John Crane

Safeflow Oil Flowmeter

For Easy and Accurate Flow Monitoring

SAFEMATIC™

A Rugged Oil Flowmeter for Demanding Use

SAFEFLOW oil flowmeters are used for controlling and measuring the flow rate of lubricants in oil circulation lubrication systems.

The SAFEFLOW oil flowmeters can be banked (up to 10 units wide) to reduce piping and simplify installation.

The base is made of durable aluminium. The flow tube is made of glass, so high temperatures and use of mineral and synthetic oils will present no problems.

Durable Metallic Frame

The major frame of the flowmeters is of durable aluminium, rather than plastic, which allows for tight connections for all tube fittings and reduces the chance of breakage.

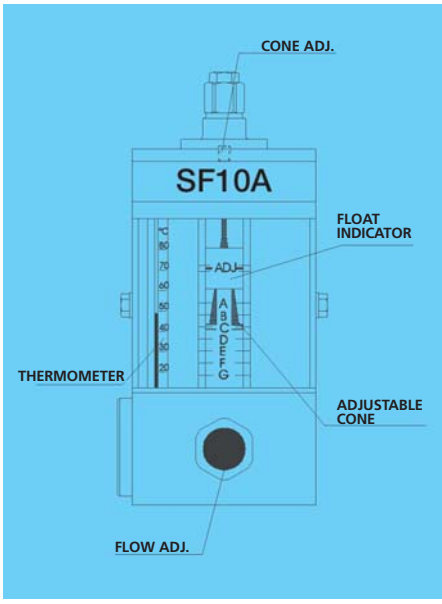
Excellent Readability

It is easy to read the flowmeter even when using the dark oil or high oil flows. This is possible because the operating principle of the SAFEFLOW flowmeter is quite different from that of the ordinary conical flowmeter.

The SAFEFLOW flowmeter has a straight glass flow tube with an internal calibration cone, extending along its vertical axis. The float is cylindrical in shape, its O.D. is slightly smaller than the I.D. of the flow tube.

In operation, the calibrated cone extends through the annular opening in the float, creating the variable orifice needed for measurement as the float moves with flow changes. Because the oil flows through the float rather than around it in an ordinary flowmeter, the float is always clearly visible. A white teflon ring on the float marks the reading point.

The flowmeter can be field calibrated so that when the desired oil flow is properly adjusted, the white ring will line up with a predetermined mark. This makes it easy to monitor banks of flowmeters with different required flows because all floats will be at the same level and it will not be necessary to remember what is the correct flow to each bearing.



Easy Calibration

Flowmeters can be individually calibrated according to the oil viscosity and desired flow. The calibration is done by adjusting the position of the calibration cone in accordance with a graph furnished by John Crane Safematic. Should there be a change in the oil viscosity or the desired flow, the flowmeter can be re-calibrated without removing it from service.

Improved Flow Adjusting Valve

The design of the adjusting valve has been improved by utilizing a cylindrical spindle with an elliptical shape bevelled on the metering end. This construction allows larger particles to pass through the valve than the ordinary needle valve arrangement, and does not block as easily as a needle valve. The oil flow through each flowmeter can be adjusted individually.

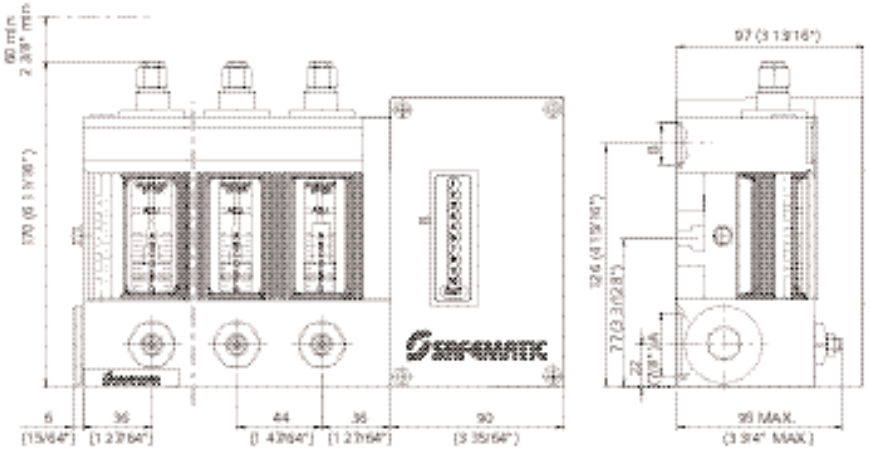
All the materials used in the SAFEFLOW flowmeters, aluminium frame, glass tube, and FPM rubber seals, are compatible with the use of mineral and synthetic oils.

