MITSUBISHI

AnS Module Type I/O User's Manual

Mitsubishi Programmable Controller

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

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

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

Please save this manual to make it accessible when required and always forward it to the end user.

[DESIGN PRECAUTIONS]



<!> DANGER

- Install a safety circuit external to the PLC that keeps the entire system safe even when there are problems with the external power supply or the PLC module. Otherwise, trouble could result from erroneous output or erroneous operation.
 - (1) Outside the PLC, 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 PLC 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 PLC 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 PLC 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 PLC 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.

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 \rightarrow ON. Take measures such as replacing the module with one having sufficient rated current.

[INSTALLATION PRECAUTIONSDANGER]

\bigwedge \circ

CAUTION

- Use the PLC in an environment that meets to the general specifications contained in this
 manual. Using the PLC 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 externally supplied power used in the system when installing or placing wiring. Not completely turning off all power could result in electric shock or damage to the product.
- When turning on 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.

\triangle

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 PLC, 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.
- Switch off all phases of the externally supplied power used in the system when cleaning the module or retightening the terminal or module mounting screws.
 Not doing so could result in electric shock.

\triangle

CAUTION

- Do not disassemble or modify the modules. Doing so could cause trouble, erroneous operation, injury, or fire.
- Use any radio communication device such as a cellular phone or a PHS phone more than 25cm (9.85 inch) away in all direction of the PLC.
 Not doing so can cause a malfunction.
- Switch off all phases of the externally supplied power used in the system when mounting or removing the module.
 Not doing so could result in failure or malfunction of the module.
- Do not drop or give an impact to the battery installed in the module.
 Otherwise the battery will be broken, possibly causing internal leakage of electrolyte.
 Do not use but dispose of the battery if it has fallen or an impact is given to it.
- Do not install/remove the terminal block more than 50 times after the first use of the product. (IEC61131-2-compliant)
- Always make sure to touch the grounded metal to discharge the electricity charged in the electricity charged in the body, etc., before touching the module.
 Failure to do say cause a failure or malfunctions of the module.

[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
ļ		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
		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

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

Print Date	*Manual Number	Revision
May., 2003	IB (NA) 66541-J	Partial correction
		Section 1.2
Dec., 2003	IB (NA) 66541-K	Addition of models
		A1SY42P
		Partial correction
		SAFETY PRECAUTIONS, Section 1.2, 5.1
		Addition
		Section 3.11.1
Nov., 2004	IB (NA) 66541-L	Partial correction
		SAFETY PRECAUTIONS, Section 1.2, 3.7.1, 3.8, 3.15, 5.2.1, 5.2.2
Sep., 2005	IB (NA) 66541-M	Partial correction
		Chapter 1, Section 1.1, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.10, 2.11, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.10, 3.11, 3.11.1, 3.19, 4.1.1, 4.1.2, 4.1.3, 4.1.6, 5.1, Chapter 7, Appendix 1.2, 1.5.1, 1.5.2, 1.5.3, 1.6.2 Chapter 2 through 4 have been changed for the external connection diagrams.
		Addition
		Appendix 1.5.4
Jul., 2006	IB (NA) 66541-N	Addition of models
		A1SY40P, A1SY41P
		Partial correction
		SAFETY PRECAUTIONS, Section 1.2, 3.7, 3.7.1, 5.1, 6.1
		Addition Section 3.9.1, 3.10.1
Apr., 2008	IB (NA) 66541-O	Addition of models
		A1SH42P, A1SH42P-S1
		Partial correction
,		Section 1.2, 3.6, 3.7, 3.8, 3.9.1, 3.10.1, 3.11.1, 3.19, 4.1.1, 4.1.3, 5.1, 5.2.1, 5.2.2, 8.1, Appendix 1.6.1, 1.6.3, 1.7.1 Chapter 2 through 4 have been changed for the external connection diagrams.
		Addition Section 4.1.2, 4.1.4

Japanese Manual Version SH-3497-Q

INTRODUCTION

Thank you for purchasing the MELSEC-A series PLC.
Before using the equipment, please read this manual carefully to develop full familiarity with the functions and performance of the A-series PLC you have purchased, so as to ensure correct use. Please forward a copy of this manual to the end user.

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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)

- MELSEC-A

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

This chapter describes the general specifications of I/O modules and instructions for selecting them.

1.1 General Specifications

The followings are specifications common to modules being used.

General Specifications

	Gener	al Specificati	ons		
ltem		Spe	ecifications		
Operating ambient tem- perature	0 to 55 °C				
Storage ambient tempera- ture	-20 to 75 °C				
Operating ambient humid- ity		10 to 90 % i	RH, no condensa	tion	
Storage ambient humidity		10 to 90 % l	RH, no condensa	tion	
			Intermitten	t vibrations	
		Frequency	Acceleration	Amplitude	Sweep count
	Conforms to JIS B	10 to 57 Hz		0.075 mm	
Vibration resistance	3502 and IEC 61131-2	57 to 150 Hz	9.8 m/s ²	-	10 times each
	3502 and 120 61151-2	Co	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	(147 m/s	Conforms to JIS ² , three times ea	B 3502 and IEC ch for three ortho	61131-2 ogonal directions	s)
Operating ambiance		No corrosive	gas should be pr	esent	
Operating altitude *3		2000 m	(6562ft.) or less		
Installation position		In the	control panel		
Overvoltage category *1			II or less		
Pollution level *2			2 or less		
Dielectric withstand voltage	Between all AC external terminal and grounding: 1500VAC for 1 min. Between all DC external terminal and grounding: 500VAC for 1 min.				
Noise immunity	By 1500Vp.p of AC type noise voltage, 500Vp.p of DC type noise voltage and 1 μ s noise width and 25 to 60 Hz noise frequency.				
Insulation resistance		AC external termer measured with			⊋or

REMARK

- *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 PLC in the environment where the pressure is higher than the atmospheric pressure at sea level. Otherwise, malfunction may result. To use the PLC in high-pressure environment, contact your nearest Mitsubishi representative.

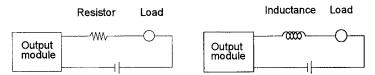
1.2 Selecting Instructions

(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.)

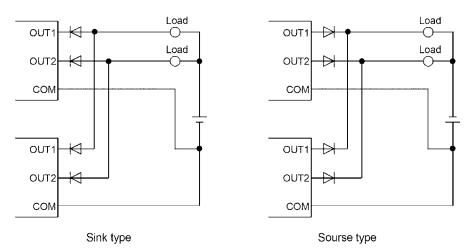
- (2) If an inductive L load is driven by an output module, it must be switched ON for 1 second or longer and switched OFF for 1 second or longer.
- (3) If a counter or timer which has a DC-DC converter as a load is used with an A1SY40, A1SY40P, A1SY41, A1SY41P, A1SY42, or A1SY42P output module, a fault 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) Connecting the transistor output modules in parallel may result in failure of the output elements.

If connecting the transistor output modules in parallel, use diodes for the circuit as shown below.



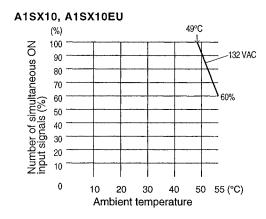
(5) Fuses installed in output modules cannot be replaced. They are principally designed to protect external wiring if the module outputs are shorted.

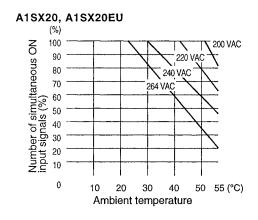
Therefore, output modules may not be protected from a short circuit.

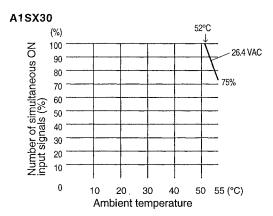
If an output module becomes faulty due to any cause other than a short circuit, its fuse may not function.

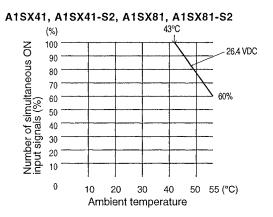
(6) The number of signals which can be turned ON simultaneously in an input module varies according to the input voltage and ambient temperature. Select the number of the simultaneous ON signals by referring to the charts on the next page.

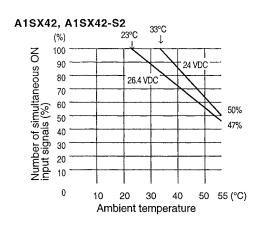
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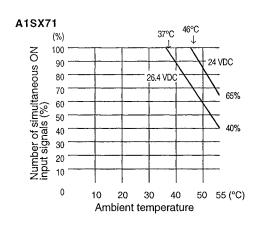


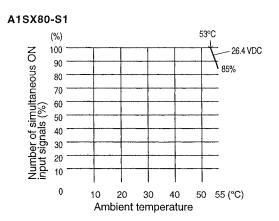


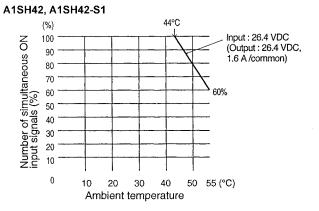




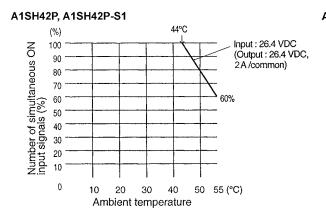


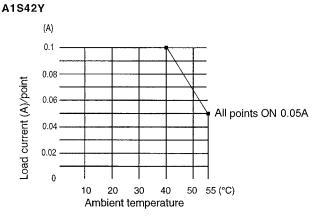


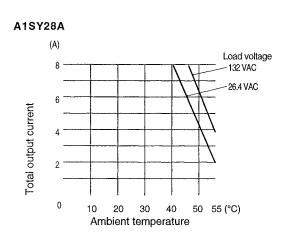


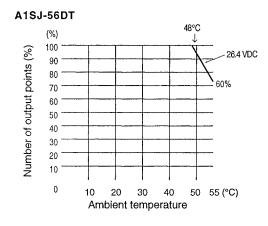


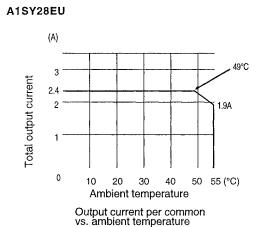
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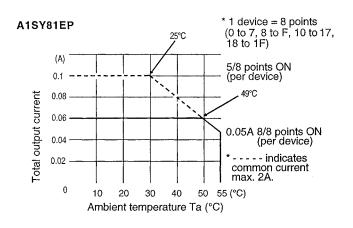










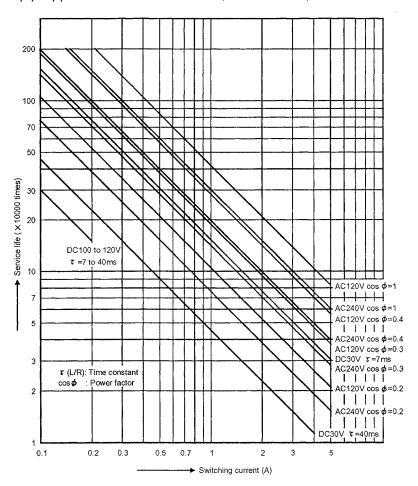


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(6) The chart below shows the service life of relay output modules.

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

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



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Point |

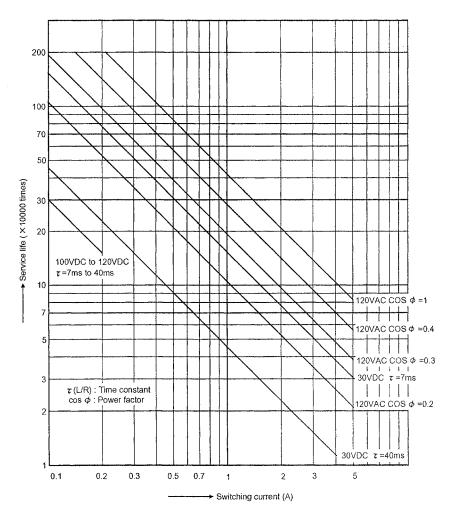
- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 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.

- (8) The Chart below shows the service life of relay output modules. Select the appropriate modules, considering the direction given in (1).
 - (a) Applicable module: A1SY10EU



module is powered on.

MELSEC-A

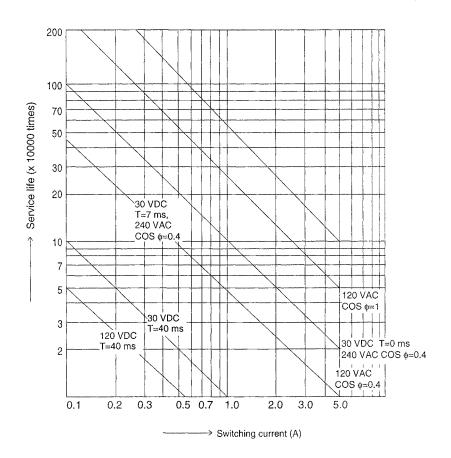
Point

- (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
- (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
 - (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: A1SY14AEU



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Point

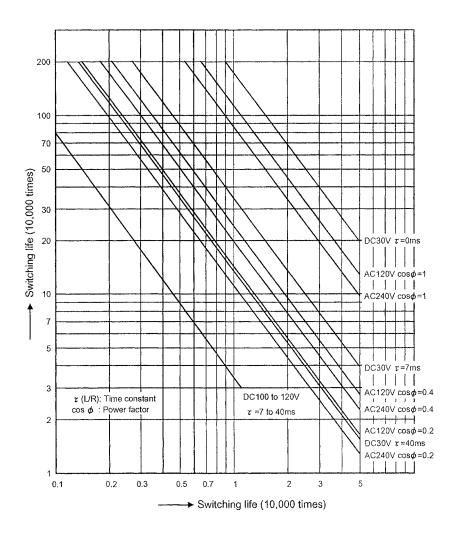
- (1) When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered.

 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.

(c) Aplicable module: A1SY18A, A1SY18AEU



MELSEC-A

Point

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

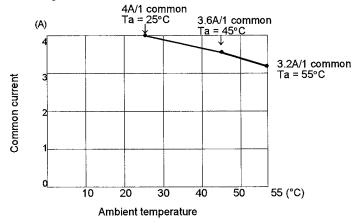
 Therefore, it is recommended to use a triac output module.
- (2) The relay life curve shows the value based on actual use, which is not guaranteed. Therefore, make sure to allow for a margin of error. The relay life span differs according to the specifications as follows: Rated switching voltage, current load 200 thousand operations 200VAC 1.5A, 240VAC 1A (COS ϕ =0.7) 200 thousand operations 200VAC 0.5A, 240VAC 0.5A (COS ϕ =0.35) 200 thousand operations 24VDC 1A, 100VDC 0.1A (L/R=7ms) 200 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.

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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.

A1SY60 derating curve



- (8) The A1SX41 and A1SX42 input modules and the A1SY41, A1SY41P, A1SY42 and A1SY42P 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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(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 768349-1, 768338-1 (die set) 91220-1 (cable cutter) 91085-2 (hand press)

Applicable wire size

: AWG #28 (twisted) AWG #30 (single wire)

(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) The overload protection function and overheat protection function of the following modules will be explained below.
 - (a) A1SY40P, A1SY41P, A1SY42P, A1SH42P, A1SH42P-S1

Function	Description
Common (Overload and overheat protection functions)	 If an overcurrent keeps flowing due to overload, heat is generated to activate the overheat protective function. Each protection function is designed to protect the internal elements of the module, not the external equipment.
Overload protection function	 The overload protection function is activated in 1 point increments in terms of 1A to 3A/point. The overload protection function returns operation to normal when the load becomes a rated load
Overheat protection function	 The overheat protection function is activated in 1 point increments. The overheat protection function automatically returns operation to normal when heat reduces.

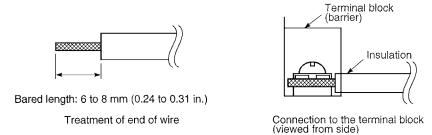
MELSEC-A

(12) Precautions for handling the I/O modules compatible with A1SX □□ EU, A1SY □□ EU type marked CE.

When connecting electric cable to the terminal block without using solderless terminals.

(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 not 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



- (b) If twisted wire is used, make sure that is does not unravel.
- (13) 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, A1SY41P, A1SY50, A1SY60(E), A1SY68A, A1SY80, A1SY81EP
Input/output composite module	A1SX48Y18, A1SX48Y58
Special function module	A1SI61, A1S64AD, A1S62DA, A1S63ADA, A1S62RD3/4, A1SD61, A1SP60

(14) 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

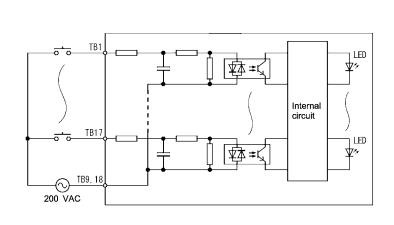
	Model	AC Input Module		
Specifications		A1SX10	Anne	arance
Number of inpu		16 points		
Isolation metho	d	Photocoupler	A1SX10	
Rated input vol	tage	100 to 120 VAC 50/60 Hz	1000	
Input voltage di	stortion factor	5% or less (See section 1.2 (13))		3
Rated input cur	rent	Approx. 6 mA (100 VAC 60 Hz)	7.0	
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)	0	
Inrush current		Max. 200 mA, within 1 ms (132 VAC)		
ON voltage/ON		80 VAC or higher/5 mA or higher	2	
OFF voltage/OF		30 VAC or lower/1.4 mA or lower	3	
Input impedanc	е	Approx. 18 kΩ (60 Hz), Approx. 21 kΩ (50 Hz)	4	
Response	$OFF \rightarrow ON$	20 ms or less (100 VAC 60 Hz)	5	
time	$ON \rightarrow OFF$	35 ms or less (100 VAC 60 Hz)	6	
Common termir arrangement	nal	16 points/common (common terminals: TB9, TB18)	7	
Operating indic	ator	ON state is indicated (LEDs)	8	
External connec	ctions	20-point terminal block connector (M3.5 x 7 screws)	9	
Applicable wire		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 RAV1.25-3.5, RAV2-3.5	С	
Accessories		None	D	
Internal current consumption (5	VDC)	50 mA (TYP, all points ON)	E	
Weight kg		0.21	F	
		External Connections		
			Terminal No.	Signal Name
			TB1	X00
			TB2	X01
			TB3	X02
]			TB4	X03
			TB5	X04
•		TB1	TB6	X05
			TB7	X06
-			TB8	X07
			TB9	СОМ
ł .		Internal	TB10	X08
	, , , , , , , , , , , , , , , , , , ,	IB17 / 150	TB11	X09
		▼ 	TB12	XOA
			TB13	XOB
	LE TB	0, 18		
	100 VAC		TB14 TB15	X0C X0D
			TB16	X0E
				X0E X0F
				COM
			TB18 TB19	Vacant

2.2 A1SX10EU AC Input Module

Mod	AC Input Module	T	
Specifications	A1SX10EU	Anno	arance
Number of input points	16 points	Арре	arance
Insulation method	Photocoupler		
Rated input voltage	100 to 120 VAC 50/60 Hz	- A1SX10E	U
Input voltage distortion factor			000000Ef
Rated input current	Approx. 7 mA (120 VAC 60 Hz)		
Operating voltage range	85 to 132 VAC (50/60 Hz ±5%)		
Max. simultaneous input points	100% simultaneously ON		
Inrudh current	Max. 200 mA, within 1 ms (132 VAC)	0	
ON voltage/ON current	80 VAC or higher/5 mA or higher	7 1	
OFF voltage/OFF current	30 VAC or lower/1.4 mA or lower	2	
Input impedance	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 → OFF	35 ms or less (100 VAC 60 Hz)	5	
Common terminal		6	
arrangement	16 points/common (common terminals: TB9, TB18)	7	
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 mm^2 (AWG16 to AWG19) (Applicable tightening torque 78.4 N \bullet cm)	A	
Applicable crimp terminals	RAV1.25-3.5	В В	
Accessories	None		
Insulation withstand voltage	1780 VAC rms/3 cycle (altitude 2,000 m)	D	
Insulation resistor	10 $M\Omega$ or higher at insulation resistance tester	F	
Noise immunity	IEC801-4:1 kV		
Internal current consumption (5 VDC)	50 mA (TYP, all points ON)		
Weight kg	0.21		
	External Connections		
			Y
		Terminal No.	Signal Name
		Terminal No.	Signal Name X00
		TB1	X00
		TB1 TB2	X00 X01
	· ·	TB1 TB2 TB3	X00 X01 X02
o`o	TBI LED	TB1 TB2 TB3 TB4 TB5	X00 X01 X02 X03 X04
	TBI LED Y	TB1 TB2 TB3 TB4 TB5 TB6	X00 X01 X02 X03 X04 X05
,	The state of the s	TB1 TB2 TB3 TB4 TB5 TB6 TB7	X00 X01 X02 X03 X04 X05 X06
	¥* ≠ ₹ √ / / / / / / / / / / / / / / / / / /	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8	X00 X01 X02 X03 X04 X05 X06 X07
	The state of the s	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9	X00 X01 X02 X03 X04 X05 X06 X07 COM
	Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8	X00 X01 X02 X03 X04 X05 X06 X07
	Internal circuit LED	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9	X00 X01 X02 X03 X04 X05 X06 X07 COM
	Internal circuit	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10	X00 X01 X02 X03 X04 X05 X06 X07 COM X08
	Internal circuit LED	TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09
	Internal circuit LED V LED V LED V V LED V V V V V V V V V V V V V	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
TB:	Internal circuit LED V LED V LED V V LED V V V V V V V V V V V V V	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 LED V LED V LED V V LED V V V V V V V V V V V V V	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 LED V LED V LED V V LED V V V V V V V V V V V V V	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 LED V LED V LED V V LED V V V V V V V V V V V V V	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
TB:	Internal circuit LED V LED V LED V V LED V V V V V V V V V V V V V	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 LED V LED V LED V V LED V V V V V V V V V V V V V	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

2.3 A1SX20 AC Input Module

Model		AC Input Module		
Specifications		A1SX20	Appearance	
Number of inpu	ıt points	16 points	A1SX20	
Isolation metho	od	Photocoupler		
Rated input vol	tage	200 to 240 VAC 50/60 Hz		
Input voltage d	istortion factor	5% or less (See section 1.2 (13))		
Rated input cui	rrent	Approx. 9 mA (200 VAC 60 Hz)		
Operating volta	ige range	170 to 264 VAC (50/60 Hz ±5%)		
Max. simultane points	ous input	60% simultaneously ON (at 220 VAC)	0	
Inrush current		Max. 500 mA, within 1 ms (264 VAC)	1	
ON voltage/ON	current	80 VAC or higher/4 mA or higher	2	
OFF voltage/O	FF current	30 VAC or lower/1 mA or lower	3	
Input impedance	e	Approx. 22 kΩ (60 Hz), Approx. 27 kΩ (50 Hz)	4	
Response	OFF → ON	30 ms or less (200 VAC 60 Hz)	5	
time	$ON \rightarrow OFF$	55 ms or less (200 VAC 60 Hz)	6	
Common terminarrangement	nai	16 points/common (common terminals: TB9, TB18)	7 8	
Operating indic	ator	ON state is indicated (LEDs)	9	
External conne	ctions	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)	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		



