

# EFD/EFDB and EDS Series Factory Sealed Control Stations

## Explosionproof, Dust-Ignitionproof

### NEC:

Class I, Division 1 and 2, Groups B\*, C, D

Class II, Division 1 and 2, Groups E, F, G

Class III

NEMA 3, 7CD, 9EFG

### Applications

- Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors. They provide circuit control and/or selection.
- Pilot lights provide visual assurance that an electrical function is being performed at a remote or local location.
- EFD/EFDB and EDS factory sealed control stations confine arcing of device within the enclosure, preventing ignition of ignitable atmospheres during control operation of motors and other equipment.
- Used in classified areas where flammable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries, and other process industries.

### Features

- EFD/EFDB Push Buttons and Selector Switches
  - Eliminate need for adding sealing fittings and compound at each conduit entrance.
  - Heavy-duty push buttons, 10 Amp, 600 Vac rated.
  - Dozens of possible combinations of push buttons, pilot lights and selector switches.
  - Smooth, rounded integral bushing in each EFD/EFDB hub protects conductor insulation.
  - Accurately tapped, tapered hubs for tight, rigid joints and ground continuity.
  - Stainless steel push button shaft operates within stainless steel bushing assuring long, maintenance free operation.
  - Push button and selector switch contacts are silver cadmium oxide which are "sealed" in lower phenolic chamber isolated from corrosive elements. Assures positive contact and long, trouble-free operation.
  - Enclosed stainless steel helper spring prevents accidental operation of push button in severe vibration installations.
  - Push button models also available with dust cap for use in areas where excessive dust, moisture or corrosive conditions are encountered.
  - Corrosion resistant captive stainless steel hex head cap screws hold EFKB covers to body.
  - All EFD/EFDB momentary push buttons are supplied with lockout type guards as standard. Hole in guard will accept locks with up to 1/4" hasp. Permits locking of push button to prevent unauthorized operation.
  - Clearly marked terminals with brass screws assure quick, easy wiring.
- EFD/EFDB Pilot Lights
  - Factory sealed pilot lights supplied with red jewel/guard assembly and 120 Vac/Vdc, 50/60 Hz, 6 Watt, Type 6S6 lamp.
  - Models also available in combination with factory sealed push buttons and selector switches.
- EFD/EFDB Selector Switches
  - Factory sealed selector switches furnished with nylon cam-operated, heavy-duty push buttons for either 2-position or 3-position maintained contact operation.
  - High thermal and arc resistance, high dielectric strength.
- EDS Push Buttons
  - Factory sealed — eliminates need for adding sealing fittings and compound at each conduit entrance.
  - Heavy duty, 10 Amp, 600 Vac.
  - Switch is enclosed in separate sealing chamber.



EFD/EFDB Push Button



EFD/EFDB Photocontrol



EDS Rocker Arm Push Button



EFD/EFDB Push Button with Dust Cap



EFD Combination Pilot Light and Push Buttons



EFD/EFDB Pilot Light



EFD/EFDB Selector Switch



EFD/EFDB Maintained Push Button

- Sealing chamber has smooth, double flanges that mate both to cover and mounting enclosure to provide flame-tight joints.
- Pigtail leads from push buttons are factory sealed in sealing well.
- Stainless steel hex head screws attach sealing chamber to cover and mounting enclosure.
- Side rocker arm push button has lockout holes.
- EFD/EFDB backbox supplied with internal ground screw.

### Standard Materials

- EFD/EFDB control stations: malleable iron body with copperfree (4/10 of 1% max.) aluminum cover
- SPBB push button: copperfree (4/10 of 1% max.) aluminum upper barrel and phenolic lower barrel with nylon plastic button (dust cap models have neoprene buttons)
- SPLN/SPLS pilot light: copperfree (4/10 of 1% max.) aluminum guard and body assembly; steel clamping ring; and tempered glass jewel
- SSBA selector switch: copperfree (4/10 of 1% max.) aluminum operator mechanism, nylon cam, and sealed phenolic contact block
- EDS control stations: malleable iron body and cover; copperfree (4/10 of 1% max.) aluminum sealing chamber; and nylon operating handle

♦ Select items suitable for Class I, Division 1 and 2, Groups B, C and D; Class II, Groups E, F and G and Class III. See product selection pages for suitable items.

