

## Smart Gas Metering - Wireless Monitoring of LP Gas Tanks on Fuel Station

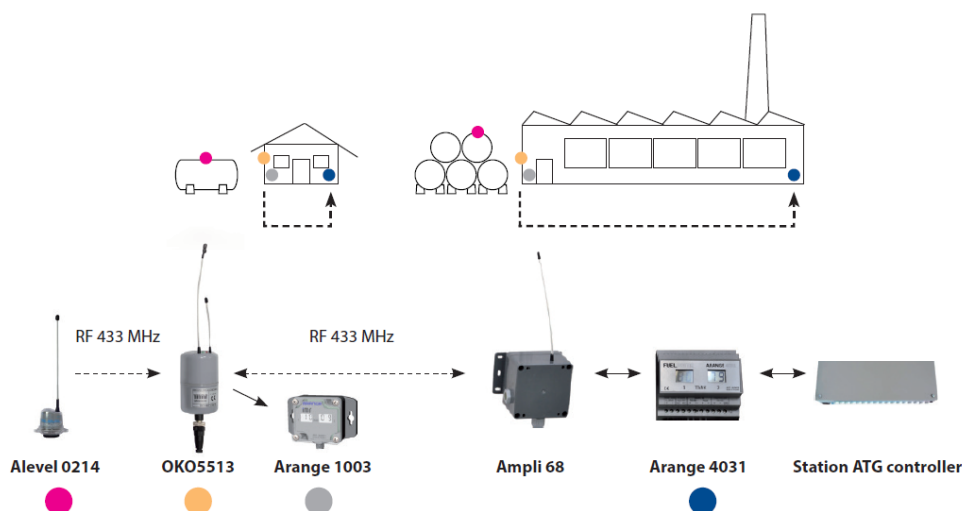
# SMART GAS METERING - WIRELESS MONITORING OF LPG TANKS

IMR Tankmonitoring system is designed for remote monitoring of LP Gas level in the fuel station tanks. The system can be integrated with commonly used ATG station controllers, such as Veeder-Root, OPW, DOMS and others. IMR Tankmonitoring solution, designed for demanding fuel station environment, provides:

- Supervision over current and historical LP Gas levels,
- Safety improvement for LP Gas delivery, overfill prevention,
- Consumption prediction for better delivery planning, stock-out elimination,
- Multi-level data access (on-site presentation, data integration with existing ATG systems and over Internet).

## Description

Local readout at the station



- GPRS or SMS communication
- Detection of LP Gas refilling, volume and time
- Seamless integration with station ATG
- Long life lithium battery (up to 5 years)
- Real time data of LP Gas level available locally at the station
- Robust, suitable for outdoor environment
- Fits nearly to all types of gauges and tanks
- On-delivery, Hi and Lo levels alarming

CATEGORY:

GAS

CERTIFICATIONS

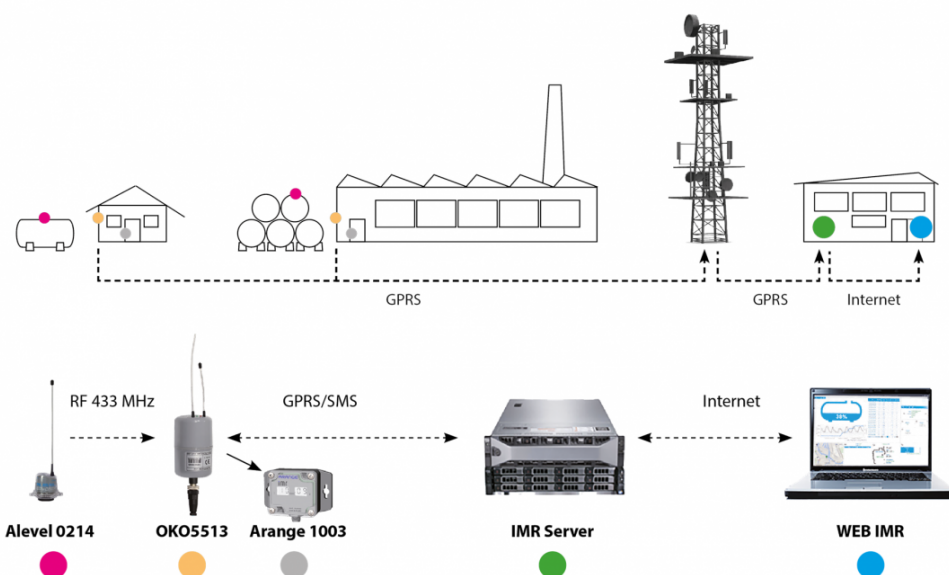


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- Zone 0 - ATEX approved

Data presentation, reports, SMS/E-mail at ATG station controllers



## Features/Technical specification

### Features/Technical specification

#### Alevel 0214

- The smart sensor, for nearly all types of LP Gas gauges and tanks (directly or via adapters)
- Radio transmission of measured value to receivers in the range
- Works in horizontal and vertical positions. Measurement accuracy  $\pm 3\%$
- Effective local radio communication within approximately 30 m distance
- Long life lithium battery (up to 5 years)
- Robust outdoor design - IP 68
- Zone 0 - ATEX approved

