4C Control Stations

Application and Selection, Quick Selector Chart

Application:
Control stations are used as a remote means of:
- motor control
- visual indication of equipment performance
- on-off control of circuits
- circuit selection

Considerations for Selection:
- The environment of the control station location and requirements for construction in terms of NEC/CEC compliances and NEMA/EEMAC type.
- Function to be performed
- Desirability of factory sealing as compared to field sealing
- Factory sealing has distinct advantages
  Less installation problems
  Less time consuming
  Less change of error
  Lower installed cost
  Accommodates future changes to circuitry
  Greater reliability
- The number of controls required, and the space available for installation. Where space is limited, panel or junction box mounting with many combinations are available
- See ''Quick Selector Chart'' for guidance

Options:
Many options are available on:
- material and finishes where special atmospheric conditions prevail
- special features for specific applications.

See individual control station listings for available options

Quick Selector Chart

Control Station	NEC/CEC – Hazardous Area Compliance	NEMA/ EEMAC Type	Function	Factory Sealed	No. of Devices or Units	Type of Mounting	Cover Style
MC, MCC		3, 4	Pushbutton Pilot light Selector switch		1-5*	Surface 1-5 gang	Gasketed
AFU, AFUX (conveyor control switch)	Cl. I, Div. 1 & 2, Groups C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 4, 7CD, 9EFG	Emergency stop		1-2†	Surface 1 gang	Ground Joint and Gasketed
AFU (signal switch)		3	''ON-OFF'' ''START-STOP'' Pull cord		1†	Surface 1 gang	Not applicable
AFA, AFAX	Cl. I, Div. 1 & 2, Groups C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 4, 7CD, 9EFG	Conveyor belt alignment switch		1-2*	Surface 1 gang	Ground Joint and Gasketed
EDS, EDSC§	Cl. I, Div. 1, Groups C,D Cl. I, Div. 2, Groups B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7B(Div. 2)CD, 9EFG	Pilot light Pushbutton Selector switch	Pilot light Pushbutton Selector switch §	1-2*	Surface 1-2 gang	Ground joint
DSD-SR	Cl. I, Div. 1 & 2, Groups C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 5, 7CD, 9EFG, 12	Selector Switch		1	Surface 1 gang	Ground joint
Flex Station	Cl. I, Div. 1, Groups C,D Cl. I, Div. 2, Groups B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7B(Div. 2)CD, 9EFG	Pilot light Pushbutton	Pilot light Pushbutton	1-2-3	Surface 1-2 gang	Ground joint

* Number of devices per unit

† Number of units in combination

§ **Factory sealed units; listed on pages 431 through 441**

Quick Selector Chart (continued)

Control Station	NEC/CEC – Hazardous Area Compliance	NEMA/ EEMAC Type	Function	Factory Sealed	No. of Devices or Units	Type of Mounting	Cover Style
EDSCM	Cl. I, Div. 1, Groups C,D Cl. I, Div. 2, Groups B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7CD, 9EFG	Pilot light Pushbutton Selector switch		1-15*	Surface 1-15 gang	Ground joint
EFS §	Cl. I, Div. 1 & 2, Groups B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7BCD, 9EFG	Pilot light Pushbutton Selector switch	Pilot light § Pushbutton Selector switch	1-2*	Surface 1 gang	Ground joint
OAC	Cl. I, Div. 1, Groups A,B,C,D Cl. I, Div. 2, Groups A,B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7ABCD, 9EFG, 12	Pushbutton Selector switch	Pushbutton Selector switch	1-2*	Surface 1 gang	Threaded
EMP	Cl. I, Div. 1, Groups C,D Cl. I, Div. 2, Groups B,C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	3, 7CD, 9EFG	Pushbutton Pilot light Selector switch Combination	Pilot light Pushbutton Selector switch	1-78*	Surface junction box	Ground joint
EGL	Cl. I, Div. 1 & 2, Groups C,D Cl. II, Div. 1, Groups E,F,G Cl. II, Div. 2, Groups F,G Cl. III	7CD, 9EFG	Static ground indicator		1	Surface	Ground joint

* Number of devices per unit

† Number of units in combination

§ **Factory sealed units; listed on pages 431 through 441**

4C EFS Pilot Lights

Factory Sealed Pushbutton, Selector Switch Stations – See Section 5C

Cl. I, Div. 1 & 2, Groups B*,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7B*CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

EFS pilot lights are used:
- in areas which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- for installation at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist
- to visually indicate at a remote location that the desired function is being performed

Features:

- Small, compact enclosures with accurately ground flange on both body and cover for flame-tight joint
- Pilot lights are factory sealed. Conventional external seals are not required
- Dead end (EFS) or through feed (EFSC) hubs – ½″ to 1″ sizes

Standard Materials:

- Bodies – *Feraloy*® iron alloy (U.S.) and copper-free aluminum (Canada)
- Pilot light covers – *Feraloy* iron alloy
- Operating shafts – stainless steel

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized with aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural

Electrical Rating Range:

- Pilot lights – 110 to 600vac

Certifications & Compliances:

- NEC/CEC: Class I, Groups B*,C,D
  Class II, Groups E,F,G
  Class III
- NEMA/EEMAC: 3, 7B*CD, 9EFG
- UL Standard: 698
- CSA Standard: C22.2

Options:

- The following special options are available from factory by adding suffix to Cat. No.

Description	Suffix to be Added to Encl. Cat. #
Pilot lights for circuit voltages up to 600 volts maximum (standard voltage range 110-125)	See Listings
LED pilot lights in place of standard incandescent pilot lamps	LED
Bodies and covers — copper-free aluminum	SA
24 VDC operation on pilot lights	S300

EFS2190 Pushbutton

EFS11271 Selector Switch

For Factory Sealed Pushbutton Stations and Selector Switches, see Section 5C.

* External conduit seal required only on 1 inch hub size in Division 1, Group B within 5 feet (1.5 meters).

Pilot lights listed below are factory sealed and do not require external seals*. Lamps are 6 watt, type S6, candelabra base for use on 110-125 volt circuits.

LED pilot lights can be provided in place of standard incandescent lamps by adding suffix LED after the color symbols. See Options on page 386

Enclosures with single pilot covers **only** can be equipped with a transformer for each lamp for high voltages as shown.

Transformer Voltages Above 125

Nominal Volts 50-60 hertz Transformer	Primary Voltage Range	Cat. No. Suffix
220/110	220-240	T2
440/110	440-480	T4
550/110	550-600	T5

EFS Single Gang

Enclosure with Single Pilot Light ♦

Hub Size	Dead End Cat. #	Through Feed Cat. #
½	EFS11524-†	EFSC11524-†
¾	EFS21524-†	EFSC21524-†
1	EFS31524-†	EFSC31524-†

Enclosure with Double Pilot Lights ♦

½	EFS11561-†	EFSC11561-†
¾	EFS21561-†	EFSC21561-†
1	EFS31561-†	EFSC31561-†

* External conduit seal required for 1 inch hub size in Division 1, Group B within 5 feet (1.5 meters) of enclosure.

† Add color symbol for each pilot light from table below. Example: EFS11561 with red and green lights is EFS11561-J1-J3

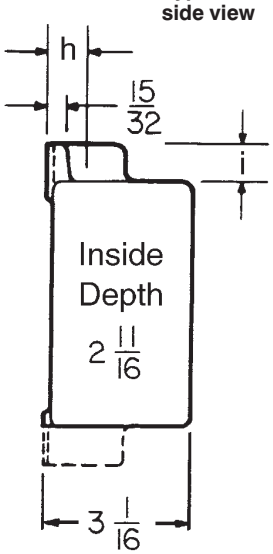
Color	Symbol	Color	Symbol	Color	Symbol
Red	J1	Amber	J6	Blue	J11
Green	J3	Clear	J10		

♦ LED pilot lights can be furnished in place of standard incandescent pilot lamps. Add suffix LED to catalog number after color symbol.

Dimensions (inches)

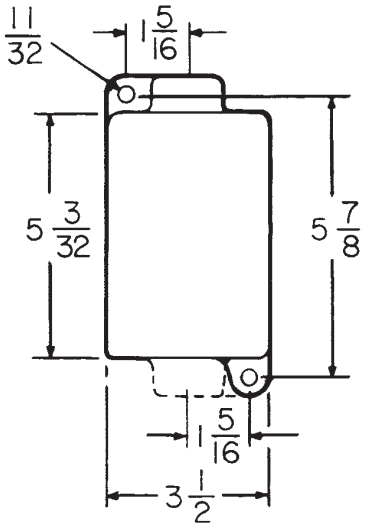
Dimensions are approximate, not for construction purposes.

Typical body side view

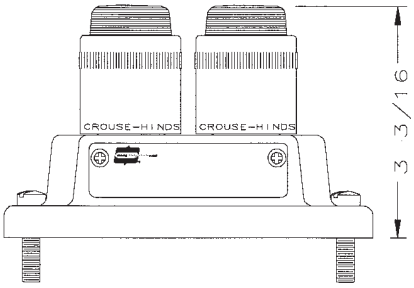


Hub Size	Dim. "h"	Dim. "i"
½	¾	13/16
¾	⅞	13/16
1	1	15/16

Front view



Cover †



Surface covers have same length and width dimensions as bodies.

4C FlexStation™ Control Station Components

Class I, Div. 1 & 2, Groups B (Div. 2 only)* C, D
Class II, Div. 1 & 2, Groups E, F, G
Class III
Zone 1 & 2 Groups IIB*
NEMA 3R, 7B*(Div. 2)CD, 9 EFG, 12

Application:

Five modular components - operators, contact blocks, covers, legend plates, and bodies - are combined to provide a variety of control stations which are:

- For use indoors or outdoors, in areas which are hazardous due to the presence of flammable gases and vapors, or combustible dust.
- Used in conjunction with magnetic starters or contactors for remote control of motors and other electrical apparatus.
- For installation in petroleum refineries, chemical petrochemical, and other industrial process facilities; grain processing and storage facilities; and other heavy industrial applications where Class I, Class II, or Class III hazards are present.

Features:

- Momentary contact pushbuttons, maintained contact pushbuttons, and pilots lights offer a choice of functions.
- Selector switches in 2 or 3 position configurations including keyed and spring return options.
- Single-hole, two-hole, and three-hole covers for one, two, or three devices respectively per station.
- Rugged control devices for safe, reliable operation in industrial applications.
- Bodies, with extra room for wire pulling and termination, also include two integral mounting feet for fast, secure installation.
- Bodies have ½″, ¾″, or 1″ dead-end or through-feed conduit hubs with integral bushing for protection of wire insulation.
- Covers and bodies are available in Feraloy® or copper-free aluminum for light weight and corrosion resistance.
- DL legend plates have large lettering to give clear indication of device function. Space is available for field markings.

Standard Materials:

- Bodies, covers - Feraloy® or copper-free aluminum.
- Pushbuttons and guards - Type 6/6 nylon.
- Operating shafts, bearings - Stainless Steel.

Standard Finishes:

- Feraloy® iron-alloy - electrogalvanized and aluminum acrylic paint.
- Copper-free aluminum - natural.
- Stainless Steel - natural.

Electrical Ratings:

- Pushbuttons and selector switches - 600 VAC heavy duty (NEMA A600).
- Pilot lights - 120 VAC.

