

Catalog



Industrial group

MIDA

www.midaus.com

Microelectronic sensors

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About company

Since 1991 Industrial group "Microelectronic sensors" (IG MIDA) develops and produces microelectronic pressure transmitters and related devices.

MIDA transmitters and transducers development is based on profound original investigations of piezoresistive effect in "Silicon-on-Sapphire" (SOS) heteroepitaxial semiconductor structures carried out in Russia in 1970-80s which resulted in a series of Russian pressure measuring systems (Sapphire, Sapphire-22, Metran, etc.). The main technical concepts derived from these investigations have been patented in Russia, USA, France and Germany. Currently IG MIDA's efforts are aimed at further enhancing of pressure measurement potentialities on the basis of SOS sensitive elements, improving sensors' accuracy and stability, reducing their weight and dimensions.

The first device produced by IG MIDA in 1991 in cooperation with other manufacturers was a series of compact industrial gage pressure transmitters MIDA-GP-01 with pressure ranges from 0.16 MPa to 160 MPa, accuracy of 0.5% and 1% and operating temperature range from -40 to +80 °C.

Today IG MIDA has continuous production technological cycle of pressure sensors and other devices (except sensing element, which is produced by specialized companies according to the documentation of IG MIDA). IG MIDA produces about thirty types of industrial and special transmitters and more than twenty types of transducers for gage and absolute pressure, differential pressure, vacuum, gage pressure – vacuum, the total number of transmitters and transducers modifications exceeding eighteen thousand. The upper limit of pressure measurement varies from 4 kPa to 250 MPa, the devices' accuracy is from 0.1% to 0.5%, and operating temperature range from -55 to +350 °C.

Working life of our devices is 12 years, guaranty working time is 2 and 3 years, calibration period is 3 and 4 years.

Every transducer model has its modification for hazardous processes (intrinsic-safe electrical circuit or/and flame-proof casing).

IG MIDA also develops and produces DC power supplies MIDA-PS-104, MIDA-PS-106, DC power supplies with safety barriers MIDA-PSSB-102-Ex and intrinsic safe barriers MIDA-ISB-105-Ex, MIDA-ISB-107-E for sensors installed in hazardous conditions, as well as digital indicators of pressure and other physical quantities MIDA-DI-202-Ex, surge voltage protection device MIDA-SVP-301-Ex designed to protect the instrumentation from the powerful electric pulses.

MIDA devices for many years successfully work in oil and gas production and gas transportation sectors, energetics (including nuclear power plants), metallurgy, chemistry, public utilities, energy accounting systems – more than 3.000 enterprises in Russia in more than 400 cities use MIDA pressure transducers and other devices. MIDA products are appreciated by clients in Belarus, Kazakhstan, Uzbekistan and Ukraine, Moldova and the Baltic countries. Since 1995 MIDA transducers are exported to the United States, Czech Republic, France, Sweden, India, China, South Korea.

IG MIDA steadily increases the range and quality of devices produced, adapting them to the demands of the customers and improving the accuracy, stability and reliability of products. As an example we may tell that tests, carried out in USA, showed that SOS pressure transducers' characteristics do not change after 10 millions maximum pressure cycles; our own stability tests showed that after 200 temperature cycles in the range of -40...+80°C during a year the accuracy change for industrial pressure transmitters was less than 0.2 % FS.

For French company "DH-Budenberg" pressure transducers with accuracy 0,01% were designed and supplied.

IG MIDA products have been awarded many national and international competitions and exhibitions prizes: diploma of the "Top 100 enterprises of machine building of Russia in XXI century" in 2000, two diplomas and six gold medals in the National Exhibition Center 2001, 2002, diploma of "100 best goods of Russia" 2001, 2003, 2004, 2006, 2008, 2010, diploma and winner medal of "The 1000 best enterprises of Russia" 2002, 2003, 2005, 2006, 2008, 2011, 2012, gold seal of quality "Russian Brand" in 2003, 2004, two gold and one silver medals "For high quality. New millenium" US-Russia Chamber of Commerce (ARCCI) in 2005, winner medal of "Environmentally friendly products" 2003, Medaille d'or de Societe d'Encouragement pour l'Industrie Nationale, France 2012 et al.

This catalogue contains main technical characteristics, overall and mounting dimensions, design of electrical connection, external electrical circuit connections, mounting sockets layouts, as well as information required to place an order for pressure transmitters, transducers and modules, power supplies, DC power supplies with safety barriers, intrinsic safe barriers, digital indicators, surge voltage protection device that are designed and mass-produced by Industrial Group MIDA enterprises.

MIDA transmitters and transducers generate a normalized output signal (current or voltage) as a function of the pressure imposed for following physical quantities:

- Gage pressure: transmitters MIDA-SG-13(-Ex,-Fp), MIDA-SG-13-M, MIDA-SG-15(-Ex); transducers MIDA-TG-51, -82, -83, -84, -85, -88; modules MIDA-MG-41, -42, -45, -58, -65, -70, -71, -76, -77, -90, -93;
- High-temperature gage pressure: transmitters MIDA-SG-12-05(-Ex), MIDA-SG-12-06(-Ex), MIDA-SG-12-072(-Ex), MIDA-SG-12-081(-Ex), MIDA-SG-12-082(-Ex) MIDA-SG-12-11(-Ex), MIDA-SG-12-12(-Ex); transducers MIDA-TG-52, MIDA-TG-82-7; MIDA-TG-55; modules MIDA-MG-55;
- Gage pressure-vacuum: transmitters MIDA-SGV-13(-Ex); MIDA-SGV-15(-Ex); modules MIDA-MGV-76;

- Vacuum: transmitters MIDA-SV-13(-Ex), MIDA-SV-15(-Ex), MIDA-SV-12-06(-Ex); modules MIDA-MV-76;
- Absolute pressure: transmitters MIDA-SA-13(-Ex,-Fp), MIDA-SA-15(-Ex); transducers MIDA-TA-51, -81, -82, -87, -88, -91; modules MIDA-MA-58, -65, -70, -71, -76, -90;
- Differential pressure: transmitters MIDA-DD-15(-Ex).

MIDA-13-C(N), MIDA-SG-12-C transmitters have secondary transducer (electronics) and are made with microprocessor which assures overall accuracy in the operating temperature range not exceeding 0,25% or 0,5%. MIDA-13-CN transmitter allows rangeability of pressure range.

High accuracy of MIDA-13-H and MIDA-SG-12-H transmitters is attained by their calibration in the operating temperature range using capabilities of modern electronic components.

The high repeatability and thermal stability of transmitters allowed to exclude "range" adjusting in MIDA-SG-13-M transmitters.

MIDA-13 pressure transmitters are produced both nipple and flange membrane applications. MIDA-SG-12-05, MIDA-SG-12-06, MIDA-SG-12-072, MIDA-SG-12-081, MIDA-SG-12-082 transmitters have an open membrane and do not contain any fluid inside unlike their foreign analogues.

MIDA-SG-13-Fp-SVP, MIDA-SA-13-Fp-SVP transmitters with 4-20 mA output and straight armored hose have built-in surge voltage protection device, and transmitters with angle armored hose are equipped with interchangeable surge voltage protection device preventing pulse-wave overload that are caused by lightning and industrial inductions.

MIDA-SG-12P-06, MIDA-SG-12-081, MIDA-SG-12-082, MIDA-SG-12-12 transmitters' primary transducers and electronics blocks are separated and connected with each other with a 1 m (or longer) cable.

On special order the sensors and transmitters can be:

*** equipped with snubbers (dampers) that protect the sensor from water hammer and pressure pulsation, replacing traditional loop-shaped dampers;**

*** made with pressure ports, electrical connections and mounting dimensions differing from existing design documentation.**

MIDA-PS-104, MIDA-PS-106 DC multichannel power supplies are designed to supply stabilized DC voltage (with electric isolated channels) for transmitters and other devices operating in the non-hazardous conditions.

MIDA-PSSB-102-Ex DC power supplies with safety barriers and MIDA-ISB-105-Ex, MIDA-ISB-107-Ex intrinsic safe barriers are designed for power supply and intrinsic safety of 2-wires 4-20 mA output signal transmitters installed in hazardous areas and converting of sensors' output into a normalized 4-20 mA and 0-5 mA DC output signals.

MIDA-DI-202(-Ex) indicators are designed to digitally display information on pressure or other physical quantity transmitted by 2-wires line 4-20 mA DC. The indicators can be mounted in hazardous area; the indicator's display range is adjustable.

MIDA-SVP-301(-Ex) surge voltage protection device is designed to protect the 4-20 mA output transmitters from pulse and wave voltage over-load caused by lightning and industrial power induction.

MIDA devices are included in the State Register of measuring devices, they have the necessary certificates of compliance and manufacturing licenses issued by State Standards Bureau and permissions and licenses by Federal Service for Ecological, Technological and Nuclear Supervision for use in hazardous areas, including mines, and nuclear energy production.

Quality management system of IG MIDA is certified in accordance with the requirements of GOST R ISO 9001-2008 (ISO 9001:2008).



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High-temperature gage pressure transmitters

MIDA-SG-12

MIDA-SG-12 gage pressure transmitters are designed for continuous conversion of gage (SG) pressure of high-temperature liquids and gases, which includes gases with liquid and solid particles, polymer melts, high-viscosity and crystallizing liquids into a normalized DC current or DC voltage output signals in industrial instrumentation and process control systems. Medium to be measured should be compatible with the transmitter materials (Stainless Steel and Titanium).

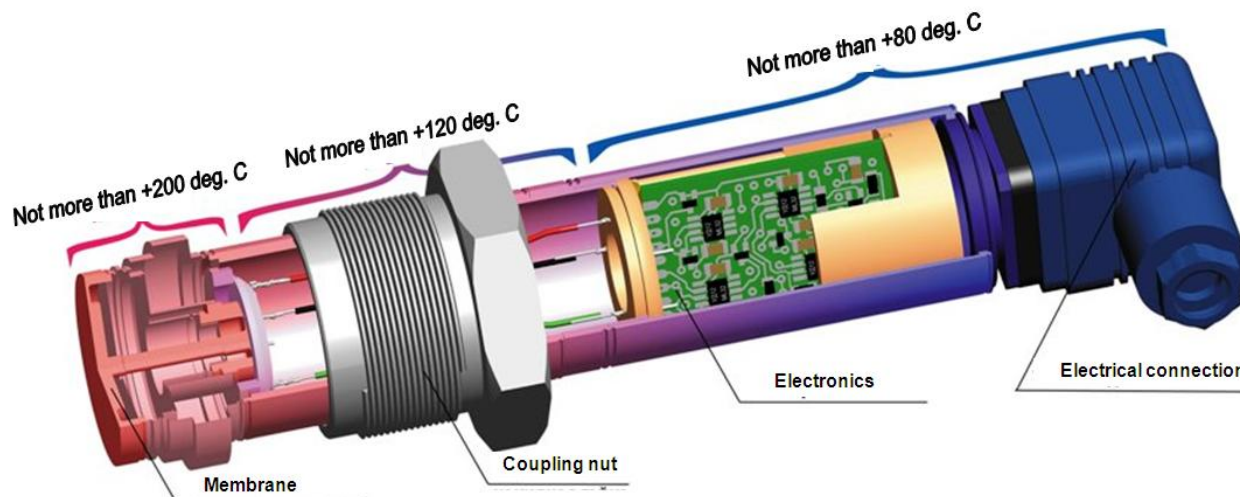
MIDA-SG-12 pressure transmitters are designed for work at temperature of measured medium from -40 to $+300$ °C and at temperature of electronics surrounding air from -40 to $+80$ °C. In transmitters with combine construction the sensing element and electronics are constructively defined. In transmitters with spaced-apart construction the sensing element and electronics spaced and bridged with a cable, which length can vary up to 5 meters according to requirements.

Transmitters designation	Transmitters construction	Pressure thread	Temperature of measured medium	Measured medium
MIDA-SG-12-11 (C)	Combine	Nipple (pressure port)	$-40 \dots +150 (+200)^{\circ}\text{C}$	High-temperature liquids and gases
MIDA-SG-12-12 (C)	Spaced-apart		$-40 \dots +150(+200; +300)^{\circ}\text{C}$	
MIDA-SG-12-05-H MIDA-SG-12-072-H	Combine	Flange membrane	$-40 \dots +150(+200)^{\circ}\text{C}$	Gases with liquid and solid particles, polymer melts, high-viscosity and crystallizing liquids
MIDA-SG-12-06-H MIDA-SG-12-081-H MIDA-SG-12-082-H	Spaced-apart		$-40 \dots +300^{\circ}\text{C}$	

MIDA-SG-12-C high-precision transmitters have a microprocessor, which algorithmically compensates the errors in operating temperature ranges with an amplitude of 0,5%. High accuracy of MIDA-SG-12-H is attained by calibration in operation temperature ranges using the opportunities of modern electronic components.

Common-industrial transmitters are intended for use in non-hazardous areas. Intrinsic safe transmitters have the “Intrinsically safe circuit” type of explosion protection and the ExiaIICT2 – ExiaIICT3 marking depending on upper level of temperature compensation range.

The figure below illustrates the structure of MIDA-SG-12-05 flange membrane pressure transmitter.



The sensing part includes an open membrane with a rod coupling it with the measuring membrane; the Silicon-on Sapphire (SOS) sensing element with piezoresistive silicon bridge is brazed to the measuring membrane; welded aluminum wires connect the sensing element and collectors leads.

The sensing part is connected to the electronics block through collector's leads. The electronics circuit board is distant from the high-temperature zone of the measured medium to avoid heating above $+80^{\circ}\text{C}$. Through connecting wires the electronics are bridged with sealing's terminal bracket: angle (as shown on the Figure) or straight. The transmitters can be equipped with connector instead of sealing. The electronics circuit board and piezoconverter are protected from environment by casing.

MIDA-SG-12-05-H(-06-H) mounting is carried out by coupling nut. Other transmitters are mounted through a pressure port. MIDA-SG-12-11(-12) transmitters have the function for adjustment of ZERO (zero output) and SPAN.

Housings are given in the end of catalogue.

Overall and mounting dimensions of MIDA-12-05(-06, -072) -C (-Ex) transmitters

MIDA-12-05-C

MIDA-12-06-C

MIDA-12-072-C

Fig. 1
Sealing gland straight

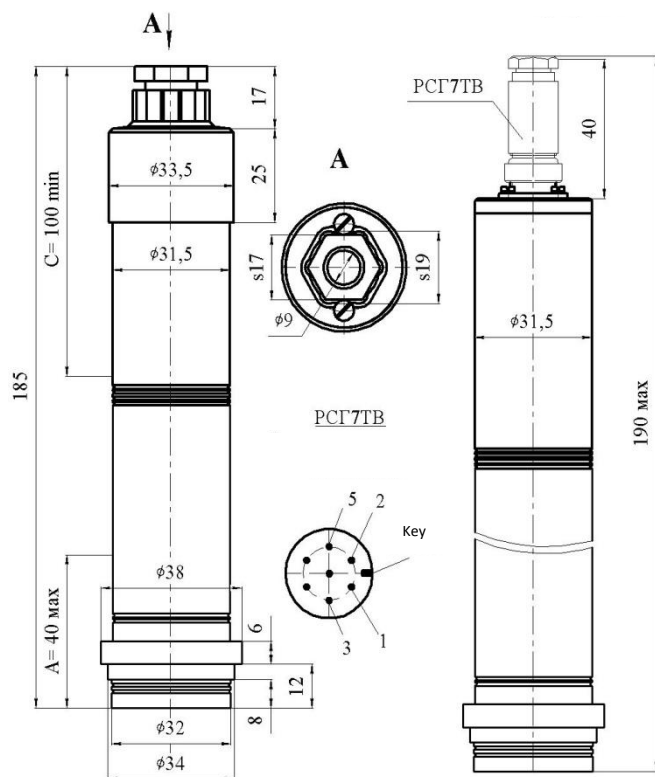


Fig. 2
Plug/socket
rest as on fig. 1

Fig. 1
Sealing gland straight

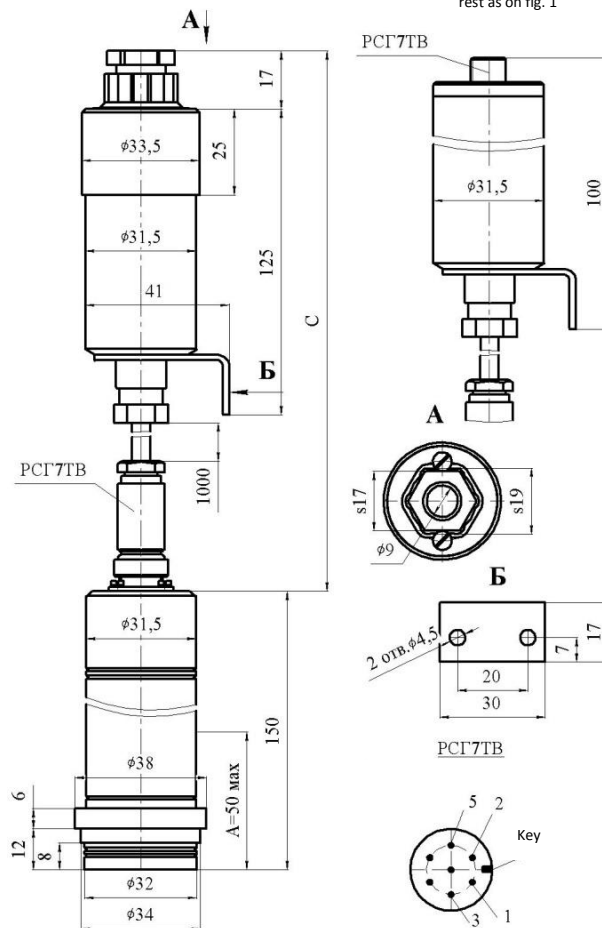


Fig. 2
Plug/socket
rest as on fig. 1

Fig. 1
Sealing gland straight
Pressure port M20x1,5

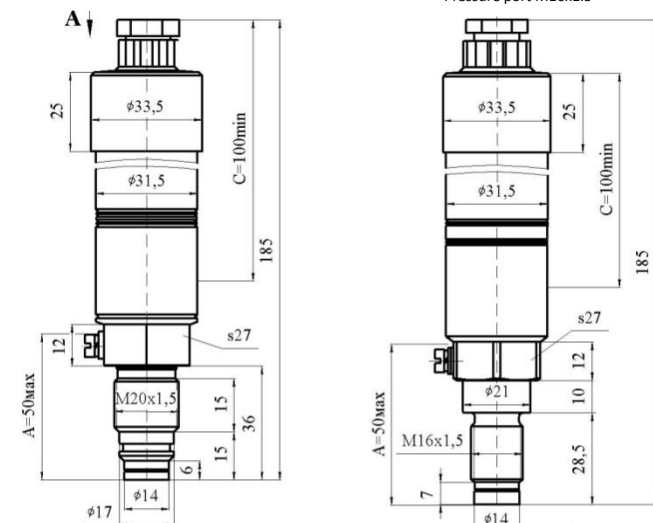


Fig. 2
Sealing gland straight
Pressure port M16x1,5

Fig. 3
Sealing gland angle
rest as on fig. 1, 2

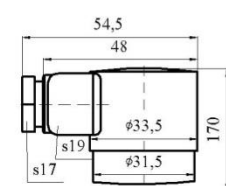
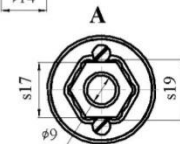
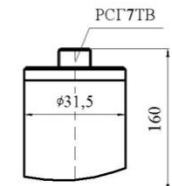


Fig. 4
Plug/socket
rest as on fig. 1, 2



Overall and mounting dimensions of MIDA-SG-12-081(-082) –C (-Ex) transmitters

MIDA-SG-12-081-C

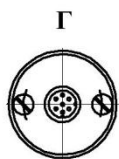
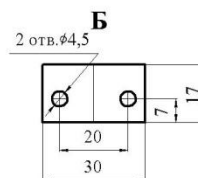
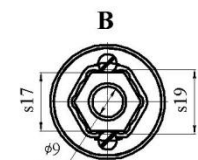
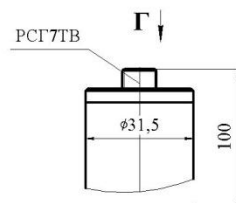
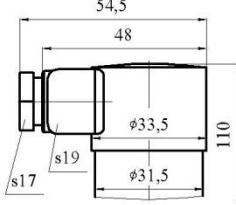
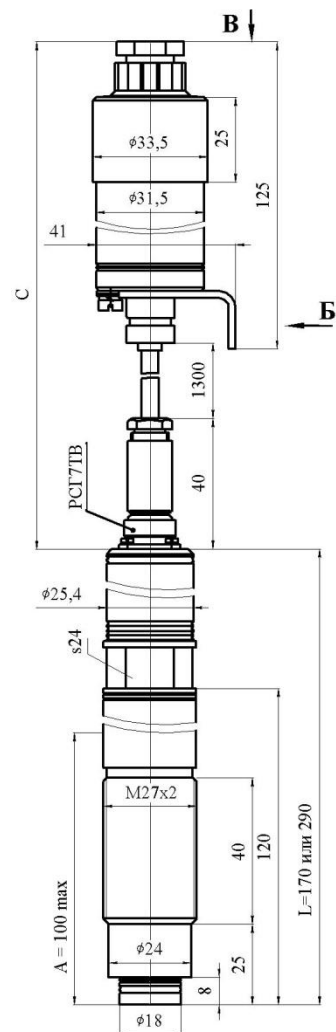
MIDA-SG-12-082-C

Fig. 1
Sealing gland straight
Pressure port M27x2

Fig. 2
Sealing gland angle
Rest as on fig. 1, 4

Fig. 3
Plug/socket
Rest as on fig. 1, 4

Pic. 4
pressure port M20x1,5
the rest on pic. 1



PCI7TB

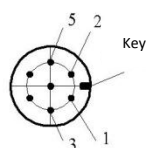


Fig. 1
Sealing gland straight

Fig. 2
Sealing gland angle
Rest as on fig. 1

Fig. 3
Plug/socket
Rest as on fig. 1

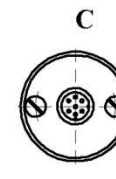
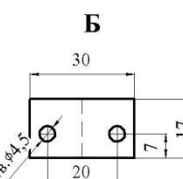
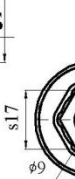
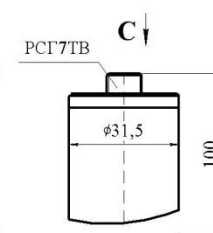
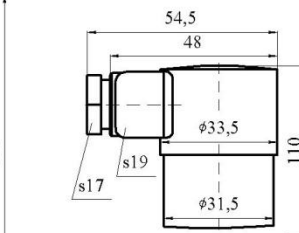
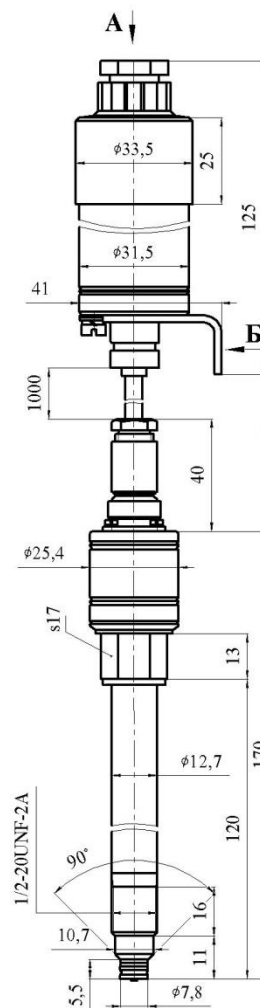
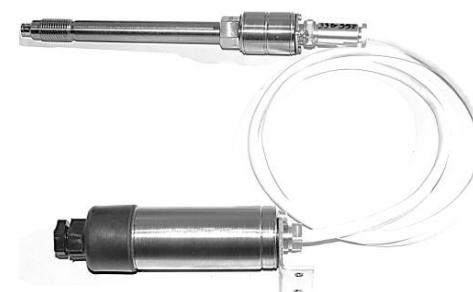
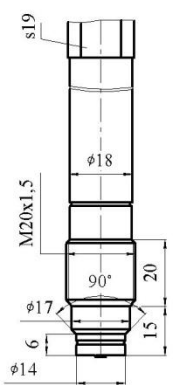
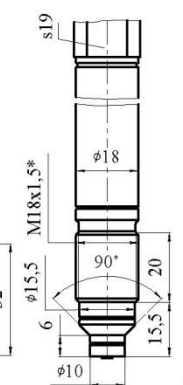
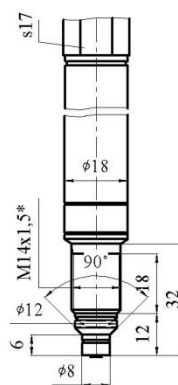


Fig. 4
Pressure port M14x1,5
rest as on fig. 1

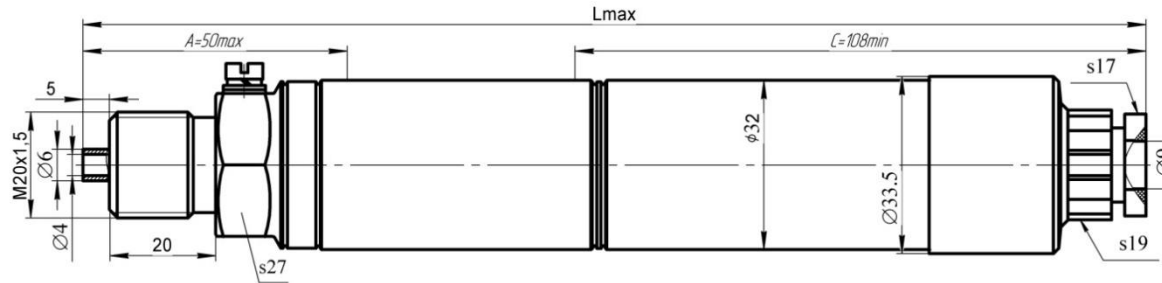
Fig. 5
Pressure port M18x1,5
rest as on fig. 1

Fig. 6
Pressure port M20x1,5
rest as on fig. 1

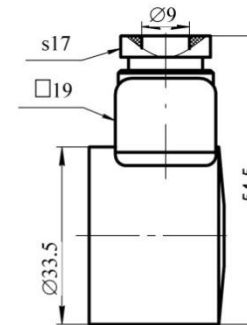
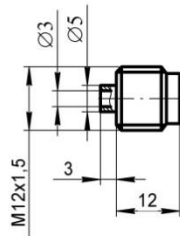


Overall and mounting dimensions of MIDA-12-11(-H) transmitters

from 10 kPa to 160 MPa



from 10 kPa to 25 MPa



Sealing gland straight

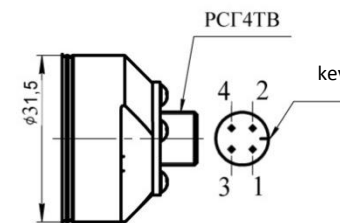
Type	Length, mm, max
SG-12-11,	201 (M20), 191 (M12)
SG-12-11-H	

Sealing gland angle

Type	Length, mm, max
SG-12-11,	186 (M20), 176 (M12)
SG-12-11-H	

Plug/socket PCΓ4TB

Type	Length, mm, max
SG-12-11,	186 (M20), 176 (M12)
SG-12-11-H	



Microelectronic pressure transmitters MIDA-13:

absolute pressure , gage pressure, vacuum, gage pressure-vacuum

MIDA-13 pressure transmitters are designed for continuous conversion of gage (SG), absolute (SA) pressure, vacuum (SV), gage pressure-vacuum (SGV) of liquids and gases into a normalized DC current or DC voltage output signals in industrial instrumentation and process control systems. Medium to be measured should be compatible with the transmitter materials (Stainless Steel and Titanium).

