1. Presentation

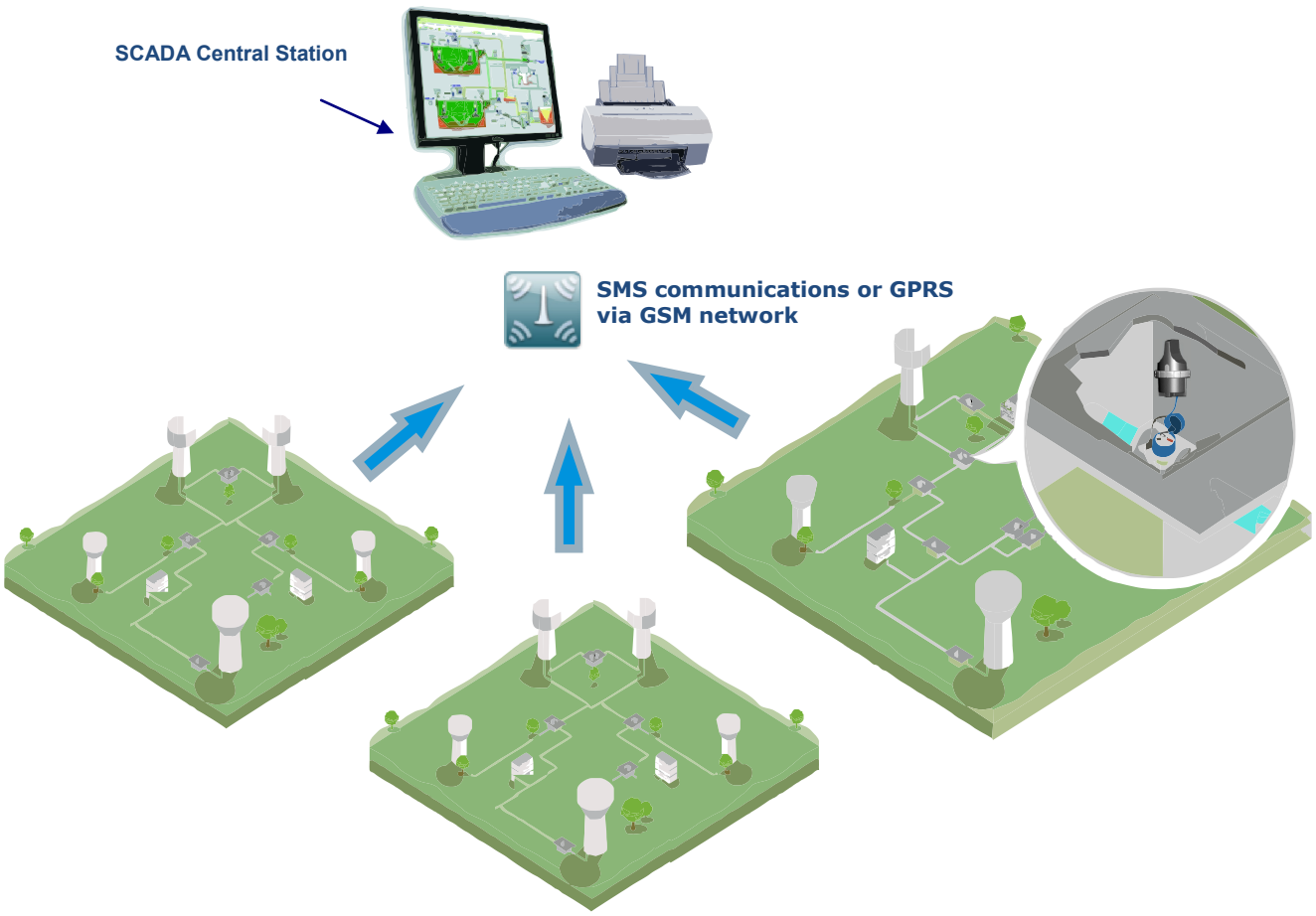
✓ *Typical application:*

The **Data Logger automatically collects the counting and flow values and measures drinking water network pressure**; it sends these data **by SMS** or **GPRS** once a day, to a **centralized system**.

Powered by a Lithium battery, this product **possesses a power autonomy of several years**.

Completely watertight, it conforms to the requirements of the environment in which it is placed: in particular when fitted underground, or in a wet or flood-prone counting manhole.

