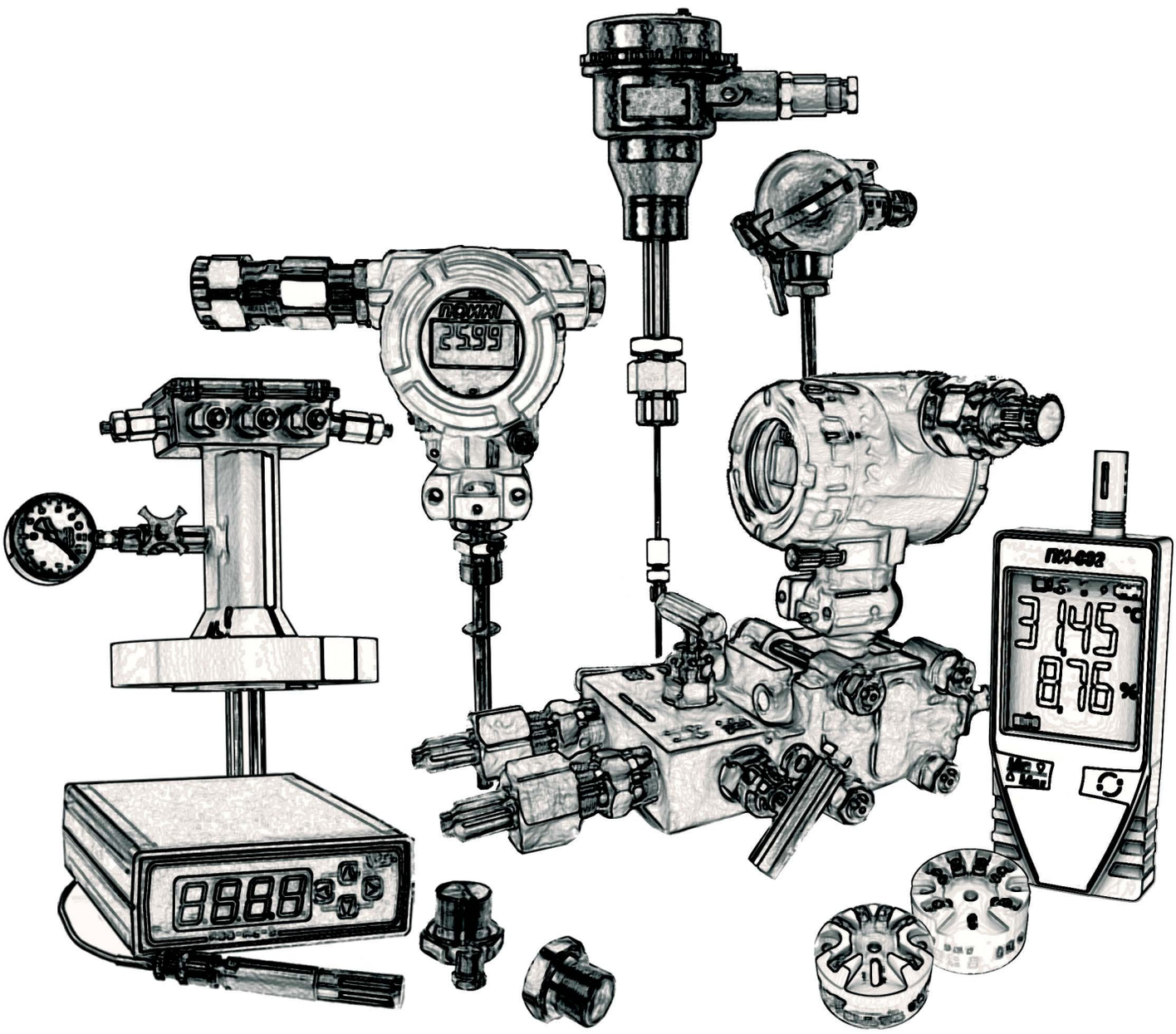
ПОЛОЦК

ПОИНТ



Pressure sensors

Protective fittings

Temperature sensors

Reference equipment

PRODUCT CATALOG

2024

Point LLC specializes in the production of primary field sensors and secondary electronic digital devices designed to measure, control, and regulate temperature, pressure, and other parameters of technological processes, as well as accessories for their installation at technological and industrial facilities.

An important area of our production is the manufacture of metrological equipment.

Our company stands out in the modern market due to:

- the presence of its own design bureau and modern mechanical production, which allows for the development and manufacture of devices of any complexity in the shortest possible time;
- a quality system in accordance with the European standard EN ISO 9001, as well as effective functioning and continuous improvement of effectiveness, as outlined in the Risk Management Policy and consistent with the principles set out in the international standards for risk management ISO 31000 and COSO ERM;
- a flexible production base that allows for the manufacture of a wide range of products;
- an accredited calibration and verification laboratory, which provides warranty and post-warranty maintenance of the offered devices, as well as repair and calibration (verification) of other measuring instruments. The competence of our laboratory is confirmed by the accreditation body, which is a signatory of the ILAC MRA Agreement.

Product quality is an integral part of our company's strategy. Our products are listed in the state registers of the Republic of Belarus, the Russian Federation, the Republic of Kazakhstan, and the Republic of Uzbekistan.

Our company is always open to offers of joint cooperation. **Guaranteed product availability** is ensured by an established logistics process that allows us to deliver products in the shortest possible time. Additionally, the company continuously improves its production process to ensure the volume supply of high-quality products.

- **Oil refining industry**
- **Chemical industry**
- **Engineering, machine engineering**
- **Food industry**
- **Sanitation, air conditioning systems**

Resistance temperature sensors are produced in two modifications:

- TS-B with an output characteristic corresponding to the standardized characteristic: Pt100, Pt500, Pt1000, 50P, 100P, 500P, 50M, 100M.
- TS-B-U with a unified output signal of direct current (4-20) mA, (0-5) mA.

Thermocouples are produced in two modifications:

- TP-B with an output characteristic corresponding to the standardized characteristic: THA(K), TXK(L), TKK(J), THH(N), TXKn(E), TMK(T), TPP(B), TPP(K).
- TP-B-U with a unified output signal of direct current (4-20) mA, (0-5) mA.

