

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).

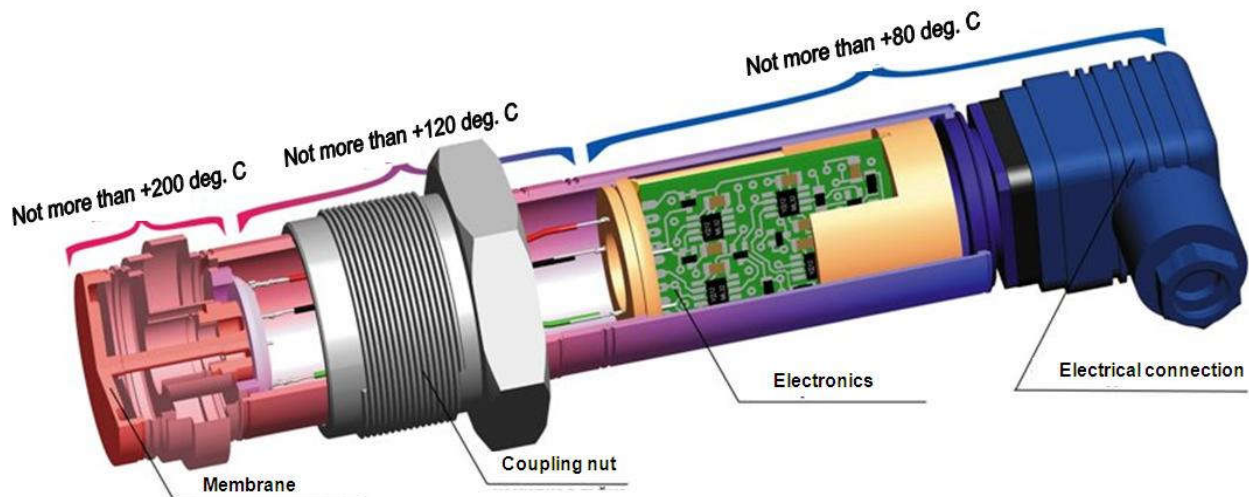
MIDA-SG-12 pressure transmitters are designed for work at temperature of measured medium from -40 to +300 °C and at temperature of electronics surrounding air from -40 to +80 °C. In transmitters with combine construction the sensing element and electronics are constructively defined. In transmitters 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 ...+150 (+ 200) ⁰ C	High-temperature liquids and gases
MIDA-SG-12-12 (C)	Spaced-apart		- 40...+150(+200; + 300) ⁰ C	
MIDA-SG-12-05-H MIDA-SG-12-072-H	Combine	Flange membrane	- 40... +150(+200) ⁰ 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... + 300 ⁰ 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 ExialICT2 – ExialICT3 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° 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.

