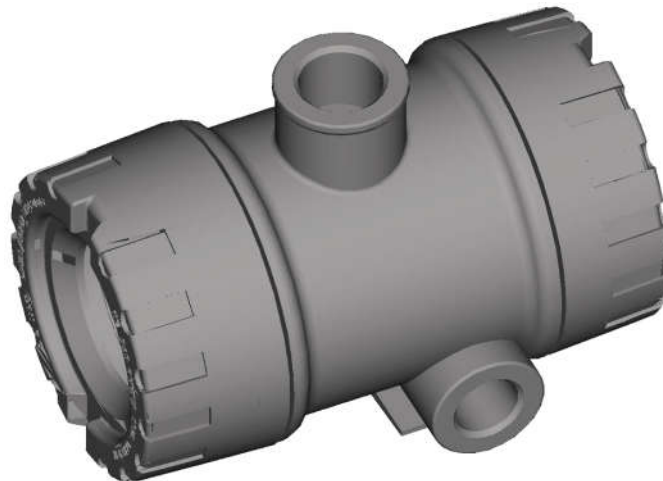




## APPLICATION MANUAL



### Two-compartment instrument housing types: **XD-ID100, XD-ID100win, XD-ID100H, XD-ID100Hwin**

#### Contents:

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

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#### NOTES OF SAFETY

The XD-ID100 series are designed to accomodate various electronic instruments or devices and electric power supply, working in hazardous. If used incorectly it is possible that application-related dangers may arise.

The XD-ID100 series 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.

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Only the empty XD-ID100 series instrument housing is certified. When used as part of an end product, subsequent approval of the end use equipment assembly is required.

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## 1. DESTINATION.

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- Marking:

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

- Standards:

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

- Ambient temperature:

Housing type	$T_{amb}$
	O-ring VMQ rubber
XD-ID100, XD-ID100H	-40 to + 100 °C
XD-IDwin, XD-ID100Hwin	-40 to + 85 °C

- Possible zone application

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

**! The empty enclosure can be used for electrical equipment designed for ambient temperatures not exceed range -40°C to +85°C !**

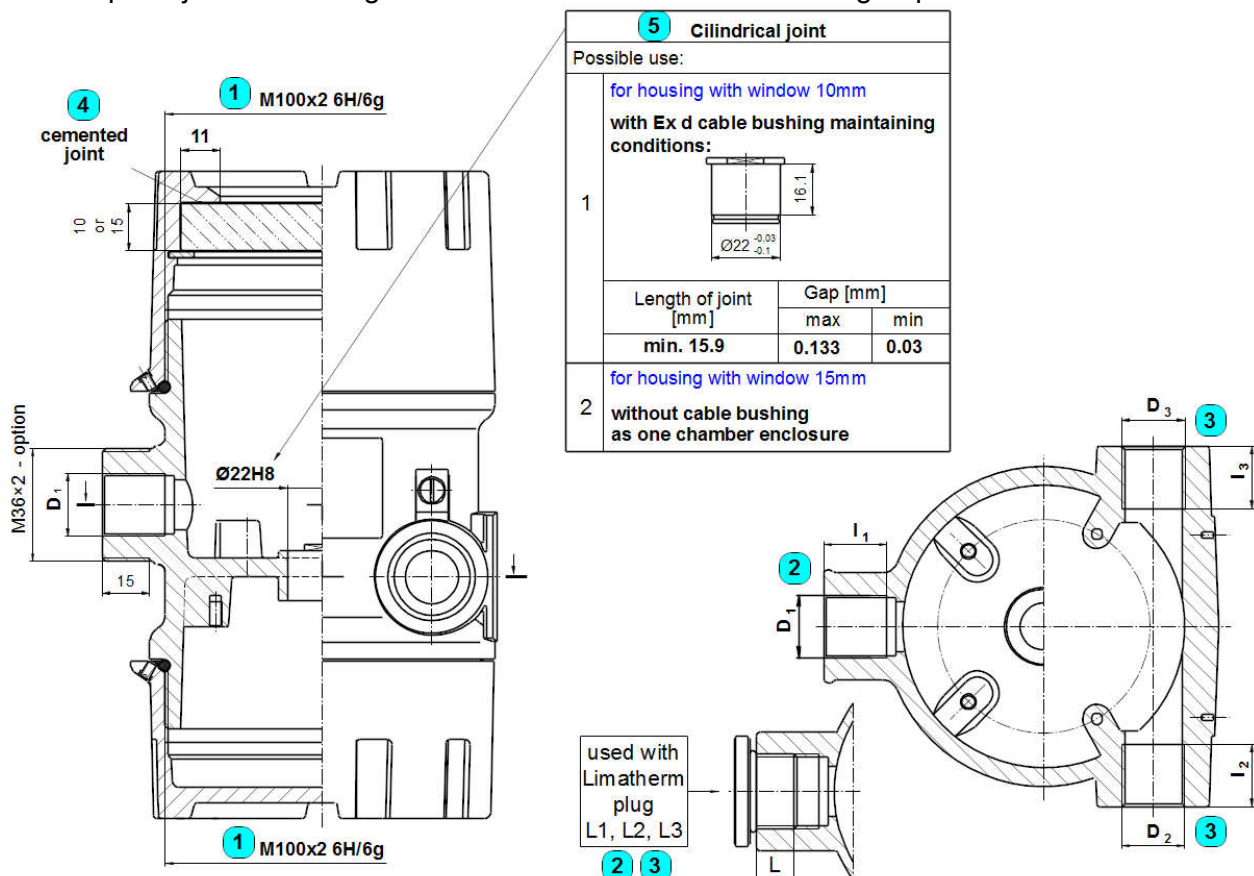
**! An apparatus installed inside of the empty enclosure can has any lay-out, which ensures, that in any cross-section area will be at least 40% of area free !**

