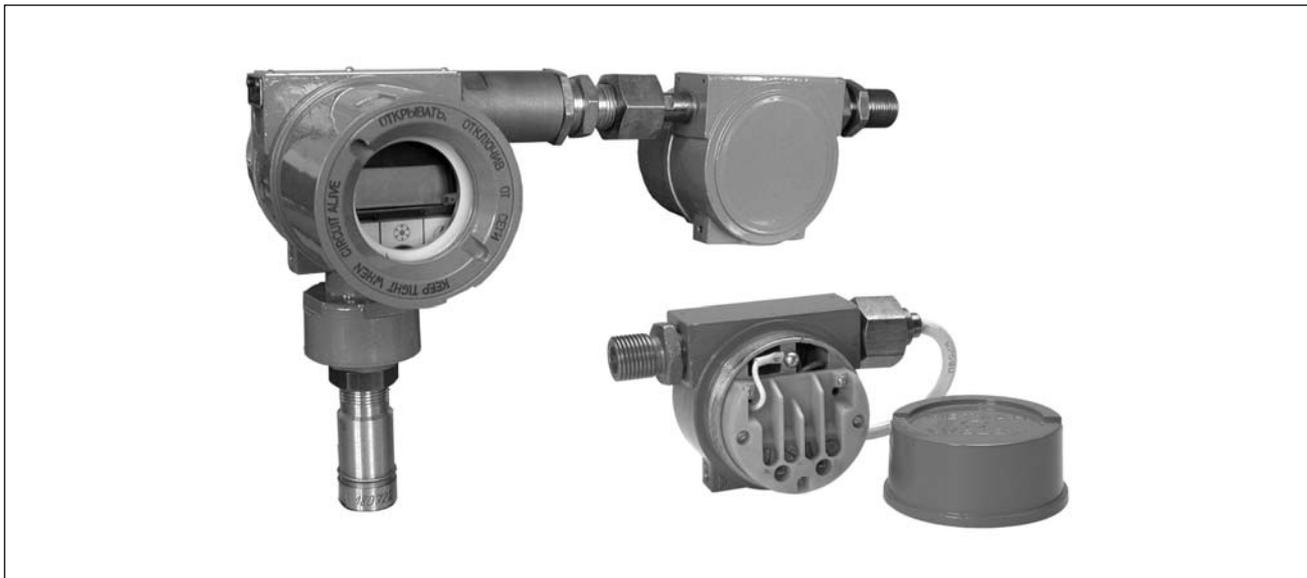


Metran-700-BVP High Potential Barrier

OKP code: 42 1725



- **Protected communication lines:**
2- or 4-wire
- **Version:**
Traditional;
Explosion-proof: Exd
- **Dust and water tightness:**
IP65 per GOST 14254
- **Ambient temperature:**
-42...70°C
- **Weight, max:**
0.9 kg

Metran-700-BVP High Potential Barriers are designed to protect field-mounted Metran, Saphir pressure transmitters and functional and secondary equipment from communication line transients due to lightning, welding works, operation of high-power electrical equipment and engaging mechanisms.

BASIC SPECIFICATIONS AND PARAMETERS

- Barrier types are given in Table 1.

Table 1

Barrier Types	Quantity of Protected Lines	Barrier Mounting	Communication Line Connection
Metran-700-BVP-42-1-S	2	On Metran transmitter, except Metran-55	Gland lead-in (S)
Metran-700-BVP-05-1-S	4		Plug and socket connector (ShR)
Metran-700-BVP-42-1-ShR	2		
Metran-700-BVP-05-1-ShR	4		
Metran-700-BVP-42-2-ShR	2	On clamp: for functional and secondary equipment protection	ShR
Metran-700-BVP-05-2-ShR	4		
Metran-700-BVP-42-3-S	2	On Metran-55 transmitter	S
Metran-700-BVP-05-3-S	4		ShR
Metran-700-BVP-42-3-ShR	2		
Metran-700-BVP-05-3-ShR	4		
Metran-700-BVP-42-Exd-S	2	On Metran transmitter	S
Metran-700-BVP-05-Exd-S	4		

