

Relay Terminal Block (screwless type)

Line-up

Features

- [Common Feature]
- Switch between independent and common output with jumper bar
 - Easy wiring and stable connection with screwless push-in connection
 - Relay protection cover
 - Operation status indicator (blue LED)
 - DIN rail mount and screw mount methods

- [4-point]
- Rated load voltage: 5A
 - Switch between NPN and PNP input using jumper bar
 - Convenient relay removal with removal lever
 - Supported relays
- : [OMRON] G6B-1174P-FD-US, [Matsushita (Panasonic)] PQ1a-24V

- [16-point]
- Rated load voltage: 3A
 - Convenient relay removal with relay ejector clip
 - Supported relays: [OMRON] G6B-1174P-FD-US



⚠ Please read "Safety considerations" in operation manual before using.



(only for 16-point model)

Ordering Information


AB	L	-	L	04	PQ	-	U	N	
									Varistor installation
									Input logic
									Relay type
									No. of relay points
									Connector type
									Terminal type
									Item

Specifications

Rated load current 5A

Model		ABL-L04PQ-UN	ABL-L04PQ-UY※1	ABL-L04R6-UN	ABL-L04R6-UY※1
Power supply		24VDC≒ ±10%			
Rated load voltage & current※3		250VAC~ 50/60Hz 5A, 30VDC≒ 5A			
Current consumption※4		≤ 20mA			
Output type		1a contact relay output			
Applied relay		PQ1a-24V [MATSUSHITA (Panasonic)]		G6B-1174P-FD-US [OMRON]	
No. of relay points		4-point			
Terminal type		Screwless			
Terminal pitch		10.2mm			
Indicator		Operation indicator: Blue LED			
Applied cable	Solid wire	Ø0.6 to Ø1.25mm			
	Stranded wire※5	AWG22-16 (0.3 to 1.25mm²)			
Stripped wire length		8 to 10mm			
Insulation resistance		≥ 1,000MΩ (at 500VDC megger)			
Insulation resistance	between coil-contacts	4,000VAC 50/60Hz for 1 minute		3,000VAC 50/60Hz for 1 minute	
	Between same contacts※6	1,000VAC 50/60Hz for 1 minute		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	1,000m/s² (approx. 100G) in each X, Y, Z direction for 3 times			
	Malfunction	100m/s² (approx. 10G) in each X, Y, Z direction for 3 times			
Environ-ment	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: Polyamide 66, Conducting plate: Brass, CASE&BASE: Modified Polyphenylene Oxide			
Accessory		Jumper bar: 1			
Protection structure		IP20 (IEC standard)			
Weight※7		Approx. 148g (approx. 92g)	Approx. 150g (approx. 94g)	Approx. 143g (approx. 87g)	Approx. 144g (approx. 88g)

Rated load current 3A

Model	ABL-H16R6-NN	ABL-H16R6-PN
Power supply	24VDC ⁻⁻⁻ ±10%	
Rated load voltage & current ^{※2※3}	250VAC~ 50/60Hz 3A, 30VDC ⁻⁻⁻ 3A	
Current consumption ^{※4}	≤ 20mA	
Output type	1a contact relay output	
Applied relay	G6B-1174P-FD-US [OMRON]	
No. of relay points	16-point	
Terminal type	Screwless	
Terminal pitch	≥ 7.8mm	
Indicator	Power indicator: red LED, operation indicator: blue LED	
Applied cable	Solid wire	Ø0.6 to Ø1.25mm
	Stranded wire ^{※5}	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 ^{※7}	Approx. 446g (approx. 348g)	

※1: This is for contact protection and it is recommend to use at the inductive load.

※2: Please connect to a load using the same power supply. Connecting to a load from a different power supply may cause safety issues.

※3: Relay contact capacity for resistive load.

※4: The current consumption including LED current by one relay.

※5: When using stranded wire, use End Sleeve (ferrule terminal) crimp terminals.

※6: In case of ABL-L04□-□Y (varistor installed type), this is 300VAC.

