



Ultra low flow sensors





ULF

The FLS ULF, Ultra Low Flow sensor is a device designed for use with any type of aggressive, solid-free liquid. The sensor can be mounted on flexible or rigid pipes through connections with 1/4" GAS male thread. The paddlewheel sensor produces a frequency output proportional to the speed of the flow that can be transmitted and processed without difficulty. The ULF sensor offers two different flow ranges, starting from 1.5 l/h (0.0066 gpm). The construction materials, POM or ECTFE (Halar®), guarantee particularly high strength and chemical resistance.

ULTRA LOW FLOW SENSORS

APPLICATIONS

- Water treatment
- Chemical industry
- Pharmaceutical industry
- Batching systems

Laboratory systems

- MAIN CHARACTERISTICS
- Parts in contact with liquids in POM or ECTFE (Halar®)
- Two flow rate ranges available:
- - from 1.5 to 100 l/h (0.0066-0.44 gpm)
- - from 6 to 250 l/h (0.0264-1.1 gpm)
- High chemical resistance
- Easy mounting

TECHNICAL DATA

General information	Flow rate range: – Model ULF01: from 1.5 to 100 I/h (0.0066-0.44 gpm) – Model ULF03: from 6 to 250 I/h (0.0264-1.1 gpm)		
	Linearity: ±1% of full scale		
	Repeatability: ±0,5% of full scale		
	Operating temperature: from -10°C to 80°C (from 14°F to 176°F)		
	Operating pressure: max 5 bar (70 psi) at 22°C (72°F)		
	Fluid viscosity: from 1 to 10 cST		
	Protection class: IP65		
	Materials in contact with liquids (POM model):		
	– Sensor body: POM		
	– O-ring: FKM		
	- Rotor: POM		
	- Shart: corepoint - Magnets: SmCo		
	Materials in contact with liquids (ECTEE model):		
	- Sensor body: ECTFE (Halar®)		
	- O-ring FKM or KALREZ		
	- Rotor: ECTFE (Halar®)		
	- Shaft: Sapphire		
	Connections: 1/4"GAS male thread		
	Cable length: standard 2 m (6 5ft)		
Specific data for ULE01 H L	Supply voltage: from 5 to 24 VDC ±10% regulated		
and ULF03.H	Supply current: < 15 mA at 24 VDC		
	Output signal: Square wave		
	Signal type: push-pull (for connection to NPN and PNP inputs)		
	K-Factor: - Model ULF01: 8,431 pulses/litre (31,569 pulses/US gallon), linear		
	 Model ULF03: 3,394 pulses/litre (12,846 pulses/US gallon), linear range 15 to 250 l/h 		

Specific data for ULF01.R I and ULF03.R	Supply voltage: none
	Output signal: Square wave
	Output type: Reed contact
	 K-Factor: Model ULF01: 2,108 pulses/litre (7,978 pulses/US gallon), linear range 8 to 100 l/h Model ULF03: 848 pulses/litre (3,210 pulses/US gallon), linear range 15 to 250 l/h
Standards & Approvals	Manufactured under ISO 9001 Manufactured under ISO 14001 CE RoHS Compliance EAC

PRESSURE DROP



ULFXX.H SENSOR ELECTRICAL CONNECTIONS

	M9.50	M9.03 iinput 1	M9.03 input 2	M9.07	M9.08	M9.10
GND	30	30	16	16	16	37
FREQ	28	28	14	14	14	36
V+	27	27	13	13	13	35



ULFXX.R SENSOR ELECTRICAL CONNECTIONS



PRODUCT CODES



ULFOX.X.X Ultra Low Flow Sensors

Code	Version	Power supply	Length	Main Wetted Materials	Enclosure	Flow Rate Range	Weight (gr.)
ULF01.H.O	Push-Pull	5 - 24 VDC	77 mm	POM FKM	IP65	From 1,5 to 100 l/h*	170
ULF01.H.2	Push-Pull	5 - 24 VDC	77 mm	ECTFE FKM	IP65	From 1,5 to 100 l/h*	200
ULF01.H.3	Push-Pull	5 - 24 VDC	77 mm	ECTFE KALREZ	IP65	From 1,5 to 100 l/h*	200
ULF01.R.0	Reed	None	77 mm	POM FKM	IP65	From 1,5 to 100 l/h*	170
ULF01.R.2	Reed	None	77 mm	ECTFE FKM	IP65	From 1,5 to 100 l/h*	200
ULF01.R.3	Reed	None	77 mm	ECTFE KALREZ	IP65	From 1,5 to 100 l/h*	200
ULF03.H.O	Push-Pull	5 - 24 VDC	77 mm	POM FKM	IP65	From 6 to 250 l/h**	170
ULF03.H.2	Push-Pull	5 - 24 VDC	77 mm	ECTFE FKM	IP65	From 6 to 250 l/h**	200
ULF03.H.3	Push-Pull	5 - 24 VDC	77 mm	ECTFE KALREZ	IP65	From 6 to 250 l/h**	200
ULF03.R.0	Reed	None	77 mm	POM FKM	IP65	From 6 to 250 l/h**	170
ULF03.R.2	Reed	None	77 mm	ECTFE FKM	IP65	From 6 to 250 l/h**	200
ULF03.R.3	Reed	None	77 mm	ECTFE KALREZ	IP65	From 6 to 250 l/h**	200

*(0,0066-0,44 gpm) **(0,0264-1,1 gpm

TECHNICAL DRAWINGS



ULF

- 1 Electrical cable: standard 2m (6.5ft)
- 2 Fully encapsulated electronics
- 3 Connection to the process (other models are available on reques depending on the body material)t
- 4 Sensor body in POM or ECTFE Halar® (registered trademark of Ausimont-Solvay)
- 5 PP fixing plate