



APPLICATION

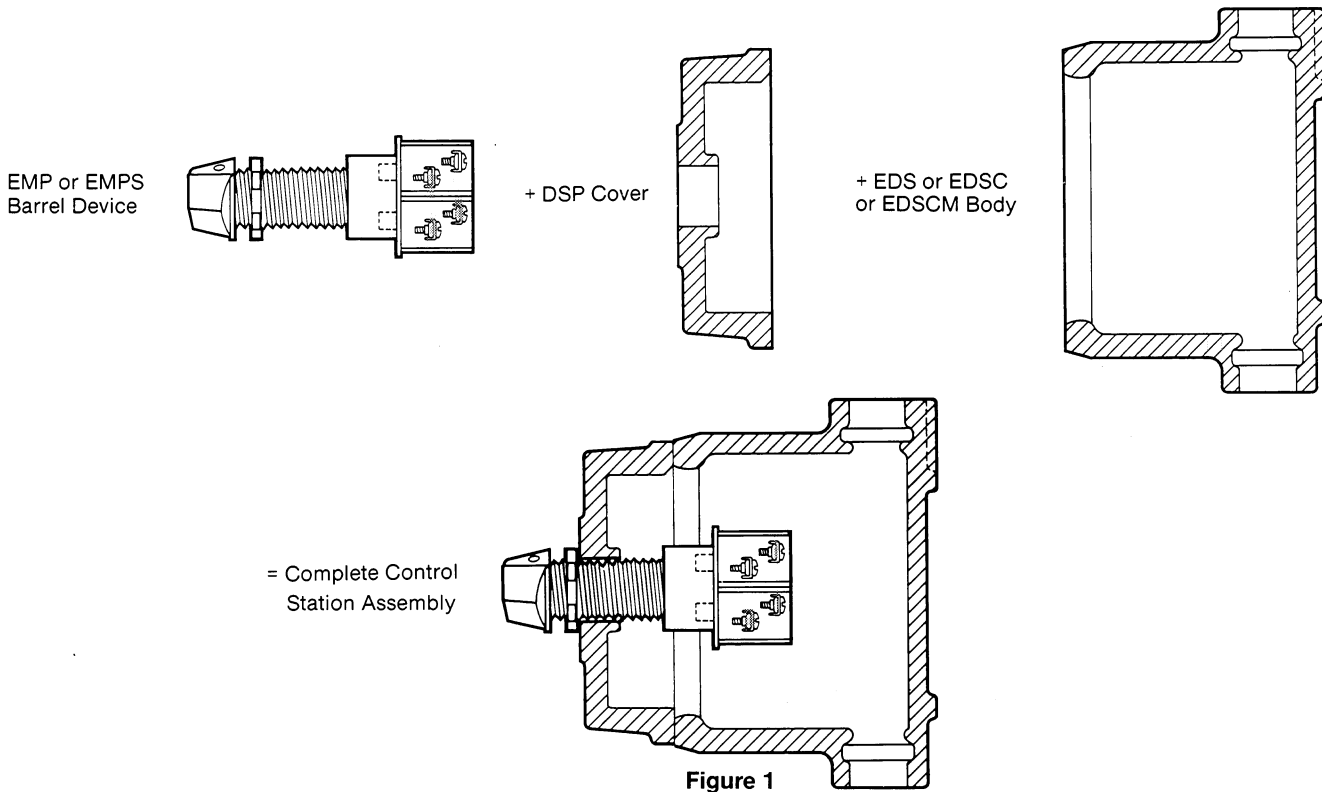
Crouse-Hinds Electrical Construction Materials DSP series control station covers are intended for use with Crouse-Hinds EMP and EMPS series barrel assemblies and Crouse-Hinds EDS, EDSC, and EDSCM series control station bodies in conjunction with magnetic starters or contactors for pilot duty

and remote control of electrical apparatus. When properly assembled, the complete control station assemblies are suitable for use in Class I, Groups C, D; Class II, Groups E, F, G; and Class III hazardous (classified) locations as defined by the National Electrical Code® (NEC).

