

## Flow rate sensor converting fluid instant flow rate into electric pulse signals

- By combining with the digital flow meter, instant flow rate can be read directly, making easy measurement remotely.
- Flowing state can be checked visually.
- Flow rate range can be switched in two ranges of 0.5 ~ 5 ℓ /min and 2.5 ~ 25 ℓ /min.
- Disassembling can be made without removing pipes.



### Specifications

Model type	DFT-1000
Item	
Fluid	Water
Pressure range	0~0.7MPa
Proof test pressure	1MPa
Note) Flow rate range	Flow rate range A : 0.5~ 5 ℓ /min Flow rate range B : 2.5~25 ℓ /min
Reading precision	±5%FS (0~+70°C)
Ambient temperature	0~+50°C
Fluid temperature	0~+70°C
Fitting direction	Free
Flowing direction	Both ways
Weight	280g

Note) Water temperature is 20°C. Temperature range is changed according to the viscosity and temperature of the fluid being used.

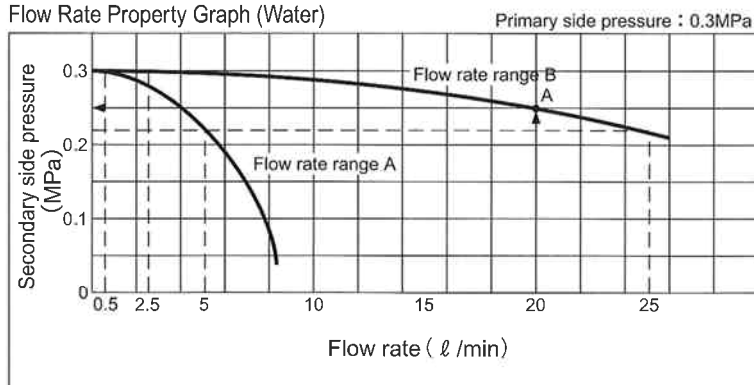
### Electric specifications

Power supply voltage	DC10.8~26.4V	
Consumed current	10mA	
Output	System	Photo-coupler output
	Voltage	0V or above and 30V or under
	Current	4mA or under
Cable	VCTF 5-core 0.5 mm <sup>2</sup> Length 1m	

### Accessories

- Pipe adapter set  
(Cracking of the resin body port is prevented.)
- Type symbol DF-AP  
Set contents Pipe adapter (Material: Copper alloy / C3604B): 2 units  
O-ring for seal (P-10A): 2 units

Flow Rate Property Graph (Water)



### How to read the graph

This Flow Rate Property Graph is used to obtain pressure loss of the Digital Flow Sensor DFT Series.

Ex.: How much is pressure loss when 20 ℓ /min water is flown, with the flow rate range B?

Answer: The intersection of flow rate 20 ℓ / min and flow rate curve is made A. Read the secondary side pressure value at the A point.

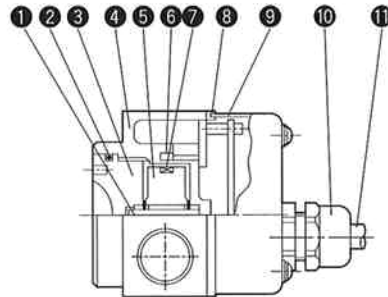
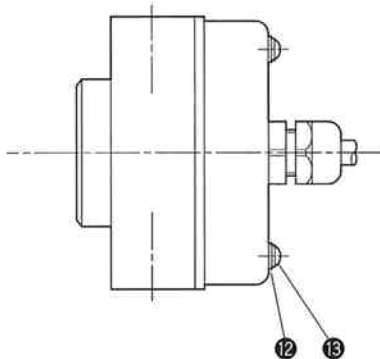
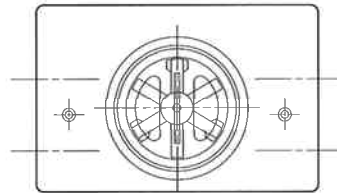
Here;

$$(\text{Pressure loss}) = (\text{Primary side pressure}) - (\text{Secondary side pressure})$$

$$\text{Therefore; Pressure loss} = 0.3\text{MPa} - 0.25\text{MPa} = 0.05\text{MPa}$$

Consequently, in flowing 20 ℓ /min water, pressure difference at the front and back of the flow sensor is 0.05MPa. This shows that the primary side pressure (pump discharging pressure) must be above 0.05MPa or more, but actually, pump discharging pressure is determined by obtaining pressure loss of the whole pipes.

