

■ Output-1

Output-1 Range	Allowable Load Resistance	Output-1 Range	Allowable Load Resistance
4 to 20 mA DC	750Ω max.	0 to 10 mV DC	250KΩ min.
2 to 10 mA DC	1500Ω max.	0 to 100 mVDC	250KΩ min.
1 to 5 mA DC	3000Ω max.	0 to 1 V DC	2KΩ min.
0 to 20 mA DC	750Ω max.	0 to 10 V DC	10KΩ min.
0 to 16 mA DC	900Ω max.	0 to 5 V DC	2KΩ min.
0 to 10 mA DC	1500Ω max.	1 to 5 V DC	2KΩ min.
0 to 1 mA DC	15KΩ max.	-10 to +10V DC	10KΩ min.

■ Output-2

• Analog Output

Output Signal	Output Resistance	Permissible Load Resistance
1 to 5 V DC	1 Ω or less	2 kΩ or more
4 to 20 mA DC	500 kΩ or more	350Ω or less

• Communication Function

This isolator can be connected to a personal computer, or programmable controllers.

Standards: EIA RS485

Maximum number of connectable controllers: 31 controllers

Maximum communication distance: 1200 m

Communication method: 2-wire half duplex, start-stop synchronization, non-procedural

Communication rate: 1200, 2400, 4800, 9600, 19200 bps

Data length: 8 bit

Stop bit: 1, 2 bit

Parity: Even parity, odd parity, or none

Communication protocol: MODBUS RTU

• Alarm Output

Signal type: Relay contact

Output signal: N.O. contact output (contact ON at excitation) 2 points, COM common

Contact capacity: 30 V DC, 1 A

Alarm operating direction: High limit alarm or low limit alarm

Relay operating direction setting: Excitation or non-excitation at normal status

Alarm setting range: 0 to 100 % of input range

Setting resolution: 0.1 %, 4 significant digits

Hysteresis setting range: Set the value added to alarm setting point at alarm release, 0 to 100 % of input range

Setting resolution: 0.1 %, 4 significant digits

Alarm on-delay setting: Delay time from alarm condition completion to output

(Ex. Outputted when alarm status continues for 1 second or more after input value is over alarm point in case of set value "1 second.")

Setting range: 0 to 999 seconds

Setting resolution: 1 second (however, add about 0.2 seconds to setting time to prevent wrong operation)

Alarm off-delay setting: Delay time from alarm normal condition completion to output

(Ex. Released when normal status continues for 2 seconds or more after input value becomes normal status from alarm status in case of set value "2 seconds.")

Setting range: 0 to 999 seconds

Setting resolution: 1 second (however, add about 0.2 seconds to setting time to prevent wrong operation)

Alarm operation display: Front LED lights at excitation, 2 LEDs

◆ Items Available to Be Set

The following items can be set through Setup Utility:

Input range, address number, communication rate, parity, data length, stop bit, alarm operating direction, relay operating direction, alarm setting, hysteresis, alarm on-delay, alarm off-delay

◆ Standard Performance

Accuracy rating: ±0.1 % of span

However, accuracy is limited when zero elevation is 50% or more.

$$\text{Accuracy}(\%) = (F_{100} / 2) / (F_{100} - F_0) \times 0.1$$

Response speed: 2 intervals of input pulse + 100 ms 63% response (10% to 90%) when in F/V conversion mode

Effect of power supply voltage fluctuation: ±0.1% or less of span for power supply voltage fluctuation of 85 to 264 V AC (47 to 63 Hz)/DC and 12 to 36 V DC

Effect of ambient temperature change: ±0.2% or less of span for change of 10°C

◆ Safety and EMC Standards

The followings will be acquired.

Safety:

Conforms to IEC1010-1: 1990 and EN61010-11: 1993.

Certified for CSA1010

CSA1010 category: CAT II (IEC1010-1)

Certified for UL508

Non-Incendive Explosion-Proof:

CSA C22.2 No. 213 Class I, Division 2,

Groups A, B, C & D

FM No. 3611 Class I, Division 2, Groups A, B, C & D

The above conformed instrument is only for voltage of 15 to 30V DC.