Certifications and Compliances:

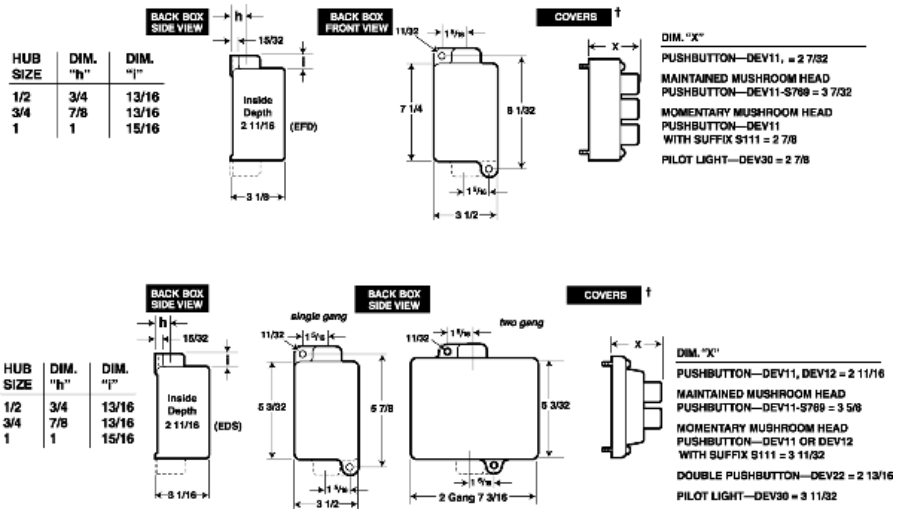
- NEC: Class I, Div. 1&2, Groups B* (Div. 2), C, D
  Class II, Div. 1&2, Groups E, F, G
  Class III
- Zone 1&2 Groups IIB*
- NEMA: 3R, 7B (Div. 2)CD, 9EFG, 12
- UL Standard: 698

* For Class I, Division 1, Group B or Zone 1 Hydrogen applications, use the EFS(C) complete control station catalog numbers found in Section 5C.

Options:

Description	Suffix
● Corro-free™ epoxy finish for use in severely corrosive environments. FlexStation covers and bodies.	S752

Dimensions** (Inches):



COOPER Crouse-Hinds

FlexStation™ Control Station Components

Ordering Information

Class I, Div. 1 & 2, Groups B (Div. 2 only) C, D
Class II, Div. 1 & 2, Groups E, F, G
Class III
NEMA 3R, 7B(Div. 2)CD, 9EFG, 12
IEC Zone 1 & 2 Groups IIB

STEP 1 – Select operator

Pushbutton *front operated, standard black button*

Description	Cat. #
Single button for 1 contact block	DEV11
Single button for 2 contact blocks	DEV12
Double buttons for 2 contact blocks	DEV22

Options	Suffix to be added to Cat. #
Specify color for each pushbutton button (ex: *DEV11G, DEV22GR).* Color is black if unspecified.	
Green button (unmarked)	G
Red button (unmarked)	R
Momentary red mushroom head style (not available with lockout or with DEV22)	S111
Lockout with bar and chain (available on DEV11 and DEV12)	S153
Maintained red mushroom head style (lockout comes standard, do not specify S153; not available on DEV22)	S769

Pilot Light *factory sealed, incandescent lamp*

Description	Cat. #
Pilot light with red jewel	DEV30 J1
Pilot light with green jewel	DEV30 J3
Pilot light with amber jewel	DEV30 J6
Pilot light with clear jewel	DEV30 J10
Pilot light with blue LED and clear jewel	DEV30 J11–LED

Options	Suffix to be added to Cat. #
LED lamps (standard clear jewel with colored lamp)	LED
24 V lamp (not available with transformer feature)	S300
240/120 V pilot light transformer	T2
480/120 V pilot light transformer	T4
600/120 V pilot light transformer	T5

Selector Switch *with standard lockout*

Description	Cat. #
2-position (pos. 1 – N.O., pos. 2 – N.C.) for use with 1 or 2 contact blocks	DEV42
3-position (pos. 1 – N.O., pos. 2 – Open, pos. 3 – N.C.) for use with 1 or 2 contact blocks	DEV43
3-position (pos. 1 – N.C., pos. 2 – N.O., pos. 3 – N.O. for Switch A) (pos. 1 – N.O., pos. 2 – N.O., pos. 3 – N.C. for Switch B) for use with 2 contact blocks	DEV44

Options	Suffix to be added to Cat. #
Spring return to center from right *(For DEV43 or DEV44 only)*	S634
Spring return to center from left *(For DEV43 or DEV44 only)*	S635
Spring return to center from right and left *(For DEV43 or DEV44 only)*	S842
Key Operated – removable from all positions	S847 K1
Key Operated – removable from left position for DEV42 or from center for DEV43 and DEV44	S847 K2
Key Operated – removable from right position for DEV42 or from left for DEV43 and DEV44	S847 K3
Key Operated – removable from right position for DEV43 and DEV44	S847 K4

STEP 2 – Select contact block (if required)

Contact Block

Description	Cat. #
Contact block, 1 NO/1 NC, 10A, 600VAC, A600 rating	ESWP126

*Each control station will accept a maximum of three contact blocks. Select device operators accordingly. DEV12, DEV22 and DEV44 may not be used on a three-operator (DS443-SA) cover. DEV42 and DEV43 may not be used on a three-operator cover when using them with two contact blocks.

Class I, Div. 1 & 2, Groups B (Div. 2 only) C, D
Class II, Div. 1 & 2, Groups E, F, G
Class III
NEMA 3R, 7B(Div. 2)CD, 9EFG, 12
IEC Zone 1 & 2 Groups IIB

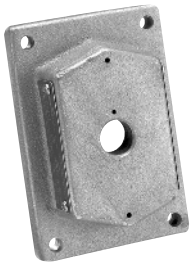
STEP 3 – Select desired legend plates

Device Legend Plates – *for special markings order DL01 – "desired marking"*

Cat. #	Inscription	Cat. #	Inscription
DL01	Blank w/no fields	DL97	Alarm-Silence
DL02	Blank w/single field	DL95	Auto-Manual
DL03	Blank w/2 fields	DL92	Fast-Slow
DL16	Automatic	DL30	Forward-Reverse
DL21	Close	DL29	Hand-Auto
DL23	Down	DL35	In-Out
DL17	Emergency Stop	DL93	Local-Remote
DL46	Fast	DL98	Maint-Manual
DL18	Forward	DL48	Off-On
DL15	Hand	DL91	On-Off
DL24	In	DL32	Open-Close
DL10	Jog	DL36	Raise-Lower
DL27	Lower	DL28	Run-Jog
DL08	Off	DL33	Up-Down
DL07	On	DL86	Safe-Run
DL20	Open	DL65	Slow-Fast
DL25	Out	DL96	Start-Emergency Stop
DL14	Power On	DL37	Start-Stop
DL26	Raise	DL90	Stop-Start
DL12	Reset	DL99	Test-Reset
DL19	Reverse	DL94	Trip-Reset
DL09	Run		
DL85	Safe		
DL47	Slow		
DL05	Start		
DL06	Stop		
DL13	Test		
DL11	Trip		
DL22	Up		

STEP 4 – Select Cover

Covers



Description	Cat. #
Blank cover with single hole (Single gang)	DS441
Blank cover with 2 holes (Single gang)	DS442
Blank cover with 3 holes (To be used with EFD(C)1491-SA, 2491-SA or 3491-SA series of back boxes)	DS443-SA
Replacement cover plug for unused device operator openings	0206765

Options	Suffix to be added to Cat. #
Aluminum body (mandatory suffix on DS443 must be included in catalog number	SA
Exterior epoxy powder coat finish	S752
Interior & exterior epoxy powder coat finish. Not available on three operator cover (DS443-SA)	S753

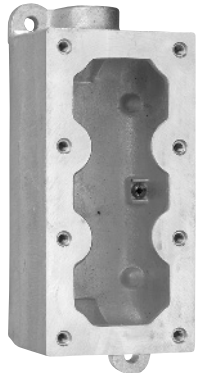
STEP 5 – Select back box

Back Boxes *(for use with DS441 and DS442 covers or with 1 gang and 2 gang DS/DSD Series covers)*

Dead End	Through Feed	Hub Size	Back Box Arrangement
EDS171	EDSC171	½″	Single gang back box
EDS271	EDSC271	¾″	Single gang back box
EDS371	EDSC371	1″	Single gang back box
EDS172	EDSC172	½″	Double gang back box
EDS272	EDSC272	¾″	Double gang back box
EDS372	EDSC372	1″	Double gang back box

Options	Suffix to be added to Cat. #
Aluminum Body	SA
Exterior epoxy powder coat finish	S752
Interior & exterior epoxy powder coat finish	S753

Back Boxes *(for use with DS443-SA cover or with 1½ gang DS511 (3-operator) Series covers)*



Dead End	Through Feed	Hub Size	Back Box Arrangement
EFD1491-SA	EFDC1491-SA	½″	1½ gang back box
EFD2491-SA	EFDC2491-SA	¾″	1½ gang back box
EFD3491-SA	EFDC3491-SA	1″	1½ gang back box

Options	Suffix to be added to Cat. #
Exterior epoxy powder coat finish	S752
Interior & exterior epoxy powder coat finish	S753

4C EDSCM Modular Multi-Gang Control Device Bodies

Dimensions Pg. 393

Cl. I, Div. 1, Groups C,D ♦
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7B(Div. 2)CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

For use with DSD device cover sub-assemblies listed on catalog pages 394 to 396.

Applications:

Modular control device bodies are for *surface mounting combinations of control device equipment for use in:*

- Industrial areas such as chemical plants, oil and gas refineries, paint and varnish manufacturing plants, gasoline bulk loading terminals, grain elevators, grain processing industries, coal processing or handling areas where atmospheres may contain hazardous gases or dusts, and arcing of enclosed devices must not ignite the surrounding atmosphere.
- Conjunction with magnetic starters or contactors for remote control and monitoring of motors.
- Manual starting and stopping of small AC or DC motors.
- Controlling and supplying energy to portable electrical devices such as motor generator sets, compressors, conveyors, portable tools, etc.

Features:

EDSCM Modular Control Stations have many distinct advantages over multiple individual units:

- Reduce installation costs. A multi-gang device assembly can be installed in less time than several single-gang units.
- Seals not required between gangs.
- Improved appearance. No exposed conduit runs between devices.
- Light weight. Fifteen-gang aluminum device body can be installed by one person.
- Mounting feet are provided on the top and bottom of every gang to facilitate installation.
- Two and three gang tandem bodies have 1¼″ thru-feed inward horizontal hubs and 1″ or 2″ vertical thru-feed hubs. Pipe plugs are installed in one horizontal hub and both vertical hubs.
- Single-gang device bodies have 1″ thru-feed inward horizontal hubs and ¾″ thru-feed vertical hubs. Pipe plugs are installed in one horizontal hub and both vertical hubs.
- All hubs are taper tapped and have integral bushings.
- Close nipples, which are used to join two or more device bodies together, are furnished with EDSCM 21, 32, 33, 62 and 63 units.
- Any combination of bodies can be joined together horizontally.

Standard Materials:

- Copper-free aluminum

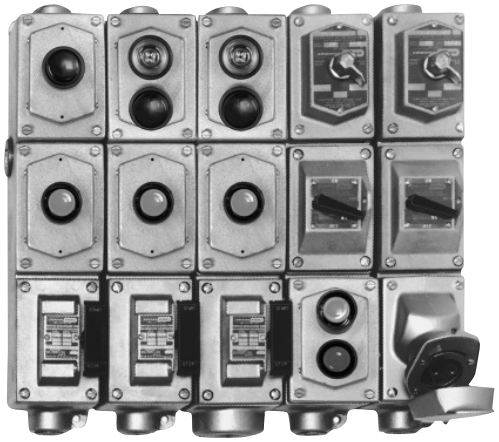
Finish:

- Natural

Certifications and Compliances:

(When used with DSD device sub-assemblies) ♦:
Class I, Division 1 & 2, Groups C,D
Class I, Division 2, Group B,C,D
Class II, Division 1, Groups E,F,G
Class II, Division 2, Groups F,G
Class III
NEMA/EEMAC 3,7B(Div.2)CD,9EFG
U.L. Standard 894, 698
- CSA Standard: C22.2 No. 30

NOTE: In Class I areas all conduit runs entering bodies must be sealed. As many as five bodies can be joined horizontally without an intervening seal.



Series EDSCM

The EDSCM Series consists of five basic device bodies that can be joined together to make multi-gang control stations.