- The Barrier is capable of withstanding test impulses 1.2/50, amplitude of 6 kV per GOST 1516.2 (1EE801/5), single current pulse of 5000 A and 20 mcs interval, providing residual voltage of each wire from the output relative to the housing, max: 100 V
- Resistance of each communication line wire between barrier input and output, max 4 Ohm

BASIC REQUIREMENTS TO COMMUNICATION LINE PARAMETERS

In order to provide reliable operation of the barrier under normal conditions (without line overloading from lightning, powerful equipment operation, etc.) communication line should meet the following requirements:

- constant operating voltage, max:
 - between line wires: 80 V;
 - between each line wire and barrier housing: 50 V;
- operating current in each line wire, max: 100 mA.

EXPLOSION PROTECTION

- Explosion protection type: "intrinsically safe housing", explosion protection marking: **1ExdsIIBT4/H₂ X**

OPERATION PROCEDURE

For effective transmitter protection, the barrier should be mounted from communication line side exposed to crosstalks. The barrier is mounted directly on a transmitter. Barrier housing under field conditions should be connected to protective grounding or physical earth with the help of a separate bus (wire).

If it is necessary to protect functional (power supply, spark protection barriers) and secondary equipment (indicating and recording devices), an additional barrier is used on 2-wire line and two barriers are used on 4-wire line. Barrier should be mounted in the immediate vicinity of protected equipment (see Fig.11, Barrier with loop).

OPERATING CONDITIONS

- Climatic type: **U2** per GOST 15150, for operation at **-42 up to 70°C** of ambient temperature and (95±3)% of relative humidity at 35°C.
- Stability to mechanical effects: **V3** group per GOST 12997
- **Dust and water tightness: IP 65** per GOST 14254

DELIVERY SET

Table 2

Name		Quantity	Note
Metran-700-BVP High Potential Barrier		1 unit	Standard set
Product Data Sheet SPGK5150.000.00PS or SPGK5154.000.00PS		1 copy	
Mounting part set	Clamp	1 unit	Only for: Metran-700-BVP-05-2-ShR Metran-700-BVP-42-2-ShR
	Washer	6 unit	
	Screw M6	1 unit	
	Screw M4	2 unit	
	Nut M4	2 unit	

RELIABILITY

Average service life, min: 12 years.

WARRANTY

Warranty period: 36 months from the date of commissioning.

ORDERING INFORMATION

Metran-700-BVP - 42 - 1 - Exd - ShR - M20 - KMCh - TU 4217-002-12580824-2000							
1	2	3	4	5	6	7	8

- Barrier type.
- Output code of transmitter connected to barrier:
 - 42** output signal 4-20, 20-4 mA;
 - 05** output signal 0-5, 5-0, 0-20, 20-0 mA.
- Barrier attachment code:
 - 1** on transmitter, except Metran-55;
 - 2** on the side of secondary devices and power sources;
 - 3** on Metran-55 transmitter;
- Explosion-proof type code (if any):
 - Exd**
- Connection of communication line to barrier:
 - S** through gland lead-in;
 - ShR** through ShR14 socket (2RMT14B4Sh12E2).
- Fitting connection for barrier mounting to transmitter:
 - M20** fitting connection M20x1.5 (except Metran-55 transmitters);
 - M16** fitting connection M16x1.5 (for Metran-55 transmitters).
- Mounting part set (see Table 2).
- Specification.

WIRING DIAGRAMS OF METRAN-700-BVP BARRIER AND TRANSMITTER

Abbreviations:

BVP - Metran-700-BVP High Potential Barrier;
 PT - Pressure Transmitter;
 PS - Power Source;
 SE - Secondary Equipment.

