

EJB, Style D Series Classified Enclosures

Installation & Maintenance Information

COOPER Crouse-Hinds

IF 1444

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATION

EJB Style D series explosion proof classified enclosures are used as classified enclosures, pull boxes or custom control panels in rigid conduit systems and with metal clad cable rated for hazardous locations. Third party approvals (UL and CSA) allow for field addition of drilled and tapped NPT conduit entries on sides, top and bottom of enclosure. Field addition of device holes on cover for EMP or similar devices is also permitted. Attached instructions must be followed to maintain approvals.

EJB series classified enclosures are suitable for use indoors or outdoors and are UL listed and cUL certified to CSA Standards for Class I, Groups B, C and D; Class II, Groups E, F and G; and Class III hazardous (classified) locations as defined by the National Electrical Code® and the Canadian Electrical Code®. EJB classified enclosures include a gasket on the cover to meet Type 4 watertight requirements.

EJB series classified enclosures ordered with suffix -ATEX meet the ATEX directive and are certified by PTB. EJB classified enclosures with -ATEX suffix have the following classification: (Ex) II 2 G D EEx d IIB + H2. ATEX certified boxes have an IP 66 rating. ATEX suffix junction box complies with EN50014:1997 and EN50018:2000 Certificate PTB-05-ATEX 1062U. ATEX certified boxes cannot be field drilled and tapped for conduit entries. All conduit entries must be drilled and tapped by Cooper Crouse-Hinds at the factory. Breather and drain options are not available on ATEX certified enclosures.

EJB series classified enclosures should be installed, inspected and maintained by qualified and competent personnel.

INSTALLATION

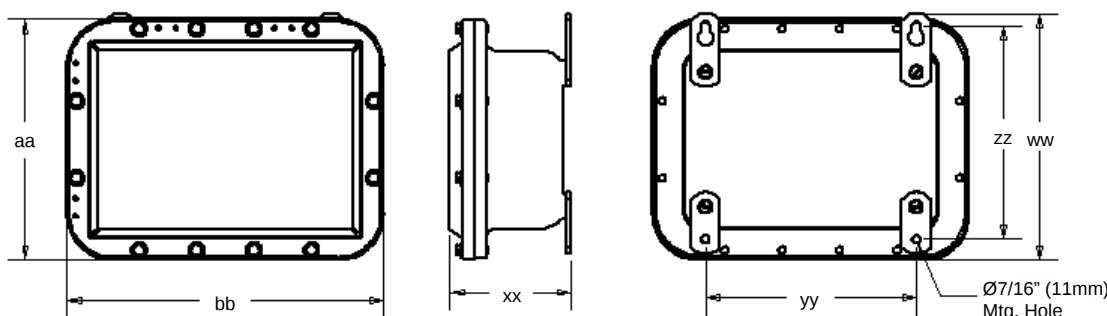


WARNING

To avoid risk of electrical shock, electrical power must be off before and during installation and maintenance.

1. EJB series classified enclosures are furnished with or without drilled and tapped openings. Drilling and tapping of conduit openings and device openings on cover are subject to the limitations of maximum size and number of openings as well as spacings. Refer to DRILLING AND TAPPING section following. All machining must be done prior to installation.

2. Select a mounting location that will provide suitable strength and rigidity for supporting all contained wiring and control devices. Figure 1 shows the mounting dimensions for the four detachable mounting feet.
3. Remove cover bolts securing cover. Carefully set cover aside to prevent damage to the machined joint and cover gasket. Remove mounting feet kit, balance of cover screws and hinge kit (if ordered with suffix -S598) from inside enclosure.
4. Install mounting feet.
 - Use (4) 5/16-18 screws supplied to attach mounting foot to pre-drilled hole on back wall of enclosure



IMPORTANT
ATEX certified boxes **MAY NOT**
be field drilled and tapped.
Conduit entries must be
machined by factory.

