ND flowsensor is ideal for measuring a variety of liquids and this is a low cost, high quality and bestselling product.

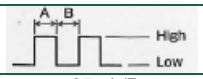
Flowsensor ND Type

Feature

- Excellent reproducibility.
- Built-in magnetic sensor which is noise tolerant, outputs a proportional signal to the flow velocity.
- Pulse output by means of open collector
- Wide flow rate range and high accuracy.
- Measurement principle is tangential flow vane wheel type and structure is simplified.
- Compatible with various type of liquids
- CE marking certified
- RoHS-ready

Specification

In addition, for the special specification, please contact us.

Model		ND05-N ATAAC	ND05-P ATAAC	ND05-T ATAAA	ND10-N ATAAA	ND-10P ATAAA	ND10-T ATAAA	ND20-N ATAAA	ND20-P ATAAA
Flow rate range		0.3~3.0L/min			1.5~20L/min		1.0~10L/min	3.0~60L/min	
Accuracy*1		±2%RS (Standard installation position)							
Liquid to be measured		Compatible with various kinds of liquids (Please select the model after checking main wetted materials below)							
Maximum working pressure		1MPa (Liquid temperature at 20°C)							
Pressure loss		12 kPa or less (At 3L/min)			20 kPa or less (At 20L/min)		15 kPa or less (At 10L/min)	60 kPa or less (At 60L/min)	
Liquid viscosity range		0.5~1.5mPa·s (Equivalent to water)							
Liquid temperature range		0~+70°C	0~+60°C		0~+70°C	0~+60°C		0~+70°C	0~+60°C
Ambient temperature/humidity		-10~+70°C 35~85%RH (No condensation)							
Output signal		Open collector pulse 4-wire, lead-wire length: About 600mm Duty ratio: 3:7 < A:B < 7:3 							
Pulse factor		2.5mL/P			7.69mL/P			25mL/P	
Maximum frequency		20Hz			About 44Hz		About 22Hz	40Hz	
Minimum pulse width		0.015s			About 0.007s		About 0.014s	0.0075s	
Applied voltage range		3~24 VDC*2							
Power consumption		0.2VA or less							
Structure		IP X4 (indoor specification)							
Connection		R1/2						R3/4	
Weight		About 150g			About 120g			About 360g	
Main materials of wetted part	Case	Modified PPO	PP	ETFE	Modified PPO	PP	ETFE	Modified PPO	PP
	Vane wheel	POM		ETFE	POM		ETFE	POM	
	Pivot	SUS304	PA	ETFE	SUS304	PA	ETFE	SUS304	
	O-ring	NBR	FKM		NBR	FKM		NBR	FKM
	Magnet	Sa-Co*3			Ba-Fe		Sa-Co*3	Ba-Fe	

●For the details of material marks, refer to the back cover

*1 Installation position other than standard installation position does not cover accuracy assurance. In addition, ND05-TATAAA, ND10-TATAAA cannot be used for the installation position other than standard position.

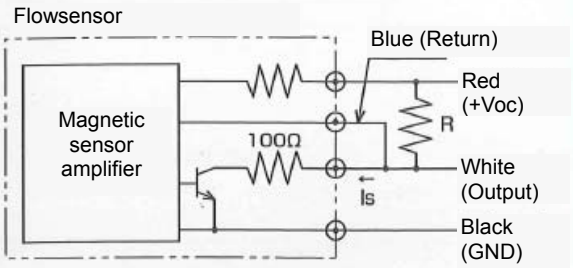
*2 Sensor power supply (Red – Black) and pulse output (Blue/White-Black) shall be the same. *3 Triple magnet does not touch the liquid.

Model code

When placing an order, please place an order in reference to this model code

ND	**	-	*	ATAA	*	-	RC	Details
Model								ND
	Nominal diameter							05, 10, 20
		-						-
			Constituent material					N, P, T
				ATAA				ATAA
					*			C: ND05-N/P A: In other cases
						-		-
							RC	RC

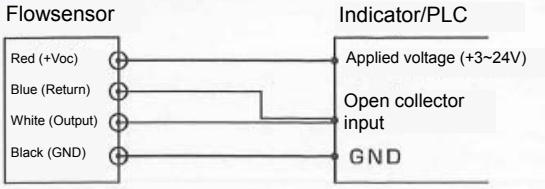
Wiring technique [Open collector output]



Pull-up resistor on the output side of open collector shall be 50Ω or less.
However, please arrange so that output sink current falls within 6mA.

