ENERGY MANAGEMENT

for existing and new buildings

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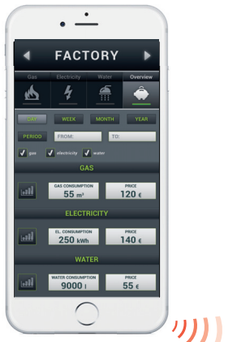
Energy management

BUS (bus solution)
for larger buildings

RF (wireless solution)
for existing apartments and houses

day / month / year



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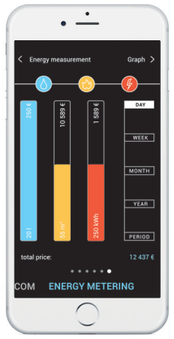

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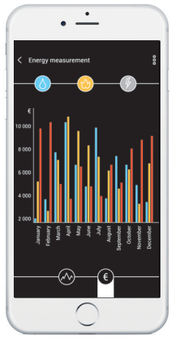

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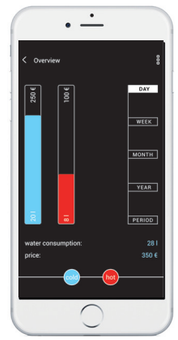

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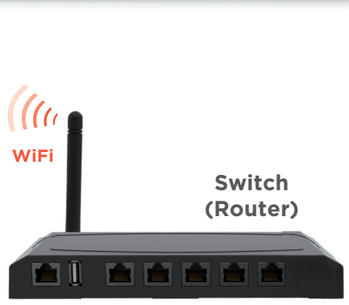
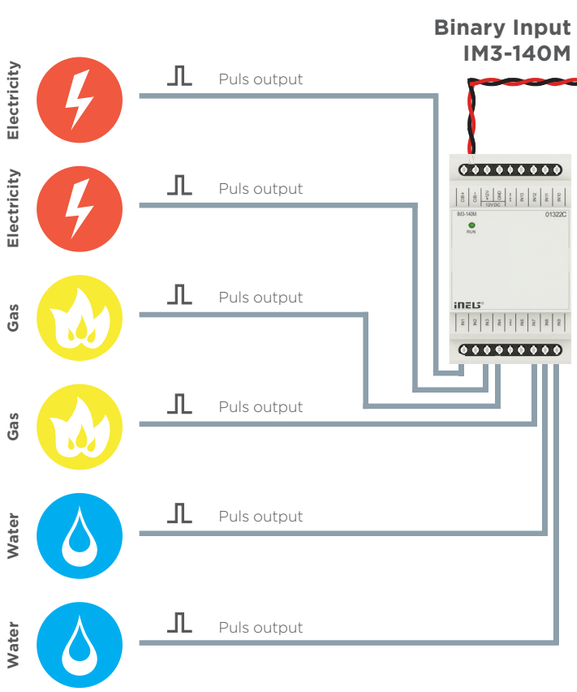
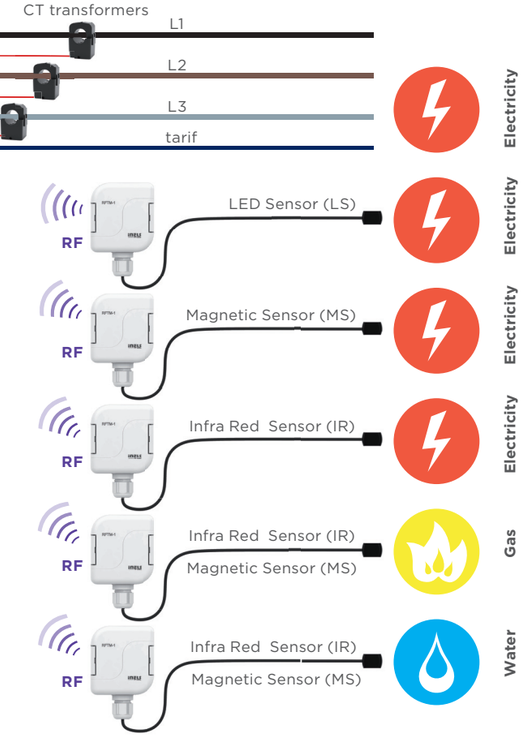


