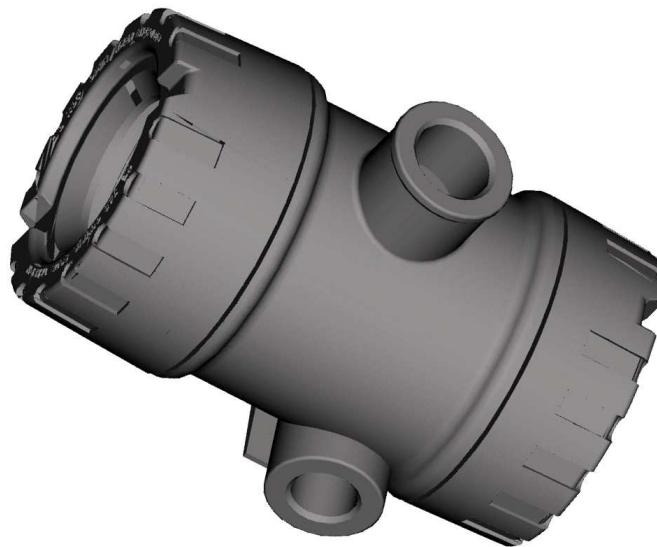




N-L2643

Updated 19.03.2019



APPLICATION MANUAL

Flameproof Ex d
Universal Two-Compartments Instrument Housing
Type: **XD-ID80, XD-ID80win**

Contents :

1. Destination.
2. Flameproof joints.
3. Pressure tests.
4. Temperature classes, ambient temperature, power dissipation.
5. Earth and protection terminals.
6. Cover locking.
7. Protection degree.
8. Assembly of inside conductor bushing.
9. Way of mounting.
10. Marking.

NOTES OF SAFETY

The XD-ID80 series are designed to accommodate various electronic instruments. If used incorrectly it is possible that application-related dangers may arise.



The XD-ID80 universal instrument housing may be used by qualified and authorized company and people only, under strict observance of these application manual and relevant standards, legal requirements, and, where appropriate the certificate.

Only the empty XD-ID80 instrument housing is certified. When used as part of an end product assembly, subsequent approval of the end use equipment assembly is required.

1. DESTINATION

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- Marking:

2014/34/EU	IECEX
 II 2G Ex db IIC Gb  II 2D Ex tb IIIC Db	Ex db IIC Gb Ex tb IIIC Db

- Standards:

ATEX 2014/34/EU
 EN 60079-0, EN 60079-1, EN 60079-31,
 IEC 60079-0, IEC 60079-1, IEC 60079-31

- Servis temperature:

Housing type	T _{serv}
	O-ring VMQ rubber
XD-ID80	-40 to + 100 °C
XD-ID80win	-40 to + 85 °C