Versions made of corrosion-resistant steels on order

Availability of indication

Minimal dimensions

Wall-mounted version

Availability of two cable entries

Availability of two cable entries

Availability of two cable entries

Resistance temperature detectors, thermocouples, and their modifications

- Manufacturing according to customer sketches
- Additional fittings for various process connections
- Robust mechanical design with high resistance to impacts and vibrations
- Seismic resistance up to 9 points inclusive
- **Measurement range: for resistance temperature detectors TS-B, TS-B-U from -200 °C to +600 °C; for thermoelectric converters (thermocouples) TP-B, TP-B-U from -200 °C to +1300 °C**

Explosion protection:

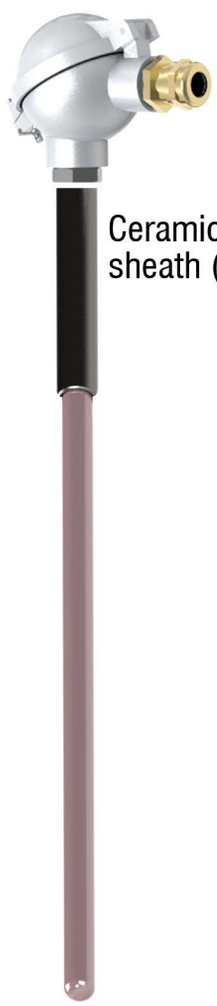
- Comply with the requirements of TR TS 012 2011
- Suitable for use in explosive gas environments, zones (zone 0, zone 1, zone 2), as well as in areas with the risk of ignition of combustible dust (zone 20, zone 21, zone 22)
- Functional safety SIL 2; SIL 3 (Safety Integrity Level)

Modular design of the thermoelectric converter

Modular design of the thermoelectric converter

Thermometer with DIN EN 175301 803 connector

Low-inertia thermocouples

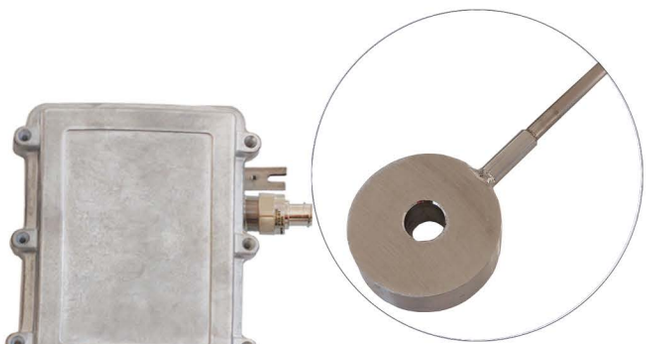


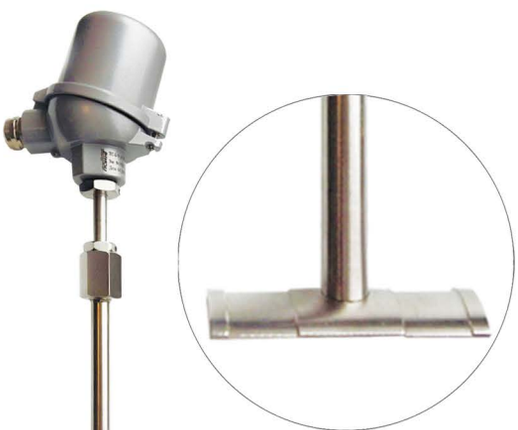
Ceramic protective sheath (Al2O3, ZrO2)

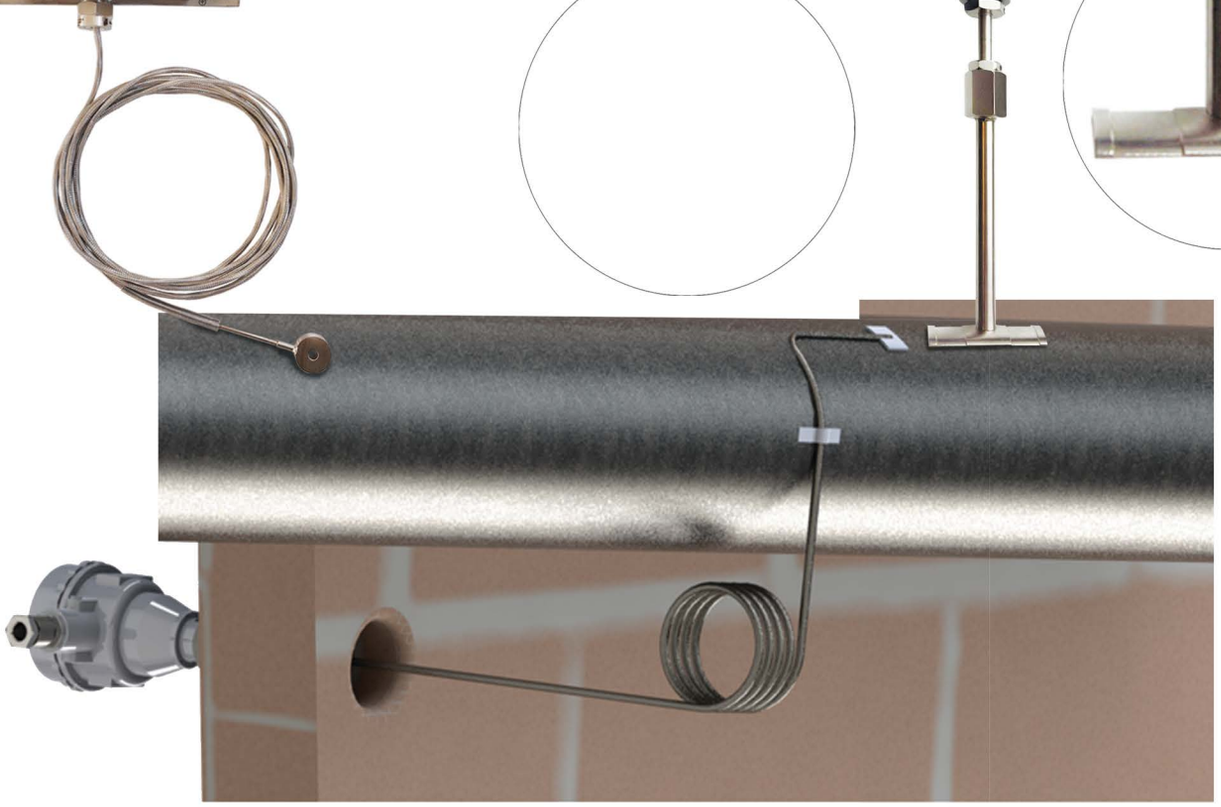
- various execution options
- thermal protective screen
- welded guide clips
-c ompensation rings
- temperature measurement in hard-to-reach surfaces and environments
- surface temperature monitoring of pipes, monitoring of coking in the heat exchanger (control and timely coking removal, as well as monitoring fuel delivery and temperature monitoring of raw material heating)

