THERMIS

MĚŘÍCÍ A REGULAČNÍ TECHNIKA

What you can see is a measuring device - thermometer, thermostat, pressure gauge, flowmeter or an heating element from which you expect high accuracy, constant and guaranteed operation.

A gauge, which you perceive as a comprehensive feature without the need of understanding the principles of operation, without the need of knowledge of technical parameters and other details.

For you it is a comprehensive feature in which we have invested countless hours of development, continuous innovation, modifications tailored to particular applications and harmonization on customers request.

It is up to us to offer a valuable product to you, which will be fully suitable and functional for your needs.

It is up to us to ensure full support during the product selection process and provide with consulting services to reach the most suitable solution.

It is up to us to ensure sufficient amount of products on stock, sufficient amount of spare part to assure fast and trouble-free production of atypical products and special designs.

It is up to us to provide with complete sales and after sales services including all additional attributes.

We do everything to see, that you can only enjoy the function of our product - whether it's a thermometer, pressure gauge, heating element or a flowmeter. All without any concerns.

We would like to present our new catalog, where we introduce wide range of new products and novelties. Should you require detailed technical specification of the products, you may ask for complete technical pages, which are available on our webside - www.thermis.cz.

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A. TEMPERATURE MEASUREMENT

Basic measurement unit of temperature is 1K (kelvin). Degree Celsius 1°C = 1K; Degree Fahrenheit 1°F = 5/9K

Kelvin scale $K = \frac{5(F+459,67)}{9}$ $F = \frac{9K}{5} - 459,67$

Celsius scale: $C = \frac{5(F-32)}{9}$ $F = \frac{9C}{5} + 32$

Note: Absolute zero value can never be reached. It can only be approximated.

-273,15°C	0°C	100°C
0 K	273,15K	373,15K
-459,67°F	32°F	212°F

Melting point is a temperature at which solid material passes from solid to a liquid state.
Freezing point is a temperature at which liquid changes its state into a solid.

Significant values and melting points of some elements

Absolute zero	-273 °C
Mercury	-38,83 °C
Water	0°C
Tin	232 °C
Lead	237 °C
Aluminium	658 °C
Copper	1083 °C
Steel	1350-1400 °C
Iron	1535°C
Titanium	1668°C
Chrome	1907°C
Carbon	3642°C

Basic principles of temperature measurement

Mechanical temperature measurement

Bimetallic measurement - works on principle of expansion of two different metals, which deforms a spring (spiral). By means of deformed spring made of these two metals and a conversion mechanism, the measured value is displayed on the dial of the gauge.

Capillary measurement- the measuring mechanism consists of two parts: a cartridge and a capillary with a marked scale. When heating the cartridge (stem) the indicating medium expands, which results in level change inside the capillary and by means of a marked scale it is possible to read the measured value.

Pressure measurement - is made of a closed pressure loop which includes a Bourdon pen and a stem or capillary with sensor. This closed system is pressurized with inert gas. Heating of the stem or the sensor results in increased pressure inside the system and deformation of Bourdon pen. By means of a transfer mechanism similar to the ones used in pressure gauges, it is possible to read the measured value on the gauge.

A.1.1.

HEATING THERMOMETER ETR

diameter 63, 80, 100, 160mm bottom, back connection including CuZn well G1/2

DESCRIPTION:

- head: galvanized sheet
- copper stem
- acrylate inspection hole
- brass thermowell with thread G1/2 is part of the thermometer
- back connection, on individual request bottom connection

APPLICATION:

- heating and sanitary technology
- heating management, power engineering
- other operations without high technical requirements

TECHNICAL PARAMETERS:

- case diameter: 63, 80, 100, 160mm
- temperature ranges: 0-120°C (-50+50, -30+30, -20+40, -20+60, -15+45, -10+70, -10+60, 0-40, 0-50, 0-60, 0-80, 0-100, 0-160, 0-200, 0-250°C)
- stem length: 50, 65, 105, 150mm
- accuracy: kl.2

SPECIFICATION:

Heating thermometers are universally applicable devices for local temperature measurement, mainly used in heating engineering and light industry. Thermometers may be used for temperature measurement in any position.

Thermometers head may be placed into simple environment according to ČSN 33 0300 within range -30+110°C. Permitted tolerance for all ranges is in accordance with kl.2 from all range. Measured temperature must not exceed max. scale range.

Thermometers are produced with various stem lengths as mentioned in the technical documentation. Brass thermowell PN25 (for thermowells with lenghts up to 105 mm) and PN6 (for longer thermowells) with G1/2 thread comes as part of the thermometer, see technical documentation.

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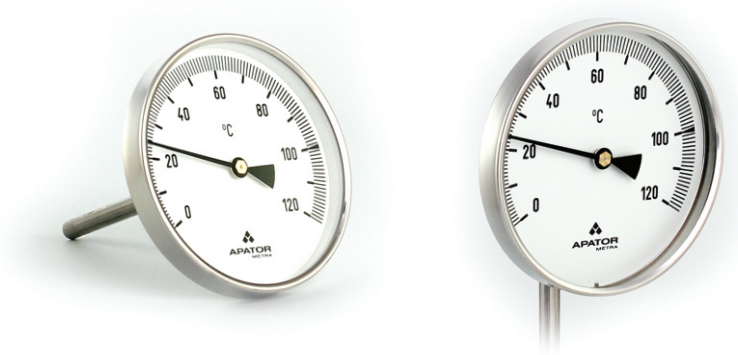
A.1.2.

BIMETALLIC THERMOMETER TR and TÚ

diameter 60, 100, 120mm bottom, back connection all-stainless steel design



DESCRIPTION:

- head made of stainless steel 17 240/1.4301
- stem made of stainless steel 17 248/1.4541
- glass inspection hole
- head surrounding temperature -30+110°C
- thermometer is supplied without well
- back connection TR (straight thermometer)
- bottom connection TÚ (angular thermometer)

APPLICATION:

- heating and sanitary technologies
- heating management, power enginnering
- food industry
- chemical engineering
- hydraulics

TECHNICAL PARAMETERS:

- case diameter: 60, 100, 120mm
- temperature ranges: -30+50, 0-120, 0-160, 0-200, 0-350, 0-450°C
- stem length: 45, 60, 100, 160, 250, 400, 630, 1000, 1500mm
- stem diameter: 8mm up to length 400mm 10mm up to length 630mm
- accuracy class: ±2%

SPECIFICATION:

Technical thermometers with bimetallic measure system are universally applicable devices for local temperature measurement in most industries.

Thermometers are designed for measurement in any position and for less demanding conditions.

Thermometers are produced with various stem lengths, as mentioned in the technical documentation.

Should the stem be protected from high pressures or aggressive mediums, it is necessary to use a thermowell. Standard thermowells available- steel PN6, stainless steel PN25 and PN40, special wells for high paramaters according to DIN or ON standards.

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A.1.3.

BIMETALLIC THERMOMETER DTR a DTÚ

diameter 106mm
bottom,back connection

DESCRIPTION:

- resistant plastic head
- stainless steel stem 17 248/1.4541
- glass inspection hole
- the thermometer is supplied without stem
- back connection DTR (straight thermometer)
- bottom connection DTÚ (angular thermometer)

APPLICATION:

- heating and sanitary industry
- heating management, power engineering
- food industry
- chemical industry
- hydraulic systems

TECHNICAL PARAMETERS:

- case diameter: 106mm
- temperature range: -30+50, 0-120, 0-200, 0-350, 0-450°C
- stem length: 60, 100, 160, 250, 400, 630, 1000, 1500mm
- stem diameter: 8mm up to length 400mm
  12mm up to length 630mm
- accuracy class: ±2%

SPECIFICATION:

Bimetallic technical thermometers are due to its design and accuracy meant to be used for normal measuring under operational conditions. They are used for direct temperature measuring in almost all branches of industry. They may be used in cold rooms, boiler rooms, bakeries, drying rooms, green houses, smokehouses and in many other places using central heating systems. In specific cases the thermometers may be designed for extreme climate conditions.

A well must be used if it is necessary to protect the stem from high pressures or aggressive agents. Standard wells are available - steel PN6, stainless steel PN25 and PN40, then special wells for high parameters according to DIN or ON standards.

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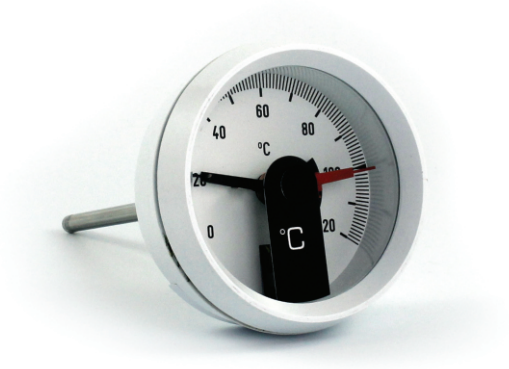
A.1.4.

CONTACT BIMETALLIC THERMOMETER DKR

diameter 106mm
contacts Min, Max



DESCRIPTION:
- resistant plastic head
- stainless steel stem 17 248/1.4541
- glass inspection hole
- adjustable contacts Min or Max
- thermometer is supplied without well
- bottom connection

APPLICATION:
- heating and sanitary industry
- heating management, power engineering
- food industry
- chemical industry
- hydraulic systems

TECHNICAL PARAMETERS:
- case diameter: 106mm
- temperature range: -30+50, 0-120, 0-200, 0-350°C
- stem length: 100, 160, 250, 400mm
- stem diameter: 8mm
- accuracy class: ±2%
- contact load: 250V/50mA

SPECIFICATION:
DKR thermometer is equipped with switch-on contacts and due to its application it is manufactured as a maximum or minimum type. Max thermometer ensures, that the contacts are getting closer with increasing temperature and when the set temperature is reached, the circuit is connected. Minimum thermometers ensure, that the contacts are getting closer with decreasing temperature and when the set temperature is reached, the circuit is connected.

A well must be used if it is necessary to protect the stem from high pressures or aggressive agents. Standard wells are available - steel PN6, stainless steel PN25 and PN40, then special wells for high parameters according to DIN or ON standards.

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A.1.5.

CAPILLARY THERMOMETER 2440

diameter 63mm
back connection
capillary up to 7m

DESCRIPTION:

- stainless steel head 17 240/1.4301
- stainless steel head and sensor 17 248/1.4541
- glass inspection hole
- panel mounting onto yoke or front flange

APPLICATION:

- heating and sanitary industry
- heating management, power engineering
- hydraulics

TECHNICAL PARAMETERS:

- case diameter: 63mm
- temperature ranges: -40+40, -20+60, 0-80, 0-120, 0-150, 0-200, 0-250, 0-300, 0-400, 0-500, 0-600°C
- capillary length: 1; 1,5; 2; 3; 7m
- accuracy class: 2,5%

SPECIFICATION:

Capillary thermometer 2440 is used for remote measuring in all industrial applications.
stainless steel cased head of the thermometer may be placed in simple environment according to ČSN 33 0300 in range -30+110 °C.
The allowed tolerance for all ranges is ±2,5% within all scale. In standard version the stainless steel capillary is supplied in lengths up to 7m, it is possible to order capillary in plastic braiding. Stainless steel sensor with 8mm diameter can be placed freely or in a thermometer well.
A well must be used if it is necessary to protect the sensor from high pressures or aggressive agents. Standard wells are available - steel PN6, stainless steel PN25 and PN40, then special wells for high parameters according to DIN or ON standards.

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A.1.6.

INDUSTRIAL THERMOMETER TPS, TPZ, TPO

diameter 63, 80, 100, 160mm bottom, back, turning connection

DESCRIPTION:

- bayonet or encapsulated case
- stainless steel stem 17 248/1.4541
- glass inspection hole
- threadless or threaded connection
- bottom connection TPS, back connection TPZ, turning connection TPO

APPLICATION:

- heating industry
- petrochemically industry
- food industry
- cooling industry
- farmaceutical industry
- hydraulics

TECHNICAL PARAMETERS:

- diameters: 63, 80, 100, 160mm
- temperature ranges: -40+40, -40+60, -30+50, -20+50, -20+40, -20+60, 0-60, 0-80, 0-100, 0-120, 0-160, 0-200, 0-250, 0-300, 0-350, 0-400, 0-500°C
- stem lengths: 50, 60, 100, 160, 200, 250, 400mm
- connection threads: G1/4, G1/2, G3/4, G1, M18x1,5, M20x1,5, M24x1,5, M24x1,5, M27x2, 1/2NPT, 3/4NPT
- accuracy: class 1
- protection: IP 65
- choice if silicon or glycerine filling

SPECIFICATION:

Industrial thermometers TPS, TPZ, TPO are the highest series from all bimetallic thermometers, which can be used in very demanding conditions. The stem may be exposed to pressures up to 25bar, for higher pressures it is required to use a well.

Industrial thermometers are supplied in wide range of designs with choice of connectors. Case in bayonet or encapsulated design, other optional accessories: silicone or glycerine dampers, max. pressure needle, lazy needle, etc.

A well must be used if it is necessary to protect the stem from high pressures or aggressive agents. Standard wells are available - steel PN6, stainless steel PN25 and PN40, then special wells for high parameters according to DIN or ON standards.

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A.1.7.

PRESSURE STEM TTS THERMOMETER

diameter 63, 80, 100, 160mm bottom, back bended connection

DESCRIPTION:

- bayonet stainless steel case 17 240/1.4301
- stainless steel stem 17 248/1.4541; 17 348/1.4571
- glass inspection hole, safety glass
- individual stem lengths, connections and other design features
- back, bottom and bended connection

APPLICATION:

- food industry
- hydraulics
- petrochemical industry
- cooling industry
- light and heavy industry
- farmaceutical industry

TECHNICAL PEARAMETERS:

- case diameters: 63, 80, 100, 160mm
- temperature ranges: -40+40, -40+60, -30+60, -20+40, -20+60, 0-60, 0-80, 0-100, 0-120, 0-160, 0-200, 0-250, 0-300, 0-350, 0-400, 0-500, 0-600°C
- stem lengths: 125, 160, 200, 250, 315, 400, 500, 1000mm, individual
- stem diameters: 6, 8, 10mm, individual
- accuracy: ±1%
- protection: IP 65

SPECIFICATION:

Pressure thermometers use for measuring a closed pressure circuit with Bourdon tube. Compared to bimetallic thermometers, this system is remarkable for its higher accuracy, stability and resistance. They may be used in all kinds of operations due to the wide range of types and versions. Its accuracy is reached even in very demanding conditions.

Pressure thermometers come in wide range of designs. You may choose from various connections: threadless, with union nut, fixed or turning outer thread. Case is made of steel or stainless steel. Choose from other accessories: silicone or glycerine damping, magnetic or inductive contacts, indication needle, lazy needle, etc. Specify the pressure thermometer features in the order by modification of the order code, see technical page.

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A.1.8.

CAPILLARY PRESSURE TTK THERMOMETER

diameter 63, 80, 100, 160mm
bottom, back connection
cantilever or flange mounting

DESCRIPTION:

- bayonet case 17 240/1.4301
- stainless steel capillary 17 248/1.4541, PVC braiding or spiral protection
- glass inspection hole
- individual capillary lengths, sensor and connection designs, other variations
- back, bottom connection

APPLICATION:

- food industry
- petrochemical industry
- cooling industry
- semi-heavy and heavy industry
- farmaceutical industry
- hydraulics

TECHNICAL PARAMETERS:

- diameters: 63, 80, 100, 160mm
- temperature ranges: -40+40, -40+60, -30+50, -20+50, -20+40, -20+60, 0-60, 0-80, 0-100, 0-120, 0-160, 0-200, 0-250, 0-300, 0-350, 0-400, 0-500, 0-600°C
- capillary lengths: 1; 1,6; 2,5; 4; 6; 10; 12; 16; 25m
- sensor lengths: 125, 160, 200, 250, 315, 400mm, individual
- sensor diameter: 6, 8, 10mm, individual
- accuracy: ±1%
- protection: IP 65

SPECIFICATION:

Capillary pressure thermometers use for measuring a closed pressure circuit with Bourdon tube. Compared to the bimetallic thermometers, this system is remarkable for its higher accuracy, stability and resistance. They may be used in all kinds of operations due to the wide range of types and versions. Capillary pressure thermometers come in wide range of designs. You may choose from various connection and case designs, different stem lengths from 1 to 25 m, sensor design, etc. Choose from other accessories: silicone or glycerine damping, magnetic or inductive contacts, indication needle, lazy needle, etc. Specify the capillary pressure thermometer features in the order by modification of the order code, see technical page.

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A.1.9.

BOILER and TECHNICAL THERMOMETER

scale 160, 240mm straight, angular

DESCRIPTION:

- boiler design KMU, KMP, KVU,KVP, technical design TMU, TMP, TVU, TVP
- duralumin or plastic case
- well protection – duralumin, brass, stainless steel
- angular (90°) or straight design
- ethanol or mercury filling

APPLICATION:

- heating and sanitary technology
- petrochemical industry
- cooling industry
- light industry
- farmaceutical industry

TECHNICAL PARAMETERS:

- case: 160, 240mm
- temperature ranges: 0-130°C (boiler); -60+30, -35+50, 0-50, 0-100, 0-160, 0-200, 0-300, 0-400°C (technical)
- stem length: 50, 80mm (boiler); 60, 100, 160, 250, 400, 630, 1000mm (technical)
- sensor length: 125, 160, 200, 250, 315, 400mm
- sensor diameter: 6, 8, 10mm
- threads: M20x1,5, G1/2, (M24x2, M27x2, G3/4)

SPECIFICATION:

Boiler and technical thermometers display measured temperature using capillary system filled with organic fluid (coloured spirit or mercury). Designed into wide range of industrial applications without high demands on mechanical resistance. Technical and boiler thermometers are supplied in wide scale of temperature ranges and stem lengths, in design with small (160mm) or big (240mm) display panel and choice of plastic or duralumin case. Protection well of the thermometers sensor does not feature pressure resistance, hence it is not designed for closure of pressure system and serves only as a protective element of the fragile thermometers stem or sensor. In case of use in pressure system it is required to insert the thermometer with its protection well (or socket) into thermometers well, which will withstand pressures of the particular application.

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A.1.9.a.

MACHINAL THERMOMETER TSR,TSU

scale 110, 150, 200mm straight, angular

DESCRIPTION:

- straight design TSR2, TSR1, TSR7
  angular design TSU4, TSU3, TSU9
- duralumin case with brass anodized finish
- ethanol filling

APPLICATION:

- heating and sanitary technology
- petrochemical industry
- cooling industry
- light industry
- energetic industry

TECHNICAL PARAMETERS:

- case: 110, 150, 200mm
- temperature ranges: -60+40, -30+50, 0-100, 0-120, 0-160, 0-200
- stem length: 30, 40, 63, 100, 160, 250, 400
- stem diameter: D10mm, d8mm
- accuracy class: according to DIN 16195
- process connection: M20x1,5, G1/2 B

SPECIFICATION:

Machinal thermometers display measured temperature using capillary system filled with organic fluid (coloured spirit). Designed into a wide range of industrial applications even into operation with higher demands on mechanical resistance. Machinal thermometers are supplied in wide scale of temperature ranges and stem lengths, in design with display panel 110, 150 and 200mm. Stem of thermometer has standard pressure resistance PN6. For higher pressures is necessary to insert thermometer into protection well, which has corresponding parameters. Thermometres are supplied in straight or angular design. Stem length according to design from 30-400mm. Thermometers can be supplied even with stainless steel stem for higher chemical and pressure resistance PN25.

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A.1.10.

ROUND CAPILLARY THERMOMETER

type 2037 Ø37mm, type 2040 Ø40mm, type 2052 Ø52mm capillary 500-3000mm

DESCRIPTION:

- coloured plastic case
- acryl inspection hole
- stainless steel/copper capillary
- copper/stainless steel sensor
- panel mounting design
- spring latch for easy mounting

APPLICATION:

- heating and sanitary technology
- heating management, power engineering
- light industry

TECHNICAL PARAMETERS:

- case: 37, 40, 52mm
- temperature range: -40+40, 0-120, 50-350°C
- capillary length: 500, 1000, 1500, 2000, 3000mm
- sensor size: 6,5x30, 8,5x30, 3x80mm

SPECIFICATION:

Capillary thermometers are designed for all applications, where the place of measuring is not identical with the place of reading. They may be used in all kinds of operations due to the wide range of types and versions.
Frequently used for boilers, heating and cooling systems.
Sensor of capillary thermometers is supplied in copper with diameters 6,5 and 8,5mm or made of stainless steel with diameter 3,5 mm. Maximum temperature of case surroundings must not exceed 70°C.

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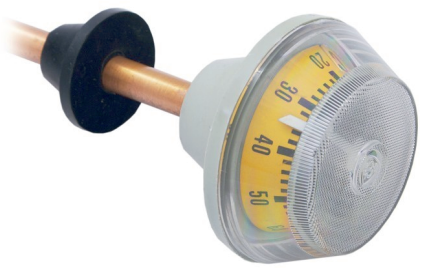
A.1.11.

PRESERVING THERMOMETER DTD2



universal design
20-110°C

DESCRIPTION:
- acryl/plastic head
- copper stem
- acryl inspection hole
- bottom connection

APPLICATION:
- food industry
(food preserving)

TECHNICAL PARAMETERS:
- diameter: 55mm
- temperature range: 20-110°C
- scale division: by 2°C
- stem length: 255mm
- accuracy: 2,5% of the range

SPECIFICATION:
Preserving thermometers DTD2 are used for temperature determination during fruit, vegetable, mushroom and other food preservation within the given temperature range.
Thermometers may be used for measuring in all possible positions. The thermometer stem is watertight cased, so that it can be used without a well. Thermometer head can be placed in all environments of temperatures between 0 and 80°C. Bottom part of the head, which is in direct contact with the lid of the preserving pot can withstand temperatures up to 95°C. Thermometer head can not come into contact with naked flame, neither can it be immersed into water. Measured temperature can not exceed the scale range. Thermometers must be treated without significant shocks and vibrations. While measuring the stem must be immersed at least 100mm into the measured environment. The stem must not be subject of a mechanical stress.

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OTHER THERMOMETERS

DTTR

Thermometer DTTR is designed for temperature measurements of metal pipelines and central heating piping. Thermometer provides fast information about temperature in any part of the pipeline without disturbing it by simply putting the thermometer in contact with the pipeline. This system helps keeping the operational and maintenance costs down.

Scale division	Measure range	For ø of pipeline	Accuracy
by 1°C	0-120°C	3/8",1/2",3/4",1"	at 20°C ±5°C
		5/4", 6/4", 2"	at 50°C ±3°C
			at 80°C ±5°C

TRV

Technical bimetallic thermometers type TRV are suitable for temperature measurements mainly in agriculture (silage and compost temperature, corn and staw storage, etc.), in food industry (brewery, malthouses). They can also be used for temperature measuring in coal storages, soaking rooms, etc. Wide range of application.

Scale division	Measure range	Accuracy	Stem length
by 1°C	-30+50°C	±2% of the range	1500mm
by 2°C	0-200°C	±2% of the range	1500mm

DTST

This thermometer is designed for indoor measurements. Easy reading enables for constant information about environments temperature and thus makes it a very convenient gadget to have at home or in the office. Thermometer comes in round design and is placed in a metal stand. All metal parts are surface treated. Thanks to these features it can serve as a good promotion object and can help you create an image of your company. Logos and other marking on the scale can be arranged with the manufacturer. Comes in gold or silver design.

Scale division	Measure range	Accuracy	Outer diameter
by 1°C	-10+50°C	2% of the range	60mm

DTN

Wall bimetallic thermometer of round shape is designed mainly for direct wall mounting. Thermometer with a very reliable bimetallic system enables temperature monitoring and control in living rooms, offices and other workplaces, and removes the need of complicated column reading. It enable constant information about environments temperature and thus it brings comfort to home and workplace. Only a brief look on the distinct scale with needle gives you a very clear information from significant distances. Thermometers case is made of plastic and may be ordered in various colours (white, yellow, red, blue, orange). Weight approx. 420g.

Scale division	Measure range	Accuracy	Outer diameter
by 1°C	-10+50°C	±2% from the range	225mm
by 1°C	-30+50°C	±2% from the range	225mm

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OTHER THERMOMETERS

DTOK

Thermometer is designed for outdoor temperature measurements. Easy value reading enables constant information about outdoor temperature and helps you choose suitable clothing. This round-shaped thermometer comes with a fitting leg (for example for window frame attachment). The thermometer may be turned around its axis in order to make the reading even easier. It may also serve as a good promotion object. Company logos and other marking on the scale can be arranged with the manufacturer.

Scale division	Measure system	Accuracy	Outer diam.
by 1°C	-30+50°C	±2% from the range	60mm

T 120 S

Bimetallic measure system in shape of Archimedes spiral is placed in a round-shaped head. The red area on the scale mark out the suggested temperature for sauning. Stainless steel materials were used, distinct scale for easy reading and visual aspect. By placing your company logo on this device you can create a nice present or promotion object. Weight approx. 160g.

Scale division	Measure range	Accuracy	Outer diameter
by 1°C	0-120°C	±2% from the range	120mm

T 120 N

T 120 N is to be used in households, workplaces, etc. It is designed to be hanged directly on wall. Bimetallic measure system in shape of Archimedes spiral is placed in a round-shaped head. Weight approx. 420g.

Scale division	Measure range	Accuracy	Outer diameter
by 1°C	-10+50°C	±2% from the range	225mm
by1°C	-30+50°C	±2% from the range	225mm

TR for smoke housese

TR thermometer is designed for mounting into smokehouses. Distinct scale print marks the temperature ranges suggested for smoke-curing, and making barbecue. Weight approx. 100g.

Head diameter	Measure range	Stem length	Stem D
100mm	0-260°C	250mm	8mm

MTCC

Combined device for pressure and temperature measurements in systems, where the place of measuring is not identical with the place of reading.

Thermometer part		Pressure gauge part	
Scale range	0-120°C	Scale range	0-4bar
Measuring range	20-100°C	Scale division	by 0,1bar
Scale division	by 2 K	Accuracy class	2,5
Accuracy class	4	Connect. sensors	G1/4,M14x1
Sensors size	Ø6x29mm		

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A.1.13.

STANDARD THERMOWELL

length from 50mm to 1505mm
PN 6, 25, 40

DESCRIPTION:

• materials: steel, brass, copper, stainless steel and other metals, other surface finish available
• attachment thread -inner, outer
• process connection thread
• stem attachment using side bolt, union nut or outer thread on the stem

APPLICATION:

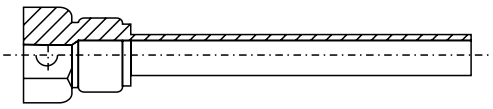
• heating and sanitary technology
• heating management, power engineering
• food industry
• chemical industry
• hydraulics

TECHNICAL PARAMETERS:

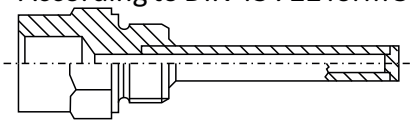
• standard well lengths: 50, 65, 105, 165, 255, 405, 635, 1005, 1505mm, individual
• diameter of hole: 9; 12mm
• thread: M20x1,5, G1/2, 1/2NPT, individual
• PN 6 -varnished steel, brass/ copper, PN 25 stainless steel multipart, PN 40 one-piece

SPECIFICATION:

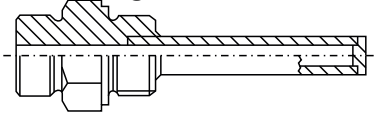
Thermowells are intended to protect stems of all kinds of thermometers, technical, boiler or pressure thermometers mainly in moderate demanding or demanding conditions.
Thermowells are used at operations, where it is essential to seal the pressure system or where the thermometers stem or sensor could be damaged.
Choice of design must be made with regard to the particular application.
STANDARD with attachment bolt



According to DIN 43 722 form 5 and 6



According to DIN 43 722 form 8 and 9



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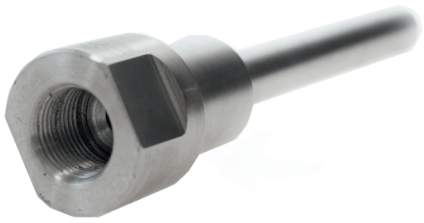
A.1.13.

THERMOWELL FOR HIGH PARAMETERS



length from 50mm to 1505mm
PN 25 up to unlimited

DESCRIPTION:

- materials: 11 353, 11523, 15 128, 17 248, 17 348 individual
- attachment thread - inner, outer
- process connection thread
- welding conel DIN/ČSN
- flange design according to DIN/ČSN

APPLICATION:

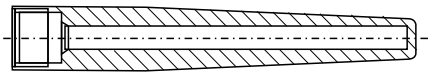
- heating and sanitary technology
- heating management, power engineering
- food industry
- chemical industry
- hydraulics

TECHNICAL PARAMETERS:

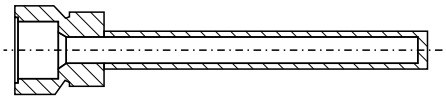
- standard well lengths: 50, 65, 105, 165, 255, 405, 635, 1005, 1505mm, individual
- diameter of hole: 3,5; 5; 7; 9; 12; 14mm
- thread: M14x1,5, M18x1,5, M20x1,5, M27x2, M33x2, G1/2, G3/4, G1, 1/2NPT, 1NPT, individual

SPECIFICATION:

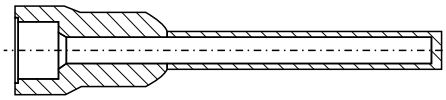
According to DIN 43 722



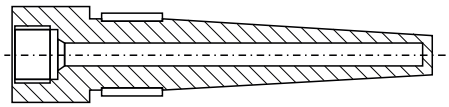
According to ON 027210



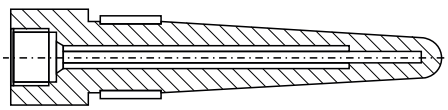
According to ON 027212



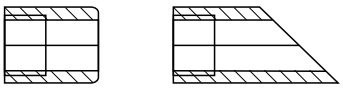
According to ON 027215



According to ON 027217



Weldolet



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A.2.1.

SENSORS/TRANSDUCERS WITH CURRENT OUTPUT

sensor: Pt100, 500, 1000 Cu50, 100; Ni100, 500, 1000 current output 4-20mA voltage output

DESCRIPTION:

- case stainless steel, connector DIN 43 650
- stainless steel connection 17 248/1.4541
- transducer-current/voltage
- sensors in wide range of resistances
- design: stem, room, contact, cable

APPLICATION:

- hydraulics
- power engineering
- heating industry
- petrochemical industry

TECHNICAL PARAMETERS:

- sensors: resistance types - Pt100, Pt500, Pt100 Cu50, Cu100, Ni100, Ni500, Ni1000
- transducers: current 0-20mA, 4-20mA / voltage 0-5V, 0-10V
- stem length: 35, 50, 65, 105, 165, 250mm or on individual request
- connection thread: G1/4 (G1/2, M12x1,5, M20x1,5) or on individual request
- protection: up to IP 65

SPECIFICATION:

Electronic sensors/transducers with resistance output are designed for temperature measurement of liquid, gas, loose and solid materials with high accuracy and reliability of measurement. Serves for very fast and accurate temperature measurement even in demanding operations. Sensor itself can be made of Pt, Cu or Ni. They enable immediate transfer of measured temperature in form of analog output, which can be further processed/assessed using suitable device (display/regulatory unit). Thanks to wide range of designs and sensor types they can meet all your requirements. Sensor/transducers are supplied in cable KST, stem with terminal board STSs, contact with terminal board STSp, room PST and outside designs. Sensor/transducers coding is as follows: e.g. stem sensor with resistance output with DIN connector is coded STS, and when equipped with inbuilt transducer for analog output 4-20mA, its code is značí se STS/ I.

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A.2.2.

TEMPERATURE SENSOR THST

DESCRIPTION:

• sensor Pt100, Pt500, Pt1000, Ni1000, KTY, NR
• high accuracy, low power consumption, wide working range of surrounding temperature
• integrated construction, easy to install

APPLICATION:

• chemical industry
• heating industry
• power engineering
• pharmacy

TECHNICAL PARAMETERS:

• heat range: up to 500 °C according to used sensor
• connection thread: G1/2 (G1/4, G3/4, M12x1,5, M20x1,5, M27x2, NPT) or on individual request

SPECIFICATION:

Compact temperature sensor suitable for direct mounting or mounting to thermowell. Temperature sensors according to standard 1/1 DIN B, 1/3 DIN B or 1/6 DIN B.
Sensors are suitable for wide range of applications in indusrty, food processing, air-conditioning systems, heating etc. (sensors for air temperature are used without thermowells due to quick responsese recieving).
Integrated sensor changes its inner resistance according to temperature. Main advantage is linear conveyance characteristic in whole range of measured temperatures.
Modular conception is suitable for wide range of applications, it is possible to provide variable connection threads on individual request. Magnesium oxide guarantees high resistance against impacts and vibrations and also improves heat exchange and electrical insulation of sensor.

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A.2.3.

TEMPERATURE TRANSDUCER TO ATEX ENVIRONMENT THTB4

DESCRIPTION:

- stability and resistance to vibrations
- stainless steel case with high resistance to external conditions and pressures
- various installations, on individual request
- variable methods of process connection

APPLICATION:

- petrochemical industry
- heating industry
- power engineering
- compressors, pumps
- gas distribution

TECHNICAL PARAMETERS:

- temperature ranges: -50-0, 0-60, 0-100, 0-120, 0-160, 0-200, 0-250, 0-300°C
- output signal: 1-5V, 4-20mA
- connection: fixed thread, fixed flange, turning thread, turning flange
- accuracy class: 0,5%FS (standard), 1%FS

SPECIFICATION:

Temperature transducers THTB4 use Pt100 or similar temperature sensors. By means of the inbuilt transducer it converts the measured value to an analog output, for details see technical parameters.

Cylindric case of the THTB4 transducer features high strength of the outer coating and resistance (also suitable into ATEX environment). THTB4 construction, where the sensor is sealed by epoxy resin, features very good resistance to shocks and vibrations, resists temperature overloading and has a heavy-duty robust design. THTB4 is widely used for measurements and regulations in many industrial applications.

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A.2.4.

ROBUST TEMPERATURE TRANSDUCER WITH DISPLAY INTO ATEX ENVIRONMENT THTI8

DESCRIPTION:

- use of Pt100 or other temperature resistance as a pick-up element
- high accuracy, low power consumption, wide working range of environment temperature
- integrated construction, easy installation
- high accuracy of transmitted signal up to 1000m

APPLICATION:

- petrochemical industry
- heating industry
- power engineering
- food industry
- healthcare

TECHNICAL PARAMETERS:

- temperature ranges: -200-0, -100-0, 0-60, 0-100, 0-120, 0-160, 0-200, 0-250, 0-300, 0-400, 0-500, 0-750, 0-1200, 0-1300, 0-1600, 0-1800 °C
- output signal: 4-20mA
- connection: M 27x2 (outer), G1/2, M20x1,5
- accuracy class: thermistor - 0,25%FS; 0,5%FS(standard); thermocouple - 0,75%FS

SPECIFICATION:

Temperature transducers THTI8 use temperature sensors Pt100. By means of the inbuilt transducer it converts the measured value to an analog output, for details see technical parameters.

Local temperature indication on 3 ½ LCD display optional. THTI8 case is made of aluminium, parts that come in contact with the medium are made of stainless steel 17 248/1.4541. THTI8 is suitable for temperature measurements in most industrial applications. Also suitable for ATEX environment.

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A.2.5.

DIGITAL THERMOMETER

for stationary use

DESCRIPTION:

• quick, accurate measurement
• option of switching contacts or analog output
• resistant case, high IP

APPLICATION:

• power-engineering
• mechanical engineering
• gas distribution
• food industry

SOLAR STEM

• bottom, back or turning connection design

BATTERY-POWERED STEM

• bottom or back connection, powered by Li-ion battery

CAPILLARY WITH OUTPUT

• design withlong-distance line, option of switching contacts or output 4-20mA

STEM FOR ATEX ENVIRONMENT

• ranges within -50+400°C, output 4-20mA

SPECIFICATION:

Digital thermometers are designed for local/remote measurement of liquids, gases, air and other mediums within temperature ranges -100+600°C. Industrial use in applications, where it is required to read the measured value at the place of measurement.
Normalized output from sensor 4÷20mA. Thermometers are supplied in both capillary and stem designs. Compared to mechanical thermometers they feature higher accuracy and speed of measurement.

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A.2.6.

SOLAR-POWERED DIGITAL THERMOMETER TDSS, TDSZ, TDSO

diameter 75mm

bottom, back and turning connection

DESCRIPTION:

- encased stainless steel case
- stem of stainless steel 17 248/1.4541
- glass inspection hole , LCD display
- smooth or threaded connection
- bottom connection TDSS, back connection TDSZ, turning connection TDSO
- value loading every 6 seconds

APPLICATION:

- power engineering
- heating
- food industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 75mm
- temperature ranges: -50+180°C
- connection threads: G1/2, M20x1,5
- stem length: 63, 100, 150, 230, 400, 600mm
- min. Lux: 35Lux
- accuracy: kl.1%
- protection: IP 68

SPECIFICATION:

Solar-powered digital thermometers series TDSS, TDSZ, TDSO find their use in all applications, that arise need of accurate, automatic and maintenance-free temperature measurement.