#### OK05513

- Data logger, receiving radio measurements from Alevel 0214 smart sensors (up to 6 devices)
- Data transmission to the IMR server (via GPRS/SMS) and locally to radio receiver Ampli 68
- Hi and Lo levels alarming, detection of LP Gas delivery
- Long life lithium battery (up to 5 years)
- Robust outdoor design - IP 67
- Zone 0 - ATEX approved

#### Arange 1003

- LCD display of current LP Gas levels (up to 6 tanks)
- NFC communication for current and recent level readouts from mobile application (supervision over gas delivery)
- Flexible installation option for good visibility for station personnel and tankers drivers
- Serial communication and power supply from OK0 5513
- Robust outdoor design - IP 67
- Zone 0 - ATEX approved

#### Ampli 68



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- 433 MHz radio receiver
- RS-485 serial communication and power supply from Arange 4031
- Robust outdoor design - IP 67

#### Arange 4031

- LCD display of the LP Gas level in 2 tanks
- Input RS 485 serial communication from Ampli 68 radio receiver
- Output serial communication - emulation of the magnetostrictive sensor protocol
- Analog 4-20 mA output- average value of the level
- 24 VAC power supply, optional DIN-rail mounting



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## Clustered Metering for residential meters

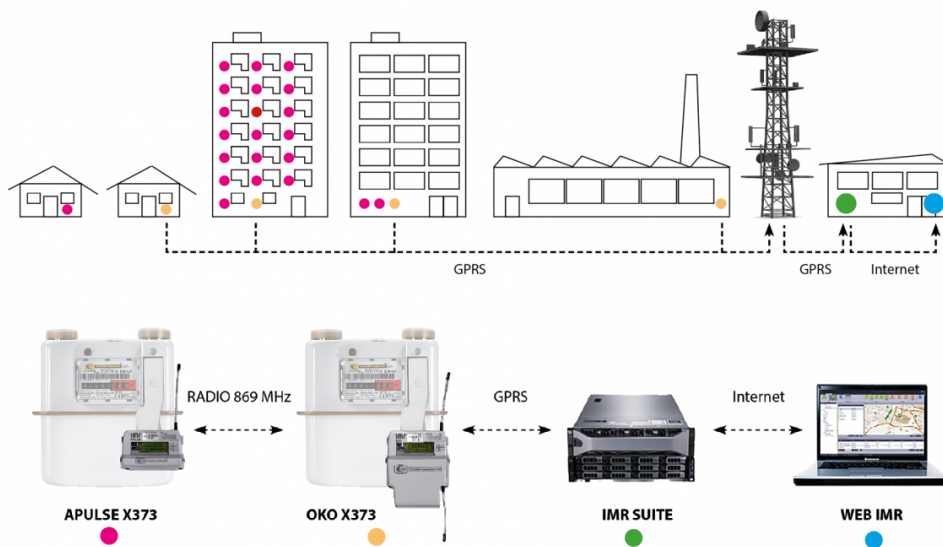
# SMART GAS METERING - CLUSTERED METERING

IMR Clustered Metering System provides reliable, automatic daily communication from data loggers installed on diaphragm gas meters. Clustered architecture consists of a large number of radio data loggers that communicate across a small number of GPRS data loggers to a back office server.

Due to high performance radio technology, system perfectly meets requirements of different types of urban architecture: from high rise buildings down to individual housing. All communication units are powered by long life batteries and installed only on gas meters, that is why clustered system is very economical to be deployed and maintained.

IMR Smart Gas Metering AIUT consists of communication equipment, data loggers, sensors as well as back office software package for data acquisition, analytics and presentation.