**! A circuit breakers or contactors containing oil filling are not allowed to be installed inside of the empty enclosure !**

**! The empty enclosure shall be installed to avoid a risk from propagating brush discharges for application in explosive dust atmosphere !**

## 2. FLAMEPROOF JOINTS.

Flameproof joints are designed for volume  $500 < V \leq 2000 \text{ cm}^3$  group II C enclosures.



Lp.	Connection type		Requirements of 60079-1	Achieved values					
1	M100×2 6H/6g		threads engaged ≥ 5	9					
			depth of engagement ≥ 8 mm	18mm					
2	D <sub>1</sub> proces opening	M20×1.5 6H M24×1.5 6H M25×1.5 6H	fit of thread	l <sub>1</sub>	6g of male thread should be ensured by customer	L <sub>1</sub>	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 <sub>1</sub>	6g of male thread should be ensured by customer	L <sub>1</sub>	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 engaged	l <sub>1</sub>	should be ensured by customer, possible to reach: 5,0 ÷ 5,5	L <sub>1</sub>	5		
		3	D <sub>2</sub> , D <sub>3</sub> conduit openings	M20×1.5 6H M24×1.5 6H M25×1.5 6H	fit of thread	l <sub>2</sub> , l <sub>3</sub>	6g of male thread should be ensured by customer	L <sub>2</sub> , L <sub>3</sub>	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 engaged	l <sub>2</sub> , l <sub>3</sub>	should be ensured by customer, possible to reach: 5,0 ÷ 5,5	L <sub>2</sub> , L <sub>3</sub>	5
				4	Cemented joint	min. length of joint 10mm	11mm		
5	Cilindrical joint Ø22H8			min. length of joint 12,5mm	min 15,9 mm				
				max gap of joint 0,15mm	should be ensured by customer, possible to reach with Limatherm cable bushing: max 0,133 mm				
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 D<sub>1</sub>, D<sub>2</sub> and D<sub>3</sub> opening can be **plugged**.

