

Manufacturer of Specialist Flow Instruments









- Sight Indicators
- Sight Glasses
- Flow Meters
- Flow Switches
- Sales, service and repair
- Accredited to ISO 9001
- Certified PED and ATEX

SOLUTIONS FOR FLOW MANAGEMENT AND PLANT PROTECTION











# Specialist UK manufacturer providing quality flow solutions and customer support

#### **About Flow-mon**

Flow-Mon is a specialist manufacturer of flow indicators, switches and sight glasses producing cost effective and robust flow solutions to industry for over 40 years. Our factory in North Yorkshire is equipped with the latest CNC technology, UKAS accredited calibration equipment, welding and fabrication facilities.

Our team of skilled and experienced engineers manufacture a broad range of products from simple low cost sight indicators to large capacity flanged units for heavy industrial use. Flow-Mon can offer a solution to suit most applications within the process control industry and wider market.

We manufacture liquid and gas flow units for up to 12 inch process connections which are chemical resistant, accurate and can be fitted with several switch options, transmitters and totalisers for use in hazardous areas. Bespoke products are frequently manufactured to meet customer specifications.

#### Why choose Flow-Mon?

- Cost effective soultions
- Reliability
- Short lead times
- Quality assured products
- CE marked and fully PED compliant
- ATEX certified units available
- Specialist for bespoke items
- Exceptional customer service

#### **Quality Assurance**

ISO 9001:2015 is the internationally recognised standard for quality management. This standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. This guarantees we continuously monitor our processes and quality management system to ensure our standards meet customer's requirements with consistent, high quality products and services.

#### Ask our sales team

Call us on 0044 (0)1423 561972 to find out how our dedicated team can help.

- Full range of flow indicators
- Bespoke solutions
- Sales and supply
- Repair or refurbishment
- Advice and guotation



The Plastic Sight Flow Indicator is a robust, low-cost industrial class flow indicator that is simple to install. It can be mounted in any position from vertical to horizontal without any special connectors or plumbing.

Constructed of high impact polycarbonate plastic, this product offers excellent structural integrity and compatibility with a wide range of industrial chemicals. The transparent polycarbonate plastic body allows visual inspection of the fluid condition as well as viewing the centrifugal movement of the internal impeller.

#### **Features & Benefits**

- 1/4 inch to 1 inch BSP/NPT connection
- Easy to install in any position

**Dimensions** 

- No special piping or connections required
- Robust with good shock and vibration resistance
- Resistant to a wide range of chemicals
- Temperature 80°C (maximum working temperature)
- Pressure 40 bar (maximum working pressure)





SIZE		Dim A	Dim B	Weight	Max Flow
mm	inch	Length	Width	Kg	LPM
8	1/4″	120mm	50.8mm	0.60	40
10	3/8″	120mm	50.8mm	0.60	40
15	1/2″	127mm	50.8mm	0.60	40
20	3/4″	127mm	50.8mm	0.60	80
25	1″	127mm	50.8mm	0.60	80



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А	IJ	D	•••	La	Ο	ns
	-			_	 -	

Water

Oils

Coolants

Chemicals

Corrosives

Air and gases

#### **Materials**

Body	-	Polycarbonate
Impeller	-	PPS
Spindle	-	Stainless steel 316
Seals	-	Viton
End caps	-	SS 316, Bronze, Aluminium, PVC.

	SS	15				BSP			
	•	•							
МА	TERIAL	SIZE				THRE	AD		
B SS AL P	= Bronze = Stainless Steel = Aluminium = PVC	8 10 15 20 25	= = = =	1/4" 3/8" 1/2" 3/4" 1"		NPT BSP			

#### **Spinner Visual Sight Flow Indicator**



The Flow-Mon Spinner is a low-cost, robust flow indicator that is simple to install and will outperform other spinner instruments by a considerable margin. This spinner design can be mounted both horizontally and vertically, offering bidirectional flow indication with low pressure losses. With a tough construction, this product offers excellent structural integrity and compatibility with a wide range of applications.

When calibrated flow indicators are not needed, this simple indicator will satisfy most requirements within pipe sizes 8mm to 40mm. When operators require a visual confirmation in their pipe work for lubrication and coolant flow, this simple Spinner can provide a cost effective solution for plant protection.

