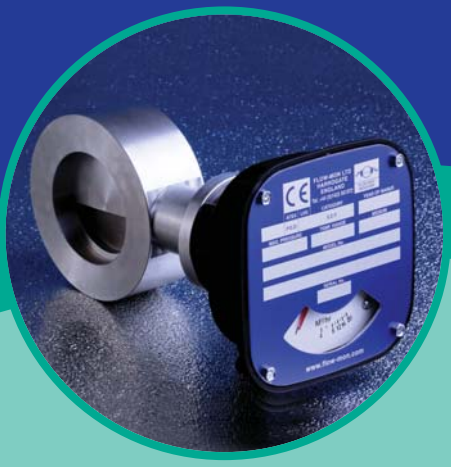
www.flow-mon.com

flow~mon

...simple flow solutions in a complicated world



Spinner

Visual Flow Indicator

Flow-Mon's Spinner, the latest design of low cost, 'entry level' Flow Indicator. This robust indicator out performs other spinner instruments by a considerable margin. When calibrated flow indicators are not needed, this single sided indicator will satisfy most requirements within pipe sizes 8mm to 40mm.

The Flow-Mon Spinner starts to rotate once flow has commenced, this can be from as low as 0.7lpm. The exceptional ratio between maximum and minimum flow is achieved by carefully toleranced manufacture. This spinner design can be mounted both horizontal and vertical, offering bi-directional flow indication with low pressure losses.

When operators require a visual confirmation in their pipework for lubrication and coolant flow, this simple Spinner can provide a cost effective solution for plant protection.

Including one of these inexpensive fittings to pipework on a power-plant may save thousands of pounds in downtime and bearing or pump impeller replacement. Add to this the safety implications resulting from plant failure and the true benefits may be fully appreciated.

Features & Benefits

- Suitable for water and other clear liquids and gases
- 16 bar pressure and 200˚C temperature capability
- Precision moulded glass dome with yellow PPS plastic spinner
- Can be used in any orientation
- Bi-directional flow
- Operates over a wide flow range
- Competitively priced
- Off the shelf deliveries
- No routine maintenance needed
- Unrivalled flow and pressure drop performance
- Manufactured in stainless steel or bronze

Applications

This flow indicator is used in plant protection applications to show lubrication or coolant flow to pumps, compressors or engines.

Applications for the Flow-Mon Spinner include:

- Early warning of overheating, bearing or seal failure
- Detecting changes in the colour and condition of liquids during processing
- Pump, compressor and diesel protection
- Ensuring that flow of cooling water is maintained to specialised welding equipment
- Indication of air entrainment

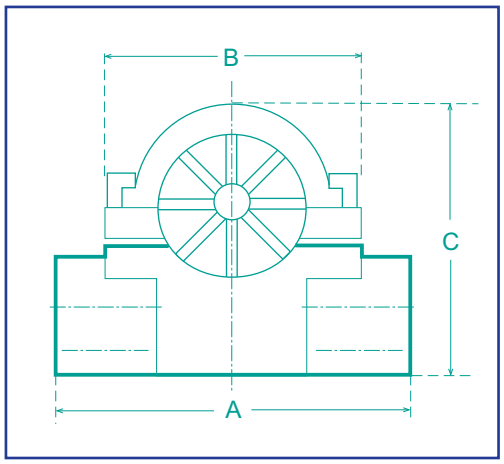
Technical Data

Materials:

Body	- Stainless Steel 316: ASTM-A-351-2000 GR CF8M - Bronze BS EN1982 CuSn5Zn5PB5-C-GS (formerly LG2)
Clamp Ring	-Stainless Steel or Bronze
Spinner	-PPS Plastic, 'canary yellow'
Glass Dome	-Annealed Borosilicate
'O' Ring	-Viton
Gasket	-Klingersil (C-4400) or equivalent
Fasteners	-Stainless Steel

Pressure:	-16 Bar (maximum working pressure)
Temperature:	-200˚C (maximum working temperature)
Connections:	-BSP(F) parallel and NPT(F) taper

Every effort will be made to meet any special connection and seal requirements



Flow Requirements

Size	Min Flow	Max Flow	Pressure Drop - 2m/sec
mm	l/min	l/min	bar
8	0.7	30	0.14
10	0.8	40	0.16
15	1.0	55	0.22
20	1.2	90	0.19
25	1.5	140	0.50
32	4	180	0.80
40	4	200	0.90

Dimensions and Weights

Bore	Size	Weight	A' Overall Length	B' Width (Clamp)	C' Overall Height
mm	inch	kg	mm	mm	mm
8	1/4	0.68	76	63	65
10	3/8	0.65	76	63	65
15	1/2	0.62	76	63	65
20	3/4	1.25	89	63	83
25	1	1.20	89	63	83
32	1 1/4	2.4	115	75	100
40	1 1/2	2.4	115	75	100

Rising Ball

Visual Flow Indicator

Flow-Mon's Rising Ball, introduced to give industry a high standard flow indicator that meets the needs of simple flow applications. When calibrated flow indicators are not needed, the Rising Ball will satisfy most requirements within pipe sizes 8mm to 40mm.

