

Autonics

16-POINT RELAY TERMINAL BLOCK (screwless type)

ABL Series

INSTRUCTION MANUAL



Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.

※Safety considerations are categorized as follows.

⚠ Warning Failure to follow these instructions may result in serious injury or death.

⚠ Caution Failure to follow these instructions may result in personal injury or product damage.

※The symbols used on the product and instruction manual represent the following
⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ Warning

1. **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, fire, or economic loss.

2. **Do not repair, or inspect the unit while connected to a power source.**

Failure to follow this instruction may result in fire or electric shock.

3. **Do not use the unit where flammable or explosive gas, humidity, direct sunlight, radiant heat, vibration, or impact may be present.**

Failure to follow this instruction may result in fire or explosion.

4. **Do not disassemble or modify the unit. Please contact us if necessary.**

Failure to follow this instruction may result in electric shock, fire, or product damage.

⚠ Caution

1. **Do not use the unit outdoors.**

Failure to follow this instruction may result in shortening the life cycle of the unit, or electric shock.

2. **Use the unit within the rated specifications.**

Failure to follow this instruction may result in shortening the life cycle of the unit, or fire.

3. **Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.**

Failure to follow this instruction may result in electric shock or product damage.

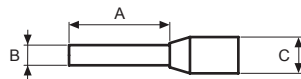
4. **Keep dust and wire residue from flowing into the unit.**

Failure to follow this instruction may result in fire or product damage.

■ Model

Model	Terminal type	Connector type	No. of relay points	Relay type	Input logic	Varistor installation
ABL-H16R6-NN	Screwless	Hirose connector	16	OMRON G6B	NPN	Not installed
ABL-H16R6-PN	Screwless	Hirose connector	16	OMRON G6B	PNP	Installed

■ Crimp Terminal Specifications



(unit: mm)

	A	B	C	Applicable wires
End Sleeve (ferrule terminal) crimp terminal	10 to 12.0	≤ 2.0	≤ 4.1	AWG22-16 (0.30 to 1.25mm ²)

■ Connecting Crimp Terminals

○ Connecting and removing end sleeve (ferrule terminal) crimp terminal at screwless type terminal block

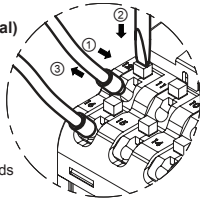
● Connecting
1) Push the end sleeve (ferrule) crimp terminal towards direction ① to complete the connection.

● Removing

1) Press and hold the catch above the terminal in direction ② with a flathead screwdriver.

2) Pull and remove the end sleeve (ferrule) crimp terminal towards direction ③.

※The above specifications are subject to change and some models may be discontinued without notice.



■ Specifications

Model	ABL-H16R6-NN	ABL-H16R6-PN
Power supply	24VDC±10%	
Rated load voltage & current ^{※1,2}	250VAC~ 3A, 30VDC~ 3A	
Current consumption ^{※3}	≤ 20mA	
Output type	1a contact relay output	
Applied relay	G6B-1174P-FD-US [OMRON]	
No. of relay points	16	
Terminal type	Screwless	
Terminal pitch	≥ 7.8mm	
Indicator	Power indicator: red LED, operation indicator: blue LED	
Applied wire	Solid wire Ø0.6 to Ø1.25mm	
Stranded wire ^{※4}	AWG22-16 (0.3 to 1.25mm ²)	
Stripped wire length	8 to 10mm	
Insulation resistance	≥ 1,000MΩ (at 500VDC megger)	
Dielectric strength	Between coil-contact	3,000VAC 50/60Hz for 1 minute
	Between same contacts	1,000VAC 50/60Hz for 1 minute
Vibration	Mechanical	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours
	Malfunction	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minutes
Shock	Mechanical	1000m/s ² (approx. 100G) in each X, Y, Z direction for 3 times
	Malfunction	100m/s ² (approx. 10G) in each X, Y, Z direction for 3 times
Environment	Ambient temp.	-15 to 55°C, storage: -25 to 65°C
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH
Material	Terminal block, Cover: Polycarbonate CASE&BASE: Modified Polyphenylene Oxide	
Accessory	Jumper bar: 2	
Protection structure	IP20 (IEC standard)	
Approval	CE @ ^{***}	
Weight ^{※5}	Approx. 446g (approx. 348g)	

※1: Please connect to a load using the same power supply.
Connecting to a load from a different power supply may cause safety issues.
※2: Relay contact capacity for resistive load.
※3: The current consumption including LED current by one relay.
※4: When using stranded wire, use End Sleeve (ferrule terminal) crimp terminals.
※5: The weight includes packaging. The weight in parenthesis is for unit only.
※Environment resistance is rated at no freezing or condensation.

