

# FLS M9.45



Conductivity Monitor and Transmitter  
with Modbus communication



# FLS M9.45

The FLS M9.45 is a high-performance device designed for industrial and water treatment applications, including ultrapure water production. Integration of the Modbus protocol ensures real-time data access and reliable connectivity, enabling advanced monitoring and optimized process control.

The large 4" graphic display with high-brightness backlight provides clear readings even from a distance, showing conductivity, resistivity, or TDS according to requirements.

The freely configurable cell constant allows the use of any 2-cell conductivity probe, ensuring maximum flexibility.

The 4-20 mA analog output enables data transmission to remote systems, while the digital SSR output allows fast and reliable activation of high and low alarms, ensuring process protection and safety.

## CONDUCTIVITY MONITOR AND TRANSMITTER WITH MODBUS COMMUNICATION

### APPLICATIONS

- Water treatment and regeneration
- Industrial wastewater treatment and recovery
- Softening
- Filtration systems
- Desalination
- Production of demineralised water
- Reverse osmosis/EDI
- Cooling monitoring
- Processing and manufacturing industry
- Chemical production

### MAIN CHARACTERISTICS

- Large graphic display with backlight
- Temperature compensation dedicated to the production and use of ultrapure water (UPW)
- Freely settable cell constant
- Values in conductivity, resistivity, TDS
- Modbus RTU communication (RS485)

### TECHNICAL DATA

#### General information

**Compatible sensors:** conductivity sensors and temperature sensors

#### Materials:

- Case: ABS
- Display: PC
- Panel and wall gasket: silicone rubber
- 5-button keyboard: silicone rubber

#### Display:

- Transflective technology
- Update rate: 1 second
- Protection class: IP65 front

**Conductivity input range:** 0.055÷200000 µS/cm (according to the applied cell constant)

**Conductivity measurement accuracy:** ±2.0% of reading value

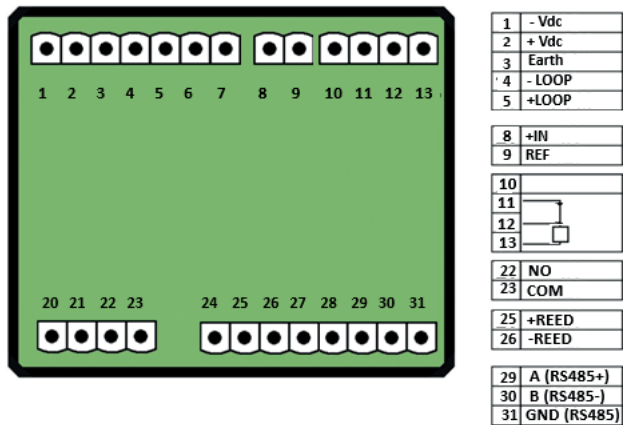
**Temperature input range:** 0÷100 °C, 32÷212 °F (with Pt100-Pt1000)

**Temperature measurement resolution:** 0.1°C/°F (Pt1000); 0.5°C/°F (Pt100)

<b>Electrical data</b>	<b>Supply voltage:</b> from 12 to 24 VDC $\pm 10\%$ regulated
	<b>Max electrical consumption:</b> < 300 mA
<b>Environmental data</b>	<b>1 current output:</b> – 4–20 mA, isolated, fully adjustable and reversible – Max loop impedance: 800 $\Omega$ @ 24 VDC – 250 $\Omega$ @ 12 VDC
	<b>1 solid state relay output:</b> – User settable as MIN–MAX alarm – Optically isolated, 50 mA max sink, 24VDC pull-up voltage – Hysteresis: user selectable
	<b>1 Modbus RTU:</b> – RS485 Serial Communications
	<b>Operating temperature:</b> from $-10^{\circ}\text{C}$ to $70^{\circ}\text{C}$ (from $14^{\circ}\text{F}$ to $158^{\circ}\text{F}$ ) <b>Storage temperature:</b> from $-30^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ (from $-22^{\circ}\text{F}$ to $+176^{\circ}\text{F}$ ) <b>Relative humidity:</b> from 0 to 95% not condensing
<b>Standards &amp; Approvals</b>	Manufactured under ISO 9001 Manufactured under ISO 14001 CE RoHS Compliance EAC

## ELECTRICAL CONNECTIONS

Rear view of electrical connections



# PRODUCT CODES



## M9.45.PX - M9.45.WX

Conductivity Monitor and Transmitter with Modbus communication

Code	Mounting	Power supply	wires power Technology	Sensor Input	Modbus RTU	Output	Weight (gr.)
M9.45.P1	Panel	12 - 24 VDC	3/4 wires	Conductivity Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	550
M9.45.W1	Wall	12 - 24 VDC	3/4 wires	Conductivity Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	650
M9.45.W2	Wall	110 - 230 VAC	3/4 wires	Conductivity Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	750