※7: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

I/O Terminal Blocks

AFS(Interface Terminal Block)
AFL/AFR(Interface Terminal Block)
ACS(Common Terminal Block)
AFE(Sensor Connector Terminal Block)
ABS(Relay Terminal Block)
ABL(Relay Terminal Block)
Power Relay

I/O Cables

MITSUBISHI
LSIS
Autonics
RS Automation
YOKOGAWA
FUJII
KDT
OMRON
TELEMECANIQUE
For SERVO
Open Type Cables
Cable Appearance

Remote I/O

ARD(DeviceNet Digital Standard Terminal Type)
ARD(DeviceNet Digital Sensor Connector Type)
ARD(DeviceNet Analog Standard Terminal Type)
ARM(Modbus Digital Sensor Connector Type)

Others

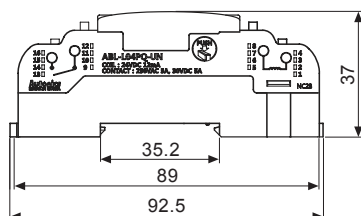
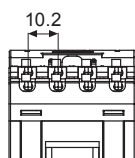
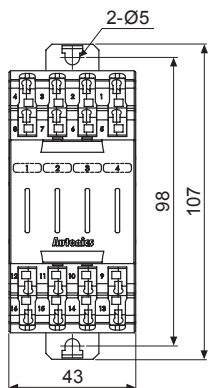
Sensor Connectors
Sockets
Sensor Distribution Boxes
Valve Plugs
Thumbwheel Switches

■ Dimensions

(unit: mm)

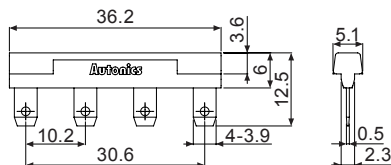
◎ Rated load current 5A

● ABL-L04PQ/R6-□



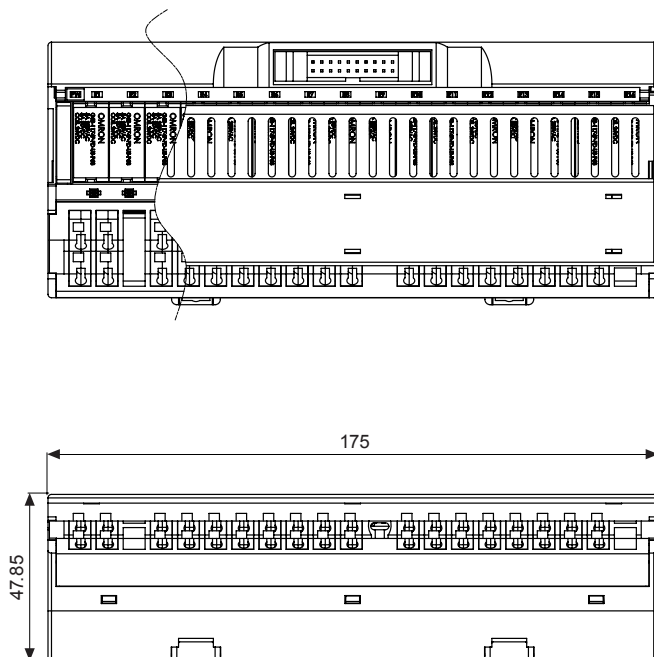
● Jumper bar (model: JB-10.2-04L)

※For NPN or PNP common, the additional jumper bar is sold separately.



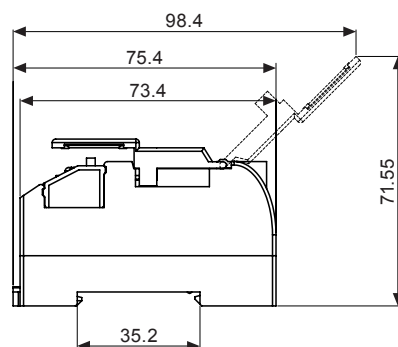
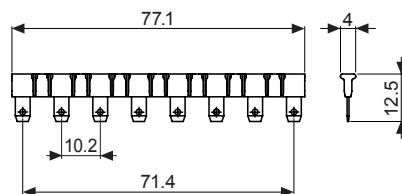
◎ Rated load current 3A

● ABL-H16R6-NN/PN



● Jumper bar (model: JB-10.2-08L)