## Description



## Features/Technical specification

- Combined license free radio and GPRS communication
- Installed only on the meters, no external gateways etc.
- Battery powered transmitters and concentrators, no 230V
- Hourly consumption data acquired from all meters
- Suitable for a group of detached houses and high-rise buildings
- Easy to deploy, tailored to individual utility needs
- Consumption registered for 10 years

CATEGORY:

GAS

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- Only ATEX certified equipment



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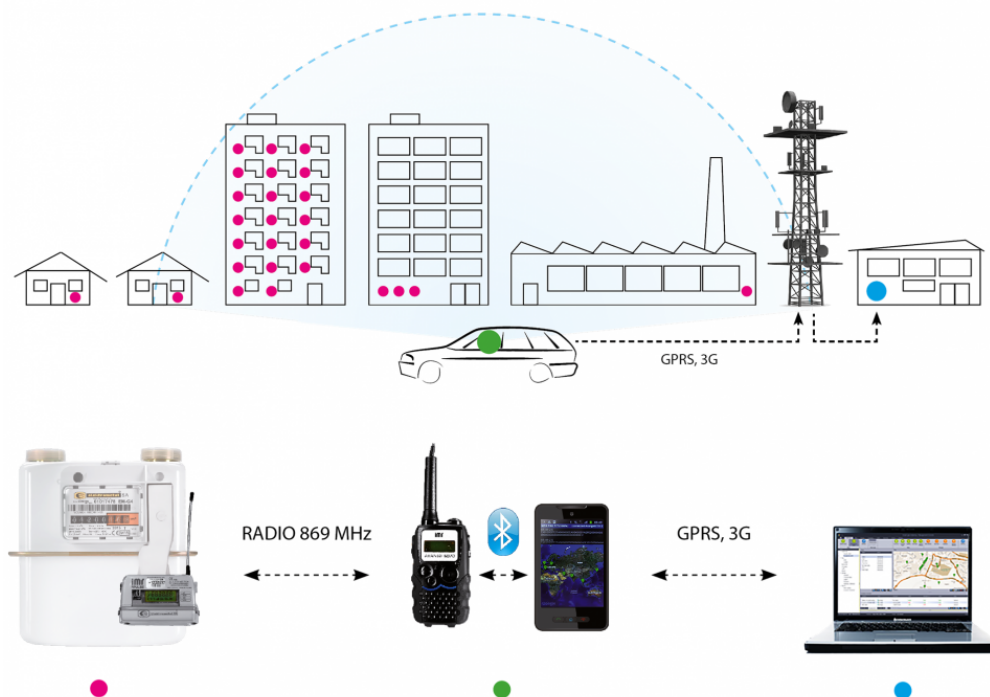
## Smart Gas Metering - Walk-by System

# SMART GAS METERING - WALK-BY SYSTEM FOR VARIOUS METERS

IMR Walk-by System is a complete solution for your natural gas distribution business. Highly efficient radio data acquisition enables the collector to get exact consumption data by radio without the need of entering consumer's premises. With IMR system all installed telemetric devices are always accessible, can be read out and configured at any time of day or night, seven days a week.

IMR Smart Gas Metering AIUT consists of communication equipment, data loggers, sensors as well as back office software package for data acquisition, analytics and presentation.

## Description



## Features/Technical specification

- Wireless solution with no cable connected data logger
- License free radio communication
- Consumption data immediately available from the street
- Suitable for a group of detached houses and high-rise buildings
- Easy to deploy, tailored to individual utility needs

CATEGORY:

GAS

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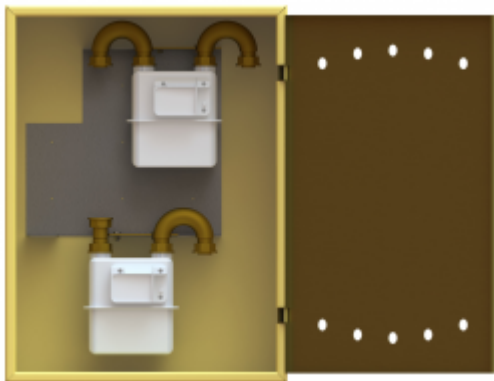
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- Consumption registered for 10 years



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EM-SL-800

## EM-SL-800 DOUBLE METER FIXING SET

CATEGORY:

GAS

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## FULLY EQUIPPED GAS BOX EM-SX-600

The EM-SX600 gas box allows a multiple internal component configurations: with different types and points of fixing, angles, different types and distances between the connectors, additional cut-off valves, etc. The photo shows just one of the possible configurations which can be adjusted to the client particular requirements.

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EM-eGx

## DOMESTIC DIGITAL GAS METER

Domestic digital gas meter EM-eGx are designed to measure the consumption of gaseous fuels according to PN-C-04750 in households and industry.