GENERAL INFORMATION - CONTROL STATION ASSEMBLIES

DSP1 and DSP2 covers have one and two 3/4"-14 NPSM threaded holes, respectively, for the installation of EMP and/or EMPS threaded barrel devices. This DSP/EMP cover sub-assembly is then installed on the selected EDS, EDSC, or EDSCM body to create a complete control station assembly. See Figure 1.

EDS281 and EDSC281 are 1" deeper than other EDS, EDSC, and EDSCM bodies to allow the installation of the longer EMP barrel devices and to allow stacking of switches on certain EMPS pushbutton and selector switch devices. Refer to Tables 1, 2, and 3 for combinations of EMP/EMPS devices, DSP covers, and EDS/EDSC/EDSCM bodies that may be used. For installation of bodies, see Installation and Maintenance Information Sheets packaged with those products — IF328 for EDS/EDSC bodies and IF294 for EDSCM bodies.



INSTALLATION

WARNING

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

CAUTION

Refer to Tables 1, 2, and 3 to be sure the desired device(s), cover, and body may be combined.

A. Install EDS, EDSC, or EDSCM Body

1. Securely fasten body to the mounting surface, then attach body into the conduit system in accordance with NEC requirements. Refer to Installation Sheet IF328 (for EDS and EDSC) or IF294 (for EDSCM) for body mounting details.

CAUTION

- Hazardous location information indicating the NEC Class and Group for which the product is approved is marked on the nameplate.
- Conduit sealing fittings may be required to be installed to comply with the requirements of the NEC, Section 501-5 and/or 502-5, plus any other applicable standards. Refer to Note B, under "Instructions for Tables 1, 2, and 3" to determine if sealing fittings are required for your assembly.
- All unused conduit openings must be plugged with Crouse-Hinds type PLG plugs that are approved for hazardous areas. Plugs must engage a minimum of five full threads and be a minimum of 1/8 inch thick.

2. Pull all wires into the enclosure, making them long enough to connect to the switch terminals.

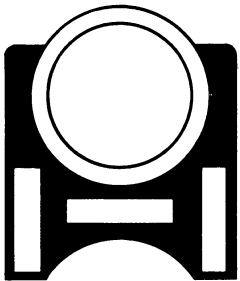
B. Install EMP or EMPS Barrel Device(s)

CAUTION

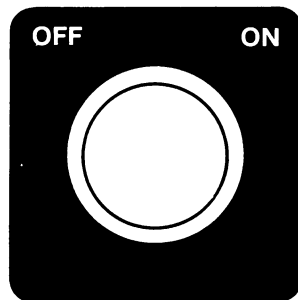
When installing EMP and EMPS devices into DSP covers, caution must be exercised to protect the flat ground joint surface of the DSP cover. Do not handle covers roughly or place them on surfaces that might damage or scratch the flat ground joint surface. Keep mating surfaces clean of dirt, grit, or other foreign materials.

NOTE: When installing EMP and EMPS devices in DSP style covers, refer to the installation instructions contained in this instruction sheet *NOT* the instructions shipped with the EMP/EMPS devices (IF872).

1. Remove threaded guards, handles, jewels, legend plates, outer locknuts, and other hardware as necessary to allow barrels to be threaded into DSP cover. Do not remove contact block(s) or attachment hardware at opposite end of EMP/EMPS barrel. (Note: Discard legend plate packed with EMP device. It is not used when installing EMP into DSP style cover. See Figure 2.)



Discard legend plate packed with EMP device. Not for use with DSP cover.



DSL Legend Plate (typical) for use with DSP cover.

