

General Specifications

Model MH1
Isolator

JUKTA

GS 77J04H01-01E

General

The MH1 is a 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 (RDY).



Model and Suffix Codes

Model		MH1-□□-□*C /□	
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			
Z: Custom order (DC current/voltage signal)			
See Table 1.			
Output 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		
Z: Custom order (DC current/voltage signal)			
See Table 1.			
Power supply			
1: 15-40 V DC (Operating range: 12 to 48 V)			
2: 100-240 V AC (Operating range: 85 to 264 V)			
Option			
/SN: No socket (with socket if not specified)			
/CO: Coating			
/FB: Fuse bypass			

(Note 1) "/CO" option: Polyurethane coating. The "/CO" option does not guaranteed the coating effect though it is expected that the corrosion resistance for electric circuit is reinforced. And it is not able to submit coating test data.

(Note 2) "/FB" option: The primary power supply fuse is deleted, short circuit and ship it.

Ordering Information

- Model and Suffix Codes: e.g. MH1-66-2*C

Input/Output Specifications

Input signal: DC voltage or DC current signal
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
2 to 10 mA DC	500 Ω	0 to 100 mV DC	10 kΩ or more during power off
1 to 5 mA DC	1 kΩ	0 to 1 V DC	
0 to 20 mA DC	250 Ω	0 to 10 V DC	
0 to 16 mA DC	250 Ω	0 to 5 V DC	1 MΩ during power on
0 to 10 mA DC	500 Ω	1 to 5 V DC	800 kΩ or more during power off
0 to 1 mA DC	1 kΩ	-10 to +10 V DC	
10 to 50 mA DC	100 Ω		

Allowable input level:

- Voltage input: Within ±30 V DC
- Current input: Any level that satisfies the following condition,

(Input current)² × Input resistance ≤ 0.5 W

Output signal: DC voltage or DC current signal

Output variable range: -6 to 106 %

Allowable load resistance:

Output Range	Allowable Load Resistance	Output 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	15 kΩ maximum	-10 to +10 V DC	10 kΩ minimum

Output resistance: Current output; 500 kΩ or more

Voltage output other than below: 1 Ω or less
0 to 10 mV DC, 0 to 100 mV DC

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%)

Effect of power supply voltage fluctuation: Within the accuracy range of span for power supply voltage fluctuation.

Effect of ambient temperature change: ±0.15 % of span for change of 10 °C

■ Power Supply and Isolation

Supply rated voltage range: 100-240 V AC/DC ~
50/60 Hz or 15-40 V DC ∴
Supply input voltage range: 100-240 V AC (-15,
+10%) 50/60 Hz or 15-40 V DC (±20%)
Power consumption: 1.5 W at 24 V DC; 3.2 VA at 100
V AC; 4.4 VA at 200 V AC
Insulation resistance: 100 MΩ minimum at 500 V DC
between input, output, power supply and
grounding terminals mutually
Withstanding voltage: 2000 V AC for one minute
between input, output, power supply and
grounding terminals mutually

■ Environmental Conditions

Temperature: 0 to 50 °C (0 to 40 °C for multiple
mounting)
Humidity: 5 to 90 % RH (no condensation)
Ambient Condition: Avoid installation in such
environments as corrosive gas like sulfide
hydrogen, dust, sea breeze and direct
sunlight.
Magnetic field: 400 A/m or less.
Continuous vibration (at 5 to 9 Hz) Half amplitude of
3 mm or less (at 9 to 150 Hz) 4.9 m/s² or
less, 1 oct/min for 90 minutes each in the
3-axis directions.
Impact: 98 m/s² or less, 11 msec, 3-axis 3 times each
in 6 directions.
Altitude: 2000 m or less.
Warm-up time: At least 30 minutes after power on.

■ Transport and Storage Conditions

Ambient temperature: -25 to 70 °C
Temperature change rate: 20 °C per hour or less
Ambient humidity: 5 to 95 %RH (no condensation)

■ Mounting and Appearance

Construction: Compact plug-in type
Material: Modified polyphenylene oxide (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: 86.5 (H)× 51 (W)× 123 (D) mm
(including a socket)
Weight: Main unit: 200 g or less
Socket: 60 g or less