Technical I	Da	ta
Body	- -	Stainless steel 316: ASTM-A-351 2000 GR CF8M Bronze BS EN1982 CuSn5Zn5PB5-C- GS (formerly LG2)
Spinner	-	PPS
Spindle	-	Stainless steel 316
Glass Dome	-	Annealed Borosilicate
'O' Ring	-	Viton
Gasket	-	Klingersil (C-4400)
Fasteners	-	Stainless steel
Pressure	-	16 Bar (maximum working pressure)
Temperature	-	200°C (maximum working temperature
Connections	-	BSP(F) parallel and NPT(F) taper
	-	Other connection types available on request

# B

#### **Dimensions & Weight**

Bore	Size	Weight	A'	B'	C'
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

#### **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

#### **Product Application**

- Plant protection
- Early warning of overheating, bearing or seal failure
- Pump and compressor protection
- Provide assurance that flow of cooling water is maintained to specialised welding equipment
- Indication of air entrainment

- 1/4 inch to 1 1/2 inch connection available
- Easy to install in any orientation

Feature & Benefits

- No routine maintenance required
- Unrivalled flow and pressure drop performance
- Bi-directional flow
- Operates over a wide flow range
- Robust with good shock and vibration resistance

# **Rising Ball Visual Sight Flow Indicator**



The Flow-Mon Rising Ball was developed to provide industry a high standard in-line flow indicator to meet the requirements for a broad range of chemical, water, oil and gas applications. When calibrated flow indicators are not needed, the Rising Ball will satisfy most requirements within pipe sizes 8mm to 40mm.

With 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, becoming clearly visible. The ball will continue to rise and move freely in the dome as the flow rate increases.

Technical	Data			32	. 11/	4	2.50	117	75	125		
Body	ody - Stainless steel 316: ASTM-A-351-2000 CF8M			40	) 1 1/	2	2.35	117	75	125		
	- Bronze BS EN1982 CuSn5Zn5PB (formerly LG2)	5-C-GS	Flow Requirements									
Spinner	- PPS			Size	Min Flow	Out	of Socket	Max Flow	Pre	essure Drop		
Spindle	- Stainless steel 316									- 2m/sec		
Glass Dome	- Annealed Borosilicate			mm	l/min		l/min	l/min		bar		
Ball	- PTFE			0	0.1		1.0	60		0.10		
'O' Ring	- Viton			ð	0.1		1.0	60		0.13		
Gasket	- Klingersil (C-4400)			10	0.1		1.0	60		0.16		
Fasteners	- Stainless steel			15	0.1		1.0	65		0.19		
Pressure	- 16 Bar (maximum working press	ure)		20	2.4		5.2	150		0.16		
Temperature	- 200°C (maximum working temp	erature)		25	2.7		5.5	165		0.40		
Connections	- BSP(F) parallel and NPT(F) taper	on request		32	11.0		16.0	400		0.20		
	- Other connection types available	on request		40	16.0		21.0	450		0.23		

#### **Product Application**

- Plant protection to show lubrication or coolant flow to pumps, compressors or engines.
- Detecting changes in the colour & condition of liquids during processing.
- Pump, Compressor & Diesel Protection.
- Ensuring that flow of cooling water is maintained to specialized welding equipment.
- Indication of air entertainment.
- Showing the presence of condensate in steam return lines.
- Maintaining demineralised water rinsing essential to electronics components manufacture.

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#### **Dimensions & Weight**

Bore	Size	Weight	A'	B′	C'	
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	

#### Feature & Benefits

- 1/4 inch to 1 1/2 inch connection available
- Easy to install (horizontal plane only)
- No routine maintenance required
- Unrivalled flow and pressure drop performance
- Robust with good shock and vibration resistance
- Resistant to a wide range of chemicals
- Can be used for condensate

# Double Window – Spout, Flap & Spinner Visual Sight Flow Indicator

#### **Product Description**

The Flow-Mon Double Window Sight Flow Indicators are designed to provide the means of visual inspection for process operations and plant protection. The straight through windows allow the operator to view immediate flow and to monitor the colour and condition of pipeline applications.

The plain spout enables visual inspection only while the flap variant with its' graduated scale provides an indication of flow rate and repeatability of valve positioning. This variant is also available with a sprung flap to manage approximate flow that can be increased up to three times. It is an ideal solution for use in vertical lines where gravity prevents the use of an untensioned flap.

A spinner variant equipped with an 8 blade PTFE spinner and stainless steel internals is ideally suited for chemical applications providing excellent corrosion resistance. All designs can be mounted in any pipeline orientation capable of managing a wide flow range.

