

MELSEC A Series

Programmable Logic Controller

User's Manual

AnS Module type I/O



● SAFETY PRECAUTIONS ●

(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".

 		DANGER	Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly.	
!	\triangle	CAUTION	Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.	

Depending on circumestances, procedures indicated by \(\frac{1}{2} \) CAUTION may also be linked to serious results.

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

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

DANGER

- Install a safety circuit external to the PC that keeps the entire system safe even when there are problems with the external power supply or the PC module. Otherwise, trouble could result from erroneous output or erroneous operation.
 - (1) Outside the PC, construct mechanical damage preventing interlock circuits such as emergency stop, protective circuits positioning upper and lower limits switches and interlocking forward/reverse operations.
 - (2) When the PC detects the following problems, it will stop calculation and turn off all output.
 - The power supply module has and over current protection equipment and over voltage protection equipment.
 - The PC CPUs self diagnostic functions, such as the watchdog timer error, detect problems. In addition, all output will be turned on when there are problems that the PC CPU cannot detect, such as in the I/O controller. Build a fail safe circuit exterior to the PC that will make sure the equipment operates safely at such times. Refer to Section 8.1 of this user's manual for example fail safe circuits.

Refer to this user's manual for example fail safe circuits.

- (3) Output could be left on or off when there is trouble in the output module relay or transistor. So build an external monitoring circuit that will monitor any single output that could cause serious trouble.
- When overcurrent which exceeds the rating or caused by short-circuited load flows in the output module for a long time, it may cause smoke or fire. To prevent this, configure an external safety circuit, such as fuse.
- Build a circuit that turns on the external power supply when the PC main mosule power is turned on. If the external power supply is turned on first, it could result in erroneous output or erroneous operation.
- When configuring a system, do not leave any slots vacant on the base. Should there be any vacant slots, always use a blank cover (A1SG60) or dummy module (A1SG62). When the extension base A1S52B, A1S55B or A1S58B is used, attach the dustproof cover supplied with the product to the module installed in slot 0. If the cover is not attached, the module's internal parts may be dispersed when a short-circuit test is performed or overcurrent/overvoltage is accidentally applied to the external I/O area.

<u>^</u>

CAUTION

- Do not bunch the control wires or communication cables with the main circuit or power wires, or install them close to each other. They should be installed 100mm (3.94inch) or more from each other. Not doing so could result in noise that would cause erroneous operation.
- 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 → ON. Take measures such as replacing the module with one having sufficient rated current.

[INSTALLATION PRECAUTIONSDANGER]

CAUTION

- Use the PC in an environment that meets to the general specifications contained in this manual. Using the PC in an environment outside the range of the general specifications could result in electric shock, fire, erroneous operation, and damage to or deterioration of the product.
- Install so that the pegs on the bottom of the module fit securely into the base unit peg holes and use the specified torque to tighten the module's fixing screws. Not installing the module correctly could result in erroneous operation, damage, or pieces of the product falling. Tightening the screws too far may cause damages to the screws and/or the module. resulting in fallout, short circuits, or malfunctions.
- Do not directly touch the module's conductive parts or electronic components. Doing so could cause erroneous operation or damage of the module.

[WIRING PRECAUTIONS]



DANGER

- Completely turn off the external power supply when installing or placing wiring. Not completely turning off all power could result in electric shock or damage to the product.
- When turning of the power supply or operating the module after installation or wiring work, be sure that the module's terminal covers are correctly attached. Not attaching the terminal cover could result in electric shock.

CAUTION

- Be sure to ground the FG terminals and LG terminals to the protective ground conductor. Not doing so could result in electric shock or erroneous operation.
- When wiring in the PC, be sure that it is done correctly by checking the product's rated voltage and the terminal layout. Connecting a power supply that is different from the rating or incorrectly wiring the product could result in fire or damage.
- Tighten the terminal screws to with the specified torque. If the terminal screws are loosen, it could result in short circuits, fire or erroneous operation. Tightening the terminal screws too far may cause damages to the screws and /or the module, resulting in fallout, short circuits, or malfunctions.
- Be sure there are no foreign substances such as sawdust or wiring debris inside the module. Such debris could cause fires, damage, or erroneous operation.
- External connections shall be crimped or pressure welded with the specified tools, or correctly soldered. For information regarding the crimping and pressure welding tools, refer to the I/O module's user's manual. Imperfect connections could result in short circuit, fires, or erroneous operation.

[STARTUP AND MAINTENANCE PRECAUTIONS]

(!)

DANGER

- Do not touch the terminals while the power is ON. Doing so could cause shock or erroneous operation.
- Switch all phases of the external power supply off when cleaning the module or tightening
 the terminal screws. Not doing so could result in electric shock. If the screws are too tight, it
 may cause falling, short circuit or erroneous operation due to damage of the screws or
 modules.

\triangle

CAUTION

- Do not disassemble or modify the modules.
 Doing so could cause trouble, erroneous operation, injury, or fire.
- Switch all phases of the external power supply off before mounting or removing the module.
 If you do not switch off the external power supply, it will cause failure or malfunction of the module.

[DISPOSAL PRECAUTIONS]



CAUTION

• When disposing of this product, treat it as industrial waste

REVISIONS

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

Print Date	*Manual Number	Revision
Feb.,1995	IB (NA) 66541-A	First edition
Nov.,1995	IB (NA) 66541-B	Addition of models
		A1SX10EU, A1SX20EU, A1SY10EU, A1SY14EU, A1SY18AEU, A1SY28EU
		Correction
		INTRODUCTION, CONTENTS, Manuals, Page 1-2, 1-3, 1-4, 4-7, 4-8
Jul.,1996	IB (NA) 66541-C	Correction
		Section 4.2
Sep.,1996	IB (NA) 66541-D	Correction
		Section 3.2, 4.1.1, 4.1.2, 4.1.3
Mar.,1997	IB (NA) 66541-E	Addition
		A6TB[]36[], A6TB[]54[],A6TBX70[], Chapter 5
		Correction
		Section 4.2.1, 4.2.2
Sep.,1997	IB (NA) 66541-F	Addition
		SAFETY PRECAUTIONS, Section 1.1, 1.2
		Correction
		CONTENTS, Section 1.2, 2.1 to 2.4, 2.8, 3.1 to 3.5, 3.8 to 3.11, 3.13, 4.1.2 to 4.1.5, 4.2.2, 5.1, 6.1, 6.2, Chapter 7, APPENDICES
Dec.,1997	IB (NA) 66541-G	Addition
		Section 1.2, 3.15 (A1SY81EP)
		Correction
		SAFETY PRECAUTIONS, CONTENTS, APPENDICES
May.,1999	IB (NA) 66541-H	Addition of models
ł		A1SX82-S1, A1SY82, A1SH42-S1
Oct., 2002	IB (NA) 66541-I	Equivalent to Japanese version I
		Partial correction
		CONTENTS, Manuals, Section 1.2, 2.1 to 2.4, 2.6, 2.8, 3.1 to 3.5, 3.8 to 3.11, 3.13, 4.1.3 to 4.1.6, 5.1, 8.1, 8.2, APPENDICES
		Partial addition
		Section 2.1 to 2.2.1, APPENDICES
		Addition
		Section 1.1, WARRANTY

Print Date	*Manual Number	Revision
May.,2003	IB (NA) 66541-J	Partial correction
		Section 1.2

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Manuals

The following manuals are also relevant to this product.

Related manuals

• A1SCPU/A1SCPUC24-R2/A2SCPU User's Manual (IB-66320)

This manual describes the specifications and functions of A1S, A1SC24-R2 and A2SCPU (S1), and specifications etc. of the memory cassettes, the power supply module and extension base unit.

(Sold separately)

• A2ASCPU(S1/S30) User's Manual(IB-66455)

This manual describes the specifications and functions of A2ASCPU(S1/S30) and the specifications of the memory cassettes, the power supply modules and extension base units that can be used with it.

(Sold separately)

• A1SJHCPU(S8)/A1SHCPU/A2SHCPU(S1) User's Manual (IB-66779)

This manual describes the specifications and functions of A1SJHCPU(S8), A1SH, and A2SHCPU(S1) and the specifications of the memory cassettes, the power supply modules and extension base units that can used with it.

(Sold separately)

• Q2AS(H)CPU(S1) User's Manual (SH-3599)

This manual describes the performance, functions and handling-related items of the Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU and Q2ASHCPU-S1 and the specifications and handling of the power supplies, memory cards and base units.

(Sold separately)

MEMO

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1. GENERAL SPECIFICATIONS OF INPUT AND OUTPUT MODULES AND INSRUCTIONS FOR SELECTING THEM

1.1 General Specifications

The followings are specifications common to modules being used.

General Specifications

Item	Specifications				<u> </u>
Operating ambient tem- perature	0 to 55 °C				
Storage ambient tempera- ture		-2	20 to 75 °C		
Operating ambient humid- ity	10 to 90 % RH, no condensation				
Storage ambient humidity		10 to 90 % l	RH, no condensa	tion	
			Intermitten	t vibrations	
	Conforms to JIS B 3502 and IEC 61131-2	Frequency	Acceleration	Amplitude	Sweep count
		10 to 57 Hz		0.075 mm	
Vibration resistance		57 to 150 Hz	9.8 m/s ²		10 times each
		Continuous vibrations			for X, Y, Z
		Frequency	Acceleration	Amplitude	directions (80 minutes)
		10 to 57 Hz	_	0.035 mm	
		57 to 150 Hz	4.9 m/s ²		
Shock resistance	Conforms to JIS B 3502 and IEC 61131-2 (147 m/s ² , three times each for three orthogonal directions)				
Operating ambiance	No corrosive gas should be present				
Operating altitude *3	2000 m (6562ft.) or less				
Installation position In the control pane		control panel			
Overvoltage category *1	vervoltage category *1 II or less				
Pollution level *2			2 or less		

- *1 Indicating a particular distribution board which this machine is to be connected among many boards, situated between public power supply lines and interior machine equipment. Category II is for machines receiving power supply from stationary facilities. For power rating of 300 V or less, its surge tolerance voltage is 2500 V.
- *2 Index indicating level of conductive material generation in the operating ambiance. Pollution level 2 is an ambiance which generates only non-conductive pollution, except for temporary conduction due to occasional condensation.
- *3 Do not use or store the PC in the environment where the pressure is higher than the atmospheric pressure at sea level. Otherwise, malfunction may result. To use the PC in high-pressure environment, contact your nearest Mitsubishi representative.

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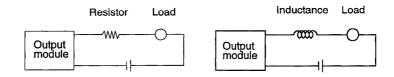
1.2 Selecting Instructions

(1) It is recommended that a triac output module be used with a load that is frequently opened and closed or with a coil load (e.g. an electromagnet) that has a large capacity or a low power factor.

(If a contact output module is used, its service life will be shorter than specified.)

- (2) If an inductive L load is driven by an output module, it must be switched ON for 1 second or longer and switched OFF for 1 second or longer.
- (3) If a counter or timer which has a DC-DC converter as a load is used with an A1SY40, A1SY41, or A1SY42 output module, a fault may be caused in the output module due to periodic rush currents when it is turned ON or during operation.

To prevent failure due to rush current, connect a resistor or an inductance to the load in series or use an A1SY50 whose maximum load current is larger.



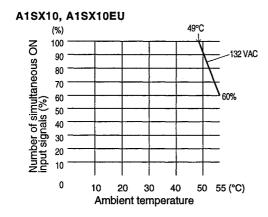
(4) Fuses installed in output modules cannot be replaced. They are principally designed to protect external wiring if the module outputs are shorted.

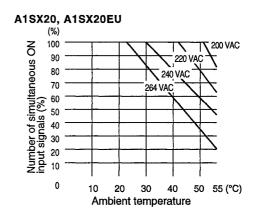
Therefore, output modules may not be protected from a short circuit.

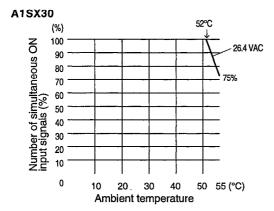
If an output module becomes faulty due to any cause other than a short circuit, its fuse may not function.

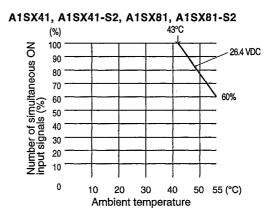
(5) The number of signals which can be turned ON simultaneously in an input module varies according to the input voltage and ambient temperature. Select the number of the simultaneous ON signals by referring to the charts on the next page.

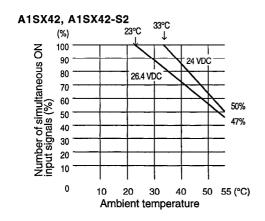
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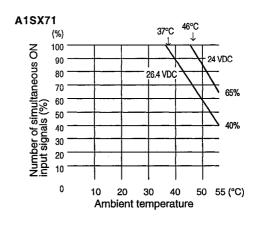


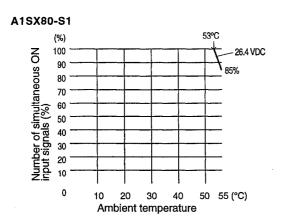


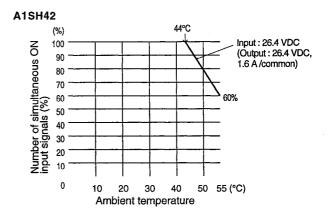




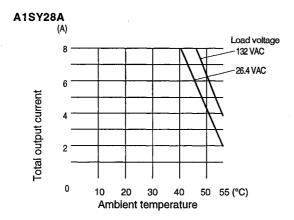


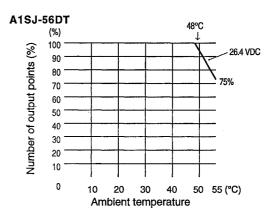


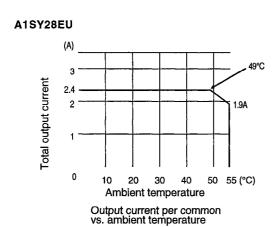


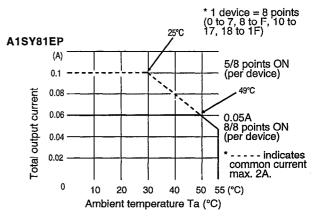


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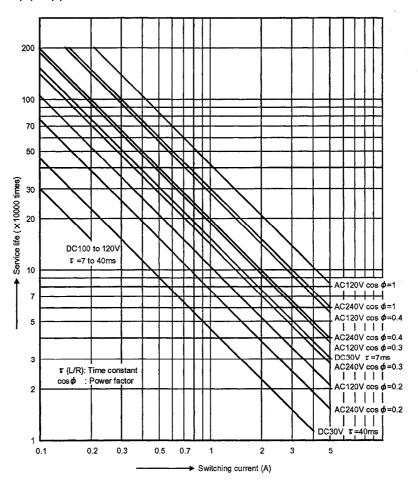


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(6) The chart below shows the service life of relay output modules.

Select the appropriate modules, considering the direction given in (1).

(a) Applicable module: A1SY10, A1SJ-56DR, A1SX48Y18



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Point

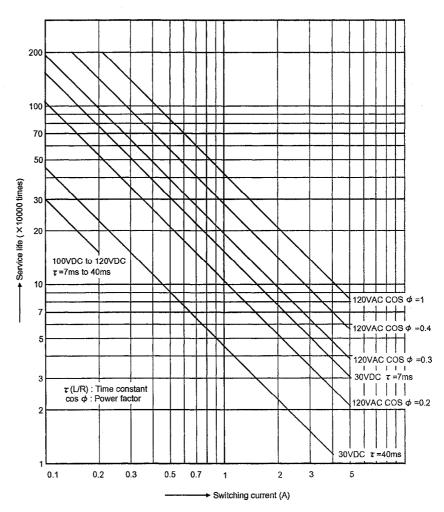
- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 Therefore, it is recommended to use a triac output module.
- (2) The relay life curve shows the value based on actual use, which is not guaranteed. Therefore, make sure to allow for a margin of error. The relay life span differs according to the specifications as follows: Rated switching voltage, current load 100 thousand operations 200VAC 1.5A, 240VAC 1A (COS ϕ =0.7) 100 thousand operations 200VAC 1A, 240VAC 0.5A (COS ϕ =0.35) 100 thousand operations 24VDC 1A, 100VDC 0.1A (L/R=7ms) 100 thousand operations
- (3) Relay life is substantially affected by the load type and inrush current characteristics. The inrush current may cause the contact welding. Therefore, consideration should be given to it as well as constant current.
 - (a) Inductive load
 When the inductive load such as electromagnetic contactor or solenoid is shut off, high counter-electromotive force is generated between the contacting materials to produce an arc discharge. Consideration should be made especially when the power factor is low, as it may decrease the life period. In addition, make sure to consider the contact melting, as the inrush current equivalent to 5 to 15 times of constant 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 current flows in the lamp circuit.
 - (c) Capacitive load

 Make sure to consider the contact melting when a device such as condenser is used in a load circuit, as the inrush current equivalent to 20 to 40 times of constant current may flow in the circuit. Also, pay full attention to the wire capacity if long length of wire is routed.

(b) Applicable module: A1SY10EU



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Point

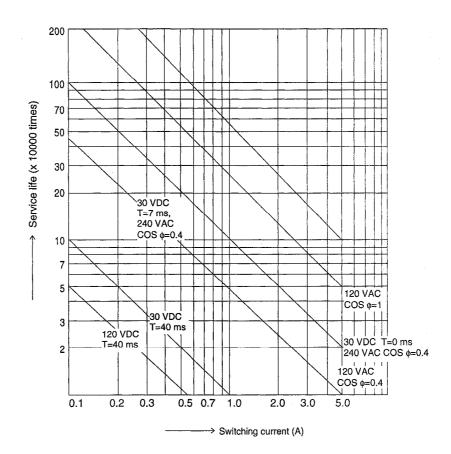
- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 Therefore, it is recommended to use a triac output module.
- (2) The relay life curve shows the value based on actual use, which is not guaranteed. Therefore, make sure to allow for a margin of error. The relay life span differs according to the specifications as follows: Rated switching voltage, current load 200 thousand operations 100VAC 2A, 120VAC 2A (COS ϕ =0.7) 200 thousand operations 100VAC 2A, 120VAC 2A (COS ϕ =0.35) 100 thousand operations 24VDC 1.5A, 100VDC 0.1A (L/R=7ms) 100 thousand operations
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 - (b) Lamp load

 Make sure to consider the contact melting, as the inrush current equivalent to 10 to 15 times of constant current flows in the lamp circuit.
 - (c) Capacitive load

 Make sure to consider the contact melting when a device such as condenser is used in a load circuit, as the inrush current equivalent to 20 to 40 times of constant current may flow in the circuit. Also, pay full attention to the wire capacity if long length of wire is routed.

(c) Applicable module: A1SY14AEU



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Point

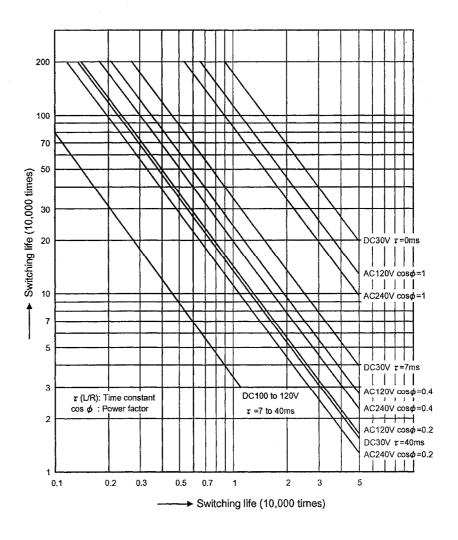
- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 Therefore, it is recommended to use a triac output module.
- (2) The relay life curve shows the value based on actual use, which is not guaranteed. Therefore, make sure to allow for a margin of error. The relay life span differs according to the specifications as follows: Rated switching voltage, current load 200 thousand operations 200VAC 2A, 240VAC 1.8A (COS ϕ =0.7) 200 thousand operations 200VAC 1.1A, 240VAC 0.9A (COS ϕ =0.35) 200 thousand operations 24VDC 1.1A, 100VDC 0.1A (L/R=7ms) 200 thousand operations
- (3) Relay life is substantially affected by the load type and inrush current characteristics. The inrush current may cause the contact welding. Therefore, consideration should be given to it as well as constant current.
 - (a) Inductive load When the inductive load such as electromagnetic contactor or solenoid is shut off, high counter-electromotive force is generated between the contacting materials to produce an arc discharge. Consideration should be made especially when the power factor is low, as it may decrease the life period. In addition, make sure to consider the contact melting, as the inrush current equivalent to 5 to 15 times of constant 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 current flows in the lamp circuit.
 - (c) Capacitive load

 Make sure to consider the contact melting when a device such as condenser is used in a load circuit, as the inrush current equivalent to 20 to 40 times of constant current may flow in the circuit. Also, pay full attention to the wire capacity if long length of wire is routed.

(d) Aplicable module: A1SY18A, A1SY18AEU



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Point

- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 Therefore, it is recommended to use a triac output module.
- (2) The relay life curve shows the value based on actual use, which is not guaranteed. Therefore, make sure to allow for a margin of error. The relay life span differs according to the specifications as follows: Rated switching voltage, current load 200 thousand operations 200VAC 1.5A, 240VAC 1A (COS ϕ =0.7) 200 thousand operations 200VAC 075A, 240VAC 0.5A (COS ϕ =0.35) 200 thousand operations 24VDC 1A, 100VDC 0.1A (L/R=7ms) 200 thousand operations
- (3) Relay life is substantially affected by the load type and inrush current characteristics. The inrush current may cause the contact welding. Therefore, consideration should be given to it as well as constant current.
 - (a) Inductive load

When the inductive load such as electromagnetic contactor or solenoid is shut off, high counter-electromotive force is generated between the contacting materials to produce an arc discharge. Consideration should be made especially when the power factor is low, as it may decrease the life period. In addition, make sure to consider the contact melting, as the inrush current equivalent to 5 to 15 times of constant current flows when the module is powered on.

(b) Lamp load

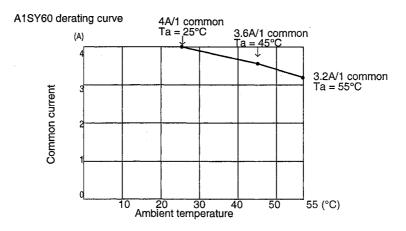
Make sure to consider the contact melting, as the inrush current equivalent to 10 to 15 times of constant current flows in the lamp circuit.

(c) Capacitive load

Make sure to consider the contact melting when a device such as condenser is used in a load circuit, as the inrush current equivalent to 20 to 40 times of constant current may flow in the circuit. Also, pay full attention to the wire capacity if long length of wire is routed.

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(7) The common current of A1SY60 output module varies according to ambient temperature. Select a common current referring to the chart shown below.



- (8) The A1SX41 and A1SX42 input modules and the A1SY41 and A1SY42 output modules are supplied with soldering-type 40-pin connectors. 40-pin connectors of the pressure-displacement type and crimp contact type are also available. Tools for the pressure-displacement and crimp contact type connectors must be procured from the following suppliers:
 - (a) Soldering-type 40-pin connector

Model name

: A6CON1 (straight out type),

A6CON4 (straight/diagonal out type)

(b) Crimp-contact-type 40-pin connector

Model name

: A6CON2 (straight out type)

Tool

: Fujitsu FCN-363T-T005/H

Applicable wire size

: AWG #24 to 28

(c) Pressure-displacement-type 40-pin connector

Model name

: A6CON3 (flat cable type)

Tool

: Fujitsu

FCN-367T-T012/H (locator plate) FCN-707T-T001/H (cable cutter) FCN-707T-T101/H (hand press)

Applicable wire size

: AWG #28 (twisted)

AWG #30 (single wire)

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(d) Supplier's offices:

Fujitsu Limited

North and South America:

Fujitsu Component of America, Inc.

3545 North First Street, San Jose, CA 95134-1804 U.S.A.

Phone: (408) 922-9000 Telex: (910) 338-0190 Fax: (408) 428-0640

Europe:

Fujitsu Microelectronik GmbH

Am Siebestein 6-10 6072, Dreieich-Buchschtag, F.R. Germany

Phone: (061) 03-690-0

Telex: 411963

Fax: (061) 03-690-122

Asia:

Fujitsu Microelectronics Asia PTE, Limited

#06-04 to #06-07 Plaza, By The Park, No.51 Bras Basah Road,

Singapore 0719 Phone: 336-1600 Telex: 55573 Fax: 336-1609

- (9) The 37-pin D sub-connector for the A1SX81 input module and A1SY81 output module is a soldering-type connector. Crimp-contact-type and pressure-displacement type 37-pin D sub-connectors are also available. Tools for the crimp-contact-type and pressure-displacement connectors must be procured by the user.
 - (a) Soldering-type 37-pin D sub-connector

Model name : A6CON1E (straight out type)

(b) Crimp-contact-type 37-pin D sub-connector

Model name : A6CON2E (straight out type)

Tool : Tyco Electronics AMP

91503-1

Applicable wire size : AWG #20 to 24

(c) Pressure-displacement-type 37-pin D sub-connector

Model name : A6CON3E (flat cable type)

Tool : Tyco Electronics AMP

91257-1 (die set) 91220-1 (cable cutter) 91085-2 (hand press)

Applicable wire size : AWG #28 (twisted)

AWG #30 (single wire)

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(d) Contact for enquiries about tools for crimp-contact and pressure-displacemet-type cables

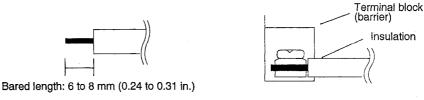
(The tools cited above are only examples: for more details, enquire at the contact given below Home Page.)

http://www.tycoelectronics.com/

- (10) The fixing screw tightening torque should be within the following range.

 Module fixing screw (M4 screw) 78.4 to 117.6N•cm
- (11) When using A1SX10EU, A1SX20EU, A1SY10EU, A1SY14EU, A1SY28EU, etc., if the wires are connected to the terminal block without using solderless terminals, observe the following points.
 - (a) Bare the end of insulated wires to expose about 6 to 8 mm of naked wire.

When making connections, ensure that bared wire does project from the terminal block. If it does, it may close the gap to a distance shorter than that required for insulation between the terminals.



Treatment of end of wire

Connection to the terminal block (viewed from side)

- (b) If twisted wire is used, make sure that is does not unravel.
- (12) When the terminal block cover cannot be closed due to wire gauge treatment, etc., replace the terminal block cover with the following product. This protects the charging section.

