

Autonics RELAY TERMINAL BLOCK

ABS Series

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep these instructions and review them before using this unit.
※Please observe the following for safety.

Warning Serious injury may result if instructions are not followed.
Caution Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.
△Caution: Injury or danger may occur under special conditions.

Warning

- In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.
It may cause a fire, human injury or damage to property.
- Do not repair or check units during power on.
It may cause electric shock.
- Do not use this unit in place where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration, impact etc.
It may cause explosion.
- Do not disassemble and modify this unit. Please contact us if it is required.
It may cause electric shock or a fire.

Ordering information

AB S - H 16 PA - N N

Varistor installation: N No install

Input logic: C Non-COM, N NPN(COM+), P PNP(COM-)

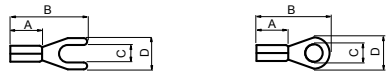
Relay type: TN TAKAMISAWA(Fujitsu) NYP, PA MATSUSHITA(Panasonic) PA

Number of relay points: 04 04EA, 16 16EA, 32 32EA

Connector type: S Screw, H Hirose connector

Terminal type: S Screw, AB Relay terminal block

Applicable crimp terminal



	A	B	C	D	Applicable wires
Forked	Min. 4.1	Max. 16.0	Min. 3.0	Max. 5.9	AWG 22-16 (0.30 to 1.25mm ²)
Round	Min. 4.1	Max. 16.0	Min. 3.0	Max. 5.9	

(Unit: mm)

※The above specifications are subject to change without notice.

Specifications

• ABS Series

Model	ABS-S04PA-CN ABS-S04TN-CN	ABS-H16PA-NN(PN) ABS-H16TN-NN(PN)	ABS-H32PA-NN(PN) ABS-H32TN-NN(PN)
Rated voltage	24VDC ±10%		250VAC 2A, 30VDC 2A*1 (2A/1point, 8A/1COM)
Rated load voltage & current	250VAC 3A, 30VDC 3A*1		
Power consumption	PA type	Max. 10.5mA*2	Max. 10.5mA*2/Max. 15.5mA*3
	TN type	Max. 8.5mA*2	Max. 8.5mA*2/Max. 13.5mA*3
Output type	1a contact relay output		
Number of output	4points	16points	32points(8points/1 COM)
Number of connectors	-	20pins	40pins
Applicable wire	Min. 1.25mm ²		
Insulation resistance	Min. 1,000MΩ (at 500VDC megger)		
Dielectric strength	2,000VAC 50/60Hz for 1 minute (between coil and contacts)		
	1,000VAC 50/60Hz for 1 minute (between contacts of same polarity)*4		
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 2 hours	
	Malfunction	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 10 minutes	
Shock	Mechanical	500m/s ² (Approx. 50G) in X, Y, Z directions for 3 times	
	Malfunction	147m/s ² (Approx. 15G) in X, Y, Z directions for 3 times	
Environment	Ambient temperature	-15 to 55°C, Storage: -25 to 65°C	
	Ambient humidity	35 to 85%RH, Storage: 35 to 85%RH	
Material	CASE & BASE:	MPPPO,	CASE: MPPPO, BASE: PA66(G25%)
	TERMINAL PIN:	Brass	TERMINAL PIN: Brass
Tightening torque	0.4 to 0.6 N·m		
Accessory*5	Jumper bar:	2EA	Jumper bar: 2EA
	(Model No: JB-7.62-04)		(Model No: JB-7.62-08)
Approval	CE		
	PA type	Approx. 68g	Approx. 224g
Unit weight	TN type	Approx. 71g	Approx. 235g
		Approx. 370g	

※1: Relay contact capacity for resistive load. ※2: The power consumption including LED current by one relay.
※3: The power consumption including power LED current of *2. ※4: For TN type(Fujitsu relay), it is 750VAC.
※5: ABS-H32□□-NN(PN) does not provide jumper bar.
※Environment resistance is rated at no freezing or condensation.

Relay

1) Coil ratings

Model	Nominal voltage	Must operate voltage	Must release voltage	Nominal current	Coil resistance	Power consumption
PA1a-24V	24VDC	70% max. of Nominal voltage	5% min. of Nominal voltage	7.5mA	3,200Ω	180mW
NYP24W-K	24VDC	16.1V	2.4V	5mA	4,800Ω	120mW