These high quality, robust units are designed for a broad range of industrial applications with working temperatures up to 250°C and working pressures up to 16 bar for the standard range and 40 bar for the high pressure range.

#### **Connections**

• Available for any threaded, socket weld or flanged connection type.

#### **Features & Benefits**

- High quality robust design
- Body cast in stainless steel or carbon steel (other materials available)
- Threaded or flanged connections
- Pressures up to 40 Bar
- Temperatures up to 250 degrees
- Can be mounted in any orientation (flap design horizontal and up only)
- CE Marked and fully compliant with the Pressure Equipment Directive

	1	-	•	
		0		
	1 2000 M		5	
C			-	

# Technical Data Body - Stainless steel 316: ASTM-A-351-2000 GR CF8M

Glass

Flap

Scale

- Carbon Steel: ASTM-A-216-2000 GR WCB
- Spinner PPS
- Spindle Stainless steel 316
  - Toughened Borosilicate (DIN7080) (16 bar) or,
  - Toughened Soda Lime (BIS 3463) (40 bar
- Gasket PTFE
  - Stainless steel 316
- Spinner PTFE, PVC
  - Polycarbonate
- Fasteners Stainless steel A2
- Pressure 16 Bar (maximum working pressure)
- Temperature 250°C (maximum working temperature)
- Connections Threaded up to 2 inch BSP/NPT
  - Flanged up to 10 inch; PN, ANSI, JIS
  - Other connection types and larger sizes available on request

#### Flow Requirements

Size	Weig	ht (kg)	(m	A (m)	B (mm)	C (mm)	D (mm)	2		6	0	Ton	Мах
	(II		(III	<i>)</i>	(11111)	(11111)	(1111)	2	4	0	0	юр	Flow
	т	F	т	F									
8	2	4	95	140	89	66	48	2.5	3.5	4.5	7	22	100
10	2	4	95	140	89	66	48	2.5	4	4.5	7	24	150
15	2	4	95	140	89	66	48	3	4.5	6	8.5	20	250
20	2	4	95	140	89	66	48	3	5	6	9	20	250
25	2	4	95	140	89	66	48	3.5	6	8	10	25	250
32	4	7	120	180	120	89	62	7	11	14	24	40	550
40	4	7	120	180	120	89	62	8	12	15	25	50	600
50	4.5	9	150	220	170	110	77	9	15	28	50	75	1000
80	-	19.5	-	258	160	165	100	24	32	52	128	220	
100	-	25	-	258	160	165	100	46	70	100	150	220	
150	20	-	80	360	333	279							
200	20	-	80	360	333	279							





#### **Example Parts List**







#### **Flow Rate Indicator**



Our Flow Rate Indicators are manufactured in a wide range of sizes and specifications providing flow solutions for a broad range of applications. They are designed to be robust, highly versatile and extremely reliable in the harshest of environments. They continuously monitor flow with a local indication, through a mechanical pointer, switch, transmitter or digital rate totaliser and, can be manufactured in a variety of materials to suit each application.

#### Design

This unique modular design allows for easy field installation and service. No straight run of pipe is required before or after the monitor minimizing pressure drop and the installation footprint. Vane-style flow meters have a spring-opposed vane that moves in relation to the flow rate. 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

#### Features & Benefits

- Calibrated in any unit of measure
- Single or Dual scale options
- Individually calibrated
- Simple modular design
- Low pressure drop
- Viscosities up to 600cSt
- 1% rate of repeatability switch set point accurate & reliable
- Size range from 8mm (1/4") to 200mm (8")
- Installed in any position
- Weatherproof enclosure box
- Capable of twice the maximum indicated flow
- Available in a wide range of materials

#### **Switches**

Vane style flow meters can be connected to a field adjustable indicator or transmitter suitable for batching, trending, totalising or recording.