Catalog No.	Inside Depth	DIMENSIONS - INCHES (Millimeters)						Net Weight Pounds (Kilograms)
		aa	bb	ww	xx	yy	zz	
EJB060404	4-5/8 (118)	8-11/32 (212)	10-11/32 (288)	8-3/4 (222)	6-1/8 (156)	5 (127)	7-1/8 (181)	43 (16)
EJB060404 SA	4-5/8 (118)	8-11/32 (212)	10-11/32 (288)	8-3/4 (222)	6-1/8 (156)	5 (127)	7-1/8 (181)	16 (6)
EJB080604	4-5/8 (118)	10-15/32 (266)	12-15/32 (317)	10-25/32 (274)	6-3/16 (157)	7 (178)	9-1/8 (232)	64 (24)
EJB080604 SA	4-5/8 (118)	10-15/32 (266)	12-15/32 (317)	10-25/32 (274)	6-3/16 (157)	7 (178)	9-1/8 (232)	24 (9)
EJB080606	6-5/8 (168)	10-15/32 (266)	12-15/32 (317)	10-25/32 (274)	8-3/16 (208)	7 (178)	9-1/8 (232)	84 (31)
EJB080606 SA	6-5/8 (168)	10-15/32 (266)	12-15/32 (317)	10-25/32 (274)	8-3/16 (208)	7 (178)	9-1/8 (232)	32 (12)
EJB080806	6-5/8 (168)	12-15/32 (317)	12-15/32 (317)	12-25/32 (325)	8-7/32 (209)	7 (178)	11-1/8 (283)	98 (37)
EJB080806 SA	6-5/8 (168)	12-15/32 (317)	12-15/32 (317)	12-25/32 (325)	8-7/32 (209)	7 (178)	11-1/8 (283)	37 (14)
EJB101008 SA	8-5/8 (219)	14-21/32 (372)	14-21/32 (372)	14-7/8 (378)	10-3/8 (264)	9 (229)	13-1/8 (333)	59 (22)
EJB120604 SA	4-5/8 (118)	10-1/2 (267)	16-1/2 (419)	10-13/16 (275)	6-3/16 (157)	11 (279)	9-1/8 (232)	32 (12)
EJB120804	4-5/8 (118)	12-1/2 (318)	16-1/2 (419)	12-13/16 (325)	6-3/8 (162)	11 (279)	11-1/8 (283)	103 (38)
EJB120804 SA	4-5/8 (118)	12-1/2 (318)	16-1/2 (419)	12-13/16 (325)	6-3/8 (162)	11 (279)	11-1/8 (283)	39 (15)
EJB120808 SA	8-5/8 (219)	12-1/2 (318)	16-1/2 (419)	12-13/16 (325)	10-3/8 (264)	11 (279)	11-1/8 (283)	56 (21)
EJB141006 SA	6-5/8 (168)	14-21/32 (372)	18-21/32 (474)	14-7/8 (378)	8-15/32 (215)	13 (330)	13-1/8 (333)	66 (25)
EJB160404	4-5/8 (118)	8-1/2 (216)	20-1/2 (521)	8-13/16 (224)	6-5/32 (156)	15 (381)	7-1/8 (181)	86 (32)
EJB160404 SA	4-5/8 (118)	8-1/2 (216)	20-1/2 (521)	8-13/16 (224)	6-5/32 (156)	15 (381)	7-1/8 (181)	33 (12)

* Body and Cover

Figure 1. EJB Style D Dimensions

® National Electrical Code is a Register Trademark of the National Fire Protection Association.

® Canadian Electrical Code is a voluntary code for Adoption and Enforcement by Regulatory Authorities.

- Securely fasten enclosure to the mounting location, then attach into conduit system. Install approved conduit or cable sealing fittings in all conduit entries within 18 inches of enclosure.

⚠ CAUTION

To avoid risk of ignition:

- Hazardous location information specifying class and group listing of each device is marked on the nameplate of each enclosure. Class and group listing for any device penetrating the enclosure must be suitable for the classification of the location in which the enclosure is installed.
- All unused conduit openings must be plugged with a listed plug that engages a minimum of five full threads and is a minimum of 1/8 inch thick. Use Cooper Crouse-Hinds PLG Series plugs.
- In Class I, Division 1 locations, conduit sealing fittings **MUST** be installed in each attached conduit run (within eighteen inches of the enclosure) to comply with the latest edition of the National Electrical Code plus any other applicable code.