### 3. PRESSURE TEST.

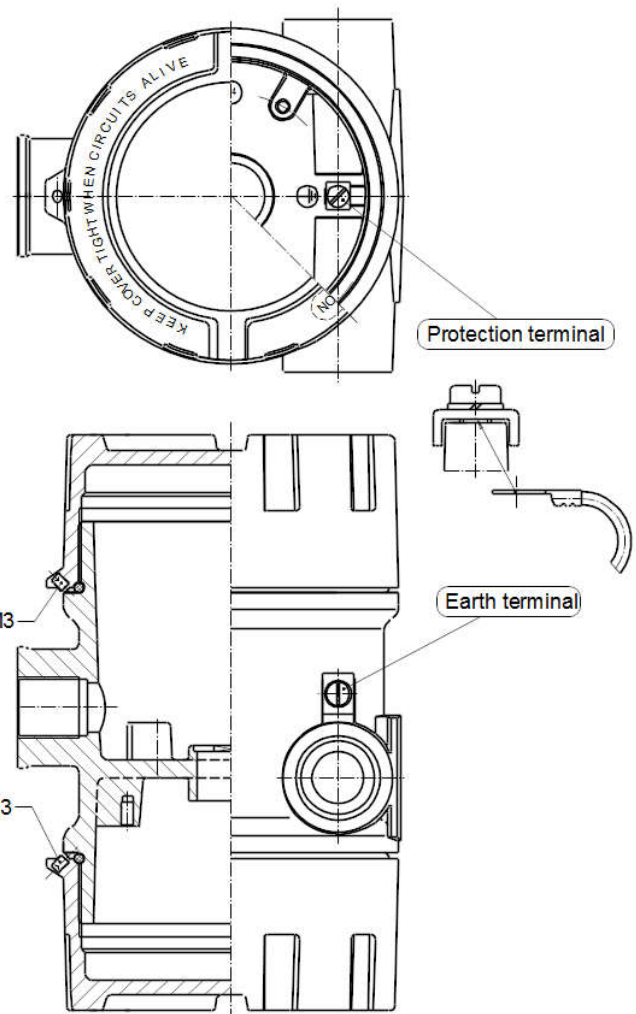
Enclosure was verified by over pressure static test 40 bar / 10s. The measured maximum reference pressure was 9,77 bar.

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

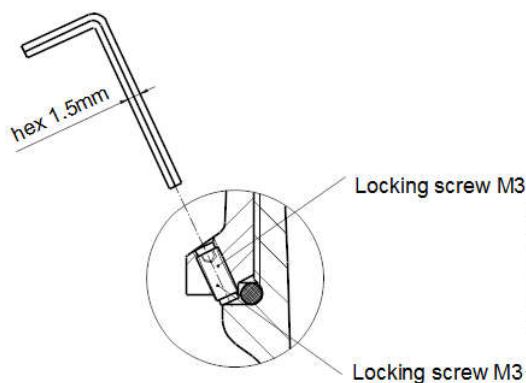
Maximum power dissipation [W]				
$T_{amb}$	Temp. class T6, or surface temp. 85° C	For all variety of enclosures Position horizontally/vertically	Temp. class T5, or surface temp. 100°C	For all variety of enclosures Position horizontally/vertically
40°C	$\Delta 0 \leq 40$ K	26 / 20	$\Delta 0 \leq 55$ K	38 / 33
55°C	$\Delta 0 \leq 25$ K	15 / 11	$\Delta 0 \leq 40$ K	26 / 20
70°C	$\Delta 0 \leq 10$ K	5 / 4	$\Delta 0 \leq 25$ K	15 / 11
85°C	N/A	-	$\Delta 0 \leq 10$ K	5 / 4

