

Electricity



Gas



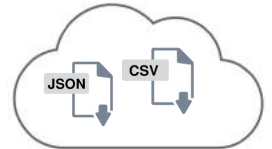
Pulse



F-Link



Internet



BelSenso IMC

Internet Meter Connect



BelSenso IMC is a multi-meter Plug & Play solution for collecting data from small buildings. Compatible with all electricity and gas meters, it includes specialized sensors FM232 (optical reading differentiated by type of meter) and a small bridge F-link to interface to an Internet box via a WiFi or Ethernet connection. This self-installing solution (max 10 meters) is optimal for monitoring consumption for professionals (shops, agencies), Office buildings or Residential.

Benefits

- ⇒ **Universal:** compatible with all existing gas & electricity meters
- ⇒ **Competitive:** self-installation (<5mn/sensor)
- ⇒ **Efficient:** excellent radio range thanks to LoRa technology
- ⇒ **Evolutive:** customization for pulse meters (water, heat, etc.)

Implementations



Residentials

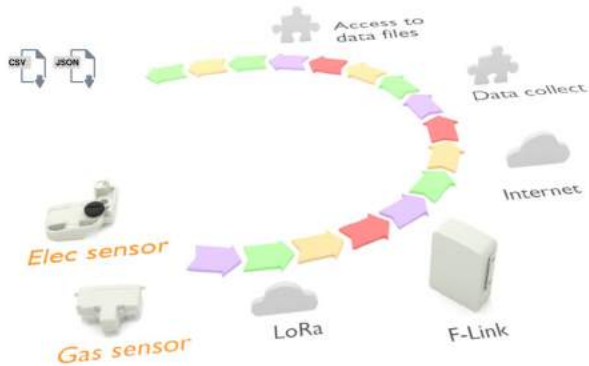


Office Buildings



Shops

Operational



Each sensor detects meter indicators, computes the consumption over a pre-defined period depending on the version (10 or 15mn) and sends a LoRa radio message containing 8 consecutive consumption values (every 80 minutes for the 10mn version or every 2 hours for the 15mn version).

The small F-Link bridge receives the radio messages and forwards them to the data collect server, using existing Internet access. The F-Link can connect to the existing Internet box by one of two means:

- ⇒ **Wifi** (connect to the F-Link with a smartphone and enter the WiFi key)
- ⇒ **Ethernet cable** (no configuration if the Internet box is in DHCP Mode, configuration via smartphone otherwise)

Access to data from the data collection server can be performed by one of two means:

- ⇒ **Access to the sensor monitor** (a simple Web page) and download a file containing consumption data series for a selected period of time.
- ⇒ **Direct request on the API**

Data Format

- ⇒ in the case of file download, the format is **CSV**
- ⇒ in the case of the API request, the format is **JSON**



General features

LoRa Sensors

| | Electricity | | Gas | | Pulse |
|--------------------------|---|--|---|---|---|
| | FM232e | | FM232g | FMG231 | FM232p |
| Input | Optical reader | | Optical reader | | Pulse |
| | electromechanical | electrical | Small meter | Others | |
| | Detection of disk rotations (max. speed 5 Rev/sec) | Detection of LED flashes (max. speed 10 flashes /sec) | Detection of digit rotation. Optical reading of one of the digits of the mechanical display | OCR technology for character recognition (3 selected digits on the display) | Detection of REED or open collector pulse |
| Output | Radio LoRa 868 Mhz (point to point mode), internal antenna (PCB), RF Power 14 dbm (25mw) | | | | |
| Data | Load curve 1mn, 10mn or 15mn | | Load curve 10 or 15mn | | 10 or 15mn |
| | A message includes 8 measurement values Data format .csv/json (via FTP or API) | | | | |
| Power supply | Internal Lithium batteries 3,6v | | | | |
| Operational | Fixation with adhesive pads (3M) Red & green LEDs for commissioning T°: -15°C / +45°C | | | | |
| | Selection of the type of meter by switch | | ATEX Zone 1 Ex ib IIA T3 Gb | | |
| Size & Weight | Optical reader: 40*24*19mm/ 19gr | | 46*34*15mm 18gr | 75*68*27mm 42gr 115*89*60 mm 320 gr | |
| | Radio Box: 95*75*30mm/ 130gr | | | | |

Small F-Link Bridge

| | |
|--------------------------|---|
| Capacity | Maximum 10 sensors LoRa point to point |
| Input | Radio LoRa 868Mhz (point to point mode), Internal antenna (PCB), RF Power 14 dbm (25mw) |
| Output | Wifi/Ethernet |
| Operational | LEDs for commissioning (red, yellow, blue, green) |
| Power supply | AC adaptor 230v/5v |
| Size & weight | Box: 95*75*30mm/ 80 gr |

Multi-meters universal solution

⇒ ELECTRICITY FM232e

Optical Sensor
Disk



Optical Sensor
Flash LED



Adaptator
Smart Meter



⇒ GAS FM232g/FMG231

Optical Sensor



OCR Sensor



ATEX Adaptator
Smart Meter



⇒ METERS WITH PULSE OUTPUT FM232p

Water, Heat, ...



⇒ F-LINK BRIDGE



LoRa Point to Point

Wifi / Ethernet

Up to 10 meters

References

| |
|----------------------------|
| Bridge |
| ⇒ F-Link |
| ⇒ Option SD card |
| Electricity |
| ⇒ FM232e_1mn |
| ⇒ FM232e_10mn |
| ⇒ FM232e_15mn |
| Gas (ATEX) |
| ⇒ FM232g_10mn |
| ⇒ FM232g_15mn |
| ⇒ FMG231_10mn (OCR) |
| ⇒ FMG231_15mn (OCR) |
| Pulse |
| ⇒ FM232p-a_10mn (Atex) |
| ⇒ FM232p-a_15mn (Atex) |
| ⇒ FM232p-n_10mn (Non-Atex) |
| ⇒ FM232p-n_15mn (Non-Atex) |

Non-contractual Document: this document has been written for information and the values contained are indicative. Consult us for more details.