

# FLS M9.00

## 2-WIRES FLOW MONITOR & TRANSMITTER



The new FLS M9.00 is a powerful flow monitor and transmitter 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. M9.00 is equipped with a USB port which allows a easy updating of instrument software by customer.

### 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
- USB port for software updating



# TECHNICAL DATA

## General

- Associated flow sensor: FLS hall effect paddlewheel (freq. output), FLS reed ULF
- 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%

- User selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
- Optically isolated, 50 mA MAX sink, 24 VAC/VDC MAX pull-up voltage
- Max pulse/min: 300
- Hysteresis: User selectable

## Environmental

- Operating temperature: -10 to +70°C (+14 to +158° F)
- Storage temperature: -30 to +80°C (-22 to 176°F)
- Relative humidity: 0 to 95% not condensing

## Standards & Approvals

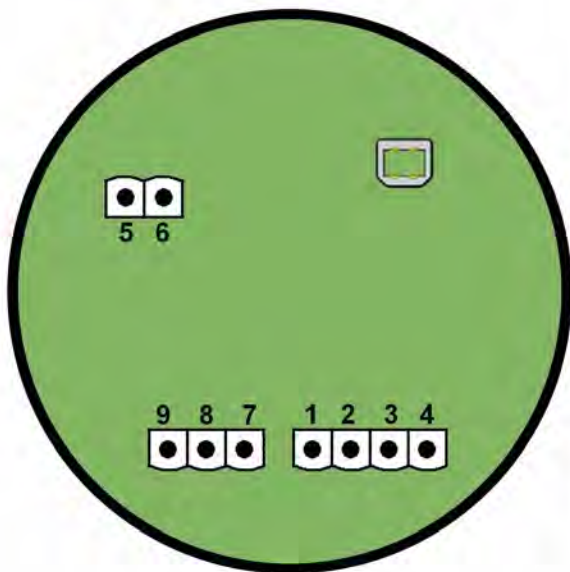
- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- EAC
- FDA on request for paddlewheel in C-PVC/EPDM, PVDF/EPDM, SS316L/EPDM.

## Electrical

- Supply Voltage: 12 to 24 VDC ± 10% regulated
- Max Power Consumption: <20mA (Backlight OFF); <30mA (Backlight ON)
- Backlight is available with power supply >= 12 VDC
- FLS hall effect flow Sensor power:
  - 3,8 VDC @ < 20 mA
  - Optically isolated from current loop
  - Short circuit protected
- 1\*Current output (Not available with backlight ON):
  - 4...20 mA, isolated, fully adjustable and reversible
  - Max loop impedance: 150Ω @ 12 VDC, 600Ω @ 24 VDC
- Solid-State relay output:

# 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 2-Wires Flow Monitor and Transmitter						
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 2-Wires Flow Monitor and Transmitter 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	C-PVCEPDM	550
M9.00.02	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L0	C-PVC/FPM	550
M9.00.03	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	C-PVC/EPDM	550
M9.00.04	Field mount Flow Monitor	12 - 24 VDC	2 wire	Flow (Frequency)	1*(4-20mA), 1*(S.S.R.)	L1	C-PVC/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