Thanks to power of the solar supply there is a measure requirement of 35Lux. High protection IP 68 enables outdoor use or use in environment, where the thermometer comes in contact with water. Stem length is optional, from 63to 600mm.

Connection bottom, back or turning.

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A.2.6.a

BATERRY POWERED DIGITAL THERMOMETERS 7035,7036,7037,7038

diameter 100mm
stem and capillary design

DESCRIPTION:

- case: stainless steel 17 240/1.4301
- stem: stainless steel 17 348/1.4571
- glass inspection hole, LCD display
- smooth or threaded connection
- bottom or back connection, stem or capillary design
- value loading every 6 seconds

APPLICATION:

- power-engineering
- heating industry
- food industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 100mm
- temperature ranges: -100+100, -50+50, 0-60, 0-80, 0-100, 0-120, 0-160, 0-200, 0-300, 0-400, 0-500°C
- connection threads: G1/2 (G1/4, M18x1,5, M20x1,5, M24x1,5)
- stem length: 63, 100, 150, 200mm
- accuracy: kl.0,3%
- protection: IP 65

SPECIFICATION:

Digital all-stainless steel thermometers are designed for local/remote temperature measurement of liquids, vapour, air and other mediums within temperature range -50+500°C (Atex design 400°C) with accuracy 0,3%. Used in industries, where it is necessary to read the measured value directly in the place of measurement. Case material stainless steel 17 240/1.4301, stem and thread made of stainless steel 17 348/1.4571, 4-digit 18mm high LCD display. Bottom and back connection, standard version is powered by battery. Normalized sensor output 4-20mA. Conductors from the measuring insertion are routed to the plastic head with transducer, display unit and output connector. Adapter is equipped with screwing for sensors attachment to the relevant armature. The transducer works as a passive transmitter in the current loop.

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A.2.7.

DIGITAL THERMOMETER

for mobile use

DESCRIPTION:

- light, easy, mobile
- advanced settings optional
- resistant case

APPLICATION:

- power engineering
- mechanical engineering
- gas distribution
- food industry

THERMOMETER GMH 1150 BASIC

- basic thermometer for sensors with thermocouple type K

THERMOMETER GMH 32.. WITH ADVANCED SETTINGS

- thermometer for one or two sensors with thermocouples K, J, N, S, T

SPECIFICATION:

Hand-held digital thermometers are designed for mobile temperature measurement of liquids, vapour, air and other mediums within temperature range -199+1750°C.
Thanks to the wide range of applicable sensors the hand-held thermometers may be used in various applications.
Hand-held thermometers are supplied from basic designs showing current temperature only with min/max function up models with advanced settings.

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A.2.8.

HAND-HELD CONTACTLESS THERMOMETER PYROMETER

temperature ranges -50+1450°C

DESCRIPTION:

- ergonomic design
- laser aiming of the measured object
- emissivity-surface effectiveness in emitting energy
- lid-up dislay
- advanced settings Min/Max

APPLICATION:

- mechanical engineering
- civil engineering
- air-conditioning
- food industry
- health care

TECHNICAL PARAMETERS:

- temperature ranges: -20+380, -20+450, -20+750, -50+380, -50+550, -50+700, -50+850, -50+1250, -50+1450°C
- dependance of the measured surface on distance from the object: 8:1, 12:1, 30:1
- adjustable functions Min/Max, Hold

SPECIFICATION:

Contactless infrared thermometer for fast temperature measurement. Aiming is performed by means of laser ray and the measured temperature is instantly shown on the LCD display.
Battery-powered, accuracy ± 2°C. Optional unit of measurement °C or °F.
The diplay may be lid up, if selected. Higher models enable for emissivity settings, which ensures accurate measurement without distortion caused by surface of the measured object.

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B. PRESSURE MEASUREMENT

stainless steel	B.1.29.	All-stainless steel low pressure gauge
	B.1.30.	All-stainless steel contact pressure gauge
	B.1.31.	All-stainless steel pressure gauge with separating membrane
	B.1.32.	All-stainless steel double and differential pressure gauge
special application	B.1.33.	Round capillary pressure gauge 1037/1040/1052
	B.1.34.	Square capillary pressure gauge 1137/1145
	B.1.35.	Round capillary thermomanometer 3040/3052
	B.1.36.	Mini pressure gauge and pressure indicator
	B.1.37.	Welding pressure gauge 404
	B.1.38.	Mining pressure gauge 1251/1252
	B.1.39.	Pressure gauge type 329
	B.1.40.	Rail vehicle pressure gauge
	B.1.41.	Pressure gauge assembly THCR-II A
	B.2.1.	Standard pressure transducer THPB1,THIPB1
	B.2.2.	Pressure transducer with front membrane THPB2, THIPB2
	B.2.3.	Pressure transducer with ceramic sensor THPB3,THIPB3, CS, PS (HART)
	B.2.4.	Pressure transducer with high frequency response THPB4, THIPB4
	B.2.5.	Pressure transducer for high pressures THPB7, THIPB7
	B.2.6.	Pressure transducer for high temperatures THPB8, THIPB8
	B.2.7.	industrial pressure transducer THPB9, THIPB9
	B.2.8.	Capacity pressure transducer ceramic membrane THPB10, THIPB10
	B.2.9.	Capacity pressure transducer for ATEX environment THPB11, THIPB11
	B.2.10.	Pressure transducer increased corrosion resistance THPB3-c, THIPB3-c
	B.2.11.	Pressure transducer for differential pressures THPB5, THIPB5
	B.2.12.	Display unit ZED 601
	B.2.13.	Digital pressure gauge 3321
	B.2.14.	Digital pressure gauge THIY6
	B.2.15.	Hand-held digital pressure gauges

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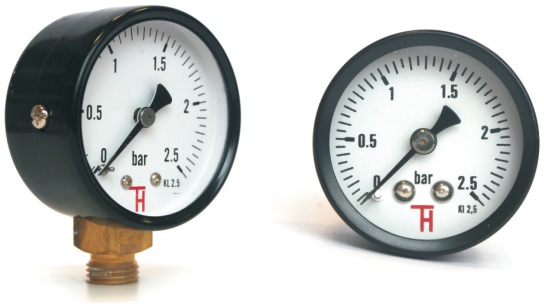
B.1.1.

STANDARD PRESSURE GAUGE 301S/301Z

diameter 40mm
bottom and back connection



DESCRIPTION:

- metal case
- acrylate/glass inspection hole
- connection 301S (bottom), 301Z (back), CuZn and copper alloys
- measurement mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- food industry
- health care
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 40mm
- measure range: 0-100, 160, 250, 400, 600kPa, 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40MPa -0,1+2,4; -0,1+1,5; -0,1+0,9MPa -100+500; -100+300; -100+150; -100-0kPa
- scale: Pa, bar, individual
- connection threads: G1/8 (G1/4, M10x1, M12x1,5)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy class: 2,5%

SPECIFICATION:

Standard pressure gauges 301S/301Z are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 60°C.

Other alternatives of design on request - special scale design, connection thread, max. pressure needle etc.

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B.1.2.

STANDARD PRESSURE GAUGE 308S/308Z

diameter 50mm
bottom and back connection

DESCRIPTION:

- metal case
- glass inspection hole
- connection 308S (bottom), 308Z (back) CuZn ans copper alloys
- measure mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- food industry
- health care
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 50mm
- measure ranges: 0-100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100-0kPa
- scale: Pa, bar, individual
- connection threads: G1/4 (G1/8, G1/2, M10x1, M12x1,5)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy class: 2,5%

SPECIFICATION:

Standard pressure gauges 308S/308Z are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 60°C.

Other alternatives of design on request - special scale design, connection thread, max. pressure needle etc. .

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B.1.3.

STANDARD PRESSURE GAUGE 304/358

diameter 63mm
bottom and back connection

DESCRIPTION:

- metal case
- glass/acrylate inspection hole
- connection 304 (bottom), 358 (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- food industry
- health care
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 63mm
- measure ranges: 0-100, 160, 250, 400, 600kPa,
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100-0kPa
- scale: Pa, Bar, individual
- connection threads: M12x1,5, G1/4 (G1/8, G1/2, M10x1)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy class: 1,6%

SPECIFICATION:

Standard pressure gauges 304 bottom, 358 back are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 60°C.

Other alternatives of design on request - special scale design, connection thread, max. pressure needle etc.

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B.1.4.

STANDARD PRESSURE GAUGE 310/320

diameter 80mm
bottom and back connection

DESCRIPTION:

- metal case
- glass inspection hole
- connection 310 (bottom), 320 (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- pneu-systems
- control systems
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 80mm
- measure ranges 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 10; 16; 25; 40; 60MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100-0kPa
  scale: Pa, bar, individual
- connection threads: G1/2 (G1/8, G1/4, M12x1,5, M20x1,5)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy class 1,6%
- special scale design

SPECIFICATION:

Standard pressure gauges 310/320 are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.
Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 80°C.
Other alternatives of design on request - special scale design, connection thread, lazy needle, max. pressure needle etc.

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B.1.5.

THERMOMANOMETER 3081/ 3082

diameter 80mm
bottom and back connection

DESCRIPTION:

- steel case
- plastic inspection hole
- connection 3081 (bottom), 3082 (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys
- including closing valve G1/2

APPLICATION:

- heating industry and sanitary technology
- heating management, power engineering
- other operations without high demands

TECHNICAL PARAMETERS:

- diameter: 80mm (63mm)
- temperature ranges: 0-120°C (0-150°C)
- pressure ranges: 0-4, 6, 10, 16bar
- connection thread: G1/2
- accuracy class: pressure gauge 1,6%; thermometer 2,5%

SPECIFICATION:

Thermomanometers 3081/3082 are produced according to standard EN837-1. Designed for simultaneous pressure and temperature measuring.

Instruments are equipped with automatic closing valve, that enables instrument change without heating system drainage.

Design of diameter 80mm, also diameter 63mm available. Other individual design options on request: special scale design, connection threads, back or front flange, max. pressure needle, etc.

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B.1.6.

STANDARD PRESSURE GAUGE 312/322

diameter 100mm
bottom and back connection

DESCRIPTION:

- metal case
- glass inspection hole
- connection 312 (bottom), 322 (back) CuZn and copper alloys
- back/front flange
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- pneu-systems
- control-system
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 100mm
- measuring ranges: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 0-2,5; 4; 10; 16; 25; 40; 60MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100+150kPa
- scale: Pa, bar, individual
- connection thread: M20x1,5, G1/2 (G3/4, M12x1,5)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy: 1,6%
- special scale design

SPECIFICATION:

Standard pressure gauges 312/322 are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 80°C.

Other alternatives of design on request - special scale design, connection thread, lazy needle, max. pressure needle etc.

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B.1.7.

STANDARD PRESSURE GAUGE 313/323

diameter 160mm
bottom and back connection

DESCRIPTION:

- bayonet metal case
- glass inspection hole
- connection 313 (bottom), 323 (back) CuZn and copper alloys
- back/front flange
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- pneu-systems
- control systems
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 160mm
- measuring ranges: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 10; 16; 25; 40; 60; 100MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100-0kPa
- scale: Pa, bar, individual
- connection threads: G1/2, M20x1,5
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- accuracy class: 1% (313); 1,6% (323)
- special scale design

SPECIFICATION:

Standard pressure gauges 313/323 are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Standard pressure gauges are suitable for use in conditions without high demands on the device. Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 80°C.

Other alternatives of design on request - special scale design, connection thread, lazy needle, max. pressure needle etc.

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B.1.8.

HEAVY DUTY PRESSURE GAUGE

diameters 63, 100, 160mm
bottom and back connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- safety glass inspection hole
- connection 304R, 312R, 313R (bottom), 358R, 322R, 323R (back) CuZn and copper alloys
- back/front flange
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- light and semi-heavy industry
- food industry
- gas distribution

TECHNICAL PARAMETERS:

- diameter: 63,100,160mm
- measuring ranges: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100; 160MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500; -100+300; -100+150; -100-0kPa
- dial design: kPa/MPa, bar
- connection thread: M20x1,5, G1/2 (G1/8, G1/4, M12x1,5, NPT)
- accuracy class: 1%, 1,6% (pr.63mm)
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- special dial design

SPECIFICATION:

Heavy duty pressure gauges are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have corrosive effect on copper alloys.

Heavy duty pressure gauges are designed into demanding conditions of industries and other applications where measurement stability and accuracy is essential.

Surrounding temperature -40 up to 60°C, medium temperature T_{max} 80°C. Other options of design on request - special scale design, atypical dial, connection thread, front and back flange, lazy needle, etc.

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B.1.9.

LOW PRESSURE GAUGE

304M, 358M

diameter 63mm
bottom and back connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass inspection hole
- connection 304M (bottom), 358M (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys
- reset bolt

APPLICATION:

- gas industry
- heating industry
- air-conditioning
- power engineering
- gas distribution

TECHNICAL PARAMETERS:

- diameter: 63mm
- measure ranges: 0-400, 600Pa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40kPa
  -150+250; -200+400; -400+600Pa
  -0,6+1; -1+1,5; -1,5+2,5; -2+4;
  -4+6; -6+10; -10+15; -15+25kPa
  -400-0; -600-0Pa
  -1-0; -1,6-0; -2,5-0; -4-0; -6-0; -10-0; -16-0; -25-0; -40-0kPa
- scale: Pa, bar
- connection threads: G1/4, M12x1,5
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- special scale design

SPECIFICATION:

Low pressure gauges 304M/358M are produced according to standard EN837-3. Mainly used for pressure measuring of liquids, vapour and gases, that do not have corrosive effect on copper alloys.

Low pressure gauges are designed for very low pressure measurements up to 400Pa. Used primary in gas distribution.

Environment temperature -40 up to 60°C,medium temperature T_{max} 60°C.

Low pressure gauges are equipped with regulatory bolt for exact reset, when it is required to set zero value before each installation.

Other design options on request - special scale design, connection thread, glycerine or silicon damping, front/back flange, etc.

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B.1.10.

LOW PRESSURE GAUGE 312M, 322M

diameter 100mm bottom and back connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- safety glass inspection hole
- connection 312M (bottom), 322M (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys
- reset bolt

APPLICATION:

- gas industry
- heating industry
- air-conditioning
- power engineering
- gas distribution

TECHNICAL PARAMETERS:

- diameter: 100mm
- measure ranges: 0-400, 600Pa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40kPa
  -150+250; -200+400; -400+600Pa
  -0,6+1; -1+1,5; -1,5+2,5; -2+4;
  -4+6; -6+10; -10+15; -15+25kPa
  -400-0; -600-0Pa
  -1-0; -1,6-0; -25,-0; -4-0; -6-0; -10-0; -16-0; -25-0; -40-0kPa
- scale: Pa, bar
- connection threads: M20x1,5, G1/2
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- special scale design

SPECIFICATION:

Low pressure gauges 312M/322M are produced according to standard EN837-3. Mainly used for pressure measuring of liquids, vapour and gases, that do not have corrosive effect on copper alloys.

Low pressure gauges are designed for very low pressure measurements up to 400Pa. Used primary in gas distribution.

Environment temperature -40 up to 60°C,medium temperature T_{max} 60°C.

Low pressure gauges are equipped with regulatory bolt for exact reset, when it is required to set zero value before each installation.

Other design options on request - special scale design, connection thread, glycerine or silicon damping, front/back flange, etc.

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B.1.11.

LOW PRESSURE GAUGE 313M, 323M

diameter 160mm bottom and back connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- safety glass inspection hole
- connect. 313M (bottom), 323M (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys
- reset bolt

APPLICATION:

- gas industry
- heating management
- air-conditioning
- power engineering
- gas distribution

TECHNICAL PARAMETERS:

- diameter: 160mm
- measure range: 0-400, 600Pa

0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40kPa
-150+250; -200+400; -400+600Pa
-0,6+1; -1+1,5; -1,5+2,5; -2+4;
-4+6; -6+10; -10+15; -15+25kPa
-400-0; -600-0Pa
-1-0; -1,6-0; -2,5-0; -4-0; -6-0; -10-0; -16-0; -25-0; -40-0kPa

- scale: Pa, bar
- connection thread: M20x1,5, G1/2
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- special scale design

SPECIFICATION:

Low pressure gauges 313M/323M are produced according to standard EN837-3. Mainly used for pressure measuring of liquids, vapour and gases, that do not have corrosive effect on copper alloys.

Low pressure gauges are designed for very low pressure measurements up to 400Pa. Used primary in gas distribution.

Environment temperature -40 up to 60°C,medium temperature T_{max} 60°C.

Low pressure gauges are equipped with regulatory bolt for exact reset, when it is required to set zero value before each installation.

Other design options on request - special scale design, connection thread, glycerine or silicon damping, front/back flange, etc.

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B.1.12.

SHOCK RESISTANT PRESSURE GAUGE 304G/ 358G

diameters 63mm
bottom, back connection
glycerine filling

DESCRIPTION:

- bayonet case / encased stainless steel 17 240/1.4301
- safety glass inspection hole, acrylate
- connection 304G (bottom), 358G (back) CuZn and copper alloys
- measure mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- hydraulics
- mechanical engineering
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: 63mm
- measure ranges: 0-100, 160, 250, 400, 600kPa 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100MPa
- scale: Pa, bar, bar/psi, individual
- connection thread: G1/4 (M12x1,5, NPT)
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Shock resistant pressure gauges 304G/358G are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Shock resistant pressure gauges with water-tight case are designed into harsh conditions, where the pressure gauge is exposed to vibration, humidity and other complicating conditions. Resists vibration, shocks and pressure surges for which purpose they are equipped with pressure shock absorbers. Supplied with encased design or bayonet case. Environment temperature -40 up to 60°C, medium temperature T_{max} 60°C. Other design options on request - special scale design, connection threads, max. pressure needle, etc.

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B.1.13.

SHOCK RESISTANT PRESSURE GAUGE 310G/320G

diameter 80mm
bottom, back connection
glycerine filling

DESCRIPTION:

- encased stainless steel case 17 240/1.4301
- acrylate inspection hole
- connection 310G (bottom); 320G (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- hydraulics
- mechanical engineering
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: 80mm
- measure ranges: 0-60, 100, 160, 250, 400, 600kPa 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100MPa
- scale: Pa, bar, bar/psi, individual
- connection threads: G1/2 (M20x1,5, NPT)
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Shock resistant pressure gauges 310G/320G are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Shock resistant pressure gauges with water-tight case are designed into harsh conditions, where the pressure gauge is exposed to vibration, humidity and other complicating conditions. Resists vibration, shocks and pressure surges for which purpose they are equipped with pressure shock absorbers. Supplied with encased design case. Environment temperature -40 up to 60°C, medium temperature T_{max} 80°C. Other design options on request - special scale design, connection threads, max. pressure needle, lazy needle etc.

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B.1.14.

SHOCK RESISTANT PRESSURE GAUGE 384/322G

diameter 100mm
bottom, back connection
glycerine filling

DESCRIPTION:

- bayonet case/encased stainless steel case 17 240/1.4301
- safety glass/acrylate inspection hole
- connection 384 (bottom); 322G (back) CuZn and copper alloys
- measuring mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- hydraulics
- mechanical engineering
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: 100mm
- measure ranges: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100; 160...700MPa
- scale: Pa, bar, bar/psi, individual
- connection thread: G1/2 (M20x1,5, NPT)
- accuracy class: bayonet 1%,encased 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Shock resistant pressure gauges 384/322G are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Shock resistant pressure gauges with water-tight case are designed into harsh conditions, where the pressure gauge is exposed to vibration, humidity and other complicating conditions. Resists vibration, shocks and pressure surges for which purpose they are equipped with pressure shock absorbers. Supplied with encased design or bayonet case. Environment temperature -40 up to 60°C, medium temperature T_{max} 80°C. Other design options on request - special scale design, connection threads, max. pressure needle, lazy needle etc.

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B.1.15.

SHOCK RESISTANT PRESSURE GAUGE 313G/ 323G

diameter 160mm
bottom, back connection
glycerine filling

DESCRIPTION:

- bayonet case, stainless steel 17 240/1.4301
- safety glass/acrylate inspection hole
- connection 313G (bottom), 323G (back) CuZn and copper alloys
- measure mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- hydraulics
- mechanical engineering
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: 160mm
- measure range: 0-60, 100, 160, 250, 400, 600kPa 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100; 160...700MPa
- stupnice: Pa, bar, bar/psi, individual
- connection threads: G1/2, (M20x1,5, NPT)
- accuracy class: 1%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Shock resistant pressure gauges 313G/323G are produced according to standard EN837-1. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Shock resistant pressure gauges with water-tight case are designed into harsh conditions, where the pressure gauge is exposed to vibration, humidity and other complicating conditions. Resists vibration, shocks and pressure surges for which purpose they are equipped with pressure shock absorbers. Supplied with bayonet case. Environment temperature -40 up to 60°C, medium temperature T_{max} 80°C. Other design options on request - special scale design, connection threads, max. pressure needle, lazy needle etc.

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B.1.16.

CONTROL PRESSURE GAUGE 313

diameter 160 mm bottom connection

DESCRIPTION:

- bayonet case of stainless steel 17 240/1.4301
- glass inspection hole
- bottom connection CuZn and copper alloys
- measure mechanism CuZn and copper alloys/stainless steel
- low pressure design from 400Pa up to 40kPa, high pressure design from 60kPaup to 160MPa

APPLICATION:

- heating indusrty
- hydraulics
- air-conditioning
- light industry
- calibration, certification, inspection

TECHNICAL PARAMETERS:

- diameter: 160mm
- measure ranges: 0-400, 600Pa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40kPa
  0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10, 16; 25; 40; 60; 100; 160MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500, -100+300, -100+150, -100-0kPa
- connection threads: M20x1,5, G1/2
- accuracy class: 1%, 0,6%, 0,4%, 0,25%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Control pressure gauges 313 are produced according to standard EN837-1(3). Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have a corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism.

Control pressure gauges are designed for certification, accurate measurements, etc. Supplied in accuracy class 1%; 0,6%; 0,4%; 0,25%. Environment temperature -40 up to 60°C, medium temperature T_{max} 60°C. Pressure gauge dial comes with a very fine interval design and beginning from accuracy class 0,6% also with a mirror background.

Other design options on request - special scale design, connection threads, etc. Control pressure gauges can be supplied with valid calibration certificates.

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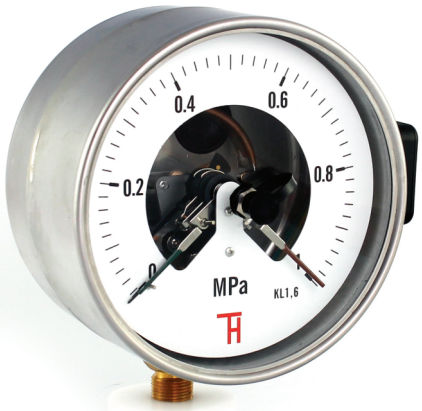
B.1.17.

CONTACT PRESSURE GAUGE

diameters 100, 160 mm bottom, back connection



DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass inspection hole
- bottom, back connection, CuZn and copper alloys
- el. connection – cable output DIN 43 650
- measure mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- mechanical engineering
- compressors
- regulatory stations
- blowers

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measuring ranges: 0-60, 100, 160, 250, 400, 600kPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa,
  -100+500; -100+300; -100+150; -100-0kPa
  scale: Pa, bar, individual
- connection threads: M20x1,5 (G1/2)
- accuracy class: 1,6%, 2,5%
- contact type: switch-on, switch-off, throw-over
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Contact pressure gauges are produced according to standard EN837-1(3). Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have corrosive effect on copper alloys and its viscosity allows for measuring using bourdon pen mechanism, capsule or separating membranes.
Pressure gauges with switching contacts (on/off) are used in engineering practice where it is required to work within limited band of pressure span. Easily adjustable contacts using the supplied wrench. Environment temperature -40 up to 60°C, medium temperature T_{max} 80°C. Other design options on request - special scale design, connection threads, contacts, etc. Pressure gauge may be supplied with glycerine or silicone(312KG) damping.

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B.1.18.

PRESUURE GAUGE WITH SEPARATING MEMBRANE

diameters 100, 160mm bottom connection

DESCRIPTION:

- bayonet case made of stainless steel 17 240/1.4301
- glass inspection hole, safety glass
- bottom/back connection
- measure mechanism made of CuZn and copper alloys

APPLICATION:

- power engineering
- food industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measuring ranges:

0-4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600kPa
0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60MPa
-0,1+2,4; -0,1+1,5; -0,1+0,9MPa
-100+500, -100+300, -100+150, -100+150kPa
-0,6+1; -1+1,5; -1,5+2,5; -2+4; -4+6kPa
-6+10; -10+15; -15+25kPa
-1-0; -1,6-0; -2,5-0; -4-0; -6-0; -10-0; -16-0; -25-0; -40-0kPa

- connection threads: G1/4, G1/2,M12x1,5, M20x1,5
- scale: Pa, bar, individual
- accuracy class: 1,6%, 2,5%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Pressure gauges with separating membrane are made in accordance with standard EN837-3. These pressure gauges are used in all applications, where it is necessary to separate the medium from measure mechanism and in applications, where it is impossible to use pressure gauges with Bourdon pen. They may be used for all aggressive mediums. For mediums of high viscosity and loose mediums it is applicable to use flange with widened connection thread or an opened flange. Environment temp. T_{min} -40 up to T_{max} 60°C, medium temp. T_{max} 80°C (higher according to the application). Pressure gauges are supplied in default with screwed type of membrane (type 41, PN 25), but may be supplied in wide range of separating membranes (for food industry, clamp, for paper industry, opened, front membrane, see chapter E.7.) Other options of design on individual request - special scale design, connection threads, with switch-off contacts, etc.

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SEPARATING MEMBRANES

Type 41.. (DN) a) screwed together

Screwed-together separating membrane is designed for separation of sensing element and the measure unit from impact of liquid, which may be corrosive, caustic, of higher density or high temperature. This membrane is suitable for pressures from -1 to 25 bar. Enables utilization of big membrane with small connection dimensions: G1/2, M20x1,5, NPT1/2 (other on request). Separator may be taken apart and the inner space may be cleaned. For pressure measurements of aggressive chemicals it is possible to use membranes made of tantal or protection foil PTFE; bottom part may be made of resistant plastic or equipped with lining.

b) screwed together with welded-on membrane

Screwed-together separating membrane is designed for separation of sensing element and the measure unit from impact of measured medium, which may be corrosive, of high viscosity or of other aggressive characteristics. The membrane is welded on to the upper part by tantal-stainless steel weld. This design enables easy cleaning of the system. Welded-on membrane is suitable for pressures from -1 up to 400bar.

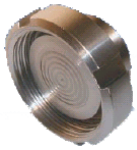
Type 55.. (DN): flange

Flange separating membrane is designed for separation of the sensing element from impact of measured medium, which may be corrosive, of high viscosity or of other aggressive characteristics, using flange process connection according to DIN 2501, EN 1092-1, ANSI B16,5 or flange on individual request.

Type 53.. (DN): clamp

Separating membrane is welded onto the construction. Mainly used in food, drink, water industry or other applications with toughened hygienic requirements. Quick-connect coupling with clamp connection, dimensions DN: 25, 32, 40, 50, 65 (DN 25, 32 and 40 with identical outer dimension). Quick-connect coupling enables easy disassembly for cleaning.

Type 32.. (DN): food industry



Separating membrane is welded onto the construction. Mainly used in food, drink, water industry or other applications with toughened hygienic requirements. Connection using quick-connect coupling with union nut according to DIN 11851. Conical socket (special design: threaded socket). Dimensions DN: 25, 32, 40, 50.

Type 34.. (DN): paper industry

Connection using union nut flange (alternatively fixed flange). Separators body with short tube. Membrane diameter 48 up to 59mm. Mainly used in paper industry. Dimensions of the flange are distinct from the standartized ones in order to use big membrane and maintain small assembly dimensions.

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SEPARATING MEMBRANES

Type 45.. (DN): welded-together

Welded-together membrane is designed for separation of sensing element and measure unit from impact of liquid, which may be corrosive, caustic, of higher density or high temperature. This membrane is suitable for pressures from 0 to 600 bar. Commonly used for efficient pressure shock absorption, because it enables use of a very narrow throttling cross section without the danger of clogging. Connection: G1/2, M20x1,5, G1/4, M12x1,5 according to DIN 16288. Device diameter: 40, 50, 60mm. Membranes size correspondents with the diameter of the device. Material: stainless steel (on request Monel, nickel, etc.)

Type 43.. (DN): threaded pin

Separating membrane type 43 is designed for separation of sensing element and measure unit from impact of liquid, which may be corrosive, have high viscosity or feature another kind of agressivity. Universal separating membrane with wide range of use thanks to the universal connection with G - thread. Suitable for high pressures up to 60 MPa

Type 56.. (DN): with cooling extension

Membrane separators are besides other things used for pressure measurements of hot substances and liquid alloys, which would otherwise solidify inside pressure gauge or transducer. Measured pressure is transferred by means of working liquid through capillary that is cooled by the outside environment. Cooling extension prevents the pressure gauge or transducer from overheating. When filled with high-temperature oil, the cooling extension enables pressure measurement of mediums of temperatures up to 400°C.

Type 57.. (DN): with movable capillary

Mainly used for level measurements in closed containers, for liquid density and flow measurements. The separator itself is usually flange or sandwich type. Other types with membrane of minimum diameter 48mm may be used as well. In order to balance the temperature error it is recommended to use capillaries of same lengths and as short as practicable; capillaries lengths usually up to 6m.

Other: Type 58.. (DN)

Separator exploits the characteristics of big membrane while built into a pipeline of smaller inner diameter . Thanks to the special construction it is still possible to maintain the sanitation characteristics without the need of separators disassembly. The membrane is efficiently washed by the flowing liquid in the pipe. Sealing of the lid meets strict hygienic regulations.

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B.1.19.

DOUBLE PRESSURE GAUGE 13352/13353

diameters 100, 160mm bottom connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass inspection hole
- connection 2x bottom
- back/front flange
- measurement mechanism CuZn and copper alloys

APPLICATION:

- heating industry
- air-conditioning
- food industry
- power engineering

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measure range: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500, -100+300, -100+150, -100- 0kPa
- connection thread: M20x1,5 (G1/2)
- accuracy class: 1,6%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

Double pressure gauges (differential) 13352/13353 are produced in compliance with EN837-1 standard. Mainly used for measurements of liquids, vapour and gases that do not have corossive effect on copper alloys. Double pressure gauges are used in applications, where it is necessary to measure value of two pressures or the difference between two static pressures. One source of pressure measurement, one dial is showing both the values. The main scale shows values of the two static pressures and the sub-scale shows the two pressure difference. Environment temperature -20 up to 60°C, medium temperature T_{max} 60°C. Other design options on individual request - special scale design, connection threads, switching contacts, front and back flange, etc.

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B.1.20.

DIFFERENTIAL PRESSURE GAUGE 5637/5638

diameter 160mm
2x bottom connection

DESCRIPTION:

- case: black varnished steel / stainless steel 17 240/1.4301
- glass/safety glass inspection hole
- connection 2x bottom
- measure mechanism: CuZn and copper alloys (5637), stainless steel 17 348/1.4571 (5638)

APPLICATION:

- heating industry
- air-conditioning
- food industry
- healthcare industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 160mm
- measure ranges: 0-1; 1,6; 2,5; 4; 6bar
- max. static pressure: 1,6; 4; 10; 16bar
- connection thread: 2x G1/2, 2x M20x1,5
- accuracy class: 1,6%
- protection: IP 65

SPECIFICATION:

Differential pressure gauges 5637/5638 are basic differential manometers with single indication of differential pressure only.

Differential pressure gauges 5637/5638 can be used for pressure measurements of all liquids, vapours and gases, that do not have a corrosive effect on copper alloys and their viscosity allows the use of measuring mechanism. Differential pressure gauges are supplied in size 160mm with the option of electric contacts. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C.

Other design options on individual request -special scale design, connection threads,max. pressure needle, etc.

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B.1.21.

DIFFERENTIAL PRESSURE GAUGE with magnetic piston

2x side connection

DESCRIPTION:

- case: steel, alluminium cast or stainless steel
- inspection hole: acrylate, glass
- connection 2x side, bottom
- measurement mechanism: CuZn, stainless steel
- piston sealing: NBR, EPDM, Viton
- design: with direct entry or with separating membrane

APPLICATION:

- air-conditioning
- hydraulics
- power engineering
- petrochemical industry
- chemical industry

TECHNICAL PARAMETERS:

- diameter: 63, 80, 100, 115, 150mm
- measure ranges - differential pressure: 0-40kPa, 0-1MPa
- max. static pressure: 10, 25, 40MPa
- connection thread: G1/4 (G1/2, 1/2NPT inner or outer)
- accuracy class: 3% for differential pressure

SPECIFICATION:

Differential pressure gauges with magnetic pistons are suitable for all applications with high static pressures. They are produced in compliance with EN 837-3 standard. Differential pressure gauges can be used for measurements of all liquids, gases and vapour that do not have corrosive effect on copper alloys and its viscosity allows for use of measuring mechanism made of stainless steel class 1.4305. For mediums of higher viscosity it is possible to use pressure gauges with separating membranes.

Differential pressure gauges with magnetic pistons may be used in applications for measurements of small pressure differences even in high static pressures. This design finds its application in wide range of operations, pressure gauges may be supplied with piston and spring or with a membrane, in wide range of materials - brass, alluminium, stainless steel. Maximum environment temperature -20 up to 60°C, medium temperature T_{max} 100°C. Dother design options on individual request - with switching contacts, analog output, special scale design, connection threads, etc.

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B.1.22.

DIFFERENTIAL PRESSURE GAUGE 702.01./5591

diameter 100mm
2x bottom connection

DESCRIPTION:

- cast case GD-AlSi 12(Cu) 3.2982
- glass, safety glass inspection hole
- connection 2x bottom inner or outer
- measure mechanism: stainless steel
- seals: FPM/FKM

APPLICATION:

- heating industry
- air-conditioning
- power engineering
- petrochemical industry
- light industry and other

TECHNICAL PARAMETERS:

- diameter: 100mm
- measure ranges - differential pressure: 0-0,25...0-25bar
- max. static pressure: 25bar
- connection thread: 2x G1/4, inner or outer
- accuracy class: 2,5% for differential pressure, 4% for static pressure
- protection: IP 65

SPECIFICATION:

Differential pressure gauges 702.01./5591 are universal differential manometers with inbuilt static pressure display. They are produced in compliance with EN837-3. Differential pressure gauges 702.01./5591 can be used for pressure measurements of all liquids, vapours and gases, that do not have corrosive effect on copper alloys and their viscosity allows the use of measuring mechanism made of stainless steel 1.4305. These differential pressure gauges are commonly used in filtration units, pressure pumps and other appliances where it is necessary to monitor both static and differential pressure.

Differential pressure gauges are supplied in size d=100mm. Environment temperature -10 up to 70°C, medium temperature T_{max} 90°C.

Other design options on individual request - switching contacts, special scale design, connection threads, etc.

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B.1.23.

INDUSTRIAL DIFFERENTIAL PRESSURE GAUGE 5595/5596

diameters 100, 160mm
2x bottom connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass/safety glass inspection hole
- connection 2x bottom
- measure mechanism: CuZn and copper alloys, stainless steel 17 348/1.4571
- membrane: stainless steel 17 240/1.4301

APPLICATION:

- power engineering
- chemical industry
- petrochemical industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 100mm (5595), 160mm (5596)
- measure ranges - differential pressure: 0-160mbar...0-10bar
- max. static pressure: 25bar
- connection threads: 2x G1/2
- connection: paralel
- pitch: 54mm
- accuracy class: 1,6%
- protection: IP 65

SPECIFICATION:

Industrial differential pressure gauges 5595/5596, produced in compliance with EN837-3 standard are suitable for lower pressures. Differential pressure gauges 5595/5596 can be used for pressure measurements of all liquids, vapours and gases, that do not have a corrosive effect on copper alloys and their viscosity allows the use of measuring mechanism.

Differential pressure gauges are supplied in sizes d=100, 160mm and are suitable into more demanding conditions while measuring aggressive mediums thanks to their resistance to organic dissolving agents. Environment temperature -20 up to 60°C, medium temperature T_{max} 80°C.

Other design options on individual request - analog output signal 0-20mA and 4-20mA, increased overload capacity, special scale design, connection threads, etc.

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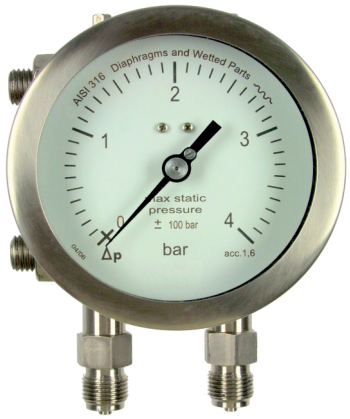
B.1.24.