### Description

Additional functions compared to mechanical gas meters::

- Convenient user interface (3 buttons)
- Two independent cells to power measurement and communication circuits
- Possibility to replace the communication link
- Ongoing monitoring of the discharge of power cells
- Electronic anti-theft security (control of opening the power cell cover, detection of external magnetic field)
- Optional pre-payment valve
- Optional measurement of gas volume under normal conditions (0°C; 1013.25 hPa) or standard conditions (15°C; 1013.25 hPa)
- Possibility to use selected radio interfaces
- Archiving of measurement data
- Event archiving
- Possibility of remote software update

### Features/Technical specification

Type	Cyclic volume (dm <sup>3</sup> )	Measurement range (m <sup>3</sup> /h)	Connection		Weight
EM-eG1,6	1,2	0,016 ÷ 2,5	G1 1/4, G1	DN 32, DN25	2 kg
EM-eG2,5	1,2	0,025 ÷ 4	G1 1/4, G1	DN 32, DN25	2 kg
EM-eG4	1,2	0,04 ÷ 6	G1 1/4, G1	DN 32, DN25	2 kg

Parameter	Value
Legal requirements and applicable standards	2004/22/EC (MID), 2004/108/EC (EMC), 2014/53/EU (RED), EN1359:2017, EN16314:2013
Metrological class of the gas meter	1,5
Mechanical class	M1
Operating pressure	max. 50 kPa
Display resolution	0,001 m3
Spacing	110, 130 mm
Dimensions	217x199x169 mm
Temperature range	-25°C ÷ +55°C
Storage temperature	-30°C ÷ +60°C
Ingress protection rating	IP 65 according to EN 60529
Power transmission	magnetic
Resistance to neodymium magnets	Yes

CATEGORY:

GAS METERS

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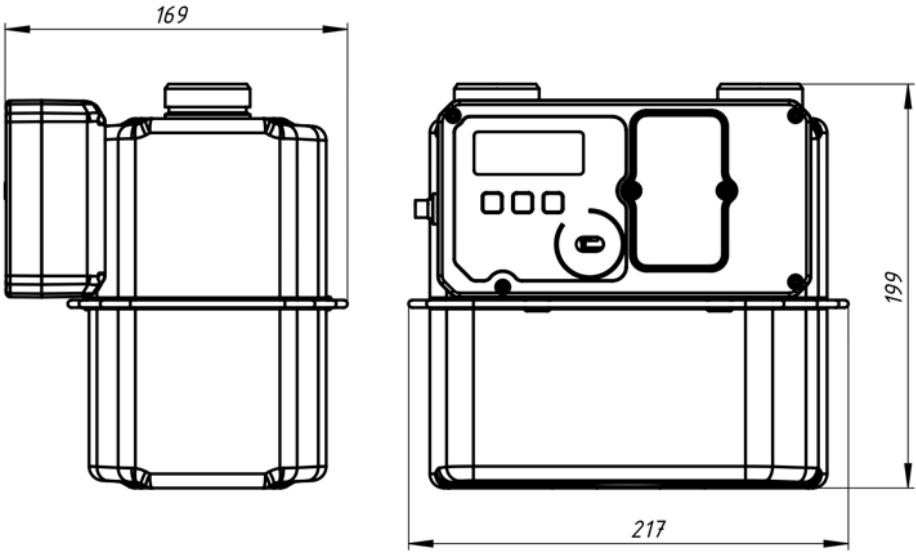


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Parameter	Value
ATEX	Zone Z2
Prepayment valve	Ball valve
Power cells	Litowe, rozmiar D
Display	LCD (volume, volume under standard or normal conditions, gas temperature, gas pressure, radio signal level, current gas consumption, energy)
Antenna	Internal or external
Service link	Optical (IEC 62056-21)
Communication link (separate board)	GSM, NB-IoT/LTE CAT-M, LORA, Wireless MBus
Application protocol	Smart-Gas (ST-IGG-0201:2018)

### Design and operation



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EM-G1.6

## EM-G1.6 DIAPHRAGM GAS METER

Diaphragm gas-meters are designed for measuring the consumption of natural gas, town gas, LPG.

Gas-meters are characterized by:

- high measuring accuracy,
- long lasting metrological stability,
- silent and failsafe working.

### Features/Technical specification

Type	Volume (dm <sup>3</sup> )	Range (m <sup>3</sup> /h)	Connector*	Weight (kg)
EM-G1,6	1,2	0,016÷2,5	G 5/4" DN 32 or 3/4" DN 20	2

(\*) On special request it is possible to provide gas meters with different types of connector

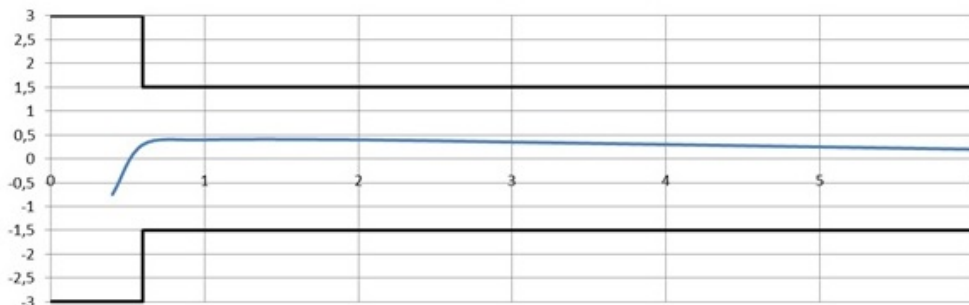
EM type gas meter has full protection against any external factors.