Explosion protection

- conform to the requirements of EAEU Technical Regulation TR TS 012/2011

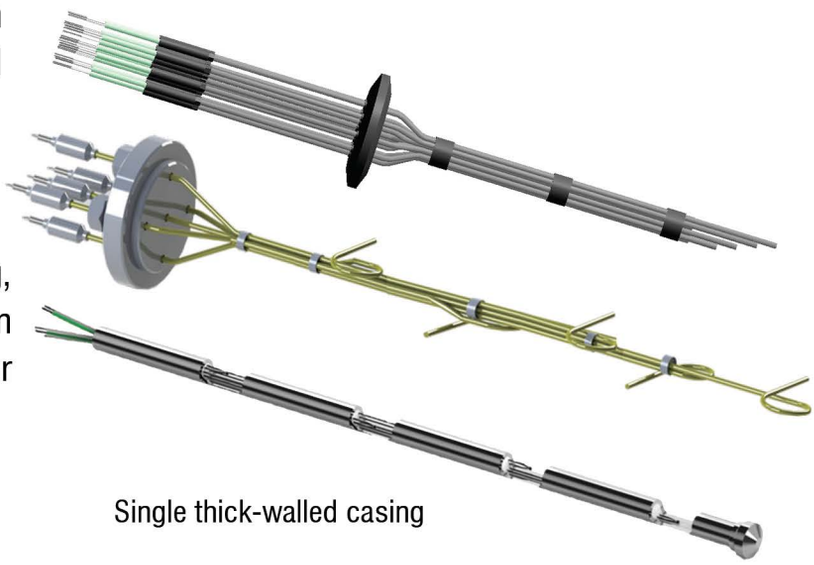






- temperature measurement in catalyst layers in technological installations of petrochemical, oil refining, and chemical industries

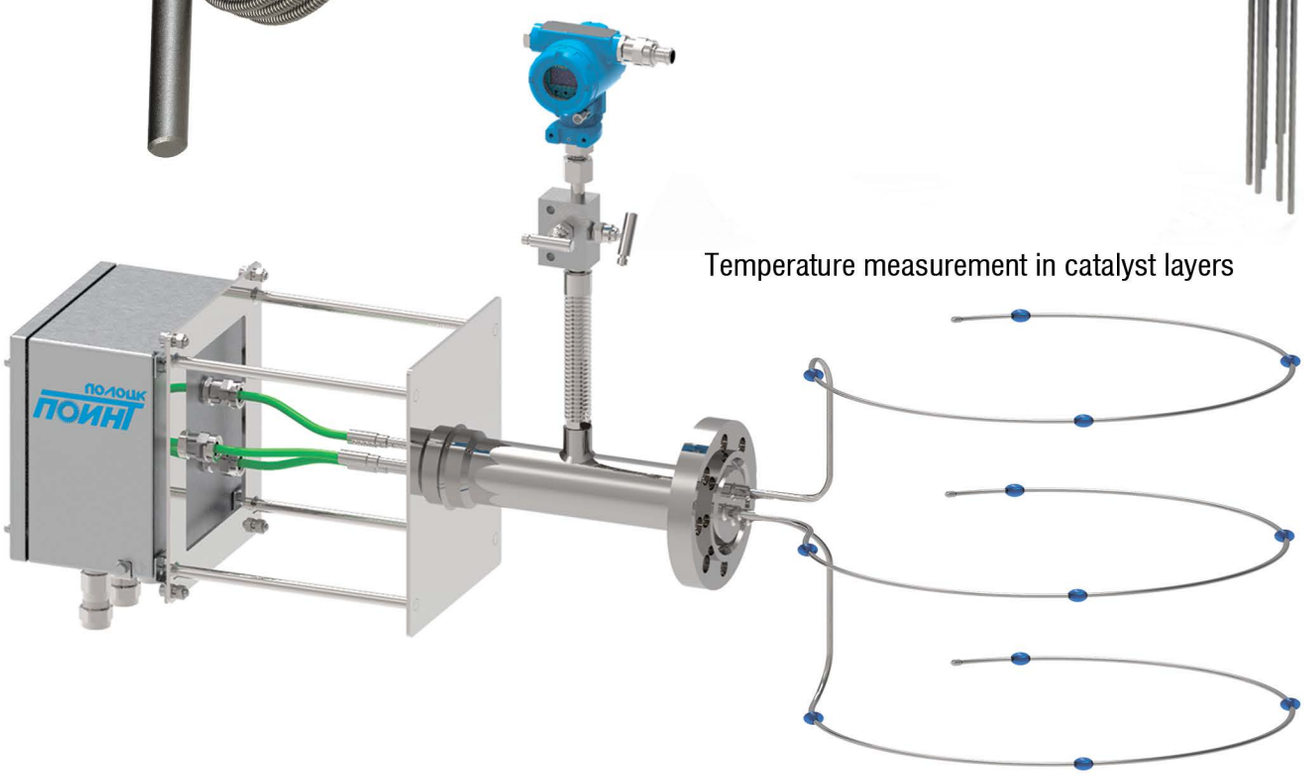
- in catalytic cracking, hydrotreating, hydrocracking units in distillation/fractionation columns during crude oil distillation and in other installations



Single thick-walled casing

Flexible hermetic metal sleeve

With determination of the tightness of the measured medium



Temperature measurement in catalyst layers

-The material of the protective casing can be: AISI 316L / AISI 316Ti / AISI 310 / AISI 347 / Inconel 600 / XN45Y / XN78T.

- Switching is done via a connector, terminal head, or an external junction box with secondary converters.

Monolithic protective casing made of stainless steel

- Additional gap for thermal expansion

HARTING HAN D Series connector for 8 pins or terminal head

Laser welding of the thermocouple cable to the protective casing

Clamps to protect working joints from mechanical damage

Austenitic stainless steel or material according to the customer's request is used

- the technological connections have an aseptic design, providing convenience and ease of cleaning from contamination, as well as connection through a membrane separator

- allowable autoclaving conditions are up to plus 85 °C, 100% relative humidity - degree of protection of enclosures according to GOST 14254 (IEC 60529), including IP 68 and IP X9.