MIDA-13 pressure transmitters are produced both **nipple** and **flange membrane** applications (for liquids containing solid particles, viscous fluids, melts, pulps).

MIDA-13-C(N) transmitters' electronics is provided with a microprocessor that assures overall accuracy in operating temperature range not exceeding 0,5% or 0,25%. MIDA-13-CN transmitter allows rangeability of pressure range.

Setting (adjustment of "zero" and "span") of MIDA-13-C(N) high-precision transmitters differs from other transmitter and is carried out not by using of variable resistors (correctors) but by an external devices. These devices – zeroing devices, PC communication device or pressure range switching device are wired up to technological connector installed on the sensor's terminal block. Resetting of pressure range of MIDA-13(-Ex, -Fp)-CN high-precision transmitters is carried out by PC communications device and a software or by pressure range switching device; "zero" adjustment is performed by PC communication device, zeroing device or pressure range switching device.

High accuracy of MIDA-13-H transmitters is attained by their calibration in the operating temperature range using capabilities of modern electronic components. MIDA-13-Fp-SVP sensors have built-in surge voltage protection device to protect from pulse-wave overload caused by lightning and industrial inductions.

Common-industrial transmitters are designed for use in non-hazardous areas.

MIDA-13-Ex intrinsically safe transmitters have the "intrinsically safe" protection and the following markings:

- 4-20 mA output signal transmitters – 0ExialICT4;
- $(U_0 - U_{\max})$ V output signals sensors – P0Exial/0ExialICT4.

MIDA-13-Fp intrinsically safe transmitters have the "flameproof casing" protection and 1ExdIIBT4 X marking.

MIDA-SG-13-M low-budget transmitter produced for regulation systems heat and water supply, and do not have adjustment of "zero" and "span".

Simplified structure of pressure transmitters is shown on example of MIDA-SG-13-Fp transmitter.

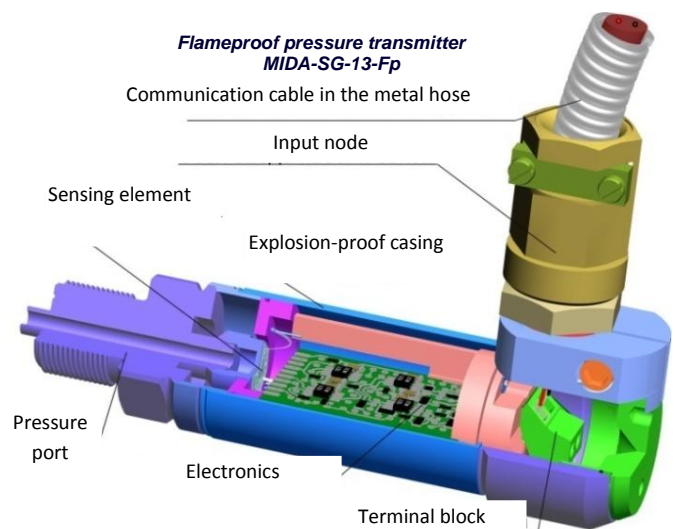
Measured medium's pressure in pressure port imposes metal membrane and SOS sensing element with four resistors located on its surface. Sensing element is represented as heteroepitaxial structure "silicon-on-sapphire" (SOS).

Gage pressure, vacuum and gage pressure-vacuum transmitters' under-sensing-element pocket is interconnected to the atmosphere, and the absolute pressure transmitters' one is isolated from the ambient air.

Due to mechanical deformation of sensing element, the resistance of bridge resistors changes. Power supply of the bridge is performed by stabilized voltage coming from electronics unit. The change of bridge arms resistance results in voltage change coming from bridge circuit.

Electronics unit amplifies the signal of the bridge circuit and converts it into the needed normalized output signal. Electronics unit (except for MIDA-13-C, MIDA-13-CN) may include correctors (variable resistors) of zero (origin value of output) and span (variation range of output).

Power supply connection of the transmitter and its output picking-up are carried out by communication cable connected to the terminal block. Design of the input node is determined by the requirements for explosion-proof safety and necessity of metal hose.



Specification of MIDA-13 transmitters

		13	13-H	13-C	13-CN	13-M	13-(M)-O(P)	13-(H,-C,-CN)-O(P)	
Applications		industrial instrumentation & process control systems, including nuclear power stations				-	industrial instrumentation & process control systems		
Measured medium		fluids and gases, compatible with titanium alloys and stainless steel					liquids containing solid particles, viscous fluids, pulps		
Standard ranges, MPa	SG (gage pressure)	(0-0,004, 0-0,006)** 0-0,01... - 0-160 (0-250)**			0-0,1... - 0-160 *	0-0,6... - 0-2,5	0-1,0...- 0-80		
	SA (absolute pressure)	0-0,04... - 0-10			0-0,4... - 0-10 *	-	0-1,0...- 0-10		
	SV (vacuum pressure)	0-0,01... - 0-0,1		-	-		-		
	SGV (gage pressure-vacuum)	(-0,02)-0,02... - (-0,1)-2,4		-	-		-		
Output signal, (table 1)		01; 02; 03; 04; 05/1; 05/2; 05/4		01			01; 02; 03; 04; 05/1; 05/2; 05/4		
Accuracy (comb. L.H.R), ±%		0,15; 0,2; 0,25; 0,5 (for SGV – 0,5)		0,25; 0,5 (for SGV – 0,5)	-	-	0,5	0,25; 0,5	-
Additional temperature error band within operating temperature range, no more than, %		1,6 (for 0,15%); 2 (for 0,2% и 0,25%); 3 (for 0,5%)		-			1,6 (for 0,15%) 2,0 (for 0,2; 0,25%) 3,0 (for 0,5%)		-
Overall accuracy in operating temperature range, no more than, ±%		-	0,25; 0,5	0,25; 0,5	in basic pressure range, no more than 0,25%; in any pressure range reset, no more than 0,5%		-	-	0,25; 0,5
Operating temperature range, °C		-40 ... +80; -40...+125 for MIDA-13-M							
Supply voltage, V DC		According to table 1							
Intrinsic safety		According to table 1				-		According to table 1	
Ingress protection		IP65 (IP64 for flameproof)							
Climatic modification		under 0,025 MPa - UHL**3.1; above 0,025 MPa - U**2				U**2			
Mechanical stability		G2							
Electrical connection		S; SM; SMM; A; AM; AMM; P; P2; P3; P4; P5; SH; AH		S; SM; SMM; A; AM; AMM; P; SH; AH		plug/socket GDM (G)	S; SM; SMM; A; AM; AMM; P; P2; P3; P4; P5; SH; AH; plug/socket GDM (G)		
Pressure port (Mounting thread)		M20 × 1,5; M12 × 1,5 (up to 25 MPa); for MIDA-13P-Fp only M20x1,5 (other by request)					M20 × 1,5; G1/2 (other by request)		
Weight, no more than, kg		from 0,35 up to 0,7							
Specifications		TY4212-044-18004487-2003							
Number in the State registry of gauges of the Russian Federation		17636-06							
Surge voltage protected unit		only for MIDA-SG-13P-Fp-Svp**	-						

*- Upper limit reset of pressure range, scale of upper limit resetting, not less 0,1 of basic pressure range. Offset of lower limit of pressure range, scale of upper limit of basic pressure range, no more 0,9.

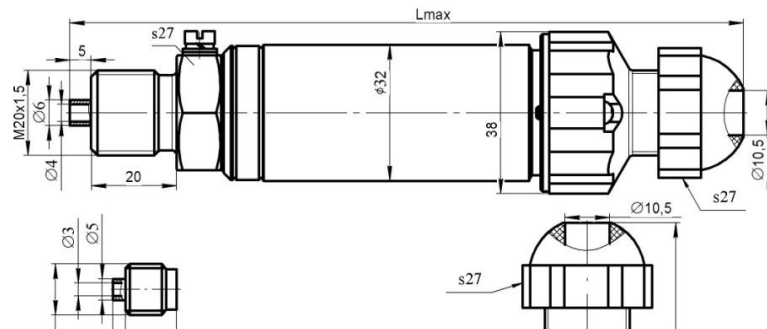
** - by request.

Table 1

Output code	01	05/1	05/2	05/4	03	02; 04
Output signal	(4-20) mA	(0,4-2) V	(0,5-4,5) V	(0-10) V	(0-5) V	(0-5) mA
Line	2-wire	3-wire	3-wire	3-wire	4-wire	3-wire; 4-wire
Supply voltage, V DC	12 ... 36	3,6 ... 36	9 ... 36	15 ... 36	9 ... 36	20... 36
Consumed current, no more, mA	-	2	5	10	8	10
Intrinsic safe transmitters supply	by MIDA-PSSB-102-Ex power supply with safety barrier or safety barriers MIDA-ISB-105-Ex; MIDA-ISB-107-Ex;			-	-	-
Type and marking of Intrinsic safety	Intrinsically safe electrical circuit: 0ExialICT4	Intrinsically safe electrical circuit: POExial/0ExialICT4		-	-	-
	flameproof casing: 1ExdIIBT4“X”					

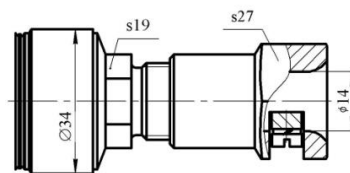
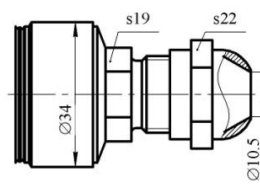
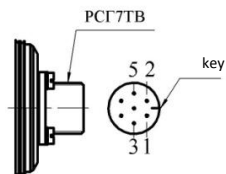
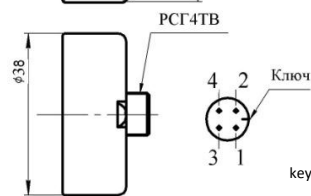
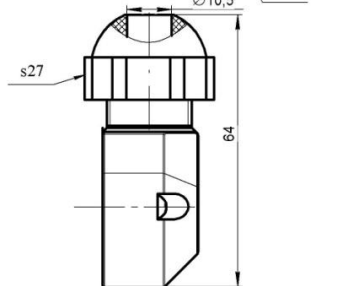
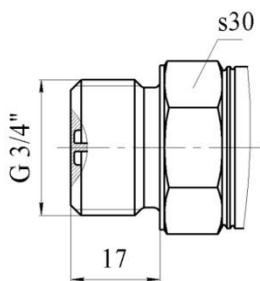
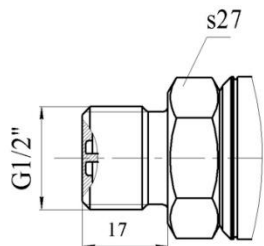
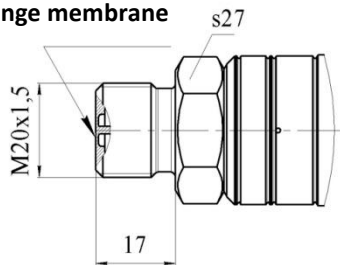
Overall and mounting dimensions of MIDA-13 transmitters

from 10 kPa to 160 MPa



from 10 kPa to 25 MPa

Flange membrane



Sealing gland straight

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6,0 and above	160 (M20); 150 (M12)
SG-13-C, SG-13-CN		
SV-13, SV-13-H	From 0,01 up to 4,0	170 (M20); 160 (M12)
SGV-13, SGV-13-H		
SA-19, SA-19-H SA-19-C, SA-19-CN	From 0,04 up to 10	170 (M20); 160 (M12)

Sealing gland angle

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6,0 and above	138 (M20); 128 (M12)
SG-13-C, SG-13-CN SV-13, SV-13-H SGV-13, SGV-13-H	From 0,01 up to 4,0	148 (M20); 138 (M12)
SA-13, SA-13-H SA-13-C, SA-13-CN	From 0,04 up to 10	148 (M20); 138 (M12)

Plug/socket PCГ4TB

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H SV-13, SV-13-H SGV-13, SGV-13-H	From 6,0 and above	160 (M20); 150 (M12)
	From 0,01 up to 4,0	170 (M20); 160 (M12)
SA-13, SA-13-H	From 0,04 up to 10	170 (M20); 160 (M12)

Plug/socket PCΓ7TB

Type	Nominal pressure range, Mpa	Length, mm (max)
SG-13-C, SG-13-CN	from 6,0 and above	123 (M20), 113 (M12)
	from 0,01 up to 4,0	133 (M20), 123 (M12)
SA-13-C, SA-13-CN	from 0,04 up to 10	133 (M20), 123 (M12)

Sealing gland straight metallic

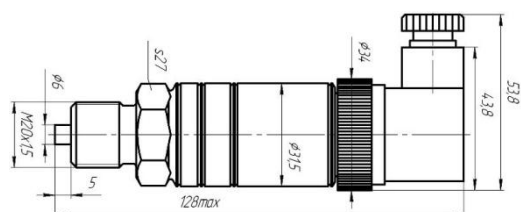
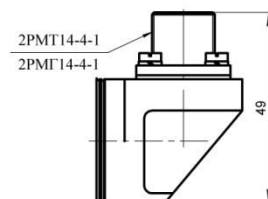
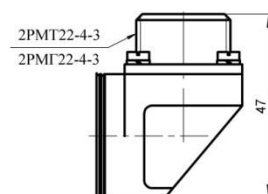
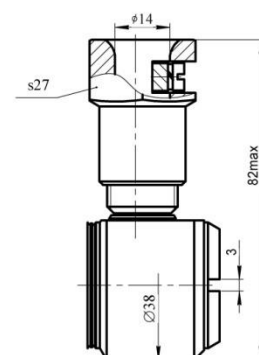
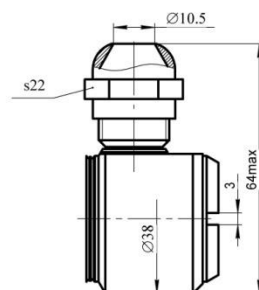
Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H SG-13-C, SG-13-CN	From 6.0 and above	162 (M20); 152 (M12)
	From 0.01 up to 4.0	172 (M20); 162 (M12)
SA-13, SA-13-H SA-13-C, SA-13-CN	From 0.04 up to 10	172 (M20); 162 (M12)

Sealing gland straight metallic for metal hose

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6,0 and above	181 (M20); 171 (M12)
SG-13-C, SG-13-CN	From 0,01 up to 4,0	191 (M20); 181 (M12)
SA-13, SA-13-H	From 0,04 up to 10	191 (M20); 181 (M12)
SA-13-C, SA-13-CN		



Overall and mounting dimensions of MIDA-13 transmitters (continuation)



Sealing gland angle metallic

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6.0 and above	140 (M20); 130 (M12)
SG-13-C, SG-13-CN	From 0.01 up to 4.0	150 (M20); 140 (M12)
SA-13, SA-13-H	From 0.04 up to 10	150 (M20); 140 (M12)
SA-13-C, SA-13-CN	From 0.04 up to 10	150 (M20); 140 (M12)

Sealing gland angle metallic for metal hose

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6.0 and above	140 (M20); 130 (M12)
SG-13-C, SG-13-CN	From 0.01 up to 4.0	150 (M20); 140 (M12)
SA-13, SA-13-H	From 0.04 up to 10	150 (M20); 140 (M12)
SA-13-C, SA-13-CN	From 0.04 up to 10	150 (M20); 140 (M12)

Plug/socket 2PMT22-4-3 (P2), 2PMT22-4-3 (P5)

Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6.0 and above	144 (M20); 134 (M12)
SG-13, SG-13-H	From 0.01 up to 4.0	154 (M20); 144 (M12)

Plug/socket 2PMT14-4-1 (P3), 2PMT14-4-1 (P4)

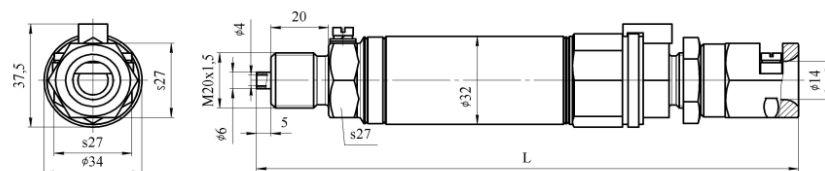
Type	Nominal pressure range, MPa	Length, mm (max)
SG-13, SG-13-H	From 6.0 and above	144 (M20); 134 (M12)
SG-13, SG-13-H	From 0.01 up to 4.0	154 (M20); 144 (M12)

Plug/socket DIN 43650 (G)



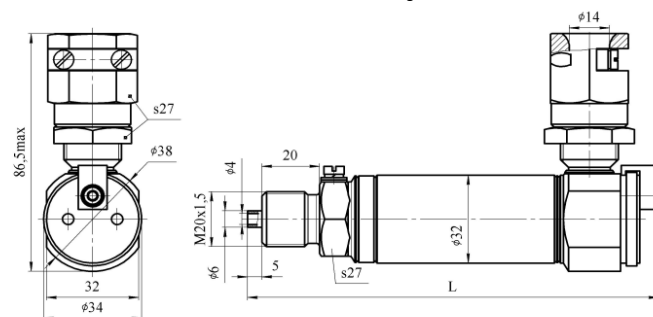
Overall and mounting dimensions of MIDA-13-Fp transmitters

Straight metallic



Type	Nominal pressure range, MPa	Length, mm (max)
SG-13-Fp, SG-13-Fp-H	From 6.0 and above	193
SG-13-Fp-C, SG-13-Fp-CN	From 0.01 up to 4.0	203
SA-13-Fp, SA-13-Fp-H	From 0.04 up to 10	203
SA-13-Fp-C, SA-13-Fp-CN	From 0.04 up to 10	203

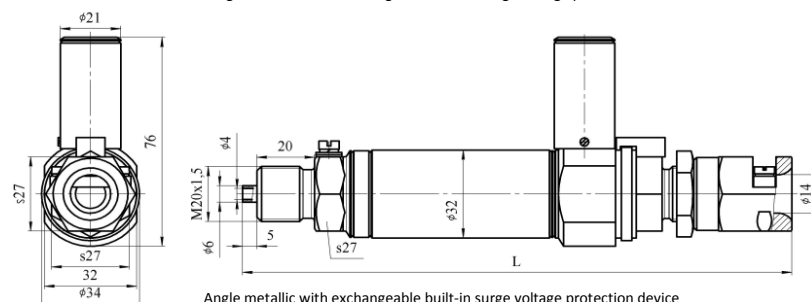
Angle metallic



Type	Nominal pressure range, MPa	Length, mm (max)
SG-13-Fp, SG-13-Fp-H	From 6.0 and above	143
SG-13-Fp-C, SG-13-Fp-CN	From 0.01 up to 4.0	153
SA-13-Fp, SA-13-Fp-H	From 0.04 up to 10	153
SA-13-Fp-C, SA-13-Fp-CN	From 0.04 up to 10	153

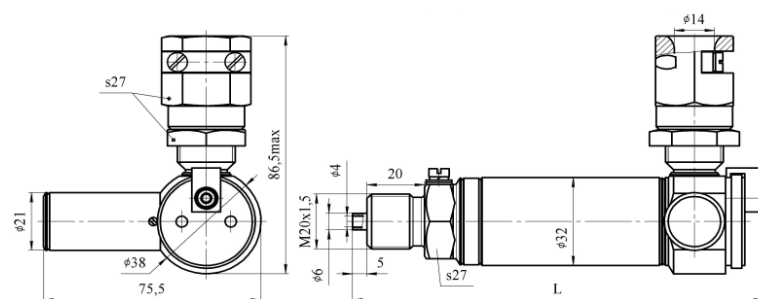


Straight metallic with exchangeable built-in surge voltage protection device



Type	Nominal pressure range, MPa	Length, mm (max)
SG-13-Fp-SVP	From 6.0 and above	196
SG-13-Fp-SVP	From 0.01 up to 4.0	206
SA-13-Fp-SVP	From 0.04 up to 10	206

Angle metallic with exchangeable built-in surge voltage protection device



Type	Nominal pressure range, MPa	Length, mm (max)
SG-13-Fp-SVP	From 6.0 and above	143
SG-13-Fp-SVP	From 0.01 up to 4.0	153
SA-13-Fp-SVP	From 0.04 up to 10	153



MIDA-15 microelectronic transmitters: gage, absolute, gage pressure-vacuum, vacuum and differential pressure

MIDA-15 pressure transmitters (hereafter – transmitters) are designed for proportional conversion of gage pressure (SG), absolute pressure (SA), gage pressure-vacuum (SGV), vacuum (SV) and differential pressure (SD) into output signal of voltage DC or digital signal of UART interface with Mida special exchange protocol, or interface RS485 signal with Modbus or Mida exchange protocols.

Transmitters are intended for use in industrial instrumentation and process control systems in different industries, public utilities, transport, including gas distributing plants (GDP), as well as in natural gas fiscal flow metering systems. Measured medium for gage and absolute pressure transmitters, as well as for “plus” chamber of differential pressure transmitters are gases, gas-vapor and gas mixtures, as well as fluids compatible with titanium alloys and stainless steels. Measured medium for differential pressure transmitters in “minus” chamber are natural gas and other purified dry nonaggressive gases and gas mixtures. MIDA-SD-15 transmitters are designed for measuring of differential pressure of gas distributing plants’ gas filters, as well as on measuring pipes of turbine and rotary gas flow counters included in gas fiscal flow metering systems. **MIDA-SD-15 transmitters do not protected against static pressure overload.** MIDA-SD-15 coming with three-valve block and pressure snubbers (dampers).

Common-industrial transmitters are intended for use in non-hazardous areas. MIDA-15-Ex intrinsic safe transmitters have the intrinsic safety «intrinsically safe electrical circuit» and POExial/OExialIBT4 marking.