EDSCM21 **EDSCM32** **EDSCM62** **EDSCM33** **EDSCM63**

Description	Thru-Feed Hub Size	Cat. #
Single Gang	¾″	EDSCM21
Tandem Two Gang	1″	EDSCM32
Tandem Two Gang	2″	EDSCM62
Tandem Three Gang	1″	EDSCM33
Tandem Three Gang	2″	EDSCM63

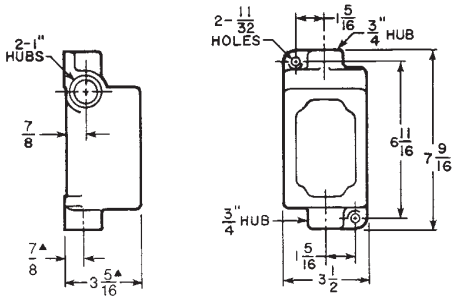
♦ When a CPS receptacle cover device is used, the assembly meets requirements for Class I, Groups C and D areas only.

EDSCM Modular Multi-Gang Control Device Bodies

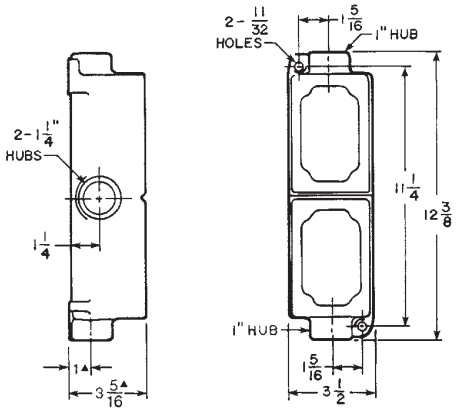
Cl. I, Div. 1, Groups C,D ♦
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7B(Div. 2)CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

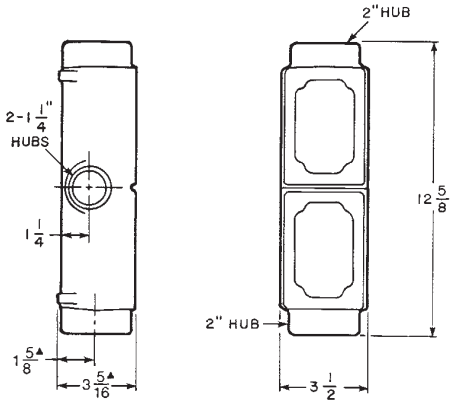
Dimensions (inches):



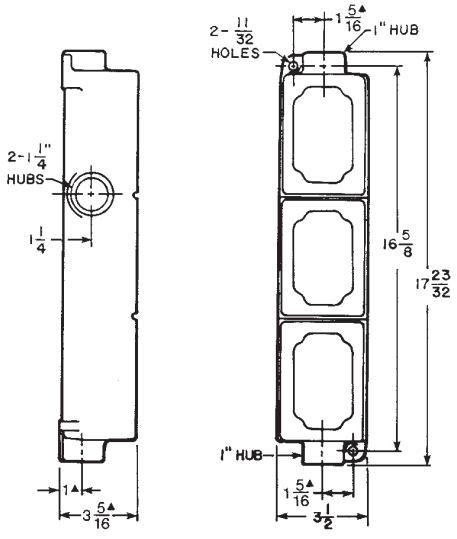
EDSCM21



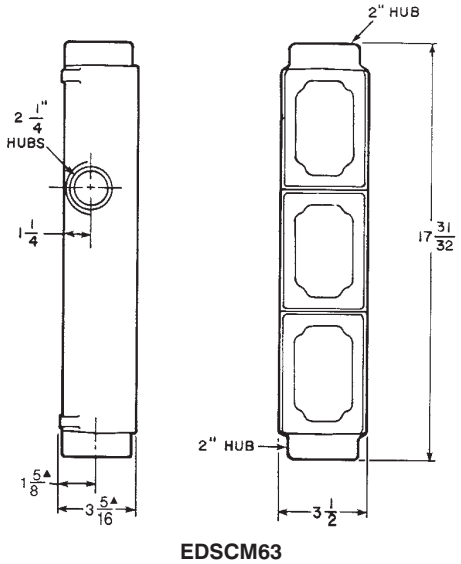
EDSCM32



EDSCM62



EDSCM33



EDSCM63

♦ When a CPS receptacle cover device is used, the assembly meets requirements for Class I, Groups C and D areas only. Receptacles comply with U.L. Standard 886 only.
* Dimensions are approximate, not for construction purposes.

4C DSD Cover and Device Sub-Assemblies

Cl. I. Div. 1&2, Groups B*, C, D ♦Explosionproof
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G Raintight
Cl. III Wet Locations
NEMA 3, 7B*CD, 9EFG

For use with EDSCM modular control device bodies listed on catalog page 392 and EDS/EDSC back boxes on page 397.

Features:

- Large machine screws for fastening covers to bodies
- Lockout hole for padlock having ¼″ hasp is provided when used with covers for front lever and side rocker type operation
- Lockout provisions on front operated pushbutton (marked ''STOP'' and ''OFF'') and all selector switch covers
- For covers with front lever and side rocker type operating handles, threaded type shafts and bushings are used to ensure flametightness
- Accurately ground flange for flametight joint when mated with ground flange on back box

Standard Materials:

- Covers, front operated – *Feraloy* iron alloy and copper-free aluminum
- Covers, side operated – Copper-free aluminum
- Shafts and shaft bushings – stainless steel
- Rocker handles, pushbuttons and guards – type 6/6 nylon
- Sealing enclosures – copper-free aluminum

CPS delayed action receptacle cover:

- Receptacle housing – copper-free aluminum
- Insulation – diallyl phthalate (DAP)
- Contacts – brass

Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural

Certifications and Compliances:

(When used with EDSCM & EDS bodies):

- NEC/CEC:
  - Class I, Division 1 & 2, Groups C, D ♦
  - Class I, Division 2, Groups B, C, D
  - Class II, Division 1, Groups E, F, G
  - Class II, Division 2, Groups F, G
  - Class III
- NEMA/EEMAC: 3, 7B(Div. 2)CD, 9EFG
- UL Standard: 894, 698
- CSA Standard: C22.2 No. 30

Pushbuttons, Pilot Lights & Selector Switches:

(When used with EFS bodies):

- NEC/CEC:
  - Class I, Division 1 & 2, Groups B, C, D
  - Class II, Division 1, Groups E, F, G
  - Class II, Division 2, Groups F, G
  - Class III
- NEMA/EEMAC: 3, 7BCD, 9EFG
- UL Standard: 894, 698
- CSA Standard: C22.2 No. 30

Options:

The following special options are available by adding suffix to Cat. No.:

Description	Suffix to be Added to Cover Cat. #
Lockout provision on front operated pushbutton cover (standard on buttons marked ''STOP'' and ''OFF'')	S153
Three-position selector switches with modified operation: Momentary contact clockwise operation, spring return to center, maintained contact counter-clockwise operation	S634
Momentary contact counter-clockwise operation, spring return to center, maintained contact clockwise operation.	S635
Emergency ''STOP'' button momentary – front operated mushroom button breaks normally closed contacts	S111
Bodies and covers – copper-free aluminum	SA
For 24 VDC operation on pilot lights	S300
Maintained contact mushroom head with lockout and guard.	S769

* For pushbuttons, pilot lights, & selector switches, use EFS back box with required external conduit seal for 1 inch hub size, within 5 feet for Class I, Division 1, Group B applications.

Manual Motor Starters

Poles	Max. H.P.	Max. Volts A.C.	Cat. #
With Allen-Bradley Bulletin 600 Switches**			
1	1	115-230	DSD910
2	1	115-230	DSD911
With General Electric Switches**			
1	1	115-230	DSD912§
2	1	115-230	DSD913§
With Cutler-Hammer Switches**			
1	1	115-230	DSD914§
2	1	115-230	DSD915§
With Arrow-Hart Switches Without Overload Protection			
2	5	250 (30A)	DSD916
2	7.5	600 (30A)	DSD916
3	7.5	250 (30A)	DSD917
3	15	600 (20A)	DSD917

♦ When a CPS receptacle cover device is used, the assembly meets requirements for Class I, Groups C and D areas only. Receptacles comply with U.L. Standard 886 only.

§ A comparable factory sealed cover will fit on the EDSCM21 body, EDS and EDSC bodies (listed on page 397), and in bottom gang of EDSCM33 and EDSCM63 bodies. To order, add suffix S701 to catalog number.

** Includes one interchangeable heater. Select heater (from tables on pages 356 and 357). Symbol 0 (zero) may be used to indicate heater omitted.

DSD Cover and Device Sub-Assemblies

Cl. I. Div. 1&2, Groups B*,C,D ♦ Explosionproof
Cl. II, Div. 1, Groups E,F,G Dust-Ignitionproof
Cl. II, Div. 2, Groups F,G Raintight
Cl. III Wet Locations
NEMA 3,7B*CD,9EFG


DSD918


DSD921


DSD933


DSD962


DSD970


CPS152R


ENR5201

For use with EDSCM modular control device bodies listed on catalog page 392 & EFS/EDS back boxes listed on catalog page 397.

Front Operated Pushbutton Stations
600 VAC Heavy Duty, Factory Sealed

Number of Cover Buttons	Normal Position	Diagram	Cat. #§
1	1 Circuit Universal		DSD918
1	2 Circuits Universal		DSD919
	2 Circuits**	A B	DSD920**
2	2 Circuits Universal		DSD921
2	2 Circuits** Start-Stop unless otherwise specified	A B	DSD922**
2	2 Circuits Universal Mushroom Head		DSD970
3	3 Circuits Universal		DSD962

Front Operated General Use Snap Switch

Style	Amperes 120 VAC	277 VAC	Cat. #
1-Pole	20	20	DSD933‡
2-Pole	20	20	DSD934‡
3-Pole	♦ ♦	♦ ♦	DSD935***
3-Way	20	20	DSD936‡
4-Way	20	20	DSD937‡
1-Pole	30	30	DSD939***
2-Pole	30	30	DSD940***
3-Way	30	30	DSD941***

*** Cannot be factory sealed.

♦ ♦ 16 Amp., 125V.
10 Amp., 250V.

** Two universal contact blocks, must be wired as two circuits with one normally open and one normally closed.

‡ To order a comparable factory sealed cover for EDS, EDSC, EDSCM21 and the bottom gang of EDSCM33 and EDSCM63 bodies, add suffix S697.

* See note on catalog page 394 for Division 1, Group B applications.

Delayed Action Receptacles
Factory Sealed

Rating	Cat. #
20 A, 1 HP, 125-250 VAC 60 Hertz 20 A, 18 VDC	CPS152R (2 wire, 3 pole)
30 A, 1½ HP, 125-250 VAC 60 Hertz; 7 A, ½ HP, 480 VAC, 60 Hertz	CPS532R (2 wire, 3 pole)
30 A, 3 HP, 125-250 VAC 60 Hertz; 7A, 1 HP, 480 VAC, 60 Hertz	CPS732R (3 wire, 4 pole)

General Purpose, Dead Front, Factory Sealed

Rating	Cat. #	NEMA Config.
20 A, 125 VAC	ENR5201	5-20R
20 A, 250 VAC	ENR6202	6-20R

♦ When a CPS receptacle cover device is used, the assembly meets requirements for Class I, Groups C and D areas only.

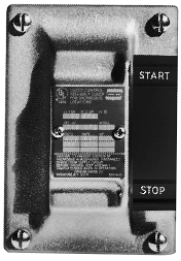
§ Specify marking required for external pushbuttons or nylon rocker handles. Standard markings available, are as follows:

START	OFF	RESET	LIGHT ON
STOP	RUN	TRIP	HAND
ON	JOG	TEST	AUTOMATIC
EMERGENCY	OPEN	DOWN	RAISE
FORWARD	CLOSE	IN	LOWER
REVERSE	UP	OUT	

4C DSD Cover and Device Sub-Assemblies

Cl. I, Div. 1&2, Groups B*,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7B*CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

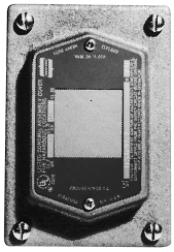


DSD951

DSD925

DSD947-J1-J1

DSD958



DSD957

DSD961-J1

For use with EDSCM modular control device bodies listed on catalog page 392 & EFS/EDS back boxes listed on catalog page 397.

