

FLS M9.10

DUAL-PARAMETER ANALOG MONITOR & TRANSMITTER



The new FLS M9.10 is a powerful monitor and transmitter designed to manage analog and frequency signals (or two analog signals) from every types of device which provide a 4-20mA or a frequency output. M9.10 is equipped with a wide full graphic display 4" which shows measured values clearly and a lot of other useful information. Moreover, due to a multicolor display plus a powerful backlight, measurement status can be determined easily from afar also. A tutorial software guarantees a mistake-proof and fast set up of every parameters. Calibration of 4-20mA input can be performed just fixing 2 points as well as 1 point or using a reference value through a new "in-line calibration". Calibration of frequency input can be performed just fixing installation features or using a reference value through a new "in-line calibration". Two independent 4-20mA outputs are available to remote measures to external devices. A proper combination of digital outputs (2*SSR and 2*relays) 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

- Industrial waste water treatment
- Civil waste water treatment
- Water treatment processes
- Processing and Manufacturing industry
- Chemical processing
- Industrial environment with electromagnetic interferences

MAIN FEATURES

- Wide graphic display
- Multicolor backlight
- Help on board
- Simultaneous visualization of two parameters
- Free setting of engineering unit
- Intuitive calibration procedure
- In line adjustment
- Able to handle active and passive analog signal
- USB port for software upgrading



TECHNICAL DATA

General

- Associated sensors: FLS hall effect flow sensors with frequency output, FLS F6.60 Flow sensor magmeters and all devices which generate a passive or active 4-20mA signal.
- 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
- Frequency input range (frequency): 0÷1000Hz
- Frequency accuracy (frequency): 0,5%
- Analog input range (frequency): 3,8÷21,0mA
- Analog input accuracy (frequency): 0,01mA

Electrical

- Supply Voltage: 12 to 24 VDC $\pm$ 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 input power:
 - 18VDC @ $\leq$ 20mA
- 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 (only for frequency input), 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 (only for frequency input), Window alarm, Off
 - Mechanical SPDT contact
 - Expected mechanical life (min. operations): 10^7
 - Expected electrical life (min. operations): 10^5 N.O./N.C. switching capacity 5A/240VAC
 - Max pulse/min: 60
 - Hysteresis: User selectable

Environmental

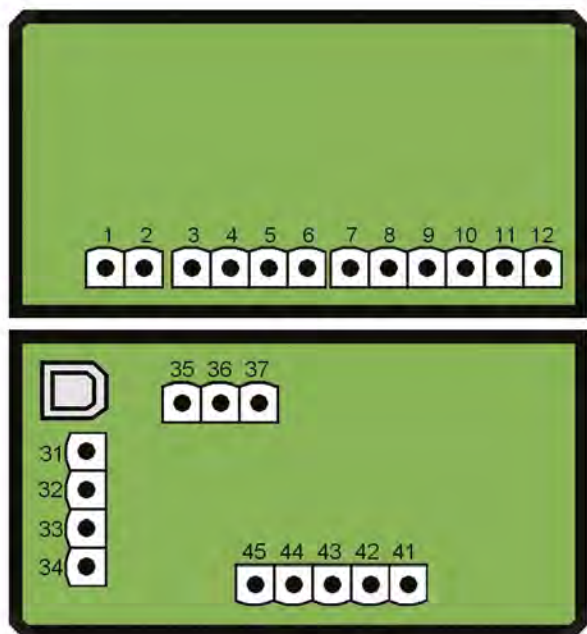
- Operating temperature: -10 to +70°C (+14 to +158°F)
- Storage temperature: -30 to +80°C (-22 to +176°F)
- Relative humidity: 0 to 95% not condensing

Standards & Approvals

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

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	RELAY2
12	NC	
31	-LOOP2	Analog Output
32	+LOOP2	
33	-LOOP1	
34	+LOOP1	
35	+ V	FREQ. Input
36	FREQ.	
37	GND	
41	+ V IN 1	Current Input
42	IN 1	
43	+ V IN 2	
44	IN 2	
45	GND	

ORDERING DATA

M9.10 Dual Analog Monitor and Transmitter						
Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Weight (gr.)
M9.10.P1	Panel mount Dual Analog monitor	12 - 24 VDC	3/4 wire	2 * 4-20mA	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	550
M9.10.W1	Wall mount Dual Analog monitor	12 - 24 VDC	3/4 wire	2 * 4-20mA	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	650
M9.10.W2	Wall mount Dual Analog monitor	110 - 230 VAC	3/4 wire	2 * 4-20mA	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	750