Being constructed from high quality materials this in-line indicator will meet the needs of many chemical applications, as well as being suitable for water, oil and gases.

Whilst there is no flow in the pipe the white PTFE Ball remains seated in the body socket. As the flow rises the ball will lift out of the socket, clearly becoming visible. The ball will continue to rise and move freely in the dome as the flow rate increases.

The Flow-Mon Rising Ball needs to be mounted on a horizontal plane, with the glass dome positioned upwards. When there is flow in the pipes the ball can be seen clearly, giving a positive confirmation of flow.

Features & Benefits

- Clear flow indication
- 16 bar pressure and 200˚C temperature capability
- Excellent chemical compatibility due to the materials of construction
- Can be used on condensate duty as well as liquids and gas
- Operates over a wide flow range
- Durable PTFE ball and borosilicate glass dome
- Competitively priced
- Off the shelf deliveries
- No routine maintenance needed
- Unrivalled flow and pressure drop performance
- Manufactured in stainless steel or bronze

Applications

This flow indicator is primarily used in plant protection applications to show lubrication or coolant flow to pumps, compressors or engines.

Applications for the Flow-Mon Rising Ball include:

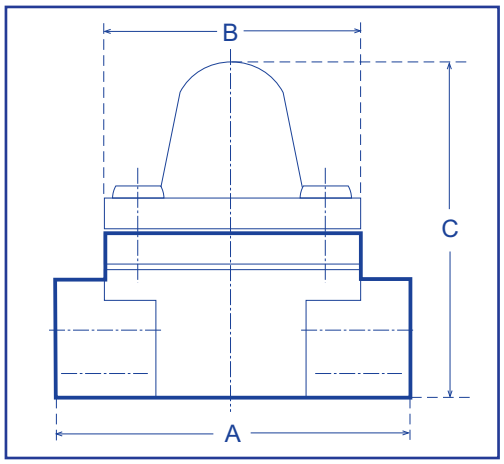
- Ensuring that the flow of cooling water is maintained to specialised medical factory equipment
- Indicating chemical dosing on water treatment facilitates
- Showing the presence of condensate in steam return lines
- Detecting changes in the condition and colour of liquids during processing
- Maintaining demineralised water rinsing essentail to electronics components manufacture

Technical Data

Materials:

Body	- Stainless Steel 316: ASTM-A-351-2000 GR CF8M - Bronze BS EN1982 CuSn5Zn5PB5-C-GS (formerly LG2)
Clamp Ring	-Stainless Steel or Bronze
Ball	-PTFE 'Teflon'
Glass Dome	-Annealed Borosilicate
'O' Ring	-Viton
Gasket	-Klingersil (C-4400) or equivalent
Fasteners	-Stainless Steel
Pressure:	-16 Bar (maximum working pressure)
Temperature:	-200˚C (maximum working temperature)
Connections:	-BSP(F) parallel and NPT(F) taper

Every effort will be made to meet any special connection and seal requirements



Flow Requirements

Size	Min Flow	Out of Socket	Pressure Drop - 2m/sec
mm	l/min	l/min	bar
8	0.1	1.0	0.13
10	0.1	1.0	0.16
15	0.1	1.0	0.19
20	2.4	5.2	0.16
25	2.7	5.5	0.40
32	11.0	16.0	0.20
40	16.0	21.0	0.23

Dimensions and Weights

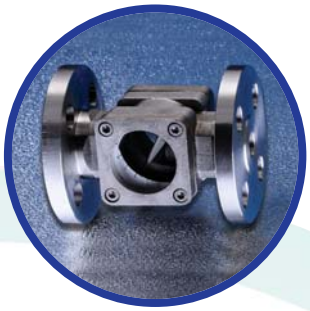
Bore	Size	Weight	A' Overall Length	B' Width (Clamp)	C' Overall Height
mm	inch	kg	mm	mm	mm
8	1/4	0.72	76	63	79
10	3/8	0.69	76	63	79
15	1/2	0.65	76	63	79
20	3/4	1.30	89	63	95
25	1	1.25	89	63	95
32	1 1/4	2.50	117	75	125
40	1 1/2	2.35	117	75	125

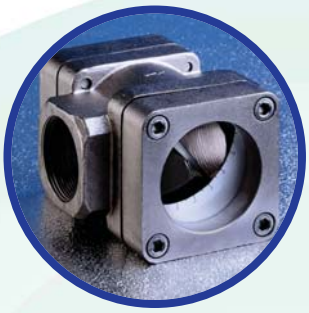
Double Window

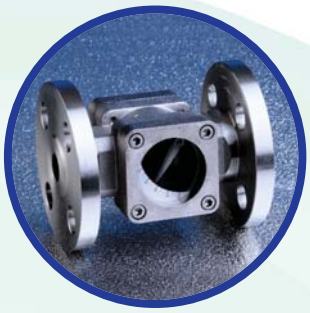
Flap & Spout Visual Sight Indicator

This new double window Flow Indicator range from Flow-Mon is most useful where visual inspection of the pipeline content is needed as a plant safety or product quality measure. The sizeable windows allow an excellent view of the conditions in the line.

