(주)엠씨마스터스
MC Masters
Measurement & Control

FLS M9.07

DUAL-PARAMETER CONDUCTIVITY AND FLOW MONITOR & TRANSMITTER

The new FLS M9.07 is a dual monitor and transmitter which combines conductivity and flow measurements. A 4” wide full graphic display shows measured values clearly together with many 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. 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
- Softener process
- Filtration systems
- Desalination process
- Demineralized water production
- Reverse osmosis process
- Cooling water monitoring
- Processing and manufacturing industry
- Chemical production

MAIN FEATURES

- Wide full graphic display
- Multicolor backlight
- Help on board
- Simultaneous measurement of conductivity, temperature and flow
- Fast, intuitive and mistake-proof calibration software
- Mechanical relay for external device control
- Solid State Relays for programmable alarms
- Multilanguage menus

TECHNICAL DATA

General

• Associated sensors: FLS conductivity/temperature sensors & FLS hall effect flow sensors or FLS F6.60 Flow sensor magmeters
• Materials:
- case: ABS
- display window: PC
- panel & wall gasket: silicone rubber
- keypad: 5-button silicone rubber
• Display:
- LC full graphic disply
- backlight version: 3-colours
- backlight activation: User adjustable with 5 levels of timing
- update rate: 1 second
- enclosure: IP65 front
• Conductivity input range: 0,055÷200000µS
• Conductivity measurement accuracy: ± 2.0 % of reading value
• 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: 800 Ω @ 24 VDC - 250 Ω @ 12 VDC
• 2 x Solid State Relay output:
- (Flow) user selectable as MIN alarm, MAX alarm, Pulse Out, Window alarm, Off
- (Conductivity) 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
- (Conductivity) user selectable as ON-OFF, Proportional frequency output, Timed Pulse, 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

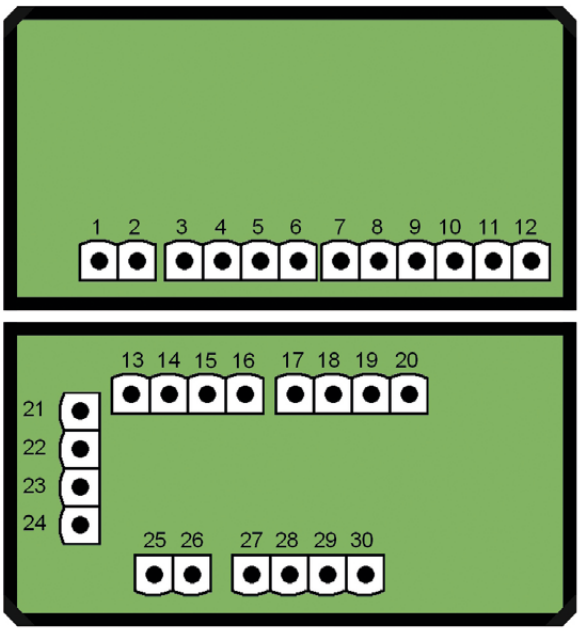
• Operating temperature: -20 to +70°C (-4 to 158°F)
• Storage temperature: -30 to +80°C (-22 to 176°F)
• Relative humidity: 0 to 95% not condensing

Standards & Approvals

• Manufactured under ISO 9001
• Manufactured under ISO 14001
• CE
• RoHS Compliant
• 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	
10	NO	RELAY2
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	Conductivity Sensor
26	REF	
27		PT100 - PT1000
28		
29		
30		

ORDERING DATA

M9.07 Dual-Parameter Conductivity and Flow Monitor and Transmitter						
Part No.	Description /Name	Power supply	Wire power Technology	Sensor Input	Output	Weight (gr.)
M9.07.P1	Panel mount Conductivity & Flow monitor	12 - 24 VDC	3/4 wire	Conductivity, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	550
M9.07.W1	Wall mount Conductivity & Flow monitor	12 - 24 VDC	3/4 wire	Conductivity, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	650
M9.07.W2	Wall mount Conductivity & Flow monitor	110 - 230 VAC	3/4 wire	Conductivity, Temperature, Flow (Frequency)	2*(4-20mA), 2*(S.S.R.), 2*(mech. relay)	750