Small silicone handle

Large silicone handle

Special tip shape

Output signal 4-20 mA

Tri-Clamp connection

Sealing ring

BScrew tip

"Milk nut"

Austenitic stainless steel or material according to the customer's request is used

- the technological connections have an aseptic design, providing convenience and ease of cleaning from contamination, as well as connection through a membrane separator

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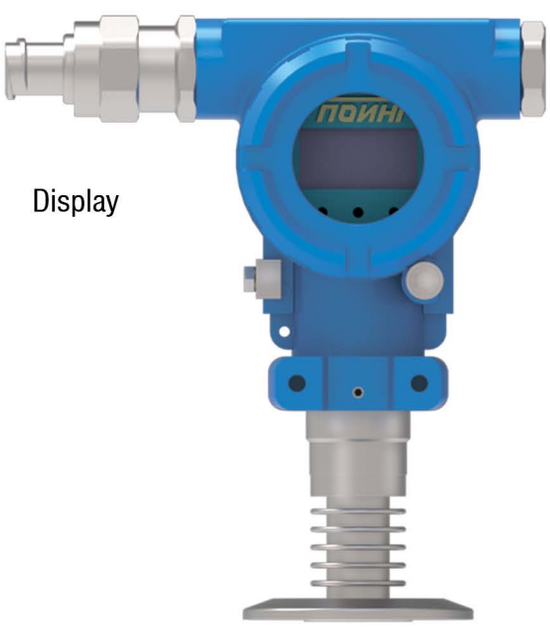
Monobloc body

Universal separator

Tri-Clamp connection



Display

Tri-Clamp connection

Media separator

4-pin connection

Open membrane

Pressure sensors are available in the following modifications:

- ID-Q - standard performance pressure sensors.
- ID-F - intelligent performance pressure sensors.
- The basic combined accuracy is ±0.075%.
- The degree of protection of enclosures according to GOST 14254 (IEC 60529), including IP 68.
- Comply with the requirements of TR TS 012/2011 and TR TS 020/2011.

DIN C

Execution H1

Execution Ti/T

DIN A

Technological connection in accordance with standards: **EN 837, DIN 3852-E, ANSI/ASM E; B 1.20**

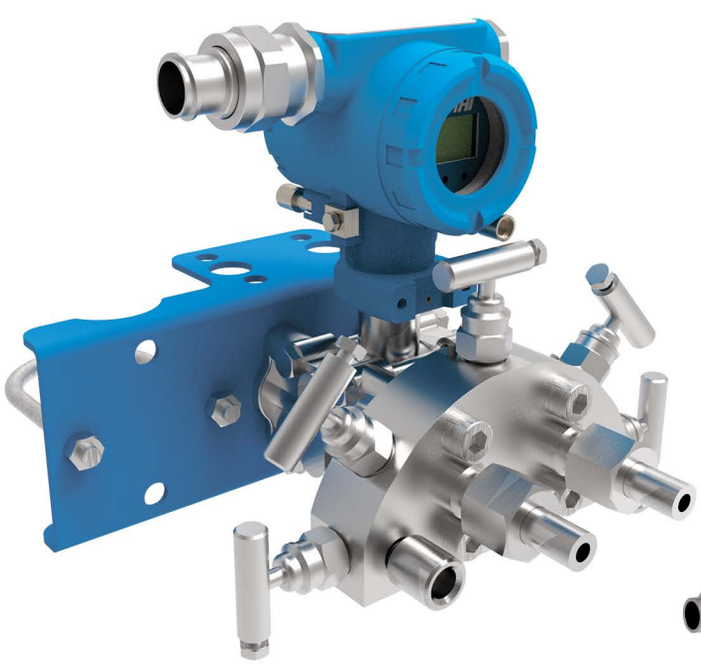
Application in explosive gas environments, zones (zone 0, zone 1, zone 2) in accordance with the requirements of GOST IEC 60079-10-1, as well as in areas hazardous due to the ignition of flammable dust (zone 20, zone 21, zone 22) in accordance with the requirements of GOST IEC 61241-1-2.

- Modular concept for any application - Electrical connection in accordance with the standards:
DIN EN 175301-803A, IEC 61076-2-101, MIL
- Robust mechanical design with high resistance to impacts and vibrations

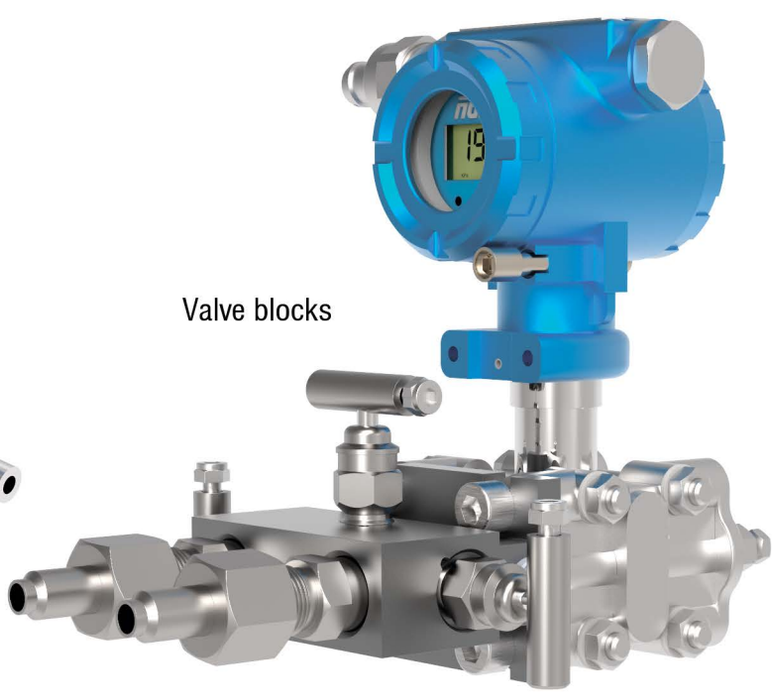
Type "P" housing design

Membrane separator

Various types of mounting



Type "C" housing design



Valve blocks

- **Immersion thermometers**
- **Temperature sensors for climate control systems**
- **Pressure sensors**
- **Selection devices**
- **DC power supplies**
- **Bushings**
- **Stubs**

Temperature sensors

- Made according to customer specifications
- Various technological connections
- Tolerance class according to GOST 6651: AA, A, B
- Protection degree of enclosures according to GOST 14254 (IEC 60529) IP 65, IP 68

Protective bushings

• Various designs, made from solid materials (from 180 mm)

• Coating of protective bushings against highly aggressive environments with special materials, including protection from abrasive wear.