The plain Spout design affords visual inspection only while the hinged internal Flap with its graduated scale allows a check on flow rate changes and for instance, affords repeatability of valve positioning. The Flap or Spout can be used in transparent or slightly opaque solutions and gas services. Both units will operate in horizontal or vertical orientation (up only for Flap style).







Materials of Construction

Body & Covers	- Stainless Steel 316: ASTM-A-351-2000 GR CF8M - Carbon Steel: ASTM-A-216-2000-GR-WCB - Bronze BS EN1982 CuSn5Zn5PB5-C-GS (formerly LG2)
Glass	- Toughened Borosilicate (DIN 7080) (16 bar) or Toughened Soda lime (BIS 3463) (40 bar)
Gaskets	-PTFE
Flap	-Stainless Steel 316
Scale	-Polycarbonate
Fasteners	-Stainless A2
Temperature	-up to 250˚C

Every effort will be made to meet any special connection and material requirements

Pressure Rating 40Bar

(subject to Glass & Flange specification)

Sizes BSP, NPT and Flanged connection: PN16, 40, Ansi150, 300
(other configurations also available)

Small	1/4”(8)	3/8”(10)	1/2”(15)	3/4”(20)	1”(25)
Medium	11/4”(32)	11/2”(40)	2”(50)		
Large	3”(80)	4”(100)			

All units are tested to 1.5 times the standard pressure limit applicable to the unit specification. Test and 3.1b material certification are available if applied for at order placement.

	Dimensions (mm)						Scale (lpm)					
Size	Weight (kg)		Length (mm)		Width (mm)	Height (mm)	2	4	6	8	Top	Max Flow
	T	F	T	F								
8	1.9	3.7	95	140	89	66	2.5	3.5	4.5	7	22	100
10	1.9	3.8	95	140	89	66	2.5	4	4.5	7	24	150
15	1.85	3.9	95	140	89	66	3	4.5	6	8.5	20	250
20	1.85	3.9	95	140	89	66	3	5	6	9	20	250
25	1.8	3.9	95	140	89	66	3.5	6	8	10	25	250
32	4	7.1	120	180	120	89	7	11	14	24	40	550
40	3.9	7	120	180	120	89	8	12	15	25	50	600
50	9	4.5	150	220	170	110	9	15	28	50	75	1000

T = Threaded F = Flanged

	Dimensions (mm)					Scale (lpm)									
Size	Min Flow	Max Flow	Weight	Length	Width	Height	1	2	3	4	5	6	7	8	9	top
80	10	-	19.5	258	160	165	15	24	26	32	40	52	85	128	200	220
100	20	-	23.5	258	160	165	34	46	58	70	80	100	118	150	190	220

FMF	SS	B	32	
Style FMF = Flap FMP = Spout	**Material** B = Bronze SS = Stainless Steel CS = Carbon Steel	**Glass** B = Borosilicate S = Sodalime (Specials please contact Flow-Mon)	**Size** 8 = 1/4″ 10 = 3/8″ 15 = 1/2″ 20 = 3/4″ 25 = 1″ 32 = 1 1/4″ 40 = 1 1/2″ 50 = 2″ 80 = 3″ 100 = 4″ (Std thread BSP. For NPT add N. For socket weld add SW)	**Flange** For Ansi or Din flanges add one of the following F16, F40, F150, F300

Low Flow Switch

Low Cost Miniature Variable Area Flow Switch

The flow switch model FMLF works according to a modified variable area principle. The float is guided in a cylindrical measuring tube by means of a spring. The flowing medium moves the float in the flow direction. A Reed contact is mounted outside the meter in a sealed housing. When the float reaches the position of the Reed contact the switch will close. With higher flows the the float moves further upward until it reaches a built-in float stop, still keeping the switch closed. This ensures a bi-stable switch function at any time. The Reed contact is adjustable over the full switching range of the meter.

