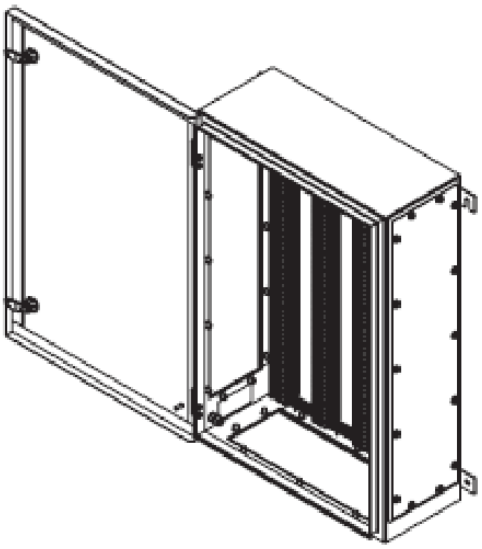
User Manual
ZONEX
Installation Instructions and Safety Data Sheet

Installation Instructions and Safety Data Sheet
Hoffman Terminal Block Enclosures With Stopping Plugs and Breather Drains

IMPORTANT : THIS DOCUMENT SHOULD BE READ CAREFULLY BEFORE COMMENCING INSTALLATION



CERTIFICATION MARKING
Ex e IIC T6 Gb (Ta -55°C to +40°C)
Ex ia IIC T6 Gb (Ta -55°C to +40°C)
(Ta -40°C to +40°C) Ex tb IIIC T85°C Db IP 66

Ex e IIC T5 Gb (Ta -55°C to +55°C)
Ex ia IIC T5 Gb (Ta -55°C to +55°C)
(Ta -40°C to +55°C) Ex tb IIIC T100°C Db IP 66

Ex e IIC T4 Gb (Ta -55°C to +**°C)
Ex ia IIC T4 Gb (Ta -55°C to +**°C)
Ex tb IIIC T135°C Db IP 66

Ex e IIC T3 Gb (Ta -55°C to +***°C)
Ex ia IIC T3 Gb (Ta -55°C to +***°C)
Ex tb IIIC T200°C Db IP 66

CERTIFICATION NUMBER
Terminal Populated Enclosure ATEX Certification Number: Sira 07ATEX3260X
Terminal Populated Enclosure IECEx Certification Number: SIR 09.0100X

PRODUCTS CERTIFICATIONS
Empty Enclosure ATEX Certification Number: Sira 9ATEX3224U
Empty Enclosure IECEx Certification Number: SIR 09.0099U

Empty Enclosure ATEX CertificationNo: TUV13 ATEX120808U
Empty Enclosure IECEx Certification Number: IECEx TUV3.0001U

Manufacturer	Terminal Type	Coded	Certificate No.
Phoenix	Type UK N Series	Ex e II	KEMA 98ATEX1651 U IECEx KEM 06.0034U
Phoenix	Type UK 10N	Ex e II	KEMA 98ATEX1786 U IECEx KEM 06.0029U
Weidmuller	Type SAK Series	Ex e II	IECEx KEM06.0014U
Weidmuller	Type W Series	Ex e II	KEMA98ATEX1683U KEMA98ATEX1684U IECEx ULD 05.0008U IECEx KEM07.0053U

Pilot Lights, Push Buttons and Contact Blocks
Hoffman model EXWK##SS6 Window kit IECEx SIR 13.0123U, Hoffman model EXWK##SS6 Window kit 13ATEX3315U

Manufacturer	Terminal Type	Coded	Certificate No.
Adalet	Pilot Lights	Ex*# pigtail leads EL*T terminal leads	IECEx UL.09.003U DEMKO 09 ATEX 146638U
Adalet	Pushbutton	EHPB, EHPBM	IECEx UL.09.002U
Adalet	Contact Block	EBT	IECEx UL.09.001U DEMKO 09 ATEX 0821714U

Marking with Pilot Lights, Push Buttons with Contact Blocks
Marking; the following will be applied as a condition of manufacture when installing pilot lights and pushbuttons with contact blocks:
"The manufacturer shall modify the marking to include additional protection concept letters and to select gas group, ambient temperature range and index protection rating that are appropriate to the combination of devices that are fitted. E.g. Ex e mb IIC T* Gb/Ex tb IIIC T** Db.
Note: 'Ex tD A21' coding may be replaced by 'Ex tb' coding."

