

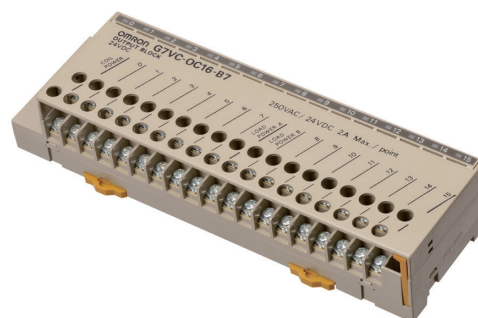
Relay Terminal for Connection to B7A and PLC Connectors

G7VC-OC16-B7

CSM_G7VC-OC16-B7_DS_E_1_1

Compact Output Relay Terminals for Connection to B7A Link Terminals and PLC Connectors

- Compact size: 192 (W) × 58 (D) × 38.5 (42.5) (H) mm.
- New design with rotating front cover for increased safety.
- Direct connection of wiring to loads.
- LED operation indicators.
- Surge absorption diodes included.
- Equipped with relay removal tool.
- DIN Track or screw mounting.



Ordering Information


Relay Terminals

Output Terminals

I/O classification	Points	Internal I/O common	Rated voltage	Model
Relay outputs	16 (SPST-NO × 16)	NPN (+ common)	24 VDC	G7VC-OC16-B7

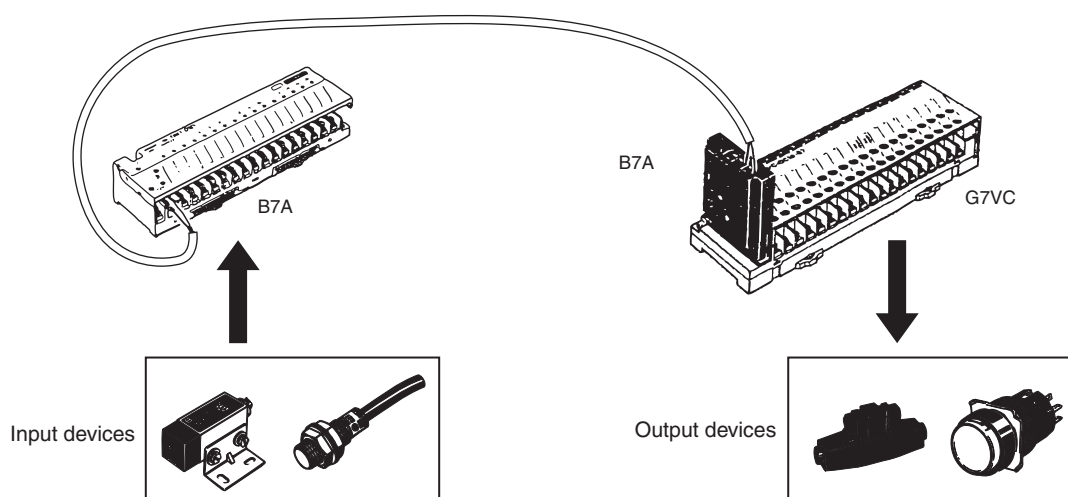
Accessories (Order Separately)

Link Terminals

I/O classification	Wiring type	Appearance	I/O delay time	Output configuration	Error processing	Model
Output (reception)	PLC connector, 16 pins		Normal speed (typical: 10.2 ms)	NPN open-collector, 50 mA/point	HOLD	B7A-R6A13
			High speed (typical: 3 ms)		LOAD OFF	B7A-R6A33
					HOLD	B7A-R6A18
					LOAD OFF	B7A-R6A38

Refer to the B7A Datasheet for details.

Cable Connection Examples: B7A and G7VC-OC16-B7



Shorting Bar

Model
G78-V02

Accessories for DIN Track Mounting

Refer to your OMRON website for details on the PFP-□.

Specifications

Ratings

Relay Specifications

The following values are for when the Relay is mounted on the G7VC-OC16-B7 Relay Terminal. The values are different from those for an individual G6B-1174P-FD-US DC24V Relay.

Operating Coil (Per one G6B-1174P-FD-US DC24V Relay mounted on the Relay Terminal)

Rated voltage (V)	Rated current (mA)	Coil resistance (Ω)	Must-operate of rated voltage	Must-release of rated voltage	Maximum of rated voltage	Power consumption (W)	
						Per 1 point	Per 16 points
24 VDC	8.3	2,880	80% max.*	10% min.	110%	Approx. 0.2	Approx. 3.2

* However, the value is 75% max. if the Relay is mounted upside down.