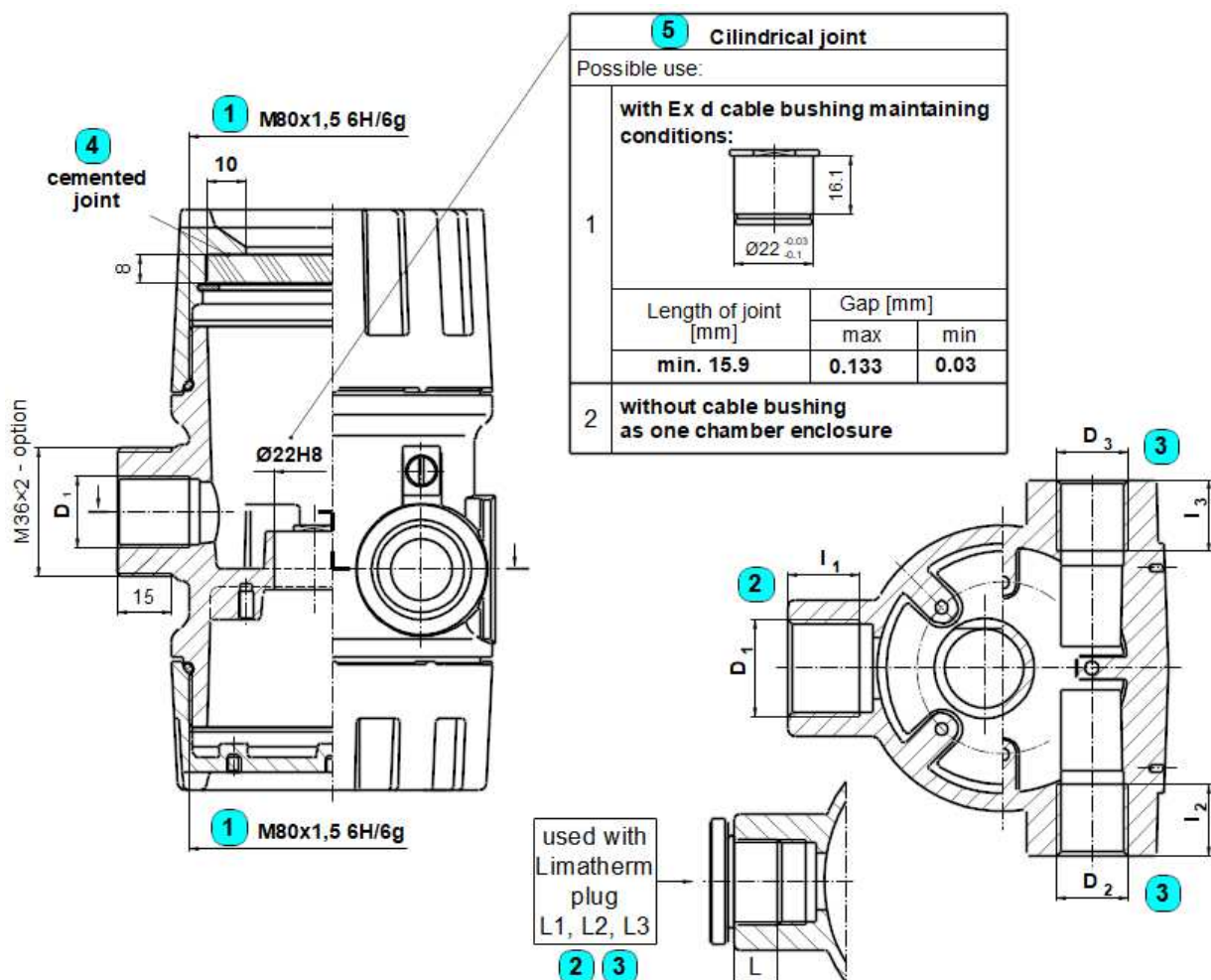
- Possible zone application

Zone	Protection Code
Zone 1 Zone 21	Ex d
Zone 2 Zone 22	Ex d

! The enclosure with Ex component certificate shall be applicated only by assumption of filling requests of the standard EN 60079-1 cl.D.3.10 !

2. FLAMEPROOF JOINTS.

Flameproof joints are designed for volume $100 < V \leq 500 \text{ cm}^3$ group II C enclosures.



