

## APPLICATION MANUAL

### Universal Explosionproof Two-Compartments Instrument Housing Type: **XD-ID100, XD-ID100win, XD-ID100H, XD-ID100Hwin**

#### Contents:

1. Destination.
2. Flameproof joints.
3. Protection degree.
4. Earth and protection terminals.
5. Cover locking.
6. Way of mounting.
7. Marking.
8. Maintenance and repair.

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#### NOTES OF SAFETY

The XD-ID100 series are designed to accomodate various electronic instruments. If used incorrectly it is possible that application-related dangers may arise.

The XD-ID100 series uniwersal 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 by FM Approvals or CSA of the end use equipment assembly is required.

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**1. DESTINATION.**

CERTIFICATIONS	STANDARDS	HAZARDOUS AREAS
FM	FM 3600, FM 3615, FM 3810 ANSI/NEMA 250	Class I, Groups A, B, C, D Class II, Groups E, F, G Class III NEMA 4x
	ANSI/ISA 60079-0, ANSI/ISA 60079-1, ANSI/ISA 60079-31 ANSI/IEC 60529	Class I, Zone 1, AEx db IIC Gb Zone 21, AEx tb IIIC Db IP66
CSA	CSA C22.2 No.0.4, No.0.5, No.25, No.30, No.94	Class I, Groups A, B, C, D Class II, Groups E, F, G Class III Type 4x
	CSA C22.2 No.60079-0, No.60079-1, No.60079-31, CAN/CSA 60529	Ex db IIC Gb Ex tb IIIC Db IP66

### Possible application

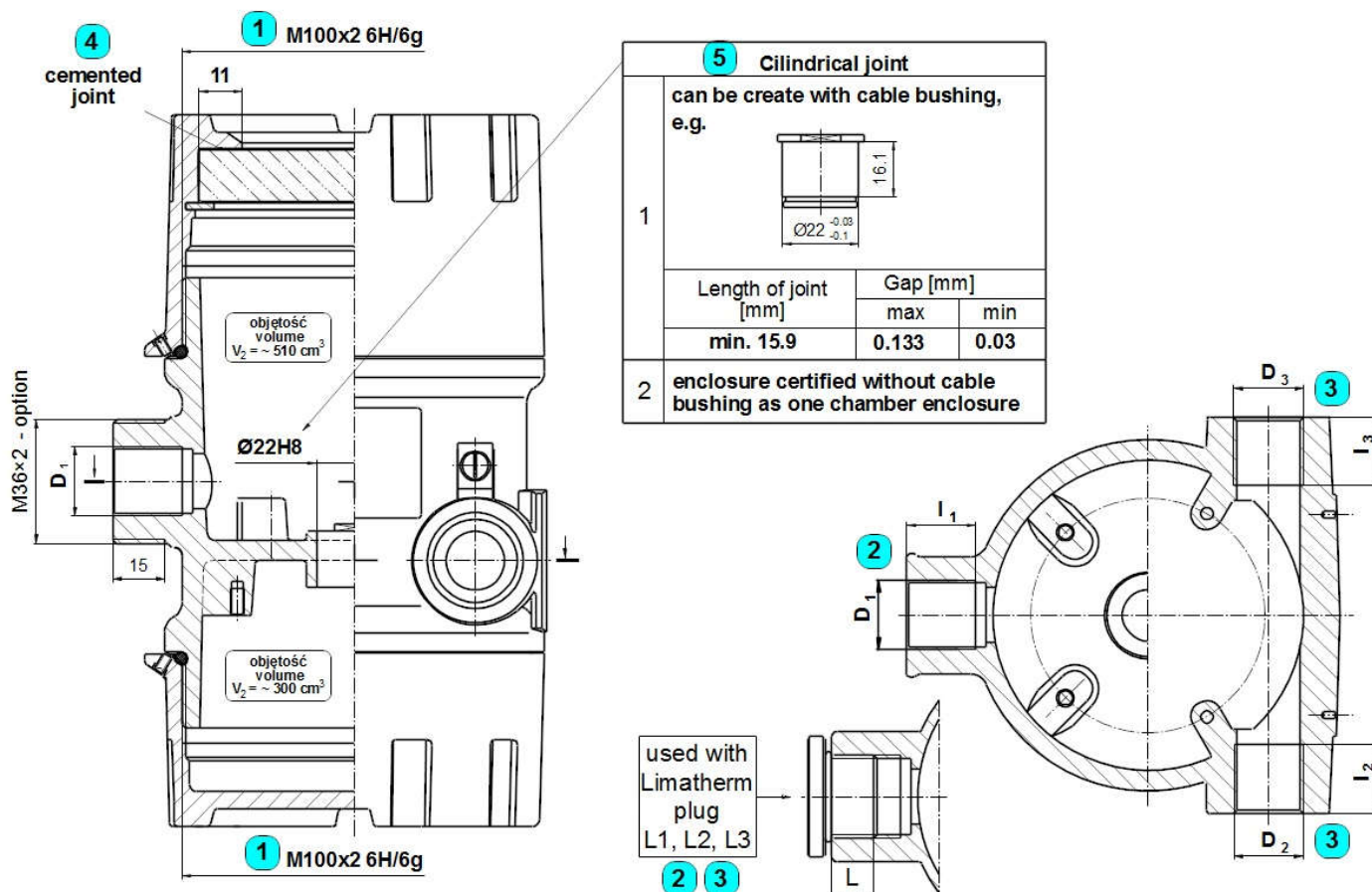
Division	Protection Code	Zone	Protection Code
Division 1 Division 2	Explosionproof	Zone 1	Ex d
		Zone 21	Ex t
		Zone 2	Ex d
		Zone 22	Ex t