Type: A1STEC-S

Applicable module

	Туре
Input module	A1SX10, A1SX20, A1SX30, A1SX40(S1/S2), A1SX80(S1/S2)
Output module	A1SY10, A1SY18A, A1SY22, A1SY28A, A1SY40, A1SY50, A1SY60(E), A1SY68A, A1SY80, A1SY81EP
Input/output composite module	A1SX48Y18, A1SX48Y58
Special function module	A1SI61, A1S64AD, A1S62DA, A1S63ADA, A1S62RD3/4, A1SD61, A1SP60

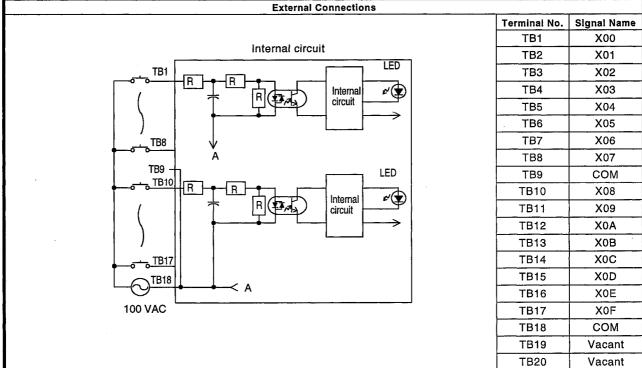
(13) Precaution when Connecting the Uninterruptive Power Supply (UPS)
Use a UPS which employs the constant inverter power supply method with 5 % or less voltage fluctuation.

Do not use a UPS with the constant commercial power supply method.

2. INPUT MODULE SPECIFICATIONS

2.1 A1SX10 AC Input Module

Model		AC Input Module			
Specifications		A1SX10 Appe		ance	
Number of input points		16 points			
Isolation metho	d	Photocoupler	A1SX10	_	
Rated input vol	tage	100 to 120 VAC 50/60 Hz			
Input voltage di	istortion factor	5% or less (See section 1.2 (13))	0000000		
Rated input cur	rent	Approx. 6 mA (100 VAC 60 Hz)	, ,	- ·	
Operating volta	ge range	85 to 132 VAC (50/60 Hz ±5%)			
Max. simultane points	ous input	100% simultaneously ON (at 110 VAC) 60% simultaneously ON (at 132 VAC)			
Inrush current		Max. 200 mA, within 1 ms (132 VAC)			
ON voltage/ON	current	80 VAC or higher/5 mA or higher	2		
OFF voltage/OFF current		30 VAC or lower/1.4 mA or lower	3		
Input impedance		Approx. 18 kΩ (60 Hz), Approx. 21 kΩ (50 Hz)	3 4		
Response	OFF → ON	20 ms or less (100 VAC 60 Hz)	5		
time	ON → OFF	35 ms or less (100 VAC 60 Hz)			
Common terminal arrangement		16 points/common (common terminals: TB9, TB18)	7		
Operating indic	ator	ON state is indicated (LEDs)	8		
External conne	ctions	20-point terminal block connector (M3.5 x 7 screws)	9		
Applicable wire	size	0.75 to 1.2 mm ² (Applicable tightening torque 78.4 N•cm)	A		
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	В		
Accessories		None	D		
Internal current consumption (5 VDC)		50 mA (TYP, all points ON)	E		
Weight kg	-	0.21			
		External Connections			

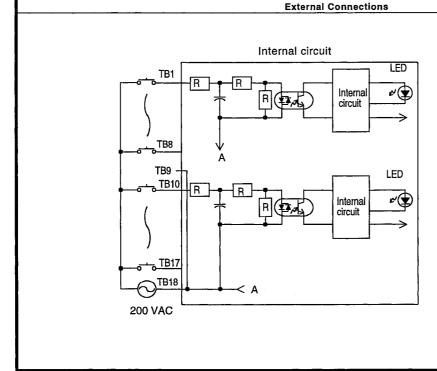


2.2 A1SX10EU AC Input Module

	Model	AC Input Module			
Specifications		A1SX10EU	Anne	arance	
Number of input points		16 points	Д		
Insulation method		Photocoupler	TA		
Rated input vol	Itage	100 to 120 VAC 50/60 Hz	│ A1SX10E	ິ ⊟ : │	
Input voltage d	listortion factor	5% or less (See section 1.2 (13))			
Rated input cur	rrent	Approx. 7 mA (120 VAC 60 Hz)	0000000	0000000 EF	
Operating volta	age range	85 to 132 VAC (50/60 Hz ±5%)			
Max. simultane points	eous input	100% simultaneously ON			
Inrudh current		Max. 200 mA, within 1 ms (132 VAC)	0		
ON voltage/ON		80 VAC or higher/5 mA or higher	1		
OFF voltage/O	FF current	30 VAC or lower/1.4 mA or lower	2		
Input impedance	ce	Approx. 18 kΩ (60 Hz), Approx. 21 kΩ (50 Hz)	3		
Response	OFF → ON	20 ms or less (100 VAC 60 Hz)	4		
time	$ON \rightarrow OFF$	35 ms or less (100 VAC 60 Hz)	5		
Common termin	nal	16 points/common (common terminals: TB9, TB18)	6		
arrangement	nator		7		
Operating indic		ON state is indicated (LEDs) 20-point terminal block connector (M3.5 x 7 screws)	8		
		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque	9		
Applicable wire		78.4 N•cm)	A		
Applicable crim	np terminals	RAV1.25-3.5			
Insulation withs	stand	None			
voltage	stand	1780 VAC rms/3 cycle (altitude 2,000 m)] E		
Insulation resis	stor	10 M Ω or higher at insulation resistance tester			
Noise immunity	/	IEC801-4:1 kV			
Internal current consumption (5 VDC)		50 mA (TYP, all points ON)			
Weight kg		0.21	1		
	External Connections				
			Terminal No.	Signal Name	
			TB1	X00	
		Internal circuit	TB2	X01	
	ج⊥ے TE	LED	TB3	X02	
			TB4	X03	
	(R	TB5	X04	
)		TB6	X05	
i	TE		TB7	X06	
		Ä	TB8	X07	
тв					
	TBS				
	TB:	10 R LED	ТВ9	СОМ	
		10 R R LED	TB9 TB10	COM X08	
		10 R R Internal circuit	TB9 TB10 TB11	COM X08 X09	
		10 R R LED	TB9 TB10 TB11 TB12	X08 X09 X0A	
	O O TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13	COM X08 X09 X0A X0B	
		10 R R Internal circuit	TB9 TB10 TB11 TB12	X08 X09 X0A	
	O O TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13	COM X08 X09 X0A X0B	
	TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13 TB14	COM X08 X09 X0A X0B X0C	
	O TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13 TB14 TB15	COM X08 X09 X0A X0B X0C X0D	
	TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	COM X08 X09 X0A X0B X0C X0D X0D	
	TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18	COM X08 X09 X0A X0B X0C X0D X0E X0F COM	
	TB	10 R R Internal circuit	TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	COM X08 X09 X0A X0B X0C X0D X0E X0F	

2.3 A1SX20 AC Input Module

Model		AC input Module	
Specifications		A1SX20	Appearance
Number of input points		16 points	A1SX20
Isolation method		Photocoupler	
Rated input v	oltage	200 to 240 VAC 50/60 Hz	
Input voltage	distortion factor	5% or less (See section 1.2 (13))	7 8 8
Rated input c	urrent	Approx. 9 mA (200 VAC 60 Hz)	
Operating vol	tage range	170 to 264 VAC (50/60 Hz ±5%)	
Max. simultan points	eous input	60% simultaneously ON (at 220 VAC)	0
Inrush current		Max. 500 mA, within 1 ms (264 VAC)	1
ON voltage/O	N current	80 VAC or higher/4 mA or higher	2
OFF voltage/0	OFF current	30 VAC or lower/1 mA or lower	3 .
Input impedar	ice	Approx. 22 kΩ (60 Hz), Approx. 27 kΩ (50 Hz)	4
Response	OFF → ON	30 ms or less (200 VAC 60 Hz)	5
time	ON → OFF	55 ms or less (200 VAC 60 Hz)	6
Common term arrangement	inal	16 points/common (common terminals: TB9, TB18)	7 8
Operating ind	icator	ON state is indicated (LEDs)	9
External conn	ections	20-point terminal block connector (M3.5 x 7 screws)	
Applicable wir	e size	0.75 to 1.25 mm ² (Applicable tightening torque 78.4 N•cm)	В
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	С
Accessories		None	D
Internal current consumption (5 VDC)		50 mA (TYP, all points ON)	F
Weight kg		0.23	
		External Connections	



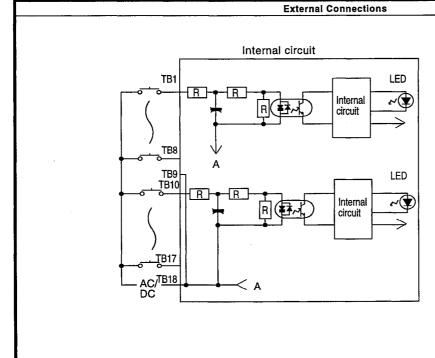
Terminal No.	Signal Name
TB1	X00
TB2	X01
TB3	X02
TB4	X03
TB5	X04
TB6	X05
TB7	X06
TB8	X07
TB9	СОМ
TB10	X08
TB11	X09
TB12	X0A
TB13	X0B
TB14	X0C
TB15	XOD
TB16	X0E
TB17	X0F
TB18	СОМ
TB19	Vacant
TB20	Vacant

2.4 A1SX20EU AC Input Module

	Model	AC Input Module			
Specification	s	A1SX20EU	Appearance		
Number of inpu	ut points	16 points			
Insulation meth	nod	Photocoupler	A1SX20E	u 🗀 i	
Rated input vol	Itage	200 to 240 VAC 50/60 Hz	0000000	000000 000000 000000	
Input voltage d		5% or less (See section 1.2 (13))			
Rated input cur		Approx. 11 mA (240 VAC 60 Hz)			
Operating volta		170 to 264 VAC (50/60 Hz ±5%)			
Max. simultane points	ous input	60% simultaneously ON (at 220 VAC)			
Inrush current		Max. 500 mA, within 1 ms (264 VAC)			
ON voltage/ON		80 VAC or higher/4 mA or higher	2		
OFF voltage/O	FF current	30 VAC or lower/1 mA or lower	3		
Input impedanc	ce	Approx. 22 kΩ (60 Hz), Approx. 27 kΩ (50 Hz)	4		
Response	OFF → ON	30 ms or less (200 VAC 60 Hz)	5		
time	ON → OFF	55 ms or less (200 VAC 60 Hz)	6		
Common termin	nal	16 points/common (common terminals: TB9, TB18)			
arrangement			7		
Operating indic		ON state is indicated (LEDs)	8		
External conne	ctions	20-point terminal block connector (M3.5 x 7 screws)	9		
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	В		
Applicable crim	np terminals	RAV1.25-3.5	c		
Accessories		None	D		
Insulation withs voltage	stand	2830 VAC rms/3 cycle (altitude 2,000 m)	E		
Insulation resis	tor	10 MΩ or higher at insulation resistance tester	<u> </u>		
Noise immunity	/	IEC801-4:1 kV			
Internal current consumption (5		50 mA (TYP, all points ON)			
Weight kg	-	0.23			
		External Connections			
1		External Connections	Terminal No.	Signal Name	
		External Connections	Terminal No.	Signal Name X00	
		External Connections Internal circuit			
		Internal circuit	TB1	X00	
	<u></u>	Internal circuit	TB1 TB2 TB3	X00 X01 X02	
	TI	Internal circuit	TB1 TB2 TB3 TB4	X00 X01 X02 X03	
		Internal circuit	TB1 TB2 TB3 TB4 TB5	X00 X01 X02 X03 X04	
		Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6	X00 X01 X02 X03 X04 X05	
		Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7	X00 X01 X02 X03 X04 X05 X06	
	O TE	Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6	X00 X01 X02 X03 X04 X05	
		Internal circuit R R R Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7	X00 X01 X02 X03 X04 X05 X06	
	()	Internal circuit R R Internal circuit Internal circuit LED LED LED	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8	X00 X01 X02 X03 X04 X05 X06 X07	
	TBS	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10	X00 X01 X02 X03 X04 X05 X06 X07 COM	
	TBS	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09	
	TBS	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A	
	TBS	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B	
	TBS	Internal circuit BI R R Internal circuit A Internal circuit LED Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit A A A	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit A A A	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D X0E	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit A A A	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D X0E X0F COM	
	TB:	Internal circuit Internal circuit Internal circuit Internal circuit Internal circuit A A A	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D X0E X0F	

2.5 A1SX30 DC/AC Input Module

	Model	DC/AC Input Module					
Specifications			Appearance				
Number of in	out points	16 points		A1SX30			
Isolation met	hod	Photocoupler					
Rated input v	oltage	12/24 VDC	12/24 VAC 50/60 Hz				
Rated input c	urrent	4.2 mA (12 VDC/VAC), 8.6 m	A (24 VDC/VAC)	; = = = =			
Operating vol	tage range	10.2 to 26.4 VDC (ripple: less than 5%)	10.2 to 26.4 VAC (50/60 Hz ±5%)				
Max. simultar points	neous input	75% simultaneously ON (at 2	6.4 VDC)				
ON voltage/O	N current	7 VDC/AC or higher/2 mA or	higher	1			
OFF voltage/	OFF current	2.7 VDC/AC or lower/0.7 mA	2				
Input impeda	nce	Approx. 2.7 kΩ	3				
Response	OFF → ON	20 ms or less (12/24 VDC)	25 ms or less (12/24 VAC 60Hz)	4			
time	$ON \rightarrow OFF$	20 ms or less (12/24 VDC)	20 ms or less (12/24 VAC 60Hz)	5 6			
Common tern arrangement	ninal	16 points/common (common	7 8				
Operating ind	licator	ON state is indicated (LEDs)	ON state is indicated (LEDs)				
External conr	nections	20-point terminal block conne	ector (M3.5 x 7 screws)	9			
Applicable wi	re size		tightening torque 78.4 N+cm)	A			
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	B				
Accessories		None	D				
Internal curre consumption		50 mA (TYP, all points ON)	E				
Weight kg		0.2					



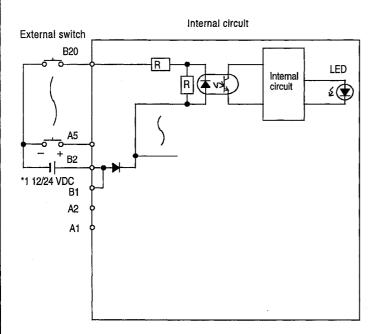
Terminal No.	Signal Name
TB1	X00
TB2	X01
TB3	X02
TB4	X03
TB5	X04
ТВ6	X05
TB7	X06
TB8	X07
TB9	СОМ
TB10	X08
TB11	X09
TB12	X0A
TB13	X0B
TB14	X0C
TB15	XOD
TB16	X0E
TB17	XOF
TB18	СОМ
TB19	Vacant
TB20	Vacant

2.6 A1SX40(S1/S2) DC Input Module (Sink Type)

	Model			DC Input Modu	le (Sink Type)			
Specifi	cations	A1S	X40	A1SX40-S1	A1SX40-S2	Appea	rance	
	of input points	16 points		L				
Isolation	n method	Photocoupler				A1sx40		
Rated in	nput voltage	12 VDC	24 VDC	24 VDC				
Rated input current Approx. 3 mA Approx. 7 mA Approx. 7 mA							000000EF	
Operatir	ng voltage range	10.2 to 26.4 VD than 5%)	C (ripple: less	19.2 to 26.4 VDC (ripple	: less than 5%)		5 ·	
Max. sin	nultaneous pints	100% simultane	ously ON (at 26.	4 VDC)				
ON volta	age/ON current	8 VDC or higher	/2 mA or higher	14 VDC or higher/4 mA or higher	14 VDC or higher/3.5 mA or higher	0		
OFF vol	tage/OFF	4 VDC or lower/	1 mA or lower	6.5 VDC or lower/1.7 m/	A or lower	2		
Input res	sistance	Approx. 3.3 kΩ] 3		
Re- sponse	OFF → ON	10 ms or less (2	4 VDC)	0.1 ms or less (24 VDC)	10 ms or less (24 VDC)	5		
time	ON → OFF	10 ms or less (2	4 VDC)	0.2 ms or less (24 VDC)	10 ms or less (24 VDC)	6 7		
arranger				ninals: TB9, TB18)		8		
Operatir	ng indicator	ON state is indi				9		
	l connections			r (M3.5 x 7 screws)		A		
	ble wire size			htening torque 78.4 N•cn	1)	В		
terminal		R1.25-3.5, R2-3 RAV1.25-3.5, R				C		
Accesso		None				- E		
	ption (5 VDC)	50 mA (TYP, all	points ON)			, F		
Weight I	kg	0.2		Total and Orange attang				
				External Connections		Terminal No.	Signal Name	
						TB1	X00	
						TB2	X01	
			Int	ernal circuit		TB3	X02	
		[TB4	X03				
	г	TB1	TB5	X04				
	İ	1	占	₹	TB6	X05		
	l		뚜	circuit	_	TB7	X06	
1)			>	TB8	X07	
		/ TD0	J			TB9	COM	
	+	TB8	V ^			TB10	X08	
		TB9 📙	^			TB11	X09	
		TB10			LED	TB12	XOA	
	†		R		<u></u>	TB13	X0B	
		, 11	R	Internal circuit	€ 🗨	TB14	XOC	
		(<u> </u>		\rightarrow	TB15	XOD	
)				TB16	XOE	
		/				TB17	X0F	
	1	TB17				TB18	СОМ	
	Ī	TD40	l			TB19	Vacant	
	Į.	TB18	▶			TB20	Vacant	
	*1: A1SX40-S1/S2	+						

2.7 A1SX41(S1/S2) DC Input Module (Sink Type)

	Model			DC Input M	odule (Sink Type)	
Specifications		A1S	A1SX41 A1SX41-S1 A1SX		A1SX41-S2	Appearance
Number of input	points	32 points				
Isolation method	1	Photocouple	er			A1SX41
Rated input volt	age	12 VDC	24 VDC	24 VDC		A 00 80 00 08 8 100 A0 02 0A 300 B0 03 00 8 40 CD 04 0C
Rated input curr	ent	Approx. 3 mA	Approx. 7 mA	Approx. 7 mA	· · · · · · · · · · · · · · · · · · ·	40 CO 040 C 50 EO 050 E 70 FO 070 F
Operating voltag	je range	10.2 to 26.4 (ripple: less		19.2 to 26.4 VDC (ripple	: less than 5%	
Max. simultaneo	ous input points	60% (20 poi	nts/common) simultaneously ON (at 2	26.4 VDC)	
ON voltage/ON	current	8 VDC or high 2 mA or high		17 VDC or higher/ 3.5 mA or higher 3.5 mA or higher		
OFF voltage/OF	F current	4 VDC or lov		3.5 VDC or lower/ 1.8 mA or lower	6.5 VDC or lower/ 1.7 mA or lower	
Input resistance		Approx. 3.3 kΩ				2 2 2 3 3 3 4 4 4
Danner dina	$OFF \rightarrow ON$	10 ms or les	s (24 VDC)	0.3 ms or less (24 VDC)	10 ms or less (24 VDC)	5 5
Response time	$ON \rightarrow OFF$	10 ms or les	s (24 VDC)	0.3 ms or less (24 VDC)	10 ms or less (24 VDC)	7 7 - 8 8 8 - 9 9 9
Common terminarrangement	al	32 points/co	mmon (com	A A B B C C C		
Operating indica	itor	ON state is	indicated (LI	0 D E E F F		
External connec	tions	40-pin conne	ector	● NC NC NC		
Applicable wire	size	0.3 mm ²				COM
Accessories		Connector (1 pce.) for e	xternal wiring (soldering t	ype)	<u> </u>
Internal current consumption (5	VDC)	80 mA (TYP, all poi	ints ON)	120 mA (TYP, all points ON)	80 mA (TYP, all points ON)	DC12/24V 3/7mA A1SX41
Weight kg		0.21				UC12/24V 3/7MA A15X41
				External Connections		



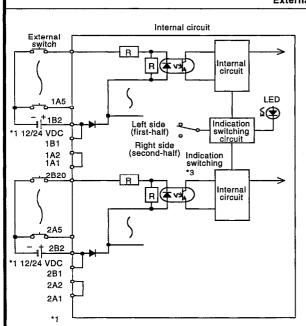
Arra	Pi		ent	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)				
				B20	X00	A20	X10				
				B19	X01	A19	X11				
	$\overline{}$	_		B18	X02	A18	X12				
B20 B19	0	0	A20	B17	X03	A17	X13				
B18	0	0	A19 A18	B16	X04	A16	X14				
B17	0	ö	A17	B15	X05	A15	X15				
B16 B15	0	0	A16 A15	B14	X06	A14	X16				
B14	0	0	A14	B13	X07	A13	X17				
B13 B12	0	0	A13 A12	B12	X08	A12	X18				
B11	0	0	- 1	-	-	0	A12	B11	X09	A11	X19
B10	0	0	A10	B10	X0A	A10	X1A				
B9 B8	0	0	A9 A8	B9	X0B	A9	X1B				
B7	0	0	A7	B8	X0C	A8	X1C				
B6 B5	0	0			0		A6 A5	B7	XOD	A7	X1D
B4	0	ŏ	A4	B6	X0E	A6	X1E				
B3 B2	0	0	A3	B5	X0F	A5	X1F				
B1	0	0	A2 A1	B4	Vacant	A4	Vacant				
				Вз	Vacant	АЗ	Vacant				
F	ront	vie	w	B2	сом	A2	Vacant				
				B1	СОМ	A1	Vacant				

^{*1:} A1SX42-S2 is 24 VDC only.

^{*2:} The arrangement of pins A and B shown above is the opposite of the arrangement of pins of the connector on the module.

2.8 A1SX42(S1/S2) DC Input Module (Sink Type)

	Model	DC Input Module (Sink Type)						
Specifications		A1S	A1SX42 A1SX42-S1 A1SX42-S2		A1SX42-S2	Appearance		
Number of input	points	64 points		·		A1SX42		
Isolation method	t	Photocouple	er					
Rated input volt	age	12 VDC	24 VDC	24 VDC		A 0 0 8 0 0 0 0 8 B 1 0 9 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Rated input curi	rent	Approx. 2 mA	Approx. 5 mA	Approx. 5 mA		4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Operating voltage	ge range	10.2 to 26.4 (ripple: less		19.2 to 26.4 VDC (ripple	e: less than 5%)			
Max. simultaneo	ous input points	50% (16 po	ints/common) simultaneously ON (at 2	24 VDC)			
ON voltage/ON	current	8 VDC or hi 2 mA or hig		18.5 VDC or higher/ 17.5 VDC or higher/ 3.5 mA or higher 3.5 mA or higher		DIS. FOL		
OFF voltage/OF	F current	4 VDC or lower/ 0.6 mA or lower		3 VDC or lower/ 0.45 mA or lower	7 VDC or lower/ 1.7 mA or lower			
Input resistance		Approx. 5 kΩ		Approx. 4.7 kΩ				
	OFF → ON	10 ms or les	ss (24 VDC)	0.3 mA or less (24 VDC)	10 ms or less (24 VDC)			
Response time	ON → OFF	10 ms or les	ss (24 VDC)	0.3 mA or less (24 VDC)	10 ms or less (24 VDC)			
Common termin arrangement	al	32 points/common (common terminals: 1B1, 1B2, 2B1, 2B2)						
Operating indica	ator	ON state is	indicated (LI					
External connec	tions	40-pin conn	ector					
Applicable wire	size	0.3 mm ²						
Accessories		Connectors	(2 pces.) for	external wiring (solderin	g type)			
Internal current consumption (5 VDC)		90 mA (TYP, all pe	points ON) 160 mA (TYP, all points ON) (TYP, all points ON)					
Weight kg		0.28				DC12/24V 2/5mA A1SX42		
				External Connections				



	Pin	Arra	ange	ment	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (SH)	Pin No.	Signal Name (SH)
Γ		~			1B20	X00	1A20	X10	2B20	X20	2A20	X30
	B20	٥	`°	A20	1B19	X01	1A19	X11	2B19	X21	2A19	X31
	B19	o	0	A19	1B18	X02	1A18	X12	2B18	X22	2A18	X32
	B18 B17	0	0	A18 A17	1B17	X03	1A17	X13	2B17	X23	2A17	X33
1	B16	0	ō	A16	1B16	X04	1A16	X14	2B16	X24	2A16	X34
1	B15 B14	0 0	0	A15	1B15	X05	1A15	X15	2B15	X25	2A15	X35
- 1	B13	o	ŏ	A14 A13	1B14	X06	1A14	X16	2B14	X26	2A14	X36
1	B12	0 0	0	A12	1B13	X07	1A13	X17	2B13	X27	2A13	X37
	B11 B10	^	A11 A10	1B12	X08	1A12	X18	2B12	X28	2A12	X38	
- 1	B9	0	0	A9	1B11	X09	1A11	X19	2B11	X29	2A11	X39
	B8 B7	0	0	A8 A7	1810	XOA	1A10	X1A	2B10	X2A	2A10	ХЗА
- 1	B6	0	0	A6	1B9	XOB	1A9	X1B	2B9	X2B	2A9	ХЗВ
- 1	B5 B4	0 0	0	A5 A4	1B8	XOC	1A8	X1C	2B8	X2C	2A8	ХЗС
	B3	0	0	A4 A3	1B7	XOD	1A7	X1D	2B7	X2D	2A7	X3D
- t	B2 B1	0 0	0	A2	1B6	X0E	1A6	X1E	2B6	X2E	2A6	X3E
	וט וט	ー) A1	1B5	X0F	1A5	X1F	2B5	X2F	2A5	X3F
					1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
	_	_			1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
	F	-ron	t vie	€W	1B2	COM1	1A2	Vacant	2B2	COM2	2A2	Vacant
L					1B1	COM1	1A1	Vacant	2B1	СОМ2	2A1	Vacant

^{*1:} A1SX42-S1/S2 is 24 VDC only.

^{*2:} In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.

^{*3:} When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs. When it is set to the right side, the status of the second-half devices (X20 to X3F) is displayed by the LEDs.