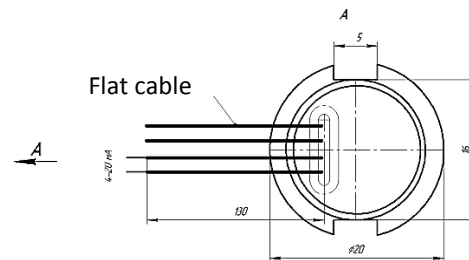
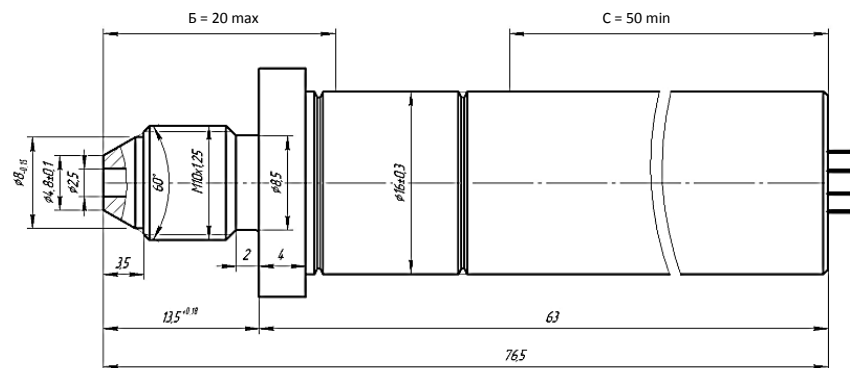
	MIDA-SG-15	MIDA-SA-15	MIDA-SV-15	MIDA-SGV-15	MIDA-SD-15	MIDA-SG-15-M
Application	Industrial instrumentation and process control systems					
Measured medium	Fluids and gases compatible with titanium alloys and stainless steels				Only dry nonaggressive gases in “minus” chamber	High-temperature liquids and gases compatible with titanium alloys and stainless steel
Pressure ranges, MPa	0-0,01... - 0-160 (0...-250)*	0-0,04... - 0-10	0-0,01... -0-0,1	(-0,02) - 0,02... - (-0,1) - 2,4	(0 - 0,004; 0 - 0,006)**; 0 - 0,01; 0 - 0,016; 0 - 0,025; 0 - 0,04; 0 - 0,06; 0 - 0,1	0-1,6; 0-2,5
Overall accuracy in operating temperature range, ±%	0,15**; 0,25; 0,5					No more than 1; 1,5 (in compensated temperature range)
Static (gage) pressures range, MPa	-				0-1,6	-
Transmitter’s error caused by static pressure changing from zero up to 1,6 MPa, ±%	-				0,15 – for accuracy 0,15; 0,25 – for accuracy 0,25 and 0,5	-
Operating temperature range, °C	-40 ... +80					-40... +120 (-40... +80 for ambient medium)
Compensated temperature range. °C	-					0... +120
Output signal / Supply voltage, V	According to table 1					-
Type and marking of intrinsic safety	Intrinsically safe electrical circuit: P0Exial/0ExialIBT4					-
Ingress protection	IP64, IP65					IP64
Climatic modification	U**2; UHL**3.1					UHL**3.1
Mechanic stability	F2; G2					V2
Electrical connection	DINC connector, flexible flat cable					Flat cable
Pressure port	M20 × 1,5; M12 × 1,5 (Other by order)				M12 × 1,5	M10x1,25
Weight, no more than, kg	0,25					0,06
Specifications	МДВГ.406233.090 ТУ					ТУ4212-043-18004487-2003

* - by request

** - for transmitters with output code 01; 061...- 064

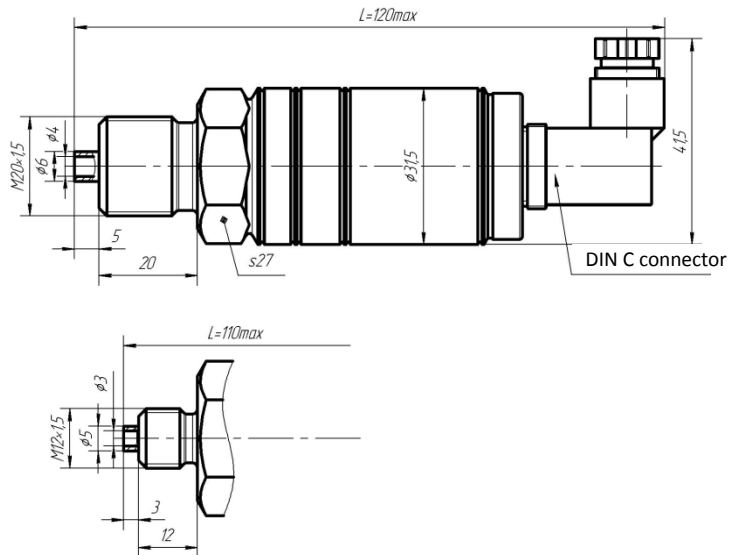
Output code	01	051	055	052	057	061	062	063	064
Output signal	(4-20) mA	(0,4-2) V		(0,5-4,5) V		-			
Interface / Protocol	-					UART / Mida		RS-485 /Mida /Modbus	
Dependence of output signal on supply voltage	-	-	+	-	+	-			
Nominal supply voltage, V	24	3,3		5,0		-			
Allowable supply voltage range, V	12-36	3,0-5,5	3,0-4,0	5,0-5,5	4,5-5,5	3,0-3,6	4,5-12		
Maximum supply voltage, V	36	5,5				3,6	12		
Consumed current in measuring state, mA	20,2	2,5		3		2	3	3,5	5
Consumed current in waiting state, mA	-					0,6	0,6	0,6	-

Overall and mounting dimensions of MIDA-SG-15-M transmitters

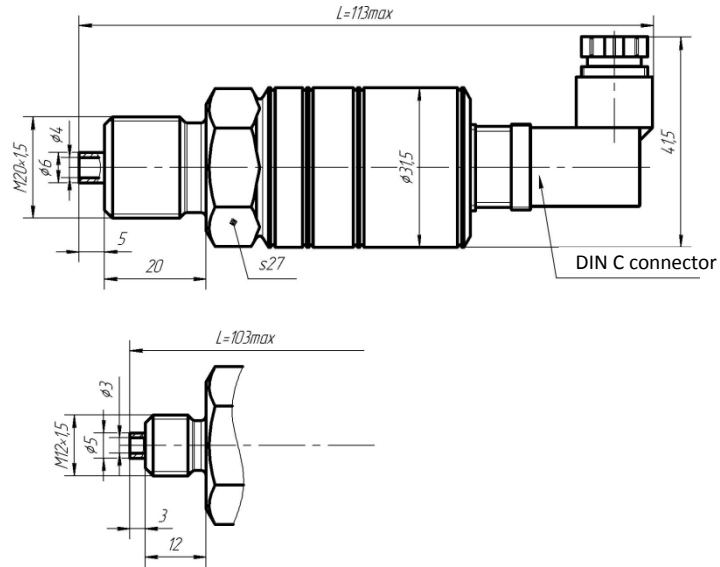


Overall and mounting dimensions of MIDA-15 transmitters

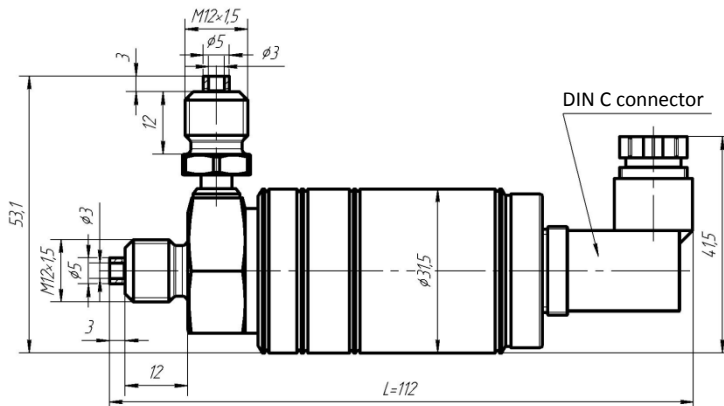
MIDA-SG(-SA,-SV,-SGV)-15(-Ex) transmitters with voltage DC output signal and “zero” and “span” adjusting (signal codes 01, 051, 052)



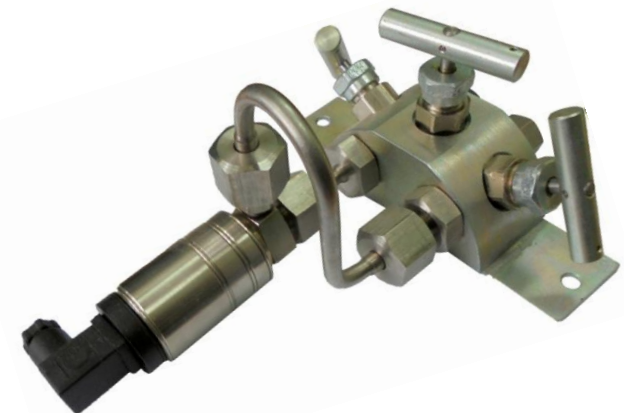
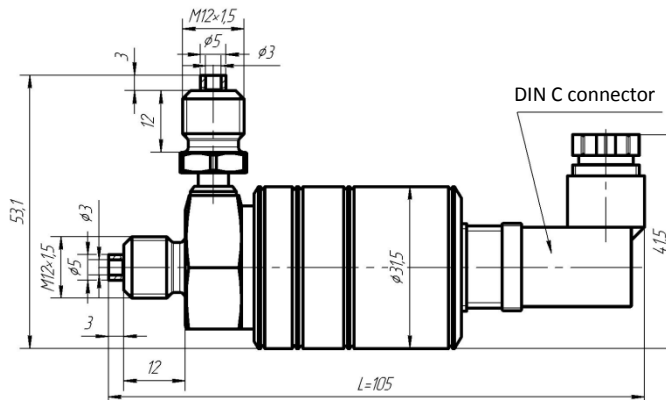
MIDA-SG(-SA,-SV,-SGV)-15(-Ex) transmitters with voltage DC output signal and proportional dependence on supply voltage (signal codes 055, 057), as well as digital output transmitters (signal codes 061-064)



MIDA-SD-15(-Ex) transmitters with voltage DC output signal and “zero” and “span” adjusting (signal codes 01, 051, 052)



MIDA-SD-15(-Ex) transmitters with voltage DC output signal and proportional dependence on supply voltage (signal codes 055, 057), as well as digital output transmitters (signal codes 061-064)



Gage and absolute pressure microelectronic transducers (TY 4212-009-18004487-2005)

MIDA transducers are intended for continuous proportional conversion of gage pressure (MIDA-TG-51, -52, -55, -82, -83, -84, -85, -88-4) or absolute pressure (MIDA-TA-51, -81, -82, -82-7, -87-4, -88-4, -91) of liquids and gases in industrial instrumentation and process control systems into standardized DC voltage output signal. MIDA transducers are working in the following temperature ranges:

- minus 40 up to plus 80 °C – MIDA-TG-51, MIDA-TA-51;
- minus 40 up to plus 150 °C – MIDA-TG-82(-83, -84, -85), MIDA-TA-81;
- minus 55 up to plus 150 °C – MIDA-TA-91;
- minus 40 up to plus 200 °C – MIDA-TG(-TA)-82-H(-88-4-H);
- minus 40 up to plus 300 °C – MIDA-TG-52, MIDA-TA-87-4;
- minus 40 up to plus 350 °C – MIDA-TA-82-7;
- plus 25 up to plus 350 (plus 500) °C – MIDA-TG-55.

Transducer's accuracy in normal conditions (γ) is determined as quadratic root of quadratic roots sum of absolute uncertainties of nonlinearity (γ_n), variation (γ_b) and repeatability (γ_r):

$$\gamma = \sqrt{\gamma_n^2 + \gamma_b^2 + \gamma_r^2}$$

Temperature error is rated in compensation temperature range specified in transducer's documentation.

For example, compensated temperature range for MIDA-TG-82 transducers shall be chosen from the following: +20... +120° C; +50... +150° C for MIDA-TG-82 and +100... +200° C for MIDA-TG-82-H.

The measured medium through the pressure port acts on metallic membrane. A SOS sensing element is brazed to the membrane.

Silicon resistors are formed on the surface of sensing element, these resistors being coupled into a strain-sensitive bridge, the output of which varies with deformation from measured medium exposure.

In absolute pressure transducers the internal cavity over a sensitive element from the side of the collector is sealed.

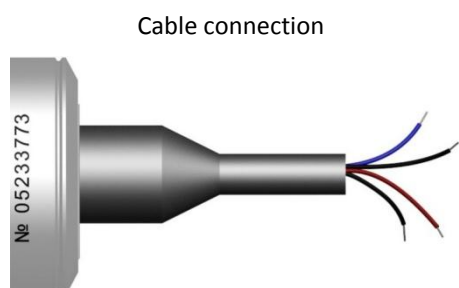
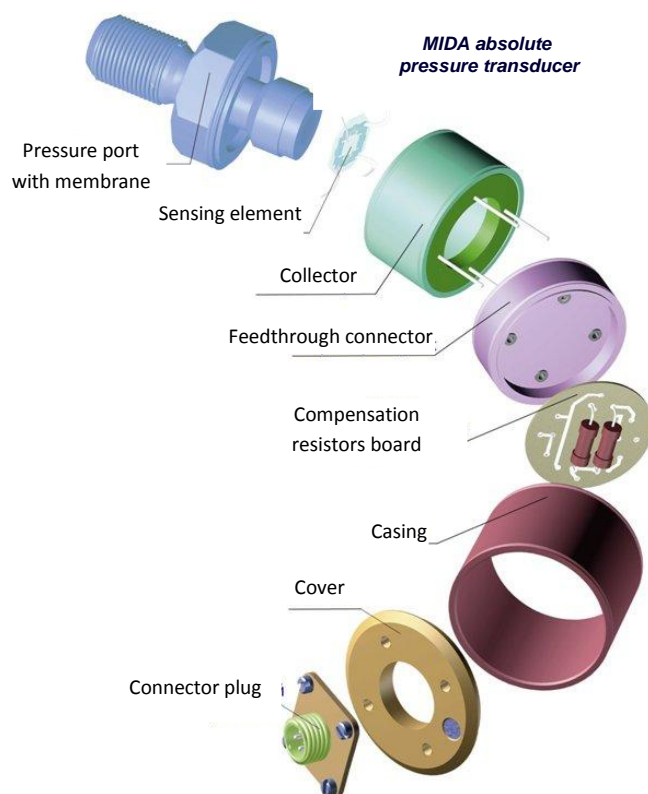
The sensing element's leads are joined through collector and feedthrough connector with the compensation resistors board. The wires connect the board's leads with connector plug, which is mounted on cover.

Casing is welded onto the pressure port and cover to proof the transducer's inner. Other models have different electrical connections instead of connector plug: cable, feedthrough connector's leads for soldering or mounting wires.

The measured pressure influences on metal receiving membrane, causing its deflection, deformation of a sensing element and change of heteroepitaxial silicon tensoresistors resistance which in case of a bridge circuit power supply by constant voltage will be transformed into a signal of its disbalance and then to an output signal of the transducer.

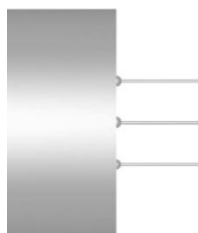
Construction of transducer may vary by customers special request.

Transducers have design with unnormalized output signal (NC) in range from 5 up to 18 mV/V.

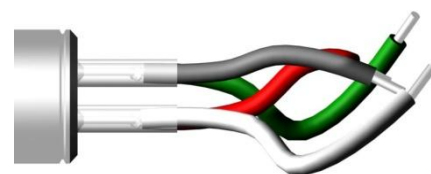


Cable connection

Connection to feedthrough connector's leads

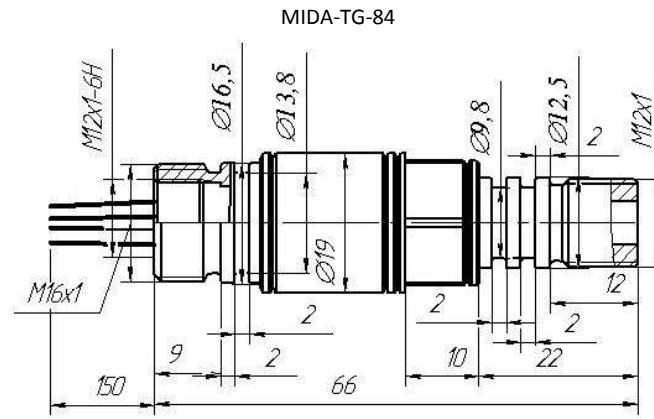
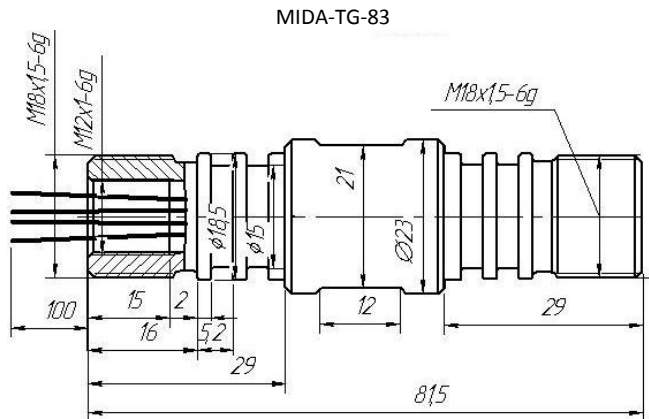


Connection to mounting wires

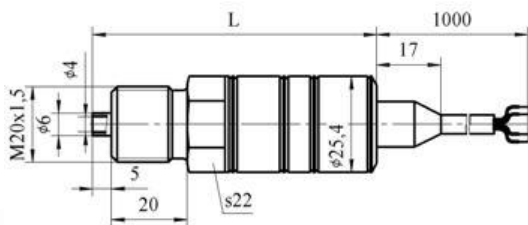
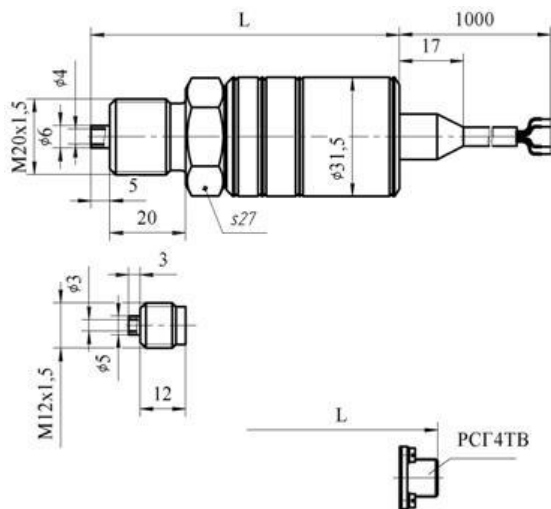


Specification of MIDA-TG(-TA)-51, MIDA-TG-52, MIDA-TG(-TA)-82, MIDA-TA-82-7, MIDA-TG-83(-84)

		TG(-TA)-51	TG-52	TG-55	TG(-TA)-82-(H)	TA-82-7	TG-83	TG-84
Applications		Industrial instrumentation and process control systems			Diagnostic equipment for bore-hole surveying			
Measured medium		Fluids and gases compatible with titanium alloys and stainless steels		Diesel gases	Fluids and gases compatible with titanium alloys			
Standard ranges, MPa	Gage (TG)	0-0,01... - 0-160	0-0,01... - 0-160	0-10...-0-60	0-2,5... - 0-200	0-2,5... -0-60	0-1,0... - 0-60	
	Absolute (TA)	0-0,04... - 0-10	-	-	0-2,5... - 0-200	0-2,5... -0-60	-	
Accuracy (comb. L.H.R),no more than, ±%		0,1; 0,2	0,25; 0,5	0,5	0,1	0,1	0,1; 0,2	
Zero output, ±mV/1 V of supply voltage		0,1 (for 0,1%); 0,2 (for 0,2%)	0,1 (for 0,25%); 0,2 (for 0,5%)	1	0,2			
Output range, mV / V		5,0±0,2 (3,0±0,2 for 0,01 MPa; 10±0,2 by special request)			5,0±0,2			
Operating temperature range, °C		-40 ... +80	-40...+300	+25...+350 +25...+500	-40... +150 for TG-82 -40... +200 for TG-82-H	-40... +350	-40... +150	
Additional temperature error in operating temperature range (-40...+80° C), no more than, %		2,0 (for 0,1%); 3,0 (for 0,2%)		20	-			
Compensated temperature range, °C		-	+10...+100; +50...+150; +100...+200; +150...+250; +200...+300	-	+20... +120; +50... +150 for TG-82 +100... +200 for TG-82-H	+20... +350	+20... +120; +50... +150	
Additional error within compensated temperature range, no more than, %: of zero output of output range		-	1,5 (for 0,25%); 2,5 (for 0,5%) 1,5 (for 0,25%); 2,5 (for 0,5%)	-	2,0 2,0			
Supply voltage, V		5 - 15						
Input and output resistance, kOhm		$R_{BX} \geq 4$; $R_{Bbix} \leq 7$						
Overload, no more than		1,5Pnom (<40 MPa), и 1,25Pnom(>40 MPa)						
Insulation resistance(at temperature of 25 °C), not less than		100 MOhm at 100 V		100 MOhm at 500 V	100 MOhm at 100 V			

Overall and dimensions of MIDA-TG-83(-84) transducers

MIDA-TG(-TA)-51



Type	Pnom, MPa	L, mm (max)
MIDA-TA-51	From 0,04 up to 0,1	82(M20); 72 (M12)
MIDA-TA-51-NK		77,5 (M20); 67,5 (M12)
MIDA-TG-51 MIDA-TG-51-NK	0,04; 0,06	82 (M20); 72 (M12)

Type	Pnom, MPa	L, mm (max)
MIDA-TA-51	From 0,04 up to 0,1	92(M20); 82 (M12)
MIDA-TA-51-NK		87,5 (M20); 77,5 (M12)
MIDA-TG-51 MIDA-TG-51-NK	0,04; 0,06	92 (M20); 82 (M12)

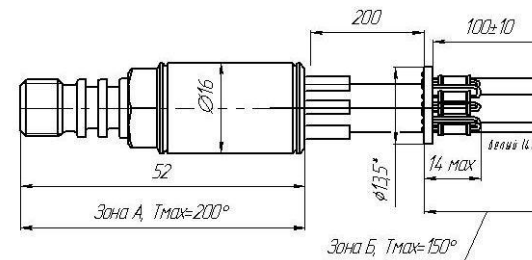
Type	Pnom, MPa	L, mm (max)
MIDA-TA-51 MIDA-TA-51-NK	From 0,16 up to 10	84(M20); 74 (M12)
MIDA-TG-51	From 0,1 up to 160	81 (M20); 71 (M12)
MIDA-TG-51-NK		77 (M20); 67 (m12)

Type	Pnom, MPa	L, mm (max)
MIDA-TA-51	From 0,16	75 (M20)
MIDA-TA-51-NK	up to 10	65 (M12)
MIDA-TG-51	From 0,1 up to 160	71 (M20); 61 (M12)
MIDA-TG-51-NK		67 (M20); 57 (M12)

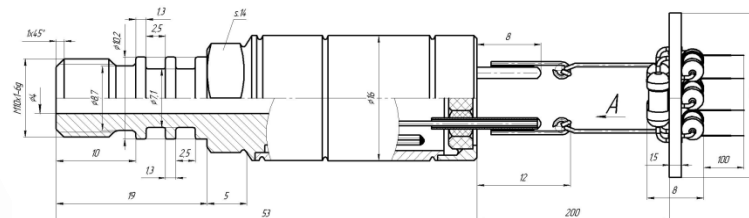
Technical drawing of a shaft assembly. The drawing shows a shaft with a central section of diameter $\phi 16$ and a total length of 62. The shaft is supported by bearings. The dimensions are as follows:

- Shaft diameter: $\phi 16$
- Shaft length: 62
- Distance from left end to first bearing: 25
- Distance from first bearing to second bearing: 10
- Distance from second bearing to third bearing: 19
- Distance from third bearing to fourth bearing: 5
- Distance from fourth bearing to end: 8
- Distance from end to center of shaft: 100
- Distance from center of shaft to end: 100
- Distance from center of shaft to end of shaft: 100
- Distance from center of shaft to end of shaft: 100

MIDA-TG(-TA)-82-H

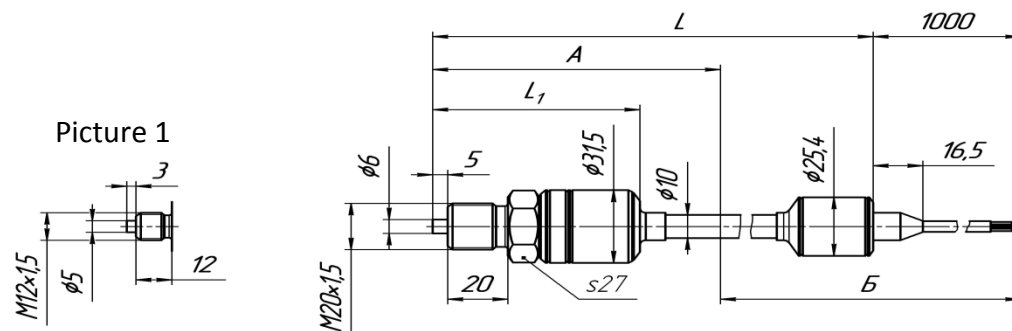


MIDA-TA-82-7

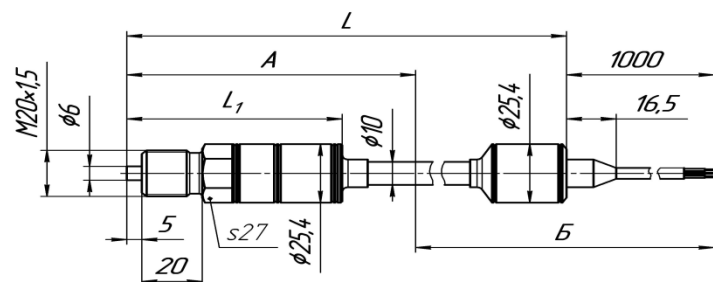


Overall and mounting dimensions of MIDA-TG-52 transducers

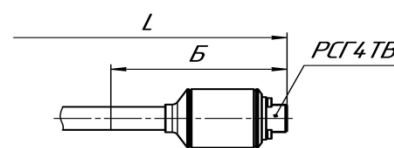
Picture 2



Picture 3



Picture 4



Temperature at A-zone is up to plus 300 °C
Temperature at B-zone is up to plus 85 °C

