

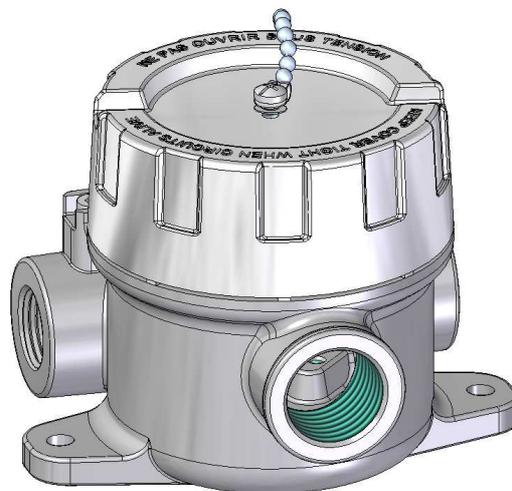


N-L2525

Updated 30.04.2019

APPLICATION MANUAL

Flameproof Ex d Universal Instrument Housing Types: **XD-I80, XD-I80win, XD-I80C, XD-I80Cwin**



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. Way of mounting.
9. Marking.

NOTES OF SAFETY

The XD-I80 series are designed to accommodate various electronic instruments or devices working in hazardous areas. If used incorrectly it is possible that application-related dangers may arise.

The XD-I80 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-I80 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	Ex db IIC Gb
 II 2D Ex tb IIIC Db	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-I80, XD-I80C	-40 to + 100 °C
XD-I80win, XD-I80Cwin	-40 to + 85 °C

- Possible zone application

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

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

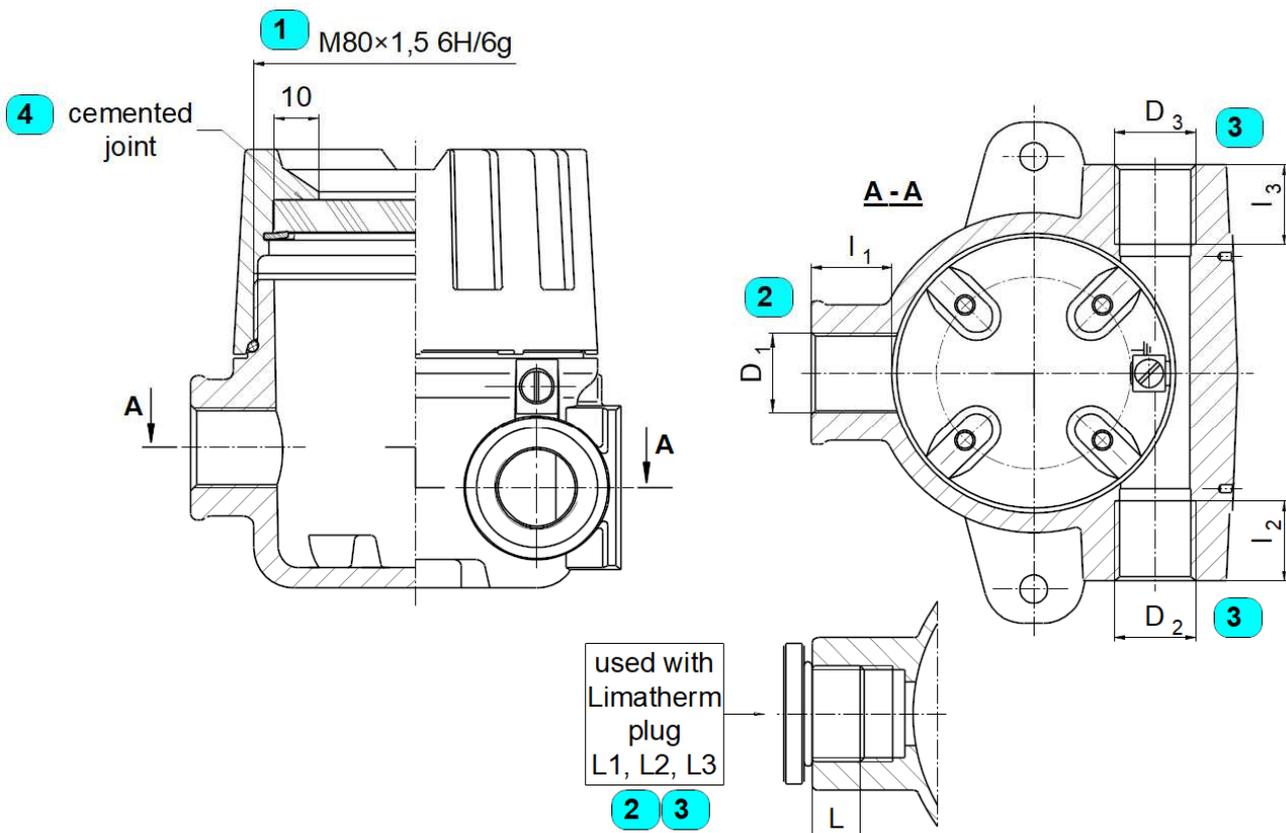
! An apparatus installed inside of the empty enclosure can has any lay-out, which ensures, that in any cross-section area will be at least 40% of area free !

