

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

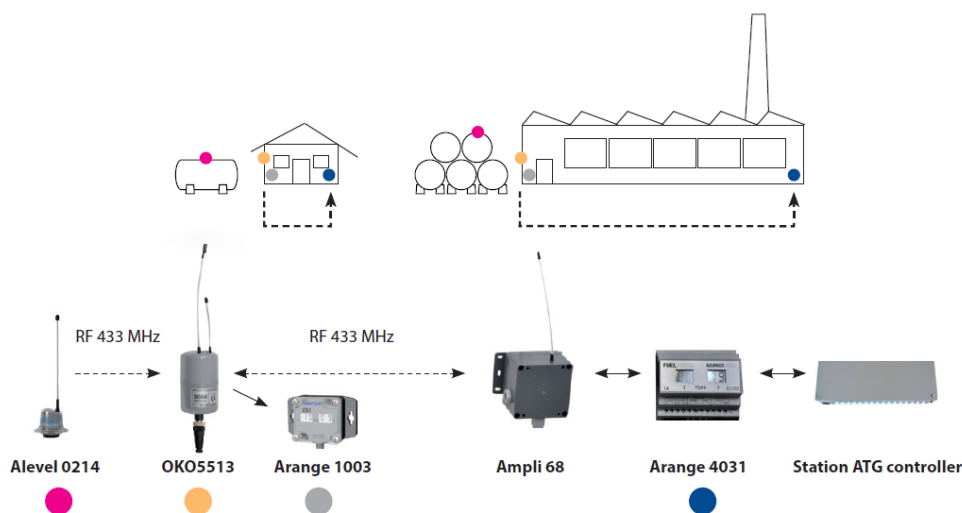
SMART GAS METERING - WIRELESS MONITORING OF LPG TANKS

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

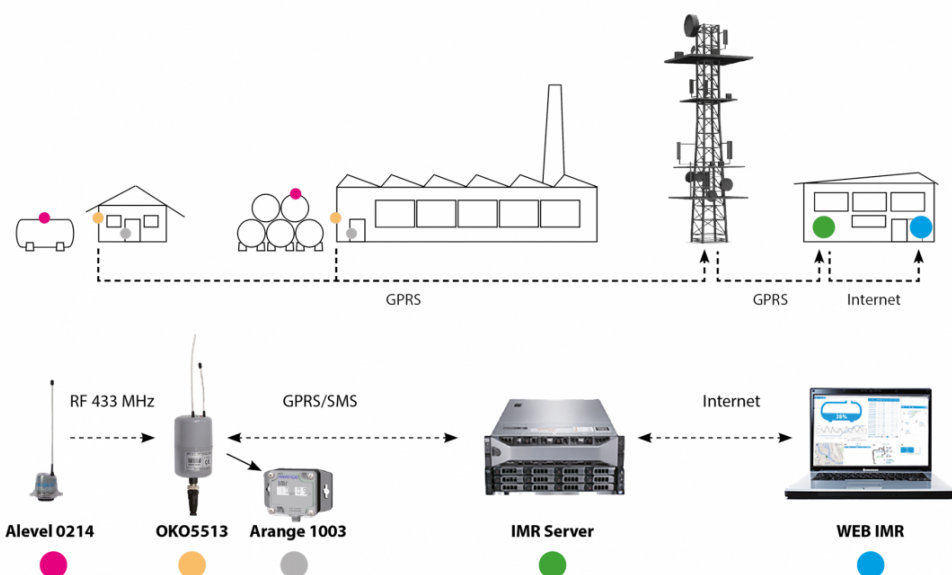


Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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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 OKO 5513
- Robust outdoor design - IP 67
- Zone 0 - ATEX approved

Ampli 68



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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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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ul. Stawowa 71
em@elektrometal.com.pl
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Clustered Metering for residential meters

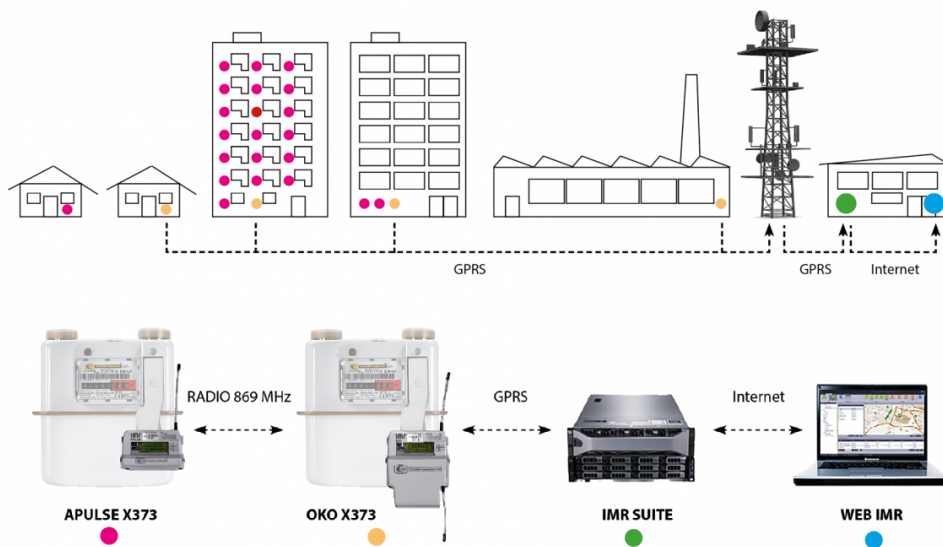
SMART GAS METERING - CLUSTERED METERING

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

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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- Only ATEX certified equipment



Elektrometal SA
43-400 Cieszyn
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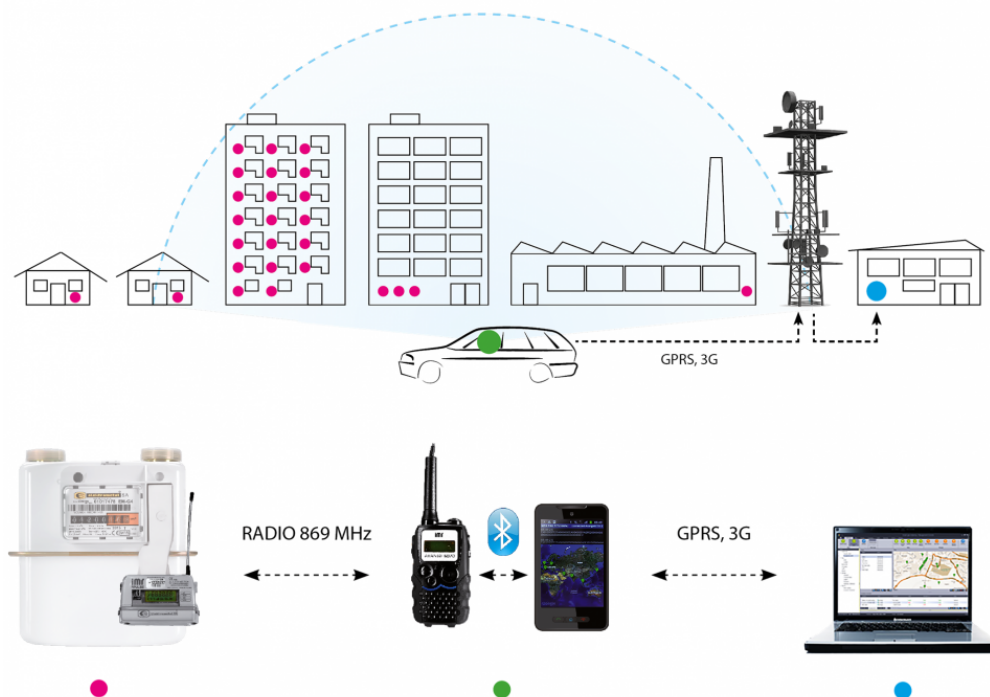
Smart Gas Metering - Walk-by System

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

6 / 52

CATEGORY:

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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
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tel: +48 33 8575 200
fax: +48 33 8575 205

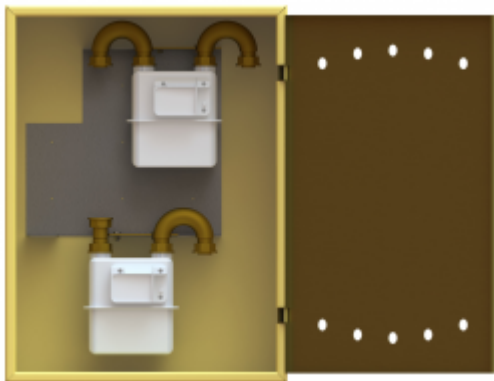
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- Consumption registered for 10 years



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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.