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Class II, Division 1 and 2, Groups E, F, G

Class III

NEMA 3, 7CD, 9EFG

### Standard Finishes

- EFD/EFDB control stations: body, triple-coat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat
- SPBB push button, SPLN/SPLS pilot light and SSBA selector switch: natural finish
- EDS control stations: body and cover: triple-coat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat sealing chamber, natural finish

### Options

- 1- or 2-gang copperfree (4/10 of 1% max.) aluminum bodies and covers available. Add suffix — **A**.
- Three position selector switches with modified operation.
  - Momentary contact right position, spring return to center, maintained contact left position. Add suffix — **SRC**.
  - Momentary contact left position, spring return to center, maintained contact right position. Add suffix — **SLC**.
  - Alternate contacts add suffix — **ALT**.
- EFD/EFDB selector switch lockout locks two or three position handle in any position. Add suffix — **LD**.
- Push button front operated mushroom head (momentary contact): Order by suffixes for desired color as follows:
  - Red — **NMRBRE**
  - Green — **NMRBGR**
  - Black — **NMRBBL**
- EFD/EFDB pilot light jewel/guard assembly. Order by suffixes if color desired is other than red, as follows:
  - Amber — **JGBA**
  - Blue — **JGBB**
  - Clear — **JGBC**
  - Green — **JGBG**;
  - Opal — **JGBO**
- For colored LED jewel/guard assembly, order by suffixes:
  - Red — **LEDR**
  - Green — **LEDG**
  - Amber — **LEDA**
- EFD/EFDB pilot light transformers for single pilot light per gang. Order by suffix:

Primary Voltage	Lamp Voltage	Suffix
220	120	-TR-2
277	120	-TR-3
440	120	-TR-4
550	120	-TR-5

- EFD and EDS units may be supplied with brazed hubs as 3-, 4-, and 5-gang in a variety of hub configurations. See Ordering Information page for how to order these and other "custom" units by adding suffixes to mounting body catalog numbers.
- Securing Rod for EFD/EFDB Push Button Lockout Guard. Add suffix — **SR**.
- NPBRKT** Nameplate Mounting Bracket to make circuit description/identification easy.
  - Pre-drilled holes in bottom of bracket allow direct mounting to control stations with existing cover bolts.
  - Pre-drilled holes in middle of bracket allow mounting of customer's circuit identification nameplate; epoxy glue may also be used for mounting (phenolic nameplate not included).
  - Bracket eliminates costly field installation of drilling and tapping to accommodate circuit identification nameplate.
  - Brackets fit side-by-side on 2-, 3- and 4-gang boxes and 3-devices.

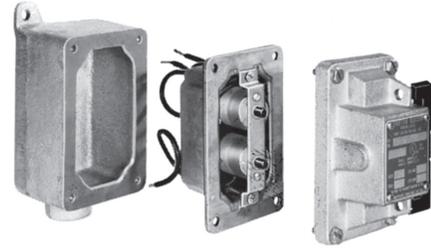
### NEC Certifications and Compliances

- UL Standards: UL 508, UL 698, UL 1203
- cULus Listed: E10449, E81751

### Related Products

- For Hazardous Location Photocontrols, see *Lighting Section*.

### Illustrated Features



EDS factory sealed rocker arm push button control station — shows separate sealing chamber and device construction. Rocker arm has holes for lock.

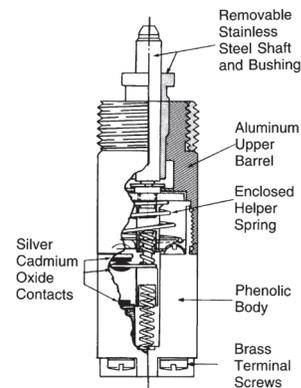


Securing Rod for EFD/EFDB Push Button Lockout Guard — available as an optional item as catalog number NBL-SR (single guard only) or add Suffix — SR to push button catalog number. Lockout Guard, furnished as standard with the EFD/EFDB push button, may also be padlocked.



SPBB factory sealed push button used in EFD/EFDB Series — standard type and unit with dust cap.