Side Operated Pushbutton Station
600 VAC Heavy Duty, Factory Sealed

Normal Position	Diagram	Cat. #§
1 Circuit Universal		DSD949
2 Circuits Universal		DSD950
2 Circuits 1 Open - A 1 Closed - B Start-Stop unless otherwise specified	A B	DSD951

Selector Switches
Maintained Contact 600 VAC Heavy Duty

	Style	Position 1	Position 2	Position 3	Cat. #††
Two Position	Two Circuit	A1 A2			DSD923
	Four Circuit	A1 A2 B1 B2			DSD924
Three Position	Two Circuit	A1 A2			DSD925
		A1 A2 B1 B2			DSD926
	Four Circuit	A1 A2 B1 B2			DSD927

Pilot Light Devices ♦
Factory Sealed

Description	Diagram	Cat. #
With one pilot light		DSD948-J†
With two pilot lights (Not available with a transformer)		DSD947-J†-J†
With one pilot light and transformer		DSD948-J†-T**
With one pilot light and pushbutton station		DSD958-J†
With one pilot light and 2 pushbutton station		DSD961-J†
With one pilot light & transformer and 2 pushbutton station		DSD961-J†-T**

Blank Cover

Cat. # DSD957

§ See table on page 395.

†† Specify indicating plate markings.
Standard indicating plate markings available are as follows:

Two-Position

RUN, JOG	FAST, SLOW	IN, OUT
HAND, AUTOMATIC	OPEN, CLOSE	RAISE, LOWER
FORWARD, REVERSE	UP, DOWN	START, STOP
	ON, OFF	

Three-Position

JOG, OFF, RUN	1, OFF, 2
AUTOMATIC, OFF, HAND	OPEN, OFF, CLOSE
FORWARD, OFF, REVERSE	UP, OFF, DOWN
FAST, OFF, SLOW	

† Add color symbol for each pilot light from table below.

Color	Symbol	Color	Symbol	Color	Symbol
Red	J1	Amber	J6	Blue	J11
Green	J3	Clear	J10		

** Add suffix below for transformer primary voltage:
Transformers – Voltages above 125

Nom. Volts 50-60 hertz Transformer	Primary Voltage Range	Suffix Added to Cat. #
220/110	220-240	T2
440/110	440-480	T4
550/110	550-600	T5

♦ LED pilot lights can be furnished in place of standard incandescent pilot lamps. Add suffix LED to Cat. No. after last color symbol.

* See note on catalog page 394 for Division 1, Group B applications.

EDS and EDSC Single and Multi-Gang Device Bodies and EFS and EFSC Single Gang Device Bodies

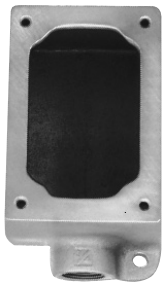
Cl. I, Div. 1 & 2, Groups B,C,D ◆ Explosionproof
Cl. II, Div. 1, Groups E,F,G Dust-Ignitionproof
Cl. II, Div. 2, Groups F,G Raintight
Cl. III Wet Locations
NEMA 3,7B ◆ CD,9EFG,12

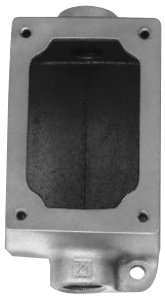
Both EFS and EFSC single gang body family and EDS and EDSC single and two-gang standard, two or three-gang tandem device bodies are designed for use with the DS covers listed below, and the DSD covers shown on pages 394 through 396.

Single and two-gang standard bodies have external dead end or thru-feed conduit hubs, with integral bushings, in sizes ½″, ¾″ and 1″. Tandem bodies have thru-feed 1″ hubs.

Each body contains 1 internal ground screw and boss per gang and external mounting feet.

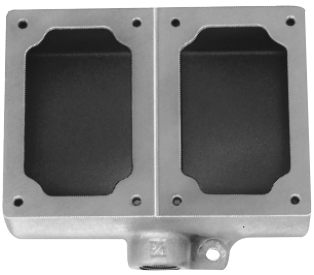
Order bodies and covers separately.

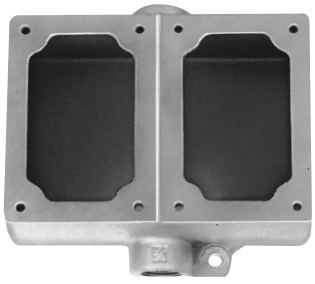




Single Gang
Feraloy

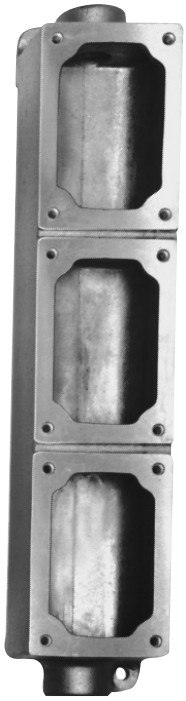
Hub Size	Deep – 2 11/16″ Deep		Shallow – 2″ Deep	
	Dead End Cat. #	Through Feed Cat. #	Dead End Cat. #	Through Feed Cat. #
½″	EDS171	EDSC171	EFS171	EFSC171
¾″	EDS271	EDSC271	EFS271	EFSC271
1″	EDS371	EDSC371	EFS371	EFSC371





Two Gang
Feraloy

Hub Size	Dead End Cat. #	Through Feed Cat. #
½″	EDS172	EDSC172
¾″	EDS272	EDSC272
1″	EDS372	EDSC372



Three Gang Tandem
Copper-free Aluminum

Hub Size	Cat. #
1″	EDSC378

Common Cover Assemblies

These covers may be used with the above bodies or as replacements for the cover portions of the control device assemblies listed on pages 392, 431, 435 & 436.

Description	Diagram	Cat. #
With one pilot light		DS455-J†
With one pilot light and transformer		DS476-J†-T‡
With two pilot lights		DS456-J†-J†
With one push button		DS429§
With two push buttons		DS454§
With one push button and one pilot light		DS510-J†§

◆ Subject to compliance limitations of device covers selected. Only EFS & EFSC bodies with the appropriate covers are for use in Div. 1, Group B areas.

† Insert color symbol. See table on page 396.

‡ Insert symbol for transformer primary voltage.
See tables on page 396. Example: DS476 with red pilot light and 440 volt transformer is DS476-J1-T4.

§ See marking requirements on page 395.

4C Control Station Covers

Hinged and Open Front

OPEN FRONT COVER

HINGED COVER

Added environmental protection for Cooper Crouse-Hinds® control stations is now available from a patented "slip on" series of covers. Easy to install, these enclosures are available in hinged and open front styles.

- Clear UV stabilized Lexan‡ polycarbonate plastic.
  - ♦ Allows the end-user to see enclosed controls.
  - ♦ Strong enough to withstand the rough treatment found in the industrial work place.
- Ideal for corrosive and adverse areas providing added product endurance.
- Short pay back period.
  - ♦ Downtime due to weather or accidental bumping is eliminated.
  - ♦ Plant shutdowns caused by inoperable or accidentally operated push button devices are non-existent.
- Lock out/tag out capabilities.
  - ♦ For conformance to OSHA requirements.
  - ♦ Provides increased personnel safety.
- Quick and easy slip on installation requires no tools.
- Colored covers are available (e.g. red for emergency, yellow for fire alarm, etc.).

SECURED ACCESS HINGED COVER

APPLICATIONS:

- High moisture areas due to weather, steam, or wash down procedures.
- Areas where dirt, dust, mud, sand, etc. interferes with equipment operation.
- Prevention of accidental equipment operation.
- Instances requiring equipment lock out/tag out.

FEATURES & BENEFITS:

- Heavy duty, impact-resistant, polycarbonate cover with stainless steel or heavy duty Lexan hinge.
- Clear material allows visibility of all controls.
- Superior sealing provided by heavy-duty neoprene gaskets. Lock out/tag out ability provides personnel safety.
- Unique patented design allows installation in seconds without any interruption of service.
- Specific chemical resistant covers available (may not be clear) - consult factory for minimum order quantity.
- Capability to engineer cover to fit any size device - consult factory.

QUICK ACCESS OPEN FRONT COVER

APPLICATIONS:

- Areas requiring quick access to control device.
- Areas of high moisture from weather or dripping liquid.
- Prevention of accidental equipment operation.
- Areas with possible damage from bumping or banging.

FEATURES & BENEFITS:

- Heavy duty, impact-resistant, polycarbonate cover.
- Clear material allows visibility of all controls.
- Unique patented design allows installation in seconds without any interruption of service.
- Specific chemical resistant covers available (may not be clear) - consult factory for minimum order quantity.
- Capability to engineer cover to fit any size device - consult factory.

ORDERING INFORMATION:

HINGED COVERS

Single Gang Application	Catalog Number
EDS(C) and EFD(C) control stations	NC-CH1
EFS(C) control stations	NC-CH1-EFS
MC(C) control stations	NC-CH1-MC
FS(C) back box with cover assembly	NC-CH1-FS
FD(C) back box with cover assembly	NC-CH1-FD
EGF11 and EGF12 (Ground Fault)	NC-CH1-EGF 11
N2S(C) Krydon: 1 & 2 devices	NC-CH1-N2S
N2D(C) Krydon: 1 & 2 devices	NC-CH1-N2D
GHG432 control station	NC-CH1-GHG
Single Gang (Long) Application	**Catalog Number**
EFD(C) (3 device)	NC-CH1-3L
N2S(C) Krydon: 3 devices	NC-CH1-N2S-3L
N2S(C) Krydon: 4 devices	NC-CH1-N2S-4L
Double Gang Application	**Catalog Number**
EDS(C) control stations	NC-CH2
EDSCM32: 2 gang tandem	NC-CH2L
EDSCM33: 3 gang tandem	NC-CH3L
FS(C) back box with cover	NC-CH2-FS
FD(C) back box with cover	NC-CH2-FD
EDSC378 - 3 gang tandem assembly	NC-CH1-MC3

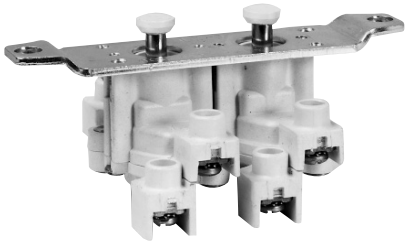
OPEN FRONT COVERS

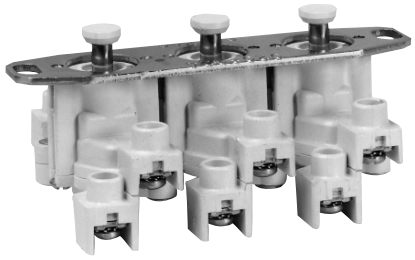
Single Gang Application	Catalog Number
EDS(C) and EFD(C) control stations	NC-CH1-QA
EFS(C) control stations	NC-CH1-EFS-QA
MC(C) control stations	NC-CH1-MC-QA
FS(C) back box with cover assembly	NC-CH1-FS-QA
FD(C) back box with cover assembly	NC-CH1-FD-QA
EGF11 and EGF12 (Ground Fault)	NC-CH1-EGF-QA
N2S(C) Krydon: 2 device assembly	NC-CH1-N2S-QA
N2D(C) Krydon: 3 device assembly	NC-CH1-N2D-QA
Single Gang (Long) Application	**Catalog Number**
EFD(C): 3 device control stations	NC-CH1-3L-QA
N2S(C) Krydon: 3 device assembly	NC-CH1-N2S-3L-QA
N2S(C) Krydon: 4 device assembly	NC-CH1-N2S-4L-QA
Double Gang Application	**Catalog Number**
EDS(C) control stations	NC-CH2-QA
EDSCM32: 2 gang tandem	NC-CH2L-QA
EDSCM 33: 3 gang tandem	NC-CH3L-QA
FS(C) back box with cover assembly	NC-CH2-FS-QA
FD(C) back box with cover assembly	NC-CH2-FD-QA

Custom covers can be supplied but must be accompanied by either a sample of the device to be covered or a copy of adrawing with all actual measurements of the device to be covered. Covers can also be color-coded. Consult factory.