It is equipped with:

- anti-burglar counter,
- non - collapsible counter housing (optional),
- protection against introducing objects that may block the counter,
- lead seal assuring protection against the interferences and deteriorations,
- measuring set made of plastic for protection against using the neodymium magnets.

Counter has a possibility of assembling low frequency, reed relay impulse reader LF (optional).

Error curve:



CATEGORY:

GAS METERS

CERTIFICATIONS



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EM-G2.5

## EM-G2.5 DIAPHRAGM GAS METER

Diaphragm gas-meters are designed for measuring the consumption of natural gas, town gas, LPG.

Gas-meters are characterized by:

- high measuring accuracy,
- long lasting metrological stability,
- silent and failsafe working.

### Features/Technical specification

Type	Volume (dm <sup>3</sup> )	Range (m <sup>3</sup> /h)	Connector*	Weight (kg)
EM-G2,5	1,2	0,025÷4	G 5/4" DN 32 or 3/4" DN 20	2

(\*) On special request it is possible to provide gas meters with different types of connector

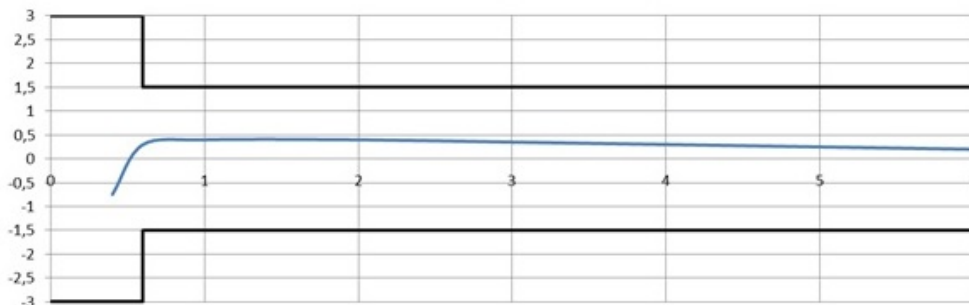
EM type gas meter has full protection against any external factors.

It is equipped with:

- anti-burglar counter,
- non - collapsible counter housing (optional),
- protection against introducing objects that may block the counter,
- lead seal assuring protection against the interferences and deteriorations,
- measuring set made of plastic for protection against using the neodymium magnets.

Counter has a possibility of assembling low frequency, reed relay impulse reader LF (optional).

Error curve:



CATEGORY:

GAS METERS

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EM-G4

## EM-G4 DIAPHRAGM GAS METER

Diaphragm gas-meters are designed for measuring the consumption of natural gas, town gas, LPG.

Gas-meters are characterized by:

- high measuring accuracy,
- long lasting metrological stability,
- silent and failsafe working.

### Features/Technical specification

Type	Volume (dm <sup>3</sup> )	Range (m <sup>3</sup> /h)	Connector*	Weight (kg)
EM-G4	1,2	0,04÷6	G 5/4" DN 32	2

(\*) On special request it is possible to provide gas meters with different types of connector

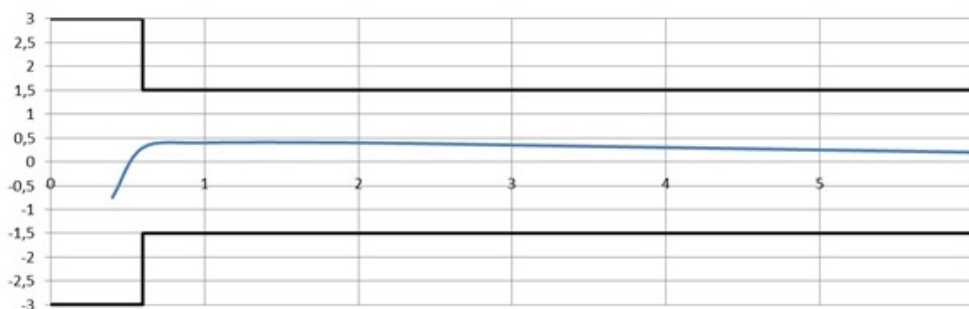
EM type gas meter has full protection against any external factors.

It is equipped with:

- anti-burglar counter,
- non - collapsible counter housing (optional),
- protection against introducing objects that may block the counter,
- lead seal assuring protection against the interferences and deteriorations,
- measuring set made of plastic for protection against using the neodymium magnets.