⚠ CAUTION

To avoid risk of ignition:

Hammers or prying tools must not be allowed to damage the flat machined-joint surfaces or cover gasket. Do not handle covers roughly, or place them on surfaces that might damage or scratch the flat machined joint surfaces.

- Pull wires into enclosure, making sure they are long enough to make the required connections. Make all electrical connections. Enclosures with suffix "ATEX" are provided with an external grounding lug. The internal grounding terminal shall be used as equipment grounding means. The external terminal is only a supplemental bonding connection.
- Test wiring for correctness with continuity checks and also for unwanted grounds with insulation resistance tester.

⚠ CAUTION

To avoid risk of ignition:

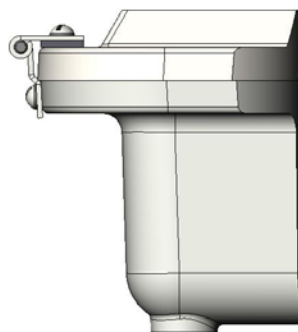
Clean both machined-joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flat machined-joint surfaces. Surfaces must seat fully against each other to provide a proper explosionproof joint.

- To install cover, make sure cover and body machined joint surfaces are clean and not scratched. Lift cover to approximate position, and line up bolt holes of cover with body. **Avoid** sliding cover machined joint surface over machined joint surface of body. Cover and body bolt holes must match up. Hand start the corner bolts. Fully tighten all cover bolts in the cover. See Table 1

CATALOG NUMBER	COVER SCREW	REQUIRED TORQUE	
		FOOT-POUNDS	NEWTON-METERS
EJB060404	1/4-20	10 - 15	14 - 20
EJB080604	5/16-18	20 - 25	27 - 34
EJB080606	5/16-18	20 - 25	27 - 34
EJB060806	5/16-18	20 - 25	27 - 34
EJB101008	3/8-16	35 - 40	48 - 54
EJB120604	3/8-16	35 - 40	48 - 54
EJB120804	3/8-16	35 - 40	48 - 54
EJB120808	3/8-16	35 - 40	48 - 54
EJB141006	3/8-16	35 - 40	48 - 54
EJB160404	3/8-16	35 - 40	48 - 54

Table 1

- If hinges were ordered (suffix -S598) install hinges to body and cover as shown in figure 2 and 3.
- Install sealing fittings (when required) in accordance with the instructions supplied with each of the approved fittings and sealing compound.



- Attach female hinge leaf to cover using two lock washers and screws as shown. When required, place spacer between cover and female leaf.
- After female hinge leaf is secured to cover, slide pin of male hinge leaf into female leaf. Align mounting holes with holes in body flange and secure with two lock washers and screws.

Note: Spacer required on EJB120804 and EJB120808.

Figure 2

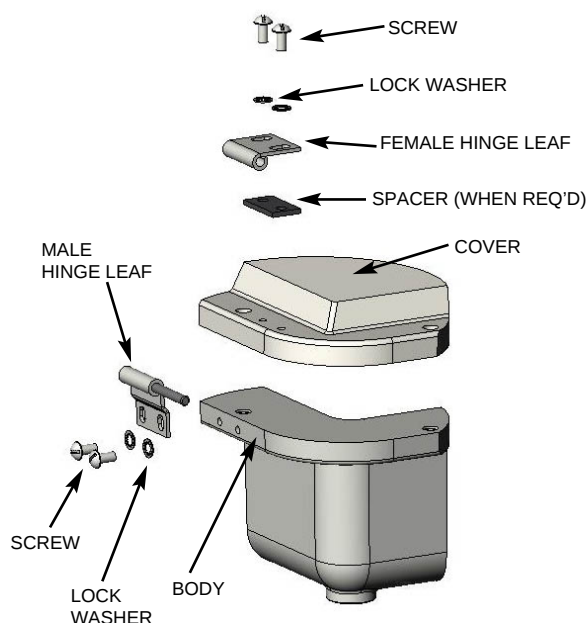


Figure 3

BREATHER AND DRAIN

(Not permitted on ATEX Certified enclosures)

Classified Enclosures installed with breather and/or drains must be protected during hosedown operations. The junction box is watertight but the breather and drain are not.