CATEGORY:

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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 ³)	Range (m ³ /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

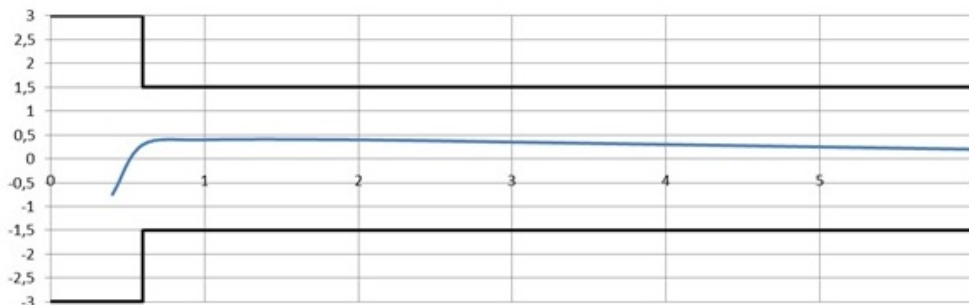
EM type gas meter has full protection against any external factors.

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



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
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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 ³)	Range (m ³ /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

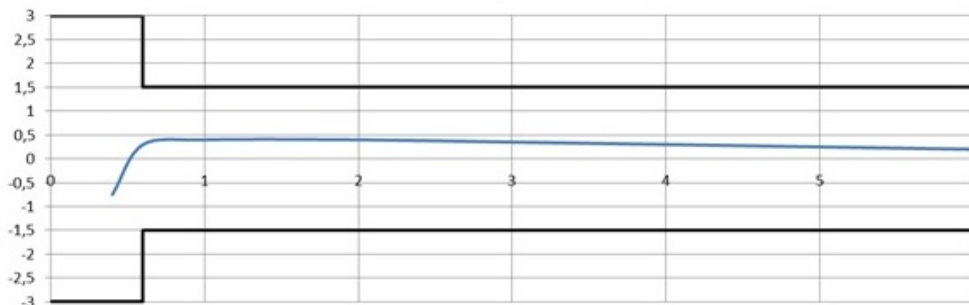
EM type gas meter has full protection against any external factors.

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

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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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 ³)	Range (m ³ /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

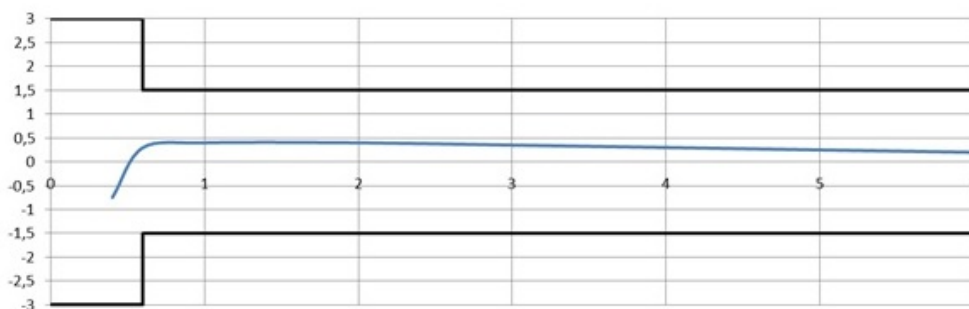
EM type gas meter has full protection against any external factors.

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

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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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TURBINE GAS METERS

Turbine gas meters are applicable in gas supplied industry, chemical industry and in the production of the furnaces for the following gases:

- natural gas
- town gas
- propane
- inert gases

Technical characteristics

Pressure rating		PN10/16 & ANSI 150.
Flanges		DIN, ANSI, JIS
Nominal diameters		from 50 mm (2 ") to 200 mm (8"). Larger sizes on request
Measuring range		minimum 20:1 or even better, in the atmospheric conditions up to 50:1 at higher densities
Flow rates		From 8 m ³ /h to 4,000 m ³ /h
Repeatability		<0.1%
Measurement accuracy	From Qmin to 0.2 Qmax	± 2% or better
	From 0.2 Qmax to Qmax	± 1% or better
Temperature range	Standard	from -25°C to +60°C,
	On request	from -40°C to +80°C,

Pipe size mm (inches)	Rated value G	Measuring range (m ³ /h) Qmin-Qmax	High fren- quency (Hz)	2 x low frequency (pulse/m ³)	Total length (mm)	Pressu- re rating	Body material
50 (2")	G 40 G 65 G 100	8 - 65 10 - 100 8 - 160	200 - 400	10 10 1	150	ANSI 150 DIN PN10/16	Aluminium GGG40 Carbon steel
30 (3")	G 100 G 160 G 250 G 400	8 - 160 13 - 250 20 - 400 32 - 650	200 - 300	1 1 1	240	ANSI 150 DIN PN10/16	Aluminium GGG40 Carbon steel
100 (4")	G 160 G 250 G 400 G 650	13 - 250 20 - 400 32 - 650 50 - 1000	200 - 300	1 1 1 1	300	ANSI 150 DIN PN10/16	Aluminium GGG40 Carbon steel
150 (6")	G 400 G 650 G 1000 G 1600	32 - 650 50 - 1000 80 - 1600 130 - 2500	100 - 200	1 1 0.1 0.1	450	ANSI 150 DIN PN10/16	Aluminium GGG40 Carbon steel

CATEGORY:

GAS METERS

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43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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200 (8")	G 650 G 1000 G 1600 G 2500	50 - 1000 80 - 1600 130 - 2500 200 - 4000	75 - 150	0.1 0.1 0.1 0.1	600	ANSI 150 DIN PN10/1 6	Aluminium GGG40 Carbon steel
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Design and operation

The operating principle is based on the gas velocity measurement. The flowing gas is accelerated and conditioned by the front straightening section of the meter. The straightening section conditions the gas flow by removing unwanted whirls, turbulences and flow profile asymmetry before the gas hits the turbine rotor. Dynamic forces the liquid cause the rotation of the turbine rotor. The turbine is mounted on the axial shaft by means of very precise stainless steel low-friction ball bearings.

The turbine rotor has spiral blades and known angle in relation to the gas flow. The turbine rotor angular velocity is proportional to the speed of the gas. The turbine rotor and its main gear (both elements are mounted in a pressurised body) drive a 100% airtight gearbox mounted on the outside. The gearbox allows error adjustment. A removable eight-digit mechanical counter is mounted on the top of the gearbox. The counter typically includes low-frequency pulse transmitters.

CONSTRUCTION

- removable meter cartridge (RMC)
- lightweight aluminium body of the meter
- optimised design of bearings, including axial load compensation
- protection against dirt and a complete flushing oil system
- multi-stage flow conditioner
- multifunction clutch with one latch
- multifunctional indicator
- high-frequency sensors with an insulated thermal socket

REMOVABLE METER CARTRIDGE (RMC)

All of our turbine meters (from 2" G40 to 3" G 2500, for pressures up to 16 bar) are based on the concept of the removable meter cartridge (RMC). This allows the owner/operator to change the characteristics of the meter on the spot. For each body of the meter, there are four types of RMC available, which ensures maximum modular flexibility in terms of minimum performance, peak performance, pressure loss and the nominal G value. Since the cartridges may be initially calibrated by legalized testing institutes, any improvements in performance or functionality of the meters can be easily performed on the spot. Recalibration of gas meters is a matter of hours because the cartridges can be replaced on the spot with initially calibrated cassettes, which reduces the logistic costs to a minimum, while the quality and performance are still maintained at the highest level. The weight of the removable meter cartridge is certainly much lower than that of the whole meter, which means that the cartridge can be quickly and safely transported by courier service, without complicated and time-consuming dispatch operations.

The length of the cartridge is equal to three diameters and fully complies with the European directives for turbine gas meters. The cartridge and the turbine are made of high quality aluminium, which guarantees long-term stability. Optionally, the cartridge can have a hard shell (anodic oxidation) in order to prevent wear and corrosion of flow-through channels resulting from effects of air and dust.

Due to the application of a special ring for the positioning of the cartridge in the meter body, the cross-sectional area of the cartridge is much larger compared to conventional turbine meters.

This enables the production of meters with greater maximum capacity (greater nominal value G). In most of conventional meters from other manufacturers, e.g. for size 6", the available Q_{max} is typically 1600 m³/h, whereas in our turbine meters, the performance for size 6" is 2500 m³/h.

The applicability of a meter smaller by one size (diameter) not only has a positive impact on the purchase price of the meter, but also allows you to use smaller pipes running to the meter, valves, etc., and thus greatly reduces the size of the station and its building.

All critical components, including the turbine rotor and input transmission gears, are located in the cartridge (RMC).