- SPDT 3 & 4 wire mechanical switch (gold contacts available)
- DPDT 6 wire mechanical switch
- 4-20mA Output
- 0-10V Potentiometer
- Digital Rate Totaliser
- ATEX variants available

#### **Applications**

- Water
- Soluble Oils (Glycols)
- Synthetic Based Fluids
- Corrosive Fluids
- Solvents

- De-Ionised Water
- Petroleum Based FluidsCoolants
- Paints
- Air & Gases



#### Dimensions

FLANGED





Min Full Scale	Max Full Scale	Pipe Size	Dimensions			Weight (kg)					
LPM	LPM		а	b	c	AL	В	CI	S/SS	PVC	
4	70	1⁄4 – 1″	160	150	130	1	2	2	2	1	
40	500	<sup>3</sup> ⁄4 - 2″	180	200	150	3	7	7	7	3	
50	800	2 1⁄2″	180	200	230	5	10	10	10	4	
250	1500	3″	255	320	305	20	54	50	54	15	
300	2000	4″	255	320	305	23	60	56	60	17	
800	3500	6″	460	500	510	60	200	175	200	-	
1000	5000	8″	485	500	535	68	225	200	225	-	

#### **Pressure Drop Charts**



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#### SCREWED







#### PART CODE BUILDER



#### Code: OUT

A non contract position encoder gives a continuous requirred 4-20 mAmp readout. Data Loggers or Recorders can be added to the system The 3 and 6 wire swtiches 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.

# Wafer



The wafer is designed to mount between two flanges which reduces the weight, size and cost. They are robust, highly versatile and extremely reliable in the harshest of environments.

They continuously monitor flow with a local indication, through a mechanical pointer, switch, transmitter or digital rate totaliser and, can be manufactured in a variety of materials to suit each application.

#### **Features & Benefits**

- Direct reading Flow Rate Indication
- Optional (field adjustable) switch(es)
- Optional Non-Contact 4-20mA Output
- High Pressure available
- Mounts in any orientation

Maximum Scale on request

#### Style

This unique modular design allows for easy field installation and service. No straight run of pipe is required before or after the monitor minimizing pressure drop and the installation footprint. Vane-style flow meters have a spring-opposed vane that moves in relation to the flow rate. 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.

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- Mounts easily between ANSI, JIS or DIN flanges
- No straight Pipe Run required
- Connection sizes from 3" to 12"
- Minimum Scale 0-40 I PM

 Specify gravity of the gas Maximum flow volume

fllowing information will be required:

same way as liquid flows. when enquiring for such an application the

- Operating Temperature
- Operating Pressure



#### **Dimensions**

DN	Α	с	ANSI	Α	с
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



#### **Switches**

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

#### **Applications**

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

# **Turbine Flow Meter**



Our Turbine Meters are suited for use on lubricating or nonlubricating liquids of low to medium viscosity and largely insensitive to density variations, pressure or temperature fluctuations. They are available in a wide variety of body sizes and styles, with an electrical pulse output directly proportional to the flow rate.

#### Design

Turbine flow meters use the mechanical energy of the fluid to revolve the rotor in the flow stream. Blades on the rotor are angled to transform energy from the flow stream into rotational energy. When the fluid moves faster, the rotor spins proportionally faster. Shaft rotation can be sensed mechanically or by detecting the movement of the blades. Blade movement is often detected magnetically, with each blade or embedded piece of metal generating a pulse. Turbine flow meter sensors are typically located external to the flowing stream to avoid material of construction constraints that would result if wetted sensors were used. When the fluid moves faster, more pulses are generated. The transmitter processes the pulse signal to determine the flow of the fluid.

#### Features & Benefits

- Available in a wide variety of body sizes
- Available with remote flow rate indication, alarms, totalising and batch control functions.
- Standard end connections are screwed BSP parallel threads, flanged meters are available to ANSI, DIN or BS standards

Technical Data		
Linear Accuracy	-	<u>+</u> 0.5% over 10:1 range
Repeatability Response Time	-	±0.1% of reading S50 millisecs for 50% step change i flowrate
Output Signal	-	Sinusoidal pulses 50mV - 800mV peak varing with flowrate
Operating Pressure	-	Operating pressure lmited to design end coupling
Pressure Drop	-	0.2 - 0.5 bar depending on meter s
Flow Range	-	10:1 as standard Wider aranges possible
Temperature	-	-30°C min 150°C max (standard coil) 400°C special design 120°C instrisically safe
Trasmission Distance	<b>)</b> -	500 metres max without pre-amplif for low-noise environment
Mounting Attitude	-	Horizontal or vertical (flow upwards inclined