● Relay

1) Coil specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current	Coil resistance	Power consumption
G6B-1174P-FD-US	24VDC~	≥ 70% of rated voltage	≤ 10% of rated voltage	8.3mA	2,880Ω	200mW

2) Contact specifications

Maker	OMRON	
Model	G6B-1174P-FD-US	
Contact	Arrangement	1 Form A (SPST-1a)
	Material	AgSnIn
Rating	Resistance (initial)	30mΩ (5VDC 1A)
	Rated load (resistive load)	5A 250VAC~ / 5A 30VDC~
	Max. switching power	1,250VA / 150W
	Max. switching voltage	380VAC~ / 125VDC~
Electrical characteristics	Max. switching current	5A
	Insulation resistance	≥ 1,000MΩ (at 500VDC megger)
	Dielectric strength	Coil and contacts: 3,000VAC 50/60Hz for 1 minute Open contacts: 1,000VAC 50/60Hz for 1 minute
	Surge voltage	6,000V
	Operate time	≤ 20ms
Mechanical characteristics	Vibration	Mechanical: 1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour Malfunction: 1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minutes
	Shock	Mechanical: 1,000m/s ² (approx. 100G) in each X, Y, Z direction for 3 times Malfunction: 100m/s ² (approx. 10G) X, Y, Z in each X, Y, Z direction for 3 times
Life expectancy	Mechanical	≥ 50,000,000 operations (at 18,000 times/hour)
	Electrical	≥ 100,000 operations (5A 250VAC, 30VDC) (at 30 times/min)
Environment	Ambient temp.	-25 to 70°C
	Ambient humi.	5 to 85%RH
Unit weight	Approx. 5g	

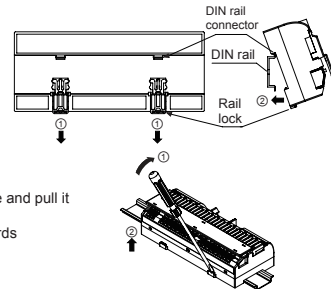
※Environment resistance is rated at no freezing or condensation.

■ Installation

○ Mounting and removal at DIN rail

● Mounting

- 1) Pull the rail lock towards direction ①.
- 2) Attach the DIN rail connection part onto the DIN rail.
- 3) Push the unit towards direction ②, then push the rail lock in to lock into position.

