

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 x SSR and 2 x relays) allows customized setups for any process to be controlled.

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



TECHNICAL DATA



General

- Associated sensors: FLS hall effect flow sensors with frequency output, FLS F6.60 Flow sensor magmeters and every 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

2 x 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 x 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): 10⁷
- Expected electrical life (min. operations): 10⁵ N.O./N.C. switching capacity 5A/240VAC
- Max pulse/min: 60
- Hysteresis: User selectable

Electrical

- Supply Voltage: 12 to 24 VDC ± 10% regulated
- FLS hall effect flow Sensor power:
 - 5 VDC @ < 20 mA
 - Optically isolated from current loop
 - Short circuit protected
- 2 x Current input power:
 - 18VDC @ ≤ 20mA
- 2 x Current output:
 - 4-20 mA, isolated, fully adjustable and reversible
 - Max loop impedance: 800 Ω @ 24 VDC - 250 Ω @ 12 VDC

Environmental

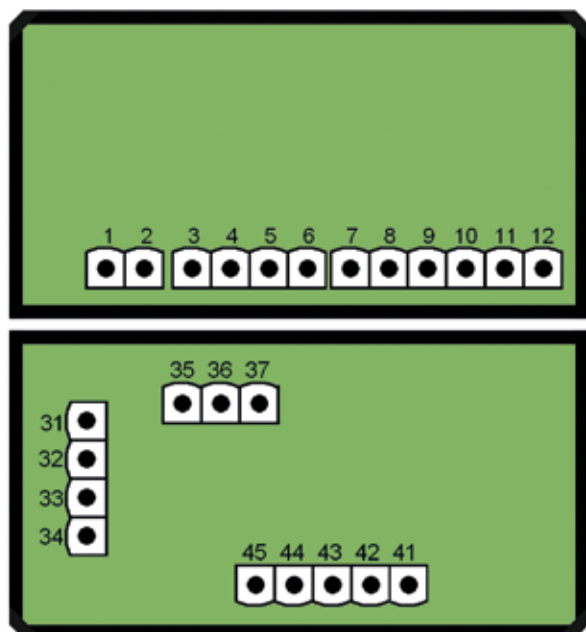
- Operating temperature: -20 to +70°C (-4 to 158°F)
- Storage temperature: -30 to +80°C (-22 to 176°F)
- Relative humidity: 0 to 95% not condensing

Standards & Approvals

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

WIRING CONNECTIONS

Rear Terminal View



| | | |
|----|----------|---------------|
| 1 | -VDC | 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 | |
| 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-Parameter Analog Monitor and Transmitter | | | | | | |
|---|---|---------------|-----------------------|--------------|---|--------------|
| Part No. | Description /Name | Power supply | Wire power Technology | Sensor Input | Output | Weight (gr.) |
| M9.10.P1 | Panel mount Dual Parameter Analog monitor & transmitter | 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-Parameter Analog monitor & transmitter | 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-Parameter Analog monitor & transmitter | 110 - 230 VAC | 3/4 wire | 2 * 4-20mA | 2*(4-20mA), 2*(S.S.R.), 2*(mech. relay) | 750 |