✓ *Network mimic diagram:*



2. User interfaces

- ✓ *Configuration read / write,*
- ✓ *Diagnostics.*

- ✓ *Centralization of network information on the SCADA Central Station by SMS or GPRS,*
- ✓ *Centralization of network information and LS-GPRS configuration on the Web Server.*

- ✓ *Local wake-up for indexing, communication diagnostics, etc.*

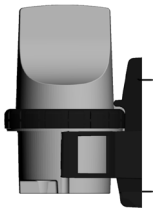
- ✓ *Sending command SMSs from the user's mobile phone (data status read request, meter indexing, etc.),*
- ✓ *Receipt of warning messages on the user's mobile phone.*

Legend:

- Bluetooth communication
- SMS communication
- GPRS communication

3. Hardware properties

Case



Dimensions in mm: H = 261 x W = 155 x D = 176
(the case can be wall-mounted using 2 screws)

Input cable connector: watertight bayonet connector (military grade)

Watertightness

With its IP68 protection rating, the Data Logger can be fitted in a wet or flood-prone manhole.

The case is protected against the effects of **prolonged submersion**, up to 100 days in 1 meter of water.

Autonomy

The "934" battery (or standard battery) **is optimized** to provide the Data Logger with an operating autonomy of several years.

The "933" battery (or high capacity battery) can be used to significantly increase the Data Logger's autonomy.

The Data Logger determines its own remaining autonomy each day and sends this information to the centralization system.

Antenna

The built-in GSM antenna has been specifically designed to improve communication quality over GSM networks in difficult environments (particularly in buried manholes).

An optional external aerial can be connected to the case.

Key

The key enables a user to wake the Data Logger to write the configuration and to run operating diagnostics (communication tests, meter indexing, GSM reception level check, etc.).

These operating tests can be performed either using the indicator lights, using either SOFTOOLS in Bluetooth communication mode, or with a mobile phone via SMS.

Tool

This specific tool is required to correctly open and close the case; it matches the locking system and maintains the product's seal.

Electrical safety

EN 60950 standard:

In accordance with current European regulations, this device is intended for use in an industrial environment. It presents no hazardous voltage, in accordance with the low voltage directive (for further details, see § "Environmental standards and conditions").

4. Functional characteristics

Configuration

Configuration read/write via SOFTOOLS via **Bluetooth** and **SMS** communication.

Configuration read/write by GPRS communication to the Web Server via SOFTOOLS.

Diagnostics

Operating checks and communication tests:

- using the indicator lights,
- using SOFTOOLS in Bluetooth communication mode,
- using a mobile phone in SMS communication mode.

Data acquisition

4 DIs can be configured to manage **meters** and **signaling**.

Characteristics of meter inputs:

- minimum pulse duration: 2 ms (max. frequency: 250 Hz).
- for meters with an open collector transistor type output (capacity < 220 pF).

These characteristics apply to products bearing a serial number greater than or equal to 04xxxxxxxx; for earlier versions, the maximum pulse duration is 20 ms (max. frequency: 25 Hz).

2 optional AIs for acquiring two "4-20 mA" measurements converted to 10 bits for remotely powered sensors.

Data calculations

Periodical data calculation:

- for **daily reports** (volumes),
- **average flows** (values expressed in m^3/h),
- **nighttime flow** to monitor flow over a user-definable time period.
- for **thresholds** on **AI measurements** and/or **average meter flow rates**.

Archiving

Large storage capacity: up to 50,000 values archived.

Periodical archiving of meter indices, average flows and AI measurements (e.g.: every 15 mn).

Daily report archiving (current index, daily volume, min., max. and night flow).

Communication with SCADA Central Stations

The Data Logger communicates with a centralization system whose type can be configured: SCADA central stations via SMS or GPRS, or with the Web server via GPRS.

- **By SMS:** the Data Logger sends archived SMS messages to 1 or 2 SCADA Central Stations. On a change of state, the Data Logger can instantly send an SMS message of current states and all the archived SMS messages to the SCADA Central Stations.
- **By GPRS:** the unit initiates communications with the central system; it can be used on a GPRS network with a private (or dedicated) APN or a public (standard) one. On each GPRS communication, the Data Logger sends the central system the archived values of its data, the daily reports and diagnostic data.

By default, the unit communicates once daily with the centralization system, though in certain cases, for specific needs, multiple daily transmissions can be programmed (based on configurable times, or periodically).

Communication with a mobile phone

The Data Logger can send **warning messages** to the user's mobile phone.

The user can issue **Diagnostic commands** via SMS messages.