DIFFERENTIAL PRESSURE GAUGE 5670/5675/1620

diameter 100, 160mm
2x bottom connection



DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass , safety glass inspection hole
- connection 2x bottom
- measure mechanism: stainless steel 17 348/1.4571
- seals: NBR, FPM

APPLICATION:

- heating industry
- air-conditioning
- food industry
- healthcare industry
- chemical industry

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measure range: 0-25mbar...0-25bar
- max. static pressure: 25bar, 100bar
- connection threads: 2x G1/2; 2x G1/4
- accuracy class: 1,6%
- protection: IP 54, with glycerine filling IP 65

SPECIFICATION:

Differential pressure gauges 5670/5675/ 1620 are all-stainless steel heavy-duty manometers designed into heavy and demanding conditions.

They are produced in compliance with EN 837-3 standard. Differential pressure gauges 5670/5675 can be used for pressure measurements of all liquids, vapours and gases, that do not have a corrosive effect on copper alloys and stainless steel class 17 348/1.4571 as well as their viscosity allows the use of membrane measuring mechanism. Environment temperature -30 up to 60°C, medium temperature T_{max} 60°C. Pressure gauges are supplied in sizes d=100, 160mm. They may be supplied with glycerine filling, electric contacts and ATEX environment design.

Other design options on request - special scale design, connection threads, etc.

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B.1.25.

DIFFERENTIAL PRESSURE GAUGE 732(3).50/1610/2700

diameter 100, 160mm
2x bottom connection

DESCRIPTION:

- stainless steel case 17 240/1.4301
- glass, safety glass inspection hole
- connection 2x bottom
- measurement mechanism: CuZn and copper alloys, stainless steel 17 348/1.4571
- membrane: stainless steel 17 240/1.4301
- ATEX design

APPLICATION:

- power engineering
- chemical industry
- petrochemical industry
- hydraulics

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measure ranges -differential pressure: 0-16mbar...0-25bar
- max. static pressure: 25bar
- connection threads: 2x G1/4 inner
- connection: paralel
- pitch: 54mm
- accuracy class: 1,6%
- protection: IP 54, with glycerine IP 65

SPECIFICATION:

Industrial differential pressure gauges 732.50/1610/2700, produced in compliance with EN837-3 standard are suitable for lower pressures. Differential pressure gauges 732.50/1610/2700 can be used for pressure measurements of all liquids, vapours and gases, that do not have a corrosive effect on copper alloys and their viscosity allows the use of measuring mechanism. Pressure gauges are supplied in sizes d=100, 160mm and are suitable into more demanding conditions while measuring aggressive mediums. They are resistant to organic dissolving agents. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C. Other design options on individual request - analog output signal 0-20mA and 4-20mA, electric contacts, inductive contacts, increased overload capacity, special scale design, connection threads, etc.

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B.1.26.

HEAVY DUTY DIFFERENTIAL PRESSURE GAUGE 732.14/2680

diameter 100, 160mm
2x bottom connection

DESCRIPTION:

- stainless steel case 17 240/1.4301/AISI 304
- glass, safety glass inspection hole
- connection 2x bottom
- measurement mechanism: stainless steel 17 348/1.4571
- seals: NBR, FPM

APPLICATION:

- power engineering
- air-conditioning
- food industry
- healthcare industry
- chemical industry

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measure ranges: 0-60mbar...0-40bar
- max. static pressure: 40bar, 100bar, 250bar, 400bar
- connection threads: 2x G1/2 inner
- accuracy class: 1,6% (732.14); 2,5% (762.14)
- protection: IP 54, with glycerine filling IP 65

SPECIFICATION:

Differential pressure gauges 732.14/2680 are all-stainless steel heavy duty manometers designed into heavy and demanding conditions. They are produced in compliance with EN837-3 standard. Differential pressure gauges 732.14/2680 can be used for pressure measurements of all liquids, vapours and gases, that do not have a corrosive effect on copper alloys and stainless steel class 17 348/1.4571 as well as their viscosity must allow the use of membrane measuring mechanism. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C. Differential pressure gauges are supplied in sizes d=100, 160mm. Pressure gauges may be supplied with glycerine filling, electric contacts and ATEX environment design. Other design options on request - special scale design, switching contacts, analog output, connection threads, etc.

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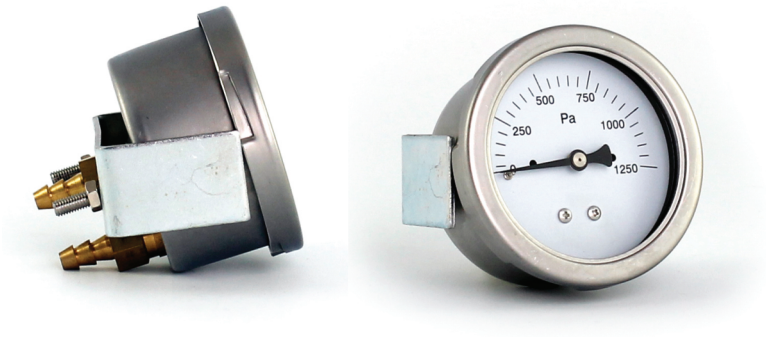
B.1.27.

DIFFERENTIAL PRESSURE GAUGE 1630

diameter 63 mm
2x back connection



DESCRIPTION:

- stainless steel case 17 240/1.4301
- polycarbonate inspection hole
- connection 2 x back
- measurement mechanism: CuZn and copper alloys

APPLICATION:

- air-conditioning
- pneumatic appliances
- light industry

TECHNICAL PARAMETERS:

- diameter: 63mm
- measure range - differential up to 2,5kPa
- max. static pressure: 40kPa
- connection threads: 2x G1/4,
- hose connection: d =6, d=8, d=10mm
- accuracy class: 2,5%
- protection: IP 65

SPECIFICATION:

Differential pressure gauges type 1630 are suitable for very low differential pressures and static pressures up to 40 kPa. They are produced in compliance with EN837-3 standard and can be used for measuring of all vapour and gases, that do not have corrosive effect on copper alloys.

Differential pressure gauges are supplied in size 63mm and are suitable into conditions, where it is necessary to measure low differential pressures up to 2,5kPa. Environment temperature -40 up to 60°C, maximum medium temperature 60°C.

Other design options on request - special scale design, connection threads, etc.

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B.1.28.

ALL STAINLESS STEEL PRESSURE GAUGE WITH BOURDON PEN

diameters 63, 100, 160mm bottom, back connection

DESCRIPTION:

- bayonet case/encased stainless steel 17 240/1.4301
- safety glass/acrylate inspection hole
- back/bottom connection: stainless steel 17 348/1.4571
- measurement mechanism: stainless steel 17 348/1.4571

APPLICATION:

- food industry
- petrochemical industry
- farmaceutical industry
- power engineering

TECHNICAL PARAMETERS:

- diameter: 63, 100, 160mm
- measure range: 0-60, 100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25...700MPa
  -0,1+2,4; -0,1+1,5; -0,1+0,9MPa
  -100+500, -100+300, -100+150, -100+150kPa
- scale: Pa, bar, individual
- connection threads: M12x1,5, M20x1,5 (G1/4, G1/2, NPT)
- accuracy class: d. 63mm 1,6%
  d. 100, 160mm 1%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator

SPECIFICATION:

All stainless steel pressure gauges with bourdon pen for measuring pressures of values up to 100MPa (for d. 63mm), up to 400MPa (for d.100mm) and up to 700MPa (for d.160mm).

Pressure gauges are produced in compliance with EN837-1 standard and are suitable fo measurements of all non-viscous and non-agressive liquids, vapour and gases that do not have corrosive/descructive effect on stainless steel material cl.17 348/1.4571 of the measurement mechanism.

Other options of design on request - special scale design, connection threads, back/front flange, silicone or glycerine damping (mark G), etc.

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B.1.29.

ALL STAINLESS STEEL LOW PRESSURE GAUGE

diameters 63, 100, 160mm bottom and back

DESCRIPTION:

- case encased/ bayonet stainless steel 17 240/1.4301
- acrylate, safety glass inspection hole
- connection: bottom/back stainless steel 17 348/1.4571
- measurement mechanism: stainless steel 17 348/1.4571

APPLICATION:

- food industry
- petrochemical industry
- farmaceutical industry
- power engineering

TECHNICAL PARAMETERS:

- diameter: 63, 100, 160mm
- measure ranges: 0-250, 400, 600Pa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40kPa,
  -150+250, -200+400, -400+600Pa,
  -0,6+1; -1+1,5; -1,5+2,5; -2+4;
  -4+6; -6+10; -10+15; -15+25kPa
  -400-0, -600-0Pa
  -1-0; -1,6-0; -2,5-0; -4-0; -6-0; -10-0; -16-0; -25-0; -40-0kPa
- connection thread: M12x1,5, M20x1,5 (G1/4, G1/2)
- accuracy class: 1,6%, 1%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- special scale design

SPECIFICATION:

All stainless steel low pressure gauges are produced in compliance with EN837-3 standard.

Pressure gauges are suitable for measurements of all non-viscous and non-agressive liquids, vapour and gases, that do not have corrosive/ destructive effect on stainless steel class 17 348/1.4571 using measurement mechanism of capsule membrane.

Other options of design on individual request - special scale design, connection threads, back/front flange, glycerine or silicone damping (mark G), etc.

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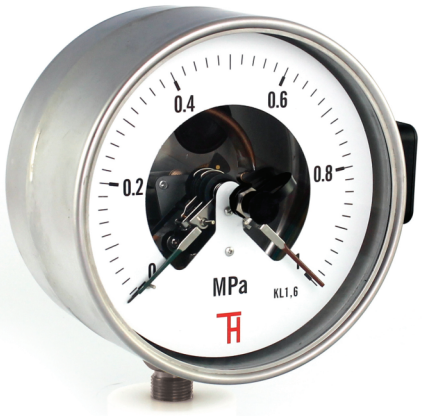
B.1.30.

ALL-STAINLESS STEEL CONTACT PRESSURE GAUGE

diameters 100, 160mm bottom, back connection



DESCRIPTION:

- stainless steel case 17 240/1.4301
- inspection hole: glass, safety glass
- connection: bottom, back stainless steel 17 348/1.4571
- measurement mechanism: stainless steel 17 348/1.4571

APPLICATION:

- food industry
- petrochemical industry
- farmaceutical industry
- power engineering

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measure ranges:

0-60, 100, 160, 250, 400, 600kP
0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 100; 160MPa
-0,1+2,4; -0,1+1,5; -0,1+0,9MPa,
-100+500, -100+300, -100+150, -100+0kPa

- connection threads: M20x1,5, G1/2
- accuracy class: 1,6%, 1%
- design: pressure gauge, pressure-vacuum indicator, vacuum indicator
- contact design:

switch-on, switch-off, throw-overinductive

SPECIFICATION:

All-stainless steel contact pressure gauges are used in technical practice where it is necessary to work within some limited band of pressure span. Pressure gauges are produced in compliance with EN837-1 standard. Pressure gauges are suitable for measurement of all aggressive mediums, that do not have a corrosive/ destructive effect on stainless steel class 17 348/1.4571. Pressure gauges have a standard equipment of M20x1,5 or G1/2 connection, switch-on/switch-off magnetic contact, may be diversified by throw-over or inductive contact design. Possible choice of glycerine or silicone damping.

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B.1.31.

ALL-STAINLESS STEEL PRESSURE GAUGE WITH SEPARATING MEMBRANE

diameters 100, 160mm bottom, back connection

DESCRIPTION:

- case: stainless steel 17 240/1.4301
- inspection hole: glass, safety glass
- connection and measurement system stainless steel 17 348/1.4571

APPLICATION:

- food industry
- petrochemical industry
- farmaceutical industry
- power engineering

TECHNICAL PARAMETERS:

- diameter: 100, 160mm
- measuring ranges:

0-4, 6, 10, 16, 25, 40, 60, 100, 160, 250,400, 600kPa
0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60MPa,
-0,1+2,4; -0,1+1,5; -0,1+0,9MPa
-100+500, -100+300, -100+150, -100+0kPa
0,6+1; -1+1,5; -1,5+2,5; -2+4;
-4+6; -6+10; -10+15; -15+25kPa

- scale: Pa, bar, individual
- connection threads:

M20x1,5 (G1/2), threads to M65x2 (G1 1/2)

- accuracy class: 1%

SPECIFICATION:

All-stainless steel pressure gauges with a basic screwed-together separating membrane, in stainless steel design, alter. teflon-coated design.

Pressure gauges are produced in compliance with EN837-3 standard. They are used for measurements of all aggressive media, that do not have a corrosive/ destructive effect on stainless steel materials class 17 348/1.457, alternatively teflon.

At applications, where it is impossible to use the screwed-together separating membrane, it is applicable to use other type of membrane from wide range of designs and materials. For details see chapter E.7/Separating membranes.

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ALL STAINLESS STEEL DOUBLE AND DIFFERENTIAL PRESSURE GAUGES

diameter 80, 100, 160 mm

bottom and back connection

SPECIFICATION:

All-stainless steel double pressure gauges are used for measurements of two pressures difference of aggressive mediums, wide spectrum of vacuum and pressure measurements. All-stainless steel differential pressure gauges are designed for measurements of final pressure difference of aggressive mediums. Wide spectrum of differential pressure gauges.

DOUBLE:

Series: 13352, 13353

Double pressure gauges are used mainly in applications, where it is necessary to measure values of two static pressures or differential pressure between two static pressures. Its an issue of one source of pressure measurement, where values are shown on one dial only. The main scale shows values of two static pressures and on the auxiliary scale you can read the difference of the two static pressures. Environment temperature -20 up to 60°C, medium temperature T_{max} 60°C.

DIFFERENTIAL:

Series: 5595/ 5596

Industrial differential pressure gauges 5595/5596 are suitable for lower pressures. Differential pressure gauges may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys and its viscosity allows for measurement using the measure mechanism. Differential pressure gauges are supplied in diameters d=100, 160mm and are suitable into demanding conditions while measuring aggressive mediums, they are resistant to organic dissolving agents. Environment temperature -20 up to 60°C, medium temperature T_{max} 80°C.

Series: 5637/5638

Differential pressure gauges 5637/5638 are basic differential pressure gauges with one indicator only, they indicate only the real pressure. Differential pressure gauges 5637/5638 may be used for two static pressures measurement of all liquids, gases and vapour, which do not have corrosive effect on copper alloys and its viscosity allows for measurement using the measure mechanism. Differential pressure gauges are supplied in diameters d=160mm with option of el. contacts. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C.

Series: 5670/5675

Differential pressure gauges 5670/5675 are all-stainless steel heavy-duty pressure gauges designed into demanding conditions. Differential pressure gauges 5670/5675 may be used for all pressure measurements of liquids, gases and vapour, which do not have corrosive effect on copper alloys and stainless steel 17 348/1.4571 and its viscosity allows for measurement using membrane measure mechanism. Environment temperature -30 up to 60°C, medium temperature T_{max} 60°C. Differential pressure gauges are supplied in diameters d=100, d=160mm. Pressure gauges may be supplied with glycerine filling, with electric contacts and in ATEX environment design.

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Series: 702.01.100 (DELTA- plus)

Differential pressure gauges type 702.01.100 (DELTA-plus) are universal differential pressure gauges with an inbuilt display of static pressure. Differential pressure gauges j701.01.100 may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys and its viscosity allows for measurement using the measure mechanism of stainless steel cl. 1. 4305. These differential pressure gauges are mainly used on filtering units, pressure pumps and on other devices, where it is necessary to monitor static and differential pressure. Gauges 702.01.100 supplied in size d=100mm. Environment temperature -10 upn to 70°C, medium temperature T_{max} 90°C.

Differential pressure gauge with magnetic piston

Differential pressure gauges with magnetic piston are suitable for applications with high static pressures. Differential pressure gauges may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys and its viscosity allows for measurement using measure mechanism of stainless steel cl. 1. 4305. For mediums of higher viscosity or aggressive mediums the pressure gauge can be used with a membrane. Differential pressure gauges with magnetic piston may be used in applications for measurement of small differences even of high static pressures. This design finds its use in wide range of applications, pressure gauges may be supplied in design with piston and spring or with a membrane, in wide spectrum of material designs - brass, aluminium, stainless steel. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C. Other design versions on individual request – with HIRLEKAR contacts, switching contacts, analog output, special scale design, connection threads, etc.

Series: 732.50/1610/2700

Industrial differential pressure gauges 732.50/1610/2700 are suitable for lower pressures. Differential pressure gauges 732.50/1610/2700 may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys and its viscosity allows for measurement using the measure mechanism. Differential pressure gauges are supplied in sizes d=100, 160mm and are suitable even into more demanding conditions while measuring aggressive mediums, they are resistant to organic dissolving agents. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C.

Series: 732.14/2680

Differential pressure gauges 732.14/2680 are all-stainless steel heavy duty differential pressure gauges designed into more demanding conditions. Differential pressure gauges may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys and stainless steel cl. 1.4571 and its viscosity allows for measurement using membrane measure mechanism. Environment temperature -20 up to 60°C, medium temperature T_{max} 100°C. Differential pressure gauges are supplied in sizes d=100, 160mm. Pressure gauges may be supplied with glycerine filling, with electric contacts, in ATEX environment design.

Series: 1630CH

Differential pressure gauges type 1630CH are suitable for very low differential pressures and static pressures up to 40 kPa. Pressure gauges may be used for pressure measurement of liquids, gases and vapour, which do not have corrosive effect on copper alloys. . Differential pressure gauges are supplied in size d=63mm and are suitable into conditions, where it is necessary to measure very low pressures max 2,5kPa of differential pressure. Environment temperature -40 up to 60°C, medium temperature T_{max} 60°C. Other optional designs on individual request - special scale design, connection threads, etc.

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B.1.33.

ROUND CAPILLARY PRESSURE GAUGE 1037 Ø 37, 1040 Ø 40 1052 Ø 52mm

capillary 1000mm

DESCRIPTION:

- case: coloured plastic
- inspection hole: acrylate
- copper capillary with PVC protection
- panel mounting design
- spring latch for easy mounting

APPLICATION:

- heating industry and sanitary technology
- heating management, power engineering
- light industry

TECHNICAL PARAMETERS:

- case: 37, 40, 52mm
- measure ranges: 0-4, 6bar
- capillary length: 500, 1000, 1500, 2000, 3000mm
- thread: G1/4 (M12x1,5, M14x1)

SPECIFICATION:

Capillary pressure gauges are designed for all applications, where the place of measuring is not identical with the place of reading.
Thanks to wide range of designs they can be used in miscellaneous applications. Mainly used for boilers, heating systems and other operations with pressure measurement neccesity.
Maximum temperature of case surrounding is 70°C. Other options of design on individual request - special scale design, connection thread, etc.

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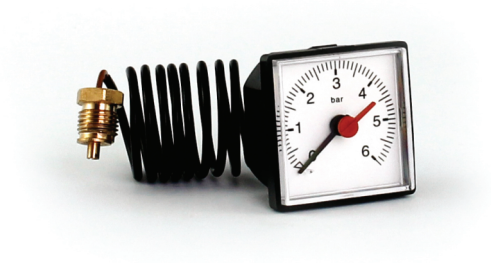
B.1.34.

SQUARE CAPILLARY PRESSURE GAUGE

1137 37x37mm
1145 45x45mm

capillary 1000mm



DESCRIPTION:

- case: coloured plastic
- inspection hole: acrylate
- copper capillary with PVC protection
- panel mounting design
- spring latch for easy mounting

APPLICATION:

- heating industry and sanitary technology
- heating management, power engineering
- light industry

TECHNICAL PARAMETERS:

- case: 37x37mm
(assembly 42x42mm including collar)
45x45mm
(assembly 48x48mm including collar)
- measure ranges: 0-4, 6bar
- capillary length: 500, 1000, 1500, 2000, 3000mm
- závit: G1/4 (M12x1,5, M14 x1)

SPECIFICATION:

Capillary pressure gauges are designed for all applications, where the place of measuring is not identical with the place of reading. Thanks to wide range of designs they can be used in miscellaneous applications. Mainly used for boilers, heating systems and other operations with pressure measurement neccesity.
Maximum temperature of case surrounding is 70°C. Other options of design on individual request - special scale design, connection thread, etc.

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B.1.35.

ROUND CAPILLARY THERMOMANOMETER

3040 Ø 40mm
3052 Ø 52mm

capillary 500-2000mm

DESCRIPTION:

- coloured plastic case
- acrylate inspetion hole
- copper capillary with PVC protection

APPLICATION:

- heating industry and sanitary technology
- heating management, power engineering
- light industry

TECHNICAL PARAMETERS:

- case: 40, 52mm
- temperature ranges: 0-120°C
- pressure ranges: 0-4, 6bar
- capillary length: 500, 1000, 1500, 2000mm
- sensor: 6,5x25mm
- thread: G1/4 (M12x1,5, M14x1)

SPECIFICATION:

Capillary thermomanometers are designed into all applications, where the place of measuring is not identical with the place of reading.
Used for simultaneous pressure and temperature measurement. Thanks to wide range of designs they may be used in miscellaneous applications. Mainly used for boilers, heating systems and other operations with pressure measurement neccesity.
Maximum temperature of case surrounding is 70°C. Other options of design on individual request - special scale design, connection thread, etc.

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B.1.36.

MINI PRESSURE GAUGE AND PRESSURE INDICATOR

diameter 23-50mm back connection

DESCRIPTION:

- plastic, steel case
- acrylate inspection hole
- connection back CuZn and copper alloys
- measure mechanism CuZn and copper alloys

APPLICATION:

- health care
- fire extinguishers
- industrial gases distribution

TECHNICAL PARAMETERS:

- diameter: 23, 25, 30, 36, 37, 40, 50mm
- measure ranges: do 400bar
- connection threads: G1/8 (M10x1)
- accuracy class: 4% or 2,5%

SPECIFICATION:

Mini pressure gauges and pressure indicators are produced in compliance with EN837-1(3) standard. Mainly used for simple pressure measurements of liquids, vapour and gases, that do not have corrosive effect on copper alloys and their viscosity allows for use of measurement mechanism with bourdon pen.

Mini pressure gauges are suitable into conditions, where simple pressure indication is required with no high demands on accuracy.

Mainly used for pressure vessels, fire extinguishers, reducing valves, etc. Environment temperature -40 up to 60°C,medium temperature T_{max} 60°C.

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Code	1180	1182	1185
Diameter	25mm	23, 35mm	25, 30, 36, 40, 50mm
Thread	G1/8	G1/8	G1/8
Accuracy class	4%; 2,5%	4%	4%
Ranges	0-400bar	0-400bar	0-400bar
Case	plastic	brass, chrome	stainless steel
Inspection hole	acrylic	acrylic	polycarbonate
Spring	Cu - alloy	Cu - alloy, stainless steel	Cu - alloy, stainless steel
Protection	IP 43	IP 54	IP 54

Code	1186	1187	1188
Diameter	36mm	25, 30, 37mm	23mm
Thread	G1/8	G1/8	G1/8
Accuracy class	2,5%	4%	4%
Ranges	0-3000psi	0-28bar	0-28bar
Case	stainless steel	stainless steel	brass, chrome
Inspection hole	polycarbonate	polycarbonate	acrylic
Spring	Be, CuZn alloy	CuZn alloy	Cu
Protection	IP 54	IP 54	IP 54

B.1.37.

WELDING PRESSURE GAUGE 404

diameter 63mm
bottom, back connection

DESCRIPTION:

- metal case with pressurized vent
- acrylate inspection hole, twofold edging
- connection bottom, back CuZn and copper alloys
- measurement mechanism CuZn and copper alloys

APPLICATION:

- industrial gases distribution
- industrial gases storing
- reducing valves

TECHNICAL PARAMETERS:

- diameter: 63mm
- measure ranges: 0-100, 160, 250, 400, 600kPa
  0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 31,5; 40MPa
- scale: Pa, bar
- connection threads: G1/4, M12x1,5
  (G1/8, G1/2, M10x1)
- accuracy class: 2,5%

SPECIFICATION:

Welding pressure gauges 404 are produced in compliance with EN562 standard. Mainly used for simple pressure measurements of industrial gases, that require oxygen purity, that do not have corrosive effect on copper alloys and their viscosity allows for use of measurement mechanism with bourdon pen.

Welding pressure gauges are suitable for measurements of industrial gases (acetylene, oxygen). Supplied in industrial gases design or universal design (NEUTRAL). Environment temperature -40 up to 60°C, maximum medium temperature T_{max} 60°C. Other design options on individual request - special scale design, connection threads, etc.

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B.1.38.

MINING PRESSURE GAUGE 1251,1252

diameter 40, 50mm bottom connection

DESCRIPTION:

- case: cast CuZn (1251), stainless steel (1252)
- acrylate inspection hole
- bottom connection DIN20043/DN10
- measure mechanism CuZn and copper alloys
- glycerine damping optional

APPLICATION:

- mining industry
- hydraulics
- other heavy industry

TECHNICAL PARAMETERS:

- diameter: 40, 50mm
- measure ranges: 0-100, 160, 250, 400, 600kPa 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60MPa
- connection: DIN20043/DN10
- accuracy class: 2,5%

SPECIFICATION:

Mining pressure gauges are produced in compliance with EN837-1 standard. Mainly used for simple pressure measurement of liquids, vapour and gases, that do not have corrosive effect on copper allows and their viscosity allows for use of bourdon pen measurement mechanism.

Pressure gauges are designed for use in mining industry. They are equipped with mining connector according to DIN20043/DN10. Pressure gauges are supplied in heavy duty design with case made of CuZn cast (type 1251) or stainless steel (type 1252). Maximum environment temperature 10 up to 60°C, medium temperature T_{max} 60°C. Other design options on individual request - special scale design, connection thread, glycerine damping, etc.

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B.1.39.

PRESSURE GAUGE 329

diameter 80 mm back connection

DESCRIPTION:

- stainless steel /chrom. steel case
- plexiglass/safety glass inspection hole
- back connection CuZn and copper alloys
- measure mechanism CuZn and copper alloys
- overload 1,3x

APPLICATION:

- firefighting
- tank trucks and cisterns
- road cleaning vehicles
- suction vehicles

TECHNICAL PARAMETERS:

- diameter: 80mm
- measure ranges: -1+25bar; 0-25bar
- connection threads: M20x1,5 or G1/2
- accuracy class: 2,5%
- protection: -IP 54

SPECIFICATION:

Pressure gauges type 329 are produced in compliance with EN837-3 standard. Mainly used for simple pressure measurement of liquids, vapour and gases that do not have corrosive effect on copper alloys. Pressure gauges are designed into cisterns, tank trucks an fire fighting vehicles. They are to be placed onto pumps and suction devices. Equipped to be used in more demanding conditions. Resistant to shocks, machine vibrations and pulses. Their heavy-duty design ensures high functionality, safety and long life-time. Environment temperature -25 up to 60°C, medium temperature -20 up to 80°C. Other design options on individual request - special scale design, connection threads, lazy needle, red line, mirror dial, stainless steel front flange,....

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B.1.40.

RAIL VEHICLE PRESSURE GAUGE

diameters 80, 100 mm
back connection

DESCRIPTION:

- case Al cast/stainless steel
- glass or polycarbonate inspection hole
- connection pin CuZn
- measurement mechanism CuZn

TECHNICAL PARAMETERS:

- diameter: 80, 100mm
- measure ranges: 0-10bar, 0-12bar, 0-16bar, other pressure range on request
- connection threads: G1/8 (G1/4; G3/8; G1/2; M12x1,5; M14x1,5; M16x1,5;M20x1,5)
- accuracy class: 1,6%, 1%
- protection: IP 54

SPECIFICATION:

Pressure gauges are produced in compliance with EN837-1 standard. Pressure gauges are designed for pressure measurements of gases and liquids of low viscosity with no solid admixtures. These mediums must not form crystals or have corrosive effect on copper alloys. Suitable for use on rail vehicles, mainly in break and fuel systems. Environment temperature -20 up to 60°C, medium temperature T_{max} 60°C. Gearing mechanism enables pressure transfer from the measurement mechanism element using the needle on the dial. Differential pressure gauge contains of two independently working measurement systems. Each measurement system has its own connection. Special gearing mechanism transfers each separate value by means of two needles with identical axis of rotation onto the same dial.

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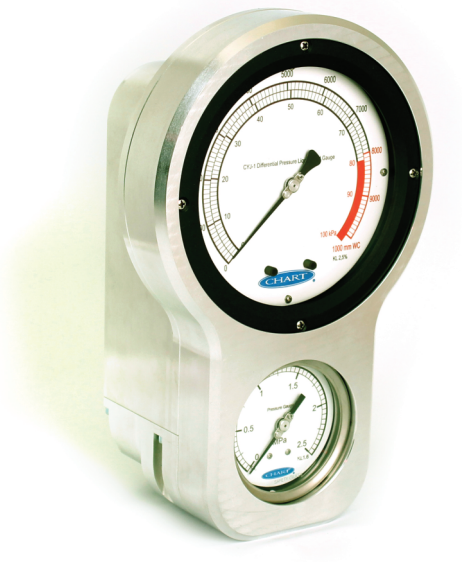
B.1.41.

PRESSURE GAUGE ASSEMBLY THCR-II A FOR KRYO USE

diameter 100, 160mm with multifunction valve



DIFFERENTIAL PRESSURE GAUGE:

- indicates differential pressure between bottom and top layer of liquid in a container
- model THCR–II
- 160mm/100mm
- max. static pressure 40 bar
- differential ranges: 0-15kPa (0-1,5m H2O)
  0-20kPa (0-2,0m H2O)
  0-30kPa (0-3,0m H2O)
- accuracy: ±2,5% of the range
- oxygen purity
- connection M18X1.5 (metric) or ¼ - 18 NPTF

STATIC PRESSURE GAUGE:

- measures pressure of the top vapour phase in a container
- model 322ROB 100mm
- pressure ranges: 0-1; 1,6; 2,5; 4; 6; 10; 16; 25; 40bar
- accuracy: 1,6% from all range
- oxygen purity
- connection M20x1,5

OPTIONAL ACCESSORIES:

- transducer for static pressure 4-20mA, 0-10V
- transducer for differential pressure (layer) 4-20mA, 0-10V
- switching contacts Min/Max
- individual procedural connection threads M, G, NPT design inner, outer, welding tubular connection
- mounting flanges

SPECIFICATION:

Model THCR-II A is a combined differential pressure gauge, used for indication of differential pressure in cryogenic containers that contain liquefied gases. THCR-II A contains three basic elements - differential pressure gauge, static pressure gauge and multifunction valve. All set is placed in an aluminum heavy-duty case for increased protection of the entire device.

MULTIFUNCTION VALVE: Replaces 4 original valves on the container. Broken differential or static pressure gauge may be replaced without isolation gas pipeline, only by gradual adjusting. When using multifunction valve, the whole process is simplified, random step may be eliminated and thus the differential pressure gauge is protected and its life-time is prolonged. Also the area of pipeline installation my be reduced compared to the original 4-valve design.

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B.2.1.

STANDARD PRESSURE TRANSDUCER series THPB1, THIPB1 (HART)

DESCRIPTION:

•completely stainless steel construction
•suitable for low pressure and vacuum measurements
• automatic testing, laser zero setting
•resistant to high-frequency shocks and interference
• resistant to corrosion, impact and wear
•protection from reverse polarity, current protection, overvoltage protection
•connector material: 17 248/ 1.4541
• membrane material: 17 348/ 1.4571

APPLICATION:

• chemical industry
• hydrology
• power engineering
• metallurgy

TECHNICAL PARAMETERS:

•measuring ranges: -1-0-...0,1-1000bar
•output signal: 4-20mA; 0-5V; 0-10V; 1-5V; 0,5-4,5V 4-20mA HART/THIPB1
• connection: G1/2 (G1/4, M12x1,5, M20x1,5,1/2 NPT)
•supply voltage: 12-36V DC
• accuracy class: 0,1% FS; 0,25% FS (standard); 0,5%FS
•pressure type: relative, absolute

SPECIFICATION:

Pressure transducer THPB1 works on the principle of piezo-resistant technology, as a sensor unit THPB1 uses a stainless steel membrane.
Transducers cylindric case is made of stainless steel, including process connection.
THPB1 is fully tested on computer and zero value is set by means of laser with high sensitivity in wide range of temperature ranges.
Some of the assets of the transducer are its integrated construction, sturdy and heavy-duty design, high accuracy and long-term stability. THPB1 is suitable for pressure measurements in most of industrial operations, widely used for pressure measuring in chemical industry, metallurgy, power engineering, hydrology, etc.

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B.2.2.

PRESSURE TRANSDUCER WITH FRONT MEMBRANE series THPB2, THIPB2 (HART)

DESCRIPTION:

•front membrane - construction without input pressure hole
• automatic testing, laser zero setting
•high accuracy and strength
• membrane type of connection against impurities
•protection from reverse polarity, current protection, overvoltage protection

APPLICATION:

• food industry
• health care
• viniculture, wine-making

TECHNICAL PARAMETERS:

•measure ranges: -1-0-...0,1-350bar
•output signal: 4-20mA; 0-5V; 0-10V; 1-5V, 4-20mA HART/THIPB2
• connection: G1/2 (G1/4, M12x1,5, M20x1,5,1/2 NPT)
•supply voltage: 12-36V DC
• accuracy class: 0,25% FS (standard); 0,5%FS
•pressure type: relative, absolute
•environment temperature: -40+125 °C

SPECIFICATION:

Pressure transducer THPB2 works on the principle of piezo-resistant technology, as a sensor unit THPB2 uses a chip.
Transducers cylindric case is made of stainless steel, including process connection. Process connection may be threaded, with front membrane, clamp or flange. Connection with front membrane is suitable as a protection against sediment load, crystallization, high viscosity liquids and similar mediums.
THPB2 is fully tested on computer and zero value is set by means of laser with high sensitivity in wide range of temperature ranges.
Some of the assets of the transducer are its sturdy and heavy-duty design, high accuracy and long-term stability. THPB2 is widely used in food industry, health care, viniculture, etc.

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B.2.3.

PRESSURE TRANSDUCER WITH CERAMIC SENSOR series THPB3, THIPB3 (HART)

DESCRIPTION:

- silicon sensor
- automatic testing, laser zero setting
- high accuracy and long-term stability
- protection from reverse polarity, current protection, overvoltage protection
- resistance to wear and corrosion

APPLICATION:

- food industry
- power engineering
- health care
- chemical industry

TECHNICAL PARAMETERS:

- measuring ranges: 0-1...200bar
- output signal: 4-20mA; 0-5V; 0-10V; 1-5V, 4-20mA HART/THIPB3
- connection: G1/4 (M20x1,5, 1/4 NPT)
- supply voltage: 12-36V DC
- accuracy class: 0,25% FS (standard); 0,5%FS
- pressure type: relative, absolute
- environment temperature: -40+125 °C

SPECIFICATION:

Pressure transducer with ceramic sensor THPB3 is equipped with integrated high quality silicon sensor and specially strengthened circuit. Transducers cylindric case is made of stainless steel, including process connection. THPB3 is fully tested on computer and zero value is set by means of laser with high sensitivity in wide range of temperature ranges. Sensor membrane THPB3 is made of ceramic material and all parts that come in contact with medium are made of stainless steel 321. THPB3 may be used for pressure measurement even in operations of variable temperatures thanks to the high temperature stability of the silicon sensor. Some of the assets of the transducer are its sturdy and heavy-duty design, high accuracy and temperature change stability. THPB3 is suitable for pressure measuring in most industrial applications, widely used in chemical, food industry, health care and power engineering.

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B.2.4.

PRESSURE TRANSDUCER WITH HIGH FREQUENCY RESPONSE series THPB4, THIPB4 (HART)

DESCRIPTION:

- monitoring frequency based on MEMS chip
- high accuracy and stability
- immediate response

APPLICATION:

- petrochemical industry
- food industry
- hydraulics
- chemical industry

TECHNICAL PARAMETERS:

- measuring ranges: 0-0,1..1000bar
- output signal: 0-5V
  4-20mA HART/THIPB4
- connection: G1/4 (M12x1, M20x1,5)
- supply voltage: 12-32V DC
- accuracy class: 0,1%FS, 0,25% FS ; 0,5%FS (standard)
- pressure type: relative, absolute

SPECIFICATION:

Pressure transducer THPB4 works with a high frequency pressure sensor and a special closed circuit of high frequency characteristics.
THPB4 works on high frequency of monitoring (max. 1MHz).
Transducers cylindric case is made of stainless steel, including process connection.
Some of the assets of the transducer are its sturdy and heavy-duty design, high accuracy and long-term stability. THPB4 is suitable for dynamic measuring and monitoring of pressures in real time. Mainly used in chemical, petrochemical, oil industry and in military research, explosive experiments, mechanical and hydraulic testing, mechanization of measuring devices and developments of mechanical constructions.