Type	P _{nom} , MPa	L, mm (max)	L ₁ , mm (max)	A, mm (max)	Picture
MIDA-TG-52 With cable (C)	0,04; 0,06	231 (M20)	69 (M20)	137 (M20)	2;
		221 (M12)	59 (M12)	127 (M12)	1; 2
	From 0,1 up to 160 (M20)	233 (M20)	72 (M20)	140 (M20)	3;
	From 0,1 up to 25 (M12)	223 (M12)	62 (M12)	130 (M12)	1; 3

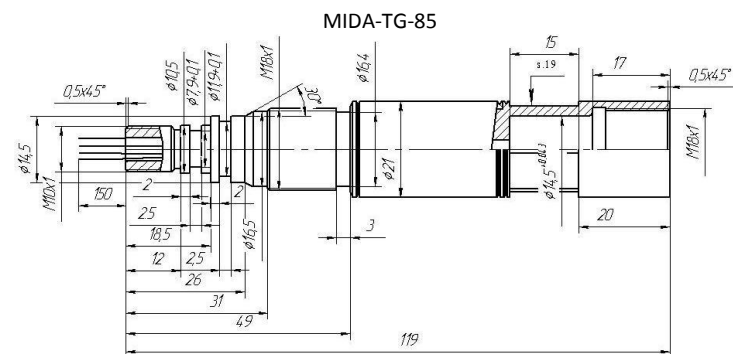
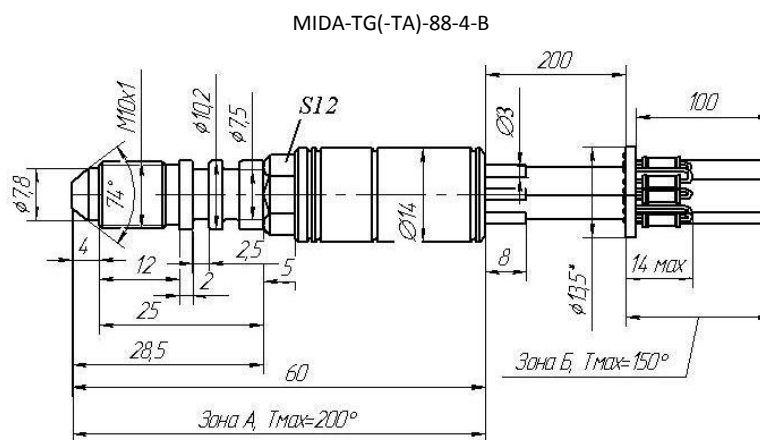
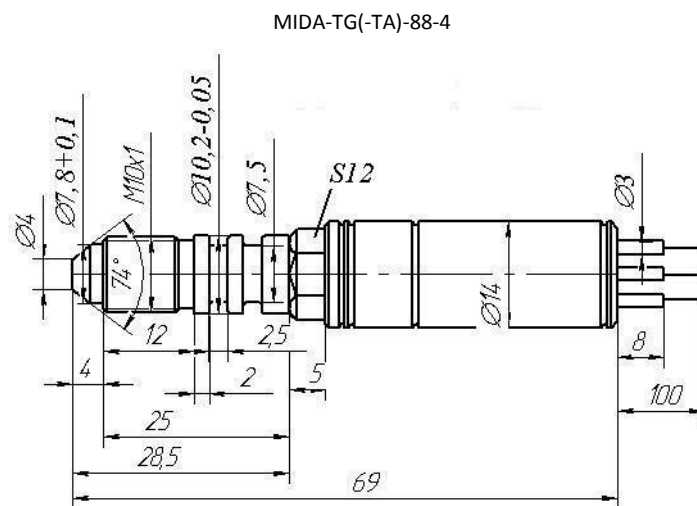
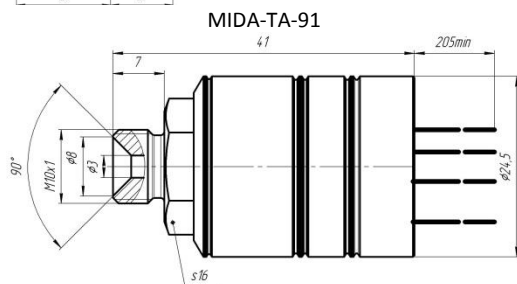
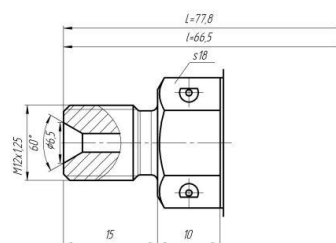
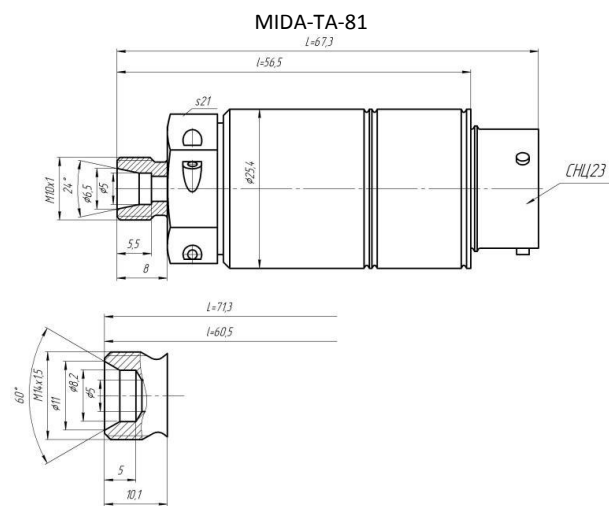
Type	P _{nom} , MPa	L, mm (max)	L ₁ , mm (max)	A, mm (max)	Picture
MIDA-TG-52 With plug/socket (P)	0,04; 0,06	240 (M20)	69 (M20)	137 (M20)	2; 4
		230 (M12)	59 (M12)	127 (M12)	1; 2; 4
	From 0,1 up to 160 (M20)	242 (M20)	72 (M20)	140 (M20)	3; 4
	From 0,1 up to 25 (M12)	232 (M12)	62 (M12)	130 (M12)	1; 3; 4



Specification of MIDA-TA-81(-91), MIDA-TG-85, MIDA-TG(-TA)-88-4(-H), MIDA-TA-87-4

	TA-81	TA-91	TG-85	TG(-TA)-88-4(-H)	TA-87-4
Applications	Industrial instrumentation and process control systems		Diagnostic equipment for bore-hole surveying		
Measured medium	Fluids and gases compatible with stainless steels	Fluids and gases compatible with titanium alloys and stainless steels	Fluids and gases compatible with titanium alloys		
Pressure range	Absolute pressure,Bar 0-1... - 0-400	Absolute pressure, MPa 0-0,2... - 0-4	Gage pressure, MPa 0-1,0... - 0-60	Gage pressure Absolute pressure, MPa 0-2,5... - 0-100	Absolute pressure, MPa 0-2,5... 0-60
Accuracy (comb. L.H.R),no more than, ±%	0,2	0,1	0,1; 0,2	0,1	
Zero output, ±mV on 1 V of supply voltage	0,06	0,05	0,2		1,0
Output range, mV / V	3±0,03 (M14); 4±0,04 (M10); 10±0,06 (M12)	10±0,03	5,0±0,2		
Operating temperature range, °C	-40 ... +150	-55 ... +150	-40... +150	-40... +150 for TG-88-4 -40... +200 for TG-88-4-H	-40... +300
Additional temperature error in compensated temperature range (-40...+80° C), no more than, %	-	2,0 (for 0,1%); 3,0 (for 0,2%)	-	-	-
Compensated temperature range, °C	-40... +120 (M14); -30... +80 (M10, M12)	-40... +130	+10... +150; +50... +150	+20... +120; +50... +150 for TG-88-4 +100... +200 for TG-88-4-H	+20... +200
Additional error in compensated temperature range of zero output, no more than, %	1,7 (M14); 3 (M10);1,5 (M12)	-	2		3
Additional error in compensated temperature range of output range, no more than, %	1,1 (M12, M14); 2 (M10)	3 - within the range - 55 ...- 20 °C; 1,5 - within the range - 20 ... + 100 °C; 2 - within the range - +100 ... + 150 °C	2		3
Supply voltage, V	5 - 15			3 - 15	
Input and output resistance, kOhm	4,5 - 5,5/3-6	2 - 20/6	R _{BX} ≥4; R _{BbIX} ≤7		
Overload, no more than	2xPnom (M14); 1,5xPnom (M10, M12);	2xPnom;	1,5Pnom (<40 MPa); 1,25Pnom(>40 MPa)		
Insulation resistance (at temperature of 25 °C), not less than	100 MOhm at 100 V	50 MOhm at 300 V	100 MOhm at 100 V		

Overall and mounting dimensions of MIDA-TA-81(-91), MIDA-TG-85, MIDA-TA-87-4, MIDA-TG(-TA)-88-4



Gage, absolute, gage pressure-vacuum and vacuum pressure microelectronic modules

MIDA modules are intended for continuous proportional conversion of gage pressure (MIDA-MG-41, -42, -45, -55, -58, -65, -70, -71, -76, -77, -90, -93), absolute pressure (MIDA-MA-58, -65, -70, -71, -76, -90), gage pressure-vacuum (MIDA-MGV-76) and vacuum pressure (MIDA-MV-76) of liquids and gases, mixture of gases containing liquid and solid particles, viscous fluids, melts and pulps into standardized DC voltage output signal in industrial instrumentation and process control systems.

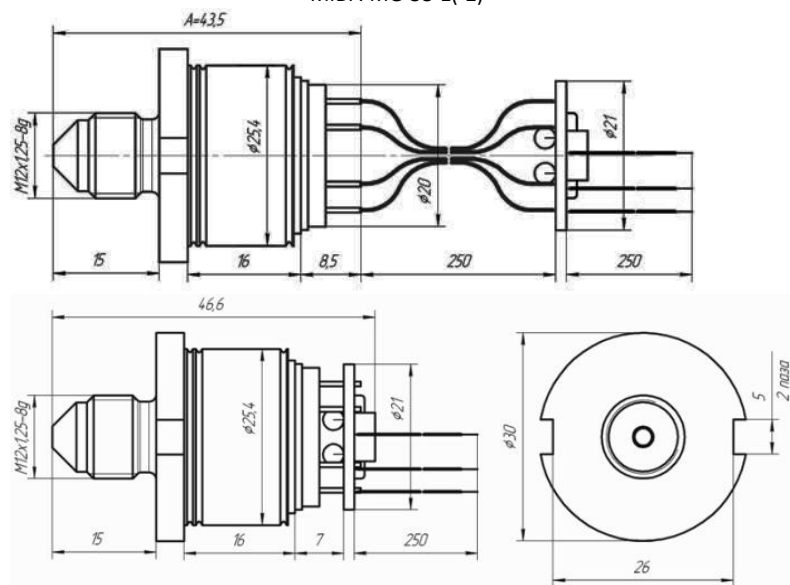
High-temperature modules (operating temperature range from minus 40 to plus 200(250) °C) are produced with remote compensation resistors board.

Specification of MIDA-MG(MA)-58(-70), MIDA-MG-55(-93) modules

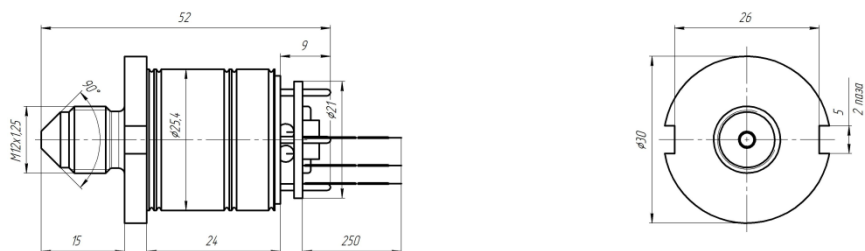
		MG(MA)-58-1(2)	MG(MA)-70	MG-93	MG-55
Applications		Industrial instrumentation & process control systems			
Measured medium		Liquids and gases compatible with titanium alloys and stainless steels			
Pressure ranges, MPa	MG (gage pressure)	0-0,1... - 0-60	0-0,006... - 0-160	0-0,1... - 0-100	0-10... -0-60
	MA (absolute pressure)	0-0,16... - 0-10	0-0,04.... - 0-10	-	-
Accuracy (comb. L.H.R), no more than, ±%		0,1 of output signal variation range	0,1 (0,2) of output signal variation range	0,1 of output signal variation range	0,5 of output signal variation range
Zero output (at temperature of 20 °C), mV/V		± 0,2	± 0,2 with accuracy 0,1%; ± 0,3 with accuracy 0,2%; ± 0,5 within pressure range 0-0,006	± 0,2	1
Output range, mV/V		10 ± 0,2	5 ± 0,2 with accuracy of 0,1%; 5 ± 0,3 with accuracy of 0,2%; 3 ± 0,2 within pressure range 0-0,01 MPa 1,5 ± 0,2 for 0-0,006 MPa range with accuracy 0,1%; 1,5 ± 0,3 for 0-0,006 MPa range with accuracy 0,2%	5 ± 0,2	30...80
Operating temperature range, °C		For zone A from 0 to +250 for MG(MA)-58-1; -40 ...+120° C for MG(MA)-58-2	- 40 ...+ 120	- 40 ...+ 125	+25...+350 +25...+500
Compensation temperature range, °C		from 0 to +250 for MG(MA)-58-1; from 0 to +120 for MG(MA)-58-2	-40 ...+120		-
Additional temperature error in compensated temperature range, % of zero output, no more than		5 for MG(MA)-58-1 2,5 for MG-58-2 2 for MA-58-2	2 with accuracy of 0,1%; 3 with accuracy of 0,2%; 3 for 0-0,006 MPa range with accuracy of 0,1%; 4,4 for 0-0,006 MPa range with accuracy of 0,2%	2	20
Supply voltage, V		5-15 DC			
Overpressure, no more than		2 Pnom for ranges from 0-0,1 to 0-2,5 MPa; 1,5 Pnom for ranges from 0-4 to 0-60 MPa	2 Pnom for ranges from 0-0,006 to 0-2,5 MPa; 1,5 Pnom for ranges from 0-4 to 0-60 MPa; 1,25 Pnom for ranges from 0-100 to 0-160 MPa	2 Pnom for ranges from 0-0,1 to 0-2,5 MPa; 1,5 Pnom for ranges from 0-4 to 0-60 MPa; 1,25 Pnom for range 0-100 MPa	1,5 Pnom
Insulation resistance		Not less than 100 MOhm at voltage of 500 V DC			

Overall and mounting dimensions of MIDA-MG(-MA)-58(-70) modules

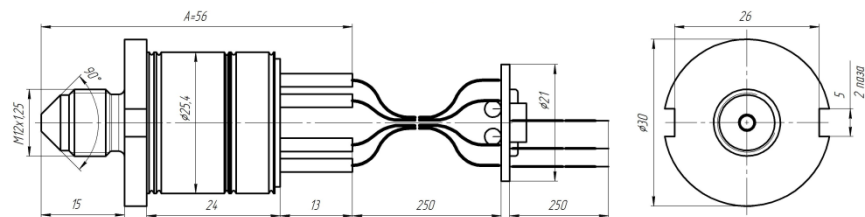
MIDA-MG-58-1(-2)



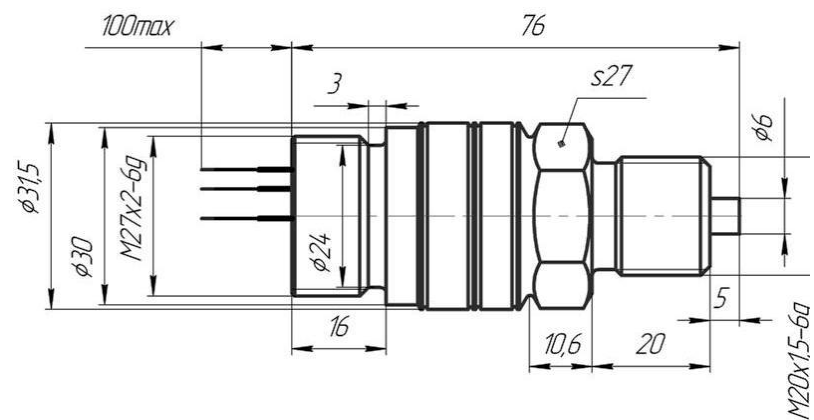
MIDA-MA-58-1



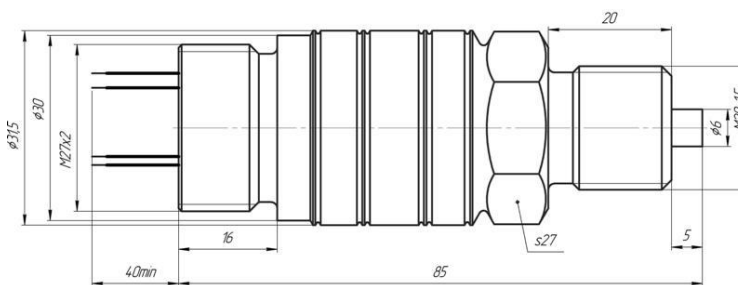
MIDA-MA-58-2



MIDA-MG-70

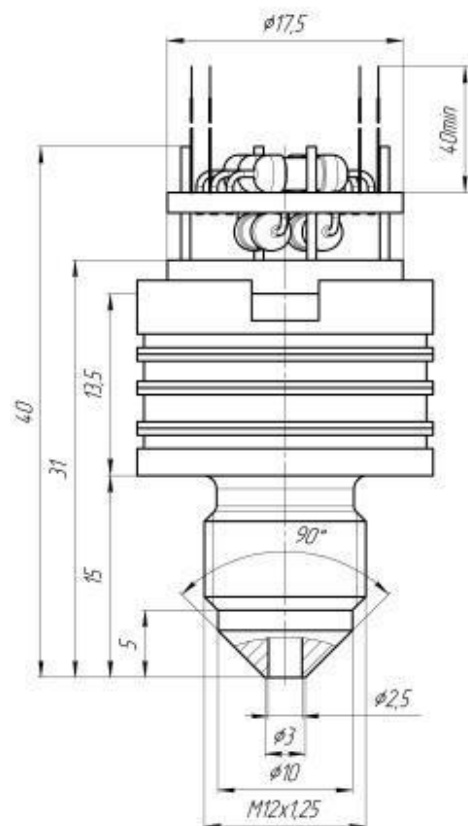


MIDA-MA-70

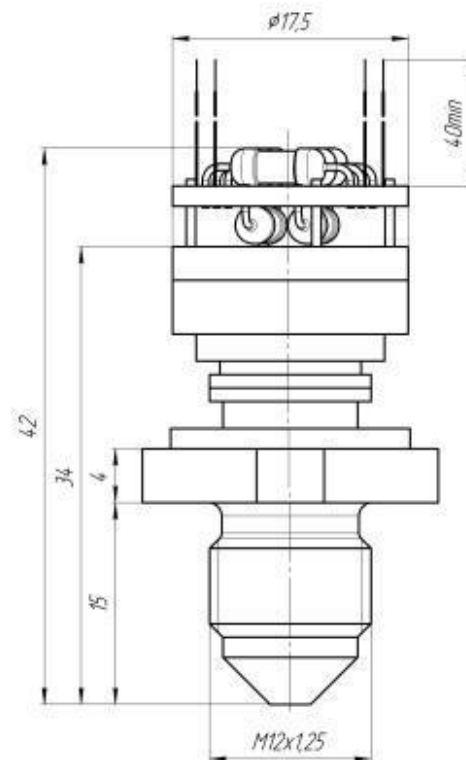


Overall and mounting dimensions of MIDA-MG-93 modules

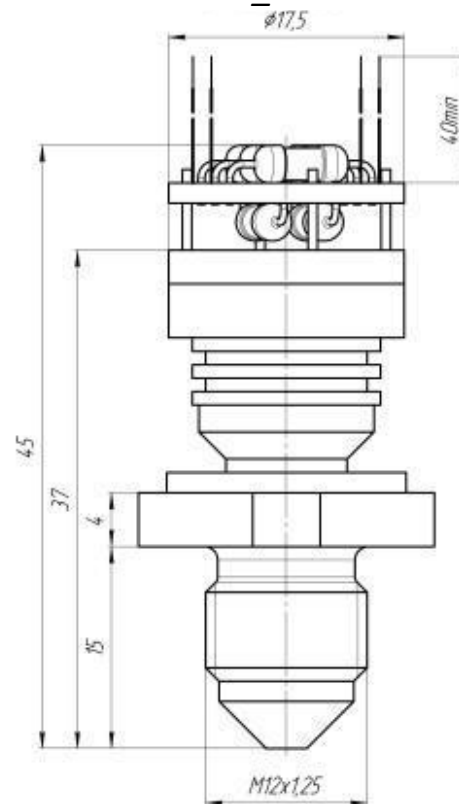
0,1_1 MPa



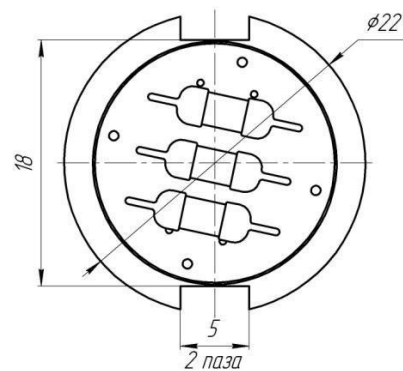
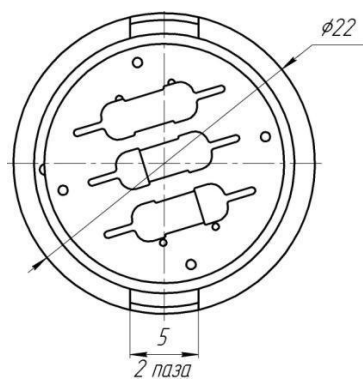
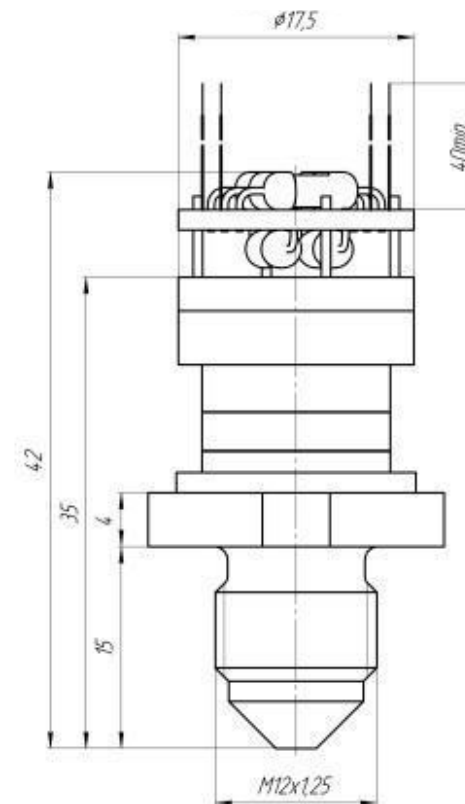
1,6_10 MPa



16_60 MPa



100 MPa

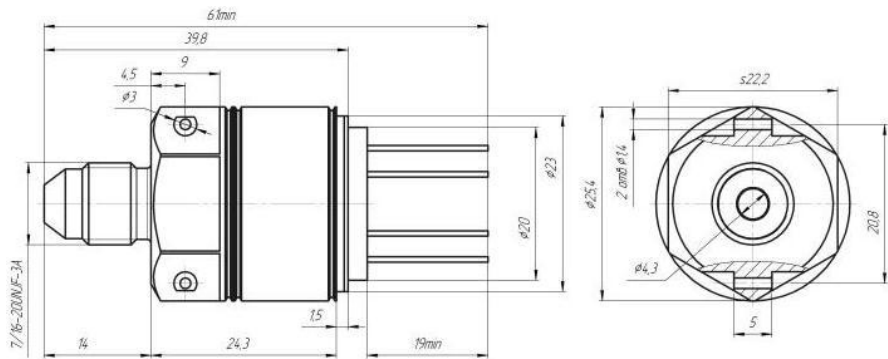


Specification of MIDA-MG(-MA)-65(-90), MIDA-MG-71(-77), MIDA-MG(-MA,-MGV)-76 modules

