·cm)	[6.06 lb inch])			
Applicable solderles terminal	\$ ·	1.25-3, 1.25-YS3A, 2- V1.25-3, V1.25-YS3A							
Weight kg (lb)		1.08 (2.38)							
			External cor	nnection diagram	1				
	Signal Io,	External input equipment				E	kternal output equipment	OUT Output Signal Tr No.	erminal No.
TB1         X00           TB2         X01           TB3         X02           TB4         X03           TB5         X04           TB5         X04           TB5         X04           TB5         X04           TB6         X05           TB7         X06           TB9         X08           TB10         X09           TB11         X04           TB12         X06           TB13         X0C           TB14         X00           TB15         X06           TB16         X07           TB17         COM1           TB18         X10           TB19         X11           TB20         X12           TB21         X13           TB22         X14           TB23         X15           TB24         X10           TB32         X16           TB33         X10           TB32         X16           TB33         X10           TB32         X16           TB33         X10           TB34         COM2 <tr< td=""><td></td><td>- TB1 COM1 TB18 () - TB16 COM1 TB18 () - TB33 - TB33 - TB34 COM2</td><td>IN Photocoupler</td><td>Internal power Dicator Photocouple</td><td>sup ( )</td><td>UT ply (5 VDC)  RA </td><td>TB1         S         TB3         COM3         COM3         TB11         S         TB18         TB19         COM4         TB28         TB28         TB29         COM4         S         TB29         COM4         TB29         COM4         TB29         COM4         TB29         COM5         TB35-         24 VDC</td><td>Y20         TB           Y21         TB           Y22         TB           Y23         TB           Y24         TB           Y25         TB           Y26         TB           Y27         TB           Y26         TB           Y27         TB           Y26         TB           Y27         TB           Y28         TB           Y28         TB           Y20         TB           Y20         TB           Y20         TB           Y20         TB           Y27         TB           Y20         TB           Y20         TB           Y31         TB           Y33         TB           Y34         TB           Y36         TB           NC         TB</td><td>2 2 3 4 5 5 7 8 3 7 8 3 10 12 12 13 11 12 13 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 32 33 34 35 5 5 5 5 5 5 5 5 5 5 5 5 5</td></tr<>		- TB1 COM1 TB18 () - TB16 COM1 TB18 () - TB33 - TB33 - TB34 COM2	IN Photocoupler	Internal power Dicator Photocouple	sup ( )	UT ply (5 VDC)  RA	TB1         S         TB3         COM3         COM3         TB11         S         TB18         TB19         COM4         TB28         TB28         TB29         COM4         S         TB29         COM4         TB29         COM4         TB29         COM4         TB29         COM5         TB35-         24 VDC	Y20         TB           Y21         TB           Y22         TB           Y23         TB           Y24         TB           Y25         TB           Y26         TB           Y27         TB           Y26         TB           Y27         TB           Y26         TB           Y27         TB           Y28         TB           Y28         TB           Y20         TB           Y20         TB           Y20         TB           Y20         TB           Y27         TB           Y20         TB           Y20         TB           Y31         TB           Y33         TB           Y34         TB           Y36         TB           NC         TB	2 2 3 4 5 5 7 8 3 7 8 3 10 12 12 13 11 12 13 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 32 33 34 35 5 5 5 5 5 5 5 5 5 5 5 5 5

#### 2.1.22 Specifications of Type A0J2-E56DS I/O unit

	inp	ut Specifications		Output Specifications					
Input points		32 points		Output points		24 points	24 points		
Insulation system		Photocoupler		Insulation sys	tem	Photocouple	Photocoupler		
Rated input voltage		12 VDC 24 VDC		Rated load vo	ltage	100 to 240 V	AC, 40 to 70 Hz		
Rated input current		3 mA	7 mA	Max. load vol	tage	264 VAC			
Operating voltage range		10.2 to 26.4 VDC (ripple ratio: within 5 %)		Max. load cur	rent	0.6 A/point, 2	2.4 A/common		
ON voltage/ON	l current	9.5 VDC or higher/2.6	Min. load volt	age, current	24 VAC 100	mA, 100/240 VAC 10 mA			
OFF voltage/O	FF current	6 VDC or lower/1.0 m	A or lower	Max. inrush c	urrent	20 A 10 ms c	r less, 8A 100 ms or less		
Input resistanc	:e	Approx. 3.4 kΩ		Leakage curre	ent at OFF	1.5 mA (120 3 mA (240 V)			
Input form		Sink input (input current outflow form)		Max. voltage drop at ON		1.8 V or lowe	r (0.1 to 0.6 A), r (0.1 A or lower) r (10 to 50 mÅ)		
Response	OFF→ON	10 ms or less (6 ms 1	TYP.)	Response	OFF→ON	1 ms or less			
time	ON→OFF	FF 10 ms or less (7.5 ms TYP.)		time	ON→OFF	0.5 CYCLE +	1 ms or less		
Common wiring	g system	16 points/common (common terminal: TB17, TB34)		Fuse rating		Fast-melting fuse 3.2 A (1 common/pce) HP-32			
Operation indic	cator	Provided (LED lit whe	in input enabled)	Fuse blow ind	icator	Provided (LED lit and signal output when fuse blown)			
Max. simultane	ous ON points	60 % (10 points/comr simultaneous ON	non)	Noise suppression		CR absorber (0.022 μF + 47 Ω)			
				Common wirir	ig system	8 points/com (common terr	mon minal: TB9, TB19, TB29)		
				Operation indicator		Provided (LE	D lit when output enabled)		
Internal current consumption (5		460 mA (TYP. all poir	nts ON)						
External conne	ction system	36-point terminal bloc	ck connector (M3 x 6 m	m screws) 2 piec	385				
Applicable wire	ə sizə	0.75 to 2 mm <sup>2</sup> (applic	able tightening torque:	7 kg·cm (68.25 !	N·cm) [6.06 lb·incl	h])			
Applicable sold terminal	leriess	1.25-3, 1.25-YS3A, 2-	·S3, 1-YS3A,						
		V1.25-3, V1.25-YS3A, V2-S3, V2-YS3A							
Weight kg (lb)		1.05 (2.31)							
		<u>.</u>	External con	nnection diagram	m				
Terminal         In           No.         100           TB1         X0           TB2         X0           TB3         X0           TB4         X0	1	External input equipment	IN <sup>2</sup> hotocoupler		OUT	External output equipment	OUT           Output Signal         Terminal           No.         No.           Y20         TB1.           Y21         TB2           Y22         TB3.           Y23         TB4           Y24         TB5		