⚠ CAUTION

To avoid risk of ignition check breather and/or drain or their carton label to be certain that they are suitable for the hazardous location (class and group) in which they are being installed.

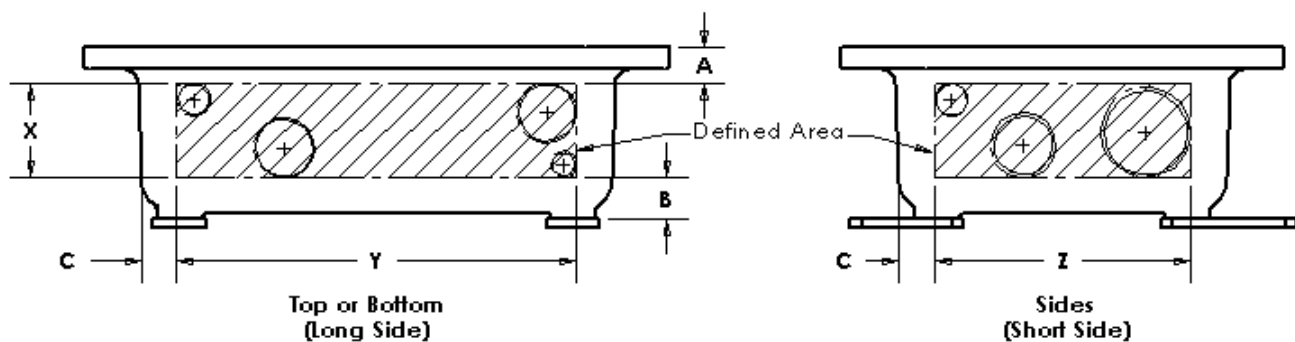
DRILLING AND TAPPING FOR CONDUIT ENTRIES

(ATEX Certified boxes must have all drilled and tapped conduit entries machined at Cooper Crouse-Hinds factory)

- To comply with the NEC, all conduit entries must be provided with a smooth rounded entry into the enclosure. This may be accomplished in various ways including the use of Crouse-Hinds RE reducers or by using LNR series conduit liners.

The location and maximum sizes of conduit openings must be in accordance with Table 2 on the next page.

- Female conduit openings or entries must be taper tapped with the thread form and taper (3/4 in. per ft.) conforming to NPT. A standard NPT male gage must enter the tapped opening 1-1/2 turns past the gage notch. Openings are tapped deeper than standard NPT gage to ensure a minimum of five full threads engagement with standard NPT threaded conduit.