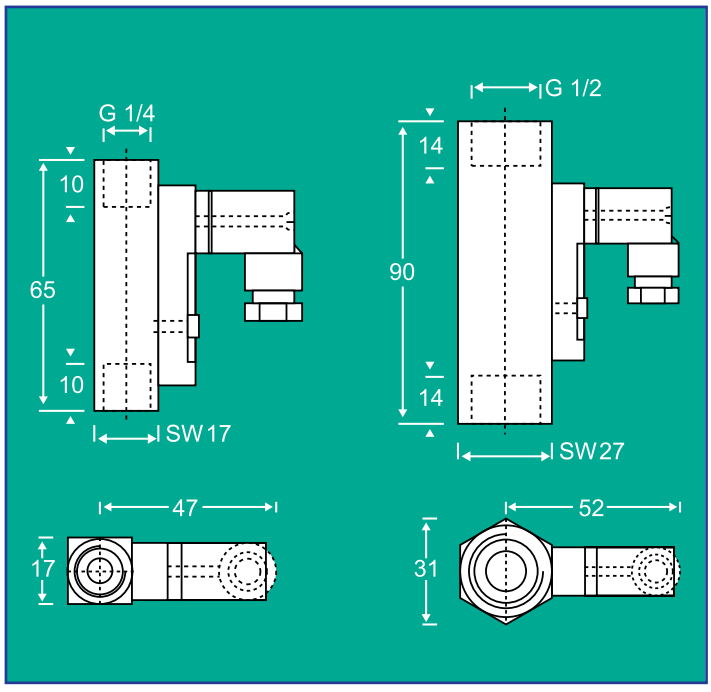
Features & Benefits

- Complete stainless steel design
- Universal mounting position
- Small mounting dimensions
- High switching accuracy
- For low viscosity liquids
- Small switch hysteresis

Applications

The variable area flow switch model FMLF is used for monitoring the flow of low viscosity liquids, e.g. in cooling circuits and laser systems, for pump monitoring, compressors and many other applications.

Dimensions



Electrical Contact

FMLF.2 (G1/4 connection)

N/O	200 V / 1 A / 20 VA	SPDT	200 V / 1 A / 20 VA

FMLF.4 (G1/2 connection)

N/O	230 V / 3 A / 60 VA	SPDT	250 V / 1,5 A / 50 VA

Ordering Code

Order number: FMLF | 2. | W21. | 1.

Low Cost Miniature Variable Area Flow Switch

Connection:
2 = G 1/4 female
4 = G 1/2 female

Measuring range:

FMLF.2 only (G 1/4 connection):

W101 = 5... 60 ml/min	W102A = 40... 130 ml/min
W106 = 0,1... 0,6 l/min	W11 = 0,2... 1,2 l/min
W12 = 0,4... 2 l/min	W13 = 0,5... 3 l/min
W15 = 1,0... 5 l/min	

FMLF.4 only (G 1/2 connection):

W202 = 0,02... 0,2 l/min	W206 = 0,2... 0,6 l/min
W21 = 0,4... 1,8 l/min	W23 = 0,8... 3,2 l/min
W27 = 2... 7 l/min	W213 = 3... 13 l/min
W220 = 4... 20 l/min	W230 = 8... 30 l/min

Contact:
1 = function N/O
2 = function SPDT

Technical Data

Max Pressure:	350 bar
Pressure Drop:	FMLF.2: 0,02... 0,6 bar
	FMLF.4: 0,02... 0,3 bar
Max Temperature:	100°C
Materials:	1.4571, Magnet: Ferrite
Electr Connection:	Plug acc. to DIN EN 175301-803
Accuracy:	±10% FS

Flow rate indicators

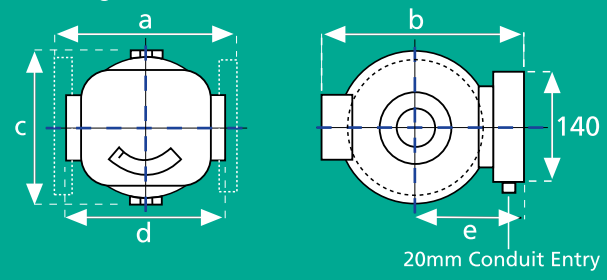
These units are manufactured in a wide range of sizes and specification options but all have the same basic function.

A dial and mechanical indicator continuously monitor the flow rate at any given time whilst electrical switches can be specified to signal when a particular level has been reached during increasing or decreasing flow rates.

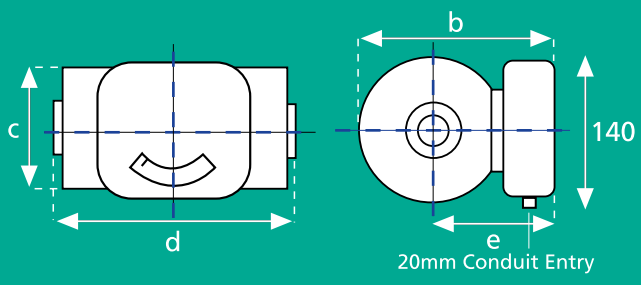
Switches are field adjustable over the full range. Where batching, trending, totalising or recording is required, all Flow-Mon units can be supplied with a 0-10V or 4-20mA output. All sizes are manufactured to the same simple design concept, the main characteristic of which ensures that the pressure drops are confined to an absolute minimum (see 'pressure drop' charts) across the vane orifice at full flow, with viscosities as high as 600cS.