These installation instructions give guidance on selection of Hoffman products and general instructions for safety and installation of chosen Hoffman products. All Hoffman Enclosures products should only be used in applications and environments as detailed in these in- structions and other Hoffman Enclosures literature.

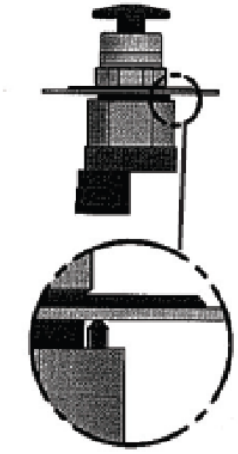
Hoffman Enclosures Inc. will not take responsibility for any damage, injury or form of loss caused where products are not installed or used as detailed in these instructions. If in doubt, further advice can be obtained from our Technical Department.

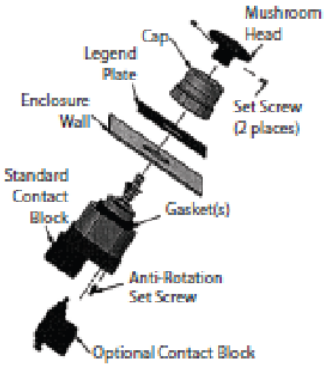
ENCLOSURE INSTALLATION

- The equipment may be used with flammable gases, vapours and/or combustible dusts with apparatus groups II and with a temperature class T6 or T5 or T4 or T3.
- The equipment is only certified for use in ambient temperatures in the range −20oC to +40oC or +55°C and should not be used outside this range.
- Installation shall be carried out by suitably−trained personnel in accordance with the applicable code of practice e.g. EN 60079−14:1997.
- Inspection and maintenance of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice e.g. EN 60079−17.
- Repair of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice e.g. EN 60079−19.
- The certification of this equipment relies upon the following materials used in its construction:
- Stainless Steel
- Silicone
- If the equipment is likely to come into contact with aggressive substances, then it is the responsibil- ity of the user to take suitable precautions that prevent it from being adversely affected, thus ensur- ing that the type of protection provided by the equipment is not compromised.

Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

Suitable precautions: e.g. regular checks as part of routine inspections or establishing from the ma- terial's data sheets that it is resistant to specific chemicals.





Pilot Light, Pushbutton and Contact Block Instructions

Reference Adalet Pilot Light, Push button and contact block instructions DS842, DS843, DS845 or DS847.

E-Series pilot lights, E-Series push buttons and selector switches and the EBT contact blocks may only be installed in equipment marked for a maximum ambient of Ta +60°C

1. Contact block will accommodate wire sizes from 22AWG (0.5mm2) to 12 AWG (4mm2) with a maximum of two wires per terminal. Strip Insulation 10-12mm. Tight terminal screws to 7-20 in-lbs.
2. Maximum working voltage 660VAC, 300VDC

The maximum power dissipation for each enclosure shall be reduced by 1.2 W for each pilot light fitted and contact block/push button arrangement fitted.

Maximum entry locations permitted within the metallic enclosures for the pilot lights and push buttons is determined by the allowed dimension spacing of the hole diameter and the respective vertical and horizontal spacing of 53mm and 66 mm. The maximum power dissipation of the enclosure is reduced 1.2 W for each pilot Light and push button. This shall be taken into account for the calculation of total power calculation in accordance with EN60097-7:2007 Annex E and E.2.

Window Kit Instructions

Hoffman model EXWK##SS6 window kit may be installed in enclosure. See Hoffman instruction part number 89104536.