LIGHTWEIGHT ALUMINIUM BODY OF THE METER

Aluminium bodies are equivalent of iron bodies of GGG40 meters in terms of strength and are verified as suitable for all classes up to ANSI 150 or DIN PN 16. Hard anodized shell perfectly protects the meter body against corrosion

OPTIMISED DESIGN OF BEARINGS, INCLUDING AXIAL LOAD COMPENSATION

When the meters are subject to impact loads during transport, initial damage to the bearings will occur without warning. The impact load, combined with the weight of the turbine rotor, will cause collisions of tiny ball with the inner/outer ring of the ball bearing. This is the starting point of the excessive wear causing increased friction and consequently a change in accuracy. Eventually, the bearings fall apart.

To reduce the forces acting on the main bearings, the main front bearing (larger than the rear bearing to overcome the axial load) is set exactly in the vertical mid-line of the turbine rotor, which means that the



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43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

resulting forces acting on a small rear bearing are eliminated

The initial verification of the meter is performed using ambient air with density of approximately 1.2 kg/m³. For the scope of 1:20, the bearings must be very small in order to reduce mechanical friction. Since the forces on the rotor of the turbine and the axial load on the bearings are proportional to the density of the gas to be measured, the axial load on the bearings is much greater when the meter is operated at higher pressures (at 8 bar pressure, the natural gas density is 5 times as high, which also refers to the axial load on the front bearing). As a result, the bearings will be overloaded when the meter is operated at a higher rating unless some constructional provisions are made. Our gas meters are compensated for this density related to the additional axial load. This so-called axial load compensation (ALC) compensates for the density associated with the axial load of the turbine rotor by causing a slight overpressure downstream the turbine rotor. This overpressure pushes the rotor back in the opposite direction to the flow of gas and as such reduces the effect of the axial load on the main front bearing. Unfortunately, the ALC may cause the meter to be more sensitive to dirty gas, because dirt tends to accumulate at the site of higher pressure (near the front bearing). To resolve both of these problems, the bearings, gears and shafts are placed before the turbine rotor, which means that the ALC effectively prevents any impact of dirt and/or dust on the bearings.

PROTECTION AGAINST DIRT AND A COMPLETE FLUSHING OIL SYSTEM

For keeping the bearings in a proper condition, it is important that dirt (dust) is washed out and oil regularly refreshed. Our turbine meters are fitted with a refreshing and flushing system which allows pumping oil into the reservoir in the bearing block (where all bearings, shafts and gears are located). A splashing vane operating at high speed (the speed of the main shaft) "splashes" the oil in the bearing block, washing, cleansing and moistening all pans and surfaces. Tests with similar oil systems installed in rotary meters show a significant improvement in service life.

Our meters have bearings mounted deep inside the bearing block, available only through the labyrinth, which further improves resistance to dirty gas. As a result, dirt particles are basically prevented from penetrating into the bearing.

MULTI-STAGE FLOW CONDITIONER

To ensure superior accuracy of the meter even in installations that are far from perfect, we have placed the turbine rotor entirely at the back of the cartridge. This doubles the distance for flow straightening, compared with conventional turbine gas meters. Conventional turbine meters have actually only four active degrees of straightening, whereas our meters have six (6) degrees of straightening.

MULTI-STAGE FLOW CONDITIONER

To ensure superior accuracy of the meter even in installations that are far from perfect, we have placed the turbine rotor entirely at the back of the cartridge. This doubles the distance for flow straightening, compared with conventional turbine gas meters. Conventional turbine meters have actually only four active degrees of straightening, whereas our meters have six (6) degrees of straightening.

MULTIFUNCTION CLUTCH WITH ONE LATCH

In order to eliminate any restrictions for any future enhancements, the rotary gas meters are equipped with a hybrid magnetic clutch. Using a specially designed magnet inside of the gas meter, only "one latch" is needed for changing the readout of the meter from the "mechanical" readout (a magnet is used for driving the magnet of the follower of the mechanical indicator) to the "electronic" one (the orientation of the magnetic field is used for activating the pulse cables to detect rotation direction and position of the turbine rotor). This means that most of the basic version of the gas meter are already prepared for transforming into an advanced, fully electronic meter with features of conversion (PTZ) and communication (GSM, PSTN, ISDN, Ethernet, etc.).

MULTIFUNCTION INDICATOR

The standard indicator is an 8-digit mechanical indicator. The indicator is 100% airtight to avoid condensation inside. Thanks to this perfectly secure sealing, the indicator glass is clean inside and the indicator is protected against blocking caused by frozen condensation or moisture in winter. The indicator can be rotated 350°. The mechanical indicator has a slot, which allows a maximum flexibility. By changing the slot, the meter can be equipped on the spot with in several types of low-frequency sensors (reed relays or Wiegand sensors) and/or a tamper detector.

HIGH-FREQUENCY SENSORS WITH AN INSULATED THERMAL SOCKET

Our turbine meters can optionally be equipped with a high-frequency sensor. The sensor can also be subsequently attached to the meter without removing the meter or cartridge to this end. The sensor is designed and approved according to ATEX, FM and CSA. The generated output signal meets the EN 60947-5-8/NAMUR requirements. The unique housing of that high frequency sensor can be also used as a thermal socket to ensure accurate temperature measurement. The thermal socket is insulated from the body of the meter by means of o-rings, which eliminates the conventional offset of the temperature readout

VERIFICATION AND CALIBRATION

Turbine meters are supplied with a calibration certificate.

The initial verification and calibration is performed at the factory on the calibration bench approved by the NMI and PTB.

Also high-pressure calibrations in approved installations can be carried out at the customer's request.

TYPICAL CALIBRATION CURVE

All of our turbine meters are equipped with carefully machined turbine rotors in order to ensure the necessary stability and guarantee the measuring accuracy in the entire range of pressures.



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ul. Stawowa 71
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Montage

The integrated, multi-stage flow conditioner of our turbine meter eliminates the effects of flow disturbances, the so-called perturbations defined in ISO 9951, and as such meets requirements of European and main international directives and the guidelines, including OIML, ISO & DVGW. The design allows construction of very compact M/R station without detriment to the accuracy of the meter.

Gas pipes must be clean and free from foreign contamination, such as sand, dirt, welding residue, other particles and liquids. In the case of dirty gases it is recommended that the gas meter should be equipped with an automatic greasing system and/or purification system.

In the case of a newly developed lubrication system, the flow of relatively dirty gas through the interior of the meter is acceptable. With dirty gas, the lubrication system must work with increased frequency to eliminate the effect of the dirty gas on the gas meter bearings.

Although the axial compensation protects the meter against sudden changes in flow, it is recommended that the pressure should be raised slowly to prevent operation with excessive speed and a possible damage to the inside of the meter.

Advantages

- Reduced production cost transferred to the customer
- Reduced cost of the station construction which enables the future customer - in the case of an increase in demand for gas - an easy improvement of the RMC in terms of the nominal G value, without an expensive and complicated extension of the meter series by using conventional turbine meters
- Easy "on the spot" maintenance by replacing the RMC with an initially calibrated new RMC with the same nominal G value or an alternative nominal G value.
- Reduced cost of repairs thanks to removing and returning to renovation only the RMC, in contrast to the long and thereby unacceptable times for repair and renovation of a conventional meter
- Increased shelf-life thanks to the oil system which not only refreshes the oil in the bearings and lubricates all moving parts, but also flushes out all the dirt and dust.
- The meter is suitable for installation in accordance with the local directives and quality levels while maintaining the highest reliability, performance and accuracy.



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ROTARY PISTON METERS

Turbine gas meters are applicable in gas supplied industry, chemical industry and in the production of the furnaces for the following gases:

- natural gas,
- town gas,
- propane,
- inert gases,

Technical characteristics

Pressure rating		as per PN 10/16 & ANSI 150
A high-pressure version		is under development
Flanges		DIN, ANSI, JIS and other (on request)
Nominal diameters		From 1½" to 6" (DN 40 - DN 150)
Measuring range		Minimum 160:1 or even better in the atmospheric conditions. (European Union standard - 1:20.)
Flow rates		From 0.5 m³/h to 1,000 m³/h
Repeatability		0.1%
Measurement accuracy	From Qmin to 0.2 Qmax	± 2% or better
	From 0.2 Qmax to Qmax	± 1% or better
Temperature range	Standard	from -25°C to +60°C,
	On request	from -40°C to +80°C,

MEASURING RANGES AND PULSE DATA

Rated value G	Size		Nominal capacity Qmax m³/h	Range	2 x low-frequency pulse (1 pulse per m3)
	inches	mm			
G 16	2"	50	25	1:50	no data available
G 25	2"	50	40	1:80	no data available
G 40	2"	50	65	1:100	10
G 65	2"	50	100	1:160	10
G 100	3"	80	160	1:160	1
G 160T	3"	80	250	1:160	1
G 160	3"	80	250	1:160	1
G 250	4"	100	400	1:160	1
G 400T	4"	100	650	1:160	1
G 400T	6"	150	650	1:160	1

