SOFREL OpenSensor High Power

OVERFLOWS CONTROL, FLOW MEASUREMENT BY ULTRASOUND PROBE AND WASTE WATER QUALITY MONITORING

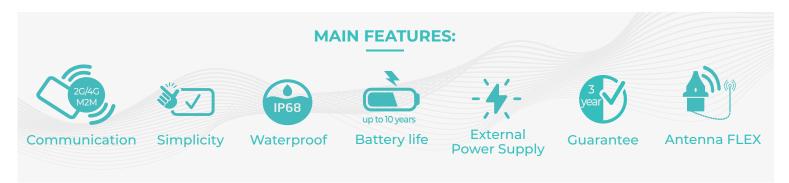### USES & BENEFITS

- **Regulatory self-monitoring**
- **Continuous diagnostics**
- **Rain gauge**
- **Physico-chemical measurements**
- **Velocity measurement**

PRODUCT FEATURES

- Integrated ultrasound probe
- Enhanced IP68 waterproof rating
- Battery powered or external power supply*:
  (Photovoltaic cell, mains power, micro-turbine or battery kit)
- Integrated high performance 2G/4G M2M internal antenna and versatil (external) antenna port activated
- On-site access to the SIM card and battery
- RS485 link to directly read Modbus sensor registers
- Remote powering of Modbus sensors up to 2w cumulated
- 3-year manufacturer guarantee

EASE OF USE

- On-site communication and exploitation via Bluetooth link
- Open to supervisory control software and third-party applications of major water operators
- Specific communication protocol guaranteeing data availability
- Simplified data exploitation via the SOFREL WEB LS IoT platform

MAIN FEATURES:

Communication	Simplicity	Waterproof	Battery life	External Power Supply	Guarantee	Antenna FLEX
2G/4G M2M		IP68	up to 10 years		3 year	

* Optional

LACROIX

Technical and functional characteristics

GENERAL FEATURES:

Mechanical design	Screwless opening system for easy access to the SIM card and battery
Dimensions	H 261 x W 155 mm
Weight	1,1 kg
Operating temperature	-20°c to +55°c
Storage temperature	-25°c to +70°c
Watertightness	Enhanced IP68 certification (30 days under 4 meters of water)
Power supply	Powered by an internal lithium battery or by an external source* (photovoltaic cell, main power, micro turbine, or battery kit) - Input voltage: 5-30 VDC - Power supply: 3 W - Inrush current: 3 A)
Connector types	Military-grade hermetic connector

DATA LOGGER INPUTS:

RS485	RS-485 Modbus RTU link Periodic acquisition of 14 registers spread over 8 inputs Remote powering of 5 V and 12 V equipment up to 2 W Transmission speed from 1200 Bauds to 19200 Bauds Detection of sensor liaison faults
DI (Digital Input)	2 digital inputs for standard metering, signalling and overflow sensors Maximum frequency: 250 Hz - Minimum pulse time: 2 ms - Maximum polarisation: 3.3 V/ Current: 15µA
AI (Analog Input)	1 analog input for SOFREL pressure sensors or remote powering of third-party sensors Remote powering of third-party sensors via 4-20 mA loop, 12 V or 20 V - Sampler control
US (Ultrasound probe)	1 Ultrasound probe for level measurement, 0-3 meters - Dead band: 17 cm - Accuracy: +/- 3 mm Resolution: 1 mm - Measurement cone: 8° - Cable length: 5 or 10 m

COMMUNICATION:

2G/4G M2M quad-band modem	4G LTE-M: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 4G NB-IoT: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85 Quad-band GSM/GPRS/EDGE (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)
Supported SIM cards	Standard SIM cards (Nano and Micro SIM cards can be installed via adapter)
Versatile antenna*	Cable of 4 or 8 meters, IP68-certified external antenna
Automatic data logger synchronisation	Daily synchronisation of the LS via the SCADA
Communication with 1 or 2 PCs	Periodic, programmed or event-based
Inter-sites communication to S500, S4W, YDRIX or AS	Periodic or event-driven (change of DI status or threshold exceedance)
Alert transmitted to mobile via SMS**	Upon change in DI state, exceeded threshold, sensor fault...

CONFIGURATION AND COMMISSIONING:

Bluetooth	Data logger configuration via Bluetooth link
Assistance with commissioning	4G M2M and 2G reception level measurement LEDs for visual diagnosis of operation and 4G M2M/2G signal
Assistance with maintenance	Remaining battery life calculator

ARCHIVING:

Local archiving capacity	100,000 data points
Primary and secondary archiving of DI, AI and US probe data	Event-based automatic changing of the archiving period (e.g. overflow)

PROCESSING:

Calculation	Includes two conversion tables for flow calculations Flow based on measured height - Daily volume linked to flow - Number of daily overflows

CERTIFICATIONS:

CE Certification	2014/53/UE "Radio equipment" 2014/30/UE "Electromagnetic compatibility" 2014/35/UE "Low voltage"
Enhanced IP68 certification	Extended immersion test (30 days under 4 meters of water) performed by an independent laboratory

STANDARD BATTERY LIFE:

2 counts and 1 pressure measurement every 15 minutes	10 years (Daily communication with the SCADA)
Height measurement every 5 minutes	2,5 years (Daily communication with the SCADA)
Height measurement every 15 minutes	4 years (Daily communication with the SCADA)

* Optional
** Depending on the activation of the telecom operator

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