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B.2.5.

PRESSURE TRANSDUCER FOR HIGH PRESSURES series THPB7, THIPB7 (HART)

DESCRIPTION:

•high accuracy, high tightness
•wide range of applications, long life-time
• long-term stability
•resistance to corrosion, abrasion and impact

APPLICATION:

• metallurgy
•power engineering
•hydraulics
• chemical industry
•health-care

TECHNICAL PARAMETERS:

•measuring ranges: 0-10..5000bar
•output signal: 4-20mA, 0-5V, 0-10V, 1-5V, 4-20mA HART/THIPB7
• connection: G1/4 (G 1/ 2, M20x1,5, M22x1,5)
•supply voltage: 12-36V DC
• accuracy class: 0,1%FS, 0,25% FS ; 0,5%FS (standard)
•pressure type: relative, absolute

SPECIFICATION:

Pressure transducer THPB7 uses advanced metal foil as a sensor element. THPB7 uses Wheatstone bridge to convert pressure load into mV electric signal, which is then transfered onto a standard output. Thanks to the small size of the sensor unit it may be used in various versions, either with front membrane or with opened connection. Transducers cylindric case is made of stainless steel, including process connection. THPB7 is fully tested on computer and zero value is set by means of laser that enables high sensitivity in wide range of temperatures. Some of the assets of the transducer are the integrated construction, its sturdy and heavy-duty design, high accuracy and long-term stability. THPB7 is designed for medium and high pressure measurements up to 5000bar. THPB7 is suitable for measurements in most industrial applications, used mainly in chemical, metallurgical industry, power engineering, hydraulics, health care, etc.

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B.2.6.

PRESSURE TRANSDUCER FOR HIGH TEMPERATURES series THPB8, THIPB8 (HART)

DESCRIPTION:

- suitable for high temperature measurements (max. 180°C)
- reliable performance, good long-term stability
- resistance to corrosion and vibrations
- protection from reverse polarity, current protection, overvoltage protection

APPLICATION:

- metallurgical industry
- power engineering
- food industry
- health care
- chemical industry

TECHNICAL PARAMETERS:

- measure ranges: -1-0...0,04- 1000bar
- output signal: 4-20mA, 1-5V, 4-20mA HART/THIPB8
- connection: G1/4 (G1/2, M20x1,5, 1/4 NPT)
- supply voltage: 10-36V DC
- accuracy class: 0,25% FS ; 0,5%FS (standard)
- pressure type: relative, absolute

SPECIFICATION:

Pressure transducer for high temperatures THPB8 is designed for measurements of high temperature mediums. THPB8 uses a special sensor, that may be in direct contact with the monitored medium. This technology enables compact size of THPB8.

Transducers cylindric case is made of stainless steel, including cooling and process connection. THPB8 is fully tested on computer and zero value is set by means of laser with high sensitivity in wide range of temperature ranges.

Some of the assets of the transducer are high accuracy, high temperature resistance up to 180 °C and high stability of measurement independant on temperature change. THPB8 is suitable for pressure measuring in most industrial applications with high liquid and gases temperatures, in aviation, health care, power engineering, food and chemical industry.

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B.2.7.

INDUSTRIAL PRESSURE TRANSDUCER series THPB9, THIPB9

DESCRIPTION:

- good value for money
- Al cast case
- resistance to corrosion, shocks and wear
- resistance to reverse polarity, overvoltage protection, current protection

APPLICATION:

- metallurgical industry
- power engineering
- chemical industry
- hydrology

TECHNICAL PARAMETERS:

- measure ranges: -1-0...0,1-600bar
- output signal: 4-20mA, 0-5V, 0-10V, 1-5V, 4-20mA HART/THIPB9
- connection: G1/2 (M20x1,5)
- power supply voltage: 12-16V DC
- accuracy class: 0,25%FS; 0,5%FS (standard)
- pressure types: relative, absolute
- protection: IP 65

SPECIFICATION:

Pressure transducer THPB9 uses high quality sensors of pressure insulated by stainless steel separating membrane functioning as the sensing element. Connector THPB9 and separating membrane are made of stainless steel, electronic case and display unit is made of aluminum cast. THPB9 is fully tested on computer and set to zero by laser with sensitivity in wide temperature range. Output signal may be showed on the LCD display unit. THPB9 is proved to work by long-term use in demanding processes and is suitable for pressure measurement and control in heavy-duty conditions. THPB9 is suitable for pressure measuring in most industrial applications, chemical industry, metallurgy, power engineering, hydrology, etc.

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B.2.8.

CAPACITY PRESSURE TRANSDUCER WITH CERAMIC MEMBRANE series THPB10, THIPB10 (HART)

DESCRIPTION:

- high resistance to wear and shocks
- long-term stability
- protection from reverse polarity, current protection, overvoltage protection

APPLICATION:

- metallurgical industry
- power engineering
- hydrology
- chemical industry

TECHNICAL PARAMETERS:

- measure ranges: -2,5-0,5...0,5- 5kPa -10-1...0-10kPa, 0-2...20kPa
- sensor ranges: 0-5kPa, 0-10kPa, 0-20kPa
- output signal: 4-20mA, 4-20mA HART/THIPB10
- connection: G1/2 (M20x1,5, M42x1,5)
- supply voltage: 12-30V DC
- accuracy class: 0,5%FS; 1%FS (standard)
- pressure type: relative, absolute

SPECIFICATION:

Pressure transducer THPB10 works on principle of pressure measuring using capacity technology with ceramic sensor.
THPB10s cylindric case is made of stainless steel, including process connection.
Pressure transducer is designed for measurements of low pressures in corrosive and aggressive mediums and in demanding conditions.
THPB10 uses high quality ceramic sensor and special amplifier. THPB10 has an integrated construction, long-term stability, high anti-corrosive resistance and high resistance to pressure shocks.
THBP10 is suitable for measuring and control of low pressures in chemical industry, metallurgy, power engineering, hydrology, etc.

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B.2.9.

CAPACITY PRESSURE TRANSDUCER FOR ATEX ENVIRONMENT series THPB11, THIPB11 (HART)

DESCRIPTION:

- ATEX - class EXIICT5
- resistant to pressure overloading and temperature change
- resistance to corrosion, wear, impact
- dustproof

APPLICATION:

- metallurgical industry
- power engineering
- chemical industry

TECHNICAL PARAMETERS:

- measure ranges: -1bar...0-5mbar...1000bar
- output signal: 4-20mA,0-5V, 0-10V, 1-5V 4-20mA HART/THIPB11
- connection: G1/2 (M20x1,5)
- supply voltage: 12-36V DC
- accuracy class: 0,25%FS, 0,5%FS (standard)
- pressure type: relative, absolute
- environment temperature: -20+80 °C
- protection: IP65

SPECIFICATION:

Pressure transducer THPB11 works on the principle of capacity technology with ceramic membrane. Electronics case is made of aluminium cast.

Thanks to use of dry technology (without using transfer liquid) of pressure measurement and sturdy electronic part, known as SMT technology, the transducer shows exceptional technical parameters of ceramic-capacity pressure transducers.

Thanks to this construction THPB11 are usable in ATEX environment (EXIICT5). THPB11 is suitable for pressure measurement in most industrial applications. Widely used in operations, where ATEX resistance is required, mainly in chemical industry, metallurgy and power engineering.

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B.2.10.

PRESSURE TRANSDUCER WITH INCREASED RESISTANCE TO CORROSION series THPB3-c, THIPB3-c (HART)

DESCRIPTION:

•used for aggressive mediums with corrosive effects
• PVDF - material of wetted parts of ceramic membrane (96% Al203)

APPLICATION:

• food industry
•power engineering
• petrochemical industry
•health care

TECHNICAL PARAMETERS:

•measure ranges: 0-1...200bar
•output signal: 4-20mA,0-5V, 0-10V, 1-5V 4-20mA HART/THIPB3-c
• connection: G1/4 (G1/2, M20x1,5, 1/2NPT)
•supply voltage: 12-36V DC
• accuracy class: 0,25%FS, 0,5%FS (standard)

SPECIFICATION:

Pressure transducer THPB3-c with increased resistance to corrosion comes from the same technical basis as transducer THPB3. Pick-up membrane THPB3-c is ceramic, the inbuilt wetted parts are separated by a separating membrane made of polyvinylidenfluorid (PVDF), thanks to which this model has increased resistance to corrosion 96% Al203. Transducers cylindric case is made of stainless steel. THPB3-c is fully tested on computer and zero value is set by means of laser with sensitivity in wide range of temperatures. THPB3-c is designed for pressure measurement of corrosive mediums in most industrial applications, widely used for pressure measurement in petrochemical industry, power engineering, food industry, health care, hydrology, etc.

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B.2.11.

PRESSURE TRANSDUCER FOR DIFFERENTIAL PRESSURE

series THPB5, THIPB5

DESCRIPTION:

- good value for money, long-term stability
- resistance to overloading up to 200%, to overpressure up to 100%
- protection from reverse polarity, current protection, overvoltage protection
- easy installation
- integrated construction in stainless steel design

APPLICATION:

- food industry
- power engineering
- health care
- petrochemical industry

TECHNICAL PARAMETERS:

- measuring ranges: 0-0,1...35bar
- output signal: 4-20mA, 0-5V, 0-10V; 1-5V; 0,5-4,5V 4-20mA HART/THIPB5
- connection: G1/4 inner thread (M12x1,5)
- accuracy class: 0,1% FS ; 0,25%FS (standard)
- pressure type: differential

SPECIFICATION:

Pressure transducer of differential pressure works on the principle of piezo-resistant technology, as measure element it uses a differential sensor with insulated stainless steel membrane.
Transducers cylindric case is made of stainless steel, including process connection.
Some of the assets of the transducer are its integrated construction, heavy duty and sturdy design, high accuracy and long-term stability. THPB5 is suitable for pressure measuring and regulation of corrosive mediums in most industrial applications, in petrochemical industry, power engineering, health care, hydraulics, airconditioning, etc.

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B.2.12.

DISPLAY UNIT series ZED 601

for connector DIN 43650

DESCRIPTION:

- 4 - digit 3 ½ LCD temperature display
- simple handling and operation

APPLICATION:

- power engineering
- petrochemical industry
- heating industry

TECHNICAL PARAMETERS:

- dimensions: 42x42x42 mm
- output signal: 4 - 20mA
- display accuracy: 0,1% FS
- temperature shift: 0,1% FS
- el. connection: DIN 43650
- accuracy class: 0,2% FS (standard)
- display accuracy: 0,1% FS
- protection: IP65

SPECIFICATION:

Display unit ZED601 is a microprocessor display unit built into current loop of transducer 4-20mA, does not require any additional power supply. May be connected to any kind of transducer using connector DIN 43650.
ZED601 is equipped with heavy duty plastic cover and is mounted directly between power source and transducer. Contains of 4-digit 3 ½ display, height 7,6mm, turning in 90 degrees angle.

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B.2.13.

DIGITAL PRESSURE GAUGE 3321

DESCRIPTION:

- stainless steel case
- graphic display from all range
- extended by memory functions

APPLICATION:

- hydraulics
- power engineering
- petrochemical industry
- heating industry

TECHNICAL PARAMETERS:

- measuring ranges: -1-0...0,1-700bar
- display range: -1999-9999
- overloading: 2x, max. 1000bar
- connection: G1/4
- accuracy class: 0,5% FS
- pressure type: relative, absolute

SPECIFICATION:

Digital pressure gauge type 3321 is an ideal solution for local and portable digital measurement with extended functions.

Thanks to the inbuilt batteries with long life time the device is not dependent on local power supply.

Pressure gauge type 3321 is equipped with graphical display of measured value from all range, Min/Max record and other functions.

Digital pressure gauge 3321 is widely used for pressure measurement in petrochemical industry, power engineering, heating and hydraulics, etc.

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B.2.14.

DIGITAL PRESSURE GAUGE series THIY6

DESCRIPTION:

- LCD display with high resolution
- min/max pressure value during measure process
- choice of units: Mpa, psi, bar, kPa, kg/cm2
- 1-15min. automatic shut-off function

APPLICATION:

- power engineering
- petrochemical industry
- heating industry

TECHNICAL PARAMETERS:

- measuring ranges: -1-0...0,1-1000bar
- display range: -1999-9999
- overloading: 150% FS
- connection: G1/2 (G1/4, M20x1,5, ½NPT)
- accuracy class: 0,1% FS; 0,25%FS (standard);0,5%FS
- pressure: relative, absolute

SPECIFICATION:

Digital pressure gauge THIY6 is designed for high accuracy pressure measurements of liquids and gases. Main assets of this device are all-stainless steel design, 4-digit LCD display, low power consumption, long-term resistance to overloading. Flexible use of digital pressure gauge, its setting and operation is very easy, safe and reliable.

THIY6 pressure gauge is widely used for pressure measurements in petrochemical industry, power engineering, heating industry, etc.

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B.2.15.

HAND -HELD DIGITAL PRESSURE GAUGES

mobile use
fce alarm, logger, data etc.

DESCRIPTION:

- light, easy, portable
- resistant case

APPLICATION:

- power engineering
- mechanical engineering
- gas distribution, air conditioning
- food industry

DIGITAL PRESSURE GAUGES WITH INTEGRATED SENSOR

- GDH 200xx - basic design;
for overpressure, vacuum and differential pressure
- GMH31xx - design with advance functions;
for overpressure, vacuum and differential pressure,
optional Ex design

DIGITAL PRESSURE GAUGES FOR EXCHANGABLE SENSORS

- GMHxx - for overpressure, vacuum and differential pressure,
EX design optional, all pressure sensors
series GMSD/MSD can be used with option of Ex design

SENSORS GMSD FOR LOW PRESSURES

- for overpressure, vacuum and differential pressure,
not suitable for aggressive mediums and water

STAINLESS STEEL SENSOR GMSD UP TO 400BAR

- for overpressure, vacuum and differential pressure,
suitable for aggressive mediums and water

SPECIFICATION:

Hand-held digital pressure gauges are designed for mobile measurement of relative, absolute and differential pressures in range of -1+400 bar.Pressure gauges are divided into two main groups. Pressure gauges with inbuilt sensor are designed for direct pressure measurement using connecting tubes, max. pressure up to 2,5 bar. Pressure gauges with external sensor can measure ranges up to 400 bar.


Digital pressure gauges
with integrated sensors


Digital pressure gauges
for exchangable sensors


Sensors for low pressures


Stainless steel sensor

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C. TEMPERATURE REGULATION

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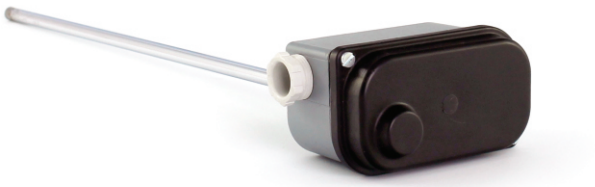
C.1.1.

STEM THERMOSTAT series TH 140

resistant thermostat IP 44 load up to 15A



DESCRIPTION:

- temperature sensitive element is the stem of thermostat, consisting of: for TH 140 and TH 143 dilating brass for TH 141 and TH 144 anticorrosive tube
- temperature expansion of the tube is transferred by invar bar through lever gearing onto switching mechanism, which is placed in a waterproof head
- regulatory button for required temperature setting is also placed in a waterproof head and may be arrested, so that the setting can not be changed by means of vibration, etc.
- for thermostat mounting into the regulated environment use union nut on thermostats stem
- thermostats TH 140 and TH 141 are designed for direct loading - switching contacts are bypassed by arc-suppresion condenser
- thermostaty TH 143 and TH 144 are designed for alternate loading

TECHNICAL PARAMETERS:

- regulatory range: 20-140°C (TH140,143) 100-200°C (TH141, 144)
- switching temperature difference: 1-4K (TH140, 143) 1-6K (TH141,144)
- stem length: 303 (TH141, 144); 350mm (TH140,143)
- setting accuracy: 10%
- contact load: 60V, 1A ss; 120V, 0,5A ss (TH140, 141) 250V st, 15A st (TH143,144)
- protection: IP 44

SPECIFICATION:

These thermostats are temperature dependent single-pole switches, which are designed for temperature regulation in liquid environment.
Suitable for hot-water heating regulation of thermoplastic and rubber moulding presses, further for regulation and temperature detection of water and oil baths.
The core of these thermostats is a reliable mechanical system, that has no power consumption itself. For assembly in liquid environment it is necessary to use a protection well. The stem must not be exposed to mechanical stress and must be placed in a way, so that it can freely dilate. Thermostats working position is arbitrary.

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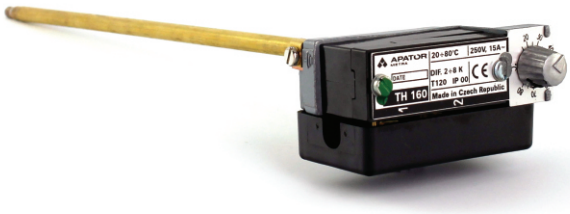
C.1.2.

STEM THERMOSTAT series TH 160



protection IP 00
load up to 15A

DESCRIPTION:

- thermostats consist of two main parts: temperature sensor and switching head
- dilative change of sensor is transfered by means of lever onto the switch
- thermostats are made in switch off design (2 terminal) or switch over design (3 terminal)
- terminals are screwed with option of conductor connection with max. section 4 mm
- protection terminal must be connected to protection conductor
- standard design is fitted with terminal cover for protection against unintended contact

TECHNICAL PARAMETERS:

- regulatory range: 20-75°C (TH160.1)
  20-80°C (TH160, 160.2), 20-100°C (TH167)
  20-160°C (TH162), 20-200°C (TH165)
  30-160°C (TH164), 50-90°C (TH163)
  60-120°C (TH169), 100-200°C (TH166)
- difference of switching temperatures: 8, 10, 16K
- stem length: 100, 125, 160, 200, 250, 315mm
- setting accuracy: 10%
- contact load: 250V, 15A st
  TH 162 a TH 165 - 250V, 10A st
- number of terminals: 2, 3
- protection: IP 00

SPECIFICATION:

Stem thermostats TH 160 are temperature-dependent single-pole switches, based on principle of different temperature dilatation of two different metals. They are designed for electric circuit switching, however not as the main switch. The core of these thermostats is a reliable mechanical system, that does not have any power consumption itself. Products are known for significantly low operational and maintanance costs compared to electronic systems. Temperature setting of thermostats TH 160, TH 160.1, TH 160.2, TH 163, TH 164, TH 166, TH 167 a TH 169 is performed by a regulatory knob. Temperature may be reset within the nominal range by the operator. Switching temperature of thermostats TH 162 and TH 165 is set by the manufacturer based on order request. The preset temperature is fixed and may not be changed by the operator.

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C.1.3.

STEM THERMOSTAT series TH 220, TH 221

protection IP 44
load up to 15A

DESCRIPTION:

- thermostats consist of two main parts: temperature sensor and switching head
- temperature sensitive element is the stem, consisting of brass tube; its dilatation is transferred onto the switching mechanism by invar bar
- the whole thermostat system is closed in a waterproof cover with cable gland P13,5

TECHNICAL PARAMETERS:

- regulatory range: -20+60°C
- switching temperature difference: 1-3K
- setting accuracy: 5%
- contact load: 1A, 60V ss; 0,5A, 120V ss (TH 220) 250V, 15A st (TH 221)
- permitted head temperature: -30+60°C
- permitted stem temperature: 140°C
- protection: IP 44

SPECIFICATION:

Stem thermostats TH 220, TH 221 are temperature-dependent single-pole switches, designed for temperature regulation in gas environment, ex. in air heating pipes or in other closed areas with high humidity and dustiness. They can be used for cooling and air-conditioning purposes, in combination with electric valves it can be used also for regulation of vapour or water heating, or as temperature sensor in heated areas. The core of these thermostats is a reliable mechanical system, that has no power consumption itself. They are known for significantly low operational and maintenance costs compared to electric systems. Switching mechanism consists of quick-break single-pole switch. The scale of switching temperatures is marked directly on the regulatory knob. Thermostat mounting is performed by two screws on the feet on thermostats head. It is essential to avoid mechanical load of the stem during the installation.

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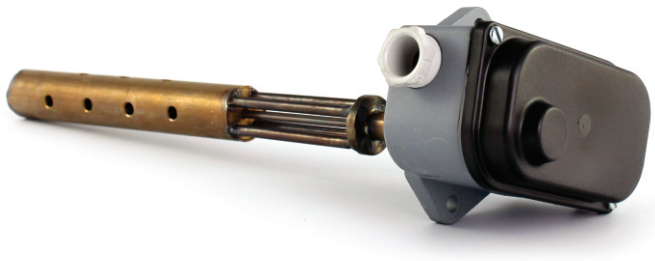
C.1.4.

STEM TERMOSTAT series TH 260, TH 261

protection IP 00
load up to 15A



DESCRIPTION:

- thermostats consist of two main parts: temperature sensor and switching head
- temperature-dependent element is the stem, consisting of dilating tube made of anti-corrosive heat-resistant steel
- regulatory knob for temperature setting is closed in a waterproof head and may be arrested

TECHNICAL PARAMETERS:

- regulatory range: 200-400°C
- switching temperature difference: 5-20K
- setting accuracy: 10%
- contact load: 0,5A, 120V ss (TH 260) 15A, 250V st (TH 261)
- permitted head temperature: 120°C
- permitted stem temperature: 500°C
- protection: IP 44

SPECIFICATION:

Stem thermostats TH 260, TH 261 are temperature-dependant single-pole switches, designed for protection against excessive exhaust gas temperature of diesel aggregate used for diesel-electric train heating. They may also be used for other thermoregulation.

Core of these thermostats is a reliable mechanical system, that has no power consumption itself. They are known for significantly low operational and maintenance costs compared to electric systems. Temperature dilation of the tube is transfered by invar bar and lever gearing onto the switching mechanism, which is enclosed in a waterproof head. There are two feet with screw holes designated for thermostat mounting.

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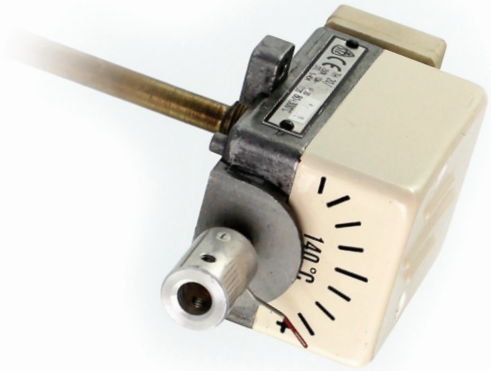
C.1.5.

STEM THERMOSTAT series TH 20

protection IP 00
load up to 10A



DESCRIPTION:

- thermostats consist of two main parts: temperature sensor and a switching head
- switching head must be placed in environment of maximum temperature 120°C and relative air humidity max. 80%.

TECHNICAL PARAMETERS:

- regulatory range: 80-320°C
- switching temperature difference: min. 1K, max. 12K
- setting accuracy: ±16°C for 200°C
- contact load: 10A, 250V st
- number of terminals: 2, 3
- protection: IP 00

SPECIFICATION:

Thermostat TH20 is basically a single-pole automatic switch, based on principle of different temperature expansion of two metals. It is designed for thermoregulation in gas environment, heated by alternate current (electric ovens etc.), within its range. The core of these thermostats is a reliable mechanical system, that has no power consumption itself. They are known for significantly lower operational and maintenance costs compared to electric systems.

The thermostat consists of a stem and a switch head. The stem comprises of expansive tube and invar bar. For fitting purposes the thermostat is equipped with two holy risers. It is necessary to install the thermostat in a way, so that the lower part of the switching head is approximately 2 cm away from the body wall and this area is filled with insulating material, so that the head temperature does not exceed +120°C .

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C.1.6.

THERMOREGULATOR series KR 10, KR 20

capillary length 500, 1000mm load up to 16A

DESCRIPTION:

- design: switch off or throw-over terminal
- connection terminal: flat pins 6,3x0,8 according to ČSN EN 612 10
- number of terminals: 2/3

TECHNICAL PARAMETERS:

- regulatory range: 7-77°C (KR 10, KR 11) 35-95°C (KR 20, kr 21)
- switch off design: KR 10, KR 20
- throw-over design: KR 11, KR 21
- switching temperature difference: 2-6K
- nominal current: 16/10A
- nominal voltage: 240/400V
- max. sensor temperature: 90°C (KR 10, KR 11) 110°C (KR 20, KR 21)
- protection: IP 00

SPECIFICATION:

Thermoregulators (thermostats) are single-pole temperature regulators, whose function is based on principle of fluid expansibility. They consist of two main parts: switch mechanism and capillary temperature sensor. Thermoregulators enable phase-conductor micro-disconnection.
They may signalize electric load micro-disconnection. Under normal working conditions the capillary regulators keep appliances temperature or its parts temperature within desired range, preset by the user, by automatic switching of the electric circuit. Capillary regulators are not designed for disconnection of an appliance from electric circuit. The obligatory parameters of the capillary regulator are determined in technical conditions TP MŠ – 030/01.

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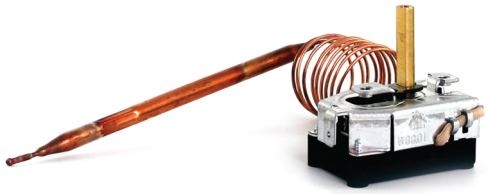
C.1.7.

THERMOREGULATOR series RT8801, RT8803 RT8804

capillary length 1000mm load up to 16A



DESCRIPTION:

- design: switch off or throw-over contact
- connecting terminals: flat pins 6,3x0,8 according to ČSN EN 612 10
- number of terminals: 2/3

TECHNICAL PARAMETERS:

- regulatory range: 0-40°C (RT 8801)
  7-77°C (RT 8803)
  50-190, 50-250, 50-320°C (RT 8804)
- switch off design: RTxx.01, RTxx.02
- throw-over design: RTxx.021
- switching temperature difference: 1-3K, 2-5K, 4-10K
- nominal current: 16(2,6)A
- nominal voltage: 240V
- max. sensor temperature: 50°C (RT 8801)
  90°C (RT 8803)
  330°C (RT 8804)
- protection: IP 00, RT built-in

SPECIFICATION:

Thermoregulators (further only RT) are designed for thermoregulation in devices heated by electric alternate current, such as water heaters and electric ovens. RT is not to be used as a switch.

RT8801, RT8803, RT8804 are single-pole capillary thermoregulators based on principle of fluid expansibility.

RT consists of two main parts - switching unit and capillary temperature sensor. There is a protection grouding pin on the cover.

The regulated temperature may be set by the user within the regulatory range, RT 8803 may also be used as an antifreeze protection.

RT installation is performed by two M4 screws.

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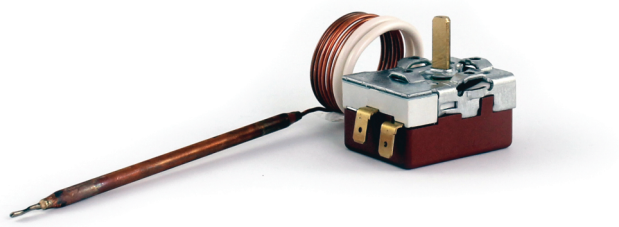
C.1.8.

SINGLE-PHASE CAPILLARY THERMOSTAT series MMG

capillary length 1000mm load up to 20A



DESCRIPTION:

- design: switch-off or throw-over
- connection terminal: flat pins 6,3x0,8 according to ČSN EN 612 10
- sensor material: copper
- capillary: copper with PVC protection

TECHNICAL PARAMETERS:

- regulatory range: 7-77, 20-127, 50-190°C
- sensor dimensions: 5x132mm, 6,5x113mm, 4x168mm
- capillary dimensions: 1,4x920mm; 1,4x550mm; 1x1180mm
- switching temperature difference: 4K, 6K
- switching range: 16A, 240V
- nominal voltage: 250V
- max. environment temperature: 80°C
- protection: IP 00

SPECIFICATION:

Single-phase capillary thermostats MMG are designed mainly for use in hot water boilers, washing machines, electric cookers, ovens and other appliances equipped with automatic thermoregulation.
May be used for all mediums, where it is possible to ensure correct heat transfer between the medium and the sensor.

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C.1.9.

CAPILLARY THERMOSTAT series TKR 100, 200, 300

setting by shaft, screw, fixed load 16A

DESCRIPTION:

- function of change-over contacts: switch-off/ switch-on
- case material: galvanized sheet, plastic
- sensor material: copper, stainless steel
- capillary material: copper with PVC protection, stainless steel

TECHNICAL PARAMETERS:

- regulatory range: -30+35, 0-40, 7-77, 0-90, 20-127, 0-210, 0-300°C
- setting accuracy: ±5, ±3-8, ±6-10, ±8-15°C
- difference: 2±1, 3±1, 6±2, 8±2°C
- max.sensor temperature: 65, 120, 135, 250, 350°C
- capillary length: 500, 1000, 1500, 2000, 3000mm
- angular setting: 270°C
- contact load: 16(4)A, 250V; 6(1)A, 400V

SPECIFICATION:

Capillary thermostats are designed for thermoregulation in appliances heated up by alternate electric current (boilers, etc.)

Thermostats do not serve as a breaker.

Thermostats are supplied with change-over contacts, you can choose from desired function: switch on or switch off. Required temperature can be set by shaft (regulatory knob shaft shoulder optional) model TKR 100, on model TKR 200 using screwdriver by turning screw with temperature scale. On model TKR 300 the required temperature can not be set, the fixed value is set by manufacturer.

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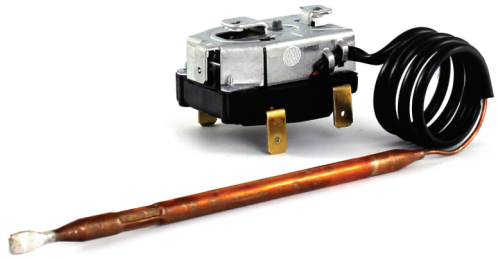
C.1.10.

THERMAL FUSE series KNTP 881*.** KNTP 8823.02



single-pole and double-pole

DESCRIPTION:

• design:
single-pole (KNTP 8812.02, 8813.02, 8814.02),
double-pole (KNTP 8823.02)
• connection terminals: flat pins 6,3x0,8
according to ČSN EN 612 10
• sensor material: copper, stainless steel

TECHNICAL PARAMETERS:

•switching temperature ranges:
35-99°C (KNTP 8812.02)
35-80°C (KNTP 8813.02)
50-320°C (KNTP 8814.02)
• switching temperature difference: -6, -10°C
• max. sensor temperature: 90°C (KNTP 8813.02)
110°C (KNTP 8812.02)
330°C (KNTP 8814.02)
• nominal current: 16(3,5)A
• nominal voltage: 250V
• protection: IP 00, KNTP is built-in

SPECIFICATION:

Capillary non-reversible thermal fuse (further only KNTP) is a protection device with temperature sensor, which serves as a temperature limiter in appliances heated up by AC under abnormal working conditions. KNTP does not serve as a switch. KNTP is built-in single or double-pole switching capillary non-reversible fuse, that works on principle of liquid dilatation. KNTP consists of two main parts - switching mechanism and capillary temperature sensor. When the sensors environment temperature reaches the switch-off value preset by the manufacturer, electric circuit is disconnected. Another start of the system must be done mechanically by pressing the button on the switches body, after the sensor has cooled down. It is not allowed to turn the KNTP on under el. load. Mounting of KNTP is performed by two M4 screws. There is a protection grounding pin on the cover. Only skilled personnel may recconect the system.

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C.1.11.a.

CAPILLARY THERMAL FUSE series WPR 100

automatic reset

DESCRIPTION:

- design: automatic reset WPR 100
- capillary material: copper with PVC protection
- sensor material: copper

TECHNICAL PARAMETERS:

- temperature range: 100, 90-110°C (WPR 100)
- setting accuracy: 0-6°C; ±3°C
- switching difference: 20±5°C
- max. sensor temperature: 135°C
- capillary length: 1500mm
- contact load: c-2: 16A, 250V AC; 6A, 400V AC
  c-1: 4A 250V AC; 1A 400V AC

SPECIFICATION:

Capillary thermal fuses WPR 100 are provided to protect the temperature in case of failure of the operating thermostat in devices heated by electricity. alternating current (boilers, boilers, etc.).Thermal fuses do not act as a switch. Thermal fuses are included in the design with switching contacts, where the function: switching/opening can be selected.

Thermal fuses are included in the version with a fixed or adjustable setting. WPR100 thermal fuses are automatic, i.e. when the temperature drops by a difference, it switches on.

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C.1.11.b.

CAPILLARY THERMAL FUSE series WPR 200, 200 B

manual reset

DESCRIPTION:

- design: manual reset
- capillary material: copper with PVC protection
- sensor material: copper

TECHNICAL PARAMETERS:

- temperature range: 90-110°C
- setting accuracy: 0-6°C; ±3°C
- switching difference: 20±5°C
- max. sensor temperature: 135°C
- capillary length: 1500mm
- contact load: c-2: 16A 250V AC; 6A 400V AC
  c-1: 4A 250V AC; 1A 400V AC

SPECIFICATION:

Capillary thermal fuses WPR 200, 200 B are used to protect the electrical circuit, in case of overload they automatically break the circuit. It thus protects the appliance from damage, especially in devices used for heating with electric alternating current (boilers, boilers and similar devices).

The fuses do not serve as a Power Button switch! For versions with switching contacts, the desired function can be selected: switching or opening.

In addition, the fuses are supplied in a version with a fixed or adjustable temperature.WPR 200/200 B, are equipped with a manual reset, where reconnection is possible only mechanically by pressing the reset button.

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C.1.12.a.

THREE-PHASE CAPILLARY THERMOSTAT series MMG

adjustable shaft
load 16A/400V

DESCRIPTION:

- design: 3 phase switch-off contact
- capillary material: stainless steel with PVC protection
- sensor material: stainless steel

TECHNICAL PARAMETERS:

- temperature range: 50-220, 50-300°C
- contact load: 16A/400V
- switching difference: 10°C
- max. sensor temperature: 320°C
- capillary length: 920mm
- contact load: 16(4)A 250V; 6(1)A 400V

SPECIFICATION:

Three-phase capillary thermostat automatically breaks a circuit when reaching preset temperature. When temperature drops, the thermostat connects the circuit again and systematically maintains the medium temperature by positions on/off. These thermostats are used mainly for washing machines, kitchen and industrial cookers, ovens, etc. Suitable for temperature control of gas, liquid and solid materials.

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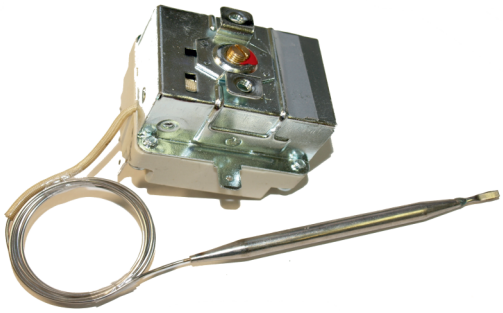
C.1.12.b.

THREE-PHASE THERMAL FUSE series MMG

manual reset load 16A/400V



DESCRIPTION:

- design: manual reset
- capillary material: stainless steel with PVC protection
- sensor material: stainless steel
- connection: A 6,3 clamp stirrup

TECHNICAL PARAMETERS:

- switch-off temperature: 250, 315°C
- contact load: 16A, 400V
- sensor diameter: 6mm
- capillary length: 920mm
- protection: IP 00

SPECIFICATION:

Three-phase thermal fuses - when the sensors environment temperature reaches the switch-off temperature preset by the manufacturer, electric circuit is disconnected, this way the fuse protects a device from overheating. Another start of the system must be done mechanically.

Thermal fuses are suitable mainly for hot water boilers and other heating devices as a protection device. Applicable for temperature limitation of liquid, gas and solid materials.

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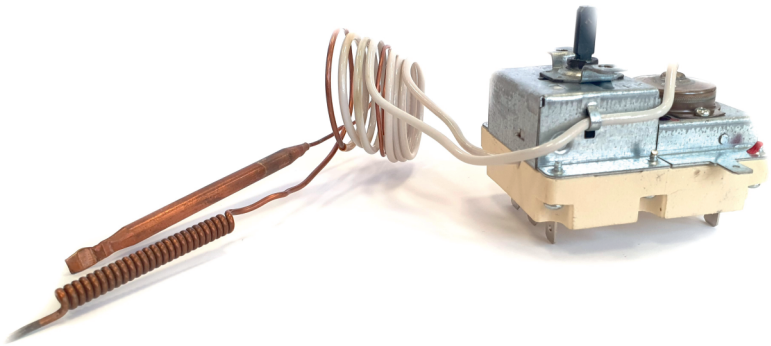
C.1.13.

