

# FLS M9.08

## DUAL-PARAMETER PH/ORP AND FLOW MONITOR



The new FLS M9.08 is a dual monitor which combines pH/ORP and flow measurements. A wide full graphic display 4" 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 settings. Different type of calibrations can be performed to fit user needs for both measurements. A 4-20mA output dedicated to each measurement grants to remote values to a external device. A proper combination of digital outputs allows customized setups for any process to be controlled.

### APPLICATIONS

- Water treatment and regeneration
- Industrial waste water treatment and recovery
- Scrubber control
- Neutralization systems
- Heavy metals recovery
- Metal surface coating
- Processing and manufacturing industry
- Chemical production
- Swimming pools and SPA

### MAIN FEATURES

- Wide graphic display
- Multicolor backlight visualization
- Help on board
- Simultaneous measurement of pH/ORP and flow
- Intuitive calibration procedures
- Mechanical relay for external device control
- Solid State Relays for programmable alarms
- Multilanguages menu



## TECHNICAL DATA

### General

- Associated sensors: FLS pH/ORP sensors & FLS hall effect flow sensors with frequency output or FLS F6.60 family sensors
- Materials:
  - case: ABS
  - display window: PC
  - panel & Wall gasket: silicone rubber
  - keypad: 5-button silicone rubber
- Display:
  - backlight version: 3-colours
  - backlight activation: User adjustable with 5 levels of timing
  - update rate: 1 second
- enclosure: IP65 front
- pH input range: -2÷16pH
- pH measurement resolution: ± 0.01 pH
- ORP input range: -2000÷ +2000mV
- ORP measurement resolution: ± 1 mV
- Temperature input range: -50÷150°C (-58÷302°F) (with Pt100-Pt1000)
- Temperature measurement resolution: 0,1°C/°F (Pt1000); 0,5°C/°F (Pt100)
- Flow input range (frequency): 0÷1500Hz
- Flow input accuracy (frequency): 0,5%

### 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 output:
  - 4-20 mA, isolated, fully adjustable and reversible
  - max loop impedance: 1000 Ω @ 24 VDC

- 2 x Solid State Relay output:
  - (Flow) user selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
  - (pH/ORP) user selectable as ON-OFF, Proportional frequency output, Timed Pulse, Off
  - optically isolated, 50 mA MAX sink, 24 VDC MAX pull-up voltage
  - max pulse/min: 300
  - hysteresis: User selectable
- 2 x Relay output:
  - (Flow) user selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
  - (pH/ORP) user selectable as ON-OFF, Proportional frequency output, Timed Pulse, Off
  - mechanical SPDT contact
  - expected mechanical life (min. operations): 10<sup>7</sup>
  - expected electrical life (min. operations): 10<sup>5</sup> N.O./N.C. switching capacity 5A/240VAC
  - max pulse/min: 60
  - hysteresis: user selectable

### Environmental

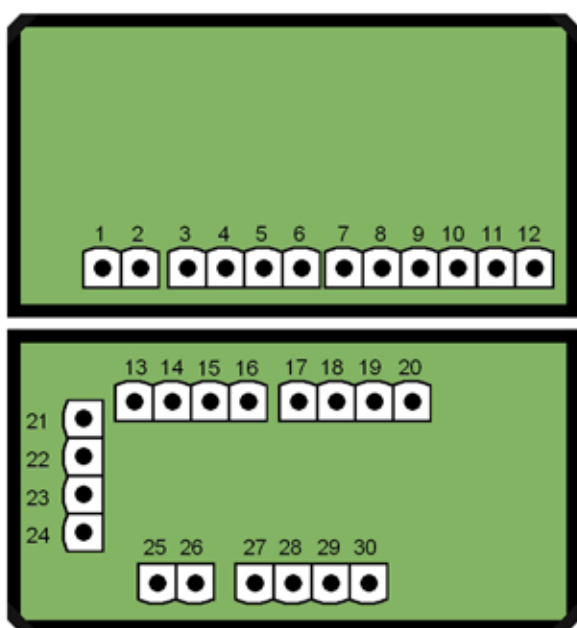
- Operating temperature: -20 to +70°C (-4 to 158°F)
- Storage temperature: -30 to +80°C (-22 to 176°F)
- Relative humidity: 0 to 95% not condensing

### Standards & Approvals

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

## WIRING CONNECTIONS

### Rear Terminal View



1	-VDC	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
14	FREQ IN	
15	DIR	
16	GND	
17	+HOLD	Digital Input
18	-HOLD	
19	+REED	
20	-REED	
21	-LOOP2	Analog Output
22	+LOOP2	
23	-LOOP1	
24	+LOOP1	
25	IN+	pH/ORP Input
26		
27	REF	PT100 - PT1000
28		
29		
30		

## ORDERING DATA

M9.08 pH/ORP & Flow Monitors						
Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Weight (gr.)
M9.08.P1	Panel mount pH/ORP & Flow monitor	12 - 24 VDC	3/4 wire	pH/ORP, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	550
M9.08.W1	Wall mount pH/ORP & Flow monitor	12 - 24 VDC	3/4 wire	pH/ORP, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	650
M9.08.W2	Wall mount pH/ORP & Flow monitor	110 - 230 VAC	3/4 wire	pH/ORP, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	750