

Maximum allowable load: 30 V DC/200 mA for large-current open collector output
 30 V DC/30 mA for small current open collector output
 100 V AC/200 mA for contactless AC switch output

Note: The VJP4 scaler is designed so that the user can input 10000 pulses to obtain the desired number of output pulses (from 0 to 9999). The scaler therefore does not always deliver the same speed of output pulses as the number of input pulses multiplied by the given pulse rate. Be fully aware of this fact when using the scaler.

Standard Performance

Formula for pulse rate calculation:

$$\text{Pulse rate} = F_{O100} / F_{I100}$$

(where, the rate is rounded to four decimal places)

Maximum Pulse Rate Setpoints vs. Maximum Input Frequency Ranges (F_{I100})

Maximum Input Frequency Range (F _{I100})	Pulse Rate
0-16.6 Hz	No limit
16.7-33.3 Hz	0.4000 maximum
33.4-83.3 Hz	0.2000 maximum
83.4-166 Hz	0.1000 maximum
167-333 Hz	0.0400 maximum
334-833 Hz	0.0200 maximum
0.834-1.66 kHz	0.0100 maximum
1.67-3.33 kHz	0.0040 maximum
3.34-8.33 kHz	0.0020 maximum
8.34-10.0 kHz	0.0010 maximum

Pulse width for ON-state output: 30 (±3) ms

Power Supply and Isolation

Supply voltage range: 100-240 V AC/DC ≈ (-15, +10%) 50/60 Hz or 15-30 V DC ∓ (±20%)

Effects of power line regulation: Normal operation is guaranteed for a supply voltage range of 85 to 264 V AC (47 to 63 Hz), 85 to 264 V DC or 12 to 36 V DC.

Effects of ambient temperature variations: Normal operation is guaranteed over the rated operating temperature range.

Current consumption: 121 mA at 24 V DC
 Power consumption: 5.5 VA at 100 V AC; 7.5 VA at 200 V AC

Insulation resistance: 100 MΩ minimum at 500 V DC between input, output-1, output-2, power supply and grounding terminals mutually

Environmental Conditions

Operating temperature range: 0 to 50°C
 Operating humidity range: 5 to 90% RH (no condensation)

Ambient Condition: Avoid installation in such environments as corrosive gas like sulfide hydrogen, dust, sea breeze and direct sunlight Installation altitude 2000m or less above sea level.

Withstanding voltage: 2000 V AC for one minute between input, (output-1, output-2), power supply and grounding terminals mutually;
 1000 V AC for one minute between output-1 and output-2 terminals

Mounting and Appearance

Material: ABS resin (casing)

Mounting: Wall mounting, DIN rail mounting, or mounting on a side-by-side multiple mounting base

Connection: Terminals with M3 size screws

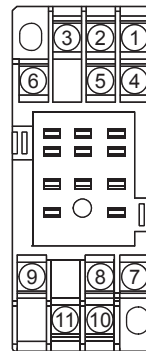
External dimensions: 76 (H) × 29.5 (W) × 124.5 (D) mm

Weight: Main unit = approx. 120 g; socket = approx. 51 g

Accessories

Tag number label: One

Terminal Assignments



1	INPUT	(PS+)
2	OUTPUT 2	(+)
3	INPUT	(+)
4	INPUT	(-)
5	OUTPUT 2	(-)
6	N.C.	
7	OUTPUT 1	(+)
8	GND	
9	OUTPUT 1	(-)
10	SUPPLY	(L+)
11	SUPPLY	(N-)

Note: For single-output models, OUTPUT2 is N.C.

F02.ai

Note: This instrument may output a pulse when the power is turned on/off. Depending on the connected devices, this pulse output is counted as "one pulse."

■ Customized Signal Specifications

Manufacturable Ranges

Output frequency	Less than 10 kHz
ON-state output pulse width	40 μs minimum

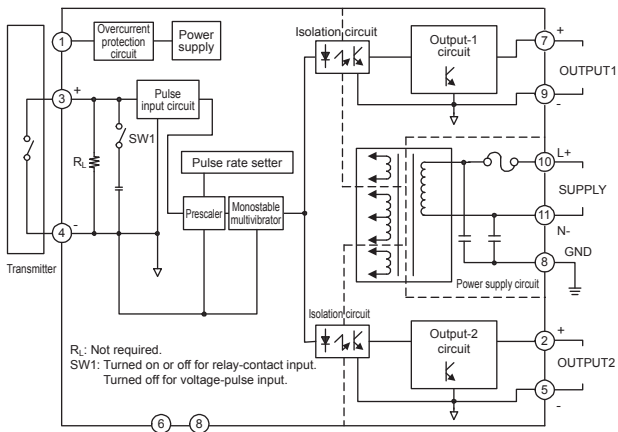
These specifications are feasible as far as the output pulse width satisfies the following formula:

$40 \mu s \leq \text{ON-state output pulse width} \leq 1/F_{i100} \times 0.5 \times n$
 where, n varies with the pulse rate applied.

