

APPLICATION MANUAL

Explosionproof Universal Box types: **XD-JB85 , XD-JB85win** **XD-JB85I , XD-JB85Iwin**

Contents:

1. Destination.
2. Flameproof joints, process opening, conduit openings .
3. Carried out tests for non transmission of an internal ignition.
4. Earth and protection terminals.
5. Protection against water and dust ingress, cover locking.
6. Way of mounting.
7. Marking.

NOTES OF SAFETY

The XD-JB85... series are designed to accommodate various electronic instruments. If used incorrectly it is possible that application-related dangers may arise.

The XD-JB85... universal box 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-JB85... universal box is certified. When used as part of an end product assembly, subsequent Approval by FM Approvals or CSA of the end use equipment assembly is required.

1. DESTINATION .

Universal Box XD-JB85... are designed to accommodate different electric, electronic instruments or devices and electric power supply, electronic or mechanic indicators, status indicators, working in hazardous areas:

CERTIFICATIONS	STANDARDS	HAZARDOUS AREAS
	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
	CSA C22.2 No.0.4 CSA C22.2 No.0.5 CSA C22.2 No.25 CSA C22.2 No.30 CSA C22.2 No.94	Class I, Groups A, B, C, D Class II, Groups E, F, G Class III NEMA 4x
Conduit seal is required within 18 inches		

Possible application

Division	Protection Code
Division 1 Division 2	Explosionproof

Ambient temperature

Housing type	T _{serv}		
	TPE rubber	VQM rubber	FKM rubber
XD-JB85	-40 to +212 °F	-40 to +302 °F	-4 to +392 °F
XD-JB85I	(-40 to +100 °C)	(-40 to +150 °C)	(-20 to +200 °C)
XD-JB85win	-40 to +185 °F	-40 to +185 °F	-4 to +185 °F
XD-JB85Iwin	(-40 to +85 °C)	(-40 to +85 °C)	(-20 to +85 °C)

2. FLAMEPROOF JOINTS, PROCESS OPENINGS, CONDUIT OPENINGS.

There are five flameproof joints in **XD- JB85...** housing :

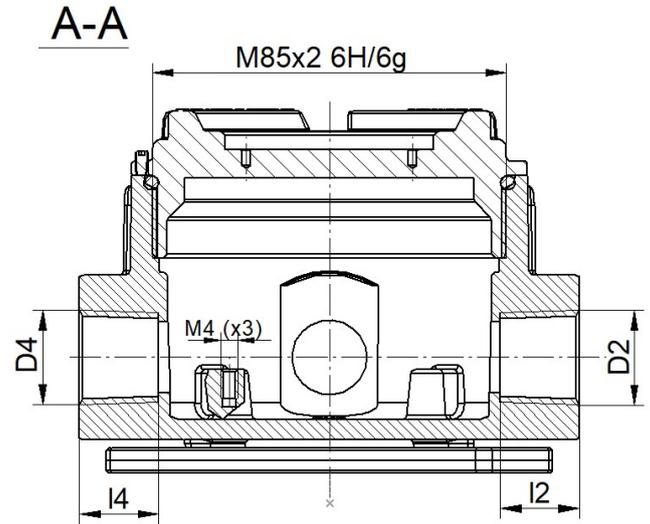
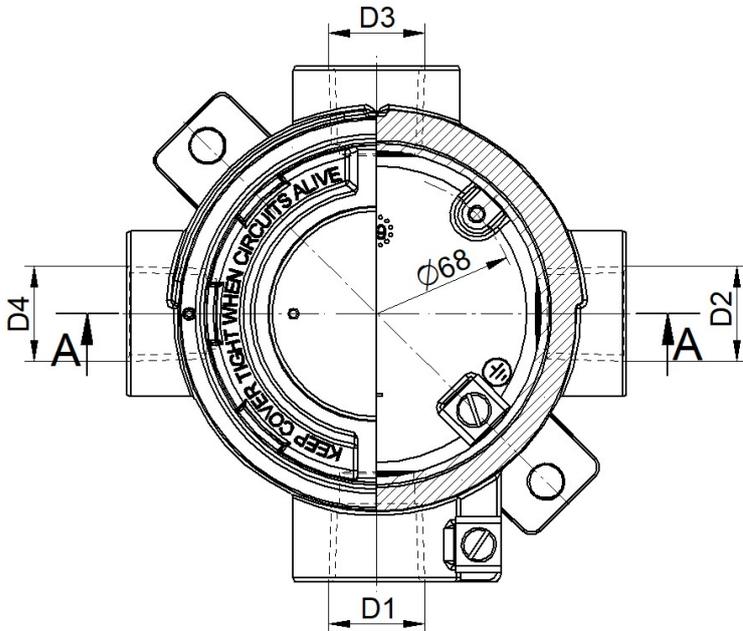
1. on the cover thread M85x2,
2. on conduit openings D₄, D₃, D₂, D₁ for cable gland:
 - threaded holes: M20x1.5; M24x1.5; M25x1.5; M27x2; ½NPTmod; ¾NPTmod