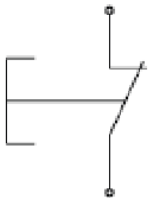
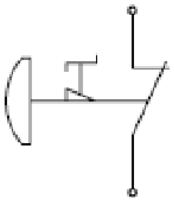
Manufacturer	Terminal Type	Coded	Certificate No.
Cortem	Pushbutton devices	M-0603, M-0604 and M-0605 II 2GD Ex e IIC Gb; Ex tb IIIC Db IP66	ATEX CESI 09 ATEX 075U , IEC Ex CES 11.0029U
Cortem	Contact block	M-0530 and M-0531 Ex de IIC Gb	ATEX CESI 09 ATEX 016U IEC Ex CES 11.0031U
Cortem	LED pilot lights	M-0612 and M-0487 Ex de IIC Gb Ex tb IIIc Db IP66	ATEX CESI 00 ATEX 060U IEC Ex CES 11.0030U

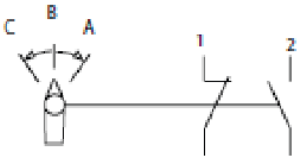
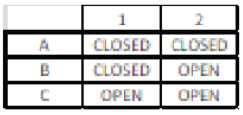
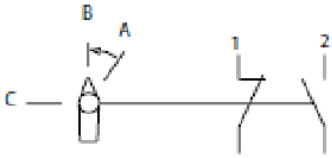
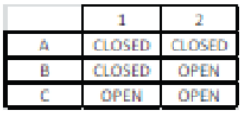
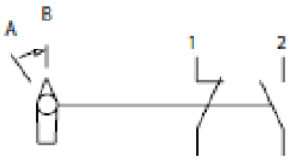
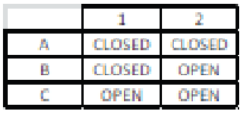
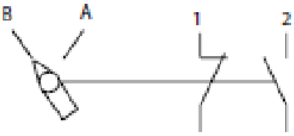
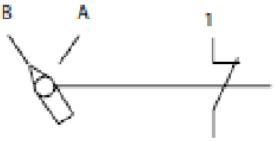
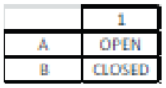
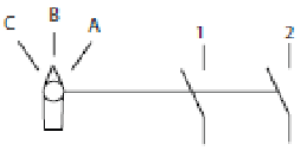
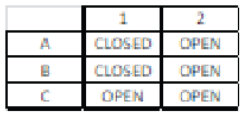
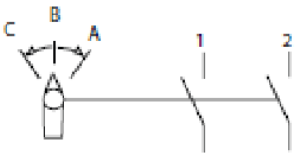
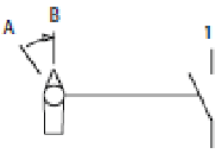
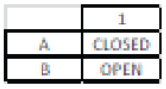
Cortem Pilot Light M-0612/3 and M-0487
Rated Voltage; 12V up to 240 V ac/dc- 50/60HZ
Rated Power for M0612 type; 1.5W
Rated Current for M-0487 Type; 20 ,A
Passing through hub 15.5mm and 32.5mm diameter
Rated Ambient Temperature -40C to +60C
Pilot Lights must be assembled on the cover or walls of a metallic or plastic enclosure with a minimum thickness of 1.5mm and blocked with a Locknut.
The clearance and creapage distances when installed must be according to clause 4.3, 4.4, and table 1 of IEC 60079-7.

Cortem Pushbutton Actuator M-0603, M-0604 and M-0605
Diameter of enclosure through-hole: 32mm
Rated Ambient Temperature -40C to +60C
The command actuators must be assembled on the cover or walls of the metallic and/or plastic enclosures
Command actuators shall be mounted on the enclosure with a thickness 1mm to 10mm and a hole diameter of 32mm with a tolerance of -0mm / +0.10mm

Cortem Contact Block M-0530 (Contact NO green) and M-0531 (Contact NC- Red)
Maximum voltage@ AC current: 400V @ 10A, 500V @ 5A, 690V @ 2 A
Maximum voltagem@ DC current: 690V @ 2A
Maximum Conductor: 2.5mm^2
Rated Ambient Temperature -40C to +60C
When the contact blocks are installed in an Ex e enclosure the clearances and creapages distances according to clause 4.3 and 4,.4 of the IEC 60079-7 standard have to be fulfilled.
The maximum admitted voltage up to 690V is guaranteed for a single contact block. For double assembly contact blocks the maximum admitted voltage is 320V. In the case of quadruple assembly contact blocks the maximum admitted voltage is 190V. For the quadruple assembly blocks, it is necessary to separate different contact blocks with interposing a partition, having a thickness of 2.0mm to guarantee the maximum admitted voltage up to 600 V.