Catalog No.	Maximum Size of Drilled and Tapped Conduit Openings								Outlined Dimensions Defined Area			Dimensions Defined Area		
	(Long Side)				(Short Side)									
	Number of Openings				Number of Openings									
	1	2	3	4	1	2	3	4	A	B	C	X	Y	Z
EJB060404	2	1-1/2	1		2	3/4			1	1-1/16	1-3/16	2-1/2	4-3/4	2-3/4
EJB060404 SA	2	1-1/2	1		2	3/4			1	1-1/16	1-3/16	2-1/2	4-3/4	2-3/4
EJB080604	2	2	1-1/4	3/4	2	1-1/2	3/4		1	1-1/4	1-3/16	2-1/2	6-3/4	4-3/4
EJB080604 SA	2	2	1-1/4	3/4	2	1-1/2	3/4		1	1-1/4	1-3/16	2-1/2	6-3/4	4-3/4
EJB080606	3-1/2	2-1/2	1-1/4	3/4	3-1/2	1-1/2	3/4		1	1-1/4	1-7/16	4-3/8	6-3/4	4-3/4
EJB080606 SA	3-1/2	2-1/2	1-1/4	3/4	3-1/2	1-1/2	3/4		1	1-1/4	1-7/16	4-3/8	6-3/4	4-3/4
EJB080806	3-1/2	2-1/2	1-1/4	3/4	3-1/2	2-1/2	1-1/4	3/4	1	1-3/8	1-7/16	4-3/8	6-3/4	6-3/4
EJB080806 SA	3-1/2	2-1/2	1-1/4	3/4	3-1/2	2-1/2	1-1/4	3/4	1	1-3/8	1-7/16	4-3/8	6-3/4	6-3/4
EJB101008 SA	4	3	1-1/2	1	4	3	1-1/2	1	1-1/8	1-1/2	1-7/16	6-1/8	8-3/4	8-3/4
EJB120604 SA	2	2	2	1-1/4	2	1-1/2	3/4		1	1-3/8	1-3/16	2-1/4	10-3/4	4-3/4
EJB120804	2	2	2	1-1/4	2	2	1-1/4	3/4	1	1-1/8	1-3/16	2-5/8	10-3/4	6-3/4
EJB120804 SA	2	2	2	1-1/4	2	2	1-1/4	3/4	1	1-1/8	1-3/16	2-5/8	10-3/4	6-3/4
EJB120808 SA	4	4	2-1/2	1-1/2	4	2-1/2	1-1/4	3/4	1	1-1/2	1-7/16	6-1/4	10-3/4	6-3/4
EJB141006 SA	3-1/2	3-1/2	3	2	3-1/2	3	2	1	1-1/8	1-5/8	1-7/16	4-1/8	12-3/4	8-3/4
EJB160404	2	2	2	2	2	3/4			1	1-1/8	1-3/16	2-7/16	14-3/4	2-3/4
EJB160404 SA	2	2	2	2	2	3/4			1	1-1/8	1-3/16	2-7/16	14-3/4	2-3/4

TABLE 2

Consult Crouse-Hinds for proper space for installing and servicing fittings such as seals, unions, etc.

If more than four (4) conduit entries, or a mix of conduit entry trade sizes are needed in any wall of the enclosure, use the following instructions:

1. From Table 2, determine how many 4" conduit entries are permitted on a side. For example, a quantity of (2) 4" entries are permitted on the long side of an EJB120808.
2. For each 4" conduit entry permitted, one may substitute a quantity of smaller conduit entry trade sizes.
3. Some smaller enclosures cannot accept a 4" opening, in which case, the maximum number of 3-1/2" or 2" conduit openings must be determined (again, using Table 2).
4. Use Table 3 to determine how many of the smaller conduit entries may be substituted for either the 4", the 3-1/2" or the 2" trade size. Use Table 4 for minimum spacing of conduit entries.

Basis of Substitution	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
4"	7	5	4	3	2	1	1	1	1	1
3-1/2"	5	4	3	2	1	1	1	1	1	0
2"	2	2	1	1	1	1	0	0	0	0

TABLE 3

Number and size of smaller conduit entries which may be substituted for 4", 3-1/2", or 2" entries.

DRILLED AND TAPPED CONDUIT OPENINGS MINIMUM CENTER-TO-CENTER DISTANCE (IN.)										
Conduit Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
1/2	1-1/2									
3/4	1-5/8	1-3/4								
1	1-3/4	1-7/8	2							
1-1/4	2	2-1/8	2-1/4	2-1/2						
1-1/2	2-1/8	2-1/4	2-3/8	2-5/8	2-3/4					
2	2-3/8	2-1/2	2-5/8	2-7/8	3	3-1/4				
2-1/2	2-3/4	2-7/8	3-1/8	3-1/4	3-3/8	3-5/8	3-7/8			
3	3-1/8	3-1/4	3-3/8	3-1/2	3-5/8	4	4-1/4	4-5/8		
3-1/2	3-3/8	3-1/2	3-5/8	3-7/8	4	4-1/2	4-7/8	5-1/8	5-1/8	
4	3-3/4	3-7/8	4	4-1/8	4-1/4	4-1/2	4-7/8	5-1/8	5-3/8	5-3/4

TABLE 4 - Minimum clearance for unions only.

