

Flow sensors

selector guide



"our aim is to form close partnerships with our customers, working with them at all levels"

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FM02050



For all your sales enquiries call...

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Flow Switch Series

- Maximum Operating Pressure 10 bar. (140 PSI)
- Low flow version available
- WRAS approval
- Temperature rated to 85°C (185°F)

Our range of Flow Switches are reed switch based devices which are manufactured in Acetal resin. These switches are designed for use in liquid flow systems up to 10 Bar pressure. Advanced design ensures minimal fluid flow restriction.

ELECTRICAL SPECIFICATIONS	ALL TYPES
Contact form	N/O
Switching Power max VA	15
Switching Voltage AC max	240
Switching Voltage DC max	120
Switching Current maximum A	1.0

All ratings are for resistive load only

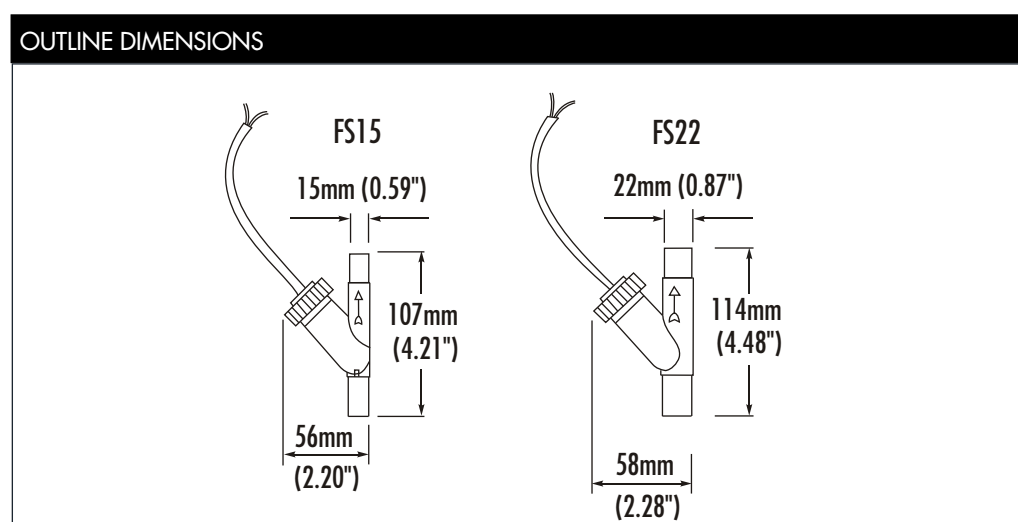
TECHNICAL SPECIFICATIONS		FS15A	FS15LF	FS22A
Operate Flow Rate*	litres/min	2.0	0.90	3.75
	US gals/min	0.53	0.24	0.99
Release Flow Rate**	litres/min	0.3	0.25	1.40
	US gals/min	0.08	0.07	0.37

* The switch will have operated when the flow rate rises above this value.

** The switch will have released when the flow rate falls below this value.

Installation

Flow switches can be mounted horizontally or vertically. As the operating piston is returned to it's original position by gravity the cap must always be upwards. Greater operate flow sensitivity is achieved with vertical installation. Supplied with 25cm Cable.



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flow switch series
Flow Sensors



Flow Switch notes

General Note

These flow switches are designed for use in low pressure, hot or cold, water systems. They may also be used with alcohol or dilute weak acids, including organic acids, up to a maximum concentration of 5%, at ambient temperatures.

N.B. These switches are not suitable for use with any type of chlorinated liquid.

Installation Note

Check the free movement of the switch plunger, before installation, by gently shaking the switch.

The Flow direction is indicated by arrows moulded on the flow switch body.

These switches may be installed, either vertically or horizontally, using compression fittings. The cable entry cap should always be upwards.

N.B. Care should be taken, when using metal compression fittings, to avoid overtightening the fitting onto the flow switch body.

The cap should not be unscrewed from the body as the components are factory present and can not be set by the user.

Electrical Caution

Do not put strain on the connecting wires, as this may cause damage to the switch.