2.9 A1SX71 DC Input Module (Sink/Source Common Type)

	Model		DC Input Module	(Sink/	Source	Comm	on Type))			
Specifications		A1SX71						Appearance			
Number of input		32 points						A1SX7	1		
Isolation metho							;				
Rated input volt	age	5 VDC	12 VDC	24	VDC *1						
Rated input curi	rent	1.2 mA	3.3 mA	7 r	nA			清		;	
Operating voltage	ge range	4.5 to 26.4 VDC (ripple	: less than 5%)		· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •					
Max. simultaneo	ous input points	65% (20 points/commo	n) simultaneously ON (a	t 24 V	DC)						
ON voltage/ON	current	3.5 VDC or higher/1 m/	A or higher								
OFF voltage/OF	F current	1.0 VDC or lower/0.1 m	A or lower						_		
Input resistance	•	Approx. 3.5 kΩ								7	
	OFF → ON	1.5 ms or less									
Response time	ON → OFF	3 ms or less								# 11	
Common termin arrangement	al	32 points/common (con	nmon terminals: B1, B2)	ı							
Operating indica	ator	ON state is indicated (L	.EDs)						1111 181 2		
External connec	tions	40-pin connector						1 111::		3 1 1	
Applicable wire	size	0.3 mm ²							ECM COM		
Accessories		Connector (1 pce.) for	external wiring (solderin	g type)					100 100	
Internal current consumption (5		75 mA (TYP, all points	ON)								
Weight kg		0.19						DC4.5/1	3.2V A1	SX71	
			External Connections	\$							
Open collecto	or (Sink)	Internal circuit				Pin No.	Signal Name	Pin No.	Signal Name		
				B20			B20	X00	A20	X10	
	B20	R					B19	X01	A19	X11	
\ <u></u>	,]		nternal LED				B18	X02	A18	X12	
_ _'			circuit ~	B20 B19	0 0	A20 A19	B17	X03	A17	X13	
		,		B18	0 0	A18	B16	X04	A16	X14	
		(B17 B16	0 0	A17 A16	B15	X05	A15	X15	
				B15	0 0	A15	B14	X06	A14	X16	
	B2)		B14 B13	0 0	A14 A13	B13	X07	A13	X17	
				B12	0 0	A12	B12	X08	A12	X18	
5/12/24	1 1			B11 B10	0 0	A11 A10	B11	X09	A11	X19	
'	B1 🟳			B9 B8	0 0	A9	B10	XOA	A10	X1A	
	A2 0			B7	0 0	A8 A7	B9	X0B	A9	X1B	
1	A1 ¢			B6 B5	0 0	A6 A5	B8	XOC	A8	X1C	
·				B4	0 0	A4	B7	XOD	A7	X1D	
ĺ				B3 B2	0 0	A3 A2	В6	X0E	A6	X1E	
				B1	00	A1	B5	X0F	A5	X1F	
							B4	Vacant	A4	Vacant	
TTL, LS-TT	L, CMOS buffer	(Sink) Sensor (S	Source)		Front vi	ew	В3	Vacant	А3	Vacant	
_F	B20	1	- 1 B20				B2	СОМ	A2	Vacant	
•	- 620	 	P1 :				B1	COM	A1	Vacant	
5 VDC		5/12 VDC +						th hardwa			
	later versions. *2: The arrangement of pins A and B shown above is the opposite of the arrangement of pins of the connector on the module.										

2.10 A1SX80(S1/S2) DC Input Module (Sink/Source Common Type)

	Model		DC Inpi	ut Module (Sink/So	ource Common Ty	oe)	······································
Specifications	s	A1	SX80	A1SX80-S1 A1SX80-S2		Appe	arance
Number of inpu	t points	16 points					
Isolation metho	d	Photocoupler				A1şx80	. ·
Rated input vol		12 VDC 24 VDC 24 VDC					
Rated input cur	rent	Approx. 3 mA	Approx. 7 mA	Approx. 7 mA		1200000	0 A B B B B B B B B B B B B B B B B B B
Operating volta		5%)	(ripple: less than	5%)	(ripple: less than		
Max. simultane	ous input points	100% simultaneo	ously ON (at 26.4 V		T		
ON voltage/ON	current	8 VDC or higher/	2 mA or higher	17 VDC or higher/5 mA or higher	13 VDC or higher/3.5 mA or higher	0	
OFF voltage/OF	F current	4 VDC or lower/1	mA or lower	5 VDC or lower/1.7 mA or lower	6 VDC or lower/1.7 mA or lower	2	
Input resistance)	Approx. 3.3 kΩ				3	
D	OFF → ON	10 ms or less (24	VDC)	0.4 ms or less (24 VDC)	10 ms or less (24 VDC)	5	
Response time	ON → OFF	10 ms or less (24	VDC)	0.5 ms or less (24 VDC)	10 ms or less (24 VDC)	7	
Common termin arrangement	ial	16 points/commo	n (common termina	als: TB9, TB18)		8	
Operating indica		ON state is indica				9	
External connec			block connector (M			A	
Applicable wire		0.75 to 1.25 mm ² (Applicable tightening torque 78.4 N•cm)				В	
Applicable sold termials	erless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RA	5 .V2-3.5			С D	
Accessories		None			·	E	
Internal current consumption (5		50 mA (TYP, all points ON)			F		
Weight kg		0.2					
			External Co	onnections		Toursinal No.	Signal Name
i			Internal circuit			Terminal No.	X00
						TB2	X01
	TB1	R		LED		TB3	X02
				nternai &		TB4	X03
				circuit		TB5	X04
	i i		→	 → 		TB6	X05
			L			TB7	X05
	TB8]		ľ			
	TB9 .	^				TB8	X07
	TB10	Л	Г	LED		TB9	СОМ
	• · · · · · · · · · · · · · · · · · · ·	R	<u>+</u>			TB10	X08
		11	FI (FI)	Internal 2		TB11	X09
						TB12	X0A
			!			TB13	X0B
						TB14	X0C
	TB17	4				TB15	X0D
12/24 VDC		1 I		1			X0E
*1			-			TB16	1 705
*1	12/24 VDC	< <i> </i>	Ą		:	TB16 TB17	XOF
*1			4				
*1	└ _{╌┈} ═┫ + ^{TB} 18 ╵╶╶┤ ┠ ╶╴╵ + -				:	TB17	X0F
*1	└ _{╌┈} ═┫ + ^{TB} 18 ╵╶╶┤ ┠ ╶╴╵ + -	D-S1/S2 is 24 VDC			:	TB17 TB18	X0F COM

2.11 A1SX81(S2) DC Input Module (Sink/Source Common Type)

Specifications Number of input points Isolation method Rated input voltage Rated input current Operating voltage range Max. simultaneous input ON voltage/ON current	12 A ₁		X81		A 1 C	X81-S2			n Type)		
Isolation method Rated input voltage Rated input current Operating voltage range Max. simultaneous input	12 A ₁			A1SX81					Appearance)
Rated input voltage Rated input current Operating voltage range Max. simultaneous input	12 A ₁	hotocoupler	32 points					A1SX8	1 _		
Rated input current Operating voltage range Max. simultaneous input	A								^ 3日		8 B
Operating voltage range Max. simultaneous input		2 VDC	24 VDC	24 VDC					A 0 8 0 0 0 8 8 1 10 10 10 10 10 10 10 10 10 10 10 10 1		
Max. simultaneous input	10	pprox. 3 mA	Approx. 7 mA	Approx. 7	mA					FB 898	F
 	59	0.2 to 26.4 VDC %)	(ripple: less than	19.2 to 20 5%)	6.4 VD	C (ripple	: less	than			
ON voltage/ON current	points 60	0% simultaneous	ly ON (at 26.4 VD	C)							
	8	VDC or higher/2	mA or higher	13 VDC c	or high	er/3.5 m	A or hi	gher			
OFF voltage/OFF curren	t 4	VDC or lower/1	mA or lower	6 VDC or	lower/	1.7 mA	or lowe	r			* *
Input resistance	Al	pprox. 3,3 kΩ									=
December time OFF → ON		0 ms or less (24	VDC)								
Response time $ON \rightarrow O$)FF 10	10 ms or less (24 VDC)									
Common terminal arrangement	32	2 points/common	(common termina	ls: 17, 18,	36)						3
Operating indicator	0	N state is indica	ted (LEDs)								
External connections		7-pin D sub-conn	ector							5 4 5 7 7 8 9 9	31
Applicable wire size	0.	.3 mm ²				-					=
Accessories	C	Connector (1 pce.) for external wiring (soldering type)								DC -	
Internal current consumption (5 VDC)	80	0 mA (TYP, ali p	oints ON)								NC NC
Weight kg 0.24							DC12/24	V 3/7mA A1	SX81		
			External Co	nnections	3						
					Arr	Pin angem	ent	Pin No.	Signal Name	Pin No.	Signal Name
		Internal o	ircuit					1	X00	9	X10
External switch			mema onoun			20			X01	28	X11
1	R I	L - —		, ED		_		2	X02	10	X12
	لنب		Internal circuit	LED],	21	X03	29	X13
		TTA	o ii o u ii	c' 🕸	20	000	2	3	X04	11	X14
)	,			_	22	0 0	3	22	X05	30	X15
35	15				23 24	00	5	4	X06	12	X16
• • • •	<u> </u>	_		1	25	0 0	6 7	23	X07	31	X17
17 - 17				1	26 27	000	8	5	X08	13	X18
34]	28	0 0	9 10	24	X09	32	X19
					29 30	000	11 12	6	XOA	14	X1A
*1 12/24 VDC 18 0					31 32	000	13	25	X0B	33	X1B
*1 12/24 VDC 18 37 P						0 0	14	7	X0C	15	X1C
						10	I .	26	VOD		1 1/4 5
37 0					34	0	0 17		X0D	34	X1D
37 0					35 36	0 0	1 1	8	X0D X0E	34 16	X1D X1E
37 0					35	10	17 18 19		1		
37 0					35 36	000	18	8 27	X0E X0F	16 35	X1E X1F
37 0					35 36 37	000	18 19	8 27 17	X0E X0F COM	16 35 37	X1E X1F Vacant
37 ¢		- · · · · - · · · · · · · - ·			35 36 37	000	18 19	8 27 17 36	X0E X0F COM	16 35	X1E X1F
37 0	s 24 VDC	only.			35 36 37	000	18 19	8 27 17	X0E X0F COM	16 35 37	X1E X1F Vacant

2.12 A1SX82-S1 DC Input Module (Sink/Source Common Type)

Model Specifications		DC Input Module (Sink/Source Common	Type)
		A1SX82-S1	Appearance
Number of input	t points	64 points	A1SX82-S1
Isolation metho	d	Photocoupler	1000-010 1000-0
Rated input volt	age	24 VDC	30 00 00 00 00 00 00 00 00 00 00 00 00 0
Rated input cur	rent	Approx. 5 mA	0 0 0 0 0 0 0 0 7 0 F
Operating voltage	ge range	19.2 to 26.4 VDC (ripple: less than 5%)	
Max. simultaneo	ous input points	50% (16 points/common) simultaneously ON (at 24 VDC)	
ON voltage/ON	current	18.5 VDC or higher/3.5 mA or higher	
OFF voltage/OFF current		3 VDC or lower/0.45 mA or lower	DIS. FOL
Input resistance	1	Approx. 4.7 kΩ	
D	OFF → ON	0.3 ms or less (24 VDC)	
Response time	ON → OFF	0.3 ms or less (24 VDC)	
Common termin arrangement	al	32 points/common (common terminals: 1B1, 1B2, 2B1, 2B2)	
Operating indica	ator	ON state is indicated (LEDs), 32-bit indication by switch	
External connec	tions	40-pin connector	
Applicable wire	size	0.3 mm ²	
Accessories		Connectors (2 pces.) for external wiring (soldering type)	
Internal current consumption (5 VDC)		160 mA (TYP, all points ON)	
Weight kg		0.28	DC24V 5mA A1SX82-S1

External curcuit
switch
- o to 1820 ← - E +
Internal circuit
LED LED
+ J - 1B2 Left side SW Indication
(first-half) switching
24 VDC 1A2 (second-half) Indication
1A1 switching
Internal Internal
2A5 C
+1 - 282
2B10—
24 VDC 2A2
2A1 0 —J

	Pin	Arra	ange	ment	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (SH)	Pin No.	Signal Name (SH)
					1B20	X00	1A20	X10	2B20	X20	2A20	X30
		_			1B19	X01	1A19	X11	2B19	X21	2A19	X31
İ	B20	0	`°	A20	1B18	X02	1A18	X12	2B18	X22	2A18	X32
	B19	o	o	A19	1B17	X03	1A17	X13	2B17	X23	2A17	X33
	B18 B17	0	0	A18	1B16	X04	1A16	X14	2B16	X24	2A16	X34
Ì	B16	0	o	A17 A16	1B15	X05	1A15	X15	2B15	X25	2A15	X35
	B15	0	0	A15	1B14	X06	1A14	X16	2B14	X26	2A14	X36
	B14 B13	0 0	0	A14 A13	1B13	X07	1A13	X17	2B13	X27	2A13	X37
1	B12	0	0	A12	1B12	X08	1A12	X18	2B12	X28	2A12	X38
	B11 B10	0 0	0	A11 A10	1811	X09	1A11	X19	2B11	X29	2A11	X39
	В9	0	0	A9	1B10	XOA	1A10	X1A	2B10	X2A	2A10	ХЗА
Į	B8 B7	0 0	0	A8	1B9	XOB	1A9	X1B	2B9	X2B	2A9	ХЗВ
i	B6	0	ō	A7 A6	1B8	XOC	1A8	X1C	2B8	X2C	2A8	хзс
	B5	0	0	A5	1B7	XOD	1A7	X1D	2B7	X2D	2A7	X3D
	B4 B3	o	ö	A4 A3	1B6	X0E	1A6	X1E	2B6	X2E	2A6	X3E
	B2	0	0	A2	1B5	X0F	1A5	X1F	2B5	X2F	2A5	X3F
ı	B1	٦		A1	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
					1B3	Vacant		Vacant	2B3	Vacant	2A3	Vacant
	F	ron	t vie	₩	1B2	COM1	1A2	Vacant	2B2	COM2	2A2	Vacant
					1B1	COM1	1A1	Vacant	2B1	СОМ2	2A1	Vacant
-		_				1 - 1111						

^{*1:} In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.

^{*2:} When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs. When it is set to the right side, the status of the second-half devices (X20 to X3F) is displayed by the LEDs.

3. OUTPUT MODULE SPECIFICATIONS

3.1 A1SY10 Contact Output Module

	Model	Contact Output Module		
Specification	s	A1SY10	Appea	rance
Number of outp		16 points		
Isolation metho	od	Photocoupler		
Switching rated voltage/current	d	24 VDC 2 A (load resistance) 240 VAC 2 A (COSφ = 1) /1 point, 8 A/common	A1SY10	B:
Min. switching	load	5 VDC 1 mA		
Max. switching	voltage	264 VAC 125 VDC	000000	3 8 8 A B B C C C C C C C C C C C C C C C C C
Response	OFF → ON	10 ms or less	7 🗀	U #
time	ON → OFF	12 ms or less		
	Mechanical	More than 20 million times		
,		Switching rated voltage/current More than 100000 times	0	
Service life	Electrical	200 VAC 1.5 A, 240 VAC 1 A (COSφ = 0.7) More than 100000 times or more	1 2	
		200 VAC 1 A, 240 VAC 0.5 A (COSφ = 0.35) More than 100000 times	3	
		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) More than 100000 times	4	
Max. switching	frequency	3600 times per hour	5	
Surge absorbe	r	None	 	
Fuse		None	6	
Common terminarrangement	nal	8 points/common (common terminals: TB9, TB18)	8	
Operating indic	ator	ON state is indicated (LEDs)	9	
External conne	ctions	20-point terminal block connector (M3.5 x 7 screws)	A	
Applicable wire	size	0.75 to 1.25 mm ²	В	
Applicable solderless		R1.25-3.5 R2-3.5	 	
terminals		RAV1.25-3.5 RAV2-3.5	C	
Accessories	r 	None	D	
External	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or less	E	
power supply	Current	90 mA (TYP 24 VDC all points ON)	F	
Internal current consumption (5		120 mA (TYP, all points ON)		
Weight kg	·	0.25 External Connections		<u></u>
			Terminal No.	Signal Name
	Inte	ernal circuit External load	TB1	Y00
		1 *1 The external load	TB2	Y01
.]	•	power supply section is as shown below.	ТВЗ	Y02
		as silowii below.	TB4	Y03
			TB5	Y04
LED	Internal	RA 7 00 to 200 VAC	TB6	Y05
(/)	circuit (🛨		TB7	Y06
124	Circuit	1917 1 1 1 + - 124 VDC		
124		(8 - 1 24 VDC	TB8	Y07
	Circuit 4		TB8 TB9	Y07 COM1
	Circuit	9 External load: power supply:		
	Circuit 1	8 L 1	TB9	COM1
	Circuit 1	9:External load: power supply:	TB9 TB10	COM1 Y08
	circuit	9:External load: power supply:	TB9 TB10 TB11	COM1 Y08 Y09
	circuit	8 L 9 ©!External load: power supply: 10 L 9	TB9 TB10 TB11 TB12	COM1 Y08 Y09 Y0A
	circuit	8 L 9 External load 1 power supply 10 L 17 L 18 J External load	TB9 TB10 TB11 TB12 TB13	COM1 Y08 Y09 Y0A Y0B
	circuit	8 L 9 SExternal load power supply 10 L 17 L 18 External load power supply 18 External	TB9 TB10 TB11 TB12 TB13 TB14	COM1 Y08 Y09 Y0A Y0B Y0C
	Circuit	8 L 9 External load	TB9 TB10 TB11 TB12 TB13 TB14 TB15	COM1 Y08 Y09 Y0A Y0B Y0C Y0D
	Circuit	9 External load power supply 10 L 17 L 18 External load power supply 19 + 24 VDC	TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	COM1 Y08 Y09 Y0A Y0B Y0C Y0D
	circuit	8 L 9 External load	TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	COM1 Y08 Y09 Y0A Y0B Y0C Y0D Y0E Y0F

3.2 A1SY10EU Contact Output Module

	Model	Co	ontact Out	put Module			
Specification	s	A1SY10EU	Appe	arance			
Number of outp	out points	16 points					
Insulation method Photocoupler							
Switching rated voltage/current		24 VDC 2 A (load resistance) 120 VAC 2 A (COSφ = 1) /1 poi					
Min. switching	load	5 VDC 1 mA			A1SY10EU		
Max. switching	voltage	132 VAC 125 VDC	132 VAC 125 VDC				
Response	OFF → ON	10 ms or less				20000000000000000000000000000000000000	
time	$ON \rightarrow OFF$	12 ms or less					
	Mechanical	More than 20 million times or more					
		Switching rated voltage/current More than 2	200000 time	es or more			
Service life		100 VAC 2A, 120 VAC 2 A (COSφ = 0.7) more	0				
	Electrical	100 VAC 2A, 120 VAC 2 A (COSφ = 0.35) more			1 2		
	<u> </u>	24 VDC 1 .5A, 100 VDC 0.1 A (L/R = 7 ms) More than 100000 times or more			3		
Max. switching		3600 times per hour			4		
Surge absorber	<u> </u>	None			5		
Fuse	nol	None			6		
Common termin arrangement		8 points/common (common terminals: TBS	9, TB18)	-	7 8		
Operating indic External conne		ON state is indicated (LEDs) 20-point terminal block connector (M3.5 x	7 corowo)		9		
		0.75 to 1.25 mm ² (AWG16 to AWG19) (Ap		htening torque	A		
Applicable wire		78.4 N•cm)			В		
Applicable crim	ip terminals	RAV1.25-3.5			С		
Accessories		None	1790 VAC	rms/3 cycle	D		
Insulation withs	stand	AC terminals-Relay coll, 5 VAC (altitude 2,000 m)			E		
voltage			500 VAC r 2,000 m)	ms/3 cycle (altitude	F		
Insulation resis	tor	10 $M\Omega$ or higher at insulation resistance t	ester				
Noise immunity	! 	IEC801-4:1 kV		· ·- ·			
External	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or I	ess	Must be a SELV			
power supply	Current	90 mA (TYP 24 VDC all points ON)		power supply			
Internal current consumption (5		120 mA (TYP, all points ON)					
Weight kg		0.25					
		External Connec	tions				
	Inte	rnal circuit			Terminal No.	Signal Name	
		External lo	ad		TB1	Y00	
			*1 The	external load	TB2	Y01	
				ver supply section is shown below.	TB3	Y02	
				↑	TB4 TB5	Y03 Y04	
LED [\vdash	(RA) + 91 \	0		TB6	Y05	
1 € 🕏	Internal circuit				TB7	Y06	
	C C			+ - OF 24 VDC	TB8	Y07	
			71	, ti	TB9	COM1	
		9 External lo	ad]		TB10	Y08	
		10			TB11	Y09	
					TB12	Y0A	
		17)			TB13	YOB	
			=		TB14	Y0C	
		18 External los	ad] bly		TB15	YOD	
		19 + 1			TB16	Y0E	
		24 VDC	;		TB17	YOF	
		20	External po	wer	TB18	COM2	
L			supply		TB19 TB20	24 VDC 0V	
					.520		

3.3 A1SY14EU Contact Output Module

	Model	C	ontact Out	put Module		
Specification	s	A1SY14EU	Appe	arance		
Number of outp	out points	12 points (number of occupied I/O points				
Insulation method Photocoupler						
Switching rated voltage/current		24 VDC 2 A (load resistance) /1 pc 240 VAC 2 A (COS = 1)	oint, 8 A/co	mmon		
Min. switching	load	5 VDC 10 mA			A1SY14E	U
Max. switching	voltage	264VAC 125 VDC	10000 10000	B:		
Response	$OFF \rightarrow ON$	10 ms or less				
time	$ON \rightarrow OFF$	12 ms or less		8		
	Mechanical	More than 20 million times or more				
		Switching rated voltage/current More than				
Service life	Electrical	200 VAC 2A, 240VAC 1.8 A (COSφ = 0.7 more 200 VAC 1.1A, 240VAC 0.9 A (COSφ = 0.7 more 200 VAC 1.1A)	0 1			
	,	or more 24 VDC 1.1A, 100 VDC 0.1 A (L/R = 7 m more	s) More tha	an 200000 times or	3	
Max. switching	frequency	3600 times per hour	· · · · · · · · · · · · · · · · · · ·		4	
Surge absorber		None			5	
Fuse		None			6	
Common terminarrangement		4 points/common (common terminals: TB	35, TB10, T	315)	7	
Operating indic		ON state is indicated (LEDs)		-	8	
External conne	ctions	20-point terminal block connector (M3.5:			9 A	
Applicable wire		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N∙cm)			В	
Applicable crim	p terminals	RAV1.25-3.5			С	
Accessories		None	20201/40	rms/3 cycle (altitude	D	
Insulation withstand voltage		AC terminals-Relay coil, 5VAC	2,000 m) Relay coil 5VAC 500VAC rms/3 cycle (altitude			
Insulation resis	tor	Relay coil, 5VAC 10 MΩ or higher at insulation resistance	2,000 m)		F	
Noise immunity		IEC801-4:1 kV	lester			
External	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or	less	Must be a SELV		
power supply	Current	100 mA (TYP 24 VDC all points ON)	1000	power supply		
Internal current		120 mA (TYP, all points ON)		L		
Weight kg		0.25				
		External Connec	ctions		<u> </u>	
	Inter	rnal circuit			Terminal No.	Signal Name
		External lo	oad pow	external load er supply section	TB1	Y00
			is a:	s shown below.	TB2	Y01
			0(ച്ച്	TB3	Y02
				or 11+ 100 to 200 VAC	TB4 TB5	Y03 COM1
1 1	\vdash			or or 24 VDC	TB6	Y04
LED			1 1	-		Y05
1 1	Internal circuit			1,	! TB7	1 100
LED ₹	Internal circuit	5; External lo:	*1 ad]		TB7 TB8	Y06
1 1		5: External loc power supp	*1 ad			
1 1		5: External to power supp	*1 ad oly		TB8	Y06
1 1		5: External loc power supp	*1 ad oly:		TB8 TB9	Y06 Y07
1 1		1 power supp	*1 adi olyi		TB8 TB9 TB10 TB11 TB12	Y06 Y07 COM2 Y08 Y09
1 1		1 power supp	*1 adi olyi		TB8 TB9 TB10 TB11 TB12 TB13	Y06 Y07 COM2 Y08 Y09 Y0A
1 1		power supp	<u>-1</u>		TB8 TB9 TB10 TB11 TB12 TB13 TB14	Y06 Y07 COM2 Y08 Y09 Y0A Y0B
1 1		power supp) <u>) </u>		TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Y06 Y07 COM2 Y08 Y09 Y0A Y0B COM3
1 1		power supp) <u>) </u>	•	TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Y06 Y07 COM2 Y08 Y09 Y0A Y0B COM3 Vacant
1 1		power supp) <u>) </u>		TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	Y06 Y07 COM2 Y08 Y09 Y0A Y0B COM3 Vacant Vacant
1 1		15 External loc ipower supp	aly:	ower supply	TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Y06 Y07 COM2 Y08 Y09 Y0A Y0B COM3 Vacant

3.4 A1SY18A Contact Output Module (All Points Independent)

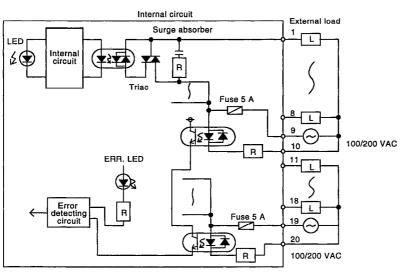
	Model	Contact Output Module			
Specifications		A1SY18A	Appe	arance	
Number of outp	ut points	8 points (number of occupied I/O points : 16 points)			
Isolation metho	d	Photocoupler			
Switching rated voltage/current		24 VDC 2 A/point (load resistance) 24 VDC 8A/module 240 VAC 2 A/point (COS¢ = 1) 240 VAC 8A/module	A1SY18	A 000000	
Min. switching l	oad	5 VDC 1 mA			
Max. switching	voltage	264 VAC 125 VDC		8	
Response	Response OFF → ON 10 ms or less				
time	$ON \rightarrow OFF$	12 ms or less			
	Mechanical	More than 20 million times	┧ ╟-┼		
		Switching rated voltage/current More than 200000 times	0		
Service life		200 VAC 1.5 A, 240 VAC 1 A (COSφ ≈ 0.7) More than 200000 times] 1		
	Electrical	200 VAC 0.75 A, 240 VAC 0.5 A (COS ϕ = 0.35) More than 200000 times or more	3		
L		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) More than 200000 times	4		
Max. switching		3600 times per hour	5		
Surge absorber		None	- 6		
Fuse		None	1 7		
Common termin arrangement		None (all points independent)	8		
Operating indica		ON state is indicated (LEDs)	9		
External connec		20-point terminal block connector (M3.5 × 7 screws)	A		
Applicable wire		0.75 to 1.25 mm ² (Applicable tightening torque 78.4 N•cm)	В		
Applicable solde terminals	eriess	R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5 None	C		
Accessories	Voltogo				
External power supply	Voltage Current	24 VDC ±10%, Ripple voltage: 4VP-P or less	 		
Internal current consumption (5		75 mA (TYP, 24 VDC all points ON) 240 mA (TYP, all points ON)			
Weight kg	V DO)	0.25	1		
		External Connections			
			Terminal No.	Signal Name	
	lr	nternal circuit	TB1	Y00	
		External load	TB2		
Ì		*1 The external load	ТВЗ	Y01	
		2 External load power supply section is as shown below.	TB4	· · · · · · · · · · · · · · · · · · ·	
LED		RA PA PA PARA SUPPLY TO THE PARA	TB5	Y02	
5€	Internal		TB7		
	circuit	100 to 200 VAC	TB8	Y03	
		J /	ТВ9		
			TB10	Y04	
			TB12	Y05	
		ol 16 External load:	TB14	Y06	
		power supply 19 +1 - 24 VDC	TB15	Y07	
		External power	TB16		
		supply	TB17	Vacant	
L			TB18	Vacant	
			TB19	24 VDC	
L <u> </u>			TB20	O V	