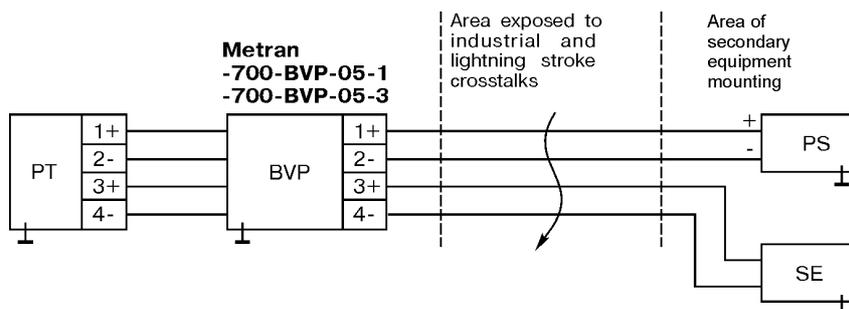


Fig.1. Protection of Traditional Transmitter on 4-wire Communication Line.
 PS and SE are not protected.

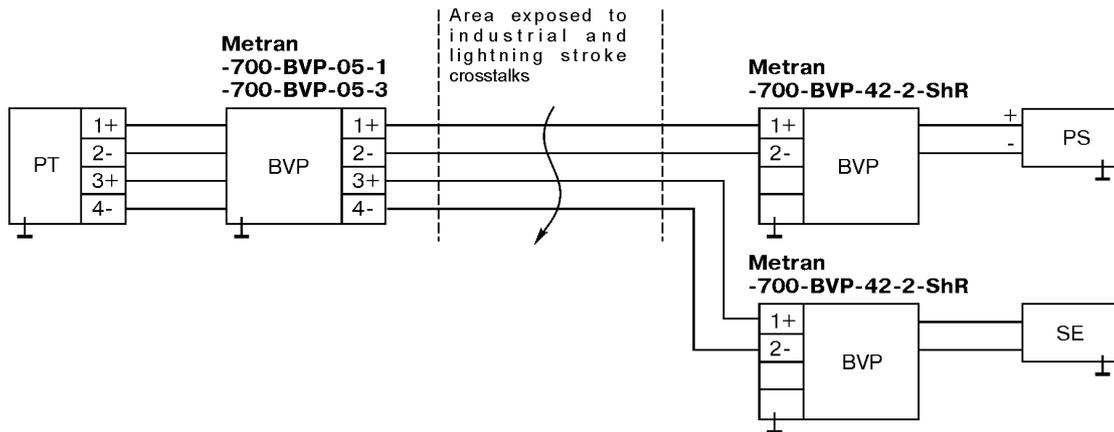


Fig.2. Protection of Traditional Transmitter, PS and SE on 4-wire Communication Line with 3 Barriers.

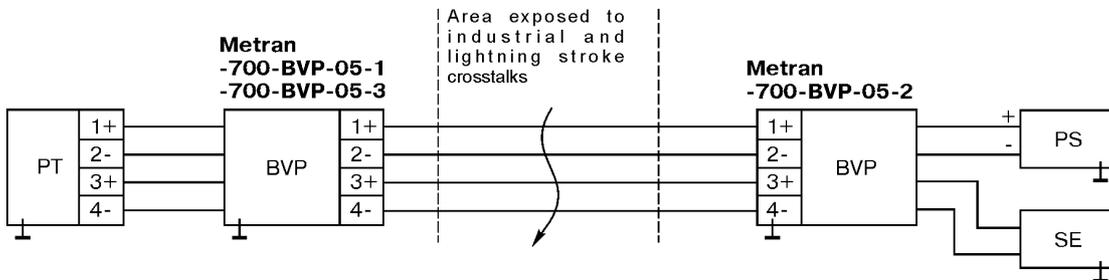


Fig.3. Protection of Traditional Transmitter, PS and SE on 4-wire Communication Line with 2 Barriers.

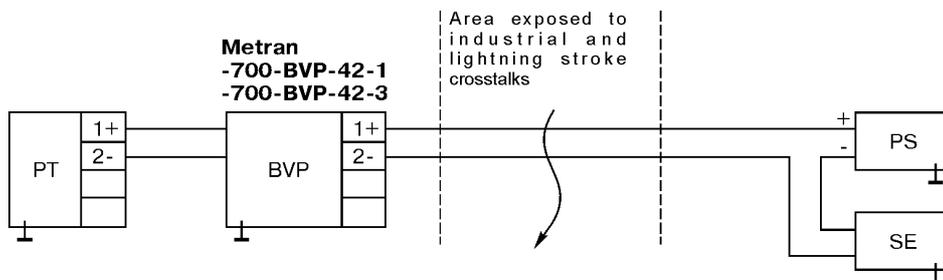


Fig.4. Protection of Traditional Transmitter on 2-wire Communication Line. PS and SE are not protected.

