

Type F3.15 and ULF3.15

Adjustable Flow Switches

The Type F3.15 and ULF3.15 Adjustable Flow Switches trip an electrical relay when flow velocity decreases below a preset trip point. This unique unit doubles as a flow sensor. The pulse output (with frequency proportional to flow velocity) may be fed to a FlowX3 flow monitor/transmitter or batch controller.

■ Type F3.15

Body Materials: CPVC, PVDF, 316L Stainless Steel, Brass

Rotor: ECTFE (Halar®)

Shaft & Bearings: Ceramic

Seals: EPDM, Viton®

Pipe Sizes: 1/2"–24" in two sensor lengths, L0 or L1
See Installation Fittings (pages 39–41)

Velocity Trip Point: 0.15 to 1 m/s (0.5 to 3 ft./sec.),
freely adjustable

■ Type ULF3.15

	Polyoxymethylene (POM) Version	ECTFE Version
Sensor Body:	POM	ECTFE (Halar®)
Rotor:	POM	ECTFE (Halar®)
Shaft:	Corepoint [†]	Sapphire
Bearings:	–	Sapphire
O-Ring:	Viton®	Viton® or Kalrez®
Connection:	Inline 1/4" BSP male threaded	
Flow Trip Point:	Freely adjustable	
ULF01 Model:	1.5 to 21 l/hr (0.0066 to 0.09 USGPM)	
ULF03 Model:	6 to 53 l/hr (0.0264 to 0.23 USGPM)	

[†] Corepoint® is a steel alloy.

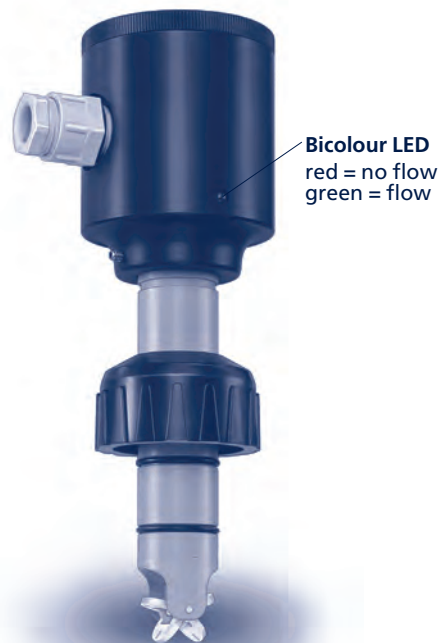
■ Connectable FlowX3 Instruments

Instrument Mounting	FlowX3 Instruments*
Panel or Wall	F9.02, F9.03, F9.50, F9.51

* Power supply can be fed from FlowX3 instruments.



F3.15



ULF3.15



■ Features

- **Reliable Pump Protection** – Typical applications are to protect a pump from running dry or pumping against a closed valve in the main pipe.
- **SPDT Relay with Adjustable Trip Point**
- **Includes Open Collector (frequency) Pulse Output** – Useable for continuous flow rate monitoring

■ Item Numbers

- See page 24

Type F3.15 and ULF3.15

Adjustable Flow Switches

■ Technical – General

- Supply Voltage:** 12 to 24 VDC, regulated
- Current Consumption:** 10 mA max.
- Output Signal:** Square wave (pulse)
- Output Frequency:** 45 Hz per m/s nominal (13.7 Hz per ft./sec.)
- Transistor Output:** NPN open collector
- Relay Output:** Mechanical SPDT contact, 3A @ 30 VDC, 3A @ 250 VAC resistive load
- Switch Delay:** 3 or 10 seconds, selectable
- Enclosure:** NEMA 4, 4X (IP65) PVC housing
- Ambient Temperature:** 0 to 60°C (32 to 140°F)

■ Technical – Type F3.15

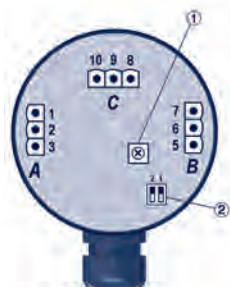
- Viscosity Range:** 0.5 to 20 centistokes. Factory calibration is required if outside this range, up to 40 centistokes maximum.
- Maximum % Solids:** 10% with particle size not exceeding 0.5 mm cross section or length

Max. Operating Pressure/Temperature: See chart on page 43

■ Technical – Type ULF3.15

- Viscosity Range:** 1 to 10 centistokes
- Maximum % Solids:** Clean services only, no solids are recommended
- Working Temperature:** -10 to 80°C (14 to 176°F)
- Working Pressure:** 5 bar (70 psi) max. @ 22°C (72°F)

■ Wiring & Operation (Cable not supplied)