Figure 2

2. Thread barrel assembly into threaded hole of DSP cover from rear so that it protrudes through the front.
3. Adjust the distance which the barrel protrudes through the front of the cover to the proper "locating dimension" using the "Barrel/Cover Assembly Gauge" included with each cover. This dimension is measured from the end of the 3/4"-14 NPSM threaded barrel to the front(outer) surface of the cover, and is necessary for adequate clearance in the bottom of the enclosure. These dimensions differ for the various EMP and EMPS devices. Refer to Tables 1, 2, and 3 and Figures 3 through 10 for the correct locating dimension(s) for the device(s) you are installing.

CAUTION

Minimum electrical spacing of 1/2" between any uninsulated live parts (contacts) and the walls of a metal enclosure must be maintained. When installing EMP or EMPS devices in DSP covers follow instructions carefully to ensure proper positioning of the barrels and switch contacts to provide the necessary clearances inside the assembled enclosure. Refer to Tables 1, 2, and 3 and Assembly Figures 3 through 10 for necessary positioning information.

4. Install DSL legend plate over the barrel into the recess in the front of the DSP cover.
5. Loosen set screw and thread locknut with set screw onto the EMP device and against DSL legend plate (finger tight only). Do not tighten set screw at this time. (Only the locknut with the set screw will be used for assembly to a DSP cover.)
6. Align switch contacts for proper clearance by turning threaded barrel to the proper position. Assembly Figures illustrate the correct positioning of the contact block(s) in the enclosure.
7. Tighten outer locknut securely against DSL legend plate making sure EMP/S barrel does not rotate.
8. Check to ensure that switches are still in proper alignment, then tighten set screw in locknut securely against DSL legend plate.
9. Replace threaded guards, handles, or jewels which were removed in Step B, 1.

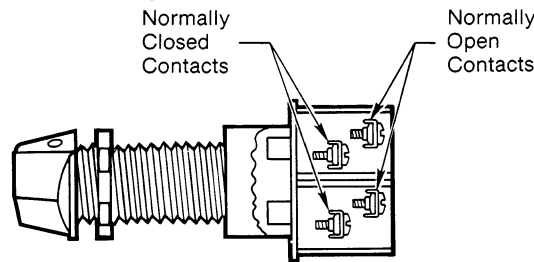


Figure 11
Contact Identification

10. Make electrical connections to switch terminals following the wiring scheme established for your system.

- EMP and EMPS pushbutton and selector switch devices are provided with binding screw terminals that will accommodate conductors in sizes from #16 AWG to #12 AWG. Normally open contacts and normally closed contacts are identified in Figure 11.

11. Test circuits for continuity and unwanted grounds.

CAUTION

Check for dirt, grit or other foreign materials on the mating surfaces of the cover and device body. Remove the dirt with a brush or soft, clean cloth and solvent, such as kerosene or Stoddard solvent. Surfaces must seat fully against each other to provide a proper explosionproof seal.

12. Assemble the DSP/EMP cover/device assembly onto the body with the four 1/4-20 screws provided. Cover screws should be tightened with a screwdriver so that they cannot be removed by hand.

13. Fill sealing fittings (when required) with sealing compound in accordance with the instructions provided with the sealing fittings and sealing compound.

14. Installation is complete and power may be turned on.

MAINTENANCE

WARNING

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

1. Regular inspection should be made. A schedule for maintenance 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 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.

- Check to make sure that switch contacts are properly aligned. Refer to step B-6. After ensuring proper alignment make sure locknut is tight and set screw is tight.

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

- Replacement switches are available from your local Crouse-Hinds ECM distributor.

- Check to see that the ground joint surfaces of the cover and body are free of scratches, mars, grit, or other imperfections that might impair mating of the two components and the explosionproof and dust-ignitionproof integrity of the product in operation.

- Check all cover screws to make sure that they have been tightened with a screwdriver and cannot be removed by hand.

3. We recommend an Electrical Preventive Maintenance program as described in the National Fire Protection Association Bulletin NFPA No. 70B.

Instructions for Using Tables 1, 2, & 3

Use Tables 1, 2, and 3 to determine the allowable combinations of EMP and EMPS devices, DSP covers, and EDS, EDSC, and EDSCM bodies, and to determine the correct Assembly Figure for each assembly.

