EMIS

20 YEARS

MEASURE THE WORLD

PRODUCT CATALOG

emis-kip.ru

2023

Dear Customer and Partners

In 2023 EMIS celebrates the 20 years in business. EMIS today is the leading Russian engineering company of industrial equipment, which owns the wide product range of metering devices for all industrial needs.

Constant development, scientific and technological potential, modern production site and strong engineering skills led the company to the international level competing with the world-class metering equipment manufacturers.

We struggle the challenging market by increasing production amount and accomplish import substitution mission with honor and credit.

EMIS company mission is to lead the Russian equipment manufacturing to the world-class level and we strive to make our brand the symbol of quality and reliability.

20 years of experience, investment in production improvement and R&D, commitment to manufacturer and supplier liabilities are the keys to success of EMIS company, which is highly recognizable among the customers.

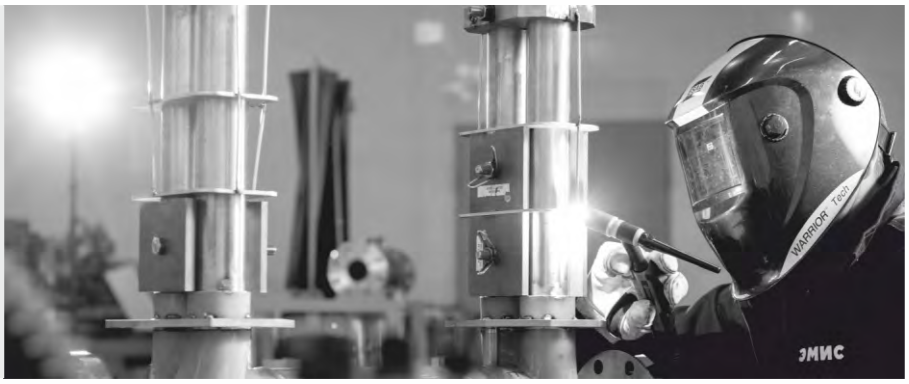
With respect, General director
Georgii Andreevskikh

Activities

The main production site is located in Chelyabinsk city and consists of two technological facilities of more than 16 000sq.m. We cover the full cycle of instrument making process, starting from development and design, manufacturing and calibration, ending with on-site installation and commissioning.

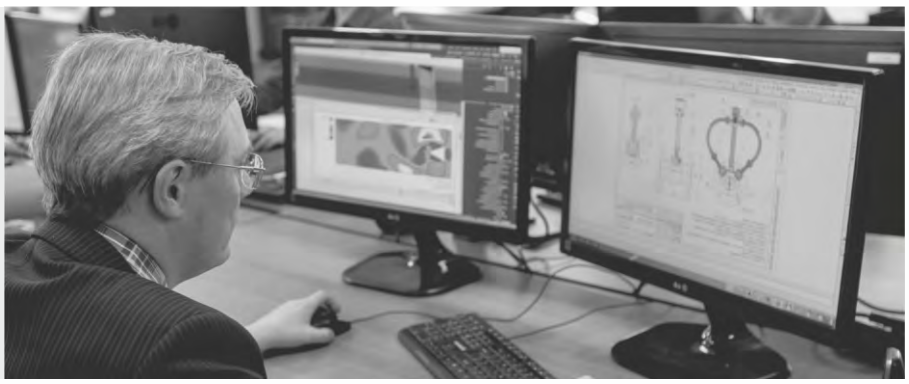
01
PRODUCTION

Manufacturing of flow meters, pressure transmitters, level switches and metering systems.



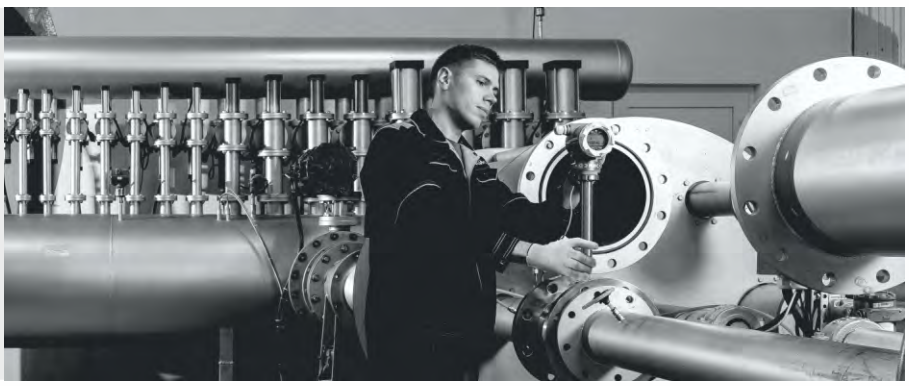
02
ENGINEERING

Design, metrology engineering.



03
CALIBRATION

Calibration of liquid and gas metering equipment.



04
SERVICE

Customer care and after-sales service

EMIS today

Newest solutions, innovative engineering and production improvement allow to increase production amount and market share.

16000+	25+	30+
Square meters of production site	Patents on invention and utility models	product names

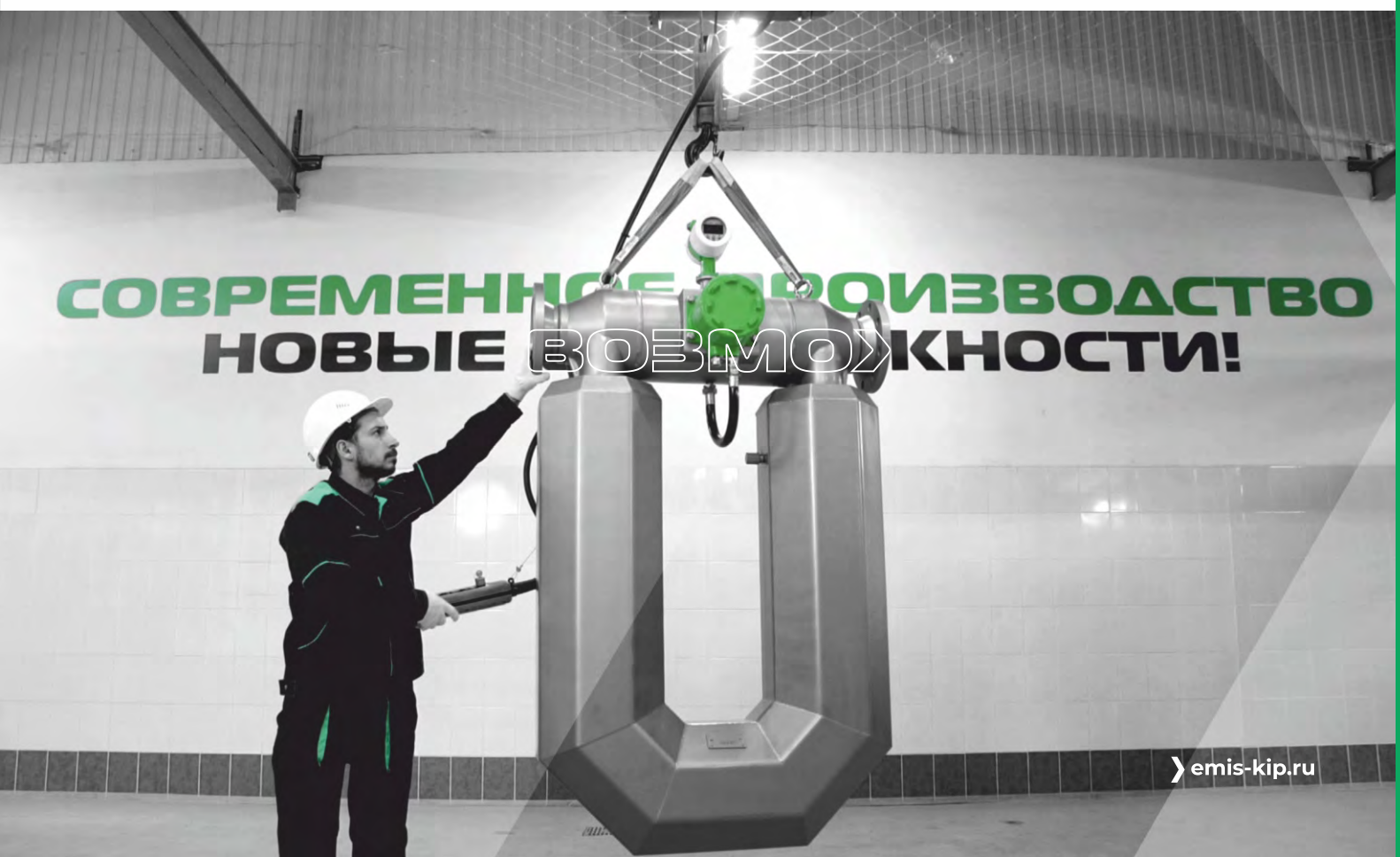
Company structure

60% — Production, service

20% — Engineering department

5% — General staff

15% — Sales department



Production site

Production site consists of the following divisions: electronic engineering, welding, assembling and production control, and testing laboratory. Quality management system complies with ISO 9001-2015.