4C Control Stations Replacements for Pushbuttons and Selector Switches

600 VAC Heavy Duty





ED Series Pushbuttons*

Complete with Mounting Strap and Hardware

Where Used	1 Circuit Universal	2 Circuits Universal	2 Circuits 1 Open - A 1 Closed - B	3 Circuits Universal
	Cat. #	Cat. #	Cat. #	
MC, EDS and EFS pushbutton stations and selector switches.	ED11	ED12	ED12**	
OAC pushbutton stations and selector switches	ED21	ED22	ED22**	
EWC pushbutton stations		ED32	ED32**	
EMP pushbutton stations	ED38	ED35		
EMP selector switches	ED38	ED35		
EFD Factory sealed pushbutton stations and selector switches (M90)	ED11	ED12	ED12**	
DSD962 pushbutton cover			ED13	

Contact Ratings

600 VAC Heavy Duty (NEMA A600)

Volts	Max. Current (Amperes) Make	Break	Voltamperes Make	Break	Continuous Current (Amperes)
120	60	6.0	7200	720	10
240	30	3.0	7200	720	10
480	15	1.5	7200	720	10
600	12	1.2	7200	720	10

Direct Current (NEMA P150)

125	1.1	1.1	138	138	5

Contact Block Only (less strap)

Catalog #
ESWP126

CF859

CF705

External Operating Buttons

Where Used	Colors Available	Cat. #
MC, EFS, and EFD – current design with nylon guards	Red, Green, Black	CF859-K1 ‡
EMPS019, EMP019, EMPS029 and EMP029 – single operator FS, EFS, and EFD – previous design with aluminum guards	Red, Green, Black	CF705-K1 ‡

Note: CF859-K1 and CF705-K1 come with 5 buttons

* ESWP126 is the contact block without the mounting strap.

** Two universal contact blocks, must be wired as two circuits, with one normally open and one normally closed.

‡ Standard markings available are as follows:

START	OFF	RESET	LIGHT ON
STOP	RUN	TRIP	HAND
ON	JOG	TEST	AUTOMATIC
EMERGENCY	OPEN	DOWN	RAISE
FORWARD	CLOSE	IN	LOWER
REVERSE	UP	OUT	

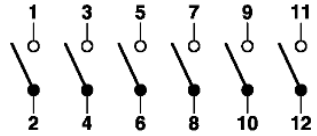
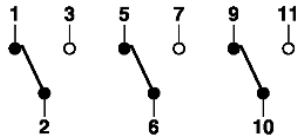
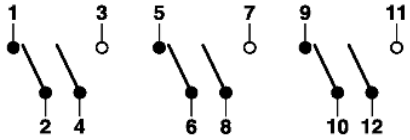
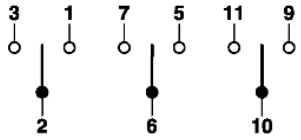
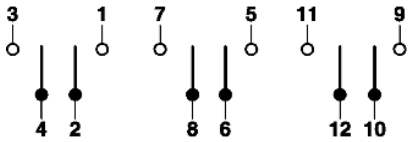
COOPER Crouse-Hinds

DSD-SR

Horsepower Rated 30 A, 600 V
Selector Switch Front Operated

Class I, Groups C & D
Class II, Groups E, F & G
Class III
Enclosure 3, 5 & 12

Ordering Information

Switch Function	Catalog Number	Number of Poles	Number of Positions	Connecting Diagram
ON/OFF	DSD-SR30120	1	2	 1-6 Pole
	DSD-SR30220	2	2	
	DSD-SR30320	3	2	
	DSD-SR30420	4	2	
	DSD-SR30520	5	2	
	DSD-SR30620	6	2	
DOUBLE-THROW without OFF	DSD-SR30121	1	2	 1-3 Pole
	DSD-SR30221	2	2	
	DSD-SR30321	3	2	
DOUBLE-THROW without OFF with electrically isolated contacts	DSD-SR30123	1	2	 1-3 Pole
	DSD-SR30223	2	2	
	DSD-SR30323	3	2	
DOUBLE-THROW with OFF	DSD-SR30132	1	3	 1-3 Pole
	DSD-SR30232	2	3	
	DSD-SR30332	3	3	
DOUBLE-THROW with OFF and electrically isolated contacts	DSD-SR30134	1	3	 1-3 Pole
	DSD-SR30234	2	3	
	DSD-SR30334	3	3	

Electrical Specification

Voltage	Horsepower Rating	
	3PH	1PH
120	3	1.5
240	7.5	3
480	10	5
600	10	5

Maximum Current: 30 A
Heavy-duty A600 rating

Options

Lockout for 2 position switch, handle in either position . . . SX178

Lockout for 3 position switch, handle in either position S349

DSD-SR cover assembly shown mounted to an EDS back box

4C EFS Fire Alarm Station

Cl. I, Div. 1, Groups B*,C,D
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7B*CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

EFS21095

Break Glass Fire Alarm Station

Hub Size	Dead End Cat. #	Through Feed Cat. #
¾	EFS21095	EFSC21095

* **Class I, Group B option:** Units listed above can be modified for Class I, Division 1, Group B usage. Add suffix GB to the Cat. No. Example: EFS21095-GB. Seals must be installed within 1½″ of each conduit opening.

Application:

EFS Fire Alarm Stations are used:
- in areas which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- for installation at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist
- to indicate at a remote location that a fire exists in the area

Features:

- Small, compact enclosures with accurately ground flange on both body and cover for flame-tight joint

Standard Materials:

- Bodies – *Feraloy*® iron alloy (U.S.) and copper-free aluminum (Canada)

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized with aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural

Certifications & Compliances:

- NEC/CEC: Class I, Groups B*,C,D
  Class II, Groups E,F,G
  Class III
- NEMA/EEMAC: 3, 7B*CD, 9EFG
- UL Standard: 698
- CSA Standard: C22.2
- As indicated under catalog listings, certain units can be supplied for Class I, Division 1, Group B (NEMA/EEMAC 7B). Seals must be installed within 1½″ of each conduit opening.

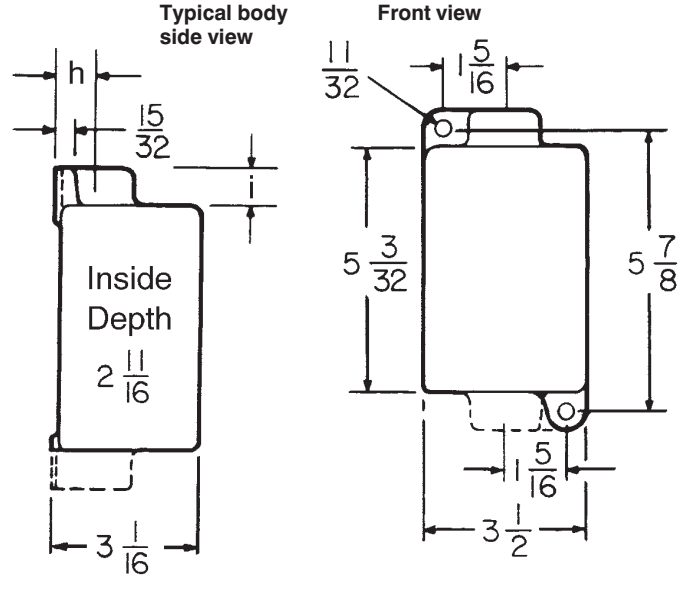
Option:

- The following special option is available from factory by adding suffix to Cat. No.

Description	Suffix to be Added to Encl. Cat. #
Where indicated in the catalog listings, units suitable for Class I, Division 1, Group B usage can be supplied	GB*

Dimensions (inches)

Dimensions are approximate, not for construction purposes.



Hub Size	Dim. "h"	Dim. "i"
½	¾	13/16
¾	7/8	13/16
1	1	15/16

† Surface covers have same length and width dimensions as bodies.

MC and MCC Pushbutton Stations Selector Switches and Pilot Lights

Application:

MC pushbuttons or selector switches are used:
- in conjunction with magnetic starters or contactors for remote control of motors

MC pilot lights are used:
- to visually indicate at a remote point that the desired function is being performed (motor running, etc.)

MC pushbuttons, selector switches or pilot lights are used:
- in damp, wet or corrosive locations such as dairies, meat packing plants, chemical plants and outdoor locations

Features:

- Enclosures are compact in design, and gasketed to meet NEMA/EEMAC 3 or 4 requirements as noted in catalog listings
- Pushbutton stations with side rocker handle are furnished with a lockout arrangement on ''STOP'' position as standard
- Dead end (MC) or through feed (MCC) hubs – ½″ and ¾″ sizes – with mounting feet
- Standard lockout on ''STOP'' and ''OFF'' button on front operated pushbutton covers.
- Standard lockout on selector switch covers. Locks two or three position switch handle in any position.

Standard Materials:

- Bodies – *Feraloy*® iron alloy
- Cover with side rocker handle – copper-free aluminum
- Front pushbutton, selector switch and pilot light covers – *Feraloy* iron alloy
- Rocker handle and pushbutton guards – type 6/6 nylon
- Selector switch handle – copper-free aluminum
- Operating shafts – stainless steel

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Type 6/6 nylon – black
- Stainless steel – natural

Certifications and Compliances:

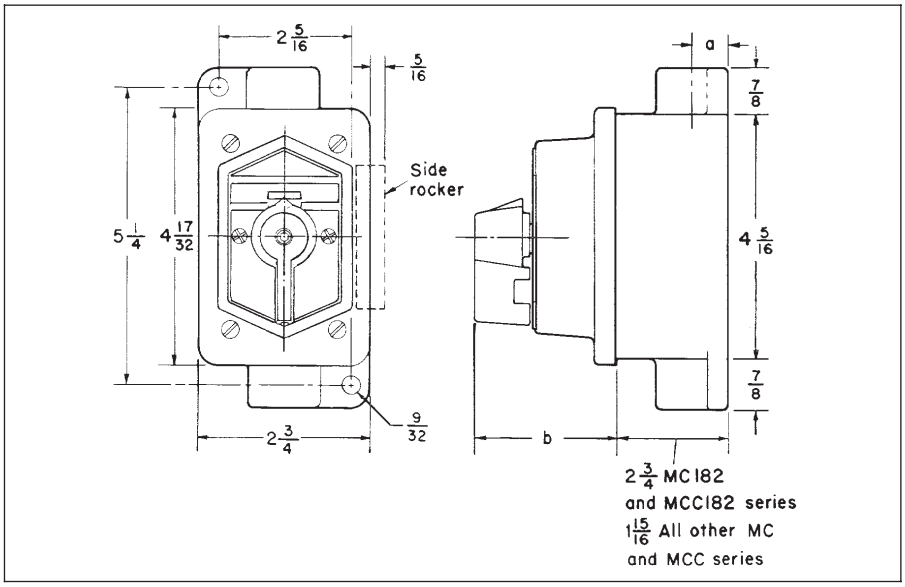
- NEMA/EEMAC 3, 4
- UL Standard: 508
- CSA Encl. 3,4,5

Options:

- The following special options are available by adding suffix to Cat. No.:

Description	Suffix to be Added to Encl. Cat. #
Lockout provision on front operated pushbutton (standard on buttons marked ''OFF'' and ''STOP'')	S153
Neoprene covers for front operated pushbuttons. Meets NEMA 4 requirements and prevents accumulation of dirt around operating shafts	S323
Three-position selector switches with modified operation:	
Momentary contact clockwise operation, spring return to center, maintained contact counter-clockwise operation	S634
Momentary contact counter-clockwise operation, spring return to center, maintained contact clockwise operation	S635
Multiple gang bodies. Two gang, two gang tandem and three, four or five gang bodies can be supplied with combinations of single gang devices	Specify
LED pilot lights in place of standard incandescent pilot lamps	LED

Dimensions (inches)*



Hub Size	a
½	⅝
¾	¾

Type of Cover	b
Side Rocker Handle	1½
Front Pushbutton	2⅜
Selector Switch	2⅜
Pilot Light	1 1/16

* Dimensions are approximate, not for construction purposes.