## 2.1.23 Specifications of Type A0J2-E56DT I/O unit

					Output Specifications				
	Inpu	t Specifications				Outpu			
Input points Insulation system		32 points		Output points			24 points		
		Photocoupler 12 VDC	24 VDC	Insulation syst			Photocoupler 12/24 VDC		
· · · · · · · · · · · · · · · · · · ·	Rated input voltage         12 VDC         24 VDC           Rated input current         3 mA         7 mA			Rated load voi			12/24 VDC 10.2 to 30 VDC		
Operating volt		10.2 to 26.4 VDC (ripple ratio: within 5 f	· · · ·	Operating load Max. load curr		rða tsruða	0.5 A/point, 4 A/c	common	
ON voltage/OI	N current	9.5 VDC or higher/2.6	· · · · · · · · · · · · · · · · · · ·	Max, inrush cu	urrent		4 A 10 ms or less		
OFF voltage/C		6 VDC or lower/1.0 m		Leakage curre	ont at (	OFF	0.1 mA or lower		
Input resistand	.e	Approx. 3.4 kΩ		Max. voltage o	frop a	t ON	0.9 V (TYP.) 0.5	A	
Input form		Sink input (input current outflow	form)	Response	T	F→ON	1.5 V (MAX) 0.5 / 2 ms or less	A	
Response	OFFON	10 ms or less (6 ms T		time	ON	→OFF	2 ms or less		
time	ON→OFF	10 ms or less (7.5 ms	· · · · · · · · · · · · · · · · · · ·		<u>'</u> _	Voltage	12/24 VDC (10.2	to 30 VDC)	
Common wirin		16 points/common		External supply power		Current	23 mA		
Operation indi		(common terminal: TE Provided		Noise suppres		Carrent	(TYP. 24 VDC 8) Varistor (52 to 62	points/common ON)	
		(LED lit when input er 60 % (10 points/comm					8 points/common		
Max. simultan	eous ON points	simultaneous ON	ion)	Common wirin Operation indi		tem	(common termina	al: TB9, TB19, TB29)) when output enabled)	
Internal currer	nt	205 mA (TVD - 11 - 1			54.01				
consumption (	(5 VDC)	225 mA (TYP. all poin							
External conne system	ection	36-point terminal bloc	k connector (M3 x 6 m	m screws) 2 piec	:05				
Applicable wir	e size	0.75 to 2 mm <sup>2</sup> (application)	able tightening torque:	7 kg·cm (68.25 M	N·cm)	[6.06 lb inch])		·	
Applicable sol terminal	derless	1.25-3, 1.25-YS3A, 2- V1.25-3, V1.25-YS3A,							
Weight kg (lb)		1.04 (2.29)	12-00, 12-1004						
		· · · · · · · · · · · · · · · · · · ·	External con	nection diagram	m				
TB18         X1           TB19         X1           TB20         X1           TB21         X1           TB22         X1           TB23         X1           TB24         X1           TB25         X1           TB26         X1           TB26         X1           TB28         X1           TB29         X1           TB30         X1           TB31         X1           TB32         X1	22           11           12           13           14           15           16           17           18           19           10           11           12           13           14           15           16           7           1           1           1           1           1           2           3           4           5           6           7           8           9           A           B           C           D           E           F           DM2           C	xternal input equipment TB1 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 TB18 COM1	IN Photocoupler India India	Internal powe	EH	Varistor	equipment TB1 5 B8 B9- COM3  + B10 B10 B11 5 B19- B10 B10 B11 5 B19- B19- B19- B10 B19- B10 B19- B10 B19- B10 B10- B10	Signit No.         No.           Y20         TB1           Y21         TB2           Y22         TB3           Y23         TB4           Y24         TB5           Y25         TB6           Y26         TB7           Y27         TB8           COM3         TB9           12/24         YB5           Y26         TB7           Y27         TB8           COM3         TB9           12/24         YDC           Y28         TB10           Y28         TB11           Y29         TB12           Y20         TB12           Y20         TB15           Y20         TB15           Y20         TB15           Y20         TB16           COM4         TB19           12/24 VDC         TB20           Y30         TB21           Y31         TB22           Y32         TB23           Y33         TB26           Y35         TB26           Y36         TB22           12/24 VDC         TB31           NC         TB32	