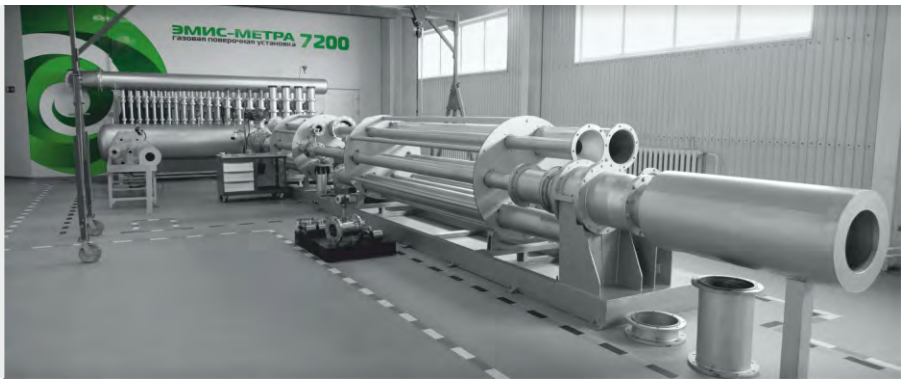
Metrology site

EMIS being the leading manufacturer of metering equipment possesses its own calibration facilities, which consists of the range of unique primary and secondary measurement standards of liquid and gas.

GAS CALIBRATION UNIT

EMIS VEKTA 7200

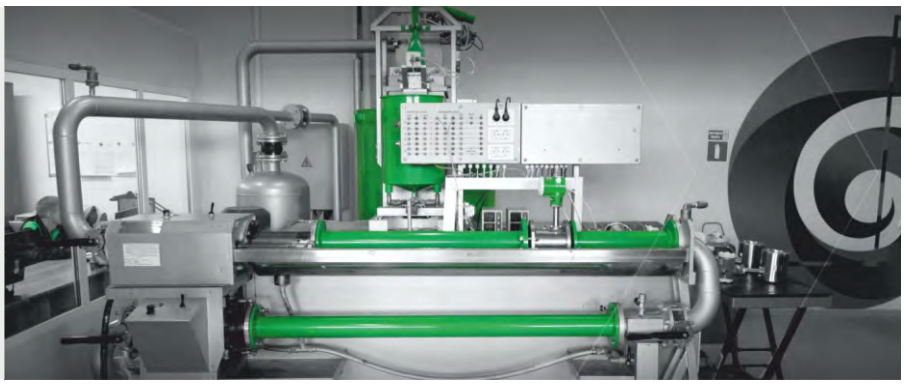
Standard for gas flow of 1st grade.
Innovative product of company engineers.



LIQUID CALIBRATION UNIT

EMIS UPSGM 140

Standard for liquid flow of 1st grade.



LIQUID CALIBRATION UNIT

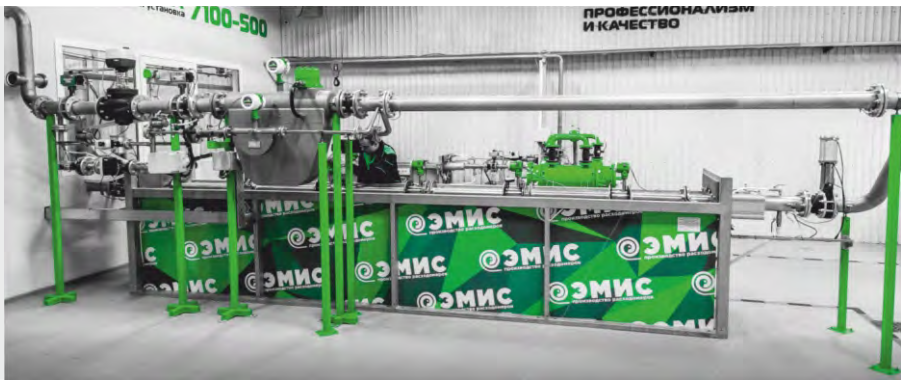
EMIS MERA 7100-20

Standard for liquid flow of 2nd grade.

LIQUID CALIBRATION UNIT

EMIS METRA 7100

Secondary standard for liquid flow/



MEASURE THE WORLD

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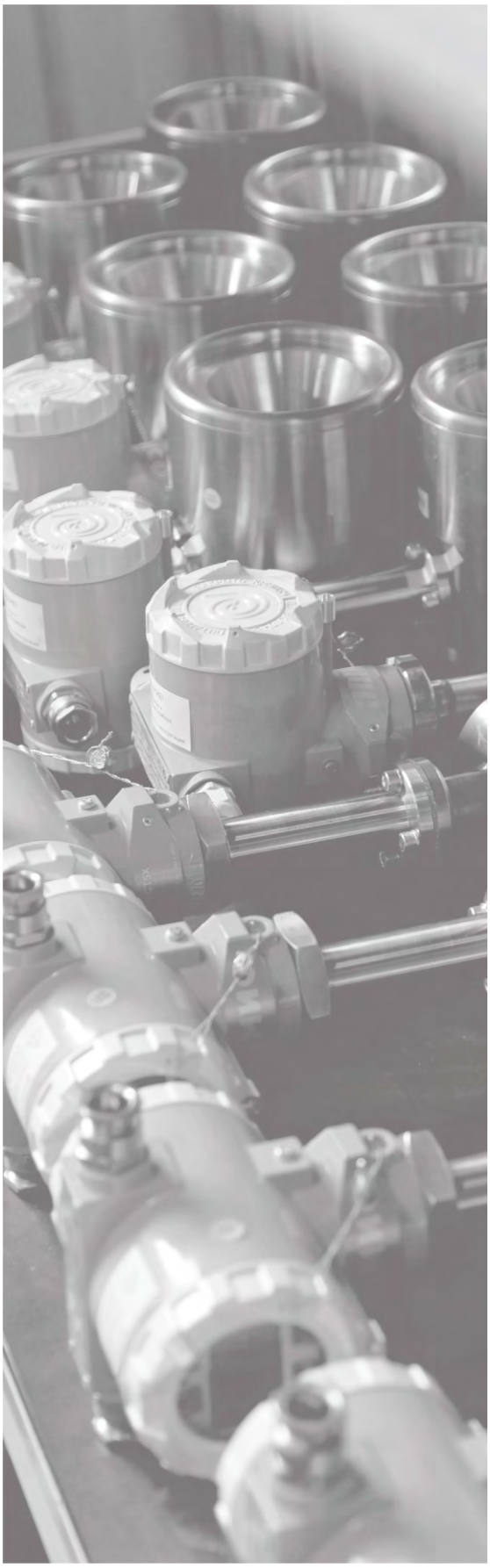


01

EMIS-BAR

Pressure transmitter

Measure medium pressure: liquid, gas or steam. LCD display shows measurement result.

Measurement result is processed via 4-20mA signal or HART digital protocol.

Transmitters measure absolute, excessive, differential and hydraulic pressure, detect pressure drop of liquid and gas media, saturated and over-heated steam.

Due to reduced error of 0.04% EMIS BAR can be used as part of commercial metering units.