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G 650T	6 "	1 5 0	1000	1:1 60	1
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DIMENSIONS AND WEIGHTS

Rated value G	Number of screws	Size		Overall flange-to-flange dimensions	Height and depth		Total weight in kg Approximate values
		inch	mm		mm	mm	
G 16	4	2 "	50	171	180	220	10
G 25	4	2 "	50	171	180	220	10
G 40	4	2 "	50	171	180	220	10
G 65	4	2 "	50	171	180	220	10
G 100	4/8	3 "	80	171	200	280	13
G 160T	4/8	3 "	80	171	200	350	21
G 160	4/8	3 "	80	241	225	315	27
G 250	8	4 "	100	241	225	400	30
G 400T	8	4 "	100	241	225	510	43
G 400T	8	6 "	150	241	285	510	50
G 650T	8	6 "	150	241	285	680	61

Note: GxxxT = Twin

Design and operation

The principle of operation of a rotary gas meter is well known. It is the positive type meter, indicating the pre-set amounts of gas by means of two rotors rotating in the opposite directions. Four times for each rotation, the fixed volume unit is moved by measuring chambers. The volume of the flowing gas is proportional to the number of rotations of the output device. The output device for this model of a rotary gas meter is a specially designed clutch with one part mounted inside the body of the meter and the part is located in the readout device. The readout device may be either a mechanical indicator or an electronic indicator with or without conversion and volume communication functions.

The robustness of the structure is clearly noticeable:

- the shape of the gas meter body
- the shape of the rotors
- the design of the main shafts and their bearings
- the meter selected for the meter body
- overall dimensions of the meter
- no bending, no twisting, no torque, no vibrations

The indicator of a standard mechanical gas meter is equipped with a low frequency output. Additionally, low- and high-frequency outputs or intelligent electronics can be installed.

The meters are also fitted with a number of Pr points and many thermal slots suitable for easy connection of devices for electronic gas volume conversion.

The bearings are placed on the outside of the timing gears, which allows a connection between the rotors and the timing gears and makes the structure much more robust than in conventional types of rotary gas meters

The rotary gas meters are designed to provide the user with maximum comfort

All the items, such as the indicator, all sight-glasses and all oil filler plugs are accessible from the front. It also enables the installation of the meter with its back to the wall in order to save space, for example in underground installations. All the major parts can be replaced on the spot without special tools. The whole mechanism containing rotors, timing gears and bearings can be drawn from the meter and reinstall without any loss of performance. Front and rear bearings can be replaced in less than 10 minutes.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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MULTIFUNCTION CLUTCH WITH ONE LATCH

In order to eliminate any restrictions for future enhancements, the rotary gas meters are equipped with a hybrid magnetic clutch. Using a specially designed magnet inside of the meter, only "one latch" is needed for changing the readout of the meter from the "mechanical" readout (a magnet is used for driving the magnet of the follower of the mechanical indicator) to the "electronic" one (the orientation of the magnetic field is used for activating the pulse cables to detect rotation direction and position of the rotors). This means that most of the basic version of the gas meter are already prepared for transforming into an advanced, fully electronic meter with features of conversion (PTZ) and communication (GSM, PSTN, ISDN, Ethernet, etc.).

MULTIFUNCTION INDICATOR

The mechanical indicator has a slot, which allows a maximum flexibility. By changing the slot, the meter can be equipped on the spot with in several types of low-frequency sensors (reed relays or Wiegand sensors) and/or a tamper detector. The mechanical indicator is 100% sealed to avoid condensation in the indicator.

VERIFICATION AND CALIBRATION

Rotary meters are supplied with a calibration certificate. The initial verification and calibration is performed at the factory on the calibration bench approved by the NMI and/or PTB. In the case of rotary meters with TWIN rotors, also high-pressure calibrations in approved installations can be carried out at the customer's request

FEATURES

The shape of the meter body, the square shape of the rotors and rigid front support plate make the gas meter completely insensitive to any pipe stress caused by misalignment. In the case of conventional types of rotary meters, the pipe stress often causes blockage of the rotors or serious deterioration of their performance. The typical asymmetric design of rotor tips enables a significant increase in the tightening proportion. Since the tip of the rotor is at least two times greater than the conventional rotor tip, any leakage flow not recorded by the meter is much smaller, which results in an increased proportion of tightening without increasing the sensitivity of the meter to the stresses in installation or dirty gas. The larger tip also means that the tip clearance can be increased, allowing larger tolerances of the measuring chamber in the body of the meter.

THE PRINCIPLE OF OPERATION OF TWIN ROTORS

In rotary meters, pulsations grow with an increase in pressure and flow, therefore, there can be generated such strong pulsations that the related resonance can become destructive to the measuring station. In fact, these pulsations limit the reachable Qmax of the rotary meter. The pulsations also affect the accuracy, since the pressure in the measuring chambers and the volume moved change.

In order to compensate for the sinusoidal pulsation, the flow in the meter is divided and measured by means of two measuring chambers with the phase shift of 45° (180° in terms of sinusoidal wave). As a result, almost 100% of the pulsation is compensated (overlapping of sinusoidal waves shifted by 180°). The residual sine wave is much smaller than the pulse generated by the rotary gas meter with a single measuring chamber. Elimination of pulsation increases the service life of the meter, reduces noise and significantly improves accuracy.

Another advantage of the TWIN rotor is that the meter is very rigid now with an additional double bearing support between the rotors. The combination of the TWIN rotor, square rotors and improved position of timing gears makes the meter ideal for applications where high pressures occur.

Montage

The design allows construction of very compact M/R station without detriment to the accuracy of the meter.

The gas meter is designed for outdoors installation. Gas pipes must be clean and free from foreign contamination, such as sand, dirt, welding residue, other particles and liquids.

We recommend that you install a gas filter with filtration level 160 µ before the rotary meter.

You should check the flow direction in the meter in relation to the required installation. Fill the oil tank after you install the meter in the system. A bottle with a suitable oil lubricant is supplied with the meter in a standard way.

The oil tank should be filled to the middle level visible in the sight glass.

The gas meter is designed for different uses in natural gas measurements, which means that its structure is able to withstand typical starting operations without detriment to performance or quality. However, in order to ensure a long service life, you should be careful when applying pressure to the meter to prevent overspeeding and damage to the rotating parts.

Advantages

- reduced production cost reflected in the price of the product
- reduced weight of the meter
- reduced overall dimensions, which allows building very compact measurement stations
- reduced pressure drop thanks to the typical shape of the rotors



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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- reduced total cost of ownership (TCO) thanks to the reduced maintenance costs
- decreased sensitivity to stresses in the system as a result of the strong structure of the meter body
- decreased sensitivity to overload, gas contaminants and pressure shocks thanks to the robust design of the meter
- the meter is suitable for installation in accordance with the local directives and quality levels while maintaining the highest reliability, performance and accuracy



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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PRESSURE REGULATORS MIX-50G, MIX-50L

Pressure regulators MIX-50G and MIX-50L are designed for reducing the average pressure of natural gas in domestic terminals and small business entities:

- in old and new gas installations,
- wherever there is a need to replace legacy or damaged regulators.

Technical characteristics

SERVICE ENDPOINTS	MIX-50G & MIX-50L	
	2.0 kPa	1.3 kPa
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4

*outlet pressure value. With possible margin of setting at the production stage.

	MIX-50G	MIX-50L
Weight	2.9 kg	
Dimensions	141 x 167 x 155 mm	155 x 149 x 155 mm
Temperature class	-30° to +60°C	
Nominal size	DN 15/25	
Inlet connection	G 3/4" spherical-conical	
outlet connection	G 5/4" flat	
Installation in any position		
Packaging	in cartons 1 pcs.	
Input pressure range	0.01 - 0.5 MPa	

Design and operation

- compact design
- two reduction degrees
- cut-off valve
- overpressure slam-shut valve at the inlet
- blow-out discharge valve
- wire mesh filter.

Body of the regulator is made of Zamak, while the connectors are made of brass.

Mix-50G - pressure regulator with nozzle spacing 103 x 70 mm, angled pattern, with nominal flow of 50 m³/h,
MIX-50L - pressure regulator with nozzle spacing 155 mm, linear pattern, with nominal flow of 50 m³/h.

Security

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded.

CATEGORY:

GAS REGULATORS

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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SELF-ACTIVATING PRESSURE REGULATORS

Pressure regulators MIX-10(*)/S are designed for reducing the average pressure of natural gas in domestic terminals in old and new gas installations:

- wherever receivers with auto shut-off of the gas supply at a pressure loss are applied.

