

General Specifications

Models WQ1A, WQ1V Pulse to Analog Converter

JUXTA

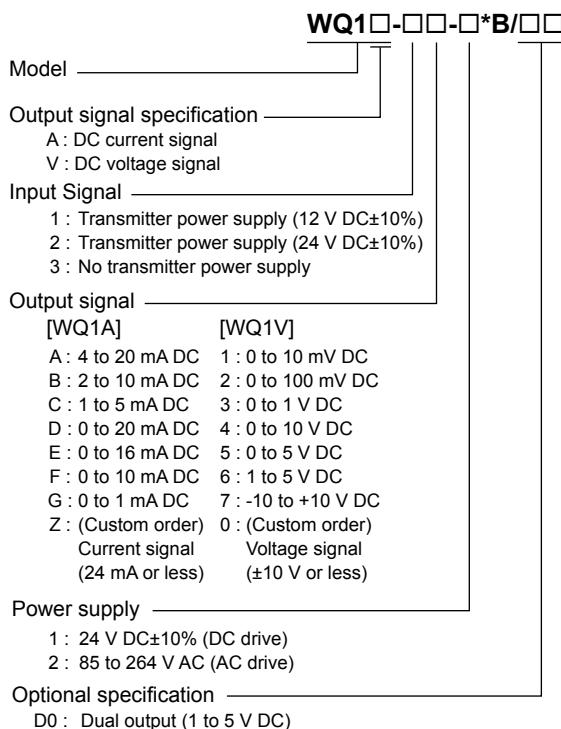
GS 77J09Q01-01E

■ General

The WQ1A/WQ1V is a compact, front terminal connection type pulse-to-analog converter that receives pulse-train signal and converts it into isolated DC voltage or DC current signal.

- With built-in 12 V or 24 V power supply for pulse transmitter inputs.
- Input pulse types include current pulse, voltage pulse, non-voltage contact, and open collector contact.
- Internal filter to eliminate chattering can be specified when ordering. (In cases where the input frequency range is up to 100Hz, the pulse width is 3ms or more)
- Dual output specifications are available upon requests.

■ Model and Suffix Codes

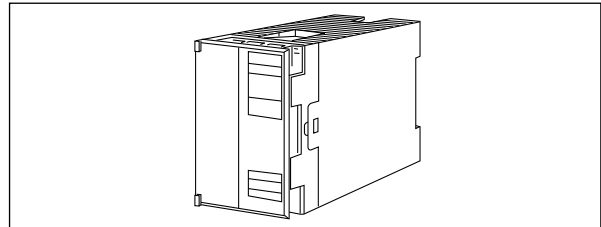


■ Ordering Information

Specify the following when ordering.

For current pulse input, the resistance can be selected from 200 Ω/510Ω/1 kΩ.

- Model and suffix codes : e.g. WQ1V-2A-2*B
 - Input range : e.g. 0 1000 Hz
 - Input resistance : e.g. 200 Ω
 - Filter : e.g. No specification*
- *: In case the input frequency range is up to 100Hz (pulse width is 3ms or more), ON/OFF can be specified.



■ Input/Output Specifications

Input signal: Contact pulse, voltage pulse or current pulse

Input frequency: 0 to F_{100} Hz (F_{100} =input frequency)
 (50 Hz ≤ F_{100} ≤ 10 kHz)

Input resistance:

Contact pulse or voltage pulse: 10 kΩ

Current pulse: 200 Ω/510Ω/1 kΩ

(Customer may specify from the above on purchase order.)

Input signal level:

Low level (V_L): -1 to +8 V

High level (V_H): 2 V or more

Swing width: 2 to 50 V

Input pulse width: Pulse width with a duty of 50±30% when the input is 100%

Transmitter power supply:

12 V DC/30 mA or 24 V DC/30 mA

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

Zero adjustment: -1 to 1%

Span adjustment: 95 to 105%

■ Standard Performance

Accuracy rating: ±0.3% 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.

Dual output (optional): Relative error between output 1 and 2 is within ±0.2%. These outputs are not insulated.

Response speed (63% response (10 to 90%)):

500 Hz span minimum: 600 ms

500 Hz span maximum: 3 sec.

Insulation resistance: 100 MΩ or more at 500 V

DC between 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

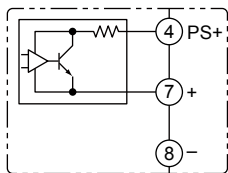
- Operating temperature range: 0 to 50°C
- Operating humidity range: 5 to 90% RH (no condensation)
- Power supply voltage: 85 to 264 V AC, 47 to 63Hz or 24 V DC±10%
- Effect of power supply voltage fluctuations: ±0.1% of span or less for fluctuation within the operating range of power supply voltage specification.
- Effect of ambient temperature change: ±0.2% of span or less for a temperature change of 10°C.
- Current consumption: 24 V DC 90 mA (WQ1A), 60 mA (WQ1V-1)
- Power consumption: 100 V AC 11 VA (WQ1A-2), 7.5 VA (WQ1V-2)

Mounting and Dimensions

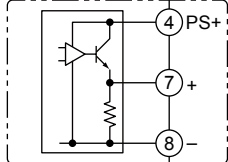
- Material: ABS resin (Case body)
- Mounting method: Rack, Wall or DIN rail mounting
- Connection method: M4 screw terminals
- External dimensions: 72 (H) × 48 (W) × 127 (D) mm
- Weight: Weight: DC; Approx.200g, AC; Approx.300g

Block Diagram

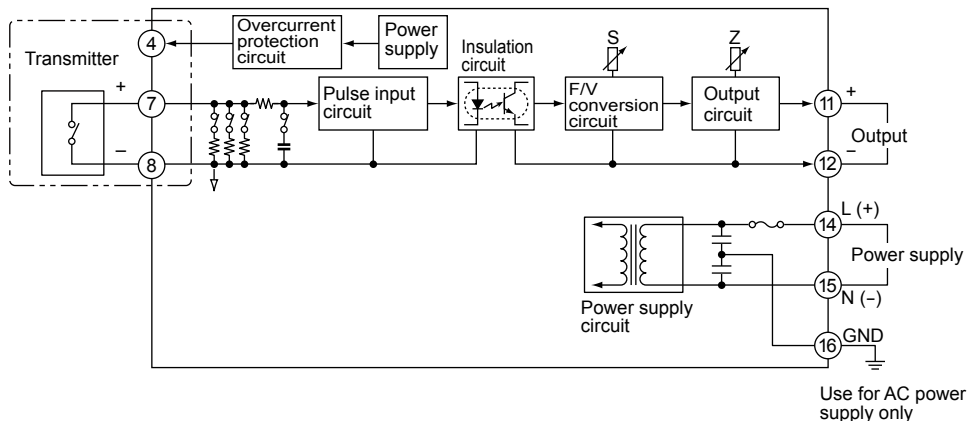
When Receiving Current Pulse by Running a Transmitter on an Internal Power Supply



When Receiving Voltage Pulse by Running a Transmitter on an Internal Power Supply



When receiving a voltage-free contact signal (or an open collector signal)



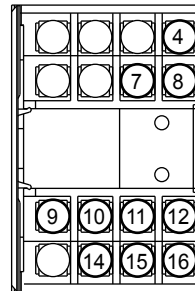
Standard Accessories

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

Custom Order Specifications

Input range (DC)	0 to 10 kHz	
Span (DC)	50 Hz to 10 kHz	
Zero elevation	0% only	
	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