3.5 A1SY18AEU Contact Output Modules (All Points Independent)

	Model		Contact Ou	tput Module		
Specifications	3	A1SY18A	EU		Appe	arance
Number of outp	ut points	8 points (number of occupied I/O points	: 16 points)			
Insulation method Photocoupler]	
Switching rated 24 VDC 2 A (load resistance) voltage/current 240 VAC 2 A (COS ϕ = 1) /1 point						
Min. switching l	oad	5 VDC 1 mA			A1SY18A	EU
Max. switching	voltage	264VAC 125 VDC	000000			
Response	OFF → ON	10 ms or less				000000
time	$ON \rightarrow OFF$	12 ms or less			」	日
	Mechanical	More than 20 million times or more				
		Switching rated voltage/current More than		·	1 1 1	
Service life	Electrical	200 VAC 1.5 A, 240VAC 1 A (COSφ = 0.7) More than 200000 times or more			0	
	Electrical	200 VAC 1 A, 240VAC 0.5 A (COSφ = 0 or more	<u> </u>		1 2	
		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) More than 200000 times or more			3	
Max. switching		3600 times per hour			4	
Surge absorber		None			5	
Fuse Common termin	al .	None			6	
arrangement		None (all points independent)			7	
Operating indica		ON state is indicated (LEDs)			8	
External connec	ctions	20-point terminal block connector (M3.5			9	
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (.78.4 N•cm)	Applicable ti	ghtening torque	A	
Applicable crim	p terminals	RAV1.25-3.5				
Accessories		None				
Insulation withs	tand	AC terminals-Relay coil, 5VAC 2830VAC rms/3 cycle (altitude 2,000 m)			E	
voltage		Relay coil, 5VAC		ms/3 cycle (altitude	F	
Insulation resist	tor	10 M Ω or higher at insulation resistance	tester			
Noise immunity		IEC801-4:1 kV				
External power supply	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P o	r less	Must be a SELV power supply		
Internal current		75 mA (TYP 24 VDC all points ON) 240 mA (TYP, all points ON)		power supply	-	
consumption (5 Weight kg	VDC)	0.25			4	
weight kg		External Conne	ctions		<u> </u>	
					Terminal No.	Signal Name
	Inte	rnal circuit	laad		TB1	
		External	load		TB2	Y00
		<u> </u>	- *1 The e	utarnal land	TB3	Y01
		ol 2 External loa	d power	xternal load r supply section	TB4	
LED		RA power supp	iyi is as	shown below. ≈	TB5 TB6	Y02
	Internal	丁 / / /	هـــر- <i>\</i>	آبر	TB7	
\$ ₩	circuit	(1 9)		100 to 200 VAC	TB8	Y03
				or 24 VDC	TB9	\/a4
						Y04
						Y05
		15 1	1		TB13 TB14	Y06
		of 16 External to	ad] oly		TB15	
		19 + -	 ¬		TB16	Y07
		24 VDC]		TB17	Vacant
L		20 E:	kternal power	supply	TB18	Vacant
ł					TB19	24 VDC
	·				TB20	0V

3.6 A1SY22 Triac Output Module

Model		Triac Output Module		
Specifications		A1SY22	Appearance	
Number of outp	ut points	16 points		
Isolation metho	d	Photocoupler		
Rated load voit	age	100 to 240 VAC 50/60 Hz ±3 Hz	A1SY22	
Max. load volta	ge	264 VAC	A1SY22 0 5M	
Max. load curre	nt	0.6 A/point, 2.4 A/common		
Min. load voltaç	ge/current	24 VAC 100 mA, 100 VAC 10 mA, 240 VAC 20 mA	; ; ; ; ;	
Max. allowed ru	ish current	20 A 10 ms or less, 8 A 100 ms or less		
Leakage curren	t at OFF circuit	1.5 mA (120 VAC 60 Hz), 3mA (240 VAC 60 Hz)		
Max. voltage dr	op at ON circuit	1.5 VAC or less (0.1 to 0.6 A), 1.8 VAC or less (50 to 100 mA), 2 VAC or less (10 to 50 mA)	0	
Response	$OFF \rightarrow ON$	1 ms or less	1	
time	$ON \rightarrow OFF$	0.5 CYCLE + 1 ms or less	2	
Surge absorber		CR absorber (0.01 μF + 47 Ω)	3	
Fuse rating		5 A (1 piece/common), not replaceable *1	4	
Fuse capacity		70 A	5	
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	6	
Common termir arrangement	ıal	8 points/common (common terminals: TB9, TB19)	7	
Operating indic	ator	ON state is indicated (LEDs)	8	
External conne	ctions	20-point terminal block connector (M3.5 x 7 screws)	9	
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	В	
Applicable sold terminals	erless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	С	
Accessories		None	D	
External	Voltage	100 to 240 VAC (85 to 264 VAC)	E	
power supply	Current	2 mA (TYP 200 VAC/common)	F	
Internal current consumption (5		270 mA (TYP, all points ON)		
Weight kg		0.24		



*1: The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.

If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

*2: The ERR. indicating LED will also light when the external power supply is shut OFF.

Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	COM1
TB10	100/200 VAC
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	Y0D
TB17	Y0E
TB18	YOF
TB19	COM2
TB20	100/200 VAC
	-

3.7 A1SY28A Triac Output Module (All Points Independent)

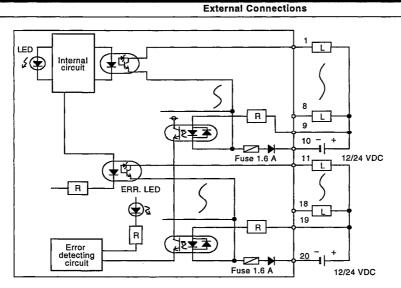
	Model	Triac Output Module		
Specifications		A1SY28A	Appe	arance
Number of outp	out points	8 points (number of occupied I/O points : 16 points)		
Isolation metho	od .	Photocoupler	A1SY28	٩ 🗇 .
Rated load volt	age	100 to 240 VAC 50/60 Hz ±3 Hz		
Max. load volta	ige	264 VAC	000000	0000000 a * * * * * * * * * * * * * * *
Max. load curre		1 A/point, 4 A/module(132 VAC), 2 A/module(264 VAC)	; =	3 :
Min. load voltag	ge/current	24 VAC 100 mA, 100 VAC 55 mA, 240 VAC 55 mA		
Max. allowed ru	ush current	25 A 10 ms or less, 10 A 100 ms or less	1	
Leakage curren	nt at OFF circuit	1.5 mA (120 VAC 60 Hz), 3mA (240 VAC 60 Hz)		
Max. voltage dr	rop at ON circuit	1.5 VAC or less (0.2 to 1 A), 1.8 VAC or less (0.1 to 0.2 A), 3 VAC or less (55 to 100 mA)		
Response	$OFF \rightarrow ON$	1 ms or less	2	
time	ON → OFF	0.5 CYCLE + 1 ms or less] 3	
Surge absorber	r	CR absorber (0.01 μF + 47 Ω), Varistor (387 to 473 V)	4	
Fuse rating		None	5	
Common termin	nal		6	
arrangement		None (all points independent)	7	
Operating indic	ator	ON state is indicated (LEDs)	8	
External conne	ctions	20-point terminal block connector (M3.5 × 7 screws)	9	
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	A	
Applicable sold terminals	lerless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	В	
Accessories		None	- C	
External power	supply	None		
Internal current	 	130 mA (TYP, all points ON)		
consumption (5	VDC)		F	
Weight kg		0.25		
	-	External Connections	1 =	
		Internal circuit	Terminal No.	Signal Name
		Surge absorber TB1 External load		Y00
LED		Surge absorber TB1	TB2	
30	Internal	(文本) 女 吉 フ 一	TB3	Y01
1	circuit		TB4	
] . '			TB5	Y02
		Triac TB2 100/200 VAC	TB6	102
			TB7	
			TB8	Y03
		<i>)</i>	TB9	
		Surge absorber TB15 External load	TB10	Y04
LED				
1 2 3	Internal circuit		TB11	Y05
	<u> </u>		TB12	
		Triac TB16 100/200 VAC	TB13	Y06
			TB14	, 50
			TB15	V07
			TB16	Y07
			TB17	Vacant
			TB18	Vacant
			TB19	
<u> </u>				Vacant
1			TB20	Vacant

3.8 A1SY28AEU Triac Output Module

	Triac Output Module		
Specifications	A1SY28AEU	Appea	arance
Number of output points	8 points (number of occupied I/O points : 16 points)		
Insulation method	Photocoupler	A1SY28	AEU 🖁
Rated load voltage	100 to 240 VAC 50/60 Hz ±3 Hz		
Max. load voltage	264 VAC	1	
Max. load current	0.6 A/point, 1.9 A/common		
Min. load voltage/current	24 VAC 15 mA, 120 VAC 15 mA, 240 VAC 15 mA		
Max. input current	30 A 10 ms or less, 15 A 100 ms or less		
Leakage current at OFF circuit	1.5 mA (240 VAC 60 Hz)	0	
Max. voltage drop at ON circuit		1 1	i
Response OFF → ON	1 ms or less	2	
time ON → OFF	0.5 CYCLE + 1 ms or less	3	
Surge absorber	Built-in CR absorber (0.01 μF + 47 Ω)	4	
Fuse rating	None	5	
Common terminal	4 points/common (common terminals: TB8, TB16)	6	
arrangement Operating indicator	ON state is indicated (LEDs)	7	
External connections	20-point terminal block connector (M3.5 × 7 screws)	8	
	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque	9	
Applicable wire size	78.4 N•cm)		
Applicable crimp terminals	RAV1.25-3.5	В	
Accessories	None		
Insulation withstand voltage	2830VAC rms/3 cycle (altitude 2,000 m)		
Insulation resistor	10 MΩ or higher at insulation resistance tester	E	
Noise immunity	IEC801-4:1 kV	- - -	
Internal current		┦ ╚╩┸═	
consumption (5 VDC)	270 mA (TYP, all points ON)		
Weight kg	0.24	_L	
	External Connections	T	G:
	Internal circuit	Terminal No.	Signal Name
	External load	TB1	Y00
	Surge absorber 1	TB2	Vacant
	Carge absorber		
		TB3	Y01
Internal		TB3	Y01 Vacant
Internal circuit	¥3¥3 ¥4 R		
	Tax 7	TB4	Vacant
	R 7 L 8	TB4 TB5	Vacant Y02
	R 7 L 8	TB4 TB5 TB6	Vacant Y02 Vacant Y03
	B B	TB4 TB5 TB6 TB7 TB8	Vacant Y02 Vacant Y03 COM1
circuit	100/200 VAC	TB4 TB5 TB6 TB7 TB8 TB9	Vacant Y02 Vacant Y03 COM1 Y04
	B B	TB4 TB5 TB6 TB7 TB8 TB9 TB10	Vacant Y02 Vacant Y03 COM1 Y04 Vacant
LED	Surge absorber	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05
circuit	Surge absorber	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant
LED	Surge absorber	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06
LED	Surge absorber 9 L 15 L	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant
LED	Surge absorber 9 L	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant Y07
LED	Surge absorber 9 L 15 L 16	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant
LED	Surge absorber 9 L 15 L	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant Y07
LED	Surge absorber 9 L 15 L 16	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant Y06 COM2
LED	Surge absorber 9 L 15 L 16	TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	Vacant Y02 Vacant Y03 COM1 Y04 Vacant Y05 Vacant Y06 Vacant Y07 COM2 Vacant

3.9 A1SY40 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Type)	
Specifications		A1SY40	Appearance
Number of outp	ut points	16 points	
Isolation metho	d	Photocoupler	A1SY40 □ ERR
Rated load volt	age	12/24 VDC	
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	A1SY40 Dem
Max. load curre	ent	0.1 A/point, 0.8 A/common	1
Max. allowed ru	ish current	0.4 Å 10 ms or less	
Leakage curren	t at OFF circuit	0.1 mA or less]]]]
Max. voltage dr	op at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A	
Response	$OFF \rightarrow ON$	2 ms or less	0
time	$ON \rightarrow OFF$	2 ms or less (resistive load)	1
Surge absorber		Zener diode	2
Fuse rating		Fuse 1.6 A (1 piece/common), not replaceable *1	3
Fuse capacity		50 A	
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	5
Common termir arrangement	nal	8 points/common (common terminals: TB10, TB20)	6
Operating indic	ator	ON state is indicated (LEDs)] 7
External conne	ctions	20-point terminal block connector (M3.5 x 7 screws)	8
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	9 A
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	В
Accessories		None	c
External	Voltage	12/24 VDC (10.2 to 30 VDC)	D
power supply	Current	8 mA (TYP 24 VDC/common)	E
Internal current consumption (5 VDC)		270 mA (TYP, all points ON)	F
Weight kg		0.19	

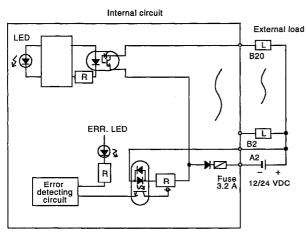


- *1 : The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.
 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *2: The ERR. indicating LED will also light when the external power supply is shut OFF.

Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	12/24 VDC
TB10	COM1
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	YOD
TB17	Y0E
TB18	Y0F
TB19	12/24 VDC
TB20	COM2

3.10 A1SY41 Transistor Output Module (Sink Type)

Model		Transistor Output Module (Sink typ	е)
Specifications		A1SY41	Appearance
Number of outp	out points	32 points	
Isolation metho	d	Photocoupler	A1SY41
Rated load volt	age	12/24 VDC	
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	
Max. load curre	ent	0.1 A/point, 2 A/common	
Max. allowed re	ish current	0.4 A 10 ms or less	
Leakage currer	nt at OFF circuit	0.1 mA or less	
Max. voltage d	rop at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A	
Response	$OFF \rightarrow ON$	2 ms or less	
time	ON → OFF	2 ms or less (resistive load)	
Surge absorbe	-	Zener diode	
Fuse rating		Fuse 3.2 A (1 piece/common), not replaceable *2	
Fuse capacity		50 A	
Error display		LED goes ON when fuse blows: signal output to PC CPU *3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Common termin	nal	32 points/common (common terminals: A1, A2)	3 1 - 1 3 1 - 1 3 1 - 1
Operating indic	ator	ON state is indicated (LEDs)	
External conne	ctions	40-pin connector	•• † <u>D</u> DF †
Applicable wire	size	0.3 mm ²	NC P P
Accessories		Connector (1 pce.) for external wiring (soldering type)	2C 2C CKS
External	Voltage	12/24 VDC (10.2 to 30 VDC)	
power supply	Current	8 mA (TYP 24 VDC/common)	
Internal current consumption (5 VDC)		500 mA (TYP, all points ON)	DC12/24V 0.1A A18Y41
Weight kg		0.21	
		External Connections	



- *1 :The arrangement of pins A and B shown right is the opposite of the arrangement of pins of the connector on the module.
- *2 :The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *3 :The ERR. indicating LED will also light when the external power supply is shut OFF.

Pin Arrangement			Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)
			B20	Y00	A20	Y10
			B19	Y01	A19	Y11
			B18	Y02	A18	Y12
B20) A20	B17	Y03	A17	Y13
B19	0 0	A20 A19	B16	Y04	A16	Y14
B18 B17	0 0	A18 A17	B15	Y05	A15	Y15
B16	0 0	A16	B14	Y06	A14	Y16
B15 B14	0 0	A15 A14	B13	Y07	A13	Y17
B13	0 0	A13	B12	Y08	A12	Y18
B12 B11	0 0	A12 A11	B11	Y09	A11	Y19
B10	0 0	A10	B10	YOA	A10	Y1A
B9 B8	0 0	A9 A8	В9	Y0B	A9	Y1B
B7	0 0	A7	B8	YOC	A8	Y1C
B6 B5	0 0	A6 A5	B7	YOD	A7	Y1D
B4 B3	0 0	A4	B6	YOE	A6	Y1E
B2	0 0	A3 A2	B5	Y0F	A5	Y1F
B1	00	J A1	B4	Vacant	A4	Vacant
_	<u> </u>		В3	Vacant	А3	Vacant
Fi	ont vie	W	B2	12/24 VDC	A2	сом
		٠	В1	12/24 VDC	A1	сом

3.11 A1SY42 Transistor Output Module (Sink Type)

Model	Transistor Output Module (Sink Type)			
Specifications	A1SY42	Appearance		
Number of output points	64 points			
Isolation method	Photocoupler	A1SY42		
Rated load voltage	12/24 VDC	2040 0204		
Operating voltage range	10.2 to 30 VDC (peak voltage 30 VDC)	A C S D D D B S S D D D D D D D D D D D D D		
Max. load current	0.1 A/point, 1.6 A/common	98F8 898F		
Max. allowed rush current	0.4 A 10 ms or less			
Leakage current at OFF circuit	0.1 mA or less			
Max. voltage drop at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A			
Response OFF → ON	2 ms or less	DIS. EOL		
time ON → OFF	2 ms or less (resistive load)			
Surge absorber	Zener diode			
Fuse rating	Fuse 3.2 A (1 piece/common), not replaceable *3			
Fuse capacity	50 A			
Error display	LED goes ON when fuse blows: signal output to PC CPU *4			
Common terminal arrangement	32 points/common (common terminals: 1A1, 1A2, 2A1, 2A2)			
Operating indicator	ON state is indicated (LEDs), 32-bit indication by switch			
External connections	40-pin connector			
Applicable wire size	0.3 mm ²			
Accessories	Connectors (2 pces.) for external wiring (soldering type)			
External Voltage	12/24 VDC (10.2 to 30 VDC)			
power supply Current	8 mA (TYP 24 VDC/common)			
Internal current consumption (5 VDC)	930 mA (TYP, all points ON)			
Weight kg	0.27			
	External Connections			
_	Internal circuit External load			
	Internal circuit LED Indication select switch Left side (first-half) R 1B2 Indication switching circuit Right side (second-half) Fuse 3.2 A 2B20 12/24 ERR. LED ERR. LED ERR. LED Fuse 3.2 A 2B20			

	Arra	Pi ang		ent	Pin No.	Signai Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)
					1B20	Y00	1A20	Y10	2B20	Y20	2A20	Y30
					1B19	Y01	1A19	Y11	2B19	Y21	2A19	Y31
	B20	\bigcap		A20	1B18	Y02	1A18	Y12	2B18	Y22	2A18	Y32
	B19	0	0	A19	1B17	Y03	1A17	Y13	2B17	Y23	2A17	Y33
	B18 B17	0	0	A18 A17	1B16	Y04	1A16	Y14	2B16	Y24	2A16	Y34
	B16	o	0	A16	1B15	Y05	1A15	Y15	2B15	Y25	2A15	Y35
	B15 B14	0	0	A15 A14	1B14	Y06	1A14	Y16	2B14	Y26	2A14	Y36
ŀ	B13	0	0	A13	1B13	Y07	1A13	Y17	2B13	Y27	2A13	Y37
	B12 B11	0	0	A12 A11	1B12	Y08	1A12	Y18	2B12	Y28	2A12	Y38
	B10	0	0	A10	1B11	Y09	1A11	Y19	2B11	Y29	2A11	Y39
- !	B9 B8	0	0	A9 A8	1B10	YOA	1A10	Y1A	2B10	Y2A	2A10	Y3A
İ	B7 B6	0	0	A7	1B9	YOB	1A9	Y1B	2B9	Y2B	2A9	Y3B
	B5	0	ö	A6 A5	1B8	Y0C	1A8	Y1C	2B8	Y2C	2A8	Y3C
1	B4 B3	0	0	A4 A3	1B7	YOD	1A7	Y1D	2B7	Y2D	2A7	Y3D
	B2	0	0	A2	1B6	YOE	1A6	Y1E	2B6	Y2E	2A6	Y3E
	В1	0	ره	A1	1B5	Y0F	1A5	Y1F	2B5	Y2F	2A5	Y3F
		_			1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
	From	nt vi			1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
	r roi	iii Vi	e₩		1B2	12/24 VDC	1A2	COM1	2B2	12/24 VDC	2A2	COM2
				أ	1B1	12/24 VDC	1A1	COM1	2B1	12/24 VDC	2A1	COM2

^{*1:} In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.

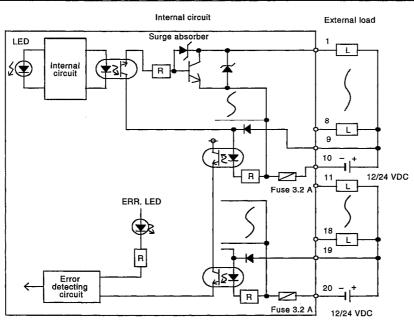
^{*2:} When the switch is set to the left side position, the status of the first-half devices (Y00 to Y1F) is displayed by the LEDs. When it is set to the right side, the status of the second-half devices (Y20 to Y3F) is displayed by the LEDs.

^{*3:} The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.
If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

^{*4:} The ERR. indicating LED will also light when the external power supply is shut OFF.

3.12 A1SY50 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink 1	Гуре)
Specifications		A1SY50	Appearance
Number of output point	s	16 points	
Isolation method		Photocoupler	A1SY50
Rated load voltage		12/24 VDC	A18Y50 O BM
Operating voltage rang	е	10.2 to 30 VDC (peak voltage 30 VDC)	
Max. load current		0.5 A/point, 2 A/common	; 5 5;
Max. allowed rush curr	ent	4 A 10 ms or less	
Leakage current at OF	F circuit	0.1 mA or less	
Max. voltage drop at O	N circuit	0.9 VDC (TYP) 0.5 A, 1.5 VDC (MAX) 0.5 A	
Response time	OFF → ON	2 ms or less	
nesponse time	ON → OFF	2 ms or less (resistive load)	2
Surge absorber		Zener diode	3
Fuse rating		Fuse 3.2 A (1 piece/common), not replaceable *1	
Fuse capacity		50 A	5
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	
Common terminal arrar	ngement	8 points/common (common terminals: TB10, TB20)	6
Operating indicator		ON state is indicated (LEDs)	7
External connections		20-point terminal block connector (M3.5 x 7 screws)	8
Applicable wire size		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N∙cm)	9 A
Applicable solderless terminals		R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5	В
Accessories		None	C
External power supply	Voltage	12/24 VDC (10.2 to 30 VDC)	D
	Current	60 mA (TYP 24 VDC/common)	E
Internal current consumption (5 VDC)		120 mA (TYP, all points ON)	F
Weight kg		0.2	
		External Connections	



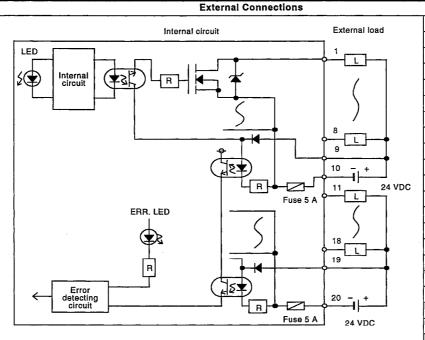
Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	12/24 VDC
TB10	COM1
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	YOD
TB17	Y0E
TB18	Y0F
TB19	12/24 VDC
TB20	COM2

^{*1 :} The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

^{*2 :} The ERR. indicating LED will also light when the external power supply is shut OFF.

3.13 A1SY60 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Ty	/pe)
Specifications		A1SY60	Appearance
Number of output point	s	16 points	
Isolation method		Photocoupler	A1SY60
Rated load voltage		24 VDC	A15Y60 0000 000 000 000 000 000 000 000 000
Operating voltage rang	е	21.6 to 26.4 VDC (peak voltage 26.4 VDC)	
Max. load current		2 A/point, 4 A/common (Ta=25°C), 1.8 A/point, 3.6 A/common (Ta=45°C), 1.6 A/point, 3.2 A/common (Ta=55°C)	, D D F
Max. allowed rush curr	ent	8 A 10 ms or less	
Leakage current at OF	F circuit	0.1 mA or less	7
Max. voltage drop at O	N circuit	0.9 VDC (TYP) 2 A, 1.5 VDC (MAX) 0.5 A	0
Response time	OFF → ON	2 ms or less	1
nesponse time	ON → OFF	2 ms or less (resistive load)	2
Surge absorber		Zener diode	3
Fuse rating		Fuse 5 A (1 piece/common), not replaceable *1	4
Fuse capacity		50 A	5
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	6
Common terminal arrar	ngement	8 points/common (common terminals: TB10, TB20)	
Operating indicator		ON state is indicated (LEDs)	8
External connections		20-point terminal block connector (M3.5 x 7 screws)	
Applicable wire size		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	A
Applicable solderless terminals		R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5	B C
Accessories		None	
External power supply	Voltage	24 VDC (21.6 to 26.4 VDC)	
External power supply	Current	15 mA (TYP 24 VDC/common)	
Internal current consumption (5 VDC)		120 mA (TYP, all points ON)	
Weight kg		0.25	



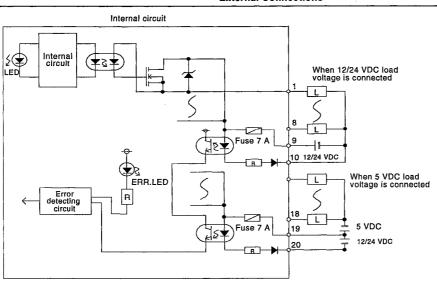
Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	24 VDC
TB10	COM1
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	YOD
TB17	Y0E
TB18	Y0F
TB19	24 VDC
TB20	COM2

^{*1 :} The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

^{*2:} The ERR. indicating LED will also light when the external power supply is shut OFF.