- For conduit entries with non-interfering vertical seals: center-to-center distance is the total of 1/2 the outside diameter of the larger conduit plus the turning radius of the sealing fitting used in the smaller conduit plus 1/4 inch clearance.
- For conduit entries with non-interfering horizontal seals: center-to-center distance is the total of 1/2 the outside diameter of the larger conduit plus the turning radius of the sealing fitting used in the smaller conduit plus 2 inches clearance for pouring.

IMPORTANT

While the number of openings derived from the above will result in a safe configuration, the number of openings could be reduced if center-to-center spacings were required to be increased for the following reason:

- If sealing fittings are required to be installed in the conduit, sufficient room must be provided to install, pack and pour the fitting after the conduit and fittings are installed and the conductors are in place. This is particularly important in horizontal conduit runs, when fittings are directly over one another.

IMPORTANT

The space between drilled & tapped conduit entries is a factor of the following considerations:

- Ability to install conduit with a variety of fittings (for various reasons, the conduit which is to be threaded into each conduit entry may, in turn, be threaded into a variety of fittings including (but not limited to) the following: unions, sealing fittings of various types. Dimensions of these fittings are provided in the Crouse-Hinds catalog, and should be referred to in planning a conduit layout.)
- All drilled and tapped conduit entries must fall completely within the defined areas as specified in Table 1.

DRILLING AND TAPPING FOR COVER DEVICE HOLES

(ATEX Certified boxes must have all drilled and tapped conduit entries machined at Cooper Crouse-Hinds factory)

- Maximum quantity, location and minimum spacing of cover device holes for field drilling are subject to limits shown in Table 5 on next page. Restrictions are based on size of enclosure cover.
1. Mark appropriate hole locations in accordance with Table 5.
 2. Drill a 0.938" diameter through hole perpendicular to cover surface.
 3. Tap hole using a 3/4-14 NPSM tap.
 4. Visually inspect hole for well formed thread. Gage hole with standard 3/4-14 NPSM GO / NO-GO gage.
 5. Install appropriate Crouse-Hinds EMP device or 0207959 3/4-14 NPSM plug ensuring at least 8 full threads engagement.

FOR ATEX ENCLOSURES:

- Before opening the enclosure in a flammable atmosphere circuits must be interrupted.
- The approval applies to equipment without cable glands. When mounting the flameproof enclosure in a hazardous area, only rigid metal conduit systems or flameproof cable glands certified to EN50018 must be used.
- All unused conduit entries must be closed with a flameproof plug certified to EN50018.
- Any components attached or installed (e.g. terminal compartments, bushings, explosionproof cable entries, connectors) shall be of a technical standard that complies with the specifications on the cover sheet as minimum and for which a separate type examination certificate has been issued. The operating conditions set forth in the relevant component certificates must by all means be complied with.

Securely fasten enclosure to the mounting location, then attach into conduit system.

The EJB shall be connected by means of suitable cable entries or conduit systems, which meet the requirements of EN 50018, sections 13.1 and 13.2, and for which a separate type examination certificate has been issued.

The enclosure is intended for wiring connections only, or for controller devices or other equipment which fall within the electrical parameters indicated above.

Note: Cable entries as well as sealing plugs of simple construction must not be used.

Cable entries (conduit threads) and sealing plugs of simple designs must not be used. Should the EJB be connected by means of a conduit entry which has been approved for this purpose, the required sealing device shall be provided immediately at the terminal box.

Any openings not used shall be sealed as specified in EN 50018, section 11.9.

The connecting wire of the EJB shall be installed to provide for permanent wiring and adequate protection against mechanical damage.

If the temperature at entry fittings should exceed 70°C, the connecting cables used have to be of the temperature-resistant type.

MAINTENANCE

WARNING

To avoid electrical shock or risk of ignition:

Always disconnect primary power source before opening enclosure for inspection or service.