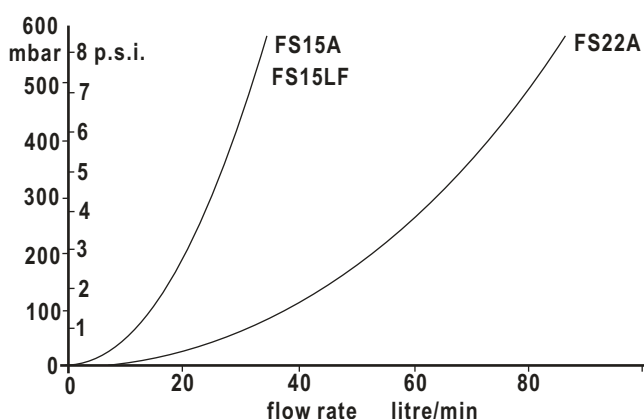
The use of plastic plumbing fittings may affect electrical earth continuity bonding, as required by IEE regulations. Please consult a qualified electrician, if in doubt.

Pressure loss

There will be a pressure loss due to the restriction caused by the flow switch. This will increase, with the flow rate, as shown on the chart.

Pressure Loss

Fig. 1



flow switch series
Flow Sensors



flowsonic Ultrasonic Flow Meter

- **Non-invasive sensor technology**
- **No moving parts**
- **Automatic viscosity and temperature compensation**
- **Unaffected by fluid contaminants**
- **Low pressure drop**
- **Push fit connection option**

This innovative design provides a high accuracy, non-invasive, flow measurement device at a fraction of the cost of other current non-invasive systems. The unique measurement technique automatically compensates for viscosity and temperature variations. The measurement of flow is by ultrasonic transit time in-line cell.

The flow path is designed to minimise pressure drop and, having no moving parts within, will not clog or jam. The flowsonic sensor also allows contaminants to pass through without affecting its performance.

The flowsonic sensor can be supplied with either a 0-5Vdc analogue output, or a pulsed 5V output.

Technical Specifications	UF10V	UF10P	UF25V	UF25P
Max. flow L/min	10		25	
Min. flow L/min	0.1		0.25	
Output	0-5VDC	Pulse	0-5VDC	Pulse

Performance	UF10V	UF10P	UF25V	UF25P
Accuracy 3% of reading or	±0.1L/min		±0.25L/min	
Repeatability 1% of reading or	±0.05 L/min		±0.1L/min	
Linearity		1% of full scale		
Resolution better than	0.05L/min		0.1L/min	
Reverse flow	0-10L/min		0-25L/min	
Response time		Better than 0.4s		

The flowsonic meter can be used, in addition to flow rate measurement, for very accurate batch control of liquids in processes, such as chemical dosing or food processing. Accurate dispensing of drinks over the counter or in vending machines can be achieved by interfacing this flow meter with the dispensing system.

Interface	UF10V	UF10P	UF25V	UF25P
Connection	3 wires (RED input, BLUE common, GREEN output)			
Supply	7.5 - 26VDC (input current <60mA @ 9VDC)			
Output load	100kΩ (for 4.8VDC output, lower impedance loads will reduce maximum output voltage)			
Output	0-5VDC	1500 pulses/L	0-5VDC	752 pulses/L
Max. output	5VDC	250 pulses/sec	5VDC	314 pulses/sec
Min. output	0VDC	0 pulses	0VDC	0 pulses

Operation	
Principle	Ultrasonic transit time in-line flow cell
Temp. range (fluid)	-10°C to 85°C
Continuous fluid sound	Maintains performance regardless of fluid type, temperature or viscosity for speed measurement fluids with sound speeds 1250 - 1750 m/s

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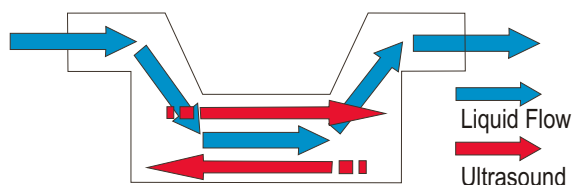
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flowsonic Ultrasonic Flow Meter
Flow Sensors