Specification of MIDA-SG-12(-Ex) pressure transmitters

	12T-05-C	12T-06-C	12T-072-C	12T-081-C	12T-082-C	12T-11	12T-11-H	12T-12	12T-12-H
Applications	Industrial instrumentation & process control systems for gases containing fluids and solid particles, viscous liquids, melts		Industrial instrumentation & process control systems for high temperature media, including viscous liquids, polymer melts		Industrial instrumentation, process & measure control systems for high-temperature liquids and gases		High-temperature liquids and gases compatible with titanium alloys and stainless steel		
Measured medium	High-temperature liquids, gases, melts compatible with titanium alloys and stainless steel								
Standard ranges, MPa SG (gauge pressure)	0-0,01... - 0-1,6		0-0,4... - 0-60	0-0,4... - 0-40	0-1... - 0-60		0-0,01... - 0-160		
Output signal (wires)	4-20 mA (2-wire)								
Operating temperature range, °C	-40 ... +150 (+200) – for A-zone; -40...+80 – for electronics ambient temperature (C-zone)		-40 ... +300 – for A-zone; 40...+80 – for electronics ambient temperature (C-zone)		-40 ... +150(+200) – for A-zone; 40...+80 – for electronics ambient temperature (C-zone)		-40 ... +300 – for A-zone; 40...+80 – for electronics ambient temperature (C-zone)		-40 ... +300 – for A-zone; -40...+200 – for B-zone; -40...+80 – for electronics ambient temperature (C-zone)
Compensated temperature range of output signal, °C	+20...+150; +20...+200		+20...+300		+20...+150; +20...+200		+20...+300		+20...+150; +20...+300
Overall accuracy in compensated temperature range, no more than ±%	0,5								
Accuracy (comb. L.H.R.), no more than ±%	-								
Additional temperature error band within compensated temperature range, no more than, ±%	-								
Supply voltage, V	12 ... 36 depending on loads resistance; * from power supply with safety barriers or intrinsic safe barrier: MIDA-PSSB-102-Ex; MIDA-ISB-105-Ex; MIDA-ISB-107-Ex								
Consumed current, no more, mA	20,2								
* Type and marking of intrinsic safety	0ExiaIICT3	0ExiaIICT2	0ExiaIICT3	0ExiaIICT2	0ExiaIICT3	0ExiaIICT3	0ExiaIICT3	0ExiaIICT2	0ExiaIICT2
Ingress protection	IP64								
Climatic modification	UHL**3.1								
Mechanical stability	V3								
Electrical connection	Sealing gland straight (S); plug/socket (P)			Sealing gland straight (S) and angle (A); plug/socket (P)					
Pressure port	Pressure port, thread specified on drawing								
Weight, no more than, kg	0,3	0,4	0,3	0,6	0,4	0,4	0,4	0,5	0,5
Specifications	TY4212-043-18004487-2003								
Number in the State Register of measuring devices of the Russian Federation	17635-03								