DFT-1000

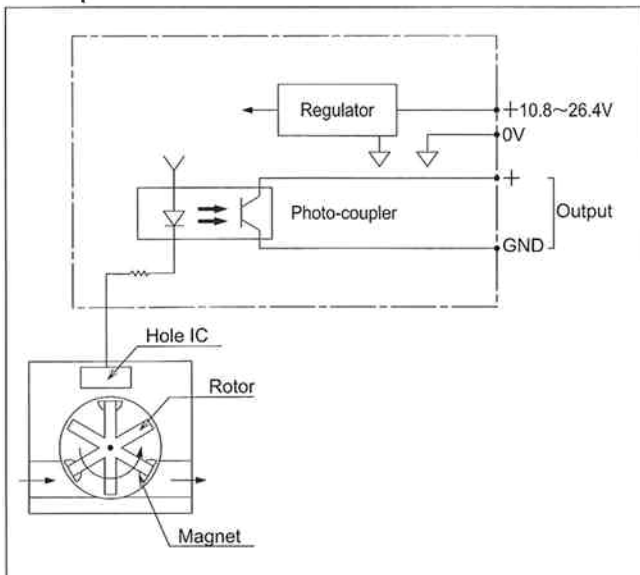


Parts Table

No.	Parts Name	Material	Q'ty
①	Rotor pin	Alumina ceramics	1
②	Rotor cap gasket	Nitrile rubber	1
③	Rotor cap	Polyether sulfon (Bearing, Alumina ceramics)	1
④	Main unit	Polyacetal + Glass	1
⑤	Rotor	Polyacetal (Bearing, Alumina ceramics)	1
⑥	Hole IC	—	1
⑦	Magnet	—	3

No.	Parts Name	Material	Q'ty
⑧	Cover gasket	Nitrile rubber	1
⑨	Cover	Cold rolled steel	1
⑩	Cable gland	—	1
⑪	Cable	—	1m
⑫	Vis gasket	—	4
⑬	Vis	—	4

Principle Chart

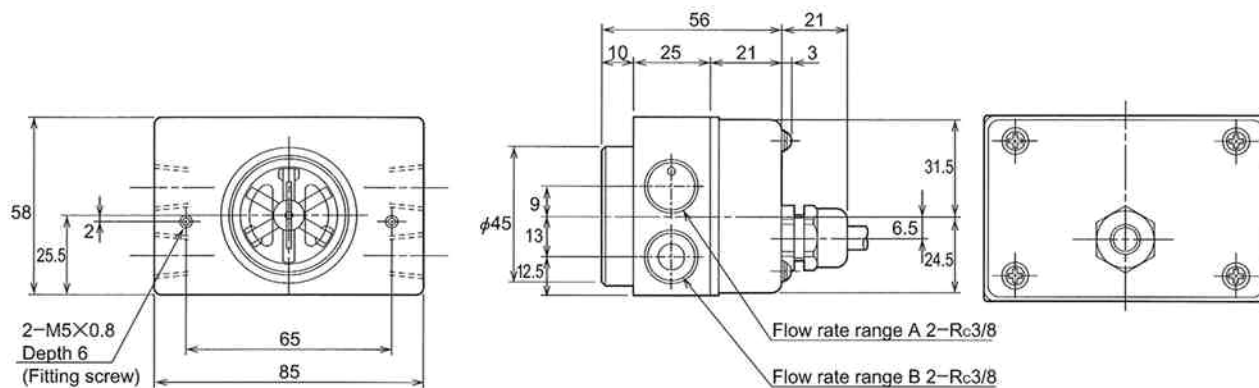
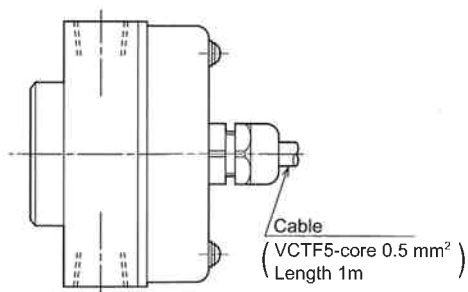


Operation explanation

The rotor rotates at the rotation number in proportion to the flow rate of the fluid. The rotor is mold by permanent magnet. By sensing the magnetism by the hole IC on the body side, rotation of the rotor is converted to electric pulse signal.

Unlike electrifying by coil, since the digital type hole IC is used, rectangular waves with constant wave height can be obtained continuously, regardless of the rotation number of the rotor. This pulse is insulated by the photo-coupler, and is output outside.

DFT-1000



Notice) As for fitting sizes of pipe adapter, refer to the outside dimension drawing of DFS3 Series.

Frequency - Flow Rate Property Graph (Fluid: Water 20°C)