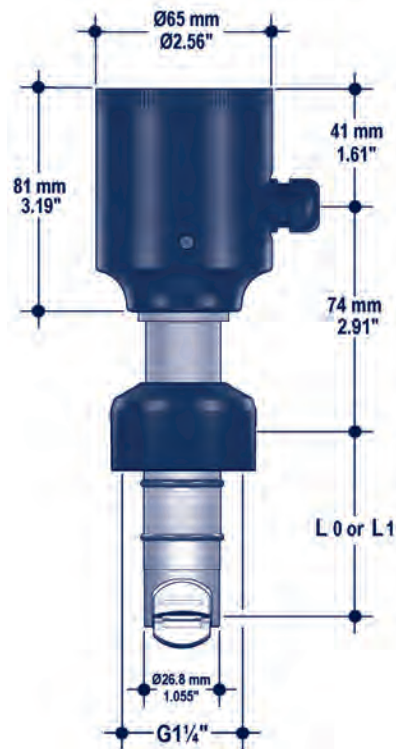


Power Supply A	1	+ VDC
	2	FREQ. OUTPUT
	3	- VDC
Sensor B	SENSOR	
	5	GND
	6	IN
	7	V+
Relay Output C	RELAY	
	8	NO
	9	NC
	10	COM

(See Instruction Manual for detailed wiring information)

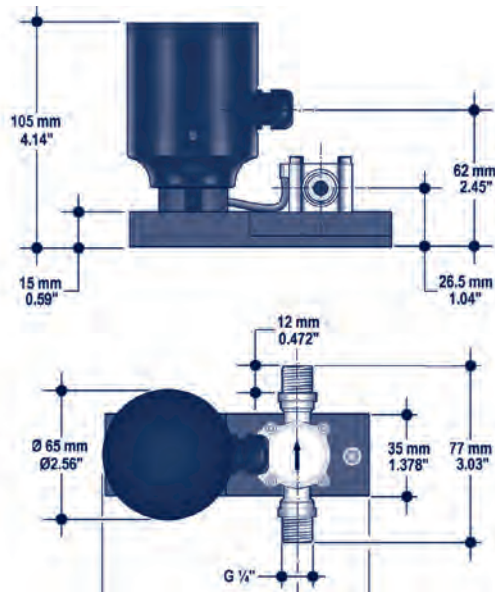
- ① Calibration Trimmer for MIN alarm set point
- ② Switch 1 switches between calibration (OFF) and operating (ON)
Switch 2 is used to select the switch delay (3 or 10 sec.)

F3.15



L0 = 68.3 mm (2.69")
L1 = 98.5 mm (3.88")

ULF3.15



■ Item Numbers

- See page 24

Item Numbers

Flow Switches and Blind Transmitters



■ No-Flow Switches See page 19

Type F3.05

Electrical Class	O-Ring	Sensor Length	Item No.		
			CPVC	PVDF	316L SS
NEMA 4, 4X (IP65)	EPDM	L0	F3.05.H.01	F3.05.H.05	F3.05.H.09
	Viton®	L0	F3.05.H.02	F3.05.H.06	F3.05.H.10
	EPDM	L1	F3.05.H.03	F3.05.H.07	F3.05.H.11
	Viton®	L1	F3.05.H.04	F3.05.H.08	F3.05.H.12

■ Adjustable Flow Switches See pages 20 and 21

Type F3.15

Electrical Class	O-Ring	Sensor Length	Item No.			
			CPVC	PVDF	316L SS	Brass
NEMA 4, 4X (IP65)	EPDM	L0	F3.15.H.01	F3.15.H.05	F3.15.H.09	F3.15.H.13
	Viton®	L0	F3.15.H.02	F3.15.H.06	F3.15.H.10	F3.15.H.14
	EPDM	L1	F3.15.H.03	F3.15.H.07	F3.15.H.11	F3.15.H.15
	Viton®	L1	F3.15.H.04	F3.15.H.08	F3.15.H.12	F3.15.H.16

Type ULF3.15

Electrical Class	Flow Trip Point (l/hr)	Item No.		
		POM† / Viton®	ECTFE* / Viton®	ECTFE* / Kalrez®
NEMA 4, 4X (IP65)	1.5 – 21	ULF3.15.01.0	ULF3.15.01.2	ULF3.15.01.3
	6 – 53	ULF3.15.03.0	ULF3.15.03.2	ULF3.15.03.3

■ Flow Transmitters See pages 22 and 23

Type F3.30

Electrical Class	O-Ring	Sensor Length	Item No.			
			CPVC	PVDF	316L SS	Brass
NEMA 4, 4X (IP65)	EPDM	L0	F3.30.H.01	F3.30.H.05	F3.30.H.09	F3.30.H.13
	Viton®	L0	F3.30.H.02	F3.30.H.06	F3.30.H.10	F3.30.H.14
	EPDM	L1	F3.30.H.03	F3.30.H.07	F3.30.H.11	F3.30.H.15
	Viton®	L1	F3.30.H.04	F3.30.H.08	F3.30.H.12	F3.30.H.16

Type ULF3.30

Electrical Class	Flow Range (l/hr)	Item No.		
		POM† / Viton®	ECTFE* / Viton®	ECTFE* / Kalrez®
NEMA 4, 4X (IP65)	1.5 – 100	ULF3.30.01.0	ULF3.30.01.2	ULF3.30.01.3
	6 – 250	ULF3.30.03.0	ULF3.30.03.2	ULF3.30.03.3

† POM = "Polyoxymethylene". * ECTFE is also referred to as "Halar®".