Ambient temperature

Housing type	T <sub>amb</sub> O-ring VMQ
XD-ID100, XD-ID100H	-40 to +212 °F -40 to +100 °C
XD-ID100win, XD-ID100Hwin	-40 to +185 °F -40 to +85 °C

## 2. FLAMEPROOF JOINTS.

Flameproof joints are designed for gas group A (Div), volume  $500 < V \leq 2000 \text{ cm}^3$  group II C (Zone) enclosures.



Lp.	Connection type		Requirements of FM 3615 CSA C22.2 No. 30 60079-1	Achieved values			
1	M100×2 6H/6g		threads engaged ≥ 7	9			
			width of engagement ≥ 12,5mm	18,5mm			
2	D <sub>1</sub> proces opening	M20×1.5 6H M24×1.5 6H M25×1.5 6H	class 2 fit	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	class 2 fit	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
			depth of engagement ≥ 8 mm		should be ensured by customer, possible to reach: 19mm		10mm
	½NPTmod ¾NPTmod	threads engaged ≥ 5	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	class 2 fit	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>
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 ≥ 5	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		NOT tested as a flameproof joint.				
NPT threads are modified to reach 5÷5,5 engaged threads and can create flameproof joint with threaded male part with standard cutting tolerance.							

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**Only NPT threads can be used for CSA Division, in all openings.**