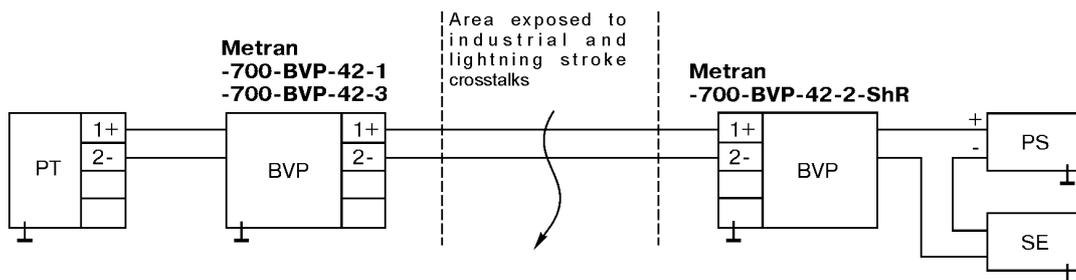


Fig.5. Protection of Traditional Transmitter, PS and SE on 2-wire Communication Line with 2 Barriers.

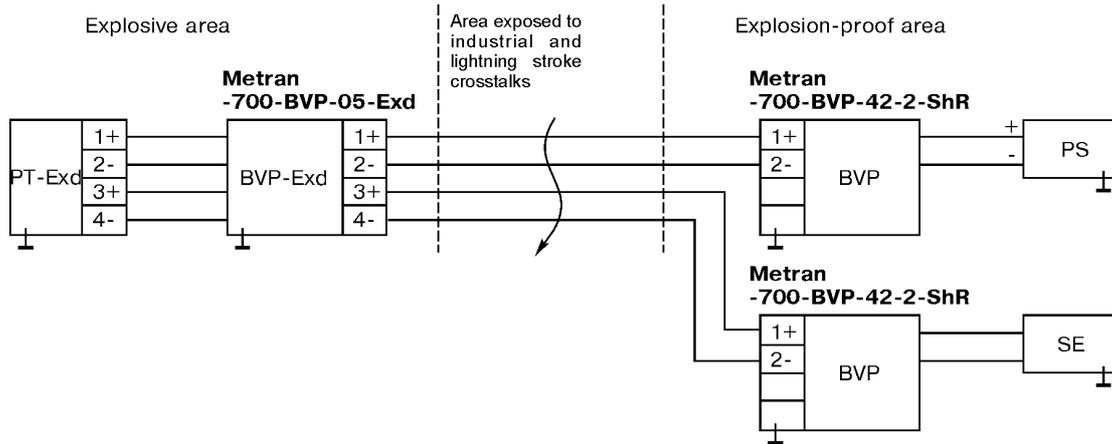


Fig. 6. Protection of Exd Transmitter, PS and SE on 4-wire Communication Line with 3 Barriers.