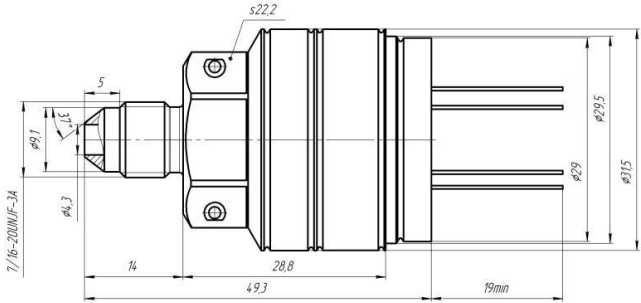
		MG(-MA)-65	MG(MA)-71	MG-77	MG(-MA,-MGV)-76	MG(-MA)-90
Application		Industrial instrumentation and process control systems				
Measured medium		Fluids and gases compatible with titanium alloys and stainless steels				Fluids and gases compatible with stainless steels
Pressure ranges	MG (gage pressure)	Psi 0-15... - 0-10000	MPa 0-0,1... - 0-160		MPa 0-0,01... - 0-160	MPa 0-0,6... - 0-25
	MA (absolute pressure)	Psi 0-10... - 0-1000;	MPa 0-0,04...-0-10	-	MPa 0-0,04... - 0-10	MPa 0-0,2... - 0-37
	MGV (gage pressure-vacuum)	-	-	-	MPa (-0,02)-0,02... - (-0,1)-2,4	-
	MV (vacuum)	-	-	-	MPa 0-0,02... - 0-0,1	-
Accuracy (comb. L.H.R),no more than, ±%		0,1 (0,2) of output range;				0,1%; repeatability, variation not more than 0,05%
Zero output (at temperature of +25° C), mV/V		± 0,2	± 0,2		± 0,1	± 0,2
Output range (at temperature of +25° C), mV/V		8-14	5 ± 0,2			
Operating temperature range, °C		- 55 ...+ 125	- 40 ...+ 120			- 55 ...+ 125
Compensated temperature range, °C		-	- 40 ...+ 120		-30 ...+ 70 (+20 ...+ 110) for MG-76 -40 ...+ 80 for MA-76 -30 ...+ 70 for MGV-76	- 40 ...+ 120
Additional error in compensated temperature range of output range, no more than, %		-	3		2	
Supply voltage, V		5-15 DC				
Bridge resistance, kOhm		6-8				
Overload pressure, no more than		2 Pnom (0,15 ... 300Psi), 1,5 Pnom (300 ... 10000 Psi)	2 Pnom (0,1 ... 2,5 MPa); 1,5 Pnom (4 ... 60 MPa); 1,25 Pnom (100, 160 MPa)		1,5 Pnom	1,5 Pnom (M12), 2 Pnom (M14, M16);
Burst pressure		not less than 4 Pnom				
Insulation resistance		not less 100 MOhm at 500 V and temperature of +25° C				

Overall and mounting dimensions of MIDA-MG(MA)-65, MIDA-MG-71(77) modules

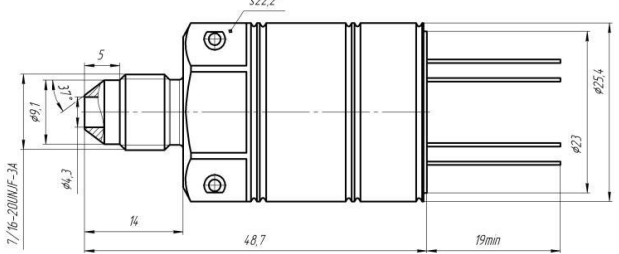
MIDA-MG-65



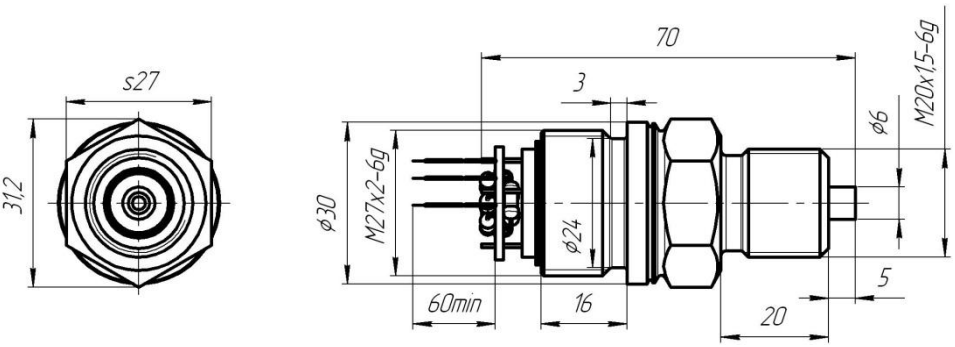
MIDA-MA-65
less than 100 psi



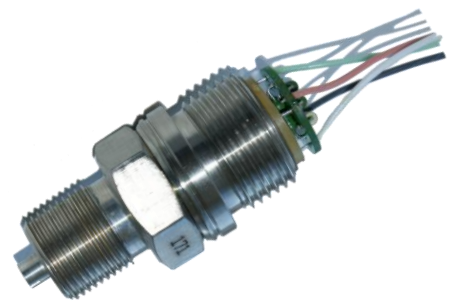
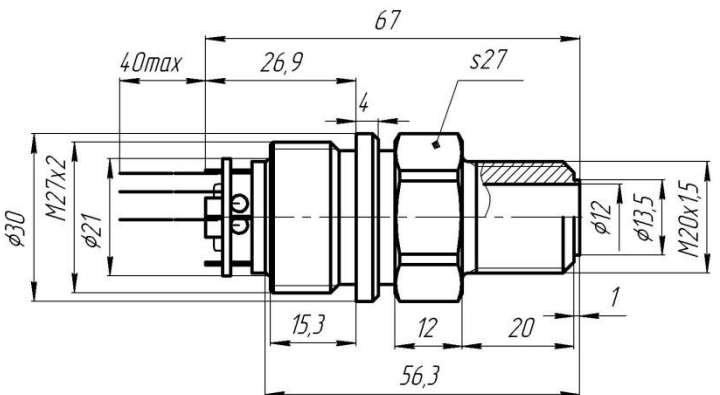
100 psi and above



MIDA-MG-71

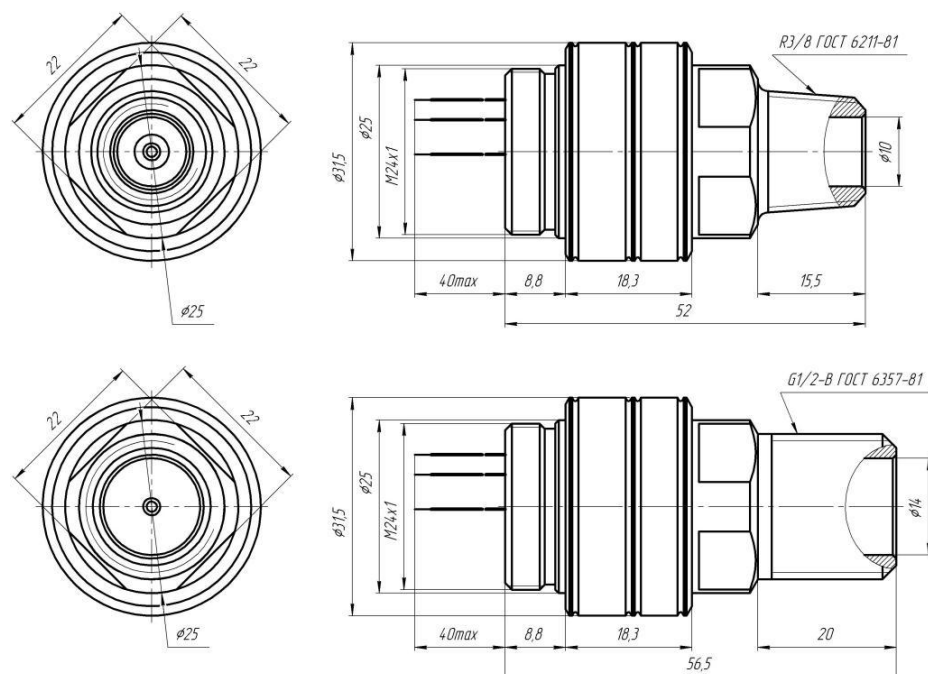


MIDA-MA-77

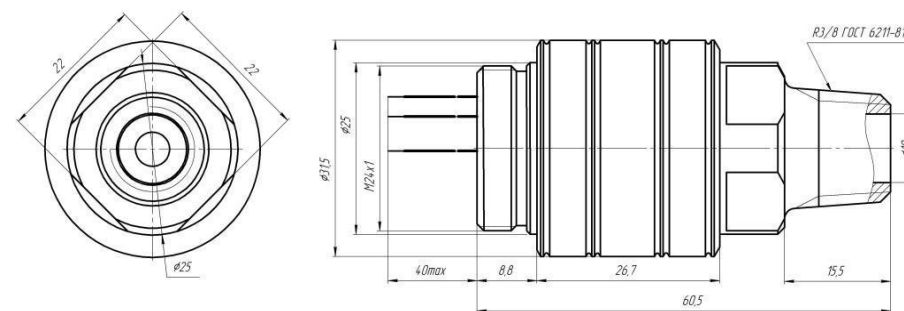


Overall and mounting dimensions of MIDA-MG(-MA,-MV,-MGV)-76 modules

MIDA-MG(-MA,-MV,-MGV)-76

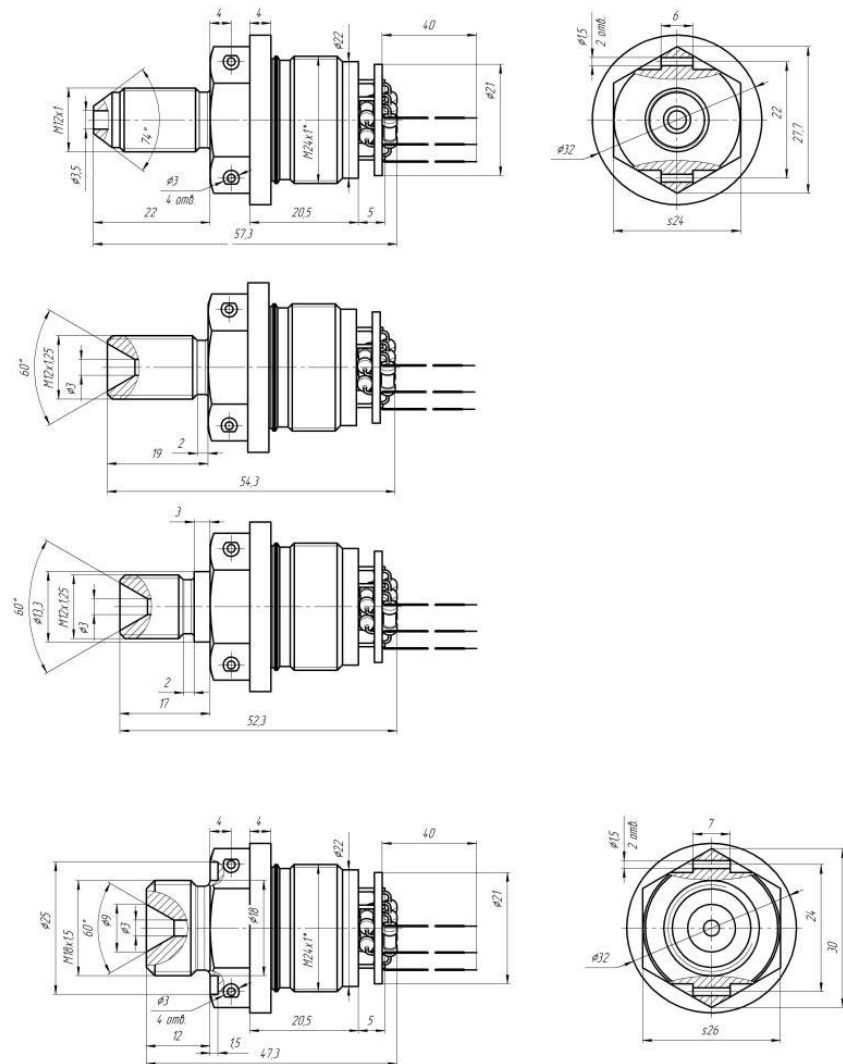


MIDA-MA-76

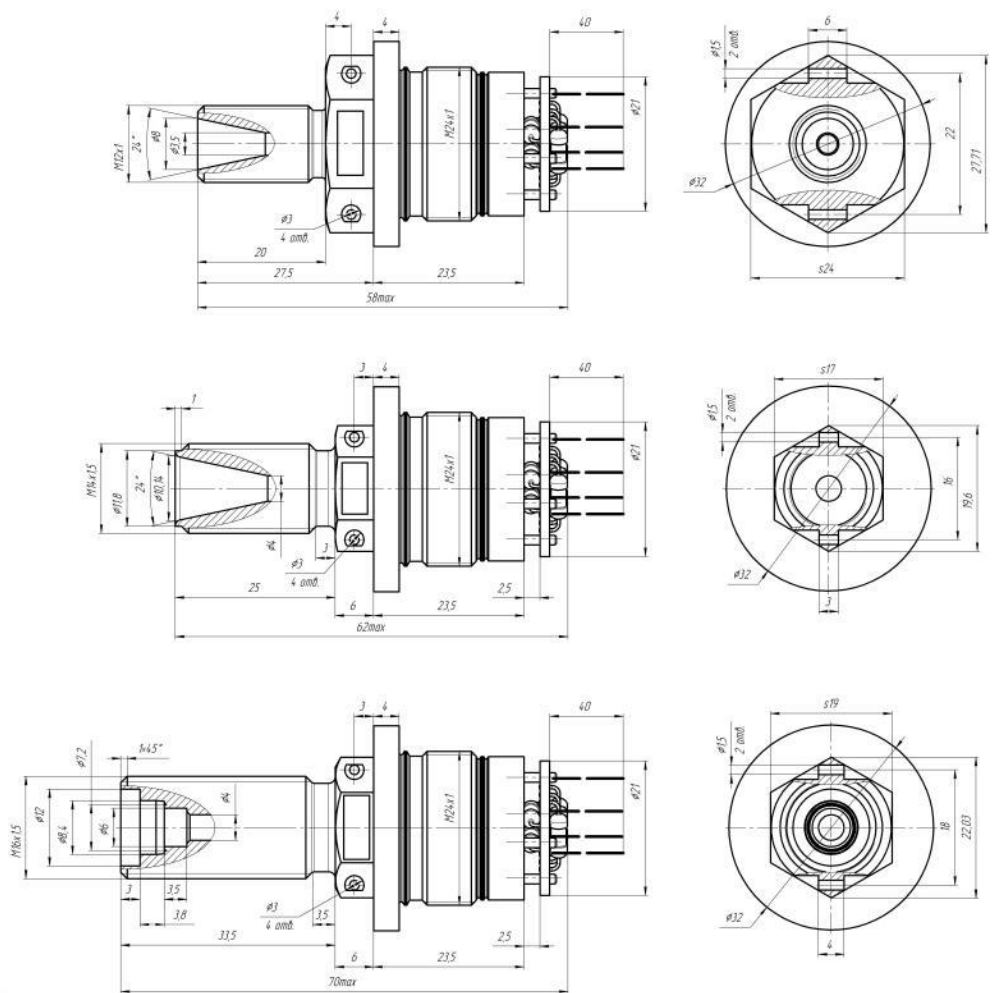


Overall and mounting dimensions of MIDA-MG(-MA)-90 modules

MIDA-MG-90



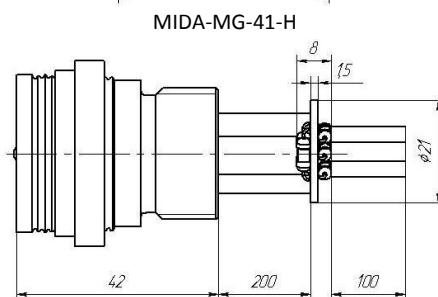
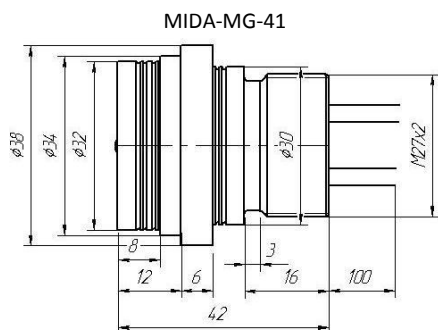
MIDA-MA-90



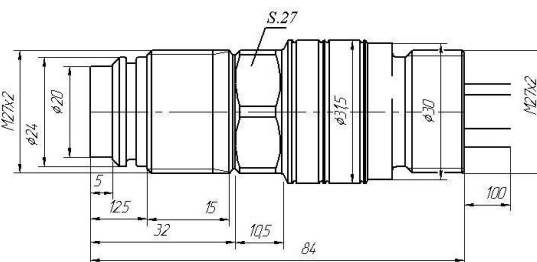
Specification of MIDA-MG-41(-42,-45) modules

	MG-41(-H)	MG-42(-H)	MG-45
Application	Industrial instrumentation and process control systems		
Measured medium	Gas mixtures with liquid and solid additives, high-viscosity liquids, melts		
Pressure range, MPa	0-0,01... - 0-1,6	0-0,025... - 0-10	0-1,0... -0-80
Accuracy (comb. L.H.R), no more than, ±%	no more than 0,1 (0,2) of output range	no more than 0,1 (0,2) of output range	no more than 0,2 of output range
Zero output, mV / V	± 0,2 at temperature of + 25 °C		
Output range, mV / V	5 ± 0,2 at temperature of + 25 °C		
Operating temperature range, °C	-40 ...+ 150 for MG-41 -40 ...+ 200 for MG-41-H	- 40 ...+ 150 for MG-42 - 40 ...+ 200 for MG-42-H	- 40 ...+ 150
Compensated temperature range, °C	-40 ...+ 120 , -40 ...+ 150 , +50 ...+ 150 for MG-41 +20 ...+ 200 , +100 ...+ 200 for MG-41-H	- 40 ...+ 120 , - 40 ...+ 150 , + 10 ...+ 150 for MG-42 + 20 ...+ 200 , + 100 ...+ 200 for MG-42-H	- 40 ...+ 120 , - 40 ...+ 150 , + 10 ...+ 150
Additional error in compensated temperature range of output range, no more than, %	3		
Supply voltage, V	5-15 DC		
Overload	no more than 1,5 Phom		
Insulation resistance	not less than 100 MOhm at 500 V and temperature of +25° C		

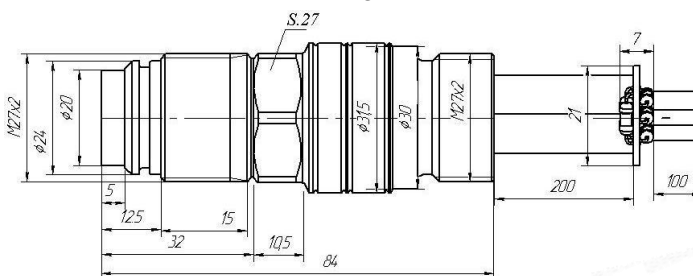
Overall dimensions of MIDA-MG-41(-42,-45) modules



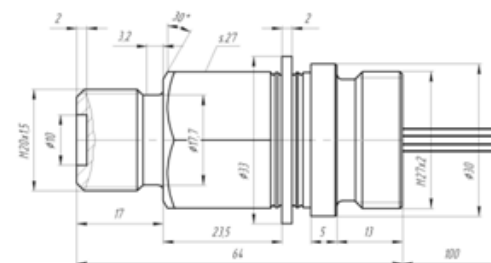
MIDA-MG-42



MIDA-MG-42-H



MIDA-MG-45



Electronic units: power supplies, intrinsic safe barriers, digital indicators, surge voltage protection devices

MIDA-PS-104, MIDA-PS-106 are multichannel power supplies with galvanic isolation or channels and are intended for stabilized DC voltage feeding of transmitters and other devices functioning in non-hazardous conditions. Number of channels: 1, 2 or 4; channel's output voltage: 24 V, 27 V or 36 V.

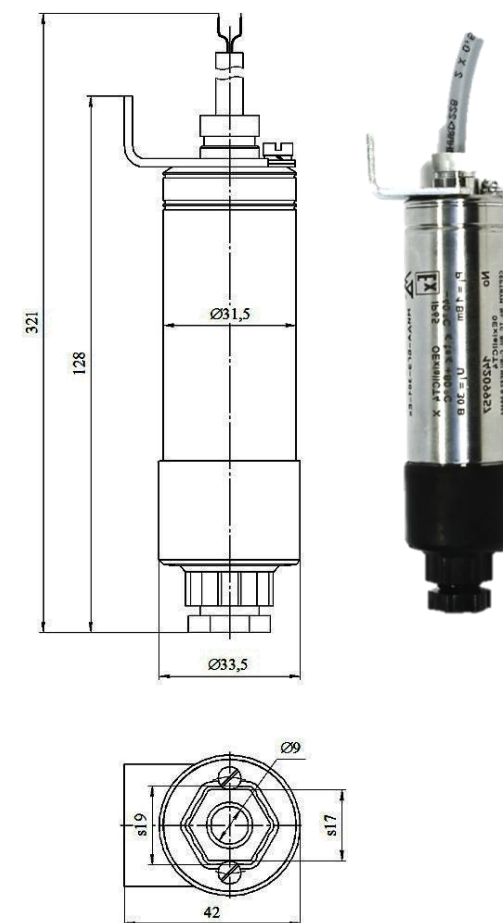
MIDA-PSSB-102-Ex power supplies with safety barriers and MIDA-ISB-105-Ex, MIDA-ISB-107-Ex intrinsic safe barriers are intended for feeding and intrinsic protection of 2-wire 4-20 mA output transmitters functioning in hazardous areas and for conversion of transmitters' output signal into normalized 4-20 mA or 0-5 mA DC output signal. Explosion protection is "intrinsically safe electrical circuit". Protection marking is: [Exib]IICX for MIDA-PSSB-102-Ex; [Exia]IIC, [Exib]IIB for MIDA-ISB-105-Ex; [Exia]IIC for MIDA-ISB-107-Ex.

MIDA-DI-202(-Ex) indicators are intended for digital displaying of information about pressure, temperature or other physical quantity, this information being transmitted by 2-wire 4-20 mA DC line. Indicator is fed by the measuring circuit's current. Digital indicators allow to reset the display range while operation and have intrinsic safe version ("intrinsically safe electrical circuit").

MIDA-SVP-301(-Ex) surge voltage protection devices are intended for protection of 2-wires transmitters with 4-20 mA DC output from impulse surge voltage caused by lightning discharges and industrial induction. These devices have intrinsic safe version ("intrinsically safe electrical circuit").