THERMOSTAT COMBINED WITH A FUSE KDT

manual reset, three-phase load 16 (20)A/400V



DESCRIPTION:

- three-phase, manual reset
- material of capillary/sensor: Cu/stainless steel
- material of membrane: stainless steel
- connection: M4x8, FAST ON connector

TECHNICAL PARAMETERS:

- range: 7-77, 30-85°C (TR)
  95, 100, 110, °C (STB)
- switching differencion: -4, -6,-10, -12°K (TR),
  -6, -8,-10°K (STB)
- switching load: 16/20A, 400V
- protection: IP 00

SPECIFICATIONS:

The combined thermostat with a fuse - KDT series automatically breaks the electric circuit after reaching the preset temperature, re-closes in the event of a drop in temperature and continuously maintains the temperature of the medium by switching on / off positions. If the temperature around the temperature sensor reaches the value of the expansion temperature fixed by the manufacturer, the electrical circuit will be disconnected, whereby the fuse protects the device from overheating.These thermostats can be used especially for boilers, electric boilers, storage tanks, reservoirs of solar systems, etc. It is suitable for controlling the temperature of liquid, gaseous or solid substances.

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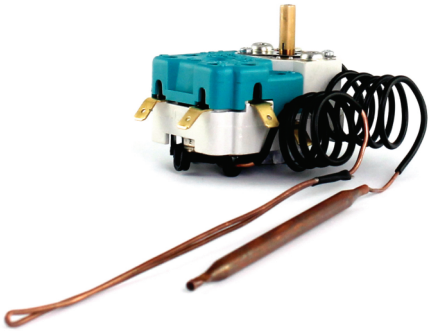
C.1.14.

THERMOSTAT COMBINED WITH A FUSE BBSC

manual reset, single-phase load 20A



DESCRIPTION:

- design : single-phase, manual reset
- sensor and capillary material: copper
- connection: connector covered in brass or nickel, terminal FAST ON 6,3

TECHNICAL PARAMETERS:

- regulatory range: 7-77°C
- thermal fuse: 102°C
- switching temperature: approx. 5% from temperature range
- current load: 20A, 240V; 15A, 400V
- sensor diameter: 6mm
- capillary length: 520mm
- protection: IP 00

SPECIFICATION:

When using combined thermostat with fuse series BBSC, the thermostat automatically disconnects the electric circuit when reaching a preset temperature. In case of temperature drop it connects the circuit again and it systematically keeps the medium temperature by constant switching of positions on/off. If the temperature of temperature sensors environment reaches fixed switching value previously set by manufacturer, the electric circuit is disconnected, thereby the fuse protects the appliance from overheating. These thermostats are used mainly for washing machines, industrial kitchen cookers, ovens, electric radiators, sanitations, health care, etc. Suitable for temperature control of liquid, gas and solid materials.

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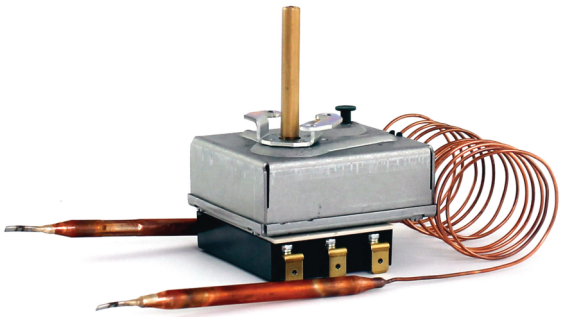
C.1.15.

THERMOSTAT COMBINED WITH A FUSE RAC

manual reset, three-phase load 20 (30)A/400V



DESCRIPTION:

- design: three-phase, manual reset
- material of capillary/sensor: copper/stainless steel
- membrane material: stainless steel
- terminal: M4x8, FAST ON connector

TECHNICAL PARAMETERS:

- setting range: 7-77, 30-85, 0-100, 0-300°C (TR)
  95, 100, 110, 330°C (STB)
- switching difference: -10, -12, -30°C (TR),
  -10, -30°C (STB)
- switching load: 20/30A, 400V
- protection: IP 00

SPECIFICATION:

Combined thermostat with a fuse series RAC automatically disconnects the electric circuit when reaching a preset temperature. In case of temperature drop it connects the circuit again and it systematically keeps the medium temperature by constant switching of positions on/off. If the temperature of temperature sensors environment reaches fixed switching value previously set by manufacturer, the electric circuit is disconnected, thereby the fuse protects the appliance from overheating.

These thermostats are used mainly for washing machines, industrial kitchen cookers, ovens, etc. Suitable for temperature control of liquid, gas and solid materials.

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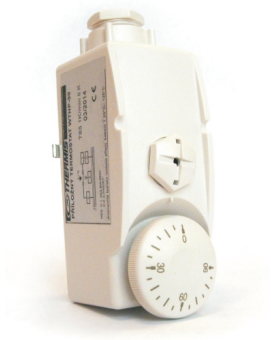
C.1.16.

CASED CONTACT THERMOSTAT series THP 90, WTHP 90

opened/covered regulation



DESCRIPTION:

- design: contact, opened or covered regulation
- mounting: onto pipe
- output: contact switch on or switch off
- placement: common environment

TECHNICAL PARAMETERS:

- temperature range: 20-90°C (THP 90), 0-90°C (WTHP 90)
- temperature difference: 8±3K
- contact load: 1-2=16(2,5)A/250V
  1-3=2,5A/250V (THP90)
  -1-2=16(4)A/250V, 1-3=6(1)A/400V (WTHP90)
- protection: IP 20 (THP 90), IP 40 (WTHP 90)

SPECIFICATION:

Contact cased thermostats are mainly used in applications, where the emphasis is put on visual aspect and easy control, or where it is convenient to prevent direct contact with the contacts. Main advantages of these thermostats are easy control, mounting and reliability.
Widely used for switching of boiler circulation pump. Thermostats THP, WTHP feature change-over contact for connection and disconnection of electric circuit. While using thermostat THP it is possible to set the switching difference. Type THP is also supplied in design with covered regulation dedicated for protection against unintended contact or unprofessional manipulation. Thermostat series WTHP is due to its wider range suitable for applications, where it is necessary to regulate temperatures close to zero. For these purposes serves also the higher protection IP 40.

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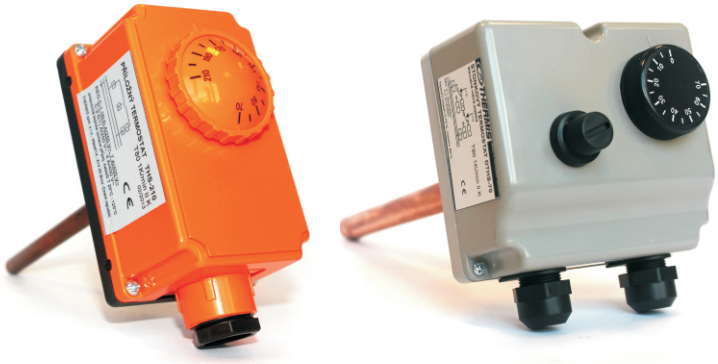
C.1.17.

CASED STEM THERMOSTAT

series THS, DTHS



DESCRIPTION:

- design: stem, freely accessible regulation
- mounting: well D8mm threaded G1/2
- contacts: switch-on or switch-off
- PPTC reset (fuse): automatic reset $\triangle$t 20°C, manual reset

TECHNICAL PARAMETERS:

- temperature range: 0-90°C (THS 90)
  40/70-210°C (THS 210)
  0-70°C (DTHS 70)
  30-90°C (DTHS 90)
- fuse regulatory range DTHS:
  90, 70-90, 110, 90-110°C
- temperature difference THS: 5 K
- stem length: 100-300mm (THS)
  105-200mm (DTHS)
- contact load:
  C-1=16(4)A/250V~, 7A/400V~ (THS 90, 210),
  16A/250V (DTHS 70/90)
- protection: IP 40 (THS), IP 44 (DTHS)

SPECIFICATION:

Stem thermostats THS 90/210 are designed for operation of electric appliances depending upon temperature of measured medium. Mounting is performed into heating system using copper protection well with thread G1/2. Suitable material is used for joint sealing, preferably teflon tape. Maximum permissible pressure on the well 10bar (1 MPa). Made in wide range of temperature ranges. Standard stem length 100mm (in case of need 200, 300mm). Stem thermostats DTHS 70/90 with PPTC fuse are designated for thermoregulation in liquid or other environment. In case of thermostats failure, the thermostats fuse automatically switches-off the circuit.

The fuse is part of this device. Fuse serves purely as a protection element, which may be manually turned-on after case removal or the automatic reset with $\triangle$t 20°C may be used.

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C.1.18.

ROOM CASED CAPPILARY THERMOSTAT

series THPR, THK

DESCRIPTION:

- design: capillary, room freely accessible regulation
- mounting: on wall, bracket

TECHNICAL PARAMETERS:

- temperature range: 0-90°C (THK), -10+40°C (THPR)
- temperature difference: 5K
- capillary length THK: 1000mm
- contact load: 16(4)A/250V, 6(1)A/400V (THK) 16(4)A/250V, 6(1)A/250V (THPR)
- protection: IP 40 (THK), IP 54 (THPR)

SPECIFICATION:

Room thermostats THPR are designed for control of electric devices in dependance on room temperature. Mounting on wall. Due to its higher protection IP 54 these thermostats are suitable also for outdoor use. Main advantages are easy operation, mounting and reliability.

Encased capillary thermostats THK are designated for use in operations, where emphasis is put on visual aspect or where it is important to prevent direct contact with the contacts. Operational thermostats enable temperature setting using a knob. Sensor of diameter 6,5mm and length 72mm should be placed in a protection well. Sensor is connected with the thermostat by 1m long capillary. Thermostat is attached using wall clips.

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THERMIS

C.1.19.

STEM THERMOSTAT THS2

protection IP 65
stainless steel well

DESCRIPTION:

- stem of the thermostat is a temperature sensitive element, which is formed by brass anticorrosive dilated tube
- thermal dilatation tube is transmited by invar rod through leverage on the switching mechanism, which is located in a waterproof rod

TECHNICAL PARAMETERS:

- regulatory range: 0-40°C, 0-90°C, 0-120°C
- contact load: 16(4)A/240VAC
- stem length: 100 mm, individual
- stainless steel well
- thread: G1/2
- number of terminals: 3
- protection: IP 65
- control knob
- cased regulation

SPECIFICATION:

Stem thermostates are temperature-dependent single-pole switches based on the principle of different temperature expensibility of metals. They are designed for electric circuit switching, however not as the main switch. The core of these thermostats is a reliable mechanical system, that does no power consumption itself. Compared thermostats THS is used here higher protection IP 65. Thermostat is supplied with stainless steel well that is suitable to regulate all the aggressive media. They are known for significantly low operational and maitenance costs compared to electric systems.

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THERMIS

C.1.19.a

STEM THERMOSTAT THS3, THS4

with cased control THS3
with open control THS4

DESCRIPTION:

- stem of the thermostat is a temperature sensitive element, which is formed by brass anticorrosive dilated tube
- thermal dilatation tube is transmited by invar rod through leverage on the switching mechanism, which is located in a waterproof rod

TECHNICAL PARAMETERS:

- regulatory range: 0-90°C, 0-120°C, 100-120°C
- contact load: 16(4)A/240VAC
- stem length: 100, 160, 200mm, individual
- stem average: 8mm
- connecting thread: union nut G1/2
- number of terminals: 3
- protection: IP 65 (THS3), IP 54 (THS4)
- cased regulation THS3
- control knob external THS4
- ambient temperature: permanent - Tmax 85°C
- ambient temperature: permanent local not more than 5% area - 150°C
- ambient temperature: short-term local not more than 10s on 5% area - 200°C

SPECIFICATION:

Stem thermostates are temperature-dependent single-pole switches based on the principle of different temperature expensibility of metals. They are designed for electric circuit switching, however not as the main switch. The core of these thermostats is a reliable mechanical system, that does no power consumption itself. Compared thermostats THS is used here higher protection IP 65 / IP 54. Thermostats THS3, THS4 are supplied with a process connection using a union nut G1/2. They are known for significantly low operational and maitenance costs compared to electric systems.

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THERMIS

C.1.20.

ROOM CASED CAPILLARY THERMOSTAT

series THPR2, THK2

DESCRIPTION:

- design: capillary, room freely accessible regulation
- mounting: on wall, bracket

TECHNICAL PARAMETERS:

- temperature range: 0-40°C, 0-90°C, 0-120°C (THK2) 0-40°C (THPR2)
- temperature difference: 5K
- contact load: 16(4)A/240V, 6(1)A/240V(THK2, THPR2)
- protection: IP 65 (THK2, THPR2)
- capillary length: 1m (THK2)
- control knob
- cased regulation

SPECIFICATION:

Room thermostats THPR2 are designed for control of electric devices in dependance on room temperature. Mounting on wall. Due to its higher protection IP 54 these thermostats are suitable also for outdoor use. Main advantages are easy operation, mounting and reliability.

Encased capillary thermostats THK2 are designated for use in operations, where emphasis is put on visual aspect or where it is important to prevent direct contact with the contacts. Operational thermostats enable temperature setting using a knob. Sensor of diameter 6,5mm and length 72mm should be placed in a protection well. Sensor is connected with the thermostat by 1m long capillary. Thermostat is attached using wall clips.

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THERMIS

C.1.21.

ELECTRONIC THERMOSTAT THP-E01

Function: switch/alarm

DESCRIPTION:

- programmable menu
- switch between heating and cooling
- temperature control by the pre-set value and difference
- mounting: onto wall
- placement: common environment

TECHNICAL PARAMETERS:

- default range: 0-99°C
- programmable range: -50-99°C
- power supply: 230V
- contact load: 10A/250V
- power consumption max 5W
- IP protection: IP 44
- adjustable switch difference: 1-16 K
- function: cooling/heating/alarm
- compressor delay: 0-9 minutes
- temperature correction: -5+5°C
- adjustable range of setting

COLOUR VERSIONS:

silver	wood design
ivory	blue
orange	black

SPECIFICATION:

Electronic thermostats are mainly used in applications, where the emphasis is put on visual aspect and easy control, or where it is convenient to prevent direct contact with the contacts. Main advantages of these thermostats are easy control, mounting and reliability. Widely used for switching of boiler circulation pump. Thermostats THP-E01 feature change-over contact for connection and disconnection of electric circuit. While using thermostat THP-E01 it is possible to set the switching difference. The thermostat is supplied with sensor, power cable and cable for connecting the pump.

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C.1.22.

BIMETALLIC THERMOSTATS

automatic, manual reset closing/opening contact

Contact thermostat
• simple contact thermostat
for wide range of application

Threaded thermostat
• screwing thermostat
for simple regulation

Thermal fuse with manual reset
• simple thermal fuse
with manual reset
suitable for wide range of applications

Thermal fuse with automatic reset
• simple thermal fuse
with automatic reset
suitable for wide range of applications

Temperature range	0-40...0-250°C, alter. on request
Max. oper. voltage	250V AC
Max. oper. current	10A / 16A
Contact resistance	≤50mΩ / ≤10mΩ (golden-plated cont.)
Elect. connection	FAST ON 2,8/4,8/6,3mm
Connection design	straight/angular 45°, 90°
Contact surface	threadless / with thread M5x1
Reset	automatic / manual
Sensor dimensions	16x12mm
Number of cycles	10.000
Protection	IP 54

SPECIFICATION:

Bimetallic thermostats are used for closing or opening of electric circuits when reaching value of a preset temperature. This temperature is fixed, set by the manufacturer and may not be changed.
These remarkably small thermostats are produced in design with both automatic and manual reset.
Connecting contacts are made in straight or angular design and the contact surface is either threadless of with thread M5x1mm.

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C.1.23.

BIMETALLIC THERMOSTAT THBT WITH Pt100 SENSOR THBTST

DESCRIPTION:

- wide range of switch-on values
- high acuuracy, no need to charge, wide working range of surrounding temperature
- integrated construction, easy to install

APPLICATION:

- chemical industry
- heating industry
- power engineering
- pharmacy

TECHNICAL PARAMETERS:

- heat range: from 65 °C to 150 °C according to used sensor
- connection thread: G1/2 (G1/4, G3/4, M12x1,5, M20x1,5, M27x2, NPT) or on individual request
- possibility to extend with temperature sensor Pt100 (THBTST)

SPECIFICATION:

Bimetallic thermostat THBT in compact and robust case can be extended with temperature sensor Pt100 (THBTST). Thermostats are suitable for direct mounting and also for mounting into thermowell. Thermostats are adjusted for specific switch-on / switch-off value from production and can not be changed by user later.

Sensors are suitable for wide range of applications in indusrty, food processing, air-conditioning systems, heating, hydraulic etc. (sensors for air temperature are used without thermowells due to quick responsese recieving)

Compact and robust case is suitable for wide range of applications, it is possible to provide variable connection threads on individual request. Magnesium oxide guarantees high resistance against impacts and vibrations and also improves heat exchange and electrical insulation of sensor.

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C.1.24.

TEMPERATURE REGULATOR

room, capillary, stem

DESCRIPTION:

- compact design
- connection using clamps on the switch or connector (except for Ex design and switch B)

APPLICATION:

- heating
- hydraulics
- air-conditioning

TECHNICAL PARAMETERS:

- ranges: -40+60°C in 5 ranges (type 61 113 - room)
  -40+210°C in 7 ranges (type 61 126 - capillary)
  -40+140°C in 5 ranges (type 61 134 - stem)
- el. load: 250V/10A,
  250V/2A, cos f 0.6-0.3
  =250V/0,1A
  =48V/0,2A
- shocks during operation: f=10-55Hz, sa=do 0,15mm
- protection: IP 65

SPECIFICATION:

Stem thermoregulators are used mainly for regulation and indication of temperatures with option of regulators mounting directly in area of temperature measurement by means of well, which is an integral part of the regulator. The well may be supplied in brass or stainless steel design with threads M27x2 or G3/4, lugs with threads M27x2 or G3/4 and wall rubber grommets.

Capillary thermoregulators are used mainly for regulation and indication of temperatures with the option of placing the regulator away from the regulated medium. A well may be supplied on order request in brass or stainless steel design with threads M27x2 or G3/4, lugs with threads M27x2 or G3/4 and wall rubber grommets.

Room thermoregulators are used mainly for simple regulation and indication of temperatures in rooms (lounges, vestibules, etc.)

Environment temperature of the regulators is -40 +60°C.

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C.1.25.

DIGITAL THERMOSTAT

series THDK, THDP, THDS

capillary, surface-mouting, immersion

DESCRIPTION:

- design: capillary, surface-mouting, immersion
- mounting: according to the model
- placement: common environment

TECHNICAL PARAMETERS:

- temperature range: 5-90°C (THDK), 5-80°C (THDP, THDS)
- temperature difference: ±1,5°C
- contact load: 10(1,5)A/250V
- case: plastic
- protection: IP 40

APPLICATIONS:

- power engineering
- hydraulics
- heating industry

SPECIFICATIONS:

Digital thermostats are most often used in applications where the emphasis is on appearance and simple operation, or where it is advisable to avoid direct contact with the contacts. The main advantages include simple operation, assembly and reliability. They are most often used for sensing the temperature of water in domestic hot water tanks or in heating systems. Thermostats THDK (capillary), THDP (touch), THDS (stem) are equipped with the function of setting the switching difference and the function of switching the opening / switching mode (heating / cooling). Due to their wider regulation range, thermostats are also suitable for applications where it is necessary to regulate temperatures close to zero. The higher IP 40 protection is also an advantage.

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C.2.1.

TEMPERATURE SWITCH THTS2 ELECTRONIC

DESCRIPTION:

- 4 -digit dislay for temperature monitoring
- adjust valve/ % trim of adjust
- emitting diode is part of the outer case (LED)contact status display, simple operation
- simple control and handling

APPLICATION:

- petrochemical industry
- power-engineering
- hydraulics

TECHNICAL PARAMETERS:

- temperature ranges: -50-0, 0-60, 0-100, 0-120, 0-160, 0-200°C
- output signal: 4-20mA
- connection : G1/4, G1/2, M20x1,5
- accuracy class: 0,5%FS (standard)

SPECIFICATION:

Temperature switch THTS2 enable digital temperature measurement and regulation with display on LCD panel, output 4-20mA and switching contacts. For temperature scanning the THTS2 uses temperature sensor Pt100 or similar. By means of inbuilt transducer it converts the measured value onto an analog output, see technical parameters.

THTS2 then evaluates the outcomes by two relay outputs, that may be set individually. THTS2 features simple control. Wide application of THTS2, used for temperature measurement of liquids in petrochemical industry, power engineering, hydraulics, etc.

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C.2.2.

DISPLAY AND REGULATORY UNITS

panel, individual design current, voltage input

PANEL

GIA 2448 - display

- universal LED display unit built into a current loop
- power supply 12V or 24V supply adapter
- display 3½digit, 10mm high LED, accuracy +0,2%,
- size 24x48mm

GIR 600 - regulatory

- regulatory range: -1999+9999 digits
- input: 0-20mA, 4-20mA, 0-1V, 0-10V
- output: freely scalable 2-point regulator for normalized signals
- supply: 230V/50-60Hz; size 48x96mm
- case with IP 65 protection at additional charge

BETWEEN CONNECTORS

ZED 601 -display

- microprocessor display unit built into transducers current loop 4-20mA
- does not require any additional power supply
- may be connected to any kind of transducer using connector DIN 43650

GRA 420 - regulatory

- additional regulator/display unit into current loop
- freely programmable by 3 buttons or infrared remote control
- input: 4-20mA, 0-10V
- display: 7mm high 4-digit

SPECIFICATION:

Display units:

Wide range of display units for majority of normalized signals (4-20mA, 0-20mA, 0-10V), with option of PC output.

Dimensions: from 24x48 up to 48x96mm. Design: into panel, flange, holder, adapter, connector DIN 43 650, etc.

Regulatory units:

Integration of display function with regulation. Option of valve, vent, flap and other devices regulation. Easy setting, provision of high accuracy of regulation and control.

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D. PRESSURE REGULATION

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D.1.1.

PRESSURE SWITCHES

ranges 0,3-400bar
voltage 42-250V

DESCRIPTION:

- adjustable or fixed hysteresis
- membrane or piston design
- connecting, disconnecting or throw-over contact

APPLICATION:

- heating industry
- hydraulics
- air-conditioning
- cooling systems

Series 200 - STANDARD MAX. 42V

- membrane pressure switch
ranges from 0,3-10bar

Series 400 - STANDARD MAX. 250V

- membrane and piston design
ranges from 0,3-200bar

Series 600 - HEAVY DUTY MAX. 250V

- membrane and piston design,
ranges from 0,2-400bar
high overload capacity

Series 700 - PRESSURE DIFFERENCE SENSOR MAX. 250V

- membrane and piston design

SPECIFICATION:

Pressure switches are designed to maintain required pressure level. They are a cheaper option to contact pressure gauges and pressure regulators.

Wide range of switches from standard, contact, throw-over to heavy-duty type will meet your requirements of simple pressure regulation without the need of current state indication.

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D.1.2.

STANDARD PRESSURE SWITCH series 200

switch-on or switch-off contact max. 42V

DESCRIPTION:

- working part: membrane or spring, NBR
- switching part

direct contact, switch-on (NO),switch-off (NC)

- installation position: any
- material: brass;

special design stainless steel or galvanised steel

APPLICATION:

- heating industry
- hydraulics
- air-conditioning
- cooling systems

TECHNICAL PARAMETERS:

- measuring ranges: 0,3-2bar, 1-10bar
- connection thread: G1/8
- hysteresis: 10% set hysteresis
- max. el. contact load: 2A, 100VA, 42V
- el. connection: 2x FAST ON 6,3
- protection: IP 00, DIN 40050

SPECIFICATION:

Standard pressure switches series 200 are designed for external pressure measuring of applications without high requirements on resistence. They are used for simple pressure measuring of liquids and gases within temperature range -25+85°C, mainly used for air, water, cooling emulsion, hydraulic oils. supplied in switch-on (NO) or switch-off (NC) conector. Max. voltage 42V design max. 2A.

Standard connection thread G1/8“, material brass (alternatively stainless steel or galvanized steel).

Pressure switches are designed for wide range of applications.

Contact cover can be supplied as an accessory.

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D.1.3.

STANDARD PRESSURE SWITCH series 400

switch-on, switch-off or throw-over contact, max. 250V

DESCRIPTION:

• working element:
membrane with spring NBR, EPDM, Viton,
piston with spring UR, NBR, Viton,
• switching element: switch-on (NO), switch-off (NC), throw-over (SW)
• installation position: any
• material: brass, special design stainless steel, galvanised steel

APPLICATION:

• heating industry
• hydraulics
• air-conditioning
• cooling systems

TECHNICAL PARAMETERS:

• measuring ranges: 0,3-2bar, 1-10bar, 10-70bar, 50-200bar
• connection thread: G1/4, (M12x1,5, M10x1, G1/8)
• hysteresis: 15-20%
• max. el. contact load: 250V AC / 5A
250V DC / 0,25A – resistance or inductive load
• el. connection: 2x FAST ON 6,3 , 3x FAST ON 6,3
• protection: IP 00, DIN 40050

SPECIFICATION:

Standard pressure switches series 400 are designed for external pressure measuring of applications without high requirements on resistence. They are used for simple pressure measuring of liquids and gases within temperature range -25+85°C, always according to membrane type, mainly used for air, water, cooling emulsion, hydraulic oils. Other mediums on request. Supplied in design with switch-on (NO) or switch-off (NC), throw-over (SW) contact, membrane or piston designed for wide range of applications. Max. voltage 250V, load max. 5A.

Standard connection thread G1/4“ (alternatively M12x1,5, M10x1, G1/8“), material galvanized steel (alternativelely brass or stainless steel).

Membrane material: NBR, EPDM, Viton.

Contact cover may be supplied as an accessory.

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D.1.4.

HEAVY-DUTY PRESSURE SWITCH series 600

throw-over contact SW max. 250V

DESCRIPTION:

• working element
membrane with spring NBR, EPDM, Viton,
piston with spring
• switching element: trow-over contact SW
• installation position: any
• material: brass, special design stainless steel,
galvanised steel

APPLICATION:

• heating industry
• hydraulics
• air-conditioning
• cooling systems

TECHNICAL PARAMETERS:

• measuring ranges: 0,3-2bar, 1-10bar,
10-70bar, 50-200bar
• max.working pressure: up to 400bar
• connection threadt: G1/4“
(alter. M12x1,5, M10x1, G1/8“)
• hysteresis: 15-20%
• max. el. contact load: 250V AC/5A
250V DC / 0,25A - resistance or inductive load
• el. connection: conector DIN 43650
• protection: IP 65, DIN 40050

SPECIFICATION:

Heavy-duty pressure switches series 600 with throw-over contact (SW), membrane or piston. They are used for gas and liquid pressure measuring in temperature ranges -25+85°C, always according to membrane type, air, water, oil emulsion, hydraulic oil and other medium on request.
Max. voltage 250V, max. load 5A. Standard connection thread G1/4“ (alternatively M12x1,5, M10x1, G1/8“), material galvanized steel (alternatively brass or stainless steel). Adjustable hysteresis. Wide range of membranes for aggressive mediums. ATEX version available.

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D.1.5.

PRESSURE DIFFERENCE SWITCH series 700

throw-over contact max. 250V

DESCRIPTION:

• working element:
membrane with spring, NBR, EPDM, Viton
• switching element: throw-over contact SW
• installation position: any
• material: brass

APPLICATION:

• heating industry
• hydraulics
• air-conditioning
• cooling systems

TECHNICAL PARAMETERS:

•differential pressure measuing ranges: 0,3-2bar, 0,5-3bar, 2-10bar, 5-50bar
• max. static pressure: 10, 250bar
• connection thread: 2x G1/8
• hysteresis: 15-20%
• max. el. contact load: 250V AC / 5A, 250V DC / 0,25A – resistance and inductive load
• el. connection: conector DIN 43650 with output Pg9
•protection: IP 65

SPECIFICATION:

Pressure difference switch series 700 with throw-over contact (SW) membrane and piston, designed for wide range of applications. Used for gases and liquid pressure measuring within the temperature range -25+85°C, always according to type of membrane, mainly air, water, oil emulsion, hydraulic oils and other medium on request. Max. voltage 250V design max. 5A.

Standard connection thread 2x G1/8“ (material brass alternatively stainless steel). Membrane material: NBR (EPDM, Viton, CR).

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D.1.6.

ELECTRONIC PRESSURE SWITCH THPS2

DESCRIPTION:

- OLED display
- Reverse voltage protected
- Relay output
- SS304 casing
- Switch point setting

APPLICATION:

- petrochemical industry
- hydraulics
- power-engineering

TECHNICAL PARAMETERS:

- Measuring range: 0...0,07 až 0...1000bar
- A class of accuracy: ±0,5% FS (standard), ±0,25% FS
- Operating Temperature: -20+60°C
- Stability: ±0,25%
- Pmax: 150% FS
- Process connection: G1/4, G1/2, M20x1,5 NPT1/4, NPT½
- Supply Voltage: 14~30Vdc
- Rated relay load: max.1A
- Overvoltage protection: 32Vdc
- Coverage: IP65

SPECIFICATION:

THPS2 is intelligent pressure switch combining pressure measurement, local display and control together. The pressure switch has an easy-to-read OLED display, quick setup, reaction and good electromagnetic compatibility for pressure control.
THPS2 allows the visually compile process pressure on display and switch the status of the contacts using the switch output and analog output. Output signals THPS2 are applicable for a wide range of applications. The use of THPS2 is very wide, used for pressure control in hydraulic systems on pumps, hydraulic and pneumatic equipment, power engineering, petrochemical industry, and so on.

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D.1.7.

STATIC PRESSURE GOVERNOR

range -0,7+30bar
adjustable difference

DESCRIPTION:
- case: plastic
- inspection hole: acrylate
- connection: threaded or hose

APPLICATION:
- heating industry
- hydraulics
- air-conditioning
- power-engineering

TECHNICAL PARAMETERS:
- measuring ranges (switching difference): -0,7+3bar (0,2+1,5)bar, -0,7+6bar (0,6+4)bar, 1+10bar (1+3)bar, 5+16bar (1+4)bar, 5+24bar (2+5)bar, 5+30bar(5+10)bar, 8+30bar(3-5)
- max. working pressure: 16,5; 35bar
- static pressure: max. 10bar, max. 250bar
- connection thread: G1/4 (M12x1,5) hose
- throw-over contacts: 250V/12A

SPECIFICATION:
Pressure governors are designed to maintain a desired static pressure range according to switching value and difference settings. They can be used for all gas and liquid mediums, which do not have a corrosive effect on copper alloys. Permissible medium temperature -10°C +120°C or -45°C +110°C depending on design.

Pressure governors are supplied with G1/4 connection or with hose connection. They are designed for fixed pipeline installation, alternatively for wall bracket mounting, which is part of the packing.

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D.1.8.

DIFFERENTIAL PRESSURE GOVERNOR

range -0,7+30bar
fixed difference

DESCRIPTION:

- case: plastic
- inspection hole: acrylate
- connection: threaded or hose
- design: 2x bottom, 1x bottom /1x upper

APPLICATION:

- heating industry
- hydraulics
- air-conditioning
- power engineering

TECHNICAL PARAMETERS:

- measuring ranges (switching difference): -0,7+6bar (0,6+4)bar, -0,7+6bar (0,6+4)bar, 0,7+6bar (doubled voltage=1), 8+30bar (fixní3+5)bar), 8+30bar (doubled voltage=4)bar
- working pressure: (factory setting) / max. pressure - (3/2) / 16,5bar, (2/15) / 35bar, (3/2) / 16,5bar, (20/manual reset) / 35bar, (3/manual reset) / 16,5bar
- connection thread: 2x G1/4 or hose
- throw-over contacts: 250V/12A

SPECIFICATION:

Pressure governors are designed to maintain a desired static pressure range according to switching value and difference settings.
They can be used for all gas and liquid mediums, which do not have a corrosive effect on copper alloys. Permissible medium temperature -10°C +120°C or -45°C +110°C depending on design.
Pressure governors are supplied with 2x G1/4 connection or hose connection. They are designed for fixed pipeline installation or wall bracket mounting, which is part of the packing.

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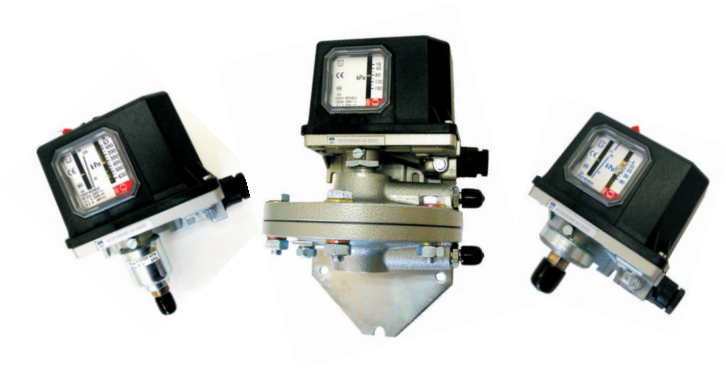
D.1.9.

PRESSURE AND VACUUM GOVERNOR

bellows, membrane, differential pressure



DESCRIPTION:

• case: plastic
• inspection hole: acrylate
• compact design
• connection: clamps on the switch or connector (except for Ex design and switch B)

APPLICATION:

• heating industry
• hydraulics
• air-conditioning
• power-engineering

TECHNICAL PARAMETERS:

• range: -80kPa-4MPa
in 11 ranges (type 61 214) 4 kPa-4MPa
in 4 ranges (type 61 218) 4 kPa-40kPa (61 242),
-0,3 kPa-10kPa in 8 ranges (type 61 219),
0 kPa-10kPa in 7 ranges (type 61 220),
4 kPa-160kPa in 2 ranges (type 61 215),
4 kPa-160kPa in 2 ranges (type 61 215)
• el. load: 250V/10A, cos 1 ,
250V/2A, cos f 0,6-0,3
= 250V/0,1A
= 48V/0,2A
•protection: IP 65
design: ATEX

SPECIFICATION:

Pressure and vacuum governors are designed for pressure regulation and signalization of gases and liquids of regulated medium temperatures maximum -40+120 °C.
Governors are intended for use in demanding conditions, where higher IP protection and heavy-duty design is required.
Pressure and vacuum governors are supplied in high pressure design, bellows, with fixed preset values and for differential pressures. Maximum surrounding temperature -40 up to 60°C.

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D.1.10.

PRESSURE AND VACUUM LIMITER

bellows

DESCRIPTION:

- compact design
- switch clamp connection or connector (switches B)

APPLICATION:

- heating industry
- hydraulics
- air-conditioning

TECHNICAL PARAMETERS:

- range: -80kPa - 4MPa in 11 ranges
- el. load: 250V/10A, cos 1
  250V/2A, cos pr.0,6-0,3
  =250V/0,1A
  =48V/0,2A
- shocks in operation: f=10-55Hz, sa=do 0,15 mm
- protection: IP 65

SPECIFICATION:

Pressure and vacuum limiters are designed for protection against pressure overload. Stand-by mode is activated by pressing the RESET button. Adjusting screw controls the required value within its range. Pressure limiter is designed for gases and liquids of medium temperature max.+120°C. Type of medium determines the limiters type, for gaseous fuels and aggressive mediums use stainless steel bellows design.

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D.2.1.

DISPLAY AND REGULATORY UNITS

panel, individual design current and voltage input

PANEL

GIA 2448 - display

- universal LED display built into a current loop.
- power supply: 12V or 24V AC adapter
- display 31 digit, 10mm high LED, accuracy +0,2%,
- dimensions 24x48mm

GIR 600 - regulatory

- regulatory range: -1999+9999 digits.
- input: 0-20mA, 4-20mA, 0-1V, 0-10V
- output: choice of scale 2-point regulator for normalized signals
- power supply: 230V/50-60Hz; dimension 48x96mm
- case with protection IP 65 on additional charge

BETWEEN CONNECTORS

ZED 601 - display

- microprocessor display built into the transducers 4-20mA current loop
- does not require any additional power supply
- may be connected to any type of transducer with connector DIN 43650

GRA 420 - regulační

- additional regulator/display into the current loop
- freely programmable by means of 3 bottons or using infrared remote control
- input: 4-20mA, 0-10V
- display: 7mm high 4-digit

SPECIFICATION:

Display units:

Wide range of display units for most of normalized signals (4-20mA, 0-20mA, 0-10V), PC output optional. Dimensions: from 24x48 to 48x96mm. Design: panel, flange, holder, interposer connector DIN 43 650, etc.

Regulatory units:

Joined display and regulatory function. Valve, flap and other element regulation optional. Easy setting, high accuracy of control and regulation.

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E. PRESSURE GAUGE ACCESSORIES

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E.1.a.