For All Cortem Pilot Pushbuttons and Contact Blocks
When the component are installed in electrical apparatus, care must be taken that the temperature at the mounting place are within service temperature.
The saftety instructions for the CORTEM components shall be strictly respected.
The maximum power dissipation for each enclosure shall be reduces by 1.5W for each pilot Light and or contact block
Maximum entry locations permitted within an enclosure for the pilot lights and pushbuttons is determined by the allowed dimension spacing of the hole diameter and the respective vertical and horizontal spacing (see diagrams below). The maximum power dissipation of the enclosure is reduced by 1.5W for each pilot light and push button. This shall be taken into account for the calculation of the total power calculation in accordance with EN 60079-7:2012

Pushbutton with NC contact	Pushbutton with NO contact	Mushroom-head pushbutton with NC twist release
		

Code	Selector	
X	3-positon control with spring return to B from both A and C	 
R	3-positon control with spring return both A and B and maintained C	 
RSX	3-positon control with spring return both A and B and maintained C	 
Z	2-position control maintained	 
I	Control switch	 
C	3-position control maintained	 
W	3-position control with spring return to B from both A and C	 
M	Control with spring return	 

MAXIMUM POWER

The total dissipated power for the Junction box shall be calculated in accordance with EN 60079–7:2007, Annex E,E.2. The total calculated dissipated power shall not exceed the figures given in Table below. Junction Boxes may also be manufactured to sizes not specified in the Table above. This assumes that any given dimension is not larger than the respective dimension of the largest enclosure or smaller than the respective dimension of the smallest enclosure. The power rating applied to a Junction Box of intermediate size is that of the next smallest enclosure.

Table 1 - Maximum Power Dissipation for Screw Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
260	260	160	16.5	16.5
306	306	160	17.5	17.5
380	260	160	18.5	18.5
458	382	160	26.0	26.0
500	350	160	26.5	26.5
260	260	205	15.5	15.5
306	306	205	17.5	17.5
380	260	205	18.5	18.5
480	480	205	25.5	25.5
500	350	205	23.5	23.5
620	450	205	28.0	28.0
745	550	205	33.0	33.0
762	508	205	32.5	32.5

Table 2 - Maximum Power Dissipation for Cage Clamp Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
260	260	160	4.1	4.1
306	306	160	4.4	4.4
380	260	160	4.6	4.6
458	382	160	6.5	6.5
500	350	160	6.6	6.6
260	260	205	3.9	3.9
306	306	205	4.4	4.4
380	260	205	4.6	4.6
480	480	205	6.4	6.4
500	350	205	5.9	5.9
620	450	205	7.0	7.0
745	550	205	8.3	8.3
762	508	205	8.1	8.1

Metallic Hinged Enclosure

Table 3 - Maximum Power Dissipation for Screw Type Ex e or Ex ia Terminals Fitted:						
Size			T3		T4	
Length (mm)	Width (mm)	Depth (mm)	Maximum Power Dissipation (W)	Maximum Ambient (°C)	Maximum Power Dissipation (W)	Maximum Ambient (°C)
260	260	160	22.9 W	75°C	22.9 W	75°C
306	306	160	31.13 W	60°C	31.13 W	60°C
380	260	160	45.1 W	60°C	45.1 W	60°C
458	382	160	78.63 W	50°C	78.63 W	50°C
500	350	160	82.1 W	50°C	82.1 W	50°C
260	260	205	25.7 W	80°C	25.7 W	80°C
306	306	205	35.5 W	55°C	35.5 W	55°C
380	260	205	38.15 W	55°C	38.15 W	55°C
480	480	205	103.9 W	55°C	103.9 W	55°C
500	350	205	82.9 W	55°C	82.9 W	55°C
620	450	205	128.25 W	45°C	128.25 W	45°C
745	550	205	193.6 W	45°C	193.6 W	45°C
762	508	205	198.4 W	45°C	198.4 W	45°C

Cable entry warning required:
Warning: cable entry may reach 29° above marked ambient.