Specification, overall and mounting dimensions of MIDA-SVP-301 surge voltage protection devices

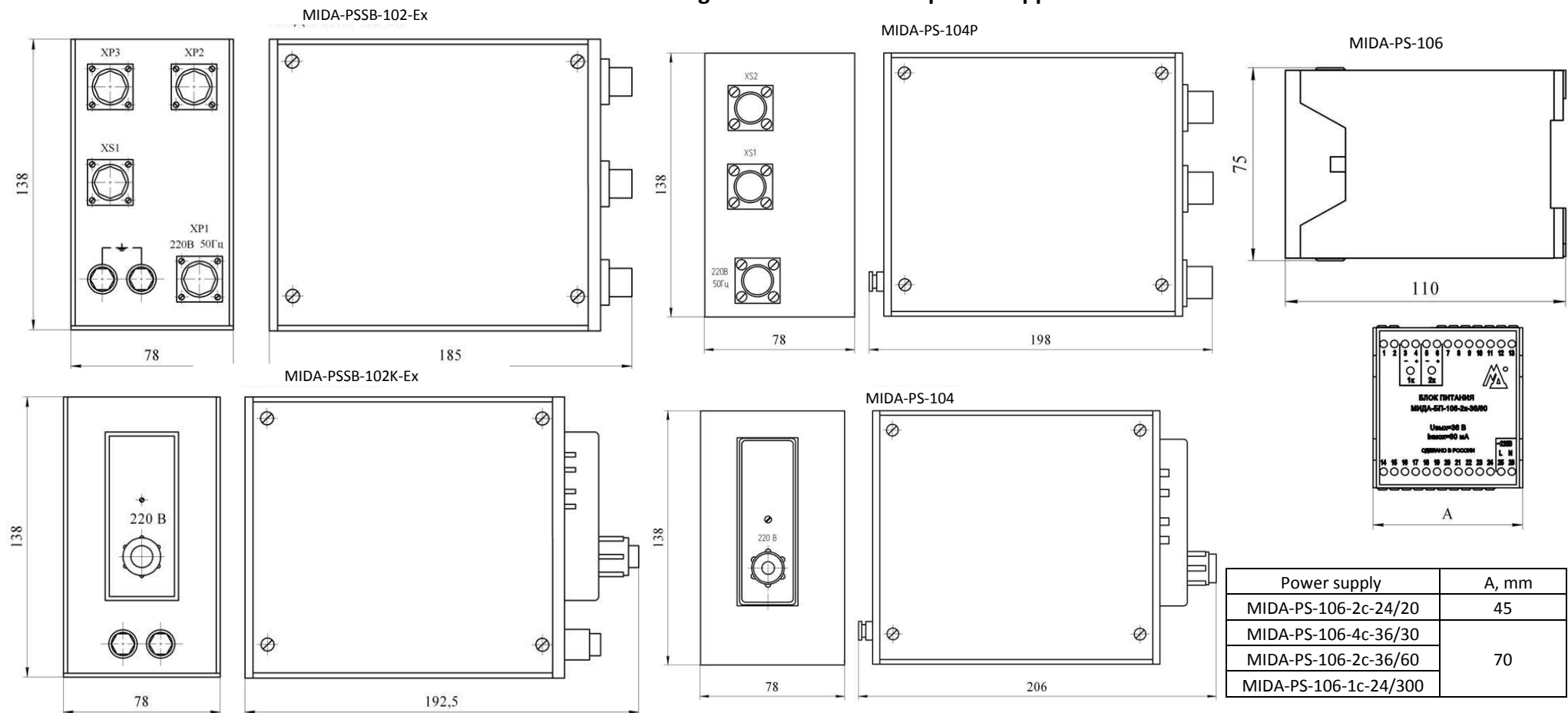
	MIDA-SVP-301-30	MIDA-SVP-301-50	MIDA-SVP-301-Ex
Applications	protection of 2-wires transmitters with 4-20 mA DC output from impulse surge voltage caused by lightning discharges and industrial induction		
Maximum allowed DC voltage in supply circuit, V	30	50	30
Leak current in supply circuit, no more than, [under voltage]	5 mA [30 V]	5 mA [50 V]	5 mA [30 V]
Maximum allowed DC voltage between supply circuit and ground, V	30	50	30
Leak current between supply circuit and ground, no more than, [under voltage]	5 mA [30 V]	5 mA [50 V]	5 mA [30 V]
Series resistance, no more than, Ohm	21		
Maximum voltage between transmitter's supply leads under test impulse of 4 kV, V	54	90	54
Maximum voltage between transmitter's supply leads and ground terminal under test impulse of 4 kV, V	54	90	54
Operating temperature range, °C	-40...+80		
Level of intrinsic safety	-		highly protected
Explosion protection	-		intrinsically safe electrical circuit; ExiaIICt4
Ingress protection	IP54		
Mechanic stability	V3		
Climatic modification	U**2		
Electrical connection	electrical connections are given in the end of catalogue		
Weight, no more than, kg	0,25		
Specifications	TV 4218-053-18004487-2000		
Form for order	MIDA-SVP-301-30	MIDA-SVP-301-50	MIDA-SVP-301-Ex



Specification of MIDA-PS-104(-106) power supplies, MIDA-PSSB-102-Ex power supplies and converters of output signal with safety barriers

	PSSB-102-Ex	PS-104	PS-106
Application	power supply, protection and conversion of output signal of transmitters and other equipment	power supply of transmitters and other equipment with channels galvanic isolation	
Number of channels	1 or 2	2 or 4	2 – for MIDA-PS-106-2c-24/20, MIDA-PS-106-2c-36/60; 4 – for MIDA-PS-106-4c-36/30; 1 – for MIDA-PS-106-1c-24/300
Input signal, mA	4-20	-	
Output signal, mA	4-20 (signal code 01); 0-5 (code 02); 0-20 (code 03)	-	
Channel output voltage, V	-	36±0,36	24±0,48 – for MIDA-PS-106-2c-24/20; 36±0,72 – for MIDA-PS-106-2c(-4c)-36/60(/30); 24...27 (adjustable) – for MIDA PS-106-1c-24/300
Load current, mA	-	0-50	-
Maximum load current, mA	-	-	20 – for MIDA-PS-106-2c-24/20; 30 – for MIDA-PS-106-4c-36/30; 60 – for MIDA-PS-106-2c-36/60; 300 – for MIDA-PS-106-1c-24/300
Current limit, no more than, mA	-	90	38 – for MIDA-PS-106-2c-24/20; 56 – for MIDA-PS-106-4c-36/30; 114 – for MIDA-PS-106-2c-36/60; 500 – for MIDA-PS-106-1c-24/300
Short circuit current, no more than, mA	-	20	32 – for MIDA-PS-106-2c-24/20; 48 – for MIDA-PS-106-4c-36/30; 96 – for MIDA-PS-106-2c-36/60; 1000 – for MIDA-PS-106-1c-24/300
Accuracy, ±%	0,1	-	
Operating temperature range, °C	-10... +50	-10... +60	
Temperature error, no more than, ±%/10°C	0,1	-	
Unit's upply voltage	220 V 50 Hz		
Electrical power, no more than, VA	7 – for 1-channel PSSB 10 – for 2-channels PSSB	15 – for 1-channel PS 20 – for 2-channels PS	4,5 – for MIDA-PS-106-2c-24/20; 14 – for MIDA-PS-106-2c(-4c)-36/60(/30); 15 – for MIDA-PS-106-1c-24/300
Type and marking of intrinsic safety	intrinsically safe electrical circuit; [Exib]IICX	-	
Ingress protection	IP30		
Stability on the mechanic	C3		
Climatic modification	UHL**3.1		
Electrical connection	MIDA-PSSB-102-Ex – plug/socket; MIDA-PSSB-102K-Ex – terminal block	MIDA-PS-104P – plug/socket; MIDA-PS-104 – terminal block	-
Weight, no more than, kg	1,5	1,7	0,26 – for MIDA-PS-106-2c-24/20; 0,58 – for MIDA-PS-106-2c(-4c)-36/60(/30); 0,6 – for MIDA-PS-106-1c-24/300
Specifications	TY4218-025-18004487-2000	TY4218-060-18004487-2000	МДБГ.430600.001TY
Form for order	MIDA-PSSB-102-Ex (including electrical connection) – number of channels – output signal code; example: MIDA-PSSB-102c-Ex-1c-01	MIDA-PS-104 (including electrical connection) – number of channels; example: MIDA-PS-104P-2c	MIDA-PS-106 – number of channels – channel's output voltage / maximum load current; example: MIDA-PS-106-2c-24/20

Overall and mounting dimensions of MIDA power supplies

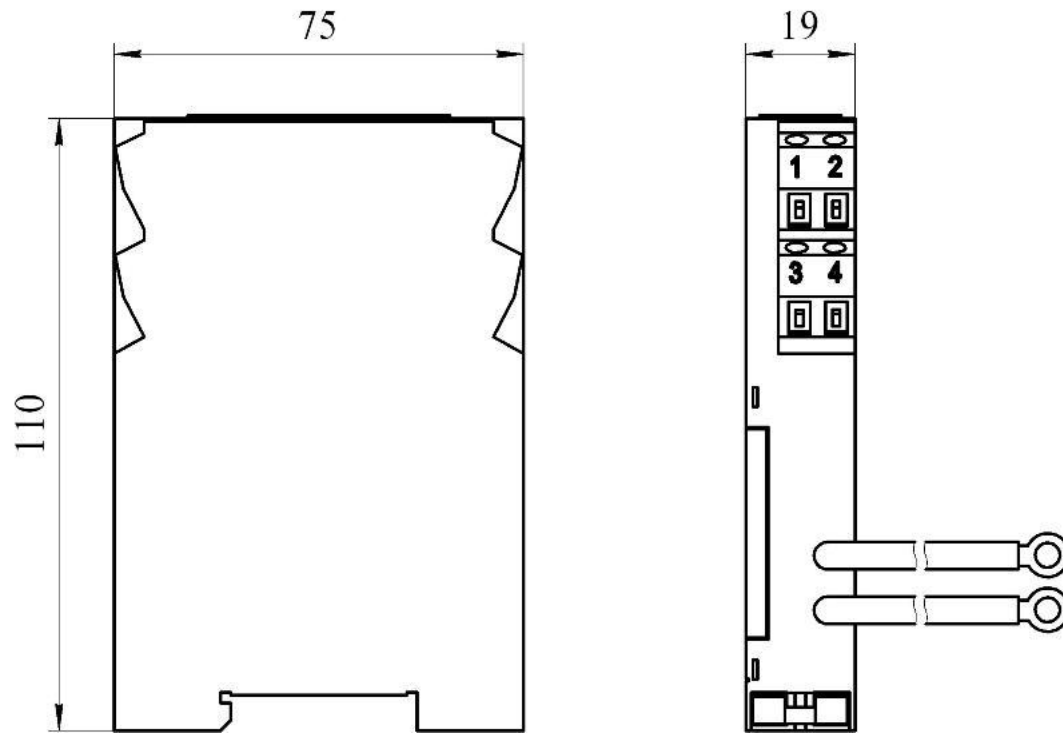


Specification of intrinsic safety barriers MIDA-ISB-105(-107)-Ex

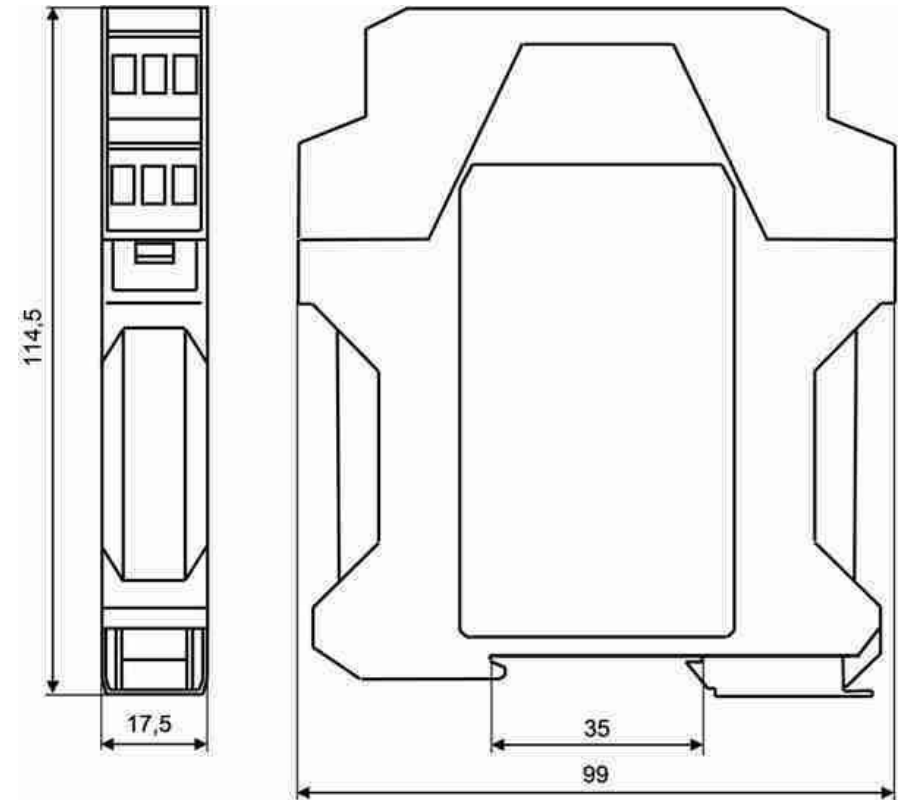
	MIDA-ISB-105-Ex	MIDA-ISB-107-Ex-01(-02,-03)	MIDA-ISB-107-Ex-04(-05,-06)
Application	power supply, protection and output signal conversion	power supply, protection and output signal conversion of transmitters and other devices	
Number of channels	1	1	1 – for ISB-107-Ex-05(-06) 2 – for ISB-107-Ex-04
Input, mA	4-20 mA		-
Output, mA	4-20 – for MIDA-ISB-105-Ex-01, MIDA-ISB-105-Ex-02; 0-5 – for MIDA-ISB-105-Ex-03, MIDA-ISB-105-Ex-04	4-20	-
Minimum output voltage, V	16 – for MIDA-ISB-105-Ex-01, MIDA-ISB-105-Ex-03; 13,5 – for MIDA-ISB-105-Ex-02, MIDA-ISB-105-Ex-04	13,5 – for ISB-107-Ex-01(-03) 16,5 – for ISB-107-Ex-02	16,5 at I of 20 mA 12,5 at I of 35 mA } for ISB-107-Ex-04(-05) 8,2-9,5 – for ISB-107-Ex-06
Accuracy, no more than, %	±0,1	±0,15	-
Temperature error, no more than, %	±0,1 / 10° C	±0,05 / 10° C	-
Supply voltage, V	25-40 –for MIDA-ISB-105-Ex-01, MIDA-ISB-105-Ex-03; 23-40 – for MIDA-ISB-105-Ex-02, MIDA-ISB-105-Ex-04	20-35	
Input current, no more than, mA	55	80 mA at U _{supply} of 20 V, 50 mA at U _{supply} of 35 V	150 mA at U _{supply} of 20 V } for ISB-107-Ex-04 87 mA at U _{supply} of 35 B 72 mA at U _{supply} of 20 V } for ISB-107-Ex-05 44 mA at U _{supply} of 35 V 110 mA at U _{supply} of 24 V – for ISB-107-Ex-06
Type and marking of intrinsic safety	[Exia]IIC, [Exia]IIB	[Exia]IIC	
Ingress protection	IP20		
Operating temperature range, °C	-10...+50	-20...+60	
Climatic modification	UHL**3.1		
Electrical connection	screw terminals	plug connectors with screw terminals	
Weight, no more than, g	130	135	135 – for ISB-107-Ex-04 115 – for ISB-107-Ex-05 130 – for ISB-107-Ex-06
Specifications	МДВГ.426475.004ТУ	МДВГ.426475.005ТУ	
Number in the State Register of measuring devices of Russian Federation	29511-05	31678-11	
Form for order	MIDA-ISB-105-Ex – code (01...04) determined by output signal code; example: MIDA-ISB-105-Ex-02	MIDA-ISB-107-Ex – code (01...06) determined by barrier’s purpose; example: MIDA-ISB-107-Ex-03	

Overall and mounting dimensions of MIDA intrinsic safety barriers

MIDA-ISB-105-Ex

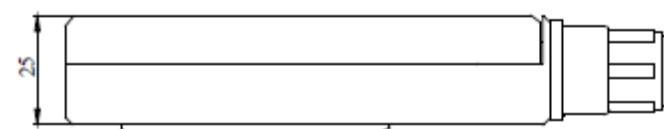
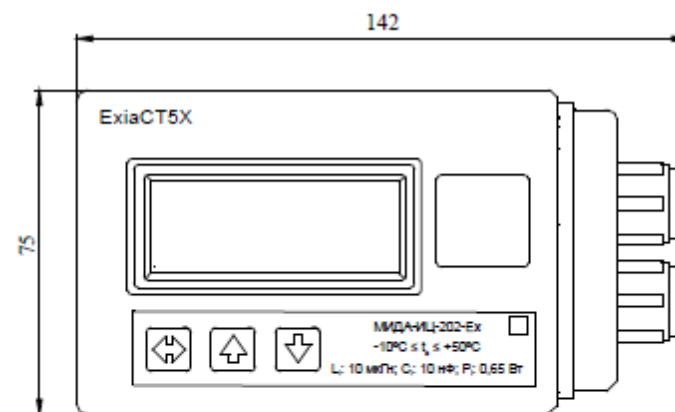


MIDA-ISB-107-Ex



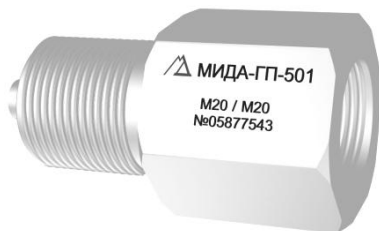
Specification, overall and mounting dimensions of MIDA-DI-202-(Ex) universal digital indicators

Application	displaying digital information of current value of pressure, temperature or other physical quantity with adjustable range of indication
Indication range	from -9999 up to +9999
Kind of readout	linearly growing and linearly decreasing
Accuracy, no more than	0,1% ± 1 count unit
Operating temperature range, °C	-10... +50
Power supply	from transmitter circuit or actuating device with 4-20 mA output signal; voltage drop at indicator is not more than 3 V
Number of digits	4
Digits' height, mm	14
Level of intrinsic safety	highly protected
Intrinsic safety	intrinsically safe electrical circuit; ExiaIIC5 X
Ingress protection	IP54
Stability on the mechanic	C3
Climatic modification	UHL**3.1
Mounting method	on a bracket; DIN rail
Weight, no more than, kg	0,3
Specifications	МДВГ.406521.003ТУ
Inquiry form	MIDA-DI-202 or MIDA-DI-202-Ex



Accessories

MIDA-PS-501 pressure snubber (damper)



MIDA-PS-501 pressure snubber (damper) is designed to protect the pressure transmitter's sensitive element, for example MIDA-13, from influence of pressure hummer or pulsations of the fluids and gases compatible with stainless steels and latten alloy 59-1.

Application category depends on the measured medium and its maximum pressure: I - gases, under 0,1 MPa; II - fluids and gases, above 0,1 MPa.

Response time in "damper – pressure transmitter" couple is not less than 100 msec for oil pressure measurement and not less than 150 msec for air pressure measurement. Mounting threads: (proportion of male thread to female thread): M20/M20; M20/M12, M12/M20; M12/M12; M12/M10 or other by request.

Form for order: MIDA-PS-501 - application category (I or II) - mounting threads.

MIDA-SD-405 communication device



MIDA-CD-405 communication device is intended for coupling of MIDA-13-CN high-precision pressure transmitters with a personal computer with special software installed (software is provided with the transmitter) for pressure range resetting and setting of transmitter's "zero".



MIDA-SD-408 communication device

MIDA-CD-405 communication device is intended for coupling of MIDA-15 pressure transmitters with digital signal of UART/RS485 interface with a personal computer for pre-setting and pre-checking of its working capacity (without galvanic separation unit).



MIDA-SD-410 communication device

MIDA-CD-405 communication device is intended for coupling of MIDA-15 pressure transmitters with digital signal of RS485 interface with galvanic separation unit (industrial application).

MIDA-ZD-402 zeroing device



MIDA-ZD-402 is designed for adjustment of MIDA-13-C(N), MIDA-12-C high-precision pressure transmitters' "zero".

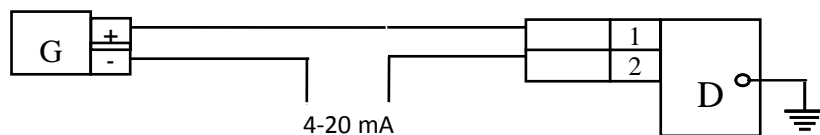
MIDA-RSD-406 range switching device



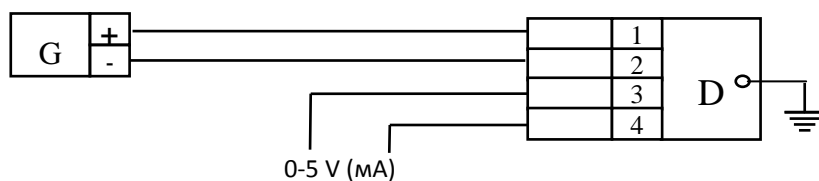
MIDA-RSD-406 range switching device is intended for setting of MIDA-13-CN transmitters' pressure ranges without personal computer to adjust the "zero" value and span of these transmitters.

Electrical connections

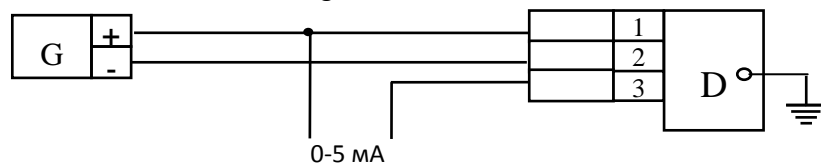
**MIDA-13, MIDA-13-Fp, MIDA-12 transmitters
with 2-wire line and 4-20 mA output signal
Signal code 01**



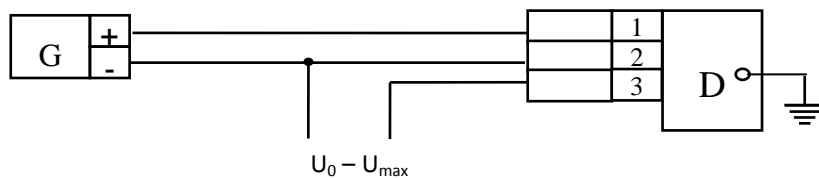
**MIDA-13, MIDA-13-Fp transmitters
with 4-wire line and 0-5 mA or 0-5 V output signals
Signal codes 03, 04**



**MIDA-13, MIDA-13-Fp transmitters
with 3-wire line and (0-5) mA output signal
Signal code 02**

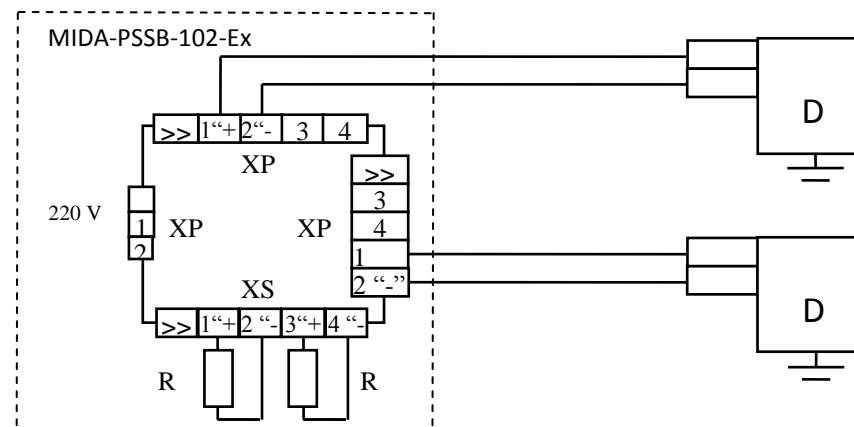


**MIDA-13, MIDA-13-Fp transmitters
with 3-wire line and $U_0 - U_{\max}$ V output signal
Signal code 05/1, 05/2, 05/4**

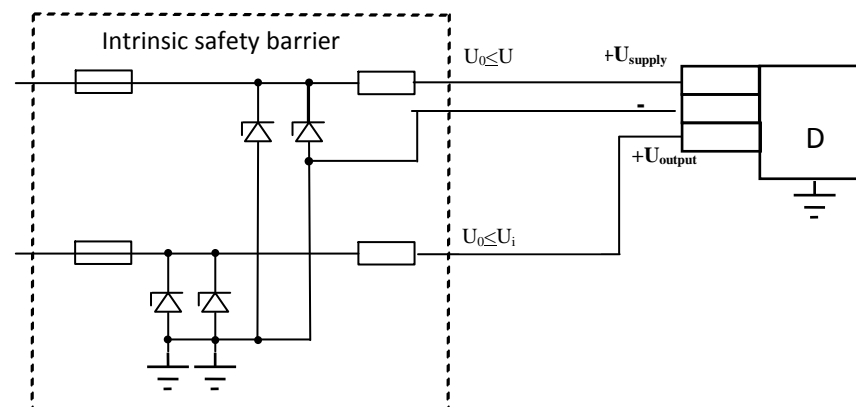


G – power supply unit;
D – transmitter

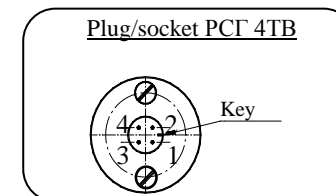
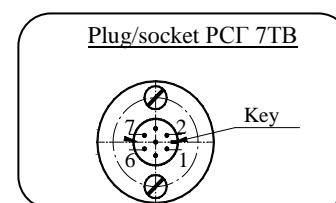
**MIDA-13-Ex, MIDA-12-Ex transmitters
with 2-wire line and 4-20 mA output signal
Signal code 01**



**MIDA-13-Ex transmitters
with 3-wire line and $(U_0 - U_{\max})$ V output signal
Signal code 05/1, 05/2, 05/4**



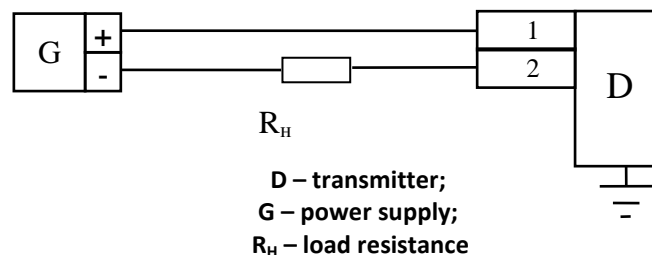
Connector leads layout



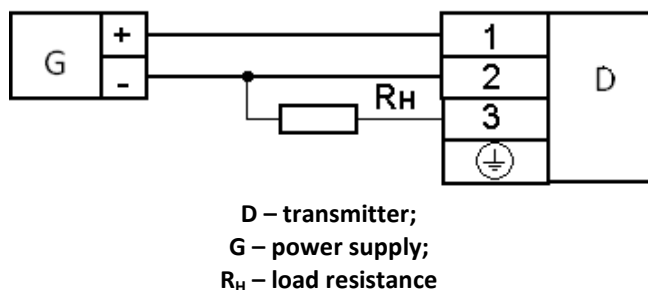
MIDA-15, MIDA-15-Ex transmitters

Purpose of DINC connector's leads depending on transmitter's model and operating mode

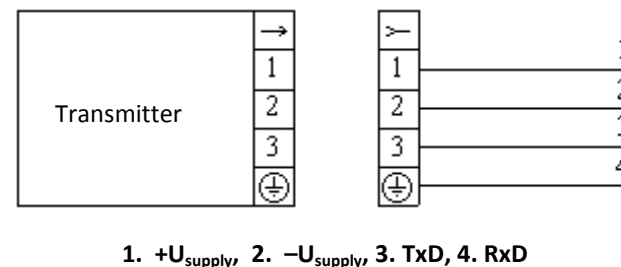
Electrical connections for transmitters with 4-20 output signals



