

# FLOWX3 F9.00 Flow Monitor & Transmitter



FLS FLOWX3 F9.00 Flow Monitors & Transmitters are designed to convert the signal from all FLOWX3 flow sensors into a display indication and a 4-20 mA signal for long distance transmission. A very simple and complete choice of options are granted by single or dual input/output, two solid state relays output and one relay output.

The high flexibility is also maximized with only one packaging for compact pipe mount, panel or wall installation.

Self explaining calibration menus allow a customized setup of all measuring parameters and the state of the art electronic design ensures long-term reliable and stable signals.

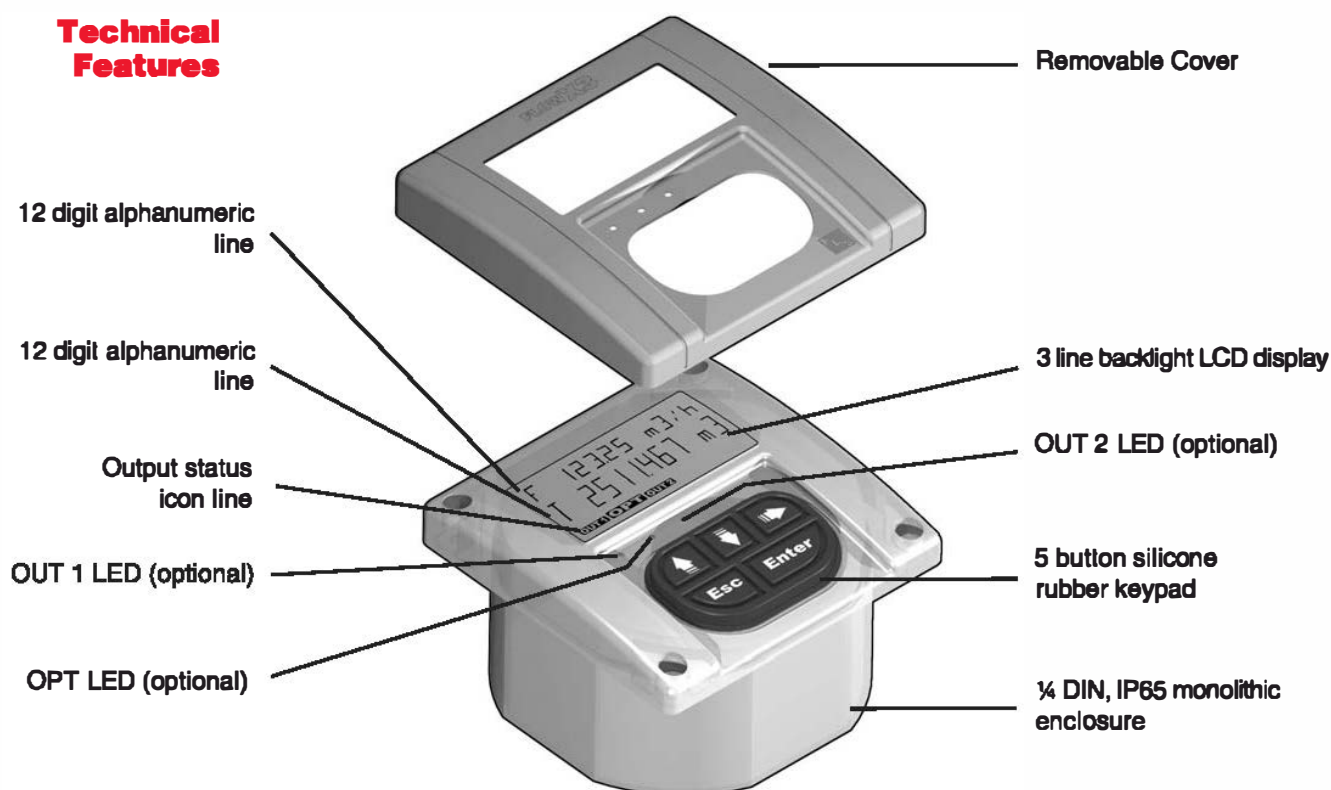
## Main Features

- Permanent and resettable totalizer.
- Adjustable outputs.
- Relay, Open Collector and Solid State Relay options.
- Installation flexibility.
- 3 line alphanumeric backlight LCD (except F9.03).
- IP65 monolithic packaging.
- 5 button keypad.
- Output simulation for system testing.
- One packaging for compact/pipe, panel or wall installation.
- Self explaining calibration menus.
- Auto-calibration.


## Applications

- Flow control and measuring.
- Water treatment and regeneration.
- Industrial wastewater treatment and recovery.
- Water distribution.
- Leak detection.
- Processing and manufacturing industry.
- Textile finishing.
- Filtration systems.
- Chemical Industry.
- Liquid delivery systems.
- Auxiliary plants.
- Swimming pools & Spas.