Pressure sensors

- Protection degree of enclosures according to GOST 14254 (IEC 60529) IP 65, IP 68
- Operating temperature range of media up to 120 °C

Stubs

- For mounting temperature sensors, pressure measuring instruments, and connecting impulse technological lines

DC power supplies

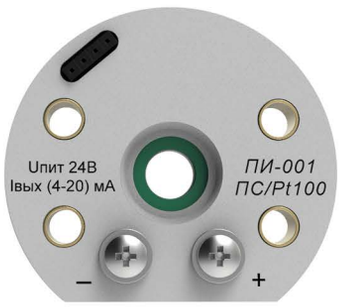
- For converting mains voltage of 230 V 50 Hz into stabilized voltages of 9 V, 12 V, 24 V
- Two or more galvanically isolated channels
- Electronic protection against overloads and short circuits for each channel
- Linear operating principle

- Free configuration software POINT - Configuration using most modern HART® communication devices - Connection of 1 or 2 sensors simultaneously - Absolute accuracy, °C: +0.15 - Compact design allows installation in any connection heads according to DIIM, as well as for mounting on a rail according to IEC 60715

Explosion protection (optional)

- Complies with the requirements of TR TS 012/2011 and TR TS 020/2011 - Application in explosive gas environments, zones (zone 0, zone 1, zone 2), in accordance with the requirements of GOST IEC 60079-10-1, as well as in areas hazardous due to combustible dust (zone 20, zone 21, zone 22) in accordance with the requirements of GOST IEC 61241-1-2.

Version E



Availability of HART

Explosion protection:

Intrinsically safe electrical circuit

Mounting on DIN rail

Availability of HART

Explosion-proof version

- For measuring and recording temperature, relative humidity, atmospheric air pressure, and for measuring the temperature of liquid, non-aggressive gaseous, and solid media.
- For workplace certification in occupational safety centers and public health organizations.
- Pharmaceutical industry, testing laboratories, clean production areas.
- Electronics industry.
- Printing industry.
- Warehouse facilities.
- Museums, archives, libraries.

Temperature,
Humidity
Pressure

ПИ 002/1М.Д

Connection of an external
temperature sensor

ПИ 002/3

Connection of an external
temperature sensor

ПИ 002/11М.Д

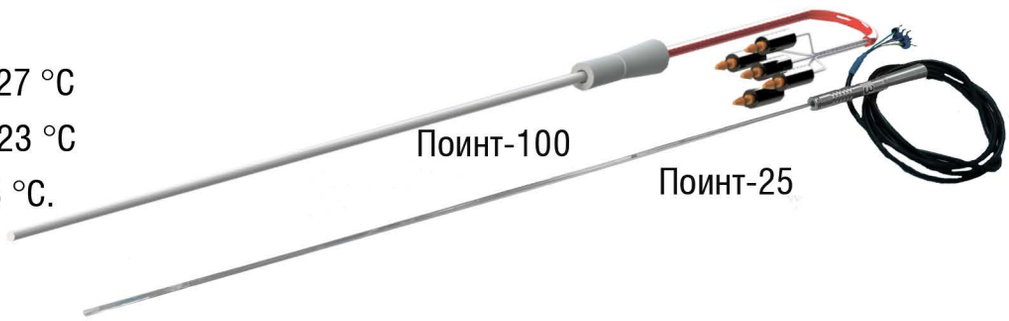
- Temperature measurement range from minus 20°C to plus 60°C
- Limits of permissible absolute error: A = ± 0.5°C, A = ± 3%, A = ± 0.2 kPa
- Data accumulation
- Continuous operation duration on a battery of at least 6 months
- Charger adapter

БГЦА BSCA BY/112 5.0072 СТБ ИСО/МЭК 17025

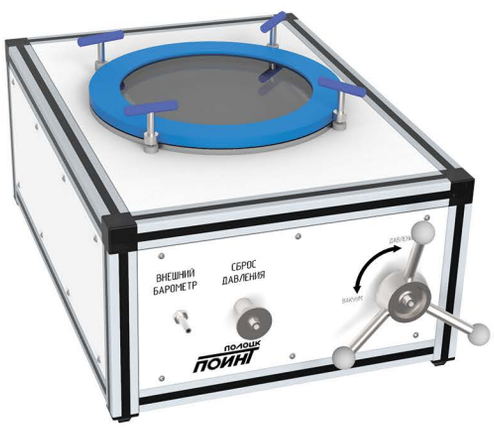
Поинт-100, Поинт-25

-As high-precision temperature measurement instruments in various industries, laboratories, and during scientific research:

- Point-100/1 from -80 °C to +419.527 °C
- Point-100/2 from -80 °C to +660.323 °C
- Point-25 from -196 °C to +660.323 °C.



Barometric station UB-01 complete with barometer RTVZZO



The barometric station UB-01 is designed for the verification and calibration of measuring instruments under varying pressure conditions from 75 to 125 kPa. The reference barometer RTVZZO is connected to the external fitting. The required pressure is set by turning the handwheel.

- Working chamber dimensions (LxWxH), mm: 311 x 206 x 30
- Working chamber volume, l: 2
- Protection class: IP22

Hygrometer

- For standard measurement of relative humidity and temperature
- Measurement range for relative humidity from 0% to 100%, measurement range for temperature from 0°C to +60°C

-Limits of permissible absolute measurement error for relative humidity +1% at air temperature (25±5)°C

- Limits of permissible absolute measurement error for temperature +0.3°C.

Air Humidity Generator ГВВ

- Regulation range of relative humidity (RH) in the chamber: 2 ... 98%, measurement accuracy: 1%
- Humidity instability in the chamber: up to +0.2%
- Humidity non-uniformity in the chamber: up to +0.2%
- Continuous autonomous operation: 24 hours a day
- Automatic desorber recovery

Pressure, Temperature, and Flow Measurement and Monitoring System for Natural Resource Extraction

The system allows for the management of connected primary transducers and to receive data from them via the LoRaWAN communication protocol, utilizing the system's network infrastructure.