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

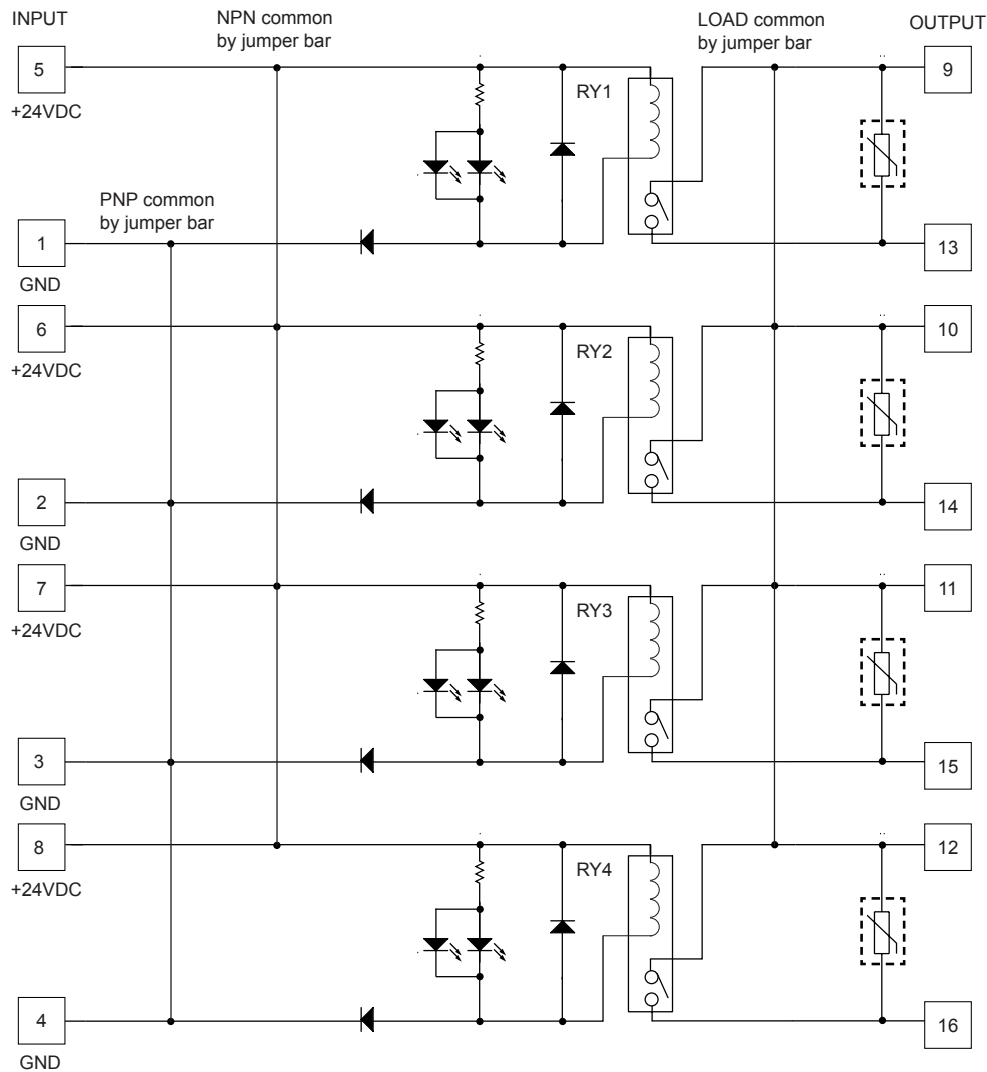


■ Connections

◎ Rated load current 5A

※ NPN, PNP, LOAD common are operated by the inserting position of the Jumper bar.
Please refer to the '2. Using jumper bars' of '■ Using Jumper Bar And Replacing Relay'.

● ABL-L04PQ(R6)-UN(UY)



※  parts are only for ABL-L04□-UY (varistor installed type).

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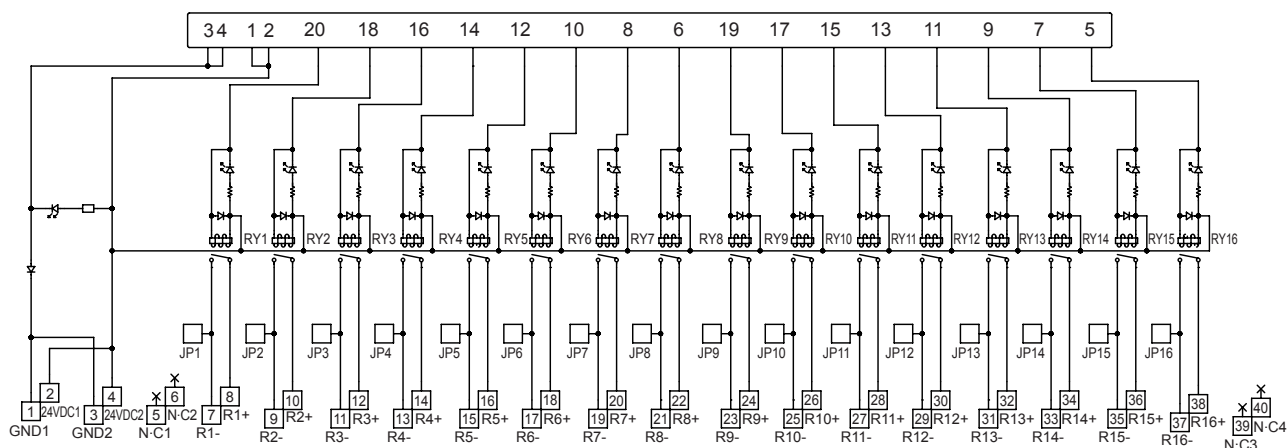
Others