### 5. EARTH AND PROTECTION TERMINALS.

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



### 6. COVER LOCKING.



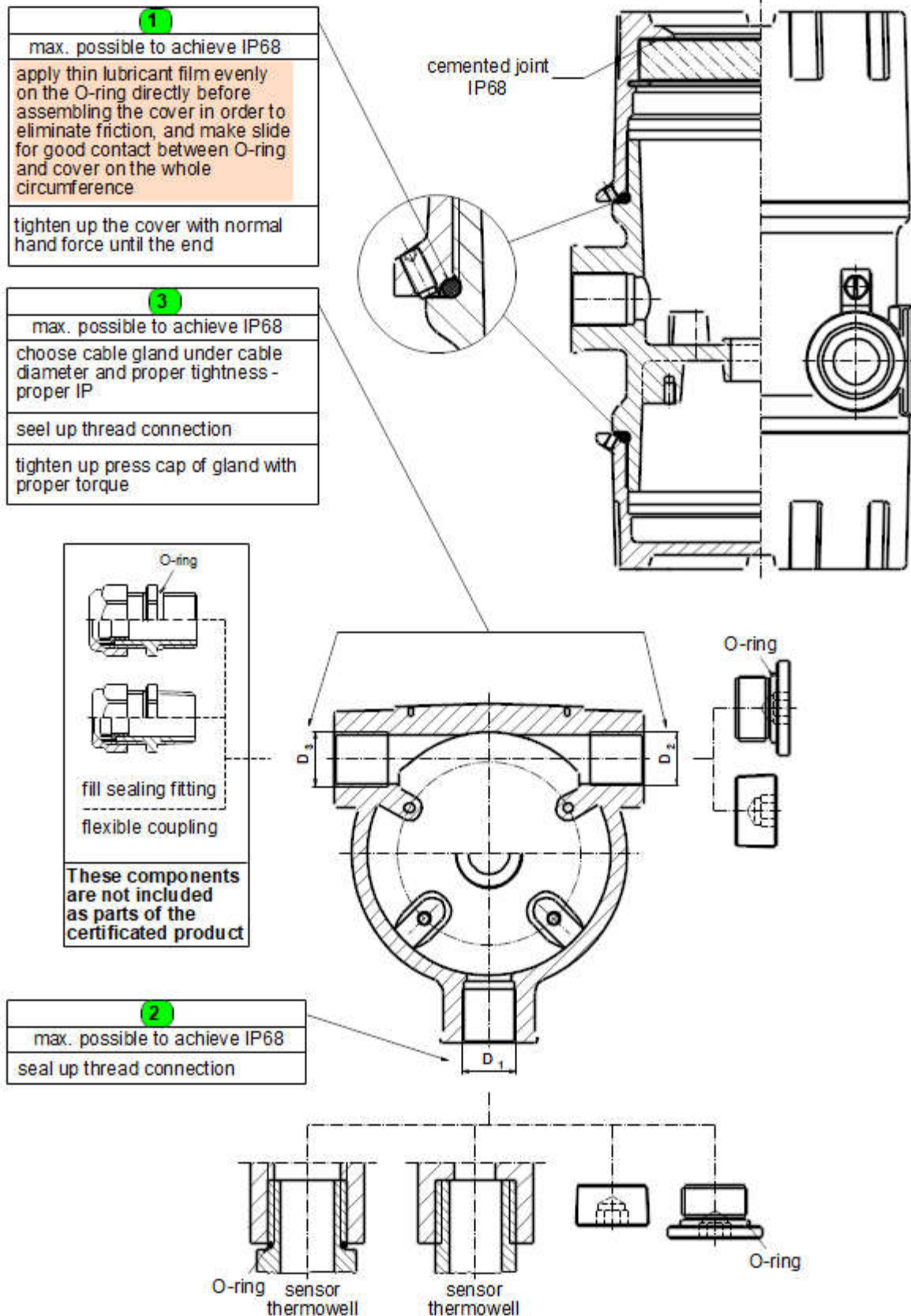
Lock the cover by screw with hex socket using hex spanner with across flat 1,5mm.

## 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, 3	
68	54	IP 54
	66	IP 66
	67	IP 67
	68	IP 68

**! ATTENTION !**

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

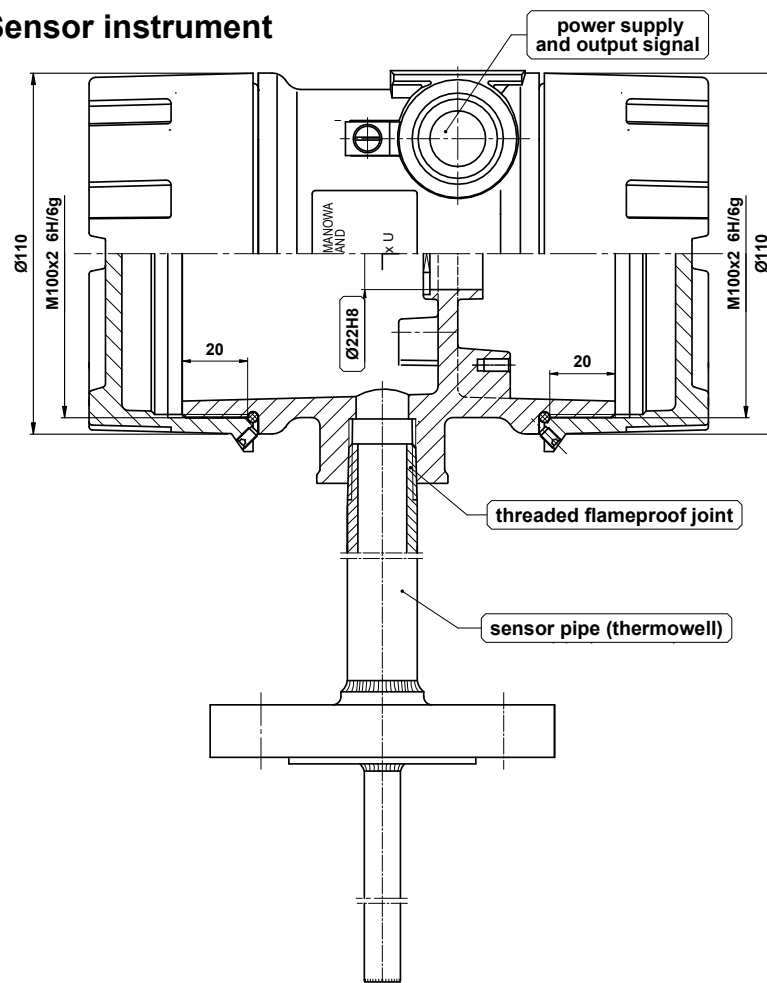
**It is required min IP65 protection for instruments designed for dust zones.**

