

**SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE**

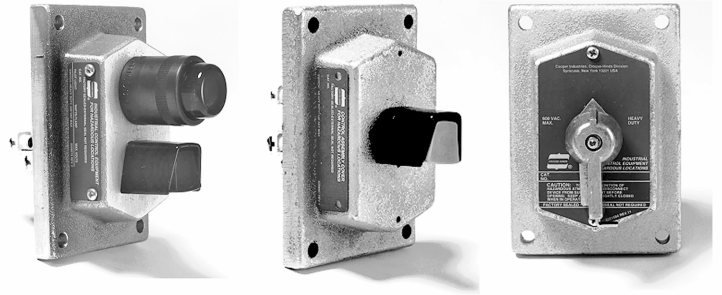
### APPLICATION

EFS and EDS Series control devices are used in conjunction with magnetic starters or contactors for remote control of motors and to visually indicate that the desired function is being performed. EFD Series manual motor starting switch enclosures are used for manually starting or stopping small AC or DC motors. EFD Series circuit breakers provide overload protection to the load side conductors.

EFS/EDS (dead end) and EFSC/EDSC (through feed) Series pushbutton stations, selector switches and factory sealed pilot lights are used separately or in combinations with a variety of standard features and special options available.

EFS Series control devices are suitable for use in Class I, Groups B, C and D (Division 1), Class II, Groups E, F, G and Class III hazardous (classified) locations, as defined by the National Electrical Code® (NEC) and Canadian Electrical Code (CEC). EDS and EFD Series control devices are suitable for

Class I, Group B (Division 1) usage, when they are identified by the suffix GB added to the Catalog Number with seals immediately adjacent to each conduit opening. DSD series control device covers are suitable for Class I, Groups B (Div. 2 only), C, D and Class II, Groups E, F, G as standard.



### INSTALLATION

**⚠ WARNING**

Electrical power must be **OFF** before and during installation and maintenance.

- Select a mounting location that will provide suitable strength and rigidity for supporting all contained wiring and control devices. Figure 2 shows the mounting dimensions of all EFS, EFD and EDS device bodies. Drill and tap mounting holes for 5/16 - 18 bolts.

**⚠ CAUTION**

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

- Securely fasten the device body to the mounting surface, then attach the body into the conduit system.

**⚠ CAUTION**

Hazardous location information indicating the class and group the product is approved for is marked on the nameplate of each device. Conduit sealing fittings may be required to be installed to comply with the requirements of the latest edition of the CEC or NEC, Section 501-5 and/or 502-5 plus any other applicable standards. Review nameplate for specific information

- Pull supply wires into the enclosure, making them just long enough to make the required connections.
- Make the electrical connections utilizing the wiring scheme established for your system. See Figures 1A and 1B for the contact diagrams of EFS and EDS pushbutton stations and selector switches.

**Selector Switches:**

Style	Position 1	Position 2	Position 3
Two Position Two Circuit	A1 A2	••	••
Two Position Four Circuit	A1 A2 B1 B2	••	••
Three Position Two Circuit	A1 A2	••	••
Three Position Four Circuit	A1 A2 B1 B2	••	••

**NOTE:** A1, B1 and C Contacts are "Normally Closed" and A2, B2 and O Contacts are "Normally Open"

Figure 1B

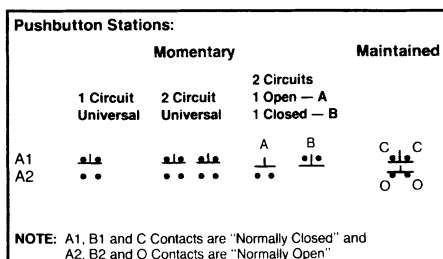


Figure 1A

**Pilot Lights:**

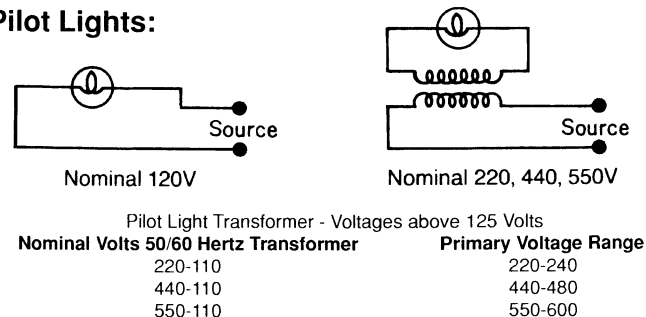


Figure 1C

The field wiring terminals on the switch units used for pushbutton or selector switch stations are marked. The  $\oplus$ , and "O" indicates normally open contacts; and  $\otimes$  and "C" indicates normally closed contacts of the switch. These switches are provided with binding screw terminals. For EDS/EDSC Series toggle switches; splice factory sealed wires to supply wires using suitable connectors.