## 2.1.24 Specifications of Type A0J2E-E56DR I/O unit

1-	Output Specifications							
	32 points		Output points				· · · · · · · · · · · · · · · · · · ·	
Input points						24 points		
Insulation system Rated input voltage	Photocoupler 12 VDC	24 VDC		Insulation system Rated switching voltage, current		Photocoupler 24 VDC 2 A (resistance load)/point, 5 A/common 240 VAC 2 A (cos¢ = 1)/point,		
Rated input current	3 mA	7 mA	Min. switching	load	1	5 VDC/1 mA	5 A/common	
Operating voltage range	10.2 to 26.4 VDC (rip	ple ratio: within 5 %)	Max. switching			250 VAC, 125 V	DC	
ON voltage/ON current	9.5 VDC or higher/2.6		Max. switching			3600 times/hour		
OFF voltage/OFF current	6 VDC or lower/1.0 m	A or lower		Me	chanical	20 million times	or more	
Input resistance	Approx. 3.4 kΩ						voltage, current load 200 thousand times or more	
Input form	Source input (input c	urrent inflow form)	Life	Ele	ectrical		240 VAC 1 A (cos¢ = 0.7) 200 thousand times or more	
	5.5 ms (TYP.)						10 VAC 0.5 A (cos¢ = 0.35) 200 thousand times or more	
time ON→OFF	6.0 ms (TYP.)						VDC 0.1 A (L/R = 7 ms) 200 thousand times or more	
Common wiring system	16 points/common (common terminal: Ti	B17, TB34)	Response time		F→ON	10 ms or less		
Operation indicator	Provided (LED lit whe			0	N→OFF	12 ms or less		
Max. simultaneous ON points	60 % (10 points/comr simultaneous ON	non)	External supply power f relay coil		Voltage	24 VDC ±10 % (ripple voltage 4	Vp-p or less)	
Responce time high speed )	0.5 ms or less	n <del></del>	driving power		Current	220 mA (24 VDC		
mode upper 8 } ON→OFF	1.0 ms or less		Noise suppres		tem	Varistor (387 to 8 points/common	n	
points only J		1.0 ms or less				(common terminal: TB9, TB19, TB29) Provided (LED lit when output enabled)		
		1		Operation indicator		Provided (8 A) MF51NM8		
			Fuse Fuse blow indication		Not provided			
Internal current consumption (5 VDC)	230 mA (TYP. all poir	nts ON)						
External connection system	36-point terminal bloc	ck connector (M3 x 6 m	m screws) 2 piec	es				
Applicable wire size	0.75 to 2 mm <sup>2</sup> (applic	able tightening torque:	7 kg·cm (68.25 N	l-cm	) [6.06 lb·inch])	· · · · · · · · · · · · · · · · · · ·		
Applicable solderless terminal	1.25-3, 1.25-YS3A, 2 V1.25-3, V1.25-YS3A							
Weight kg (lb)	1.13 (2.49)	External co	nnection diagram			<u></u>		
Image:	Set after remov		internal power supp cator	<b>117</b> 5		External output equipment TB1 S TB8 L TB9 COM3 B11 S B18 L B19 COM4 B11 S B19 COM4 B11 S B19 COM4 B11 S B19 COM4 S B19 COM4 S B19 COM4 S B19 COM4 S COM5 S C COM5 S C COM5 S C COM5 S C COM5 S C COM5 S C C C C C C C C C C C C C C C C C C	But No.         Terminal No.           Y20         TB1           Y21         TB2           Y22         TB3           Y23         TB4.           Y24         TB5           Y25         TB6           Y26         TB7.           Y27         TB8           COM3         TB9           NC         TB10           Y28         TB11           Y29         TB12           Y20         TB12           Y24         TB9           NC         TB10           Y28         TB11           Y29         TB12           Y20         TB15           Y21         TB20           Y30         TB21           Y31         TB22           Y33         TB23           Y34         TB25           Y35         TB28           COM5         TB29           NC         TB30           NC         TB30           NC         TB31           NC         TB32           Y35         TB28           COM5         TB32           NC         TB33	

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# 2.1.25 Specifications of Type A0J2E-E56DS I/O unit