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Lp.	Connection type		Requirements of 60079-1	Achieved values					
1	M80×1,5 6H/6g		threads engaged ≥ 5	9					
			depth of engagement ≥ 8 mm	13,5mm					
2	D ₁ proces opening	M20×1.5 6H M24×1.5 6H M25×1.5 6H	fit of thread	l ₁	6g of male thread should be ensured by customer	L ₁	6H/6g		
			threads engaged ≥ 5		should be ensured by customer, possible to reach: 12,5		6,5		
			depth of engagement ≥ 8 mm		should be ensured by customer, possible to reach: 19mm		10mm		
		M27×2 6H	fit of thread	l ₁	6g of male thread should be ensured by customer	L ₁	6H/6g		
			threads engaged ≥ 5		should be ensured by customer, possible to reach: 9,5		5		
			depth of engagement ≥ 8 mm		should be ensured by customer, possible to reach: 19mm		10mm		
		½NPTmod ¾NPTmod	threads provided on each part ≥ 5	l ₁	9 male part should be ensured by customer	L ₁	-		
			threads engaged		should be ensured by customer, possible to reach: 5,0 ÷ 5,5		5		
		3	D ₂ , D ₃ conduit openings	M20×1.5 6H M24×1.5 6H M25×1.5 6H	fit of thread	l ₂ , l ₃	6g of male thread should be ensured by customer	L ₂ , L ₃	6H/6g
					threads engaged ≥ 5		should be ensured by customer, possible to reach: 12,5		6,5
depth of engagement ≥ 8 mm	should be ensured by customer, possible to reach: 19mm				10mm				
½NPTmod ¾NPTmod	threads provided on each part ≥ 5			l ₂ , l ₃	9 male part should be ensured by customer	L ₂ , L ₃	-		
	threads engaged				should be ensured by customer, possible to reach: 5,0 ÷ 5,5		5		
4	Cemented joint			min. length of joint 10mm	10mm				
NPT threads are modified to reach 5÷5,5 engaged threads and can create flameproof joint with threaded male part with standard cutting tolerance.									

Process opening can be used for mounting sensor (e.g. level, flow sensor) or thermowell.

Conduit openings can be used to equip it with appropriate **certificated Ex d flameproof cable glands**, fill sealing fittings, flexible couplings or thermowells.

Each D₁, D₂ and D₃ opening can be **plugged**.

3. PRESSURE TEST.

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Enclosure passed maximum water pressure test 55 bar. No routine test is required when reference pressure of final assembly (enclosure with additional volume come from thermowells, conduit, pipe, etc.) is not higher than 13,75 bar.

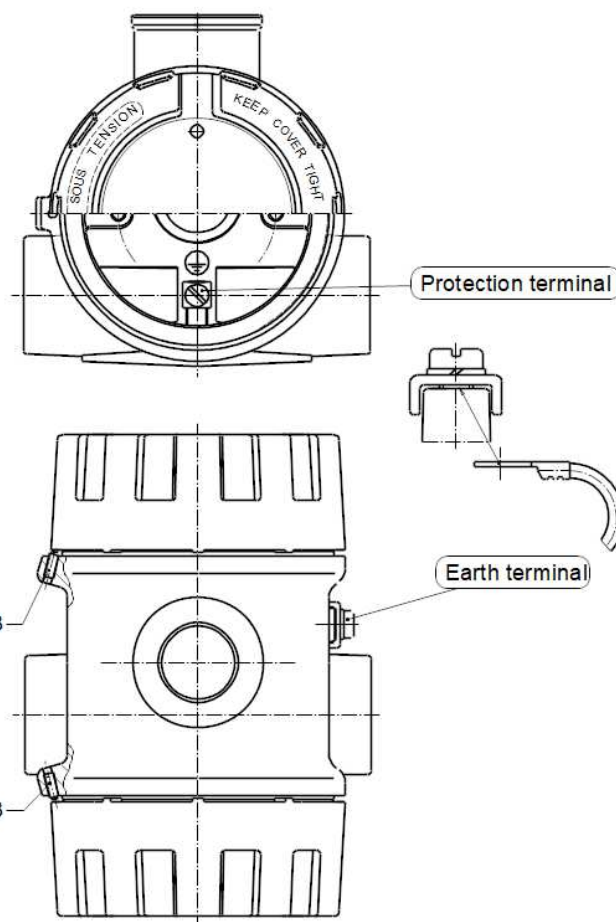
The content of the housing may be placed in any arrangement provided that an area of at least 40% (group IIC) or 20% (group I) of each cross-sectional area remains free to permit unimpeded gas flow and, therefore, unrestricted development of an explosion. Separate relief areas may be aggregated, provided that each areas has a minimum dimension in any direction of 12,5mm.