EMC Standards:

Conforms to the following EMC standards.

EN55011: 1991 Class A Group1 for EMI (emissions)

EN50082-2: 1995 for EMS (immunity)

The above conformed instrument is only for voltage of 15 to 30V DC.



◆Power Supply and Isolation

Supply rated voltage range: 100-240 V AC/DC 50/60Hz or 15-30 V DC

Supply input voltage range: 100-240 V AC/DC (-15, +10%) 50/60Hz or 15-30 V DC ($\pm 20\%$)

Power consumption: 2.2W at 24V DC; 2.1W at 110 V DC; 4.2 VA at 100V AC; 6.1VA at 200 V AC

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

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

◆Environmental Conditions

Temperature: 0 to 50°C (0 to 40°C when 2 current-output is selected and side-by-side close installation.)

Humidity: 5 to 90% RH (no condensation)

Ambient Condition: Avoid installation in such environments as corrosive gas like hydrogen sulfide, dust, sea breeze and direct sunlight.

Installation altitude 2000m or less above sea level.

◆Mounting and Appearance

Construction: Compact plug-in type

Material: Modified polyphenylene oxide (case body)

Mounting method: Wall or DIN rail mounting

Connection method: M3 screw terminal

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

Weight: Approx. 170 g

◆Instruction Required When Ordering

- Model and suffix code
- Shipped after setting the input ranges as specified.

◆Factory Setting

Factory settings are as follows:

- Conversion mode: F/V conversion
- Range unit: Hz
- Input frequency: 0 to 10 Hz
- Lowcut point: 0%
- Input filter: Off
- Sampling mode: AUTO
- Sampling time: 0.1 sec

■ When output-2 is specified as communication output

- Address No.: 01
- Baud rate: 9600 bps
- Parity: None
- Data length: 8 bit
- Stop bit: 1 bit

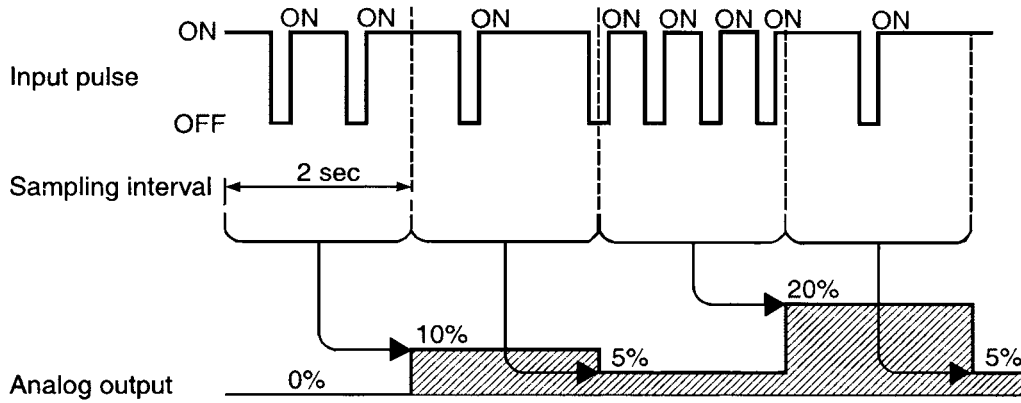
■ When output-2 is specified as alarm output

- Alarm operating direction: High limit alarm (alarm-1), High limit alarm (alarm-2)
- Relay operating direction: De-energized at alarm (alarm-1 / 2)
- Alarm setting: 100 % (alarm-1), 100 % (alarm-2)
- Hysteresis: 3 % (alarm-1 / 2)
- Alarm on-delay: 0 second (alarm-1 / 2)
- Alarm off- delay: 0 second (alarm-1 / 2)

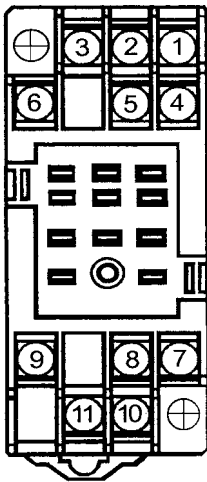


◆Environmental Conditions

This timing chart shows an example of the integration operation where input frequency is 0 to 10 Hz and sampling time is 2 sec.



