

# General Specifications

## Model WQ2P Analog to Pulse Converter (Free Range Type)



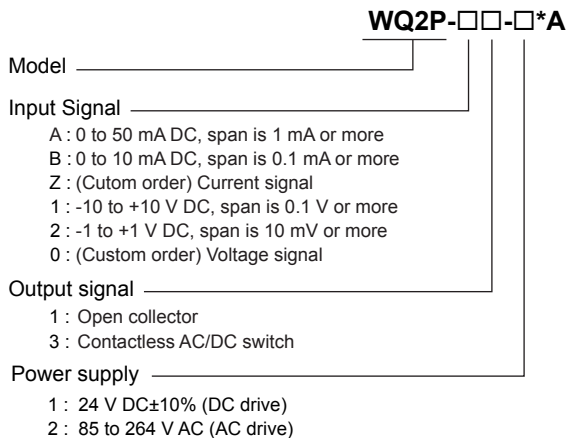
GS 77J09Q12-01E

### General

The WQ2P is a compact, front terminal connection type analog-to-pulse converter that converts DC current or DC voltage signals into pulse-train signals.

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

### Model and Suffix Codes



### Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. WQ2P-11-2\*A
- Input range :e.g. 1 to 5 V DC
- Output range :e.g. 0 to 500 Hz
- Low-cut point :e.g. 5 Hz
- Pulse width :e.g. 0.5 ms ON pulse

Note: If analog integration is used in the following cases, the MXD-Q (JUXTA M series universal computing unit) is recommended instead.

- For integration counter use
- For conversion from DC to pulse; a repeat of "steady inputs" and "inputs near 0%"

### Input/Output Specifications

Input signal: DC current or DC voltage

Code	Setting range (DC)
A	0 to 50 mA, span is 1 mA or more
B	0 to 10 mA, span is 0.1 mA or more
1	-10 to +10 V, span is 0.1 V or more
2	-1 to +1 V, span is 10mV or more

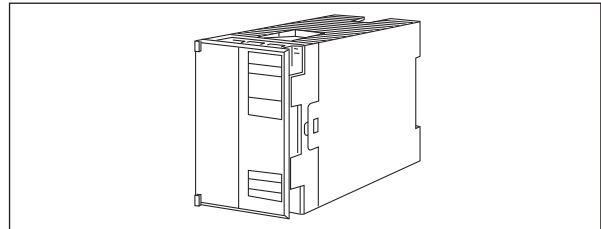
Input resistance:

Current input: 100 Ω

Voltage input: 1 MΩ during power on. 100 kΩ during power off

Maximum allowable input:

Current input: 70 mA DC or less



Voltage input: Within ±15 V DC

Output signal: Open collector or contactless AC/DC switch

Output frequency:  $F_0$  to  $F_{100}$  Hz  
 $(0 \leq F_0 \leq F_{100}/2)$  ( $0.001 \text{ Hz} \leq F_{100} \leq 1000 \text{ Hz}$ )

$F_0=0\%$  output frequency

$F_{100}=100\%$  output frequency

Low cut point: 0.0001 to  $F_{100}$  Hz (variable range)

The output of low cut point or less outputs 0Hz.

Output pulse width: Either  $50 \pm 10\%$  duty, fixed on-state pulse width, or fixed off-state pulse width is selectable.

Pulse width setting range (fixed pulse width):  
 0.1 to 500 ms

However, the frequency which can be output by pulse width fixed is as follows:

$$\frac{1}{\text{Fixed pulse width set value (sec)} \times 2} \quad [\text{Hz}]$$

If the frequency exceeds this level, it will be cutoff automatically.

Maximum permissible load:

Open collector: 30 V DC/200 mA

Contactless AC/DC Switch: 240 V AC/200 mA

Zero adjustment: ±1%

Span adjustment: ±1%

### Standard Performance

Accuracy rating: ±0.1% of span

The accuracy is limited according to input range setting.

Code	Setting range (DC)	Input accuracy (%)
A	Span is less than 10 mA	$0.1 \times 10 / \text{Span (mA)}$
	Zero elevation is more than 50%	0.2%
	Span is less than 10 mA and zero elevation is more than 50%	$0.2 \times 10 / \text{Span (mA)}$
B	Span is less than 1 mA	$0.1 \times 1 / \text{Span (mA)}$
	Zero elevation is more than 50%	0.2%
	Span is less than 1 mA and zero elevation is more than 50%	$0.2 \times 1 / \text{Span (mA)}$
1	Span is less than 1 V	$0.1 \times 1 / \text{Span (V)}$
	Zero elevation is more than 50%	0.2%
	Span is less than 1 V and zero elevation is more than 50%	$0.2 \times 1 / \text{Span (V)}$
2	Span is less than 100 mV	$0.1 \times 100 / \text{Span (mV)}$
	Zero elevation is more than 50%	0.2%
	Span is less than 100 mV and zero elevation is more than 50%	$0.2 \times 100 / \text{Span (mV)}$

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.

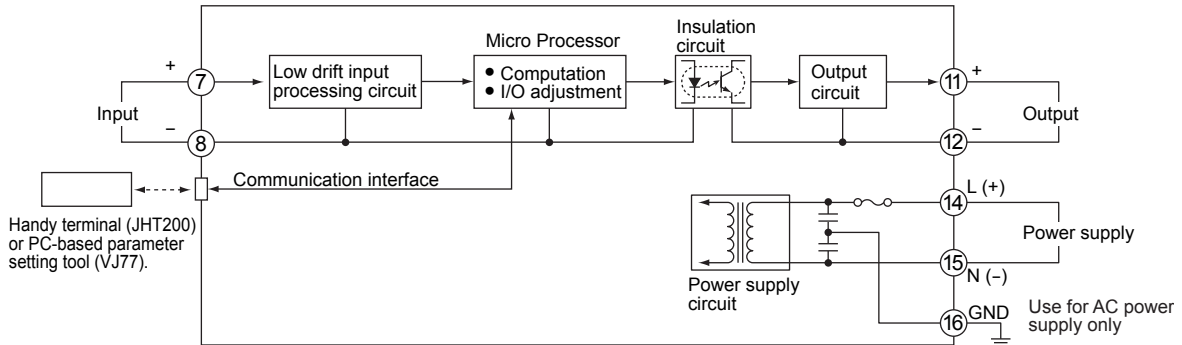
Withstand voltage:

- 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, 60 mA
- Power consumption: 100 V AC, 6 VA

**■ Block Diagram**



**■ 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: DC; Approx.150g, AC; Approx.300g

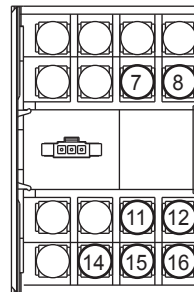
**■ Standard Accessories**

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

**■ Custom Order Specifications**

	Current signal	Voltage signal
Input range (DC)	0 to 100 mA	-30 to +30 V
Span (DC)	1 to 100 mA	3 to 60 V
Zero elevation	0 to 50%	-50 to +50%

**■ Terminal Assignments**



7	Input	(+)
8	Input	(-)
11	Output 1	(+)
12	Output 1	(-)
14	Supply	(L+)
15	Supply	(N-)
16	Ground	(GND)*

\*:Use for AC power supply only

Note: When power of WQ2P is turned on/off, one pulse may be counted by the pulse input device which connects to the WQ2P.

### External Dimensions

