

RotorFlow® Visual Indicators with Switch or Continuous Output Options

FLOW SWITCHES

ROTOR & TURBINE

The Gems Sensors generation of rotorflow indicators offer high performance and durability, all at an affordable cost. Three distinct options are available, all boasting broad chemical, pressure and temperature capabilities.

RFI RotorFlow Indicators

Simple visual confirmation of flow, the RFI indicator provides the low cost answer.

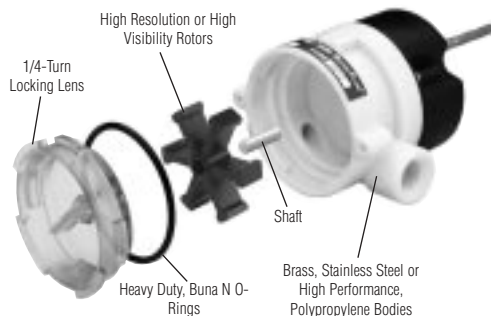
RFS RotorFlow Indicator and Switch

Visual indication plus switch, adjustable over the required flow rate. High reliable system guarding against jamming or false actuation.

RFO RotorFlow Indicator and Output

Visual indicator plus continuous output. Pulse or analogue DC voltage output proportional to the flow rate. Easy integration into all digital logic families.

Construction



- ▶ Flow range from 0.4 to 225 l/min
- ▶ Bright, visual indication
- ▶ Choice of pulsed analogue DC output or adjustable 1 amp switched output
- ▶ Available in high performance plastic, brass or Stainless Steel housing



Operating Principle

VISUAL ONLY

As liquid passes through the RotorFlow body, the rotor spins at a rate proportional to the flow.

OUTPUT VERSIONS

1. As liquid passes through the RotorFlow body the magnetic rotor spins at a rate proportional to flow. This causes a series of magnetic fields (the rotor vanes) to excite the Hall Effect sensor, producing a series of voltage pulses.
2. The output pulses are at the same voltage level as the input (4.5 – 24 Vd.c.) with a frequency proportional to the flow rate. The output signal can be utilised by digital rate meters, totalisers or other electronic controllers.

SWITCH

1. RFS Type switches incorporate state-of-the-art circuitry to compare the frequency of incoming pulses to an adjustable, preset frequency. When the pulse rate meets or exceeds the preset value, the SPDT relay closes. When the pulse rate falls below the preset value, the output relay opens. This unique design eliminates the possibility of a RotorFlow switch from remaining in a 'switch actuated' mode, if the rotor jams accidentally.
2. RotorFlow Indicators may be mounted with flow entering either port. Performance is optimised by positioning ports at the top of the unit, in a horizontal plane.

How to Order

Description	Part No.
DM21 Rate Meter/Totaliser	DM2150000
DM21 Rate Meter/Totaliser + 2nd Relay	DM2151000
DM21 Rate Meter/Totaliser + 2nd Relay + Analog Output	DM2153000



DM21 Series - 1/8 DIN Rate Meter/Totalizer

- ▶ Large 18mm high digits (LED)
- ▶ Programmable colour change display based on an event (red/green)
- ▶ Display configurable for update time, minimum number of pulses, and forced zero time
- ▶ Optional linear analog output relative to rate
- ▶ Standard outputs: two NPN transistors and one relay (2nd relay optional)
- ▶ CE Approved
- ▶ Standard 1.8 DIN size (92mmx45mm cutout)
- ▶ Easy programming
- ▶ Include output 1 and 2 status annunciators

Specifications

Supply voltage	90-264 VAC, 50/60 Hz, 4 watts
Sensor Power Supply	9-15 Vdc, Unregulated
Output	NPN Open Collector, 30 VDC Max, 100 mA Max
Relay	SPDT, 5A Resistive @ 110 VAC
Analog Output	0-20 mA, 4-20 mA, 0-10 V, 2-10 V, 0-5V, 1-5V

FLOW SWITCHES

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RotorFlow - RFI-Types, Visual Indicators

