

# FLS ULF

## ULTRA LOW FLOW SENSOR



The compact Ultra Low Flow sensor type ULF is designed for use with every kind of aggressive and solid-free liquids.

The sensor can be fixed to flexible or rigid pipes via 1/4" GAS threaded process connections. The paddlewheel sensor produces a frequency output proportional to the flow velocity that can be easily transmitted and processed.

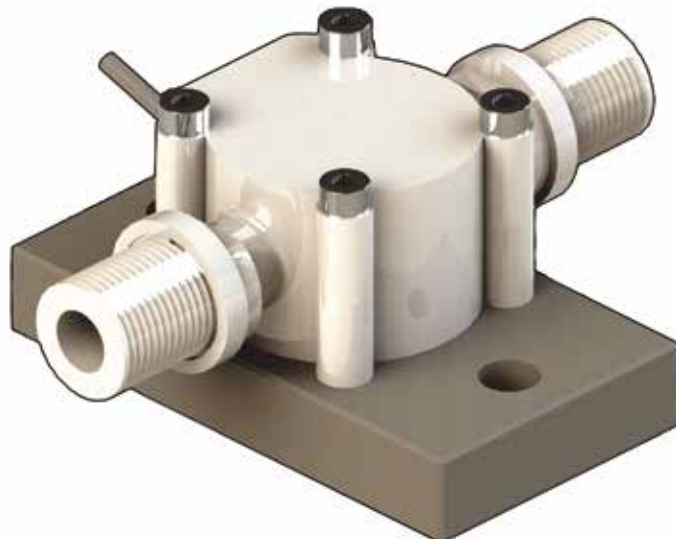
The ULF sensor offers two different flow ranges starting from 1.5 or 6 l/h (0.0066 or 0.0264 gpm). The construction materials, POM or ECTFE (Halar®), provide high strength and chemical resistance.

### APPLICATIONS

- Water treatment
- Chemical industry
- Pharmaceutical industry
- Dosing systems
- Laboratory plants

### MAIN FEATURES

- POM or ECTFE (Halar®) wetted parts
- Two flow ranges available:
  - 1.5 - 100 l/h (0.0066 - 0.44 gpm)
  - 6 - 250 l/h (0.0264 - 1.1 gpm)
- High chemical resistance
- Easy mounting



# TECHNICAL DATA

## General

- Flow Rate Range:
  - ULF01 version: 1.5 to 100 l/h (0.0066 to 0.44 gpm)
  - ULF03 version: 6 to 250 l/h (0.0264 to 1.1 gpm)
- Linearity:  $\pm 1\%$  of full scale
- Repeatability:  $\pm 0.5\%$  of full scale
- Working Temperature:  $-10^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  to  $176^{\circ}\text{F}$ )
- Working Pressure: 5 bar (70 psi) max @  $22^{\circ}\text{C}$  ( $72^{\circ}\text{F}$ )
- Viscosity of fluid: 1 to 10 cST
- Enclosure: IP65
- Wetted materials:
  - POM version:  
sensor body: POM  
o-ring: FPM  
rotor: POM  
shaft: corepoint  
magnets: ceramic
  - ECTFE version:  
sensor Body: ECTFE(Halar®)  
o-ring: FPM or KALREZ  
rotor: ECTFE (Halar®)  
shaft: Sapphire  
bearings: Sapphire
- Connections: 1/4" GAS male threaded
- Cable length: 2 m (6.5 ft) standard

## Specific for ULF01.H | ULF03.H

- Supply voltage: 5 to 24 VDC  $\pm 10\%$ , regulated
- Supply current:  $< 15\text{ mA}$  @ 24 VDC
- Output signal: square wave
- K-factor:
  - ULF01 version: 8431 Pulses/Liter (31569 Pulses/U.S. Gallon) in linear range from 8 to 100 l/h
  - ULF03 version: 3394 Pulses/Liter (12846 Pulses/U.S. Gallon) in linear range from 15 to 250 l/h

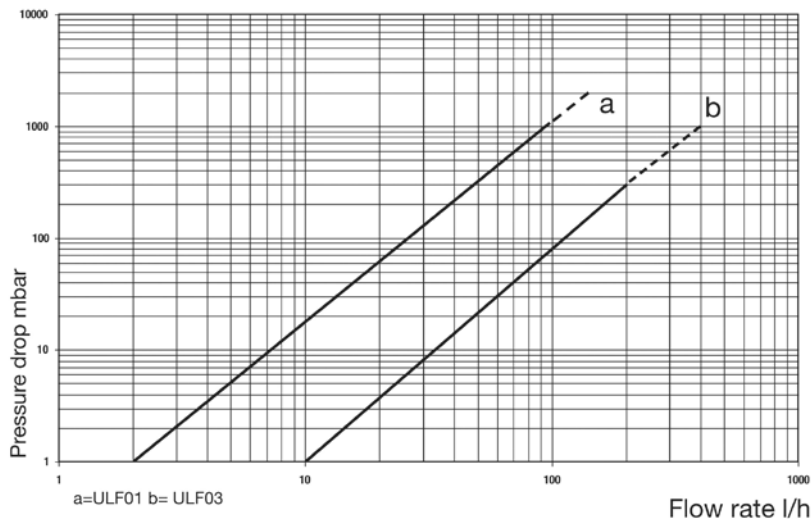
## Specific for ULF01.R | ULF03.R

- Supply voltage: none
- Output signal: square wave
- Output type: Reed Contact
- K-factor:
  - ULF01 version: 2108 Pulses/Liter (7978 Pulses/U.S. Gallon) in linear range from 8 to 100 l/h
  - ULF03 version: 848 Pulses/Liter (3210 Pulses/U.S. Gallon) in linear range from 15 to 250 l/h

