



GROUP OF COMPANIES

METRAN



MEASURING INSTRUMENTS

SELECTION GUIDE

metran.ru

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PRESSURE MEASUREMENT

6 YEARS
VI



Metran Pressure Transmitters

Metran-150

Intelligent transmitters with extensive functionality, developed in accordance with Russian standards. Measurement of positive, absolute and differential pressures, vacuum pressure, hydrostatic pressure (level) with an 4-20 mA HART output. The first pressure sensor in Russia that has successfully passed tests to change the verification interval.

Verification interval is 6 years



Metran-75

Low cost transmitter for measuring positive, absolute and differential pressures in various industries with 4-20 mA HART output.



Metran-55

Low cost and small-sized transmitter for wide application in various industries, including measurement of hydrostatic pressure (level) with a submersible probe design.



Wireless data collection system

The switches are installed complete with pressure transmitters and represent a fully complete, autonomous and wireless solution that enables to operate instruments without external power supply with data transmission over a wireless LPWAN network, LoRaWAN standard.

**Products of Metran Project LLC*



Remote diaphragm seals

Remote diaphragm seals 1199

For pressure, level and flow measurement in demanding process conditions such as critical temperatures and aggressive media.



Manifolds

Metran 0104, 0105, 0106

For connection of pressure sensors and other measuring devices to connecting lines of automatic monitoring, regulation and control of technological processes.

Cable glands, adapters

Vessels SK, SU, SR – condensation, leveling, separation vessels.

TEMPERATURE MEASUREMENT



Metran Complete Point Temperature Solutions

Metran-280

Basic level temperature transmitter with digital data transmission via the HART protocol, standard HART diagnostic functions and sensor.



Metran-2700

Microprocessor temperature transmitters with a unified output signal, configuration and self-test capabilities. Designed to measure the temperature of various media in various industrial applications.



Metran-270

Analog temperature transmitters with a unified output signal. Designed to measure the temperature of neutral and aggressive media.



Metran Temperature Transmitters

Metran-2700

Basic and improved accuracy level temperature transmitters with a unified output signal and with the HART 7 protocol, as well as standard diagnostic capabilities.



Metran Sensors

Metran-2000

A broad range of designs and types of thermal resistances and thermocouples, including a large number of designs with various protective fittings, structural materials, protective housings and types of sensitive elements.



Metran Thermowells

New Thermowells 2000

Available in a variety of process connections including flanged, threaded, welded and free-flange, with the widest configuration options for geometric parameters and materials of manufacture.

Classic range of Thermowells

2001 – welded fitting (tubular) thermowells;

2002 – solid turned thermowells;

2003 – weld-in turned thermowells;

2004 – flange welded (tubular) thermowells.



Components and parts for temperature transmitters

Mounting Kits, Compression Fittings, Cable Glands, Bosses, Washers.

FLOW MEASUREMENT



Vortex Acoustic Flowmeters

Metran-300PR

For water and aqueous solutions, thermal energy metering systems; removable bluff body – high maintainability; simulation verification; standard sizes from 25 to 300 mm.

Metran-305PR

For waterflooding systems; resistant to mineralized water; pressure up to 30 MPa; removable bluff body
- high maintainability; simulation verification; standard sizes from 50 to 150 mm.



Coriolis Flowmeters

Metran-360M

For direct high-precision measurement of mass flow rate, density and temperature, calculation of volume flow rate of liquids, gases and suspended solids. Typical sizes from 2 to 150 mm. Materials in contact with the medium: 316L, Hastelloy. Output signals: pulse-frequency, 4-20 mA, HART, Modbus, FOUNDATION Fieldbus, Profibus PA/DP.



Magnetic Flowmeters

Metran-370M

For measuring the volume flow of liquids, alkalis, acids, pulps and suspensions, water and wastewater metering. Typical sizes from 3 to 1000 mm. Wide range of materials in contact with the medium for applications in a wide range of industries. Output signals: frequency pulse, 4-20 mA, HART, Modbus, Profibus PA/DP. Certified verification by simulation without removal from the pipeline.



Vortex Flowmeters

Metran-390M*

For flow measurement of liquids, gases, saturated and overheated steam. For complex and general applications. Sizes from 15 to 300 mm. Output signals: pulse frequency, current, HART, Modbus.