LAN



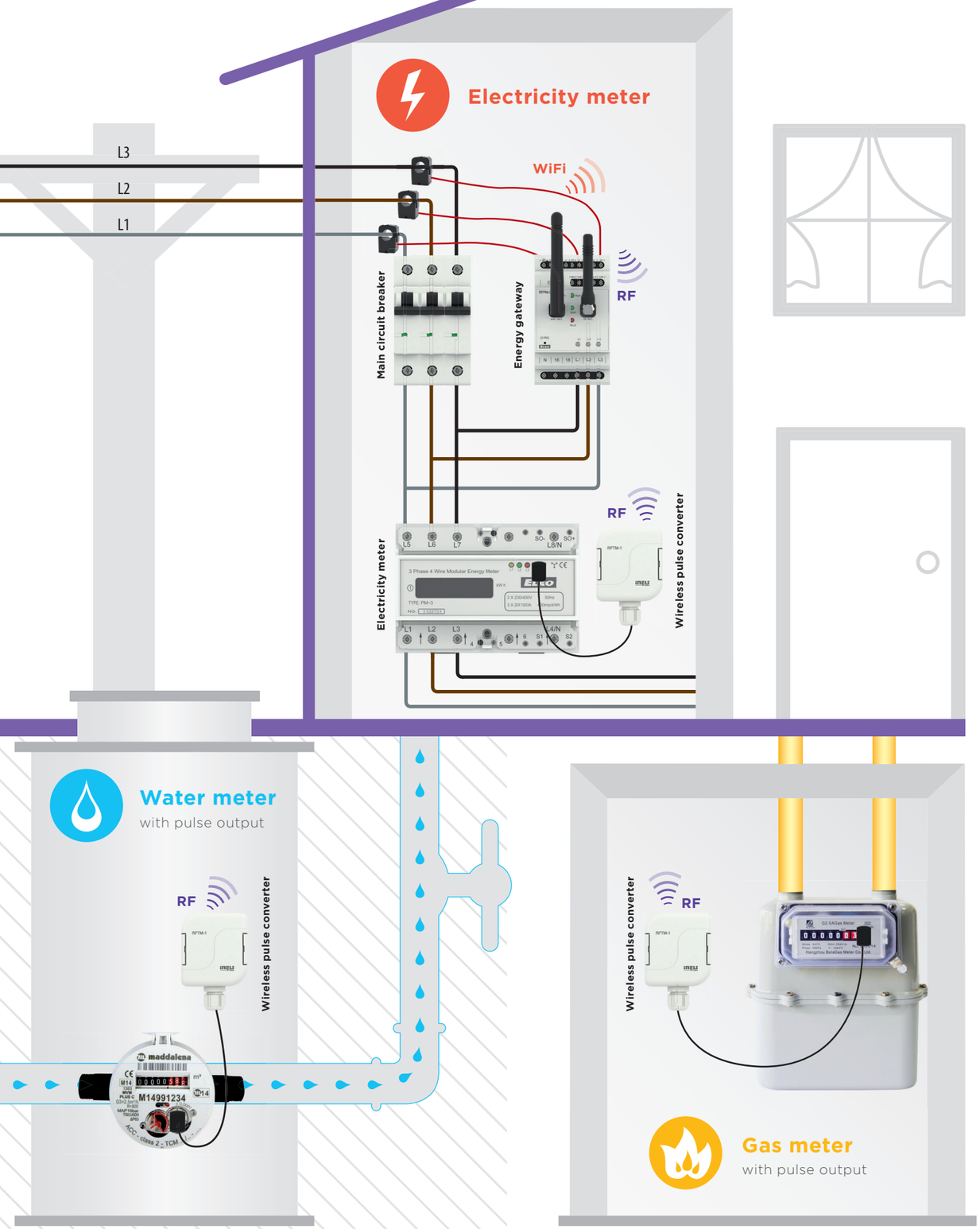
... up to 14 outputs
(more IM3-140M input moduls should be used)



... up to 8 outputs

Wireless solution (RF)

The wireless solution is appropriate for existing buildings where metering equipment has already been installed. It is therefore necessary to sense the measured values without interfering in metering equipment) and transfer data to the energy gateway, which processes the data and renders it for assessment. Methods of sensing meters function on the principle of sensing pulses, flashing of an LED, turning of a dial or a unit wheel. By means of a converter, these pulses are transmitted wirelessly to the energy gateway, which provides them with information for visualization in the application in a smartphone, tablet or stores them on the Cloud.