Features/Technical specification

The regulators are delivered with:

- the national Declaration of Conformity (Elektrometal SA)
- Technical Approval AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate of Conformity (national) No. 24/14 with AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate No. 19/14 authorising for marking the product with the safety and quality mark - in accordance with Technical Criteria KT-28-96 ed. 8 (INiG Kraków)

Technical characteristics

SERVICE ENDPOINTS	MIX-10(*)/S	
	2.0 kPa	1.3 kPa
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4
Response pressure of automatic start	ca. 1.7	ca. 1.0

Weight	1.5 kg	Inlet connection	G 3/4" spherical-conical
Temperature class	-40°C ÷ +60°C	outlet connection	G 1 1/4" flat
Nominal size	DN 15/25	Installation in any position	
Packaging	in cartons 10 pcs. or other (on request)		
Input pressure range	0.01 - 0.5 MPa		

Design and operation

- compact design
- two reduction degrees
- cut-off valve
- overpressure slam-shut valve at the inlet
- blow-out discharge valve
- absorbent/wire mesh filter
- lever for manual switching on and off of the flow.

CATEGORY:

GAS REGULATORS

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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Security

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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PRESSURE REGULATORS MIX-10U, MIX-25U

Pressure regulators MIX-10U and MIX-25U are designed for reducing the average pressure of natural gas in domestic terminals:

- in old and new gas installations,
- wherever there is a need to replace legacy or damaged regulators.

Features/Technical specification

The regulators are delivered with:

- the national Declaration of Conformity (Elektrometal SA)
- Technical Approval AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate of Conformity (national) No. 24/14 with AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate No. 19/14 authorising for marking the product with the safety and quality mark - in accordance with Technical Criteria KT-28-96 ed. 8 (INiG Kraków)

Technical characteristics

SERVICE ENDPOINTS	MIX-10U		MIX-25U
	2.0 kPa	1.3 kPa	2.0 kPa
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3	1.3 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4	4.5 ± 0.5
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4	3.3 ± 0.5

Weight	1.5 kg	Inlet connection	G 3/4" spherical-conical
Dimensions	134 x 126.5 x 132 mm	outlet connection	G 11/4" flat
Temperature class	-40°C ÷ +60°C	Installation in any position	
Nominal size	DN 15/25	Packaging	in cartons 10 pcs. or other (on request)
Input pressure range	0.01 - 0.5 MPa		

CATEGORY:

GAS REGULATORS

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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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Design and operation

- compact design
 - two reduction degrees
 - cut-off valve
 - overpressure slam-shut valve at the inlet
 - blow-out discharge valve
 - absorbent filter
- MIX-10U - pressure regulator with nozzle spacing 70 mm, upturned U pattern, with nominal flow of 10 m³/h,
MIX-25U - pressure regulator with nozzle spacing 70 mm, upturned U pattern, with nominal flow of 25 m³/h,

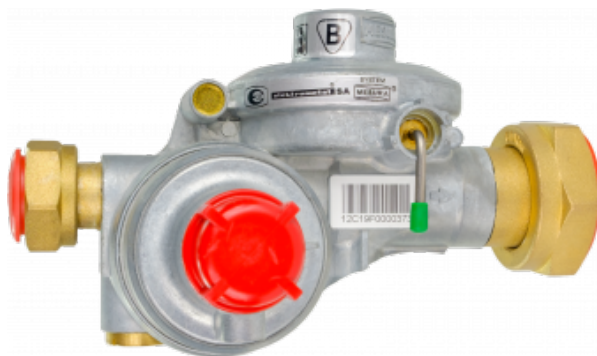
Advantages

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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PRESSURE REGULATORS MIX-10L, MIX-25L

Pressure regulators MIX-10L and MIX-25L are designed for reducing the average pressure of natural gas in domestic terminals:

- mainly in the areas of modern gas grids, in new installations,
- wherever there is a need for replacement of damaged regulators or installation of a battery of regulators.

Features/Technical specification

The regulators are delivered with:

- The national Declaration of Conformity (Elektrometal SA)
- Technical Approval AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate of Conformity (national) No. 24/14 with AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate No. 19/14 authorising for marking the product with the safety and quality mark - in accordance with Technical Criteria KT-28-96 ed. 8 (INiG Kraków)

Technical characteristics

SERVICE ENDPOINTS	MIX-10L		MIX-25L
	2.0 kPa*	1.3 kPa*	2.0 kPa*
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3	1.3 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4	4.5 ± 0.5
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4	3.3 ± 0.5

Weight	1.5 kg	Inlet connection	G 3/4" spherical-conical or G 5/4"
Outer dimensions	170 x 109.5 x 132 mm	outlet connection	G 5/4"
Temperature class	-40°C ÷ +60°C	Installation in any position	
Nominal size	DN 15/25	Packaging	in cartons 10 pcs. or other (on request)
Input pressure range	0.01 - 0.5 MPa		

*outlet pressure value. With possible margin of setting at the production stage.

CATEGORY:

GAS REGULATORS

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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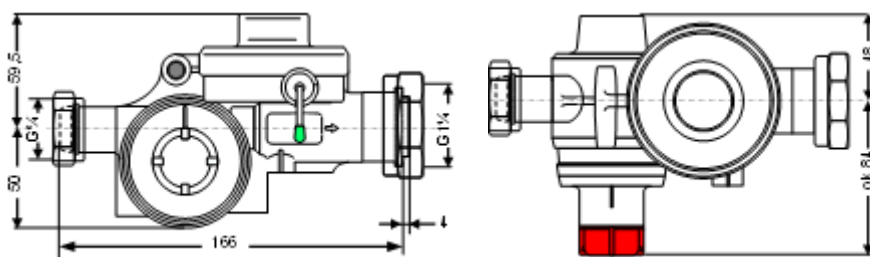
Design and operation

- compact design
- two reduction degrees
- cut-off valve
- overpressure slam-shut valve at the inlet
- blow-out discharge valve
- wire mesh filter.

Body of the regulator is made of Zamak, while the connectors are made of brass.

MIX-10L - pressure regulator with nozzle spacing 166 mm, linear, with nominal flow of 10 m³/h,

MIX-10L - pressure regulator with nozzle spacing 166 mm, linear, with nominal flow of 25 m³/h,



Advantages

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded.

The wide range of operating temperatures is from -40°C up to +60°C.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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PRESSURE REGULATORS MIX-10G, MIX-25G

Pressure regulators MIX-10G and MIX-25G are designed for reducing the average pressure of natural gas in domestic terminals:

- mainly in the areas of modern gas grids, in new installations,
- wherever there is a need to replace legacy or damaged regulators.

Features/Technical specification

The regulators are delivered with:

- The national Declaration of Conformity (Elektrometal SA)
- Technical Approval AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate of Conformity (national) No. 24/14 with AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate No. 19/14 authorising for marking the product with the safety and quality mark - in accordance with Technical Criteria KT-28-96 ed. 8 (INiG Kraków)

Technical characteristics

SERVICE ENDPOINTS	MIX-10G		MIX-25G
	2.0 kPa*	1.3 kPa*	2.0 kPa*
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3	1.3 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4	4.5 ± 0.5
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4	3.3 ± 0.5

Weight	1.5 kg	Inlet connection	G 3/4" spherical-conical
Outer dimensions	150 x 126.5 x 132 mm	outlet connection	G 5/4" flat
Temperature class	-40°C ÷ +60°C	Installation in any position	
Nominal size	DN 15/25	Packaging	in cartons 10 pcs. or other (on request)
Input pressure range	0.01 - 0.5 MPa		

*outlet pressure value. With possible margin of setting at the production stage.

CATEGORY:

GAS REGULATORS

CERTIFICATIONS



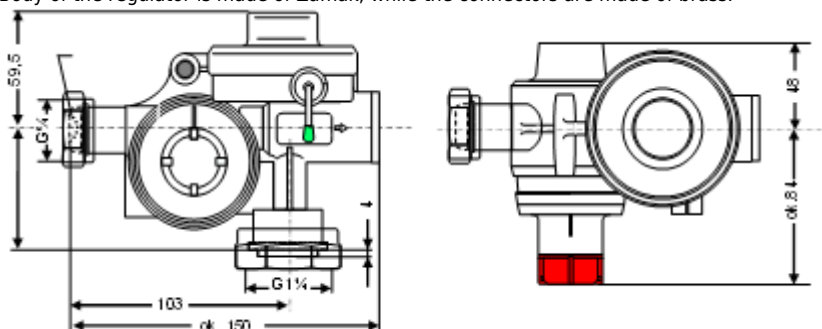
Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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Design and operation

- compact design
- two reduction degrees
- cut-off valve
- overpressure slam-shut valve at the inlet
- blow-out discharge valve
- wire mesh filter.

Body of the regulator is made of Zamak, while the connectors are made of brass.



Execution

MIX-10G - pressure regulator with nozzle spacing 103 x 63 mm, angled, with nominal flow of 10 m³/h, interchangeable with the type RG-10 (tin) and RE-10 regulators.