Sizes are defined by pipe size and / or maximum flow capacity, and every flow switch is individually calibrated so that full scale deflection is used in each application i.e. the maximum scale reading coincides with the maximum requirement of system as specified by the customer. Calibration may be in any units with single or dual scale to specification.

Screwed Model
(with flanged outline)



Low Flow Unit



			Overall Dimensions (mm)					Approximate Weight (kg)				
Min Full Scale Flow LPM	Max Full Scale Flow LPM	Pipe Size	a	b	c	d	e	AL	B	CI	S-SS	PVC
0.2 (low flow unit)	5 (low flow unit)	1/4 - 1"	n/a	155	100	188	110	3	8	-	8	3
4	70	1/4 - 1"	160	150	80	130	110	1	2	2	2	1
40	500	3/4 - 2"	180	200	120	150	115	3	7	7	7	3
50	800	2 1/2"	180	200	120	230*	115	5	10	10	10	4
250	1500	3"	255	320	250	305*	160	20	54	50	54	15
300	2000	4"	255	320	250	305*	160	23	60	56	60	17
800	3500	6"	460	500	370	510*	280	60	200	175	200	n/a
1000	5000	8"	485	500	370	535*	280	68	225	200	225	n/a

*Obtained by mating flanges

FML300	B	LP	3EE	1cS	16F10	S3	D1

Series and Flow Rate

FMC*	= Low Flow
FML*	= Litres / Min
FMB*	= Imp. Gallons / Min
FMG*	= U.S. Gallons / Min
FMM*	= M3/ Hour

*Add Full Flow Rate in Units

Material of Manufacture

AL	= Aluminum
B	= Bronze
CI	= Cast Iron
CIK	= Cast Iron Nickel Plated
S	= Carbon Steel
SS	= Stainless Steel
PTFE*	= PTFE
PVC*	= PVC

*Only available up to 4" Port Connections and 100 psi / 7 bar maximum pressure. Note: For materials and pressures not specified, please consult factory.

Pressure Rating

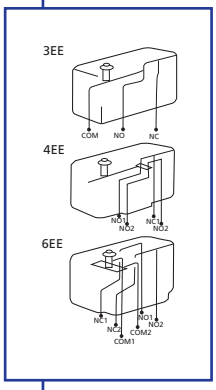
LP	= 300 psi / 20 bar maximum
MP	= 750 psi / 50 bar maximum
HP	= 3000 psi / 200 bar maximum*

*CI, CIK, S & SS only

Indicator Read Out

ME	= Mechanical Pointer only
3EE	= SPDT 3 Wire Switch
3EEG	= SPDT 3 Wire Switch with Gold Contacts
4EE	= single-pole, double throw, double-break.
3EE(ATEX3)	= SPDT Explosion Proof Micro Switch to ATEX zone 2
3EE(ATEX2)	= SPDT Explosion Proof Switch to ATEX zone 1
6EE(ATEX2)	= DPDT Explosion Proof Switch to ATEX zone 1
AIR	= Pneumatic Switch
POT	= Potentiometer (Specify Rating)
OUT	= 4-20 mAmp Output
OUTX	= 4-20 mAmp Output (ATEX)
TOT	= Digital Rate Totaliser
TOTX	= Digital Rate Totaliser (ATEX)

Note 1: All electrical boxes (apart from TOT & TOTX) also carry a Mechanical Pointer
Note 2: For 4 & 6 Wire Switches replace 3EE by 4EE or 6EE
Note 3: Manufactured to IP65 (NEMA 4) as standard (up to 2 1/2")



Electrical Options

Code: 3EE
Basic single pole, double throw, 3 wire switch.
15 Amp - 125, 250 or 480V.AC
0.5 Amp - 125V.DC / 0.25 Amp - 250V.DC

Code: 4EE
Contact arrangements is single-pole, double throw, double-break.
10 Amp - 125 or 250V.AC
0.3 Amp - 125V.DC / 0.15 Amp - 250V.DC

Code: 6EE
Double-pole, double throw switches simultaneously make and break two independent circuits.
10 Amp - 125 or 250V.AC
0.3 Amp - 125V.DC / 0.15 Amp - 250V.DC

Code: AIR
This system offers an alternative safety arrangement for operation in explosive atmospheres. Compressed air can be used to transmit an on / off signal from the danger area, or to operate a klaxon inside the danger area.