MC and MCC Side Rocker Handles and Front Push Buttons

600 VAC Heavy Duty

Watertight
Weather Resistant
NEMA 3,4

MC dead end side rocker handle

MCC through feed side rocker handle

MC dead end front push button

MCC through feed front push button

With Side Rocker Handles
Watertight, NEMA 3, 4

Normal Positions	Marking†	Diagram	Replacement Contact Blocks‡	Enclosure with Rocker Handles Hub Size	Dead End Cat. #	Through Feed Cat. #
1 Circuit Universal	Specify		ED11	½	MC1810U1	MCC1810U1
				¾	MC2810U1	MCC2810U1
2 Circuits Universal	Specify		ED12	½	MC1810U	MCC1810U
				¾	MC2810U	MCC2810U
2 Circuits 1 Open - A 1 Closed - B	START-STOP unless otherwise specified	A B	ED12*	½	MC1810	MCC1810
				¾	MC2810	MCC2810

With Front Push Buttons ♦ F
Weather Resistant, NEMA 3

Normal Positions	Marking†	Diagram	Replacement Contact Blocks‡	Enclosure with Push Buttons Hub Size	Dead End Cat. #	Through Feed Cat. #
1 Circuit Universal	Specify		ED11	½	MC1910U1	MCC1910U1
				¾	MC2910U1	MCC2910U1
2 Circuits Universal	Specify		ED12	½	MC1910U	MCC1910U
				¾	MC2910U	MCC2910U
2 Circuits 1 Open - A 1 Closed - B	START-STOP unless otherwise specified	A B	ED12*	½	MC1910	MCC1910
				¾	MC2910	MCC2910

* Two universal contact blocks, must be wired as two circuits, with one normally open and one normally closed.

† Standard markings available, heat stamped in nylon rocker handle are as follows:

START	OFF	RESET	LIGHT ON
STOP	RUN	TRIP	HAND
ON	JOG	TEST	AUTOMATIC

EMERGENCY	OPEN	DOWN	RAISE
FORWARD	CLOSE	IN	LOWER
REVERSE	UP	OUT	

‡ For replacement push buttons see page 395.

♦ Watertight NEMA 4 with Neoprene button covers, see suffix S323 under options.

MC dead end selector switch

Selector Switches

Furnished with pushbutton contact blocks, cam actuated by a maintained contact selector mechanism to operate in the sequences shown in the diagrams below.

Maintained Contact					Enclosure with Selector Switch†		
Style	Position 1	Position 2	Position 3	Replacement Contact blocks*	Hub Size	Dead End Cat. #	Through Feed Cat. #
Two-Position, Two-Circuit	A1 A2			ED11	½ ¾	MC11271 MC21271	MCC11271 MCC21271
Two-Position, Four-Circuit	A1 A2 B1 B2			ED12	½ ¾	MC11272 MC21272	MCC11272 MCC21272
Three-Position, Two-Circuit	A1 A2			ED11	½ ¾	MC11273 MC21273	MCC11273 MCC21273
Three-Position, Four-Circuit	A1 A2 B1 B2			ED12	½ ¾	MC11274 MC21274	MCC11274 MCC21274
	A1 A2 B1 B2			ED12	½ ¾	MC11275 MC21275	MCC11275 MCC21275

MC dead end pilot light

Pilot Lights ♦

Primary Voltage Range	Lamp Base	Lamp Watts	Enclosure with Jewel Cover and Lamp Hub Size	Dead End Cat. #	Through Feed Cat. #
110-125	Candelabra	6	½	MC180-J1	MCC180-J1
110-125	Candelabra	6	¾	MC280-J1	MCC280-J1
220-250	Intermediate	10	½	MC184-J1	MCC184-J1
220-250	Intermediate	10	¾	MC284-J1	MCC284-J1
440-480	Candelabra	6	½	MC182-J1	MCC182-J1
440-480	Candelabra	6	¾	MC282-J1	MCC282-J1

* For replacement contact blocks see page 400.

† Specify indicating plate markings. Standard markings available are shown on page 400.

♦ LED pilot lights can be furnished in place of standard incandescent pilot lamps. Add suffix LED after color symbol (J1).

4C OAC Pushbutton Stations and Heavy Duty Selector Switches

600 VAC Standard Factory Sealed**

Cl. I, Div. 1 & 2, Groups A,B,C,D — Explosionproof
Cl. II, Div. 1, Groups E,F,G — Dust-Ignitionproof
Cl. II, Div. 2, Groups F,G — Raintight
Cl. III — Wet Locations
NEMA 3,4,7ABCD,9EFG,12 — Watertight

Application:

OAC Units are used:
- in areas which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- in damp, wet or corrosive locations
- indoors or outdoors at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist
- in areas which are hazardous due to the presence of acetylene and hydrogen, or gases or vapors of equivalent hazard such as manufactured gas
- in conjunction with magnetic starters or contactors for remote control of motors

Features:

- Water-shedding construction with female threaded bottom opening and male threaded cover
- Threaded cover is deep dome type, which surrounds the enclosed device
- All enclosures are suitable for hazardous area use
- Pushbutton stations have a guarded rocker type operating handle at the front arranged for padlocking to prevent unauthorized operation
- Selector switches have a lever type operating handle at the top
- Provided with vertical through feed conduit hubs of sizes indicated in the listings.
- Units are factory sealed for Cl. I, Div. 1 and 2, Groups B,C,D.
- Standard lockout on selector switches. Locks two or three-position switch handle in any position.

Standard Materials:

- Bodies – *Feraloy*® iron alloy
- Covers and operating handle – copper-free aluminum
- Operating shafts – stainless steel

Standard Finishes:

Feraloy iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural

Electrical Rating Ranges:

- Pushbutton stations, and selector switches-Air Break – heavy duty 600vac maximum

Certifications and Compliances:

- NEC/CEC:
  Class I, Division 1 & 2, Groups A, B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
- NEMA/EEMAC: 3, 4, 7ABCD, 9EFG, 12
- UL Standard: 698
- CSA Standard: C22.2 No. 30

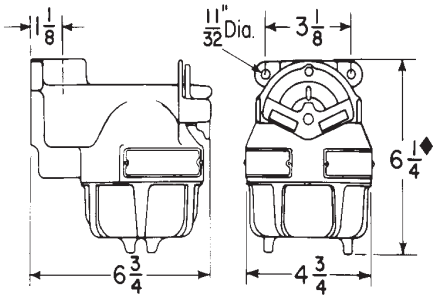
Options:

- The following special options are available from factory by adding suffix to Cat. No.

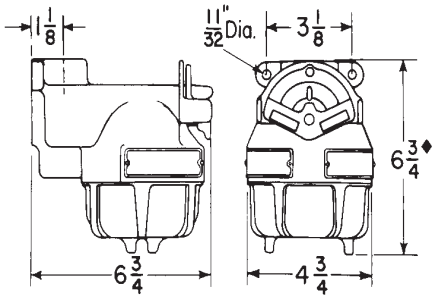
Description	Suffix to be Added to Encl. Cat. #
Back boss drilled and tapped for ¾″ and 1″ sizes	Specify
Three-position selector switches with modified operation:	
Momentary contact clockwise operation, spring return to center, maintained contact counter-clockwise operation	S634
Momentary contact counter-clockwise operation, spring return to center, maintained contact clockwise operation	S635

Dimensions (inches)*

OAC



OAC (91 Series only)



♦ For cover removal, add 2½″ to dimension.
* Dimensions are approximate, not for construction purposes.

**Factory sealed for Class I, Div. 1 & 2, Groups B,C,D.

OAC Pushbutton Stations

600 VAC
Heavy Duty Standard
Factory Sealed**

Cl. I, Div. 1 & 2, Groups A,B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,4,7ABCD,9EFG,12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations
Watertight

Specify operating handle markings. See table below listing.

Normal Pos.	1 Circuit Universal	2 Circuits Universal	2 Circuits Universal	2 Circuits*
Oper. Handles	Single	Double	Single Operating Both Buttons	Double
Replacement Pushbuttons†	ED21	ED22	ED22	ED22*
Diagram				
Hub Size	**Cat. #**			
¾	OAC2101	OAC2133	OAC2139	OAC2103
1	OAC3101	OAC3133	OAC3139	OAC3103

** Factory sealed for Class I, Div. 1 & 2, Groups B,C,D

* Two universal contact blocks, must be wired as two circuits, one normally open and one normally closed.

Standard markings available are as follows:

START	OFF	RESET	LIGHT ON
STOP	RUN	TRIP	HAND
ON	JOG	TEST	AUTOMATIC

EMERGENCY	OPEN	DOWN	RAISE
FORWARD	CLOSE	IN	LOWER
REVERSE	UP	OUT	

With momentary left handle and maintained right handle. For momentary "START", maintained "STOP" and similar applications. Specify operating handle markings. See table below.

Normal Pos.	**2 Circuits Universal**
Diagram	

Enclosure with Pushbuttons

Hub Size.	**Cat. #**
¾	OAC2291
1	OAC3291

4C OAC Selector Switches

600 VAC
Heavy Duty Standard
Factory Sealed**

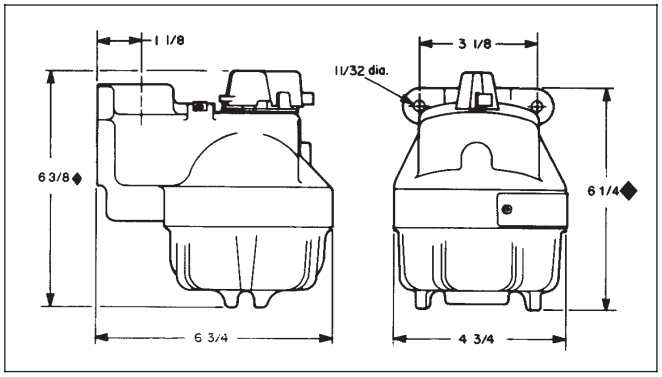
Cl. I, Div. 1 & 2, Groups A,B,C,D	Explosionproof
Cl. II, Div. 1, Groups E,F,G	Dust-Ignitionproof
Cl. II, Div. 2, Groups F,G	Raintight
Cl. III	Wet Locations
NEMA 3,4,7ABCD,9EFG,12	Watertight

Furnished with pushbutton contact blocks, cam actuated by a maintained contact selector mechanism to operate in the sequences shown in the diagrams below.

Specify indicating plate markings. See table below listings.

Style	Position 1	Position 2	Position 3	Replacement contact blocks‡	Enclosure with Selector Switch Hub Size	Cat. #
Two-Position, Two-Circuit	A1 A2			ED21	¾ 1	OAC2471 OAC3471
Two-Position, Four-Circuit	A1 A2 B1 B2			ED22	¾ 1	OAC2472 OAC3472
Three-Position, Two-Circuit	A1 A2			ED21	¾ 1	OAC2473 OAC3473
Three-Position, Four-Circuit	A1 A2 B1 B2			ED22	¾ 1	OAC2474 OAC3474
	A1 A2 B1 B2			ED22	¾ 1	OAC2475 OAC3475

Dimensions* (inches)



Standard markings are available as follows:

Two-Position

RUN, JOG	FAST, SLOW	IN-OUT
HAND, AUTOMATIC	OPEN, CLOSE	RAISE-LOWER
FORWARD, REVERSE	UP,DOWN	START-STOP
	ON, OFF	

Three-Position

RUN, OFF, JOG	1, OFF, 2
HAND, OFF, AUTOMATIC	OPEN, OFF, CLOSE
FORWARD, OFF, REVERSE	UP, OFF, DOWN
FAST, OFF, SLOW	

◆ For cover removal, add 2½″ to dimension.