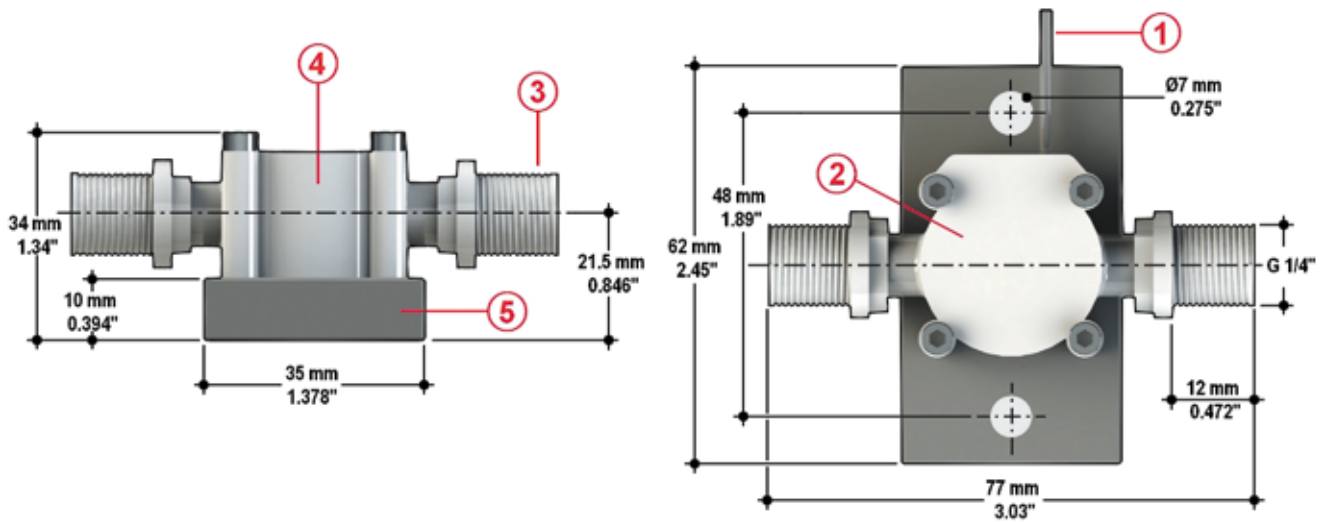
## Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- GOST R

## Pressure Drop



## DIMENSIONS



- 1 Electrical cable: 2 m. (6.5 ft) standard
- 2 Completely encapsulated electronics
- 3 Connection (other versions available on request according to body material)
- 4 POM or ECTFE Halar® (registered trademark of Ausimont-Solvay) sensor body
- 5 PP fixing plate

## WIRING CONNECTIONS

ULFXX.H Sensor wiring connection

ULFXX.R Sensor wiring connection



SENSOR	
5	GND
6	IN
7	V+



SENSOR	
5	GND
6	IN
7	V+

## ORDERING DATA

ULFOX.X.X Ultra Low Flow Sensors							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
ULF01.H.0	Hall	5 - 24 VDC	77mm	POM / FPM	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	170
ULF01.H.2	Hall	5 - 24 VDC	77mm	ECTFE / FPM	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	200
ULF01.H.3	Hall	5 - 24 VDC	77mm	ECTFE / KALREZ	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	200
ULF01.R.0	Reed	None	77mm	POM / FPM	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	170
ULF01.R.2	Reed	None	77mm	ECTFE / FPM	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	200
ULF01.R.3	Reed	None	77mm	ECTFE / KALREZ	IP65	1.5 to 100 l/h (0.0066 to 0.44 gpm)	200
ULF03.H.0	Hall	5 - 24 VDC	77mm	POM / FPM	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	170
ULF03.H.2	Hall	5 - 24 VDC	77mm	ECTFE / FPM	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	200
ULF03.H.3	Hall	5 - 24 VDC	77mm	ECTFE / KALREZ	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	200
ULF03.R.0	Reed	None	77mm	POM / FPM	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	170
ULF03.R.2	Reed	None	77mm	ECTFE / FPM	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	200
ULF03.R.3	Reed	None	77mm	ECTFE / KALREZ	IP65	6 to 250 l/h (0.0264 to 1.1 gpm)	200

IN LINE FLOW SENSORS