PRESSURE GAUGE COCK

two-way, three-way
PN 6, PN 25

DESCRIPTION:

- body material- brass 423223
- handle material – heat-resistant plastic
- connection material – carbon steel/brass
- design for distribution of air, liquids (16 260, 16 262, 16 263)
- bleeding hole (16 260, 16 262)
- testing connection (16 263)

APPLICATION:

- heating industry
- air-conditioning
- gas industry
- power engineering

TECHNICAL PARAMETERS:

- connection thread
  DIN 16 260: G1/4, M12x1,5
  DIN 16 262 : G1/2, M20x1,5
  DIN 16 263 : G1/2, M20x1,5
- PN(pressure) - 0,6MPa for 16 260; 2,5MPa for 16 262 , 16 263
- testing connection - M20x1,5L (16 263)

SPECIFICATION:

Pressure gauge pin cocks of two-way or three-way design with socket connection are produced in accordance with DIN 16 260, 16 262, 16 263 a EN 837-2 standards, they are designed as a special closing armature for pressure gauges with flat sealing, for working pressures and temperatures.

Forged unit with threaded pin on the inlet side, modified for flat sealing. On the outlet side it is equipped with a socket for pressure gauge connection.

Two-way cocks are equipped with a side bleeding hole for bleeding during pressure gauges disassembly. Three-way cocks are equipped with a side duct for connection of control pressure gauge. The cone is attached from the bottom by a nut.

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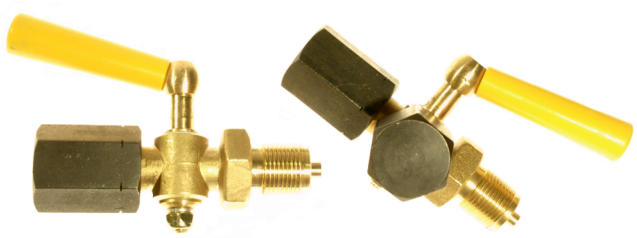
E.1.b.

PRESSURE GAUGE COCK

heating gases
two-way, three-way
PN 16



DESCRIPTION:

- body material- brass 423223
- handle material – heat-resistant plastic
- connection material – carbon steel/brass
- technical gases design (16 262TP, 16 263TP)
- bleeding hole (16 262 TP)
- testing connection (16 263 TP)

APPLICATION:

- heating industry
- air-conditioning
- gas industry
- power engineering

TECHNICAL PARAMETERS:

- connection thread

DIN 16 262 TP: G1/2, M20x1,5
DIN 16 263 TP: G1/2, M20x1,5

- PN16 - 16 262 TP , 16 263 TP
- testing connection - M20x1,5L (16 263 TP)

SPECIFICATION:

Pressure gauge pin cocks of two-way or three-way design with socket connection are produced in accordance with DIN 16 262, 16 263 and EN 837-2 standards, they are designed as a special closing armature for pressure gauges with flat sealing, for working pressures and temperatures.

Forged unit with threaded pin on the inlet side, modified for flat sealing. On the outlet side it is equipped with a socket for pressure gauge connection.

Two-way cocks are equipped with a side bleeding hole for bleeding during pressure gauges disassembly. Three-way cocks are equipped with a side duct for connection of control pressure gauge. The cone is attached from the bottom by a nut. The TP version is for heating gases (technical).

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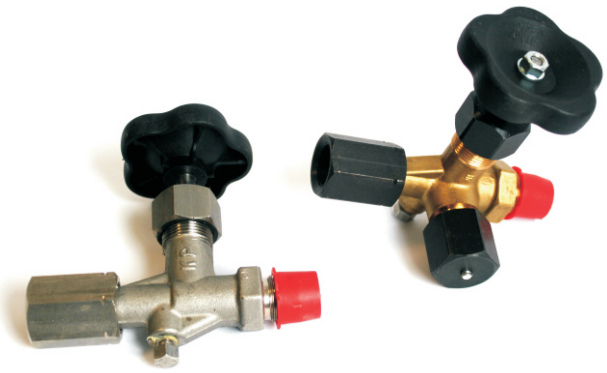
E.2.

PRESSURE GAUGE VALVE

two-way, three-way
PN 250-630



DESCRIPTION:

• body material-brass 42 3223,
fireproof steel 15 028
stainless steel 17 027
austenit stainless steel 17 348/1.4571
• control knob material – heat-resistant plastic
• connection material – carbon steel
• bleeding hole
• testing connection

APPLICATION:

• heating industry
• air-conditioning
• gas industry
• power-engineering
• chemical industry
• food industry

TECHNICAL PARAMETERS:

• connection thread- M20x1,5, G1/2
• PN 63MPa
• T_{max} 525°C
• testing connection M20x1,5L (137517.B)

SPECIFICATION:

Pressure gauge pin valves with pipe connection are produced in accordance with ČSN 137517 and EN 837-2 standards. They are designed as a special regulatory armature for pressure gauges with flat sealing, for working pressures and temperatures mentioned in the table. Its use is limited in dependance on working liquid type, temperature and concentration.

Forged unit with threaded pin on the inlet side, modified for flat sealing. On the outlet side it is equipped with a pipe connection for attachment of a pressure gauge. Three way valve is equipped with a side duct for connection of a control pressure gauge. It comes with a bleeding knob for pressure release after closing of the valve. Pressure gauge valve may be installed in any position.

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E.3.

BUTTON VALVE DVGW - 28 DVGW-28A

G 1/4", 3/8", 1/2"

DESCRIPTION:

- body material- nickeled brass
- button material- nickeled brass
- closure material- nickeled brass
- compression spring: SS DIN 17224
- sealing: NBR O-ring
- connection: steel B16 DIN 7993 Zn

APPLICATION:

- air-conditioning
- power engineering
- petrochemical industry

TECHNICAL PARAMETERS:

- connection thread: inner G1/2 (DVGW-28A), inner G1/4, 3/8, 1/2 (DVGW-28)
- PN(pressure): 4 bar
- pressure check 0,5 - 10bar

SPECIFIKACE:

Button valves DVGW-28, DVGW-28A are designed as a special closing armature for pressure gauges measuring gas medium. Basic purpose is the pressure gauge function check and verification of the zero point. This allowes replacement of the pressure gauge while the whole system is fully operational. Max. working temperature is 70°C. Button valves can be used for closing of air, gasses or gas fuels.

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E.4.

CONDENSATION LOOP

ČSN 137530
PN 250

DESCRIPTION:

• design:
A - bent for pin
B - bent for welding
C - coiled for pin
D -coiled for welding
• material: structural carbon steel 11 523, corrosion proof steel 17 027 individual
• installation: any position
• supplied with right-/left connection

APPLICATION:

• heating industry
• petrochemically industry
• power engineering

TECHNICAL PARAMETERS:

• connection thread - M20x1,5, G1/2
• T_{max} 300(400)°C
• PN 25MPa

SPECIFICATION:

Condensation loops are produced in accordance with EN837-2 standards. Condensation loops are used for connection and protection of pressure gauges against harmful effects and high temperature of measured medium, for working pressures and temperatures. Supplied in versions bent for welding or pin or coiled for welding or pin. Design must be chosen according to position of installation and with regard to condensation needs. Material either carbon steel or stainless steel (17 027). They may be supplied in other materials, mainly made of other steel classes 11, 12, 15, steel PG, all on request. Condensation loops are tested according to ČSN 13 3060, part 2 only water testing for tightness impermeability.

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E.5.

MANOMETRIC CONNECTORS AND ADAPTERS

steel, stainless steel, brass
T_{max} 300°C, PN 630

DESCRIPTION:

• Adaptive manometric connector type 13 75 24.A
M right inner / M left inner
G inner right / G left inner

• Sliding nut type 13 75 24.B
Nipple for welding nut

• Nipple for welding type 13 75 24.C
Sliding nut nipple

• Piece for welding type 13 75 24.D
Welding piece, use with „A“ adapter, M left or right

• Adaptive manometric connector type 13 75 24.E
M right inner / G right outer
G right inner / M right outer

• Adaptive manometric connector type 13 75 24. F
M right inner / G right inner

• Adaptive socket connector 13 75 24. G
M left inner / G right inner

SPECIFICATION:

Pressure gauge connectors and adapters are produced in accordance with standard EN837-2. Connectors and adapters are designed for connection and reduction of pressure gauges with manometric cocks and valves. Supplied in materials: carbon steel, stainless steel and brass.

TECHNICAL PARAMETERS:

• PN 63MPa, 50MPa
• T_{max}: 200°C, 300°C

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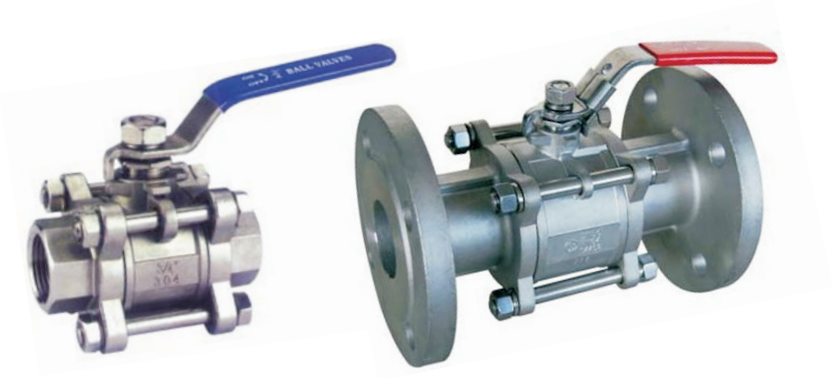
E.6.

BALL VALVE THREE WAY



two- way, three- way
PN 70

DESCRIPTION:

- Material - SS 304,316L
- Quality precision castings
- Material connections – carbon steell
- vent hole
- testing connection
- Design thread, welded, flange DIN, ANSI, GB

APPLICATION:

- air-conditioning
- energetics
- petrochemical industry
- food industry

TECHNICAL PARAMETERS:

- Types of treads - internal BSPT, NPT, DIN 2999
- connecting threads - G1/4, 3/8, 1 3/4, 1, 5/4, 6/4, 2, 2-1/2, 3, 4
- flanges- DIN, ANSI, GB, flanges for welding
- P_{max} 70bar

SPECIFICATION:

Ball three-part cock 2 KKT, KKT 3 full flow valve with its floating ball. Floating balls compensates for worn and thermal expansion. FULL design minimizes pressure loss. The shaft of the cock is insured against firing. Ball valve consists of a three-part structure, with control lever stops. Serves as a built-in solid pipeline, such as shut-off valve for any installation position. Other design options according to individual requirements - chateau handles etc.

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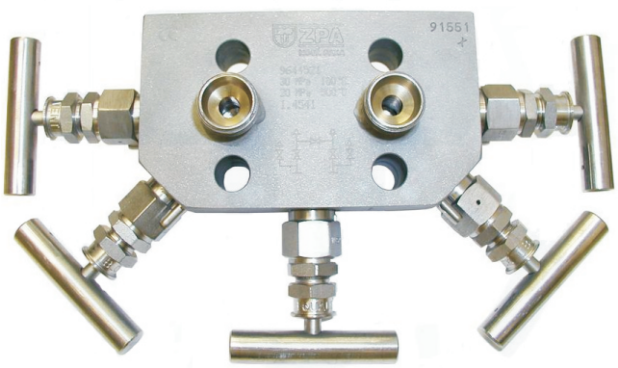
E.7.

MULTI-WAY VALVE MANIFOLD



DESCRIPTION:

- body material: stainless steel 17 348/1.4571
- gasket material: stainless steel 17 348/1.4571 Si_3N_4 or plastic
- sealing O-rings: FPM, NBR, EPDM
- seal: PTFE, PEEK, Grafoil

APPLICATION:

- heating management
- power engineering
- petrochemical industry
- farmaceutical industry

TECHNICAL PARAMETERS:

- PN 42 MPa
- T_{max} 500°C
- materials: stainless steel 17 348/1.4571 ceramics Si_3N_4, plastic
- design: 2, 3, 5 way

SPECIFICATION:

Multi-way valve manifolds are used mainly for safe and controlled use of differential pressure gauges and differential pressure sensors. They serve for closing, opening, bleeding and connection of impulse piping, installed for differential pressure gauges and sensors of differential pressure.

The basis of this system is a body with screwed-in valve units. Its base is part of the body of the main armature. Armatures with soft sealing have bases of special shape, which help to ensure perfect tightness. Main body material: stainless steel 17 348/1.4541. Valve units are of various constructions depending on the type of used spindle. That may consist of elastomer O-ring, or plug made of graphit or plastic seal.

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SEPARATING MEMBRANES

DESCRIPTION:

Measured pressure acts through membrane upon working liquid, that fills up the area behind membrane and trasfers the pressure onto measure mechanism of sensor or pressure gauge. Pressure transfer is performed by means of oil, that fills up the pressure gauge. In between the upper and lower flange there is a membrane, that separates in inlet of measured medium from the measure mechanism and transfers the measured pressure onto the pressure gauges filling. If not mentioned otherwise, the membranes are made of corrosion-resistant steel. Membranes may also be produced in the following designs: leaded steel, teflon-plated steel, stainless steel, sprayed with epox. polish, PTFE, Hestelloy, Monel, Nickel, Tantan, Titan, silver-plated steel.

Flanges: cast-iron, leaded cast-iron, rubberized cast-iron, stainless steel, brass, rubberized steel. Separating membranes are suitable for all pressure gauges of diameters: 63, 100 and 160mm.

APPLICATION:

- power-engineering
- petrochemical industry
- food industry
- farmaceutical industry

SPECIFICATION:

Separating membranes are used during pressure measurements in cases, where it is impermissible to let the measured substance get in contact with the measurement mechanism of the sensor or the pressure gauge. Separating membranes enable pressure measurement of chemical substances, that have corrosive effect on material of the pressure gauges measure element. Perfect sealing of the area filled with working liquid is a basic prerequisite for a reliable and trouble-free operation. For these purposes the most suitable are separators with metal membranes, which are welded to the separator body. All used construction elements and their connection must meet requirements of vacuum tightness.

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SCREWED TOGETHER SEPARATING MEMBRANE

Type 41.. (DN)

SPECIFICATION:

Screwed together separating membrane is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive, have high viscosity or feature another kind of agressivity. The membrane itself may be screwed on (suitable for pressures up to 2,5MPa) or welded on (suitable for pressures up to 40MPa)

PROCESS CONNECTION:

• G1/4, G1/2, M20x1,5, BSP, NPT, individual

CONNECTION TO MEASURING ELEMENT:

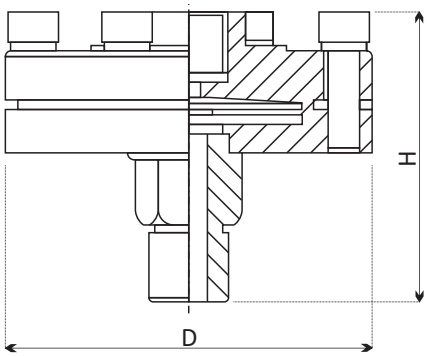
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:

• upper flange: varnished steel, rubberized, stainless steel 17 246/1.4878, 17 348/1.4571
• bottom flange: varnished steel, rubberized, stainless steel 17 246/1.4878, 17 348/1.4571, teflonplated, PVC, PTFE, silon, individual
• membrane: steel, rubberised steel, teflon-plated, stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual

TECHNICAL PARAMETERS:

• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+2,5MPa - screwed together membrane
• pressure range: -0,1+40MPa - welded membrane



Type	Size and characteristics			
41	D	H	Pressure	Weight
Screw.	97	75	-0,1+2,5MPa	1,40kg
Weld.	97	75	-0,1+40MPa	1,40kg

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.10.

FLANGE SEPARATING MEMBRANE

Type 55.. (DN)

SPECIFICATION:

Flange separating membrane is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive, have high viscosity or feature another kind of agressivity. Using process flange connection, in accordance with DIN 2501, EN 1092-1, ANSI B16,5 or flange made according to individual requirements.

PROCESS CONNECTION:

•flange DIN 2501, EN 1092-1, ANSI B16,5; individual

CONNECTION TO MEASURING ELEMENT:

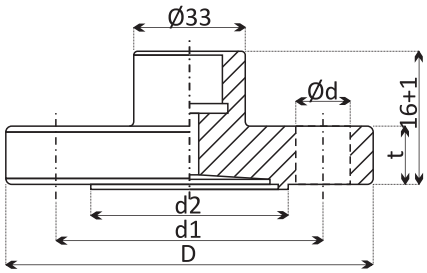
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:

• flange: stainless steel 17 246/1.4878, 17 348/1.4571 teflonplated, PVC, PTFE, individual
• membrane: steel, rubberised steel, teflon-plated, stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual

TECHNICAL PARAMETERS:

• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+2,5MPa (ANSI B16,5)



Type 55	Dimensions in mm according to DIN 2501					
DN	PN	D	d1	d2	t	d
15	6	80	55	40	12	4x11
15	40	95	65	45	16	4x14
20	6	90	65	50	14	4x11
20	40	105	75	58	18	4x14
25	6	100	75	60	14	4x11
25	40	115	85	68	18	4x14
32	6	120	90	70	14	4x14
32	40	140	100	78	18	4x18
40	6	130	100	80	14	4x14
40	40	150	110	88	18	4x18
50	6	140	110	90	14	4x14
50	40	165	125	102	20	4x18

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.11.

CLAMP SEPARATING MEMBRANE Type 53.. (DN)

SPECIFICATION:

Clamp separating membrane type 53 is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive, have high viscosity or feature another kind of agressivity. Using process clamp connection, size 1-2", DN 25-50. Suitable mainly for food industry and for applications, where sanitization often takes place.

PROCESS CONNECTION:

•clamp 1", 11", 2"
DN 25, 32, 40, 50

CONNECTION TO MEASURING ELEMENT:

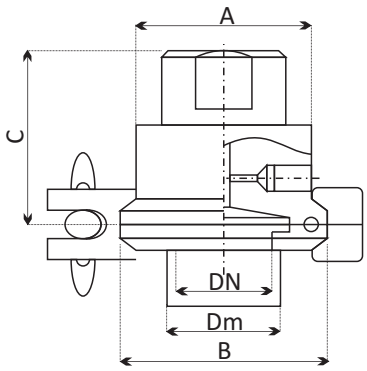
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:

• body: stainless steel 17 246/1.4878, 17 348/1.4571 teflonplated, PTFE, individual
• membrane: stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual
• accessories: clamp socket, sealing

TECHNICAL PARAMETERS:

• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+4MPa



Type 53	Dimensions in mm according to DIN 32676					
DN	PN	A	B	C	DN	Dm
25	40	41	50,5	33	25	28
32	40	41	50,5	33	32	34
40	40	41	50,5	33	40	38
50	40	53	64	33	50	48
Dimensions in mm according to ISO 2852						
1"	40	41	50,5	33	40	38
11 "	40	41	50,5	33	40	38
2"	40	53	64	33	50	48

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.12.

SEPARATING MEMBRANE FOR FOOD INDUSTRY

Type 32.. (DN)

SPECIFICATION:

Separating membrane type 32 is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive, have high viscosity or feature another kind of agressivity. Using process connection with union nut DN 25-50 in accordance with DIN 11851. Suitable mainly for food industry.

PROCESS CONNECTION:

•DN 25, 32, 40, 50

CONNECTION TO MEASURING ELEMENT:

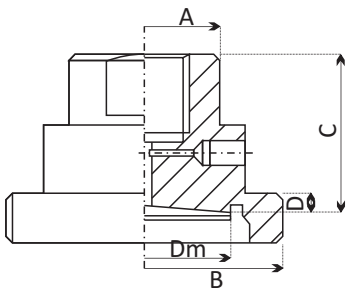
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:

• body: stainless steel 17 246/1.4878, 17 348/1.4571 teflonplated, PTFE, individual
• membrane: stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual
• accessories: counterpart, sealing

TECHNICAL PARAMETERS:

• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+4MPa



Type 32	Dimensions in mm according to DIN11851					
DN	PN	A	B	C	D	Dm
25	40	35	63	38	10	28
32	40	41	70	38	10	34
40	40	48	78	38	10	38
50	40	61	92	38	10	48

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.13.

WELDED SEPARATING MEMBRANE

Type 45.. (DN)

SPECIFICATION:

Separating membrane type 45 is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive or feature another kind of agressivity. Using process connection G1/4, G1/2, M12x1,5; M20x1,5, thread of BSP, NPT type. Separating membrane type 45 is suitable mainly for high pressures and temperatures in demanding conditions.

PROCESS CONNECTION:

•G1/4, G1/2, M20x1,5, BSP, NPT, individual

CONNECTION TO MEASURING ELEMENT:

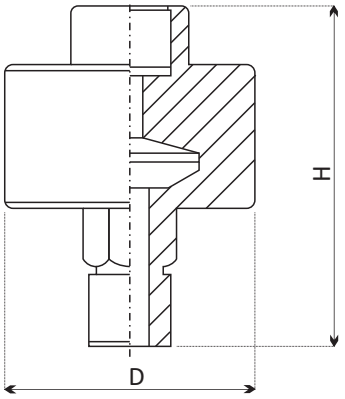
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:

• body: stainless steel 17 246/1.4878, 17 348/1.4571 teflonplated, PTFE, individual
• membrane: stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual

TECHNICAL PARAMETERS:

• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+60MPa



Type	Size and characteristics			
45	D	H	Pressure	Weight
	62	90	-0,1+60 MPa	1,13 kg

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.14.

SEPARATING MEMBRANE THREADED PIN
Type 43.. (DN)

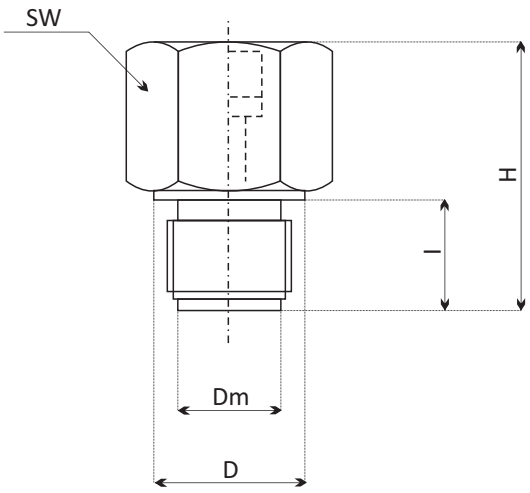
SPECIFICATION:
Separating membrane type 43 is designed for separation of measuring device sensing element from the impact of measured mediums, that may be corrosive, have high viscosity or feature another kind of agressivity. They are universally applicable separating membranes with wide range of use thanks to the universal connection with G - thread.
Suitable for high pressures up to 60MPa.

PROCESS CONNECTION:
• outer thread G1/2, G3/4, G1, G5/4, G6/4, G2"

CONNECTION TO MEASURING ELEMENT:
• G1/4, G1/2, M20x1,5, BSP, NPT, cooler, capillary line, individual

DESCRIPTION:
• body: stainless steel 17 246/1.4878, 17 348/1.4571 teflonplated, PTFE, individual
• membrane: stainless steel 17 246/1.4878, 17 348/1.4571, tantal, hesteloy, individual

TECHNICAL PARAMETERS:
• temperature according to transfer liquid: -40+240°C
• pressure range: -0,1+60MPa



Type 43	Dimensions					
DN	PN	SW	D	Dm	H	l
G1/2"	600	30	26	17	48	20
G3/4"	600	32	32	22	45	20
G1"	600	41	39	25	50	28
G5/4"	600	50	50	38	60	30
G6/4"	600	55	60	40	64	30
G2"	600	60	60	54	64	30

Transfer liquid	Temper. range°C
Silikon (low viscosity)	from -40 to +130°C
Silicon (high viscosity)	from -30 to +240°C
Fluorocarbon oil	from -30 to +160°C
Glyceríne	from -5 to +100°C

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E.15.

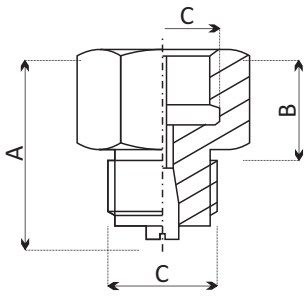
PRESSURE SHOCK ABSORBERS COOLER 03515

SPECIFICATION:

Pressure shock absorbers are designed for protection of pressure gauges measure mechanism against mediums pressure shocks. Applicable for non-solidifying liquids and gases that do not create crystals and that do not have corrosive effect on material of the capillary and body. Supplied with various inner diameters of the absorbing capillary.

TECHNICAL PARAMETERS:

- connection: M12x1,5, M20x1,5, G1/4, G1/2
- brass (suitable for pressures up to 25MPa)
- steel (suitable for pressures up to 60MPa)



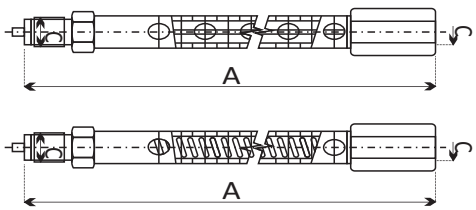
	Dimensions			
C	PN	SW	A	B
M12x1,5, G1/4	600	17	35	18
M20x1,5, G1/2	600	27	50	25

SPECIFICATION:

Coolers of measured mediums are used for protection of pressure gauges measure mechanism against mediums increased temperature. Cooling is achieved by routing the medium through capillary. Capillary of straight or spiral design is protected by perforated tube.

TECHNICAL PARAMETERS:

- connection: M20x1,5, G1/2
- type 03515/1 - straight capillary
- type 03515/2 - spiral capillary



	Tmax		Dimensions	
Type	Steel	St.steel	A	C
03515/1	200°C	200°C	280	M20x1,5, G1/2"
03515/2	400°C	600°C	280	

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E.16.

PRESSURE GAUGE CASE FOR EXTREME CONDITIONS THPI 150

with/without electric heating; Tmin -80°C

DESCRIPTION:

- case material aluminium /dural
- connection material: stainless steel 17 248/1.4541
- acrylate / argon double glass inspection hole
- insulation: pyrogel
- passive heating by medium
- active heating by electric heating cable 15/30W, individual
- bushing for el. contacts or signal

APPLICATION:

- heating management
- air-conditioning
- gas industry
- power engineering
- chemical industry
- food industry

TECHNICAL PARAMETERS:

- for pressure gauges D100mm
- connection thread - M20x1,5, G1/2, 1/2NPT
- environment Tmin up to -90°C
- heating power supply 230V AC / 24V DC, individual

SPECIFICATION:

Protection cases into extreme conditions are designed for protection of pressure gauges mainly against very low temperatures and other adverse conditions. Case is made of robust aluminium-dural component. Attachment connection including thread is made of stainless steel 17 248/1.4541. Default inspection hole made of acrylate, on request it may also be supplied with argon double glass. Pyrogel serves as a very efficient primary insulation, thickness 10mm (it is equivalent to approx. 20cm of polystyren insulation). Thanks to the elaborated construction, minimum temperature bridges and very efficient insulation the case does not require active heating. The inner area is heated up passively by means of measured medium. In case of insufficient heating, the case may be equipped with active heating of standard output 15/30W. The case is made for heavy-duty design of pressure gauge, diam. 100mm. Wide options of customization: connections, size, pass-through connector for contact pressure gauges, etc.

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F. FLOW MEASUREMENT

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F.1.

FLOWMETER EV

spring flowmeter
rate of flow:
2l/h - 380l/h liquid
5l/sec - 370 l/sec gas

DESCRIPTION:

- case: PC, PSU
- connection material: plastic, teflon or stainless steel
- float spring: stainless steel, plastic
- any position of installation
- option of liquid(water) and gases(air) measuring

APPLICATION:

- power engineering
- air-conditioning
- food industry
- mechanical engineering
- water management

TECHNICAL PARAMETERS:

- model: EV 15, 20, 25, 40, 50
- measuring range: liquid 2-20, 4-26, 4-35, 5-60, 15-65, 20-10, 12-90, 20-200, 30-280, 40-380l/min; gases 5-20, 10-30, 15-45, 20-70, 30-80, 35-110, 15-95, 20-140, 25-275, 45-370l/sec
- connection thread: G1/2 (G 3/4, G1), G1 (1/2, G 2)
- T max: 120°C
- PN: 1MPa
- T ensuring measurement accuracy: 0-80°C
- accuracy class: 5%

SPECIFICATION:

Spring-tube flowmeters EV are used for flow measuring of liquids (water, gases), where it is essential to measure instantaneous flow. Flowmeters work on a principle of floats orifice plate resistance to spring in a closed cylindric measuring tube.

Flowmeters are equipped with two adjustable red needles of limiting values and a scale liter per minute, alternatively a scale for gas measuring. They are suitable for all positions of installation. Only products PC, PSU are supplied with a high temperature and corrosive resistance.

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FLOWMETER LZS

LZS-C long version
LZS-D short version

DESCRIPTION:

- case: plastic (PC, PSU)
- connection material: plastic, teflon
- float material: stainless steel, plastic, plastic ABS
- guiding rod material: stainless steel
- installation: vertical only
- connecting for glueing or melting
- option of switching contacts
- option of liquid measuring

APPLICATION:

- power engineering
- air-conditioning
- food industry
- mechanical engineering
- water management

TECHNICAL PARAMETERS:

- diameter: 15, 25,32, 50, 65, 100, 125
- measuring ranges: long type 10-100, 16-160, 25-250, 40-400, 60-600, 100-1000, 160-1600, 250-2500 l/hod; 0,4-4; 0,6-6; 1-10; 1,6-16 m^3/h
  short type: 5-50, 10-100, 16-160, 25-250, 40-400, 50-500, 60-600, 100-1000, 160-1600, 250-2500 l/h; 0,4-4; 0,6-6; 1-10; 2,5-16; 5-26; 2-25, 8-40, 12-60, 14-90, 18-120, 25-150, 25-180 m^3/h
- T max: 0-60°C
- PN: less than 0,6 bar
- accuracy class: 4%

SPECIFICATION:

Float flowmeter LZS is a basic type of vertical flowmeter, designed for measurements and control of non-agressive mediums. Produced in two default lengths (long and short). Cheap, effective and patented solution. Flowmeters may be equipped with one or two switching contacts of limiting values. Vertical installation only. Connection flow into DN 65mm and terminated with a PVC connection, determined for glueing or melting. Flowmeters of DN 100 and DN125mm are equipped with flange connection.

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F.3.

FLOWMETER LZM-G

float flowmeter
rate of flow:
0,5 l/h - 750 l/h liquid
1 m³/h - 1400 m³/h gas

DESCRIPTION:

• case: plastic (PC, PSU)
• connection material: plastic,PVC, polypropylen brass, stainless steel, chromium-plated plated brass
• float material: stainless steel
• guide rod material: stainless steel
• sealing: O-ring NBR or Al
• installation: only vertical
• option of liquid(water) and gases (air) measuring

APPLICATION:

• power engineering
• air-conditioning
• food industry
• mechanical engineering
• water management

TECHNICAL PARAMETERS:

• design: 15G, 20G, 25G, 40G, 50G
• measuring ranges: 0,5-4, 1-7, 1,8-18, 4-36, 10-70, 20-100, 20-110, 20-150, 80-220, 80-300, 150-450, 190-560, 220-750 l/min (water)
1-10, 1,6-16, 4-40, 6-60, 16-160, 25-250, 35-350, 80-400, 10-500, 120-600, 30-850, 400-1200, 500-1400 m^3/h (air)
• T max: 90°C
• PN: 6 bar
• connection thread: G1/2 (G3/4, G1, G2)
• accuracy class: 4%

SPECIFICATION:

Tube-float flowmeters LZM-G are threaded, tube flowmeters, which are used in applications, where it is necessary to measure instantaneous flow. Flowmeters are designed for liquid (water) or gases (air) measurements. Flowmeter works on principle of float with orifice plate inside a closed cylindric measuring tube.
Flowmeters are eqipped with scale liter/min. Connection of the flowmeter is arranged as inner or outer thread G1/2 - 1". Vertical instalation only.

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FLOWMETER LZB

panel
diameter: 3,4,6,10
2,5 ml/min - 160 l/h liquid
0,03 l/min - 2,5 m³/h gas

DESCRIPTION:

- case: stainless steel
- connection material: stainless steel
- flowmeters core: silicate glass
- sealing and other hydrophilic parts: teflon
- switching contacts of limiting values
- regulatory knob
- panel mounting
- option of liquid (water) and gases (air) measuring

APPLICATION:

- power egineering
- food industry
- mechanical engineering
- agriculture
- automation
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: DN 3, 4, 6, 10 mm
- measuring range: 2,5-25, 6-60, 10-100ml/min, 1-10l/h...16-160l/h (water)
  0,03-0,3, 0,06-0,6, 0,1-1, 0,15-1,5l/min
  0,016-0,16m^3/h ... 0,25-2,5m^3/h (air)
- T max: -20+200 °C
- PN: 0,6 Mpa, 1 Mpa
- thread: 2x M6
- accuracy class: 2,5%, 4%, 6%

SPECIFICATION:

LZB glass flowmeters in panel design are used for instantaneous flow measurements of aggressive liquids and gases. The core of this flowmeter is made of silicate glass, case of stainless steel. Other hydrophilic parts of the flowmeter are made of teflon. Such construction ensures corrosion resistance of this series. Flowmeters are suitable for measurements of various types of acids and alcalis, oxidants and other corrosive substances, such as chemicals, kerosene, fertilizers, etc. Panel flowmeters are equipped with reduction/throttle valve for required flow setting. Flowmeters may further be equipped with switching contacts of limiting values.

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F.5.

FLOWMETER LZB / LZB-F

DN 15...100 glass / stainless steel design

DESCRIPTION:

- case: steel
- inspection hole: glass
- connection: flange , option of threaded adapters
- float and guide rod: stainless steel
- design: LZS-F all hydrophilic parts are teflon-plated, Viton sealing

APPLICATION:

- sanitary equipment and heating engineering
- heating management, power engineering
- mechanical engineering
- chemical industry

TECHNICAL PARAMETERS:

- diameter: DN 15, 25, 40, 50, 80, 100 mm
- measuring range for liquids: 6-60 l/h... 50-120 m^3/h
- measuring range for gases: 0,25-2,5... 500-2500m^3/h
- connection thread: G1/2
- accuracy class: 1,5 - 2,5%
- PN: 0,4- 0,6

SPECIFICATION:

Float flowmeters LZB in combinated steel and glass design are used for instantaneous flow measurements of standard liquids and gases. The core of this flowmeter is made of silicate glass, case is made of steel and surface-treated steel. All hydrophilic parts of the flowmeter are teflon-plated, that ensures corrosion resistance of this series. Flowmeters are suitable for measurements of various types of liquids and gases, that do not have corrosive effect on contact materials and sealing. Default connection by flange, threaded adapters come as accessories.

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F.6.

FLOWMETER LZB-S

DN 15...100
glass / stainless steel design

DESCRIPTION:

- case: stainless steel
- inspection hole: glass
- connection: flange , option of threaded adapters
- float and guide rod: stainless steel
- design: LZS-B all hydrophilic parts are teflon-plated, Viton sealing

APPLICATION:

- food industry
- heating management, power engineering
- mechanical engineering
- chemical industry

TECHNICAL PARAMETERS:

- diameter: DN 15, 25, 40, 50, 80, 100 mm
- measuring range for liquids: 6-60 l/h... 50-120 m^3/h
- measuring range for gases: 0,25-2,5... 500-2500m^3/h
- connection thread: G1/2
- accuracy class: 1,5 - 2,5%
- PN: 0,4- 0,6

SPECIFICATION:

All-stainless steel float flowmeters LZB-S in design that combinates stainless steel, glass, PTFE and Viton are used for instantaneous flow measurements of standard and aggressive liquids and gases. The core of this flowmeter is made of silicate glass, case is made of stainless steel. All hydrophilic parts of the flowmeter are made of stainless steel or they are teflon-plated. Such construction ensures corrosion resistance of this series. Flowmeters are suitable for measurements of various types of liquids and gases, that do not have corrosive effect on contact materials and sealing. Default connection by flange, threaded adapters come as accessories.

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FLOWMETER LZB-VA/-FA

rate of flow:
4 l/h - 16000 l/h liquid
0,12 m³/h - 300 m³/h gas

DESCRIPTION:

- case: surface-treated steel or stainless steel
- connection material: surface-treated steel or stainless steel
- flowmeters core: silicate glass
- sealing and other hydrophilic parts: teflon
- installation: only vertical
- option of liquid(water) and gases (air) measuring
- design: VA (threaded) or FA (flange)

APPLICATION:

- power engineering
- food industry
- mechanical engineering
- agriculture
- automation
- petrochemical industry

TECHNICAL PARAMETERS:

- diameter: DN 15, 25, 40, 50 mm
- measuring range: 4 - 40l/h... 4000-16000 l/h (water)
  0,12-1,2m^3/h ... 30-300m^3/h (air)
- T max: -20+200°C
- PN: 0,7MPa; 0,9MPa, 1MPa
- thread: G1/2, G1, G1 ½,G2"

SPECIFICATION:

Float flowmeters LZB-VA/-FA in glass design are used for instantaneous flow measurements of aggressive liquids and gases. The core of this flowmeter is made of silicate glass, case is made of surface-treated steel or stainless steel. Other hydrophilic parts of the flowmeter are made of teflon. Such construction ensures corrosion resistance of this series. Flowmeters are suitable for measurements of various types of acids and alcalis, oxidants and other corrosive substances, such as chemicals, kerosene, fertilizers, etc. Vertical installation only.