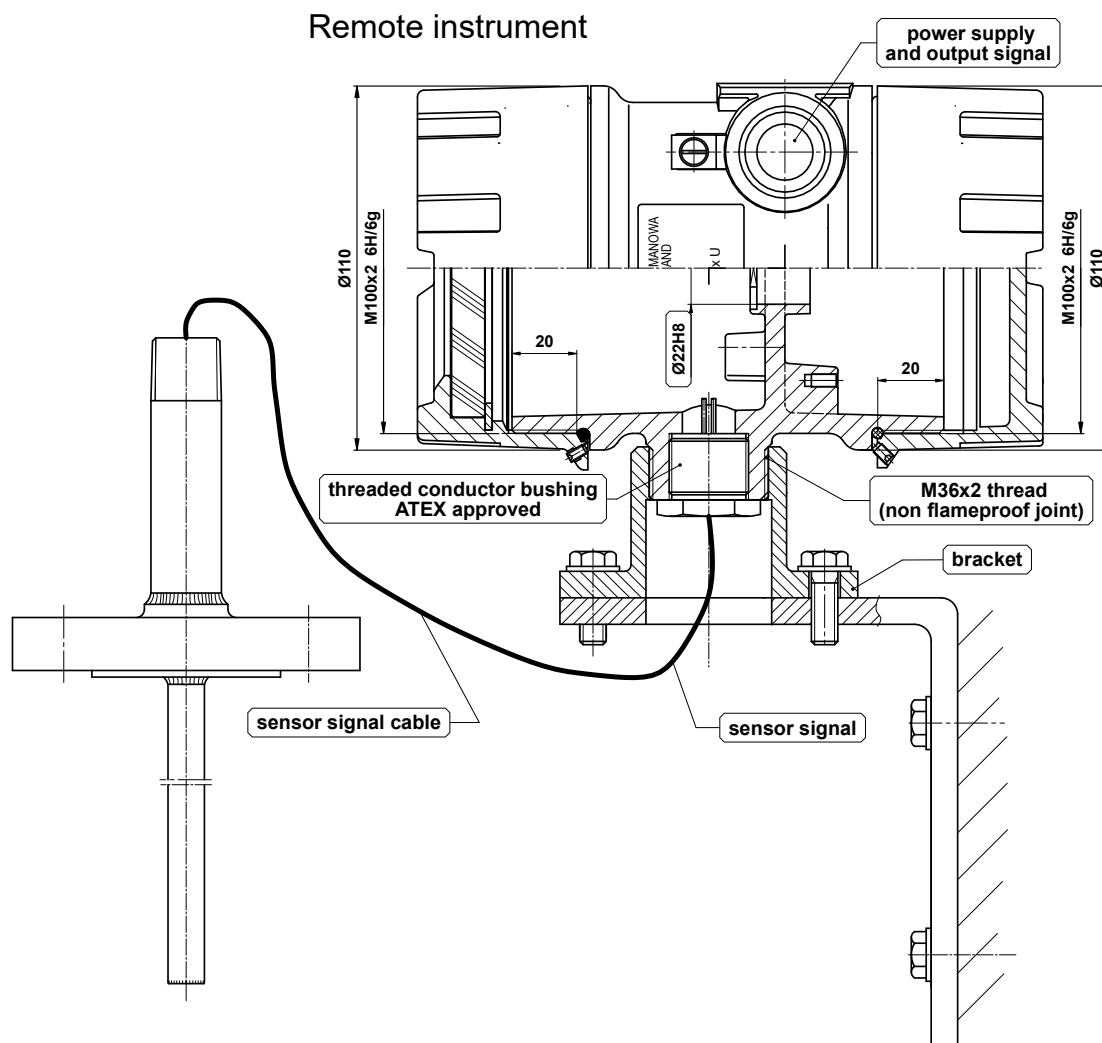
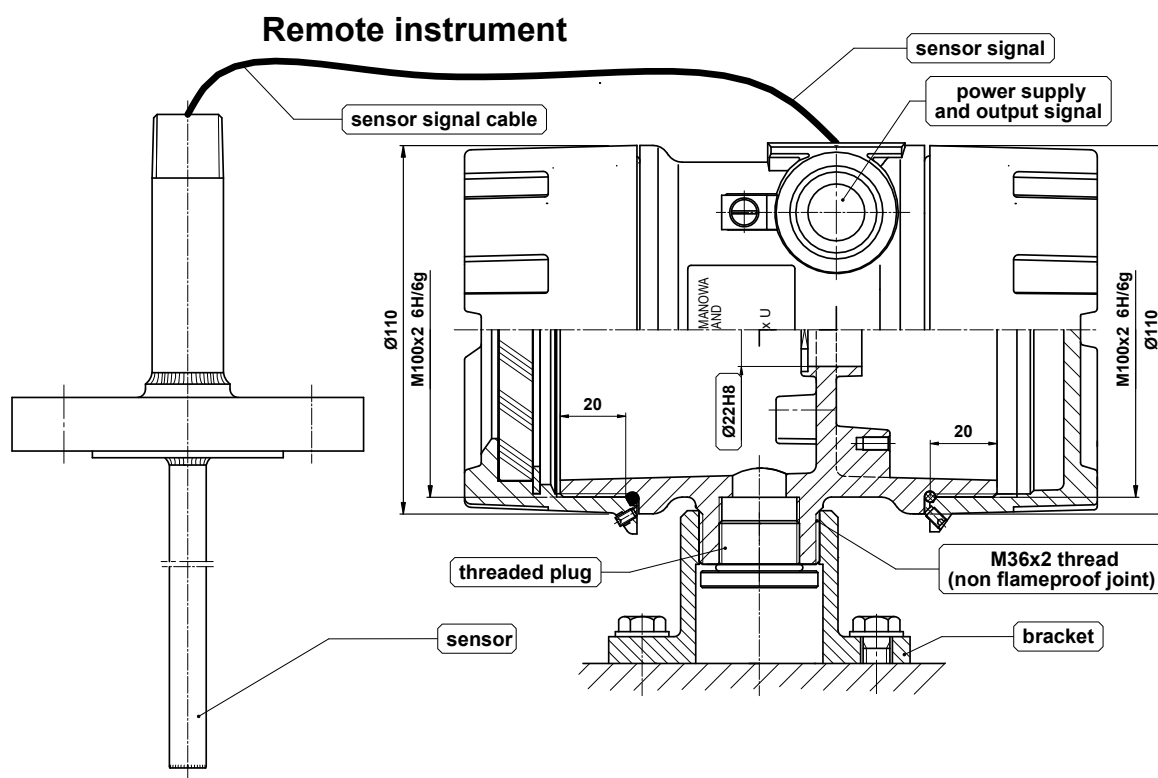
(Besides zone 22, non-conductive dust, where min IP54 protection is required)