Table 4 - Maximum Power Dissipation for Cage Clamp Type Ex e or Ex ia Terminals Fitted:						
Size			T3		T4	
Length (mm)	Width (mm)	Depth (mm)	Maximum Power Dissipation (W)	Maximum Ambient (°C)	Maximum Power Dissipation (W)	Maximum Ambient (°C)
260	260	160	5.72 W	75°C	5.72 W	75°C
306	306	160	7.78 W	60°C	7.78 W	60°C
380	260	160	11.2 W	60°C	11.2 W	60°C
458	382	160	19.65 W	50°C	19.65 W	50°C
500	350	160	20.52 W	50°C	20.52 W	50°C
260	260	205	6.42 W	80°C	6.42 W	80°C
306	306	205	8.77 W	55°C	8.77 W	55°C
380	260	205	9.53 W	55°C	9.53 W	55°C
480	480	205	25.9 W	55°C	25.9 W	55°C
500	350	205	20.72 W	55°C	20.72 W	55°C
620	450	205	32.06 W	45°C	32.06 W	45°C
745	550	205	48.4 W	45°C	48.4 W	45°C
762	508	205	49.6 W	45°C	49.6 W	45°C

Cable entry warning required:
Warning: cable entry may reach 29° above marked ambient.

Metallic Screw Cover Enclosure

Table 5 - Maximum Power Dissipation for Screw Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
102	102	76	3.8 W	3.8 W
152	152	101	6.9 W	6.9 W
177	177	101	6.9 W	6.9 W
215	146	127	9.6 W	9.6 W
254	254	127	9.6 W	9.6 W

Table 6 - Maximum Power Dissipation for Cage Clamp Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
102	102	76	0.95 W	0.95 W
152	152	101	1.7 W	1.7 W
177	177	101	1.7 W	1.7 W
215	146	127	2.4 W	2.4 W
254	254	127	2.4 W	2.4 W

Table 7 - Maximum Power Dissipation for Screw Type Ex e or Ex ia Terminals Fitted:						
Size			T3		T4	
Length (mm)	Width (mm)	Depth (mm)	Maximum Power Dissipation (W)	Maximum Ambient (°C)	Maximum Power Dissipation (W)	Maximum Ambient (°C)
102	102	76	3.8 W	90°C	3.8 W	90°C
152	152	101	8.3 W	80°C	8.3 W	80°C
177	177	101	8.3 W	80°C	8.3 W	80°C
215	146	127	15.0 W	70°C	15.0 W	70°C
254	254	127	15.0 W	70°C	15.0 W	70°C

Cable entry warning required:
Warning: cable entry may reach 29° above marked ambient.

Table 8 - Maximum Power Dissipation for Cage Clamp Type Ex e or Ex ia Terminals Fitted:						
Size			T3		T4	
Length (mm)	Width (mm)	Depth (mm)	Maximum Power Dissipation (W)	Maximum Ambient (°C)	Maximum Power Dissipation (W)	Maximum Ambient (°C)
102	102	76	0.95 W	90°C	0.95 W	90°C
152	152	101	2.0 W	80°C	2.0 W	80°C
177	177	101	2.0 W	80°C	2.0 W	80°C
215	146	127	3.75 W	70°C	3.75 W	70°C
254	254	127	3.75 W	70°C	3.75 W	70°C

Cable entry warning required:
Warning: cable entry may reach 29° above marked ambient.

Non Metallic Screw Cover Enclosure

'X' Condition non-metallic enclosures are only permitted to be installed in low risk impact areas.

Table 9 - Maximum Power Dissipation for Screw Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
75	80	75	2.7 W	2.7 W
75	110	75	3.4 W	3.4 W
75	160	75	4.5 W	4.5 W
75	190	75	3.9 W	3.9 W
120	122	90	5.4 W	5.4 W
160	160	90	7.3 W	7.3 W
160	260	90	9.3 W	9.3 W
160	560	90	10.4 W	10.4 W
250	255	120	16.8 W	16.8 W
250	400	120	13.1 W	13.1 W
405	400	120	19.8 W	19.8 W
405	400	165	24.2 W	24.2 W

Cable entry warning required:
Warning: cable entry may reach 29° above marked ambient.