Pulse Rate $\frac{F_{o100}}{F_{i100}}$	n
0.9999-0.4001	1
0.4000-0.2001	2
0.2000-0.1001	5
0.1000-0.0401	10
0.0400-0.0201	20
0.0200-0.0101	50
0.0100-0.0041	100
0.0040-0.0021	200
0.0020-0.0011	500
0.0010-0.0005	1000
0.0004-0.0003	2000
0.0002	5000
0.0001	10000

Block Diagrams

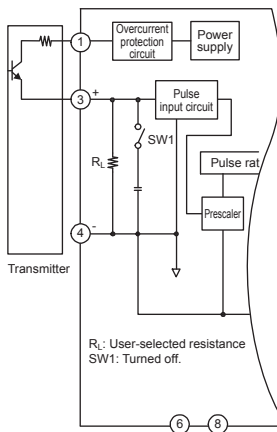
(1) When Receiving Voltage-free Contact Signal or Voltage Pulses (where, terminal 3 is the positive input (+) and terminal 4 is the negative input (-) for voltage pulse)



R_L : Not required.
SW1: Turned on or off for relay-contact input.
Turned off for voltage-pulse input.

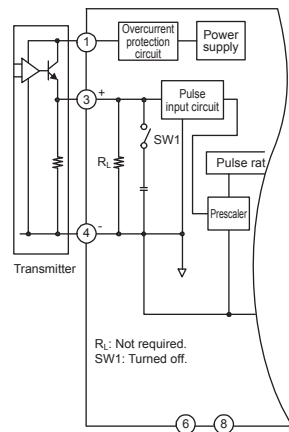
Note: Single-output models do not contain the output-2 circuit.

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



R_L : User-selected resistance
SW1: Turned off.

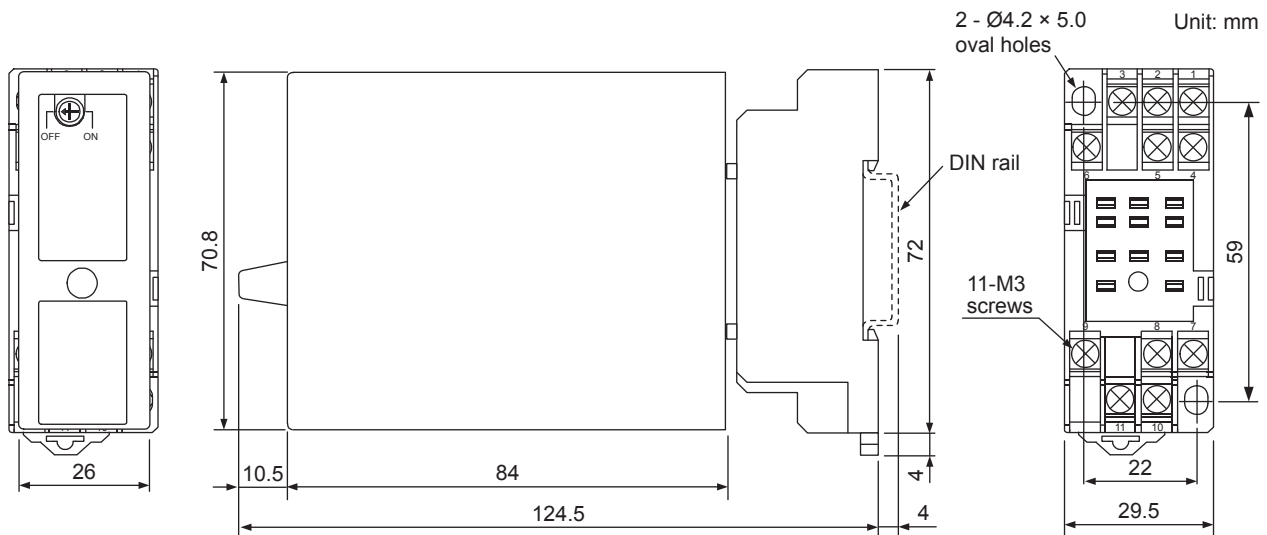
(3) When Receiving Voltage Pulse by Running a Transmitter on an Internal Power Supply



R_L : Not required.
SW1: Turned off.

F03.ai

External Dimensions



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