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

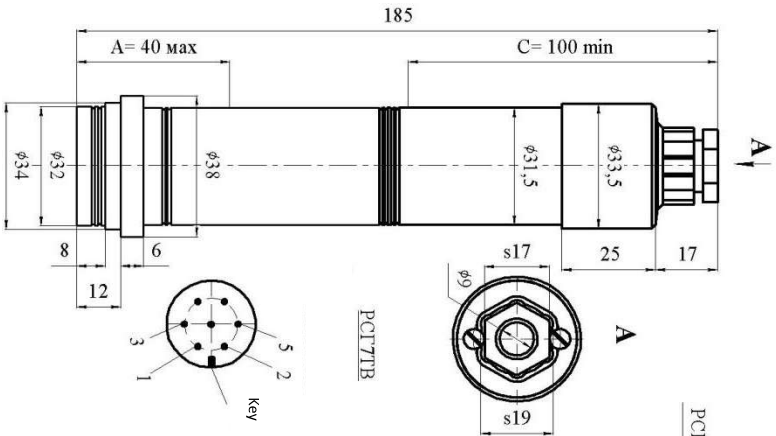


Fig. 2
Plug/socket
rest as on fig. 1

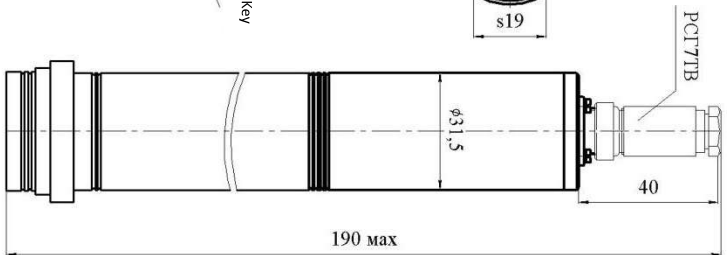


Fig. 1
Sealing gland straight

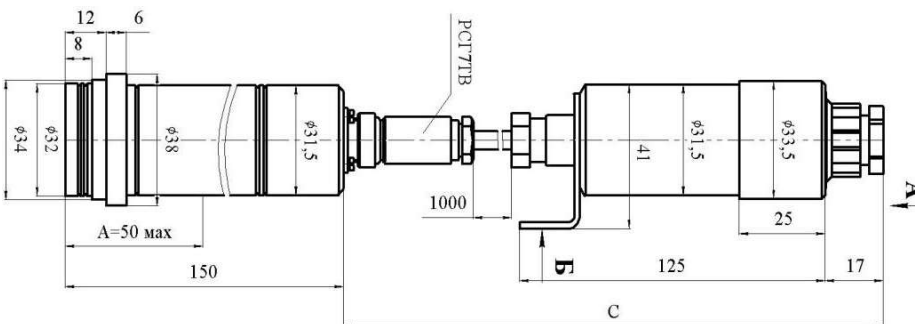


Fig. 2
Plug/socket
rest as on fig. 1

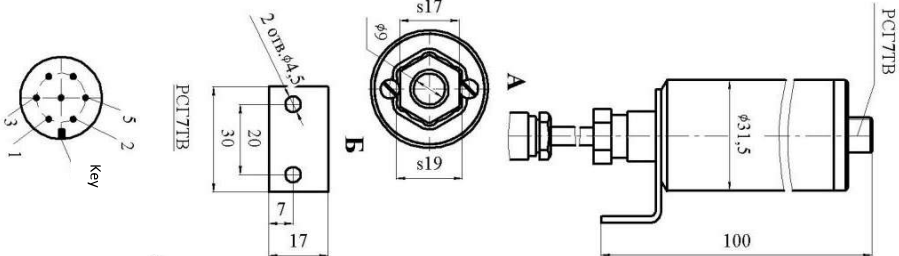


Fig. 1
Sealing gland straight
Pressure port M20x1.5

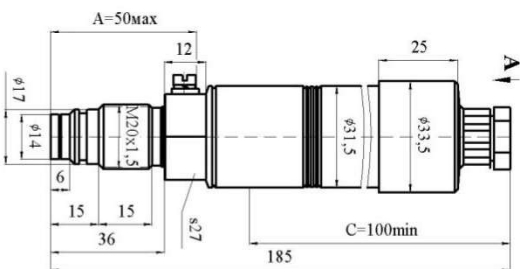


Fig. 2
Sealing gland straight
Pressure port M16x1.5

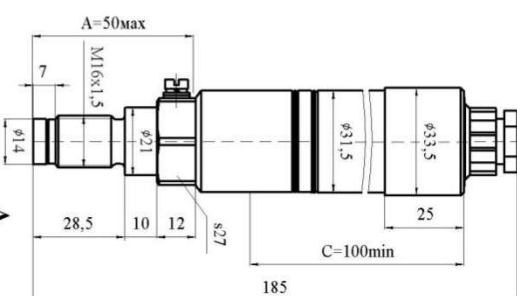


Fig. 3
Sealing gland angle
rest as on fig. 1, 2

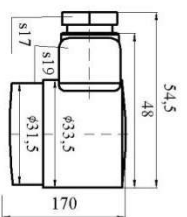
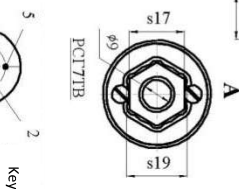
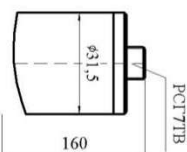