Configurations

02

03

04

05

06

07

01 EMIS BAR 143 / 153 / 193
Flanged
(differential pressure)

02 EMIS BAR 163 / 164
With remote diaphragm seal
(differential pressure)

03 EMIS BAR 183 -188
With flat diaphragm seal
(differential pressure))

04 EMIS BAR 173 - 176
With flat diaphragm seal
(excessive pressure/absolute pressure)

05 EMIS BAR 103 / 123
Socket connection(excessive pressure/absolute pressure)

06 EMIS BAR 113
With open diaphragm seal
(excessive pressure)

07 EMIS BAR 105 / 133
Flanged (excessive pressure/
absolute pressure)

Specification

Medium	Gas (incl. oxygen), steam, liquid (incl. contaminated liquids and mixtures)
Pressure of medium, Mpa	up to 70
Medium temperature, °C	-90...+400 (using medium separator)
Ambient temperature*, °C	-60...+85
Basic reduced error, %	±0,04;±0,065;±0,074;±0,1; ±0,15; ±0,16; ±0,2; ±0,25; ±0,4; ±0,5; ±0,6; ±1,0; ±1,5; ±2,0; ±2,5
Output signals	4-20mA + HART v.6, v.7 DD-files
Explosion protection	Exi, Exd, Ext, mine version
IP	IP 65, IP 66, IP 67, IP 68
Adjustment range**	up to 100:1
Calibration interval, years	5
Mechanical connection	M20x1,5; M44x1,25; G1/2, 1/2NPTF, 1/4NPTM, Flanged configuration

HYDROGEN CONFIG | OXYGEN CONFIG | HYDROGEN SULFIDE CONFIG | FOOD CONFIG | FDT GROUP | HART COMMUNICATION PROTOCOL | SIL

** - for ambient temp. see Manual*
*** - Depending on transmitter version.*

Features and benefits

- Equipped with media separator of different configurations.
- The basic reduced error of ± 0.04% of the measuring range.
- Ex-proof operation buttons for explosive environment.
- Combined explosions protection 1Ex d ia II T6...T4 Gb X.
- Mine explosion protection RV Ex d ia I Mb X.
- ATEX certificate.
- Long-time stability, the best in the industry - less than 0.1% of the range within 10 years (0.01% of the range per year).
- Sensor and electronic unit temperature measurement.
- Mean time before failure 220 000 hours.
- Display operational range -42...+85°C.
- Two-piece electronic unit.
- High overload capability: up to 105 MPa.
- Average service life: 30 years.
- Intergazsert Certificate.
- Seismic resistance 9 points under MSK64 GOST 30546.1.
- Certificates: TR TS 032, TR TS 012, TR TS 020.
- Vibration resistance V2 and G2 under GOST R 52931-2008.
- Approval certificate of Russian Maritime Register of Shipping. Certification for hydrogen medium application under GOST R 53679-2009, GOST R 53678-2009.
- Certification for use in contact with Chlorine GEST 79/82
- SIL2 Certificate with ability to calculate safety integrity level.

01

EMIS VIHR 200

Vortex
flow meters

Designed for measuring flow and volume of liquids, gases (natural, associated petroleum gas, hydrogen, air, oxygen, etc), saturated and overheated steam under working pressure and temperature, volume and volume flow of gas under normal conditions and can be applied in different manufacturing spheres.

Can be used for direct flow measurement of wide range of media as well as part of metering systems for heat, hot and cold running water accounting.

At a constant density of the working medium, it is possible to measure the mass and mass flow rate by setting the density in the calculator of the electronic unit of the flow meter.

Configurations

02

03

04

05

06

01 EMIS VIHR 200
Flanged configuration

02 EMIS VIHR 200
Sandwich configuration

03 EMIS VIHR 200
High-temperature configuration

04 EMIS VIHR 200
Config. 3 in 1

05 EMIS VIHR 200
Remote configuration

06 EMIS VIHR 200
Ex-proof configuration

Specification

Medium	Liquid/Gas/ Steam
Dn, mm	15; 25; 32; 40; 50; 65; 80; 100; 125; 150; 200; 250; 300
Pressure of medium, Mpa	up to 30
Medium temperature, °C	-200...+450
Ambient temperature, °C	-60...+70
Accuracy liquid/gas, steam, %	up to ±0,5 / до ±0,7
Output signals	Frequency - NAMUR NA 01; Pulse; Analog 4-20mA -NAMUR NE 43; Digital Modbus RTU (RS-485, USB), HART
Explosion protection:	Exi, Exd, mine config.
IP	IP 66/68
Calibration interval, years	5

H2 HYDROGEN CONFIG O2 OXYGEN CONFIG H2S HYDROGEN SULFIDE CONFIG FOOD CONFIG FDT GROUP HART COMMUNICATION PROTOCOL SIL

Features and benefits

- One of the best accuracies among vortex flow meters in Russia: ±0,5% for liquid, ±0,7% for gas.
- High accuracy of measurement.
- Measurement of mass flow of liquids, saturated and overheated steam, mass flow of gas media under N.C. With rated accuracy under GOST GSSSD (for VV version of electronic unit).
- Output for external pressure and temperature gauges connection (available for for VV version of electronic unit).
- 2-Wire connection (current loop of 4-20mA).
- Measurement accuracy of ±1% if gas inclusions does not exceed 4%. Maintain working efficiency with an error of ± 6.5% with gas inclusions water does not exceed 15%.
- EMIS-Integrator service and diagnostics software.
- Resistant to water hammer.
- High-temperature version (up to +450°C).
- Low temperature version (up to -200°C).
- ATEX, PED, EMC Certificates
- Stable operation under high temperatures.
- Digital processing of the signal.
- Adjustable pulse value and length. Self-test functions, including compatible with NAMUR NE 107.
- Approved simulation test and diagnostics without interruption of technological process.
- Remote data transmission, adjustment via RS-485 or USB Modbus RTU and HART.
- Mine version for underground mines, pits hazardous with mine gas and combustible dust.
- It is possible to manufacture installation sizes including those compatible with foreign-made analogues.
- Sanitary and epidemiological approval report.
- Certificate of Conformity GOST R 53678 and GOST R 53679 for hydrogen sulfide media.
- RTM 311.001-90 approval report from Gazprom VNIIGAZ.
- Intergazsert Certificate.

Config. 1

EMIS-VIHR 200-PPD

Vortex flow meters

equipped with piezoelectic bending sensor.

PPD version is used to account for water injected into the formation during oil production to maintain reservoir pressure. This configuration of the vortex flow meter is designed to measure the medium under high pressure and with mechanical and gas inclusions. The reliability of the device is ensured by the special design of the sensor.

It can measure: fresh water (river, lake), produced water (coming from oil treatment plants), reservoir water, Cenomanian water, oil-water mixtures, chemical and other liquid products, non-aggressive towards the flow meter materials.

Config. 2

EMIS-VIHR 200-PPD

Vortex flow meters

with ultrasonic vortex signal processing

Flow meter shall be used as part of reservoir pressure maintenance systems, for measuring of Senomanian water or other liquids under high pressure.

Flow meters can be used as part of automatic control and monitoring systems and local automation units using a pulse frequency signal, current signal and digital signals ModBus (RS485) and HART

Specification

Medium	**Config.1** Liquids with mechanical inclusions of up to 1 g/l and gas inclusions up to 15%. **Config.2** Liquids
Dn, mm	50; 80; 100, 150
Pressure of medium, MPa	up to 30
Medium temperature, °C	0...+100
Ambient temperature, °C	-60...+70
Accuracy liquid/gas, steam, %	**Config.1** up to ±0,5 / **Config.2** ±1,0; ±1,5; ±3,0
Output signals	Frequency - NAMUR NA 01; Pulse; Analog 4-20mA - NAMUR NE 43; Digital Modbus RTU (RS-485, USB), HART
Explosion protection	**Config.1** Exi, Exd **Config.2** Exd
IP	IP 66/68
Calibration interval, years	5

H2S | HYDROGEN SULFIDE CONFIG HART COMMUNICATION PROTOCOL SIL

Features and benefits of Config.1 and Config 2

- The ability to measure contaminated and mineralized liquids.
- The ability to measure emulsion (up to 30% of the oil content in the liquid). **(Config.1)**
- Measurement accuracy of ±1% if gas inclusions does not exceed 4%. Maintain working efficiency with an error of ± 6.5% with a gas inclusions up to 15%. **(Config.1)**
- Ability to measure low flow due to integrated reducers.
- Operation under low temperatures down to -60 °C.
- Does not require special maintenance.
- EMIS-Integrator service and diagnostics software.
- Remote data transmission, adjustment via Modbus RTU (RS-485, USB) or HART.
- It provides full interchangeability with flow transmitters used in reservoir pressure maintenance systems by connection dimensions and installation method, data communication protocol.
- Adjustable pulse value and length. Approved simulation test without interruption of technological process.
- Certificate of Conformity GOST R 53678 and GOST R 53679 for hydrogen sulfide mediums.
- 2-Wire connection (current loop of 4-20mA).
- Digital processing of the signal.
- Self-test functions, including compatible with NAMUR NE 107.
- Resistant to pipeline vibration. **(Config.2)**

01

02

EMIS VIHR 205

Vortex flow meters

insertion configuration

Designed for measuring flow and volume of liquids, gases (natural, associated petroleum gas, air, etc). corrosive media under working pressure and temperature in different industrial spheres.

