

General Specifications

Models WA5A, WA5V
Distributor
(with Square Root Extractor)



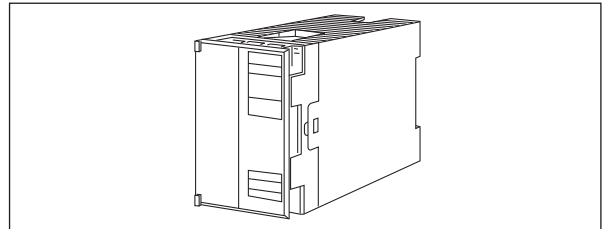
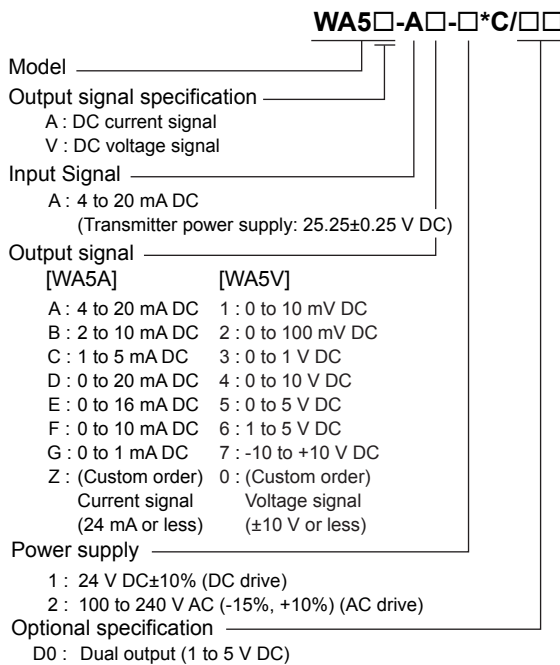
GS 77J09A05-01E

General

The WA5A/WA5V is a compact, front terminal connection type distributor that is used in combination with a two-wire transmitter, and extracts the square root of 4 to 20 mA DC input signals from the transmitter and converts them into isolated DC current or DC voltage signals.

- Zero/span adjustment, I/O monitoring 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

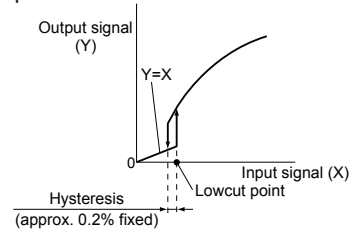
Input adjustment: ±1% of span (Zero/Span)

Output adjustment: ±10% of span (Zero/Span)

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

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.



Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. WA5V-A6-2°C

Input/Output Specifications

Input signal: 4 to 20 mA DC signal from two-wire transmitter

Input resistance: 250 Ω

Maximum allowable input: 40 mA DC

Transmitter power supply: 25.25±0.25 V DC

(provided with a current limiter to keep the current between 25 and 35 mA)

Allowable conductor resistance (RL):

Up to [(20 –transmitter’s minimum operating voltage) V/0.02 A] Ω

Input-output characteristics:

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

X: Input value, Y: Output value

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

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

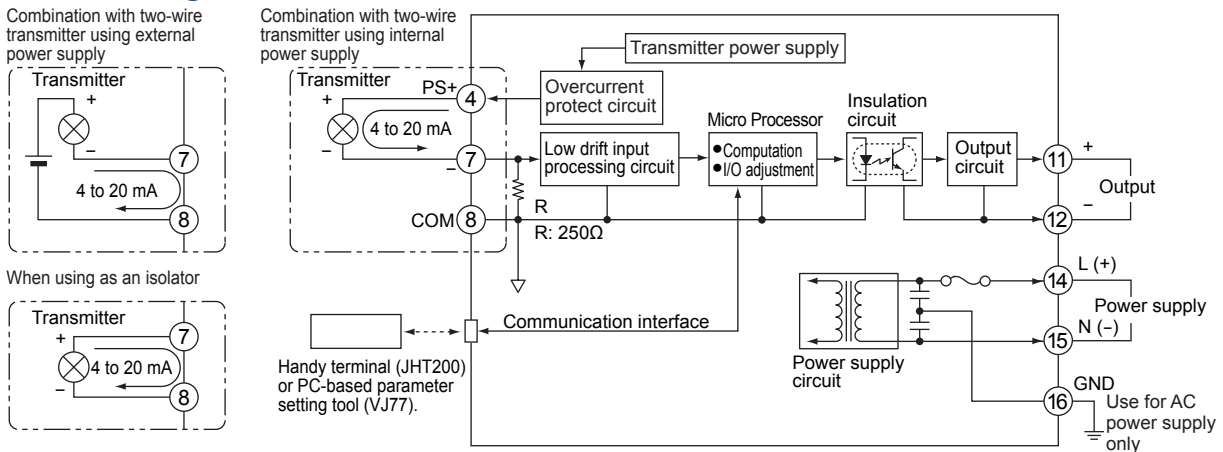
Environmental Conditions

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 100 mA (WA5A), 90 mA (WA5V)
 Power consumption:
 100 V AC 6 VA (WA5A), 5 VA (WA5V)
 200 V AC 8 VA (WA5A), 7 VA (WA5V)

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

Block Diagram



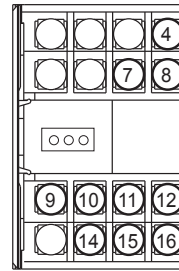
Standard Accessories

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

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



4	Input (PS+)
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 only when the dual output is specified.

*: Use for AC power supply only

External Dimensions