Sensor Connectors
Sockets
Sensor Distribution Boxes
Valve Plugs
Thumbwheel Switches

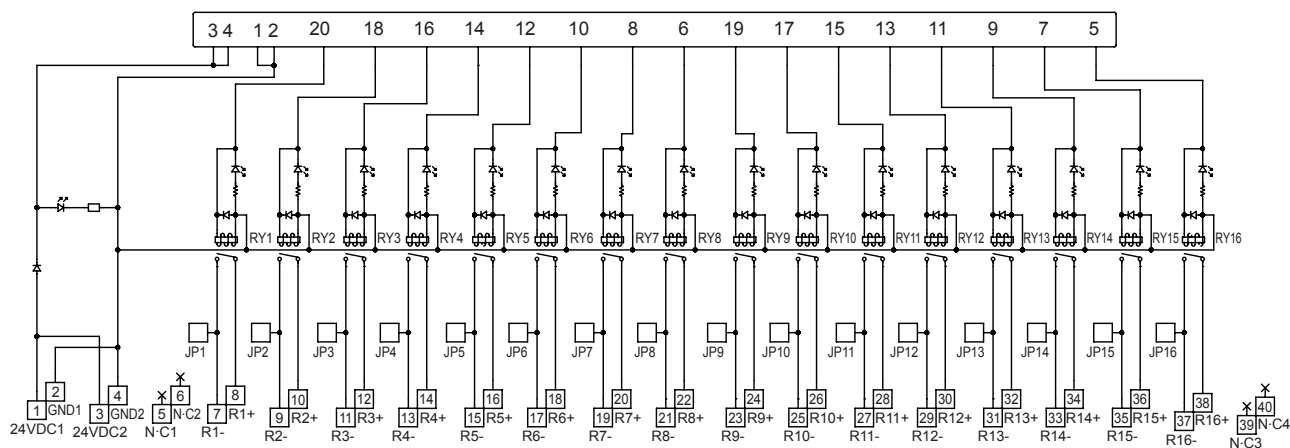
■ Connections

⊙ Rated load current 3A

● ABL-H16R6-NN



● ABL-H16R6-PN



■ Connecting Crimp Terminals

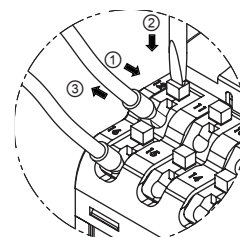
1. Connecting and removing end sleeve (ferrule terminal) crimp terminal at screwless type terminal block

● 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 flat head screwdriver.
- 2) Pull and remove the end sleeve (ferrule) crimp terminal towards direction ③.



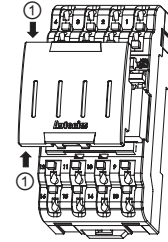
■ Using Jumper Bar And Replacing Relay

◎ Rated load current 5A

● ABL-L04PQ/R6-□

1. Removing the protection cover

1) Pull the protection cover towards direction ① to insert jumper bars or replace relays.



2. Using jumper bars

Remove the protection cover and use the jumper bars accordingly.

NPN COMMON	PNP COMMON	LOAD COMMON
Insert the jumper bar to the far left towards terminals 4 and 8.	Insert the jumper bar to the far right towards terminals 1 and 5.	Insert the jumper bar above terminals 12, 11, 10, 9.

3. Replacing relays

1) Remove the protection cover.

2) Push the operation indicator guide in direction to remove the relay.

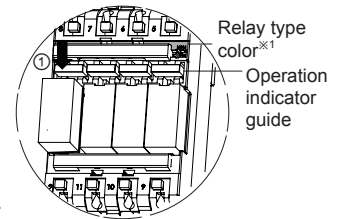
3) Insert a new relay to the case.

