

General Specifications

Models WHRA, WHRV
Isolator
(Reverse Output Type)



GS 77J09H12-01E

General

The WHRA/WHRV is a compact, front terminal connection type isolator that converts DC current or DC voltage signals into isolated DC current or DC voltage signals.

- 0 to 100% of the input signals are reversed and output.
- Dual output and 2000 V AC withstand voltage specifications are available upon requests.

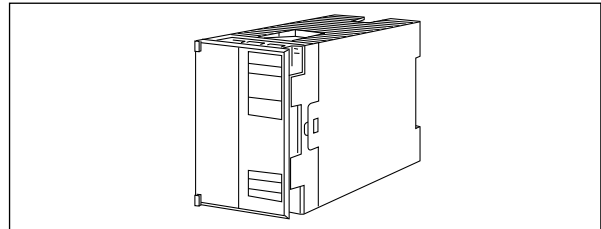
Model and Suffix Codes

Model		WHR□-□□-□*B/□□	
Output signal specification	A : DC current signal V : DC voltage signal	Input Signal	A : 4 to 20 mA DC 1 : 0 to 10 mV DC B : 2 to 10 mA DC 2 : 0 to 100 mV DC C : 1 to 5 mA DC 3 : 0 to 1 V DC D : 0 to 20 mA DC 4 : 0 to 10 V DC E : 0 to 16 mA DC 5 : 0 to 5 V DC F : 0 to 10 mA DC 6 : 1 to 5 V DC G : 0 to 1 mA DC 7 : -10 to +10 V DC H : 10 to 50 mA DC 0 : (Custom order) Z : (Custom order) Voltage signal Current signal (±300 V or less) (150 mA or less)
Output signal	[WHRA] [WHRV] A : 20 to 4 mA DC 1 : 10 to 0 mV DC B : 10 to 2 mA DC 2 : 100 to 0 mV DC C : 5 to 1 mA DC 3 : 1 to 0 V DC D : 20 to 0 mA DC 4 : 10 to 0 V DC E : 16 to 0 mA DC 5 : 5 to 0 V DC F : 10 to 0 mA DC 6 : 5 to 1 V DC G : 1 to 0 mA DC 7 : +10 to -10 V DC Z : (Custom order) 0 : (Custom order) Current signal Voltage signal (24 mA or less) (±10 V or less)	Power supply	1 : 24 V DC±10% (DC drive) 2 : 85 to 264 V AC (AC drive)
Optional specification	D0 : Dual output (5 to 1 V DC)		

Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. WHRV-A6-2*B



Input/Output Specifications

Input signal: DC current or DC voltage signal
Input resistance:

DC current input	Input resistance	DC voltage input	Input resistance
4 to 20 mA	250 Ω	0 to 10 mV	1 MΩ during power on 100 kΩ during power off
2 to 10 mA	500 Ω	0 to 100 mV	
1 to 5 mA	1 kΩ	0 to 1 V	
0 to 20 mA	250 Ω	0 to 10 V	
0 to 16 mA	250 Ω	0 to 5 V	
0 to 10 mA	500 Ω	1 to 5 V	
0 to 1 mA	1 kΩ	-10 to +10 V	
10 to 50 mA	100 Ω		

Maximum allowable input:

Voltage input: ±30 V DC or less

Current input: Any level that satisfies the following condition,

$$(\text{Input current})^2 \times \text{Input resistance} \leq 0.5 \text{ W}$$

Output signal: DC current or DC voltage signal

Allowable load resistance:

DC current output	Allowable load resistance	DC voltage output	Allowable load resistance
20 to 4 mA	750 Ω or less	10 to 0 mV	250 kΩ or more
10 to 2 mA	1500 Ω or less	100 to 0 mV	250 kΩ or more
5 to 1 mA	3000 Ω or less	1 to 0 V	2 kΩ or more
20 to 0 mA	750 Ω or less	10 to 0 V	10 kΩ or more
16 to 0 mA	900 Ω or less	5 to 0 V	2 kΩ or more
10 to 0 mA	1500 Ω or less	5 to 1 V	2 kΩ or more
1 to 0 mA	15 kΩ or less	+10 to -10 V	10 kΩ or more

Zero adjustment: -5 to +5%

Span adjustment: 95 to 105%

Standard Performance

Accuracy rating: ±0.1% of span

Accuracy is not guaranteed for output level more than 99.5% of the span of a 0 to X mA output range type.