All five flameproof joints are designed for :

- volume $100 < V \leq 1500 \text{ cm}^3$
- gas group A

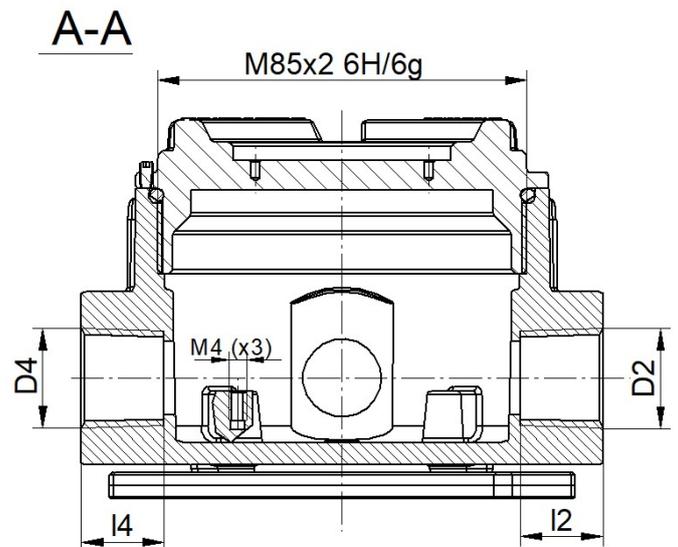
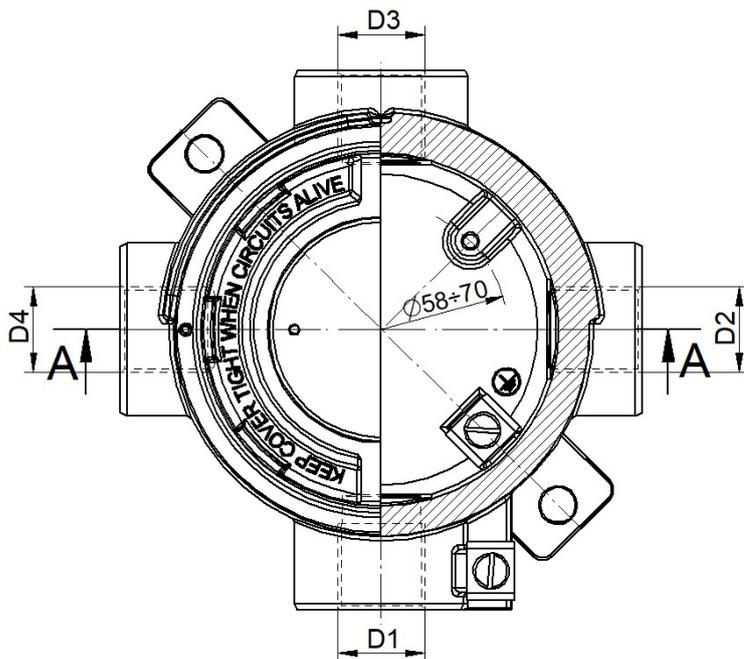
UNIVERSAL BOX TYPE: XD-JB85 and XD-JB85

