

- Compact design, no straight piping is required for either side of the piping! Greater freedom in installation locations.
- Equipped with two outputs, this sensor broadens the choice of output, such as flow rate, switch judgment and self-diagnosis.
- Having no moving parts makes free of damage resulting from foreign substances.



Specifications

| Model | | VN05F | VN10F | VN20F |
|--|------------------------|---|----------------|----------------|
| Accuracy Guaranteed Flow Rate Range (Minimum flow rate – maximum flow rate) | | 0.05 – 1 L/min | 0.5 – 10 L/min | 3.0 – 60 L/min |
| Maximum operating flow | | 3 L/min | 25 L/min | 100 L/min |
| Low flow cut-off | | 0.025 L/min | 0.25 L/min | 1.5 L/min |
| Accuracy (at fluid temperature of 25°C) | Frequency pulse | ± 2.5 RS% (100% to 20% of maximum flow rate) ± 0.5 FS% (20% to 5% of maximum flow rate) | | |
| | Unit pulse | ± 2.0 RS% (100% to 20% of maximum flow rate) ± 0.4 FS% (20% to 5% of maximum flow rate) | | |
| Piping connection (Screw size) | | R1/2 | R1/2 | R1 |
| Fluid temperature range | | 0 to 60°C(Non-freezing) | | |
| Fluid conductivity range | | 50 µS/cm or higher | | |
| Target liquids | | Conductive liquid that does not corrode the material exposed to it. | | |
| Operating pressure | | 1 MPa or less | | |
| Pressure loss | | 0.02 MPa or less | | |
| Ambient temperature and humidity | | Temperature: -20°C to 60°C Humidity: 35% to 85% RH (Non-condensing) | | |
| Responsiveness | | 63% response Damping time: 2 s (Standard) | | |
| Signal cables | | Length: 0.5 m, 4-wire Red: Power + line White: Output 1 Blue: Power – line (GND) Yellow: Output 2 | | |
| LED displays | | One LED display on the sensor body Green: Indicates flow rate with three scales of blinking speed. Red: Indicates abnormal state with the number of blinks. | | |
| Installation position | | Free (Vertical piping is recommended.) | | |

| | | | | | |
|-------------------------------------|--------------------------|-------------------|--|---------------------|--------------------|
| Output common specifications | | | NPN open collector Current capacity: 20: mA or less Voltage: 30 VDC or less Residual voltage when ON: 1 V or less | | |
| Output 1*2 | Frequency pulse*1 | Duty ratio | Standard 200 Hz (Can be configured by 0.1 Hz in the range between 20 and 400 Hz.) | | |
| | Unit pulse | | 0.001 L/P (Standard) | 0.01 L/P (Standard) | 0.1 L/P (Standard) |
| | Alarm*3 | | Can be selected from normal open (Standard) or normal close. Alarm contents (Power supply and voltage drops/ meter failure/ empty fluid/excessive flow rate/ excessive flow noise/ reverse flow) | | |
| | Switch*4 | | Can be selected from normal open (Standard) or normal close. Level judgment value: Can be configured by 1% in the range of 0 – 100%. (The maximum flow rate is converted to 100%.) | | |
| Output 2 *2 | Unit pulse | | Same as output 1. | | |
| | Alarm*3 | | Same as output 1. | | |
| | Switch*4 | | Same as output 1. | | |
| Safety Class | | | IP X4(IP 64 compatible) | | |
| Current Consumption | | | 100mA or less | | |
| Power Source | | | Supply isolated power at 12 -24 VDC (±10%). Use of one unit of power supply is recommended for one unit of VN. | | |
| Exposed materials to fluids | | | Body: PPS resin Electrodes: SUS 316 L O ring: FKM Grounding ring: SUS 316 | | |

* 1: The frequency at maximum flow rate

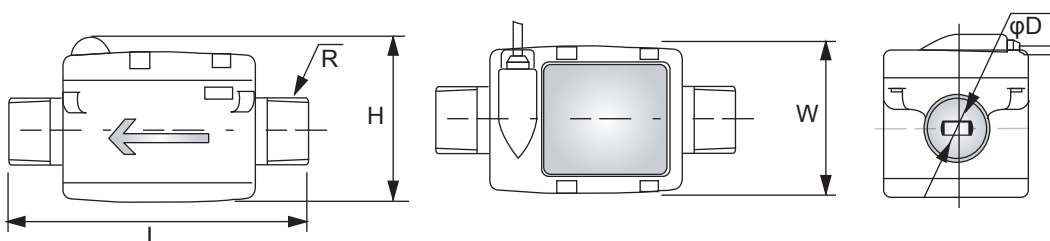
* 2: The set value of Output 1 and 2 and options are the factory-default settings. The set value cannot be changed after installation.