! 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 $100 < V \leq 500 \text{ cm}^3$ group II C enclosures.



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Lp.	Connection type		Requirements of 60079-1	Achieved values					
1	M80x1,5 6H/6g		threads engaged ≥ 5	9					
			depth of engagement ≥ 8 mm	13,5mm					
2	D ₁ proces opening	M20x1.5 6H M24x1.5 6H M25x1.5 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	
		M27x2 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	M20x1.5 6H M24x1.5 6H M25x1.5 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**.

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3. PRESSURE TEST.

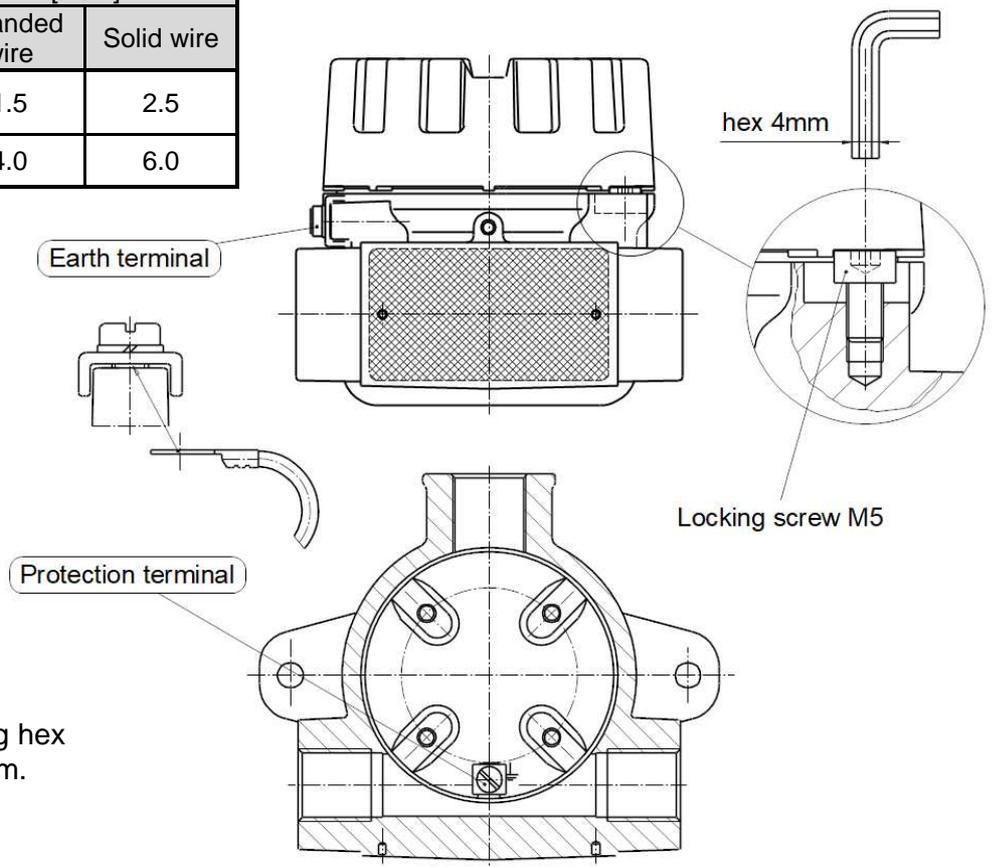
Enclosure was verified by over pressure static test 65 bar / 10s. The measured maximum reference pressure was 6,56 bar.

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	22 / 17	$\Delta 0 \leq 55$ K	32 / 26
55°C	$\Delta 0 \leq 25$ K	13 / 10	$\Delta 0 \leq 40$ K	22 / 17
70°C	$\Delta 0 \leq 10$ K	4.5 / 3.5	$\Delta 0 \leq 25$ K	13 / 10
85°C	N/A	---	$\Delta 0 \leq 10$ 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 4mm.

