

General Specifications

Model MH1D
Isolator
(Dual-output Type)



GS 77J04H01-02E

General

The MH1D is a dual-output, plug-in type isolator that receives DC current or DC voltage signals to convert them into isolated DC current or DC voltage signals.

- Provided with Power indicator lamp

Model and Suffix Codes

MH1D-□□□-□*B

Model _____

Input signal _____

Output-1 signal _____

Output-2 signal _____

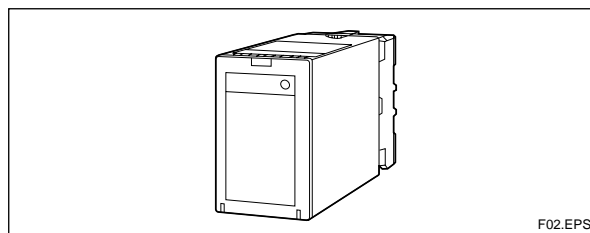
Power supply _____

1: 12-48 V DC
2: 85 -264 V AC

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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: Customized voltage signal*
Z: Customized current signal*	

*See Table 1.



Input resistance: Attach an external resistor for current input.

Input Range	Input Resistance	Input Range	Input Resistance
4 to 20 mA DC	250 Ω	0 to 10 mV DC	1 MΩ during power on 10 kΩ during power off
2 to 10 mA DC	500 Ω	0 to 100 mV DC	
1 to 5 mA DC	1 kΩ	0 to 1 V DC	
0 to 20 mA DC	250 Ω	0 to 10 V DC	1 MΩ during power on 800 kΩ during power off
0 to 16 mA DC	250 Ω	0 to 5 V DC	
0 to 10 mA DC	500 Ω	1 to 5 V DC	
0 to 1 mA DC	1 kΩ	-10 to +10 V DC	
10 to 50 mA DC	100 Ω		

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Allowable input level:

- Voltage input: Within ±30 V DC
- 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 voltage or DC current signal

Allowable load resistance:

Output-1 Range	Allowable Load Resistance	Output-1 Range	Allowable Load Resistance
4 to 20 mA DC	750 Ω maximum	0 to 10 mV DC	250 kΩ minimum
2 to 10 mA DC	1500 Ω maximum	0 to 100 mV DC	250 kΩ minimum
1 to 5 mA DC	3000 Ω maximum	0 to 1 V DC	2 kΩ minimum
0 to 20 mA DC	750 Ω maximum	0 to 10 V DC	10 kΩ minimum
0 to 16 mA DC	900 Ω maximum	0 to 5 V DC	2 kΩ minimum
0 to 10 mA DC	1500 Ω maximum	1 to 5 V DC	2 kΩ minimum
0 to 1 mA DC	15k Ω maximum	-10 to +10 V DC	10 kΩ minimum
Output-2 Range	Allowable Load Resistance	Output-2 Range	Allowable Load Resistance
4 to 20 mA DC	350 Ω maximum	0 to 10 mV DC	250 kΩ minimum
2 to 10 mA DC	700 Ω maximum	0 to 100 mV DC	250 kΩ minimum
1 to 5 mA DC	1400 Ω maximum	0 to 1 V DC	2 kΩ minimum
0 to 20 mA DC	350 Ω maximum	0 to 10 V DC	10 kΩ minimum
0 to 16 mA DC	430 Ω maximum	0 to 5 V DC	2 kΩ minimum
0 to 10 mA DC	700 Ω maximum	1 to 5 V DC	2 kΩ minimum
0 to 1 mA DC	7k Ω maximum	-10 to +10 V DC	10 kΩ minimum

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Zero adjustment: -5 to +5%

Span adjustment: 95 to 105%

Standard Performance

Accuracy rating: ±0.1% of span (aside from the ±0.1% accuracy of the external resistor for current input); accuracy is not guaranteed for output levels less than 0.5% of the span of a 0 to X mA output range type.