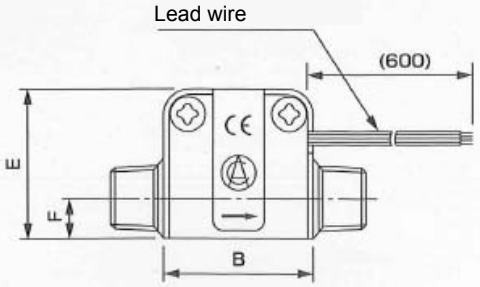
$$\text{Is (Output sink current : mA)} = \frac{\text{V (Power supply voltage: Volt)}}{\text{R (Pull-up resistor: kΩ)}} \leq 6\text{mA}$$

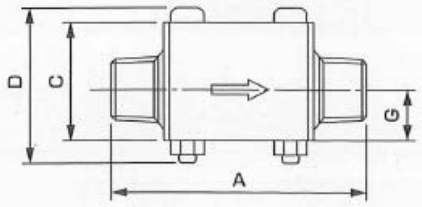
Wiring with general indicator/ PLC



Applied voltage of sensor power supply (Red – Black) and pulse output (Blue/White-Black) should be the same.

External dimensions

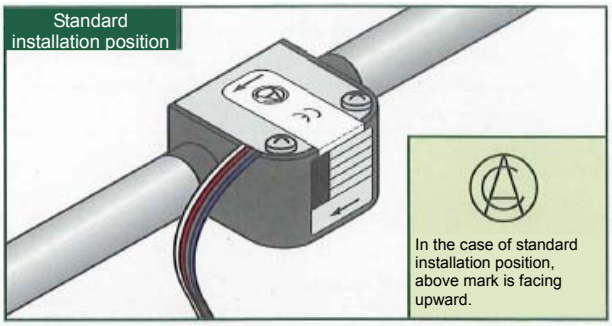




Unit: mm

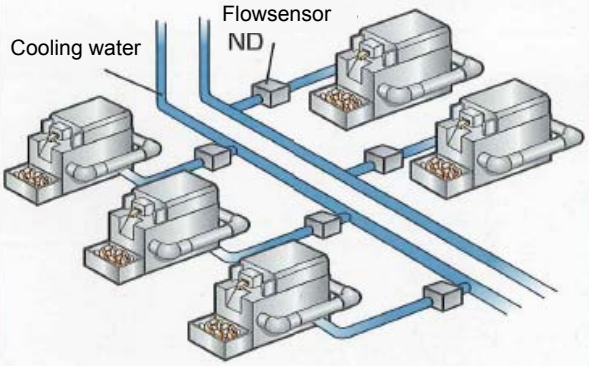
Model	ND05	ND10	ND20
A	80	80	110
B	47	47	68
C	37.5	37.5	50
D	49	49	65
E	47	47	68
F	12.5	12.5	18
G	16	16	23

Standard installation position

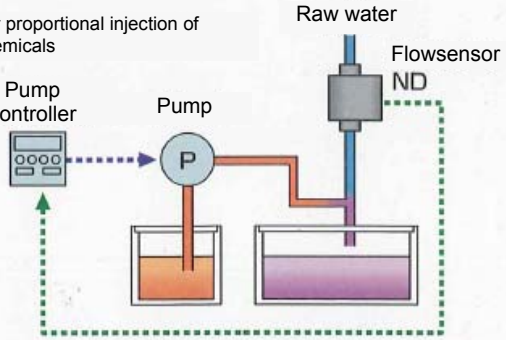


Application example

- For switching and monitoring of the flow of cooling system
- Detection of clogging in the cooling system
- Grasp of circulating volume in the system



- For proportional injection of chemicals



For the receiver, please refer to pages 19~22