Code: POT
Remote read-out option (0-10V). Rating to customer's specification, e.g. 1K, 2K etc.

Code: OUT
A non contact position encoder gives a continious required 4-20 mAmp readout. Data Loggers or Recorders can be added to the system.

The 3 and 6 wire switches described above are available in ATEX approved explosion proof versions, with the appropriate enclosure box. When two or more switches are assembled in one unit, they remain independently adjustable. Re-adjustments may be carried out in the field.

Flow Directions

D1 = → D2 = ←
D3 = ↑ D4 = ↓

O Ring Seal Material

S1 =	Buna	(-40°C	+110°C)
S2 =	EPDM	(-40°C	+150°C)
S3 =	Viton	(-20°C	+200°C)
S4 =	PTFE	(-100°C	+250°C)
S5 =	Perlast	(-15°C	+330°C)

Port Connections

2 = 1/4"
4 = 1/2"
6 = 3/4"
8 = 1"
10 = 1 1/4"
12 = 1 1/2"
16 = 2"

Sizes 1/4" - 2" are Screwed or Flanged. For Flanged Bodies, add relevant code letters (shown below).

20 = 2 1/2"
24 = 3"
32 = 4"
48 = 6"
64 = 8"

Sizes 2 1/2" - 8". Standard units have Flanged Bodies - add relevant code letters (shown below). Cast Iron and Steel mating flanges are available: For Screwed, add - S For Socket Weld, add - SW

Standard Threads are BSP, for NPT add - N. For Wafer connections add W then Flange type. For Flanged Connections add one of the following codes:

F10
F16
F25
F40

Alternative Pressure Ratings in BSEN1092 / DIN2632-5

F150
F300
F600

Alternative Pressure Ratings in BS1560 / ANSI B16.5

FAD
FE
FF

Alternative Pressure Ratings in BS10

For special flange connections, please enquire at factory

For model part number 16W10 see page 10

Viscosity at Operating Temperature

State units and scale eg. Water is 1 Centistoke (cS) Maximum rating should not exceed 600cS

Air & Gas Applications

Flow-Mon flow switches can be used to measure gas flows in exactly the same way as liquid flows. When enquiring for such an application the following information will be required:

- Specify gravity of the gas
- Maximum flow volume
- Operating temperature
- Operating pressure

Small, Medium, Large

The flow switch body houses a spring-loaded valve plate (vane) which pivots off-centre in a hemispherical cavity. Thus the vane and cavity have a variable area orifice relationship. This gives both a high flow range and a linear relationship between flow rate and vane displacement. The vane indirectly operates both the indicating needle and an adjustable cam, which in turn triggers the micro-switch at any chosen setting of flow rate. Two switches can be supplied to provide high and low (or 'low-low') flow switching.

Features & Benefits

- All metal construction - no tubes of glass or plastic to break.
- Spring loaded mechanical design - requires no straight pipe run and not affected by orientation.
- Limited movement on internal parts - minimal wear and down time.
- Modular design - reduces maintenance costs, down time, and production loss.
- Direct indication & field adjustable switch(es) - monitors critical flows and provides alarm(s).
- 1% of rate repeatable switch set point - accurate & reliable through all operation cycles.
- Weatherproof enclosure box to IP65 (Nema 4).
- Flow through design - minimal pressure loss.
- Individually calibrated to customer specification - ensures accuracy.
- Adjustable under operating conditions.
- Scale is in units (e.g litres/minute).
- Large range of body materials available.
- Size range from 8mm (1/4") to 200mm (8").
- May be installed in any position.
- Orientation of enclosure box easily changed.
- High switch rating - 10 to 15 Amps.
- ATEX approved Explosion-proof models available.
- Will pass twice the maximum indicated flow.
- Acts as non-return value.

Function

A scaled plate and mechanical indicator continuously monitor the flow rate at any given time whilst electrical switches can be specified to signal when a particular level has been reached during increasing or decreasing flow rates.

Low	0-0.5 LPM min 0-4 LPM max	
Small	0-6 LPM min 0-70 LPM (pipe size 1/4" - 1") max	
Medium	(3/4" to 2 1/2") 0-40 LPM min (3/4" to 1 1/4") 0-400 LPM max (1 1/2" to 2") 0-500 LPM max (2 1/2") 0-800 LPM max	
Large	3"	0-1500 LPM
	4"	0-2000 LPM
	6"	0-3500 LPM
	8"	0-5000 LPM

Style

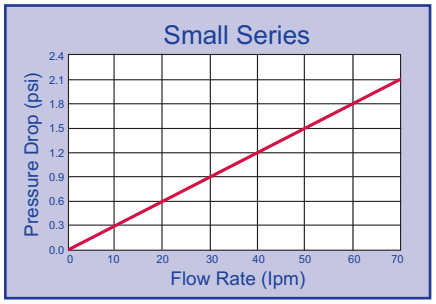
Through its unique modular design it allows for easy field installation and service. It does not require any straight pipe runs before or after the monitor thus minimizing the installation footprint. The versatile design of the vane monitor allows for orientation to be mounted in any position. Vane style monitor operates when flow is introduced through the inlet connection making direct contact with the vane that is mechanically linked to the indicator shaft. The fluid forces the vane to move through a contoured opening creating a variable orifice, the greater the flow the larger the orifice becomes for flow to pass. The vane style monitor is spring loaded and allows the vane to return on decreasing flows.