- Note:**
1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±15% for coil resistance.
 2. The operating characteristics are measured at a coil temperature of 23°C.
 3. The value for the maximum voltage is the maximum value within the allowable voltage fluctuation range for the relay coil's operating power supply. Continuous operation at this voltage is not within product specifications.
 4. Approx. 4 mA flows into each LED indicator. To calculate the power supply capacity, add the power value of each

LED indicator.

Contact Ratings

Item	Resistive load ($\cos \phi = 1$)	Inductive load ($\cos \phi = 0.4$, $L/R = 7$ ms)
Rated load	2 A at 220 VAC, 2 A at 24 VDC	0.8 A at 220 VAC, 0.8 A at 24 VDC
Rated carry current	2 A (per one Relay), 8 A per 8-point common terminal, and 16 A per 16-point common terminal	
Max. switching voltage	250 VAC, 125 VDC	
Max. switching current	2 A	0.8 A
Max. switching capacity (reference value)	AC: 440 VA, DC: 48 W	AC: 176 VA, DC: 10.2 W
Error rate (reference value)*	10 mA at 5 V	
Electrical endurance	200,000 operations	
Mechanical endurance	50,000,000 operations	

* The above values are for a switching frequency of 120 operations/

Characteristics

Item	Model	G7VC-OC16-B7
		Relay outputs
Contact form		16 (SPST-NO × 16)
Contact mechanism		Single contact
Contact material		AgInSn
Contact resistance *1		50 mΩ max.
Must operate time *2		15 ms max.
Release time *2		15 ms max.
Max. switching frequency	Mechanical limit	18,000 operations/hour
	At rated load	1,800 operations/hour
Insulation resistance		100 MΩ min. (at 500 VDC)
Dielectric strength	Between coil and contact	2,000 VAC, 50/60 Hz for 1 minute
	Between same polarity contacts	1,000 VAC, 50/60 Hz for 1 minute
	Between paired connectors	250 VAC, 50/60 Hz for 1 minute
Vibration resistance		10 to 55 to 10 Hz with 1.0-mm double amplitude
Shock resistance		200 m/s ²
Noise immunity		Noise level: 1.5 kV; pulse width: 100 ns to 1 μs
Rated voltage between positive and negative terminal blocks		24 VDC ±5%
Rated current between positive and negative terminal blocks		24 VDC: 12.3 mA × number of ON points
Cable length	To controller	5 m max. (reference value for AWG28)
	To I/O devices	Dependent on load
Ambient operating temperature		0 to 55°C (with no icing or condensation)
Ambient operating humidity		35% to 85%
Tightening torque for external connections		0.78 to 1.18 N·m
Mounting strength		No damage when a tensile force of 5 kgf (49 N) is applied for one second in each direction. In the direction of the track, the strength is 1 kg (9.8 N) min.
Terminal tightening torque		No damage when a tensile force of 5 kgf (49 N) is applied for one second in each direction. In the direction of the track, the strength is 1 kg (9.8 N) min. No damage when a tensile force of 5 kgf (49 N) is applied.
LED color		Orange
Coil surge absorber		Diode (400 V, 300 mA)
Weight		Approx. 300 g

Note: The above values are initial values.

*1. Measurement condition: 1 A at 5 VDC.

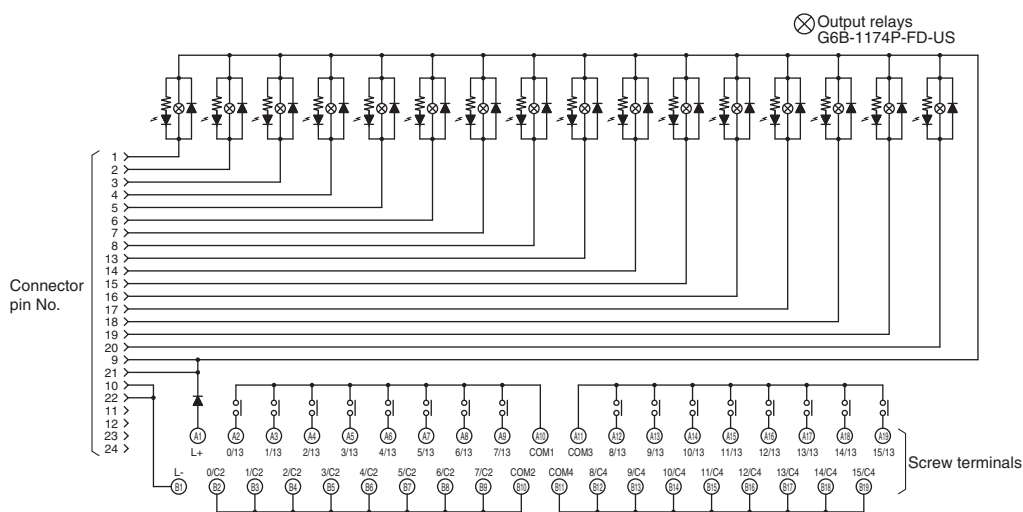
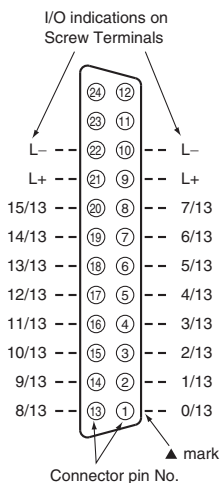
*2. Ambient temperature: 23°C