- Operating frequency range: 863 - 870 MHz
- Support for LTE/GPRS/EDGE standards
- The base station includes a GPS module
- LoRaWAN communication protocol - Non-contact switch (reed switch)
- The data polling and transmission frequency is user-defined
- Estimated service life of at least 15 years
- The base station protection rating is at least IP65

Base Station with External Antennas

Temperature Sensors

Pressure Sensors

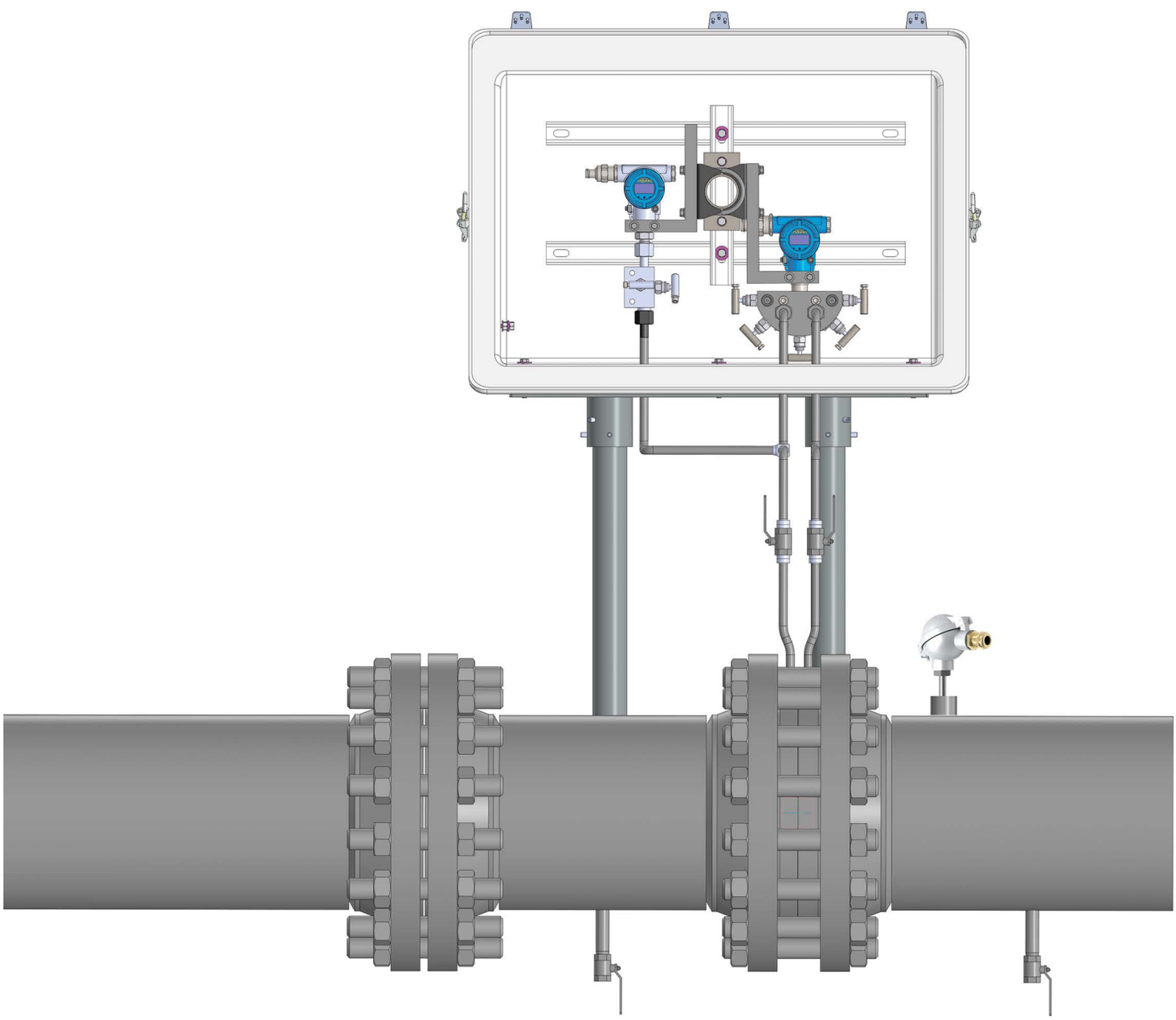
Sensors are equipped with a module for receiving and transmitting signals.

- Output signal: 4-20 mA
- Presence of HART protocol
- Versions resistant to hydrogen sulfide in accordance with NACE MR0103/MR01753

The measurement complex is designed for measuring the flow of natural gas and consists of a set of measuring instruments.

It is intended to obtain information about the measured parameters of the measured medium (e.g., natural gas) such as pressure, pressure drop, flow, temperature, and others.

- Selection and calculation of the constricting device
- Completion with flanges and calibrated section
- Ultrasonic inspection of welds, color defectoscopy
- Versions resistant to hydrogen sulfide in accordance with NACE MR0103/MR01753
- Sensors with HART protocol



Protective sleeves

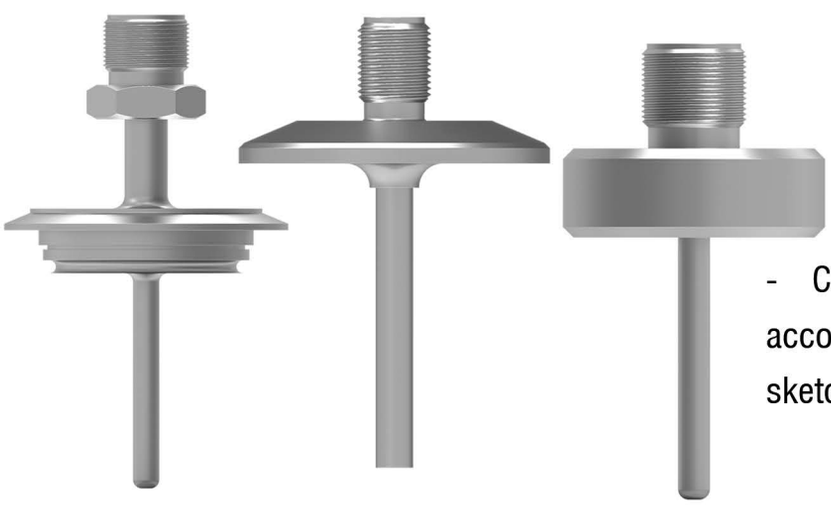
- **Chemical and petrochemical industry**
- **Gas processing, offshore and coastal facilities**
- **Food industry**
- **Technological processes with high working loads**
- **Machine engineering**

With a supporting collar

- various designs, solid turned (up to 2300 mm), composite (up to 9000 mm)составные

- sleeve shapes with pointed (open) tips
- a wide selection of materials used, including 12X18H1 OT, 10X17H1ZM2T, XH78T, HN45Y, 12X1 MF, AISI316, Monel 400, Inconel 625, Hastelloy C276, KanthalAF, титан и др.
- Monel 400, Inconel 625, Hastelloy C276, Kanthal AF, titanium, etc.