Inpu	t Specifications			Outp			
	32 points		Output points			24 points	
e						40 10 /0 HZ	
	10.2 to 26.4 VDC					Vpoint (60 % ON, 55 °c)	
rrent			Min. load volta	ge, current	24 VAC 100 mA, 100/240 VAC 10		
current	6 VDC or lower/1.0 m/	A or lower	Max. inrush cu	rrent	20 A 10 ms or les 8 A 100 ms or les	ss,	
	Approx. 3.4 kΩ		Leakage curre	nt at OFF	1.5 mA (120 VAC 3 mA (240 VAC 6		
	Source input (input current inflow fo	orm)	Max. voltage d	rop at ON	1.5 V or lower (0 1.8 V or lower (0 2.0 V or lower (1	.1 A or lower)	
FF→ON	5.5 ms (TYP.)		Response	OFF→ON	1 ms or less		
N-→OFF	6 ms (TYP.)		time	ON→OFF	0.5 CYCLE + 1 n	ns or less	
vstem	16 points/common (common terminal: TB	17, TB34)	Fuse rating		Fast-melting fuse 3.2 A (1 common	ə 1/pce) HP-32	
7	Provided (LED lit when input en	abled)	Fuse blow indi	cator	Provided LED lit when fuse blown	and signal output	
5	60 % (10 points/comm simultaneous ON	non)	Noise suppres	sion	CR absorber (0.0	022 μF + 47 Ω)	
FF→ON	0.5 ms or less		Common wirin	g system	8 points/common (common termina	at: TB9, TB19, TB29))	
N→OFF	1.0 ms or less		Operation indi	cator	Provided (LED li	t when output enabled)	
Internal current consumption (5 VDC) 460 mA (TYP. all points ON)							
on 	36-point terminal bloc	k connector (M3 x 6 m	m screws) 2 piec	<del>8</del> \$			
ze	0.75 to 2 mm <sup>2</sup> (applica	able tightening torque:	7 kg·cm (68.25 N	l·cm) [6.06 lb·inch]	)		
ess							
• • • •	1.08 (2.38)						
	• • • • • • • • • • • • • • • • • • •	External co	nnection diagram	n			
	* For only upper 8 Set after removi	points, high or low sp ng the top cover.	eed can be selec	ted using DIP swit			
	equipment	(High) (Ld selector	Internal power s Fuse blown LED indicator	Upply VDCC)		Output         State           Output         Signal         Terminal           No.         No.         No.           Y20         TB1         Y21           Y21         TB2         Y23           Y23         TB4         Y24           Y25         TB5         Y25           Y26         TB7         Y27           Y27         TB8         Octo           Y27         TB9         NC           Y28         TB10         Y28           Y28         TB11         Y29           Y28         TB12         Y28           Y20         TB12         Y27           Y28         TB11         Y29           Y28         TB11         Y29           Y20         TB12         Y24           Y20         TB15         Y26           Y20         TB15         Y27           Y20         TB16         COM4           Y31         TB25           Y34         TB25           Y35         TB26           Y36         TB27           Y37         TB28           COM5         TS29           NC </td	
	e t range rrent current FF→ON N→OFF rstem or s FF→ON N→OFF DC) on ze ess t Sign al te 	Photocoupler e 12 VDC it 3 mA 10.2 to 26.4 VDC (ripple ratio: within 5.9 rrent 9.5 VDC or higher/2.6 current 6 VDC or lower/1.0 m/ Approx. 3.4 kΩ Source input (input current inflow for FF→ON 5.5 ms (TYP.) N→OFF 6 ms (TYP.) rstem 16 points/common (common terminal: TB or (LED lit when input er s 60 % (10 points/common simultaneous ON FF→ON 0.5 ms or less N→OFF 1.0 ms or less	32 points           Photocoupler           e         12 VDC         24 VDC           arms         7 mA         7 mA           range         10.2 to 26.4 VDC         7 mA           (ripple ratic: within 5 %)         7 mA           rrent         9.5 VDC or higher/2.6 mA or higher           current         6 VDC or lower/1.0 mA or lower           Approx. 3.4 kΩ         Source input (input current inflow form)           FF→ON         5.5 ms (TYP.)           N→OFF         6 ms (TYP.)           rstem         16 points/common (common terminal: TB17, TB34)           or         Provided           (LED lit when input enabled)         5           S         60 % (10 points/common) simultaneous ON           FF→ON         0.5 ms or less           N→OFF         1.0 ms or less           OC)         460 mA (TYP. all points ON)           an         3e-point terminal block connector (M3 x 6 m           ze         0.75 to 2 mm² (applicable tightening torque:           ess         1.25-3, 1.25-YS3A, V2-S3, V2-S3A           V1.25-3, V1.25-3, V2-S3A, V2-S3, V2-YS3A           V1.26-3, V1.25-3, V2-S3A, V2-S3A, V2-S3A           V1.25-3, V1.25-3, V2-S3A, V2-S3A           Set after removing the top cover. <td>32 points     Output points       Photocoupler     Insulation syst       e     12 VDC       range     10.2 to 26.4 VDC       (ripple ratio: within 5%)     Max. load volt       rrent     9.5 VDC or lower/1.0 mA or lower     Max. load volt       current     6 VDC or lower/1.0 mA or lower     Max. incush cu       Approx. 3.4 kΩ     Leakage current       Source input (input current inflow form)     Max. voltage d       FF→ON     5.5 ms (TYP.)     Response time       16 points/common (common terminal: TB17, TB34)     Fuse rating       vr     (LED it when input enabled)     Fuse blow indi       simultaneous ON     Noise suppres       FF→ON     0.5 ms or less     Common wirin       N→OFF     1.0 ms or less     Operation indi       DC)     460 mA (TYP. all points ON)     36-point terminal block connector (M3 x 6 mm screws) 2 piec       2re     0.75 to 2 mm² (applicable tightening torque: 7 kg-cm (68.25 h       vi 1.25-3, 1.25-YS3A, 2-S3, 1-YS3A, V1.25-3, V2-YS3A     1.08 (2.38)       External connection diagram       * For only upper 8 points, high or low speed can be selec Set after removing the top cover.       External input equipment       Internal power s (figural com/       Fuse blown istructor</td> <td>32 points       Output points         Insulation system       Insulation system         e       12 VDC       24 VDC         range       102 to 26 4 VDC       Max. load voltage         range       102 to 26 4 VDC       Max. load voltage         rrent       9.5 VDC or lower/1.0 mA or lower       Max. load voltage, current         current       6 VDC or lower/1.0 mA or lower       Max. load voltage, current         Approx. 3.4 kD       Leakage current at OFF         Source input (input current inflow form)       Max. voltage drop at ON         FF→ON       5.5 ms (TYP.)       Response         OFF→ON       5.6 ms (TYP.)       Response         N→OFF       6 ms (TYP.)       Fuse traing         remin       (common terminal: TB17, TB34)       Fuse stow indicator         s       60 % (10 points/common)       Noise suppression         FF→ON       0.5 ms or less       Common wiring system         N→OFF       1.0 ms or less       Operation indicator         OC       460 mA (TYP. all points ON)       Dise suppression         State       0.75 to 2 mm² (applicable tightening torque: 7 kg cm (68.25 N cm) (6.06 lb inch)         1.08 (2.38)       External connection diagram         * For onty upper 8 points, high or low speed can b</td> <td>32 points     Output points     24 points       Photocoupler     Insulation system     Photocoupler       1 arrow     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     5 VDC or higher/2 5 mA or higher     Min. load voltage, ourrent     20 A for or low 20 V or low 2</td>	32 points     Output points       Photocoupler     Insulation syst       e     12 VDC       range     10.2 to 26.4 VDC       (ripple ratio: within 5%)     Max. load volt       rrent     9.5 VDC or lower/1.0 mA or lower     Max. load volt       current     6 VDC or lower/1.0 mA or lower     Max. incush cu       Approx. 3.4 kΩ     Leakage current       Source input (input current inflow form)     Max. voltage d       FF→ON     5.5 ms (TYP.)     Response time       16 points/common (common terminal: TB17, TB34)     Fuse rating       vr     (LED it when input enabled)     Fuse blow indi       simultaneous ON     Noise suppres       FF→ON     0.5 ms or less     Common wirin       N→OFF     1.0 ms or less     Operation indi       DC)     460 mA (TYP. all points ON)     36-point terminal block connector (M3 x 6 mm screws) 2 piec       2re     0.75 to 2 mm² (applicable tightening torque: 7 kg-cm (68.25 h       vi 1.25-3, 1.25-YS3A, 2-S3, 1-YS3A, V1.25-3, V2-YS3A     1.08 (2.38)       External connection diagram       * For only upper 8 points, high or low speed can be selec Set after removing the top cover.       External input equipment       Internal power s (figural com/       Fuse blown istructor	32 points       Output points         Insulation system       Insulation system         e       12 VDC       24 VDC         range       102 to 26 4 VDC       Max. load voltage         range       102 to 26 4 VDC       Max. load voltage         rrent       9.5 VDC or lower/1.0 mA or lower       Max. load voltage, current         current       6 VDC or lower/1.0 mA or lower       Max. load voltage, current         Approx. 3.4 kD       Leakage current at OFF         Source input (input current inflow form)       Max. voltage drop at ON         FF→ON       5.5 ms (TYP.)       Response         OFF→ON       5.6 ms (TYP.)       Response         N→OFF       6 ms (TYP.)       Fuse traing         remin       (common terminal: TB17, TB34)       Fuse stow indicator         s       60 % (10 points/common)       Noise suppression         FF→ON       0.5 ms or less       Common wiring system         N→OFF       1.0 ms or less       Operation indicator         OC       460 mA (TYP. all points ON)       Dise suppression         State       0.75 to 2 mm² (applicable tightening torque: 7 kg cm (68.25 N cm) (6.06 lb inch)         1.08 (2.38)       External connection diagram         * For onty upper 8 points, high or low speed can b	32 points     Output points     24 points       Photocoupler     Insulation system     Photocoupler       1 arrow     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     10 2 to 264 vVDC,     7 mA     Max load voltage     284 VAC       range     5 VDC or higher/2 5 mA or higher     Min. load voltage, ourrent     20 A for or low 20 V or low 2	