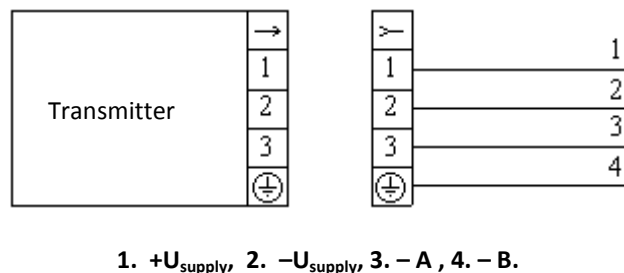
Electrical connections
for transmitters with voltage DC output signals



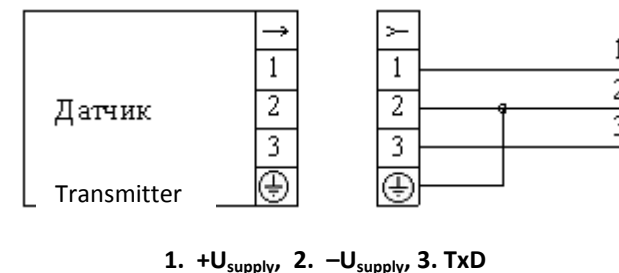
Electrical connections for transmitters with Mida/UART exchange protocols
with transmission upon request of data on pressure measured



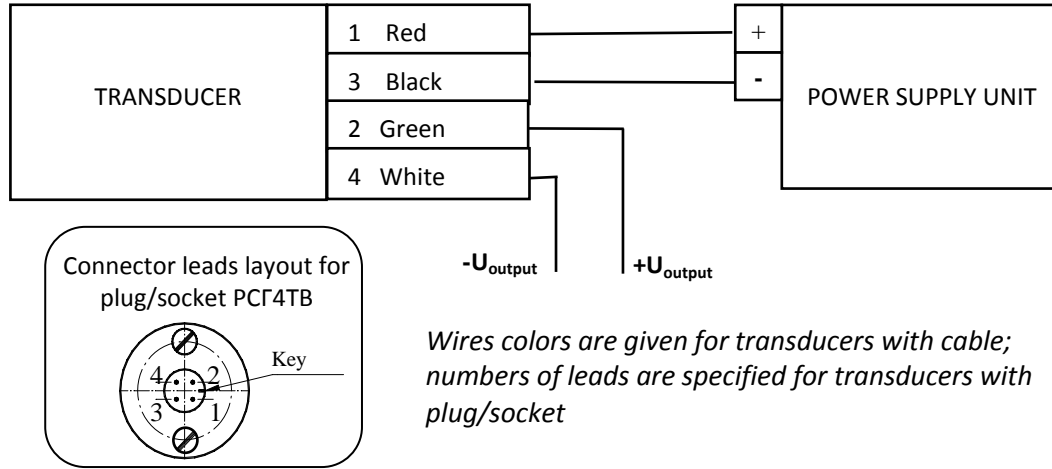
Purpose of connector's leads for transmitters with Modbus/RS485 exchange protocols
with transmission upon request of data on pressure measured



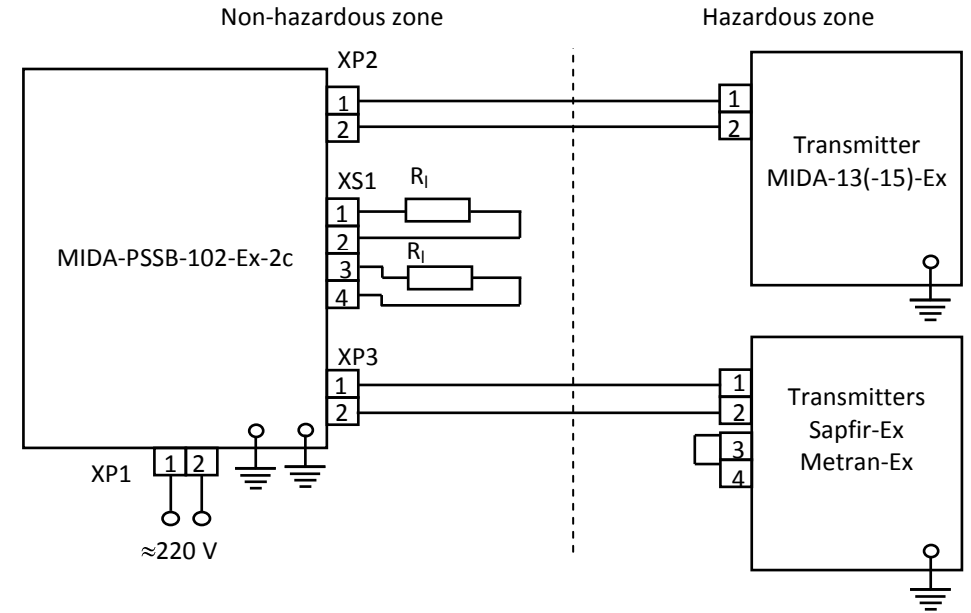
Electrical connections for transmitters with Mida/UART exchange protocols
with periodical transmission of data on pressure measured



Transducers



MIDA-PSSB-102-Ex-2c power supply with safety barrier



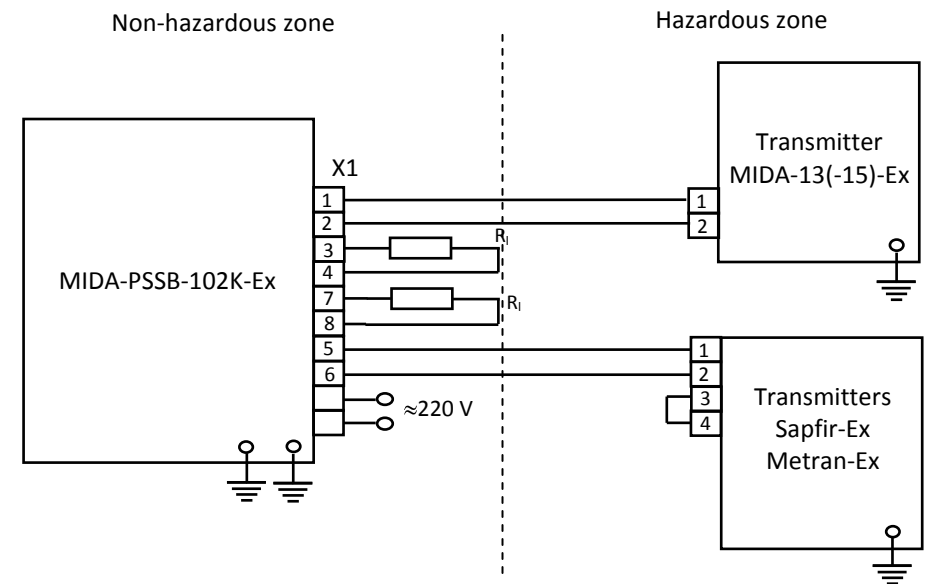
MIDA-PS-104 power supplies

POWER SUPPLY	1	+36 V 1 ch.	X1
	2	-36 V 1 ch.	
	3	+36 V 2 ch.	
	4	-36 V 2 ch.	
	5	+36 V 3 ch.	
	6	-36 V 3 ch.	
	7	+36 V 4 ch.	
	8	-36 V 4 ch.	
	9	220 V	
	10	220 V	

MIDA-PS-104P power supplies

POWER SUPPLY	1	+36 V 1 ch.	XS1
	2	-36 V 1 ch.	
	3	+36 V 2 ch.	
	4	-36 V 2 ch.	
	5	+36 V 3 ch.	XS2
	6	-36 V 3 ch.	
	7	+36 V 4 ch.	
	8	-36 V 4 ch.	
	9	220 V	XP1
	10	220 V	

MIDA-PSSB-102K-Ex power supply with safety barrier



MIDA-PS-106 power supplies

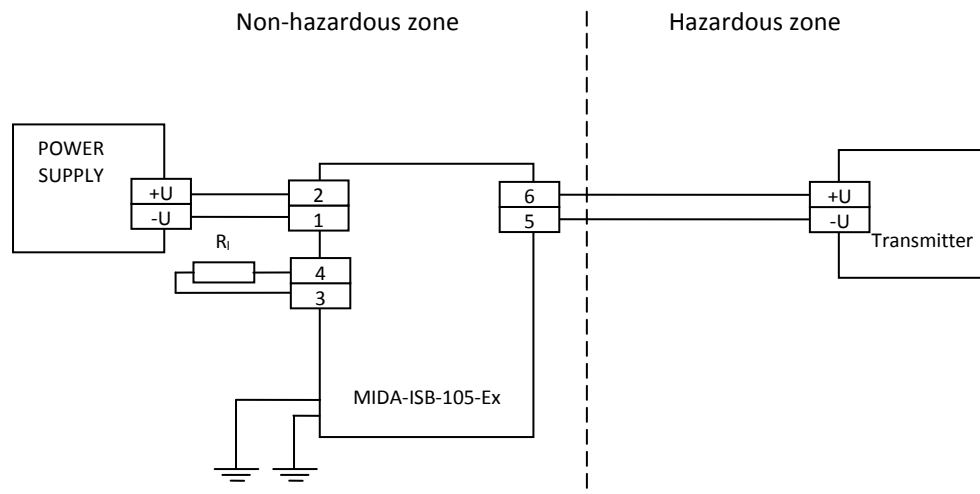
MIDA-PS-106- 2c-24/20	1	-24 V 1 ch.
	2	+24 V 1 ch.
	3	-24 V 2 ch.
	4	+24 V 2 ch.
	15	~220 V
	16	~220 V

MIDA-PS-106- 2c-36/60	3	-36 V 1 ch.
	4	+36 V 1 ch.
	5	-36 V 2 ch.
	6	+36 V 2 ch.
	15	~220 V
	16	~220 V

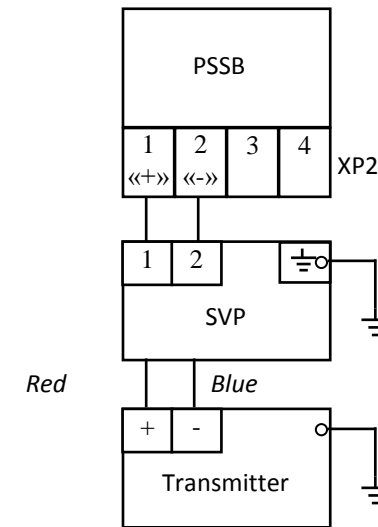
MIDA-PS-106-4c-36/30									
1	2	3	4	5	6	7	8		
-36 V 1 ch.	+36 V 1 ch.	-36 V 2 ch.	+36 V 2 ch.	-36 V 3 ch.	+36 V 3 ch.	-36 V 4 ch.	+36 V 4 ch.	~220 V	~220 V

MIDA-PS-106- 1c-24/300	1	+24 V 1 ch.
	2	+24 V 1 ch.
	15	~220 V
	16	~220 V

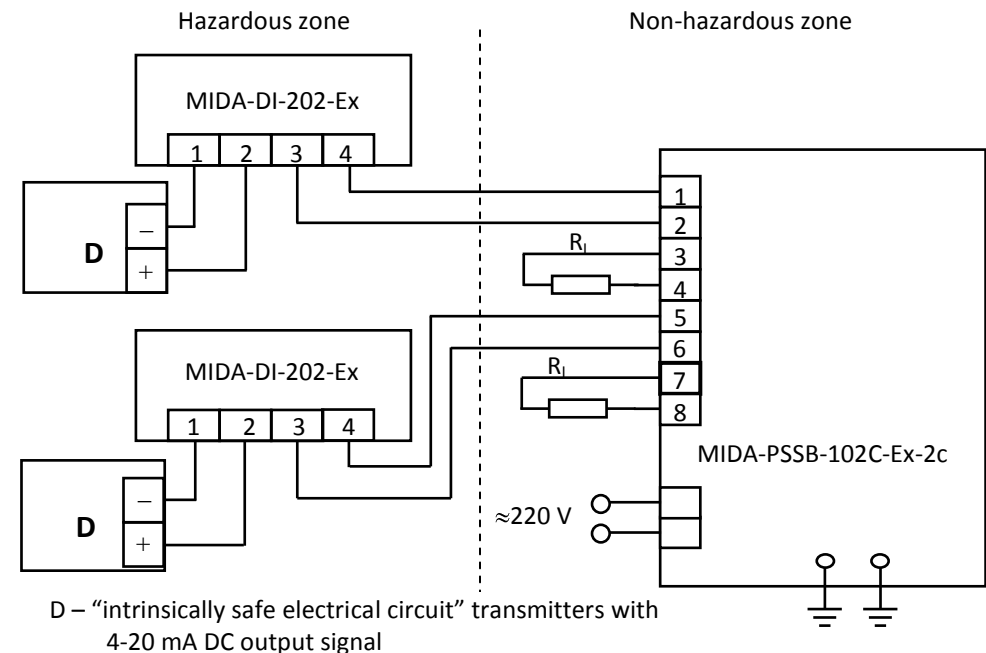
Intrinsic safe barriers MIDA-ISB-105-Ex



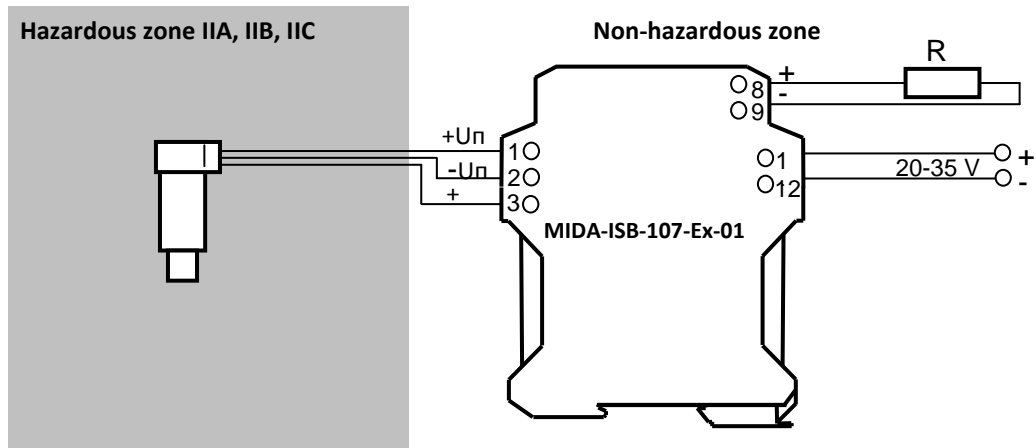
Surge voltage protection device



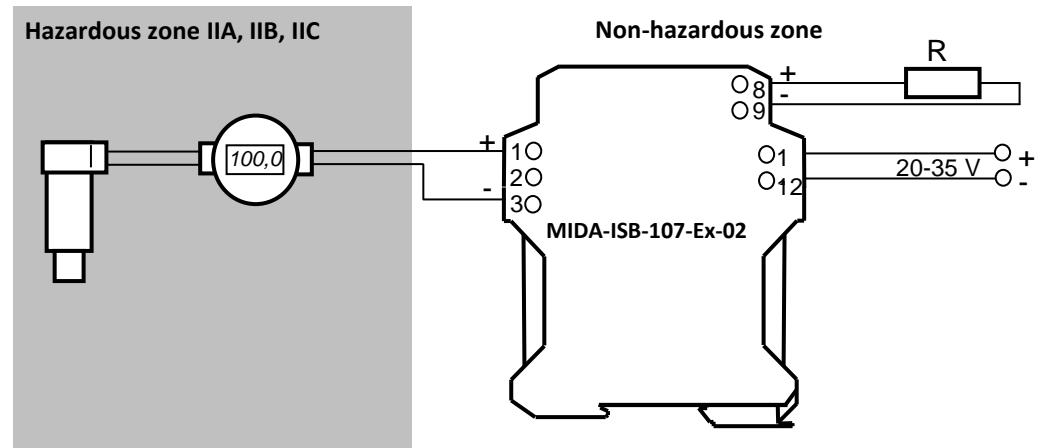
Intrinsic safe digital indicator MIDA-DI-202-Ex



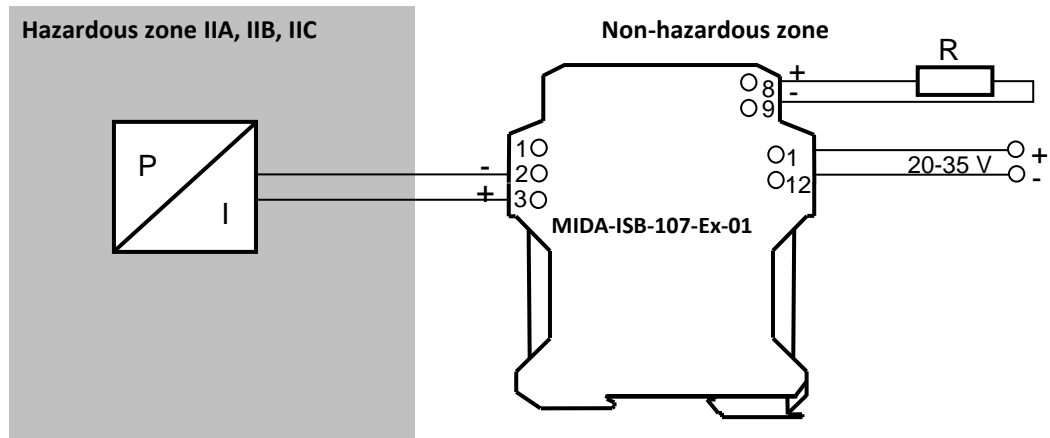
MIDA-ISB-107-Ex-01 intrinsic safety barrier with 3-wire transmitter



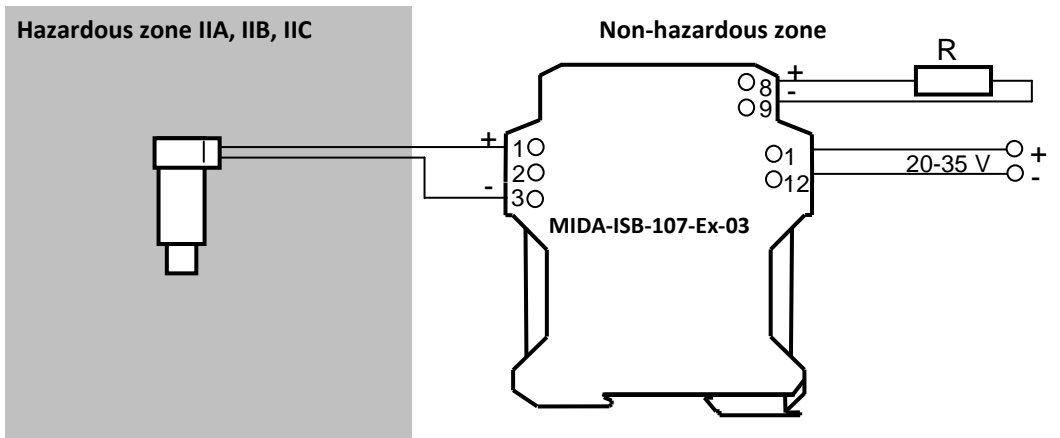
MIDA-ISB-107-Ex-01(-02) intrinsic safety barrier with 2-wire transmitter and digital indicator



MIDA-ISB-107-Ex-01 intrinsic safety barrier with power supply

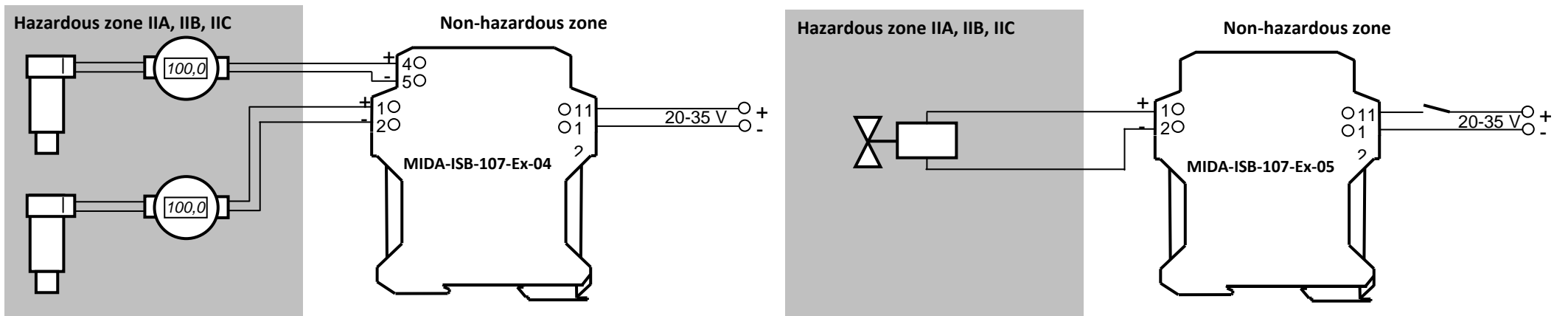


MIDA-ISB-107-Ex-03 intrinsic safety barrier with 2-wire transmitter

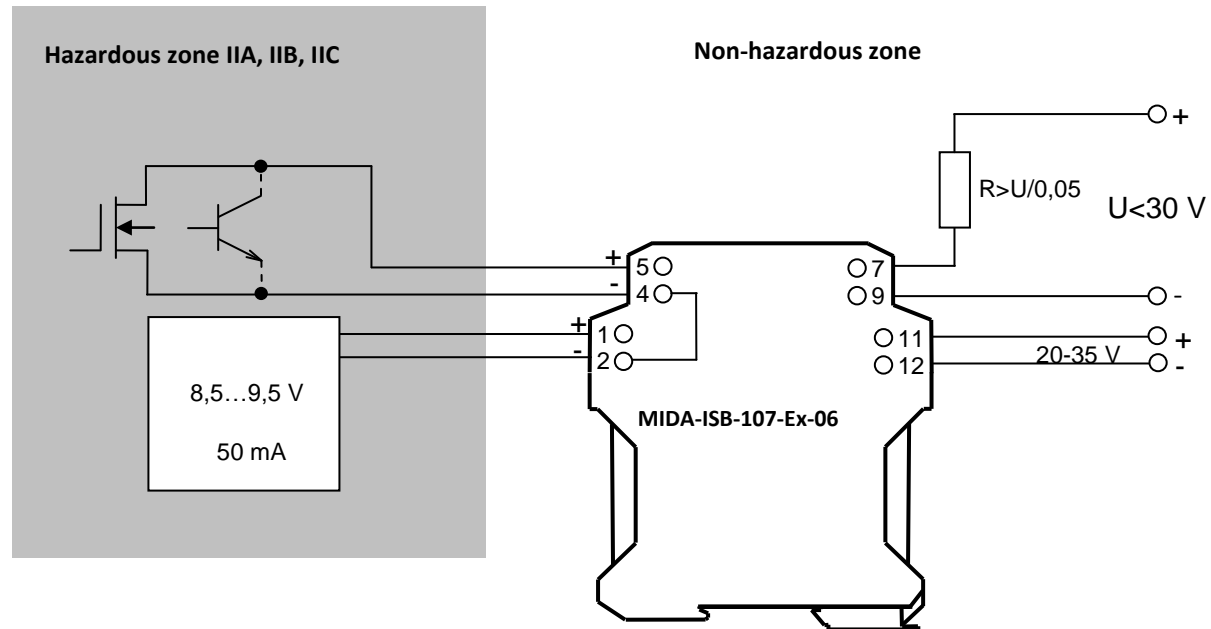


MIDA-ISB-107-Ex-04 intrinsic safety barrier with intrinsic safe transmitters and digital indicators

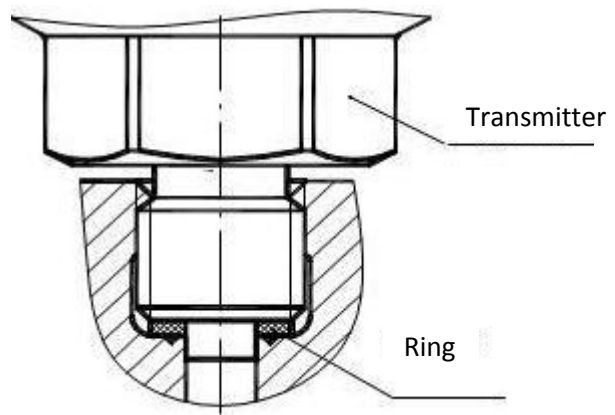
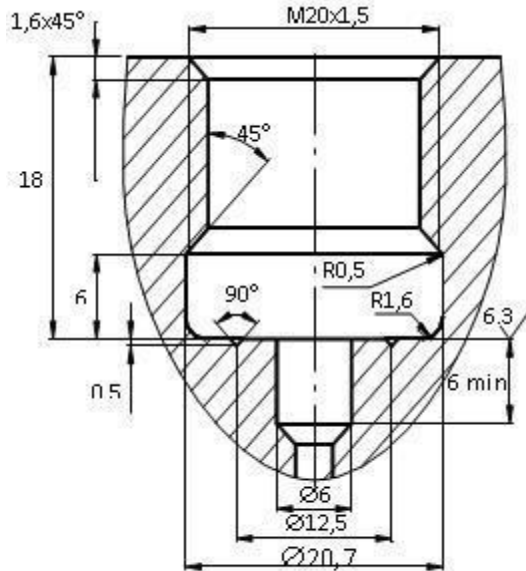
MIDA-ISB-107-Ex-05 intrinsic safety barrier with intrinsic safe actuating device