**Order placement in 4Q 2023*



Differential pressure flow measurement

Orifice devices as per GOST 8.856-2005, RD50-411

LEVEL MEASUREMENT



Non-Contacting Radars

Metran-740* is a non-contacting radar level transmitter based on FMCW technology (frequency modulated continuous radiation). Different types of antennas provide level measurement of liquid or bulk solids in tanks over a wide temperature and pressure range). Possibility configuration locally with LOI and remotely with digital protocols (HART, Modbus, Profibus). Verification with partial dismantling and without dismantling provides a verification interval of 1 and 3 years (depending on the selected measurement accuracy).

**Order placement in 4Q 2023*



Guided Wave Radars

Metran-730* is a guided wave radar level transmitter based on the TDR technology («Time Domain Reflectometry»). It is designed to measure level and interface boundaries (oil/water). Possibility configuration locally with LOI and remotely with digital protocols (HART, Modbus, Profibus). Designed for operation at low ambient temperatures and a wide range of operating temperatures and pressures.

**Order placement in 1Q 2024*



Remote diaphragm seals

Remote diaphragm seals 1199

For pressure, level and flow measurement in demanding process conditions such as critical temperatures and aggressive media.

UTILITY METERING



Energy metering system TEKON-20K

Measurement of the flow rate, pressure, temperature, mass and volume of liquids, steam, gases and gas mixtures, thermal and electrical energy in fiscal metering systems, automated control and process control systems.

Heat meter Metran-400

Fiscal metering of heat, hot and cold water based on vortex acoustic flowmeters **Metran-300PR**, calculators **Tekon-19**, **SPT**, **VKT-7**, **IM2300** etc.

FUNCTIONAL AND COMMUNICATION EQUIPMENT

Power supplies and IS barriers



Single and multi-channel, explosion-proof Exia power supplies **Metran-600**, **Metran-600M**;

Exia, Exib IS barrier power supply **Metran-630**.

Recorders



Videographic paperless recorder **Metran-910**.

Acquisition, visualization, recording and control of various process parameters.

Intelligent I/O Modules



Metran-970

Acquisition, conversion and primary processing of signals from various sensors and transmission of the received information via RS485, CAN or Ethernet links to the upper level of the PCS.

Transmitters



Metran-950MK

Continuous conversion of input signals from resistance temperature detectors (RTD), thermoelectric transmitters (TT) to the output unified current signal.

Regulators



Metran-961, Metran-950

Measurement, visualization, monitoring and control of process parameters in various industries.

Communications Tools



Metran-683 HART-Modem

Portable tool for diagnostic and configuration of field devices with HART protocol.

METROLOGICAL EQUIPMENT

Industrial laboratories



Off-the-shelf solutions for the creation of new and upgrading of existing metrological laboratories using standards produced by Metran IG, as well as leading Russian and international companies.

Ready-made workplaces of a metrology engineer and a instrumentation specialist for servicing a wide range of measuring instruments.

Metrological benches and equipment sets



Verification, calibration, repair of **pressure transmitters** (including precision transmitters with an error of 0.025%, absolute pressure measuring instruments, multiparameter sensors integrated in flow meters and energy metering stations), secondary instruments, technical and oxygen pressure gauges, draft-and-head gauges and other instruments with unified or digital output signals (HART protocol).



Verification, calibration, repair of **temperature devices**: thermoelectric transmitters (TT); resistance temperature detectors (RTD); temperature transmitters with a unified current output signal and a digital HART signal; liquid, dilatometric thermometers; secondary instruments.



Verification, calibration and testing of **gas analytical equipment**: gas analyzers, chromatographs, gas analytical systems and gas analytical transmitters.



Verification, calibration of **level transmitters** with an error of ± 1 mm: radar, waveguide, buoy and other types of level transmitters. The unit for level transmitters verification is included in the register of measuring instruments (certificate of the State Register No. 89465-23). Patent for invention No. 2772553.

Training laboratories

Training benches, simulator benches and equipment sets



For educational institutions and advanced training centers of industrial enterprises.

Studying of the design, operation and configuration of instrumentation, studying the methods of calibration and verification of transmitters, troubleshooting for various processes.

METROLOGICAL EQUIPMENT

Calibrators and reference pressure modules



Metran-520

Portable calibrator with built-in module and pressure source, power supply for calibrated instruments, documentation and work with calibration templates, HART, processing of measurement results.



Metran-517

Portable calibrator for verification/calibration of pressure instruments (including high-precision) and secondary instruments, HART, explosion-proof design.



Metran-518

Digital pressure module (positive, absolute, pressure-vacuum), general industrial, explosion-proof and degreased design. Accuracy class can be chosen while ordering (from 0.02% to 0.1%).