4. TEMPERATURE CLASSES, AMBIENT TEMPERATURE, MAX. POWER DISSIPATION.

Maximum power dissipation [W]				
T_{amb}	Temp. class T6, or surface temp. 85° C	For all variety of enclosures Position horizontally/vertically	Temp. class T5, or surface temp. 100°C	For all variety of enclosures Position horizontally/vertically
40°C	$\Delta 0 \leq 40 \text{ K}$	22 / 17	$\Delta 0 \leq 55 \text{ K}$	32 / 26
55°C	$\Delta 0 \leq 25 \text{ K}$	13 / 10	$\Delta 0 \leq 40 \text{ K}$	22 / 17
70°C	$\Delta 0 \leq 10 \text{ K}$	4.5 / 3.5	$\Delta 0 \leq 25 \text{ K}$	13 / 10
85°C	N/A	-	$\Delta 0 \leq 10 \text{ K}$	4.5 / 3.5

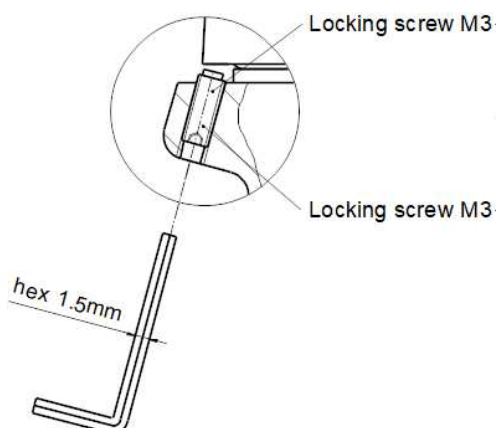
5. EARTH AND PROTECTION TERMINALS.

Place	Type	Cable cross section [mm ²]	
		Stranded wire	Solid wire
Inside	Protection terminal	1.5	2.5
Outside	Earth terminal	4.0	6.0



6. COVER LOCKING.

Lock the cover by screw with hex socket using hex spanner with across flat 1,5mm.