DIAMETER OF MOUNTING TRANSMITTER: $\varnothing 68$



UNIVERSAL BOX TYPE: XD-JB85I AND XD-JB85I

DIAMETER OF MOUNTING TRANSMITTER BETWEEN $\varnothing 58$ AND $\varnothing 70$



Metric threaded joints: cover thread and D ₁ , D ₂ , D ₃ , D ₄			
Standard requirements		Achieved value	
		cover	D ₁ , D ₂ , D ₃ , D ₄ , D ₅
FM 3615	<ul style="list-style-type: none"> pitch ≥ 1.27 mm threads engaged ≥ 7 threads depth of engaged ≥ 8 	<ul style="list-style-type: none"> 2 mm 8 16 mm 	<ul style="list-style-type: none"> 1.5 mm or 2 mm should be ensured by customer, possible to reach: 13 or 10 should be ensured by customer, possible to reach: 20 mm
CSA C22.2 No. 30	<ul style="list-style-type: none"> pitch ≥ 1.27 mm threads engaged ≥ 8 Class 1 fit width of engaged ≥ 12.5 mm 	<ul style="list-style-type: none"> 2 mm 8 thds 6H/6g 16 mm 	-
Taper threaded joints: D ₁ , D ₂ , D ₃ , D ₄			
Standard requirements		Achieved value	
FM 3615	<ul style="list-style-type: none"> pitch ≥ 1.27 mm threads provided on each parts: ≥ 6 threads engaged: ≥ 5 	<ul style="list-style-type: none"> 1.814 mm or 2.209 mm 6.5 ÷ 7.5 5.5 ÷ 6.5 	<div style="border: 1px solid black; padding: 2px;"> Standard plug gauge shall engage within 0 to +3½ turns of the gauging notch. </div>
CSA C22.2 No. 30	<ul style="list-style-type: none"> pitch ≥ 0.7 mm threads engaged ≥ 5 threads 	<ul style="list-style-type: none"> 1.814 mm or 2.209 mm 5.5 ÷ 6.5 	

Each type of parallel threads: M20x1.5; M24x1.5; M25x1.5; M27x2 is adapted to create explosionproof joint. Also taper threads: ½NPTmod; ¾NPTmod are modified acc. to FM and CSA standards and can create flameproof joint with threaded male part with standard cutting tolerance.

Openings can be used for mounting sensor (e.g. level, flow sensor), thermowell or can be used to equip it with various certified explosionproof cable glands, fill sealing fittings, flexible couplings or pipes.

Each threaded hole D₁ D₂ D₃ and D₄ can be plugged.

3. CARRIED OUT TESTS FOR NON TRANSMISSION OF AN INTERNAL IGNITION.

Conduit holes D ₁ , D ₂ , D ₃ , D ₄	FM 3615 p. 4.3 CSA C22.2 p. 6.5
M20x1.5 M24x1.5 M25x1.5 M27x2 ½NPTmod ¾NPTmod	tested - together with plug

D₁, D₂, D₃, D₄ threads and fixed to them threaded male parts of sensor, thermowell, cable gland, fill sealing fittings, flexible couplings, pipes - must create flameproof joint.

mod=modified to meet standards: EN 60079-1, IEC 60079-1, FM 3615, CSA C22.2 No. 0.5,