Can be installed as a part of metering and control systems in the big-size pipelines from 300 to 2000 mm.

Configurations

01

EMIS VIHR 205
Standard version

02
EMIS VIHR 205
Equipped with ball valve

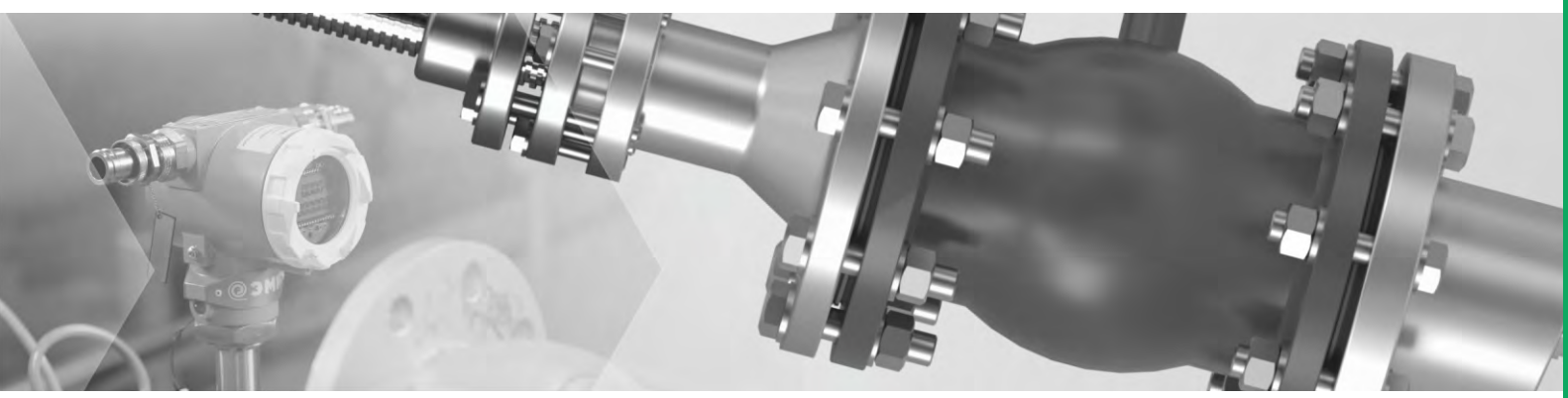
Specification

Medium	Liquid/Steam
Dn, mm	300; 350; 400; 450; 500; 600; 700; 800; 900; 1000; 1100; 1200; 1300; 1400; 1500; 1600; 1800; 2000
Pressure of medium, MPa	up to 2,5
Medium temperature, °C	-40...+250
Ambient temperature, °C	-60...+70
Accuracy liquid/gas, steam, %	Up to ±0,5 / to±1
Output signals	Frequency - NAMUR NA 01; Pulse; Analog 4-20mA - NAMUR NE 43; Digital Modbus RTU (RS-485, USB), HART
Explosion protection	Exi, Exd
IP	IP 66/68
Calibration interval, years	5

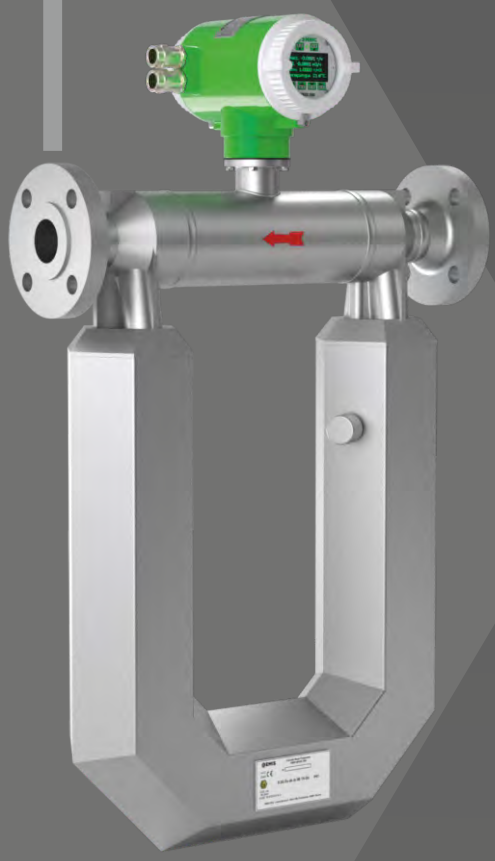
Features and benefits

- Simple installation with minimum mounting work.
- Installation without process interruption.
- No moving parts.
- Versatile application.
- Installation in the pipeline of different Dn*.
- Low pressure losses comparing to reducers.
- Digital processing of the signal.
- Does not require periodical maintenance.
- Self-test functions, including compatible with NAMUR NE 107.
- Remote data transmission, adjustment via Modbus RTU (RS-485, USB) and HART.
- EMIS-Integrator service and diagnostics software.
- Approved simulation test without interruption of technological process.

** for 1.6 MPa modifications.*



01



EMIS MASS 260

Coriolis mass flow meters

Designed for measurement of mass flow, temperature, density and calculation of mass flow, liquid and gas inclusions in the flow.

Can be used in automatic process control systems, mixing and dosing systems, as a part of automated group metering stations, gas and liquid metering units in overground, including truck-mounted, natural gas filling and transfer stations, and other industrial spheres.

Can be used for metering homogeneous and non-homogeneous 2-phase media providing calculation of each component amount.

Configurations

02

03

04

01 EMIS MASS 260
Standard configuration

02 EMIS MASS 260
Remote modification with extended version of electronic unit U/UIP.

03 EMIS MASS 260
Compact version

04 EMIS MASS 260
Food configuration

Specification

Medium	Liquid/Liquefied gas/ Gas
Dn, mm	10; 15; 25; 40; 50; 80; 100; 150; 200; 250
Pressure of medium, MPa	up to 25
Medium temperature, °C	-196...+200
Ambient temperature, °C	-60...+70
Accuracy liquid/gas, steam, %	Liquid ±0,1; ±0,15; ±0,2; ±0,25; ±0,5%; Gas ±0,35; ±0,4; ±0,45; ±0,5; ±0,75%; Temperature ±0,5; ±1 °C; Density ±0,5; ±1,0 kg/m³
Output signals	Pulse (passive/active) - NAMUR NA 01; Analog 4-20mA (passive/active) - NAMUR NE 43; Digital ModBus RTU with RS-485; Digital Ethernet with ModBus TCP/IP; Current 4-20mA with digital HART (passive) without additional error.
Explosion protection	Exi, Exd, mine config.
IP	IP66/IP67
Calibration interval, years	5

H2 HYDROGEN CONFIG | H2S HYDROGEN SULFIDE CONFIG | FOOD CONFIG | FDT GROUP | HART COMMUNICATION PROTOCOL | SIL

Features and benefits

- Additional Modbus register card compatible with foreign-made flow meters software.
- Dosing function with discrete signal.
- Adjustable pulse value and length.
- Adjustable damping time for flow rate and density measurement, low flow cut-off, visual display of signal spectrum and digital filtration.
- Measurement of flow rate of 2-phase liquid media with approved algorithm of component calculation.
- Measurement of highly viscous fluids, non Newtonian fluids, fluids with gas inclusions up to 3%;
- Measurement of gas volume flow under standard conditions.
- Verified accuracy at current output without additional error, including for reverse flow measurement.
- Socket for external pressure transmitter connection.
- Sanitary and epidemiological approval report; certificates of resistance to hydrogen, vibration and seismic loads.
- Approved simulation test without interruption of technological process.
- Calibration interval - 5 years.
- EMIS-Integrator service and diagnostics software.
- Connection sockets under GOST, EN and ANSI, including DIN 11851.
- It is possible to manufacture installation sizes including those compatible with foreign-made analogues.
- Compact version with reduced weight and dimensions of flow body.