- all sleeves undergo hydraulic testing according to GOST 356
- manufacturing of protective sleeves with coatings such as "Stellite," PFA, Al2O3, etc.



VARIVENT Clamp DIN 11851/DIN 11864-1/

- strength calculations according to ASME B31.3 TW-2016, DIN 43772:2000-03, and others

- Custom sleeves can be manufactured according to the customer's drawings and sketches, as well as for high pressure

By default, the thermowells are made of steel 12X18H10T. At the request of the Customer, it is possible to manufacture thermowells from other steels and alloys, as well as to produce wells with protective coatings such as Stellite, Teflon, ceramics, etc.

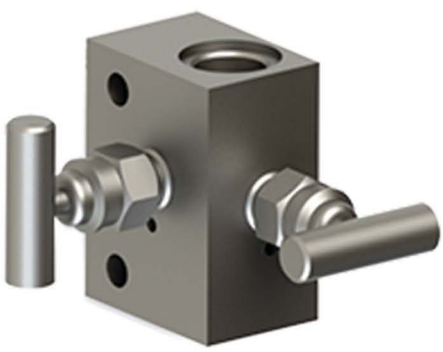
12X18H10T 321 SS	Corrosion-resistant austenitic steel. Operating temperature: from -253 to +350 °C. In environments that do not cause intergranular corrosion: from -253 to +610 °C.
08X18H12Б 347 SS	Corrosion-resistant austenitic steel. Has improved resistance to intergranular corrosion compared to 12X18H10T. Operating temperature: from -253 to +610 °C
03X17H14M3 316L SS	Corrosion-resistant austenitic steel. Has increased corrosion resistance compared to 12X18H10T. Operating temperature: from -196 to +450 °C.
10X17H13M2T 316Ti SS	Corrosion-resistant austenitic steel. Has increased corrosion resistance compared to 12X18H10T. Operating temperature: from -196 to +350 °C. In environments that do not cause intergranular corrosion: from -196 to +600 °C.
12X1MФ 15XM	Heat-resistant steel designed for operation at temperatures up to 560 °C.
15X5M A182 F5	Heat-resistant steel for use in environments containing sulfur (flue gases). Has increased resistance to sulfur compared to 20X23H18. Operating temperature up to 1000 °C
20X23H18 310S SS	Heat-resistant steel for use in environments containing sulfur (flue gases). Operating temperature up to 1000 °C.
15X25T 446 SS	Heat-resistant steel for use in environments containing sulfur (flue gases). Has increased resistance to sulfur compared to 20X23H18. Operating temperature up to 1000 °C.
XH78T XH45Ю Inconel 600 Inconel 601	Heat-resistant alloy designed for operation in oxidative working environments free of sulfur. Operating temperature up to 1100 °C (XH78T, Inconel 600, Inconel 601); up to 1250 °C (XH45Ю)
06XH28MДT 904L SS	Iron-nickel-based alloy for use in sulfuric and phosphoric acids of various concentrations. Operating temperature: from -196 °C to +400 °C.
XH65MB Hastelloy C276	HNickel-molybdenum-chromium alloy with tungsten addition, intended for use in hydrochloric and sulfuric media, concentrated acetic acid, dry chlorine, etc. Operating temperature: from -70 °C to +500 °C.
HMЖMц28-2,5-1,5 Monel 400	- Nickel-copper alloy for use in corrosive environments: fluorine, hydrogen fluoride, hydrofluoric acid, etc. Operating temperature: from -20 °C to +425 °C.
XH75MБTЮ Inconel 625	Heat-resistant alloy designed for operation in oxidative working environments free of sulfur. Operating temperature up to 1100 °C.
XH32T Incoloy 800	Heat-resistant iron-nickel alloy for operation in high-temperature conditions in petrochemical engineering. Operating temperature: up to +900 °C.
XH38BT Incoloy 825	Chromium-iron-nickel alloy resistant to various types of corrosion in aggressive environments.
BT1-0 B348 Gr2	Titanium alloy for use in marine environments and other highly corrosive environments, including those containing wet chlorine. Operating temperature: from -269 °C to +300 °C.

ACCESSORIES: STOP VALVE, LATERAL BRANCHES AND EXPANDERS

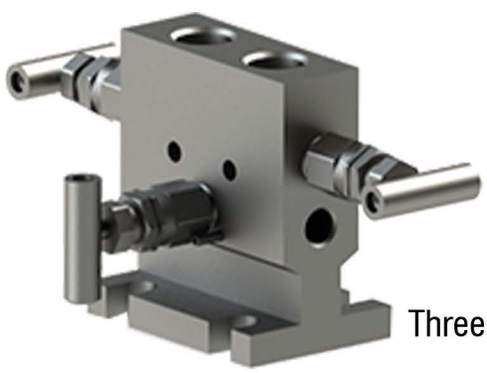
- Chemical and oil refining industry
- Gas processing, offshore and onshore facilities
- Food industry
- Technological processes with high operational loads
- Machine engineering

SHUT-OFF VALVES (MANIFOLDS)

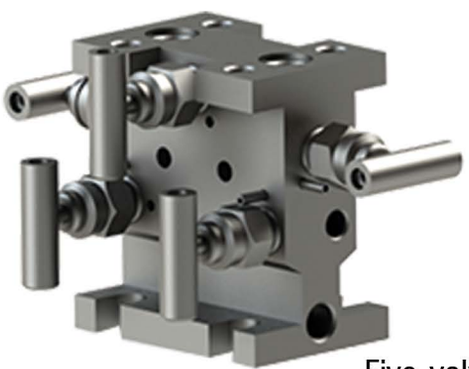
- Wide selection of connection methods: threaded, flange, welded, and socket
- PTFE seals (up to +232 °C) and graphite seals (up to +400 °C)
- Made from various steels and alloys