7. PROTECTION DEGREE.

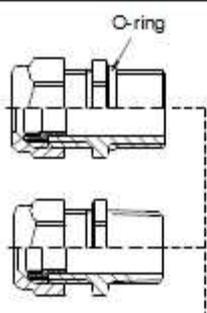
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There are three connections of assembled device deciding about IP degree:

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

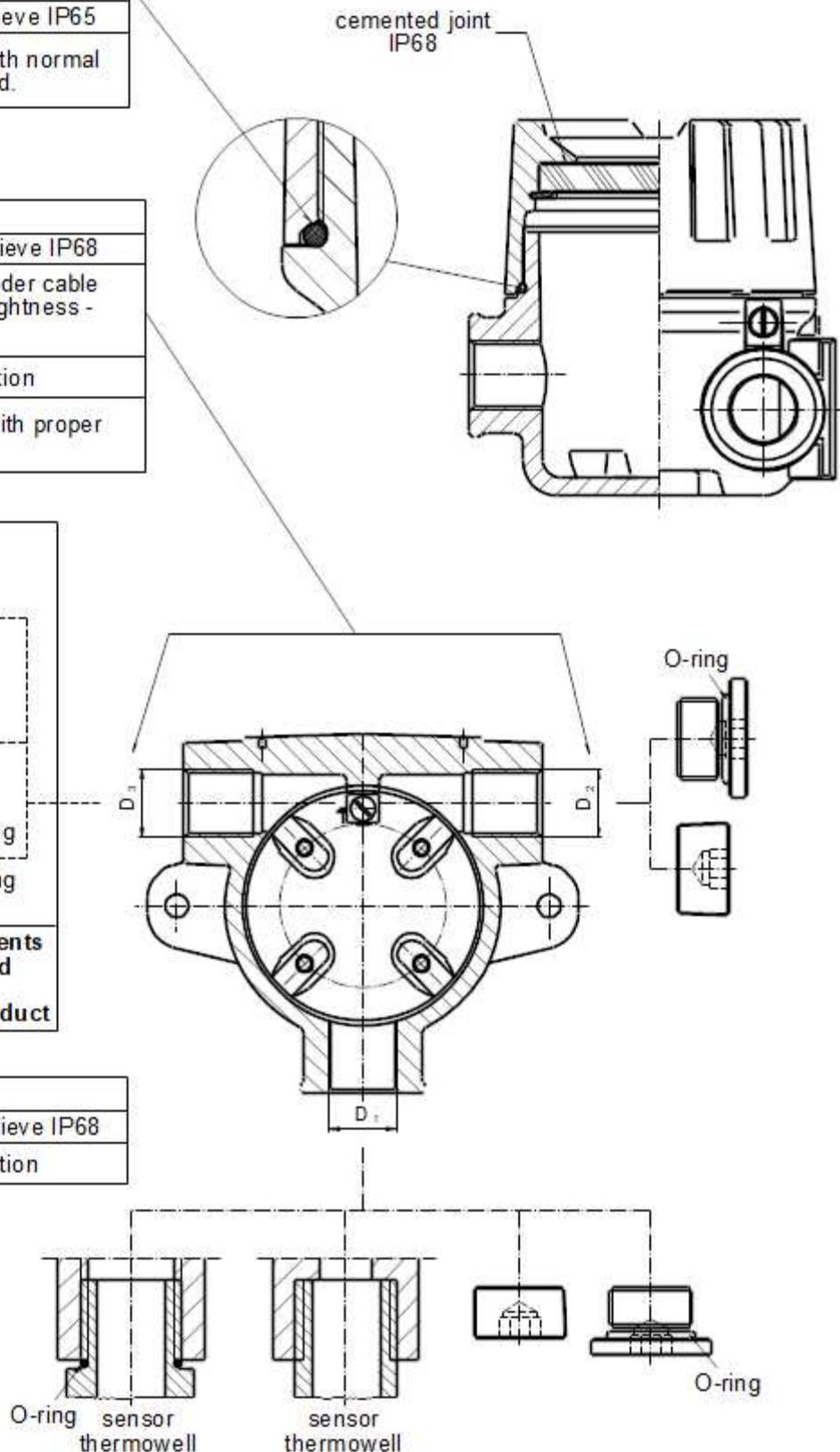
1
 max. possible to achieve IP65
 tighten up the cover with normal hand force until the end.

3
 max. possible to achieve IP68
 choose cable gland under cable diameter and proper tightness - proper IP
 seal up thread connection
 tighten up press cap with proper torque



O-ring
 fill sealing fitting
 flexible coupling
These components are not included as parts of the certificated product

2
 max. possible to achieve IP68
 seal up thread connection



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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	
65	54	IP 54
	66	IP 65
	67	IP 65
	68	IP 65

! ATTENTION !