3.14 A1SY60E Transistor Output Module (Source Type)

	Model	Transistor Output Module (Source Type)				
Specifications		A1SY60E	Appearance			
Number of output points		16 points				
Isolation method		Photocoupler	A1SY60E			
Rated load voltage		5/12/24 VDC				
Operating voltage range		4.5 to 26.4 VDC (peak voltage 26.4 VDC)	A1SY60E			
Max. load current		2 A/point (condition:τ = L/R ≤ 2.5 ms), 4 A/common	7 🖸 🔾 🖟			
Max. allowed rush current		8 A 10 ms or less				
Leakage current at OFF circuit		0.1 mA or less	7			
Max. voltage drop at ON circuit		0.2 VDC (MAX) 1 A, 0.4 VDC (MAX) 2 A	0			
Response time OFF → ON		3 ms or less	1			
Response time	ON → OFF	10 ms or less (resistive load)	2			
Surge absorber		Zener diode	3			
Fuse rating		Fuse 7 A (1 piece/common), not replaceable *1				
Fuse capacity		300 A				
Error display		LED goes ON when fuse blows: signal output to PC CPU *2				
Common terminal arrangement		8 points/common (common terminals: TB9, TB19)				
Operating indicator		ON state is indicated (LEDs)				
External connections		20-point terminal block connector (M3.5 x 7 screws)				
Applicable wire size		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)	9 A			
Applicable solderless terminals		R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5	В			
Accessories		None				
External power supply	Voltage	12/24 VDC (10.2 to 26.4 VDC)*3				
Laternal power supply	Current	10 mA (TYP 24 VDC/common)				
Internal current consumpt	ion (5 VDC)	200 mA (TYP, all points ON)				
Weight kg		0.2				
		External Connections				



Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	COM1
TB10	0V
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	YOC
TB16	YOD
TB17	Y0E
TB18	Y0F
TB19	COM2
TB20	OV

Terminal No. Cianal Name

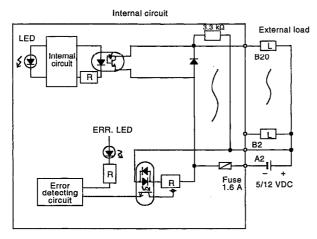
- *1 The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *2 The ERR. indicating LED will also light when the external power supply is shut OFF.
- *3 When 5 VDC operating load voltage is used, another 12/24 VDC power supply is required for external power supply.

3.15 A1SY68A Transistor Output Module (Sink/Source Common Type (All Points Independent))

Number of output points	ance						
Number of output points 8 points (number of occupied I/O points : 16 points)	0000000						
Solation method	000000 m						
Max. load current Max. allowed rush current B A 10 ms or less Leakage current at OFF circuit O.1 mA or less Max. voltage drop at ON circuit OFF → ON 3 ms or less ON → OFF 10 ms or less (resistive load) Surge absorber Common terminal arrangement ON state is indicated (LEDs) External connections Applicable wire size Applicable solderless terminals R1.25-3.5 RAV1.25-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) Max. 10 ms or less O.4 VDC (MAX) 2 A 1	D0000						
Max. load current Max. allowed rush current B A 10 ms or less Leakage current at OFF circuit D.1 mA or less Max. voltage drop at ON circuit O.4 VDC (MAX) 2 A Response time OFF → ON 3 ms or less ON → OFF 10 ms or less (resistive load) Surge absorber Common terminal arrangement None (all points independent) Operating indicator ON state is indicated (LEDs) External connections Applicable wire size O.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 N cm) R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) External Connections External Connections External Connections External Connections External Connections External Connections External Connections	10 °,						
Max. allowed rush current 8 A 10 ms or less Leakage current at OFF circuit 0.1 mA or less Max. voltage drop at ON circuit 0.4 VDC (MAX) 2 A Response time OFF → ON 3 ms or less ON → OFF 10 ms or less (resistive load) 3 Surge absorber Zener diode Common terminal arrangement None (all points independent) Operating indicator ON state is indicated (LEDs) External connections 20-point terminal block connector (M3.5 x 7 screws) Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 Nocm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 RAV1.25-3.5 RAV2-3.5 RAV1.25-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) 110 mA Weight kg 0.2 External Connections							
Leakage current at OFF circuit Max. voltage drop at ON circuit O.4 VDC (MAX) 2 A Provided at the provided							
Max. voltage drop at ON circuit 0.4 VDC (MAX) 2 A Response time OFF → ON 3 ms or less ON → OFF 10 ms or less (resistive load) 4 Surge absorber Zener diode Common terminal arrangement None (all points independent) Operating indicator ON state is indicated (LEDs) External connections 20-point terminal block connector (M3.5 x 7 screws) Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) 110 mA Weight kg 0.2 External Connections							
Max. voltage drop at ON circuit 0.4 VDC (MAX) 2 A Response time OFF → ON 3 ms or less ON → OFF 10 ms or less (resistive load) 4 Surge absorber Zener diode 5 Common terminal arrangement None (all points independent) 6 Operating indicator ON state is indicated (LEDs) 8 External connections 20-point terminal block connector (M3.5 x 7 screws) 9 Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm) A Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 RAV2-3.5 RAV2-3.5 RAV2-3.5 RAV2-3.5 D External power supply None D Internal current consumption (5 VDC) 110 mA E Weight kg 0.2 External Connections							
Response time OFF → ON 3 ms or less 3 4 Surge absorber Zener diode 5 Common terminal arrangement None (all points independent) Operating indicator ON state is indicated (LEDs) External connections 20-point terminal block connector (M3.5 x 7 screws) Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 Nocm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) 110 mA External Connections							
Surge absorber Common terminal arrangement Operating indicator External connections Applicable wire size Applicable solderless terminals External power supply Internal current consumption (5 VDC) None (all points independent) Constate is indicated (LEDs) 8 20-point terminal block connector (M3.5 x 7 screws) 9 A (a) Constant indicator Provided (August 1) A (b) B (c) Constant indicator A (c) B (c) C (c) D (c) External current consumption (5 VDC) Internal current consumption (5 VDC) External Connections							
Common terminal arrangement Operating indicator On state is indicated (LEDs) External connections 20-point terminal block connector (M3.5 x 7 screws) Applicable wire size O.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV1-25-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) Internal current consumption (5 VDC) External Connections							
Operating indicator Operating indicator ON state is indicated (LEDs) External connections 20-point terminal block connector (M3.5 x 7 screws) 9 Applicable wire size Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 RAV1.25-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) External Connections 7 8 C D External Connections							
Operating indicator External connections 20-point terminal block connector (M3.5 x 7 screws) Applicable wire size O.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 Nocm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) Internal current consumption (5 VDC) External Connections							
External connections 20-point terminal block connector (M3.5 x 7 screws) 9 Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 Nocm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) 110 mA Weight kg 0.2 External Connections							
Applicable wire size 0.75 to 1.25 mm²(AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm) Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) To D E F External Connections							
Applicable solderless terminals R1.25-3.5 R2-3.5 RAV2-3.5 External power supply None Internal current consumption (5 VDC) Veight kg D External Connections							
External power supply Internal current consumption (5 VDC) Weight kg External Connections External Connections							
Internal current consumption (5 VDC) Weight kg 0.2 External Connections							
Weight kg 0.2 External Connections							
External Connections							
Terminal No. S	Signal Name						
Internal sizuit	Y00						
Sink TR3							
Surge absorber L TB4	Y01						
TB5	Y02						
Internal circuit R							
TB7	Y03						
(TB8							
\							
Source TB10	Y04						
T Y I'	Y04						
+'- TB11							
+ - TB11 TB12	Y04 Y05						
	Y05						
TB12							
TB12 TB13	Y05 Y06						
TB12 TB13 TB14 TB15	Y05						
TB12 TB13 TB14 TB15 TB16	Y05 Y06 Y07						
TB12 TB13 TB14 TB15 TB16 TB17	Y05 Y06 Y07 Vacant						
TB12 TB13 TB14 TB15 TB16 TB17 TB18	Y05 Y06 Y07 Vacant Vacant						
TB12 TB13 TB14 TB15 TB16 TB17	Y05 Y06 Y07 Vacant						

3.16 A1SY71 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (for TTL, CMOS : Sink Type)			
Specifications		A1SY71	Appearance		
Number of output points		32 points	A1SY71		
Isolation method		Photocoupler			
Rated load voltage		5/12 VDC			
Operating voltage range		4.5 to 15 VDC			
Max. load current		16 mA/point, 256 mA/common	7070 0707		
Max. allowed rush current		40 mA 10 ms or less			
Leakage current at OF	F circuit	Voh: 3.5 VDC (Vcc = 5 VDC, IoH = 0.4 mA)			
Max. voltage drop at O	N circuit	Vol: 0.3 VDC			
Response time OFF → ON		1 ms or less			
nesponse time	ON → OFF	1 ms or less (resistive load)			
Surge absorber		None			
Fuse rating		Fuse 1.6 A (1 piece/common), not replaceable *2			
Fuse capacity		50 A	3 3		
Error display		LED goes ON when fuse blows: signal output to PC CPU *3			
Common terminal arrar	ngement	32 points/common (common terminals: A1, A2)			
Operating indicator		ON state is indicated (LEDs)			
External connections		40-pin connector			
Applicable wire size		0.3 mm ²	90 W W W W W W W W W W W W W W W W W W W		
Accessories		Connector (1 pcs.) for external wiring (soldering type)			
External power supply	Voltage	5/12 VDC (4.5 to 15 VDC)			
External power supply	Current	150 mA (TYP 12 VDC/common)			
Internal current consum	nption (5 VDC)	400 mA (TYP, all points ON)	DC5/12V 16mATTL A1SY71		
Weight kg		0.19	MCCATCA TOMBETTE STREET		



- *1 : The arrangement of pins A and B shown right is the opposite of the arrangement of pins of the connector on the module.
- *2: The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *3 : The ERR. indicating LED will also light when the external power supply is shut OFF.

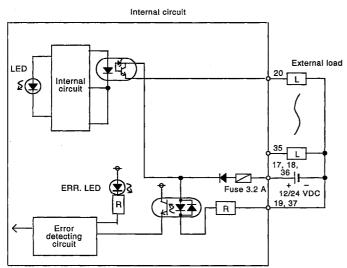
External Connections								
	Arra	Pin ingen	nent	Pin No.	Signal Name	Pin No.	Signal Name	
External load				B20	Y00	A20	Y10	
B20				B19	Y01	A19	Y11	
	B20) A20	B18	Y02	A18	Y12	
	B19	0 0	A19	B17	Y03	A17	Y13	
	B18	0 0	A18 A17	B16	Y04	A16	Y14	
	B16	0 0	A16	B15	Y05	A15	Y15	
 	B15	0 0	A15 A14	B14	Y06	A14	Y16	
B2	B13	0 0	A13	B13	Y07	A13	Y17	
A2	B12 B11	0 0	A12 A11	B12	Y08	A12	Y18	
use 6 A 5/12 VDC	B10	0 0	A10	B11	Y09	A11	Y19	
	B9 B8	0 0	A9 A8	B10	YOA	A10	Y1A	
	B7 B6	0 0	A7	B9	Y0B	A9	Y1B	
	B5	0 0	A6 A5	B8	Y0C	A8	Y1C	
ne opposite of the ar-	B4 B3	0 0	A4	B7	Y0D	A7	Y1D	
).	B2	0 0	A3 A2	B6	YOE	A6	Y1E	
ent the external wiring s output. Therefore,	B1 (00	J A1	B5	Y0F	A5	Y1F	
s output. Therefore,				B4	Vacant	A4	Vacant	
other than a short cir-	F	ront vi	ew	В3	Vacant	А3	Vacant	
external power supply				B2	5/12 VDC	A2	СОМ	
Atomai power supply				B1	5/12 VDC	A1	СОМ	

3.17 A1SY80 Transistor Output Module (Source Type)

Specification	Model	Transistor Output Module (Source Type))		
F	IS	A1SY80	Appearance		
Number of out	put points	16 points			
Isolation metho	od	Photocoupler	A1SY80	□ ERR	
Rated load vol	tage	12/24 VDC			
Operating volta	age range	10.2 to 30 VDC (peak voltage 30 VDC)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	EAR 8 9 A C C D F	
Max. load curre	ent	0.8 A/point, 3.2 A/common		님 :	
Max. allowed r	ush current	8 A 10 ms or less			
Leakage curre	nt at OFF circuit	0.1 mA or less			
Max. voltage d	lrop at ON circuit	1.5 VDC (MAX) 0.8 A			
Response	OFF → ON	2 ms or less	0		
time	ON → OFF	2 ms or less (resistive load)	1		
Surge absorbe		Zener diode	2		
Fuse rating		Fuse 5 A (1 piece/common), not replaceable *1	3		
Fuse capacity		50 A	4		
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	5		
	nal arrangement	8 points/common (common terminals: TB9, TB19)	6		
Operating indic		ON state is indicated (LEDs)	7		
External conne		20-point terminal block connector (M3.5 x 7 screws)	8		
Appliable wire		0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4	9		
Applicable wire	3 SIZE	N•cm)	A		
Applicable solderless R1.25-3.5 R2-3.5			В		
terminals RAV1.25-3.5 RAV2-3.5			c		
Accessories None					
External power supply	Voltage	12/24 VDC (10.2 to 30 VDC)	E		
Internal current consumption				F	
(5 VDC) 120 mA (TYP, all points ON)					
Weight kg	0.2				
		External Connections			
		Internal circuit	Terminal No.	Signal Name	
			TB1	1 1/00	
	}	Surge absorber	101	Y00	
		Surge absorber External load	TB2	Y00 Y01	
	LED	External load	TB2	Y01	
	l - 🖒 linte	External load	TB2 TB3 TB4	Y01 Y02 Y03	
	بغما أحصا	External load	TB2 TB3 TB4 TB5	Y01 Y02 Y03 Y04	
	بغما أحصا	External load	TB2 TB3 TB4 TB5 TB6	Y01 Y02 Y03 Y04 Y05	
	بغما أحصا	ernal rouit External load	TB2 TB3 TB4 TB5 TB6 TB7	Y01 Y02 Y03 Y04 Y05 Y06	
	بغما أحصا	ernal load 1 L Fuse 5 A 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TB2 TB3 TB4 TB5 TB6 TB7 TB8	Y01 Y02 Y03 Y04 Y05 Y06 Y07	
	بغما أحصا	ernal rouit External load	TB2 TB3 TB4 TB5 TB6 TB7	Y01 Y02 Y03 Y04 Y05 Y06	
	بغما أحصا	External load 1 L Fuse 5 A 9 12/24 10 10 10 10	TB2 TB3 TB4 TB5 TB6 TB7 TB8	Y01 Y02 Y03 Y04 Y05 Y06 Y07	
	بغما أحصا	External load 1 L Fuse 5 A 9 12/24 VDC	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1	
	بغما أحصا	External load 1 L Fuse 5 A 9 1 12/24 VDC L	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1	
	≨ Introduction	ernal load 1 L Fuse 5 A 9 12/24 VDC L Fig. 18 18	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09	
	Error detection	ernal load 1 L Fuse 5 A 9 1 12/24 VDC L R R R R R R R R R R R R R R R R R R	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A	
	≨ Introduction	External load 1 L Fuse 5 A 9 1 12/24 VDC L R Fuse 5 A 19 1- 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VD	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B	
	Error detection	External load 1 L Fuse 5 A 9 1 12/24 VDC R Fuse 5 A 20 12/24 20 12/24	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B Y0C	
	Error detection	External load 1 L Fuse 5 A 9 1 12/24 VDC L R Fuse 5 A 19 1- 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VDC R Fuse 5 A 12/24 VD	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B Y0C Y0D	
*1 · The fire	Error detecting circuit	External load 1 L Fuse 5 A 9 12/24 VDC R Fuse 5 A 20 VDC	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B Y0C	
event of	Error detecting circuits a short in the mo	External load 1 L Fuse 5 A 9 12/24 VDC L VDC VDC VDC VDC VDC VDC	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B Y0C Y0D	
event of	Error detecting circuits a short in the mo	External load 1 L Fuse 5 A 9 12/24 10 VDC L Fuse 5 A 20 VDC Dedule is provided to prevent the external wiring from burning in the	TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 0V Y08 Y09 Y0A Y0B Y0C Y0D Y0E	

3.18 A1SY81 Transistor Output Module (Source Type)

	Model	Transistor Output Module (Source Ty	pe)
Specifications		A1SY81	Appearance
Number of output points		32 points	A1SY81 _
Isolation method		Photocoupler	C) FRR
Rated load voltage		12/24 VDC	A 0
Operating voltage range		10.2 to 30 VDC (peak voltage 30 VDC)	40 CD C4 CC 50 CD C5 CD
Max. load current		0.1 A/point, 2 A/common	\$8 6 8 8 6 F
Max. allowed rush current		0.4 A 10 ms or less	
Leakage current at OFF circuit		0.1 mA or less	
Max. voltage drop at ON circuit Response OFF → ON		1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A	
		2 ms or less	
time	ON → OFF	2 ms or less (resistive load)	
Surge absorber		Zener diode	
Fuse rating		Fuse 3.2 A (1 piece/common), not replaceable *1	
Fuse breaking capacity		50 A	
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	
Common terminal arrangement		32 points/common (common terminals: 17, 18, 36)	
Operating indicator		ON state is indicated (LEDs)	
External conne	ctions	37-pin D sub-connector	
Applicable wire size		0.3 mm ²	
Accessories		Connector (1 pce.) for external wiring (soldering type)	
External	Voltage	12/24 VDC (10.2 to 30 VDC)	
power supply	Current	8 mA (TYP 24 VDC/common)	
Internal current consumption (5 VDC)		500 mA (TYP, all points ON)	DC12/24V 0.1A A1SYB1
Weight kg		0.23	
		External Connections	



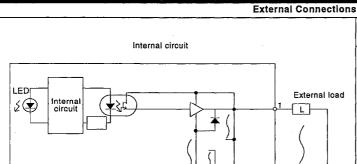
*1 : The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices. If an output device is damaged in a failure mode other than a short circuit the fuse might not blow.
cuit, the fuse might not blow.
If an output device is damaged in a failure mode other than a short cir-

^{*2 :} The ERR. indicating LED will also light when the external power supply is shut OFF.

Pin Arrangement	Pin No.	Signal Name	Pin No.	Signal Name
	1	Y00	9	Y10
	20	Y01	28	Y11
	2	Y02	10	Y12
20 0 0 1	21	Y03	29	Y13
21 0 0 3	3	Y04	11	Y14
23 0 0 4	22	Y05	30	Y15
24 0 0 6	4	Y06	12	Y16
26 0 0 7	23	Y07	31	Y17
27 0 0 9	5	Y08	13	Y18
29 0 0 10	24	Y09	32	Y19
30 0 0 11 31 0 0 12	6	YOA	14	Y1A
32 O O 13	25	Y0B	33	Y1B
33 0 0 15	7	Y0C	15	Y1C
35 O O 16	26	YOD	34	Y1D
36 O O 17 37 O O 18	8	YOE	16	Y1E
0 19	27	Y0F	35	Y1F
)	17	СОМ	37	0V
Front view	36	СОМ	19	0V
	18	СОМ		

3.19 A1SY81EP Circuit Protection Provided Transistor Output Module (Source Type)

	Model	Transistor Output Module (Source Type	e)
Specifications		A1SY81EP	Appearance
Number of output points		32 points	
Isolation method		Photocoupler	A1SY81EP
Rated load voltage		12/24 VDC	
Operating load voltage range		10.2 to 26.4 VDC	2 A B B B B B
Max. load current		0.1 A/point, 2 A/common (Ta = 25 °C), 0.05 A/point, 1.6 A/common (Ta = 55 °C)	4
Max. inrush current		No limit (short protect)	T
Leakage current at OFF circuit		0.1 mA or lower	
Max. voltage d	rop at ON circuit	3.5 VDC (0.1 A Max.), 2.5 VDC (0.1 A Min.)	
Response	OFF → ON	0.5 ms or less	
time	ON → OFF	1.5 ms or less (resistive load)	
Surge absorber		Clamping diode	
Protect		Provided (thermal and short-circuit protect) Thermal protect is detected in 8 points module (Y0 to 7, 8, to F, 10 to 17, 18 to 1F). When thermal protect occurs at an 8 points of 1 common, output of all points for corresponded common terminal is turned OFF.	
Protect detection indication		None (signal not output to a PC CPU.)	
Protect reset		Automatic reset (reset by canceling thermal protect)	
Common method		32 points/common (common terminals: 17, 18, 36)	
Operating indic	cator	ON state is indicated (LEDs)	
External conne	ections	37-pin D sub-connector	
Applicable wire	e size	0.3 mm ²	
Accessories		Connector (1 pcs.) for external wiring (soldering type)	
External	Voltage	12/24 VDC (10.2 to 26.4 VDC)	
power supply	Current	80 mA (TYP. 24 VDC/common)	
Internal current consumption (5 VDC)		500 mA (TYP. all points ON)	DC12/24V 0.1A A1SY81EP
Weight kg		0.25	



Arrangement		No.	Name	No.	Name	
			1	Y00	9	Y10
	_	`	20	Y01	28	Y11
20	60	1	2	Y02	10	Y12
21	0 0	2	21	Y03	29	Y13
22 23	0 0	4	3	Y04	11	Y14
24	0 0	5	22	Y05	30	Y15
25	0 0	6 7	4	Y06	12	Y16
26 27	00	8	23	Y07	31	Y17
28	0 0	9	5	Y08	13	Y18
29 30		11	24	Y09	32	Y19
31	00	12	6	YOA	14	Y1A
32 33	00	14	25	Y0B	33	Y1B
34	0 %	15 16	7	Y0C	15	Y1C
35 36	000	17	26	YOD	34	Y1D
37	0 0	18 19	8	Y0E	16	Y1E
	, ,	J	27	Y0F	35	Y1F
			17	СОМ	37	OV
F	ront vie	W	36	СОМ	19	ΟV
			18	СОМ		

Pin

Signal

Pin

Signal

Pin

Make sure that output short-circuits do not occur at more than three

outputs simultaneously.

If output short-circuits occur in three or outputs at the same time, the output element may be deteriorated or corrupted.

3.20 A1SY82 Transistor Output Module (Source Type)

Model Transistor Output Module (Source Type)					
Specifications	A1SY82	Appearance			
Number of output points	64 points				
Isolation method	Photocoupler	A1SY82			
Rated load voltage	12/24 VDC	A 00 50 00 06 H 10 90 01 09 20 A0 02 0A			
Operating voltage range	10.2 to 30 VDC (peak voltage 30 VDC)	A 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Max. load current	0.1 A/point, 1.6 A/common	10 fo			
Max. allowed rush current	0.4 A 10 ms or less				
Leakage current at OFF circuit	0.1 mA or less	11			
Max. voltage drop at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A				
Response OFF → ON	2 ms or less	DIS. F			
time ON → OFF	OIS. FOL				
Surge absorber	0 0				
Fuse rating	Fuse 3.2 A (1 piece/common), not replaceable *3				
Fuse capacity	50 A				
Error display	LED goes ON when fuse blows: signal output to PC CPU *4				
Common terminal arrangement	32 points/common (common terminals: 1A1, 1A2, 2A1, 2A2)				
Operating indicator	ON state is indicated (LEDs), 32-bit indication by switch				
External connections	40-pin connector				
Applicable wire size	0.3 mm ²				
Accessories	Connectors (2 pces.) for external wiring (soldering type)				
External Voltage	12/24 VDC (10.2 to 30 VDC)				
power supply Current					
Internal current consumption (5 VDC)	930 mA (TYP, all points ON)	DC12/24V 0.1A A1SY82			
Weight kg	0.27				
	Internal circuit External load load load load load load load lo				

		Pin ngem	ent	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)			
			1B20	Y00	1A20	Y10	2B20	Y20	2A20	Y30				
				1B19	Y01	1A19	Y11	2B19	Y21	2A19	Y31			
	B20		1 A20	1B18	Y02	1A18	Y12	2B18	Y22	2A18	Y32			
	B19	0 0	A19	1B17	Y03	1A17	Y13	2B17	Y23	2A17	Y33			
	B18 B17	0 0	A18 A17	1B16	Y04	1A16	Y14	2B16	Y24	2A16	Y34			
	B16	0 0	A16	A16	A16	1B15	Y05	1A15	Y15	2B15	Y25	2A15	Y35	
	B15 B14	0 0	A15 A14	1B14	Y06	1A14	Y16	2B14	Y26	2A14	Y36			
	B13	0 0	0 A13 0 A12	1B13	Y07	1A13	Y17	2B13	Y27	2A13	Y37			
	B12	0 0 A12		1B12	Y08	1A12	Y18	2B12	Y28	2A12	Y38			
	B10	0 0	A10	1B11	Y09	1A11	Y19	2B11	Y29	2A11	Y39			
	B9 B8	0 0	A8 A7	A8 A7	A7	A8 A7	1B10	YOA	1A10	Y1A	2B10	Y2A	2A10	Y3A
	B7	0 0					A7	1B9	Y0B	1A9	Y1B	2B9	Y2B	2A9
	B6 B5	0 0	A6 A5	1B8	YOC	1A8	Y1C	2B8	Y2C	2A8	Y3C			
1	B4	0 0	A4	1B7	YOD	1A7	Y1D	2B7	Y2D	2A7	Y3D			
	B3 B2	0 0	A3 A2	1B6	YOE	1A6	Y1E	2B6	Y2E	2A6	Y3E			
	B1	00	A1	1B5	Y0F	1A5	Y1F	2B5	Y2F	2A5	Y3F			
				1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant			
	-			1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant			
	ron	t view		1B2	12/24 VDC	1A2	COM1	2B2	12/24 VDC	2A2	COM2			
				1B1	12/24 VDC	1A1	COM1	2B1	12/24 VDC	2A1	COM2			

^{*1:} In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.

^{*2:} When the switch is set to the left side position, the status of the first-half devices (Y00 to Y1F) is displayed by the LEDs. When it is set to the right side, the status of the second-half devices (Y20 to Y3F) is displayed by the LEDs.

^{*3:} The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.

If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

^{*4:} The ERR. indicating LED will also light when the external power supply is shut OFF.