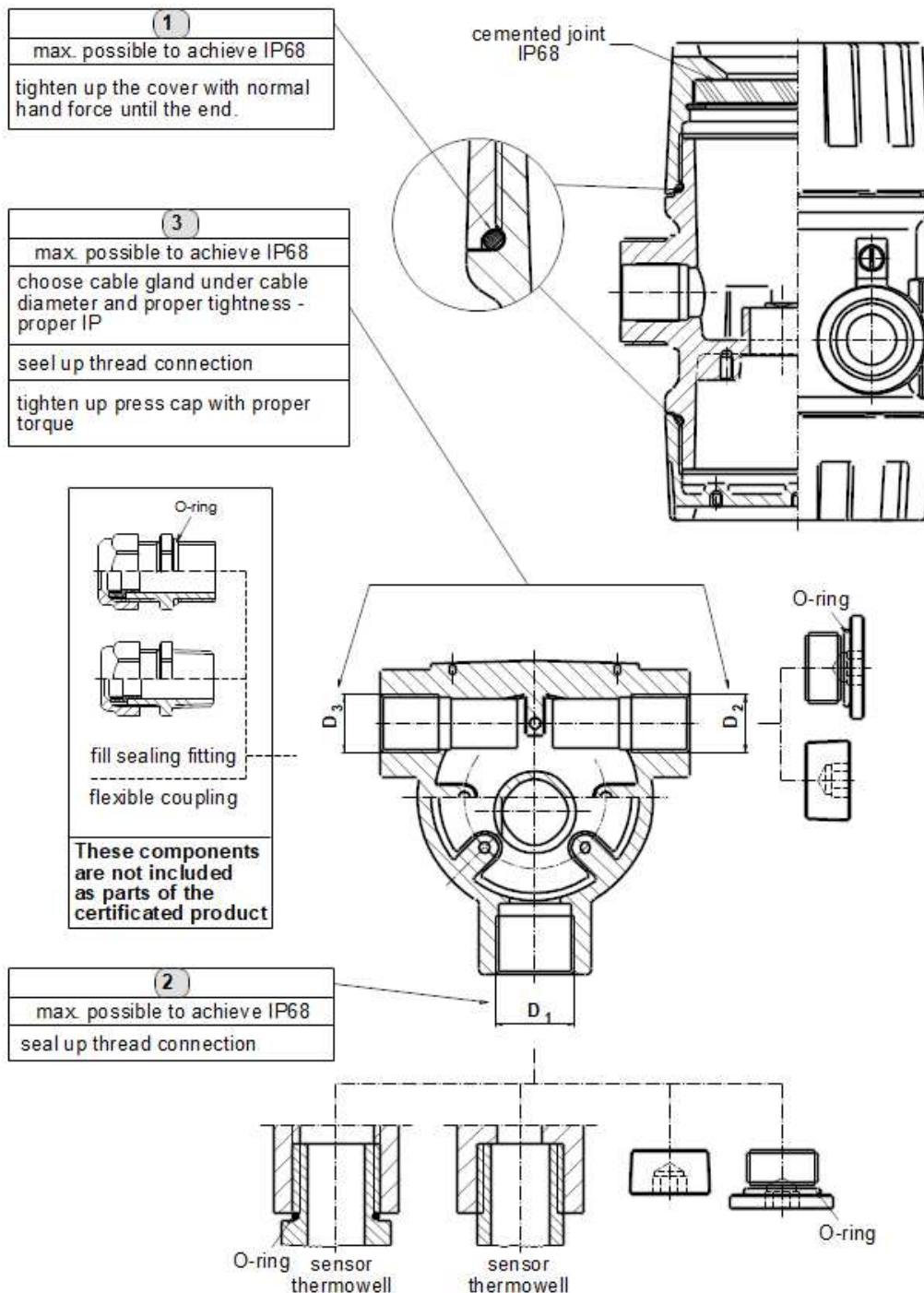


7. PROTECTION DEGREE.

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There are three connections of assembled device deciding about IP degree:

- 1 – cover,
- 2 – process opening,
- 3 – conduit opening.



Threaded connection sealing	Possible IP
Without sealing - standard accuracy class thread	54
Use of a sealant, e.g. Loctite 577	68
Thread tightened with O-ring	68

If IP for each connection		IP of assembled device
1	2	
68	54	IP 54
	66	IP 66
	67	IP 67
	68	IP 68

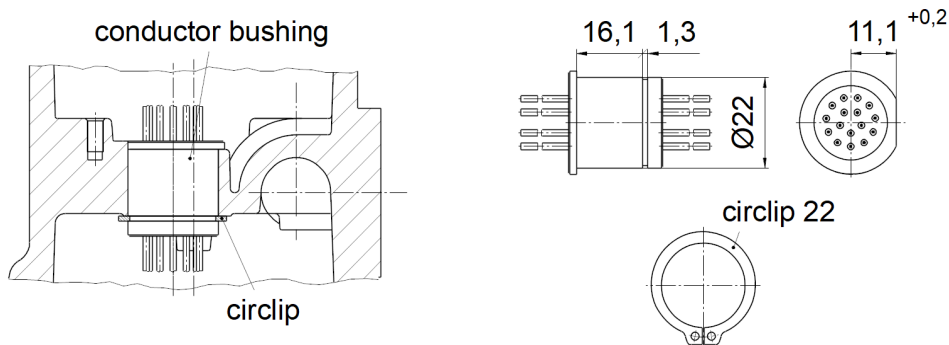
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! ATTENTION !

Protection IP68 refers to depth 1,0m of submersion under water.

It is required min IP65 protection for instruments designed for dust zones.