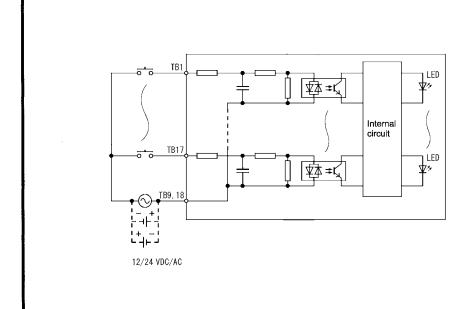
Terminal No.	Signal Name
TB1	X00
TB2	X01
TB3	X02
TB4	X03
TB5	X04
TB6	X05
TB7	X06
TB8	X07
TB9	СОМ
TB10	X08
TB11	X09
TB12	X0A
TB13	X0B
TB14	X0C
TB15	XOD
TB16	XOE
TB17	X0F
TB18	СОМ
TB19	Vacant
TB20	Vacant

2.4 A1SX20EU AC Input Module

	Model	AC Input Module			
Specifications	5	A1SX20EU	Appearance		
Number of input	t points	16 points			
Insulation metho	od	Photocoupler	A1SX20E	U .	
Rated input volt	tage	200 to 240 VAC 50/60 Hz			
Input voltage di	stortion factor	5% or less (See section 1.2 (13))		8 * A B C O E F	
Rated input curr	rent	Approx. 11 mA (240 VAC 60 Hz)		<u> </u>	
Operating voltage	ge range	170 to 264 VAC (50/60 Hz ±5%)			
Max. simultaned points	ous input	60% simultaneously ON (at 220 VAC)			
Inrush current		Max. 500 mA, within 1 ms (264 VAC)			
ON voltage/ON	current	80 VAC or higher/4 mA or higher			
OFF voltage/OF	F current	30 VAC or lower/1 mA or lower			
Input impedance	е	Approx. 22 kΩ (60 Hz), Approx. 27 kΩ (50 Hz)	3		
Response	$OFF \to ON$	30 ms or less (200 VAC 60 Hz)	4		
time	ON → OFF	55 ms or less (200 VAC 60 Hz)	5		
Common termin			6		
arrangement		16 points/common (common terminals: TB9, TB18)			
Operating indica	ator	ON state is indicated (LEDs)	8		
External connec	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)	A B		
Applicable crim	p terminals	RAV1.25-3.5			
Accessories		None			
la sul sti sa suith s	tand	0000 1/40	E		
Insulation withs voltage		2830 VAC rms/3 cycle (altitude 2,000 m)			
		$10 \text{ M}\Omega$ or higher at insulation resistance tester	F		
voltage	tor				
voltage Insulation resist	tor	10 M Ω or higher at insulation resistance tester			
voltage Insulation resist Noise immunity Internal current	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV			
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON)	F		
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23	Terminal No.	Signal Nam	
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23	F	Signal Nam X00	
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23	Terminal No.		
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23	Terminal No.	X00	
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23	Terminal No. TB1 TB2	X00 X01	
voltage Insulation resist Noise immunity Internal current consumption (5	tor	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3	X00 X01 X02	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5	X00 X01 X02 X03 X04	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6	X00 X01 X02 X03 X04 X05	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7	X00 X01 X02 X03 X04 X05 X06	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8	X00 X01 X02 X03 X04 X05 X06 X07	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9	X00 X01 X02 X03 X04 X05 X06 X07 COM	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8	X00 X01 X02 X03 X04 X05 X06 X07	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9	X00 X01 X02 X03 X04 X05 X06 X07 COM	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10	X00 X01 X02 X03 X04 X05 X06 X07 COM X08	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC)	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. 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	
voltage Insulation resist Noise immunity Internal current consumption (5	VDC) TB TB9.	10 MΩ or higher at insulation resistance tester IEC801-4:1 kV 50 mA (TYP, all points ON) 0.23 External Connections	Terminal No. TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB15	X00 X01 X02 X03 X04 X05 X06 X07 COM X08 X09 X0A X0B X0C X0D X0E X0F	

2.5 A1SX30 DC/AC Input Module

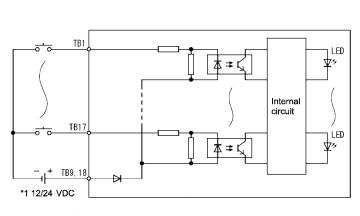
Model		DC/AC Input Module			
Specifications			Appearance		
Number of inpu	t points	16 points		A1SX30	
Isolation metho	d	Photocoupler			
Rated input vol	tage	12/24 VDC	12/24 VAC 50/60 Hz		
Rated input cur	rent	4 mA (12 VDC/VAC), 8.5 mA	(24 VDC/VAC)	; B B = F	
Operating volta	ge range	10.2 to 26.4 VDC (ripple: less than 5%)	10.2 to 26.4 VAC (50/60 Hz ±5%)		
Max. simultane points	ous input	75% simultaneously ON (at 26	6.4 VDC)	0	
ON voltage/ON	current	7 VDC/AC or higher/2 mA or h	nigher	1	
OFF voltage/OF	F current	2.7 VDC/AC or lower/0.7 mA	or lower	2	
Input impedanc	е	Approx. 2.7 kΩ		3	
Response	$OFF \to ON$	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)	6	
Common termin arrangement	nal	16 points/common (common terminals: TB9, TB18)		7	
Operating indic	ator	ON state is indicated (LEDs)		8	
External connec	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)		A	
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5		C	
Accessories		None		D	
Internal current consumption (5 VDC)		50 mA (TYP, all points ON)		E	
Weight kg		0.2			
		Exteri	nal 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

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

Model		DC Input Module (Sink Type)						
Specifications		A1SX40		A1SX40-S1	A1SX40-S2	Appearance		
Number of input points		16 points		<u>, , , , , , , , , , , , , , , , , , , </u>				
Isolation	n method	Photocoupler				A1SX40		
Rated in	nput voltage	12 VDC	24 VDC	24 VDC				
Rated in	nput current	Approx. 3 mA	Approx. 7 mA	Approx. 7 mA		0000000 000000000000000000000000000000		
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%)	7 0 0 5		
Max. sin	multaneous oints	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	Itage/OFF	4 VDC or lower/1 mA or lower		6.5 VDC or lower/1.7 mA or lower		2		
Input re	sistance	Approx. 3.3 kΩ	Approx. 3.3 kΩ			3		
Re-	OFF → ON	10 ms or less (24 VDC)		0.1 ms or less (24 VDC)	10 ms or less (24 VDC)	5		
sponse time	$ON \rightarrow OFF$	10 ms or less (2	4 VDC)	0.2 ms or less (24 VDC)	10 ms or less (24 VDC)	6		
Commoi	n terminal ment	16 points/comm	8					
Operatir	ng indicator	ON state is indic	9					
External	l connections	20-point termina	A					
Applicat	ble wire size	0.75 to 1.25 mm	В					
Applicable solderless terminals		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5				C		
Accesso	ories	None						
Internal current consumption (5 VDC)		50 mA (TYP, all	points ON)	F				
Weight I	kg	0.2						
				External Connections				

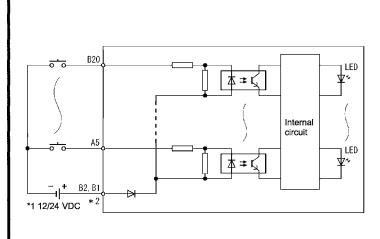


*1: A1SX40-S1/S2 is 24 VDC only.

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	COM
TB19	Vacant
TB20	Vacant

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

Model			DC Input Module (Sink Type)				
Specifications		A1SX41		A1SX41-S1 A1SX41-S2		Appearance	
Number of input points		32 points					
Isolation method	t l	Photocouple	er	· · · · · · · · · · · · · · · · · · ·		A1SX41	
Rated input volt	age	12 VDC	24 VDC	24 VDC		4 0 0 8 0 0 0 0 8 8 10 90 0 10 9 20 40 0 20 4 30 80 0 3 0 8	
Rated input curr	ent	Approx. 3 mA	Approx. 7 mA	Approx. 7 mA		100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Operating voltag	ge range	10.2 to 26.4 (ripple: less		19.2 to 26.4 VDC (ripple	: less than 5%		
Max. simultaneo	us input points	60% (20 poi	nts/common) simultaneously ON (at 2	26.4 VDC)		
ON voltage/ON	current	8 VDC or hi 2 mA or high		17 VDC or higher/ 4.5 mA or higher	14 VDC or higher/ 3.5 mA or higher		
OFF voltage/OFF current		4 VDC or lower/ 1 mA or lower		3.5 VDC or lower/ 0.8 mA or lower	6.5 VDC or lower/ 1.7 mA or lower	A 8	
Input resistance		Approx. $3.3 \text{ k}\Omega$			2 2 3 3 3 4 4 4		
D	$OFF \rightarrow ON$	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 termin arrangement	al	32 points/common (common terminals: B1, B2)			A A		
Operating indica	itor	ON state is indicated (LEDs)				D D -	
External connec	tions	40-pin conn	ector	NC - NC			
Applicable wire size		0.3 mm ²				COM	
Accessories		Connector (1 pce.) for external wiring (soldering type)					
Internal current consumption (5 VDC)		80 mA (TYP, all points ON) 120 mA (TYP, all points ON) (TYP, all points ON)		DC12/24V 3/7mA A1SX41			
Weight kg		0.21				00:2/24V 3/7MM ATSX41	
				External Connections			



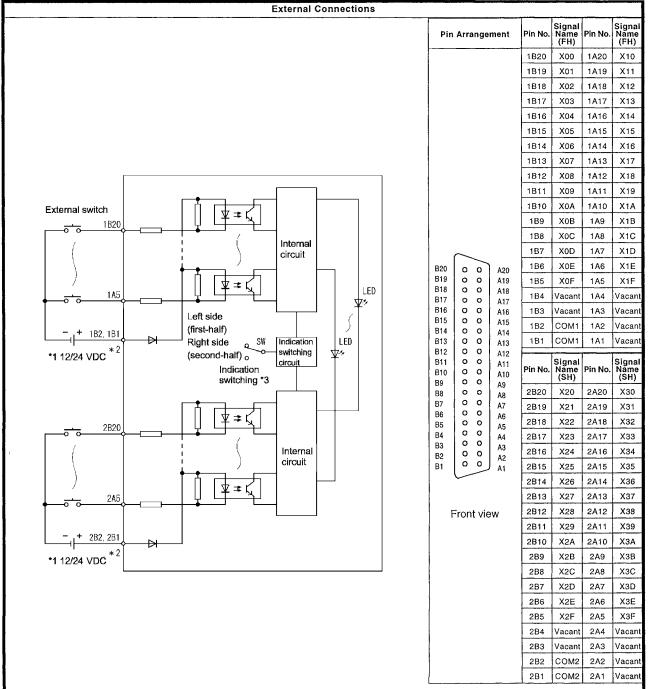
i										
Arra	Pin Arrangement			Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)			
				B20	X00	A20	X10			
				B19	X01	A19	X11			
	\sim	_		B18	X02	A18	X12			
B20 B19	0	0	A20	B17	X03	A17	X13			
B18	0	0	A19 A18	B16	X04	A16	X14			
B17	o	o	A17	B15	X05	A15	X15			
B16 B15	0	0	A16 A15	B14	X06	A14	X16			
B14	0	0	-	-	-	A14	B13	X07	A13	X17
B13 B12	0	0	A13	B12	X08	A12	X18			
B11	0	0	O A12 O A11	B11	X09	A11	X19			
B10 B9	0	0	A10	B10	XOA	A10	X1A			
B8	0	0	A9 A8	В9	X0B	A9	X1B			
B7	0	0	A7	B8	X0C	A8	X1C			
B6 B5	0	0	A6 A5	B7	XOD	A7	X1D			
B4	0	0	A4	В6	X0E	A6	X1E			
B3 B2	0	0	A3 A2	B5	X0F	A5	X1F			
B1	ő	o .	A1	B4	Vacant	A4	Vacant			
	_			В3	Vacant	A3	Vacant			
F	ront	vie	W	B2	COM	A2	Vacant			
				B1	СОМ	A1	Vacant			

^{*1:} A1SX41-S1/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		A1SX42 A1SX42-S1 A1SX42-S2		Appearance			
Number of inpu	t points	64 points		<u> </u>		ΓΔ	1SX42
Isolation metho	d	Photocouple	ər			^	
Rated input volt	age	12 VDC	24 VDC	24 VDC			2 D A D D 2 D A D D 2 D A D D 2 D A D D 2 D A D D 2 D A D D 2 D A D D D D
Rated input cur	rent	Approx. 2 mA	Approx. 5 mA	Approx. 5 mA			A 0 0 8 0 0 0 8 0 0 0 0 8 0 0 0 0 0 0 0
Operating volta	ge range	10.2 to 26.4 (ripple: less		19.2 to 26.4 VDC (ripple	: 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/ 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			
D	$OFF \rightarrow ON$	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)			F		
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)					
Internal current consumption (5		90 mA (TYP, all points ON) 160 mA (TYP, all points ON) (TYP, all points ON)					
Weight kg		0.28					C12/24V 2/5mA A1SX42



^{*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)

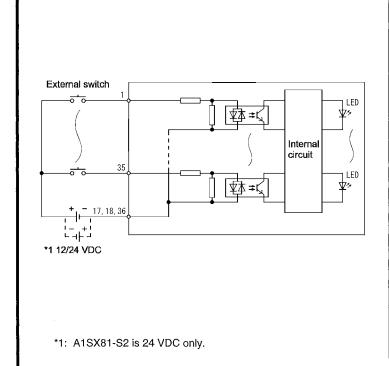
	Model		DC Input Module (Sink/	Source	Comm	on Type)			
Specifications		A1SX71					·····	Арр	earance	
Number of input	t points	32 points						A1SX7		
Isolation method	d	Photocoupler						10000000 10000000000000000000000000000		
Rated input volt	age	5 VDC	12 VDC	24	VDC *1					B C D
Rated input curr	rent	1.2 mA	3.3 mA	7 r	nA			特日	#8 8 # B	7
Operating voltage	ge range	4.5 to 26.4 VDC (ripple:	less than 5%)							
Max. simultaned	ous input points 65% (20 points/common) simultaneously ON (at 24 VDC)									
ON voltage/ON	ge/ON current 3.5 VDC or higher/1 mA or higher									
OFF voltage/OF	tage/OFF current 1.0 VDC or lower/0.1 mA or lower							<u> </u>		
Input resistance	ut resistance Approx. 3.5 kΩ									
Dooponoo timo	$OFF \to ON$	1.5 ms or less								날 레
Response time	$ON \rightarrow OFF$	3 ms or less							111 3 3	
Common termin arrangement	al	32 points/common (com	mon terminals: B1, B2)						3 9 9 9	
Operating indica	ator	ON state is indicated (LI	EDs)						C C	¥]
External connec	tions	40-pin connector								£_
Applicable wire	size	0.3 mm ²							NC NC	HC HC
Accessories		Connector (1 pce.) for e		type)					J-ac
Internal current consumption (5	VDC)	75 mA (TYP, all points ON) (0.08A is shown on the rating plate of the module.)						DC4.5/1	3 2 41	SX71
Weight kg		0.19						504.3/1	0.2 V A1	5X71
			External Connections							
Open collecto	or (Sink)			Ar	Pin rangen	ent	Pin No.	Signal Name	Pin No.	Signal Name
							B20	X00	A20	X10
Г	B20		150]	B19	X01	A19	X11
		↑ 	LED LED				B18	X02	A18	X12
<u> </u>]			B20 B19	0 0	A20	B17	X03	A17	X13
		(In	iternal \	B18	0 0	A19 A18	B16	X04	A16	X14
	A5	;) ci	rcuit /	B17 B16	0 0	A17 A16	B15	X05	A15	X15
			LED	B15	0 0	A15	B14	X06	A14	X16
<u> </u>		<u> </u>	₩	B14 B13	0 0	A14 A13	B13	X07	A13	X17
				B12	0 0	A12	B12	X08	A12	X18
	B2, B1 * 2			B11 B10	0 0	A11 A10	B11	X09	A11	X19
 - - -	-			B9 B8	0 0	A9	B10	XOA	A10	X1A
*1 5/12/2	24 VDC			B7	0 0	A8 A7	В9	X0B	A9	X1B
				B6 B5	0 0	A6	B8	XOC	A8	X1C
				B4	0 0	A5 A4	B7	XOD	A7	X1D
				B3 B2	0 0	A3 A2	B6	X0E	A6	X1E
TTL, LS-TTI	L, CMOS buffer	(Sink) Sensor (So	ource)	B1	00	A2 A1	B5	X0F	A5	X1F
,		. ,	1				B4	Vacant	A4	Vacant
├			B20		Front vi	ew	B3	Vacant	A3	Vacant
		<u>[</u>					B2	COM	A2	Vacant
	$T \mid \cdot \mid$. ; Џ					B1	COM	A1	Vacant
		5/12 VDC_+ \	<u> </u>	L	041/75	l		1		
			B2	!	later ver	sions.		th hardwai s A and B		
		•		1	the oppo nector o	site of	the arrar	ngement o	f pins of	the con-

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

	Model		DC I	nput Module (Sink/	Source Common Ty	pe)	
Specifications	S	A1SX80 A1SX80-S1 A1SX80-S2		Appe	arance		
Number of inpu	t points	16 points		· 	I,		
Isolation metho	d	Photocoupler				A1sx80	m s
Rated input volt	tage	12 VDC	24 VDC	24 VDC			
Rated input current		Approx. 3 mA Approx. 7 mA Approx. 7 mA		0000000			
Operating voltage range		10.2 to 26.4 VDC than 5%)	C (ripple: less	19.2 to 26.4 VDC (I	ripple: less than 5%)		
Max. simultaneous input points		100% simultaned (at 26.4 VDC)	ously ON	85% simultaneously ON (at 26.4 VDC)	100% simultaneously ON (at 26.4 VDC)		
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	1 2	
OFF voltage/OF	F current	4 VDC or lower/1	I mA or lower	5 VDC or lower/1.7 mA or lower	6 VDC or lower/1.7 mA or lower	3 4	
Input resistance)	Approx. 3.3 kΩ				5	
OFF → ON Response time		10 ms or less (24	4 VDC)	0.4 ms or less (24 VDC)	10 ms or less (24 VDC)	6 7	
nesponse une	$ON \rightarrow OFF$	10 ms or less (24	4 VDC)	0.5 ms or less (24 VDC)	10 ms or less (24 VDC)	8	
Common termin arrangement	nal	<u> </u>	~·····································	ninals: TB9, TB18)		9 A	
Operating indica		ON state is indic				В	
External connec				r (M3.5 x 7 screws)	70.41	С	
Applicable wire Applicable solde	· · · · · · · · · · · · · · · · · · ·	R1.25-3.5, R2-3.		19)(Applicable tighteni	ng torque 78.4 N•cm)	D	
termials	eness	RAV1.25-3.5, RA				E	
Accessories		None				F	
Internal current consumption (5		50 mA (TYP, all	points ON)				
Weight kg		0.2					
			External	Connections			1
						Terminal No.	Signal Name
						TB1	X00
						TB2	X01
						TB3	X02
					\neg	TB4	X03
	TB:	1			ED	TB5	X04
			▼ 本 ⇒ ¢			TB6	X05
				┺┤ ├┘,	′	TB7	X06
			(Internal	\	TB8	X07
	TB1	7 !)	circuit	[/]	TB9	COM
	• • •	`	-	<u> </u>		TB10	X08
			<u> </u>			TB11	X09
	- _{.1} + TB9.1	8				TB12	XOA
	1+,-1	Ĭ				TB13	X0B
	└ ┤⊢ ┘ *1 12/24 VDC					TB14	XOC
	I IZIZ4 VDC					TB15	X0D
						TB16	X0E
						TB17	X0F
						TB18	COM
						TB19	Vacant
	*1: A1SX80	0-S1/S2 is 24 VD0	C only.			TB20	Vacant
					100	1020	vacant

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

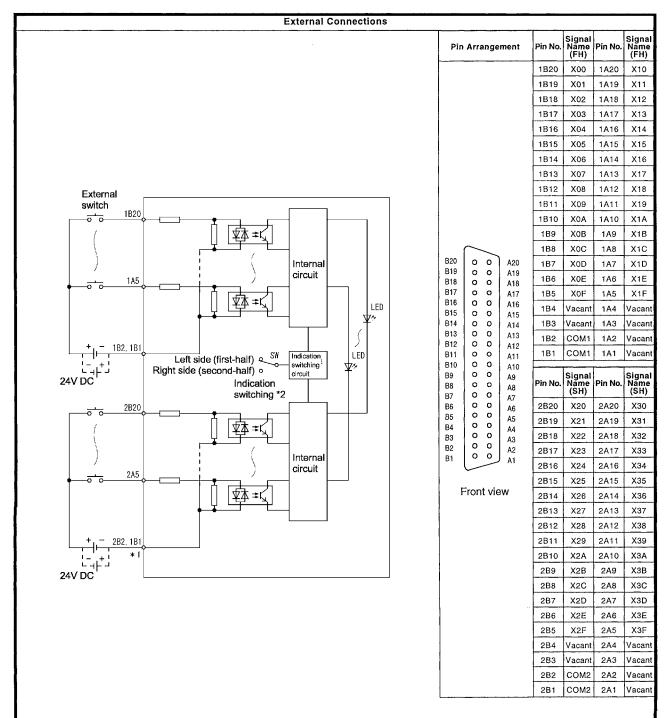
	Model		DC Inpt	ut Module (Sink/Source Common Typ	e)
Specifications	Specifications		A1SX81 A1SX81-S2		Appearance
Number of input	points	32 points			A1SX81
Isolation method	d	Photocoupler			A 00 80 00 08 8
Rated input volt	age	12 VDC	24 VDC	24 VDC	30 80 03 08 40 00 04 00 50 00 05 00
Rated input curi	rent	Approx. 3 mA	Approx. 7 mA	Approx. 7 mA	
Operating voltag	ge range	10.2 to 26.4 VDC 5%)	(ripple: less than	19.2 to 26.4 VDC (ripple: less than 5%)	
Max. simultaneo	ous input points	60% simultaneous	sly ON (at 26.4 VD	C)	
ON voltage/ON	current	8 VDC or higher/2 mA or higher		13 VDC or higher/3.5 mA or higher	
OFF voltage/OF	F current	4 VDC or lower/1 mA or lower		6 VDC or lower/1.7 mA or lower	
Input resistance		Approx. 3.3 kΩ			
Despares time	$OFF \to ON$	10 ms or less (24 VDC)			
Response time	ON → OFF	10 ms or less (24 VDC)			
Common termin arrangement	al	32 points/common (common terminals: 17, 18, 36)			
Operating indica	ator	ON state is indicated (LEDs)			
External connec	tions	37-pin D sub-con	nector		
Applicable wire size		0.3 mm ²			
Accessories		Connector (1 pce.) for external wiring (soldering type)			
Internal current consumption (5 VDC)		80 mA (TYP, all points ON)		E X	
Weight kg		0.24			DC12/24V 3/7mA A1SX81
			External Co	onnections	