※ 1: The color of the jumper bar insertion holes indicate the relay types of the model.

(green: MATSUSHITA (Panasonic) PQ, navy blue: OMRON G6B)

※ Only insert designated relays for each model.

※ Execute above directions only for replacing relays. If not, it may cause relay damage.

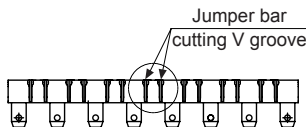


◎ Rated load current 3A

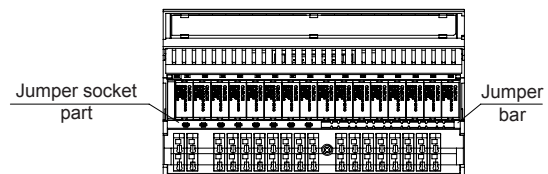
● ABL-H16R6-NN/PN

1. Using jumper bars

1) Cut the jumper bar to the user's desired length by cutting at the V dent (two) using a nipper.



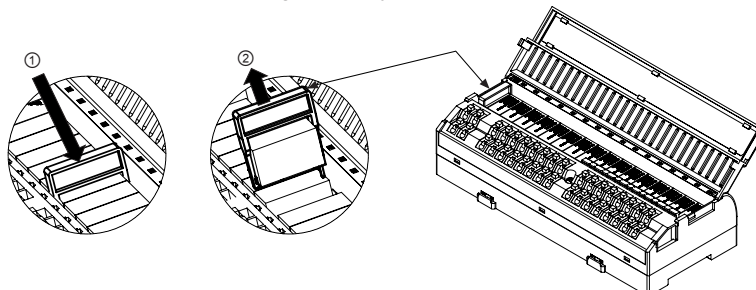
2) Insert the cut jumper bar to the desired jumper bar socket position.



2. 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.



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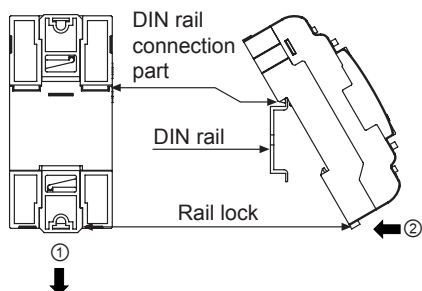
■ Installation

※Each model appearance is different by no. of relay points.

1. Mounting and removal at DIN rail

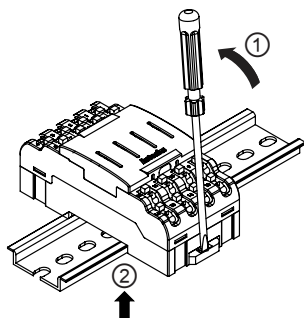
● Mounting

- 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.



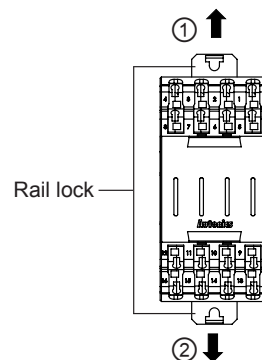
● Removal

- 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.



2. Mounting with screws

- 1) The unit can be mounted on panels using the rear rail locks.
- 2) Pull the rail locks towards directions ① and ②.
- 3) M4×10mm spring washer screws are recommended for installation. When using flat washers, use Ø9mm diameter washers. The tightening torque should be between 1.0 to 1.5N·m.



■ Cautions During Use

1. Use the unit within the rated environment of specification.
2. Supply power within the rated allowable voltage range.
3. Check the polarity of power or COMMON before connecting PLC or other controllers.
4. When connecting the power input, use AWG22-16 (0.30 to 1.25mm²). For using crimp terminals, refer to '■ Crimp Terminal Specifications'.
5. Do not connect wire, remove connector, or replace relays while connected to a power source.
6. Do not touch the unit immediately after the load power is supplied or cut. It may cause burn by high temperature.
7. In case of 24VDC model, power supply should be insulated and limited voltage/current or Class 2 source, SELV power supply device.
8. Do not use the unit at below places.
 - ① Environments with high vibration or shock.
 - ② Environments where strong alkali or acids are used.
 - ③ Environments with exposure to direct sunlight.
 - ④ Near machinery which produce strong magnetic force or electric noise
9. This unit may be used in the following environments.
 - ① Indoor.
 - ② Altitude max. 2,000m
 - ③ Pollution degree 2
 - ④ Installation category II