## 2.1.26 Specifications of Type A0J2E-E56DT I/O unit

	inp	ut Specifications				Outpu	t Specifications	l
Input points	•	32 points		Output points		24 points		
Insulation sys Rated input vo		Photocoupler 12 VDC	24 VDC	Insulation syste	· · · · · · · · · · · · · · · · · · ·		Photocoupler	
Rated input cu	·	3 mA	24 VDC	Rated load volt Operating load	_		12/24 VDC	
Operating volt	age range	10.2 to 26.4 VDC		range Max. load curre				
		(ripple ratio: within 5 9	· · · · · · · · · · · · · · · · · · ·					A/point (60 % ON, 55 ℃)
ON voltage/Ol OFF voltage/C		9.5 VDC or higher/2.6 6 VDC or lower/1.0 m/		Max. inrush cu			Not limit (short	
Inrush resista		Αρριοχ. 3.4 kΩ		Leakage currer Max. voltage d			1.0 mA or lowe 1.0 V (TYP.) 0.	8 A
Input form		Source input				F-→ON	1.5 V (MAX) 0.	8 A
		(input current inflow fo	orm)	Response time			0.5 ms or less	
Response time	OFF→ON ON→OFF	5.5 ms (TYP.) 6.0 ms (TYP.)			10	N→OFF	1.5 ms or less	
Common wirin		16 points/common		External supply power		Voltage Current	200 mA	.2 to 26.4 VDC)
Operation indi		(common terminal: TB Provided		Neise symmetry			(24 VDC all poi	
Max. simultan		(LED lit when input en 60 % (10 points/comm		Noise suppress			Surge absorbin 8 points/commo	
ON points		simultaneous ON		Common wiring	_			nal: TB9, TB19, TB29))
Response time	OFF→ON	0.5 ms or less		Operation indic	ator		Provided (LED	lit when output enabled)
[ high speed ] mode [ upper 8 [ points only ]	ON→OFF	1.0 ms or less		Protect			Provided (thern	nal protect, short protect)
				Protect detection	on ir	dication	None	
				Protect reset			Automatic reset (reset when the	t ermal protect is cancelled)
Internal curren consumption (		225 mA (TYP. all points ON)						
External conne system	ection	36-point terminal block	connector (M3 x 6 mm	n screws) 2 piece	S			•
Applicable wire	e size	0.75 to 2 mm <sup>2</sup> (applica	ble tightening torque: 7	7 kg cm (68.25 N	cm)	[6.06 lb inch])		
Applicable sole terminal	derless	1.25-3, 1.25-YS3A, 2-5 V1.25-3, V1.25-YS3A,						
Weight kg (lb)		1.08 (2.38)						
			External con	nection diagram	i	· · · · · · · · · · · · · · · · · · ·		
Image: second	put Signal         No.         No.	*For only upper B Set after removia equipment	IN Internal power s (5 VDC) Photocoupler Photocoupler Inde	upply Source driv with protect ator	T er	Noise suppression 7 181 5 7 2 188		Output Signal No,         Terminal No,           Y20         TB1           Y21         TB2           Y22         TB3           Y23         TB4           Y24         TB5           Y25         TB6           Y26         TB7           Y27         TB8           12/24 VDC         TB9           0 V         TB10           Y28         TB11           Y29         TB12           Y28         TB14           Y20         TB16           Y27         TB18           Y29         TB14           Y20         TB16           Y21         TB20           Y28         TB11           Y29         TB16           Y20         TB16           Y21         TB20           Y32         TB21           Y30         TB21           Y31         TB22           Y32         TB24           Y34         TB25           Y37         TB28           12/24 VDC         TB30           NC         TB33           NC         TB33           NC

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### 2.2 Specifications of Extension Power Supply Units

Table 2.1 shows specifications of extension power supply units to be used for the A0J2CPU system.

ltem			Specifications			
Unit type			A0.	A0J2PW-DC24		
	Input power		100 to 120 VAC -15 %	200 to 240 VAC <sup>+10</sup> % (170 to 264 VAC)	24 VDC +30 % (15.6 to 31.2 VDC)	
	Input current		1.4 A or less	0.7 A or less	-	
Input	Input frequency		50/60 Hz ±5 %			
	Maximum input apparent power		120 VA or less			
:	Input power		<u> </u>		24 W max.	
a	Inrush current		40 A, within 5 ms	65 A, TYP (within 2 ms)		
	Efficiency		65 % or more	65 % or more		
	Besteld entertaint entertaint	5 VDC	2.3 A		2.5 A	
Output	Rated output current	24 VDC	1.5 A			
Output	Overcurrent	5 VDC	2.6 A		2.7 A	
	protection	24 VDC	1.95 A		_	
Power d	Power display		LED indicator provided		LED indicator provided	
Size mn	Size mm (inch)		250 (9.84) x 112 (4.41) x 41 (1.61)		250 (9.84) x 112 (4.41) x 41 (1.61)	
Weight	kg (lb)		0.71 (1.56)		0.71 (1.56)	

Table 2.1 Specifications of Extension Power Supply Units

### POINTS

- (1) Extension power supply unit is used when power capacity is insufficient with only the CPU unit's built-in power supply.
- (2) One extension power supply unit may be used for the A0J2CPU system.
- (3) When the A0J2PW is used with a light load, noise caused by oscillation may occur, but this is not abnormal.