Internal Circuits

G7VC-OC16-B7 (NPN output/- common)

Note: A controller with an NPN transistor, - common output can be connected to the G7VC-OC16-B7.

Connector Pin Configuration Top View

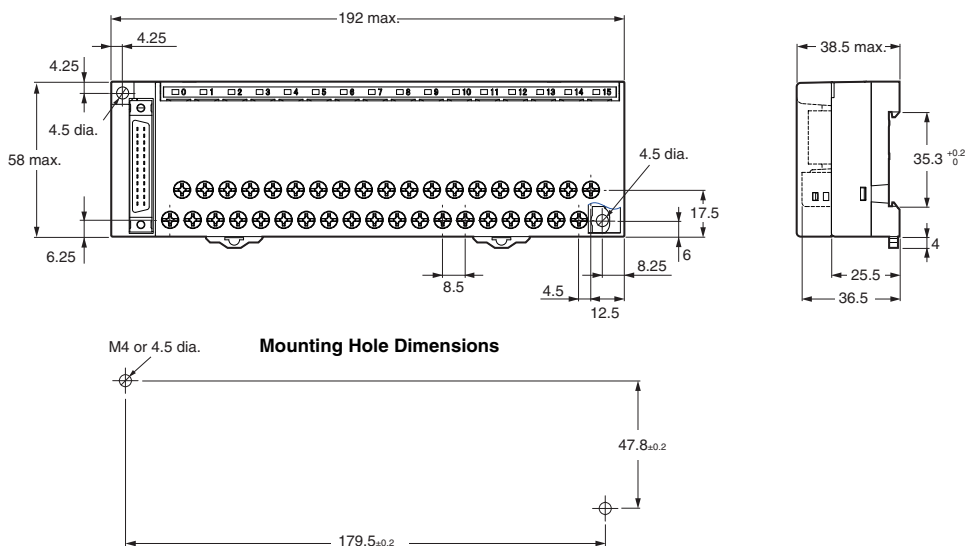
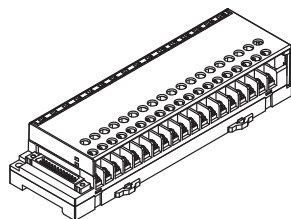


Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

Dimensions

(Unit: mm)

Relay Terminals G7VC-OC16-B7

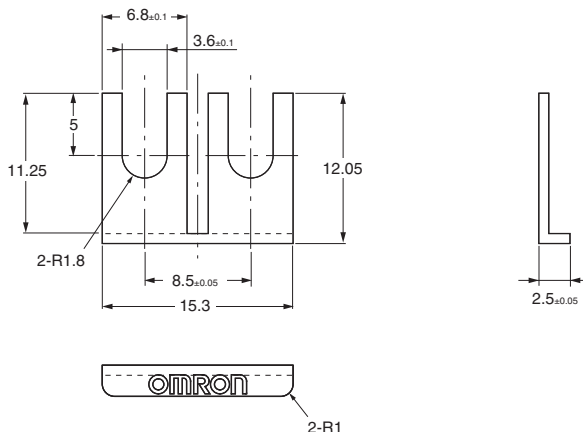


Accessories (Order Separately)