※All values in the table are measured at 20°C with a tolerance of ±10%

2) Contact ratings

Maker	MATSUSHITA(Panasonic)	TAKAMISAWA(Fujitsu)
Model	PA1a-24V	NYP24W-K
Contact	Arrangement	1 Form A(SPST 1a)
	Material	Au-clad AgNi type
Rating	Resistance(initial)	Max. 30mΩ(at 1A 6VDC)
	Rating (resistive)	5A 250VAC, 5A 30VDC, 3A 250VAC, 3A 30VDC
Electrical characteristics	Max. switching power	1,250VA, 150W, 750VA, 90W
	Min. switching capacity	100mVDC, 100uA, 5VDC, 1mA
	Max. switching voltage	250VAC, 110VDC, 270VAC, 150VDC
	Max. switching current	5A
Mechanical characteristics	Insulation resistance	Min. 1,000MΩ(at 500VDC megger)
	Dielectric strength	Coil and contacts: 2,000VAC 50/60Hz for 1 minute, 3,000VAC 50/60Hz for 1 minute Open contacts: 1,000VAC 50/60Hz for 1 minute, 750VAC 50/60Hz for 1 minute
	Surge voltage	4,000V, 5,080V
	Operate time	Max. 10ms
Shock	Mechanical	3.5mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 1 hour
	Malfunction	2.5mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 10 minutes
Expected life	Mechanical	Min. 20,000,000 operations(at 180 times/min)
	Electrical*1	Min. 100,000 operations(3A 250VAC, 30VDC resistive load)
Environment	Ambient temperature	-40 to 70°C, -40 to 90°C
	Ambient humidity	5 to 85%RH, 35 to 80%RH
Unit weight	Approx. 3g	Approx. 3.5g

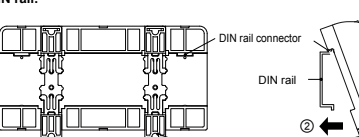
※1: 50,000 operations min. -5A 250VAC, 30VDC resistive load (at 20times/min)
※Environment resistance is rated at no freezing or condensation.

Installation

1. Mounting to and removing from DIN rail.

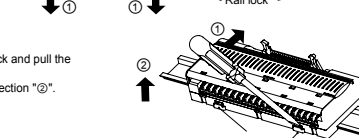
• Mounting

- Push rail lock to the direction "O".
- Hook DIN rail connector onto DIN rail.
- Push the unit down to the direction "O" and then push up the rail lock to the opposite direction "O".



• Removing

- Insert a screwdriver into hole of rail lock and pull the lock out to the direction "O".
- Removing the unit by pulling to the direction "O".

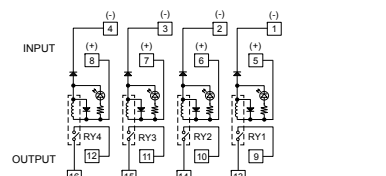


2. Mounting to panel

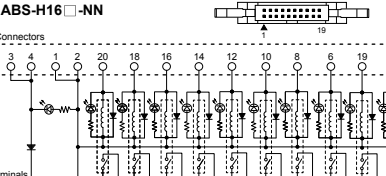
- This unit is able to mount on the panel with rail locks.
- It is recommended to use M4×15mm of spring washer screws and to use flat washers which are diameter φ6. The tightening torque should be 0.7 to 1.0N·m.

Wire connections

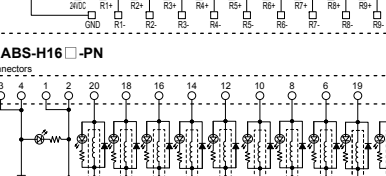
• ABS-S04PA-CN / ABS-S04TN-CN



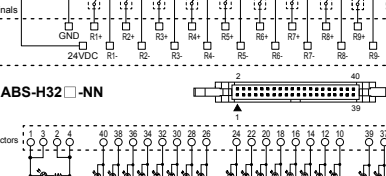
• ABS-H16□-NN



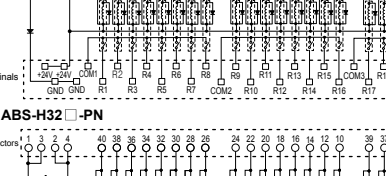
• ABS-H16□-PN



• ABS-H32□-NN



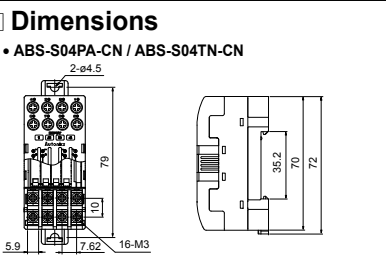
• ABS-H32□-PN



※Hirose connector model No.: HIF3BA-20PA-2.54DSA

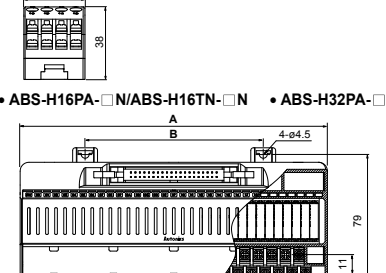
Dimensions

• ABS-S04PA-CN / ABS-S04TN-CN



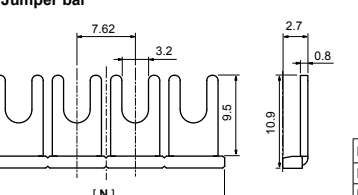
(Unit: mm)