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

Insulation resistance: 100 MΩ minimum at 500 V DC between input, output-1, output-2, power supply and grounding terminals mutually

Withstanding voltage: 2000 V AC for one minute between input, (output-1 and output-2), power supply and grounding terminals mutually; 1000 V AC for one minute between output-1 and output-2 terminals

Items to be specified when ordering

- Model and Suffix Codes: e.g. MH1D-6A6-1*B

Input/Output Specifications

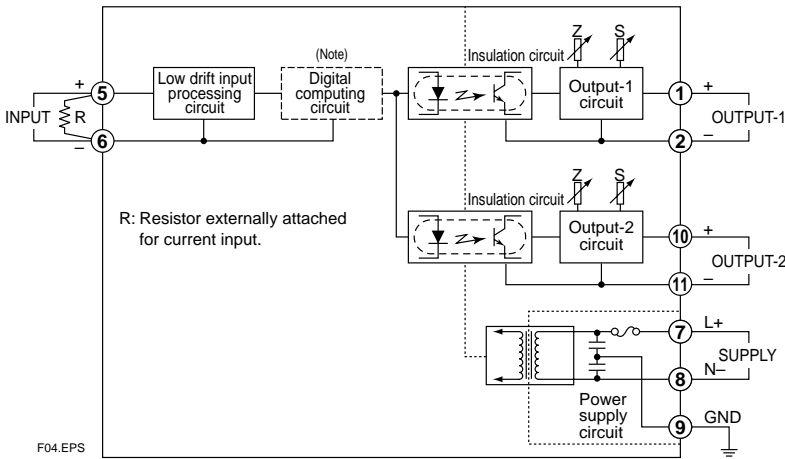
Input signal: DC voltage or DC current signal

Operating temperature range: 0 to 50°C
 Operating humidity range: 5 to 90% RH (no condensation)
 Supply voltage range: 85-264 V AC 47-63 Hz, or 12 to 48 V DC
 Effects of power line regulation: Up to ±0.1% of span for the regulation of 85 to 264 V AC or 12 to 48 V DC
 Effects of ambient temperature variations: Up to ±0.15% of span per 10°C
 Power consumption: 2.2 W at 24 V DC; 4.2 VA at 100 V AC; 6.1 VA at 200 V AC

■ Mounting and Appearance

Material: ABS resin (casing)
 Mounting method: Wall or DIN rail mounting
 More than 5 mm interval is required for side-by-side close mounting.
 Connection method: M3.5 screw terminals
 External dimensions: 85 (H)×51 (W)×132 (D) mm (including a socket)
 Weight: Approx. 250 g (main unit), approx. 80 g (socket)

■ Block Diagrams



■ Accessories

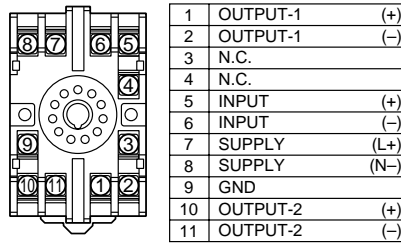
Spacer: One (used for DIN rail mounting)
 Resistor: One (attached for current input)

■ Customized Signal 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%

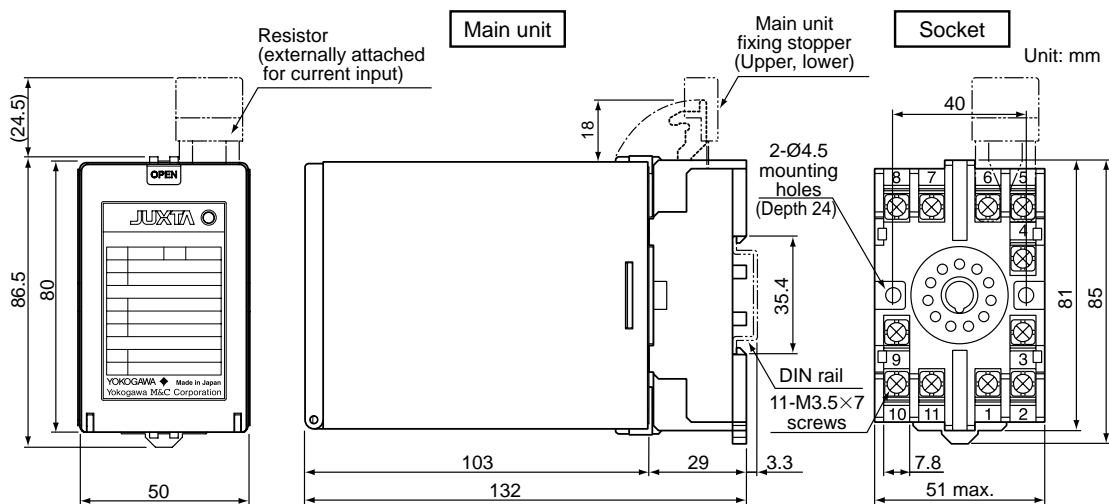
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■ Terminal Assignments



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■ External Dimensions



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• The information covered in this document is subject to change without notice for reasons of improvements in quality and/or performance.