

# General Specifications

Models WH5A, WH5V  
Isolator  
(with Square Root Extractor)



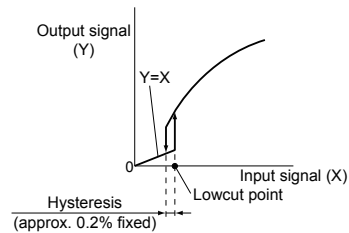
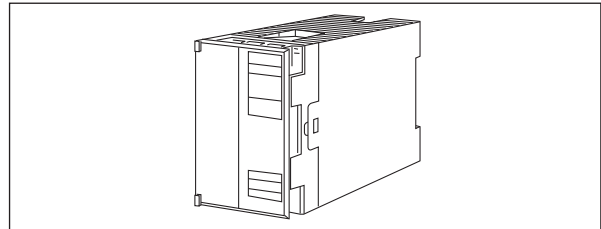
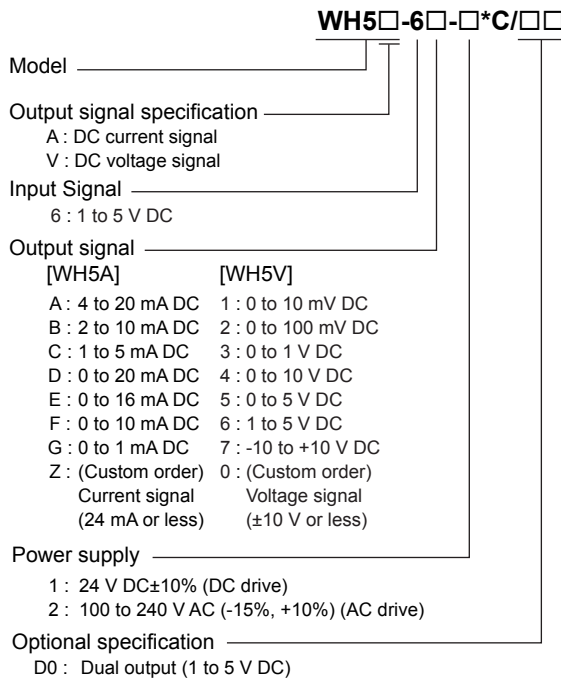
GS 77J09H05-01E

## General

The WH5A/WH5V is a compact, front terminal connection type isolator that extracts the square roots of 1 to 5 V DC signals and converts them into isolated DC current or DC voltage signals.

- Low cut point setting, zero/span adjustment, I/O monitoring, etc. can be made using the optional Parameter Setting Tool (VJ77) or Handy Terminal (JHT200).
- Dual output and 2000 V AC withstand voltage specifications are available upon requests.

## Model and Suffix Codes



Output signal: DC current or DC voltage signal  
 Allowable load resistance:

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

Input adjustment: ±1% (Zero/Span)  
 Output adjustment: ±10% (Zero/Span)  
 In the case of the output specification code 7, it is ±5% of span.

## Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. WH5A-6A-2\*C

## Input/Output Specifications

Input signal: 1 to 5 V DC  
 Input resistance: 1 MΩ during power on,  
 100kΩ during power off.  
 Maximum allowable input: ±9 V DC or less  
 Input-output characteristics:

$$Y = \left( \sqrt{\frac{X - (\text{input } 0\% \text{ value})}{\text{input span}}} \right) \times (\text{output span}) + (\text{output } 0\% \text{ value})$$

X: Input valve, Y: Output valve  
 Lowcut point setting range: 0.3 to 100% (0.6% for factory default)  
 Output characteristic: Output for lowcut point or less is cramped with straight line proportional to input.