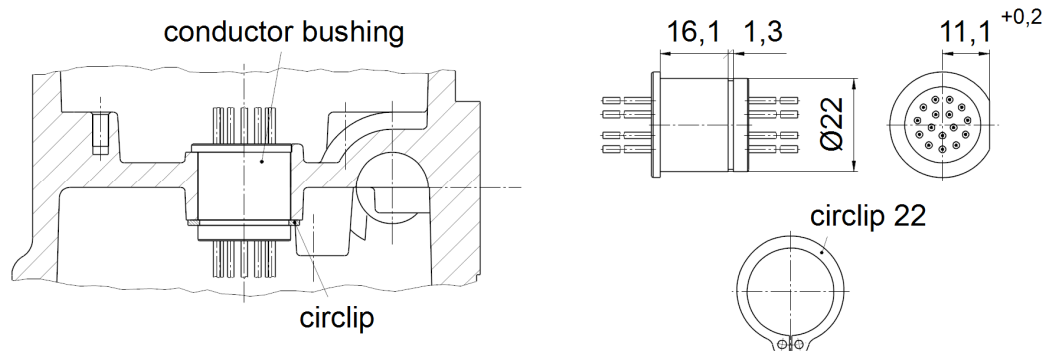
**8. WAY OF MOUNTING****NOTES**

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 !**

**Sensor instrument**

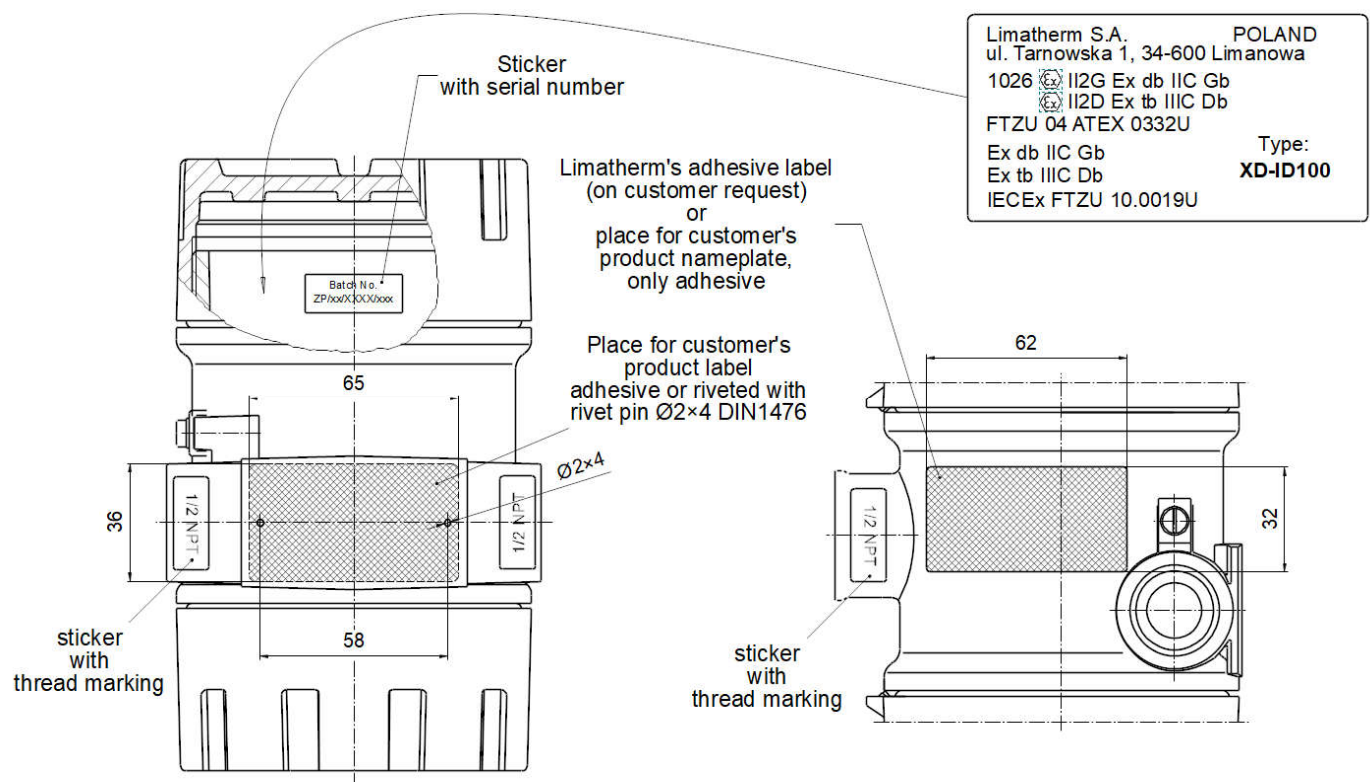


**N-L2611****9. ASSEMBLY OF INSIDE CONDUCTOR BUSHING.****10. MARKING**

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.

**11. MAINTENANCE and REPAIR****NOTES**

It is recommended to change the O-ring if the cover has been opened during service work of the unit.

O-ring, if changed, has to be lubricated evenly on the whole circumference by a grease or oil for O-rings, or by technical Vaseline directly before reassembling the cover.

Cover, when opened after operation in maximum temperature, 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.