MIX-25G - pressure regulator with nozzle spacing 103 x 63 mm, angled, with nominal flow of 25 m³/h.

Advantages

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded.

Wide range of operating temperatures from -40°C up to +60°C.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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PRESSURE REGULATORS MIX-10, MIX-25

Pressure regulators **MIX-10** and **MIX-25** are designed for reducing the average pressure of natural gas in domestic terminals:

- in old and new gas installations
- wherever there is a need to replace legacy or damaged regulators

Features/Technical specification

The regulators are delivered with:

- the national Declaration of Conformity (Elektrometal SA)
- Technical Approval AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate of Conformity (national) No. 24/14 with AT/2014-03-04 edition I/2014 (INiG Kraków)
- Certificate No. 19/14 authorising for marking the product with the safety and quality mark - in accordance with Technical Criteria KT-28-96 ed. 8 (INiG Kraków)

Technical characteristics

SERVICE ENDPOINTS	MIX-10		MIX-25
	2.0 kPa	1.3 kPa	2.0 kPa
Closing pressure of the shut-off valve	1.3 ± 0.3	0.8 ± 0.3	1.3 ± 0.3
Closing pressure the slam-shut valve activated at the increase of the outlet pressure	4.5 ± 0.5	3.2 ± 0.4	4.5 ± 0.5
Response pressure of the blow-off discharge valve	3.3 ± 0.5	2.2 ± 0.4	3.3 ± 0.5

Mass	1.5 kg	Inlet connection	G 3/4" spherical-conical
Dimensions	154 x 122.5 x 132 mm	outlet connection	G 1 1/4" flat
Temperature class	-40°C ÷ +60°C	Installation in any position	
Nominal size	DN 15/25	Packaging	in cartons 10 pcs. or other (on request)
Input pressure range	0.01 - 0.5 MPa		

Design and operation

- compact design
- two reduction degrees
- cut-off valve
- overpressure slam-shut valve at the inlet
- blow-out discharge valve
- absorbent filter.

CATEGORY:

GAS REGULATORS

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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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Execution

MIX-10 - pressure regulator with nozzle spacing 133 x 63 mm, angled, with nominal flow of 10 m³/h,

MIX-25 - pressure regulator with nozzle spacing 133 x 63 mm, angled, with nominal flow of 25 m³/h

Advantages

Regulators have built-in protections in the form of a slam-shut valve and a blow-out discharge valve activated when the outlet pressure grows, as well as a shut-off valve activated by an outlet pressure fall/loss and when the maximum capacity is exceeded.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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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 m³/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:

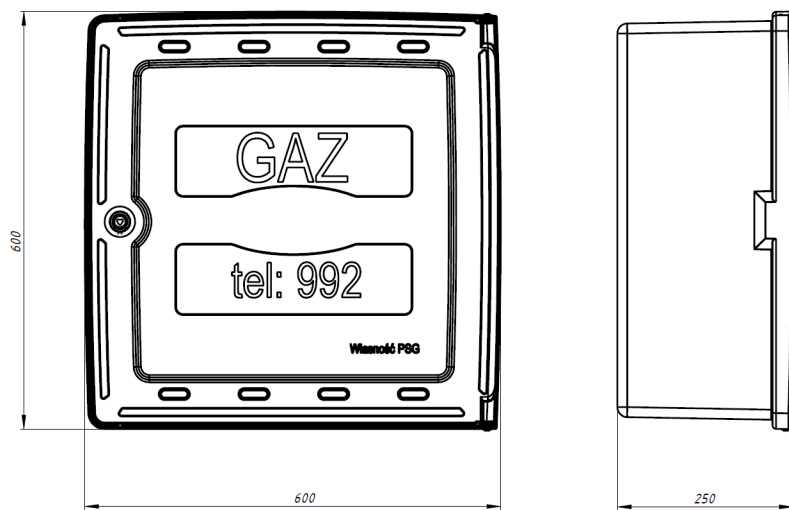
GAS BOXES

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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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



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
version of day: 2020-05-05

PB600

CONCRETE BASE

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

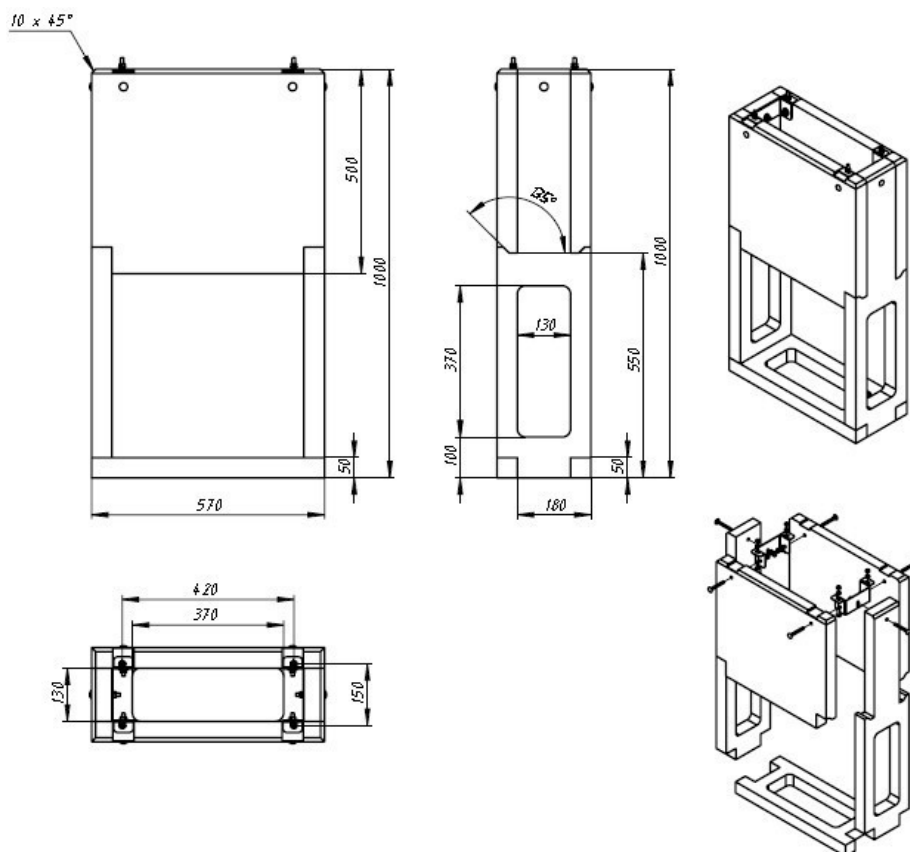
Features/Technical specification

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

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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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

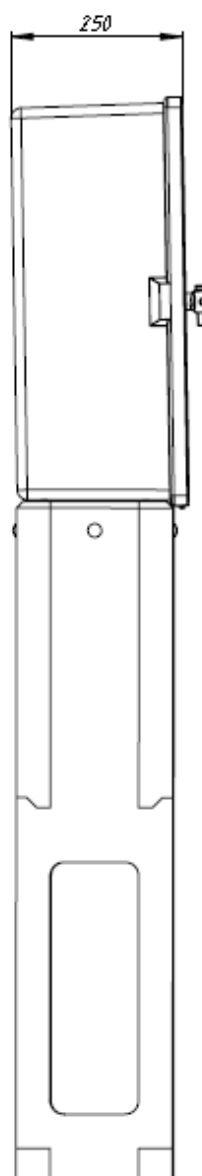
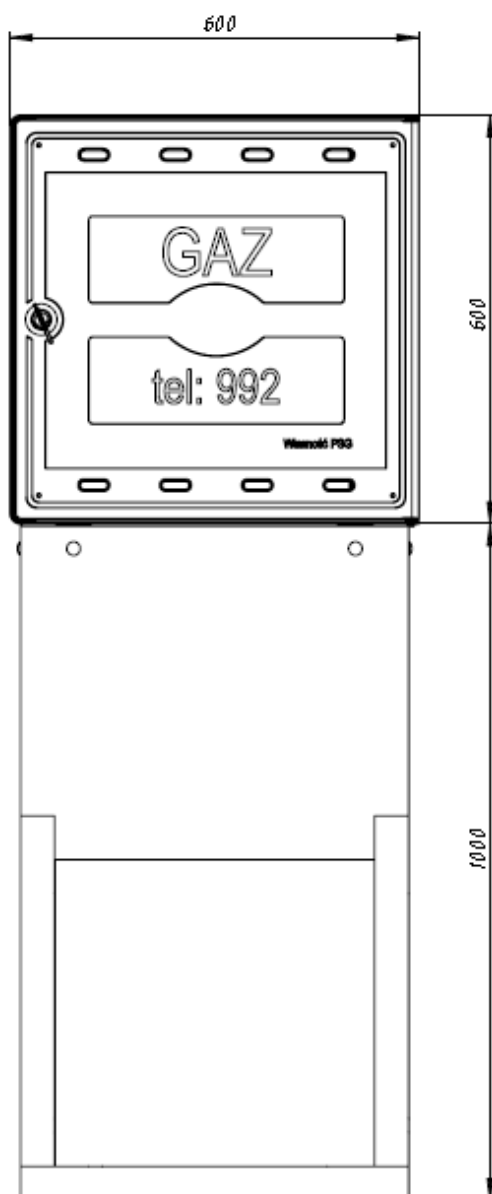
The set includes:

PB600 base

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

Options

SX600 box with PTX600 base



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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

GAS BOX BASE PTX 600

The PTX600 gas box base is designed for mounting an SX600 gas box as a standalone connecting point.