* Dimensions are approximate. Not for construction purposes.

** See page 406.

EMP Panel Mounted Pushbutton Stations, Selector Switches, Pilot Lights and Combinations

Factory Sealed

Cl. I, Div. 1, Groups C,D
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7CD,9EFG,12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

EMP panel mounted pushbutton stations, selector switches, pilot lights and combinations are used:
- together with instruments, gauges and meters all mounted on a panel of sheet steel or other suitable material in the fabrication of control boards
- in areas made hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- in corrosive locations
- indoors at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist

Features:

- Compact enclosures which require a minimum of panel space, making them ideally suited for flow chart control boards
- Enclosures made in single, two and three gang sizes
- Accurately ground; wide flange on both body and cover for flame-tight joint
- Only the device operators and pilot lights protrude through the panel. Enclosures are behind the panel so that conduit and wiring is concealed
- Pilot lights are relamped from the front of the panel by unscrewing the knurled jewel assembly
- Mounting made easy – a 1⅛″ diameter hole is drilled for each threaded barrel and any panel up to ¾ thick can be used; locking nuts clamp the assemblies to the panel and permit alignment with conduit and other fittings behind the panel
- Furnished with vertical through feed hubs – 1″ size
- Units are factory sealed for Class I, Division 1 and 2, Groups C and D.

Standard Materials:

- Bodies and covers – *Feraloy*® iron alloy
- Threaded barrels – copper-free aluminum
- Operating shafts – stainless steel
- Single pushbutton and selector switch operators – phenolic
- Double pushbutton operators – copper-free aluminum

Standard Finishes:

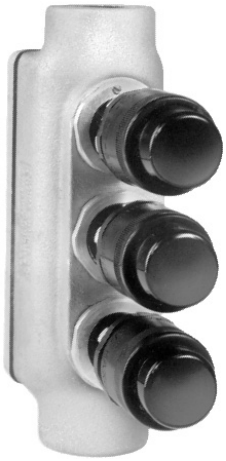
- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – barrels, black anodized; operators, natural
- Stainless steel – natural
- Phenolic – natural

Electrical Rating Ranges:

- Pushbutton stations and selector switches: heavy duty 600vac maximum
- Pilot lights: 110 to 600vac

EMP43

EMP501



EMP3000

Certifications and Compliances:

- NEC/CEC:
  - Class I, Division 1, Groups C,D
  - Class I, Division 2, Groups B,C,D
  - Class II, Division 1, Groups E,F,G
  - Class II, Division 2, Groups F,G
  - Class III
- NEMA/EEMAC: 3, 7CD, 9EFG, 12
- UL Standard: 698
- CSA Standard: C22.2 No. 30

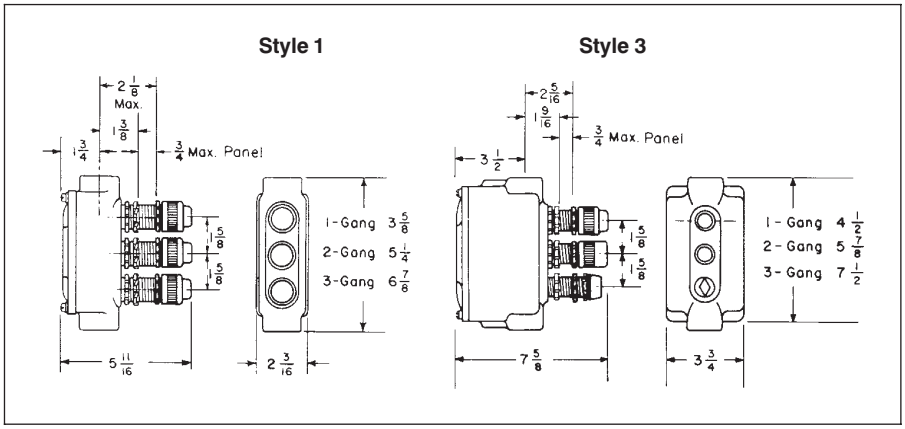
Options:

- The following special options are available from factory by adding suffix to Cat. No.:

Description	Suffix to be Added to Encl. Cat. #
Lockout on single pushbutton operator only. Locks normally closed contacts in open position	S153
Three-position selector switches with modified operation:	
Momentary contact clockwise operation, spring return to center, maintained contact counter-clockwise operation	S634
Momentary contact counter-clockwise operation, spring return to center, maintained contact clockwise operation.	S635
Pilot lights for circuit voltages up to 600 volts maximum (standard voltage range 110-125)	See Listings
Combination of devices other than those listed can be supplied	Specify
LED pilot lights in place of standard incandescent pilot lamps	LED

Dimensions (inches)

Dimensions are approximate, not for construction purposes.



4C EMP Panel Mounted Pushbutton Stations, Selector Switches, Pilot Lights and Combinations

Factory Sealed, 600 VAC Heavy Duty

Cl. I, Div. 1, Groups C,D
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Pilot lights include 6 watt bayonet base lamps for use on 110-125 volt circuits. For higher voltages, pilot lights can be equipped with a transformer as shown in the table

Style 3 bodies are used when transformers are supplied.

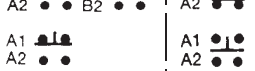
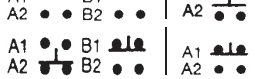
LED pilot lights can be provided in place of standard incandescent pilot lamps. Add suffix LED after color symbols in catalog number. See suffixes on page 411.

Selector switches use momentary contact pushbuttons, cam actuated by a maintained contact selector mechanism to operate in the sequence shown in the diagrams below.

Pilot Lights* with Selector Switches

No. Pilot Lights and Nominal Voltage	No. of Selector Switches ♦	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (120V)	1 (ED38)	3	Two		1	EMP506-†‡
2 (120V)	1 (ED38)	3	Three		1	EMP9006-†‡

Selector Switches

No. of Selector Switches ♦	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (ED38)	3	Single		1	EMP44‡
1 (ED35)	3	Single		1	EMP45‡
1 (ED38)	3	Single		1	EMP46‡
1 (ED35)	3	Single		1	EMP47‡
1 (ED35)	3	Single		1	EMP48‡

Pilot Lights*

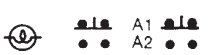
No. Pilot Lights and Nominal Voltage	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (120V)	1	Single		1	EMP10-†
1 (440V)	3	Single		1	EMP40-†-T4
2 (120V)	1	Two		1	EMP200-†
2 (440V)	3	Two		1	EMP500-†-T4
3 (120V)	1	Three		1	EMP3000-†
3 (440V)	3	Three		1	EMP9000-†-T4

Transformers for Voltages Above 125

Nom. Volts 50-60 Cycle Transformer	Primary Voltage Range	Suffix Added to Cat. #
220/110	220-240	T2
440/110	440-480	T4
550/110	550-600	T5

Pilot lights include 6 watt, type S6, candlelabra base lamps for use on 110-125 volt circuits.

Pushbuttons with Selector Switches and Pilot Lights*

No. and Type of Pushbuttons ♦	No. of Selector Switches ♦	No. Pilot Lights and Nominal Voltage	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (ED38)	1 (ED38)	1 (120V)	3	Three		1	EMP9016-†‡

COOPER Crouse-Hinds

EMP Panel Mounted Push Button Stations Selector Switches, Pilot Lights and Combinations

Factory Sealed, 600 VAC Heavy Duty

Cl. I, Div. 1, Groups C,D
Cl. I, Div. 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Push Buttons

No. and Type of Push Buttons ♦	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (ED38)	3	Single		1	EMP41‡
1 (ED35)	3	Single		1	EMP42‡
2 (ED35)	3	Single		1	EMP43‡
2 (ED38)	3	Two		1	EMP511‡
3 (ED38)	3	Three		1	EMP9111‡

Push Button with Pilot Lights*

No. and Type of Push Buttons ♦	No. Pilot Lights and Nominal Voltage	Body Style	Gang	Diagram	Hub Size	Cat. #
1 (ED38)	1 (120V)	3	Two		1	EMP501-†‡
1 (ED35)	1 (120V)	3	Two		1	EMP502-†‡
1 (ED35)	1 (120V)	3	Two		1	EMP503-†‡
1 (ED38)	2 (120V)	3	Three		1	EMP9001-†‡
1 (ED35)	2 (120V)	3	Three		1	EMP9002-†‡
2 (ED38)	1 (120V)	3	Three		1	EMP9011-†‡
1 (ED35)	2 (120V)	3	Three		1	EMP9030-†‡
2 (ED38)	1 (120V)	3	Three		1	EMP9101-†‡

Push Buttons with Selector Switches

No. and Type of Push Buttons ♦	No. of Selector Switches	Body Style	Gang	Diagram Pos. 1	Diagram Pos. 2	Diagram Pos. 3	Hub Size	Cat. #
1 (ED38)	1 (ED38)	3	Two				1	EMP516‡
2 (ED38)	1 (ED38)	3	Three				1	EMP9116‡

Selector Switch Marking

Two-Position

RUN, JOG	FAST, SLOW	IN-OUT
HAND, AUTOMATIC	OPEN, CLOSE	RAISE-LOWER
FORWARD, REVERSE	UP, DOWN	START-STOP
ON, OFF		

Three-Position

RUN, OFF, JOG	1, OFF, 2
HAND, OFF, AUTOMATIC	OPEN, OFF, CLOSE
FORWARD, OFF, REVERSE	UP, OFF, DOWN
FAST, OFF, SLOW	

† Add color symbol for each pilot light from table below.

Color	Symbol	Color	Symbol
Red	J1	Clear	J10
Green	J3	Blue	J11
Amber	J6		

‡ Specify indicating plate marking for each push button and selector switch. Standard markings available as follows:

Push Button Station Marking

START	OFF	RESET	LIGHT ON	EMERGENCY	OPEN	DOWN	RAISE
STOP	RUN	TRIP	HAND	FORWARD	CLOSE	IN	LOWER
ON	JOG	TEST	AUTOMATIC	REVERSE	UP	OUT	

♦ See page 400 for listing of ED35 & ED38 replacement contact blocks.

* LED pilot lights can be furnished in place of standard incandescent pilot lamps. Add suffix LED after last color symbol. See Options on page 409.

4C EMP and EMPS Barrel Assemblies

Dimensions Pg. 414

Cl. I, Div. 1 & 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7BCD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

As indicated in the listings, certain of the barrel assemblies are the same as those used in complete EMP units and may be utilized as replacements.

The remainder are primarily for use with hazardous area boxes to assemble special control stations. For additional information, refer to page 415 describing custom-built control panels.

Ordering Information:

Select the Cat. No. from the listings. For pilot lights and illuminated pushbuttons specify color of jewel using symbols from the table on page page 411. For pushbuttons and selector switches specify markings from the tables on page 411.

Group 1:

Standard assemblies are for replacement in complete EMP units or for custom-built control panels. Short assemblies are for custom-built control panels only. Both assemblies may be used with System 4 Control Stations.