01

EMIS MERA 300

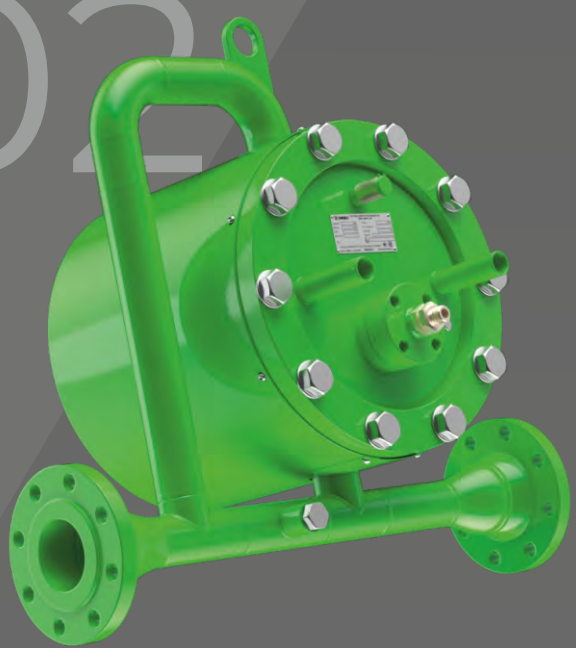
Liquid quantity flow meter

The flow meter is designed for measurement of mass (mass flow rate) of liquids, oil and gas mixtures, crude oil under GOST R 8.615-2005 and oil products and further use of the information obtained for technological purposes and accounting.

Can be installed in oil production sites for primary measurement of oil and gas-water mixture with high content of gas and mechanical inclusions, as well as a part of automated group metering stations.

Configurations

02



01 EMIS MERA 300
Clamp config. (standard)

02 EMIS MERA 300
Flanged configuration

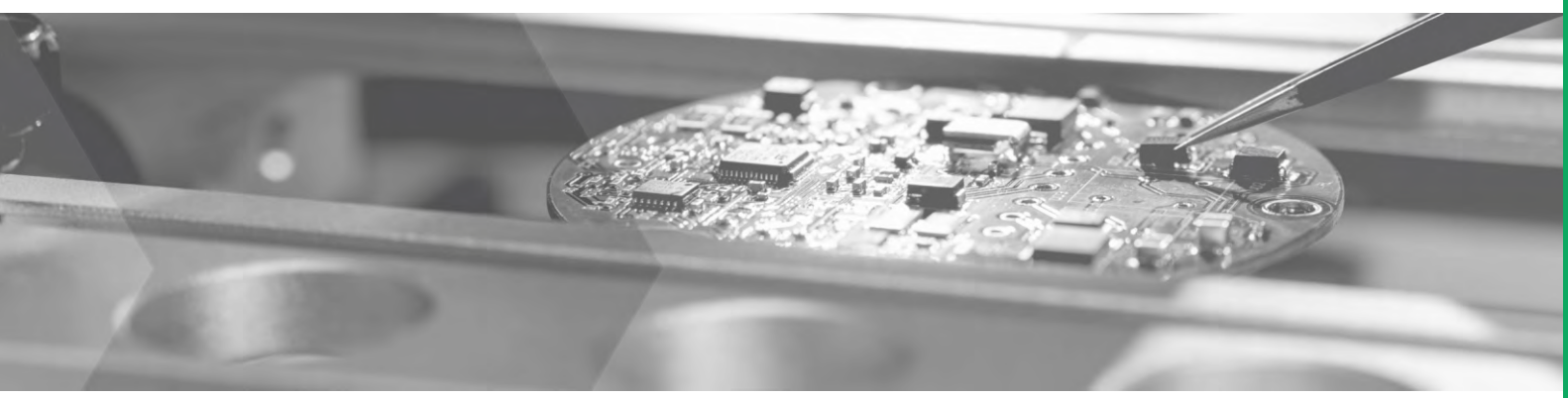
Specification

Medium	Liquid/Oil and gas-water mixture/crude oil
Pressure of medium, MPa	Up to 6,3
Medium temperature, °C	0...+130
Ambient temperature, °C	-50...+80
Accuracy, %	±1,0; ±1,5; ±1,75; ±2,0; ±2,5
Output signals	Pulse (frequency); digital RS-485.
Explosion protection	Exe, Exd
IP	IP 67
Calibration interval, years	3
Permissible content of non-associated gas in oil and gas-water mixture.	2...50%; Up to 75% - for special versions upon request.

H2S | HYDROGEN SULFIDE CONFIG

Features and benefits

- Calibration at universal calibration units.
- Adjustment of pulse weight and duration.
- Secondary equipment operation safety provided by galvanically isolated circuits of interfaces.
- Self-contained power supply.
- Self-diagnostics.
- Calibration time 40 minutes.
- The signal can be transmitted to SCADA unit without additional pulse counters and electronic units.
- EMIS-Integrator service and diagnostics software.
- Real-time clock and data logging in the electronic unit.



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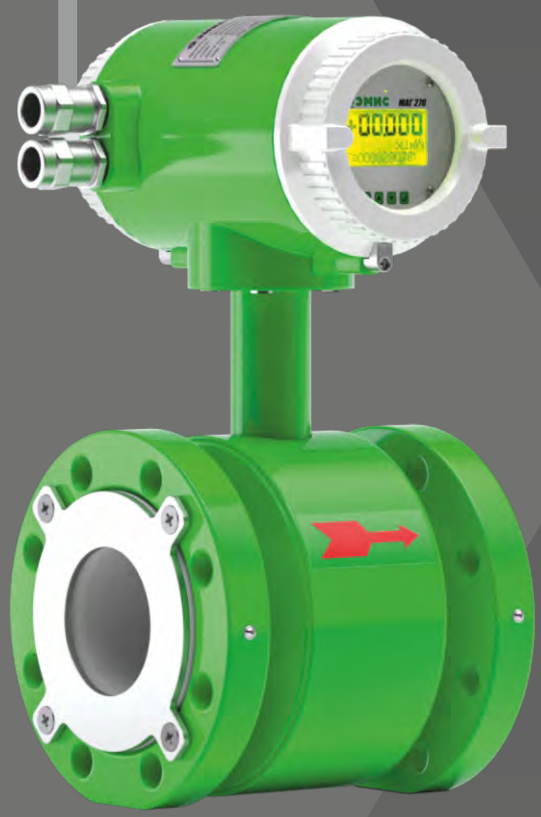


EMIS MAG 270

Electromagnetic flow meters

Designed for measurement of volume flow of electrically conducting liquids in direct and reverse direction, including corrosive media, 2-phase and contaminated liquids (with solid particles inclusion or slurry) with electric conductivity of $5 \cdot 10^{-4}$ cm/m.

Applicable for measurement of medium volume as part of automated control systems in energy sector, chemical, paper and food industries, etc.

Flow meters can used for reverse flow metering and indicate flow direction.

Configurations

02

03

04

01 EMIS MAG 270
Standard config

02 EMIS MAG 270
Food config.

03 EMIS MAG 270
Remote config

04 EMIS MAG 270
Mine version

Specification

Medium	Liquid with conductivity of $5x10^{-4}$ cm/m or more
Dn, mm	15; 20; 25; 32; 40; 50; 65; 80; 100; 125; 150; 200; 250; 300; 350; 400; 450; 500; 600, 700; 800
Pressure of medium, MPa	up to 25
Medium temperature, °C	-40...+180
Ambient temperature, °C	-60...+70
Accuracy liquid/gas, steam, %	±0,5
Output signals	Pulse/frequency signal; Analog current signal (4-20mA); Digital ModBus RTU; Digital HART; Alarm signal.
Explosion protection	Ex, Exd, mine config.
IP	IP65, IP66, IP67, IP68
Calibration interval, years	5

H2S HYDROGEN SULFIDE CONFIG FOOD CONFIG HART COMMUNICATION PROTOCOL SIL

Features and benefits

- EMIS-MAG 270 is applicable for corrosive media due to wide range of lining and electrode materials.
- Operation under high pressure up to 25 MPa.
- Measurement of two-phase and contaminated liquids (with solid inclusions or slurry).
- Measurement accuracy does not depend on medium viscosity or density.
- Food certificate.
- EMIS-Integrator service and diagnostics software.
- Explosion protection for mines.
- Low pressure loss.
- Integrated total flow counter with display provides the operation of flow meter without any other additional indicating devices and lower cost of operation (equipment and installation costs).
- Installation on horizontal, vertical and inclined sections of the pipeline.
- No mechanical parts or parts extending into the flow channel.
- Approved simulation test without interruption of technological process.

01

EMIS PLAST 220
Liquid flow meters

Designed for measurement of liquid volume flow in high-pressure pipelines and data transfer.

Applicable at oil, chemical, petro-chemical, metal industries, etc.