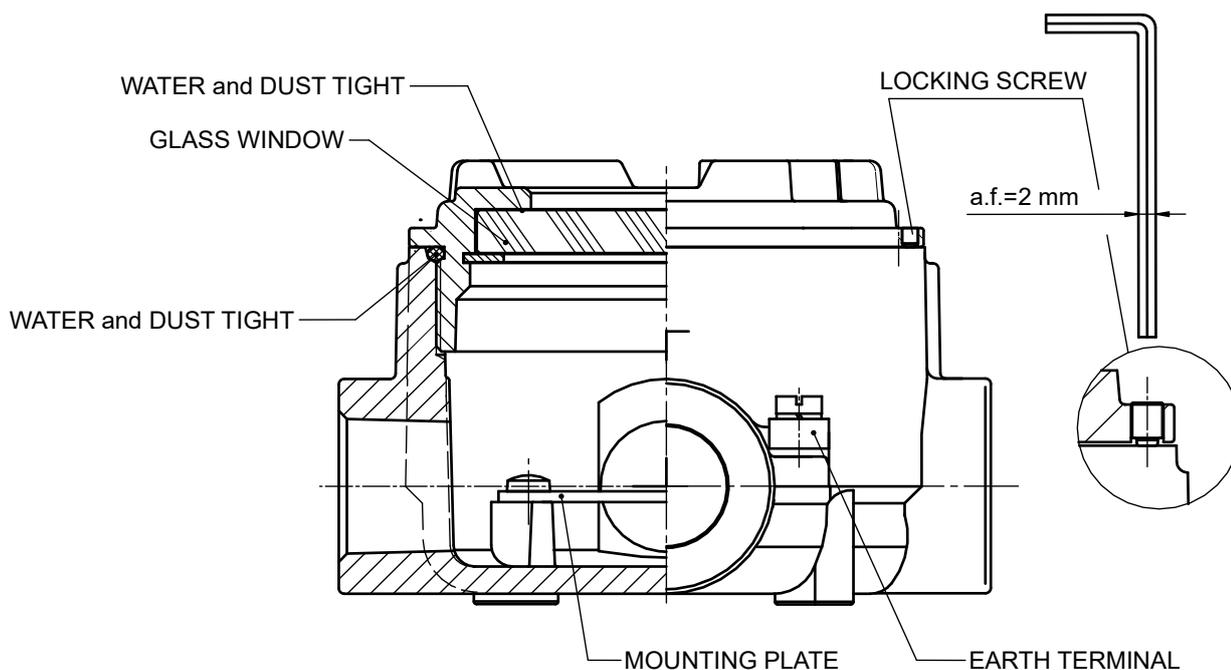
4. EARTH AND PROTECTION TERMINALS.

To these terminals can be connected with both solid wire and standard wire cables as shown in the table below.

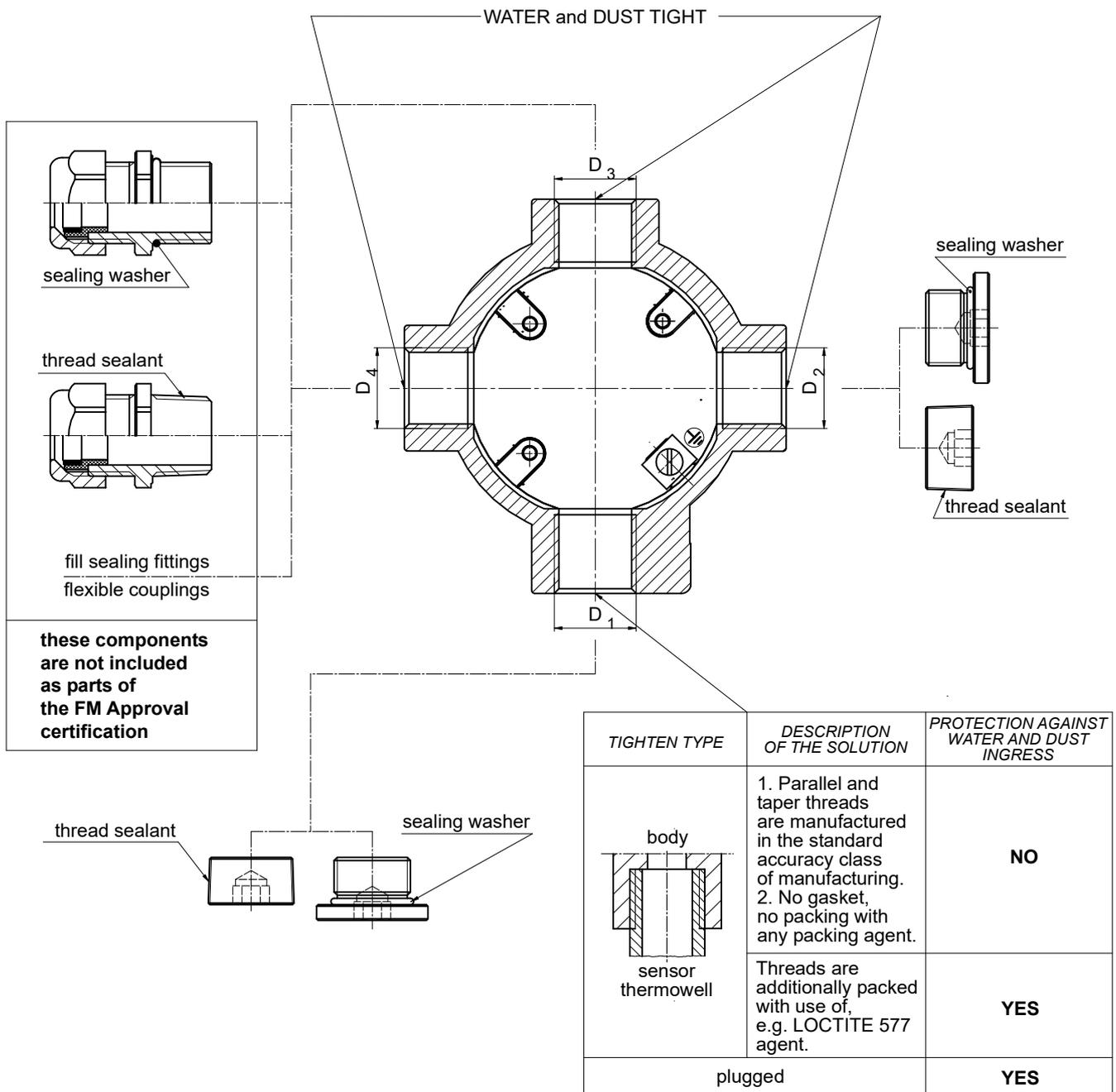
Place	Type	AWG
Inside	Protection terminal	10
Outside	Earth terminal	

