FLS M9.02

Flow monitor and transmitter

aliaxis

FLS M9.02

FLS M9.02 is an extremely efficient flow monitor and is designed to convert the frequency signal of flow sensors into flow rate. The M9.02 monitor is equipped with a large 4" graphic display which shows measured values clearly and a lot of other useful information. Moreover, due to a multicolour display plus a powerful backlight, measurement status can be determined easily from afar too. A tutorial software guarantees a mistake-proof and fast set up of every parameter. Calibration can be performed by indicating the installation features or using a reference value through a new "in-line calibration". A 4-20mA output is available to communicate the flow rate to an external remote device. Appropriate combination of digital outputs allows customised setups for any process to be controlled. The USB port on the back allows you to update the software with a wide range of customisation services as standard and on-demand.

FLOW MONITOR AND TRANSMITTER

APPLICATIONS

- Water treatment plants
- Industrial wastewater treatment and recovery
- Water distribution networks
- Filtration systems
- Swimming pools and spas
- Irrigation and fertilization
- Leak detection
- Cooling monitoring
- Processing and manufacturing industry
- Chemical production

MAIN CHARACTERISTICS

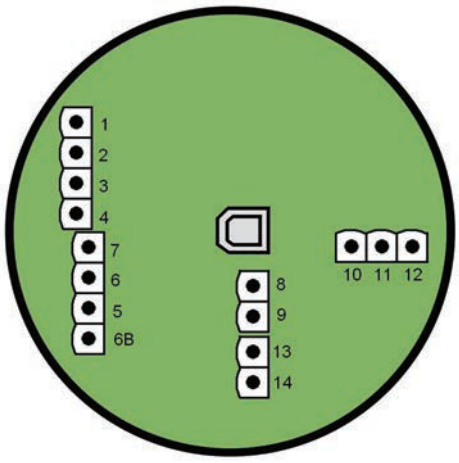
- Large graphic display
- Colour backlighting
- On-line help
- Installation flexibility
- Simple, user-friendly and error-proof calibration software
- Mechanical relay and solid state relay for external alarms and for the control of external devices
- Multilingual menu
- USB port for software upgrade

TECHNICAL DATA	
General information	**Compatible sensors**: Hall - effect flow sensors with frequency output or FLS F6.60 electromagnetic flow sensors
	Materials: – Case: ABS – Display: PC – Panel and wall gasket: silicone rubber – 5-button keyboard: silicone rubber
	Display: – Full graphic LCD – Backlight version:3-colours – Backlighting activation: User adjustable with 5 levels of timing – Update rate: 1 second – Protection class: IP65 front
	Flow input range (frequency): 0÷1500Hz
	Flow input accuracy (frequency): 0.5%

Electrical data	**Supply voltage:** from 12 to 24 VDC ±10% regulated
	Max electrical consumption: < 200 mA
	Hall effect flow sensor power supply: – 5 VDC a < 20 mA – Optically isolated from current loop – Short circuit protected
	1 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 outputs: – User selectable as MIN alarm, MAX alarm, pulse output, window alarm, off – Optically isolated, 50 mA max sink, 24 VDC max pull-up voltage – Max pulse/min: 300 – Hysteresis: user selectable
	1 relay output: – User selectable as MIN alarm, MAX alarm, pulse output, window alarm, off – Mechanical SPDT contact – Expected mechanical life (min. operations): 10^7 – Expected electrical life (min. operations): 10^5 switching N.A./N.C. capacity 5 A/240 VAC – Max pulse/min: 60 – Hysteresis: user selectable
Environmental data	**Operating temperature:** from –10 °C to 70 °C (from 14°F to 158 °F)
	Storage temperature: from -30°C to +80°C (from -22°F to +176°F)
	Relative humidity: from 0 to 95% not condensing
Standards & Approvals	Manufactured under ISO 9001 Manufactured under ISO 14001 CE RoHS Compliance EAC

ELECTRICAL CONNECTIONS

Rear view of electrical connections



1	+VDC	Power Supply
2	+LOOP	
3	-LOOP	
4	-VDC	
7	V+	Flow Sensor
6	FREQ IN	
5	GND	
6B	DIR	
8	NO	SSR1
9	COM	
10	NC	RELAY
11	COM	
12	NO	
13	NO	SSR2
14	COM	

PRODUCT CODES

M9.02.PX - M9.02.WX

Flow Monitor and Transmitter

Code	Mounting	Power supply	wires power Technology	Sensor Input	Output	Weight (gr.)
M9.02.P1	Panel	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	500
M9.02.W1	Wall	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	550
M9.02.W2	Wall	110 - 230 VAC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	650

S.S.R: solid state relay / mech relay.: mechanical relay

M9.02.XX

Flow Monitor and Transmitter Field mount

Code	Power supply	wires power Technology	Sensor Input	Output	Length	Main Wetted Materials	Weight (gr.)
M9.02.01	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	C-PVC EPDM	550
M9.02.02	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	C-PVC FKM	550
M9.02.03	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	C-PVC EPDM	550
M9.02.04	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	C-PVC FKM	550
M9.02.05	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	PVDF EPDM	550
M9.02.06	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	PVDF FKM	550
M9.02.07	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	PVDF EPDM	550
M9.02.08	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	PVDF FKM	550
M9.02.09	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	316L SS EPDM	600
M9.02.10	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L0	316L SS FKM	600
M9.02.11	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	316L SS EPDM	600
M9.02.12	12 - 24 VDC	3/4 wires	Flow (Frequency)	1* (4-20 mA) 2* (S.S.R.) 1* (mech. relay)	L1	316L SS FKM	600

S.S.R: solid state relay / mech relay.: mechanical relay