RFPM-2M

RFTM-1

Energy gateway

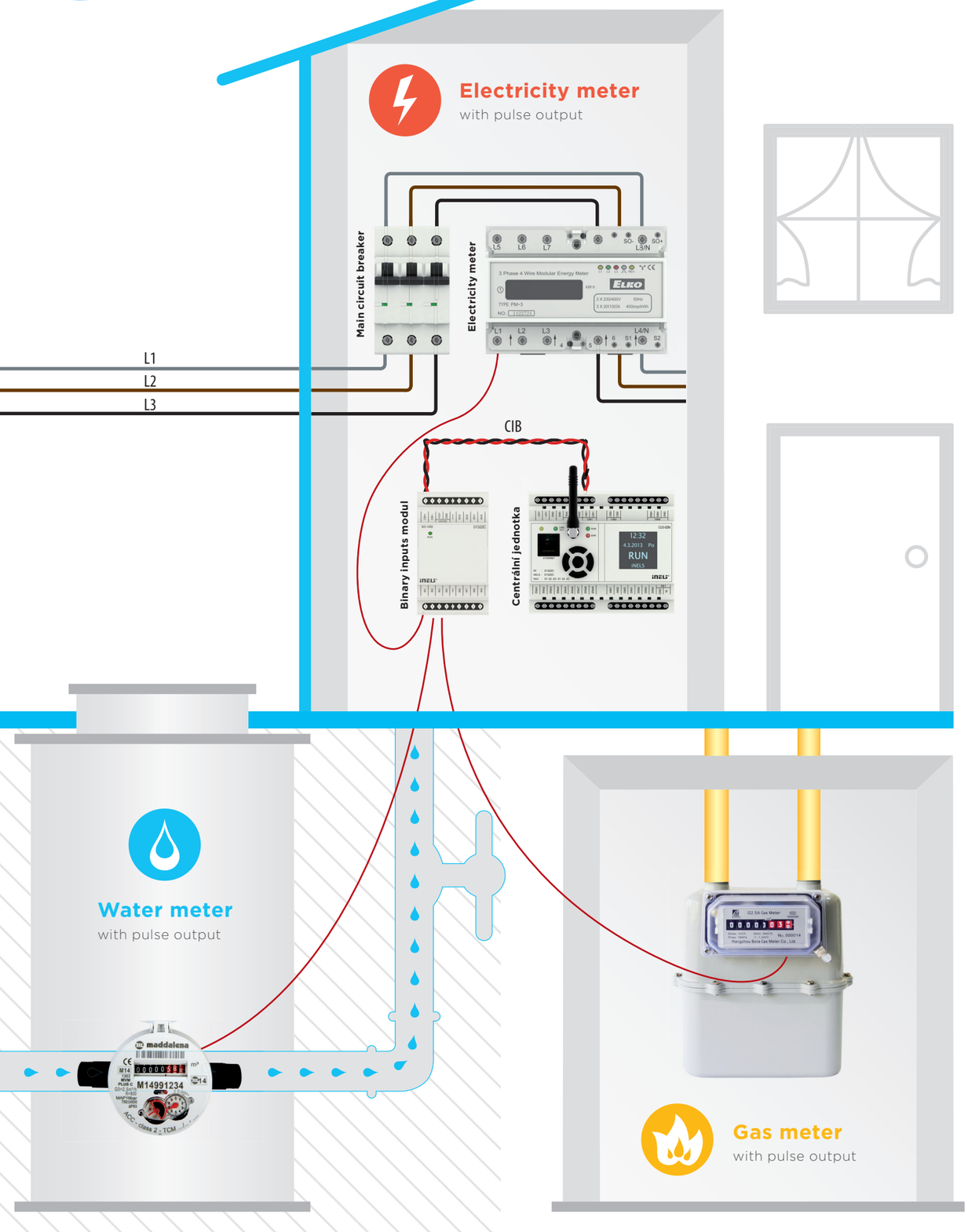
- energy gateway for data collection from meter sensors and measuring current probes
- interface for displaying on mobile devices and Cloud storage
- 2x inputs for connecting potential free pulse outputs of meters
- 3x inputs for connection current probes (CT50) for indirect electricity measurement
- 2x inputs for potential free contact of the tariff switch (SmartGrid)
- RF antenna for wireless receipt from wireless pulse converters