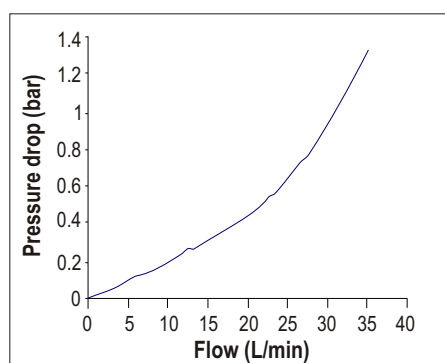


flowsonic Ultrasonic Flow Meter

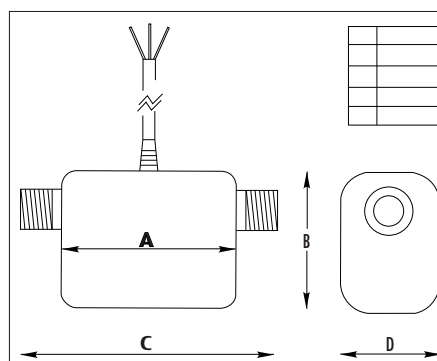


Sound transmitted in direction of flow is accelerated; sound transmitted against flow is decelerated. The resulting time difference is proportional to flow and converted by a microcontroller into an output signal.

Flow characteristics



Dimensions



Physical characteristics

Flow tube material	Glass filled plastic, Grivory HTV-4X1 (WRAS approved)
Flow tube internal diameter	12.5mm
Connection thread	3/8" BSP
Internal bore of connection	10mm
Pushfit adaptor (to fit 1/2" OD Tube)	John Guest Speedfit PI451613S
Maximum pressure	15 bar
Case material	Nylon 66
Case integrity	Ultrasonically welded, not liquid proof
Connection	6 core shielded, PVC sheathed, 50cm long standard

Ordering Code

Series	UF 10 P 050	Cable length (cms)
Flow range	(10 = 0 to 10L/min) (25 = 0 to 25L/min)	Output (P = pulse, V = volts)

flowsonic Ultrasonic Flow Meter
Flow Sensors



Using *flowsonic* Ultrasonic Flow Meters with Red Lion CUB5 display

Guide to using Crydom Flowsonic UF series flowmeters with CUB5 miniature electronic counter and rate meter. The CUB5 display counter/rate meter coupled with a Crydom UF series flowmeter will provide a highly accurate flow rate and flow count display solution, that is easy to set up and program to suit particular applications. The user can toggle between flow rate and flow count by using a button on the front panel.

The CUB5 indicator is supplied with full instructions but the following should provide simple guidance on setting up the system for your application. Physical installation

The UF series flowmeter should be installed according to the instructions supplied with the unit.

The CUB5 should be suitably mounted in a panel. Electrical connections

Blue wire of UF25 to Common Terminal of CUB5

Green wire to UF25 to Input A terminal of CUB5

Programming the CUB5

Connect the Program terminal to the Common terminal to enter programming function. The following parameter settings should enable you to set up the indicator to work with either the UF10P or UF25P devices:

INP A-b	==	cnt ud	
dSPSEL	==	Yes	
tot dP	==	0.0	This allows the user to change the decimal point location for flow counter.
SCLFAC	-	See Table below.	
rAtE Enb	==	Yes	This turns on the rate indicator function.
rAtE dP	==	0.0	This allows the user to change the decimal point location for the flow rate indication.
rAtE dSP	-	1	This is the number of whole units to display. (this number corresponds to the rAtE INP below) rAtE INP - See table below.
Lo-Udt	==	1	This is the amount of time the CUB5 waits until it begins sampling the input.
Hi-Udt	==	5	This is the amount of time the CUB5 waits until it stops sampling the input. 5 is default and works well. It is unwise to make this less than 2 or 3,m as this may give fluctuating readings.

The figures with a - in front of them above are the minimum setting required to produce a output for a rate display, all the others are default settings.

UF10P	Litres	Pints
Scale factor (SCLFAC)	0.0133	0.0234
Rate INP (minute) rAtE INP)	12.5	7.1
Rate INP (hour) (rAtE INP)	752.0	427.4

Note : these figures are only to be used with the UF10 device.

UF25P	Litres	Pints
Scale factor (SCLFAC)	0.0067	0.0117
Rate INP (minute) rAtE INP)	25.0	14.2
Rate INP (hour) (rAtE INP)	1500.0	852.6

Note : these figures are only to be used with the UF25 device.

Disconnect the User Input terminal from the Common terminal to exit programming function and save the data.

The Red Lion CUB5 manual is available here in PDF form. [Click here for a copy.](#)

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