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

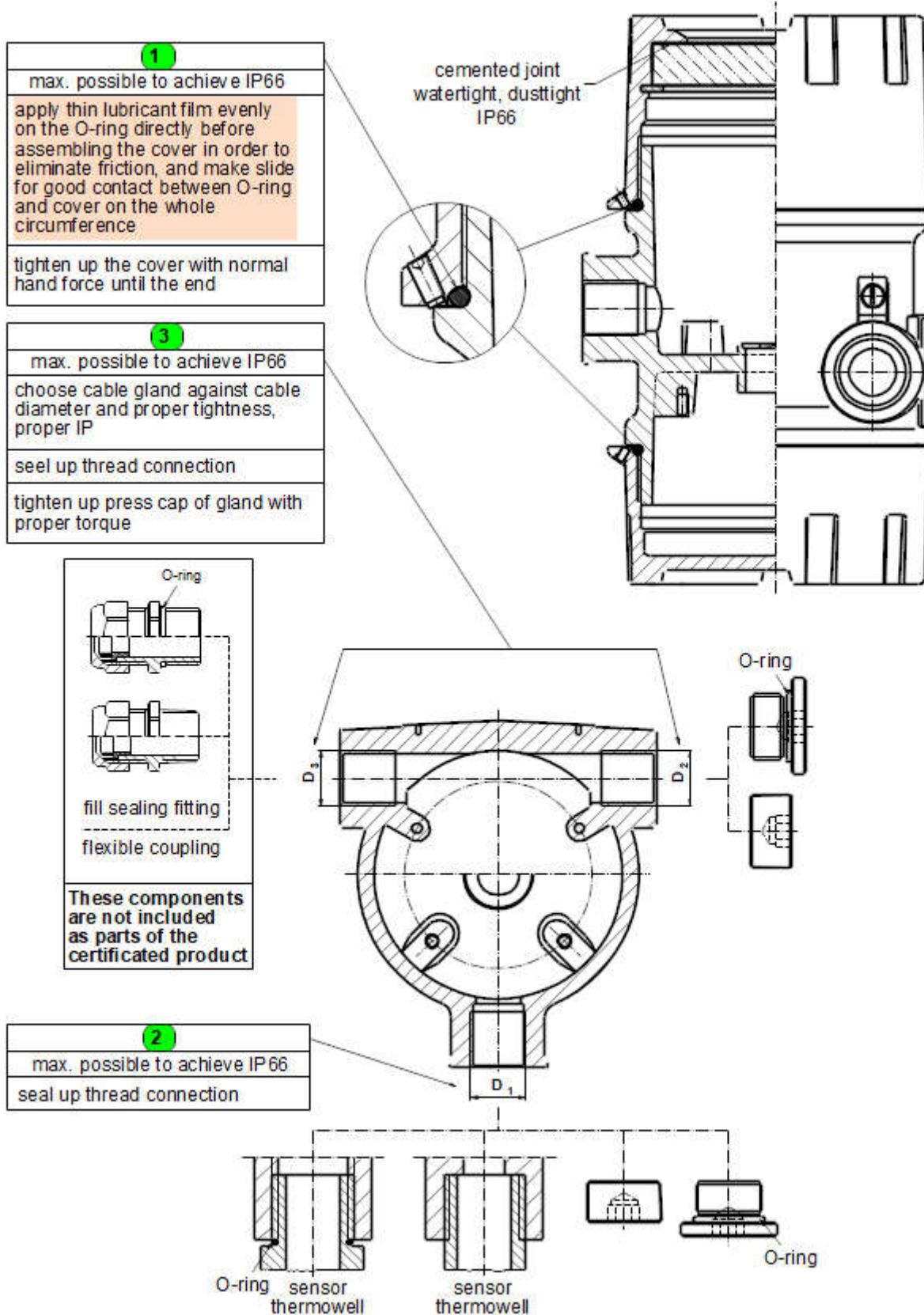
**Conduit openings** can be used to equip it with certificated **explosionproof** or/and **Ex d flameproof cable glands**, fill sealing fittings, flexible couplings or thermowells.

Each D<sub>1</sub>, D<sub>2</sub> and D<sub>3</sub> opening can be **plugged**.

### 3. PROTECTION DEGREE (Enclosure type 4x).

There are three connections of assembled device deciding about water and dust tightness:

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



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Threaded connection sealing	Protection against water and dust ingress	Possible IP
Without sealing - standard accuracy class thread	NO	IP54
Use of a sealant, e.g. Loctite 577	YES	IP66
Thread tightened with O-ring	YES	IP66

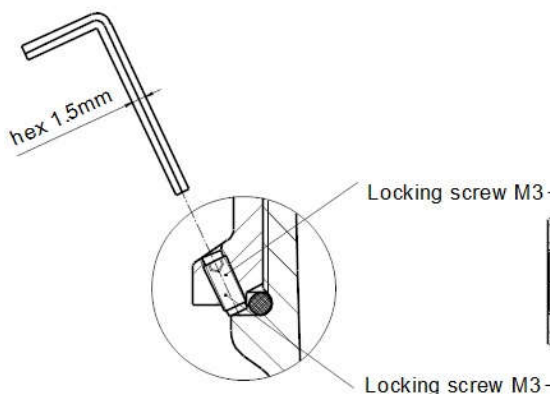
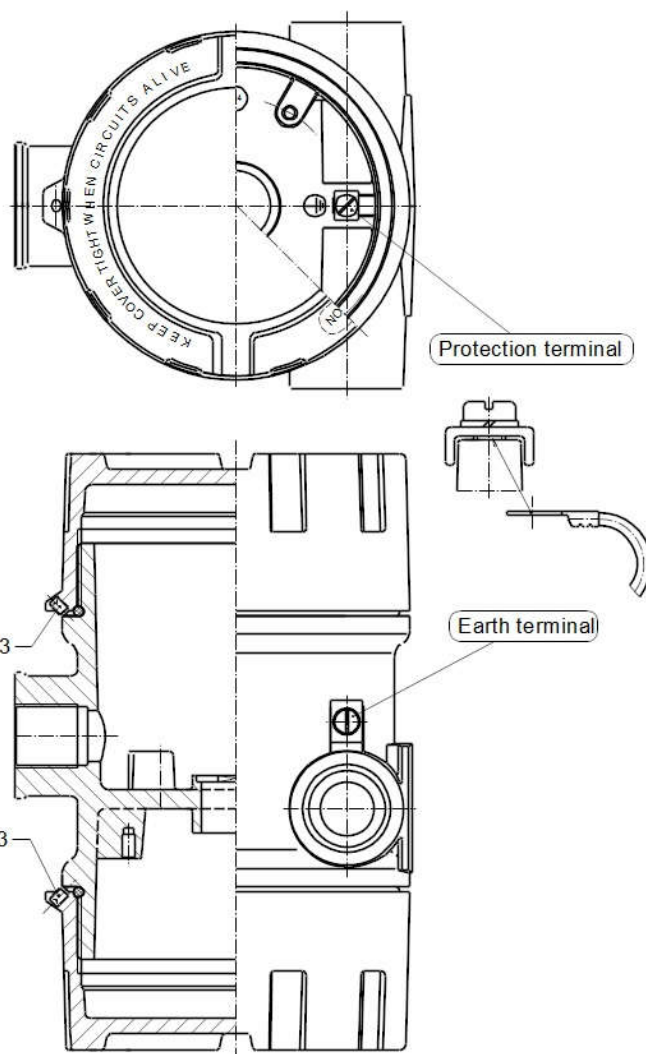
**! ATTENTION !**