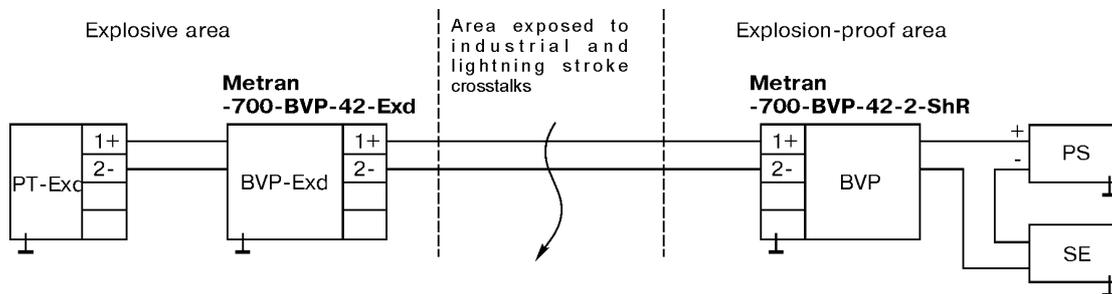
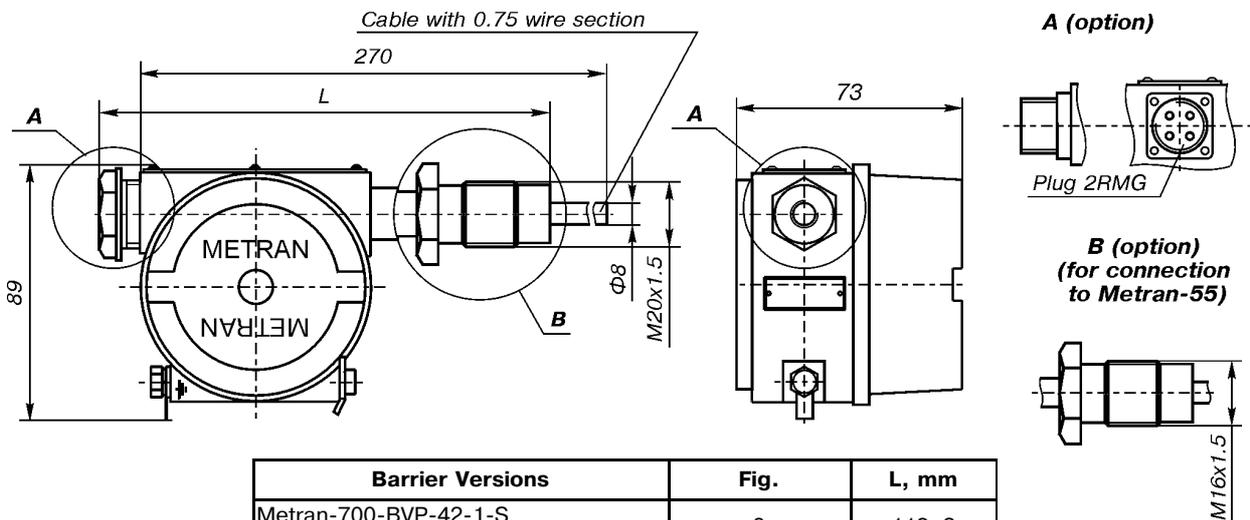


Fig. 7. Protection of Exd Transmitter, PS and SE on 2-wire Communication Line with 2 Barriers.

OVERALL AND MOUNTING DIMENSIONS



Barrier Versions	Fig.	L, mm
Metran-700-BVP-42-1-S Metran-700-BVP-05-1-S	8	119±2
Metran-700-BVP-42-1-ShR Metran-700-BVP-05-1-ShR	8 (option A)	135±2
Metran-700-BVP-42-2-ShR Metran-700-BVP-05-2-ShR	9	108±2
Metran-700-BVP-42-3-S Metran-700-BVP-05-3-S	8 (option B)	112±2
Metran-700-BVP-42-3-ShR Metran-700-BVP-05-3-ShR	8 (options A, B)	128±2

Fig. 8. Metran-700-BVP Barrier.