* 3: The alarm can only be selected for either Output 1 or 2.

* 4: The window judgment uses Output 1 and 2.

(Note) Not complied with the lightning surge protection in CE.

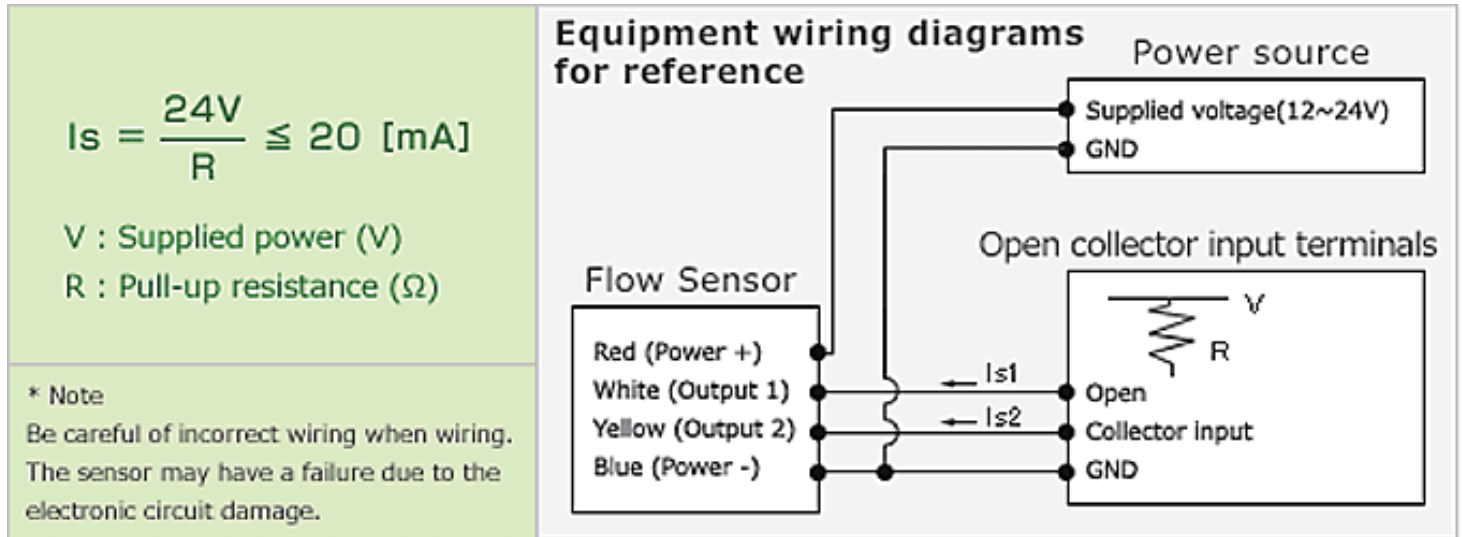
— Dimensions



Unit : mm

| Model | VN05R | VN10R | VN20R |
|-------|-------|-------|-------|
| L | 85 | 95 | 110 |
| W | 47 | 47 | 49 |
| H | 49 | 52 | 62 |
| φD | 5.2 | 10 | 20 |
| R | 1/4 | 1/2 | 1 |

Wiring Diagram



Selection of 2 outputs (& Alarm LED Display)

VN flowsensor has 2 outputs (OUTPUT 1 and OUTPUT 2), which are able to be selected from the following table (One kind of output content is selectable for the each OUTPUT).

| | | OUTPUT 2 | | | |
|----------|-------------------------|----------|--------|--------|-----------------|
| | | Alarm | Switch | | Unit pulse (※1) |
| | | | Level | Window | |
| OUTPUT 1 | High-density pulse | ○ | ○ | ○ | ○ |
| | Unit pulse (※1) | ○ | ○ | ○ | ○ |
| | Switch: Level judgment | ○ | ○ | ○ | ○ |
| | Alarm | X | ○ | ○ | ○ |
| | Switch: Window judgment | ○ | ○ | ○ | ○ |

○: Able to be selected

×: Not able to be selected

※1 : Pulse unit for OUTPUT 1 and OUTPUT 2 can be differ

(Example: 1L/pulse for OUTPUT 1 and 10L/pulse for OUTPUT 2).