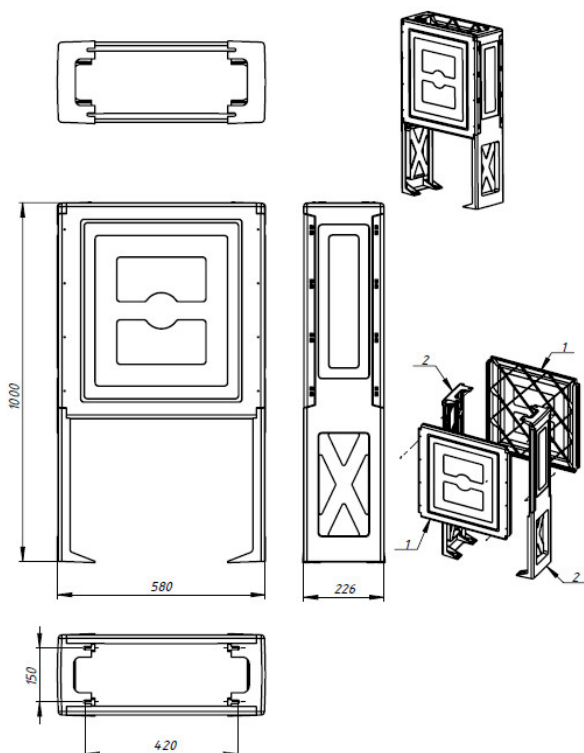
Description

The box base is made of high-quality, flame retardant, self-extinguishing plastic with high mechanical strength, resistant to weather conditions, aggressive chemicals, and is very resistant to mechanical deformations. The base 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 extra maintenance. Is equipped with a set of metal components ensuring a durable and stable connection to the box. The front base wall is removable, making it easier and quicker to install the entire system and simplifying any later technical inspections of the system.

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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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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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

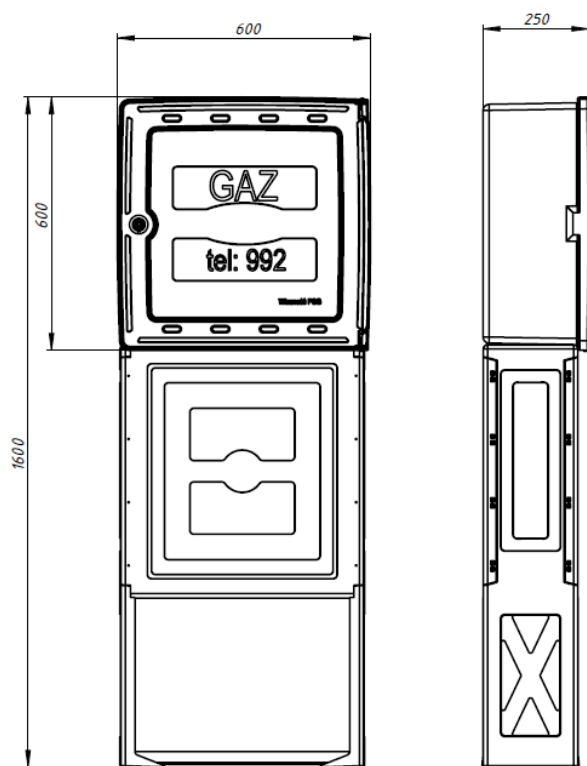
The set includes:

- 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



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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EM-S350

EM-S350 GAS BOX

CATEGORY:
GAS BOXES

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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EM-SX600

EM-SX600 GAS BOX

CATEGORY:

GAS BOXES

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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EM-SX600 & EM-PTX600

EM-SX600 GAS BOX WITH BASIS EM-PTX600

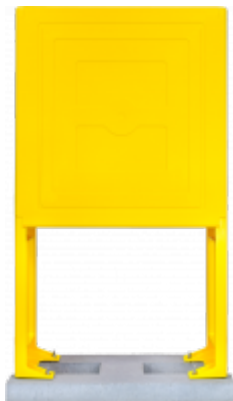
CATEGORY:
GAS BOXES

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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EM-PTX600

EM-PTX600 BASE FOR GAS BOX EM-SX600

CATEGORY:
GAS BOXES

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Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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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.

CATEGORY:

FULLY EQUIPPED GAS BOXES

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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version of day: 2019-01-10

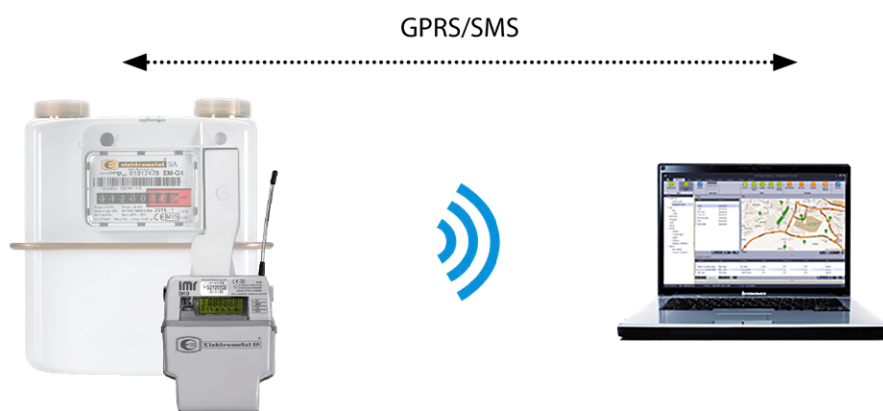
OKO X303

WIRELESS GAS METER DATA LOGGER

OKO X303 is a universal data logger, that can be easily installed on existing diaphragm meters. On a daily basis, the logger transmits consumption profile with GPRS/SMS to backoffice server. Flexible configuration permits for customisation of logged data structures and communication pattern for specific Gas Utility needs. IMR Smart Gas Metering system AIUT consists of communication equipment, data loggers, sensors, as well as back office software package for data acquisition, analytics and presentation.

Description

Functionality



Advantages

- GPRS or SMS communication
- Data stored at 30'/60' intervals for 10 years
- Built-in pulse sensor
- Long life battery (5 years)
- Robust, suitable for outdoor environment
- Easy to set up & retrofittable on existing meters
- Optional replicated pulse output
- Zone 0 - ATEX approved



CATEGORY:

SMART GAS
METERING

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
version of day: 2019-04-23

Features/Technical specification

Data structures

- Configurable logging interval of 15, 30, 60 minutes or 24 hours,
- Current state: temperature, device status, GSM reception, battery state,
- Daily maximum instantaneous and hourly flow, peak hours counter,
- Tamper detection: cover open, device removal, external magnet.

Communication

- GPRS/SMS communication: daily readouts, data archive, alarms, configuration,
- Over the air firmware upgrade,
- GSM Modem Telit GL865 Dual Band (Quad Band on request),
- Opto Port for easy diagnostics.

User friendly interface

- Graphic orientated display with single button control for current readout presentation, extensive diagnostics and easy installation process.

Environment

- Robust design, secured with seals,
- Suitable for outdoor environment,
- Operational temperature -25°C to +55°C,
- Ingress protection IP 56.

Compliance

- ATEX certification (Zone 0 gas group B),
- IECEx,
- LVD,
- RTTE,
- EMC.

Managment system

- Back office server with database for readouts, configuration and devices,
- Communication management and different protocols support for system with thousands devices,
- Browse current and historical data on the web, get email summary reports,
- Manage installation process, supervise and maintain high system performance.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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OKO X373

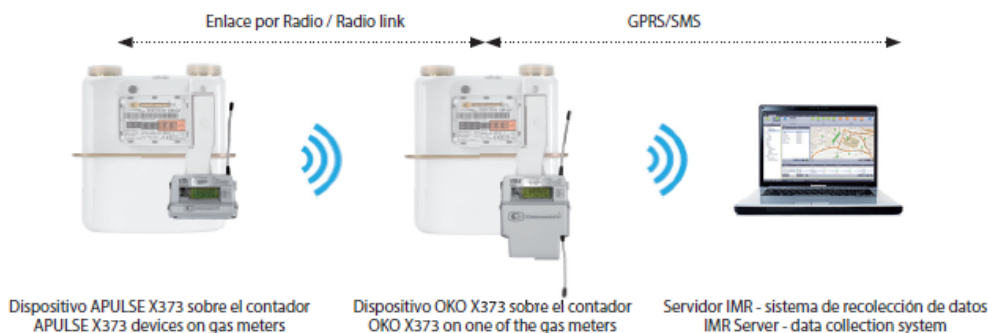
GAS METER DATA LOGGER WITH RADIO CONCENTRATION

OKO X373 is a universal data logger, that can be easily installed on existing diaphragm meters. It combines radio clustered networks with GPRS/SMS gateways to establish fully automatic readout collection to back office server. It is a perfect solution for high rise buildings.

