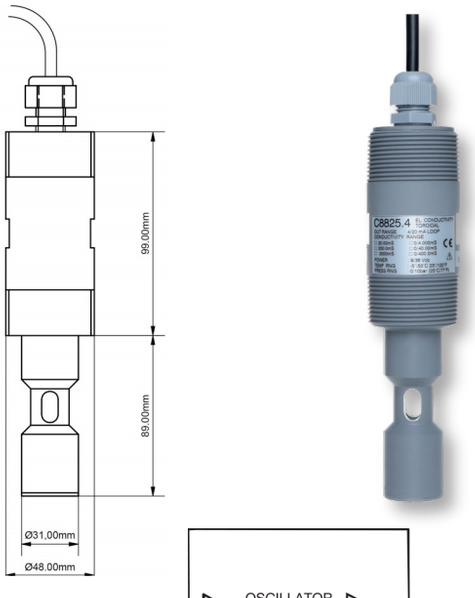
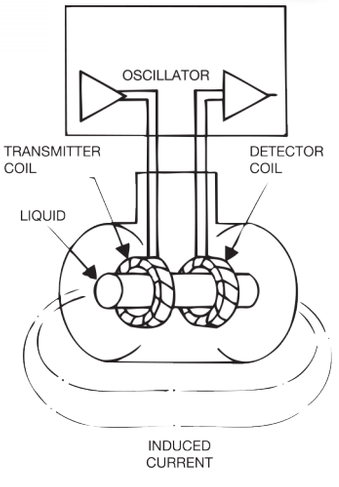
C 8825.4

Electrodeless 4-20 mA Loop Conductivity Sensor with RS485 - Modbus RTU

This sensor measures electrical conductivity and TDS using the inductive method. Thanks to the analog and digital outputs, the sensor can be connected to the most common PLC's or data acquisition boards. MC 6587 and MC 7687 multi-channel controllers allow complete management of up to three sensors, displaying the measurements and the messages that guide calibration and configuration.





Measuring Method

The electodeless conductivity sensor consists of two windings on toroidal coils, placed side by side, embedded in a plastic material and therefore not in contact with the sample. A through hole allows the solution to close an imaginary electrical circuit around them. An alternating voltage is applied to the transmitter coil while a current proportional to the conductivity of the sample is measured on the detector coil. The TDS value is calculated by applying a programmable conversion factor.

Technical Specifications

Conductivity scale	0/4.000-0/40.00-0/400.0 mS e 0/20.00-0/200.0-0.2000 mS
TDS scales	0/2.000-0/20.00-0.200.0 ppt e 0/10.00-0/100.0-0/1000 ppt
TDS/EC factor	0.450/1.000 1/S
Scalability factor 4/20 mA	10/100%
Sensitivity	60/160%
Zero	± 10% of the full-scale
Resolution	1 digit
Temperature limit	-5/+50 °C
Reference temperature	20/25 °C
Temperature coefficient	0.00/3.50 %/ °C
Power supply	9/36 Vdc
Current loop	4/20 mA isolated
Load	600 Ohm max. a 24 Vdc
Digital output	RS 485 isolated
Protocols	B&C ASCII and Modbus RTU (03, 06, 16 functions)
Baud rate	2400 / 4800 / 9600 / 19200 baud
Operating temperature	60 °C
Operating relative humidity	95% without condensation
Operating pressure	10 bar at 25 °C / 5 bar at 50 °C
Dimensions	L = 165 mm, D = 60 mm
Thread/connection	1.5" MNPT
Body	PVC-C
Weight	Body 520 g, cable 640 g
Cable	10 m (100 m max.), PVC sheath
Protection	IP 68
EMC/RFI conformity	EN 61326-2-3/2013 - EN55011/2009