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

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

**4. EARTH AND PROTECTION TERMINALS.**

Place	Type	AWG
Inside	Protection terminal	14
Outside	Earth terminal	10

**5. COVER LOCKING.**

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

**6. WAY OF MOUNTING.****NOTES**

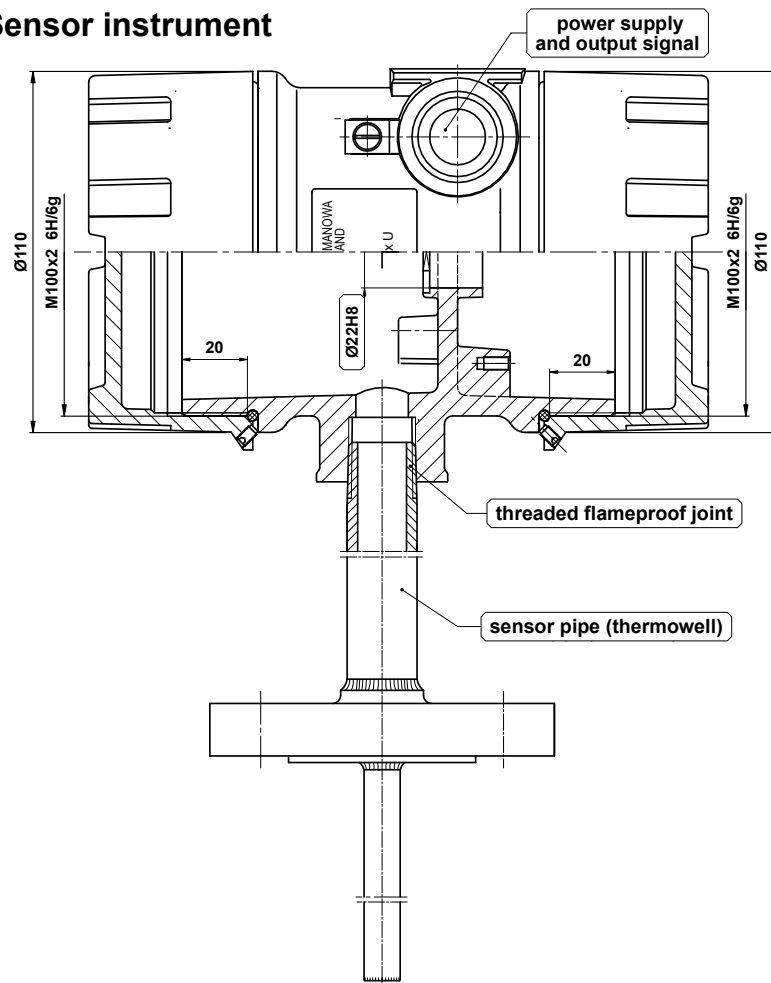
It is important to be carefull when screw on or undo a cover. Thread surface should be free of any grains, pellets and other impurity, which cause seizing, and thread could be damaged.