- Strip the insulation on each conductor wire back 3/8".
- Use a slotted or Phillips head screwdriver to loosen the field wiring terminal screws the required 3 or 4 turns.
- Insert the bare wire conductor(s) on either side of the terminal screw(s), under the terminal wire clamp(s) and securely tighten the screw(s).

NOTE: Do Not exceed 15 in. lbs. of torque.

- Pilot lights and sealing wells are furnished with pigtail leads for field connection by use of wire nuts.

For EFD manual motor starters, install heaters as required. Refer to manufacturers heater selector listings for each motor starting switch. Mount the starter into enclosure and make electrical connections utilizing the wiring scheme established for the motor starting switch.

5. Test wiring for correctness with continuity checks and also for unwanted grounds with an insulation resistance tester.

**⚠ WARNING**

No conduit openings are to be added in the field. All unused conduit openings must be plugged and these plugs must be a minimum of 1/8 in. thick and have a minimum of 5 threads engagement (7 threads for Group B applications). For EFS enclosures with 1 in. hub(s), EDS 3 pole snap switches, and EFD/EDS with "GB" suffix all conduits must be sealed within 18 in. of the enclosure.

6. Carefully assemble cover assembly to the device body with the cover screws. Check the tightness of the cover screws to ensure that the cover assembly is securely fastened.

7. Pour CHICO® sealing compound into EYS/EYD Series sealing fittings (where used) in accordance with the instructions with each sealing fitting used.

**⚠ WARNING**

Check for dirt, grit or other foreign material on the mating surfaces of the cover and the device body. Be certain that each surface is wiped completely clean before assembling. Surfaces must seat fully against each other to provide a proper explosionproof seal.

**PILOT LAMP REPLACEMENT**

110-125 Volt Circuit: 6 watt, T21/2 miniature bayonet base

LED Replacement: 24, 120 VAC, T31/4 miniature bayonet base

**MAINTENANCE**

**⚠ WARNING**

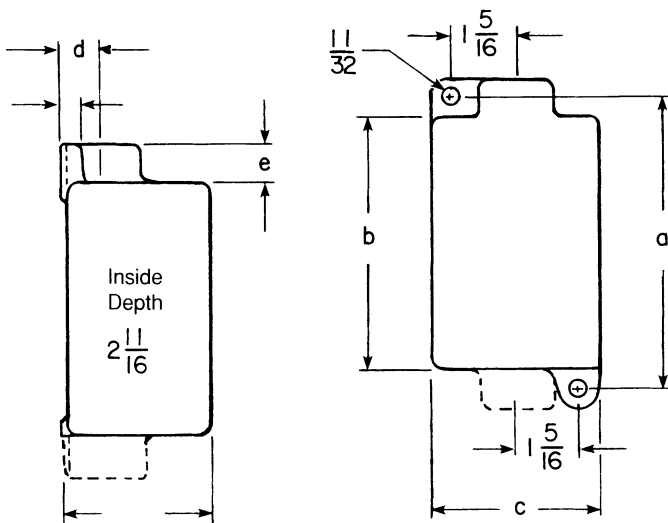
Always disconnect primary power source before opening the enclosure for inspection or service.

1. Frequent inspection should be made. A schedule for maintenance checks 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 or break as required.

Mechanically check that all parts are properly assembled, and that operating mechanisms move freely.



**BODIES FOR EDS & EFD SERIES**

Size	Dimensions (in.)				
	a	b	c	g	h
Single Gang	5 7/8	5 3/32	3 1/2	3 1/16	15/32
Two Gang	5 7/8	5 3/32	7 3/16	3 1/16	15/32

Hub (in.)	d	e
1/2	3/4	13/16
3/4	7/8	13/16
1	1	15/16

**EFS BODIES**

Size	Dimensions (in.)				
	a	b	c	d	e
Single Gang	5 7/8	5 1/32	3 7/16	1	15/16
	g	h			
	2 15/32	15/32			

Figure 2

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 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.