(Besides zone 22, non-conductive dust, where min IP54 protection is required)

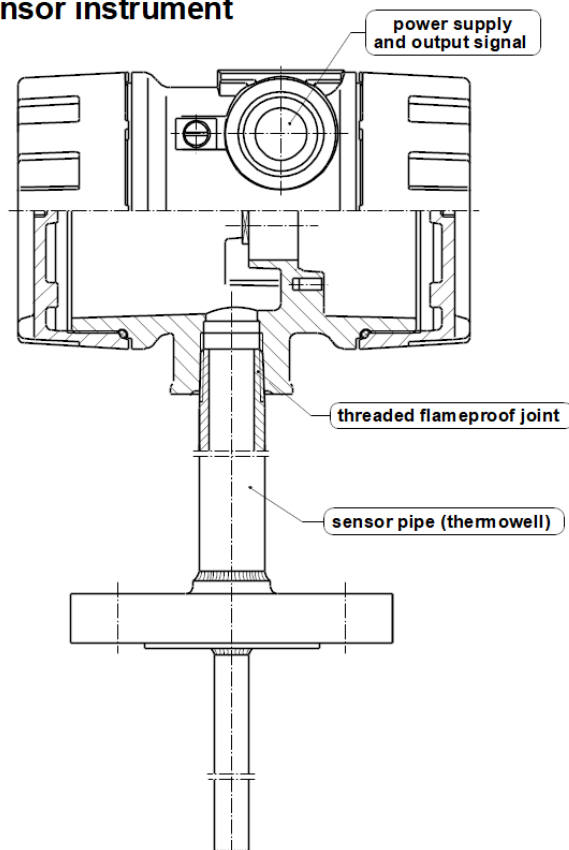
8. ASSEMBLY OF INSIDE CONDUCTOR BUSHING.**9. WAY OF MOUNTING****NOTES**

It is important to be careful when screw on or undo a cover. Thread surface should be free of any grains, pellets and other impurity, which cause seizing, and thread could be damaged.