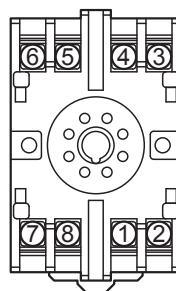
■ Accessories

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

■ Customized Signal Specifications

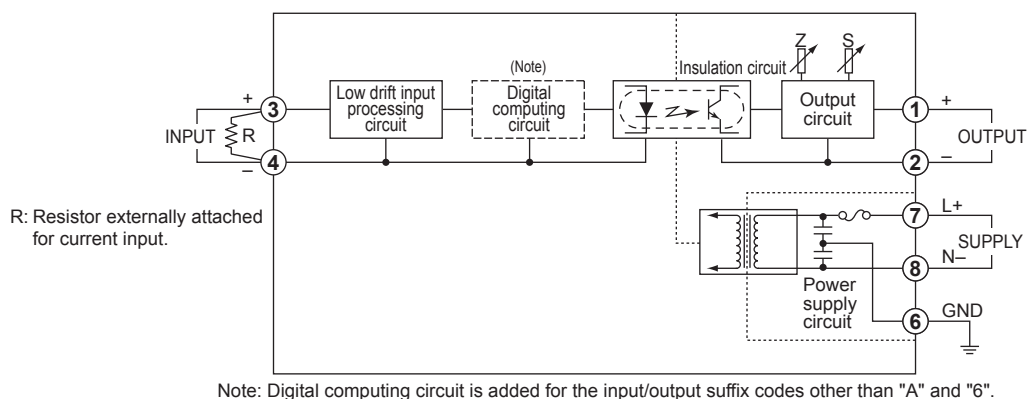
	Current Signal	Voltage Signal
Input range (DC)	0 to 150 mA	-300 to +300 V
Span (DC)	100 μA to 150 mA	10 mV to 600 V
Zero elevation	0 to 73%	-80 to +73%
Output range (DC)	0 to 24 mA	-10 to +10 V
Span (DC)	1 to 24 mA	10 mV to 20 V
Zero elevation	0 to 200%	-100 to +200%

■ Terminal Assignments



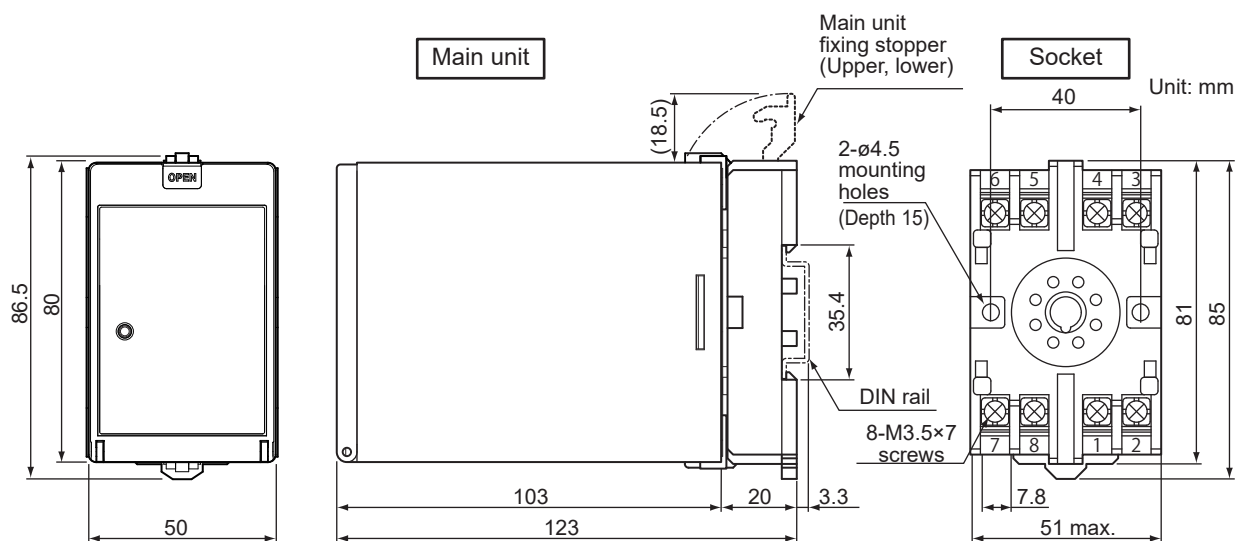
1	Output	(+)
2	Output	(-)
3	Input	(+)
4	Input	(-)
5	Do not use	
6	GND	
7	Supply	(L+)
8	Supply	(N-)

Block Diagrams

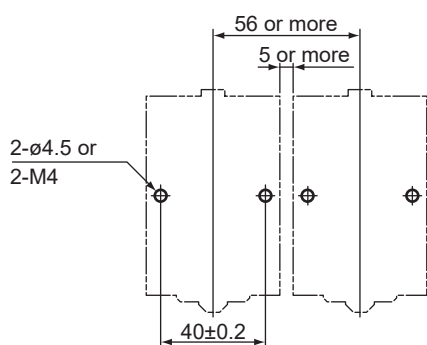


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External Dimensions



<Mounting Dimensions>



Note:

- When mounting the units close together, leave a space of at least 5 mm between them.
- Use the supplied spacer to keep a space of 5 mm for DIN rail mounting.

Normal Allowable Deviation = ± (Value of JIS B 0401-1998 tolerance grade IT18) / 2