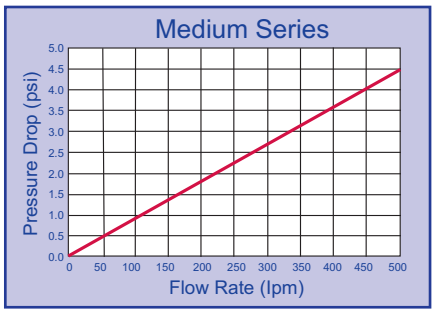
Switches

Are field adjustable, suitable for batching, trending, totalising or recording where required. All Flow-Mon units can be supplied with a 0-10v or 4-20mA output.

Sizes

All sizes are manufactured to the same simple design concept, the main characteristic of which ensures that the pressure drops are confined to an absolute minimum (see "pressure drop" charts) across the vane orifice at full flow, with viscosities as high as 600cS. Sizes are defined by pipe size and/or maximum flow capacity, and every flow switch is individually calibrated so that full scale deflection is used in each application i.e. the maximum scale reading coincides with the maximum requirements of system as specified by the customer. Calibration may be in any units with Single or Dual scale to specification.





Applications

Water, De-Ionised Water, Soluble Oils (Glycols), Petroleum Based Fluids, Synthetic Based Fluids, Coolants, Corrosive Fluids, Paints, Solvents, Air & Gases

Comparison

Comparable to similar style devices in the industry, Flow–Mon's "flow through" design offers a low pressure loss. To ensure accuracy they are individually calibrated in any unit of measure to customer operating specifications.

Wafer

Function

A scaled plate and mechanical indicator continuously monitor the flow rate at any given time whilst electrical switches can be specified to signal when a particular level has been reached during increasing or decreasing flow rates.

Features

- Direct reading Flow Rate Indication
- Optional (field adjustable) switch(es)
- Optional Non-Contact 4-20mA Output
- High Pressure available
- Mounts easily between Ansi, Jis or Din flanges
- Mounts in any orientation
- No straight Pipe Run required
- Connection sizes from 3" to 12"

Minimum Scale 0-40 LPM
Maximum Scale on request

Style

Through its unique modular design it allows for easy field installation and service. It does not require any straight pipe runs before or after the monitor thus minimizing the installation footprint. The versatile design of the vane monitor allows for orientation to be mounted in any position. Vane style monitor operates when flow is introduced through the inlet connection making direct contact with the vane that is mechanically linked to the indicator shaft, the fluid forces the vane to open. The vane style monitor is spring loaded and allows the vane to return on decreasing flows.

Switches

Are field adjustable, suitable for batching, trending, totalising or recording where required. All Flow-Mon units can be supplied with a 0-10v or 4-20mA output.

Sizes

All sizes are manufactured to the same simple design concept, the main characteristic of which ensures that the pressure drops are confined to an absolute minimum across the vane orifice at full flow, with viscosities as high as 600cS. Sizes are defined by pipe size and/or maximum flow capacity, and every flow switch is individually calibrated so that full scale deflection is used in each application i.e. the maximum scale reading coincides with the maximum requirements of system as specified by the customer. Calibration may be in any units with Single or Dual scale to specification.

Applications

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Please find part code info on page 8.

Comparison

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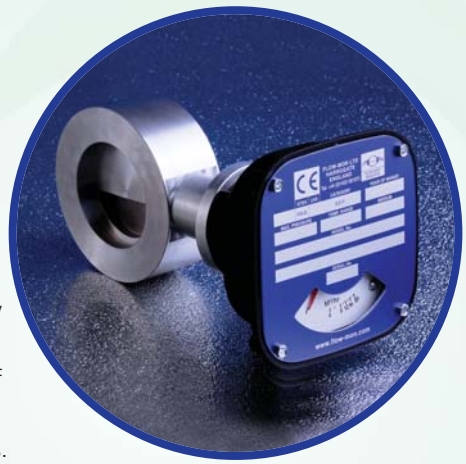
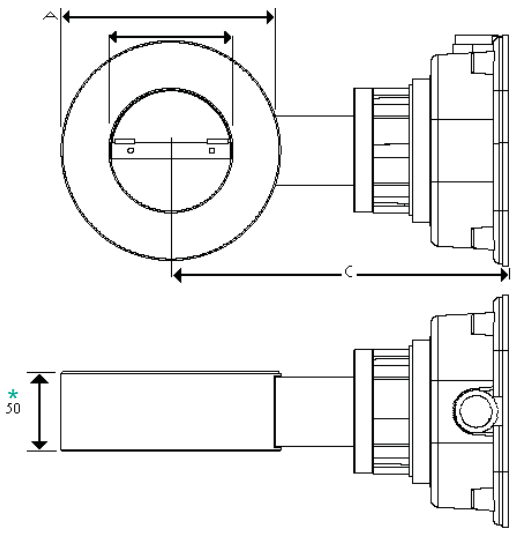