4. INPUT/OUTPUT COMPOSITE MODULE SPECIFICATIONS

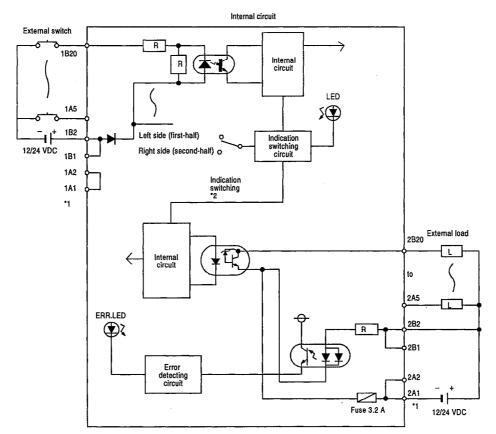
4.1 Input/Output Composite Module Specifications

4.1.1 A1SH42 input/output module

Model		1	nput/Output Composite Modu	ule
Specifications		Input Spe	Appearance	
Number of input points		32 points		
Isolation method	d	Photocoupler		
Rated input volt	age	12 VDC	24 VDC	
Rated input curi	rent	Approx. 2 mA	Approx. 5 mA	
Operating voltage	ge range	10.2 to 26.4 VDC (ripple: less than	5%)	
Max. simultaned points	•	60% (20 points/common) simultane	ously ON (at 24 VDC)	
ON voltage/ON	current	8 VDC or higher/2 mA or higher		
OFF voltage/OF	F current	4 VDC or lower/0.6 mA or lower		
Input resistance)	Approx. 5 kΩ		
Response	$OFF \rightarrow ON$	10 ms or less (24 VDC)		
time	$ON \rightarrow OFF$	10 ms or less (24 VDC)		A1SH42 G ERR
Common metho		32 points/common (common termina	als: 1B1, 1B2)	A1SH42 ERR A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Insulatoin withs		500 VAC		
Noise immunity		500 VAC		5 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
i			ecifications	7 0 6 0 7 0 6
Number of outp	ut points	32 points		
Isolation method	d	Photocoupler		
Rated input volt	age	12/24 VDC		
Operating voltage	ge range	10.2 to 30 VDC (peak voltage 30 VI	DIS. X	
Max. load curre	nt	0.1 A/point, 1.6 A/common		
Max. allowed ru	sh current	0.4 A 10 ms or less		
Leakage curren circuit	t at OFF	0.1 mA or less		
Max. voltage dre circuit	op at ON	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MA		
Response	$OFF \rightarrow ON$	2 ms or less		
time	$ON \rightarrow OFF$	2 ms or less (resistive load)		
Surge absorber		Zener diode		
Fuse rating		Fuse 3.2 A (1 piece/common), not r	eplaceable *3	
Fuse capacity		50 A		
Error display		LED goes ON when fuse blows: sig	nal output to PC CPU *4	
Common metho	d	32 points/common (common termina	als: 2A1, 2A2)	
Insulatoin withs	tand voltage	500 VAC		
Noise immunity		500 VAC		
External power	Voltage	12/24 VDC (10.2 to 30 VDC)		DC12/24V 2/5 mA 0.1 mA A1SH42
supply	Current	8 mA (TYP 24 VDC/common)		
			ecifications	
Number of I/O points		32 (I/O allocation is set as a 32-point		
Operating indicator		ON state is indicated (LEDs), 32-bit	indication by switch	
External connec		40-pin connector		
Applicable wire	size	0.3 mm ²		
Accessories		Connector (2 cps.) for external wiring	ig (soldering type)	
Internal current consumption (5		500 mA (TYP, all points ON)		
Weight kg		0.27		

External Connections

Pin Arran	ngeme	nt	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)	
				X00	1A20	X10	2B20	Y00	2A20	Y10	
B20 0	0 0 A20	1B19	X01	1A19	X11	2B19	Y01	2A19	Y11		
B19 0	0	A19	1B18	X02	1A18	X12	2B18	Y02	2A18	Y12	
B18 0	- 1	A18	1B17	X03	1A17	X13	2817	Y03	2A17	Y13	
B17 O		A17	1B16 -	X04	1A16	X14	2B16	Y04	2A16	Y14	
B16 O		A16 A15	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15	
B14 0	0	A14	1B14	X06	1A14	X16	2B14	Y06	2A14	Y16	
B13 O	- 1	A13	1B13	X07	1A13	X17	2B13	Y07	2A13	Y17	
B12 0		A12	1B12	X08	1A12	X18	2B12	Y08	2A12	Y18	
B11 0		A11	1B11	X09	1A11	X19	2B11	Y09	2A11	Y19	
B10 0	O O A9 A8	1B10	XOA	1A10	X1A	2B10	YOA	2A10	Y1A		
B8 0		1B9	X0B	1A9	X1B	2B9	Y0B	2A9	Y1B		
B7 0		A7	188	XOC	1A8	X1C	2B8	Y0C	2A8	Y1C	
B6 ~		A6	1B7	XOD	1A7	X1D	2B7	YOD	2A7	Y1D	
B5 0	0	A5 A4	1B6	X0E	1A6	X1E	2B6	Y0E	2A6	Y1E	
B3 0	- 1		A4 A3	1B5	X0F	1A5	X1F	2B5	YOF	2A5	Y1F
B2 O	0 0 A2 A1	A2	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant	
B1 (0		A1	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant	
			1B2	12/24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2	
Fron	nt vie	w	1B1	12/24 VDC	1A1	Vacant	2B1	12/24 VDC	2A1	COM2	



- *1: In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.
- *2: When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs.

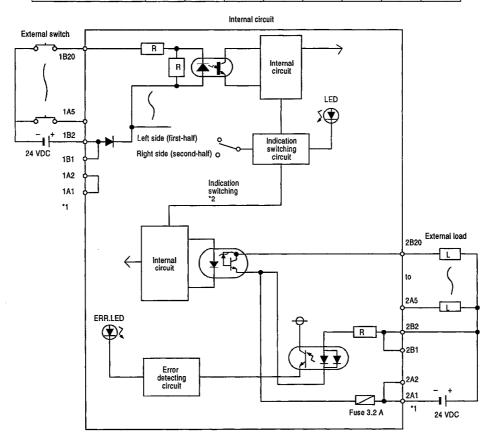
 When it is set to the right side, the status of the second-half devices (Y00 to Y1F) is displayed by the LEDs.
- *3: The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.
 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *4: The ERR. indicating LED will also light when the external power supply is shut OFF.

4.1.2 A1SH42-S1 input/output module

Model		Input/Output Composite Module					
Specification	5	Input Specifications	Appearance				
Number of inpu	t points	32 points					
Isolation method		Photocoupler					
Rated input vol	tage	24 VDC					
Rated input cur	rent	Approx. 5 mA					
Operating volta	~	19.2 to 26.4 VDC (ripple: less than 5%)					
Max. simultane points		60% (20 points/common) simultaneously ON (at 24 VDC)					
ON voltage/ON		15 VDC or higher/3 mA or higher					
OFF voltage/O	FF current	3 VDC or lower/0.5 mA or lower					
Input resistance	<u> </u>	Approx. 5 kΩ					
Response	$OFF \rightarrow ON$	0.3 ms or less (24 VDC)					
time	ON → OFF	0.3 ms or less (24 VDC)					
Common metho	od	32 points/common (common terminals: 1B1, 1B2)	A1SH42-S1 G SPR				
Insulatoin withs	stand voltage	500 VAC	A B B B B B				
Noise immunity		500 VAC					
		Output Specifications	A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Number of outp	ut points	32 points	, = = = :				
Isolation metho	d	Photocoupler					
Rated input vol	tage	12/24 VDC					
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)					
Max. load curre	ent	0.1 A/point, 1.6 A/common					
Max. allowed ru	ish current	0.4 A 10 ms or less	DIS. X O Y				
Leakage currer circuit	nt at OFF	0.1 mA or less					
Max. voltage di circuit	rop at ON	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A					
Response	OFF → ON	2 ms or less					
time	$ON \rightarrow OFF$	2 ms or less (resistive load)					
Surge absorber		Zener diode					
Fuse rating		Fuse 3.2 A (1 piece/common), not replaceable *3					
Fuse capacity		50 A					
Error display		LED goes ON when fuse blows: signal output to PC CPU *4					
Common metho		32 points/common (common terminals: 2A1, 2A2)					
Insulatoin withs	tand voltage	500 VAC					
Noise immunity		500 VAC					
External power	Voltage	12/24 VDC (10.2 to 30 VDC)					
supply	Current	8 mA (TYP 24 VDC/common)					
		Common Specifications	DC24V6 mA DC24V0.1 mA A1SH42-S1				
Number of I/O points		32 (I/O allocation is set as a 32-point output module)					
Operating indicator		ON state is indicated (LEDs), 32-bit indication by switch					
External connections		40-pin connector					
Applicable wire size		0.3 mm ²					
Accessories		Connector (2 cps.) for external wiring (soldering type)					
Internal current consumption (5		500 mA (TYP, all points ON)					
Weight kg		0.27					

External Connections

Pin Arrangement	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)
	1B20	X00	1A20	X10	2B20	Y00	2A20	Y10
	1B19	X01	1A19	X11	2B19	Y01	2A19	Y11
	1B18	X02	1A18	X12	2B18	Y02	2A18	Y12
00	1B17	X03	1A17	X13	2B17	Y03	2A17	Y13
0 0	1B16	X04	1A16	X14	2B16	Y04	2A16	Y14
	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15
	1B14	X06	1A14	X16	2B14	Y06	2A14	Y16
00	1B13	X07	1A13	X17	2B13	Y07	2A13	Y17
0 0	1B12	X08	1A12	X18	2B12	Y08	2A12	Y18
	1B11	X09	1A11	X19	2B11	Y09	2A11	Y19
0 0	1B10	XOA	1A10	X1A	2B10	YOA	2A10	Y1A
	1B9	X0B	1A9	X1B	2B9	Y0B	2A9	Y1B
0 0	1B8	XOC	1A8	X1C	2B8	YOC	2A8	Y1C
	1B7	XOD	1A7	X1D	2B7	YOD	2A7	Y1D
	1B6	X0E	1A6	X1E	2B6	Y0E	2A6	Y1E
0 0	1B5	X0F	1A5	X1F	2B5	YOF	2A5	Y1F
0 0	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
	1B2	12/24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2
 Front view 	1B1	12/24 VDC	1A1	Vacant	2B1	12/24 VDC	2A1	COM2



- *1: In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.
- *2: When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs.

 When it is set to the right side, the status of the second-half devices (Y00 to Y1F) is displayed by the LEDs.
- *3: The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.
 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *4: The ERR. indicating LED will also light when the external power supply is shut OFF.

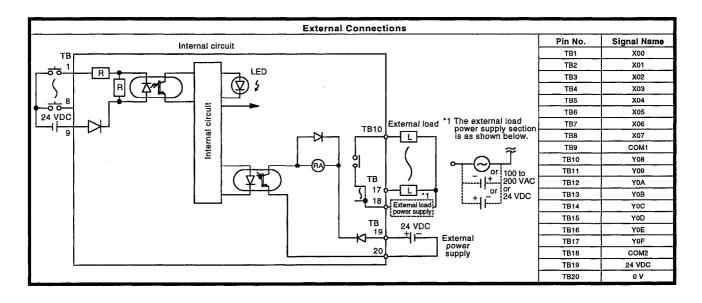
4.1.3 A1SX48Y18 I/O module (24 VDC input (sink type), relay contact output)

	Model	Input/Output Composite Module						
Specification	\$	Input Specifications	Appearance					
Number of inpu	t points	8 points						
Isolation method		Photocoupler						
Rated input voltage		24 VDC						
Rated input cur		Approx. 7 mA						
Operating volta	ge range	19.2 to 26.4 VDC (ripple: less than 5%)						
Max. simultane points		100% simultaneously ON (at 26.4 VDC)						
ON voltage/ON		14 VDC or higher/3.5 mA or higher						
OFF voltage/OI	· · · · · · · · · · · · · · · · · · ·	6.5 VDC or lower/1.7 mA or lower						
Input resistance		Approx. 3.3 kΩ						
Response	$OFF \rightarrow ON$	10 ms or less (24 VDC)						
time	ON → OFF	10 ms or less (24 VDC)						
Input method		Sink input (method by which the input current flows out)						
Common metho	od	8 points/common (common terminals: TB9)	A1SX48Y 18					
		Output Specifications						
Number of outp		8 points						
Isolation metho		Photocoupler						
Rated switching current		24 VDC 2 A (resistive load) 240 VAC 2A (COS=1)/point, 8 A/common						
Minimum switch	. •	5 VDC 1mA						
Maximum switc	hing voltage	264 VAC 125 VDC	0					
Response	OFF → ON	10 ms or less	1					
time	ON → OFF	12 ms or less (resistive load)	2					
	Mechanical	20,000,000 times of switching or over	3					
		At rated switching voltage and current loads 100,000 times of switching or over	4					
Service life	Electrical	At 200 VAC 1.5 A, 240 VAC 1 A (COSφ=0.7) 100,000 times of switching or over	6					
		At 200 VAC 1 A, 240 VAC 0.5 A (COS¢≔0.35) 100,000 times of switching or over	7 8					
		At 24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) 100,000 times of switching or over	9					
Maximum switc	hing frequency	3600 times/hour						
Surge absorber	r	Not provided	В					
Fuse		None	C					
External power supply (relay	Voltage	24 VDC ±10%, ripple voltage: 4 V _{P-P} or less	D					
coil drive)	Current	45 mA (TYP. 24 VDC all points ON)	E					
Common metho	od	8 points/common (common terminal: TB18)	F					
		Common Specifications						
Operation indic	ator	Provided (The LED lights when the input/output is ON.)						
External wiring method	connection	20-point terminal block connector (M3.5 x 7 screw)						
Applicable cabl	e size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N∙cm)						
Applicable sold	erless terminal	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5						
Accessories		None						
Internal current consumption (5		85 mA (TYP. all points ON)						
Weight kg		0.225						
Number of I/O	points	16 points (Make I/O allocation as a 16-point output module.)						

POINT

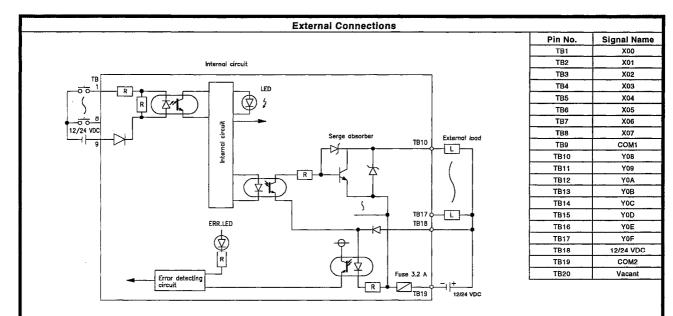
If using an A1SX48Y18, observe the following points.

- (1) Set the I/O control mode of the PC CPU to the direct mode.
- (2) If the I/O control mode of the PC CPU is set to the refresh mode, install input modules or special function modules at the both sides of the A1SX48Y18.



4.1.4 A1SX48Y58 I/O module (24 VDC input (sink type), 12/24 VDC transistor output)

	Model	Input/Output Composite Module		
Specifications		Input Specifications	Appearance	
Number of input	t points	8 points		
Isolation method	d	Photocoupler		
Rated input voltage		24 VDC		
Rated input curi	rent	Approx. 7 mA		
Operating voltage	·	19.2 to 26.4 VDC (ripple: less than 5%)		
Max. simultaned points	ous input	100% simultaneously ON (at 26.4 VDC)		
ON voltage/ON	current	14 VDC or higher/3.5 mA or higher		
OFF voltage/OF	F current	6.5 VDC or lower/1.7 mA or lower		
Input resistance)	Approx. 3.3 kΩ	A1SX48Y 58	
Response	OFF → ON	10 ms or less (24 VDC)	A1SX48Y 58	
time	ON → OFF	10 ms or less (24 VDC)		
Input method		Sink input	, , , , , , , , , , , , , , , , , , , ,	
Common metho	d	8 points/common (common terminals: TB9)		
		Output Specifications		
Number of outp	ut points	8 points		
Isolation method	d	Photocoupler	0	
Rated load volta	age	12/24 VDC	1	
Operating voltage	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	2	
Maximum load o	current	0.5 A/point, 2 A/common	3	
Maximum inrush	n current	4 A 10 ms or less	4	
Leakage current	t at OFF	0.1 mA or less	5	
Maximum voltag	ge drop at ON	0.9 VDC (TYP.) 0.5 A 1.5 VDC (MAX.) 0.5 A	7	
Response	OFF → ON	2 ms or less	8	
time	ON → OFF	2 ms or less (resistive load)		
Surge absorber		Zener diode	A	
Fuse rating		Fuse 3.2 A (1 per common) Not replaceable *1	В	
Fuse breaking o	apacity	5.0 A	C	
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	D	
External power	Voltage	12/24 VDC (10.2 to 30 VDC)	E	
supply (relay coil drive)	Current	60 mA (TYP. 24 VDC per common)	F	
Common metho	d	8 points/common (common terminal: TB19)		
<u> </u>		Common Specifications		
Operation indica	ator	Provided (The LED lights when the input/output is ON.)		
External wiring method	connection	20-point terminal block connector (M3.5 x 7 screw)		
Applicable cable	size	0.75 to 1.25 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N∙cm)		
Applicable solds	erless terminal	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5		
Accessories		None		
Internal current consumption (5		60 mA (TYP. all points ON)		
Weight kg		0.2		
Number of I/O p	oints	16 points (Make I/O allocation as a 16-point output module.)		



- *1: The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices.

 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *2: The ERR. indicating LED will also light when the external power supply is shut OFF.

4.1.5 A1SJ-56DT I/O module

Can only be installed on an A1SJ(H)CPU. Cannot be installed on an A1S3\[\begin{align*}B\ext{B} (S1) (main base unit), or an A1S6\[\begin{align*}B\ext{B} (S1) (extension base unit).

			T								
N 1		out Specifications	Input Specifications Number of input points 32 points								
Number of outpu		24 points	 		32 points	Photocoupler					
Isolation method		Photocoupler 24 VDC	Isolation metho	Rated input voltage							
Rated load volta	.ge	24 VDC	 			24 VDC					
Operating load v	oltage range	19.2 to 30 VDC (peak voltage: 30 VDC)	Rated input cu		Approx. 7 mA		. 50()				
		0.5.4/	Operating volta		19.2 to 26.4 VDC	 					
Maximum load o		0.5 A/point, 4 A/common	ON voltage/ON		14 VDC or higher	<u>-</u>					
Maximum inrush		4 A 10 ms or less	OFF voltage/O	rr current	6.5 VDC or lower	71.7 mA of lower					
Leakage current circuit		0.1mA or less	Input resistanc	e	Approx. 3.3 KΩ						
Maximum voltag circuit	e drop at OFF	0.9 V (TYP.) 0.5 A 1.5 V (MAX.) 0.5 A	Input method		Sink input (methor flows out)	od by which the ir	nput current				
Response time	OFF → ON	2 ms or less	Response time	OFF → ON	10 ms or less (24						
	ON → OFF	2 ms or less (resistive load)		ON → OFF	10 ms or less (24	VDC)					
External power	Voltage	24 VDC (19.2 to 30 VDC)	Common metho	od	16 points/commo	n (common termi	inal: TB17,				
supply	Current	60 mA (TYP. 24 VDC/common)			TB34)						
Surge absorber		Zener diode	Operating indic	ator	Provided (the LEI ON.)	D lights when the	input is				
Common method	d	8 points/common (common terminal: TB10, TB20, TB30)	Maximum simu points	Itaneous input	60 % (10 points/c	common)simultan	eously ON				
Operating indica	itor	Provided (the LED lights when the output is ON.)		_							
Number of I/O p	oints	128 points (slot 0: output, 64 points; slots 1 to 4:	vacant, 16 poin	ts)							
Internal current consumption (5	VDC)	220 mA (TYP. all points ON)									
External wiring o	connection	34-point terminal block connector (M3.5 x 6 screw), 2 connectors									
Applicable cable	size	0.75 to 2 mm ² (AWG16 to AWG19) (Applicable ti	0.75 to 2 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)								
Applicable solde	rless terminal	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5									
Weight kg		0.7									
		External Co	nnections								
OUT						IN IN					
Pin No. S	ignal Name			[-		Signal Name	Pin No.				
Pin No. S TB1 TB2	y20 Y21	External	IN		ternal	Signal Name X00 X01	Pin No. TB1 TB2				
Pin No. S TB1 TB2 TB3	ignal Name Y20 Y21 Y22		IN	0	ternal utput evice	Signal Name X00 X01 X02	Pin No. TB1 TB2 TB3				
Pin No. S TB1 TB2	y20 Y21	External out device	IN	0	utput	Signal Name X00 X01	Pin No. TB1 TB2				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6	ignal Name	External input device OUT	IN	TB1	utput evice	X00 X01 X02 X03 X04 X05	Pin No. TB1 TB2 TB3 TB4 TB5 TB6				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7	ignal Name	External input device TB1	l,	d d	utput evice	X00 X01 X02 X03 X04 X05 X06	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6	ignal Name	External input device OUT	l,	TB1	utput evice	X00 X01 X02 X03 X04 X05	Pin No. TB1 TB2 TB3 TB4 TB5 TB6				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB8 TB9 TB10	gnal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Z4 VDC COM3 Y26 Y27 Y27 Y26 Y27 Y27 Y27 Y26 Y27	External input device OUT	l,	d d	utput evice	\$\text{Signal Name}\$ \$\times 00\$ \$\times 01\$ \$\times 02\$ \$\times 03\$ \$\times 04\$ \$\times 05\$ \$\times 06\$ \$\times 06\$ \$\times 07\$ \$\times 08\$ \$\times 08\$ \$\times 08\$ \$\times 08\$ \$\times 09\$	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB7 TB8 TB8 TB9 TB10				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11	Ignal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Y27 Y24 Y0C COM3 Y28 Y2	External input device OUT	l,	d d	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB9 TB10 TB11				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11 TB12	gnal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Z4 VDC COM3 Y28 Y29 Y29	External input device TB1 TB8 Internal input device		d d	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11	gnal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Y27 Y24 Y0C COM3 Y28 Y28	External and a control out the		d d	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB9 TB10 TB11				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB7 TB8 TB9 TB9 TB10 TB11 TB12 TB13 TB14 TB15	ignal Name	External input device TB1 TB8 Internal input device		d d	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y28 Y29 Y28 Y29 Y20 External and a control out the		d d	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	gnal Name Y20 Y21 Y20 Y21 Y22 Y23 Y24 Y25 Y26 Y27 24 VDC COM3 Y28 Y29 Y24 Y25 Y26 Y27 Y28 Y29 Y26 Y27 Y28 Y29 Y26 Y27 Y28 Y29 Y26 Y27 Y27 Y28 Y27 Y28 Y28 Y29 Y28 Y29 Y28 Y29 Y26 Y27 Y28 Y38	External input device TB1 TB8 TB9 Internal input device TB1 TB9 TB1 Internal input device		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17				
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y28 Y29 Y28 Y29 Y20 External and a control out the		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB12 TB13 TB14 TB15 TB16 TB17 TB16 TB17 TB18 TB19 TB19 TB19	Ignal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y26 Y27 Y26 Y27 Y28 Y29 Y26 Y27 Y28 Y29 Y26 Y27 Y27 Y28 Y28 Y29 Y29 Y29 Y20 External input device TB1 TB8 TB9 Internal input device TB1 TB9 TB1 Internal input device		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB16 TB17 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB20	Ignal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y28 Y29 Y26 Y27 Y26 Y27 Y27 Y28 Y29 Y26 Y27 Y27 Y28 Y28 Y29 Y27 Y28 Y28 Y29 Y27 Y28 Y28 Y29 Y27 Y28 Y27 Y28 Y28 Y29 Y29 Y28 Y29 External input device TB1 TB8 TB9 TB10 24 VDC TB11 TB19 +TB20 LED	it	R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB19 TB20 TB21					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB16 TB17 TB18 TB19 TB20 TB22 TB22	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y20 External input device TB1 TB1 TB9 TB1 TB1 TB1 TB19 TB19 TB20 LED		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB22					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB16 TB17 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB20	Ignal Name Y20 Y21 Y21 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y28 Y29 Y26 Y27 Y26 Y27 Y27 Y28 Y29 Y26 Y27 Y27 Y28 Y28 Y29 Y27 Y28 Y28 Y29 Y27 Y28 Y28 Y29 Y27 Y28 Y27 Y28 Y28 Y29 Y29 Y28 Y29 External input device TB1 TB8 TB9 TB10 24 VDC TB11 TB19 +TB20 LED		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB19 TB20 TB21					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB20 TB22 TB22 TB22 TB22 TB23 TB24 TB25	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y20 External input device TB1 TB1 TB9 TB1 TB1 TB1 TB19 TB19 TB20 LED		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB24 TB25					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB18 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB22 TB23 TB24 TB25 TB26	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y25 Y26 Y27 Y24 Y27 Y24 Y27 Y26 Y27 Y28 Y29 Y2A Y28 Y20 Y2D Y2E Y2C Y2D Y2E Y2F Y2F Y2F Y2F Y2F Y2F Y2F Y30 Y31 Y32 Y33 Y34 Y35 External input device TB1 TB1 TB10 24 VDC TB11 TB19 +TB20 24 VDC TB21 LED indice tion		R TB1	utput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB11 TB12 TB13 TB14 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB21 TB22 TB23 TB24 TB26					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB27	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y29 Y22 Y29 Y20 External input device TB1 TB1 TB9 TB1 TB1 TB1 TB19 TB19 TB20 LED		TB1 TB1 TB1 TB1 TB1	deput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TE8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB24 TB23 TB24 TB26 TB27					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB20 TB20 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB26 TB27 TB28	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y28 Y29 Y29 Y20 External input device TB1 TB1 TB10 24 VDC TB11 TB19 +TB20 24 VDC TB21 LED indice tion		TB1 TB1 TB1 TB1 TB1	deput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB26 TB27 TB28					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB27	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y29 Y22 Y29 Y20 External input device TB1 TB1 TB1 TB19 TB19 TB19 TB29 TB29 TB29		TB1 TB1 TB1 TB1	deput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TE8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB24 TB23 TB24 TB26 TB27					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB20 TB20 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB26 TB27 TB28 TB29 TB20 TB20 TB21 TB21	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y27 Y28 Y28 Y29 Y28 Y29 Y29 Y20 External input device TB1 TB8 L B10 24 VDC TB11 TB19 +TB20 24 VDC TB21 TB28 TB29 +-TB30		TB1 R TB1 R TB1 TB1 TB1 TB3	6 6 7	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB29 TB29 TB29 TB29 TB29 TB29 TB29 TB29					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB29 TB28 TB29 TB29 TB30 TB30 TB30 TB31 TB31	Ignal Name Y20 Y21 Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y26 Y27 Y28 Y28 Y29 Y20 Y29 Y20 Y20 Y20 Y20 Y20 Y20 Y20 Y20 Y21 Y25 Y26 Y27 Y27 Y28 Y27 Y28 Y27 Y28 Y27 Y28 Y29 External input device TB1 TB1 TB1 TB19 TB19 TB19 TB29 TB29 TB29		TB1 R TB1 R TB1 TB1 TB1 TB3	deput evice	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB27 TB28 TB29 TB30 TB31 TB32					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB20 TB20 TB22 TB23 TB22 TB23 TB24 TB25 TB26 TB26 TB27 TB28 TB29 TB20 TB20 TB21 TB21	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y27 Y28 Y28 Y29 Y28 Y29 Y29 Y20 External input device TB1 TB8 L B10 24 VDC TB11 TB19 +TB20 24 VDC TB21 TB28 TB29 +-TB30		TB1 R TB1 R TB1 TB1 TB1 TB3	6 6 7	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB16 TB17 TB18 TB19 TB20 TB21 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB29 TB29 TB29 TB29 TB29 TB29 TB29 TB29					
Pin No. S TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB20 TB21 TB20 TB21 TB20 TB21 TB20 TB21 TB22 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB28 TB29 TB29 TB30 TB31 TB31	Ignal Name Y20 Y21 Y22 Y22 Y23 Y24 Y25 Y26 Y27 Y26 Y27 Y26 Y27 Y28 Y29 Y28 Y29 Y28 Y29 Y28 Y29 Y28 Y29 External input device TB1 TB8 L B10 24 VDC TB11 TB19 +TB20 24 VDC TB21 TB28 TB29 +-TB30		TB1 R TB1 R TB1 TB1 TB1 TB3	6 6 7	Signal Name	Pin No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB16 TB17 TB18 TB17 TB18 TB17 TB18 TB17 TB18 TB17 TB18 TB17 TB18 TB20 TB21 TB22 TB23 TB24 TB25 TB26 TB27 TB28 TB29 TB30 TB31 TB32 TB32 TB32 TB32					

4.1.6 A1SJ-56DR I/O module

Can only be installed on an A1SJ(H)CPU. Cannot be installed on an A1S3[[]B (S1) (main base unit), or an A1S6[[]B (S1) (extension base unit).

