

VN Compact Electromagnetic Flowsensor



Features

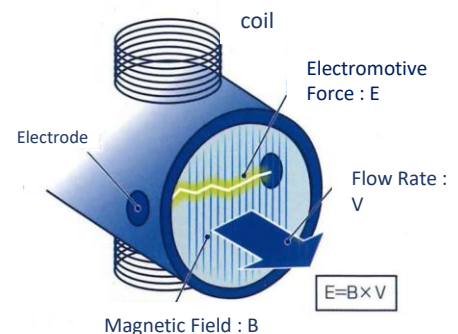
- Electromagnetic flowsensor without moving parts suitable for use in machines.
- With absence of moving parts, there is less failure due to its contaminants.
- Low pressure loss
- No straight pipe required, compact design, and easy to install.

Measurement Principle

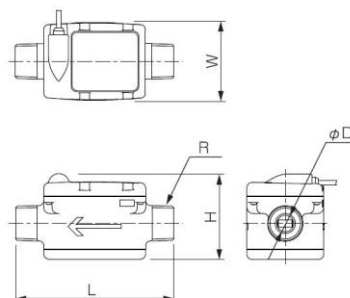
By applying the Faraday's law of induction, with a current flowing through the coil to generate a magnetic field in the flow path, an electromotive force is generated when a conductive liquid passes through the flow path.

Electromagnetic force becomes signal which is proportional to flow velocity, and this voltage is measured to convert it to flow rate.

The flow rate is calculated by multiplying this flow rate by the cross-sectional area of the flow path.



External Dimensions



Unit: mm

Model	VN05	VN10	VN20
L	85	95	110
W	47	47	49
H	49	52	62
φD	5.2	10	20
R	1/4	1/2	1

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Specifications

Model		VN05R	VN10R	VN20R
Nominal Diameters		5mm	10mm	20mm
Accuracy-Guaranteed Flow Range		0.05~1L/min	0.5~10L/min	3.0~60L/min
Maximum Operating Flow Rate		3L/min	25L/min	100L/min
Low Flow Cutoff		0.025L/min	0.25L/min	1.5L/min
Accuracy (Liquid Temp. at 25°C)	Frequency Pulse	±2.5%RS (20% ~ 100% of maximum flow rate) ±0.5%FS (5% ~ 20% of maximum flow rate) *1		
	Unit Pulse	±2.0%RS (20% ~ 100% of maximum flow rate) ±0.4%FS (5% ~ 20% of maximum flow rate) *1		
Type of Fluid		Conductive fluid that does not corrode the material contacting to fluid (ex. cold/hot water)		
Fluid Conductivity Range		50μS/cm or more		
Fluid Temperature Range		0~+60°C (No freezing)		
Ambient Temperature / Humidity		Temperature: -20~+60°C Humidity: 35~85%RH (No condensation)		
Storage Ambient Temperature Range		-20~+70°C		
Working Pressure		1MPa or less		
Pressure Loss		20kPa or less		
Output 1 *3	Spec. of Output	NPN open collector Current capacity: 20mA DC or less / Voltage: 30V DC or less / ON-time residual voltage : 1V or less Minimum pulse ON-time 2.5 ms (at 200 Hz frequency pulse) Duty ratio: 50%		
	Frequency Pulse *2	Standard 200.0Hz (Settable in steps of 0.1Hz between 20 and 400Hz upon delivery) Note: When connecting ASI-100, select 200.0 Hz for output 1.		
	Unit Pulse	0.001L/P (Standard)	0.01L/P (Standard)	0.1L/P (Standard)
	Alarm *4	Selectable between Nomal Open (Standard) and Normal Close Details of alarm (Excitation error / Memory error / Low source voltage / Dry moisture / Excessive fluid noise / Excessive flow rate / Reverse flow)		
	Switch	Selectable between Nomal Open (Standard) and Normal Close		
Output 2 *3	Spec. of Output	Same as Output 1		
	Unit Pulse	Same as Output 1		
	Alarm *4	Same as Output 1 Note: When connecting ASI-100, select Alarm for output 2.		
	Switch	Same as Output 1		
Response *3		63% response Dampling time: 2s (Standard) Settable in steps of 1s from 1~99s upon delivery.		
Cable		Cable length: Approx. 500mm 4 core AWG28 Outer diameter: φ2.8 with shield		
LED Display		One LED display in the main body Green: Flow rate display in 3-step speed Red: NG status is displayed with number of blinks		
Installation Position		Free (Air intrusion shall be avoided.)		
Piping Connection		R1/4	R1/2	R1
Protection Level		Indoor use (Equivalent to IP65.)		
Power Supply *5		12~24V DC ± 10%		
Consumption Current		100mA DC or less		
Weight		Approx. 190 g	Approx. 190 g	Approx. 290 g
Wetted Materials	Body Case	PPS		
	Electrode	SUS316L		
	Earth Ring	SUS316		
	O-Ring	FKM		

*1 : Accuracy is guaranteed value of average value accumulated for 240s.

*2 : Indicates the frequency at the maximum guaranteed flow rate.

*3 : For the set value and choice of Output 1 and Output 2, all are factory setting. The setting cannot be changed after installation.

*4 : Alarm is selectable only either one of Output 1 or Output 2.

*5 : Using isolated power supply and connecting one power supply device per VN flow sensor are recommended.