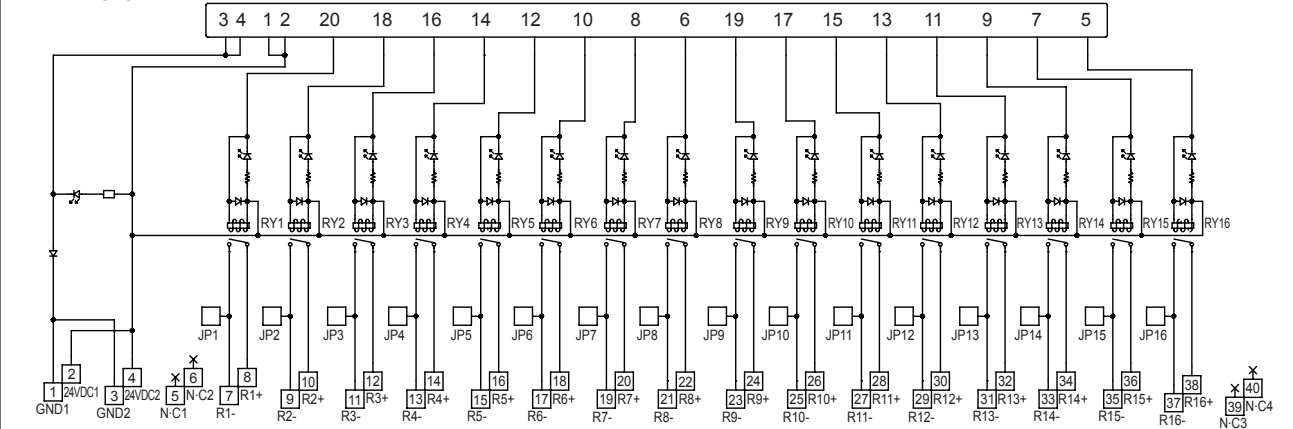


● Removal

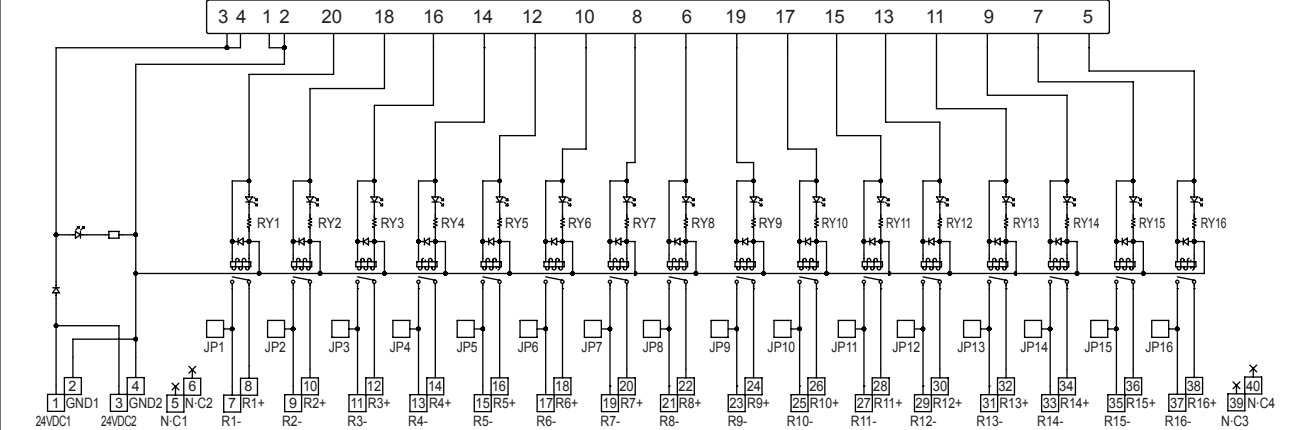
- 1) Insert a screwdriver into the rail lock hole and pull it towards direction ①.
- 2) Remove the unit by pulling the unit towards direction ②.

■ Wire Connections

● ABL-H16R6-NN

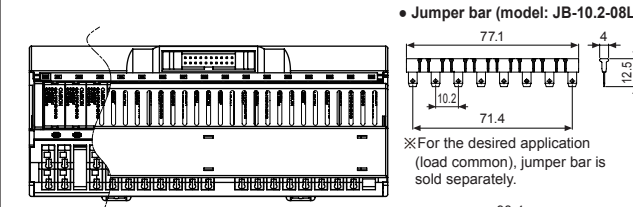


● ABL-H16R6-PN



■ Dimensions

(unit: mm)



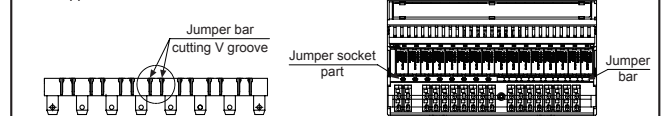
● Jumper bar (model: JB-10.2-08L)

※For the desired application (load common), jumper bar is sold separately.

■ Using Jumper Bar and Replacing Relay

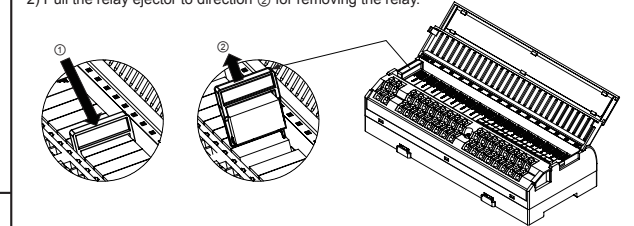
● Using jumper bars

- 1) Cut the jumper bar to the user's desired length by cutting at the V dent (two) using a nipper.
- 2) Insert the cut jumper bar to the desired jumper bar socket position.



● Replacing relays

- 1) Insert the relay ejector at both ends of the installed relay to direction ①.
- 2) Pull the relay ejector to direction ② for removing the relay.



■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/Sockets
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co, Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometers/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

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