Counter has a possibility of assembling low frequency, reed relay impulse reader LF (optional).

Error curve:



CATEGORY:

GAS METERS

CERTIFICATIONS



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Fire resistance class B-s1, d0 according to EN 13501-1

## GAS BOX SX600+

The SX600 gas box is designed for installing a gas pressure reduction and metering point with a capacity of up to 10 m<sup>3</sup>/h in:

Connections of single-family buildings;  
Connections of public interest buildings  
Connections of small workshops etc.,

under the main valve.

### Features/Technical specification

The box ensures the installation of a system with gas meters type G 1,6, G2,5, G4, G6 with a spacing of 130 mm. The box is made of high-quality, flame retardant, self-extinguishing plastic with high mechanical strength, resistant to weather conditions, aggressive chemicals and mechanical deformations. The box has a smooth case surface that prevents dirt and increases resistance to moisture penetration. It is also resistant to ultraviolet (UV) radiation and does not require maintenance.

The door is hinged to provide an opening angle of up to 180° and has a universal steel lock, the bolt end of which is shaped like an equilateral triangle with a 9 mm side. Both the steel lock and the key are covered with a galvanic layer for corrosion protection. They are designed to be opened with a firefighter axe.

The box can be equipped with a fixing connector designed so that it is impossible to change the position of the pipe unions in which a gas meter is fixed. Depending on the Customer's needs, the connection can be configured as follows:

- with elbow and half union on both sides (for low-pressure supply) MW130-1
- with elbow and half union on the right side and a 180 degree outlet (for medium-pressure supply) MW130-2:

The gas box includes:

- SX600 gas box (body and door with a steel lock), steel key,
- holder that stabilises the underground part of the gas connection system in the box.

Available on request:

MW130 fixing connector for a gas pressure reduction point or a gas pressure reduction and metering point  
PTX600 plastic base,  
PB600 concrete base

### Software

The box can be installed as a free-standing unit on the base in the line of a fence or on the wall of a building. The installation should be carried out in accordance with the Regulation of the Minister of Infrastructure (Journal of Laws No. 75/2002, item 690, Articles 166-168, as amended) and the manual provided with the product.

CATEGORY:

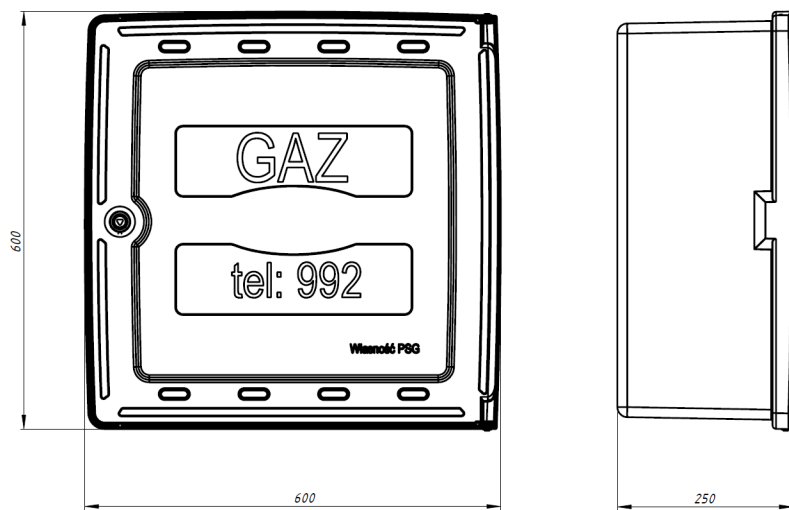
GAS BOXES

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## Advantages

the solution significantly reduces the dimensions of a gas pressure reduction and metering point, increases the tightness of the system, and limits mechanical stresses acting on the reduction gear and the gas meter, the place of installation of the box (building wall, fence, niche) provides direct access to measuring devices, in many cases, a gas network which ends with the main valve coincides with the fence line or building line within the property, thanks to which it is much shorter and therefore cheaper, In the event of a breakdown (catastrophe, etc.), all technical services can quickly shut down the gas supply and, once the breakdown has been removed or the operating works have been completed, the gas network may be started up without any problems, the box is aesthetically pleasing and resistant to weather conditions, full unification of works makes it easier to estimate costs of services.

## Composition of sets

SX600 box or SX600p key

set of mounting screws for the fixing connector on request:

MW fixing connector with a spacing of 130, 250, or 280 mm PTX600 plastic base

PB600 concrete base

## Types of workmanship

The box is yellow RAL 1021; we can manufacture boxes in any RAL colour on request



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PB600

## CONCRETE BASE

The PB600 base is designed for mounting an S600 or SX600 gas box as a standalone connecting point.