Table 10 - Maximum Power Dissipation for Cage Clamp Type Ex e or Ex ia Terminals Fitted:				
Size			Maximum Power Dissipation (W)	
Length (mm)	Width (mm)	Depth (mm)	T6 at Ta = +40°C	T5 at Ta = +55°C
75	80	75	0.65 W	0.65 W
75	110	75	0.85 W	0.85 W
75	160	75	1.1 W	1.1 W
75	190	75	0.97 W	0.97 W
120	122	90	1.35 W	1.35 W
120	220	90	1.35 W	1.35 W
160	160	90	1.8 W	1.8 W
160	260	90	2.3 W	2.3 W
160	360	90	2.3 W	2.3 W
160	560	90	2.6 W	2.6 W
250	255	120	4.2 W	4.2 W
250	400	120	3.27 W	3.27 W
405	400	120	4.9 W	4.9 W
405	400	165	6.0 W	6.0 W

Cable entry warning required (for T5 marked enclosures only):
Warning: cable entry may reach 19° above marked ambient.
For non-metallic enclosures, before closing the door verify the gasket is undamaged and properly aligned with the enclosure flange

MAINTENANCE AND SERVICE

When performing maintenance or service on the Hoffman ZonEx enclosure, the following items should be observed:

1. Gaskets should be reliably secure to the inside surface of the door.
2. Gasket corner seams should be tight and glued.
3. Gaskets should not show any signs of deterioration that could directly impact the enclosure's environmental performance.
4. If any of the conditions described in items 1 through 3 are violated, the gasket should be replaced.
5. All gland plate screws should be tight and torqued to 35Nm.
6. When cleaning the enclosures, only a damp cloth may be used.

Earthing

TERMINAL WIRING

All wiring and jumpers must be carried out in accordance with the relevant code of practice and / or instructions e.g. BS EN 60079–14 and EN 50281.

1. The voltage, current, and maximum dissipated power shown on the label must not be exceeded.
2. Individual circuits must be protected against over correct.
3. The installer must ensure that the limiting temperature does not exceed 85ºC (T6) or 100ºC (T5).
4. The wiring installation must extend to within 1mm of the metal face of the terminal. All leads must be insulated for the appropriate voltage.
5. Not more than one single or multiple stranded lead shall be connected into either side of the terminals. A parallel shaft screwdriver of the correct size should be used.
6. Any suitably certified terminal may be fitted in the junction boxes providing that they conform with the following requirements:
   - The terminals are compliant with the EN 60079 series of standards.
   - The terminals are screw type only.
   - The terminals shall be fitted in accordance with the manufacturer's instructions and any special conditions for safe use that are specified in their certificate.
   - When installed, the terminals shall have the minimum clearance to earth that is shown on the specified drawings.
   - When terminals are installed within a T6 enclosure they shall be rated for a minimum of +80°C and when terminals are installed within a T5 enclosure they shall be rated for minimum of +95°C.
   - Weidmuller WDU 1.5 and WDU 2.5 terminals must be limited to a maximum current of 15 A.
   - The user/installer of the Junction Boxes shall be provided with a copy of the certificate that appertains to the particular terminals that are fitted in that box.
   - All terminal screws used and unused shall be fully tightened down.
   - The installer shall ensure creepage and clearance distances are not reduced.

STOP PLUG AND BREATHER DRAIN

Breather Drain:
Sira99ATEX3050U Stopping Plug:
Sira00ATEX1094
NOTE: Install stop plugs and breathers per manufacturers instruction sheet included with product

SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- Non-metallic enclosures of size range 75 mm x 80 mm x 75 mm to 120 mm x 122 mm x 90 mm inclusive shall only be installed in areas of low mechanical impact risk.
- Since light metals are used at the accessible surface of the products incorporating aluminium enclosures, in rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered when these products are used in locations that specifically require Group II, EPL Ga equipment.
- Some enclosures are non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- The flameproof joint parameters of the Adalet Contact block are as follows:

Joint	Width of Joint, L (mm)
Cylindrical joint between the shaft and shaft bushing	7.68 mm
Spigot joint between the contact body and cover (Cylindrical portion)	6.32 mm

Assembly BOM

Enclosure p/n or S/N:_____ Maximum Allowed Power_____

Item	Component Model	Quantity	
Enclosure			
Terminal			
Glands			
Breather			
Number of DIN Rails			