SOFREL LT-US

OVERFLOW CONTROL AND FLOW MONITORING BY ULTRASOUND PROBE

USES & BENEFITS

- **Regulatory self-monitoring**
  - Overflows detection in Combined Services Overflows
  - Daily calculation of the number of overflows and their duration
  - Discharge volumes and flows monitoring
  - Autonomous sampler controls
- **Continuous diagnostics**
  - Ensure appropriate network sizing
  - Anticipate load development
  - Measure inputs from adjacent municipalities
  - Monitor industrial discharge into the system
  - Detect quantity of infiltration water
- **Rain gauge**
  - Calculate rainfall intensity
  - Compare rain gauge indications with the network operation
- **Water quality, Physico-chemical measurements**
  - Quality sensors management (conductivity, pH, Redox, ORP, etc.)

PRODUCT FEATURES

- Integrated ultrasound probe
- Enhanced IP68 waterproof rating
- Battery powered
- Integrated high performance 2G/4G M2M antenna
- Access to the SIM card and battery on site
- 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

Guarantee

Antenna FLEX

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 (200 days under 2 meters of water)
Power supply	Powered by an internal lithium battery
Connector types	Military-grade hermetic connector
DATA LOGGER INPUTS:	
DI (Digital Inputs)	2 digital inputs for standard metering, signalling and overflow sensors Maximum frequency: 250 Hz - Minimum pulse time: 2 ms Maximum polarisation voltage: 3.3 V - Maximum polarisation current: 15 µA
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 Controlling a sampler
US (Ultrasound probe)	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 (FLEX option)	4-meters, IP68-certified external antenna
Automatic data logger synchronisation	Daily synchronisation of the LT 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:	
Self-monitoring	Includes two conversion tables for flow calculations Flow calculation based on height measured via an analog input (AI) Daily calculation of volume linked to flow Calculation of the 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 (200 days under 2 meters of water) performed by an independent laboratory
STANDARD BATTERY LIFE:	
Height measurement every 5 minutes	6 years (Daily communication with the SCADA)
Height measurement every 15 minutes	10 years (Daily communication with the SCADA)

* Depending on the activation of the telecom operator

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