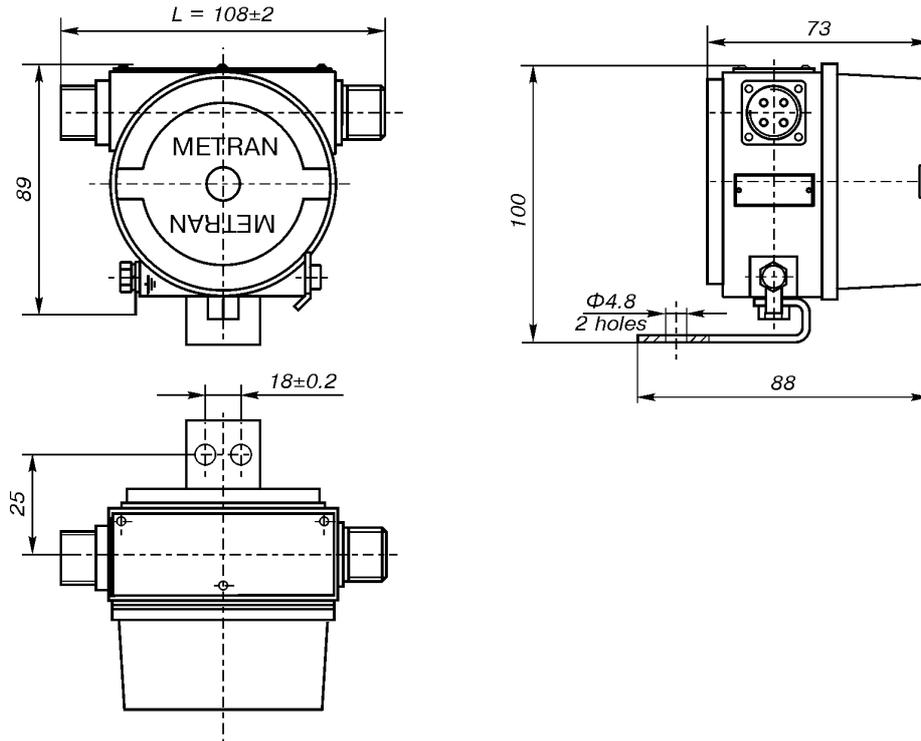


Fig.9. Metran-700-BVP-42-2-ShR, Metran-700-BVP-05-2-ShR Barriers.

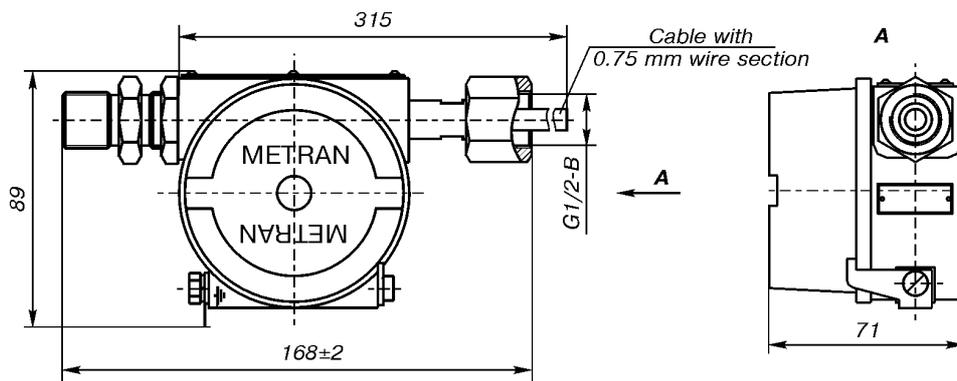


Fig.10. Metran-700-BVP-Exd Barrier.

BARRIER MOUNTING

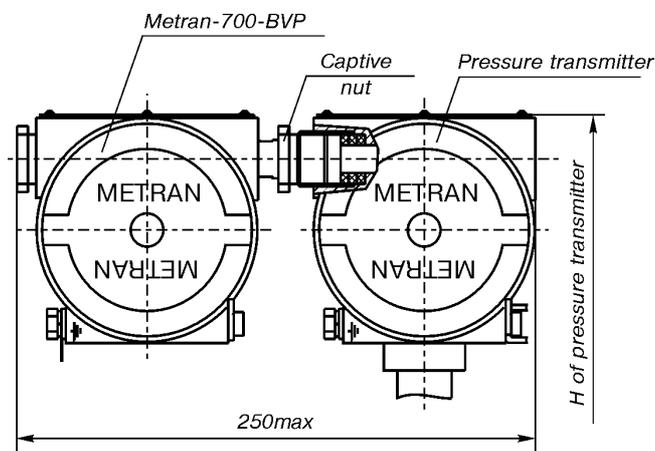


Fig.11. Mounting of Metran-700-BVP on Metran Pressure Transmitters, except Metran-55.