OUTPUTS AND COMMUNICATION INTERFACES:

- RJ45 connector for connecting to LAN
- WIFI antenna for communicating with Mobile devices
- switching contact 16A with potential L1
- bus for connecting to central unit CU3

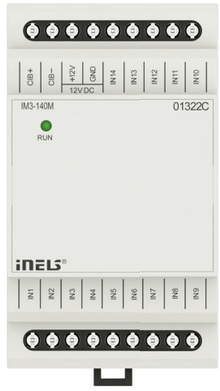
Wireless pulse converter

- detects home energy meters (electricity, water, gas) using sensors and sends them to the wireless unit RFPM-2
- the sensor is designed for use on existing meters even without impulse output „S0"
- it senses energy meters by means of **LS** (LED Sensor), **MS** (Magnetic Sensor), **IRS** (Infra Red Sensor) or impulse output
- increased IP protection enables use in outdoor areas
- battery power (1.5V / 2 x AAA) with average battery life of around 2 years (according to amount of transferred information - pulses)

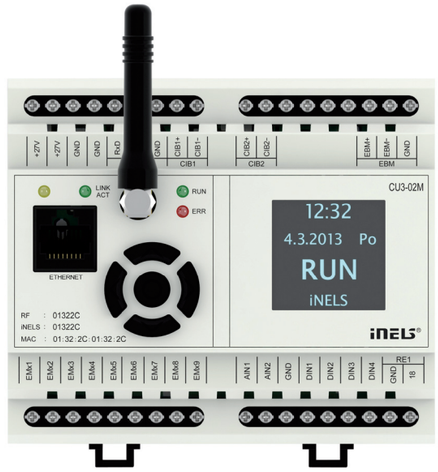


Bus solution (BUS)

The bus solution is used for large buildings, commercial space and apartment buildings with a large number of meters (up to 140). These meters must be equipped with a pulse output, which is connected by wire to the input unit (14 inputs). The input units are connected by bus to the central unit CU3. The central unit is connected by LAN to an iMM Server, which converts measured data to consumption values and consequently then provides such data for display in applications (telephone, tablet, PC, TV).



IM3-140M



CU3-02M

Binary inputs modul

- this is designed for connecting up to 14 meters with pulse potential free output
- by CIB bus, by which it is also powered, it is connected in the central unit CU3
- there can be up to 10 output units connected, i.e. 140 meters
- it can be combined with further devices with potential free input (buttons, sensors, detectors, etc.) - e.g. a switch for opening the gas meter door...

Central unit

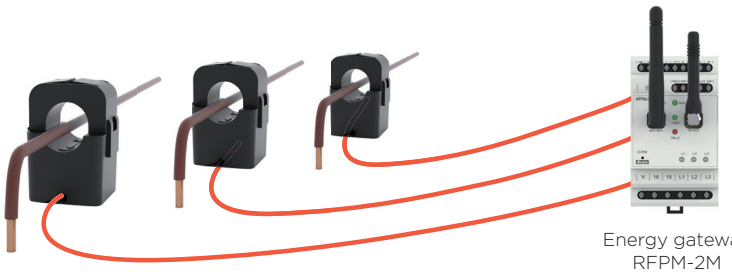
- the brain of the entire system iNELS and the „interface“between the user program environment and controllers
- has an OLED display, showing the current status, and enables settings (network settings, date, time, services) central units
- it is possible to connect to it up to two branches of the CIB bus, whereas to each bus, you can connect up to 32 iNELS3 units

Methods of sensing meters

Electricity Gas Water

CT (Current transformer)