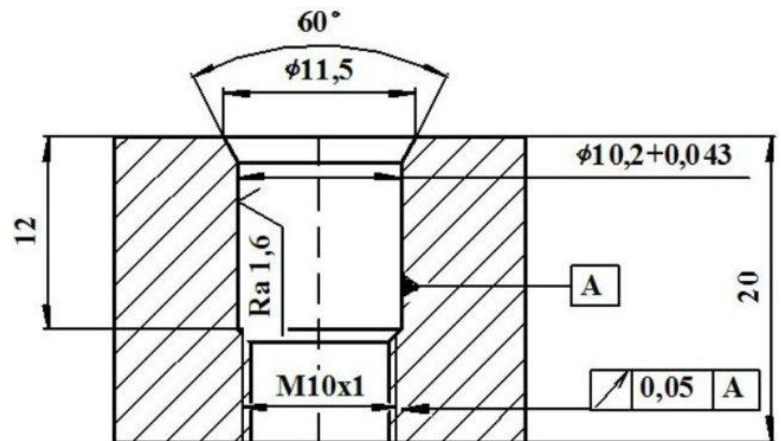
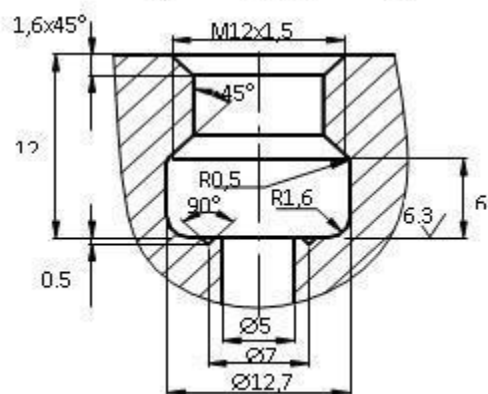
MIDA-107-Ex-06 intrinsic safety barrier with intrinsic safe device



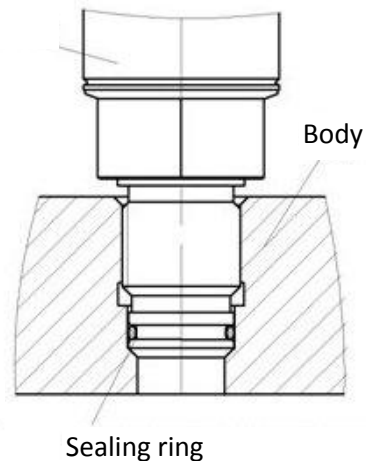
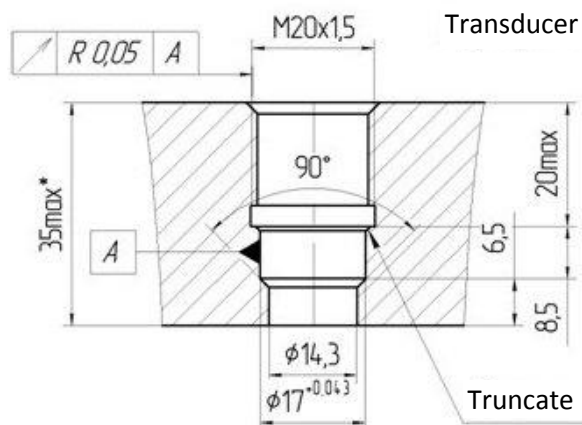
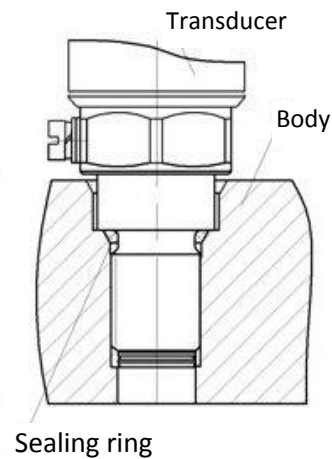
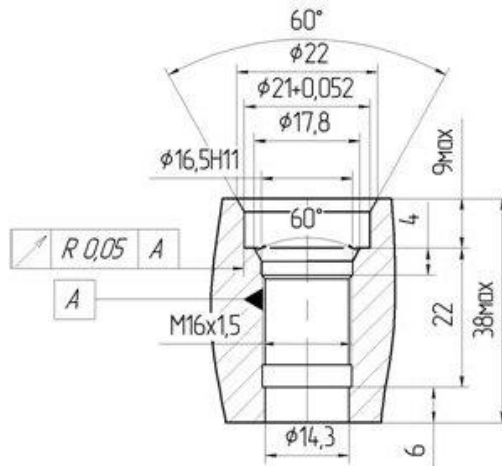
Mounting holes for transmitters and installation on mainline



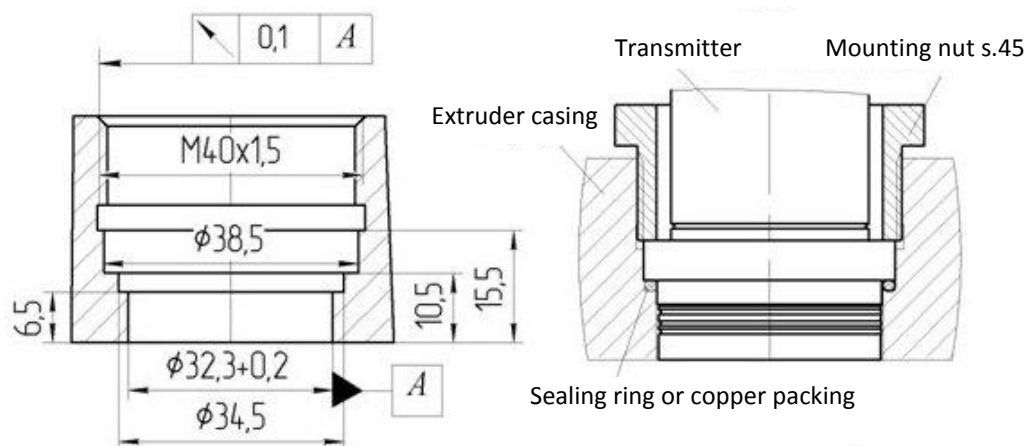
Mounting hole for MIDA-TG-82 transducer



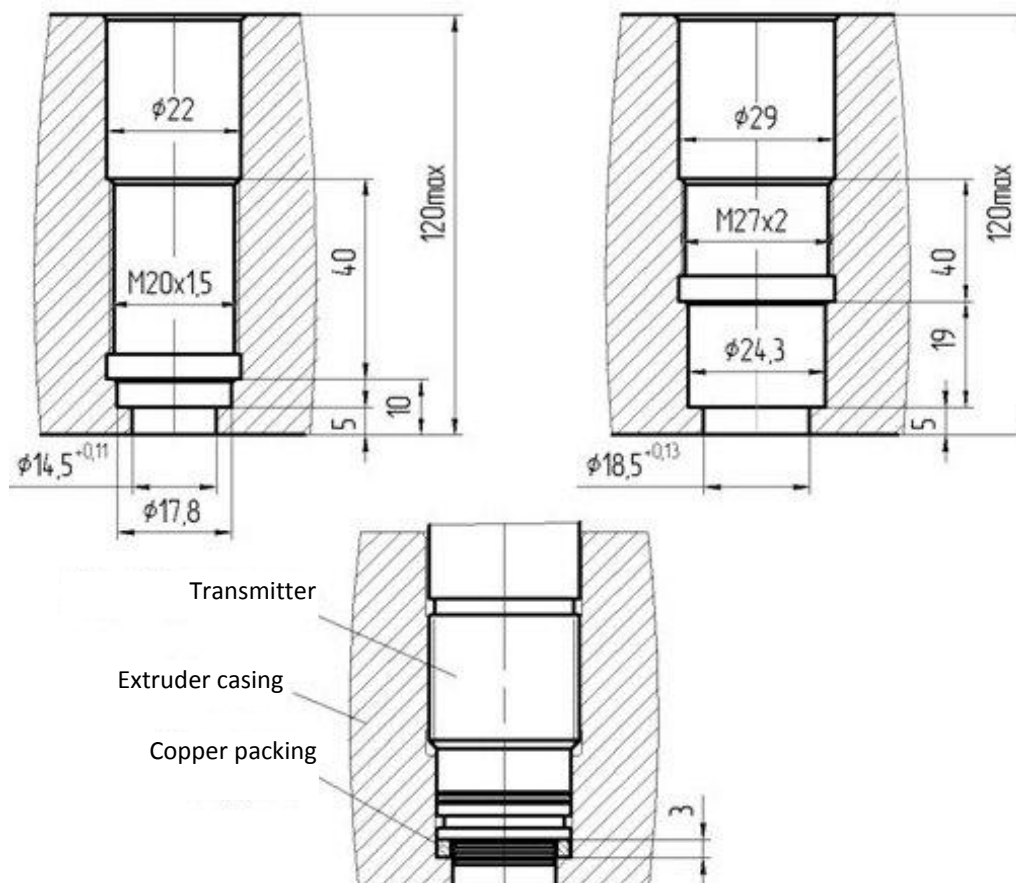
Mounting hole for MIDA-SG-12-072 transmitter



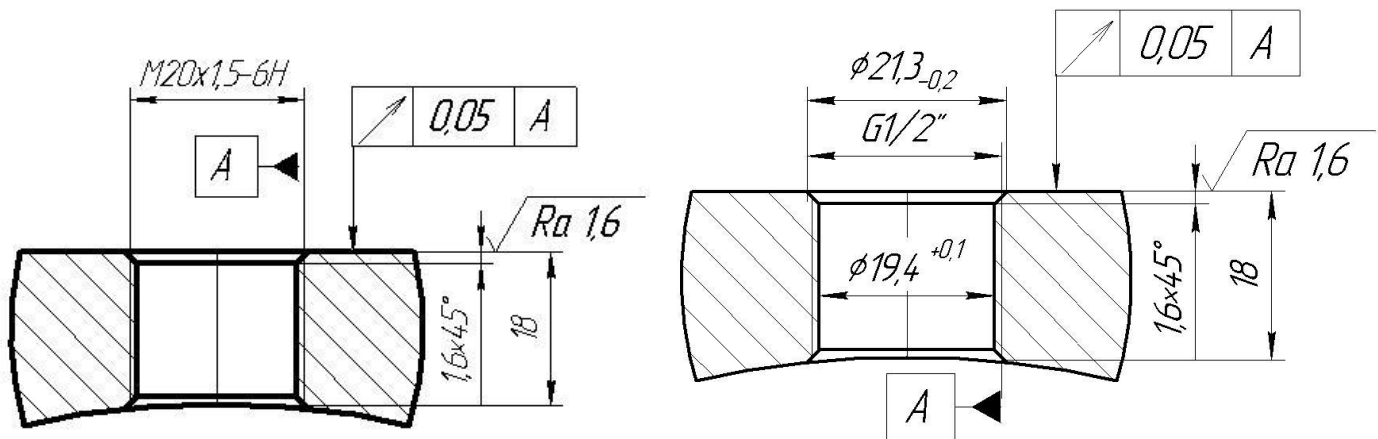
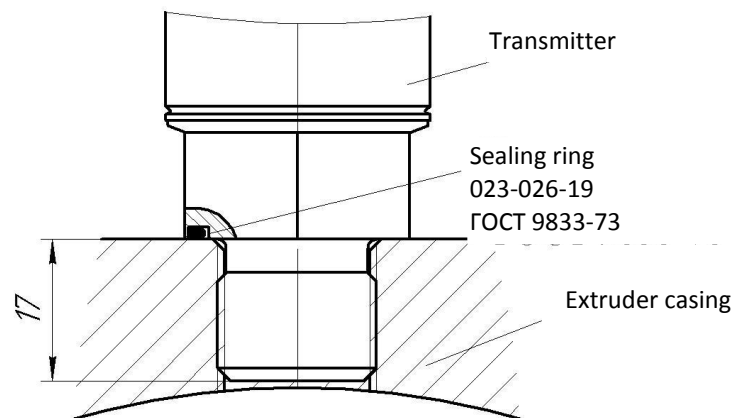
Mounting hole and installation of MIDA-SG-12-05, MIDA-SG-12-06 transmitters and MIDA-MG-41 modules



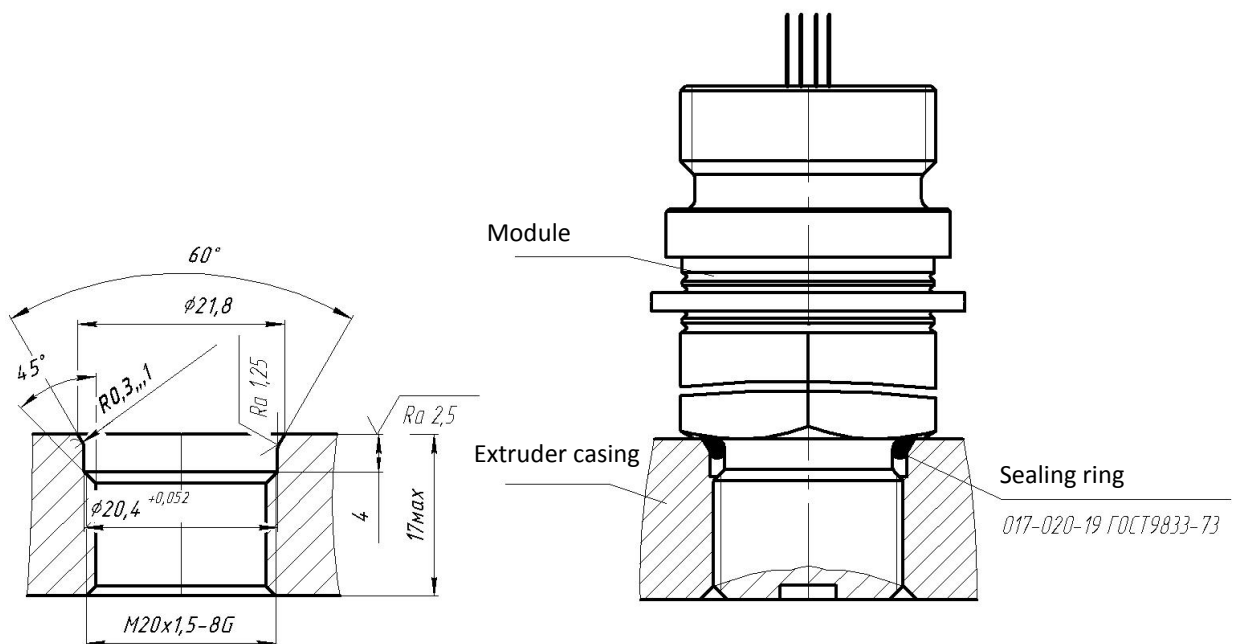
Mounting hole and installation of MIDA-SG-12-081 transmitter



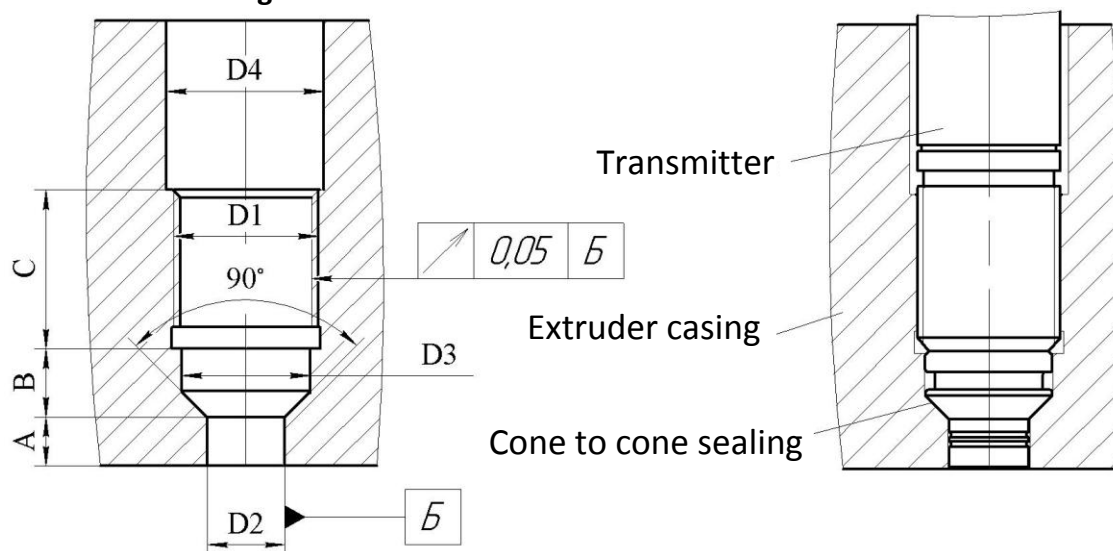
Mounting hole and installation of MIDA-13 with flange membrane transmitters



Mounting hole and installation of MIDA-MG-45 modules

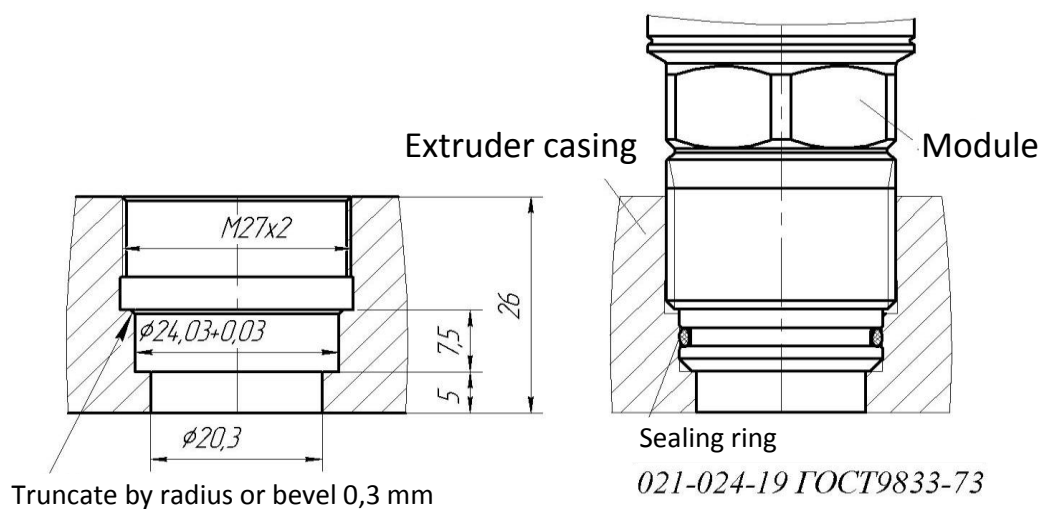


Mounting hole and installation of MIDA-SG-12-082 transmitters



D1	D2, MM	D3, MM	D4, MM	A	B	C
1/2-20UNF-2A	$\varnothing 7,95+0,05$	$\varnothing 11,5+0,1$	$\varnothing 13$	5,7min	4,3	19
M14X1,5	$\varnothing 8,1+0,05$	$\varnothing 12,1+0,01$	$\varnothing 15$	6,15 min	5	25
M18X1,5	$\varnothing 10,1+0,05$	$\varnothing 15,6+0,1$	$\varnothing 20$	6,15 min	7	25
M20X1,5	$\varnothing 14,1+0,05$	$\varnothing 17,1+0,1$	$\varnothing 22$	6,15 min	8	25

Mounting hole and installation of MIDA-MG-42 modules



Reference sheet for MIDA devices ordering

Scheme 1
MIDA-SG-12 high-temperature transmitters

$\frac{\text{MIDA-SG-12-11}}{1} - \frac{0,5}{2} / \frac{1 \text{ MPa}}{3} - \frac{150}{4} - \frac{\text{M20}}{5} - \frac{\text{S}}{6}$

- 1 | Transmitter designation
MIDA-SG-12-05-C, MIDA-SG-12-05-Ex-C
MIDA-SG-12-06-C, MIDA-SG-12-06-Ex-C
MIDA-SG-12-072-C, MIDA-SG-12-072-Ex-C
MIDA-SG-12-081-C, MIDA-SG-12-081-Ex-C
MIDA-SG-12-082-C, MIDA-SG-12-082-Ex-C
MIDA-SG-12-11, MIDA-SG-12-11-Ex
MIDA-SG-12-11-H, MIDA-SG-12-11-Ex-H
MIDA-SG-12-12, MIDA-SG-12-12-Ex
MIDA-SG-12-12-H, MIDA-SG-12-12-Ex-H

- 2 | Accuracy (comb. L.H.R), %
3 | Upper limit of measurement with unit of measurement specified
4 | Upper limit of compensated temperature range, °C
5 | Pressure port (pressure thread)
6 | Electrical connection

*
For MIDA-SG-12-081(-082) length of rod must be pointed additionally

Scheme 2
MIDA-13 transmitters

$\frac{\text{MIDA-SG-13}}{1} - \frac{0,5}{2} / \frac{1 \text{ MPa}}{3} - \frac{01}{4} - \frac{\text{M20}}{5} - \frac{\Pi}{6}$

- 1 | Transmitter designation

Absolute pressure transmitters
MIDA-SA-13, MIDA-SA-13-Ex, MIDA-SA-13-Fp
MIDA-SA-13-H, MIDA-SA-13-Ex-H, MIDA-SA-13-Fp-H
MIDA-SA-13-C, MIDA-SA-13-Ex-C, MIDA-SA-13-Fp-C
MIDA-SA-13-CN, MIDA-SA-13-Ex-CN, MIDA-SA-13-Fp-CN

Gage pressure transmitters
MIDA-SG-13, MIDA-SG-13-Ex, MIDA-SG-13-Fp
MIDA-SG-13-H, MIDA-SG-13-Ex-H, MIDA-SG-13-Fp-H
MIDA-SG-13-C, MIDA-SG-13-Ex-C, MIDA-SG-13-Fp-C
MIDA-SG-13-CN, MIDA-SG-13-Ex-CN, MIDA-SG-13-Fp-CN
MIDA-SG-13-Fp-Svp

Vacuum transmitters
MIDA-SV-13, MIDA-SV-13-Ex
MIDA-SV-13-H, MIDA-SV-13-Ex-H

Gage pressure-vacuum transmitters
MIDA-SGV-13, MIDA-SGV-13-Ex
MIDA-SGV-13-H, MIDA-SGV-13-Ex-H

- 2 | Accuracy (comb. L.H.R), %
3 | Upper limit of measurement with unit of measurement specified
4 | Signal code or output signal maximum values
5 | Pressure port
6 | Electrical connection

*
For MIDA-13 with flange membrane transmitters the type of membrane (**O** – for viscous fluids containing solid particles; **P** – for pulps) must be pointed additionally

Scheme 3
MIDA-15 transmitters

	MIDA-SG-15	-	0,5	/	1 MPa	-	01	-	M20	-	DIN C
	1		2		3		4		5		6
1	Transmitter designation Absolute pressure transmitters MIDA-SA-15, MIDA-SA-15-Ex Gage pressure transmitters MIDA-SG-15, MIDA-SG-15-Ex Vacuum transmitters MIDA-SV-15, MIDA-SV-15-Ex Gage pressure-vacuum transmitters MIDA-SGV-15, MIDA-SGV-15-Ex Differential pressure transmitters MIDA-SD-15, MIDA-SD-15-Ex										
2	Accuracy (comb. L.H.R), %										
3	Upper limit of measurement with unit of measurement specified										
4	Signal code or output signal maximum values										
5	Pressure port										
6	Electrical connection										

Scheme 4

MIDA transducers

	$\frac{\text{MIDA-TG-51}}{1}$	$- \frac{0,1}{2}$	$/ \frac{1 \text{ MPa}}{3}$	$- \frac{\text{M20}}{4}$	$- \frac{\text{C}}{5}$
1	Transducer designation Absolute pressure transducers MIDA-TA-51, -81, -82, -88, -91 Gage pressure transducers MIDA-TG-51, -82, -83, -84, -85, -88				
2	Accuracy (comb. L.H.R), no more, $\pm\%$				
3	Upper limit of measurement with unit of measurement specified				
4	Pressure port				
5	Electrical connection				
	* for MIDA-TG-81, -82, -83, -84, -85, -88 transducers upper limit of compensated temperature range must be specified, $^{\circ}\text{C}$				

Scheme 5
MIDA modules

	$\frac{\text{MIDA-MG-70}}{1}$	$-\frac{0,1}{2}$	$/\frac{1\text{ MPa}}{3}$	$-\frac{\text{M20}}{4}$
1	Module designation absolute pressure modules MIDA -MA-70, MIDA -MA-58 gage pressure modules MIDA -MT-70, MIDA -MT-58-1, MIDA -MT-58-2, MIDA -MT-93			
2	Accuracy (comb. L.H.R), no more, ±%			
3	Upper limit of measurement			
4	Pressure port			
	* for MIDA-41, -42, -58, -76 modules upper limit of compensated temperature range must be specified, °C			

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