#### **Applications**

- Oil and Gas
- Water and Wastewaster
- Gas Utility
- Chemical
- Power

 Pharmaceutical Mining

Aerospace

• Food and Beverage

• Pulp and Paper



#### **Dimensions**



#### Sizing Table

	Flow Rate	e (Linear)	Approx	K-factor		Standard End Fittings		
Type Number	Ltr/Min	I.G.P.M	Ltr	Imp Gall	Linearity	BSP Screwed	ANSI or BS10	DIN Flange
FMT3	0.5-5	.11-1.1	17000.0	771800.0	<u>+</u> 0.5%	1/2″	1/2″	ND15
FMT5	1.2-10	.22-2.2	5900.0	26780.0	<u>+</u> 0.5%	1/2″	1/2″	ND15
FMT7	2-20	.44-4.4	3000.0	13620.0	<u>+</u> 0.5%	1/2″	1/2″	ND15
FMT11	5-50	1.1-11	2600.0	11800.0	<u>+</u> 0.5%	1/2″	1/2″	ND15
FMT13	8-80	1.8-18	1950.0	8850.0	<u>+</u> 0.5%	3/4"	1/2″	ND15
FMT19	15-150	3.3-33	630.0	2860.0	<u>+</u> 0.5%	1″	1″	ND25
FMT24	25-250	5.5-55	350.0	1590.0	<u>+</u> 0.5%	1″	1″	ND25
FMT32	45-450	9.9-99	135.0	613.0	<u>+</u> 0.5%	1 1/4″	1 1/2″	ND40
FMT38	65-650	14.5-145	117.0	530.0	<u>+</u> 0.5%	1 1/2″	1 1/2″	ND40
FMT48	110-1100	25-250	67.0	305.0	<u>+</u> 0.5%	2″	2″	ND50
FMT65	200-2000	44-440	18.0	82.0	<u>+</u> 0.5%	3″	2 1/2"	ND65
FMT80	300-3000	66-660	14.0	64.0	<u>+</u> 0.5%	-	3″	ND80
FMT100	500-5000	110-1100	7.5	34.0	<u>+</u> 0.3%	-	4″	ND100
FMT150	1000-10000	220-2200	3.4	15.5	<u>+</u> 0.3%	-	6″	ND150

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#### For the latest news visit our website: www.flow-mon.com

Α	В	С	D
51	110	25	82
64	110	25	82
64	110	25	82
85	110	38	84
85	110	38	86
114	150	51	89
114	150	51	91
135	174	64	95
150	174	64	98
180	210	76	103
-	258	100	112
-	316	100	119
-	386	167	130
-	410	167	155

Allow an extra 50mm height on dimension 'D' for pick off coil connector

# **Low Flow Indicator**

The Flow-Mon Low Flow Unit is a robust flow indicator specifically designed to manage low flow rates of liquids and gases. Its basic design provides a simple and robust accurate measurement well suited to harsh industrial process applications. It is easy to install and can be mounted in any orientation offering threaded or flanged connections with very low pressure loss.

#### Design

A fixed tapered needle passing through an orifice in the face of a piston, the device completely seals the port to port connection when the piston is seated. As flow commences, the piston is displaced against a differential spring and moves over the tapered section of the needle to permit flow through the orifice. Accuracy is not affected by position so the unit can be mounted in any plane.

#### Features & Benefits

- Calibrated in any unit of measure
- Measures down to 50cc/minute
- Maximum capacity 5litres/minute
- Installed in any position
- Low pressure drop
- Weatherproof enclosure box
- Available in a wide range of materials
- High pressure variant available
- Size range from 8mm (1/4") to 50mm (2")

#### **Dimensions and Weight**



#### **Switches**

The low flow meter can be connected to a field adjustable indicator or transmitter suitable for batching, trending, totalising or recording. All Flow-Mon units can be supplied with a 0-10v or 4-20mA output.

#### **Applications**

- Water
- Soluble Oils (Glycols)
- Synthetic Based Fluids
- Corrosive Fluids
- Solvents

- De-Ionised Water • Petroleum Based Fluids
- Coolants
- Paints
- Air & Gases



Min Full Scale	Max Full Scale		Dimensions			Weight (kg)			
LPM	LPM	Pipe Size	а	b	c	AL	В	S/SS	PVC
0.2	5	1/4″ - 1″	190	161	110	3	8	8	3









#### **MANUFACTURER OF SPECIALIST FLOW INSTRUMENTS**

Reliable

Short lead times

Quality assured

Bespoke service

International sales & distribution





#### Location - Harrogate



#### **How to Contact Us**

Flow-Mon are dedicated to deliver the best service to your industry.

Contact us on email at **sales@flow-mon.com** or call **0044 (0)1423 561972** to see how our experienced team can help.

Visit our website for more information www.flow-mon.com