Dimensions

DN	A	C	Ansi	A	C
80	138	216	3	127	210
100	158	226	4	157	217
150	218	264	6	216	263
200	278	291	8	270	287
250	335	318	10	324	313
300	395	348	12	381	338



* for 3" and 4", 70mm for 6-12"

i-Mon

4-20mA Transducer

Programmable 4-20mA current loop transducer designed to be built into Flow-Mon's flow indicators.

- Based on the sophisticated Zettlex ST technology for inductive displacement sensing
- Non-contact (no wear problems, no loading and no added hysteresis on the system to effect measurement at low flow)
- Absolute measurement (no problems if power is disconnected and reconnected)
- Robust construction (long life without problems)
- Smart (one time factory calibration stored in in electronic memory)
- Accurate (more than 1000 measurement points over full-scale deflection)
- High resolution measurement (sensor can indicate changes in flow before the eye can)
- Programmable output filter for stable output (damping of the pointer vibration)
- Consists of two parts: electronics board and target (pointer replacement)
- 3 wire or 2 wire version

Technical specifications

Mechanical specification

Measurement range	100˚
Angle resolution	0.03˚
Linearity	±1%
Gap range (electronics to target)	4.3mm... 5.8mm[a,b]
Max concentricity	±1.5mm
Repeatability	<0.2%

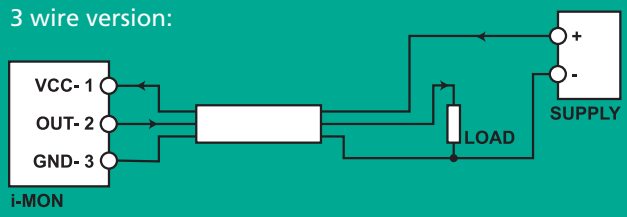
Electrical specification

Operating voltage	8... 28V DC
Supply current	50mA max[d], 4... 20mA[e]
Reverse polarity protection	Yes
Overvoltage protection	up to 30V
Output signal	4... 20mA[c]
Load impedance	R<(Usupply - 3)/0.02[d]
	R<(Usupply - 8)/0.02[e]
Resolution of the output signal	>10 bit
Programmable output filter	0... 5s (0.5s steps)
Temperature stability	<80ppm
Standard connections	3[d]/2[e] way terminal block, wires<1.0mm²
Operating temperature	-40˚C... +85˚C
Storage temperature	-40˚C... +85˚C

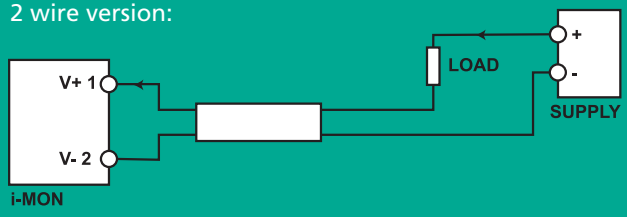
[a] Specified performance is only within this range of the gap
[b] Gap is measured between top of the pointer and top of the electronics board
[c] Guaranteed only within the full scale ±5% on both ends
[d] 3 wire version only
[e] 2 wire version only

Installation instructions

3 wire version:



2 wire version:



Wires must be kept away from the underneath of the electronics board area otherwise they could affect the accuracy of the output.

(3 pins board are for calibration only)

ATEX approved i-Mon

Certificate number FTZU09ATEX0221X
Product marking II 1G Ex ia IIC T4/T6
Ambient temperature for T4 -40°C<Ta<+85°C
Ambient temperature for T6 -40°C<Ta<+60°C
Applicable in zones 0, 1, 2
Ex data
Ui = 28V Ii = 120mA Pi = 0.82W Ci = 0nF Li = 5 H

Your nearest distributor

go with the *flow...*

For further information contact:
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Email: sales@flow-mon.com **www.**flow-mon.com
Flow-Mon Limited, Chatsworth House, Chatsworth Terrace,
Harrogate, North Yorkshire HG1 5HT, UK

PED, ATEX & LVD Approved
ISO 9001
certificate number: 16168