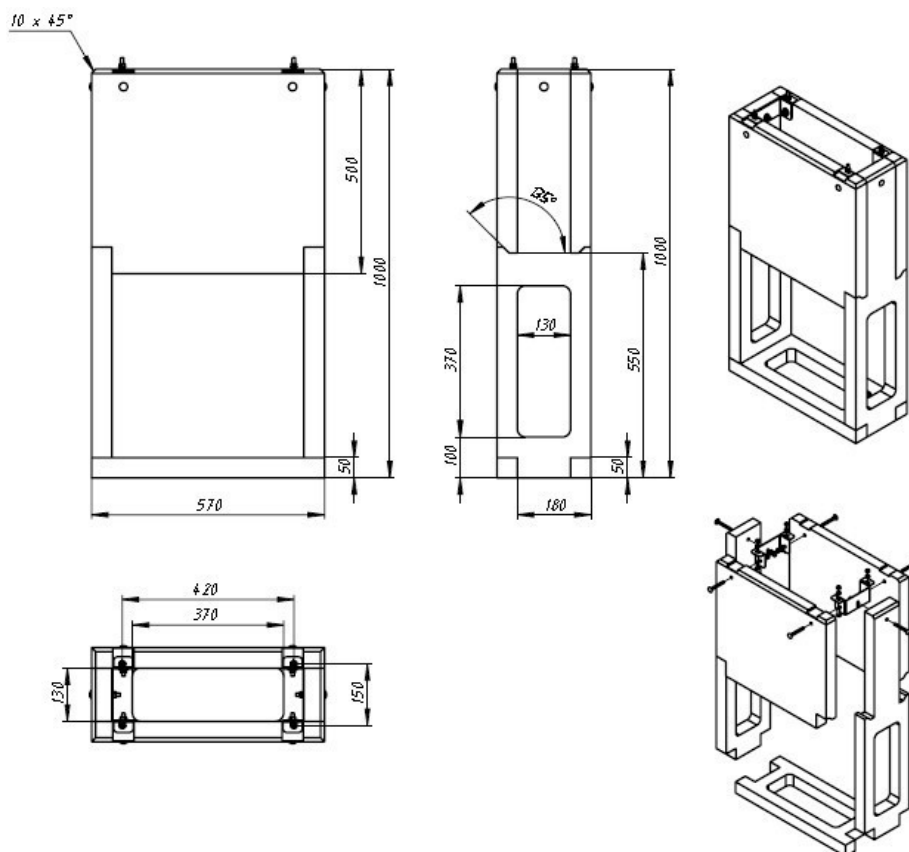
### Features/Technical specification

The box base is made of C16 concrete reinforced with steel wire, which is protected against moisture in the underground part. The base also includes a set of metal elements protected against corrosion, while M8 screws ensure that the base is securely mounted to the box.

### Montage

A box with a base can be mounted as a standalone unit at the base of the fence line. The installation should be carried out in accordance with the Regulation of the Minister of Infrastructure (Journal of Laws No. 75/2002, item 690, Article 166 -

168, as amended) and the installation manual provided with the product. The product complies with Ordinance No. 28/2013 of the President of the Management Board of Polska Spółka Gazownictwa sp. z o.o. in Warsaw of 19 September 2014.



CATEGORY:  
GAS BOXES

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## Advantages

- product modularity ensures fast and trouble-free installation,
- removable front or rear base wall makes it easier to operate and maintain the connection point,
- in many cases, a gas network which ends with the main valve coincides with the fence line or building line within the property, thanks to which it is much shorter and therefore cheaper,
- the base is aesthetically pleasing and resistant to weather conditions, full unification of works makes it easier to estimate costs of services.