		Output Specifications		In	put Specifications		
Number of outp		24 points	Number of input points 32 points				
Isolation metho		Photocoupler			Photocoupler		
Rated switching	yoltage	24 VDC 2 A (resistive load) 240 VAC 2A	Rated input voltage		24 VDC		
and current	. <u>-</u>	(COSφ=1)/point, 5 A/common	Rated input of	current	Approx. 7 mA		
Minimum swith	cing load	5 VDC 1 mA	Operating vo	ltage range	19.2 to 26.4 VDC (ripple: less than 5%)		
Max. switching	voltage	264 VAC 125 VDC	ON voltage/C	ON current	14 VDC or higher/3.5 mA or higher		
Max. switching	frequency	3600 times/hour	OFF voltage/	OFF current	6.5 VDC or lower/1.7 mA or lower		
	Mechanical	20,000,000 times of switching or over	Input resistar	nce	Approx. 3.3 KΩ		
		At rated switching voltage and current loads 100,000 times of switching or over	Input method		Sink input (method by which the input current flows out)		
Service life	Electrical	At 200 VAC 1.5 A, 240 VAC 1 A (COSφ=0.7) 100,000 times of switching or over	Response OFF → ON ON → OFF		10 ms or less (24 VDC) 10 ms or less (24 VDC)		
		At 200 VAC 1 A, 240 VAC 0.5 A (COSφ=0.35) 100,000 times of switching or over	Common met	thod	16 points/common (common terminal: TB17, TB34)		
	٠	At 24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) 100,000 times of switching or over	Operating inc	dicator	Provided (the LED lights when the input is ON.)		
Response	OFF → ON	10 ms or less	Maximum sin	nultaneous	20.07 (40		
time	ON → OFF	12 ms or less	input points		60 % (10 points/common)simultaneously ON		
External power supply (relay c	Voltage	24 VDC ±10%, ripple voltage: 4 V _{P-P} or less					
drive)	Current	140 mA (TYP. 24 VDC all points ON)					
Surge absorbe	·	None					
Common metho		8 points/common (common terminal: TB9, TB18, TB27)					
Operating indic		Provided (the LED lights when the output is ON.)	1.40				
Number of I/O		128 points (slot 0: output, 64 points; slots 1 to 4: vacan	it, 16 points)				
Internal current consumption (5		220 mA (TYP. all points ON)					
External wiring method		34-point terminal block connector (M3.5 x 6 screw), 2 connectors					
Applicable cab	e size	0.75 to 2 mm ² (AWG16 to AWG19) (Applicable tightening torque 78.4 N•cm)					
Applicable sold terminal	erless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5					
Weight kg		0.8					
OU		External Con	nections		IN		
Pin No. 9 TB1 TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB18 TB17 TB18 TB18 TB19 TB19 TB19 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17 TB18 TB19 TB20 TB21 TB20 TB21 TB22 TB23 TB22 TB23 TB24 TB25 TB25 TB26	Signal Name Y20 Y21 Y22 Y23 Y24 Y25 Y26 Y27 COM3 NC Y27 COM3 NC Y27 COM3 NC Y29 Y28 Y29 Y29 Y28 Y29 Y29 Y21 Y20 Y21 Y20 Y30 Y31 Y32 Y33 Y34 Y35	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1]		Signal Name Pin No. No. TB1		
TB28 TB29 TB30 TB31 TB31 TB32 TB33 TB33 TB34	Y37 COMS NC NC V 24 VDC 24 GDC FG	*1 The external load pow	•	tion is as shown	X1A TB28 X1B TB29 X1C TB30 X1D TB31 X1E TB32 X1F TB33 COM2 TB34 VDC below.		

4.2 Dynamic Input/Output Module Specifications

4.2.1 A1S42X dynamic input module

	Model		Dynamic Input Module					
Specifications		A1S	Appearance					
Number of input points	*1	16/32/48/64 points (switch setti	ng)				٦	
Isolation method		Photocoupler			A1SX	42 		
Rated input voltage		12 VDC	24 VDC		, accompan			
Rated input current		Approx. 4 mA	Approx. 9 mA					
Operating voltage rang	е	10.2 to 26.4 VDC (ripple : less	than 5 %)				1	
Max. simultaneous inpu	ut points	100 % simultaneously ON (at 2	6.4 VDC)					
ON voltage/ON current		8 VDC or higher/2 mA or higher					1	
OFF voltage/OFF curre	ent	4 VDC or lower/1 mA or lower			DIS. [F			
Input resistance		Approx. 2.4 kΩ			1 2			
Response time	OFF → ON	0.4 ms or less (24 VDC)						
ricaponac unic	ON → OFF	0.4 ms or less (24 VDC))		
Dynamic scan cycle		13.3 ms						
Operating indicator		On state is indicated (LEDs), 32	2-bit indication by switch					
External connections		24-pin connector		_				
Applicable wire size		0.3 mm ²			1 1 1			
Accessories		Connector (1 pce.) for external	wiring (soldering type)					
Internal current consumption (5 VDC)		80 mA (TYP, all points ON)						
Weight kg		0.18		-	DC1E/BAY 4/BA	A AIBREX	_	
		External Conne	ections					
Input termi	inals P	iņ No.		P	In Arra	ngemen	it	
X38 X30 X28 X20 X11 X39 X31 X29 X21 X1 X3A X32 X2A X22 X1 X3B X33 X2B X23 X1 X3C X34 X2C X24 X10 X3D X35 X2D X25 X1 X3E X36 X2E X26 X1E X3F X37 X2F X27 X1	9 X11 X09 X01 A X12 X0A X02 B X13 X0E X03 C X14 X0C X04 D X15 X0D X05 C X16 X0E X06	B12 XD0 R R Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Internal circuit		B9	0 A1: 0 A1 A1: 0 A9 0 A8 0 A7 0 A6 0 A5 0 A4 0 A3 0 A2	1	
		B8 XSCN0 R S S S S S S S S S S S S S S S S S S	Internal circuit	Pin No.	Front Signal Name	Pin No.	Signal Name	
		A7 XSCN3	Scanned	B12	XD0	A12	XD1	
		B6 XSCN4	internally at 1/8 duty	B11	XD2	A11	XD3	
		A6 XSCN5		B10	XD4	A10	XD5	
		B5 XSCN6		B9	XD6	A9	XD7	
<u> </u>				B8	XSCN0	A8	XSCN1	
<u> </u>	****	A5 XSCN7)	B7	XSCN2	A7	XSCN3	
	Do	A2		B6	XSCN4	A6	XSCN5	
	12/24 VDC + B3,	~						
	12/24 VDC	A2 +		B5	XSCN6	A5	XSCN7	
	D2,	11		B4	Vacant	A4	Vacant	
		ach switch if there will be any occ		B3	12/24 VDC	А3	12/24 VDC	
or more switche	es are pressed si	multaneously. (Refer to the figure	re on the right.)	B2	0V	A2	0V	
				B1	FG	A1	FG	

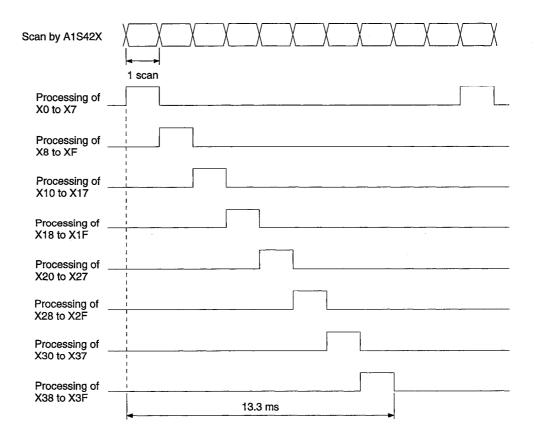
(1) Number of occupied I/O points setting

The Number of occupied I/O points is set by the DIP switches on the front face of the module. It is factory-set to 64 points.

Number of occupied I/O points	16 points	32 points	48 points	64 points
Switch setting	SW 1 2	SW 1 2 NO	SW 1 2	SW 1 2 NO

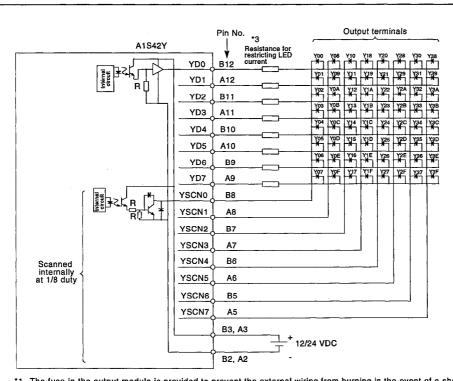
(2) Dynamic scan method

In the dynamic scan method, the whole number of occupied I/O points is divided into several groups of a specified number of points, and processed in several scans. 64 input points are divided into 8 groups of 8 points, and processed group by group as shown in the figure below. Regardless of whether the number of occupied I/O points is set at 16, 32, or 48 points, the dynamic scan cycle is fixed at 13.3 ms.



4.2.2 A1S42Y dynamic output module

Model		Dynamic Output Module	
Specifications		A1S42Y	Appearance
Number of output point	s	16/32/48/64 points (switch setting)	
Isolation method		Photocoupler	A1S42Y ^ :::::::::::::::::::::::::::::::::::
Rated load voltage		12/24 VDC	1572 000 000 000 000 000 000 000 000 000 0
Operating voltage rang	e	10.2 to 26.4 VDC (ripple : less than 5 %)	
Max. load current		0.1 A/point	
Leakage current at OFI	F circuit	0.1 mA or less	
Max. voltage drop at O	N circuit	Source : 1.1 VDC, Sink : 1.5 VDC	
December time	OFF → ON	2 ms or less (resistive load)	DIS. F DL
Response time	ON → OFF	2 ms or less (resistive load)	SW C
Fuse rating		Fuse 1.6 A, not replaceable *1	1 2
Fuse capacity		50 A	
Error display		LED goes ON when fuse blows : signal output to PC CPU *2	
Operating indicator		On state is indicated (LEDs), 32-bit indication by switch	
External connections		24-pin connector	
Applicable wire size		0.3 mm ²	
Accessories		Connector (1 pce.) for external wiring (soldering type)	
External power	Voitage	12/24 VDC (10.2 to 26.4 VDC)	
supply	Current	8 mA (TYP, 24 VDC/common)	
Internal current consumption (5 VDC)		100 mA (TYP, all points ON)	
Weight kg		0.19	DC12/24V 4/9mA A1S42Y
		External Connections	



		B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1	/ 00000000000 on	o o o o o o o o o t vie	A12 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1	1
	Pin No.	Signa Name (FH)	e	Pin	No.	Signal Nane (FH)
	B12	YD0		Α	12	YD1
	B11	YD2		Α	11	YD3
	B10	YD4		Α	10	YD5
	B9	YDe	3	P	9	YD7
	B8	YSCN	10	P	ا8	YSCN1
	В7	YSCN2		A7		YSCN3
	В6	YSCN4		A6		YSCN5
	B5	YSCN6		F	\5	YSCN7
in	B4	Vacant		F	١4	Vacant
ed	вз	12/2 VDC		F	13	12/24 VDC
	B2	٥٧		A	12	0V

Pin Arrangement

- *1 The fuse in the output module is provided to prevent the external wiring from burning in the event of a short the module's output. Therefore, it may not be able to protect output devices. If an output device is damage in a failure mode other than a short circuit, the fuse might not blow.
- *2 The ERR. indicating LED will also light when the external power supply is shut OFF.
- *3 Install the resistance for restricting LED current outside the A1S42Y module.
- *4 The power supply voltage(24/12 VDC) is applied to the reverse direction of the LED. If the opposite voltage resistance is not sufficient, connect a diode for serial protection to each LED.

Vacant

Α1

Vacant

(1) Number of occupied I/O points setting

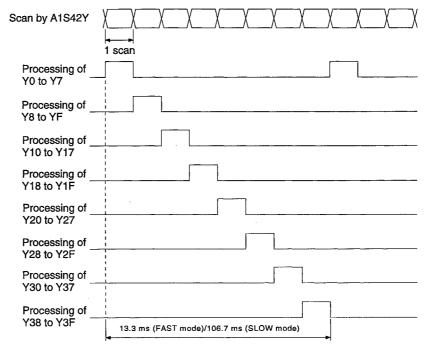
The number of occupied I/O points is set using the DIP switches on the front face of the module. It is factory-set to 64 points.

Number of occupied I/O points	16 points	32 points	48 points	64 points
Switch setting	SW 1 2 2 2 0	SW 1 2 NO	SW 1 2	SW 1 2 NO

(2) Dynamic scan method and dynamic scan cycle setting

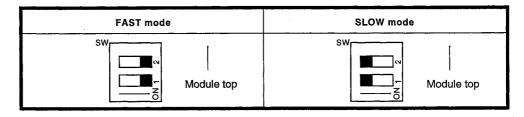
(a) Dynamic scan method

In the dynamic scan method, the whole number of occupied I/O points is divided into several groups of a specified number of points, and processed in several scans. 64 input points are divided into 8 groups of 8 points, and processed group by group as shown in the figure below. Regardless of whether the number of occupied I/O points is set at 16, 32, or 48 points, the dynamic scan cycle is fixed at 13.3/106.7 ms.



(b) Dynamic scan cycle setting

The dynamic scan cycle is set using the DIP switches on the rear face of the module. It is factory-set to FAST mode.



5. SPECIFICATIONS OF CONNECTOR/TERMINAL BLOCK CONVERTOR MODULES

5.1 **Specifications of Connector/Terminal Block Convertor Modules**

1) Connector/Terminal Block Convertor Module

Type	Details	Weight	Applicable Models	
A6TBXY36	For positive common type input modules and sink type output modules (standard type)	0.4kg	Q series: QX41, QX42, QY41P, QY42P AnS series: A1SX41, A1SX41-S1, A1SX44 A1SX42, A1SX42-S1, A1SX44 A1SX42, A1SX82-S1	1-S2, 2-S2,
A6TBXY54	For positive common type input modules and sink type output modules (2-wire type)	0.5kg	A1SY41, A1SY42, A1SY82, A A1SH42-S1 A series: AX42, AX42-S1, AY42, AY42- AY42-S3, AY42-S4, AH42 CC-Link: AJ65SBTC1-32D, AJ65SBTC AJ65SBTC1-32D AJ65SBTC1-32T MELSECNET-MINI: AJ35TC1-32D, AJ35TC1-32T	S1,
A6TBX70	For positive common type input modules (3-wire type)	0.6kg	Q series: QX41, QX42, QH42P AnS series: A1SX41, A1SX41-S1, A1SX44 A1SX42, A1SX42-S1, A1SX44 A1SX42, A1SX82-S1, A1SH44 A1SH42-S1 A series: AX42, AX42-S1, AH42 CC-Link: AJ65SBTCF1-32D, AJ65BTC MELSECNET-MINI: AJ35TC1-32D	2-S2, 2,
А6ТВХЗ6-Е	For negative common type input modules (standard type)	0.4kg	O series: QX81	
A6TBX54-E	For negative common type input modules (2-wire type)	0.5kg	AnS series: A1SX81, A1SX81-S1, A1SX8 A series: AX82	1-S2
A6TBX70-E	For negative common type input modules (3-wire type)	0.6kg		
А6ТВҮ36-Е	For source type output modules (standard type)	0.4kg	Q series: QY81P AnS series: A1SY81	
A6TBY54-E	For source type output modules (2-wire type)	0.5kg	A series: AY82EP	

INPORTANT

- (1) The number of connectable I/O points is 32 for all connector/terminal block convertor modules.
 - Two connector/terminal block convertor modules and two cables for connector/terminal block convertor modules are required for 64-point I/O modules.
- (2) Though the A1SX81(S1/S2) is used either as a sink or source type, use the A6TBX36-E, A6TBX54-E or A6TBX70-E. The A6TBXY36, A6TBXY54 or A6TBX70 cannot be used.
- (3) Though the A1SX82-S1 is used either as a sink or source type, the A6TBXY36/XY54/X70 may be used only when the A1SX82-S1 is used as a sink type.

When it is used as a source type, the A6TBXY36/XY54/X70 cannot be used.

- (4) Though the A1SY82 is a source type output module, use the A6TBXY36 or A6TBXY54. The A6TBXY36-E or A6TBXY54-E cannot be used.
- (5) In the A series, the plus common input module is separately labeled as a sink type input module, and the minus common input module is separately labeled as a source type input module.
- (6) When using the A6TBXY70 as a mixed input/output module, use at the input side.
- (7) Tighten the module terminal screws to the following torque. Supply line connecting terminal screw (M3.5 screw): Tightening torque 78.4N•cm

5. SPECIFICATIONS OF CONNECTOR/TERMINAL BLOCK CONVERTOR MODULES

MELSEC-A

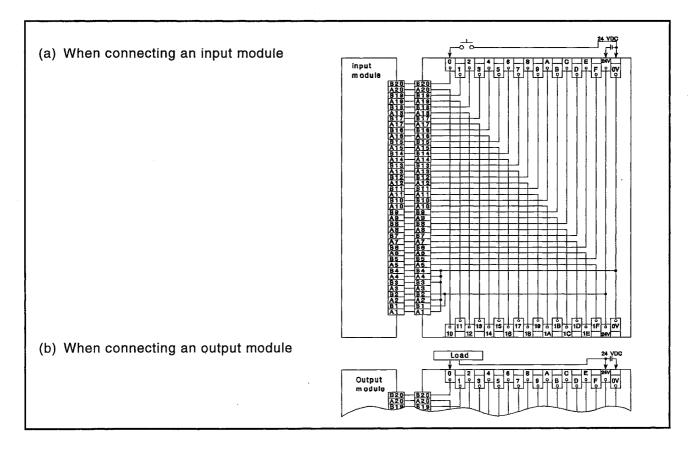
2) Cable

Туре	Details	Weight	Applicable Models
AC05TB	0.5 m (19.69 in.), for sink modules	0.17kg	
AC10TB	1 m (39.37 in.), for sink modules	0.23kg	
AC20TB	2 m (78.74 in.), for sink modules	0.37kg	
AC30TB	3 m (118.11 in.), for sink modules	0.51kg	A6TBXY36
AC50TB	5 m (196.85 in.), for sink modules	0.76kg	A6TBXY54 A6TBX70
AC80TB	8 m (314.96 in.), for sink modules (common current not exceeding 0.5 A)	1.2kg	
AC100TB	10 m (393.7 in.), for sink modules (common current not exceeding 0.5 A)	1.5kg	
AC05TB-E	0.5 m (19.69 in.), for source modules	0.17kg	
AC10TB-E	1 m (39.37 in.), for source modules	0.23kg	A6TBX36-E A6TBY36-E
AC20TB-E	2 m (78.74 in.), for source modules	0.37kg	A6TBX54-E
AC30TB-E	3 m (118.11 in.), for source modules	0.51kg	A6TBY54-E
AC50TB-E	5 m (196.85 in.), for source modules	0.76kg	A6TBX70-E

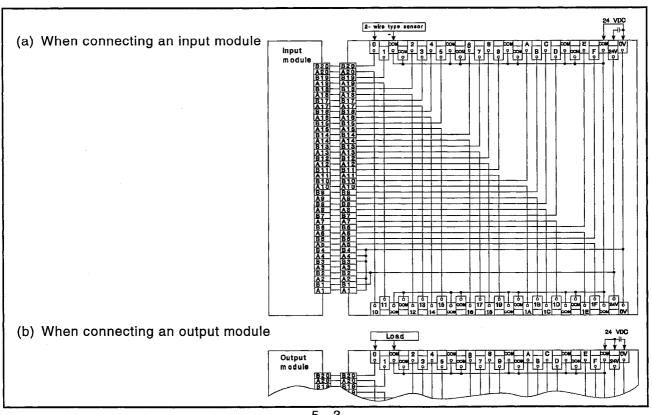
MELSEC-A

5.2 Connector/Terminal Block Convertor Module Connection Diagrams

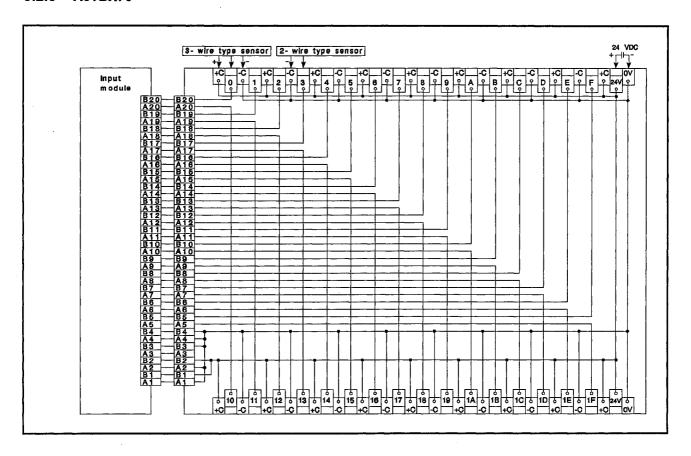
5.2.1 A6TBXY36



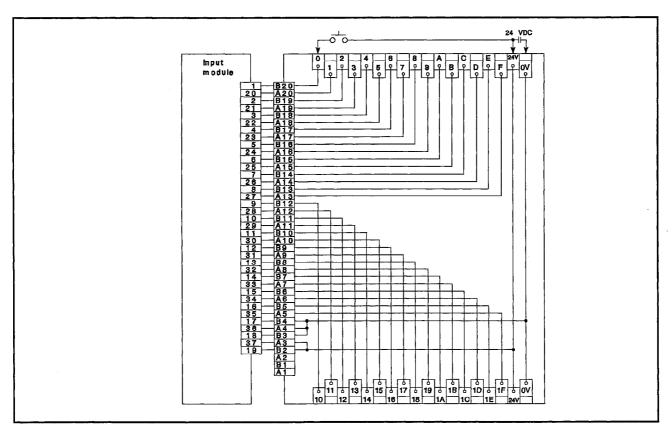
5.2.2 A6TBXY54



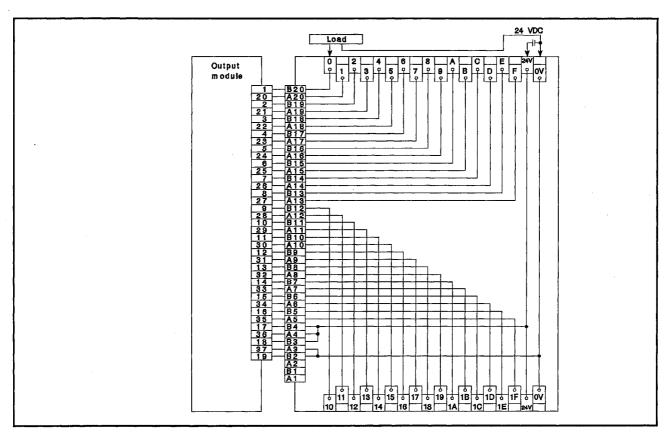
5.2.3 A6TBX70



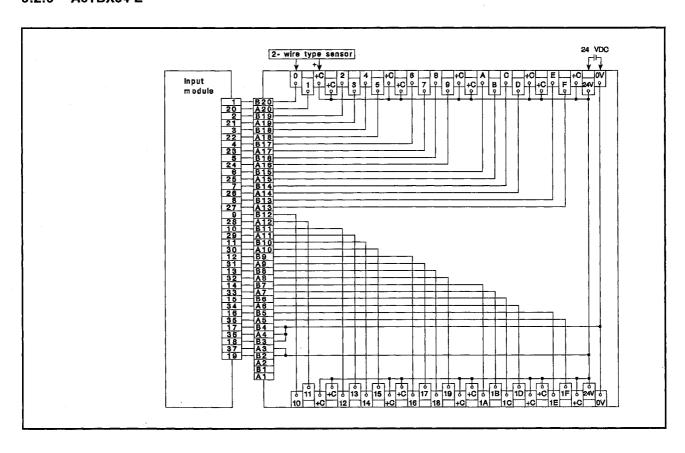
5.2.4 A6TBX36-E



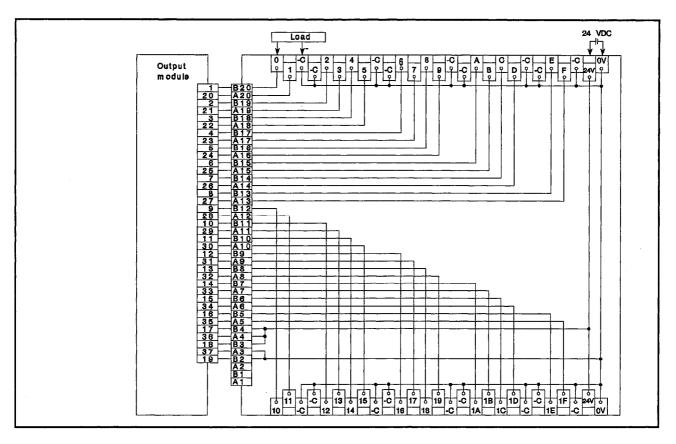
5.2.5 A6TBY36-E



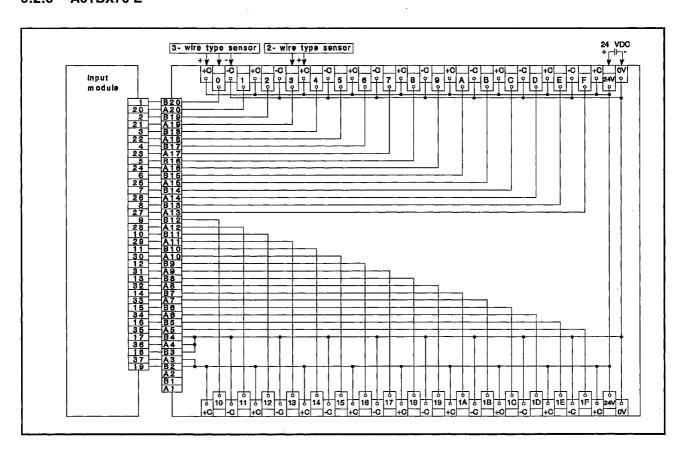
5.2.6 A6TBX54-E



5.2.7 A6TBY54-E



5.2.8 A6TBX70-E



6. BLANK COVER, DUMMY MODULE SPECIFICATIONS

6.1 Blank Cover (A1SG60), Dummy Module (A1SG62) Specifications

The A1SG60 blank cover is used to protect base unit vacant slots against dust etc.