### 2.3 Cable Specifications

This section describes specifications of the I/O and extension cables to be used for the A0J2CPU system.

### 2.3.1 I/O cable specifications

Table 2.2 shows specifications of the I/O cables to be used for the A0J2 CPU system. Select I/O cable according to unit mounting method.

Type	A0J2C01	A0J2C03(F)	A0J2C06	A0J2C10	A0J2C20	
Cable length mm (inch)	80 (3.15)	300 (11.81)	550 (21.65)	1000 (39.37)	2000 (78.74)	
5 VDC supply line resistance (Ω: at 55 °C)	0.047	0.0617	0.0882	0.168	0.294	
	Used for unit-to-unit mounting	Used for side-to-side installation	Used for t installation	op-to-bottoi n	n ·	
Application	A0J2C01 A0J2CPU E28(3):3 (E32(3)) E56(3):3	A0J2C03 A0J2C03 F E56(313) A0J2CPU (E323) E28(313) Used for double mounting with A0J2-2F A0J2C03F A0J2C03F A0J2C03F A0J2-2F E56(313)	Aojzcpu		A0J2C[][] E56[][] E28[][] E24[]	
	Connection between A0J2CPU unit and A0J2 I/O unit Connection between extension power supply unit and A0J2 I/O unit Connection between A0J2 I/O units					
Weight kg (lb)	0.025 (0.01)	0.085 (0.003)	0.130 (0.005)	0.196 (0.43)	0.375 (0.83)	
External dimensions mm (inch)		300 (11.81) 55 (2.17) to 65 (2.56) 53 (2.56) 53 (2.56) 53 (2.56) 53 (2.56) 53 (2.56) 53 (2.56) 54 (2.56) 55 (2.56) 5		550 (21.65) 5 (2.17) to 65 (2	46 (1.77) 46 (1.77)	



### 2.3.2 Extension cable specifications

This section describes specifications of the extension cables used for the A0J2CPU system.

~			
Type	A0J2C04B	A0J2C10B	
Cable length mm (inch)	400 (15.75)	1000 (39.37)	
5 VDC supply line resistance (Ω: at 55 °C)	0.0626	0.126	
Application	Connection between A0J2 I/O unit Connection between extension po extension base unit	t and A series extension base unit wer supply unit and A series	
Connecting method outline	A0J2C04B or A0J2C10B (A series I/O unit) E32, E24, E28 E56 *Insert the cable into IN position. Be sure to set the extension stage number to 1.		
Weight kg (lb)	0.160 (0.006)	0.260 (0.01)	
External dimensions	Cable length		

### 2.4 Fuse Specifications

Table 2.3 shows specifications of the fuse used for the output units.

Type	HP-32
Application	For triac output (Unit protection against short circuit) E24S E28(3)S E56(3)S
Туре	Plug type (fast-melting type)
Rated current	3.2 A
Size mm (inch)	30.3 (1.19) x 8 (0.31) x 20 (0.79)

Table 2.3 Fuse Specifications

### 2.5 Simulation Switch Unit Specifications

By installing a simulation switch unit on the input side of the A0J2 I/O unit, simulated input can be provided easily.

Type	A0J2-SW16	A0J2-SW32
Number of input switches (points)	16	32
Rated voltage, current	250 VAC, 10 mA	
Minimum voltage, current	5 VDC, 1 mA	
Life	More than 10000 operations	
Lever operating force (g.f)	400 or less	
Size mm (inch)	165 (6.50) x 38 (1.50) x 39.5 (1.56)	192.5 (7.58) x 38 (1.50) x 39.5 (1.56)
Weight kg (lb)	0.18 (0.4)	0.19 (0.42)
External view mm (inch)	Accessme (*)         0         1         2         3         4         4         4         5         5         6         6         9         9         9         10         2         3         6         6         9         9         9         9         10         2         11         8         9         10         11         11         12         13         14         17         16         17         30         5(1.56)	

To install the simulation switch unit, remove the input side terminal block and mount the switch unit.

There are three types of power wiring depending on input types as shown below.

AC input	Sink Input	Source Input

### 3. HANDLING

This chapter explains the handling instructions for unpackaging to installation and also the nomenclature and setting of various portions.

### 3.1 Handling Instructions

This section explains the handling instructions for the unpackaging to installation of the PC.

- (1) Since the case, terminal block connector, and pin connector of this PC are made of plastic, do not drop or give strong shock.
- (2) Do not remove the printed circuit board of each unit from the case. Removal may cause board failure.
- (3) At the time of wiring, take care to prevent the entry of wire chips from the top into the unit. If such chips have entered, remove them.
- (4) Tighten screws, such as unit mounting screws and terminal screws, in the range specified below.

Screw	Tightening Torque Range N·cm (kg·cm) [lb·inch]
I/O unit terminal block terminal screw (M3 screw)	40.75 to 78 (5 to 8) [4.33 to 6.93]
I/O unit terminal block mounting screw (M4 screw)	78 to 136.5 (8 to 14) [6.93 to 12.13]
CPU unit and extension power supply unit terminal block terminal screw (M4 screw)	97.5 to 136.5 (10 to 14) [8.66 to 12.13]
Unit mounting screw (M4 screw)	78 to 117 (8 to 12) [6.93 to 10.4]

#### 3.2 I/O Unit

This section describes the nomenclature and setting of the I/O unit.

### 3.2.1 Nomenclature



It is necessary to set or install the shaded areas before trial run and adjustment.

#### 3.2.2 I/O unit number setting

This section describes I/O unit number setting.