5. PROTECTION AGAINST WATER AND DUST INGRESS, COVER LOCKING.

There are two places deciding of water and dust tightness.



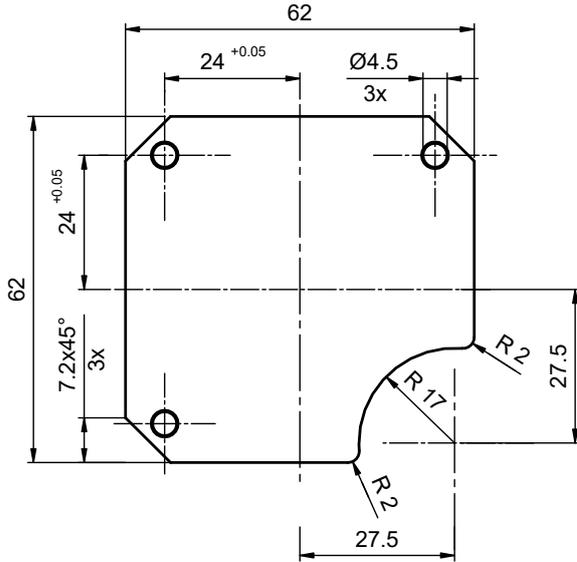
Cover is locked by screw with hex socket using hex spanner with across flat 2 [mm]. This screw is situated on the cover.



6. WAY OF MOUNTING.

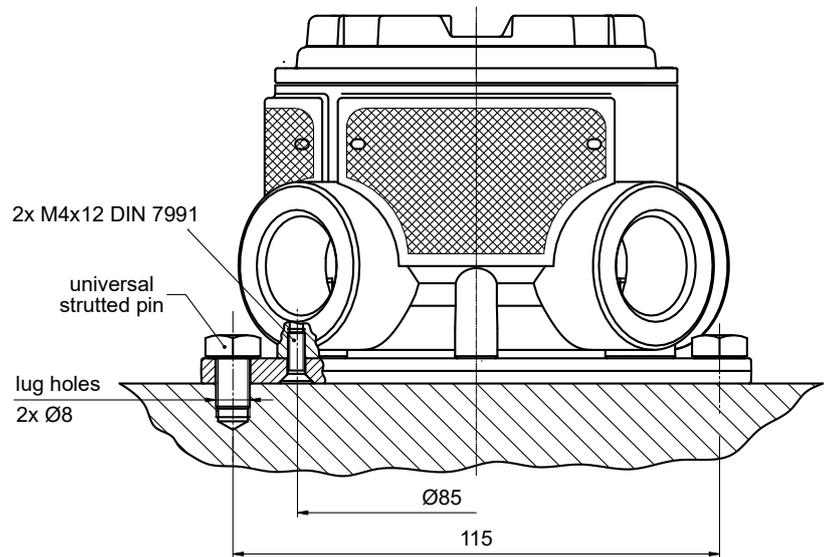
NOTES
It is important to be careful when screw on or undo a cover. Thread surface should be free of any grains, pellets and other impurity, which cause seizing, and thread could be damaged. ! Never screw on the cover forcefully !
In case of necessities of opening of the connection head's cover after 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.