• ABS-H16PA-□N/ABS-H16TN-□N • ABS-H32PA-□N/ABS-H32TN-□N



	ABS-H16 type	ABS-H32 type
A	140	173
B	70	100

Jumper bar

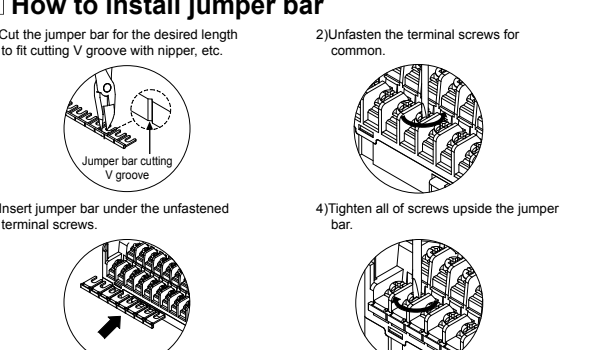


(Unit: mm)

Model	JB-7.62-04	JB-7.62-8
Number of pins	4EA	8EA
[N] Size	29.5	60.0

How to install jumper bar

- Cut the jumper bar for the desired length to fit cutting V groove with nipper, etc.
- Unfasten the terminal screws for common.
- Insert jumper bar under the unfastened terminal screws.
- Tighten all of screws upside the jumper bar.



How to replace relay

• The position of two-way ejector for relay replacement

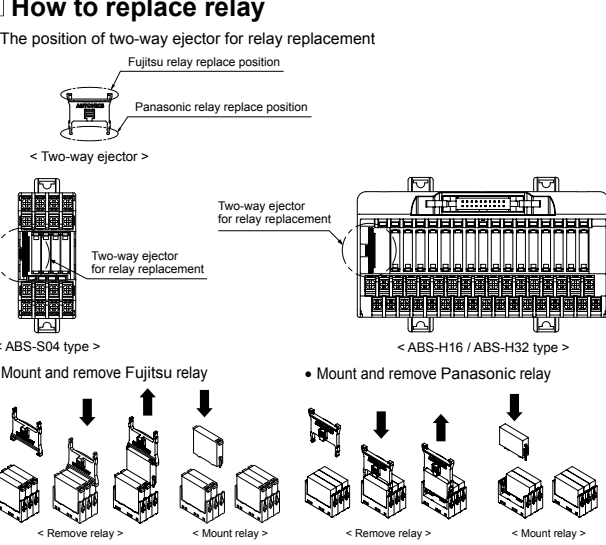
Fujitsu relay replace position
Panasonic relay replace position

< Two-way ejector >

Two-way ejector for relay replacement

< ABS-S04 type > < ABS-H16 / ABS-H32 type >

• Mount and remove Fujitsu relay • Mount and remove Panasonic relay



※Relay socket can be used both Fujitsu relay (NYP24W-K) and Panasonic relay (PA1a-24V).

Caution for using

- This unit shall not be used beyond specified temperature or humidity range.
- Maintain voltage fluctuations in the power supply within specified range.
- When connecting PLC or other controllers, check the polarity of power and COMMON before wiring.
- Use AWG 16(1.25mm²) wire and applicable crimp terminals to the terminal block.
- Turn OFF the power supply before wiring or removing connectors.
- Power shall be disconnected before replacing relay.
- Do not use this unit at below places.
 - Place where there is severe vibration or impact.
 - Place where strong alkalis or acids are used.
 - Place where there are direct ray of the sun.
 - Place where strong magnetic field or electric noise are generated.
- Installation environment.
 - It shall be used indoor
 - Altitude Max. 2,000m
 - Pollution Degree 2
 - Installation Category II

※It may cause malfunction if above instructions are not followed.

Major products

- Proximity sensors
- Area sensors
- Photoelectric sensors
- Fiber optic sensors
- Door/Door side sensors
- Sensor controllers
- Graphic/Logic panels
- Temperature controllers
- Tachometer/Pulse/Rate meters
- Temperature/Humidity transducers
- Switching power supplies
- Stepping motors/drivers/motion controllers
- Field network devices
- Laser marking system(CO₂, Nd:YAG)
- Laser welding/soldering system
- Counters
- Timers
- Display units
- Panel meters
- Pressure sensors
- Rotary encoders
- Power controllers

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