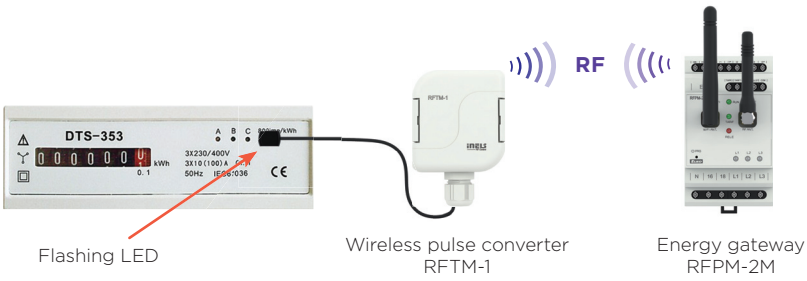
Opening pliers open/close on the existing wire of the measured circuit, most frequently at the main supply at the electricity meter.



Energy gateway RFPM-2M

LS (LED sensor)

The LED sensor scans LED impulses on the meter, which indicates consumption by flashing.



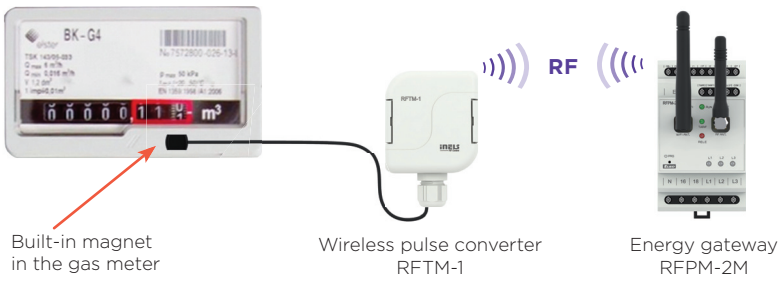
Flashing LED

Wireless pulse converter RFTM-1

Energy gateway RFPM-2M

MS (Magnetic sensor)

The magnetic sensor scans movement of the numeral, upon which a permanent magnet is placed.



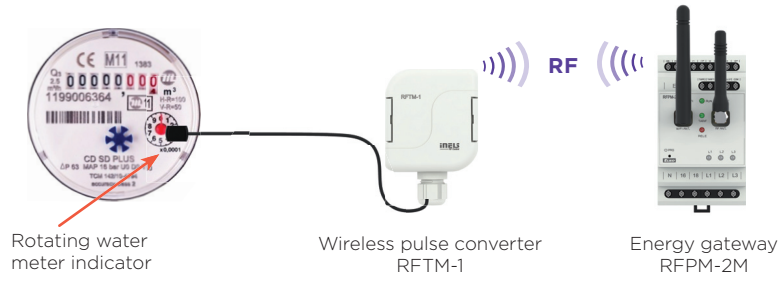
Built-in magnet in the gas meter

Wireless pulse converter RFTM-1

Energy gateway RFPM-2M

IRS (Infra Red sensor)

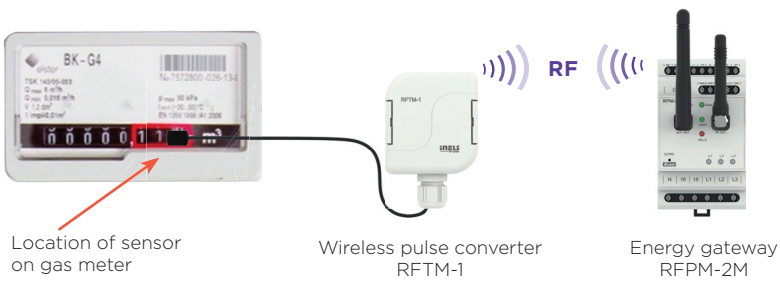
The IR sensor senses the reflective curtain placed on the moving number of the meter or senses the rotating indicator (mainly on water meters).



Rotating water meter indicator

Wireless pulse converter RFTM-1

Energy gateway RFPM-2M



Location of sensor on gas meter

Wireless pulse converter RFTM-1

Energy gateway RFPM-2M

IMP (Output „S0“)

Meters with impulse output indicated as „S0“ connected by wires to terminals GND and DATA1 on the sensor RFTM-1.

Impulse output

Wireless pulse converter RFTM-1

Energy gateway RFPM-2M

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