Step 1. Select the proper table for your assembly. If you are installing Single Device Cover number DSP1, use Table 1 or Table 2, depending on the body you are using. If you are installing Two Device Cover number DSP2, use Table 3.

Step 2. Refer to the column titled "Control Station Devices" and locate the catalog number for the EMP or EMPS device(s) you are installing.

Step 3. Locate the column heading for the body you are installing. (If you are using body number EDS281 or EDSC281, use the appropriate "Standard Switch Configuration" or "Stacked Switch Configuration" column.

Step 4. Follow the "Allowable Combination?" column for the body selected in Step 3 to where it intersects the row for the EMP/EMPS device selected in Step 2. If the word "No" is shown, this is not an allowable combination of cover, device(s), and body (see Note A). If the word "Yes" is shown, refer to the column immediately to the right for the number of the Assembly Figure for your combination. This Assembly Figure will be used later in the installation.

Notes to Tables

Note A. If the Tables indicate that the combination you have selected is not an allowable combination, or if your combination cannot be located in any of the Tables, contact your Crouse-Hinds ECM distributor or Crouse-Hinds ECM sales representative for assistance.

Note B. For Class I, Div. 1 or 2 installations, conduit sealing fittings are required for ALL combinations shown in Tables 1, 2, and 3.

EXCEPT —

- DSP1 with EMP009 installed on EDS281, EDSC281, or EDS271 series single and two-gang (side by side) bodies.
- DSP2 with 2-EMP009 installed on EDS281, EDSC281, or EDS271 series single and two-gang (side by side) bodies.

For Class II installations the need for conduit sealing fittings is determined by various factors. Refer to section 502-5 of the National Electrical Code® for details.

Note C. EDS Series bodies include the following catalog numbers:

EDS171	EDS272	EDSC271	EDSC372
EDS271	EDS372	EDSC371	EDSC378
EDS371	EDSC377	EDSC172	
EDS172	EDSC171	EDSC272	

Catalog numbers may be followed by suffix "SA".

Table 1. Combinations of Devices and Single Device Covers that may be used with EDS281 and EDSC281 Bodies.

Control Station Cover	Control Station Devices	EDS281 or EDSC281 Bodies			
		Standard Switch Configuration		Stacked Switch Configuration	
		Allowable Combination?	Assembly Figure No.	Allowable Combination?	Assembly Figure No.
Single Device Cover DSP1	EMPS019	yes	7	yes	6
	EMPS029	yes	9	yes	6
	EMPS039	yes	10	yes	10
	EMPS049	yes	3	no	
	EMPS0491 Series	yes	9	yes	6
	EMPS059	yes	3	no	
	EMPS0591 Series	yes	9	yes	6
	EMPS069	yes	3	no	
	EMPS0691 Series	yes	9	yes	6
	EMPS079	yes	3	no	
	EMPS0791 Series	yes	9	yes	6
	EMPS089	yes	3	no	
	EMPS0891 Series	yes	9	yes	6
	EMP009	yes	8	N/A	
	EMP019	yes	7	no	
	EMP029	yes	9	no	
	EMP039	yes	10	no	
	EMP049	no		no	
	EMP0491 Series	yes	9	no	
	EMP059	no		no	
EMP0591 Series	yes	9	no		
EMP069	no		no		
EMP0691 Series	yes	9	no		
EMP079	no		no		
EMP0791 Series	yes	9	no		
EMP089	no		no		
EMP0891 Series	yes	9	no		
EMP098	yes	7	no		
EMP0090	yes	5	no		
EMP0098	yes	5	no		

Table 2. Combinations of Devices and Single Device Covers that may be used with EDS271 Series* or EDSCM Series Bodies - Standard Switch Configuration Only.

