

General Specifications

Model FQ2P Analog to Pulse Converter (Free Range Type)



GS 77J08Q12-01E

General

The FQ2P 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).

Model and Suffix Codes

FQ2P-□□*A

Model _____

Input Signal _____

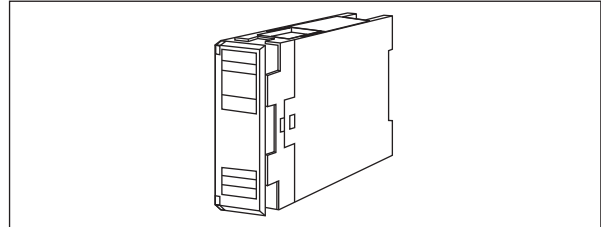
A : 0 to 50 mA DC, span is 1 mA or more
 B : 0 to 10 mA DC, span is 0.1 mA or more
 Z : (Custom order) Current signal
 1 : -10 to +10 V DC, span is 0.1 V or more
 2 : -1 to +1 V DC, span is 10 mV or more
 0 : (Custom order) Voltage signal

Output signal _____

1 : Open collector
 3 : Contactless AC/DC switch

Power supply _____

24 V DC±10%



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 0 Hz.
 Output pulse width: Either 50±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.

Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. FQ2P-11*A
- Input range :e.g. 0 to 10 V DC
- Output range :e.g. 0 to 300 Hz
- Low-cut point :e.g. 5 Hz
- Pulse width :e.g. 1 ms ON pulse

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

- For integration counter use
- For the 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

Maximum permissible load:
 Open collector: 30 V DC/200 mA
 Contactless AC/DC Switch: 240 V AC/200 mA
 Input adjustment: ±1% (Zero/Span)
 Output adjustment: ±10% (Zero/Span)

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, 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.

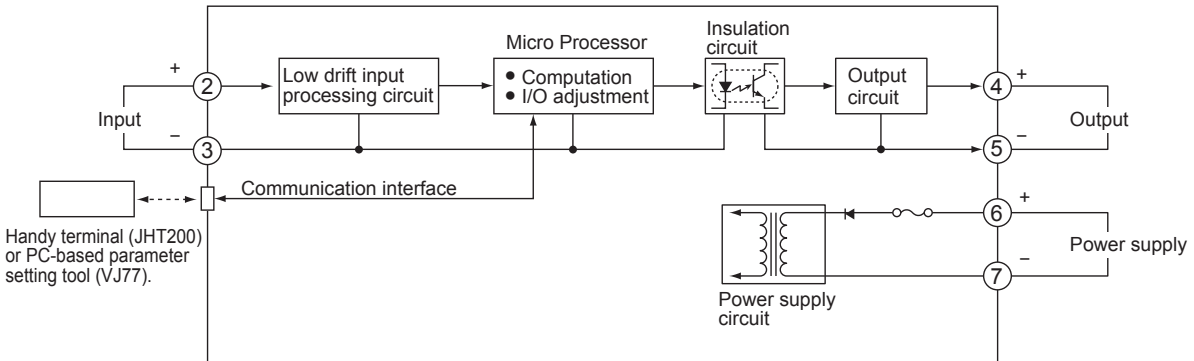
■ Environmental Conditions

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 the 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

■ 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) × 24 (W) × 127 (D) mm
 Weight: Approx. 130g

■ Block Diagram



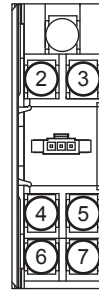
■ Standard Accessories

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

■ 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



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

Note: When power of FQ2P is turned on/off, one pulse may be counted by the pulse input device which connects to the FQ2P.

■ External Dimensions