ROTOR & TURBINE

Applications - Visual only - RFI

There are varied applications, but some of the more common are:

- ▶ Plastic injection moulding equipment
- ▶ Visual flow on heat exchangers

Applications - Switch/Analogue Output - RFO & RFA

- ▶ Lasers
- ▶ Medical Equipment
- ▶ X-Ray Tubes
- ▶ Computers
- ▶ Robotic Welding Equipment
- ▶ Water Purification/Dispensing Systems
- ▶ Chemical Metering Equipment
- ▶ Water Sampling
- ▶ Ice Making Machinery
- ▶ Water Injection Systems
- ▶ Proof of Delivery Systems

OEMS

Specialist designs are available based on your requirements. Please contact Sales Office for further details on options such as potable water, enhanced chemical capabilities or 4-20mA loop powered units.

This is RotorFlow in its most basic form – a bright orange rotor turning with fluid flow. Simple, direct and reliable.

Flow rate is estimated, or simply confirmed, by viewing the speed of the turning rotor. Either port may be used for incoming flow, and new bayonet mounting lens is easily removed for quick cleanout. RFI Type RotorFlow sensors are easy to see, easy to install and easy to afford.

Specifications

Wetted Materials

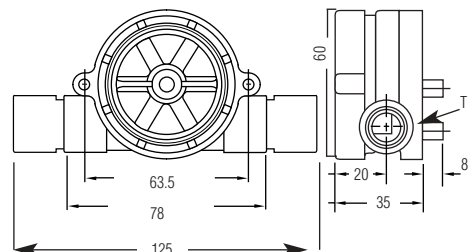
Body	Polypropylene (Hydrolytically Stable, Glass Reinforced), SS or Brass
Rotor pin	Ceramic
Rotor	Moulded Nylon, Colour: High Visibility Orange
Lens	Polysulfone
O-Ring	Buna N (Metal body = Viton)
Adaptor	Acetal (Polypropylene body only)

Max. operating pressure	Polypropylene Body: 7 bar	Metal Body: 14 bar
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Max. operating temperature	Polypropylene Body: 80°C	Metal Body: 100°C
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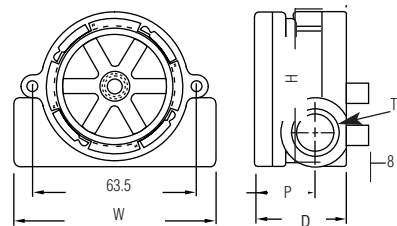
Typical pressure drop	See Graph (Page 70 RFS)
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Polypropylene Bodies



Adaptors, See Note 1

Metal Bodies



T	W	H	D	P
1/4	77	60	35	20
1/2	77	60	35	22
3/4	100	66	51	27
1	100	66	51	27

Notes:

1. Adaptors are supplied fitted to plastic units, sealed using Teflon (PTFE) tape.
2. If NPT thread is required for plastic units discard adaptor.
3. For pressure drop curves see RFS page.

How to Order

Body Material	Port Size	Flow Ranges (l/min)		Order Number	
		Low Range*	Standard Range	BSP	NPT
Polypropylene	1/4"	0.4 to 4.0	2.0 to 20.0	155420BSPP	155420
	1/2"	6.0 to 45.0	15.0 to 75.0	155480BSPP	155480
Brass	1/4"	0.4 to 4.0	2.0 to 20.0	142541BSPP	142541
	1/2"	6.0 to 45.0	15.0 to 75.0	142542BSPP	142542
	3/4"	---	20 to 112.5	180392BSPP	180392
	1"	---	30 to 225	181681BSPP	181681
Stainless Steel	9/16 x 18 UNF	0.4 to 4.0	2.0 to 20.0	N/A	174596
	1/2"	6 to 45	15.0 to 75.0	173138BSPP	173138
	3/4"	---	20 to 112.5	181682BSPP	181682
	1"	---	30 to 225	181683BSPP	181683

* With use of low flow adaptor supplied, see page 70

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Standard Products in **bold**