Can be equipped with inbuilt power source for installation in remote sites

Configuration

02

01 EMIS PLAST 220
Standard configuration

02 EMIS PLAST 220
Ex-proof configuration

Specification

Medium	Liquid (including contaminated liquids)
Dn, mm	8; 15; 20; 25; 40; 50; 80; 100; 150; 200; 250; 300
Pressure of medium, Mpa	up to 42
Medium temperature, °C	Standard config. -40 ... +80 High-temperature config.: 0 ... +150
Ambient temperature, °C	–60 ... +80
Accuracy liquid/gas, steam, %	±0,5; ±1; ±1,5
Output signals	Pulse; Analog 4-20mA; Digital RS-485; Visual indication.
Explosion protection	Exd, mine config
IP	IP 65
Calibration interval, years	4

Features and benefits

- Inbuilt counter of total flow allows to use EMIS PLAST 220 without additional indicating units and totalizers, which ensure lower expenditures.
- Inbuilt battery allows to use the flow meter in remote sites with no access to power sources during 3 years, and also guarantees operation in case of emergency.
- Flow meter sensor is securely protected from mechanical pollution and greasing which ensures flow meter reliability. Does not require re-adjustment for process medium and operation conditions, which ensures operation comfort.
- Detachable sensor which ensures quick and easy maintenance without de-installation of flow body which reduces time and maintenance costs.
- Explosion protection for mine application.

01

EMIS META 215

Rotameters

Flow meters that operate at a constant pressure drop.

Metal rotameters are designed for measurement of liquid and gas volume flow, including corrosive media.

Applicable for automated process control systems at versatile industries and medical systems of oxygen supply.

It can measure, indicate, read and transfer measurement data under standard or normal conditions for compressible medium.

Configurations

02

03

01 EMIS META 215
Standard config.

02 EMIS META 215
Horizontal config.

03 EMIS META 215
Food config.

Specification

Medium	Liquid/Gas
Dn, mm	15; 25; 40; 50; 80; 100; 150
Pressure of medium, MPa	up to 32
Medium temperature, °C	Standard config. -40...+100 °C; High-temperature config. -80...+250 °C; Special config. -40...+420 °C
Ambient temperature, °C	–60 ... +70
Accuracy, %	±1; ±1,5; ±2,5; ±4
Output signals	LCD display; Current 4-20 mA; HART; Up to 2 limit switches
Explosion protection*	Exi, Exd, Gbc
IP	IP 65; IP 67
Calibration interval, years	5

HYDROGEN CONFIG | OXYGEN CONFIG | HYDROGEN SULFIDE CONFIG | FOOD CONFIG | HART COMMUNICATION PROTOCOL | SIL

*For version with output signal

Features and benefits

- The universal principle of operation allows the use of device for flow measurement of versatile gases and liquids.
- Operation with corrosive mediums (corrosion resistant config. Ft).
- Scale can be graded upon customer request.
- Indication of current and accumulated volume flow on LCD display.
- HART interface.
- Remote readings control (using output signals).
- Limit switches with adjustable control point can be installed.
- Version for horizontal installation on the pipeline is available.
- Measuring tube can be equipped with heating unit.
- Easy calibration.

EMIS RGS 245

Rotary gas meter

Designed for measurement of gas volume flow under operating conditions as specified in GOST 5542-87, also can be used for metering of non-associated gas, oxygen, nitrogen and other non-corrosive pure and dry gases. Additional electronic volume corrector with pressure and temperature gauges is required to adjust obtained data to normal conditions.

Widely used in middle and low pressure networks of gas distribution.

Specification

Medium	Gas and gas mixtures
Dn, mm	25...200
Pressure of medium, MPa	1,6
Medium temperature, °C	-30...+80
Ambient temperature, °C	-40...+60
Contaminations, µm	50
Accuracy, %	±0,6; ±1,0
Output signals	Pulse signal (seal switch)
Explosion protection	Ex, Gbc
Relative humidity, %	Not exceed 95
Atmospheric pressure, kPa	84 to 106.7
IP	IP 65
Calibration interval, years	6

Features and benefits

- Wide Dn range from 25 to 200 mm;
- Operation at low flow from 0.4 cbm/h;
- High accuracy of gas measurement (±0,6% accuracy at special request);
- Compatible with connection sizes of foreign-made equipment.
- Small size.
- Temperature and pressure gauges can be installed inside the meter body for joint operation with electronic volume corrector;
- Does not require straight sections of the pipe prior and after installation point.
- Installation in vertical and horizontal sections of the pipeline.

EMIS ESCO 2230

Gas accounting system

Designed for measurement of volume flow and volume, pressure, temperature of natural gas under operating conditions with further adjustment of obtained data to standard conditions as specified in GOST R 8.740-2011.

Applicable in commercial metering gas systems, automated process control systems.

Specification

Medium	Natural gas
Pressure of medium, MPa	up to 1,6
Flow range, cbm/h	0,4...1600
Medium temperature, °C	-30...+80
Ambient temperature, °C	Flow meter: -40-+60 Electronic corrector: -30-+50
Accuracy, %	±1,5; ±2,5
Output signals	RS-485, optical interface, RS-232
IP	IP 65
Calibration interval, years	5

Features and benefits

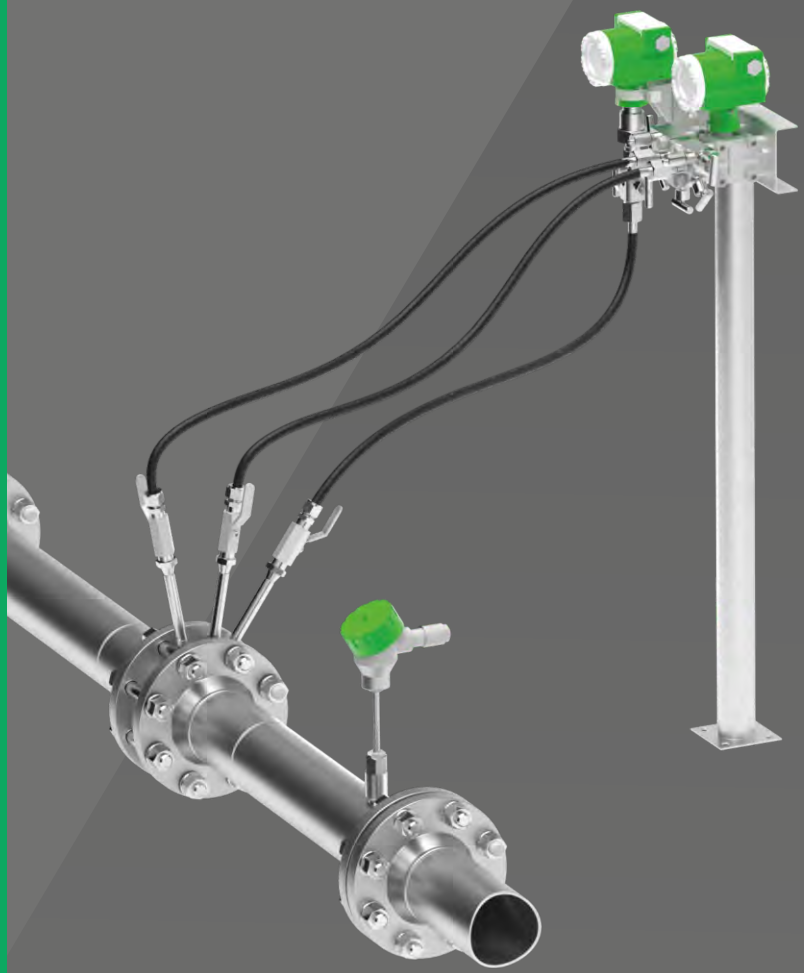
- Inbuilt power source (battery lifetime 5 years);
- Calibration interval is 5 years;
- Compact, single unit assembly.
- Installation convenience.
- Conform with requirements of GOST R 8.740-2011 (does not require measurement procedure development).

EMIS ESCO 2210

Energy carrier metering system

Designed for measurement of volume, pressure, temperature, mass and volume flow of water, steam, gas and gas mixtures, metering of heat energy in closed and open heat distribution systems.

Application: Metering accounting systems, automated process control systems, heat and gas distribution stations, oil and gas production sites, other industrial facilities.



EMIS ESCO 2210

Energy carrier metering system (based on orifice plate)

EMIS ESCO 2210 with orifice plate is approved measurement unit, which has obtained approval certificate of measuring instrument. According to Federal Law No102 dated June 26, 2008 “On uniformity of measurements” and requirements of GOST and Rosstandard, to implement measurement system it is required to develop and certify measurement procedure for specific operation conditions.

