Waveflow

Product summary

Wireless smart meter Transceiver and data logger for water and gas pulse meters

Waveflow is an advanced battery-powered wireless transceiver and data logger for demanding Smart Metering applications. Deployed in networks covering millions of homes and commercial locations around the world, this flexible ready-for-branding or OEM platform can be integrated into new gas, water and electric meter designs or connected with existing meters as an after-market add-on.

Waveflow provides fast remote access to all relevant meter information, allowing utilities to speed up data collection and billing cycles and to offer new value-added services to customers. Waveflow integrates Wavenis® wireless technology for large-scale automated metering networks as well as walk-by solutions.

- Logs meter index and events periodically

- Transmits data automatically or on-demand

- Issues alerts for leaks, tampering, backflow, low battery

Waveflow solution integrated in custom casing

OEM platform for smart meters

Waveflow can be customized to meet your specific application and design requirements. A flexible OEM platform, this solution is available either as a finished ready-to-brand product in IP68 casing, or as wireless board that can be integrated directly into your new products.

- Wireless OEM card or ready-to-use module in IP68 casing (ATEX version available on demand)

- Supports up to 4 meters

- Supports electrovalve (on demand)

Industry-leading wireless performance

In metering networks, strong last-mile wireless coverage and long battery life in the field are among the most important factors for success and low-cost of ownership over time.

Waveflow is based on Wavenis wireless technology, a highly optimized ultra-low-power and long-range solution specifically designed to handle communications in harsh, complex and often unpredictable scenarios. With its unique approach to wireless network synchronization, Wavenis delivers the extreme long range and battery life required for cost-effective, easy-to-deploy and worry-free smart metering networks.

- Battery life over 10 years[1], even in highly dense networks
- Range up to 1 km Line of Sight
- Enhanced power saving technology
- Easy one-touch configuration in the field[2]
- Support Wavenis synchronized or asynchronized networks

Waveflow connected to modular pulse probe

Product Specifications

- Programmable access time:
  10ms <1s (typical value) <10s
- Complex-Wakeup enabled (save battery life in dense network and fast reading)
- Supports Wavenis synchronous or asynchronous networks
- Automatic one-way daily Bubble-up
- ATEX certification[3] II2G (on demand)⟨Ex⟩
- Electrovalve version available

Wavenis Properties Overview

- Operates in license-free ISM 433, 866, 868, or 915MHz
- EN300-220 / FCC15.247 certified & compliant
- Typical rate:
  - 9.6kbps (433, 866 & 868MHz)
  - 19.2kbps (915MHz)
  - more on demand
- Frequency Hopping Spread Spectrum (FHSS)
- GFSK modulation
- Single channel operation for narrowband applications (alarms)
- Data interleaving, Forward Error Correction BCH (31,21)
- Automatic Frequency Control (AFC) for optimal performances over operating lifetime
- Quality of Service management (RSSI) and output power control
- Point-to-Point, Point-to-Multipoint (broadcast, polling) modes, and native repeater (up to 3 hops)
- Tree and star network topologies
- Designed for reliability, power savings, network coexistence
- Access hard-to-reach devices with link budget of 124dBm (25mW)
  - Line-of-sight range up to 1km (25mW/+14dBm and 10mW/+10dBm)
  - Line-of-sight range up to 4km (500mW / +27dBm)
  - Sensitivity: -110dBm @ 9.6kbps

General features

- Designed for walk-by and smart metering fixed network
- 25mW ATEX (868/915MHz), 25mW (868/915MHz) and 10mW (433MHz) versions
- Inputs for up to 4 pulse meters [4]
- Programmable data logging: stores up to 2,100 index readings
- Available in ready-to-connect plastic casing with external cable connection to compatible meters or as OEM board for under-glass integration
- Sample battery life: up to 10 years with 3.6V 3.6Ah battery [1]

Dedicated metering profile

- Water valve profile for remote shutoff with compatible meters and equipment
- Alerts for major and residual leaks (programmable thresholds), back-flow, tampering and low battery

Wavenis wireless connectivity

- Designed for large-scale metering networks
- Wireless data transfer to and from remote locations
- Robust against physical and electronic interference
- Highly optimized for long battery life in the field (synchronized fixed networks, optimize data transmission)
- One-touch network integration[2] with Wavetalk range extenders and Ethernet/GPRS gateways using installation software on a Mobile device (Smartphone, Tablet)

Physical description

- IP68 protection (for ready-to-use version)
- Operating temperature range: -20° to +70°C
- Battery size (for finished product): 3.6V 3.6Ah
- Dimensions and weights:
  - OEM (without battery): 65 x 23 x 14mm ; 10g
  - Ready-to-connect: 98 x 47 x 35mm; 140g

Product Codes

	OEM	Finished Product
433 MHz	WFL433-OEM-10-A	WFL433-FP-10-A
868 MHz	WFL868-OEM-25-A	WFL868-FP-25-A
868 MHz ATEX	WFL868-OEM-25-A-AT	WFL868-FP-25-A-AT
915 MHz	WFL915-OEM-25-A	WFL915FP-25-A

(1) Depending on environment and transmission frequency.
(2) With Self-discovery Protocol (SDP) to add end-points in synchronized networks.
(3) ATEX-ready version available. Contact Elster for additional information.
(4) Check with Elster representative to ensure meter/probe compatibility.
(5) Probe provided by customer.

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