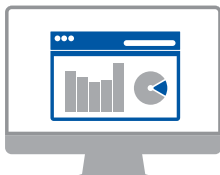
Metran-501-PKD-R

Portable calibrator for verification/calibration of pressure instrument with an error of 0.15% and coarser and secondary instruments.



Metran-500 Air

Pneumatic pressure calibrators are used to accurately reproduce positive pressure. High-precision reference pressure gauges from 5 Pa to 1000 kPa, accuracy class from 0.01%.



DUT Verification Software

Automation of verification and calibration of measuring instruments when working with Metran pressure calibrators and metrology benches. Processing of measurement results and generation of verification protocols, maintaining a database of calibrated instruments and a calibration archive, remote control of reference gauges (calibrators, controllers, multimeters, etc.).



Accessories:

pressure sources, power supply systems and air preparation units for reference gauges and benches, equipment for connection and installation of calibrated instruments (connecting hoses, reducing fittings, quick-release couplings, racks, collectors, metrological tables), SPTA.



Metrological services. Service

Services for verification, calibration and repair of reference pressure gauges, electronic calibrators, precision pressure transmitters.

ANALYTICAL EQUIPMENT AND SOLUTIONS



Flue Gas Analyzers

General industrial analyzers for measuring oxygen content in the range of 0-25% O₂ vol. in flue (furnace) gases based on a zirconium oxide sensing element.

OXT 3000 – general industrial analyzers.

OCM 6000 – explosion-proof analyzers.

SERVOCC 6100

Explosion-proof high-performance two-component gas analyzer (O₂ and COe) allowing to optimize the combustion process.

Universal Gas Analyzers

SIGAS:

Automatic continuous measurement of the concentration of various components in the process gas media of technological processes, industrial emissions, determination of impurities in pure gases, biogas and other process gases.

Photoacoustic analyzer **SPTr-GAS ANALYZER**.

Modular analyzer **S-ANALYZER 200 (SA-200)** with measuring modules of various types.

Modular analyzer **S-ANALYZER 200 ATEX** with explosion-proof measuring modules of various types.

METRAN AG:

300A / 300S

Multicomponent gas analyzer. Up to 4 measuring channels in various configurations. The analyzer performs analysis using non-dispersive infrared, visible, ultraviolet (NDIR/UV/VIS) technology, electrochemical cells, as well as determination of oxygen content using a paramagnetic cell.

300V

Explosion-proof multicomponent gas analyzer with various combinations of measuring cells, including a capacitive humidity sensor.

L-100

A single-channel analyzer using Tunable Diode Laser Absorption Spectroscopy (TDLAS) for measurement of gas components adopting a hot method.

500

Universal customizable analyzer. Measurement technologies:

Tunable Diode Laser Absorption Spectroscopy (TDLAS), cell temperature up to 180 °C and UV-Visible Differential Optical Absorption Spectroscopy (DOAS), cell temperature up to + 60 °C.

MP AG In-Situ

Gas analysis using laser technology. Measuring module constructions allow to analyze directly on the pipelines, without sampling. Types of measuring cells: TDLAS or ICL/QCL.



ANALYTICAL EQUIPMENT AND SOLUTIONS

Explosive and toxic gas detectors



Irekson-AMV Series

Combustible and toxic gas detector designed for the harshest applications in industrial facilities, in situations requiring increased reliability and high measurement accuracy. Explosionproof design.

In-line Gas Chromatography



MP-PGH-3000 model 3000-1

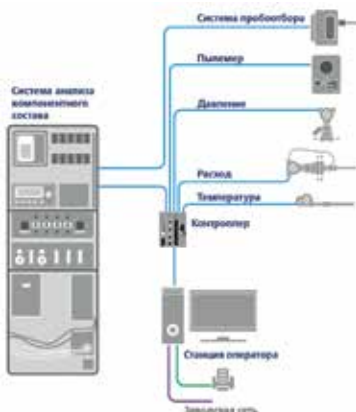
Industrial chromatograph for typical applications. Analysis of the composition and calculation of the physical and chemical parameters of natural gas. Explosionproof design (Ex d).



MP-PGH-3000 model 3000-2

Industrial chromatograph for complex applications. Explosion proof (Ex p) design is available. Accurate, continuous monitoring of the components of gaseous or liquid fluids, automatic analysis of the composition of natural gas, associated petroleum gas and products of its processing.

Automatic Emission Monitoring Systems



Ecology MP

The system is designed for continuous automatic measurement and recording of the concentrations of pollutants, as well as the mass concentration of suspended particulate matter (dust), gas flow parameters (temperature, pressure, flow rate) in waste gas and process gas in industrial enterprises.