Optional Flow Change Alarm System

The oil flow through each SAFEFLOW flowmeter can be remotely and continiously monitored. The alarm system consists of one alarm sensor for each flow tube and one monitoring unit for from one (1) to ten (10) alarm sensors. The alarm sensor is an inductive proximity switch, which identifies the location of a metal float in the tube. The monitoring unit contains the terminals and the power supply for ten sensors. The system transmits either a single alarm from each bank of meters or a separate signal from each flow tube. The alarm delay can be selected.

Technical Specifications

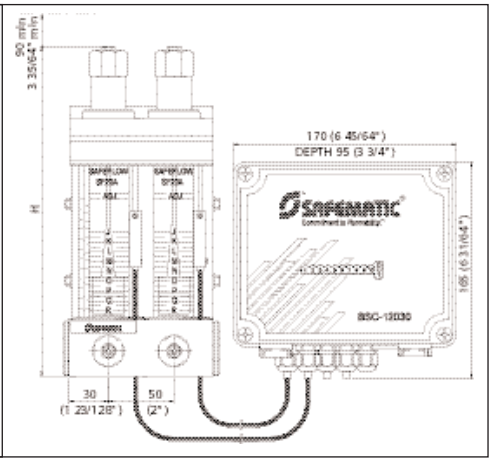
	SF05A	SF10A	SF15A
Flow rate			
- 100 cSt (460 SSU)	0.1 - 0.7 l/min	0.1 - 3.0 l/min	0.3 - 7.2 l/min
	0.2 - 1.5 pints/min	0.2 - 6.3 pints/min	0.6 - 15.2 pints/min
- 220 cSt (1000 SSU)	0.04 - 0.35 l/min	0.1 - 1.7 l/min	0.2 - 4.4 l/min
	0.08 - 0.74 pints/min	0.2 - 3.6 pints/min	0.4 - 9.3 pints/min
Number of Flowmeters (Tubes, pcs)	1, 2, 4, 6, 8, 10	1, 2, 4, 6, 8, 10	1, 2, 4, 6, 8, 10
Connections			
A & B GS1	R ½" (NPT ½")	R ½" (NPT ½")	R ½" (NPT ½")
A GS 2 - 10	R 1" (NPT 1")	R 1" (NPT 1")	R 1" (NPT 1")
B GS 2 - 10	R ½" (NPT ½")	R ½" (NPT ½")	R ½" (NPT ½")



GS = Group size, A = inlet, B = outlet

Both SF05 and SF10A together and SF10A and SF15A together can be combined in the same bank.

	SF20A	SF30A
Flow rate		
- 100 cSt (460 SSU)	1.3 - 17.0 l/min	5.0 - 56.0 l/min
	2.7 - 36.0 pints/min	10.6 - 118.3 pints/min
- 220 cSt (1000 SSU)	0.6 - 10.6 l/min	2.5 - 44.0 l/min
	1.3 - 22.4 pints/min	5.3 - 93.0 pints/min
Number of Flowmeters (Tubes,pcs)	1, 2, 4, 6	1
Height (H)	250 (9 27/32")	275 (10 53/64")
Length		
Group size 1	74 (3 45/64")	100 (3 15/16")
Group size 2	124 (5 43/64")	
Group size 4	224 (9 5/8")	
Group size 6	324 (13 35/64")	
Connections		
A&B GS1	R ¾" (NPT ¾")	R 1 ¼" (NPT 1 ¼")
A GS 2 - 6	R 1" (NPT 1")	
B GS 2 - 6	R ¾" (NPT ¾")	



GS = Group size, A = inlet, B = outlet

Power supply	24V DC (22 - 36V DC) or 24V AC (18 - 27V AC RMS) Power consumption 150 mA max.
Max. operating temperature	70°C/158°F
Alarm output	Dry contact relay output Max. load 50V AC/DC, 1 A
Delays	0s, 10s, 50s or 100s (selectable)

Ordering information

SF05A, SF10A and SF15A Flowmeters

SFYYA-XX-CD-E	(Example SF10A-10-RA-BSC)	
SF	Safeflow	
YY	Size: 05, 10, 15	
A	Adjustable cone	
XX	Number of flowmeters (tubes)	
C	Thread:	R = BSP-P (parallel) U = NPT (tapered)
D	Electrical alarm:	X = no alarm A = with electrical alarm
E	BSC = common alarm BSS = individual alarm	

SF20A, SF30A Flowmeters

SFYYA-XX-CD	(Example SF20A-06-UA)	
SF	Safeflow	
YY	Size: 20, 30	
A	Adjustable cone	
XX	Number of flowmeters (tubes)	
C	Thread:	R = BSP-P (parallel) U = NPT (tapered)
D	Electrical alarm:	X = no alarm A = with alarm sensors pre-assembled
	The alarm unit must be ordered separately	
BSC-12030	Alarm unit, common alarm	
BSS-12030	Alarm unit, individual alarm	

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For your nearest John Crane facility, please contact one of the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated.

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