### POINTS

- Set the rotary switch for I/O unit number setting to an appropriate number in the range 0 to 7 according to the number of I/O unit. Note that setting the same I/O unit number between I/O units caused input/output errors.
- (2) Setting of I/O unit number determines X and Y addresses. For details, refer to the programming manual for A0J2CPU.

### 3.2.3 I/O unit internal power supply (5 VDC) setting

This section describes the setting of I/O unit internal power supply (5 VDC).



### 3.2.4 I/O unit internal power supply (5 VDC) check

This section describes how to check the I/O unit internal power supply (5 VDC). Use a circuit tester for measurement.



#### 3.3 Extension Power Supply Unit

This section describes the nomenclature and setting of extension power supply unit.

### 3.3.1 Nomenclature

This section describes the nomenclature of extension power supply unit. (The power supply terminals of the A0J2PW-DC24 differ from those of the A0J2PW.)



### Details of terminal block for power supply





This section explains circuit failure examples and corrective actions for I/O units.

### 4.1 Input Unit Circuit Failures and Corrective Actions

This section described circuit failure expmples and corrective actions for input units.



Table 4.1 Input Unit Circuit Failure and Correction Actions (Continue)



**Table 4.1 Input Unit Circuit Failure and Correction Actions** 

Calculation example of Example 4



**MELSEC-A** 

 Voltage V<sub>TB</sub> across terminal and common is obtained by the following expression:

> $V_{TB} = 4 \text{ [mA] x } 3.4 \text{ [k}\Omega\text{]} = 13.6 \text{ [V]}$ (The voltage drop of LED is ignored.)

Since this voltage does not satisfy the OFF voltage of 6 [V] or lower, the input signal does not turn off. Therefore, connect a resistor as shown below.



• Calculate the value of resistor R as shown below:

Since A0J2-E32D terminal voltage should be 6 V or lower, current I which keeps the terminal voltage at 6 V or lower is,

$$(24 - 6 [V]) + 2.6 [k\Omega] = 6.9 \text{ mA}$$

Therefore, connect a proper resistor R which keeps current l at 6.9 mA or higher.

• Now resistor R is as follows:

$$6 [V] + R > 6.9 - \frac{6 V}{3.4 k\Omega}$$
  

$$6 [V] + 5.1 [mA] > R$$
  

$$1.2 [k\Omega] > R$$

Assuming that resistor R is 1 [k $\Omega$ ], power capacity W of the resistor is obtained by the following expression:

W =  $(applied voltage)^2/R$  (or W =  $(maximum current)^2 \times R$ )

The terminal voltage of resistor R is,

$$\frac{3.4 \times 1}{3.4 + 1} [k\Omega] : \frac{3.4 \times 1}{3.4 + 1} + 2.6 [k\Omega] = X : 24 [V]$$
$$X = 5.5 [V]$$

Therefore, the power capacity W of resistor R is:

 $W = (5.5 [V])^2 / 1 [k\Omega] = 0.030 [W]$ 

• Since the power capacity of resistor is selected at 3 to 5 times larger than the actual power consumption, set the resistor power capacity to 0.125 to 0.25 [W].

As caluculated above, connect a resistor of 1 [ $k\Omega$ ] and 0.125 to 0.25 [W] across the relevant terminal and COM.

### 4.2 Output Unit Circuit Failures and Corrective Actions

This section explains circuit failure examples and corrective actions for output units.

$\sim$	Condition	Cause	Corrective Action
Example 1	When output is off, excessive voltage is applied to load.	<ul> <li>Load is half-wave rectified inside (seen in some solenoids) E24S, E26 S</li> <li>Output unit</li> <li>Load</li> <li>(1)</li> <li>Load</li> <li>(2)</li> <li>When the polarity of power supply is as shown by (1), C is charged. When the polarity is as shown by (2), voltage charged in C plus line voltage are applied across D1. Max. voltage is approx. 2√2E.</li> </ul>	Connect a resistor of several ten kΩ to several hundred kΩ across the load When the resistor is used in this way, it does not pose an output element problem but may sometimes cause the diode built in the load to deteriorate, resulting in burning, etc. Resistor Load
Example 2	Load does not turn off.	• Leakage current due to built-in noise suppression. This may occur especially in small capacity load. E24S, E28 S E56 S Output unit Leakage current	• Connect C and R across the load. [When wiring distance form output card to load Is long, be careful because there may exist leakage current due to line capacity.] $\begin{array}{c} C & R \\ \hline \\$
Example 3	When load is C-R type timer, time limit fluctuates.	E24S, E26 S E56 S Output unit Leakage current	<ul> <li>After driving the relay, drive the C-R type timer with the same contact.</li> <li>Some timers have half-wave rectified internal circuits. Therefore, the same care as indicated in Caution in Example 1 should be taken.</li> <li>Connect C and R accross the C-R type timer.</li> <li>C R create timer</li> <li>CR timer</li> <li>Calculate CR constant depending on loads.</li> </ul>



# MELSEC-A

	Condition	Cause	Corrective Action
Example 4	Output transistor is broken.	This may occur when a lamp is used as loads for transistor output. Since inrush current flows from the lamp when the transistor is on, the output transistor is broken. E24T, E28DT E56DT Inrush current Since the maximum inrush current or E24T, E28DT, and E56DT is 4 A (10 ms), use a lamp with its inrush current at less than 4A.	<ul> <li>(1) Connect the resistor as shown below so that the current which does not illuminate fht lamp may always flow. This prevents the inrush current from generating in the circuit.</li> <li>[Example] I : Firm current x (1/3 to 1/4) E24T, E28DT E56DT</li> <li>(2) Connect the resistor as shown below to suppress the inrush current. E24T, E28DT E56DT</li> <li>(2) Connect the resistor as shown below to suppress the inrush current.</li> </ul>
Example 5	The load does not operate properly (due to load short). AOJ2E-E [][]T	Short may have occurred due to load deterioration or miswiring. Check as described on the right.	<ul> <li>Check load operation.</li> <li>At ON time, measure the voltages shown below. If 3 V or more, the load may have shorted. Check the load.</li> <li>Load</li> <li>Source driver</li> </ul>

# Table 4.2 Output Unit Circuit Failures and Corrective Actions

POIN	IT				
	is recommended to use the C and R w pecifications for Examples 2 and 3.	rith tl	ne follow	ing	
1)	Combination of C and R	С	0.1 μF	0.47 μF	0.5 μF
		R	120 Ω	47 Ω	50 Ω
2)	2) C is a paper capacitor or metalized paper capacitor.				
3)	3) The rated voltage of C is 630 VDC or 200 VAC.				
4)	4) The power capacity of R is 1/2 W or more.				
5)	When the power consumption of load is 30 VA or more, use C of about 0.47 $\mu F$ and R of about 47 $\Omega.$				

### 5 MAINTENANCE AND INSPECTION

### 5.1 Periodic Inspection

This section explains the inspection items which are to be checked every six months to one year. If the equipment have been moved or modified or wiring has been changed, also make the inspection.