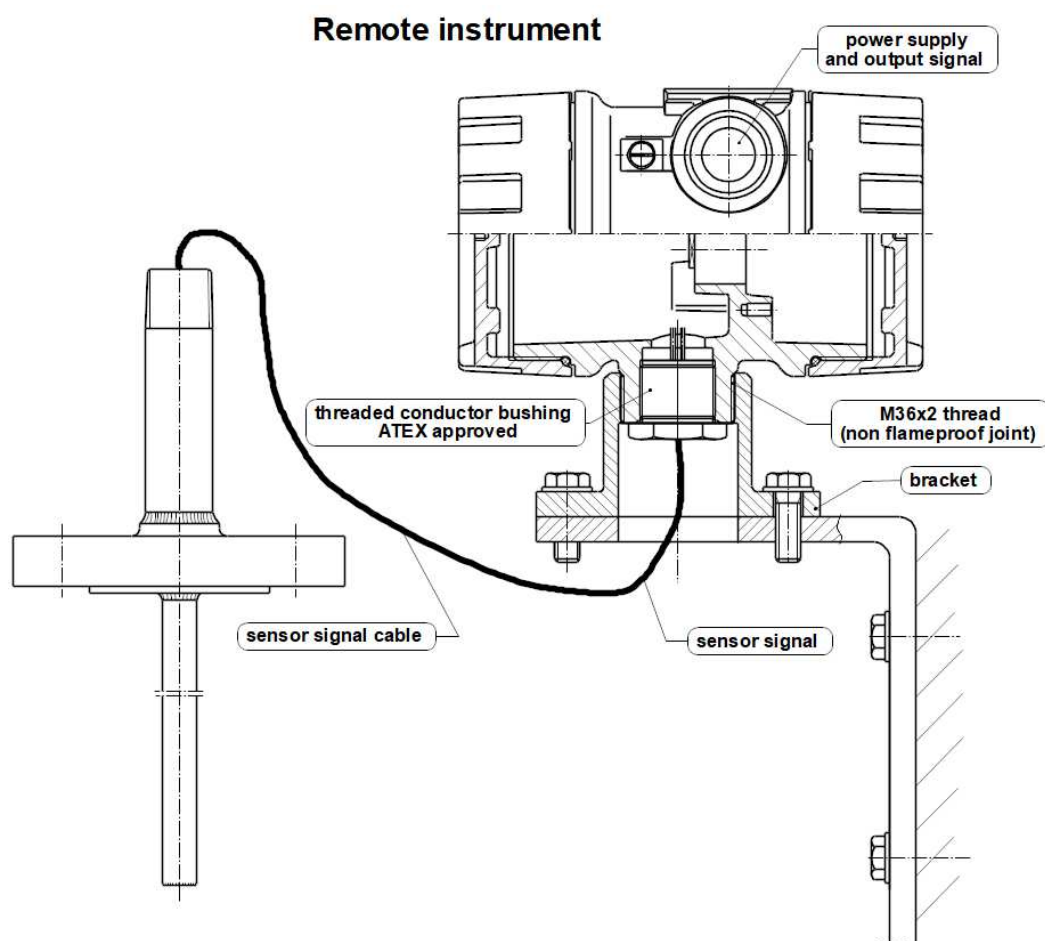
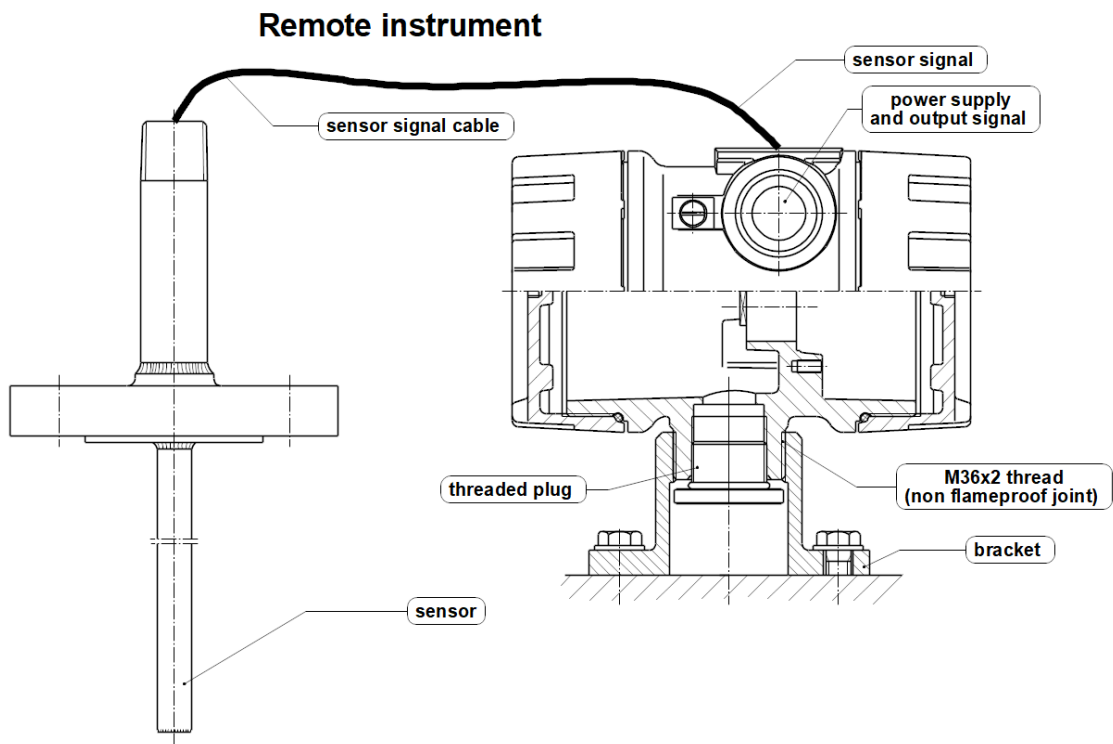
! Never screw on the cover forcefully !

In case of necessities of opening of the box cover after operation in maximum temperature it can be blocked (does not give to open with the hand).

In such case keep cover tensioned with the hand to opening and hit delicate with rubber hammer into cover.

Sensor instrument

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10. MARKING

Limatherm label with marking is put inside the housing.

The label can be glued on the outside or inside surface, it's up to customer.

Producer of assembled instrument should apply additional own label with the marking of complete sensor or transfer valuable information from Limatherm's label to instrument nameplate.