Fig. 4
Plug/socket
rest as on fig. 1, 2



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

MIDA-SG-12-081-C

Fig. 1
Sealing gland straight
Pressure port M27x2

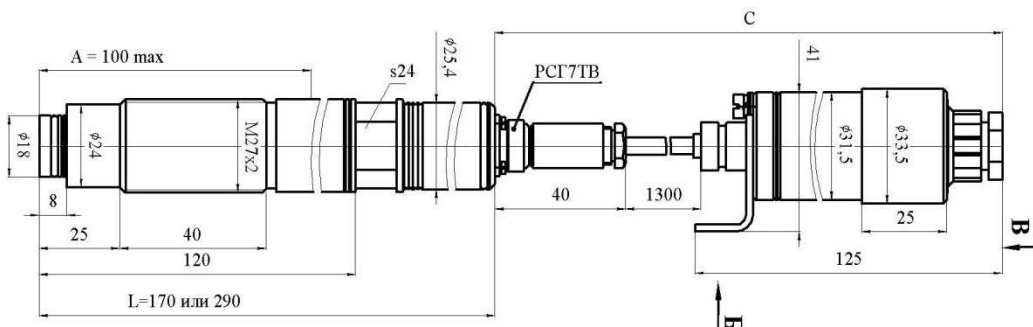


Fig. 2
Sealing gland angle
Rest as on fig. 1, 4

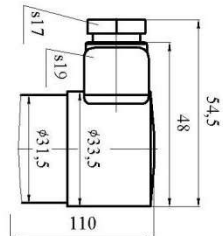


Fig. 3
Plug/socket
Rest as on fig. 1, 4

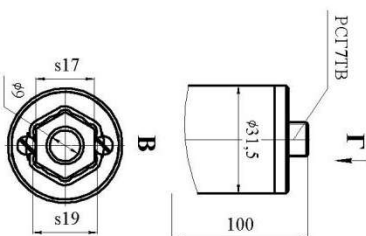
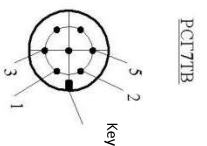
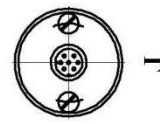
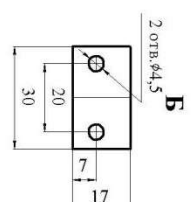
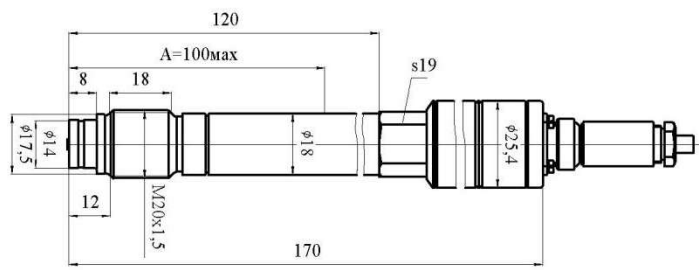