### SPBB Design Features



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CONTROLS: NEC/CEC EXPLOSIONPROOF CONTROL STATIONS AND SWITCHES

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# EFD/EFDB and EDS Series Factory Sealed Control Stations

## Mounting Bodies

Furnished with Internal Ground Screw. ①

### NEC/CEC:

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 Class II, Division 1 and 2, Groups E, F, G  
 Class III  
 NEMA 7CD, 9EFG

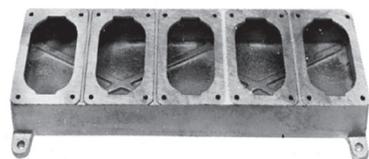
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	Type	Hub Size (Inches)	Catalog Number	
			Malleable Iron	Aluminum
<b>1-Gang</b>				
	Dead-End	1/2	EFD150NLQ	EFD150ANLQ
		3/4	EFD175NLQ	EFD175ANLQ
		1	EFD110NLQ	EFD110ANLQ
	Feed-Thru	1/2	EFDC150NLQ	EFDC150ANLQ
		3/4	EFDC175NLQ	EFDC175ANLQ
		1	EFDC110NLQ	EFDC110ANLQ
<b>2-Gang</b>				
	Dead-End	1/2	EFD250NLQ	EFD250ANLQ
		3/4	EFD275NLQ	EFD275ANLQ
		1	EFD210NLQ	EFD210ANLQ
	Feed-Thru	1/2	EFDC250NLQ	EFDC250ANLQ
		3/4	EFDC275NLQ	EFDC275ANLQ
		1	EFDC210NLQ	EFDC210ANLQ
<b>Tandem ②</b>				
	Dead-End	1/2	EFDT50NLQ	—
		3/4	EFDT75NLQ	—
		1	EFDT10NLQ	—
	Feed-Thru	1/2	EFDC150NLQ	—
		3/4	EFDC175NLQ	—
		1	EFDC110NLQ	—
<b>3-Device</b>				
	Dead-End	1/2	EFDL50Q	—
		3/4	EFDL75Q	—
		1	EFDL10Q	—
	Feed-Thru	1/2	EFDC150Q	—
		3/4	EFDC175Q	—
		1	EFDC110Q	—

### Blank Bodies for Brazed Hubs ③

Construct complete catalog numbers per EFD Cast Device Boxes Ordering Information on following page. Hubs will be located in center of walls and evenly spaced unless otherwise specified. Where spacings are critical, submit sketch showing exact spacing requirements.



1-Gang	EFD1NL	—
2-Gang	EFD2NL	—
3-Gang	EFD3NL	—
4-Gang	EFD4NL	—
5-Gang	EFD5NL	—

① 1-Gang, 2-Gang, and 5-Gang bodies only.

② For tandem bodies, external seals must be installed within 1.5 meters (5 feet) of each conduit entrance for Class I, Groups C and D.

③ Blank EFD bodies are Non-UL Listed.

# EFD/EFDB and EDS Series Factory Sealed Control Stations

## EFD Cast Device Box Ordering Information. Blank Bodies for Brazed Threaded Hubs

1-, 2-, 3-, 4- and 5-Gang Boxes. Brazed Threaded Hubs for Rigid Conduit, 1/2" thru 1"; Brazed Union Hubs, 1/2" thru 1".

### Determine catalog number as follows:

- (1) Select EFD device box catalog number;
- (2) Select "Standard Hub Arrangement Diagram" number; and
- (3) Select symbols that represent hub sizes from "Symbol Table." (Use "0" where no hub is required, and separate the various divisions of the complete catalog number by dashes.)

### Example

The blank body device box selected is EFD3NL and the hub arrangement is diagram #8. Hub "a" is to be 3/4" brazed threaded; hub "b", 1" brazed threaded; hub "c", 3/4" brazed threaded; hub "d", no hub is required; and hub "e", 1" brazed union.

The complete catalog number will be:  
**EFD-3NL-8-23203E**

If a "Standard Hub Arrangement" is not suitable for the application, or when hubs are to be more accurately spaced, submit sketch locating hubs (1) from centerlines of walls and (2) from outside back of box (or from mounting lug surface if lugs are supplied).