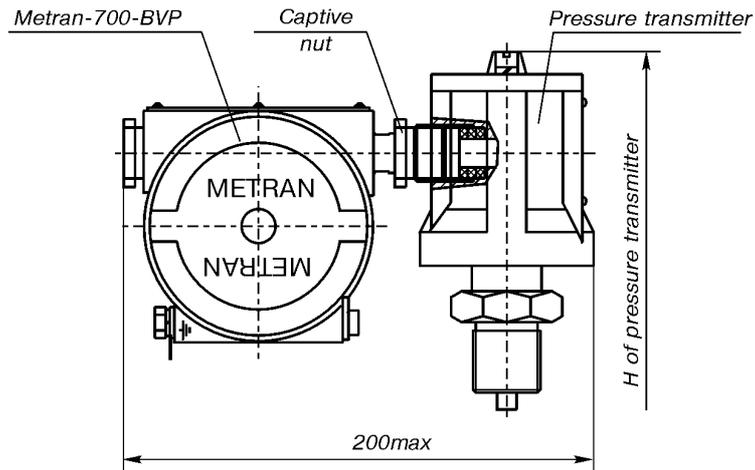


Fig.12. Mounting of Metran-700-BVP Barrier on Metran-55 Transmitter.

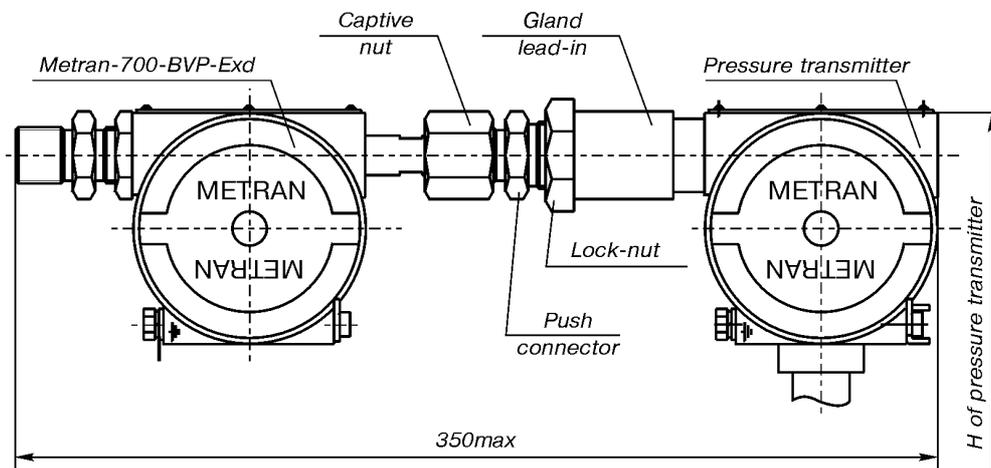


Fig.13. Mounting of Metran-700-BVP-Exd Barrier on Metran Transmitters, except Metran-55.

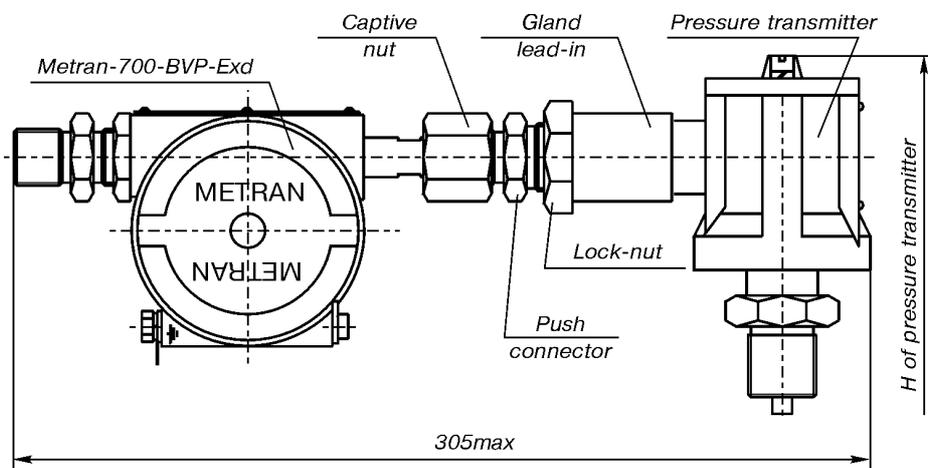


Fig.14. Mounting of Metran-700-BVP-Exd Barrier on Metran-55 Transmitter.