The assembly consists of the reducer (orifice plate), differential and absolute pressure transmitters.

Orifice plates designed for flow measurement based on differential pressure method.

EMIS ESCO 2210 specification

Medium	Liquid/Gas/ Steam
Dn, mm	15; 25; 32; 40; 50; 65; 80; 100; 125; 150; 200; 250; 300
Pressure of medium, MPa	1,6; 2,5; 4; 6,3; 16; 20; 25
Medium temperature, °C	- 200....+450*
Relative error limits, %	Measuring channel for gas flow and volume adjusted to standard conditions: 1,0; 1,5; 2,5; 3 Measuring channel for steam mass: ±3/Measuring channel for liquid mass: ±2/Measuring channel for heat energy: ±4; ±5
Data transmission interface	RS-232/CAN-BUS/RS-485, GSM/GPRS/Ethernet
Explosion protection	Exi, Exd
IP	No lower than IP65 for electronic unit IP20 for operation equipment
Measuring (control) points	up to 14
Calibration interval, years	4

*Medium temperature depends on the flow meter configuration.

Features and benefits

- Applicable for overheated, saturated, dry and wet steam.
- Remote data transmission GSM/GPRS.
- Open list of flow, pressure, temperature transmitters available.
- Replacement, repair, calibration without process interruption.
- Metering of gas and gas mixtures flow, mass and volume adjusted to standard conditions are carried out under GOST 30319.(2,3) - 2015, GOST R 8.662-2009, ISO 20765-2, GOST R 8.740-2011, GOST 8.611-2013, GOST P 8.733-2011, GSSSD MR 112-2003, GSSSD MR 134-2007, GSSSD MR 113-2003, MI 3563-2016, GSSSD MR 118-2005, GSSSD MR 273- 2018, GSSSD MR 232-2014.
- Metering system provides heat energy accounting under “Rules of commercial accounting of heat and heat conductor” approved by the Order of the
- Government of the Russian Federation No 1034 dated 18/11/2013, rev. dated 13/02/2019.
- Metering of thermophysical properties of water and water steam arranged under GSSSD MR 147-2008.

EMIS ESCO 2210 (with orifice plate) specification

Medium	Liquid/Gas/ Steam
Dn, mm	50-1000
Pressure of medium, Mpa	1,6; 2,5; 4; 6,3; 16; 20; 25
Medium temperature, °C	- 60....+500

Features and benefits

- Applicable for overheated, saturated, dry and wet steam.
- Open list of flow, pressure, temperature transmitters and type of orifice plate according to GOST 8.586-2005.
- Metering of gas and gas mixtures flow, mass and volume adjusted to standard conditions are carried out under GOST 30319.(2,3) - -2015, GOST R 8.662-2009, ISO 20765-2, GOST R 8.740-2011, GOST 8.611-2013, GOST R 8.733-2011, GSSSD MR 112-2003, GSSSD MR 134-2007, GSSSD MR 113-2003, MI 3563-2016, GSSSD MR 118-2005, GSSSD MR 273-2018, GSSSD MR 232-2014.
- Metering system provides heat energy accounting under “Rules of commercial accounting of heat and heat conductor” approved by the Order of the
- Government of the Russian Federation No 1034 dated 18/11/2013, rev. dated 13/02/2019. Metering of thermophysical properties of water and water steam arranged under GSSSD MR 147-2008.
- No-water calibration. Examination of dimensions 1 time in a year.

EMIS POTOK 236

Paddle type flow switch

Designed for detection of flow inside the pipeline.

Flow switch protects pumps, engines and other equipment from over-heating due to low flow or absence of flow, can be installed as part of automated process control in energy, petrochemical, food, paper industries, etc.

Can be manufactured in two confi-gurations: general and ex-proof.

EMIS POTOK 285

Thermoanemometric flow switch

It is the modern solution for detection of gas flow inside the industrial pipelines, including big size pipes.

Applicable for process flow detection and control in automated liquid supply systems as a flow detector to protect equipment from overheating and dry run of the pump, engine, and other assemblies..

EMIS POTOK 236 specification

Medium	Liquid
DN, mm	32...250
Pressure of medium, MPa	up to 5
Medium temperature, °C	-30 to +150 °C without explosion protection -50 to +130 °C for ex-proof config.
Ambient temperature, °C	-50... +60
Max.viscosity of medium, mPa*s	400
Explosion protection	Exd
Output signal	SPDT relay
IP	IP 65
Pressure loss, kPa	до 0,02
Relay capacity	1A, 220V AC 24V DC (SPDT)
Connection	R1 GOST 6211-81

Features and benefits

- Does not require adjustment
- Simple and reliable design.
- High working pressure.
- Operation at direct and reverse flow.
- Wide range of working and ambient temperature.
- Operation with highly viscous media.

EMIS POTOK 285 specification

Medium	Liquid,Gas
DN, mm	25...700
Pressure of medium, MPa	до 10
Medium temperature, °C	-50... +75
Ambient temperature, °C	-50...+70
Explosion protection	Exd
Output signal	SPDT relay; NPN relay; PNP relay
IP	IP 65
Relay capacity	2.5A/220V AC (relay circuit); 1A/24V DC (relay circuit); 400mA/24V DC (PNP and NPN).
Connection	K1/2 GOST 6111

Features and benefits

- No moving parts.
- Reliability and durability.
- Operation at direct and reverse flow.
- Operation in low ambient temperature.
- High working pressure.
- Installation in big DN pipes.
- Check point re-adjustment
- Installation convenience.
- Installation at vertical and inclined sections of the pipeline.
- Applicable for liquid and gas media.
- Can be manufactured in two configurations: general and ex-proof.

01

EMIS SIGNAL

Vibrating level switch

Used for high and low level control.

Can be used independently to control the level of tank filling and as auxiliary unit along with level gauge with continuous output signal.

Applicable for level control of liquid and dry free running media in automated process control systems to protect a pump from dry run, detect medium and bottom sediments inside the tank, protect from overflow.

Vibration level sensors EMIS SIGNAL can be manufactured in two configurations: general and ex-proof according to TR TS 012/2011.

Configurations

02

03

04

05

01 Threaded for liquids

02 Threaded for dry free running media

03 Flanged for liquid in standard version and with extended sensor

04 Flanged for liquid as standard version and with extended sensor

05 High temperature config. for liquid as standard version and with extended sensor

! All presented level switches can be manufactured for solids.

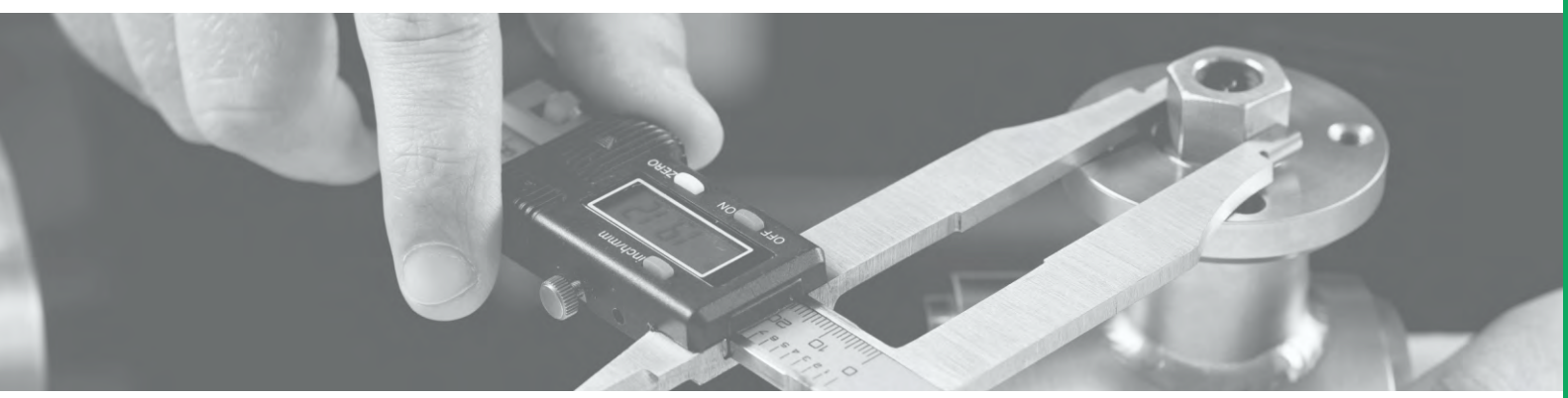
Specification

Medium	Liquid, solids
Excessive pressure of medium, MPa	Threaded connection: -0,1...6,3 Flanged connection: -0.1...6.3
Medium temperature, °C	- 60.... +290
Ambient temperature, °C	-60 to +75°C (-70 °C to +75 °C with heat jacket)
Output signals	DPDT relay
Explosion protection	Ext, Exd
IP	IP 66/67
Resistance to magnetic field	400 A/m for constant; 400A/m AC at 50Hz for variable
Cable glands thread	M20 x 1,5
Materials	Sensor body: aluminum alloy Vibrating fork: stainless steel, stainless steel with PTFE coating