Control Station Cover	Control Station Devices	EDS271 Series Bodies		EDSCM Series Bodies	
		Allowable Combination?	Assembly Figure No.	Allowable Combination?	Assembly Figure No.
Single Device Cover DSP1	EMPS019	yes	7	yes	7
	EMPS029	yes	9	yes	9
	EMPS039	yes	10	yes	10
	EMPS049	yes	3	yes	3
	EMPS0491 Series	yes	9	yes	9
	EMPS059	yes	3	yes	3
	EMPS0591 Series	yes	9	yes	9
	EMPS069	yes	3	yes	3
	EMPS0691 Series	yes	9	yes	9
	EMPS079	yes	3	yes	3
	EMPS0791 Series	yes	9	yes	9
	EMPS089	yes	3	yes	3
EMPS0891 Series	yes	9	yes	9	
EMP009	yes	8	yes	8	

* See NOTE C for list of EDS271 Series Bodies.

Table 3. Combinations of Devices and Two Device Covers — All Bodies

Control Station Cover	Control Station Devices		EDS281 or EDSC281 Bodies				EDS271 Series Bodies*†		EDSCM Series Bodies †	
			Standard Switch Config.		Stacked Switch Config.		Allowable Combination?	Assembly Figure No.	Allowable Combination?	Assembly Figure No.
			Allowable Combination?	Assembly Figure No.	Stacking Allowable?	Assembly Figure No.				
Two Device Cover	EMP009	EMP009	yes	4	N/A	N/A	yes	4	yes	4
	EMP009	EMPS019	yes	4	N/A	yes	6	yes	4	no
	EMP009	EMP019	yes	4	N/A	no		no		no
	EMP009	EMP098	yes	4	N/A	no		no		no
	EMP009	EMP0090	yes	4	N/A	no		no		no
	EMPS019	EMPS019	yes	4	yes	yes	6	yes	4	no
DSP2	EMPS019	EMP019	yes	4	yes	no	6	no		no
	EMPS019	EMP098	yes	4	yes	no	6	no		no
	EMPS019	EMP0090	yes	4	yes	no	6	no		no
	Any Combination of: EMP019 EMP098 EMP0090		yes	4	no	no		no		no

* See Note C for list of EDS271 Series Bodies.

† Standard Switch Configuration Only — Stacked Switches not allowable.

ASSEMBLY FIGURES

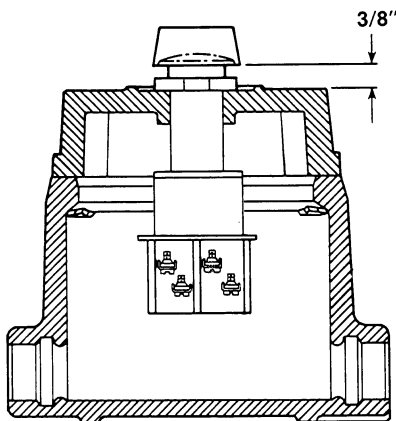


Figure 3

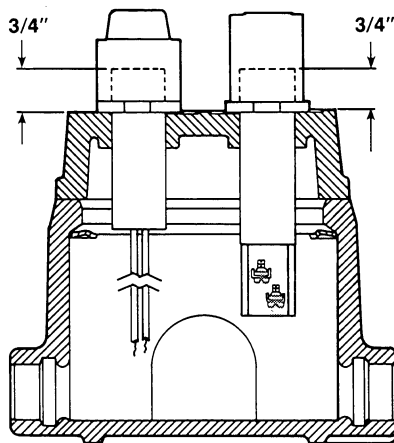


Figure 4

(EMP009 and EMPS019 shown. See Figure 5 also if EMP0090 is used in two device cover.)