Dual output (optional): Relative error between output-1 and 2 is within ±0.2%. These outputs are not insulated.

Response speed: 150 ms, 63% response (10 to 90%)

Insulation resistance: 100 MΩ or more at 500 V

DC between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.

Withstand voltage:

- DC drive 1500 V AC/min. between input and (output and power supply).
500 V AC/min. between output and power supply.
- AC drive 1500 V AC/min. between input and output, input and power supply, input and ground, output and power supply, output and ground, and power supply and ground.

Environmental Conditions

- Operating temperature range: 0 to 50°C
- Operating humidity range: 5 to 90% RH (no condensation)
- Power supply voltage: 85 to 264V AC, 47 to 63 Hz or 24 V DC±10%
- Effect of power supply voltage fluctuations: ±0.1% of span or less for fluctuation within the operating range of power supply voltage specification.
- Effect of ambient temperature change: ±0.2% of span or less for a temperature change of 10°C.
- Current consumption: 24 V DC 102 mA (WHRA-1), 80 mA (WHRV-1)
- Power consumption: 100 V AC 10 VA (WHRA-2), 6 VA (WHRV-2)

Mounting and Dimensions

- Material: ABS resin (Case body)
- Mounting method: Rack, Wall or DIN rail mounting
- Connection method: M4 screw terminals
- External dimensions: 72 × 48 × 127 mm (H × W × D)
- Weight: DC; Approx. 150 g, AC; Approx. 300 g

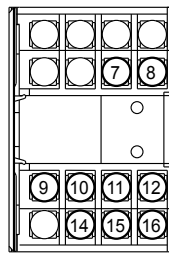
Standard Accessories

- Tag number label: 1
- Mounting block: 2
- Mounting screw: M4 screw x 4

Custom Order Specifications

	Current signal	Voltage signal
Input range (DC)	0 to 150 mA	-300 to +300 V
Span (DC)	100 μA to 150 mA	10 mV to 600 V
Zero elevation	0 to 73%	-80 to +73%
Output range (DC)	0 to 24 mA	-10 to +10 V
Span (DC)	1 to 24 mA	10 mV to 20 V
Zero elevation	0 to 200%	-100 to +200%

Terminal Assignments

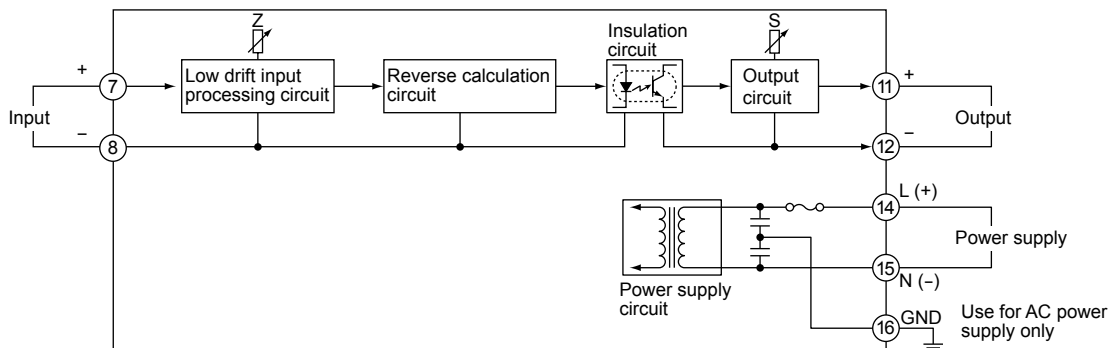


7	Input (+)
8	Input (-)
9	Output 2 (+)
10	Output 2 (-)
11	Output 1 (+)
12	Output 1 (-)
14	Supply (L+)
15	Supply (N-)
16	Ground (GND)*

Terminals (9)–(10) are used for Output only when the dual output is specified.

*: Use for AC power supply only

Block Diagram



External Dimensions