**! Never screw on the cover forcefully !**

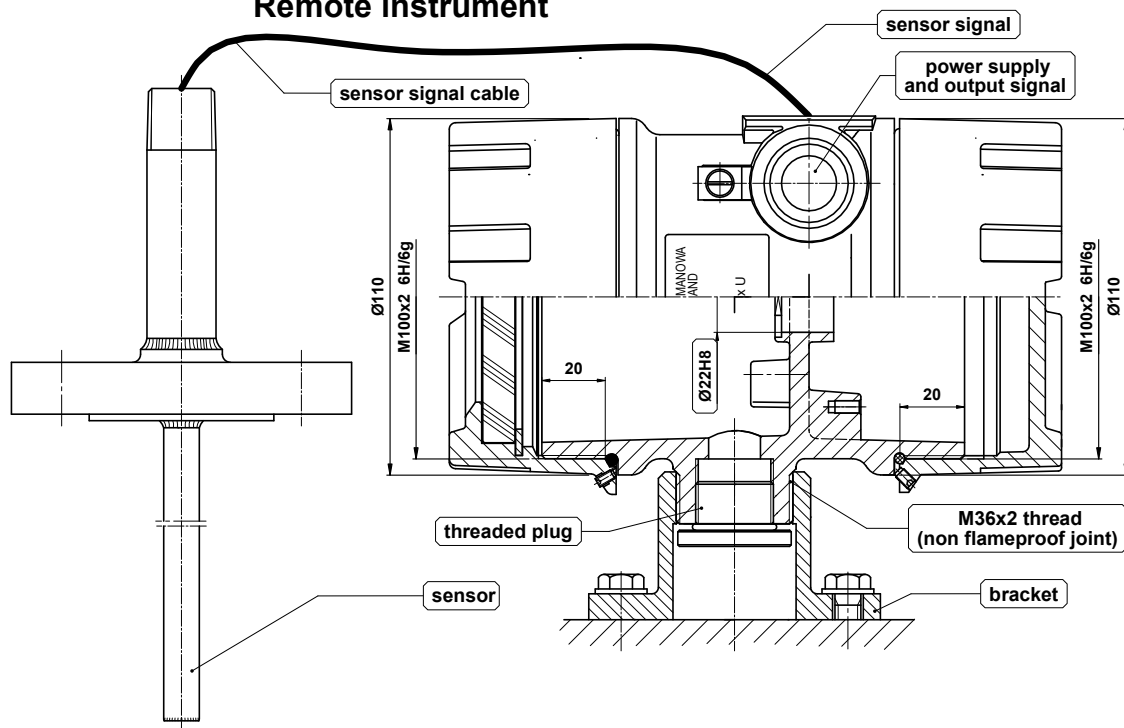


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### Sensor instrument

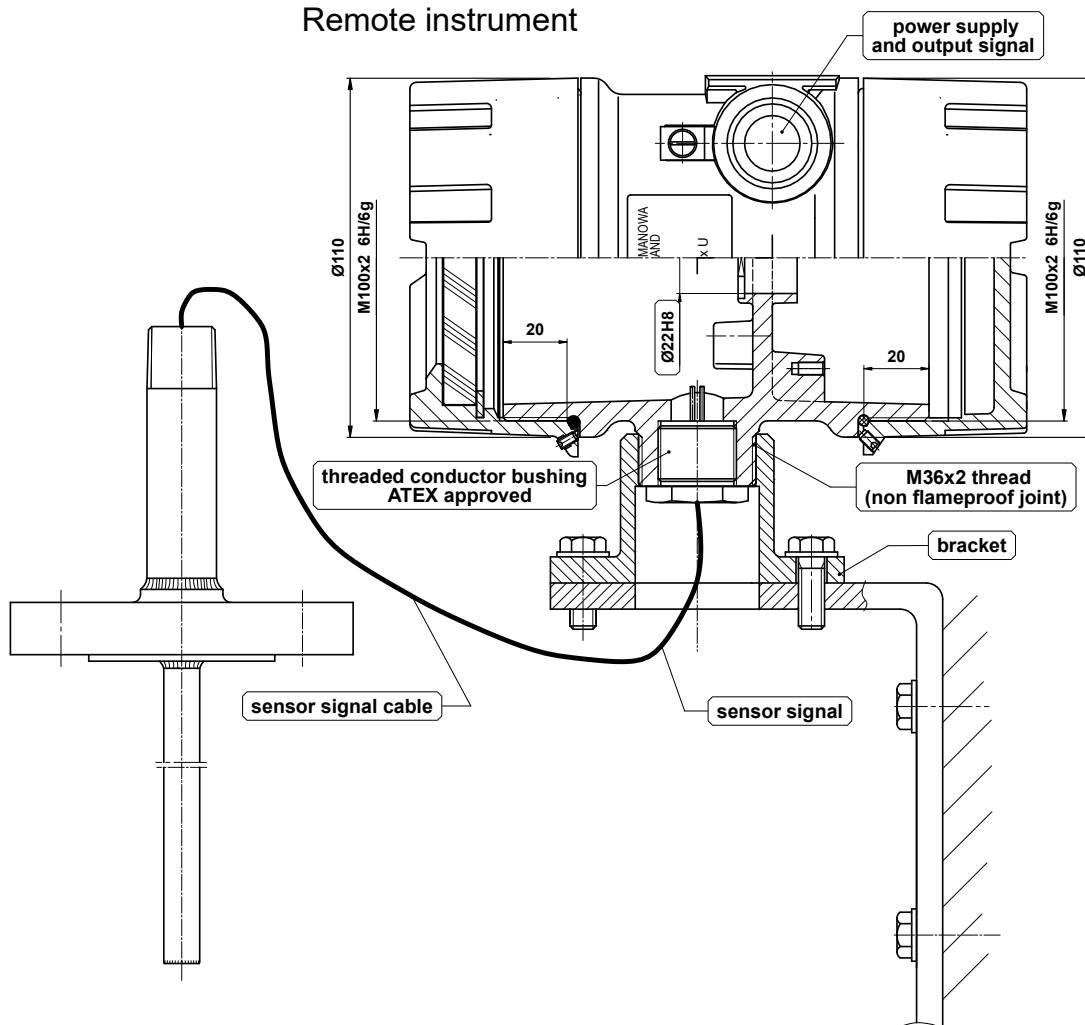