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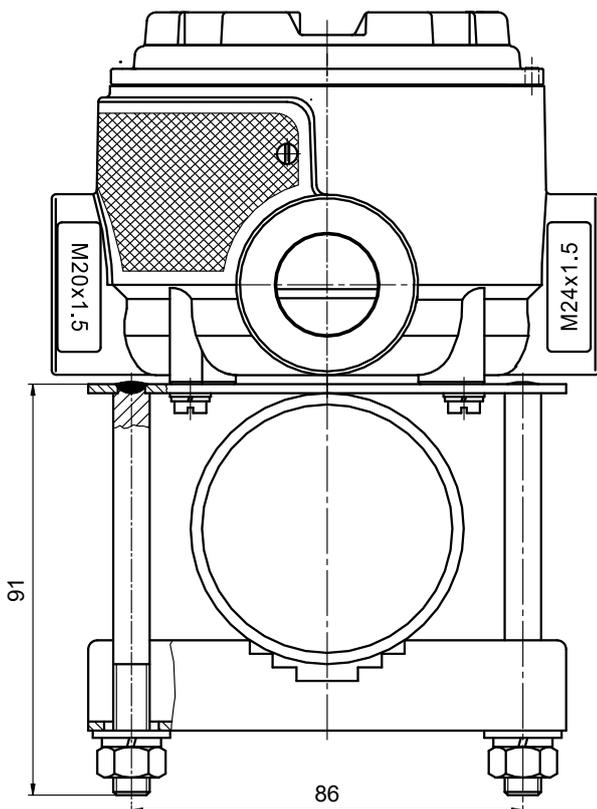


Each universal box type XD-JB85 and XD-JB85win can be equipped with mounting plate. Customer can freely make holes for a mounting e.g. electric, electronic unit, etc.

Mounting to wall

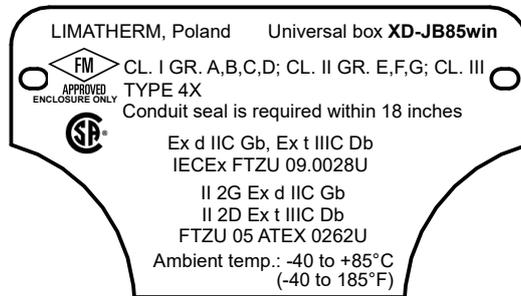
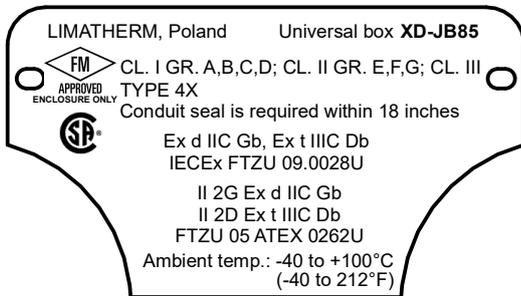


Mounting to pipe



7. MARKING.

Each universal box is equipped with product nameplate on the outside surface of the body. Serial number label is glued on the inner surface of the body.



Producer of instrument should apply additional own label with the rest marking of complete sensor or transfer valuable information from Limatherm's label to instrument label. To each batch of junction box will be attached also this Application Manual with drawing of the marking label.

Places for product labels