Short Bar

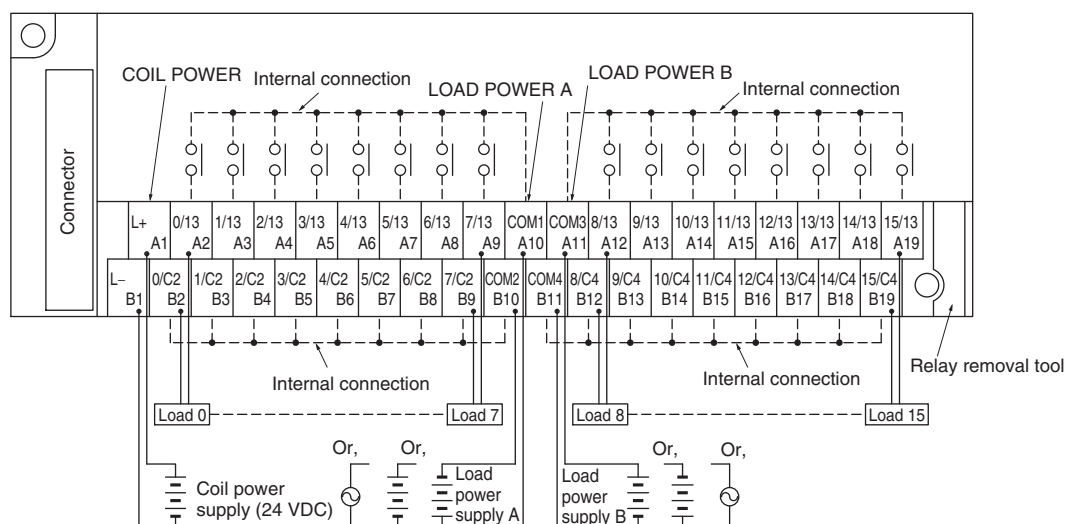
G78-V02

For 16-point common connection.
Max. current flow: 10 A



Terminal Arrangement/Terminal Connection Example

G7VC-OC16-B7



Note: 1. ----: Internal connections.

2. Connect the power supply to drive the SSRs between A1 (L+) and B1 (L-). A1 (L+) is the positive terminal and B1 (L-) is the negative terminal.
3. On the contact side, there are 2 commons with 8 points each. To use a 16-point common terminal, connect A10 (COM1) to A11 (COM3) and connect B10 (COM2) to B11 (COM4). (Optional short bar Type G78-V02 is available.)
4. The following pairs of terminals are connected internally: B2 (0/C2) to B10 (COM2), and B11 (COM4) to B19 (15/C4).

Safety Precautions

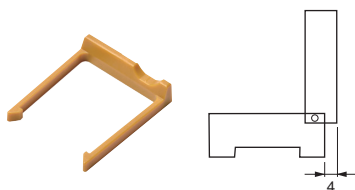
Be sure to read the *Common Precautions for I/O Relay Terminal* in the website at the following URL: <http://www.ia.omron.com/>.

Warning Indications

Precautions for Correct Use	Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction or undesirable effects on product performance.
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Precautions for Correct Use

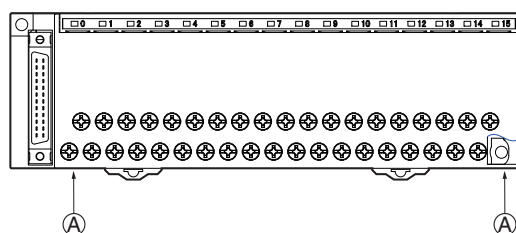
- This Relay Terminal is for outputs only.
- G6B-1174P-FD-US DC24V Relays are mounted as a standard feature on the G7VC.
- To replace the Relays, use the yellow relay removal tool provided on the right side of the screw terminals.



- When the cover is opened, it will extend 4 mm past the exterior of the Relay Terminal. Allow sufficient room to open the cover when you install the Relay Terminal.
- Contact output terminals are connected in the unit of eight COMs. Supply the power to A10 (COM1) and B10 (COM2) for the relays No. 0 to No. 7. B10 (COM2) and B2 thru B9 are connected internally. Similarly, supply the power to A11 (COM3) and B11 (COM4). B11 (COM4) and B12 thru B19 are connected internally. In the case of using the product with 16 COMs, connect A10 (COM1) to A11 (COM3) and B10 (COM2) to B11 (COM4), respectively. For short-circuit, the optional short bar Type G78-V02 is available. However, use it at the current less than 10 A for unit (16 COMs), less than 8 A for 8 COMs and less than 2 A for a COM.
- Avoid connecting and disconnecting the connectors while the power is ON. Otherwise misoperation may be caused.
- It is dangerous to mount or remove a Relay while power is being

supplied.

- Opening the Front Cover (Rotating)
Use both hands to lift up on the edges (A) at the bottom of the cover and rotate the cover.



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