

# General Specifications

Models FH5A, FH5V  
Isolator  
(with Square Root Extractor)



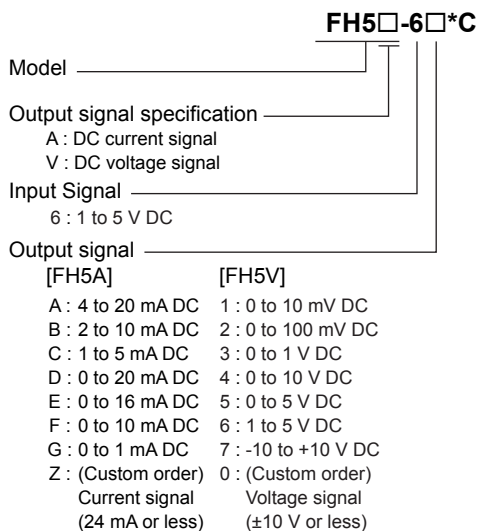
GS 77J08H05-01E

## General

The FH5A/FH5V, a compact, front terminal connection type isolator, 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).

## Model and Suffix Codes



Power supply: 24 V DC±10%

## Ordering Information

Specify the following when ordering.

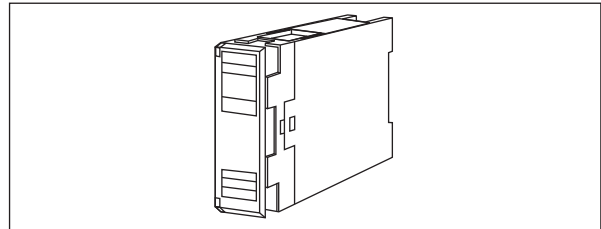
- Model and suffix codes :e.g. FH5A-6A\*C

## Input/Output Specifications

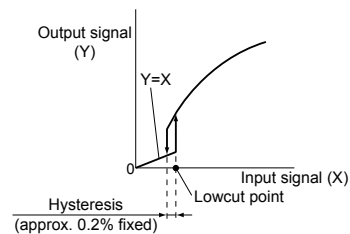
Input signal: 1 to 5 V DC  
 Input resistance: 1 MΩ during power on,  
 100kΩ during power off.  
 Maximum allowable input: ±9 V DC or less  
 Input-output characteristics:

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

X: Input valve, Y: Output valve



Output characteristic: Output for lowcut point or less is cramped with straight line proportional to input.



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 output specification code 7, it is ±5% of span.

Lowcut point setting range: 0.3 to 100% (0.6% for factory default)

## 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.

Response speed: 200 ms, 63% response (10 to 90%)

Insulation resistance: 100 MΩ or more at 500 V DC between input and output, output and power supply, and input and power supply.

Withstand voltage: 1500 V AC/min. between input and (output and power supply).

500 V AC/min. between output and power supply.

**■ Environmental Conditions**

Operating temperature range: 0 to 50°C  
 Operating humidity range: 5 to 90% RH (no condensation)  
 Power supply voltage: 24 V DC±10% (percentage ripple is 5% p-p or less)  
 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 (FH5A), 50 mA (FH5V)

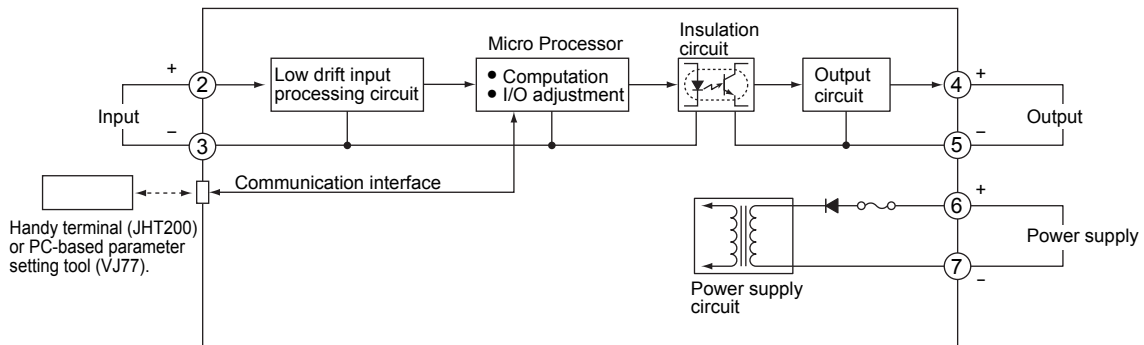
**■ Mounting and Dimensions**

Material: ABS resin (Case body)  
 Mounting method: Rack, Wall or DIN rail mounting  
 Connection method: M4 screw terminals  
 External dimensions: 72 × 24 × 127 mm (H x W x D)  
 Weight: Approx. 130 g

**■ Standard Accessories**

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

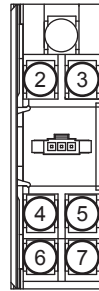
**■ Block Diagram**



**■ 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**



2	Input (+)
3	Input (-)
4	Output (+)
5	Output (-)
6	Supply (+)
7	Supply (-)

**■ External Dimensions**