Fig. 4
pressure port M20x1,5
the rest on pic. 1



MIDA-SG-12-082-C

Fig. 1
Sealing gland straight

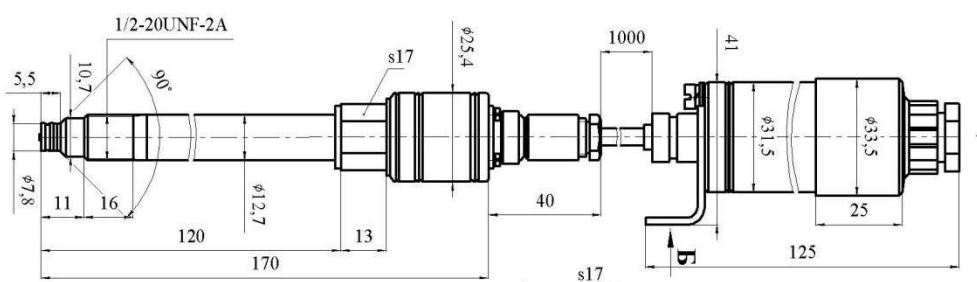


Fig. 2
Sealing gland angle
Rest as on fig. 1

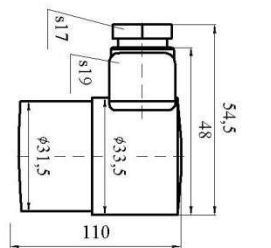


Fig. 3
Plug/socket
Rest as on fig. 1

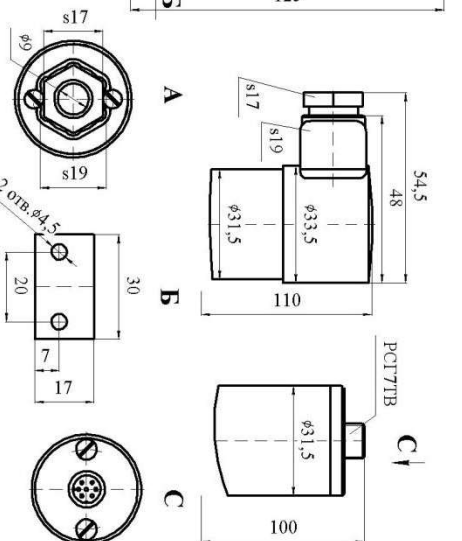


Fig. 4
Pressure port M14x1,5
rest as on fig. 1

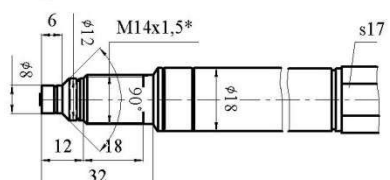


Fig. 5
Pressure port M18x1,5
rest as on fig. 1

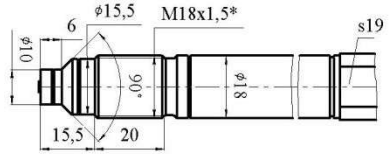
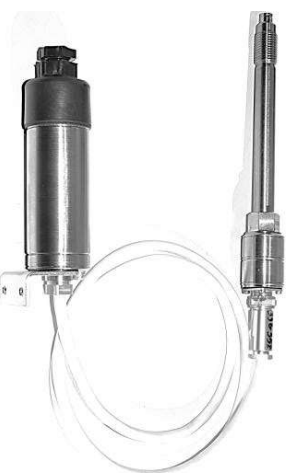
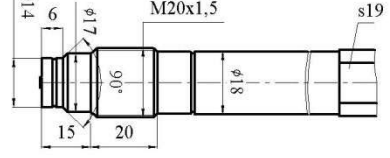
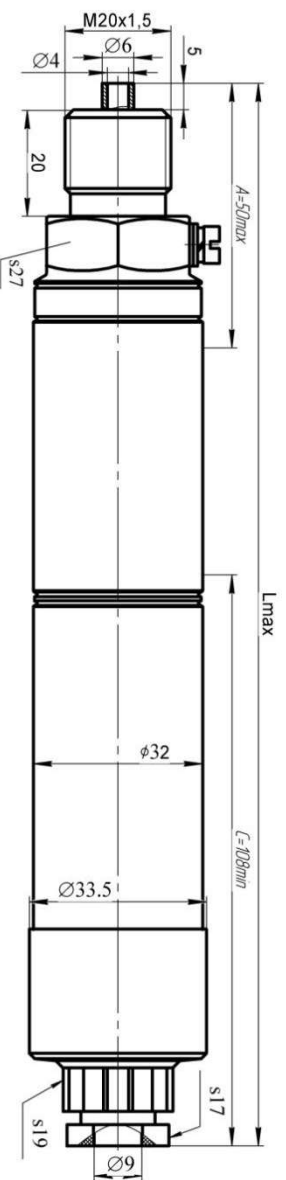


Fig. 6
Pressure port M20x1,5
rest as on fig. 1



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

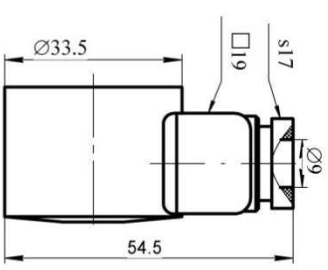
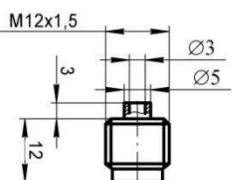
from 10 kPa to 160 MPa



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

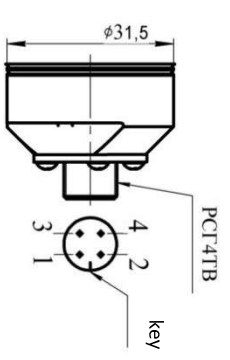
Sealing gland straight

from 10 kPa to 25 MPa



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

Sealing gland angle



Plug/socket PCT4TB

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