◆Terminal Arrangement



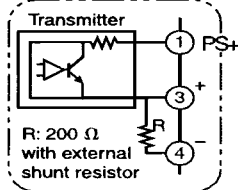
Terminal No.	Signal	Output-2 analog output	Output-2 communication output	Output-2 alarm output
1	Input	(PS+)		
2	Output-2	(+)	B (+)	ALM1
3	Input	(+))		
4	Input	-		
5	Output-2	(-)	A (-)	COM
6	Output-2	Not connected	COM	ALM2
7	Output-1	(+))		
8	GND	GND		
9	Output-1	(-)		
10	Power Supply	(L+)		
11	Power Supply	(N-)		

Note 2: With the one-output type, terminals for Output-2 are not connected.

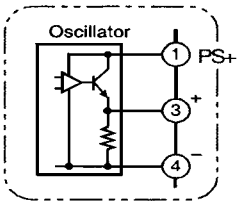


◆ Block Diagram

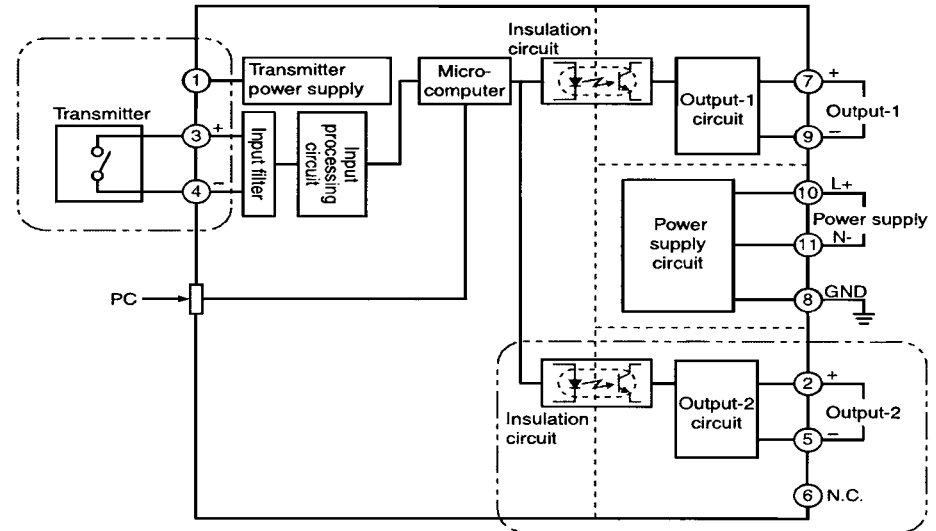
- When receiving current pulse by running a transmitter on an internal power supply



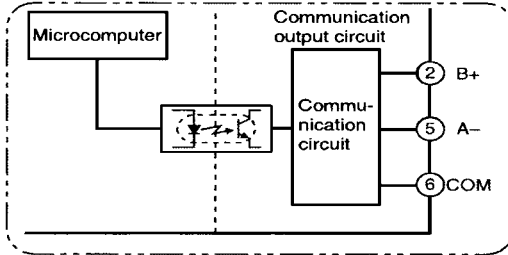
- When receiving voltage pulse by running a transmitter on an internal power supply



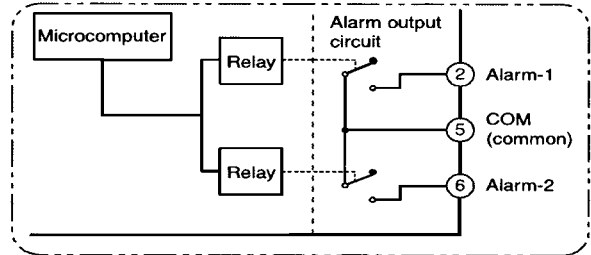
- When receiving non-voltage contact signal or voltage pulse (Where, terminal 3 is the positive input (+) and terminal 4 is the negative (-) for voltage pulse)



- When output-2 is communication function



- When output-2 is alarm output



◆ External Dimensions