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FLOWMETER LZM-Z

panel mounting
rate of flow:
10 l/h - 170 l/min liquid
0,1 m³/h - 350 m³/h gas

DESCRIPTION:

- case: acrylate, glass
- connection material: ABS, PVC, polypropylen brass, stainless steel, chromium-plated brass
- float: acrylate, teflon
- sealing: NVR, PTFE
- control valve
- installation: only vertical
- option of liquid(water) and gases (air) measuring

APPLICATION:

- food industry
- mechanical engineering
- test and lab equipment

TECHNICAL PARAMETERS:

- model: 15Z, 15ZA, 25Z
- measuring range: 10-100, 16-160, 25-250 l/h
  0,5-4...10-170l/min (water)
  from 0,1-1m^3/h up to 35-350m^3/h (air)
- T max: 80°C
- PN: 6 bar
- thread: G1/2, G1"
- accuracy class: 4%

SPECIFICATION:

Flowmeters LZM-Z are used for instantaneous flow measurements of liquid and gases.
This model of flowmeter is suitable for panel mounting. Comes in various materials of float and connection. Vertical installation only.

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FLOWMETER LZM-T

with regulatory valve
rate of flow:
6ml/min - 170 l/min liquid
0,2 l/min - 160 m³/h gas

DESCRIPTION:

- case: acrylate, glass
- connector material: ABS, PVC, polypropylen brass, stainless steel, chromium-plated brass
- float: acrylate, teflon
- sealing: NVR, PTFE
- control valve
- installation: only vertical
- option of liquid (water) and gases (air) measuring

APPLICATION:

- food industry
- mechanical engineering
- test and lab equipment

TECHNICAL PARAMETERS:

- model: 4T, 6T, 8T, 15T, 20T, 25T
- measuring range: from 6-60ml/min up to 100-1000ml/min
  2,5-25, 4-40, 6-60 l/h
  0,5-4 l/min... 30-170 l/min (water)
  from 0,2-2l/min up to 6-30 l/min
  from 1-10m^3/h up to 16-160m^3/h (air)
- T max: 80°C
- PN: 6 bar
- thread: G1/4, G1/2, G3/4, G1"
- accuracy class: 4%

SPECIFICATION:

Flowmeters LZM-T are used for instantaneous flow measurements of liquid and gases.
This model of flowmeter is suitable for panel mounting. Flow may be regulated by use of valve. Manufactured in accuracy class 4%. Various materials of connectors, floats and valves.
Vertical installation only.

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F.10.

FLOWMETER LZM-6T O_2

with valve for oxygen measurements ranges: 0 – 14l/min

DESCRIPTION:

- case: acrylate
- connector material: ABS, brass, chromium-plated brass
- float: acrylate, stainless steel
- sealing: O-ring(rubber)
- control valve
- installation: only vertical
- option of gas measurement(oxygen)

APPLICATION:

- food industry
- mechanical engineering
- air-conditioning
- power engineering

TECHNICAL PARAMETERS:

- model: LZM-6T O_2
- measure range: 1-3l/min... 0,5-14l/min
- thread: M10x1mm or 9/16-18
- accuracy class: 5%

SPECIFICATION:

Flowmeters LZM-6T O_2 are used for flow control and measurements of oxygen and its concentrations. Mediums flow may be regulated by a valve.

This model is suitable for panel mounting. Produced in accuracy class 5%. Float, connector and valve can be made of various materials, optional special scale design for oxygen, etc.

Install into vertical position only.

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FLOWMETER LVB

vortex flowmeter
DN6...25, 0,5l-150l/min

DESCRIPTION:

- water volumetric flow meter
- working on the principle of vortex
- for mounting into piping
- any posititon of installation
- low pressure lost
- the possibility of atypical version - clamp connection, high pressure version...

APPLICATION:

- petrochemical industry
- chemical industry
- food industry
- metallurgy

TECHNICAL PARAMETERS:

- DN: 6, 8, 10, 15, 20, 25
- measuring range from 0,5 l/min to 150 l/min
- measurement accurancy: 50...100%FS <2%; up to 50%FS <1%
- PN: 12bar (+40°C), 6bar (+100°C)
- environment temperature: -15+85°C
- case: PA6T/6I (40%GF)
- sensor: ETFE
- seal: EPDM
- output: analog (4-20mA) or pulse
- IP 65

SPECIFICATION:

Basic series of flowmeters LVB offer compact, easy and affordable price solution for monitoring the flow or consumption.
Flowmeters are working on the principle of vortex, LVB series are using for measurement the flow of water and low viscous liquids. Flowmeters can be used for a wide range of media in the temperature range up to 125°C.
They can be used in petochemical, chemical and food industry and also in metallurgy and scientific research for measurement and regulation.
It is possible to choose analog or pulse output.
Analog output signal is standard 4-20mA.
Level of protection is IP 65.

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FLOWMETER LZZ, LZK, LZD

LZZ-side indicator
LZK-el.contact
LZD-wire version

DESCRIPTION:

- case: steel
- version: with side indicator LZZ, with el. connector LZK, wire version LZD
- any position of installation
- option of liquid (water) and gases (air) measuring

APPLICATION:

- petrochemical industry
- chemical industry
- food industry
- mechanical and civil engineering

TECHNICAL PARAMETERS:

- diameter: 15, 25, 40, 50, 80, 100, 150
- measuring range: liquid 0,025; 0,04; 0,06; 0,1; 0,16; 0,25; 0,4; 0,6; 1; 1,6; 2,5; 4; 6; 10; 16; 25; 40; 60; 160m^3; gases 0,7; 1,1; 1,8; 2,8; 4; 7; 10; 16; 30; 45; 70; 110; 160; 250; 400; 750; 1100; 1800; 2500m^3
- connection: flange according the JB/T81-94)PN1,6,PN2,5) or JB/T82.2-94 (PN4, PN6,3)
- environment temperature: -20 + 50°C
- media temperature: -80+120°C
- PN: 1,6 MPa
- El.output: 2 wires 4-20mA, 3 wires 0-10mA, 4 wires 0-20mA, 4-20mA
- EX - version: IbIICT4 with LB830S with safety protection
- Power, el. contacts (LZK): 24V DC ±20%, 12V DC± 10%

SPECIFICATION:

Flowmeters LZZ, LZK, LZD with steel case are suitable for the measurement the flow of liquid and gases into piping. This series of the flowmeters come in several options. With side indicator (LZZ), with electrical contact (LZK) or with el. output according standard signals 0-10, 4-20mA 2/4 wire version (LZD). LZ.. flowmeters have simple construction, reliable service with low pressure lost and are supplied in various modifications: EX version, stainless steel, with a condensation container etc. Installation in all positions.

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MAGNETIC-INDUCTIVE FLOWMETERS

DN 10... DN 1000

DESCRIPTION:

- construction material: welded steel
- flow tube: stainless steel
- connection flange and sensors cover: carbon (stainless) steel
- assembly connection: flange DIN, BS, ANSI
- flow direction: both-way measurement
- internal diameter: DN 10... DN 1000
- environment temperature: -20+50°C

APPLICATION:

- water industry
- petrochemical industry
- mechanical and civil engineering
- farmaceutical industry
- food industry

TECHNICAL PARAMETERS:

- value indication: only by exter. indicator, control system, PC
- analog. output: 4/0-20mA, generally adjustable within range 0-30mA/300 Ohmů
- frequency output: instantaneous flow (0-2kHz)/ max. 30V/50mA DC
- binary output with modes (relay): inductionless load 30V/2A DC; 125V/0,5A AC
- communic. output: network LONWORKS, protocol LonTalk
- power supply: 24V/500mA DC
- cable outlets: 2 pieces PG 11
- measuring accuracy: 0,5% from the measured value within range 10-100% Qmax

SPECIFICATION:

Control unit integrated in the sensors body - without display. Welded steel construction. Does not contain elements built into the measurement tube. Protection IP 65/NEMA 3.

All sensors are manufactured in compliance with international standards. Wide range of flanges (DIN, BS, ANSI...). Flange or screw design. Adjustable filtration of measurement and low flow suppresion.

Standard sensor

Compact design

Separate design

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ELECTROMAGNETIC INDUCTION FLOW METER

pipe instalation MVM

DESCRIPTION:

- process connectons stainless steel/PVDF
- case aluminuim/ABS
- fast response
- instalation in any possition
- electrodes stainless steel

APPLICATION:

- petrochemical industry
- chemical industry
- food industry
- metallurgy

TECHNICAL PARAMETERS:

- measuring ranges: 0,5-250 l/min (MVM-xxx PA)
- measuring ranges: 0,1-250 l/min (MVM-xxx QA)
- connection: 1/2 BSP, 3/8 BSP, 3/4 BSP, 1 BSP vnější závit
- power supply: 12-24 VDC, 24 VDC
- output: 4-20mA
- IP65

SPECIFICATION:

Electromagnetic flowmeter MVM offer high quality in areas where flow sensorswith moving parts cannot be used. Flowmeter is designed for continuous measurement flow rates or for dosing, dosing electrically conductive liquids. MVM works on the magnetic induction principle. The measuring tube is in the megnetic field. If electrically the conductive medium passes through the measiring tube and therefore the voltage is perpendicular to the magnetic field induced into the medium, which is proportional to the average flow spedd and captured by two electrodes. Pulse signal frequency and optional analong output is proportional to the flow.

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F.15.

ULTRASONIC FLOWMETTER

for pipe instalation type F3

DESCRIPTION:

- process connection: by 4 screws
- pipe material: PVC, carbon steel, stainless steel, copper
- conection trought Wi-Fi
- various mounting positions

APPLICATION:

- cleaning system
- chemical industry
- energy
- agriculture

TECHNICAL PARAMETERS:

- flow range: 0,4 - 90 m3/h
- pipe size: DN20- DN80
- accuracy.: 2%
- power supply: 10 - 36VDC/ 500mA
- output: 4-20mA, RS 485, Wi-Fi
- IP54

SPECIFICATION:

Ultrasonic flowmeters are designed for flow measurement with fast and easy instalation.
Ultrasonic flowmeter type F3 is for noninvasive instalation for pipes in ranges from DN20 to DN80 from PVC, carbon steel, stainless steel and copper. Instalation by attaching and thightening the 4 screws. Flowmeter F3 can be used at outdoor aplications due to protection rate IP54.
Flowmeter F3 can be used for measuring chilled water in HVAC system, cleaning system, supply system, residential water, farming irrigation system, etc.
Flowmeter F3 has output 4-20mA and own network support for Wi-Fi connection with support for cloud saving with ”Gentos iCloud” application for easy remote acces.

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FLOWMETER ULTRASONIC TDS

for installation into the pipe DN 15-6000mm




DESCRIPTION:

- TDS-100H - hand held, DN 15-6000 mm
- TDS-100P - portable, DN 15-6000 mm
- TDS-100F1 - wall mount, DN 15-6000 mm
- TDS-100M - modular, DN 15-6000 mm

APPLICATION:

- petrochemical industry
- chemical industry
- food industry
- metallurgy
- water management

TECHNICAL PARAMETERS:

- accuracy: <1% (100H, 100P, 100F1)
- power supply: 90~230VAC (100H),220VAC or 110VAC(100P), 85~264VAC or 24VDC (100F1), 8~36VDC (100M)
- interface: RS 232 or OCT output (100H), RS 485 (100P)
- output: 4-20mA
- IP65 (100F1), IP57 (100M)

SPECIFICATION:

Ultrasonic flowmeters TDS series are working on principle of two ultrasonic transducers fixed on the outer surface of the steel pipe (or any other conductive material). The advantage of this measurement is that the transducers are not in contact with the medium.
It is to choose a pulse or analog output signal (4...20mA). In case of lack of power or air is alarm activated and can be set via a rotary switch with 16 adjustable values.
Installation in any position.

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FLOWMETER HD005

turbine flowmeter
DN2...300, 10l-1800m3/h

DESCRIPTION:

- threaded or flanged connection
- precalibrated rotor
- design with / without local display
- rotor from karbid wolfram
- all stainless steel case
- atypical design - clamp connection, high-pressure, HART communication...

APPLICATION:

- petrochemical industry
- chemical industry
- food industry
- metallurgy

TECHNICAL PARAMETERS:

- DN: 2,4,6,10,15,25,40,50,80,100,150,200,250,300
- measuring range from 10l/h to 1800m3/h
- accuracy from: 0.2, 0,5, 1%
- PN: <40MPa
- case: stainless steel 304 (or 316)
- bearing and axle: karbid wolfram
- rotor: stainless steel 304 (or Alloy CD4Mcu)
- output: 4-20mA, 0-10 V, HART
- IP65

SPECIFICATION:

Turbine flowmeters HD005 series are design for flow measurement of low viscosity fluids. They can be used for the media in the temperature range -20 till +120°C
They can be used in petrochemical, chemical and food industry and also in metallurgy or scientific researche for measurement and regulation.
It is to choose a pulse or analog (current, voltage) output. It is possible to choose different ways for displaying.
Output signal is 4-20mA or 0-10V.
Level of protection is IP65.

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G. Level control

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LEVEL SENSORS

linear level encoders, high accuracy measurement

SPECIFICATION:

Level sensors are designed for level measurements of loose materials. There are various kinds of measurements - contactless radars, microwave level sensors, ultrasound compact level sensors, capacitive and hydrostatic submersible sensors. Each of this mentioned principles is suitable for certain mediums and conditions.

Contactless radars

Pulse radar sensor of series **PiloTREK** belongs to group of the most progressive level meters in the branch of process automatization. Its main advantages are high accuracy of measurement, small dimensions of antennas and their easy installation, low beam angle and affordability. PiloTREK works in K-band frequency range and enables accuracy up to ±3 mm with very small event dead zone. The head may be made of plastic, aluminium alloy or stainless steel. According to application there are various designs of antennas including the encased one.

Microwave level sensors

Contact radar sensor series **MicroTREK** with directed wave is designed to measure levels of both conductive and non-conductive liquids and loose materials. It is based on TDR (Time Domain Reflecometry) principle. Microwave of speed of light is trasmitted along the guiding probe. When the wave reaches the mediums surface, it is reflected back to the meter. The distance from the surface is directly proportional to the time of waves return. The level is then counted electronically. The reflected signal is dependant on dielectric factor of material, which has to be of min. value 1,4. Measuring principle TDR is not affected by other parameters of the material, vapour, foam, temperature or pressure.

Ultrasound compact level sensors

EchoTREK, ultranoise sensor represents a reliable solution to level measurements even in very demanding applications. SenSonic technology enables narrow beam angle, which is a significant advantage in narrow tanks. According to the transmitters material the devices series EchoTREK are capable of measurements up to 25m. The output signal is directly proportional to the levels state. The main advantages of series EchoTREK are the option of 4-bottom control and optional slide-in display, that shows the required values and enables complete sensor control. Electronics are directed by QUEST+ software, which features adaptive signal procession, due to which the sensor reaches high accuracy of measurement in demanding conditions.

Capacitive

Capacitive sensor series **NIVOCAP** represents ideal solution to continuous level measurements of conductive and non-conductive liquids in demanding conditions of high pressures, temperatures, with foam of the surface or with vapour. Its based on principle of capacity measurement between plates of condenser, which are the measuring parts of the device and the conductive wall of the tank. If the tank is made of non-conductive material, it is required to use a reference probe. The air from in between the condenser plates is replaced with a medium of higher dielectric constant which changes the capacity directly proportional to the level. In-built electric circuits measure the capacity difference and converts it onto output signal of correcsponding level.

Hydrostatic submersible sensors

Submersible hydrostatic sensor series **Nivopress N** is a reliable and low-cost device for level measurements in demanding applications such as drillings and tunnels and for basically all continuous measurements of non-aggresive liquids and chemicals. The sensor works on principle of hydrostatic and atmospheric pressure sum, where the resulting signal provides with information about level, or rather water column. Atmospheric pressure is brought to the sensor by means of capillary in cable, protected from humidity. Hydrostatic pressure is measured by membranes, which (according to order code) may be ceramic or made of stainless steel. The signal is then electronically converted onto a analog output 4-20mA, corresponding with the water column.

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LIMIT SWITCHES

up to 5 switching points, wide range of designs

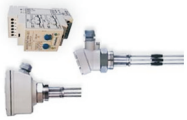
SPECIFICATION:

Limit level switches are designed for switching at certain level heights in loose medium with 1-5 switching points. There are couple of methods of limit switching: float, conductive, vibrational, with magnetic floats and rotary sensor. Each of these principles is suitable for certain mediums and conditions.

Float type

Float type switches series **NIVOFLOAT N** belong to the simplest and most convenient limit switches in the branch. They are suitable for various applications from drinkable water to municipal and waste water. Their wide application comes mainly from the simplicity of this device. Double polystyrene case enables perfect water tightness and cable of lengths from 5 to 20m with choice of PVC or Neopren material will meet the most demanding requirements. There is a mercury-free switch inside the float, that switches under 45° angle. These features make these NIVOFLOAT series the most desired switches in the branch.

Conductivity



Conductivity switches series **NIVOCONT K** represent simple and low-cost version of level detection (for example in boiler rooms) and is suitable for all kinds of limit switching of conductive liquids (min. 10 µS/cm). It is produced in one socket design with electrode for level detection, but only under condition the tanks material is conductive. It can also come with head with up to 4 electrode screwing connections, from which one can serve as a reference when the tanks material does not feature conductivity. Other compact solution is a single channel head for 3 electrodes and two channel one for 5 electrodes together with 1-2 integrated relays. Electrodes come in lengths up to 3 metres and their length may be easily and quickly shortened.

Magnetic floats

Magnetic float switches series **NIVOMAG MK-200** represent universal limit switches in heavy-duty design with usable characteristics. The principle of its operation is based on the magnet placed inside the float, which influences a microswitch inside the body of the meter depending on the floats position. The advantage of this switch is its independence on power supply and capability of operation under high pressures (Up to 25bar). Wide range of designs and accessories. Optional connections of the device: BSP thread, DIN flange or a special welding flange made of carbon steel or stainless steel.

Magnetic

Multi-point magnetic switch series **NIVOPOINT** is an ideal solution to applications, where it is necessary to switch more than two surfaces. There are limit switches placed in the rod probe, which change its state when the float passes and start switching. The customer can determine the distance between contacts and contact type. Submersed parts of the device are made of stainless steel. Probe length from 0,25 up to 3m.Variable float designs in dependance on liquid density.

Vibrational

Vibrational rod switches series **NIVOCONT R**, are heavy-duty devices, that switch surfaces of nearly all powders and glanulates of min. density 0,05kg/dm3. Vibrational fork switches series **NIVOSWITCH** are suitable for limit switching of liquids and loose materials .In default the device has an inbuilt relay, so there is no need to use any additional actuators. The principle is based on electric circuit function, which creates vibration in the rod. When the medium inundates the rod, the vibrations ceases and electronics evaluates the signal, alternatively switches the relay.

Rotary sensors

Rotary blade switches series **NIVOROTA** are used in applications, where it is necessary to measure limit or destructive level of loose materials, such as powders, granulates and materials of higher fraction. It may be attached from the side or on the lid by rope or rod extension which represents an optimal solution to all demanding applications. Between others we would like to mention mediums such as coil, sand, ash, feed, grains and gravel of limited fraction. Based on principle of an electric motor, that turns blade when it is not covered. When the blade comes into contact with medium, electric motor stops and at the same time the relay switches. When the mediums level is lowered, the engine is started and relay comes into its original state.

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H. HEATING ELEMENTS

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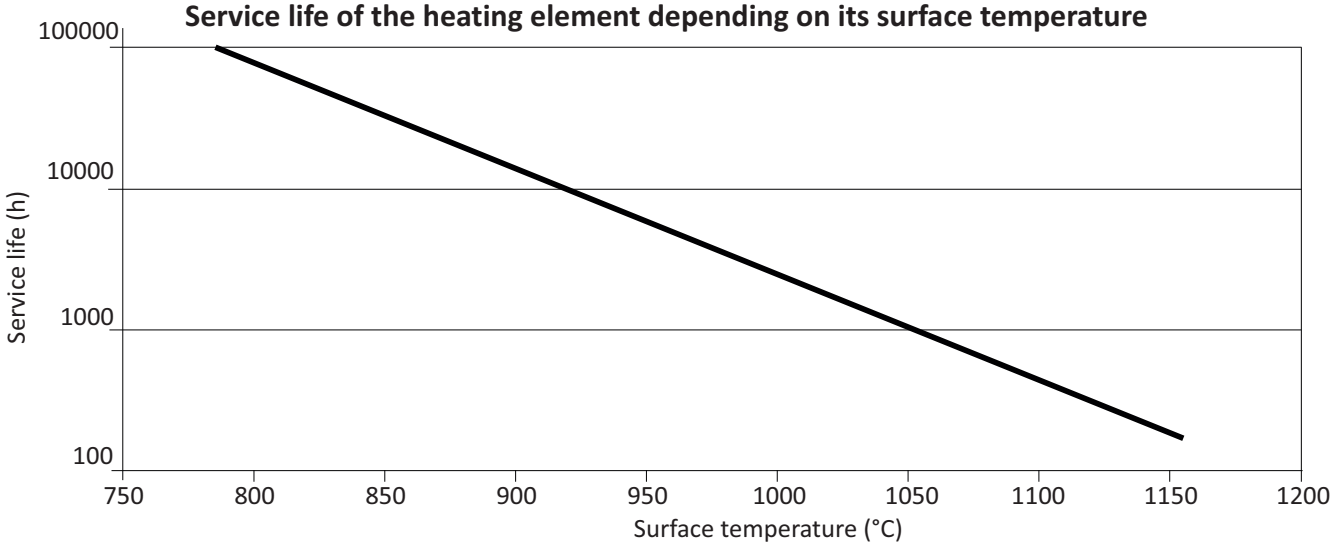
Max. surface loading of the heating element according to working environment

Application	Material of the element			
	Copper	Steel	Stainless steel	Incoloy 800
slack water	10		10	
flowing water	14		14	
water in flow-heater i	25		25	
water vapour	6		6	
light oils		3,5	3,5	
oil		1,2	1,2	
special heating oils		12	12	
stacionary air		1,7	5	6
agitated air v=2m/s		2	5,5	6,5
agitated air v=10m/s		5	10	10

Service life of the heating element depending on its surface temperature



Formula for calculation of elements required output

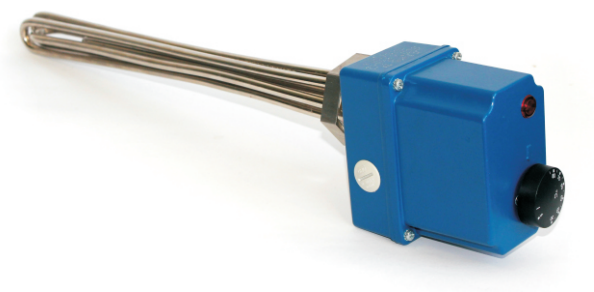
$$P = \frac{k \cdot \Delta T \cdot m}{s}$$

P ..... elements output
k ..... koeficient of specific heat capacity (see table)
ΔT .... difference between the initial and the final temperature
m ..... medium weight
s ..... heating time

Material	k
water	4180
ethanol	2460
ice	2090
oil	2000
air	1003
alluminium	896
iron	450
copper	383

H.1.

HEATING ELEMENT WITH REGULATION TRG 11



type TRG 11
1 500-12 000W

DESCRIPTION:

• heating element with inbuilt regulation including thermal fuse
• connection material: steel, brass, stainless steel 17 248/1.4541
• rods material: steel, brass, stainless steel 17 248/1.4541, Incoloy 800

APPLICATION:

• food industry
• mechanical engineering
• power engineering
• heating
• hydraulics

TECHNICAL PARAMETERS:

• power: 1 500, 2 000, 2 400, 3 000, 4 000, 4 500, 6 000, 7 500, 9 000, 12 000W
• regulatory range/ T fuse: 0-40°C/55°C; 7-77°C/99°C; 20-127°C/150°C; 30-85°C/110°C; 50-150°C/180°C
• thread: M48x2, G6/4 or individual
•power supply: 230/400V
• protection: IP 54

SPECIFICATION:

Heating element consists of two parts. Heating part is made of three U-shaped heating rods (made of mentioned materials) which are connected to the head by M48x2 or G11 thread. Terminal board is made of Al cast with IP 54. Other component parts are a regulatory capillary thermostat in mentioned ranges, thermal fuse that protects the heating element from overheating, glow tube to indicate the current state (heating/not heating) and a regulatory knob with marked scale. Electric supply is possible from both sides through the OBO-VTEC bushing.

Heating element is designed for direct heating of any liquid (material of the element must be suited to the medium). During operation the element must be constantly immersed in the liquid up to the head. Suitable for operations, where immediate thermoregulation is essential.

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H.1.2.

HEATING ELEMENT WITH REGULATION TRG 13

type TRG 13
1 500-12 000W

DESCRIPTION:

• heating element with inbuilt regulation including thermal fuse
• connection material: steel, brass, stainless steel 17 248/1.4541
• rods material: steel, brass, stainless steel 17 248/1.4541, Incoloy 800

APPLICATION:

• food industry
• mechanical engineering
• power engineering
• heating
• hydraulics

TECHNICAL PARAMETERS:

• power: 1 500, 2 000, 2 400, 3 000, 4 000, 4 500, 6 000, 7 500, 9 000, 12 000W
• regulatory range/ T fuse: 0-40°C/55°C; 7-77°C/99°C; 20-127°C/150°C; 30-85°C/110°C; 50-150°C/180°C
• thread: M48x2, G6/4 or individual
•power supply: 230/400V
• protection: IP 66

SPECIFICATION:

Heating element consists of two parts. Heating part is made of three U-shaped heating rods (made of mentioned materials) which are connected to the head by M48x2 or G1½ thread. Terminal board is made of plastic cast with IP 66. Other component parts are a regulatory capillary thermostat in mentioned ranges, thermal fuse that protects the heating element from overheating, glow tube to indicate the current state (heating/not heating) and a regulatory knob with marked scale. Electric supply is possible from both sides through the OBO-VTEC bushing.
Heating element is designed for direct heating of any liquid (material of the element must be suited to the medium). During operation the element must be constantly immersed in the liquid up to the head. Suitable for operations, where immediate thermoregulation is essential.

Design „S" : not transparent case
Design „L": transparent case with ON/OFF indicator

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H.1.3.

HEATING ELEMENT WITH DIGITAL REGULATION TRG 31

type TRG 31
1 500-12 000W

DESCRIPTION:

• heating element with digital regulation including thermal fuse
• connection material: steel, brass, stainless steel 17 248/1.4541
• rods material: steel, brass, stainless steel 17 248/1.4541, Incoloy 800

APPLICATION:

• food industry
• mechanical engineering
• power engineering
• heating industry
• hydraulics

TECHNICAL PARAMETERS:

• power: 1 500, 2 000, 2 400, 3 000,4 000, 4 500, 6 000, 7 500, 9 000, 12 000W
• regulatory range/ T fuse: 0-90°C/110°C
• adjustable switch difference: 1-16°C
•thermostat delay: 0-9 min
• thread: M48x2, G6/4 or individual
• power supply: 230/400V
• protection: IP 54

SPECIFICATION:

Heating element consists of two parts: heating part is made of three U-shaped heating rods (made of mentioned materials) which are connected to the head by M48x2 or G1½. Terminal board is made of Al cast with IP 54. Other component part parts are a regulatory digital thermostat in mentioned ranges, thermal fuse taht protects the heating element from overheating and glow tube to indicate the current state (heating/not heating). Electric supply is possible from both sides through the OBO-VTEC bushing.

Heating element is designed for direct heating of any liquid (material of the element must be suited to the medium). During operation the element must be constantly immersed in the liquid up to the head. Suitable for operations, where immediate thermoregulation is essential.

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H.1.4.

FLOW HEATER THPOV, THPOVR

THPOV - without regulation
THPOVR - with regulation

DESCRIPTION:

- flow heater THPOV without regulation, THPOVR with regulation
- connection material: stainless steel 17 248/1.4541

APPLICATION:

- food processing
- mechanical engineering
- power engineering
- heating industry
- pharmacy

TECHNICAL PARAMETERS:

- output: 1250, 2 400, 9000, 12000 W
- DN 13 (connection thread G ½), DN 46 (connection thread G 6/4)
- regulatory range/ T fuse: 0-99°C/180°C
- power supply: 1 x 230/3 x 230 (400)V
- protection: IP44

SPECIFICATION:

Flow heaters are in two versions: with regulation (THPOVR) and without regulation (THPOV).

Flow heater is designated for straight heaiting of liquid. For this is used innovative technology of printed heating element. This technology provides even heating of medium, when heat transfer is provided straight by flow heater coat. This way of heating provides distinctively better physical and chemical resistance in comparison with standard flow heaters. THPOVR version is equiped with control unit, which enables linear regulation of output heat.

THPOV version is designated for installation of system with external regulation. Both wersions of flow heaters are equiped with thermal fuse, which protects heating element from overheating.

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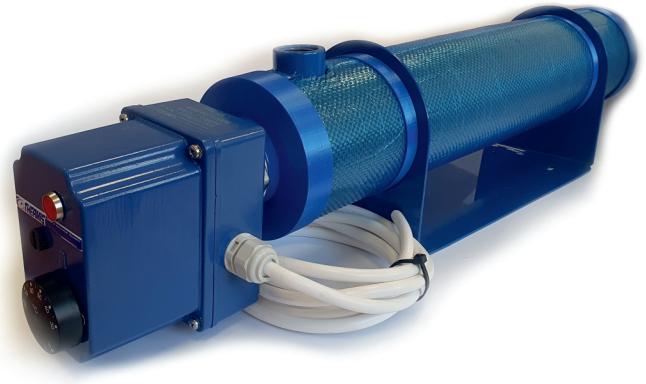
H.1.5.

FLOW HEATER TRGPOV 11 / 31 WITH REGULATION

POWER
1 500 - 12 000 W



DESCRIPTION:
- flow heater with regulation TRGPOV 11, TRGPOV 31
- flow heater component TPOV
- connection: steel Dn25 G3/4
- heating rods: nickeled brass

APPLICATION:
- accessory (supplement) to the solar system and heat pumps

TECHNICAL PARAMETERS:
- power: 1500,...., 12000 W
- G6/4“ as connection for heating element
- DN 25 (connection G3/4“) for water (input / output)
- max. PN 6
- TRGPOV 11 - regulation range/ T fuse: 7-77°C/99°C; 30-85°C/110°C
- TRGPOV 31 - regulation range/ T fuse: 0-90°C/110°C
- power supply: 1x230V / 3x230V, 3x400V cable 2 m
- protection: IP54

SPECIFICATIONS:
Flow heaters are supplied in two versions TRGPOV11 with manual regulation and TRGPOV31 with digital regulation. TPOV is a separate heater body. Flow heater is intended for direct heating of liquid. A heating element located in a cylindrical body is used to heat the liquid, which includes a manual / digital thermostat in the specified temperature range and a thermal fuse protecting the heating element from overheating, and a glow plug indicating the state (heating / not heating) for TRGPOV 11, for TRGPOV 31 by signaling on the display. Electrical supply is possible from both sides via the OBO-VTEC bushing. The body must be constantly immersed in liquid during operation. Installation is possible both in vertical and horizontal position. The standard version with an output of up to 6.0 kW has a body length of 600 mm, and the extended version with an output of up to 12 kW has a body length of 850 mm.

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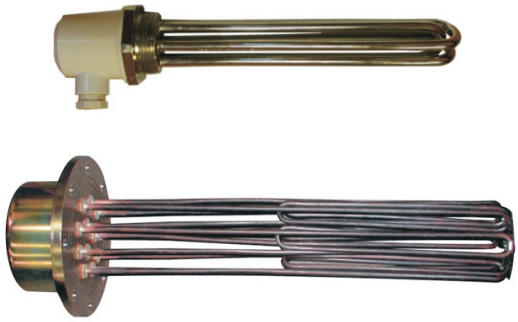
H.2.

HEATING ELEMENTS FOR LIQUID HEATING



power 500W - 50 000W
water and similar
liquid heating

DESCRIPTION:

• flange material: steel including rubber seal, galvanized steel, brass nickel-plated/stainless steel, stainless steel 17 240/1.4301; 17 346/1.4401
• rods material: copper - nickel-plated/stainless steel, stainless steel 17 240/1.4301; 17 346/1.4401

APLLICATION:

• electric appliances – boilers, washing machines, dishwashers, elecric-boilers, oil radiators, hotwater radiators, kettles, coffee machines, deep fryers
• food industry and gastronomy - water heaters, various brewing and boiling machines, gas chambers, deep fryers and frying devices
• transportation and industry – heating of coolants and transmission oils in motor vehicles during winter operation

TECHNICAL PARAMETERS:

• power: 500-50 000W
• power supply: 110, 230, 400, 480V, individual
•IP protection: IP 00 - IP 68

SPECIFICATION:

Heating elements are designed for water and similar liquid heating without risk of medium carbonisation on the elements surface. They consist of heating rods in desired shape and of attachment flange according to application and use. The heating rods are usually made of copper, copper with surface working, various classes of stainless steel, may be teflon-plated. Flanges are made of brass, steel and various classes of stainless steel. Loading of the heating rods is dependant on liquid flow and usually ranges within 6-9W/cm2, according to the actual application there is an option of adjustments for higher/lower loading. Power supply of the heating rods is optional according to customer requirements 110V, 230V, 400V, 480V, 500V. On individual request the heating elements may be supplied with other adjustments: atypical shape of heating rods, individual connected flanges, other materials or surface working.

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Socket heating element
Type: 5107; 14006950; 16.xxx

SPECIFICATION:

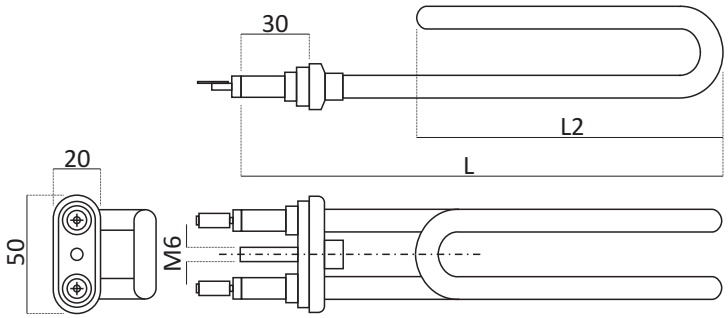
Heating element consists of heating rod connected to the oval-shaped flange. Outlets feature flat pins. Designed for direct water heating in electric water heaters, during operation it must be fully immersed up to the flange. Attachment performed by means of threaded pin M6, sealing by rubber gasket, which is part of the flange.

DESCRIPTION:

- heating rods: copper - nickel-plated
- flange: brass - nickel-plated, including rubber gasket
- PN: 6bar

TECHNICAL PARAMETERS:

Type			Supply (V)	Power (W)	L (mm)	L2 (mm)	Thread
5107/7	140695070	16.121	230	850	170	94	Oval flange 20x50 mm
5107/1	140695010	16.102	230	1000	205	121	
5107/8	140695020	16.131	230	1350	230	146	
5107/3	140695030	16.141	230	1600	330	236	
5107/9	1406950740	16.151	230	1750	290	213	
5107/6	140695060	16.161	230	2000	325	208	
5107/5	140695050	16.171	230	2400	400	313	



Threaded heating element
Type: 5101 / 5102; 14010970; 40.xxx

SPECIFICATION:

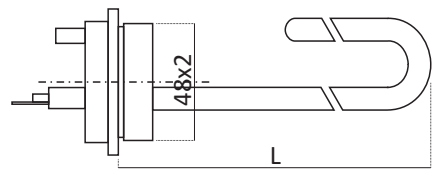
Heating element consists of one heating rod, attached to a brass head (M48x2/ G6/4“). Heating rod is terminated by connection clamps with M4 screws, which serve for inlet cable connection. Designed for water and similar liquid heating (boilers), during operation it must be fully immersed up to the head. For flange sealing it is recommended to use copper, klingerit or other appropriate gasket under the thread.

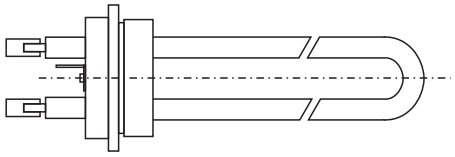
DESRIPTION:

- heating rods: copper - nickel-plated
- flange: brass - nickel-plated,
- PN: 6bar

TECHNICAL PARAMETERS:

Type			Supply (V)	Power (W)	L (mm)	L2 (mm)	Thread
5101/011	1401097010	40.800	230	800	285		M48x2 G6/4“
5101/013	1401097020	40.1000	230	1000	370		
5102/011	1401097030	40.1600	230	1600	293	220	
5101/018	1401097040	40.2000	230	2000	353		
5102/012	1401097050	40.2400	230	2400	363	300	





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Threaded heating element IP 44
Type: 5144; 14011900; 40.xxx

SPECIFICATION:

Heating element consists of three U-shaped heating rods fixed to a brass head with lid (protection IP 54) and with el. bushing PG13,5. Flange attachment hexagon of size 65. Designed for direct water and similar liquid heating in water heaters, electro-boilers, etc. During operation it must be constantly immersed up to the head.