## Composition of sets

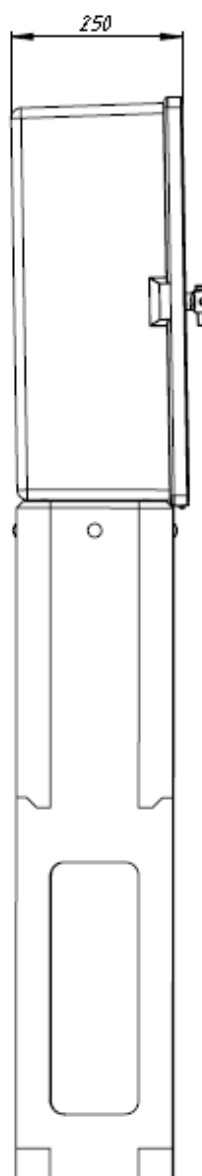
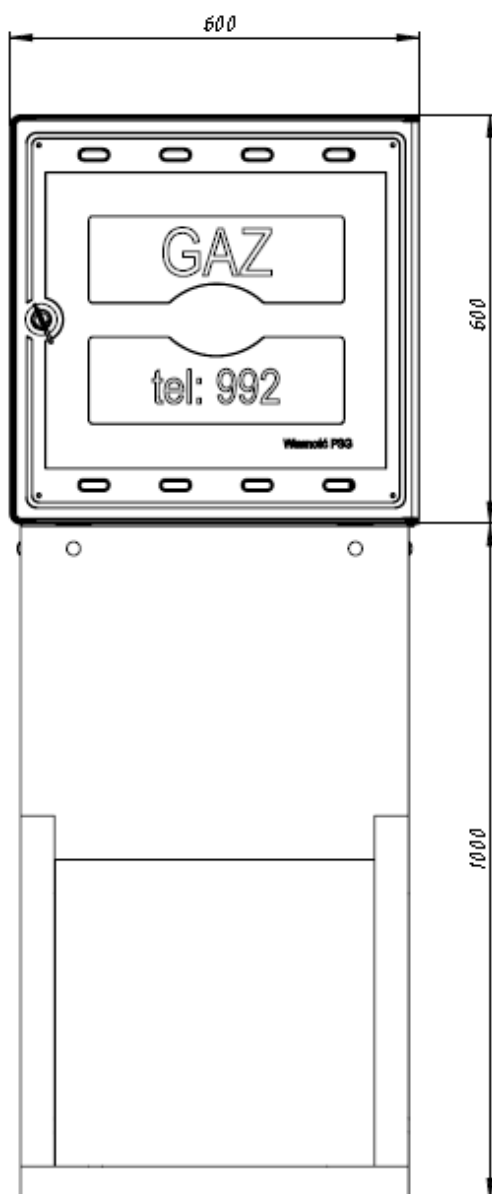
The set includes:

PB600 base

set of connectors and M8 mounting screws. for the S600 or SX600 gas box

## Options

SX600 box with PTX600 base



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## GAS BOX BASE PTX 600

CATEGORY:

**GAS BOXES**

## CERTIFICATIONS

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A box with a base can be mounted as a standalone unit at the base of the fence line. The installation should be carried out in accordance with the Regulation of the Minister of Infrastructure (Journal of Laws No. 75/2002, item 690, Article 166 - 168, as amended) and the installation manual provided with the product. The product complies with Ordinance No. 28/2013 of the President of the Management Board of Polska Spółka Gazownictwa sp. z o.o. in Warsaw of 19 September 2014.



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## Advantages

- in many cases, a gas network which ends with the main valve coincides with the fence
- line or building line within the property, thanks to which it is much shorter and therefore cheaper,
- the base is aesthetically pleasing and resistant to weather conditions;
- the base is delivered unfolded, which makes it possible to save storage space,
- full unification of works makes it easier to estimate costs of services.

## Composition of sets

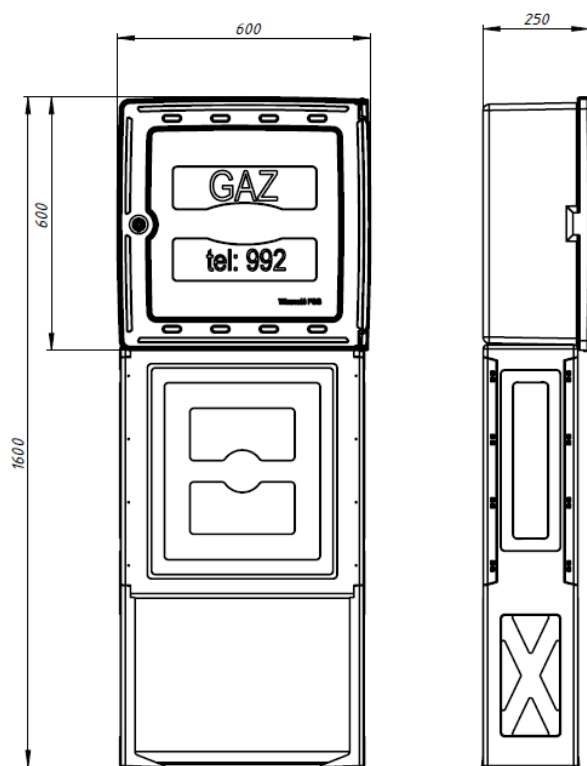
The set includes:

- PTX600 base
- set of mounting screws for the SX600 box

Available on request:

- 1000x600 mm B600 concrete foundation slab
- steel struts mounted to the base feet

## Options



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EM-SL-800

## FIXING UNIT EM-SL-800

Unit designed for fixing 2 gas meters

CATEGORY:

ADDITIONAL  
EQUIPMENT

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