

# SOFREL LS-Flow

## REMOTE READING OF FLOW METERS AND DISTRICT METERING



### USES & BENEFITS

- **Remote reading of “major consumers” meters**
  - Monitor consumption levels
  - Detect consumption anomalies
  - Billing contribution
- **Remote reading of interconnection meters**
  - Inter-network transfer monitoring
- **Periodic reading of flow-meter registers**
  - Remote reading of electromagnetic flow-meters
  - Instantaneous flow monitoring
  - Flow-meter operational alarm monitoring
- **District metering**
  - Leaking sectors detections
  - Pressure and flow monitoring
  - Immediate alarm in case of an upstream or downstream pipe breakage
  - Improved network performance

### PRODUCT FEATURES

- Enhanced IP68 waterproof rating
- Battery powered
- Integrated high performance 2G/4G M2M antenna
- Access to the SIM card and battery on site
- RS485 link for direct reading of internal flow-meter data (SIEMENS MAG 8000, ABB Aquamaster, KROHNE Waterflux or ARAD Octave)
- 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

# 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                               |
| Connector types       | Military-grade hermetic connector                                    |

## DATA LOGGER INPUTS:

|                    |                                                                                                                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RS485              | RS-485 MODBUS link for interfacing with electromagnetic flow-meters<br>Periodic acquisition of index values, instantaneous flow, alarms related to flow-meter performance, temperature and pressure data according to the electromagnetic flow-meter model |
| DI (Digital Input) | 1 digital input for instant or timed signalling<br>Maximum frequency: 250 Hz<br>Minimum pulse time: 2 ms<br>Maximum polarisation voltage: 3.3 V<br>Maximum polarisation current: 15 µA                                                                     |
| AI (Analog Input)  | 1 analog input for SOFREL pressure sensor or remote powering of a third-party sensor<br>Remote powering of a third-party sensor via 4-20 mA loop, 12 V or 20 V                                                                                             |

## 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<br>4G NB-IoT : B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85<br>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 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<br>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 |
|--------------------------|---------------------|

## PROCESSING:

|                   |                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------|
| District metering | Calculation of average flows<br>Calculation of night flows<br>Calculation of daily volumes, daily minimum and maximum flows |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------|

## CERTIFICATIONS:

|                             |                                                                                                        |
|-----------------------------|--------------------------------------------------------------------------------------------------------|
| CE Certification            | 2014/53/UE "Radio equipment"<br>2014/30/UE "Electromagnetic compatibility"<br>2014/35/UE "Low voltage" |
| Enhanced IP68 certification | Extended immersion test (30 days under 4 meters of water) performed by an independent laboratory       |
| Cybersecurity               | hEN 18031-1 "RED-DA"                                                                                   |

## STANDARD BATTERY LIFE:

|                                                                                                      |          |
|------------------------------------------------------------------------------------------------------|----------|
| 2 counts and 1 pressure measurement every 15 minutes, processing and daily transmission to the SCADA | 10 years |
|------------------------------------------------------------------------------------------------------|----------|

\* Depending on the activation of the telecom operator