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

Description

Functionality



Advantages:

- GPRS/SMS and Radio concentrator
- Hourly consumption registered for 10 years
- Built-in pulse sensor
- Long life battery (3 years)
- Robust, suitable for outdoor environment
- Easy to set up & retrofittable on existing meters
- Zone 0 - ATEX approved

Features/Technical specification

Own data structures as well as for all supported APULSEs

- Configurable logging interval of 60 minutes or 24 hours,
- Daily data (current state, daily statistics, daily data archive),
- Summary reports with hourly and daily consumption profile,
- Tamper detection: device removal, external magnet.



CATEGORY:

SMART GAS
METERING

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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Communication

- GPRS/SMS communication with backoffice server,
- License free radio communication RF: 867-869 MHz (by default) or 169 MHz, 433 MHz, 915 MHz (on request),
- Daily readouts, data archive, alarms, configuration,
- Over the air firmware upgrade,
- Opto Port for easy diagnostics.

User friendly interface

- Graphic orientated display for current readout presentation, extensive diagnostics and easy installation process.

Environment

- Robust design, secured with seals,
- Suitable for outdoor environment,
- Operational temperature -20°C to +55°C,
- Ingress protection IP56.

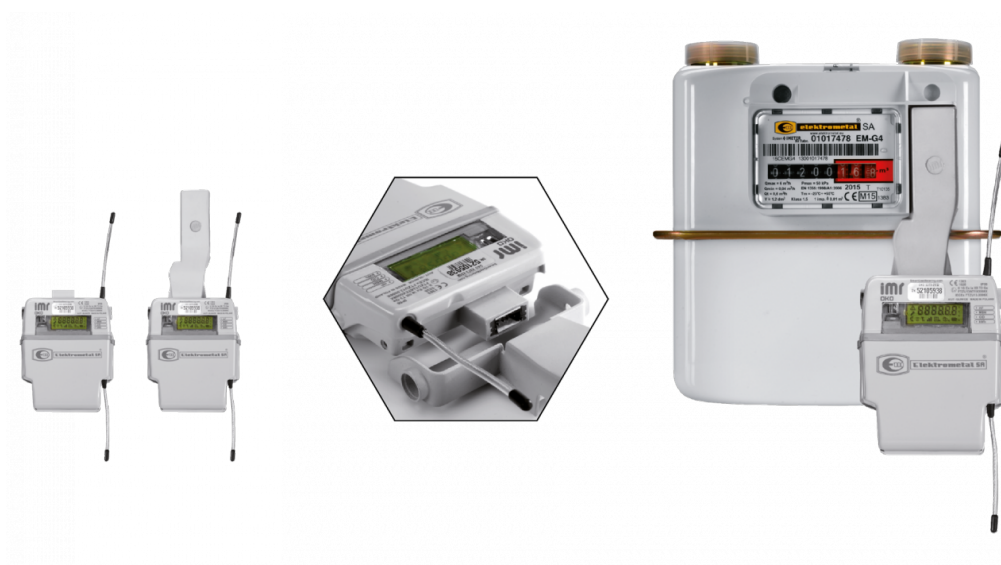
Compliance

- ATEX certification (Zone 0 gas group B),
- IECEx,
- LVD,
- RTTE,
- EMC.

Management system

- Backoffice server with database for readouts, configuration and devices,
- Communication management and different protocols support for system with thousands of devices,
- Browse current and historical data on the web, get email summary reports,
- Manage installation process, supervise and maintain high system performance.

Montage



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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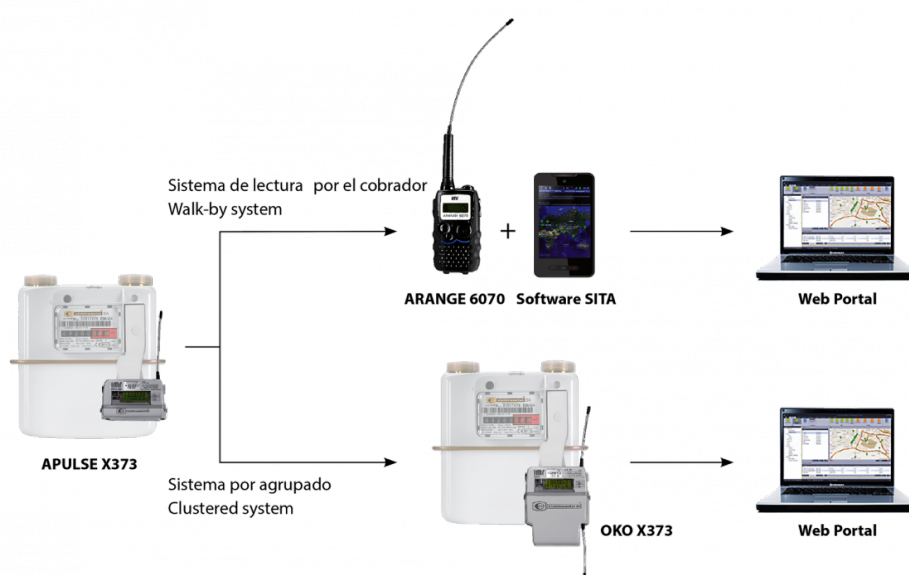
APULSE X373

WIRELESS RADIO GAS METER DATA LOGGER

APULSE X373 is a universal wireless data logger with built-in pulse detector that can be installed on new or existing diaphragm meters. The device registers consumption profile as well as magnet and tamper detection. Designed for walk-by gas metering as well as fixed (clustered) metering which makes it the most cost effective solution for individual housing, dense urban and block of flats. IMR Smart Gas Metering system AIUT consists of communication equipment, data loggers, sensors as well as backoffice software package for data acquisition, analytics and presentation.

Description

Functionality



Advantages

- Cost effective solution
- Radio communication
- Hourly consumption registered for 10 years
- Built-in pulse sensor
- Long life battery (10 years)
- Robust, suitable for outdoor environment
- Easy to set up & retrofittable on existing meters
- Zone 0 – ATEX approved



CATEGORY:

SMART GAS
METERING

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
version of day: 2019-01-17

Features/Technical specification

Data structures

- Configurable logging interval of 60 minutes or 24 hours,
- Daily data (current state, daily statistics, daily data archive),
- Summary reports with hourly and daily consumption profile,
- Tamper detection: device removal, external magnet.

Communication

- Radio communication RF 867-869 MHz, on request 169 MHz/433 MHz,
- Daily readouts, data archive, alarms, configuration,
- Remote firmware upgrade,
- Opto Port for easy diagnostics.

User friendly interface

- Graphic orientated display for current readout presentation, extensive diagnostics and easy installation process.



Environment

- Robust design, secured with seals,
- Suitable for outdoor environment,
- Operational temperature -40°C to +55°C,
- Ingress protection IP56.

Compliance

- ATEX certification (Zone 0 gas group B),
- IECEx,
- LVD,
- RTTE,
- EMC.

Management System

- Backoffice server with database for readouts, configuration and devices,
- Communication management and different protocols support for system with thousands devices,
- Browse current and historical data on the web, get email summary reports,
- Manage installation process, supervise and maintain high system performance.



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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E.AED26

GAS METERS DURABILITY TESTBENCH E.AED26

Test facility for durability test of diaphragm gas meters according to article 7.1.2.2.2 of EN 1359:2017.

CATEGORY:

ADDITIONAL
EQUIPMENT

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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EM-SL-800

FIXING UNIT EM-SL-800

Unit designed for fixing 2 gas meters

CATEGORY:

ADDITIONAL
EQUIPMENT

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

www.elektrometal.eu
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MW130-2

FIXING CONNECTOR MW130-2

CATEGORY:

ADDITIONAL
EQUIPMENT

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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MW130-1

FIXING CONNECTOR MW130-1

CATEGORY:

ADDITIONAL
EQUIPMENT

CERTIFICATIONS



Elektrometal SA
43-400 Cieszyn
ul. Stawowa 71
em@elektrometal.com.pl
tel: +48 33 8575 200
fax: +48 33 8575 205

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