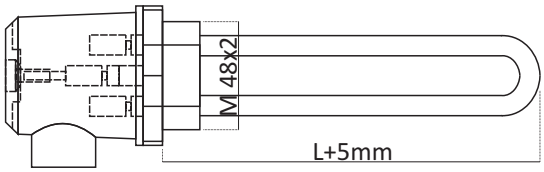
TECHNICAL PARAMETERS:

Type			Supply (V)	Power (W)	L (mm)	Thread
5144/1	1401190091		230/3x230	1500	148	M48x2 G6/4“
5144/2	1401190081		230/3x230	2000	178	
5144/3	1401190010	40.911	230/3x230	2400	203	
5144/4	1401190020	40.921	230/3x230	3000	240	
5144/5	1401190030	40.931	230/3x230	4000	303	
5144/6	1401190040	40.941	230/3x230	4500	333	
5144/7	1401190050	40.951	230/3x230	6000	428	
5144/8	1401190060	40.961	400/3x400	7500	520	

DESCRIPTION:

- heating rods: copper - nickel-plated/stainless steel
- flange: brass - nickel-plated/ stainless steel
- PN: 10bar
- atypical adjustments: individual connectors

– clamp, flanges according to DIN, other threads, etc.
customized heating rods – length, shape, diameter, surface finish
el. connection – voltage, power supply change



Heating element for washing machines
Type: 14089; 02.xxx

SPECIFICATION:

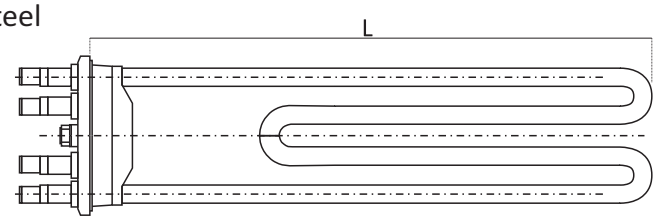
Heating element for direct water heating in automatic washing machines. There is a flat-oval hole 18x70 serving for installation, sealing is done by means of one screw M8. Heating rod is made of copper or stainless steel and must be immersed during all operation.

TECHNICAL PARAMETERS:

Type		Supply (V)	Power (W)	L (mm)	L2 (mm)	Thread
1408990060	02.1750	230	1750	190		Oval flange for hole 70x18 mm
1408990040	02.2000	230	2000	225		
1408990100	02.2500	230	2500	180	220	
1408990150	02.2800	230	2800	300		
1408990050	02.3000	380	3000	370	300	
1408990080	02.4000	380	4000	370		

DESCRIPTION:

- heating rods: copper - nickel-plated / stainless steel
- flange: steel including rubber seal
- PN: 6bar
- optional individual adjustments:
  length, shape, power



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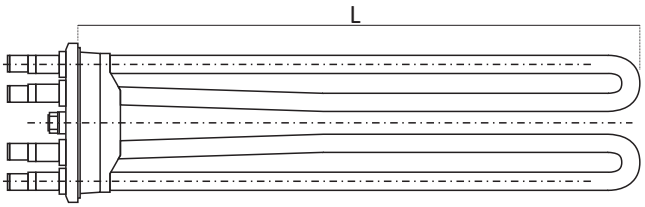
Heating element for industrial washing machines
Type: 309/989; K048,052

SPECIFICATION:

Heating element is designed for direct water heating in industrial washing machines, it has two U-shaped heating rods placed in one flange with rubber seal, determined into hole 70x18mm. Sealing is done by means of one screw M8. Heating rod is made of copper or stainless steel and must be fully immersed during operation. Heating elements are to be connected on nominal voltage as per wiring diagram of appliance for which they are designed.

TECHNICAL PARAMETERS:

Type		Supply (V)	Power (W)	L (mm)	Material	Thread
309	K052	230	2x2000	300	Copper	Oval flange for hole 70x18 mm
309		230	2x2000	350	Copper	
309		230	2x2000	470	Copper	
309	K048	230	2x3000	470	Copper	



DESCRIPTION:

- heating elements: copper - nickel-plated / stainless steel
- flange: steel including rubber seal
- PN: 6bar
- option of individual adjustments: length, shape, power

Heating element for dish washers
Type: 14520

SPECIFICATION:

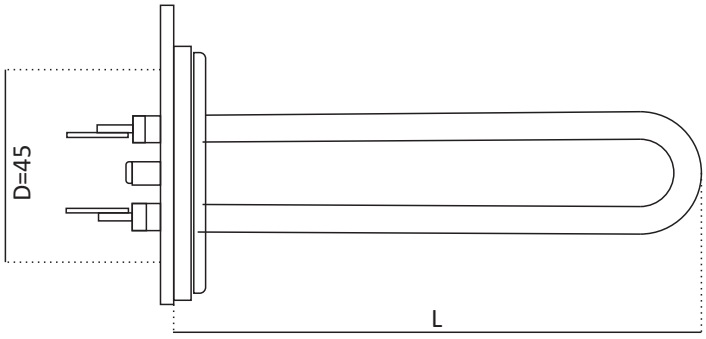
Heating element designed for dish washers produced by ALBA Hořovice company. Heating rods material - stainless steel, flange is made of brass.

TECHNICAL PARAMETERS:

Type	Supply (V)	Power (W)	L (mm)	Note
1452090000	3x230	3x2000	326	
1452090010	3x230	3x1333	326	
1452090030	3x230	3x2000	326	only with hole
1452090040	3x230	3x2000	326	with well
1452090050	3x230	3x1333	326	Cu-Ms/Ni
1452090060	3x400	3x3000	440	with well
1452090070	3x400	3x1333	326	

DESCRIPTION:

- stainless steel
- flange: brass
- PN: 6bar



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H.2.

FLANGE HEATING ELEMENT UP TO 15 000W

type 14063 / 4034
7 500-15 000W

DESCRIPTION:

• steel cover of the terminal board IP 42
• heating rods: copper, steel, stainless steel 17 240/1.4301; 17 346/1.4401
• flange: galvanized steel, stainless steel 17 240/1.4301; 17 346/1.4401
• flange DIN 2501, EN 1092-1, ANSI B16,5, individual

APPLICATION:

• power engineering
• mechanical engineering
• food industry
• farmaceutical industry
• automotive industry

TECHNICAL PARAMETERS:

• power: 7 500, 9 000, 12 000, 15 000W, individual
• power supply 120, 230, 400, 480, 500V
• atypical adjustments: increased IP, inbuilt el. control, inbuilt thermostat control, limit switches etc.
• individual length and shape of heating rods

SPECIFICATION:

Heating rods are designed for direct water and similar liquid heating. During operation the rods must be fully immersed in the liquid.
Max. permissible pressure 1MPa. Heating rods with longer submersible length than 700mm should be supported.
Flange heating elements consist of steel/stainless steel flange (according to DIN 2501, EN 1092-1, ANSI B16,5/ alternatively on request) and three heating rods. Ceramic terminal board is protected by steel cover with el. bushing GP21/18, ensuring IP 42.

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H.2.

FLANGE HEATING ELEMENT UP TO 50 000W

type 14071 / 4407
15 000-50 000W

DESCRIPTION:

• steel cover of terminal board IP 44
•heating rods: copper, steel, stainless steel 17 240/1.4401; 17 346/1.4403
• flange: galvanized steel, stainless steel 17 240/1.4401; 17 346/1.4403
• flange DIN 2501, EN 1092-1, ANSI B16,5, individual

APPLICATION:

• power-engineering
• mechanical engineering
• food industry
• farmaceutical industry
• automotive industry

TECHNICAL PARAMETERS:

• power: 15 000, 18 000, 24 000, 30 000, 50 000W, individual
• power supply 120, 230, 400, 480, 500V
• atypical adjustments: increased IP protection, inbuilt el. control, inbuilt thermostat control, limit switches etc.
• individual adjustments of length and shape of heating rods
• pressure load : PN 0,6 / 1,0 / 2,5 / 6,4MPa

SPECIFICATION:

Heating rods are designed for direct water or similar liquid heating. During operation the rods must be fully immersed in the liquid.
Max permissible pressure up to 6,4MPa. Heating elements with submersible length over 700mm should be supported.
Flange heating elements consist of steel/ stainless steel flange (according to DIN 2501, EN 1092-1, ANSI B16,5/ alternatively on request) and three heating rods. Ceramic terminal board is protected by a steel cover with el. bushing GP36/28, ensuring IP 42.

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H.3.

GALVANIC HEATING ELEMENT

Type - 1701
Type - 1705 – shaped galvanic heating element

1701 - VERTICALLY IMMERSIBLE HEATING ELEMENTS

DESCRIPTION:

- rods material: stainless steel 17 348/1.4571, stainless steel 17 240/1.4301, porcelain, teflon, titanium, boron-silica glass

1705 - SHAPED HEATING ELEMENTS

DESCRIPTION:

- rods material: stainless steel 17 240/1.4301, stainless steel 17 348/1.4571, stainless steel teflon-plated, individual
- heating rods profile D8,5mm, 11,5x6,2mm
- power on individual requirements

APPLICATION:

- food industry
- mechanical engineering
- power engineering
- heating industry
- hydraulics

TECHNICAL PARAMETERS:

- power: 1 100, 1 500, 1 800, 3 000, 4 500 (1701), on request (1705)
- supply: 3x400V (1701), on request (1705)
- protection: IP 65 (1701)

SPECIFICATION:

Vertical galvanic heating elements (1701) consist of coating (silica glass or noble steel), ceramic heating lining and water-proof el. terminal board. On the coating there is always a mark stating the minimum submersion, if there is no such mark, the element must be fully immersed in the bath during heating operation. El. terminal board is made of polypropylen, waterproof (IP 65) and resistant to heated medium as well as its vapour.

Shaped galvanic heating elements (1705) are shaped from long heating rods of oval or circular cross-section. The bottom heating part may as well follow an atypical shape of the tank. Outlets may be covered by PE head, Al box or rubberized head smoothly changing into cable.

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H.4.

HEATING ELEMENTS INTO THE ENVIRONMENT RISK OF EXPLOSION - ATEX

Heating bodies and heating elements are designed in accordance with the international standards IEC / EN 60079-0, IEC / EN 60079-1, EN 60079-7 and IEC / EN 60079-31 in order to meet the demanding conditions in operations where maximum emphasis on safety, especially in zones with a risk of explosion. Thanks to their properties, they will also find application where IEC, CSA (Canada), INMETRO (Brazil) standards and schemes are implemented, as well as regulations in force in the United States. Entities with valid notifications or accreditations according to the reference certification scheme are involved in the certifications.

After passing the explosion, overpressure and heat tests required by C.E.S.I.C regulations, the components of the heating elements are also certified. They are mainly covers, flanges, pressure vessels or containers, in such a way that they cover the widest possible conditions and possibilities of use for direct heating of flammable gases and explosive dusts with IP 68 degree of protection.

To date, our portfolio includes products suitable for use in potentially explosive areas. For example: flange heaters, electric heat exchangers, indirect heaters for explosive gases, immersion heaters - both threaded and cantilever, heating coils in Combo design, anti-condensation heaters. Furthermore, simple smooth and ribbed radiators designed on the basis of functional requirements agreed with the customer and in accordance with thermodynamic properties and requirements set by regulations.

We cover these typical average applicationsin potentially explosive areas:

- preheating of heating oils
- heating and regeneration through passage technical and process gases
- heating of flammable gases (e.g. methane) in gas stations and in facilities at energy production
- heating of flammable storage areas materials- indirect heating of natural gas at high pressure (Seal Gas Heaters)
- separation and filtration of solvents and oil
- protection against frost and condensation
- contact heating of small tanks
- heating forms or bases with circulating oil circuits

Due to the individual approach to the customer, we are able to define a reasonable safety margin and properties of protective devices and then verify them with verification calculations.

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CLASSIFICATION OF EXPLOSION ENVIRONMENTS AND PRODUCT LABELING

<table>
<tr><td>II</td><td>It indicates the environment where the device is installed, and the subsequent determination of a suitable heating element for heating. Group II environments are open spaces (not closed spaces/mines) in which gas or potentially explosive dust is present. Group I environments are open spaces/mines with the presence of gas. The supplied heating elements are intended for heating in a group II environment.</td></tr>
<tr><td>2</td><td>An environment with a risk of explosion is divided into zones according to the probability of an explosion. It is marked with the numbers 0-1-2 (indicates the presence of explosive gases) or 20-21-22 (indicates the presence of explosive dust). As the number decreases, the probability of an explosive atmosphere is created in the environment. Electrical equipment used in this explosive environment is further divided into CATEGORIES. The equipment is divided into categories according to the following table.
<table>
<tr><td>Kategory 1</td><td>Kategory 2</td><td>Kategory 3</td></tr>
<tr><td>Suitable for the zone 0</td><td>Suitable for the zone 1</td><td>Suitable for the zone 2</td></tr>
</table>
Product suitable for highly explosive environments, can also be used for less explosive environments. The supplied heating elements belong to category 2, so they can be installed in zones 1 and 2.</td></tr>
<tr><td>G
D</td><td>The letters G, D indicate whether the device is suitable for operation in an environment with the presence of explosive gases (G) or explosive dust (D). If both letters (G-D) are present, the device is suitable for an environment that simultaneously assumes the presence of explosive gases and explosive dust. In these cases, the products are marked with explosion resistance and data regarding protection against gas and explosive dust. The supplied heating elements are suitable for environments with explosive gas (G) and explosive dust (D).</td></tr>
<tr><td>EX</td><td>EX is the designation of equipment for an environment with a risk of explosion. The EX symbol is always followed by one or more letters indicating different protection modes. Example: EX d (explosion protection); EX e (increased security)</td></tr>
<tr><td>e/d e/tb
-/d -/tb</td><td>Symbols of the type of equipment protection used with regard to the danger posed by the presence of gas or explosive dust, how it suppresses or prevents the effects of deflagration. The device may have more than one method of protection, and in this case they are all listed on the label. If the protection mode is separated by "/ ", the mode on the left is the relative protection of the process side and the protection of the external environment on the right side.</td></tr>
<tr><td>IIC
IIIA</td><td>Indicates the hazard level of explosive gas or dust for which the device is suitable. Gases are divided into three groups of increasing danger depending on temperature and percentage of ignition: group IIA (e.g. Methyl alcohol), IIB (e.g. Methane), IIC (e.g. Hydrogen). Explosive dust is divided into three groups of increasing danger IIIA, IIIB and IIIC, according to size and electrical conductivity (conductive or non-conductive).</td></tr>
<tr><td>T1
÷
T6</td><td>
<table>
<tr><td>Temperature class</td><td>Temperature°C</td></tr>
<tr><td>T1</td><td><450</td></tr>
<tr><td>T2</td><td><300</td></tr>
<tr><td>T3</td><td><200</td></tr>
<tr><td>T4</td><td><135</td></tr>
<tr><td>T5</td><td><100</td></tr>
<tr><td>T6</td><td><85</td></tr>
</table>
T1 - temperature class
T140°C - max. surface temperature of equipment exposed to an explosive atmosphere</td></tr>
<tr><td>Gb/Db</td><td>Equipment protection level against explosive gases (G) and explosive dust (D). There are three levels of protection: Ga/Da = very high, Gb/Db = high, Gc /Dc = increased. The supplied heating elements have a high level of Gb/Db protection.</td></tr>
<tr><td>IP65</td><td>Resistance of the electrical devices:
1.number: protection against intrusion of solid bodies
2.number: protection against liquid ingress</td></tr>
</table>

Heating elements are equipped as standard with one or more safety systems with manual reset mode. If the nominal operating limits are exceeded, they are responsible for sending an alarm signal with a subsequent request to immediately cut off the heater. Setting alarms with manual reset forces the operator to check the cause of the circuit break before restoring operating conditions and restarting the process to avoid subsequent irreversible damage. If the control system is far from the heating, it is possible to control the safety intervention remotely. equipment in the control room if it is guaranteed that recovery after an intervention is not automatic. The choice of the most suitable temperature sensor is agreed after an individual consultation with the customer, taking into account the characteristics of the system and the requirements for the process. All power cables and cable grommets are connected directly to the housing, without the insertion of other elements. This accessory is also certified as standard for use in explosive environments.

H.4.a.

HEATING ELEMENTS for ATEX

type RFA threaded

DESCRIPTION:

- rods:AISI316 Ti, AISI 316 L, Incoloy 800
- flange : brass, stainless steel 17 34/1.4401
- Atex certification in accordance with ATEX94/9EC
- case: from cast aluminium

APPLICATION:

- petrochemical industry
- mechanical engineering
- power engineering
- surface finishes

TECHNICAL PARAMETERS:

- power: 500, 1 000,2000,3000, 6 000, 9 000, 12 000, max. 18 000W
- voltage: 48V - 690V
- connection: 1 1/4", 1 1/2", 2", 2 1/2"
- power supply: 230/400V
- protection: IP 65/IP 68
- temperature class: T2÷T6
- ambient temperature: -20/ +40°C
- max. surface temperature: T85÷400°C

SPECIFICATIONS:

The heating elements of the RFA series are characterized by more compact dimensions and are manufactured with nominally lower outputs than flanged heaters. The criteria for selection and evaluation of operating conditions are in any case the same as for flanged heaters, which guarantees that these products can be safely used in designated areas for direct or indirect heating of highly flammable substances (solvents) or highly explosive substances (LPG).

Depending on the requirements for use, threaded connections can be made of brass or stainless steel.In the menu, it is possible to choose heaters made of seamless stainless steel pipes: AISI316Ti, AISI 316L or material: Incoloy 800.The housing of the electrical terminal box is for easy installation of cabling and safety elements, or temperature sensors. It is made of cast aluminum divided into two half-shells.

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H.4.b.

HEATING ELEMENTS for ATEX

type FP flanged

DESCRIPTION:

• rods: Incoloy 800, Inconel 625, stainless steel 17346/1.4401, 17 349/ 1.4404, 17 248/ 1.4541
• flange : stainless steel 17 344/1.4401, 17 349/1.4404
•Atex in accordance with ATEX EX 11 2 G/D

APPLICATION:

• petrochemical industry
• engineering
• power engineering
• fuel heating
• surface finishes / treatments

TECHNICAL PARAMETERS:

• power: up to 1000kW
• voltage: 48V - 690V
• flange diameter: 150 - 1000mm
• protection: IP 66/IP 67
• temperature class: T1÷T6
• ambient temperature: -60 + 70°C
• max. immersion length: 3665mm

SPECIFICATIONS:

Flanged heaters are designedfor heating static or flowing heatkutin in tanks or in pipes whichserves for the transport of specific media.Body design always takes into account individualdual customer requirements based onof which is defined: specific power anumber of heating elements, properties ofruby, the maximum temperature of the mantle with over- new definition of "thermal safety" andfollowing that the use of specificconstruction materials with correspondingspatial dimension of the heating elements.Design of flanged heaters withwith replaceable inner inserts inEx design - single layer. This solutionyou will especially appreciate it in the case of heatingoils and corrosive liquids. Heaters withheaters attached to the flangeusing threaded fittings with screw-with a torx head. The advantage of this solution(with a case that is located indistance from the flange) is thatthat the eventual leakage of the process fluidis dispersed into the external environmentnot into the electrical terminal.

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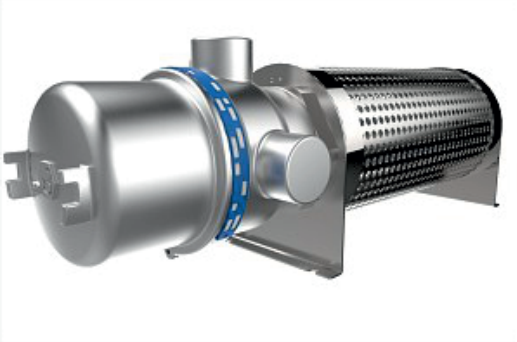
H.4.c.c

HEATING ELEMENTS for ATEX

type combo spatial



DESCRIPTION:

- rods: AISI316 Ti, dia.16mm
- desing: protective grid made of galvanized or stainless steel AISI 304
- Atex in accordance with ATEX94/9EC

APPLICATION:

- petrochemical industry
- mining industry
- power engineering
- surface finishes / treatments

TECHNICAL PARAMETERS:

- power: 500, 800, 1000, 1200, 1500, 1600, 2000, 3000, 4000W
- voltage: 48V - 690V
- connection for wiring :2x 1/2"NPT (1x1/2"NPT +1x3/4"NPT for 3kW)
- protection: IP 65/IP 68
- temperature class: T3
- ambient temperature: -60/ +70°C

SPECIFICATIONS:

The spatial heating element is specially designed for heating small rooms up to 6÷8 m3, where it is desirable to prevent surface condensation of steam.
The heaters are designed for heating static air, they are characterized by a very low specific power (0.66 W / cm2), so that the surface temperature of the heating elements is limited in the presence of natural flow.
For this reason, these products are not suitable for heating large rooms with a complicated floor plan, as it is not possible to ensure that the air temperature is distributed evenly throughout the environment.
If you want to prevent condensation in rooms that have a complex shape and a volume greater than 6÷8 m3, it is advisable to use air heaters equipped with a fan

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H.4.d.

HEATING ELEMENTS for ATEX

Heating plates / panels

DESCRIPTION:

- material of the heater : cast aluminum with durableperimeter armouring
- insulating heat shield of the underside of the panel
- installation: horizontally on flat surfaces (alignment using locking screws)
- increasing the heating surface by means of others modules (4 panels =volume 12 bottles)
- certicication: IEC/EN 60079-0, IEC/EN 60079-1, EN 60079-7, IEC/EN 60079-31

APPLICATION:

- petrochemical industry
- mechanical engineering
- power engineering
- pressure cylinder logistics

TECHNICAL PARAMETERS:

- max. load weight: 100kg
- temperature resistance of cabling: <126°C
- temperature class: T4
- ambient temperature: -60 + 70°C
- max.working temperature: 99°C
- protection: IP 65/IP 68

SPECIFICATIONS:

The heating panels were designed to stabilize the internal pressure of cylinders containing technical gases. Heating the bottles with TP ensures that at lower ambient temperatures than the optimum temperature for processing, the formation of surface frost is prevented, so the contents of the bottle will be used to 100%. This is contact heating when the bottles are placed on the upper heating part of the panel. The generated heat is transferred through the shell of the bottle to the gas, which achieves a constant internal pressure even at a low external ambient temperature. An indisputable advantage is the optimization of gas consumption and the possibility of completely emptying the bottle and minimizing the residual gases inside the bottle, which would otherwise not be used due to insufficient pressure.An analogous product to the heating plates are the explosion-proof Clamp heaters. These too are produced by "drowning" one or more heating elements in aluminum or bronze fusion. They are made in the shape of cylinders or half shells. They enable cylindrical bodies to be heated.

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H.4.e.

HEATING ELEMENTS for ATEX

Air flow heating

DESCRIPTION:

- functional sets for heating the flowing air
- optimized performance of heating elements
- optimized fan performance and auxiliary bridge
- standard / all-stainless design

APPLICATION:

- petrochemical industry
- vertical chambers
- surface finishes
- room heating in an ATEX environment

TECHNICAL PARAMATERS:

- power: up to 250kW
- voltage: 110V - 690V
- fan power: (battery x 4)

SPECIFICATIONS:

The hot-air electric unit is used to heat air or process gas by inserting it into air ducts or ventilation channels. The individual heating elements are ribbed to facilitate and improve the efficiency of heat exchange, but in the event that the heated medium contains suspended particles or aerosols, there is also a variant with smooth heating elements on offer, which prevent the settling of solid particles and subsequent reduction in performance (these and other technical and functional requirements are determined by the customer.

When creating a specific structure, sophisticated technical software is used to verify the thermodynamic performance, thanks to which it is possible to have an accurate analysis of the operating conditions of the thermalunit.

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H.4.f.

HEATING ELEMENTS for ATEX

Heat exchangers, columns

DESCRIPTION:

•options : Ex d, Ex e
• control: ON/ OFF with option - smooth regulation of power using a thyristor
• installation: vertical, horizontal
•material of the spiral: AISI316, Duplex SAF 2205, Inconel 625
• certification: ATEX, IECEx, EAC, CSA, cCSAus, INMETRO

APPLICATION:

• food factory
• mechanical engineering
• power engineering
• heating
• hydraulics

TECHNICAL PARAMETERS:

• max PM: up to 500barg
• max.temperature: up to 350°C
• ambient temperature: -60 + 70°C
• protection: IP 66/IP 68

SPECIFICATIONS:

The double-walled electric duplicator for indirect heating, due to its compactness, high performance and a considerable degree of precision in the regulation of the operating temperature, forms a particularly interesting area of heating and rectification of liquids with the subsequent possibility of releasing the gaseous phase with high vapor tension. They can also be used in applications where, due to the heating of corrosive substances, there is a steep rise in surface temperatures and, as a result, an extreme increase in the corrosive properties of liquids, acids or alkaline substances. Materials normally resistant to corrosion can be destabilized by critical action as a result of these factors, in these cases it is advisable to use an indirect heating system in which the fluid passes through a spiral immersed in a liquid, depending on the working temperatures, it can be water, glycol or oil. It is an electric indirect type heat exchanger, with a more complex structural system than conventional el. exchanger, because it requires the use of specific fuses. systems such as level control, expansion tank and safety valve.

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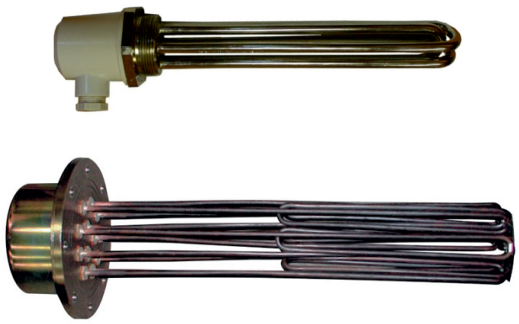
H.5.

HEATING ELEMENT FOR OIL HEATING



low loading W/cm2
500-12 500W

DESCRIPTION:

• flange material: brass, steel, stainless steel 17 240/1.4301; 17 346/1.4401
• rod material: copper, steel, stainless steel 17 240/1.4301; 17 346/1.4401
• threaded, flange design, with inbuilt regulation TRG

APPLICATION:

• hydraulics
• industrial control systems
• rail vehicles
• railway switches

TECHNICAL PARAMETERS

• power: 500-12 500W
• connection: threaded M48x2, G6/4", flange DIN 2501, EN 1092-1, ANSI B16,5, individual
• regulatory range/ T fuse: 0-40°C/55°C; 7-77°C/99°C; 20-127°C/150°C; 30-85°C/110°C; 50-150°C/180°C
• power supply 120, 230, 400, 480, 500V
• atypical adjustments: increased IP, inbuilt el. control, control by inbuilt thermostat, limit switches etc.
• individual rods length and shape adjustments
• PN: 0,6-6,4MPa
• protection: IP 54

SPECIFICATION:

Heating elements for oil heating are specially modified tube elements, that ensure, that there is no oil or similar heated liquid carbonization on the surface or the element. Heating elements feature surface load within interval 1,4-2W/cm², that guarantees sufficient and safe heat transfer. It is also possible to produce elements with individual ajdustments and lower/higher W/cm² loading requirements.

Commonly used materials for flanges are brass and nickel-plated steel, for heating rods carbon steel or stainless steel.

Power supply of the heating rods is optional and will be supplied according to customer requirements 110V, 230V, 400V, 480V, 500V, most commonly 1x230V or 1x400V (for single rod design) and 1x230V, 3x230V, 1x400 and 3x400V (for multi rod design).

Heating elements may be supplied with modifications according to customer requirements.

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Heating element 1 - rod type 230V
Type: 14070, A4....

SPECIFICATION:

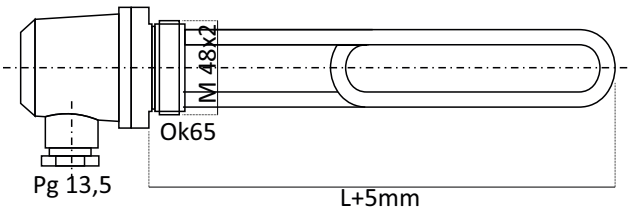
Heating element consists of one steel heating branch made in required shape and length which is connected to the brass head with lid (protection IP 54) and with el. bushing PG13,5. Flanges attachment hexagon size OK 65. Heating element designed for direct oil heating. Output surface load should be selected in a way, so that oil carbonisation does not take place. Working pressure 0,6MPa.

DESCRIPTION:

- heating rods: steel
- flange: brass
- PN: 6bar

TECHNICAL PARAMETERS:

Type		Supply (V)	Power (W)	L (mm)	Thread
1407090020	A4546	1x230	500	300	M48x2 G6/4“
1407090010	A4545	1x230	750	450	
1407090040	A4544	1x230	1000	580	
1407090060	A4547	1x230	1250	680	
1407090050	A4621	1x230	1800	820	
1407090030	A4820	1x230	2250	980	



Heating element 3 - rod type
Type: 14011, A4...

SPECIFICATION:

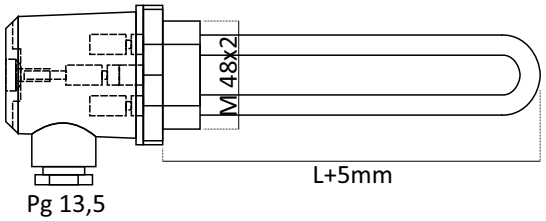
Heating element consists of three heating rods made in required shape and length connected to the brass head with lid (protection IP 54) and with el. bushing PG13,5. Flanges attachment hexagon size OK 65. Heating element designed for direct oil heating. Output surface load should be selected in a way, so that oil carbonisation does not take place. Working pressure 0,6MPa.

DESCRIPTION:

- heating rods: steel
- flange: brass
- PN: 6bar

TECHNICAL PARAMETERS:

Type		Supply (V)	Power (W)	L (mm)	Thread
1401193940	A4770	2x230/400V	500	300	M48x2 G6/4“
1401193860	A4609	2x230/400V	750	340	
14011	A4550	3x230/400V	1000	580	
1401194130	A4553	3x230/400V	1250	680	
1401194140		3x400V	1800	820	



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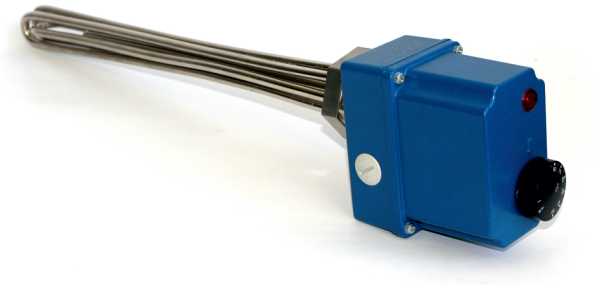
H.5.a.

HEATING ELEMENT WITH REGULATION FOR OIL HEATING

type TRG 11
500-2 250W



DESCRIPTION:

• heating element with inbuilt regulation including thermal fuse
•connection material: steel, brass, stainless steel 17 248/1.4541
• rod material: steel, brass, stainless steel 17 248/1.4541, Incoloy 800

APPLICATION:

• hydraulic industry
• mechanical engineering
• food industry
• farmaceutical industry
• paper industry

TECHNICAL PARAMETERS:

• power: 500, 750, 1 000, 1 250, 1 800, 2 250W
• regulatory range/ T fuse: 0-40°C/55°C; 7-77°C/99°C; 20-127°C/150°C; 30-85°C/110°C; 50-150°C/180°C
• thread: M48x2, G6/4 or individual
• power supply: 230/400V
• protection: IP 54

SPECIFICATION:

Heating elements consist of two parts. The heating part is made of three U-shaped steel heating rods, that are connected to the head by thread M48x2 or G1½“. Terminal board is made of Al cast with protection IP 54. Another parts or the element are regulatory thermostat (capillary) with thermal fuse, that protects the heating element from overheating, glow tube indicating the mode (heating/not heating) and a regulatory knob with marked scale. Electric supply is possible from both sides through OBO-VTEC bushing.

Heating element is designed for direct oil and similar liquid heating. The element is specially modified to ensure there is no oil or similar heated liquid carbonization. During operartion, the heating rods must be fully immersed in the liquid up to the head. Suitable in operations that require instant liquid temperature regulation.

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H.5.b.

FLANGE HEATING ELEMENTS up to 12 500W

type 14211 / 4411 2 500-12 500W

DESCRIPTION:

• steel cover of terminal board IP 44
• heating rods: copper, steel, stainless steel 17 240/1.4301; 17 346/1.4401
• flange: galvanized steel, stainless steel 17 240/1.4301; 17 346/1.4401
• flange DIN 2501, EN 1092-1, ANSI B16,5, individual

APPLICATION:

• hydraulics
• mechanical engineering
• food industry
• farmaceutical industry
• paper industry

TECHNICAL PARAMETERS:

• power: 2 500, 3 500, 4 000, 5 500, 7 000, 8 000, 10 000, 12 500W, individual
• supply: 120, 230, 400, 480, 500V
• atypical adjustments: increased IP, inbuilt el. control, control by inbuilt thermostat, limit switches etc.
• individual rods length and shape adjustments
• pressure load: PN 0,6 / 1,0 / 2,5 / 6,4MPa

SPECIFICATION:

Heating elements are designed for water, oil and similar liquid heating and are adjusted in a way, so that they do not case oil carbonisation. Heating elements must be fully immersed in the liquid during operation.

Max. permissible pressure 0,6; 1; 2,5 and 6,4MPa. Heating elements with submersible length over 700mm should be supported. Flange heating elements consist of nickel-plated steel flange (according to DIN 2501, EN 1092-1, ANSI B16,5/ alternatively on customers request) and three heating rods. Ceramic terminal board is protected by a steel cover with el. bushing GP21/18, ensuring IP 42.

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H.6.

HEATING CARTRIDGES

diameter 6,5-20mm
100-3 000W

TECHNICAL PARAMETERS:

• diameter: heating cartridges are supplied in a circular section of diameter: 6,5; 8; 10; 12,5; 16; 20mm

• connection type: heating cartridges are supplied in threadless design, but also with connection thread or flange
- threadless
- metric threads M10x1; M12x1,5; M14x1,5; M16x1,5; M18x1,5; M20x1,5; M22x1,5; M24x2; M27x2
- inch threads G1 “, G¾“, G1“
- attachment flange
- with reversed threaded flange

• electric outlets: heating cartridges are supplied with various types of electric conductor connection:
- nickel-plated outlets
-with inner conductor connection
- with outer conductor connection
- with silicone cable
- cable with metal protection brading
- cable in flexible metal hose

• electric connection:
- one-way
- both-way

SPECIFICATION:

Heating cartridges are designed for use in wide range of industrial applications, mainly for form and injection molding machines heating, heating of machine part, etc. Heating cartridges are supplied in wide range of designs and can be subject of individual modifications according to customers requirements. They are supplied according to mentioned parameters.

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TECHNICAL PARAMETERS:

• body design: according to application
heating cartridges may be supplied in design:
- straight
- right-angled

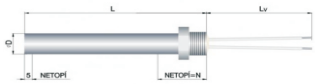
• body material: material of the cartridge body's coat
may be selected from:
- stainless steel
- brass

• individual customization: you may choose
from wide range of individual designs and adjustments:
- individual length; length of the non-heating part;
defined process of output load
- high-load design of the heating cartridges up to 20W/cm2;
various electric outlet design:
teflon insulation, glass-wool insulation,
string of beads, etc.
-surface finish of the heating cartridge body
-thermocouple

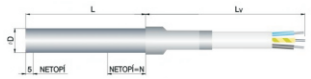
TECHNICAL PARAMETERS:

• diameter:

• connection type:

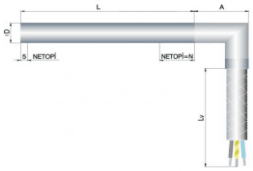


• electric outlets:



• electric outlets:

• electric connection:



Order code

TP									
	Power	Length	Diameter	Body design	Material	Connection type	El. outlets	El.connect.	Individual

Code	Power: write down in W
	determine from 100-¾000W
Code	Length: write down in mm
	as required
Code	Diameter:
1	6,5mm
2	8mm
2	10mm
4	12mm
5	16mm
6	20mm
Code	Body design:
P	straight
U	right-angled

Code	Material
N	stainless steel
M	brass
Code	Connection type
0	threadless
1	M10x1
2	M12x1,5
¾	M14x1,5
4	M16x1,5
5	M18x1,5
6	M20x1,5
7	M27x2
8	G1 "
9	G¾"
10	G1"

Code	El. outlets
N	nickel-plated outlets
I	with inner cond. connect.
O	with outer cond. connect.
S	with silicon cable
K	with metal protec.braiding
H	in flexible metal hose
Code	El. connection
J	one-way
O	both-way
Code	Individidual: specify
N	individual non-heating part
V	defined output process
E	el. outlet design
P	surface finish
T	thermocouple
O	other - specify

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