### Remote instrument

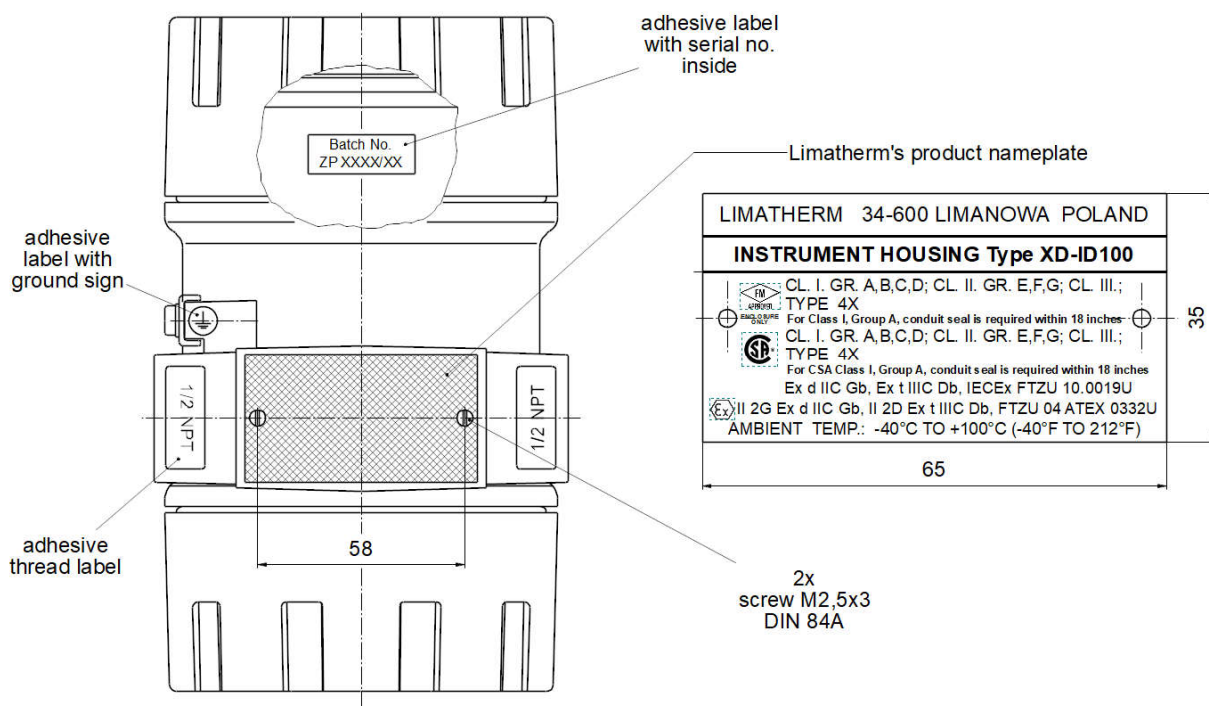


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## Remote instrument



## 7. MARKING



## 8. 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.