

# FLS M9.00

## 2-WIRES FLOW MONITOR



The new FLS M9.00 is a powerful flow monitor based on 2-wire technology designed to convert the frequency signal of FLS flow sensors into a flow rate. M9.00 is equipped with a wide 4" display which shows measured values clearly. Moreover the standard backlight improves further the display visibility.

The first procedure will grant a easy set up of main parameters. A flow rate reference can be used for a recalibration or a alignment through a intuitive "in-line calibration". A 2 wires 4-20mA output combined with a solid state relay allow to remote instant flow rate as well as an alarm.

### APPLICATIONS

- Water treatment systems
- Industrial waste water treatment and recovery
- Water distribution
- Filtration systems
- Swimming pools & SPA
- Irrigation & Fertigation
- Leak detection

### MAIN FEATURES

- Wide display
- Bright backlight
- Installation flexibility
- Solid State Relays for programmable alarms
- Multilanguage menu



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## TECHNICAL DATA

### General

- Associated flow sensor: FLS Hall effect with frequency output
- Materials:
  - Case: ABS
  - Display window: PC
  - Panel & Wall gasket: silicone rubber
  - Keypad: 5-button silicone rubber
- Display
  - transfective technology
  - backlight version: mono colour
  - backlight activation: available without analog output activation
  - Update rate: 1 second
- Enclosure: IP65 front
- Flow input Range (frequency): 0.5 to 500 Hz
- Flow input accuracy: 0,5%

### Electrical

- Supply Voltage: 12 to 24 VDC  $\pm$  10% regulated
- Backlight is available with power supply  $\geq$  12 VDC
- FLS hall effect flow Sensor power:
  - 3,8 VDC @ < 20 mA
  - Optically isolated from current loop
  - Short circuit protected
- 1 x Current output (Not available with backlight ON):
  - 4...20 mA, isolated, fully adjustable and reversible
  - Max loop impedance: 150 $\Omega$  @ 12 VDC, 600 $\Omega$  @ 24 VDC
- Solid-State relay output:
  - User selectable as MIN alarm, MAX alarm, Pulse Out, Freq Out, Off
  - Optically isolated, 50 mA MAX sink, 24 VAC/VDC MAX pull-up voltage
  - Max pulse/min: 300
  - Hysteresis: User selectable

### Environmental

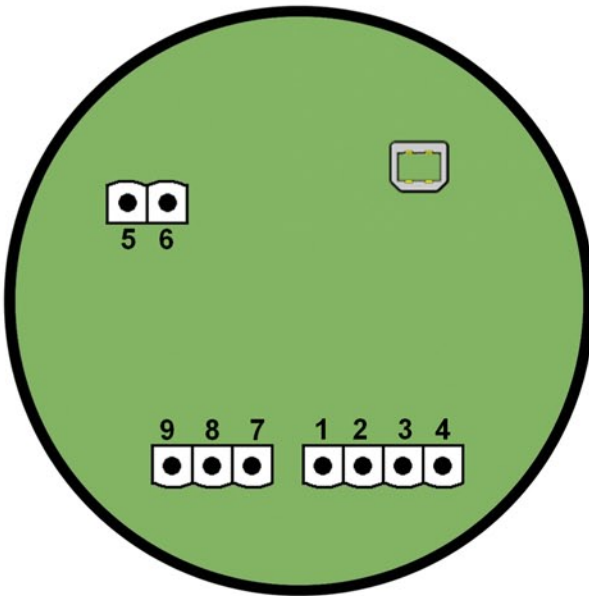
- Operating temperature: -20 to +70°C (-4 to 158°F)
- Storage temperature: -30 to +80°C (-22 to 176°F)
- Relative humidity: 0 to 95% not condensing

### Standards & Approvals

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

## WIRING CONNECTIONS

### Rear Terminal View



1	+ VDC
2	+ LOOP
3	- LOOP
4	- VDC

SENSOR	
7	GND
8	IN
9	V+

SSR	
5	NO
6	COM



## ORDERING DATA

### M9.00 Flow Monitors

Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Weight (gr.)
M9.00.P1	Panel mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	500
M9.00.W1	Wall mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	550
M9.00.W2	Wall mount Flow Monitor	110 - 230 VAC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	650

### M9.00 Flow Monitors Field mount

Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Lenght	Main Wetted Materials	Weight (gr.)
M9.00.01	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L0	PVCC/EPDM	550
M9.00.02	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L0	PVCC/FPM	550
M9.00.03	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L1	PVCC/EPDM	550
M9.00.04	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L1	PVCC/FPM	550
M9.00.05	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L0	PVDF/EPDM	550
M9.00.06	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L0	PVDF/FPM	550
M9.00.07	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1* (4-20mA), 1*(S.S.R.)	L1	PVDF/EPDM	550
M9.00.08	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	PVDF/FPM	550
M9.00.09	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L0	SS316L/EPDM	600
M9.00.10	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L0	SS316L/FPM	600
M9.00.11	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	SS316L/EPDM	600
M9.00.12	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	SS316L/FPM	600
M9.00.13	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L0	BRASS/EPDM	600
M9.00.14	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L0	BRASS/FPM	600
M9.00.15	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	BRASS/EPDM	600
M9.00.16	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	BRASS/FPM	600