The A1SG62 dummy module is used to reserve a specified number of I/O points at any base unit slot.

Table 6.1 Dummy Module, Blank Cover Specifications

Model Item	A1SG60	A1SG62
Occupied I/O points	16 points	Max. 64 (16, 32, 48, or 64 points can be selected by using a select switch on the front of the module.)
I/O allocation specification	16 vacant points	☐ input (X) points Designate the number of points set with the select switch in the ☐
Purpose	Used as a dust preventive cover for an unused slot where no input/output module is installed (e. g., a vacant slot between modules).	A module used to reserve 16, 32, 48, or 64 points for an I/O module to be installed in the future.
Other functions	-	Equipped with simulation switches for 16 points beginning with the head I/O number: inputs can be turned ON/OFF without using any external switch.
Internal current consumption (5 VDC)	_	60 mA
Outside dimen- sions (mm)(in)	130(H) x 34.5(W) x 93.6 (D) (5.12 x 1.36 x 3.69)	130(H) x 34.5(W) x 93.6 (D) (5.12 x 1.36 x 3.69)
Weight (kg)	0.08	0.13

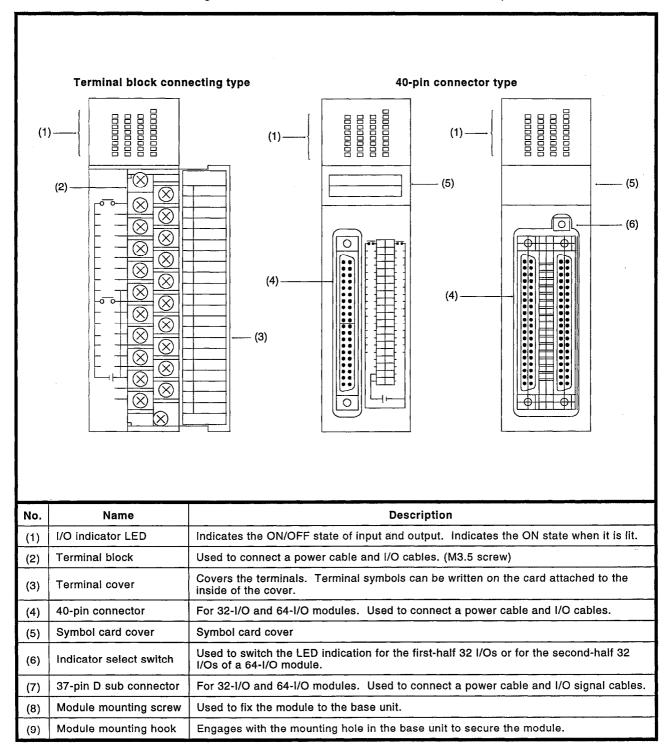
6.2 Setting the Occupying Number of Inputs/Outputs for A1SG62

Set the switches for setting the occupying number inputs/outputs (DIP switches) on the front of the module. The factory setting is 16 points.

Occupying number of inputs/outputs	16 points	32 points	48 points	64 points
Switch settings	SW1 □ SW2 □ → §	SW1 □ SW2 □ → §	SW1 □ SW2 □ SW2	SW1 □ SW2 □ SW2 □ SW2 □ SW2

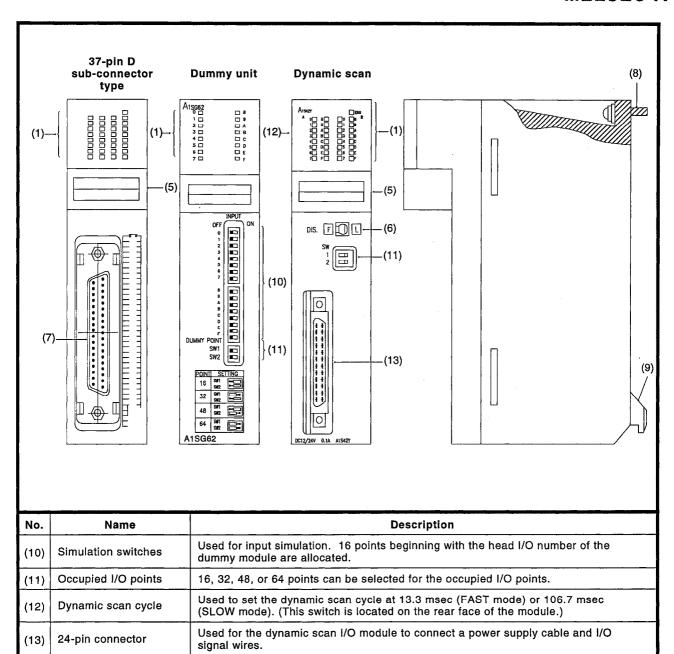
7. NAMES OF PARTS AND SETTINGS

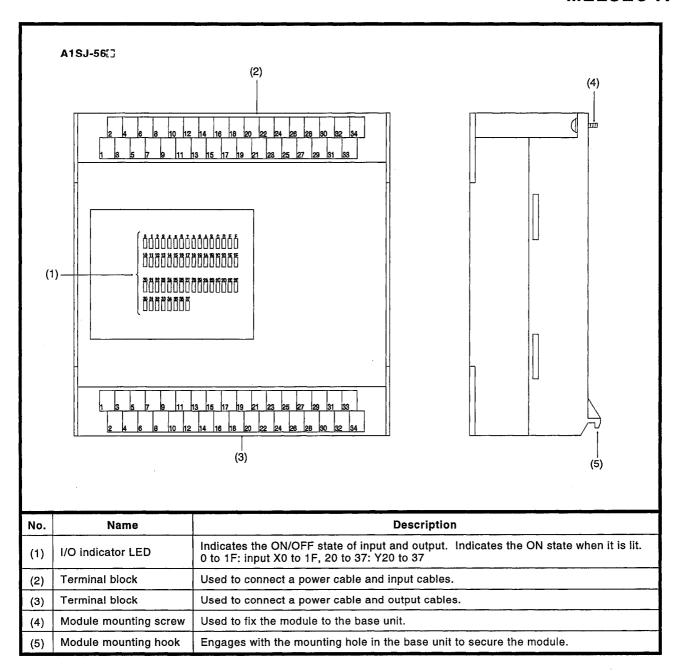
The figures and table below show the names of the parts of I/O modules.

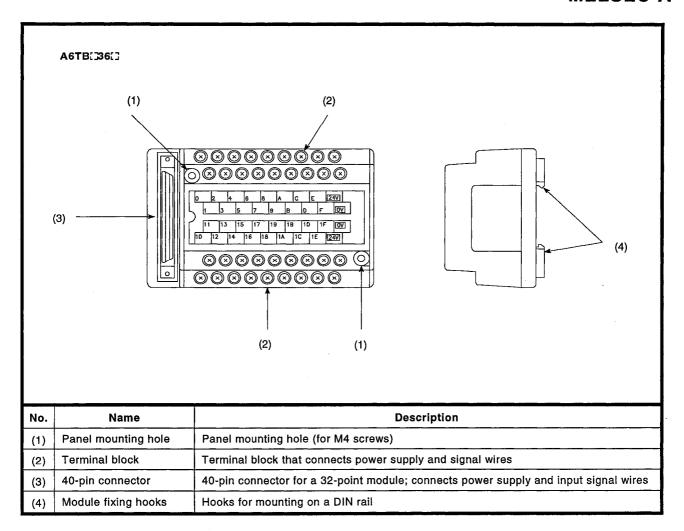


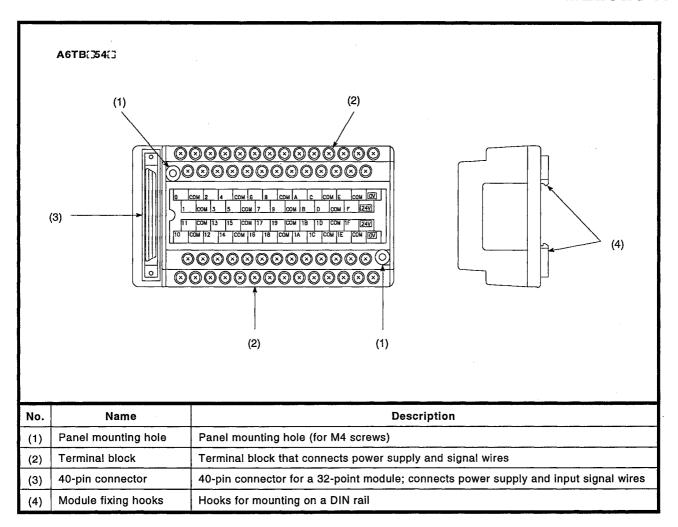
REMARK

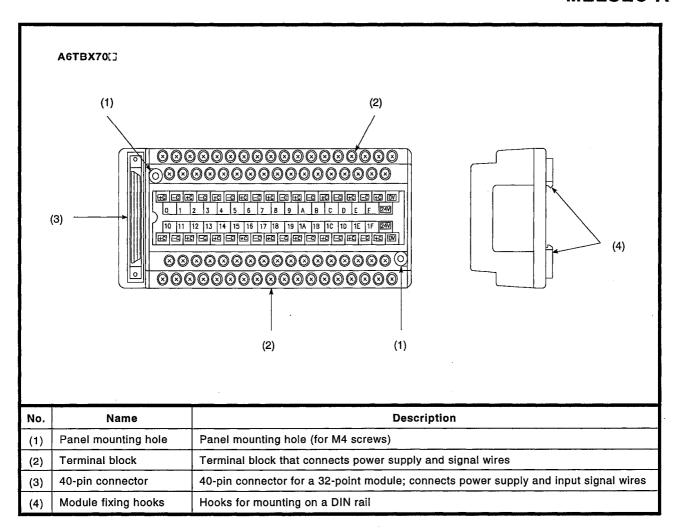
When removing the terminal symbol card, lift up the edge of the card a little to pull it out of the terminal cover smoothly.











8. I/O CONNECTION TROUBLESHOOTING

This section explains possible problems with I/O circuits.

8.1 Input Circuit Troubleshooting

This section describes possible problems with input circuits, and corrective action.

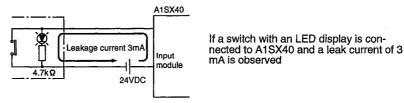
Table 8.1 Input Circuit Problems and Corrective Action

	0	Table 8.1 Input Circuit Problems and	
	Condition	Cause	Corrective Action
		 Leakage current of input switch (e.g. drive by non-contact switch). 	Connect an appropriate resistor which will make the voltage across the terminals of the input module lower than the OFF voltage value.
Example 1	Input signal does not turn OFF.	AC input Leakage current Input module Power supply	AC input Input module It is recommended to use 0.1 to 0.47 μ F + 47 to 120 Ω (1/2 W) for the CR constant.
Example 2	Input signal does not turn OFF.	Drive by a limit switch with neon lamp. AC input Leakage current Power supply	Same as Example 1. Or make up another independent display circuit.
Example 3	Input signal does not turn OFF.	Leakage current due to line capacity of wiring cable. (Line capacity C of twisted pair wire is approx. 100 PF/m). AC input Leakage current Power supply Power supply	Same as Example 1. However, leakage current is not generated when the power supply is located in the input equipment side as shown below. AC input Input module Power Supply
Example 4	Input signal does not turn OFF.	DC input (sink) Leakage current Input module	Connect a register which will make the voltage between the input module terminal and common higher than the OFF voltage, as shown below. DC input (sink)

Table 8.1 Input Circuit Problems and Corrective Action (Continued)

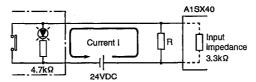
Condition	Cause	Corrective Action
Example 5 Input signal does not turn OFF.	Sneak path due to the use of two power supplies. E1	Use only one power supply. Connect a sneak path prevention diode. (Figure below) Input module

<Example 4s Calculation Example>



Voltage V_{TB} across the terminal and common base is:

Because the condition for the OFF voltage (\leq 4 [V]) is not satisfied, the input does not turn off. To correct this, connect a resistor as shown below.



· Calculation of resistance of connected resistor R

The voltage of A1SX40 across the terminals must be reduced to within 4 [V]. The current for reducing the voltage across the terminals to within 4 [V] is:

$$(24 - 4 [V] \div 4.7 [k\Omega] = 4.26 mA)$$

Therefore resistor R for flowing current I of 4.26 [mA] must be connected.

Resistance of the connected resistor R is obtained in the following equations.

$$4 [V] \div R > 4.26 - 1.21 [mA] ← 4 [V] ÷ Input impedance 3.3 [kΩ] $4 [V] \div 3.05 [mA] > R$
 $1.31 [kΩ] > R$$$

Suppose that the resistance R is 1.2 [k Ω].

The power capacity W of the resistor during activation of the switch is:

 $W = (Applied voltage)^2/R$

 $W = (26.4 \text{ [V]})^2 / 1.2 \text{ [k}\Omega\text{]} = 0.58 \text{ [W]}$

• Because the resistance is selected so that the power capacity is three to five times the actual power consumption, 2 to 3 [W] should be selected. From the above, the resistor to be connected across the terminal in question and COM is 1.2 [k Ω] 2 to 3 [W].

8.2 Output Circuit Failures and Corrective Action

This section describes possible problems with output circuits, and corrective action.

Table 8.2 Output Circuit Failures and Corrective Action

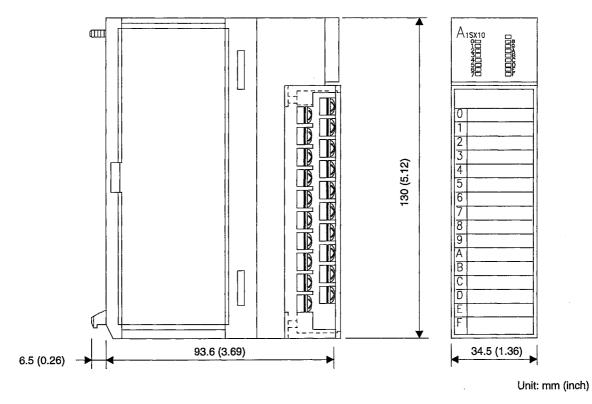
		Table 6.2 Output Circuit Failures and C	
	Condition	Cause	Corrective Action
Example 1	When the output is OFF, excessive voltage is applied to the load.	Load is half-wave rectified inside (in some cases, this is true of a solenoid). A1SY22 Output module Load (2) When the polarity of the power supply is as shown in (1), C is charged. When the polarity is as shown in (2), the voltage charged in C plus the line voltage are applied across D1. Max. voltage is approx. 2.2E.	Connect a resistor several tens to hundreds of kΩ across the load. If a resistor is used in this way, it does not pose a problem to the output element. But it may cause the diode, which is built into the load, to deteriorate, resulting in a fire, etc. Resistor Load
Example 2	The load does not turn OFF (triac output).	Leakage current due to built-in noise suppression A1SY22 Output module Load Leakage current	Connect the resistors to both ends of the load. When the wiring distance from the output module to the load is long, there may be a leakage current due to the line capacity. Resistor Load
Example 3	When the load is a CR type timer, time constant fluctuates (triac output).	A1SY22 Output module CR timer Leakage current	Connect the resistors to both ends of the CR timer. When the wiring distance from the output module to the load is long, there may be a leakage current due to the line capacity. Resistor CR timer Calculate the CR constant depending on the load.

APPENDICES

APPENDIX 1 OUTSIDE DIMENSIONS

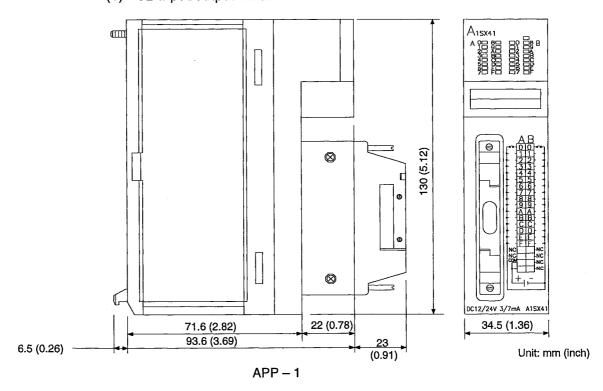
1.1 input/Output Modules

1.1.1 Terminal base connecting type

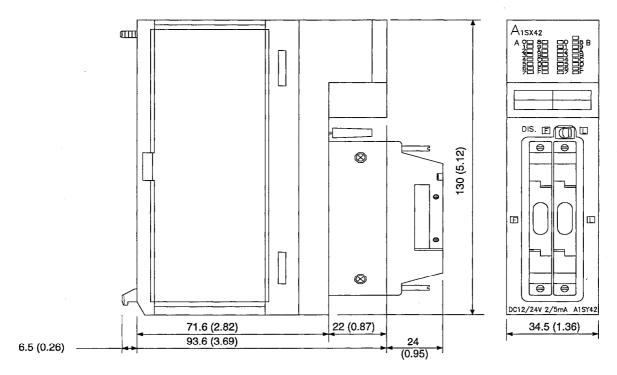


1.1.2 40-pin connector type

(1) 32-input/output module

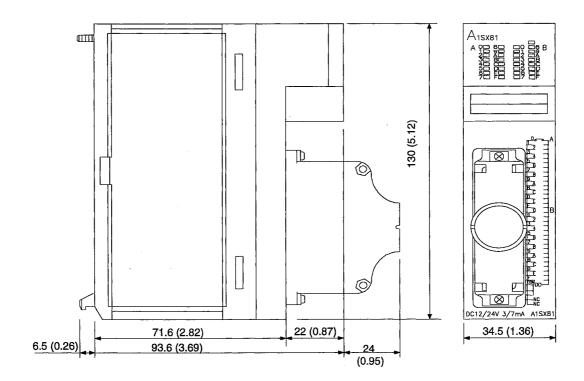


(2) 64-input/output module



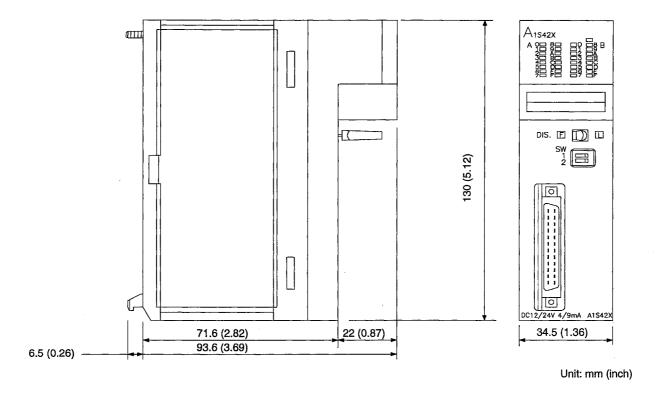
Unit: mm (inch)

1.1.3 37-pin D sub-connector type 32-input/output module

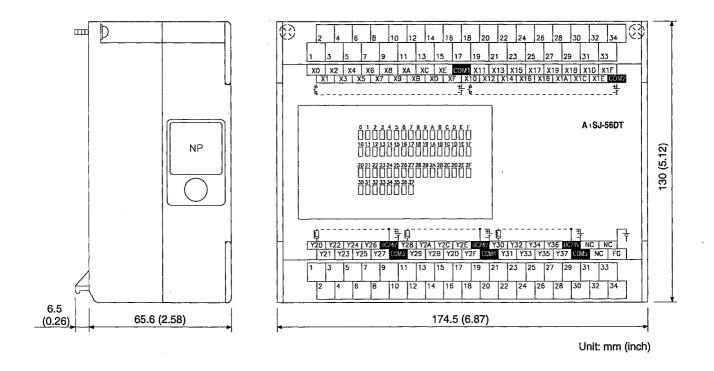


Unit: mm (inch)

1.2 Dynamic I/O Module

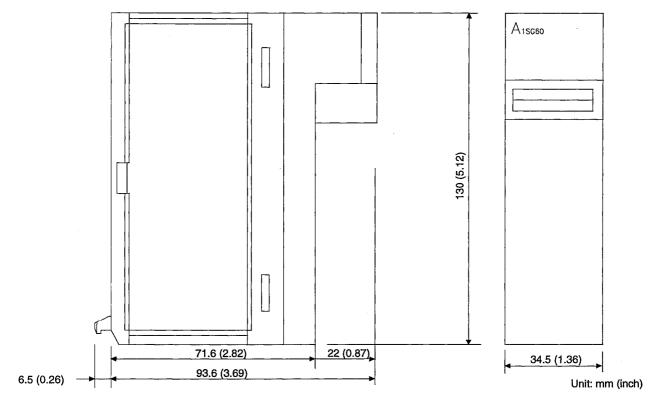


1.3 A1SJ-56 Input/Output Combination Module

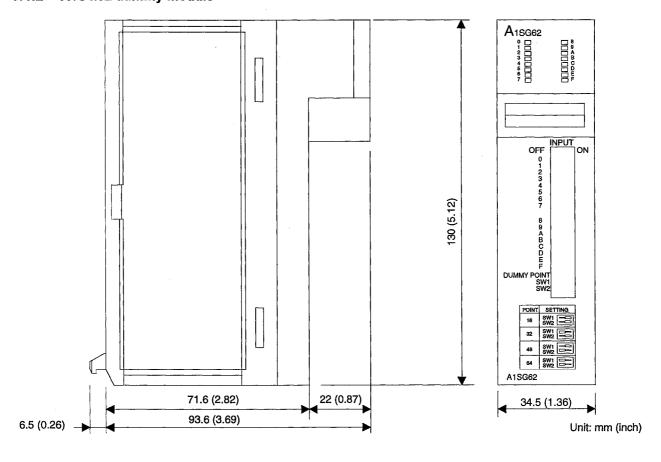


1.4 Dummy Module, Blank Cover

1.4.1 A1SG60 blank cover



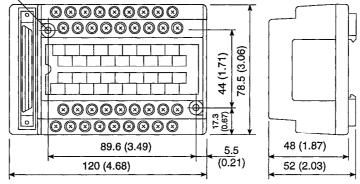
1.4.2 A1SG62 dummy module



1.5 Connector/Terminal Block Convertor Modules

1.5.1 A6TB[[36]] type connector/terminal block convertor module

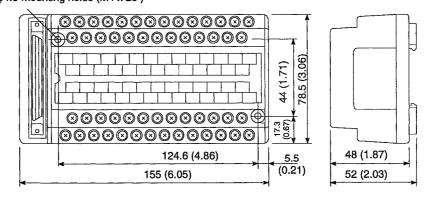
2-φ4.5 mounting holes (M4 x 25)



Unit: mm (inch)

1.5.2 A6TB[[54]] type connector/terminal block convertor module

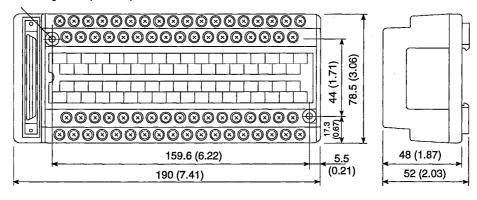
2-\phi4.5 mounting holes (M4 x 25)



Unit: mm (inch)

1.5.3 A6TBX70 type connector/terminal block convertor module

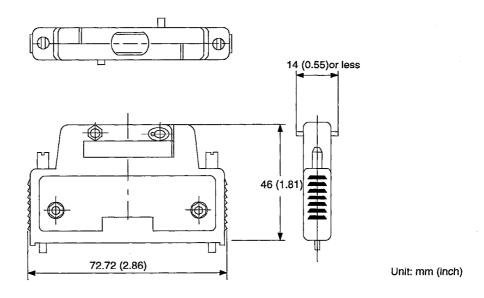
2-\phi4.5 mounting holes (M4 x 25)



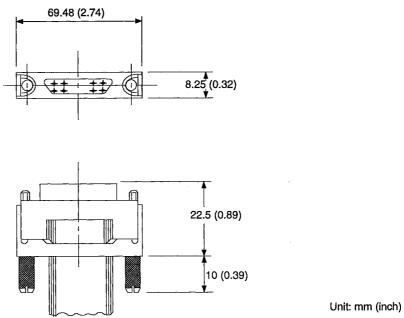
Unit: mm (inch)

40-Pin Connectors

A6CON1 soldering-type 40-pin connector (straight out type), 1.6.1 A6CON2 crimp-contact-type 40-pin connector (straight out type)

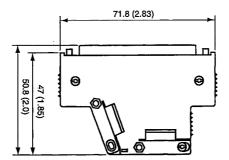


1.6.2 A6CON3 pressure-displacement-type 40-pin connector (flat cable type)



1.6.3 A6CON4 soldering type 40-pin connector (straight/diagonal out type)



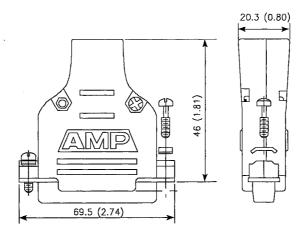


Unit: mm (inch)

If the cable diameter is thinner than the clamp portion, wind tape, etc. to secure the cable so that it will not come off the cable clamp portion. If the cable is made of slippery material, it is recommended to take anti-slip measures by winding rubber-based tape, etc.

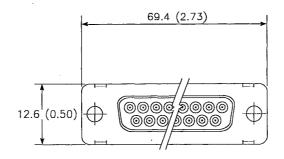
1.7 Pin D Sub-Connectors

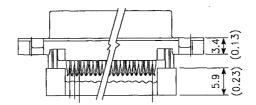
1.7.1 A6CON1E soldering type 37-pin D sub-connector (straight out type) A6CON2E crimp-contact-type 37-pin D sub-connector (straight out type)



Unit: mm (inch)

1.7.2 A6CON3E pressure-displacement-type 37-pin D sub-connector (flat cable type)





Unit: mm (inch)

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.
 - 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.

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.

AnS Module type I/O

User's Manual

MODEL	ANS-TYPE-I/O-U-E	
MODEL CODE	13JE81	
IB(NA)-66541-J(0305)MEE		



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

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.



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