

FLS M9.03

DUAL-PARAMETER FLOW MONITOR AND TRANSMITTER



The new FLS M9.03 is a powerful dual flow monitor designed to convert the frequency signals of FLS flow sensors into flow rates. M9.03 is equipped with a 4" wide full graphic display which shows measured values clearly and a lot of other useful information. Moreover, due to a multicolor backlight, measurement status can be determined easily from afar also. A tutorial software guarantees a mistake-proof and fast set up of every parameters. Calibrations can be performed just fixing installation features or using a reference value through a new "in-line calibration". Two 4-20mA output are available to remote each flow rate to an external device. A proper combination of digital outputs allows customized setups for any process to be controlled. The USB port on the rear part allows the upgrade of software offering a wide range of customization services both standard and on request.

APPLICATIONS

- Water treatment systems
- Industrial waste water treatment and recovery
- Water distribution
- Filtration systems
- Swimming pools & SPA
- Irrigation & Fertigation
- Leak detection
- Cooling water monitoring
- Processing and manufacturing industry
- Chemical production

MAIN FEATURES

- Wide full graphic display
- Multicolor backlight
- Help on board
- Delta flow rates visualization
- Fast, intuitive and mistake-proof calibration software
- Mechanical relays for external device control
- Solid State Relays for programmable alarms
- Multilanguage menu
- USB port for software upgrading



TECHNICAL DATA

General

- Associated sensors: 2*FLS hall effect flow sensors with frequency output or FLS F6.60 flow magmeters
- Materials:
 - case: ABS
 - display window: PC
 - panel & wall gasket: silicone rubber
 - keypad: 5-button silicone rubber
- Display:
 - LC full graphic display
 - backlight version: 3-colours
 - backlight activation: User adjustable with 5 levels of timing
 - update rate: 1 second
 - enclosure: IP65 front
- Flow input range (frequency): 0÷1500Hz
- Flow input accuracy (frequency): 0,5%

Electrical

- Supply Voltage: 12 to 24 VDC ± 10% regulated
- Max Power Consumption: <300mA
- FLS hall effect flow Sensor power:
 - 5 VDC @ < 20 mA
 - optically isolated from current loop
 - short circuit protected
- 2*Current output:
 - 4-20 mA, isolated, fully adjustable and reversible
 - max loop impedance: 800 Ω @ 24 VDC - 250 Ω @ 12 VDC
- 2*Solid State Relay output:
 - user selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
 - optically isolated, 50 mA MAX sink, 24 VDC MAX pull-up voltage
 - max pulse/min: 300

- hysteresis: user selectable
- 2*Relay output:
 - user selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
 - mechanical SPDT contact
 - expected mechanical life (min. operations): 10⁷
 - expected electrical life (min. operations): 10⁵ N.O./N.C.switching capacity 5A/240VAC
 - max pulse/min: 60
 - hysteresis: User selectable

Environmental

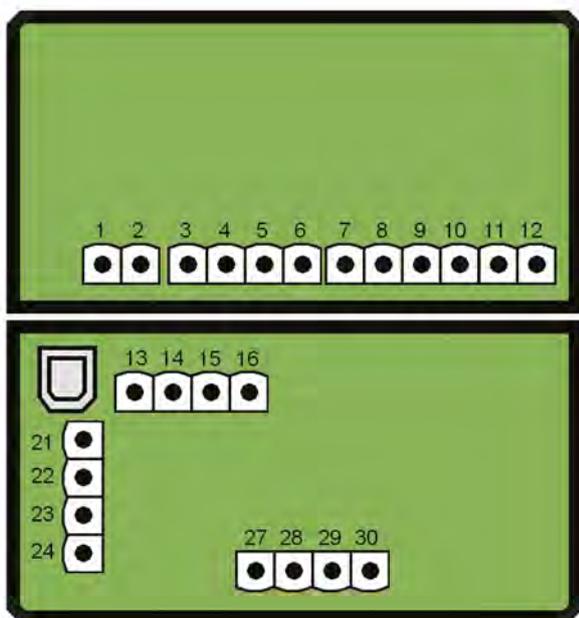
- Operating temperature: -10 to +70°C (+14 to +158°F)
- Storage temperature: -30 to +80°C (+14 to +158°F)
- Relative humidity: 0 to 95% not condensing

Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- EAC

WIRING CONNECTIONS

Rear Terminal View



1	-VDC	Power Supply
2	+VDC	
3	NO	SSR1
4	COM	
5	NO	SSR2
6	COM	
7	NO	RELAY1
8	COM	
9	NC	RELAY2
10	NO	
11	COM	
12	NC	
13	+V	Flow Sensor 2
14	FREQ IN	
15	DIR	
16	GND	
21	-LOOP2	Analog Output
22	+LOOP2	
23	-LOOP1	
24	+LOOP1	
27	+V	Flow Sensor 1
28	FREQ IN	
29	DIR	
30	GND	

ORDERING DATA

M9.03 Dual Flow Monitor and Transmitter						
Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Weight (gr.)
M9.03.P1	Panel mount Dual Flow Monitor	12 - 24 VDC	3/4 wire	2 * Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	550
M9.03.W1	Wall mount Dual Flow Monitor	12 - 24 VDC	3/4 wire	2 * Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	650
M9.03.W2	Wall mount Dual Flow Monitor	110 - 230 VAC	3/4 wire	2 * Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	750