## Technical Features



## Technical Features

Flow Monitor	Part No.	Wire Power Tech.	Associated Sensor	Sensor Input	4-20 mA Output	Digital Output	Relay Output
	F9.00.L	2 wire	Hall Effect	1	1	1 S.S.R.- MIN, MAX, Pulse, Window, Freq., Off	---
	F9.02.L	3/4 wire	Hall Effect	1	1	2 S.S.R.- MIN, MAX, Pulse, Window, Freq., Off	1 - MIN, MAX, Pulse, Window, Off
	F9.03	3/4 wire	Hall Effect	2	2	1 O.C.- MIN, MAX, Pulse, Freq., Off	2 - MIN, MAX, Pulse, Off

O.C.= Open Collector - S.S.R. = Solid State Relay.

## Engineering Data

- The flow transmitter is designed with only one packaging for compact/pipe, panel or wall installation.
- The flow transmitter has ¼ DIN panel mount standard dimensions: 96 x 96 mm (3.8 x 3.8 inch).
- The instrument meets IP65 standards.
- The instrument provides flow rate indication and dual totalization with fully scaleable engineering units.
- The flow transmitter is equipped with a 3 line LCD: 2 x 12 alphanumeric lines and 1 icon line
- Backlight LCD Display (except for F9.03)
- The flow transmitter is equipped with a silicone rubber 5 button keypad.
- The flow transmitter is compatible with all FLS FLOWX3 Hall Effect Flow Sensor.
- The instrument provides auto-calibration and simulation options.

## Connections to FLOWX3 Sensors

FLOWX3 Monitors	FLOWX3 Sensors														
	P3.00.H	F3.00.C	P3.01.H	F3.01.C	P3.10.H	F3.15.H*	P3.30.H*	ULF.H	ULF.R	ULF3.15*	ULF3.30*	F3.80	F111.H	F111.C	F3.00M F3.63M
F9.00.L	■		■		■				■				■		
F9.02.L	■		■		■	■		■		■		■	■		■
F9.03	■		■		■	■		■		■		■	■		■

\* with Output Kit mounted.

## Technical Data

### General

- Associated flow sensor:
  - FLS FLOWX3 Hall effect with frequency output.
  - FLS FLOWX3 New Electromagnetic flow sensor\*.
- Materials:
  - Case: PC
  - Panel gasket: Neoprene
  - Wall and Field gasket: EPDM
  - Keypad: 5 button silicone rubber.
- Display:
  - backlight configuration (not available for F9.03)
  - 3 line LCD: 2 x 12 alphanumeric lines and 1 icon line
  - Update rate: 1 second
  - Contrast: User adjustable with 5 levels.
- Enclosure: IP65 front.

### Electrical

- Supply Voltage: 12 to 24 VDC  $\pm 10\%$ , regulated.
- Sensor Input (Frequency):
  - Sensor power:  $3.8 \div 5$  VDC @  $< 30$  mA\*
  - Range:
    - F9.00.L-F9.03  $\rightarrow$  0.5 to 500 Hz
    - F9.02  $\rightarrow$  0.5 to 1000 Hz
  - Optically isolated from current loop (only 4 wires version)
  - Short circuit protected.
  - Accuracy:  $\pm 0,5\%$ .
- Current output:
  - 4-20 mA, isolated, fully adjustable and reversible. (Not available for F9.00.L when backlight configuration is on).
  - Max loop impedance:  $150 \Omega$  @ 12 VDC,  $330 \Omega$  @ 18 VDC,  $600 \Omega$  @ 24 VDC.

### ■ Open Collector output or Solid State Relay output:

- User selectable as MIN alarm, MAX alarm, Pulse Out, Freq Out, Off, Window
- Optically isolated, 50 mA MAX sink, 24 VDC maximum pull-up voltage
- Max pulse/min: 300 (180 for F9.00.L)
- Hysteresis: User selectable.
- Relay output:
  - User selectable as MIN alarm, MAX alarm, Window, Pulse Out, Off
  - Mechanical SPDT contact
  - Max voltage rating: 8A @ 24 VDC, 8A @ 240 VAC, resistive load
  - Max pulse/min: 60 for F9.00, 180 for F9.03
  - Hysteresis: User selectable.
  - Expected mechanical life (min. operations):  $10^7$
  - Expected electrical life (min. operations):  $10^6$ , for F9.03 N.O.:  $5 \times 10^4$  / N.C.:  $2 \times 10^6$  N.O./N.C. switching capacity 8A @ 240 VAC, for F9.03 N.O. 5A @ 250VAC / N.C. 2A @ 250VAC

### Environmental

- Operating temperature:  $-10^\circ\text{C}$  to  $+70^\circ\text{C}$  ( $14^\circ\text{F}$  to  $158^\circ\text{F}$ ).
- Storage temperature:  $-15^\circ\text{C}$  to  $+80^\circ\text{C}$  ( $5^\circ\text{F}$  to  $176^\circ\text{F}$ ).
- Relative humidity: 0 to 95% non condensing.

### Standards & Approvals

- Manufactured under ISO 9001 (Quality).
- Manufactured under ISO 14001 (Environmental Management).
- CE.

\* For F3.60M & F3.63M power supply must be provided separately.