This is a stationary multi-channel continuous measurement system. Structurally, the system consists of a sampler and sample preparation system, transmitters (analyzers), a sample transportation system, data acquisition, processing, archiving and transmission systems and an operator workstation.

Analytical Systems & Solutions



Development, production and installation of analytical systems and solutions. The work scope includes: pre-design survey, detailed and design documentation development, production, installation supervision and commissioning, arrangement of type approval and primary verification of measuring instruments, warranty and post-warranty services. Production of analytical systems includes: assembly of gas and liquid analysis systems; assembly and fabrication of block containers; assembly and fabrication of cabinets.

CONTROL VALVES

Control valves are used in pipelines to regulate the operating process parameters, such as a flow rate, pressure, temperature and liquid level, fully or partially opening or closing in response to a control input. They can be provided with pneumatic, electric and manual actuators depending on the application.

Sliding stem control valves



These valves can have a globe, angle and three-way design. Sizes range from DN15 to DN500 with various materials depending on the application. Noise suppression and anti-cavitation kits of internal parts designed for heavy-duty operation can be used in most of designs. They are used in anti-surge systems. Cryogenic designs and high temperature designs are available.

Control valve, HICON 6000

Reliable high-pressure valves (up to PN420/CL2500) designed for application in power generation, refining, petrochemical, chemical and other industries.

Control valve, UNICON 1000

Universal general purpose globe valves (up to PN50/CL300). The internal design and the materials used depend on the process temperature, pressure, process fluids and other parameters.

Rotary type valves (butterfly, segment type)



Triple-offset butterfly valve Model 7600

These valves are used to control and shut off the flow, both in high temperature environments and in cryogenic applications. These valves have nominal sizes from DN80 to DN2000 and pressure class up to PN160 depending on the model. They have a metal seal ensuring a zero leakage in both directions.

Two-offset butterfly valve UNICON 8000

These valves are used for various applications, including the use as shut-off valves. These valves have nominal sizes from DN50 to DN1000 and pressure class up to PN50. Various types of seat materials and seals are available.

Rotary valve with ball segment UNICON 5000

The ball segment slightly restricts the flow through the valve and at the same time ensures high-quality control in a wide range.

MAINTENANCE AND REPAIR OF FISHER VALVES



Diagnostics and repair of Fisher control valves. Fabrication of SPTA in Metran IG, JSC. Repair services will enable to operate the equipment in accordance with technical conditions and safety standards, as well as to increase the uptime period and reduce downtime of the enterprise.

SAFETY VALVES



SR-07

Spring-loaded safety valves specially designed and manufactured in accordance with API 526. These valves are suitable for supplying air, gas, steam, cryogenic liquids. A hand popping device. The internal parts are made of stainless steels of different grades, which prevents jamming. The self-aligning disc is designed to withstand high and low temperatures without leakage due to uneven thermal expansion. The carefully lapped sealing metal pair is polished to a mirror shine. This lapping in combination with the design of the disc ensures an excellent tightness and ease of maintenance.



SR-08

SR-08 are threaded safety valves specially designed and manufactured in accordance with API 520/527.

Both models meet high quality standards for overpressure protection for air, gas, steam and vapor media, as well as for liquid phase applications. Highly effective for various applications such as oil refineries, chemical industry, fertilizer plants, petrochemical industry, oil and gas industry, storage tank systems, etc. The well-thought-out design with a minimum number of components reduces the downtime, the number of necessary spare parts is reduced and maintenance costs are decreased.

DIRECT-OPERATED PRESSURE REGULATORS

Pressure control solutions that do not require additional power supplies, applicable in various industries.



Model D81

A highly efficient high pressure regulator that can be used with all non-aggressive gases. Designed for domestic, commercial, industrial applications. Glandless design. Protection against unauthorized access to the adjusting screw. The regulator can be installed in any position. The internal parts of the regulator can be checked and replaced without removing it from the pipeline. Excellent tightness for a long service life.



Model D53

High precision pressure control in various application areas. It is provided with a two-stage pilot control valve, due to which these regulators can withstand large fluctuations in inlet pressure without compromising the accuracy of the regulated outlet pressure. The special design and treatment of materials prevent the wear and erosion of seats, ensuring an excellent tightness over a long service life. It can be provided with a feedback position transmitter.



Model B3

The double pilot valve system is used for high-precision control in low-pressure systems. The regulator ensures high accuracy when extremely low setpoints and minimal proportionality range are important, combined with greater capacity for larger tanks and/or pumping rate. A broad range of materials and configurations. Complete tightness, easy maintenance, glandless design.