Two-valve



Three-valve



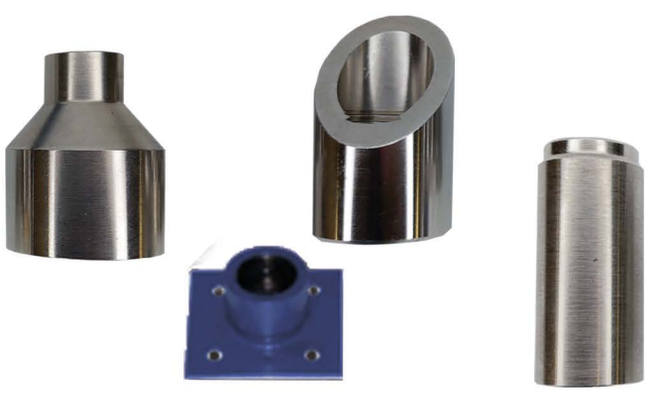
Five-valve

Expanders

- Measurement and control of temperature in technological pipelines and equipment
- Wide range of connection diameters (from 25 mm to 89 mm)
- Designs: straight and angled

Lateral branches

- Embedded devices installed on technological and engineering equipment and communications for mounting thermosensors, pressure measurement devices, level measurement devices, shut-off valves, and connecting impulse technological lines.



ACCESSORIES: DIVIDER VESSEL, RADIATOR, DIAPHRAGM

- **Chemical and petrochemical industry**
- **Gas processing, offshore and onshore facilities**
- **Food industry**
- **Technological processes with high operational loads**
- **Machine engineering**

Various designs

Separator vessels, equalizers, equalizing condensers

- Wide range of connection methods - PTFE and - T

o protect the internal cavities of sensors from direct exposure to measured aggressive environments by transmitting pressure through a separating fluid.

Pressure up to 40 MPa

Volume up to 1 liter

Damping devices

To protect the sensitive element of the manometer or pressure sensor from the effects of hydraulic shocks or pulsations.

Radiator

- For reducing the temperature of the measured medium - Operating medium: steam, water, petroleum products - Operating medium temperature up to +500°C - Temperature reduction to +50°C.

Lengths from 100 mm to 180 mm

Diaphragm

- chambered, flange, eccentric, non-chambered, restrictive, "quarter-circle," etc. - manufactured according to GOST 8.586-5-2005, RD 50-411-83, ISO 5167, ISO TR 15377, etc. - upon customer request, manufacturing of a set of mounting parts and calibrated sections of the pipeline

ACCESSORIES: MANOMETRIC STANDS, PRESSURE SAMPLING DEVICES, DISTRIBUTION UNIT

- Chemical and petroleum refining industries

- Gas processing, offshore and onshore facilities

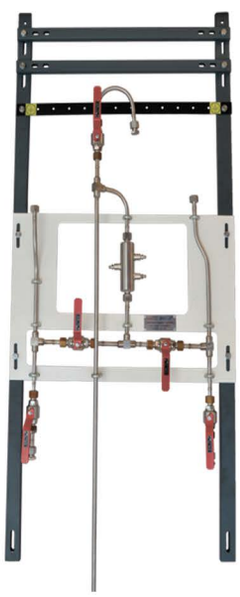
- Food industry

- Technological processes with high operational loads

- Machine engineering

Distribution Unit

- Wide selection of connection methods (combined, etc.)
- Teflon and graphite seals
- Even distribution of air across all sections of the impulse lines, as well as branching of the impulse line through a collector and shut-off valves

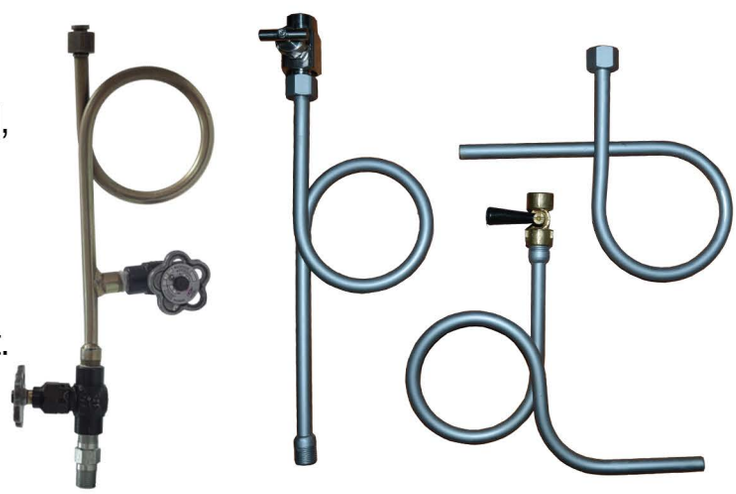


Manometric Stands

- Wide selection of connection options (combined, etc.)
- Teflon and graphite seals
- Pressure sampling, connection of tube runs fixed to a frame, designed for pressure impulse sampling and installation of field instruments on technological pipelines and equipment with non-aggressive environments

Pressure Sampling Devices

- Wide selection of connection methods (combined, etc.)
- Teflon and graphite seals
- Cooling of the measured medium
- Manufactured from various steels and alloys (St. 20, 09G2S, 12X18H10T, Hastelloy, titanium, etc.)



CABLE ENTRIES

-For sealing and securing flexible armored and non-armored, armored cables when entering electrical equipment.

-For connecting pipe runs between each other and for changing the diameter of entry holes with internal or external threads.

- For closing unused entry holes in enclosures of stationary, mobile, or portable electrical equipment.

Operating Conditions of Entries

- Comply with the performance group DZ according to GOST 12997:

o Polyamide from minus 50 °C to 85 °C;

o Operating temperature range of silicone from minus 60 °C to 125 °C.

Entries can be manufactured:

-In general industrial performance and in explosion-proof performance (Ex performance)

- Using types of explosion protection according to GOST 31610.0 (IEC 60079-0). Explosion-proof entries comply with II and III groups of explosion-proof equipment for indoor and outdoor installations:

- With the type of explosion protection "flameproof enclosure" "d" and explosion protection marking 1 Ex db HC GbX

- With the type of explosion protection "increased safety" type "e" and explosion protection marking 1 Ex e HC GbX

- With the type of explosion protection "protection against dust ignition" type "t" and explosion protection marking Ex tbIIIC Db X.

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