Number	Check Item		Check Method	Judgement	Corrective Action
1	Ambient enviornment	Ambient temperature	Measure with	0 to 55 °C	When PC is used inside a panel, the temperature in the panel is
		Ambient humidity	thermometer and hygrometer. Measure corresive gas.	10 to 90 %RH	
		Ambience		There should be no corrosive gases.	ambient temperature.
2	Line voltage check		Measure voltage across 100/200 VAC terminal.	85 to 132 VAC 170 to 264 VAC	Change supply power. Change transformer tap.
3	Mounting conditions	Looseness, play	Move the unit.	The unit should be mounted securely and positively.	Retighten screws. For CPU, I/O, and power supply units check all connections.
		Ingress of dust or foreign material	Visual check.	There should be no dust or foreign material, in the vicinity of the P.C.	Remove and clean.
4	Connecting conditions	Loose terminal screws	Visual check.	Connectors should not be loose.	Retighten.
		Distances between solderless terminals	Visual check.	Proper clearance should be provided between solderless terminals.	Correct.
		Loose connector	Visual check.	Connectors should not be loose.	Retighten connector mounting screws
5	Fuse		Check fuses.	Preventive maintenance	Change the fuse periodically due to rush current.

 Table 5.1 Periodic Inspection

#### 5.2 Fuse Replacement

If the fuse is not blown, the element may be worn by inrush current. Therefore, it is recommended to replace the fuse periodically.

### 5.2.1 Output unit fuse replacing procedure

This section describes the fuse replacing procedure.



**APPENDIX 1 DIMENSIONAL OUTLINE DRAWINGS** 

- 1.1 I/O Unit
- 1.1.1 I/O unit
- (1) E32 [], E24 [], E28 [][] I/O units

The figure below shows a dimensional outline drawing of Type E32 [] input unit. These dimensions also apply to Type E24 [] output unit and Type E28 [] [] I/O unit.



MELSEC-A





### 1.1.2 Unit-to-unit mounting

(1) Mounting the A0J2CPU unit onto Type A0J2-E [[]]]]]])/O unit (1 unit)



(2) Mounting the A0J2CPU unit onto Type A0J2-E [[]]]]] I/O unit (2 units)



### 1.2 Extension Power Supply Unit



### APPENDIX 2 I/O UNIT TERMINAL LABELS

The following shows the terminal labels for the A0J2 I/O units. Especially for the unit-to-unit mounting method, the silkscreen indication of the inner I/O unit cannot be seen. Therefore, cut off the following terminal label and attach in onto the terminal block cover.

	Type A0J2-			
E24	E28	E32	E56 left	E56 right
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{bmatrix} 1 \\ 1 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\$

APP-6



### IMPORTANT

- (1) Design the configuration of a system to provide an external protective or safety inter locking circuit for the PCs.
- (2) The components on the printed circuit boards will be damaged by static electricity, so avoid handling them directly. If it is necessary to handle them take the following precautions.
  - (a) Ground your body and the work bench.
  - (b) Do not touch the conductive areas of the printed circuit board and its electrical parts with non-grounded tools, etc.

Under no circumstances will Mitsubishi Electric be liable or responsible for any consequential damage that may arise as a result of the installation or use of this equipment.

All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.

Owing to the very great variety in possible applications of this equipment, you must satisfy yourself as to its suitability for your specific application.

# WARRANTY

Please confirm the following product warranty details before starting use.

### 1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the dealer or Mitsubishi Service Company. Note that if repairs are required at a site overseas, on a detached island or remote place, expenses to dispatch an engineer shall be charged for.

### [Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place.

Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

#### [Gratis Warranty Range]

- (1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
  - 1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
  - 2. Failure caused by unapproved modifications, etc., to the product by the user.
  - 3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
  - 4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
  - 5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
  - 6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
  - 7. Any other failure found not to be the responsibility of Mitsubishi or the user.

### 2. Onerous repair term after discontinuation of production

- (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
- (2) Product supply (including repair parts) is not possible after production is discontinued.

### 3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

### 4. Exclusion of chance loss and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to damages caused by any cause found not to be the responsibility of Mitsubishi, chance losses, lost profits incurred to the user by Failures of Mitsubishi products, damages and secondary damages caused from special reasons regardless of Mitsubishi's expectations, compensation for accidents, and compensation for damages to products other than Mitsubishi products and other duties.

#### 5. Changes in product specifications

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

### 6. Product application

- (1) In using the Mitsubishi MELSEC programmable logic controller, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the programmable logic controller device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
- (2) The Mitsubishi general-purpose programmable logic controller has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or National Defense purposes shall be excluded from the programmable logic controller applications.

Note that even with these applications, if the user approves that the application is to be limited and a special quality is not required, application shall be possible.

When considering use in aircraft, medical applications, railways, incineration and fuel devices, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected and for which a particularly high reliability is required in terms of safety and control system, please consult with Mitsubishi and discuss the required specifications.

# Type A0J2 (Input/Output unit)

# User's Manual

MODEL A0J2-I/O-USERS-E

13J602

MODEL CODE

IB(NA)-66068-N(0312)MEE

# MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : 1-8-12, OFFICE TOWER Z 14F HARUMI CHUO-KU 104-6212, JAPAN NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

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