**All hubs will be located in centerlines of walls and evenly spaced unless otherwise specified.**

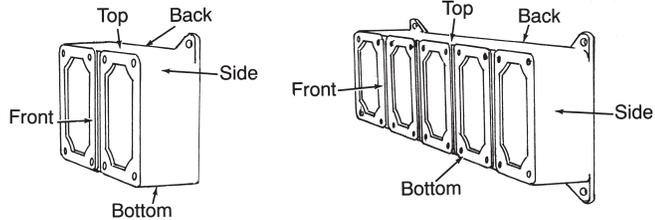
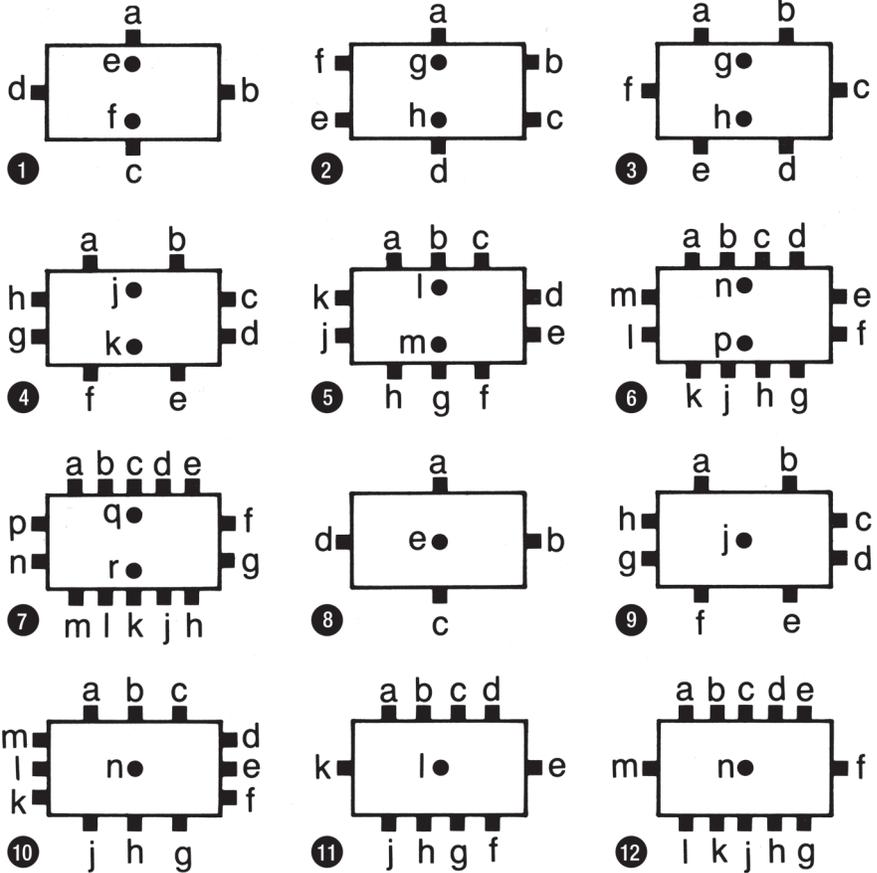
### Symbol Table

Hub Size (Inches)	Brazed Threaded Hub Symbol	Brazed Union Hub Symbol
Blank	0	0
1/2	1	1E
3/4	2	2E
1	3	3E

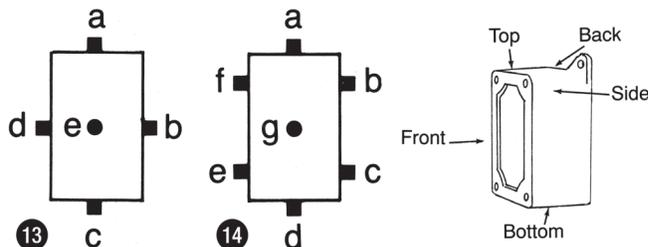
### Standard Hub Arrangement Diagrams

Hub "a" is always TOP of box

#### 2-, 3-, 4- and 5-Gang (Front View)



#### 1-Gang (Front View)



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