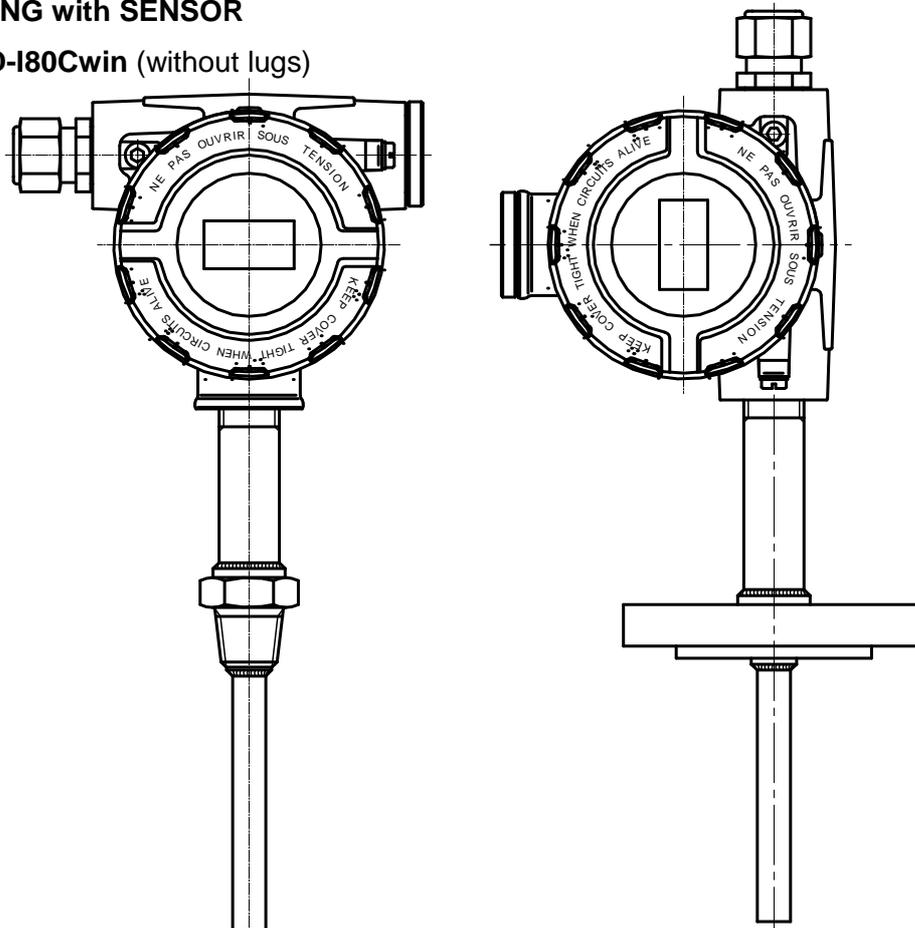
It is required min IP65 protection for instruments designed for dust zones.
 (Besides zone 22, non-conductive dust, where min IP54 protection is required)

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 !
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.

WAY OF MOUNTING with SENSOR

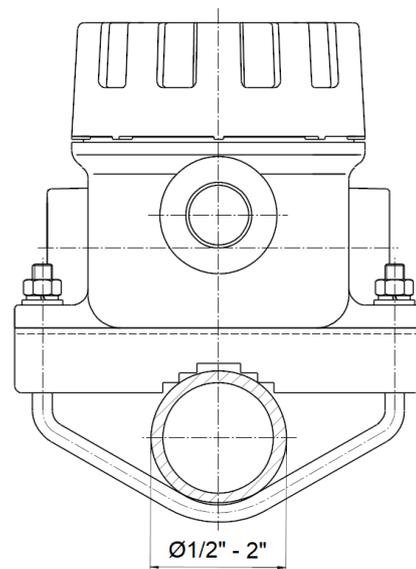
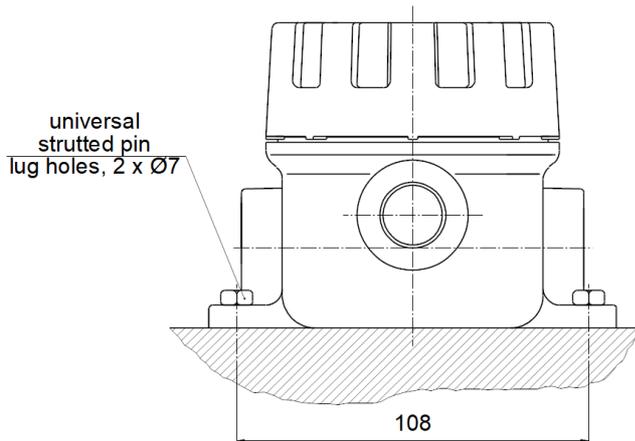
types XD-180C, XD-180Cwin (without lugs)



WAY OF FIXING to WALL and to PIPE

types **XD-I80, XD-I80win** (with lugs)

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9. 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.