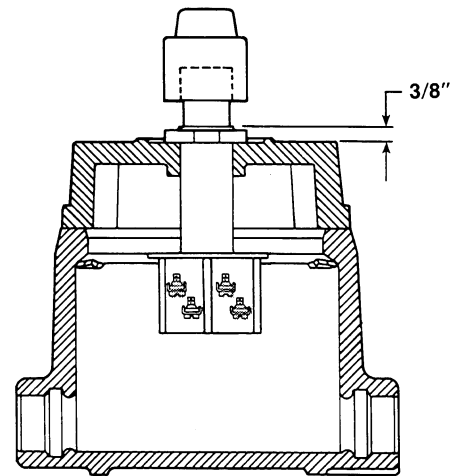


Figure 5

ASSEMBLY FIGURES (con't)

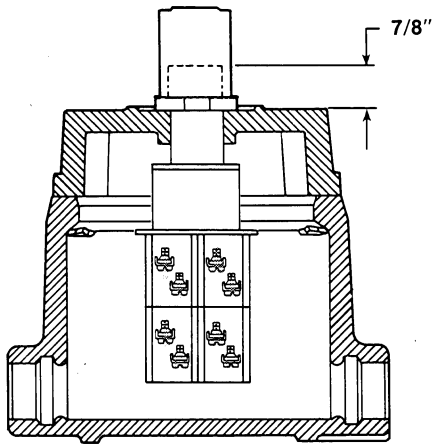


Figure 6

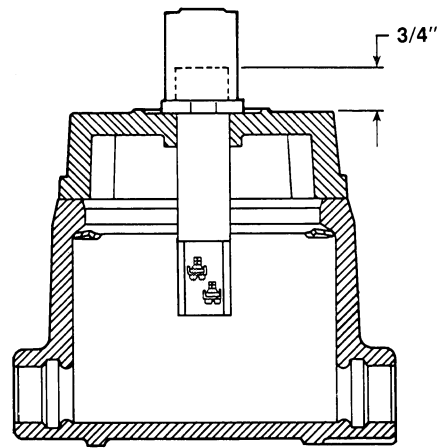


Figure 7

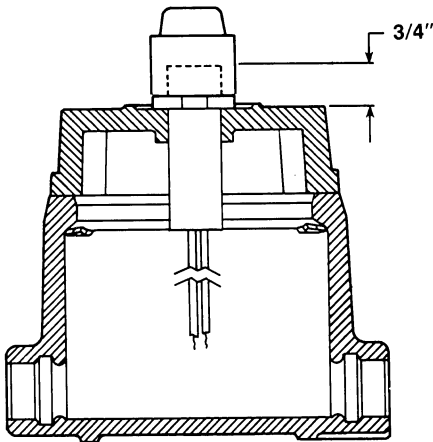


Figure 8

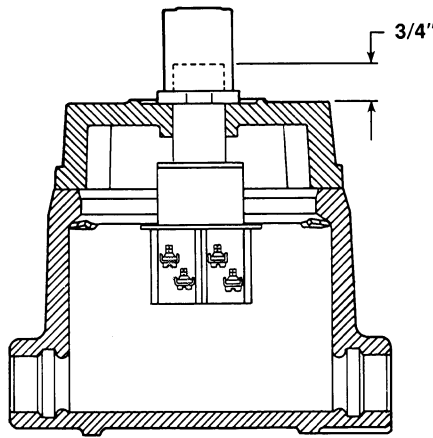


Figure 9

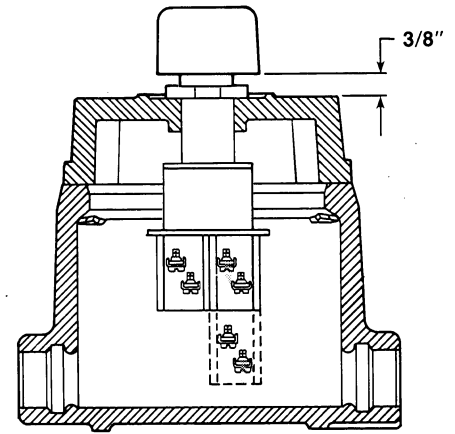


Figure 10

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.



**CROUSE-HINDS
ELECTRICAL
CONSTRUCTION
MATERIALS**

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