Model DMB

This regulator ensures a constant reduced pressure of pre-filtered, non-aggressive gases and liquids used in industrial, commercial facilities and process installations. Internal pressure measurement through the pitot tube, ensures a faster response and ease of installation in line, increases the accuracy of the regulator, and also saves installation costs. The possibility of replacing springs without changing the housing to ensure a wider range of the set pressure without any modifications.



Model DP3000

These regulators are best suited to maintain a constant reduced pressure of pre-filtered non-corrosive gases used in industrial, commercial and process installations.

METRAN GAS PRESSURE REGULATORS

Pressure control solutions for various industries.



FL Series

Metran FL Series gas pressure regulators are used in reduction, distribution and pumping stations with natural gas of the required degree of purification. They can also be used for air, propane, butane, liquefied natural gas, urban gas, nitrogen, carbon dioxide and hydrogen.

SOLENOID VALVES AND FILTER REGULATORS

Solutions for controlling shut-off valves.

Solenoid valves

Series 327

An universal direct-operated solenoid valve is suitable for actuator control, compressor unloading, and control of utilities. The “non-breathing” design prevents the penetration of dirt from the environment. Low power consumption reduces the size of power supplies and cables. Internal resistance to vibration. Low-temperature version up to -60°C . Removable manual control.



Series 353

Series 353 series pulse valve is specially designed for use in dust and gas cleaning systems for the regeneration of bag and cartridge filters. These valves use a new springless diaphragm piston technology, which reduces compressed air consumption by 15% and increases efficiency compared to the conventional design of pulse valves. High throughput and fast response for opening/closing ensures highly efficient cleaning of the filter element in dust removal systems.



Filters, Filter Regulators and Regulators

Series 342

Designed for operation in aggressive environments of gases, vapors and water mist. Built-in overpressure relieving function. Cold temperature version up to -60°C . The internal springs are made of ICONEL alloy for resistance to sulfur dioxide.





Factory Services in Metran IG, JSC

Warranty and post-warranty repair of Metran, Rosemount, Micro Motion instruments. Maintenance and upgrading of all types of coriolis, electromagnetic and vortex flowmeters, as well as 3300 and 5300 series level meters manufactured at any Emerson plant. Consulting on the operation of instruments and remote correction of device errors.



Field Services

Metran provides qualified services under service contracts based on the agreed schedule and ensures an instant response in case of unforeseen equipment failures, as well as priority delivery of spare parts and consumables. List of services: installation supervision, diagnostics, calibration and verification, audit, commissioning, repair and maintenance.

Service field specialists of Metran Project LLC provide support services for DeltaV, Ovation and other control systems; analytical equipment and systems based on it; instrumentation equipment and energy metering systems; regulation equipment.



Verification of Measuring Instruments

Measuring instrument verification services: Metran, Rosemount and MicroMotion pressure and temperature transmitters, flowmeters and level meters; all types of flowmeters from any manufacturers; high-precision metrological equipment.



Training

Training of personnel to operate the equipment on our site or directly at your production facility. Your specialists will gain the knowledge and practical experience necessary for the operation of our equipment.



Engineering, Programming and Design

Development of Application Software for PCS and ESD:

We develop application software for control systems, ESD, analytical systems, integrated system solutions, local control systems, cybersecurity.

PCS Engineering

A full cycle of services for PCS design from pre-design survey to commissioning and warranty service.

Service Support

Expert advice and assistance on all issues of the functioning of the system software and hardware of the DeltaV and Ovation systems.



Project Management & Execution

Process Automation

We will create and implement integrated automated process control systems.

Instrument Deliveries for Projects

Metran offers proprietary and third-party solutions as the main instrumentation supplier.



Design Solutions

Flow Measurement System

Metering of the amount of gas or liquid, as well as control and recording of its parameters.

Emission and Discharge Monitoring System

Continuous automatic measurement and metering of pollutants and gas flow parameters in waste and process gases of enterprises.

Wireless data acquisition system

Ensuring the uniformity of measurements of remote instruments or instruments without power supply; reduction of the emergency response time; reduction of the time of installation of instruments at the facility; reduction of the project complexity.



Non-Standard Process Solutions

We design and implement unique process solutions necessary for your process. Metran engineers have many years of experience in solving complex and non-trivial process automation tasks.





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Automation news, new products, production technologies in our telegram channel

The details are relevant at the time of the catalog release. For up-to-date, please, visit our website www.metran.ru

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