## Standard Performance

- Accuracy rating: ±0.1% of span  
 Accuracy is not guaranteed for output level less than 0.5% of the span of a 0 to X mA output range type.  
 Accuracy is ±1% of span for input level 2% or less
- Dual output (optional): Relative error between output-1 and 2 is within ±0.2%. These outputs are not insulated.
- Response speed: 200 ms, 63% response (10 to 90%)
- Insulation resistance: 100 MΩ or more at 500 V DC 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: 100 to 240 V AC (-15%, +10%)  
 50/60 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 70 mA (WH5A), 50 mA (WH5V)  
 Power consumption: 100 V AC 4 VA (WH5A), 3 VA (WH5V)  
 200 V AC 5.5 VA (WH5A), 4.5VA (WH5V)

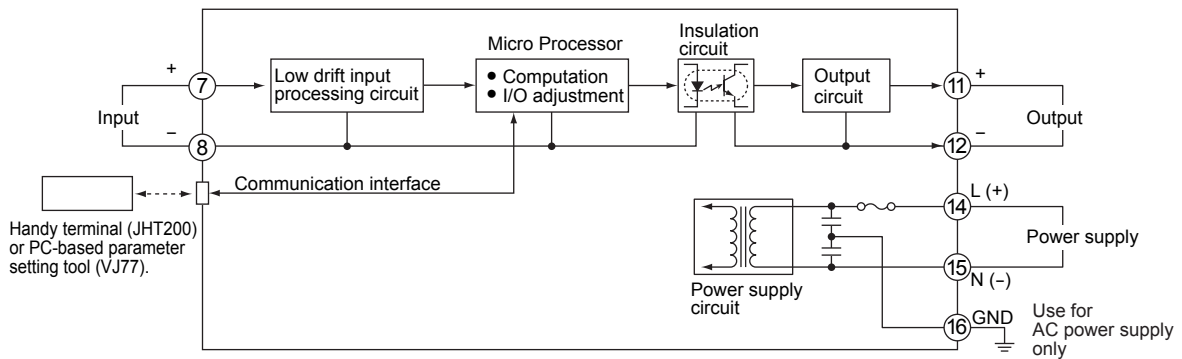
**■ Mounting and Dimensions**

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 x W x D)  
 Weight: DC; Approx. 150 g, AC; Approx. 300 g

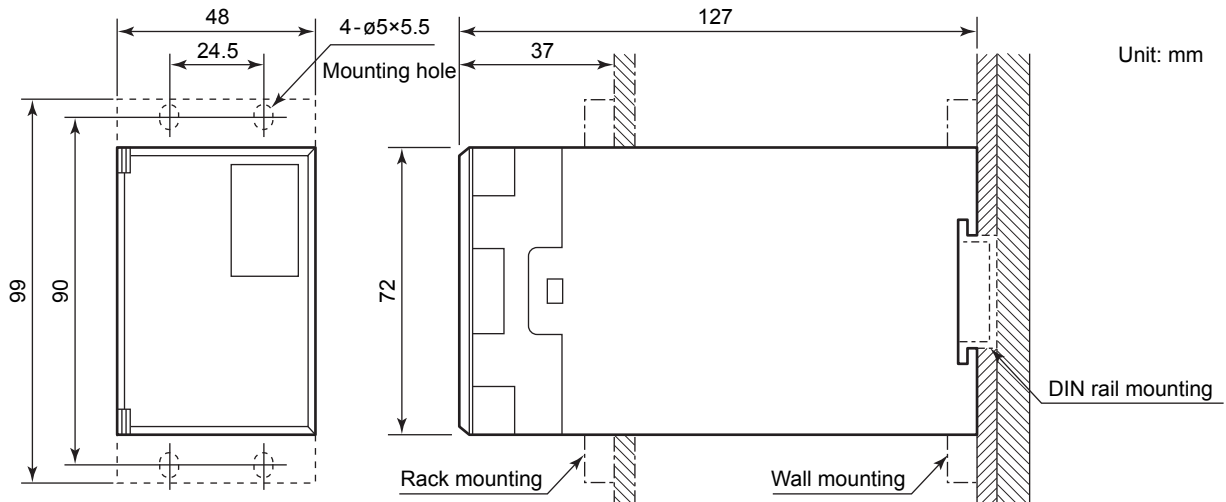
**■ Standard Accessories**

Tag number label: 1  
 Mounting blocks: 2  
 Mounting screws: M4 screw x 4

**■ Block Diagram**



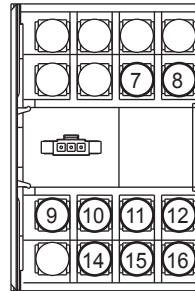
**■ External Dimension**



**■ Custom Order Specifications**

	Current signal	Voltage signal
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 2 in case dual output is specified.

\*: Use for AC power supply only