H2S HYDROGEN SULFIDE CONFIG FOOD CONFIG SIL

Features and benefits

- Mechanical wear durability of all elements, including vibrating fork.
- Absence of moving parts protects from mechanical wear and seizure.
- Does not require maintenance of sensor for long time of operation.
- Easy installation and commissioning (does not require filling with medium and calibration).
- Wide range of DN sizes for versatile process needs.
- Installation in any position at necessary height of switch point.
- Reliable control principle, which does not depend on installation position, foam, viscosity and particle size.
- Operation at ambient temperature range from -60 to +85 °C.
- Applicable for use in SIL2 systems.



EMIS BRIZ 90

Transformer power supply unit

It is mainly used for power supply of transmitters (flow, pressure, level, etc.) of general industrial configuration as part of automated control systems in various industries, in stationary technological installations, in commercial metering systems.

EMIS BRIZ 100

Pulse power supply unit

It is mainly used for power supply of industrial automatic units, process control systems, metering equipment, electromagnetic drives, fans, electronic units and other DC equipment.

EMIS BRIZ 90 specification

Type	Transformer
Qty of channels	2/4
Voltage, V	187...242. 50±1Hz
Max load current, mA	100/250
Output voltage, V	24 (±0,2%)
Installation	on board (version 1 and 1K) or on DIN-rail
Ambient temperature, °C	-10...+50
IP	IP 20 for DIN version of installation IP 30 for in-board version of installation

Features and benefits

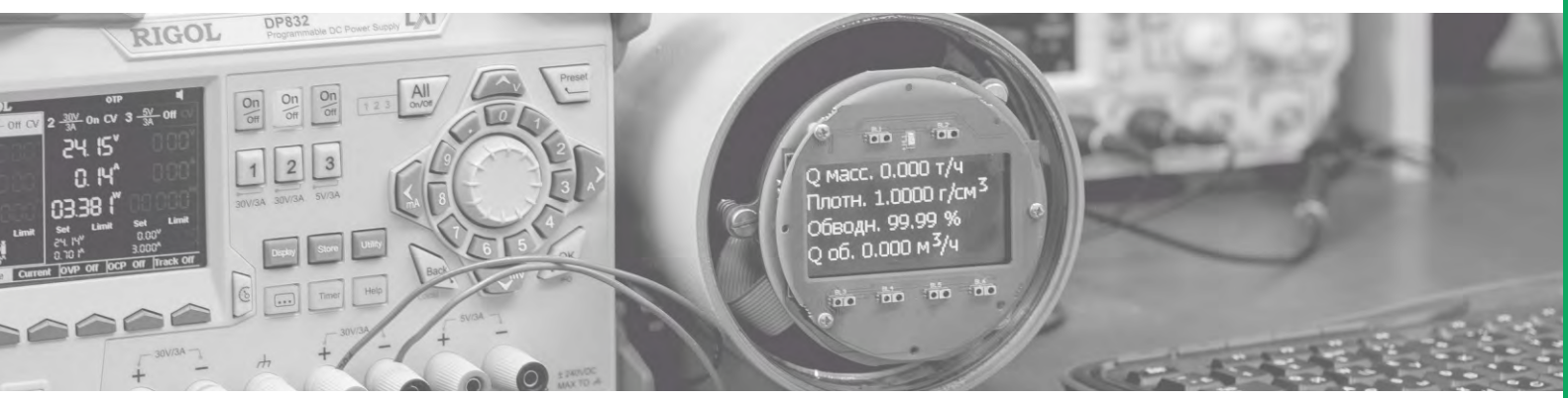
- Galvanic isolation of output channels.
- Protection from overload and short circuit
- Compact size.
- Power indication for each channel.
- Does not create industrial interference.
- High reliability.

EMIS BRIZ 100 specification

Type	Pulse
Qty of channels	1
Voltage, V	100...265. 45...65 Hz
Max load current, mA	1
Output voltage, V	24
Installation	DIN-рейка
Ambient temperature, °C	-40...+50
IP	IP 20

Features and benefits

- Easy connection and operation control.
- Installation convenience.
- No industrial interference.
- Protection from overheating and short circuit at the output; equipped with input fuse activated in case of failure.



EMIS BRIZ 250

Pulse power supply unit

It is mainly used for power supply of industrial automatic units, process control systems, metering equipment, electromagnetic drives, fans, electronic units and other DC equipment.

EMIS BRIZ 500

Transformer power supply unit

It is mainly used for power supply of transmitters (flow, pressure, level, etc.) of general industrial configuration as part of automated process control system in versatile industries, in stationary technological installations, in commercial metering systems at low temperatures (-60°C).

-60°C

EMIS BRIZ 250 specification

Type	Pulse
Qty of channels	1
Voltage, V	184...264 V AC, 45...65 Hz
Max load current, A	2,5
Output voltage, V	24
Installation	DIN rail
Ambient temperature, °C	-40...+50
IP	IP 20

Features and benefits

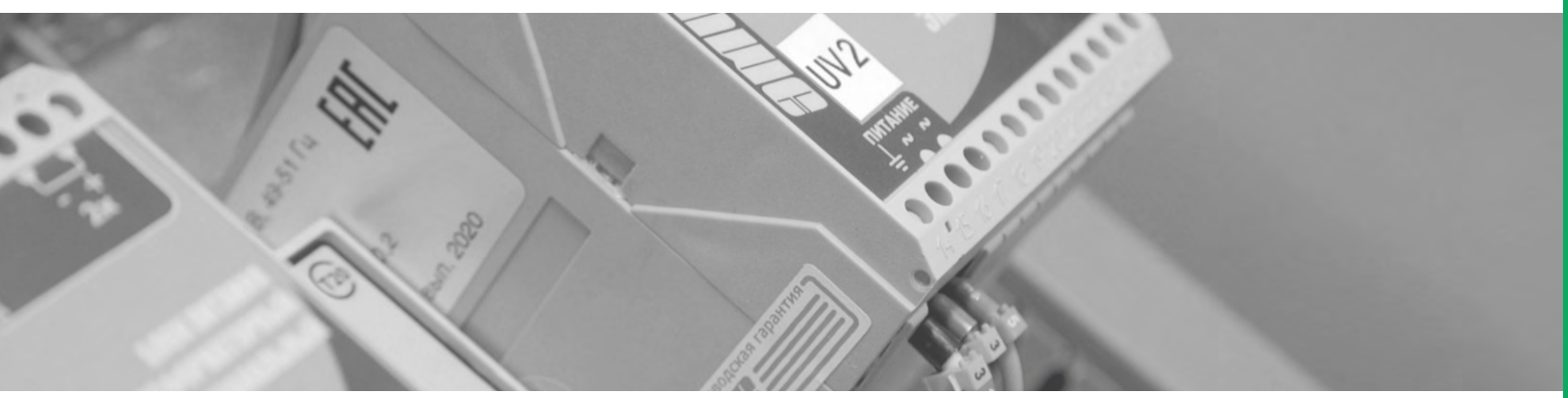
- Easy connection and operation control.
- Installation convenience.
- No industrial interference.
- Protection from overheating and short circuit at the output; equipped with input fuse activated in case of failure.

EMIS BRIZ 500 specification

Type	Transformer
Qty of channels	1
Voltage, V	187...242, 50±1Hz
Max load current, mA	500
Output voltage, V	24 (±0,2%)
Installation	DIN rail
Ambient temperature, °C	-60...+50
IP	IP 20

Features and benefits

- Easy connection. Operation control. Installation convenience.
- Operation at low temperatures down to -60 oC.
- Protection from overheating and short circuit at the output; equipped with input fuse activated in case of failure.



EMIS 20 YEARS

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