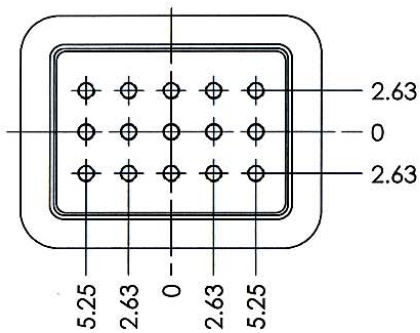
In addition to the following required maintenance procedures, we recommend an Electrical Preventative Maintenance program as described in the National Fire Protection Association NFPA No. 70B.

1. Frequent inspection should be made. A schedule for maintenance check should be determined by the environment and frequency of use. It is recommended that it should be at least once a year.
2. Perform visual, electrical and mechanical checks on all components on a regular basis.
 - Visually check for undue heating evidenced by discoloration of wires or other components, damaged or worn parts, or leakage evidenced by water or corrosion in the interior.
 - Electrically check to make sure that all connections are clean and tight and that contacts in the components make and break as required.
 - Mechanically check that all parts are properly assembled and operating mechanisms move freely.
3. EJB gasketed Classified Enclosures: do not attempt field replacement or repair of cover gasket. Instead, remove damaged gasket and continue to use cover without gasket. This will assure safety for use in Class I and Class II hazardous (classified) locations. However, the enclosure will **not be** watertight.

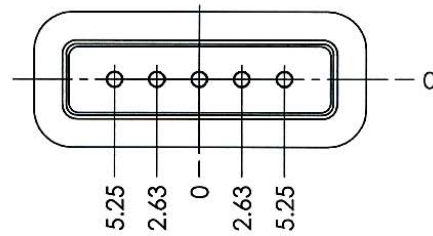
CAUTION

To avoid electrical shock or risk of ignition:

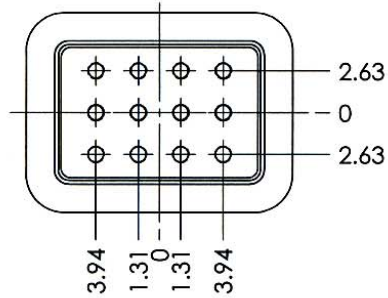
Clean both machined joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flat machined joint surfaces. Surfaces must seat fully against each other to provide a proper explosionproof joint.



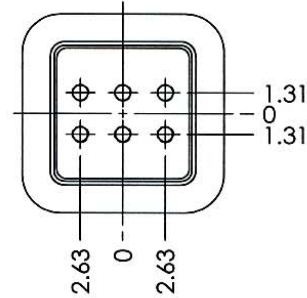
EJB1410



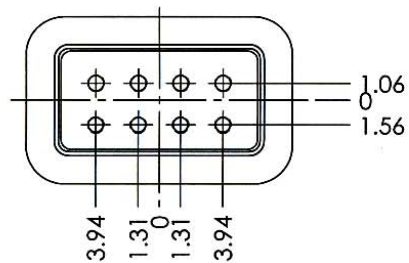
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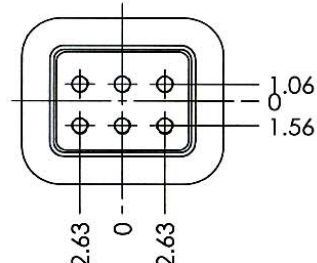
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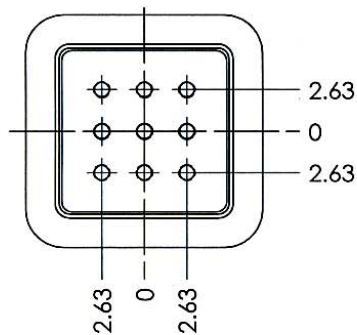
EJB0808



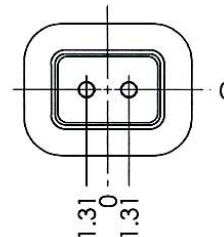
EJB1206



EJB0806



EJB1010



EJB0604

Table 5

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof are not guaranteed. In accordance with Cooper Crouse-Hinds "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith.