c3controls
P.O. BOX 496
BEAVER, PA 15009
PH: 724-775-7926
FX: 724-775-5283
www.c3controls.com
e-mail: info@c3controls.com

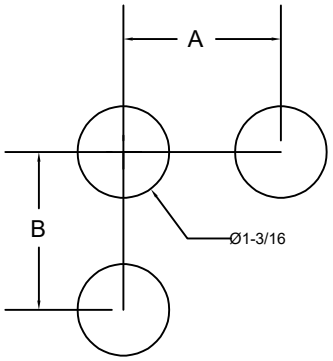
# Installation Instructions & Dimensional Drawings

## 30mm PILOT DEVICES
IL100155 REV 5

### 30mm Ordinary Location
**Push Button, Selector Switches, & Pilot Lights**

## MOUNTING INFORMATION

FIG #1 MOUNTING HOLE PATTERN




| SPACING | A | B |
|---|---|---|
| MIN | 2-7/16" | 2-1/8" |
| STANDARD | 2-11/16" | 2-3/8" |

TABLE 1 - MOUNTING GASKETS FOR 30MM PUSH BUTTON & SELECTOR SWITCHES

| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.080 | 1 | 5 |
| 0.080-0.132 | 1 | 4 |
| 0.133-0.185 | 1 | 3 |
| 0.186-0.238 | 1 | 2 |
| 0.239-0.291 | 1 | 1 |
| 0.292-0.344 | 0 | 3 |

TABLE 2 - MOUNTING GASKETS FOR † 30MM PILOT LIGHT

| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.032 | 1 | 2 |
| 0.033-0.065 | 1 | 1 |
| 0.066-0.187 | 0 | 2 |
| 0.188-0.250 | 0 | 1 |

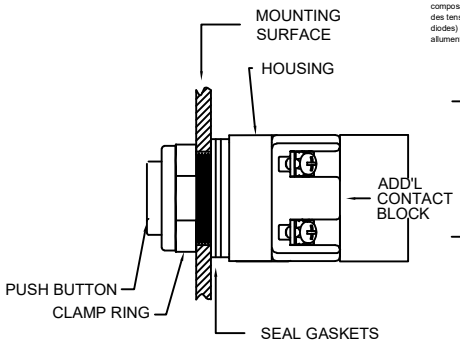
TABLE 3 - MOUNTING GASKETS FOR 30MM ILLUMINATED PUSH PULL OPERATOR

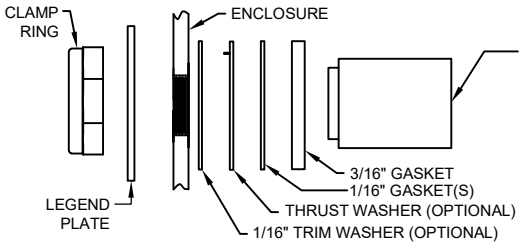
| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.080 | 1 | 3 |
| 0.080-0.132 | 1 | 2 |
| 0.133-0.185 | 1 | 1 |
| 0.186-0.238 | 0 | 3 |
| 0.239-0.291 | 0 | 2 |
| 0.292-0.344 | 0 | 1 |

TABLE 4 - MOUNTING GASKETS FOR † 30MM MULTI-VOLTAGE PILOT LIGHT

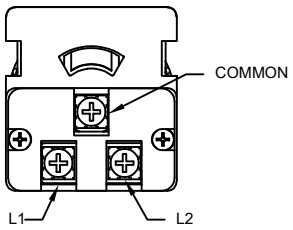
| PANEL THICKNESS | 1/16" GASKETS |
|---|---|
| Less Than 0.060 | 3 |
| 0.061-0.125 | 2 |
| 0.126-0.250 | 1 |

FIG #2 GENERAL MOUNTNG



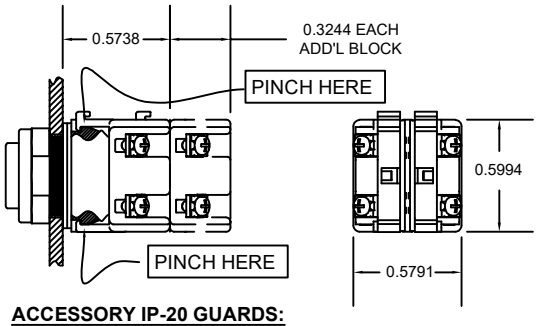




REMOTE TEST WIRING




**30mm Industrial Operating Temperature Range:**
**-40°C to 55°C**

**NOTE:**
ALL CONTACT BLOCKS SNAP ON BACK OF OPERATORS. ORDINARY LOCATION CONTACT BLOCKS ARE STACKABLE. SEE RATING INFORMATION BELOW




**ACCESSORY IP-20 GUARDS:**

Contact Blocks- Series CB -- Cat# CBIP20
Full Voltage, Illum.PB & PTT Lights- Cat# FVIP20
Transformer & Resistor Lights-- Cat# MLIP20

## *Multi-Voltage Pilot Light
30MV / 30RMV

VOLTAGE RATING: 20–277V AC/DC
POWER CONSUMPTION: <1.0 WATT

* THIS EQUIPMENT IS ALSO SUITABLE FOR USE IN CLASS 1, DIV. 2, GROUPS A, B, C, AND D OR NON-HAZARDOUS LOCATIONS.

**⚠ CAUTION**
In applications where the multi-voltage pilot light is in line with an inductive component (i.e. relay coils, solenoids, motors...etc.) that may cause transient voltages, we recommend surge protection (i.e. MOVs, diodes) be added to the circuit to prevent any damage to the multi-voltage pilot light or any electronic based components in the circuit.

**⚠ ATTENTION**
Dans des demandes(applications) où le pilote de multi-tension la lumière est conformément à un composant inductif (c'est-à-dire des bobines de relais, des solénoïdes, moteurs) qui peut causer des tensions passagères, nous recommandons la protection de montée (c'est-à-dire MOVs, les diodes) être ajouté au circuit pour empêcher n'importe quels dégâts au pilote de multi-tension allument(éclairent) ou n'importe quels composants basés électroniques dans le circuit.

## Ordinary Location Contact Block
CBNO / CBNC

c UL us

### DEVICE RATINGS

**A600 AC:**

10AMPS, CONTINUOUS THERMAL (AC)
7200 VA (MAKE) – AC
720 VA (BREAK) – AC

**P300 DC:**

5AMPS, CONTINUOUS THERMAL (DC)
138 VA (MAKE & BREAK)
250 VDC (TEST VOLTAGE)

### CONTACT BLOCK INSTALLATION INSTRUCTIONS

1) DETERMINE THE PROPER POSITION OF THE CONTACT BLOCK TO PROVIDE THE PARTICULAR SWITCHING SEQUENCE DESIRED. FOR SELECTOR SWITCHES, REFER TO CATALOG CHARTS.
2) ALIGN THE SNAP LEGS OF THE CONTACT BLOCK WITH THE SLOTS ON THE OPERATOR HOUSING.
3) PUSH CONTACT BLOCK ONTO OPERATOR IN A LINEAR FASHION UNTIL YOU HEAR THE 'CLICK' OF THE SNAPS ENGAGING.
4) PINCH THE SNAPS TOGETHER TO MAKE SURE THAT THEY ARE SECURE ON THE OPERATOR. A SECOND 'CLICK' MAY OR MAY NOT BE HEARD.
5) MANUALLY OPERATE THE SWITCH IN YOUR HAND TO CONFIRM THE PROPER OPERATION OF THE DEVICE. AN OHM METER MAY BE USED TO CONFIRM THE SWITCH SEQUENCE.

### OPERATOR INSTALLATION INSTRUCTIONS

1) AFTER REMOVING THE OPERATOR FROM IT'S PACKAGE, UNSCREW AND REMOVE THE CLAMP RING.
2) TO ASSURE A GOOD SEAL, THE CORRECT NUMBER OF GASKETS MUST BE USED - REFER TO TABLES 1-3.
3) INSERT OPERATOR HOUSING FROM THE REAR OF PANEL, THROUGH THE PANEL MOUNTING HOLE - REFER TO FIGURE 2.
4) LOCATE THE PUSH BUTTON (CAP OR HANDLE) FOR PROPER ORIENTATION IN PANEL. ANY LEGEND PLATES, OPTIONAL THRUST OR TRIM WASHERS ARE TO BE ADDED AT THIS POINT.
5) SECURE THE OPERATOR BY INSTALLING THE CLAMP RING. SUFFICIENT TORQUE (25 TO 30 LB-IN) WILL COMPRESS THE SEAL GASKETS MAKING THE OPERATOR TIGHT TO THE PANEL. THE OPERATOR SHOULD NOT ROTATE IN THE HOLE WHEN TWISTED BY HAND.
6) OPERATE THE UNIT TO OBSERVE PROPER CONTACT OPERATION.

NOTE:
CERTAIN SPECIAL OPERATORS REQUIRE INSTALLATION OF ADDITIONAL HARDWARE ITEMS. THESE ARE EVIDENT WHEN DISASSEMBLING SOME PORTION OF THE PRODUCT PRIOR TO PLACEMENT ON A PANEL. FOR EXAMPLE, THE POTENTIOMETER INSTALLATION REQUIRES THAT A SET SCREW BE REMOVED FROM THE KNOB PRIOR TO OPERATOR BEING INSERTED THROUGH HOLE IN MOUNTING SURFACE.

### LIGHTS & ILLUMINATED OPERATOR INSTALLATION INSTRUCTIONS

1) TO ASSURE A GOOD SEAL, THE CORRECT NUMBER OF REAR PANEL GASKETS MUST BE USED - REFER TO TABLES 1-3.
2) INSERT UNIT FROM THE REAR OF PANEL, THROUGH THE PANEL MOUNTING HOLE - REFER TO FIGURE 2.
3) INSTALL ANY ENVIRONMENTAL SEALS/ REFLECTORS THAT WERE PROVIDED WITH LENS CAP. THIS IS A NECESSARY PART OF THE TYPE 4-4X ENVIRONMENTAL RATING.
†4) SECURE THE OPERATOR BY INSTALLING THE CLAMP RING ON THE PANEL FRONT. SUFFICIENT TORQUE WILL COMPRESS THE REAR SEAL GASKETS MAKING THE OPERATOR TIGHT TO THE PANEL. THE WHITE INNER REFLECTOR SERVES A DUAL FUNCTION AS A LENS SEAL. WHEN INSTALLING THE COLORED LENS, SPECIAL CARE MUST BE TAKEN TO MAKE SURE THAT THE LENS TIGHTENS ALL THE WAY DOWN AND COMPRESSES THE INNER WHITE SEAL. IF IN DOUBT, REMOVE ONE ADDITIONAL 1/16" GASKET FROM BEHIND THE PANEL.

NOTE:
TO REPLACE BULB, REMOVE THE LENS CAP THEN PUSH INWARD AND ROTATE BULB COUNTER-CLOCKWISE (1/4 TURN). IF YOU ARE HAVING TROUBLE REMOVING BULB, USE LAMP REMOVAL TOOL (C3CONTROLS CAT# LRT). REPLACE BULB (CONTACT C3CONTROLS IF YOU HAVE QUESTIONS REGARDING BULB SPECIFICATIONS) BY PUSHING IT INTO THE SOCKET AND LOCKING IT INTO PLACE BY ROTATING CLOCKWISE (1/4 TURN).

## ⚠ WARNING
* Disconnect power before proceeding with any work on this equipment.
* Installation and maintenance by technical personnel only.
* Installation of c3controls product must be in accordance with the NEC (U.S. National Electrical Code) regulations or local codes/standards per your application. Any violation of these safety requirements could result in a personal injury and/or result in damage to the equipment.

## ⚠ AVERTISSEMENT
* Débranchez le Pouvoir(la Puissance) avant la suite de n'importe quel travail sur cet équipement.
* Installation et maintien par personnel technique seulement.
* L'installation de produit c3controls doit être conformément au NEC (le Code Électrique national américain) des règlements ou des codes/normes locaux par votre demande(application). N'importe quelle violation de ces exigences de sécurité pourrait aboutir à une blessure personnelle et-ou aboutir aux dégâts à l'équipement.

c UL us LISTED IND. CONT. EQ. 545X

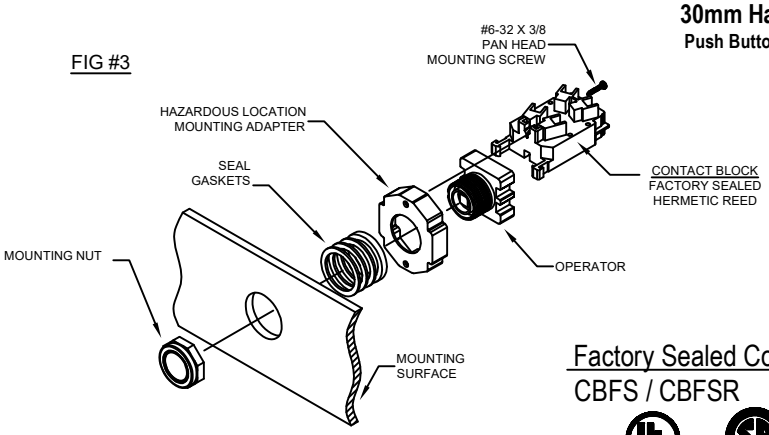
c3controls
P.O. BOX 496
BEAVER, PA 15009
PH: 724-775-7926
FX: 724-775-5283
www.c3controls.com
e-mail: info@c3controls.com

# Installation Instructions & Dimensional Drawings

## 30mm PILOT DEVICES
IL100155 REV 5

### 30mm Hazardous Location
**Push Button, Selector Switches, & Pilot Lights**

FIG #3




Operating Temperature Range:
-40°C to 55°C

SUITABLE FOR USE IN ENCLOSURE TYPES:
1, 2, 3, 3R, 4, 4X, 12 AND 13

TABLE 1 - MOUNTING GASKETS FOR 30MM PUSH BUTTON & SELECTOR SWITCHES

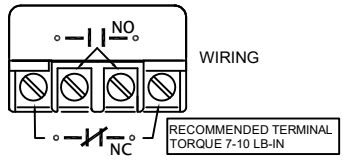
| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.080 | 1 | 4 |
| 0.080-0.132 | 1 | 3 |
| 0.133-0.185 | 1 | 2 |
| 0.186-0.238 | 1 | 1 |
| 0.239-0.291 | 0 | 3 |
| 0.292-0.344 | 0 | 2 |

TABLE 2 - MOUNTING GASKETS FOR † 30MM PILOT LIGHT

| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.032 | 1 | 1 |
| 0.033-0.125 | 0 | 2 |
| 0.126-0.185 | 0 | 1 |

TABLE 3 - MOUNTING GASKETS FOR 30MM ILLUMINATED PUSH PULL OPERATOR

| PANEL THICKNESS | 3/16" GASKETS | 1/16" GASKETS |
|---|---|---|
| Less Than 0.080 | 1 | 2 |
| 0.080-0.132 | 1 | 1 |
| 0.133-0.185 | 0 | 3 |
| 0.186-0.238 | 0 | 2 |
| 0.239-0.291 | 0 | 1 |




| OPERATOR TYPE | DIMENSION A | B | C |
|---|---|---|---|
| PUSHBUTTON (LINEAR) | 2-1/2" | 2-1/8" | 1-3/4" |
| SELECTOR SWITCH (ROTATING) | 2-3/4" | 2-1/4" | 1-3/4" |

## Factory Sealed Contact Block
CBFS / CBFSR

### DEVICE RATINGS

CLASS 1 DIV 2 GROUP B,C,D
T Code – T6

* THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS 1, DIV. 2, GROUPS A, B, C, AND D OR NON-HAZARDOUS LOCATIONS ONLY.

Operating Temperature Range: -40°C to 55°C

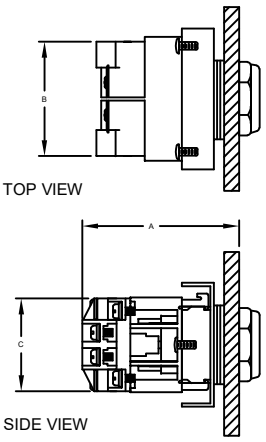
**A600 AC:**

10AMPS, CONTINUOUS THERMAL (AC)
7200 VA (MAKE) – AC
720 VA (BREAK) – AC

| | MAKE | BREAK |
|---|---|---|
| 120 VAC | 60A | 6A |
| 240 VAC | 30A | 3A |
| 480 VAC | 15A | 1.5A |
| 600 VAC | 12A | 1.2A |

**P300 DC:**

5AMPS, CONTINUOUS THERMAL (DC)
138 VA (MAKE & BREAK)
250 VDC (TEST VOLTAGE)




## Hermetic Reed Contact Block

### DEVICE RATINGS:

CLASS 1 DIV 2 GROUP A,B,C,D
T Code – T6

LRNO SERIES - 250 VAC / 40W (RES. ONLY)
PRNO SERIES - B300/C600 (AC) / Q300 (DC)
MPRNO SERIES - C300 (AC) / Q 150 (DC)
MLRNO SERIES - 250 VAC (MAX) / 40 VA (IND) / 100W (RES)

* THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS 1, DIV. 2, GROUPS A, B, C, AND D OR NON-HAZARDOUS LOCATIONS ONLY.

Operating Temperature Range: -40°C to 55°C

FIG. #4: HERMETIC REED

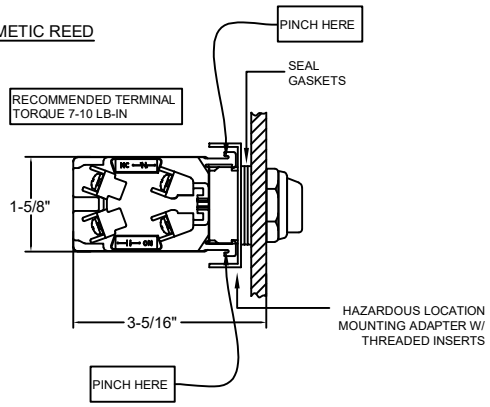
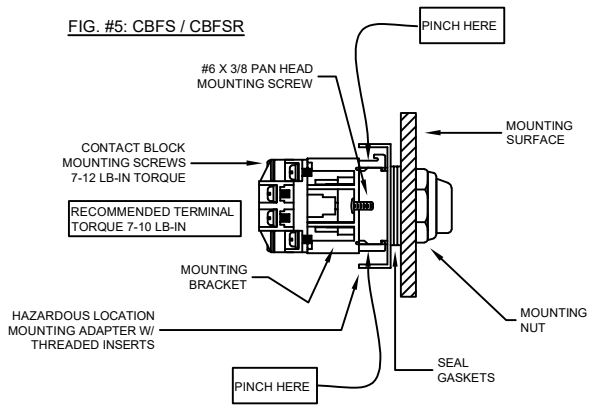



FIG. #5: CBFS / CBFSR




## INSTALLATION INSTRUCTIONS

APPLIES TO HERMETIC REED DEVICES
FACTORY SEALED - DIV 2 / ZONE 2

1. BEFORE INSTALLING THE OPERATOR TO THE PANEL, REMOVE THE OPERATOR MOUNTING NUT AND SLIDE THE SEAL GASKETS AND THE MOUNTING ADAPTER BACK EXPOSING THE BOTTOM OF THE OPERATOR HOUSING. SNAP THE CONTACT BLOCK ONTO THE OPERATOR HOUSING. A DISCERNABLE "CLICK"- IS HEARD WHEN THE CONTACT BLOCK IS SNAPPED IN.

IMPORTANT- "PINCH" THE SNAP LEGS TO MAKE SURE THEY ARE SEATED. (SEE PINCH POINTS FIG 4 & 5)

2. SLIDE MOUNTING ADAPTER (WITH THREADED METAL INSERTS) BACK INTO PLACE ON THE THREADED OPERATOR BODY OF THE HOUSING. INSERT THE #6 PAN HEAD SCREW (Provided with Contact Block) INTO THE SLOT PROVIDED IN THE MOUNTING BRACKET AND TIGHTEN IT TO THE ADAPTER. (RECOMMENDED TORQUE 7 LB-IN)
3. SLIDE THE SEAL GASKETS BACK ONTO THE THREADED BODY OF THE HOUSING AND INSERT THE OPERATOR INTO THE HOLE IN THE PANEL. BE SURE TO USE THE PROPER NUMBER OF GASKETS FOR THE GIVEN PANEL THICKNESS.
4. SECURE THE OPERATOR BY INSTALLING THE HANDLE/CAP AND TIGHTENING THE PANEL MOUNTING NUT.
5. OPERATE THE UNIT TO OBSERVE THAT THE CONTACT BLOCKS ARE SECURE AND FUNCTIONING PROPERLY
6. ALL WIRING FOR CONTACT BLOCK IS MARKED ON THE DEVICE

**⚠ WARNING**
EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1 DIVISION 2.

**⚠ AVERTISSMENT**
DANGER(HASARD) D'EXPLOSION - SUBSTITUTION DE LES COMPOSANTS PEUVENT DÉTÉRIORER LA PERTINENCE POUR LA CLASSE 1 DIVISION 2.

LISTED
IND. CONT. EQ.
9M13