Pin Arrangement	Pin No.	Signal Name	Pin No.	Signal Name
	1	X00	9	X10
	20	X01	28	X11
	2	X02	10	X12
20 0 0 1	21	X03	29	X13
20 0 0 2	3	X04	11	X14
22 0 0 3 4	22	X05	30	X15
24 0 0 5	4	X06	12	X16
25 0 0 7 26 0 0 7	23	X07	31	X17
27 0 0 8	5	X08	13	X18
28 0 0 10	24	X09	32	X19
30 0 0 11	6	XOA	14	X1A
31 0 0 13	25	X0B	33	X1B
33 0 0 14	7	X0C	15	X1C
34 O O 16	26	X0D	34	X1D
36 O O 17	8	X0E	16	X1E
37 0 19	27	X0F	35	X1F
	17	COM	37	Vacant
Front view	36	COM	19	Vacant
	18	COM		

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

	Model	DC Input Module (Sink/Source Common	Type)
Specifications		A1SX82-S1	Appearance
Number of input	t points	64 points	A1SX82-S1
Isolation metho	d	Photocoupler	A 0 8 0 0 8 8 1 0 0 1 0 0 1 0 0
Rated input volt	tage	24 VDC	A15X82-51 D A15X82
Rated input cur	rent	Approx. 5 mA	7 O F O O O O F
Operating voltage	ge range	19.2 to 26.4 VDC (ripple: less than 5%)	
Max. simultane	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/OF	F current	3 VDC or lower/0.45 mA or lower	OIS. FOL
Input resistance	•	Approx. 4.7 kΩ	
Response time	OFF → ON	0.3 ms or less (24 VDC)	
Response time	$ON \rightarrow OFF$	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	ctions	40-pin connector	
Applicable wire size		0.3 mm ²	
Accessories		Connectors (2 pces.) for external wiring (soldering type)	
Internal current consumption (5		160 mA (TYP, all points ON)	
Weight kg		0.28	DC24V 5mA A1SX82-S1



^{*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		
Specifications	s	A1SY10	Appea	rance
Number of outp	out points	16 points		
Isolation metho	d	Photocoupler		
Switching rated voltage/current		24 VDC 2 A (load resistance) 240 VAC 2 A (COSφ = 1) /1 point, 8 A/common	A1SY10	. s
Min. switching load		5 VDC 1 mA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	日:
Max. switching		264 VAC 125 VDC	; =	8 9 A B C DE F
Response	$OFF \rightarrow ON$	10 ms or less		
time	$ON \rightarrow OFF$	12 ms or less		
	Mechanical	More than 20 million times or more	-	
		Switching rated voltage/current More than 100000 times or more	0	
Service life		200 VAC 1.5 A, 240 VAC 1 A (COSφ = 0.7) More than 100000 times or more	1 2	
OCTAIGG III.G	Electrical	200 VAC 1 A, 240 VAC 0.5 A (COS¢ = 0.35) More than 100000 times or more	3	
		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) More than 100000 times or more	5	
Max. switching	frequency	3600 times per hour	6	
Surge absorber		None	7	
Fuse		None	8	
Common termir arrangement	ıal 	8 points/common (common terminals: TB9, TB18)	9	
Operating indicate		ON state is indicated (LEDs)	A	
External connec		20-point terminal block connector (M3.5 x 7 screws)	В	
Applicable wire		0.75 to 1.25 mm ² (AWG16 to AWG19)(Applicable tightening torque 78.4 N·cm)	С	
Applicable sold terminals	erless	R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5	D	
Accessories		None	E	
External	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or less	F	
power supply	Current	90 mA (TYP 24 VDC all points ON)	<u> </u>	
Internal current consumption (5		120 mA (TYP, all points ON)		
Weight kg		0.25		
		External Connections		
		External load	Terminal No.	Signal Name Y00
	LED	TBI TBI	TB1 TB2	Y01
	₹		ТВЗ	Y02
	,	TB8 /	TB4	Y03
		¥ = \$\times \nabla \infty \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau \tau	TB5	Y04
		TB9 TB9	TB6	Y05
	Internal	- + 1 100 to 200 VAC or 24 VDC	TB7	Y06
	dircuit		TB8	Y07
			TB9	COM1
		¥=\$\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	TB10 TB11	Y08 Y09
	/		TB12	YOA
	LED T-	The state of the s	TB13	YOB
		₩ ≠ \$ ∇ ® Å TBIS	TB14	YOC
			TB15	YOD
			TB16	Y0E
		IBI8	TB17	YOF
		TR20+ External power supply	TB18	COM2
		1020 1 24 VDC	TB19 TB20	24 VDC 0V
L	"		1020	- 00

3.2 A1SY10EU Contact Output Module

	Model	C	ontact Out	put Module		
Specification	s	A1SY10EU			Appea	arance
Number of outp	out points	16 points				
Insulation meth	nod	Photocoupler				
Switching rated voltage/current		24 VDC 2 A (load resistance) 120 VAC 2 A (COS\$\phi = 1) /1 po	int, 8 A/co	mmon		
Min. switching		5 VDC 1 mA	***		A1SY10EU	
Max. switching	T	132 VAC 125 VDC			100000	000000m
Response time	OFF → ON	10 ms or less		······		
ume	ON → OFF	12 ms or less				10 "
ı	Mechanical	More than 20 million times or more				
'		Switching rated voltage/current More than		· · · · · · · · · · · · · · · · · · ·		jj j
Service life	Electrical	100 VAC 2A, 120 VAC 2 A (COSφ = 0.7) more			0	
ļ	Electrical	100 VAC 2A, 120 VAC 2 A (COSφ = 0.35)	·	· · · · · · · · · · · · · · · · · · ·	1 2	
		24 VDC 1 .5A, 100 VDC 0.1 A (L/R = 7 m more	s) More th	an 100000 times or	3	
Max. switching		3600 times per hour	·· ·- ··· ·		4	
Surge absorber	<u>r </u>	None			5	
Fuse Common termin	n o l	None			6	
arrangement		8 points/common (common terminals: TB	9, TB18)	×	7 8	
Operating indic		ON state is indicated (LEDs)	7		9	
External conne Applicable wire		20-point terminal block connector (M3.5 x 0.75 to 1.25 mm ² (AWG16 to AWG19) (Apr		ghtening torque	A	
Applicable crim		78.4 N•cm) RAV1.25-3.5			В	
Accessories	ip terminais	None			C	
Accessories	 	Г	1780 VAC	rms/3 cycle	D	
Insulation withs	stand	AC terminals-Relay coil, 5 VAC	(altitude 2,		E	
		Helay coll, 5 VAC	2,000 m)	ms/3 cycle (allitude		
Insulation resis		10 MΩ or higher at insulation resistance t	tester	· · · · · · · · · · · · · · · · · · ·		
	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or I	long	[14 OFIN		
External power supply	Current	90 mA (TYP 24 VDC all points ON)		Must be a SELV power supply		
Internal current consumption (5		120 mA (TYP, all points ON)				
Weight kg	····	0.25				
		External Connec	tions			
					Terminal No.	Signal Name
	LED	TB1 External load			TB1	Y00
	LED Y	TB1 External load			TB1 TB2	Y00 Y01
	LED /	¥ # \$ TBI			TB1 TB2 TB3	Y00 Y01 Y02
	LED	TBI TBI			TB1 TB2	Y00 Y01
	LED [¥ ‡ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$			TB1 TB2 TB3 TB4	Y00 Y01 Y02 Y03
	\\ \	TB1			TB1 TB2 TB3 TB4 TB5	Y00 Y01 Y02 Y03 Y04
	LED	¥ ‡ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$			TB1 TB2 TB3 TB4 TB5 TB6	Y00 Y01 Y02 Y03 Y04 Y05
	Internal	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB8	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1
	Internal	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			TB1 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08
	Internal	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09
	Internal	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A
	Internal circuit	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B
	Internal crout	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1			T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B Y0C
	Internal crout	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1	C or 24 VUC		T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B
	Internal crout	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1	C or 24 VUC		T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B Y0C Y0D
	Internal crout	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1	C or 24 VDC		T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B Y0C Y0D Y0E
	Internal crout	TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1	C or 24 VUC	cu red)	T81 TB2 TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17	Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 COM1 Y08 Y09 Y0A Y0B Y0C Y0D Y0E Y0F

3.3 A1SY14EU Contact Output Module

	Model	Co	ontact Out	tput Module		
Specification	s	A1SY14EU			Appe	arance
Number of outp	out points	12 points (number of occupied I/O points	: 16 points)		
Insulation meth	od	Photocoupler				
Switching rated voltage/current		240 VAO 2 A (000\$ = 1)	nt, 8 A/co	mmon		
Min. switching I	~	5 VDC 10 mA			A1SY14E	
Max. switching	<u>~</u>	264VAC 125 VDC			0000000 3000000	
Response time	OFF → ON	10 ms or less				8.
ume	ON → OFF	12 ms or less		***	, , ,	<u> </u>
	Mechanical	More than 20 million times or more	200000 1			
		Switching rated voltage/current More than 2			-	
Service life	Electrical	200 VAC 2A, 240VAC 1.8 A (COSφ = 0.7) more			0	
		200 VAC 1.1A, 240VAC 0.9 A (COSφ = 0 or more 24 VDC 1.1A, 100 VDC 0.1 A (L/R = 7 ms			1 2	
		more	, word the		3	
Max. switching		3600 times per hour			4	
Surge absorber	<u>r</u>	None	·		5	
Fuse	-:	None			6	
Common termir arrangement		4 points/common (common terminals: TB5	5, TB10, TI	B15)	7 8	
Operating indic		ON state is indicated (LEDs)	~		9	
External conne		20-point terminal block connector (M3.5 x 0.75 to 1.25 mm ² (AWG16 to AWG19) (Ap			l la	
Applicable wire		78.4 N•cm)	plicable ti	gntening torque	В	
Applicable crim Accessories	p terminals	RAV1.25-3.5 None	·····		С	
Accessories			2830VAC	rms/3 cycle (altitude	D	
Insulation withs	stand		2,000 m)	maro cycre (annuae	E	
voltage	· · · · · · · · · · · · · · · · · · ·		500VAC rr 2,000 m)	ns/3 cycle (altitude	F	
Insulation resis		10 M Ω or higher at insulation resistance to	ester			
Noise immunity	,	IEC801-4:1 kV		r		
External power supply	Voltage Current	24 VDC ±10%, Ripple voltage: 4VP-P or lo	ess	Must be a SELV power supply		
Internal current consumption (5		120 mA (TYP, all points ON)				
Weight kg		0.25				
		External Connec	tions			
					Terminal No.	Signal Name
	LED	TB1 External load			TB1	Y00
	▼*	¥ = \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			TB2	Y01
	,	TB4			TB3 TB4	Y02 Y03
		¥ = \$ ¥ ® \$			TB5	COM1
		TIB5			TB6	Y04
	Internal	- + 100 to 200 VAC	or 24 VDC		TB7	Y05
	circuit	\			ТВ8	Y06
					TB9	Y07
		TB11			TB10	COM2
		<u> </u>			TB11	Y08
		TB14			TB12	Y09
	LED	¥ = \$ ¥ @ ;			TB13	YOA
		1 ₁₈₁₅			TB14	YOB
			04 1/00		TB15	COM3
1			or 24 VDC		TB16	Vacant Vacant
		IB19 C→F→			TB18	Vacant
		IBZU - I SELV	nal power supply / power supply is rec	quired)	TB19	24 VDC
					TB20	ov
					<u> </u>	

3.4 A1SY18A Contact Output Module (All Points Independent)

	Model	Contact Output Module		
Specifications	s	A1SY18A	Appe	arance
Number of outp		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.	
Min. switching		5 VDC 1 mA	00000000000000000000000000000000000000	
Max. switching	voltage	264 VAC 125 VDC	; =	8 :
Response	OFF → ON	10 ms or less		
time	$ON \rightarrow OFF$	12 ms or less		
	Mechanical	More than 20 million times or more		
		Switching rated voltage/current More than 200000 times or more	0	
Service life	Electrical	200 VAC 1.5 A, 240 VAC 1 A (COS $\phi \approx$ 0.7) More than 200000 times or more	2	
	Electrical	200 VAC 0.75 A, 240 VAC 0.5 A (COS ϕ = 0.35) More than 200000 times or more	3 4	
		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) More than 200000 times or more	5	
Max. switching		3600 times per hour	6	
Surge absorber		None	7	
Fuse		None	8	
Common termir arrangement	nal	None (all points independent)	9	
Operating indicate	ator	ON state is indicated (LEDs)	A	
External connec		20-point terminal block connector (M3.5 × 7 screws)	В	
Applicable wire	size	0.75 to 1.25 mm ² (AWG16 to AWG19)(Applicable tightening torque 78.4 N·cm)		
Applicable sold	erless	R1.25-3.5 R2-3.5		
terminals		RAV1.25-3.5 RAV2-3.5	E	
Accessories		None	F	
External power supply	Voltage	24 VDC ±10%, Ripple voltage: 4VP-P or less		
Internal current		75 mA (TYP, 24 VDC all points ON) 240 mA (TYP, all points ON)		
consumption (5 Weight kg	VDC)	0.25		
		External Connections		
			Terminal No.	Signal Name
		External load	TB1	Y00
LED		TB1 External load	TB2	
₩,			TB3	Y01
	┦ ├──	TB2 + O+	TB5	
/		/	TB6	Y02
	Internal	1+ -1	TB7	
	circuit	\	TB8	Y03
)		<i>)</i>	TB9	Y04
		TB15	TB10	104
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			TB11	Y05
l		TB16	TB12	
			TB13	Y06
		1	TB14	
		L - L -	TB15 TB16	Y07
		TBI9 TROO - + External power supply	TB17	Vacant
		TB20 - + 24 VDC	TB18	Vacant
			TB19	24 VDC
			TB20	0 V

3.5 A1SY18AEU Contact Output Modules (All Points Independent)

	Model	C	ontact Out	put Module		
Specification	s	A1SY18AE	U		Appe	arance
Number of outp	out points	8 points (number of occupied I/O points	: 16 points)			
Insulation meth	od	Photocoupler				
Switching rated voltage/current	1	24 VDC 2 A (load resistance) 240 VAC 2 A (COS ϕ = 1) /1 pc	oint			
Min. switching	load	5 VDC 1 mA	·····		A1SY18A	EU
Max. switching	voltage	264VAC 125 VDC			: 0	8
Response	OFF → ON	10 ms or less	****		0000000	000000
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		200 VAC 1.5 A, 240VAC 1 A (COSφ = 0. more			0	
	Electrical	200 VAC 0.75 A, 240VAC 0.5 A (COSφ times or more			1 2	
		24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms more) More than	200 0 00 times or	3	
Max. switching		3600 times per hour			4	
Surge absorber	r	None			5]
Fuse	**************************************	None			6	
Common termin arrangement		None (all points independent)	.,	,	7 8	
Operating indic		ON state is indicated (LEDs)				
External conne	ctions	20-point terminal block connector (M3.5			9	
Applicable wire		0.75 to 1.25 mm ² (AWG16 to AWG19) (A 78.4 N•cm)	opplicable tig	htening torque	B	
Applicable crim	p terminals	RAV1.25-3.5			С	
Accessories		None	00001/40	(0 1 (1))	D	
Insulation withs	stand	AC terminals-Relay coil, 5VAC	2830VAC rms/3 cycle (altitude 2,000 m)			
		Relay coil, 5VAC	2,000 m)	ns/3 cycle (altitude	F	
Insulation resis		10 MΩ or higher at insulation resistance	tester			
Noise immunity		IEC801-4:1 kV				
External power supply	Voltage Current	24 VDC ±10%, Ripple voltage: 4VP-P or 75 mA (TYP 24 VDC all points ON)	less	Must be a SELV power supply		
Internal current consumption (5		240 mA (TYP, all points ON)				
Weight kg		0.25				
		External Conne	ctions			
					Terminal No.	Signal Name
		External load			TB1	Y00
LED		TB1	7		TB2	
🛂*	\ \ \ ≠ \ \(\lambda \)	♥ ® S			TB3 TB4	Y01
		TB2			TB5	
		- + 100 to	200 VAC or 24	VDC	TB6	Y02
Int	ernal				TB7	
	cuit	; ; \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			TB8	Y03
)					TB9	
		TDIE)			TB10	Y04
LED		TB15	٦		TB11	Y05
🕸	\ \ ≠ \ \(\lambda \)				TB12	105
	 	TB16	_		TB13	Y06
I '		-+	200 //40 01	VDC	TB14	
		1+ -1	200 VAC or 24	VDC	TB15	Y07
		L- TB19			TB16	
}		 	External por		TB17	Vacant
i		TB20 - + 24 VDC	_J(SELV powe	er supply is required)	TB18	Vacant
[TB19 TB20	24 VDC 0V
L					1050	v

3.6 **A1SY22 Triac Output Module**

Model	Triac Output Module		
Specifications	A1SY22	Appe	arance
Number of output points	16 points		
Isolation method	Photocoupler		
Rated load voltage	100 to 240 VAC 50/60 Hz ±3 Hz	A1SY22	EAR.
Max. load voltage	264 VAC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DEAR &
Max. load current	0.6 A/point, 2.4 A/common		
Min. load voltage/current	24 VAC 100 mA, 100 VAC 10 mA, 240 VAC 20 mA		8;
Max. allowed rush current	20 A 10 ms or less, 8 A 100 ms or less		
Leakage current at OFF circuit	u financia de la companya de la financia de la companya de la companya de la companya de la companya de la comp	_	
Max. voltage drop at ON circui	of less (To to 50 IIIA)	0	
Response OFF → ON	1 ms or less	1 1	
time ON → OFF	1 ms + 0.5 cycles or less	2	
Surge absorber	CR absorber (0.01 μ F + 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 terminal arrangement	8 points/common (common terminals: TB9, TB19)	7	
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 mm ² (AWG16 to AWG19) (Applicable tightening torque	A	
· · · · · · · · · · · · · · · · · · ·	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	**
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 VDC)	270 mA (TYP, all points ON)		
Weight kg	0.24		
	External Connections		
	Surgo absorbor TBI Externel load	Terminal No.	Signal Nam
TCD		TB1	Y00
1		TB2	Y01
/	TBG /	TB3	Y02
		TB4	Y03
		TB5	Y04
\	Fuse 5A TB9	TB6	Y05
\	Indianal 日本本本 100/200V AC	TB7	Y06
, i	arouil TB10	TB8	Y07
,	Surge absorber TB11	TB9	
,		TB10	COM1 100/200 VA
			
	TBIB.	TB11	Y08
TED TED	本辛本本	TB12	Y09
	-L	TB13	Y0A
	Fuse 5A TB19	TB14	Y0B
	100/200V AC	TB15	Y0C
	TB20	TB16	YOD
*1 · The fuse in the outp	ut module is provided to prevent the external wiring from burning	TB17	Y0E
in the event of a sho	rt in the module's output. Therefore, it may not be able to pro-	TB18	YOF
tect output devices.	damaged in a failure mode other than a short circuit, the fuse	TB19	COM2
might not blow.	damayed in a failure mode offici friall a short official, the fuse	TB20	100/200 VA
•	LED will also light when the external nower supply is shut OFF	1020	100/200 47

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

3.7 A1SY28A Triac Output Module (All Points Independent)

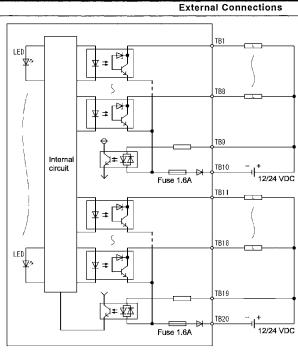
	Model	Triac Output Module		
Specification	ıs	A1SY28A	Appea	arance
Number of outp	put points	8 points (number of occupied I/O points : 16 points)		
Isolation metho	od	Photocoupler	A1SY28	١
Rated load volt	tage	100 to 240 VAC 50/60 Hz ±3 Hz	0120000	
Max. load volta		264 VAC		
Max. load curre	<u> </u>	1A/point, 8A/module (132VAC, 46°C), 8A/module (264VAC, 40°C), 4A/module (132VAC, 55°C), 2A/module (264VAC, 55°C)	; ;	
Min. load volta	ge/current	24 VAC 100 mA, 100 VAC 55 mA, 240 VAC 55 mA	F	
Max. allowed re	ush current	25 A 10 ms or less, 10 A 100 ms or less		
Leakage currer	nt at OFF circuit	1.5 mA (120 VAC 60 Hz), 3mA (240 VAC 60 Hz)	0	
Max. voltage d	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)	1	
Response	OFF → ON	1 ms or less	2	
time	ON → OFF	1 ms + 0.5 cycles or less	3	
Surge absorbe		CR absorber (0.01 μF + 47 Ω), Varistor (387 to 473 V)	4	
Fuse rating	-	None	5	
Common termin	na!		6	
arrangement		None (all points independent)	7	
Operating indic	cator	ON state is indicated (LEDs)	8	
External conne	ections	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	derless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	В	
Accessories		None		
External power	r supply	None	D	
Internal current		130 mA (TYP, all points ON)	E	
consumption (5 Weight kg	5 VDC)	0.25	F	
weight kg		External Connections	 	
		External connections	Terminal No.	Signal Name
			· · · · · · · · · · · · · · · · · · ·	Signal Name
			TB1	Y00
Г		Fotomalland	TB2	
		Surge absorber TB1 External load	TB3	Y01
	LED		TB4	107
	LED ~		TB5	
	Ť		TB6	Y02
		Triac Varistor 100/200 VAC	TB7	
		,	TB8	Y03
	Internal			
	circuit	Surge absorber TRIE External load	TB9	Y04
		TB15	TB10	
	LED		TB11	V05
	₩.		TB12	Y05
		TE16 (C)	TB13	
		Triac Varistor 100/200 VAC	TB14	Y06
			TB15	Y07
			TB16	
			TB17	Vacant
			TB18	Vacant
I			TB19	Vacant
		· · · · · · · · · · · · · · · · · · ·	70.0	Vacant

3.8 A1SY28EU Triac Output Module

Model	Triac Output Module			
Specifications	A1SY28EU	Appearance		
Number of output points	8 points (number of occupied I/O points : 16 points)			
Insulation method	Photocoupler	– A1SY28E	U B	
Rated load voltage	100 to 240 VAC 50/60 Hz ±3 Hz	1 ! 🗒		
Max. load voltage	264 VAC		00000000	
Max. load current	0.6A/point, 2.4A/common (49°C), 1.9A/common (55°C)		ō	
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)			
Max. voltage drop at ON circui	<u> </u>	$\left \begin{array}{c} \left \begin{array}{c} 0 \\ 1 \end{array} \right \right $		
	1 ms or less	1		
Response $OFF \rightarrow ON$ time $ON \rightarrow OFF$		2		
ON -3 OFF	1 ms + 0.5 cycles or less	3		
Surge absorber	Built-in CR absorber (0.1 μF + 47 Ω)	4		
Fuse rating	None	5		
Common terminal arrangement	4 points/common (common terminals: TB8, TB16)	6		
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)	A		
Applicable crimp terminals	RAV1.25-3.5] B		
Accessories	None			
Insulation withstand voltage	2830VAC rms/3 cycle (altitude 2,000 m)	D		
Insulation resistor	10 MΩ or higher at insulation resistance tester	E		
Noise immunity	IEC801-4:1 kV	F		
Internal current consumption (5 VDC)	270 mA (TYP, all points ON)			
Weight kg	0.24			
	External Connections			
		Terminal No.	Signal Name	
	Surge absorber TB1 External load	TB1	Y00	
		TB2	Vacant	
LED V		TB3	Y01	
 	 	TB4	Vacant	
	TB7	TB5	Y02	
/				
		TB6	Vacant	
		TB7	Y03	
	TPO -	TB8	COM1	
	TB8 O LOS TODA NO S	TB9	Y04	
\ Interna		TB10	Vacant	
circuit	Surge absorber TB9 External load	TB11	Y05	
\		TB12	Vacant	
		TB13	Yacant Y06	
 				
	TB15	TB14	Vacant	
')	TB15	Y07	
LED		TB16	COM2	
₩*	 	TB17	Vacant	
	TB16	TB18	Vacant	
	φ——(ο)——-	TB19	Vacant	
	100/200 VAC	TB20	Vacant	
		1020	vacani	

3.9 A1SY40 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Type)					
Specifications		A1SY40	Appearance				
Number of output points		16 points					
Isolation metho	d	Photocoupler	A1SY40 DERR				
Rated load volt	age	12/24 VDC	A15Y40				
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	100000 WE				
Max. load curre	nt	0.1 A/point, 0.8 A/common					
Max. allowed ru	ish current	0.4 Å 10 ms or less					
Leakage currer	t at OFF circuit	0.1 mA or less	_				
Max. voltage di	op at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A					
Response	OFF → 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	4				
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	5				
Common termin 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				
Applicable sold terminals	erless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5	В				
Accessories		None					
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					



· · · · · · · · · · · · · · · · · · ·	,
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	Y0D
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.

protect output devices.

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

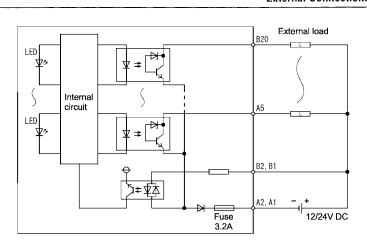
^{*2:} The ERR. indicating LED will also light when the external power supply is shut OFF.

3.9.1 A1SY40P Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Type)		
Specification	S	A1SY40P	Appearance		
Number of outp	out points	16 points			
Isolation metho	od	Photocoupler	A1SY40F		
Rated load volt	tage	12/24 VDC		DERR S	
Operating volta		10.2 to 30 VDC (peak voltage 30 VDC)	1200000	8	
Max. load curre		0.1 A/point, 0.8 A/common		100 -	
Max. allowed ru		0.7 A 10 ms or less			
	nt at OFF circuit	0.1 mA or less			
Max. voltage di	rop at ON circuit	0.1 VDC (TYP) 0.1 A, 0.2 VDC (MAX) 0.1 A	_		
Response time	OFF → ON	1 ms or less	- - -		
	ON → OFF	1 ms or less (resistive load)	1 1		
Surge absorber	r	Zener diode	2		
Fuse		None] 3		
Protection func	tion	Yes (overload protection function, overheat protection function) • Overheat protection function is activated in increments of 1 point.	4		
		Overload protection function is activated in increments of 1 point.	5	i	
Common termin	nal	8 points/common (common terminals: TB10, TB20)	6		
Arrangement	rator		7		
Operating indic External conne		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	size	78.4 N•cm)	A		
Applicable sold terminals	lerless	R1.25-3.5, R2-3.5	В		
Accessories		RAV1.25-3.5, RAV2-3.5 None	- c		
	Voltage	12/24 VDC (10.2 to 30 VDC)	- D		
External power supply	Current	11 mA (TYP 24 VDC/common)	E		
Internal current	L	79 mA (TYP, all points ON)	F		
consumption (5		(0.08A is shown on the rating plate of the module.)			
Weight kg		0.13			
	<u>-</u>	External Connections	T	Oi-	
			Terminal No.	Signal Name	
	1.50	External load	TB1	Y00	
	LED Y	\\ \pm \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	TB2	Y01	
		<u> </u>	TB3	Y02	
	/		TB4	Y03	
			TB5	Y04	
			TB6	Y05	
			TB7	Y06	
		TB9	TB8	Y07	
	Interna	al voltage circuit	TB9	12/24 VDC	
		TB10 - +	TB10	COM1	
		12/24VDC	TB11	Y08	
			TB12	Y09	
	/		TB13	YOA	
	'				
	LED	TB18	TB14	YOB	
	LED 7%	<u> </u>	TB15	YOC	
	4		TB16	YOD	
			TB17	Y0E	
		Constant voltage circuit	TB18	Y0F	
		TB20 -,,+	TB19	12/24 VDC	
		12/24VDC	TB20	COM2	
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	

3.10 A1SY41 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink type)				
Specification	ıs	A1SY41	Appearance			
Number of out	put points	32 points				
Isolation metho	od	Photocoupler	A1SY41			
Rated load vol	tage	12/24 VDC				
Operating volta	age range	10.2 to 30 VDC (peak voltage 30 VDC)				
Max. load curr	ent	0.1 A/point, 2 A/common	18			
Max. allowed r	ush current	0.4 A 10 ms or less				
Leakage curre	nt at OFF circuit	0.1 mA or less				
Max. voltage d	lrop 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	r	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 termi arrangement	inal	32 points/common (common terminals: A1, A2)				
Operating indi	cator	ON state is indicated (LEDs)				
External conne	ections	40-pin connector	•			
Applicable wire	e size	0.3 mm ²	xc y F			
Accessories		Connector (1 pce.) for external wiring (soldering type)	NG - NG			
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 A1SY41			
Weight kg		0.21				
		External Connections				

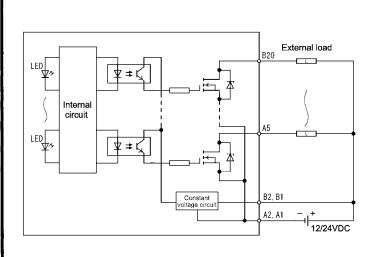


- *1 : The arrangement of pins A and B shown right is the opposite of the arrangement of pins of the connector on the module.
- *2 : A1SY41 has one connector jack soldering type (A6CON1) included.
 *3 : The fuse in the output module is provided to prevent the external wiring from burning in the event 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.

Arı	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	A20 A19	B16	Y04	A16	Y14				
B18 B17		0	A18 A17	B15	Y05	A15	Y15				
B16		5	A16	B14	Y06	A14	Y16				
B15 B14		0 0	0	A15 A14	B13	Y07	A13	Y17			
B13	0 0	٥	A13	B12	Y08	A12	Y18				
B12 B11	1 - '	0	A12 A11	B11	Y09	A11	Y19				
B10	0 0	5	A10	B10	YOA	A10	Y1A				
B9 B8		_	0	0	_	_	A9 A8	B9	Y0B	A9	Y1B
B7		0	A7	B8	Y0C	A8	Y1C				
B6 B5		0	A6 A5	B7	YOD	A7	Y1D				
B4 B3	ı	0	A4	B6	YOE	A6	Y1E				
B3 B2		0	A3 A2	B5	YOF	A5	Y1F				
B1	0 0	ره	A1	B4	Vacant	A4	Vacant				
_		_		В3	Vacant	АЗ	Vacant				
F	Front view			B2	12/24 VDC	A2	сом				
				В1	12/24 VDC	A1	сом				

3.10.1 A1SY41P Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink type)				
Specifications	s	A1SY41P	Appearance			
Number of outp	ut points	32 points				
Isolation metho	d	Photocoupler				
Rated load volta	age	12/24 VDC	A1SY41P			
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)				
Max. load curre	nt	0.1 A/point, 2 A/common	500 100 100 100 100 100 100 100 100 100			
Max. allowed ru	ish current	0.7 A 10 ms or less	5U DU US UD			
Leakage curren	t at OFF circuit	0.1 mA or less				
Max. voltage dr	op at ON circuit	0.1 VDC (TYP) 0.1 A, 0.2 VDC (MAX) 0.1 A				
Response	$OFF \to ON$	1 ms or less				
time	ON → OFF	1 ms or less (resistive load)				
Surge absorber		Zener diode				
Fuse		None				
Protection funct	tion	Yes (overload protection function, overheat protection function) Overheat protection function is activated in increments of 1 point. Overload protection function is activated in increments of 1 point.	111 12 1			
Common termir arrangement	nal	32 points/common (common terminals: A1, A2)				
Operating indic	ator	ON state is indicated (LEDs)				
External connec	ctions	40-pin connector	0 C C			
Applicable wire	size	0.3 mm ²				
Accessories		Connector (1 pce.) for external wiring (soldering type)	WC WC WC			
Applicable connector/terminal block converter unit		A6TBXY36, A6TBXY54				
External	Voltage	12/24 VDC (10.2 to 30 VDC)				
power supply	Current	12 mA (TYP 24 VDC/common)				
Internal current consumption (5 VDC)		141 mA (TYP, all points ON) (0.15A is shown on the rating plate of the module.)				
Weight kg		0.15				
		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 : A1SY41 has one connector jack soldering type (A6CON1) included.

Arı	Pin Arrangement			Signal Name (FH)	Pin No.	Signal Name (FH)
			B20	Y00	A20	Y10
			B19	Y01	A19	Y11
			B18	Y02	A18	Y12
Dog !		١	B17	Y03	A17	Y13
B20 B19	0 0	A20 A19	B16	Y04	A16	Y14
B18 B17	O O A18	B15	Y05	A15	Y15	
B16	0 0	A17 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	Y0A	A10	Y1A
B9 B8	0 0	A9 A8	В9	Y0B	Α9	Y1B
B7 B6	0 0	A7	В8	Y0C	Α8	Y1C
B5	0 0	A6 A5	В7	YOD	Α7	Y1D
B4 B3	0 0	A4 A3	В6	YOE	A6	Y1E
B2	0 0	A3 A2	B5	Y0F	A5	Y1F
B1	00) A1	B4	Vacant	A4	Vacant
_	<u> </u>		ВЗ	Vacant	АЗ	Vacant
F	Front view			12/24 VDC	A2	сом
			B1	12/24 VDC	A1	сом

3.11 A1SY42 Transistor Output Module (Sink Type)

Model					
Specifications	A1SY42	Appearance			
Number of output points	64 points				
Isolation method	Photocoupler	A1SY42			
Rated load voltage	12/24 VDC	A15Y42 DERR 108000888 208000368 208000368 408000368 40800068			
Operating voltage range	10.2 to 30 VDC (peak voltage 30 VDC)	3 - 8 3 - 8 4 - 0 0 - 0 5 - 0 0			
Max. load current	0.1 A/point, 1.6 A/common	68 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8			
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. FOL			
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 SW Left side (first-half) 12/24V DC				

Pin Arrangement	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 Q Q A20	1B18	Y02	1A18	Y12	2B18	Y22	2A18	Y32
B20 O O A20 B19 O O A19	1B17	Y03	1A17	Y13	2B17	Y23	2A17	Y33
B18 0 0 A18 B17 0 0 A17	1B16	Y04	1A16	Y14	2B16	Y24	2A16	Y34
B16 O O A16	1B15	Y05	1A15	Y15	2B15	Y25	2A15	Y35
B15 O O A15	1B14	Y06	1A14	Y16	2B14	Y26	2A14	Y36
B13 O O A13	1B13	Y07	1A13	Y17	2B13	Y27	2A13	Y37
B12 0 0 A12 B11 0 0 A11	1B12	Y08	1A12	Y18	2B12	Y28	2A12	Y38
B10 O O A10	1B11	Y09	1A11	Y19	2B11	Y29	2A11	Y39
B9 0 0 A9 B8 0 0 A8	1B10	YOA	1A10	Y1A	2B10	Y2A	2A10	Y3A
B7 0 0 A7	1B9	Y0B	1A9	Y1B	2B9	Y2B	2A9	Y3B
B6 0 0 A6 B5 0 0 A5	1B8	Y0C	1A8	Y1C	2B8	Y2C	2A8	Y3C
B4 0 0 A4 B3 0 0 A3	1B7	Y0D	1A7	Y1D	2B7	Y2D	2A7	Y3D
B2 0 0 A2	1B6	Y0E	1A6	Y1E	2B6	Y2E	2A6	Y3E
B1 0 0 A1	1B5	Y0F	1A5	Y1F	2B5	Y2F	2A5	Y3F
	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
- Frank in	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
Front 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.

3.11.1 A1SY42P Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Type)	
Specification	s	A1SY42P	Appearance
Number of outp		64 points	
Isolation metho	<u> </u>	Photocoupler	A1SY42P
Rated load volt		12/24 VDC	1
Operating volta		10.2 to 30 VDC (peak voltage 30 VDC)	
Max. load curre		0.1 A/point, 2 A/common	1818 818F
Max. allowed ru		0.7 A 10 ms or less	
Leakage currer	it at OFF circuit	0.1 mA or less	
	rop at ON circuit	0.1 VDC (TYP) 0.1 A, 0.2 VDC (MAX) 0.1 A	
	$OFF \rightarrow ON$	1 ms or less	DIS. []
Response time	ON → OFF	1 ms or less (rated load, resistance load)	
Surge absorber		Zener diode	
Fuse	· · · · · · · · · · · · · · · · · · ·	No No	
	nol orrongoment	32 points/common (common terminals: 1A1, 1A2, 2A1, 2A2)	
Common termin	nal arrangement		
Protection func	tion	Yes (overload protection function, overheat protection function) Overheat protection function is activated in increments of 1 point. Overload protection function is activated in increments of 1 point.	
Operating indic	ator	ON state is indicated (LEDs), 32-bit indication by switch	
External conne	ctions	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	14 mA (TYP 24 VDC/common)	
Internal current (5 VDC)	consumption	170 mA (TYP, all points ON)	DC12/24V 0.1A A1SY42P
Weight kg		0.17	
		Internal circuit LED Indication SW offirst-half) Right side (second-half) *2 Indication select switch Right side (second-half) *2 Indication select switch	
		Constant voltege ercur 2A2, 2A1 - 1 + 12/24 VDC	

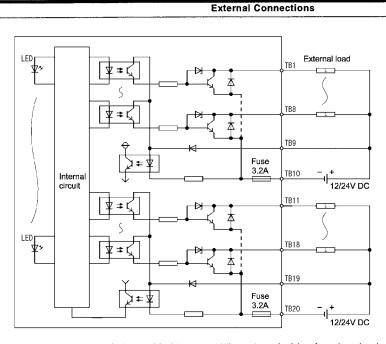
Arr	Pin angeme	nt	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)
			1B20	Y00	1A20	Y10	2B20	Y20	2A20	Y30
		Ì	1B19	Y01	1A19	Y11	2B19	Y21	2A19	Y31
B20		A20	1B18	Y02	1A18	Y12	2B18	Y22	2A18	Y32
B20 B19		A19	1B17	Y03	1A17	Y13	2B17	Y23	2A17	Y33
B18 B17	1 1	A18 A17	1B16	Y04	1A16	Y14	2B16	Y24	2A16	Y34
B16		A16	1B15	Y05	1A15	Y15	2B15	Y25	2A15	Y35
B15 B14		A15 A14	1B14	Y06	1A14	Y16	2B14	Y26	2A14	Y36
B13	0 0	A13	1B13	Y07	1A13	Y17	2B13	Y27	2A13	Y37
B12 B11		A12 A11	1B12	Y08	1A12	Y18	2B12	Y28	2A12	Y38
B10	0 0	A10	1B11	Y09	1A11	Y19	2B11	Y29	2A11	Y39
B9 B8		A9 A8	1B10	YOA	1A10	Y1A	2B10	Y2A	2A10	Y3A
B7	0 0	A7	1B9	Y0B	1A9	Y1B	2B9	Y2B	2A9	Y3B
B6 B5		A6 A5	1B8	YOC	1A8	Y1C	2B8	Y2C	2A8	Y3C
B4	1 1	A4	1B7	YOD	1A7	Y1D	2B7	Y2D	2A7	Y3D
B3 B2		A3 A2	1B6	Y0E	1A6	Y1E	2B6	Y2E	2A6	Y3E
B1	00)	A1	1B5	Y0F	1A5	Y1F	2B5	Y2F	2A5	Y3F
		Ī	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
		Ī	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
Fro	nt view	Ī	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.

3.12 A1SY50 Transistor Output Module (Sink Type)

	Model	Transistor Output Module (Sink Ty	/pe)	
Specifications		A1SY50	Appearance	
Number of output point	s	16 points	A1SY50	
Isolation method		Photocoupler	A1SY50	
Rated load voltage		12/24 VDC	A18V50 DEFA	
Operating voltage rang	е	10.2 to 30 VDC (peak voltage 30 VDC)		
Max. load current		0.5 A/point, 2 A/common	7 EJ EJ F	
Max. allowed rush curr	ent	4 A 10 ms or less		
Leakage current at OFI	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		
Dannana tima	$OFF \rightarrow ON$	2 ms or less	1	
Response time	$ON \rightarrow OFF$	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)		
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)	9 A	
Applicable solderless terminals		R1.25-3.5 R2-3.5 RAV1.25-3.5 RAV2-3.5	В	
Accessories		None		
Futornal names are at	Voltage	12/24 VDC (10.2 to 30 VDC)		
External power supply	Current	60 mA (TYP 24 VDC/common)	E	
Internal current consumption (5 VDC)		120 mA (TYP, all points ON)		
Weight kg		0.2		
		Estamal Compactions		



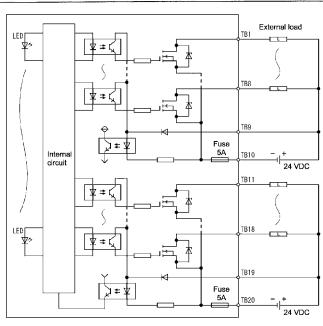
Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	12/24 VDC
TB10	COM1
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	Y0D
TB17	Y0E
TB18	Y0F
TB19	12/24 VDC
TB20	COM2

^{*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 Type)	tput Module (Sink Type)		
Specifications		A1SY60	Appearance		
Number of output point	S	16 points			
Isolation method		Photocoupler	A1SY60		
Rated load voltage		24 VDC			
Operating voltage rang	e	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		
Max. allowed rush curr	ent	8 A 10 ms or less			
Leakage current at OF	= circuit	0.1 mA or less			
Max. voltage drop at O	N circuit	0.9 VDC (TYP) 2 A, 1.5 VDC (MAX) 0.5 A	0		
B	OFF → ON	2 ms or less	1		
Response 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 arrangement		8 points/common (common terminals: TB10, TB20)	7		
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 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	В		
Accessories		None	D		
Fidemal newsproversity	Voltage	24 VDC (21.6 to 26.4 VDC)	E		
External power supply	Current	15 mA (TYP 24 VDC/common)	F		
Internal current consu	mption (5 VDC)	120 mA (TYP, all points ON)			
Weight kg		0.25			
		External Connections	<u> </u>		



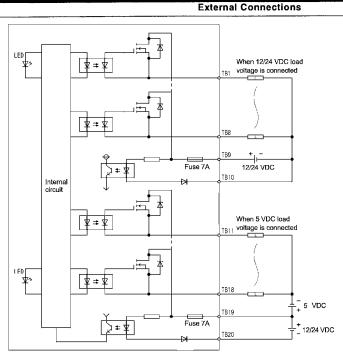
Terminal No.	Signal Name
TB1	Y00
TB2	Y01
ТВЗ	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	24 VDC
TB10	COM1
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	Y0D
TB17	Y0E
TB18	Y0F
TB19	24 VDC
TB20	COM2

^{*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 1	ype)	
Specifications		A1SY60E	Appearance	
Number of output point	S	16 points	A1SY60E FIRE	
Isolation method		Photocoupler	AISYBOE DER	
Rated load voltage		5/12/24 VDC		
Operating voltage rang	е	4.5 to 26.4 VDC (peak voltage 26.4 VDC)	A1SY60E DEFINE	
Max. load current		2 A/point (condition:τ = L/R ≤ 2.5 ms), 4 A/common	, , , , , , , , , , , , , , , , , , , ,	
Max. allowed rush curre	ent	8 A 10 ms or less		
Leakage current at OFI	circuit	0.1 mA or less		
Max. voltage drop at O	N circuit	0.2 VDC (MAX) 1 A, 0.4 VDC (MAX) 2 A		
D	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	4	
Fuse capacity		300 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: 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)	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		
External power supply	Current	10 mA (TYP 24 VDC/common)		
Internal current consumption (5 VDC)		200 mA (TYP, all points ON)		
Weight kg		0.2		

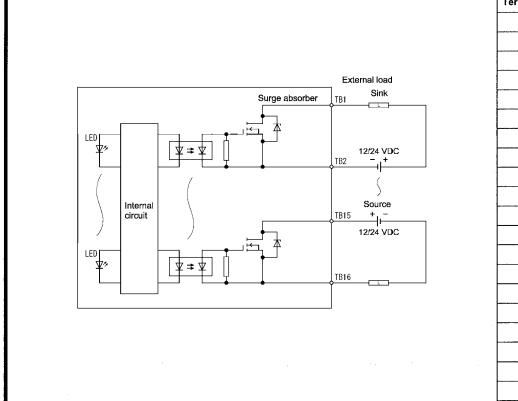


Terminal No.	Signal Name
TB1	Y00
TB2	Y01
TB3	Y02
TB4	Y03
TB5	Y04
TB6	Y05
TB7	Y06
TB8	Y07
TB9	COM1
TB10	0 V
TB11	Y08
TB12	Y09
TB13	Y0A
TB14	Y0B
TB15	Y0C
TB16	Y0D
TB17	Y0E
TB18	Y0F
TB19	COM2
TB20	0V
,	

- *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))

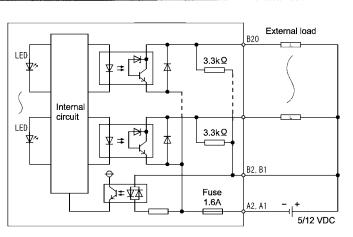
	Model	Transistor Output Module	
Specifications		A1SY68A	Appearance
Number of output poin	ts	8 points (number of occupied I/O points : 16 points)	A1SY68A
Isolation method		Photocoupler	0 0 0 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Rated load voltage		5/12/24/48 VDC	
Operating voltage rang	je	4.5 to 52.8 VDC	/ LJ LJ F
Max. load current		2 A/point	
Max. allowed rush curr	ent	8 A 10 ms or less	
Leakage current at OF	F circuit	0.1 mA or less	
Max. voltage drop at O	N circuit	0.4 VDC (MAX) 2 A	2
Response time	$OFF \rightarrow ON$	3 ms or less	3
nesponse time	ON → OFF	10 ms or less (resistive load)	4
Surge absorber		Zener diode	5 6
Common terminal arra	ngement	None (all points independent)	7
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 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	C
External power supply		None	D E
Internal current consumption (5 VDC)		110 mA	
Weight kg		0.2	
		External Connections	



Terminal No.	Signal Name		
TB1	Y00		
TB2	100		
TB3	Y01		
TB4	101		
TB5	Y02		
TB6	102		
TB7	Y03		
TB8	103		
TB9	Y04		
TB10	104		
TB11	Y05		
TB12	103		
TB13	Y06		
TB14	100		
TB15	Y07		
TB16	107		
TB17	Vacant		
TB18	Vacant		
TB19	Vacant		
TB20	Vacant		

3.16 A1SY71 Transistor Output Module (Sink Type)

Model Transistor Output Module (for TTL, CMOS : S			: Sink Type)	
Specifications		A1SY71	Appearance	
Number of output point	s	32 points	A1SY71	
Isolation method		Photocoupler	10000000000000000000000000000000000000	
Rated load voltage		5/12 VDC		
Operating voltage rang	е	4.5 to 15 VDC	100000	
Max. load current		16 mA/point, 256 mA/common	10 80 0 10 8	
Max. allowed rush curr	ent	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	- · · · · · · · · · · · · · · · ·	
D	OFF → ON	1 ms or less		
Response time	$ON \rightarrow OFF$	1 ms or less (resistive load)		
Surge absorber		None		
Fuse rating		Fuse 1.6 A (1 piece/common), not replaceable *2	3 3 4 4	
Fuse capacity		50 A	5 5	
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)	C C	
External connections		40-pin connector	g g	
Applicable wire size		0.3 mm ²	MC MC MC	
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 consun	nption (5 VDC)	400 mA (TYP, all points ON)	DC5/12V 16mATTL A1SY71	
Weight kg		0.19		
		External Connections		



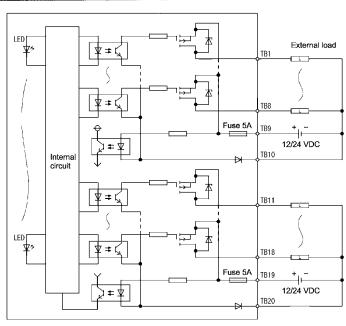
- *1 : The arrangement of pins A and B shown right is the opposite of the arrangement of pins of the connector on the module.
- *2 : The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect 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	Pin No.	Signal Name			
				B20	Y00	A20	Y10	
					Y01	A19	Y11	
B20 0 0 A20			١ ٨٥٥	B18	Y02	A18	Y12	
B19	0	0	A19	B17	Y03	A17	Y13	
B18 B17	0	0	A18 A17	B16	Y04	A16	Y14	
B16	0	0	A16	B15	Y05	A15	Y15	
B15 B14	0	0	A15	B14	Y06	A14	Y16	
B13	0	0	A13	B13	Y07	A13	Y17	
B12 B11	0	0	A12 A11	B12	Y08	A12	Y18	
B10	٥	0	A10	B11	Y09	A11	Y19	
B9 B8	0	0	A9 A8	B10	Y0A	A10	Y1A	
B7	0	0	A7	B9	Y0B	A9	Y1B	
B6 B5	0	0	A6 A5	B8	Y0C	A8	Y1C	
B4	0	0	A4	В7	YOD	A7	Y1D	
B3 B2	0	0	A3 A2	В6	Y0E	A6	Y1E	
B1	0	0	A1	B5	Y0F	A5	Y1F	
				B4	Vacant	A4	Vacant	
1	Front view		ВЗ	Vacant	A3	Vacant		
				B2	5/12 VDC	A2	СОМ	
				B1	5/12 VDC	A1	СОМ	

3.17 A1SY80 Transistor Output Module (Source Type)

Model Specifications		Transistor Output Module (Source Type)				
		A1SY80	Appea	arance		
Number of outp	out points	16 points				
Isolation metho		Photocoupler	A1SY80	□ ea		
Rated load volt	tage	12/24 VDC				
Operating volta	age range	10.2 to 30 VDC (peak voltage 30 VDC)	BA BB BB BB BB BB BB BB			
Max. load curre	ent	0.8 A/point, 3.2 A/common	; 5	3 ;		
Max. allowed ru	ush current	8 A 10 ms or less				
Leakage currer	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]			
time	ON → OFF	2 ms or less (resistive load)	$\left \frac{1}{2} \right $			
Surge absorber		Zener diode	$\frac{ z }{3}$			
Fuse rating		Fuse 5 A (1 piece/common), not replaceable *1				
Fuse capacity		50 A	4			
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	5			
Common terminal arrangement		8 points/common (common terminals: TB9, TB19)	6			
Operating indicator		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	С			
External	Voltage	12/24 VDC (10.2 to 30 VDC)	D			
power supply	Current	20 mA (TYP 24 VDC/common)	E			
Internal current (5 VDC)	t consumption	120 mA (TYP, all points ON)	F			
Weight kg		0.2	. .			
		External Connections				
			Terminal No.	Signal Na		
				1		

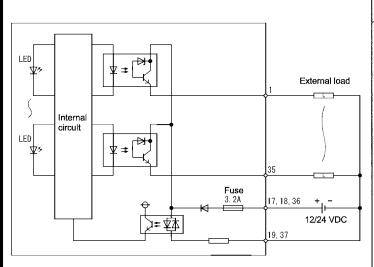


*1 : The fuse in the output module is provided to prevent the external wiring from burning in the event of a short in the module's output. Therefore, it may not be able to protect output devices If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.	
*2 : 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	٥٧			
TB11	Y08			
TB12	Y09			
TB13	Y0A			
TB14	Y0B			
TB15	Y0C			
TB16	Y0D			
TB17	Y0E			
TB18	Y0F			
TB19	COM2			
TB20	٥٧			
TB18	Y0F			
TB19	COM2			
TB20	0V			

3.18 A1SY81 Transistor Output Module (Source Type)

	Model	Transistor Output Module (Source Typ	pe)
Specification	s	A1SY81	Appearance
Number of outp	out points	32 points	A1SY81
Isolation metho	od	Photocoupler	A 0 8
Rated load volt	age	12/24 VDC	2 0 A 0 0 0 A 0 B 4 0 C 0 0 4 0 C
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	\$0.50 0.505 60.50 0.605
Max. load curre	ent	0.1 A/point, 2 A/common	7010 0701
Max. allowed ru	ush current	0.4 A 10 ms or less	
Leakage currer	nt at OFF circuit	0.1 mA or less	
Max. voltage di	rop at ON circuit	1.0 VDC (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A	
Response	$OFF \to ON$	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	7
Fuse breaking	capacity	50 A	
Error display		LED goes ON when fuse blows: signal output to PC CPU *2	
Common termin	nal arrangement	32 points/common (common terminals: 17, 18, 36)	
Operating indic	ator	ON state is indicated (LEDs)	
External conne	ctions	37-pin D sub-connector	
Applicable wire	size	0.3 mm ²	y. A
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 (5 VDC)	consumption	500 mA (TYP, all points ON)	DC12/24V 0.1A A1SY81
Weight kg		0.23	
		External Connections	

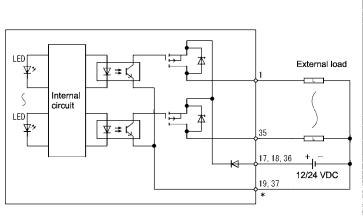


Pin Arrangement	Pin No.	Signal Name	Pin No.	Signal Name
	1	Y00	9	Y10
	20	Y01	28	Y11
	2	Y02	10	Y12
20 0 0 1	21	Y03	29	Y13
21 0 0 2 3	3	Y04	11	Y14
23 0 0 4	22	Y05	30	Y15
24 O O 5 25 O O 6	4	Y06	12	Y16
26 0 0 7	23	Y07	31	Y17
27 0 0 8	5	Y08	13	Y18
28 0 0 10	24	Y09	32	Y19
30 0 0 11 30 0 0 12	6	Y0A	14	Y1A
31 0 0 13	25	Y0B	33	Y1B
33 O O 14 15	7	Y0C	15	Y1C
34 0 0 16 35 0 0 16	26	Y0D	34	Y1D
36 O O 17	8	Y0E	16	Y1E
37 0 0 19	27	Y0F	35	Y1F
)	17	СОМ	37	0V
Front view	36	СОМ	19	0V
	18	СОМ		

- *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.

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

	Model	Transistor Output Module (Source Type)			
Specifications		A1SY81EP	Appearance		
Number of outp	ut points	32 points			
Isolation metho	d	Photocoupler	A1SY81EP		
Rated load volta	age	12/24 VDC	A 0 0 0 0 8 B		
Operating load	voltage range	10.2 to 26.4 VDC	2 A B B B B B B B B B B B B B B B B B B		
Max. load curre	nt	0.1 A/point, 2 A/common (25 °C), 0.05 A/point, 1.6 A/common (55 °C)	\$ 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		
Max. inrush cur	rent	No limit (short protect)	,		
Leakage curren	t at OFF circuit	0.1 mA or lower			
Max. voltage dr	op at ON circuit	3.5 VDC (0.1 A Max.), 2.5 VDC (0.1 A Min.)			
Response	$OFF \rightarrow ON$	0.5 ms or less			
time	$ON \rightarrow OFF$	1.5 ms or less (resistive load)			
Surge absorber		Clamping diode			
Protect		Provided (overload protection function, overheat protection function) Overheat protection function is detected in 8 points module (Y0 to 7, 8, to F, 10 to 17, 18 to 1F). When overheat protection function occurs at an 8 points of 1 common, output of all points for corresponded common terminal is turned OFF.			
Protect detectio	n indication	None (signal not output to a PLC CPU.)	F		
Protect reset		Automatic reset (reset by canceling thermal protect)	B 2		
Common metho	od	32 points/common (common terminals: 17, 18, 36)	5 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 -		
Operating indica	ator	ON state is indicated (LEDs)	9		
External connec	tions	37-pin D sub-connector			
Applicable wire	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 (5 VDC)	consumption	500 mA (TYP. all points ON)	DC12/24V 0.1A A1SY81EP		
Weight kg		0.25			
		External Connections			



Pin Arranger	Pin Arrangement		Signal Name	Pin No.	Signal Name
		1	Y00	9	Y10
			Y01	28	Y11
20 0 0	1	2	Y02	10	Y12
21 0 0		21	Y03	29	Y13
22 0 0	_	3	Y04	11	Y14
24 0 0		22	Y05	30	Y15
25 0		4	Y06	12	Y16
26 0 0 27 0 0		23	Y07	31	Y17
28 0 0		5	Y08	13	Y18
30 0	11	24	Y09	32	Y19
31 0 0		6	Y0A	14	Y1A
32 0 0	14	25	Y0B	33	Y1B
34 0 0	1	7	Y0C	15	Y1C
35 O O	17	26	YOD	34	Y1D
37 0		8	Y0E	16	Y1E
	0 19		Y0F	35	Y1F
1		17	СОМ	37	٥٧
Front v	iew	36	СОМ	.19	οv
		18	СОМ		

^{*} 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)

A1SY82 Its Dupler DC 30 VDC (peak voltage 30 VDC) Dint, 1.6 A/common D ms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P- is/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by signal connector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch
pupler DC 30 VDC (peak voltage 30 VDC) pint, 1.6 A/common or ms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch
pupler DC 30 VDC (peak voltage 30 VDC) pint, 1.6 A/common or ms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch
DC 30 VDC (peak voltage 30 VDC) pint, 1.6 A/common oms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P is/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by seconnector connector con	PC CPU *4 , 2A1, 2A2) switch
30 VDC (peak voltage 30 VDC) bint, 1.6 A/common correctly 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to Pess/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by seconnector connector correctly 1.6 Common correctly 1.7 Common (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) r switch
O ms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P- ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector ctors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) r switch
O ms or less or less C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P- ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector ctors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) r switch
C (TYP) 0.1 A, 2.5 VDC (MAX) 0.1 A less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P- ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch Ig type)
less less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P. ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch Ig type)
less (resistive load) iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P- ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector ctors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch Ig type)
iode 2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P. ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch Ig type)
2 A (1 piece/common), not replaceable *3 es ON when fuse blows: signal output to P ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by s connector 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	BPC CPU *4 , 2A1, 2A2) r switch
es ON when fuse blows: signal output to Pres/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector et al., 2 tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) r switch
ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) r switch Ig type)
ts/common (common terminals: 1A1, 1A2, e is indicated (LEDs), 32-bit indication by sonnector tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	PC CPU *4 , 2A1, 2A2) switch
e is indicated (LEDs), 32-bit indication by sonnector tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	, 2A1, 2A2) - switch Ig type)
connector tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	ng type)
tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	ig type)
tors (2 pces.) for external wiring (soldering DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	g type)
DC (10.2 to 30 VDC) YP 24 VDC/common) (TYP, all points ON)	
YP 24 VDC/common) (TYP, all points ON)	
(TYP, all points ON)	
	DC12/24V 0.1A A1SY8:
External Connections	
Tation Silver Left side (first-half) Indication select switch	External load 1B20 1A5 1B2, 1B1 + - 12/24 VDC 1A2, 1A1 External load 2B20 2A5 2B2, 2B1 + 1, -
	ernal cuit \(\frac{\pi}{\pi}\)

Arr	Pin angeme	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
D00			1B18	Y02	1A18	Y12	2B18	Y22	2A18	Y32
B20 B19	0 0	A20 A19	1B17	Y03	1A17	Y13	2B17	Y23	2A17	Y33
B18	0 0	A18	1B16	Y04	1A16	Y14	2B16	Y24	2A16	Y34
B17 B16	0 0	A17 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	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	Ү ЗА
B7	0 0	A7	189	YOB	1A9	Y1B	2B9	Y2B	2A9	Y3B
B6 B5	0 0	A6 A5	1B8	YOC	1A8	Y1C	2B8	Y2C	2A8	Y3C
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	1 A 5	Y1F	2B5	Y2F	2A5	Y3F
			1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
			1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
Fro	nt view	1	1B2	12/24 VDC	1A2	COM1	2B2	12/24 VDC	2A2	COM2
-		ŀ	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

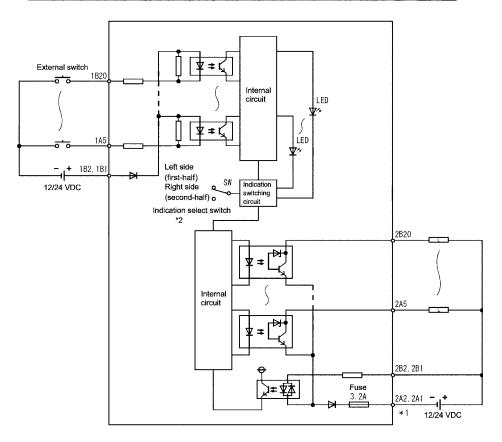
4.1 Input/Output Composite Module Specifications

4.1.1 A1SH42 input/output module

	Model		Input/Output Composite Module	• .
Specifications	s	Input	Appearance	
Number of inpu	t points	32 points		
Isolation metho	d	Photocoupler		
Rated input vol	tage	12 VDC	24 VDC	
Rated input cur	rent	Approx. 2 mA	Approx. 5 mA	
Operating volta	ge range	10.2 to 26.4 VDC (ripple: less t	han 5%)	
Max. simultane points	'	60% (20 points/common) simul	taneously ON (at 24 VDC)	
ON voltage/ON	current	8 VDC or higher/2 mA or higher		
OFF voltage/OF	FF current	4 VDC or lower/0.6 mA or lowe	r	A1SH42
Input resistance	9	Approx. 5 kΩ		AISH42
Response	$OFF \rightarrow ON$	10 ms or less (24 VDC)		
time	$ON \rightarrow OFF$	10 ms or less (24 VDC)		
Common metho	od	32 points/common (common ter	minals: 1B1, 1B2)	7 1 1 1 1 1 1
			Specifications	
Number of outp	ut points	32 points		
Isolation metho	d	Photocoupler		
Rated input vol	tage	12/24 VDC		DIS. X OY
Operating volta	ge range	10.2 to 30 VDC (peak voltage 3	0 VDC)	
Max. load curre	nt	0.1 A/point, 1.6 A/common		
Max. allowed rush current		0.4 A 10 ms or less		
Leakage curren circuit	it at OFF	0.1 mA or less		
Max. voltage dr circuit	op at ON	1.0 VDC (TYP) 0.1 A, 2.5 VDC		
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),		
Fuse capacity		50 A		
Error display		LED goes ON when fuse blows	signal output to PC CPU *4	
Common metho	od	32 points/common (common ter	minals: 2A1, 2A2)	
External power	Voltage	12/24 VDC (10.2 to 30 VDC)		
supply	Current	8 mA (TYP 24 VDC/common)		DC12/24V 2/5 mA 0.1 A A1SH42
	Common Specifications			
Number of I/O	ooints	32 (I/O allocation is set as a 32	-point output module)	
Operating indic	Operating indicator ON state is indicated (LEDs), 32-bit indication by switch			
External connec	External connections 40-pin connector			
Applicable wire	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 A	rrangeme	nt	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signal Name (LH)	Pin No.	Signal Name (LH)
1	~		1B20	X00	1A20	X10	2B20	Y00	2A20	Y10
B20	0 0	A20	1B19	X01	1A19	X11	2819	Y01	2A19	Y11
B19	0 0	A19	1B18	X02	1A18	X12	2B18	Y02	2A18	Y12
B18	0 0	A18	1B17	X03	1A17	X13	2B17	Y03	2A17	Y13
B17	0 0	A17	1B16 -	X04	1A16	X14	2B16	Y04	2A16	Y14
B16 B15	0 0	A16 A15	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15
B14	0 0	A14	1B14	X06	1A14	X16	2B14	Y06	2A14	Y16
B13	0 0	A13	1B13	X07	1A13	X17	2B13	Y07	2A13	Y17
B12	0 0	A12	1B12	X08	1A12	X18	2B12	Y08	2A12	Y18
B11	0 0	A11	1B11	X09	1A11	X19	2B11	Y09	2A11	Y19
B10 B9	0 0	A10 A9	1B10	XOA	1A10	X1A	2B10	YOA	2A10	Y1A
B8	0 0	A8	1B9	X0B	1A9	X1B	2B9	Y0B	2A9	Y1B
B7	0 0	A7	1B8	X0C	1A8	X1C	2B8	YOC	2A8	Y1C
B6	0 0	A6	1B7	XOD	1A7	X1D	2B7	Y0D	2A7	Y1D
B5 B4	0 0	A5 A4	1B6	X0E	1A6	X1E	2B6	Y0E	2A6	Y1E
B3	0 0	A3	1B5	X0F	1A5	X1F	2B5	Y0F	2A5	Y1F
B2	0 0	A2	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
B1	0 0	A1	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
,			1B2	12/24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2
F	ront vie	w	1B1	12/24 VDC	1A1	Vacant	281	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.

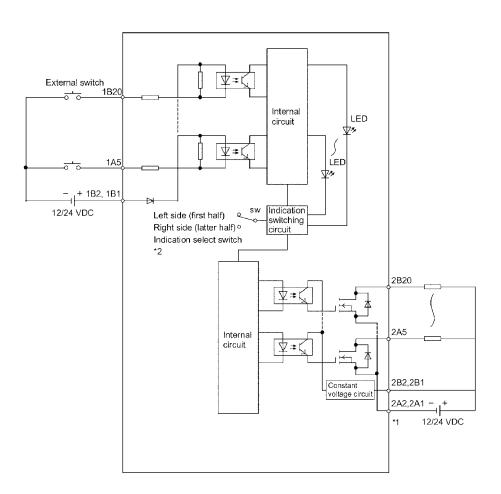
 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *4: The ERR. indicating LED will also light when the external power supply is shut OFF.

4.1.2 A1SH42P input / output module

	Model Input / Output Composite Module				
Specifications		Input Spec	cifications	Appearance	
Number of input po	ints	32 points			
Isolation method		Photocoupler		1	
Rated input voltage)	12VDC 2	24VDC	1	
Rated input current	:	Approx. 2 mA	Approx. 5 mA		
Operating voltage r	ange	10.2 to 26.4 VDC (ripple: less than 5	5%)	7	
Max. simultaneous	input points	60% (20 points / common) simultane	eously ON (at 24 VDC)	A 1\$1 42P	
ON voltage/ON cur		8 VDC or higher/2mA or higher		A 0 🗆 8 🗀 🗀 0 🗆 8 B	
OFF voltage/OFF of	current	4 V or lower / 0.6 mA or lower			
Input resistance		Approx. 5k ^Ω		3 B	
Doggoog time	OFF→ON	10 ms or less (24 VDC)		5 🗆 D 🗀 6 🗆 D	
Response time	ON→OFF	10 ms or less (24 VDC)		6 E E 6 E F 7 F F F F	
Common method		32 points / common (common termin	nal: 1 B1, 1B2)		
		Output Spe	ecifications		
Number of Output	points	32 points		 	
Isolation method		Photocoupler		1	
Rated input voltage	;	12 / 24 VDC		71 1	
Operating voltage range		10.2 to 30 VDC (peak voltage 30 VE	DC)		
Max. load current	-	0.1 A / points, 2 A / common	·	71 /	
Max. allowed rush	current	0.7 A 10 ms or less		<u> </u>	
Leakage current at	OFF circuit	0.1 mA of less			
Max. voltage drop a	at ON circuit	0.1 VDC (TYP) 0.1 A, 0.2 VDC (MA	7 :: 		
Response time	OFF→ON	1 ms or less] :: :::		
Response time	ON→OFF	1 ms or less (resistive load)		7 :: ::	
Surge absorber		Zener diode			
Fuse rating		None			
Common method		32 points / common (common termin	nals: 2A1, 2A2)		
External power	Voltage	12 / 24 VDC (10.2 to 30 VDC)	,		
supply	Current	12 mA (TYP 24 VDC / common)		▋▍▕░░▐ ▋▍░░	
Protection function		Yes (overload protection function, coordinate of the coordinate of	tivated in increments of 1 point.		
		Overload protection function is action	•		
Normalia and 110 marin	1 -	Common Sp			
Number of I/O points		32 (I/O allocation is set as a 32-poin		DC12/24 2/5mA DC12/24V 0.1A A1SH42P	
Operating indicator		ON state is indicated (LEDs), 32-bit	indication by switch	-	
External connection		40-pin connector		4	
Applicable wire size		0.3mm ²		4	
Accessories	aumention (F \ /DO)	Connector (2 cps.) for external wiring	g (soldering type)	4	
Internal current con	isumption (5 VDC)	130 mA (TYP, all points ON)		4	
Weight Kg		0.17			

F		A		
Exte	ากลเ	Con	nect	ions

Pin A	Arrangeme	nt	Pin No.	Signal Name (FH)	Pin No.	Signal Name (FH)	Pin No.	Signat Name (LH)	Pin No.	Signal Name (LH)
			1B20	X00	1A20	X10	2B20	Y00	2A20	Y10
B20	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 0	A18	1B17	X03	1A17	X13	2B17	Y03	2A17	Y13
B17	0 0	A17	1B16 -	X04	1A16	X14	2B16	Y04	2A16	Y14
B16 B15	0 0	A16 A15	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15
B13	0 0	A14	1B14	X06	1A14	X16	2B14	Y06	2A14	Y16
B13	0 0	A13	1B13	X07	1A13	X17	2B13	Y07	2A13	Y17
B12	B11 O O A11 B10 O O A10 B9 O O A9	1B12	X08	1A12	X18	2B12	Y08	2A12	Y18	
		1B11	X09	1A11	X19	2B11	Y09	2A11	Y19	
			1B10	XOA	1A10	X1A	2B10	YOA	2A10	Y1A
B8			1B9	X0B	1A9	X1B	2B9	YOB	2A9	Y1B
B7	0 0	A7	1B8	XOC	1A8	X1C	2B8	Y0C	2A8	Y1C
B6	0 0	A6	187	X0D	1A7	X1D	2B7	Y0D	2A7	Y1D
B5 B4	0 0	A5 A4	1B6	X0E	1A6	X1E	2B6	Y0E	2A6	Y1E
B3	0 0	A3	1B5	X0F	1A5	X1F	2B5	Y0F	2A5	Y1F
B2	20 1 0 0 1	A2	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
B1		J A1	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
	_		1B2	12/24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2
F	ront vie	W	1B1	12/24 VDC	1A1	Vacant	2B1	12/24 VDC	2A1	COM2



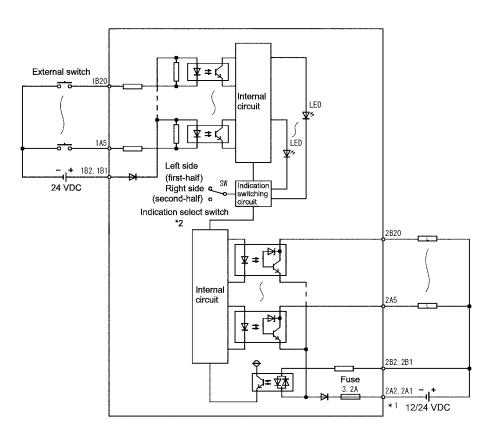
- *1: In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.
- *2: When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs.
 When it is set to the right side, the status of the second-half devices (Y00 to Y1F) is displayed by the LEDs.

4.1.3 A1SH42-S1 input/output module

Model		Input/Output Composite Module		
Specifications		Input Specifications	Appearance	
Number of input points		32 points		
Isolation method		Photocoupler		
Rated input voltage		24 VDC		
Rated input current		Approx. 5 mA		
Operating voltage range		19.2 to 26.4 VDC (ripple: less than 5%)		
Max. simultaneous input points		60% (20 points/common) simultaneously ON (at 24 VDC)		
ON voltage/ON current		15 VDC or higher/3 mA or higher	A1SH42-S1	
OFF voltage/OFF current		3 VDC or lower/0.5 mA or lower		
Input resistance		Approx. 5 kΩ		
Response time	$OFF \rightarrow ON$	0.3 ms or less (24 VDC)	A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	$ON \rightarrow OFF$	0.3 ms or less (24 VDC)		
Common method		32 points/common (common terminals: 1B1, 1B2)		
		Output Specifications		
Number of output points		32 points	DIS. X	
Isolation method		Photocoupler		
Rated input voltage		12/24 VDC		
Operating voltage range		10.2 to 30 VDC (peak voltage 30 VDC)		
Max. load current		0.1 A/point, 1.6 A/common		
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 time	$OFF \rightarrow ON$	2 ms or less		
	$ON \rightarrow OFF$	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 method		32 points/common (common terminals: 2A1, 2A2)		
External power	Voltage	12/24 VDC (10.2 to 30 VDC)	DC24V6mA DC24V0.1A A1SH42-S1	
supply	Current	8 mA (TYP 24 VDC/common)		
		Common Specifications		
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 VDC)		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
00	1B19	X01	1A19	X11	2B19	Y01	2A19	Y11
0 0	1B18	X02	1A18	X12	2B18	Y02	2A18	Y12
	1B17	X03	1A17	X13	2B17	Y03	2A17	Y13
0 0	1B16	X04	1A16	X14	2B16	Y04	2A16	Y14
0 0	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15
0 0	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	Y0A	2A10	Y1A
	1B9	XOB	1A9	X1B	2B9	Y0B	2A9	Y1B
0 0	1B8	XOC	1A8	X1C	2B8	YOC	2A8	Y1C
	1B7	X0D	1A7	X1D	2B7	Y0D	2A7	Y1D
00	1B6	X0E	1A6	X1E	2B6	Y0E	2A6	Y1E
00	1B5	X0F	1A5	X1F	2B5	Y0F	2A5	Y1F
00	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
	1B2	24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2
Front view	1B1	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.

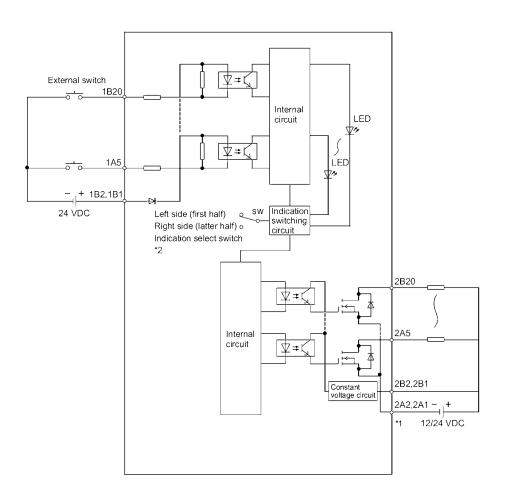
 If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.
- *4: The ERR. indicating LED will also light when the external power supply is shut OFF.

4.1.4 A1SH42P-S1 input / output module

	Model	Input / Output Composite Module				
Specifications		Input Specifications	Appearance			
Number of input po	oints	32 points				
Isolation method		Photocoupler]			
Rated input voltage	e	24VDC				
Rated input curren		Approx. 5 mA				
Operating voltage	range	10.2 to 26.4 VDC (ripple: less than 5%)				
Max. simultaneous		60% (20 points / common) simultaneously ON (at 24 VDC)	A 181 142P-81			
ON voltage/ON cui		15 VDC or higher / 3 mA or higher	A 0 🗆 8 🗀 🗀 0 🗀 8 B			
OFF voltage/OFF	current	3 V or lower / 0.5 mA or lower	1			
Input resistance		Approx. 5k ♀	3 B 3 B			
Doonongo timo	OFF→ON	0.3 ms or less (24 VDC)	5 🗆 D 🗆 6 🗆 D			
Response time	ON→OFF	0.3 ms or less (24 VDC)	6			
Common method	•	32 points / common (common terminal: 1B1, 1B2)				
		Output Specifications	11			
Number of Output	points	32 points	1			
Isolation method		Photocoupler				
Rated input voltage	ė	12 / 24 VDC				
Operating voltage	range	10.2 to 30 VDC (peak voltage 30 VDC)				
Max. load current		0.1 A / points 2 A / common				
Max. allowed rush	current	0.7 A 10 ms or less				
Leakage current at	t OFF circuit	0.1 mA of less				
Max. voltage drop	at ON circuit	0.1 VDC (TYP) 0.1 A, 0.2 VDC (MAX) 0.1 A	11 :: 出 ::			
Decreases time	OFF→ON	1 ms or less				
Response time	ON→OFF	1 ms or less (resistive load)	` ::⊞ ::			
Surge absorber	•	Zener diode] :: 			
Fuse rating		None				
Common method		32 points / common (common terminals: 2A1, 2A2)				
External power	Voltage	12 / 24 VDC (10.2 to 30 VDC)				
supply	Current	12 mA (TYP 24 VDC / common)				
Protection function		Yes (overload protection function, overheat protection function) Overheat protection function is activated in increments of 1 point. Overload protection function is activated in increments of 1 point.				
Number of I/O points		Common Specifications				
		32 (I/O allocation is set as a 32-point output module)	DC24V 2/5mA DC12/24V 0.1A A1SH42P-S1			
Operating indicator		ON state is indicated (LEDs), 32-bit indication by switch				
External connections Applicable wire size		40-pin connector 0.3mm ²				
Applicable wire siz	е					
	nsumption (5 VDC)	Connector (2 cps.) for external wiring (soldering type)	-			
Weight Kg	isumption (5 VDC)	130 mA (TYP, all points ON)				
weight K g		U.17				

F		A		
Exte	rnai	Con	nect	ions

Pin A	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
B20	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 0	A18	1B17	X03	1A17	X13	2B17	Y03	2A17	Y13
B17	0 0	A17	1B16 -	X04	1A16	X14	2B16	Y04	2A16	Y14
B16 B15	0 0	A16 A15	1B15	X05	1A15	X15	2B15	Y05	2A15	Y15
B14	0 0	A14	1B14	X06	1A14	X16	2B14	Y06	2A14	Y16
B13	0 0	A13	1B13	X07	1A13	X17	2B13	Y07	2A13	Y17
B12	0 0	A12	1B12	X08	1A12	X18	2B12	Y08	2A12	Y18
B11 B10	0 0	A11 A10	1B11	X09	1A11	X19	2B11	Y09	2A11	Y19
B10	0 0	A9	1B10	XOA	1A10	X1A	2B10	YOA	2A10	Y1A
B8	0 0	A8	1B9	X0B	1A9	X1B	2B9	Y0B	2A9	Y1B
B7	0 0	A7	1B8	XOC	1A8	X1C	2B8	Y0C	2A8	Y1C
B6	0 0	A6	1B7	X0D	1A7	X1D	2B7	Y0D	2A7	Y1D
B5 B4	0 0	A5 A4	1B6	X0E_	1A6	X1E	2B6	Y0E	2A6	Y1E
B3	0 0	A3	1B5	X0F	1A5	X1F	2B5	Y0F	2A5	Y1F
B2	0 0	A2	1B4	Vacant	1A4	Vacant	2B4	Vacant	2A4	Vacant
B1	ر فی ک	A1	1B3	Vacant	1A3	Vacant	2B3	Vacant	2A3	Vacant
			1B2	24 VDC	1A2	Vacant	2B2	12/24 VDC	2A2	COM2
F	ront vie	W	181	24 VDC	1A1	Vacant	2B1	12/24 VDC	2A1	COM2



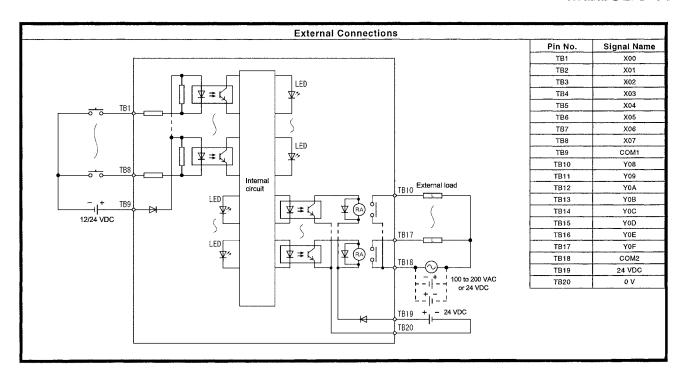
- *1: In the pin number column, the pins beginning with "1[][]" are left connector pins and those beginning with "2[][]" are right connector pins.
- *2: When the switch is set to the left side position, the status of the first-half devices (X00 to X1F) is displayed by the LEDs.
 When it is set to the right side, the status of the second-half devices (Y00 to Y1F) is displayed by the LEDs.

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

	Model	Input/Output Composite Module					
Specification	s	Input Specifications	Appearance				
Number of inpu	it points	8 points					
Isolation method		Photocoupler					
Rated input voltage		24 VDC					
Rated input cur	rent	Approx. 7 mA					
Operating volta	ge range	19.2 to 26.4 VDC (ripple: less than 5%)					
Max. simultane points	ous input	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	9	Approx. 3.3 kΩ					
Response	$OFF \rightarrow ON$	10 ms or less (24 VDC)					
time	$ON \rightarrow OFF$	10 ms or less (24 VDC)					
Input method		Sink input					
Common metho	od	8 points/common (common terminals: TB9)	A1SX48Y 18				
		Output Specifications					
Number of outp	ut points	8 points					
Isolation metho		Photocoupler	0 DOD A A A A A A A A A A A A A A A A A A				
Rated switching current	g voltage and	24 VDC 2 A (resistive load) 240 VAC 2A (COSφ=1)/point, 8 A/common					
Minimum switch	ning load	5 VDC 1mA					
Maximum switc	hing voltage	264 VAC 125 VDC	0				
Response	$OFF \rightarrow ON$	10 ms or less	1				
time	$ON \to OFF$	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	Flooring	At 200 VAC 1.5 A, 240 VAC 1 A (COSφ=0.7) 100,000 times of switching or over	6				
	Electrical	At 200 VAC 1 A, 240 VAC 0.5 A (COSφ=0.35)					
		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	A				
Surge absorber	-	Not provided	В				
Fuse		None	С				
External power	Voltage	24 VDC ±10%, ripple voltage: 4 V _{P-P} or less	D				
supply (relay coil drive)	Current	45 mA (TYP. 24 VDC all points ON)	E				
Common metho	od	8 points/common (common terminal: TB18)	F				
1		Common Specifications	L				
Operation indic	ator	Provided (The LED lights when the input/output is ON.)					
External wiring method		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 solderless terminal		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5					
Accessories		None					
Internal current consumption (5 VDC)		85 mA (TYP. all points ON) (0.09A is shown on the rating plate of the module.)					
Weight kg		0.225					
Number of I/O	points	16 points (Make I/O allocation as a 16-point output module.)					

4. INPUT/OUTPUT CONPOSITE MODULE SPECIFICATIONS

MELSEC-A

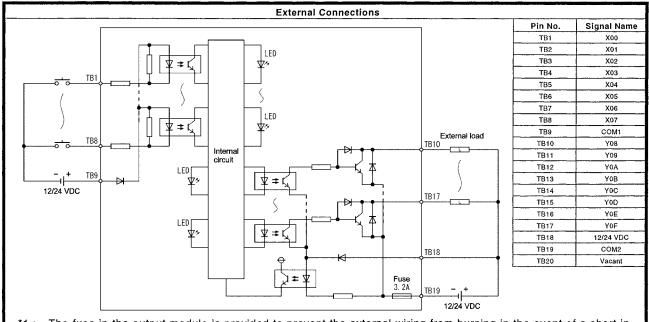


4.1.6 A1SX48Y58 I/O module (24 VDC input (sink type), 12/24 VDC transistor output)

	Model	Input/Output Composite Module			
Specification	S	Input Specifications	Appearance		
Number of inpu	t points	8 points			
Isolation method		Photocoupler			
Rated input vol	tage	24 VDC			
Rated input cur	rent	Approx. 7 mA			
Operating volta	ge range	19.2 to 26.4 VDC (ripple: less than 5%)			
Max. simultane 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/OI	F current	6.5 VDC or lower/1.7 mA or lower			
Input resistance	9	Approx. 3.3 kΩ	A1SX48Y 58 D ERR		
Response	$OFF \to ON$	10 ms or less (24 VDC)	A15X48Y 58 C 58A C		
time	$ON \rightarrow OFF$	10 ms or less (24 VDC)			
Input method		Sink input			
Common metho	od	8 points/common (common terminals: TB9)			
		Output Specifications			
Number of outp	ut points	8 points			
Isolation metho	d	Photocoupler	0		
Rated load volt	age	12/24 VDC	1		
Operating volta	ge range	10.2 to 30 VDC (peak voltage 30 VDC)	2		
Maximum load	current	0.5 A/point, 2 A/common	3		
Maximum inrus	h current	4 A 10 ms or less	4		
Leakage curren circuit	t at OFF	0.1 mA or less 5			
Maximum volta	ge drop at ON	0.9 VDC (TYP.) 0.5 A 1.5 VDC (MAX.) 0.5 A	7		
Response	$OFF \to ON$	2 ms or less	8		
time	$ON \rightarrow OFF$	2 ms or less (resistive load)	9		
Surge absorber	•	Zener diode	A		
Fuse rating		Fuse 3.2 A (1 per common) Not replaceable *1	В		
Fuse breaking	capacity	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	od	8 points/common (common terminal: TB19)			
		Common Specifications			
Operation indic		Provided (The LED lights when the input/output is ON.)			
External wiring connection method		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 solderless terminal		R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5			
Accessories		None			
Internal current consumption (5 VDC)		60 mA (TYP. all points ON)			
Weight kg		0.2			
Number of I/O	points	16 points (Make I/O allocation as a 16-point output module.)			

4. INPUT/OUTPUT CONPOSITE MODULE SPECIFICATIONS

MELSEC-A



*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.

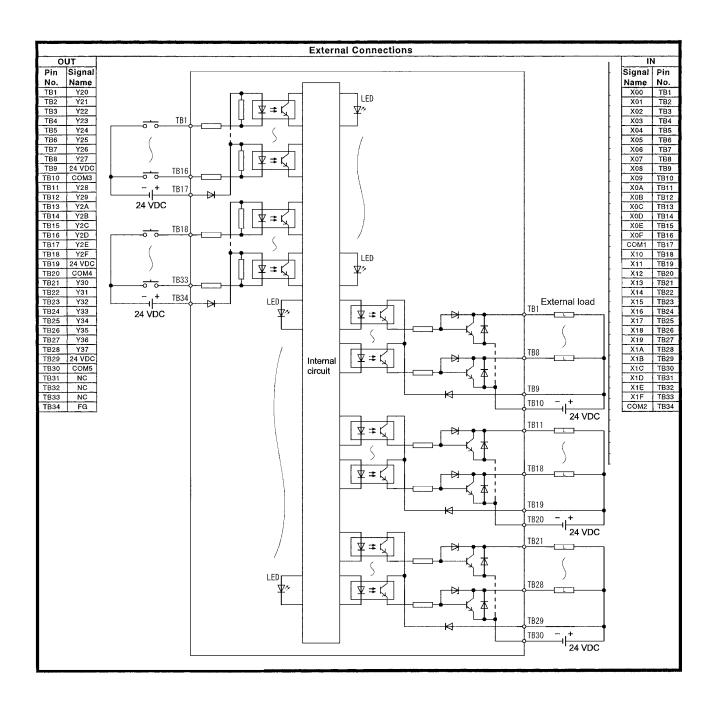
If an output device is damaged in a failure mode other than a short circuit, the fuse might not blow.

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

4.1.7 A1SJ-56DT 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).

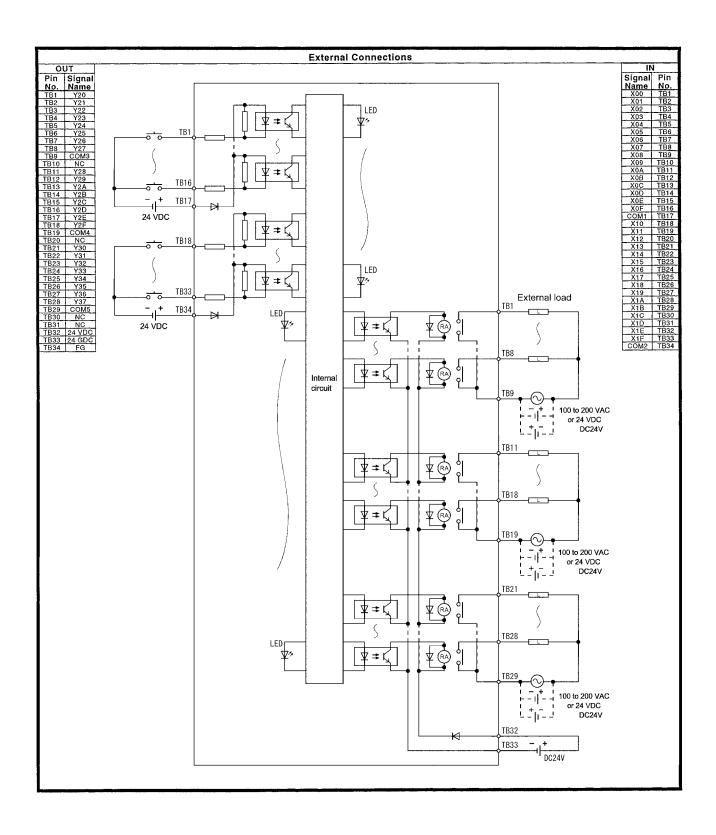
Output Specifications				Input Specifications			
Number of output points 24 points N			Number of inp	ut points	32 points		
Isolation method Photocoupler			Isolation meth	od	Photocoupler		
Rated load volta	ge	24 VDC	Rated input vo	ltage	24 VDC		
Operating load v	oltage range	19.2 to 30 VDC (peak voltage: 30 VDC)	Rated input cu	ırrent	Approx. 7 mA		
Operating toda .		Total to do voo (pour vorage, do voo)	Operating volt	age range	19.2 to 26.4 VDC (ripple: less than 5%)		
Maximum load c	urrent	0.5 A/point, 4 A/common	ON voltage/ON	V current	14 VDC or higher/3.5 mA or higher		
Maximum inrush	current	4 A 10 ms or less	OFF voltage/C	FF current	6.5 VDC or lower/1.7 mA or lower		
Leakage current circuit	at OFF	0.1mA or less	Input resistance	e e	Approx. 3.3 KΩ		
Maximum voltag circuit	um voltage drop at OFF 0.9 V (TYP.) 0.5 A Input method			Sink input (method by which the input current flows out)			
Response time	OFF → ON	2 ms or less	Response	$OFF \to ON$	10 ms or less (24 VDC)		
,	ON → OFF	2 ms or less (resistive load)	ume	ON → OFF	10 ms or less (24 VDC)		
External power	Voltage	24 VDC (19.2 to 30 VDC)	Common meth	ad	16 points/common (common terminal: TB17, TB34)		
supply	Current	60 mA (TYP. 24 VDC/common)	- Common mem				
Surge absorber		Zener diode	Operating indi	cator	Provided (the LED lights when the input is ON.)		
Common method	1	8 points/common (common terminal: TB10, TB20, TB30)	Maximum simu points	Iltaneous input	60 % (10 points/common)simultaneously ON		
Operating indica	tor	Provided (the LED lights when the output is ON.)					
Number of I/O pe	oints	128 points (slot 0: output, 64 points; slots 1 to	1 to 4: vacant, 16 points)				
Internal current consumption (5	VDC)	220 mA (TYP. all points ON)					
External wiring o	onnection	34-point terminal block connector (M3.5 x 6 scr	rew), 2 connector	s			
Applicable cable	size	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					



4.1.8 A1SJ-56DR I/O module

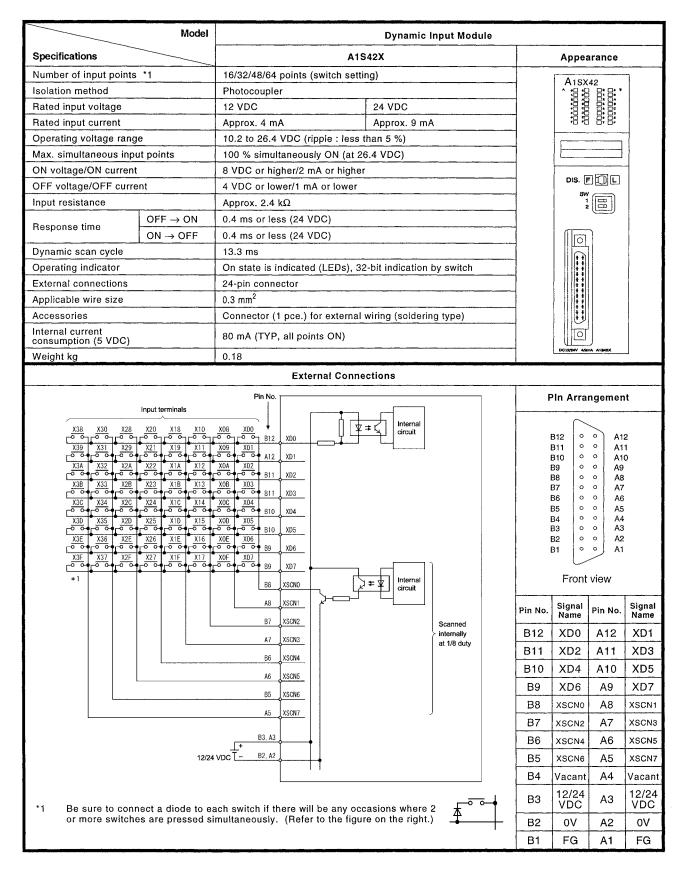
Can only be installed on an A1SJ(H)CPU. Cannot be installed on an A1S3\(\text{IB}\) (S1) (main base unit), or an A1S6\(\text{IB}\) (S1) (extension base unit).

		Output Specifications		Input Specifications			
Number of output points 24 points 1		Number of input points		32 points			
Isolation method		Photocoupler	Isolation me	thod	Photocoupler		
Rated switchin	g voltage	24 VDC 2 A (resistive load) 240 VAC 2A	Rated input	voltage	24 VDC		
and current		(COSφ=1)/point, 5 A/common	Rated input	current	Approx. 7 mA		
Minimum swith	cing load	5 VDC 1 mA	Operating v	oltage range	19.2 to 26.4 VDC (ripple: less than 5%)		
Max. switching	voltage	264 VAC 125 VDC	ON voltage/	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 resista	ance	Approx. 3,3 KΩ		
		At rated switching voltage and current loads 100,000 times of switching or over	Input metho	d	Sink input (method by which the input current flows out)		
Service life		At 200 VAC 1.5 A, 240 VAC 1 A (COSo=0.7) 100,000	Response	OFF → ON	10 ms or less (24 VDC)		
GOTTIGE III	Electrical	times of switching or over	time	$ON \rightarrow OFF$	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 method		16 points/common (common terminal: TB17, TB34)		
		At 24 VDC 1 A, 100 VDC 0.1 A (L/R = 7 ms) 100,000 times of switching or over	Operating indicator		Provided (the LED lights when the input is ON.)		
Response	OFF → ON	10 ms or less	Maximum simultaneous input points		60 % (10 points/common)simultaneously ON		
time	$ON \rightarrow OFF$	12 ms or less					
External power	Voltage	24 VDC ±10%, ripple voltage: 4 V _{P-P} or less					
supply (relay c drive)	Current	140 mA (TYP. 24 VDC all points ON)]				
Surge absorbe	r	None	1				
Common meth	od	8 points/common (common terminal: TB9, TB18, TB27)					
Operating indic	ator	Provided (the LED lights when the output is ON.)					
Number of I/O	points	128 points (slot 0: output, 64 points; slots 1 to 4: vacar	nt, 16 points)				
Internal current consumption (5 VDC)		220 mA (TYP. all points ON)					
External wiring connection 34-point termi		34-point terminal block connector (M3.5 x 6 screw), 2 d	oint terminal block connector (M3.5 x 6 screw), 2 connectors				
Applicable cab	le size	0.75 to 2 mm ² (AWG16 to AWG19) (Applicable tighten	ing torque 78.	4 N•cm)			
Applicable solo terminal	derless	R1.25-3.5, R2-3.5 RAV1.25-3.5, RAV2-3.5					
Weight kg		0.8					



4.2 Dynamic Input/Output Module Specifications

4.2.1 A1S42X dynamic input module



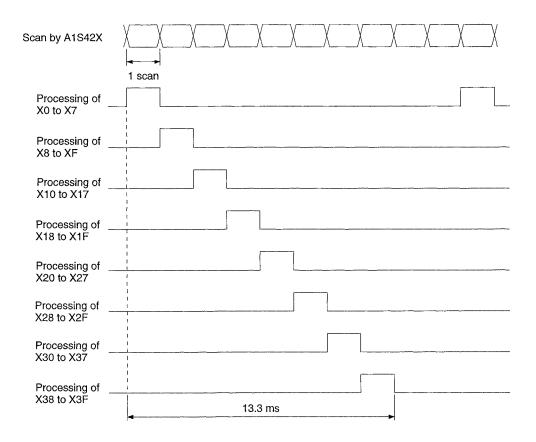
(1) Number of occupied I/O points setting

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 NO	SW 1 2	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	A	ppearance	
Number of output points		16/32/48/64 points (switch setting)			7
Isolation method	A1S42Y				
Rated load voltage		12/24 VDC			
Operating voltage range		10.2 to 26.4 VDC (ripple : less than 5 %)			
Max. load current		0.05 A/point			_
Leakage current at OFF of		0.1 mA or less	-		-
Max. voltage drop at ON		Source 2.0 VDC (MAX) 0.1 A Sink 2.0 VDC (MAX) 0.1 A			_
Response time -	OFF → ON	2 ms or less (resistive load)		ois. F 🔟 L	
	$ON \rightarrow OFF$	2 ms or less (resistive load)		sw	
Fuse rating		Fuse 1.6 A, not replaceable *1		2	
Fuse capacity		50 A			
Error display		LED goes ON when fuse blows : signal output to PC CPU *2 On state is indicated (LEDs), 32-bit indication by switch	{		
Operating indicator External connections		24-pin connector		(in)	
Applicable wire size	· · · · · · · · · · · · · · · · · · ·	0.3 mm ²			
Accessories		Connector (1 pce.) for external wiring (soldering type)		# #	
	Voltage	12/24 VDC (10.2 to 26.4 VDC)		1 1	
Extornal portor	Current	55 mA (TYP, 24 VDC/common)			
Internal current consumpt	tion	<u> </u>			
(5 VDC)		180 mA (TYP, all points ON)	DC	12/24V 4/9mA A1S42	ov
Weight kg		0.19			
	·	External Connections	,		
Internal circuit		YD1 A12 Y01 Y09 Y11 Y19 Y21 Y29 Y31 Y39 YD2 B11 Y02 Y0A Y12 Y1A Y22 Y2A Y32 Y3A YD3 B11 Y03 Y0B Y13 Y1B Y23 Y2B Y33 Y3B YD4 B10 Y04 Y0C Y14 Y1C Y24 Y2C Y34 Y3C YD5 B10 Y05 Y0D Y15 Y1D Y25 Y2D Y35 Y3D YD6 B9 Y06 Y0F Y16 Y1E Y26 Y2F Y36 Y3F YD7 B9 Y07 Y07 Y07 Y17 Y1F Y27 Y2F Y37 Y3F YSCN0 B8 YSCN1 A8 YSCN2 B7	Pin No. Sig Na (F B12 Y		0
0		YSCN3 A7	B10 Y	D4 A10	YD5
Scanned internally		YSCN4 B6		D6 A9	YD7
at 1/8 duty		YSCN5 A6	B8 YS	CN0 A8	YSCN1
		YSCN6 B5	B7 YS	CN2 A7	YSCN3
		YSCN7 A5	B6 YS	CN4 A6	YSCN5
				CN6 A5	YSCN7
		B3, A3		cant A4	Vacant
		B2. A2		/24 DC A3	12/24 VDC
		12/24 VDC		V A2	OV
			I	cant A1	Vacant
the module's output in a failure mode off *2 The ERR. indicating *3 Install the resistanc *4 The power supply v	. Therefore, it mer than a short of the than a short of LED will also light e for restricting be oltage(24/12 VD	rided to prevent the external wiring from burning in the event of a short in ay not be able to protect output devices. If an output device is damaged sircuit, the fuse might not blow. In when the external power supply is shut OFF. ED current outside the A1S42Y module. In is applied to the reverse direction of the LED. If the opposite voltage a diode for serial protection to each LED.	+ K	/	

(1) Number of occupied I/O points setting

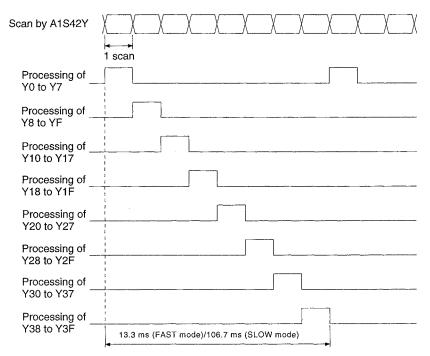
The number of occupied I/O points is set using the DIP switches on the front face of the module. It is factory-set to 64 points.

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 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	SW 1 2 NO	SW 1 2 NO	

(2) Dynamic scan method and dynamic scan cycle setting

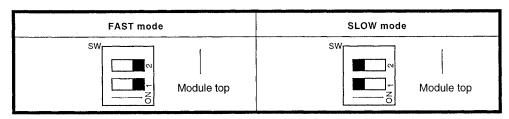
(a) Dynamic scan method

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.



SPECIFICATIONS OF CONNECTOR/TERMINAL BLOCK CONVERTOR MODULES 5.

5.1 Specifications of Connector/Terminal Block Convertor Modules

1) Connector/Terminal Block Convertor Module

Туре	Details	Weight	Applicable Wire Size	Applicable Crimping Terminal		Applicable Models
A6TBXY36	For positive common type input modules and sink type output modules (standard type)	0.4kg			Q series: AnS series:	QX41, QX41-S1, QX42, QX42-S1, QY41P, QY42P, QH42P, QX41Y41P A1SX41, A1SX41-S1, A1SX41-S2, A1SX42, A1SX42-S1, A1SX42-S2,
A6TBXY54	For positive common type input modules and sink type output modules (2-wire type)	0.5kg		1.25-3.5 (JIS) 1.25-YS3A (J.S.T.) Spade tongue	A series: CC-Link: MELSECNET-MINI:	A1SX82-S1, A1SY41, A1SY41P, A1SY42, A1SY42P, A1SY82, A1SH42, A1SH42P, A1SH42-S1, A1SH42P-S1 AX42, AX42-S1, AY42, AY42-S1, AY42-S3, AY42-S4, AH42 AJ65SBTCF1-32D, AJ65SBTCF1-32T, AJ65BTC1-32D, AJ65BTC1-32T AJ35TC1-32D, AJ35TC1-32T
А6ТВХ70	For positive common type input modules (3-wire type)	0.6kg	0.75 to 2mm ²	V1.25-M3 (J.S.T.) Insulated V1.25-YS3A (J.S.T.) Spade tongue 2-3.5 (JIS) 2-YS3A (J.S.T.)	Q series: AnS series: A series: CC-Link: MELSECNET-MINI	QX41, QX41-S1, QX42, QX42-S1, QH42P, QX41Y41P A1SX41, A1SX41-S1, A1SX41-S2, A1SX42, A1SX42-S1, A1SX42-S2, A1SX82-S1, A1SH42, A1SH42P, A1SH42-S1, A1SH42P-S1 AX42, AX42-S1, AH42 AJ65SBTCF1-32D, AJ65BTC1-32D AJ35TC1-32D
A6TBX36-E	For negative common type input modules (standard type)	0.4kg		Spade tongue V2-S3 (J.S.T.) Insulated		0.00
A6 TB X 54-E	For negative common type input modules (2-wire type)	0.5kg		V2-YS3A (J.S.T.) Spade tongue	Q series: AnS series: A series:	QX81 A1SX81, A1SX81-S2 AX82
A6TBX70-E	For negative common type input modules (3-wire type)	0.6kg		Spano III.gar		
A6TBY36-E	For source type output modules (standard type)	0.4kg			Q series: AnS series:	QY81P A1SY81
A6TBY54-E	For source type output modules (2-wire type)	0.5kg			Ans series:	AY82EP

POINT

- (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(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 A6TBY36-E, A6TBY54-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

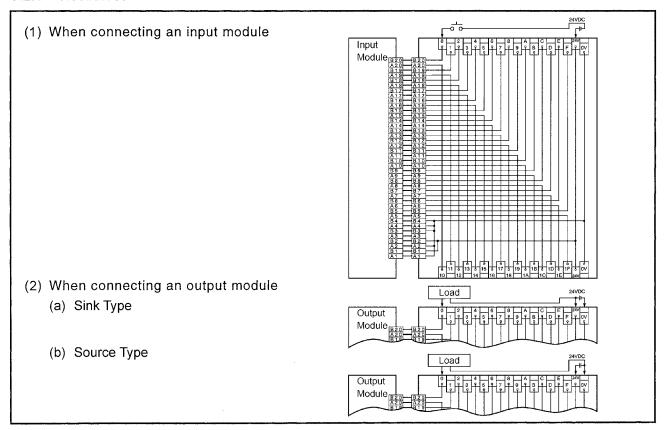
2) Cable

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 A6TBX70-E
AC50TB-E	5 m (196.85 in.), for source modules	0.76kg	AOTBA70-E

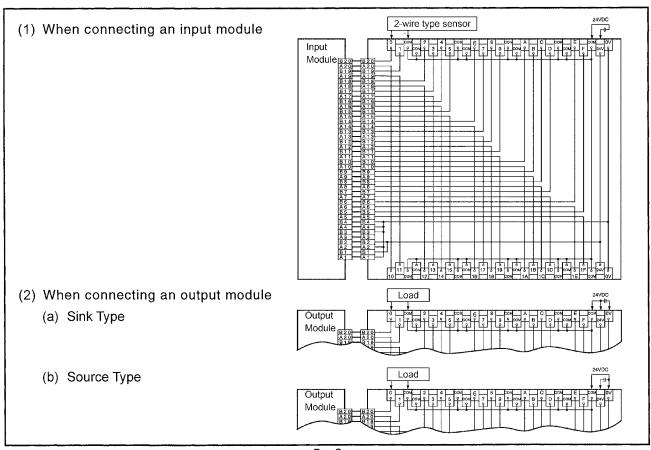
MELSEC-A

5.2 Connector/Terminal Block Convertor Module Connection Diagrams

5.2.1 A6TBXY36

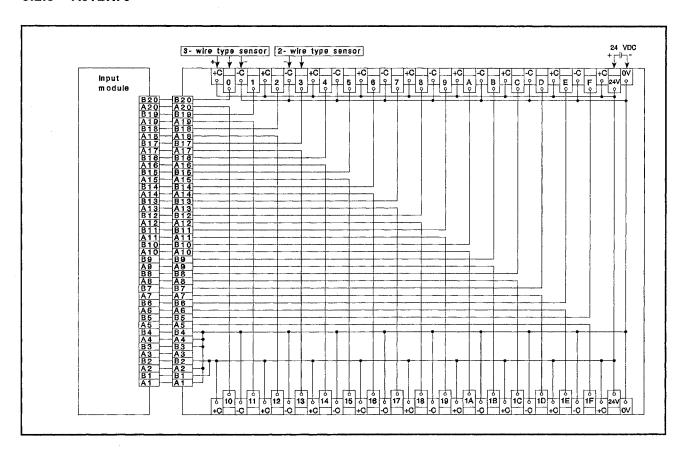


5.2.2 A6TBXY54

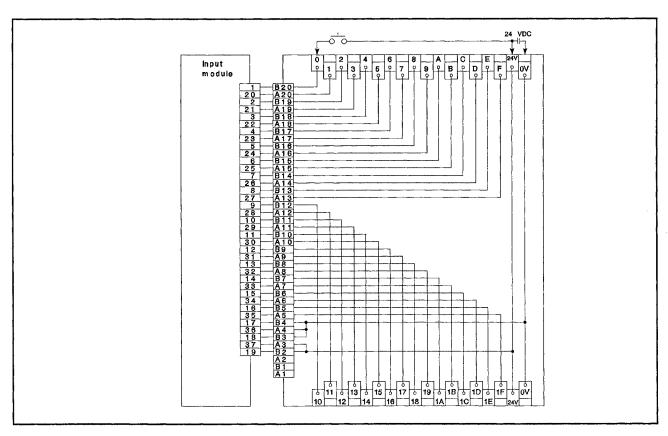


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5.2.3 A6TBX70

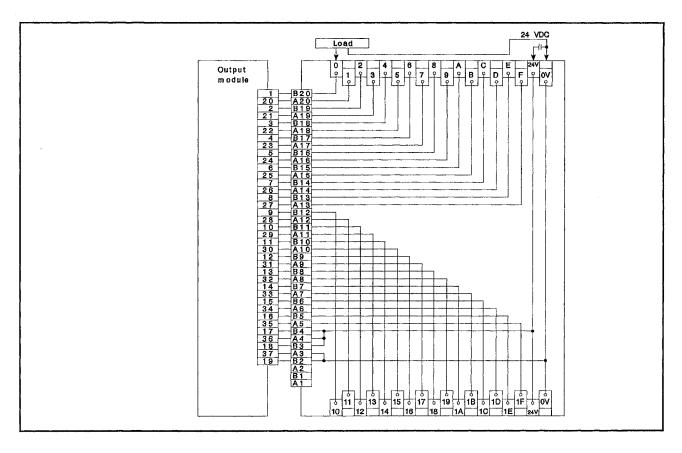


5.2.4 A6TBX36-E

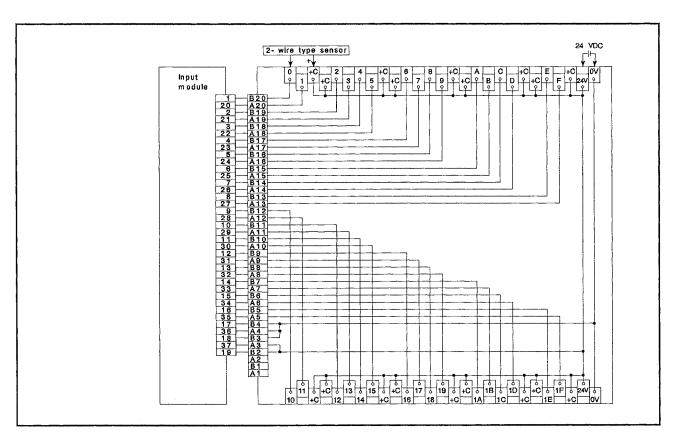


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5.2.5 A6TBY36-E

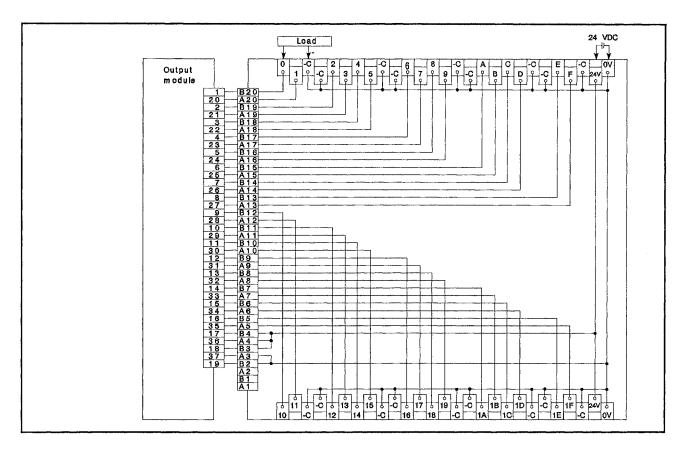


5.2.6 A6TBX54-E

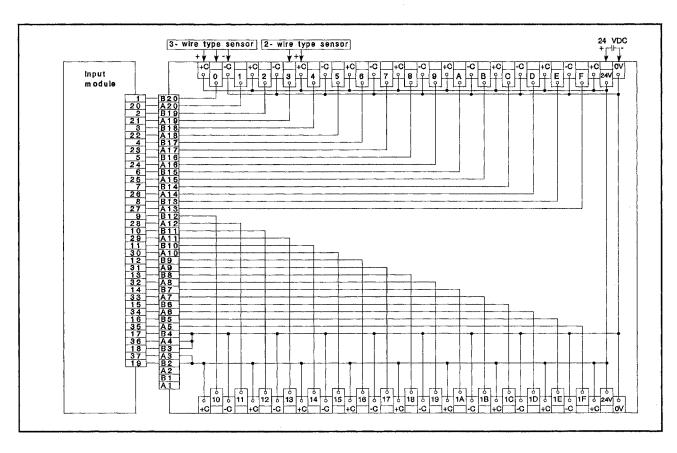


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5.2.7 A6TBY54-E



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	Empety [] points 0, 16, 32, 48, or 64 points can be specified to [].	☐ 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	

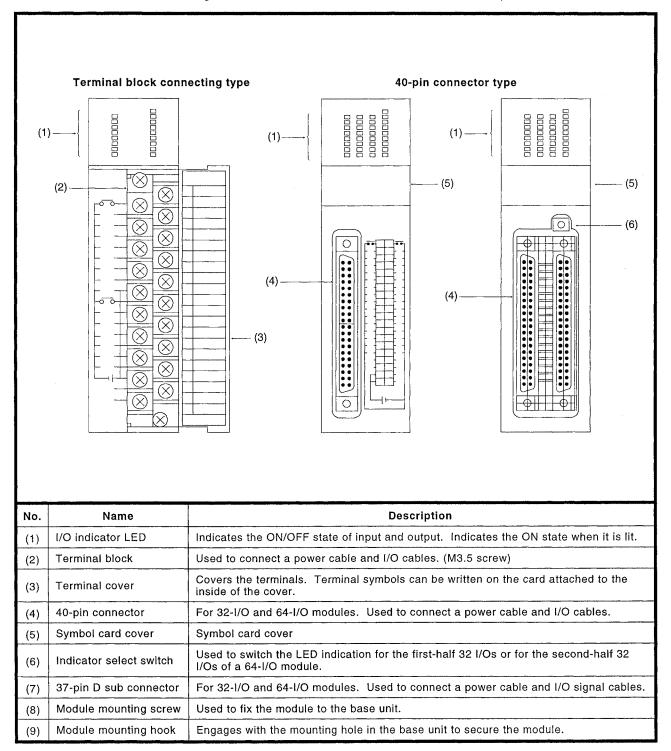
6.2 Setting the Occupying Number of Inputs/Outputs for A1SG62

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 □ → š	SW1 SW2 SW2	SW1 □ □ SW2 □ → δ

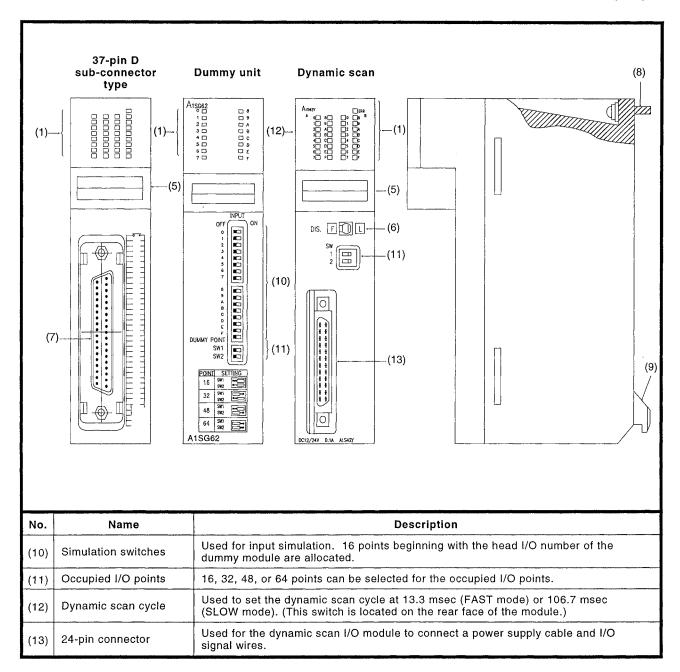
7. NAMES OF PARTS AND SETTINGS

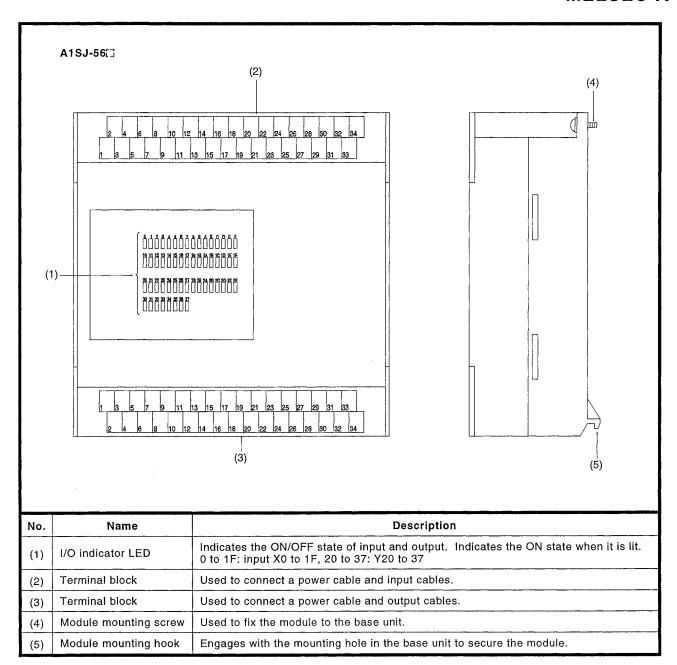
The figures and table below show the names of the parts of I/O modules.

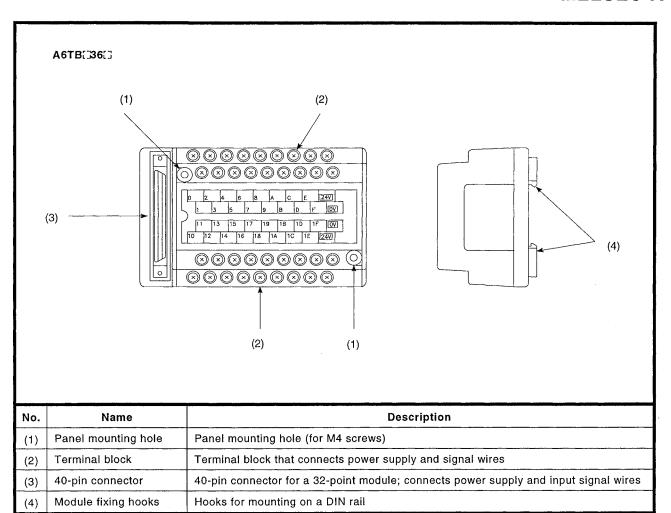


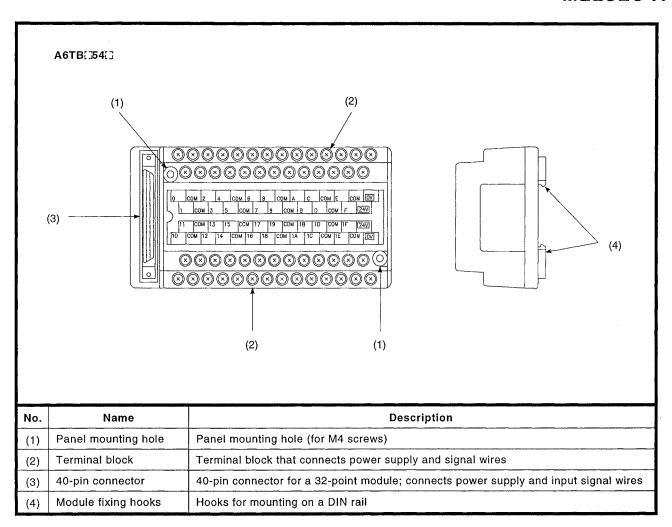
REMARK

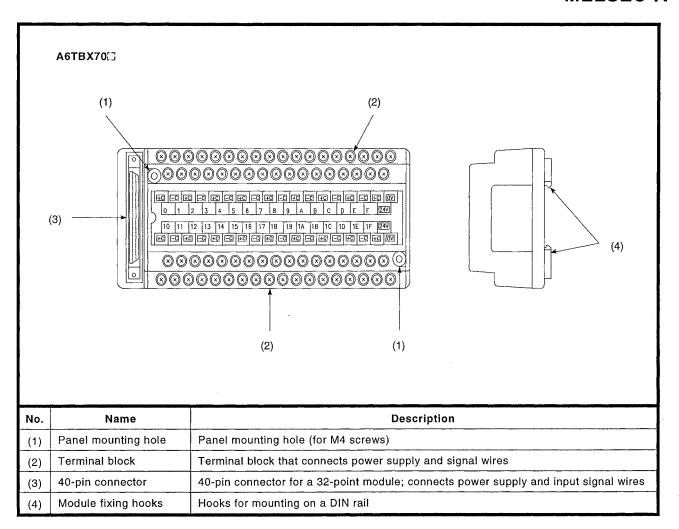
When removing the terminal symbol card, lift up the edge of the card a little to pull it out of the terminal cover smoothly.











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

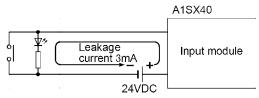
	Condition	Cause	Corrective Action
Example 1	Input signal does not turn OFF.	Leakage current of input switch (e.g. drive by non-contact switch). AC input Leakage current Input module	Connect an appropriate resistor which will make the voltage across the terminals of the input module lower than the OFF voltage value. AC input Input module
		Power supply	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 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 Input module	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
Example 4	Input signal does not turn OFF.	Drive by switch with LED indicator. DC input (sink) Input module Inpu	Connect an appropriate resistor as shown below so that the current flowing along the input module becomes lower than OFF current. DC input (sink) Resistor Input module * An example calculation of a value for a connected resistor is given on the following page.

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

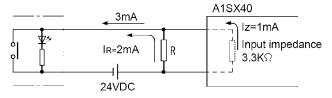
Table 8.1 Input Circuit Problems and Corrective Action (Continued)

<Sample calculation for Example 4>

When a switch with LED indicator, giving leakage current of 3mA at maximum when 24VDC power is supplied to the A1SX40



(1) 1.7mA or less OFF current of the A1SX40 is not satisfied. Hence, connect a resistor as shown below.



(2) Calculate the resistance value R as shown below.

To satisfy 1.7mA or less OFF current of the A1SX40, connect a resistor which flows 0.63mA or more.

IR: Iz=Z (Input impedance): R

$$R \le \frac{I_Z}{I_R} \times Z$$
 (Input impedance) = $\frac{1.0}{2.0} \times 3.3 = 1.65[k \Omega]$

Supposing that the resistance R is $1.5k\Omega$, the power capacity W of resistor R is: W = (Input voltage) $^2 \div$ R = $26.4^2 \div 1500 = 0.465$ (W)

- (3) Connect a resistor of 1.5 (k Ω) and 2 to 3 (W) to a terminal which may cause an error, since the power capacity of a resistor is selected so that it will be 3 to 5 times greater than the actual power consumption.
- (4) Also, OFF voltage when resistor R is connected will be as follows.

$$\frac{1}{\frac{1}{1.5[k\Omega]} + \frac{1}{3.3[k\Omega]}} \times 3[mA] = 3.09[V]$$

This satisfies 6V or less OFF voltage of A1SX40.

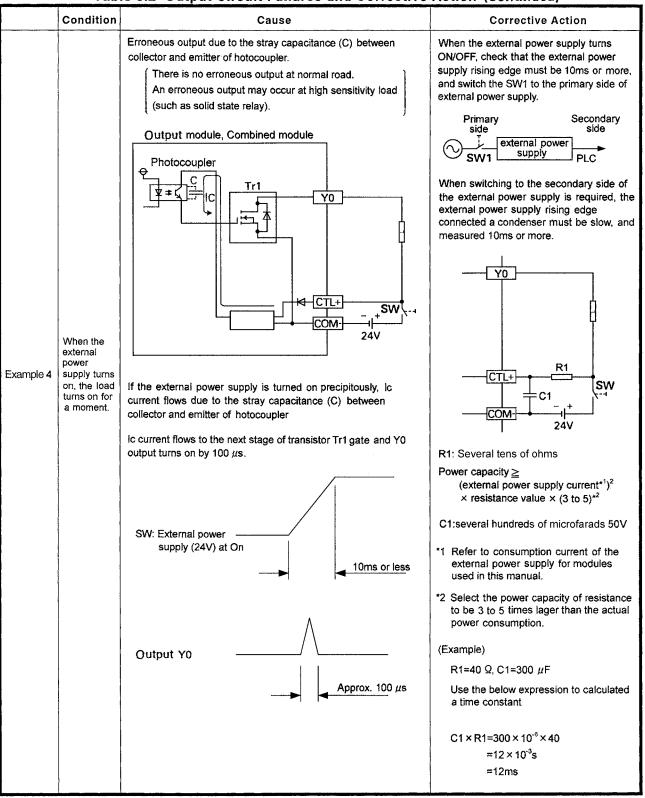
8.2 Output Circuit Failures and Corrective Action

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

Table 8.2 Output Circuit Failures and Corrective Action

		Table 8.2 Output Circuit Failures and C	Jone Cure Action
	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 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 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.

Table 8.2 Output Circuit Failures and Corrective Action (Continued)

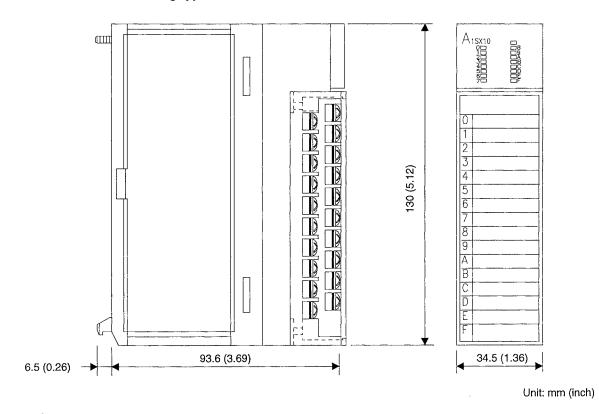


APPENDICES

APPENDIX 1 OUTSIDE DIMENSIONS

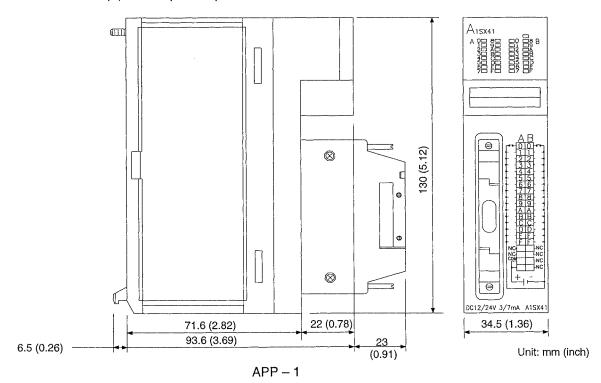
1.1 Input/Output Modules

1.1.1 Terminal base connecting type

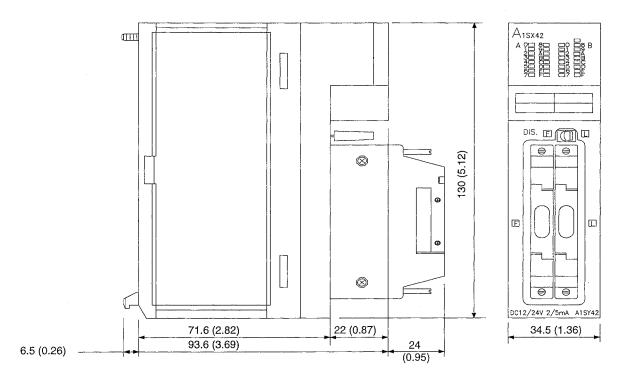


1.1.2 40-pin connector type

(1) 32-input/output module

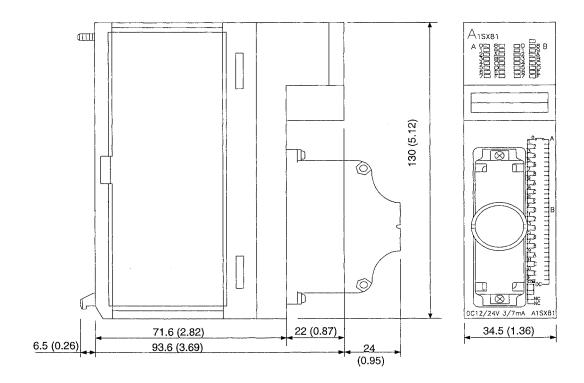


(2) 64-input/output module



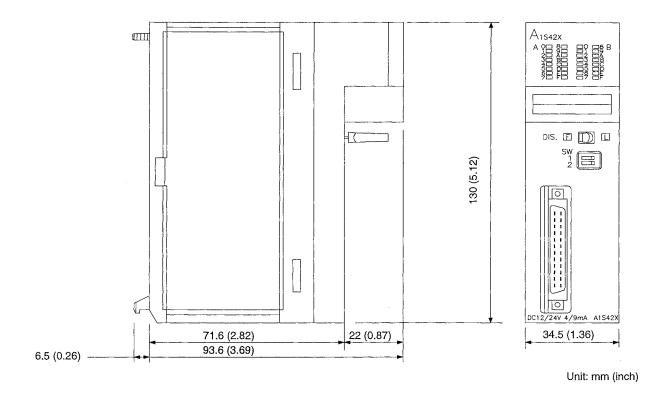
Unit: mm (inch)

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

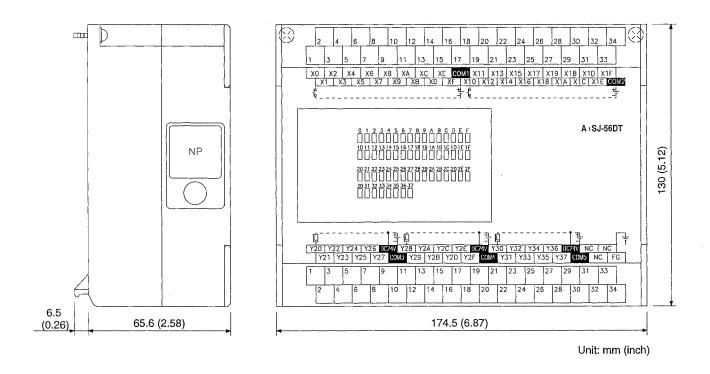


Unit: mm (inch)

1.2 Dynamic I/O Module

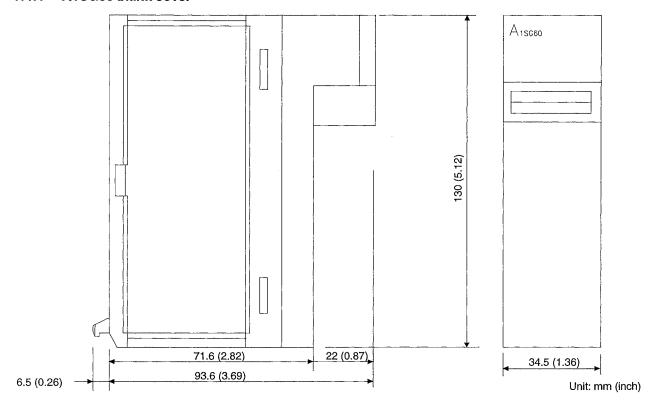


1.3 A1SJ-56 Input/Output Combination Module

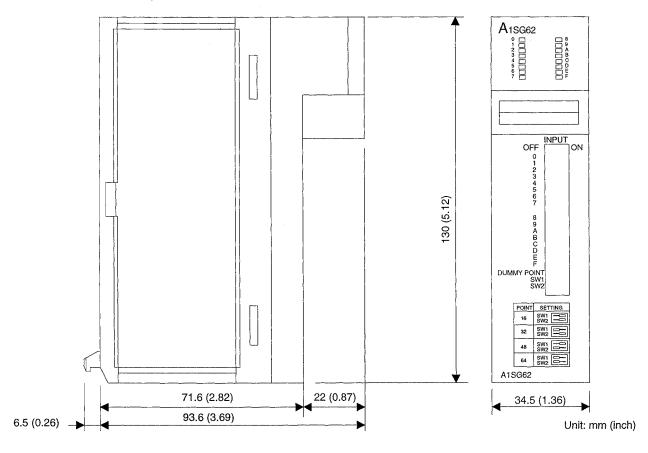


1.4 Dummy Module, Blank Cover

1.4.1 A1SG60 blank cover

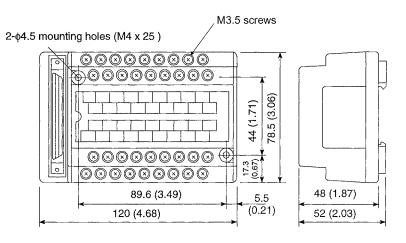


1.4.2 A1SG62 dummy module



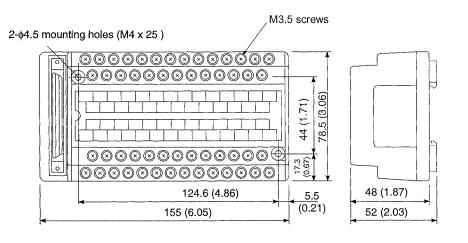
1.5 Connector/Terminal Block Convertor Modules

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



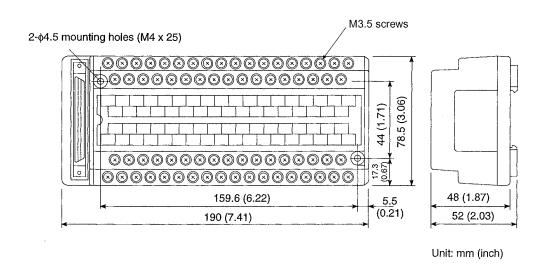
Unit: mm (inch)

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



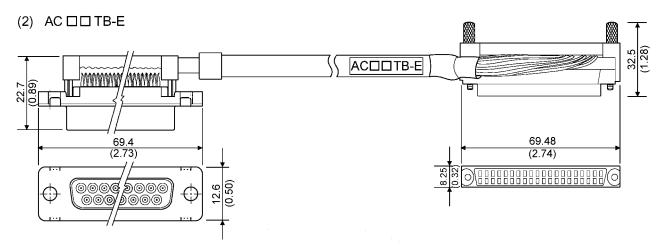
Unit: mm (inch)

1.5.3 A6TBX70[[] type connector/terminal block convertor module



1.5.4 Connector/terminal block converter module cable

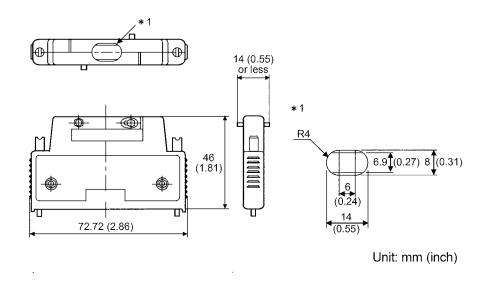
Unit: mm (inch)



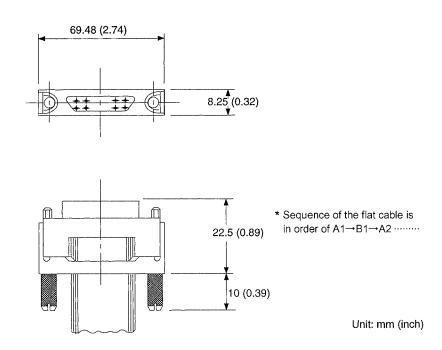
Unit: mm (inch)

1.6 40-Pin Connectors

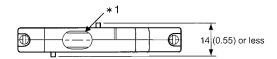
1.6.1 A6CON1 soldering-type 40-pin connector (straight out type), A6CON2 crimp-contact-type 40-pin connector (straight out type)

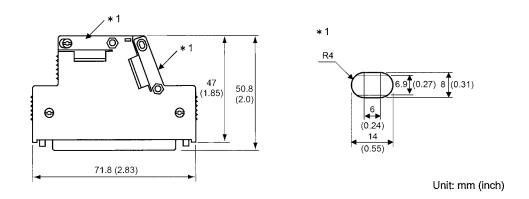


1.6.2 A6CON3 pressure-displacement-type 40-pin connector (flat cable type)



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

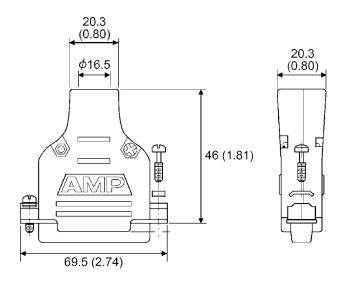




If the cable diameter is thinner than the clamp portion, wind tape, etc. to secure the cable so that it will not come off the cable clamp portion. If the cable is made of slippery material, it is recommended to take anti-slip measures by winding rubber-based tape, etc.

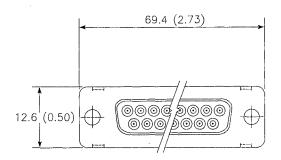
1.7 Pin D Sub-Connectors

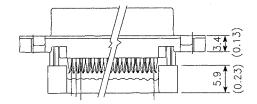
1.7.1 A6CON1E soldering type 37-pin D sub-connector (straight out type) A6CON2E crimp-contact-type 37-pin D sub-connector (straight out type)



Unit: mm (inch)

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





Unit: mm (inch)

MEMO

WARRANTY

Please confirm the following product warranty details before using this product.

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 sales representative or Mitsubishi Service Company.

However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing onsite that involves replacement of the failed module.

[Gratis Warranty Term]

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

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

[Gratis Warranty Range]

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

3. Overseas service

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

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

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

Product application

- (1) In using the Mitsubishi MELSEC programmable 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 controller device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
- (2) The Mitsubishi programmable 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 Public service purposes shall be excluded from the programmable controller applications.

In addition, applications in which human life or property that could be greatly affected, such as in aircraft, medical applications, incineration and fuel devices, manned transportation, equipment for recreation and amusement, and safety devices, shall also be excluded from the programmable controller range of applications.

However, in certain cases, some applications may be possible, providing the user consults their local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at the users discretion.

AnS Module Type I/O

User's Manual

MODEL	ANS-TYPE-I/O-U-E	
MODEL CODE	13JE81	
IB(NA)-66541-O(0804)MEE		



HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

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