Pilot light**

Diagram	Standard Assembly Cat. #
(120V)*	EMP009†

Single pushbutton
Double pushbutton, single operator

Diagram	Short Cat. #	Standard Cat. #
	EMPS019	EMP019
	EMPS029	EMP029

Double pushbutton, double operator

Diagram	Short Assembly Cat. #	Standard Assembly Cat. #
	EMPS039	EMP039

Two-position selector switch

Diagram Position 1	Diagram Position 2	Short Assembly Cat. #	Standard Assembly Cat. #
A1 A2	A1 A2	EMPS049	EMP049
A1 A2 B1 B2	A1 A2 B1 B2	EMPS059	EMP059

Three-position selector switch

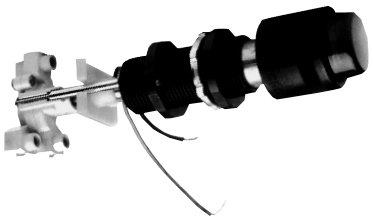
Diagram Position 1	Diagram Position 2	Diagram Position 3	Short Assembly Cat. #	Standard Assembly Cat. #
A1 A2	A1 A2	A1 A2	EMPS069	EMP069
A1 A2 B1 B2	A1 A2 B1 B2	A1 A2 B1 B2	EMPS079	EMP079
A1 A2 B1 B2	A1 A2 B1 B2	A1 A2 B1 B2	EMPS089	EMP089

* Other voltages available. See transformer suffix table on page 410. For 24 VDC operation, add suffix S300.

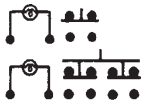
† Colors available: red, green, amber, clear, blue. See table on page 411.

** LED pilot lights can be furnished in place of standard incandescent pilot lamps. Add suffix LED to catalog number after last color symbol. See Options page 409.

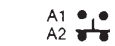
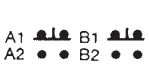
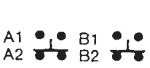
Group 2: For custom-built control panels and System 4 Control Stations.



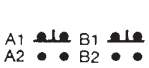
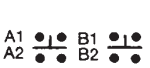
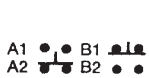
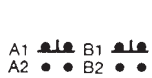
Illuminated pushbutton**

Diagram		Long Assembly Cat. #
	120V pilot light	EMP0090†
	120V pilot light	EMP0098†

Two-position selector switch, key operated

Diagram				
Position 1	Position 2	Key Removal	Short Assembly Cat. #	Standard Assembly Cat. #
		Both positions	EMPS0491	EMP0491
		Left only	EMPS0492	EMP0492
		Right only	EMPS0493	EMP0493
		Both positions	EMPS0591	EMP0591
		Left only	EMPS0592	EMP0592
		Right only	EMPS0593	EMP0593

Three-position selector switch, key operated

Diagram					
Position 1	Position 2	Position 3	Key Removal	Short Assembly Cat. #	Standard Assembly Cat. #
			All	EMPS0691	EMP0691
			Center only	EMPS0692	EMP0692
			Left only	EMPS0693	EMP0693
			Right only	EMPS0694	EMP0694
			All	EMPS0791	EMP0791
			Center only	EMPS0792	EMP0792
			Left only	EMPS0793	EMP0793
			Right only	EMPS0794	EMP0794
			All	EMPS0891	EMP0891
			Center only	EMPS0892	EMP0892
			Left only	EMPS0893	EMP0893
			Right only	EMPS0894	EMP0894

Maintained Contact Pushbutton

Diagram		Long Assembly Cat. #
Up	Down	
		EMP098

† Colors available: red, green, amber, clear, blue. See table on page 411.

* * LED pilot light can be furnished in place of standard incandescent pilot lamp. Add suffix LED after color symbol.

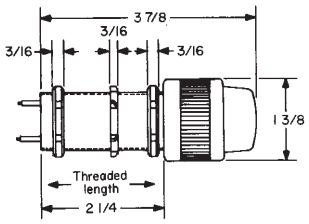
4C EMP and EMPS Barrel Assemblies

Dimensions (inches)*

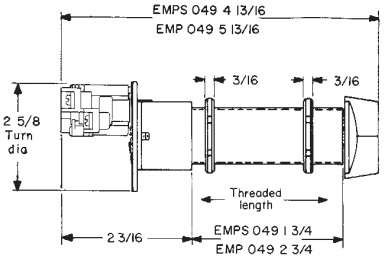
Cl. I, Div. 1 & 2, Groups B,C,D
Cl. II, Div. 2, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7BCD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

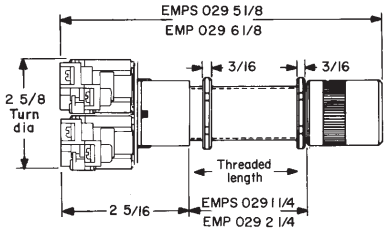
NOTE: All barrel assemblies are ¾"-14 NPSM thread size.



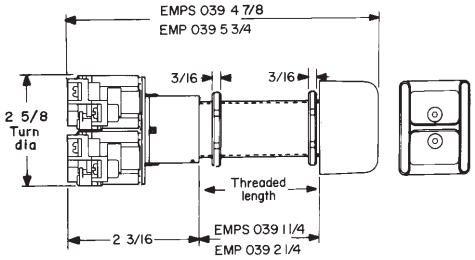
EMP009



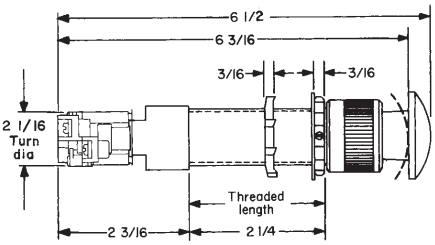
EMP-EMPS049, 059, 069, 079, 089



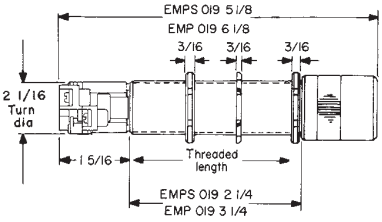
EMP-EMPS029



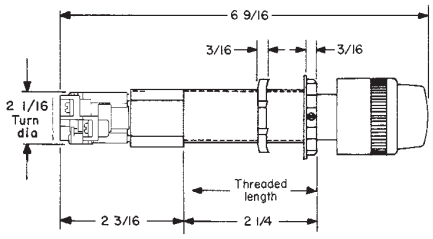
EMP-EMPS039



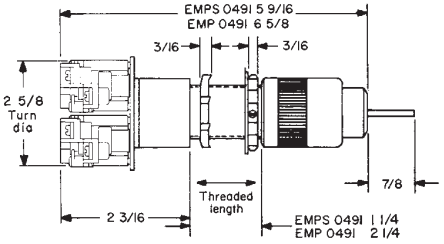
EMP098



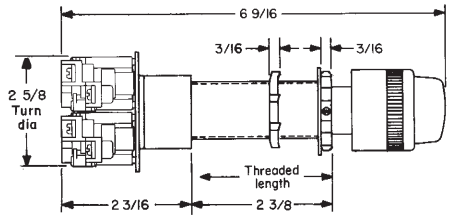
EMP-EMPS019



EMP0090



EMP-EMPS0491, 0591, 0691, 0791, 0891 Series



EMP0098

* Dimensions are approximate, not for construction purposes.

EJB Custom-Built Control Panels

Using EMP and EMPS Barrel Assemblies

Cl. I, Div. 1 & 2, Groups C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,7CD,9EFG
EEx d IIB+H_2 T6, IP66†

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

EJB custom-built control panels are used with EMP and EMPS barrel assemblies:

- as a means of grouping control stations for centralized process control in hazardous areas in minimum space
- to provide the necessary pushbuttons, pilot lights, selector switches, tumbler switches and glass windows

Features:

- To reduce installation costs, panels can be supplied with control components factory wired to terminal blocks mounted in the box. Relays and other control devices can also be mounted in the boxes for special control functions
- Surface mounted control panels have the components assembled in the hinged cover, readily accessible for circuit checking and trouble shooting
- Panel mounted control assemblies have components installed in the back wall of the junction box. The protruding barrels are passed through holes drilled in the finished panel and locked to the panel in the same manner as individual EMP assemblies. Blank hinged covers are used, and are accessible from the rear of the panel to facilitate maintenance.
- Custom-built control panels to meet your exact requirements are a Cooper Crouse-Hinds specialty. Complete quotations will be supplied for any job, large or small.

Certifications and Compliances:

EJB panels –

- NEC:
  Class I, Division 1 & 2, Groups C,D
  Class II, Division 1, Groups E,F,G
  Class II, Division 2, Groups F,G
  Class III
- NEMA/EEMAC: 3, 7CD, 9EFG
- UL Standard: 698
- CSA Standard: C22.2 No. 30
- CEC:
  Class I, Division 1 & 2, Groups B,C,D
  Class II, Division 1, Groups E,F,G
  Class II, Division 2, Groups F,G

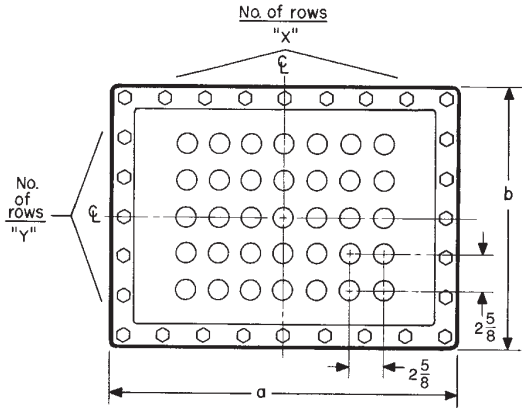
EJB surface mounted control panel – cover closed

Request Brochure # 3331 from your Cooper Crouse-Hinds sales representative or customer service to design your own custom control panel

Dimensions (in inches)*

Listed below are EJB boxes with standard spacing for most barrel assemblies. Depending on the number and type of barrel assemblies installed, closer spacing can be used and more devices assembled.

Standard spacing of barrel assemblies



Cat. #	a	b	x	y
EJB100806✓	15 1/32	13 1/32	3	3
EJB121204✓	17 1/16	17 1/16	4	4
EJB121206✓	17 1/16	17 1/16	4	4
EJB121208✓	17 1/16	17 1/16	4	4
EJB161606✓	21 3/16	21 3/16	6	6
EJB161608✓	21 3/16	21 3/16	6	6
EJB181206✓	23 5/16	23 5/16	6	4
EJB181208✓	23 5/16	17 5/16	6	4
EJB241208✓	29 9/16	17 9/16	9	4
EJB241210✓	29 9/16	17 9/16	9	4
EJB241808✓	29 5/8	23 9/16	9	6
EJB241810✓	29 5/8	23 9/16	9	6
EJB242408✓	29 9/16	29 9/16	9	9
EJB242410✓	29 9/16	29 9/16	9	9
EJB361208✓	40 5/16	16 5/16	13	4
EJB361808✓	41 15/16	23 15/16	13	6
EJB361810✓	41 15/16	23 15/16	13	6
EJB362408✓	42 3/16	30 3/16	13	9

Additional dimensional data for EJB is given on page 132.

✓ - Available with Lightning Service™. See Section G for complete details.

* Dimensions are approximate, not for construction purposes.
† Order with suffix ATEX.

NOTE: For conduit liner ordering information, see page 140.

4C AFU and AFUX Conveyor Control Switch

Cl. I, Div. 1 & 2, Groups C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,4,7CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

AFU and AFUX conveyor control switches are used:

- as emergency or normal ''STOP'' switch for conveyor lines, cranes, unloaders, bulk handling systems and similar equipment
- in steel mills, mining and ore and coal handling operations, automotive and other assembly lines, warehouses, loading docks and various process industry facilities
- in the control circuit of magnetic motor starters to shut down motor-driven conveyors or other machinery when switch is actuated.

AFU series complies with requirements for use in Class II areas having combustible dusts that may or may not be electrically conductive.

AFU series are also gasketed for use in hosedown areas even when combustible dusts are present.

AFUX series complies with requirements for use in NEC Class I areas which are hazardous due to the presence of flammable vapors or gases. AFUX series also complies with requirements for use in NEC Class I areas which are hazardous due to the presence of flammable vapors or gases. AFUX series also complies with NEC requirements for use in Class II hazardous areas, or for use in NEC hazardous areas classified simultaneously as Class I and Class II.

Features:

- Furnished with one or two end units, each containing 2-NO and 2-NC contact arrangements.
- Precision switches provide maintained contact (switches have a snap action mechanism).
- Enclosure has three 1″ conduit hubs – two for horizontal through feed and one at the bottom. Cast mounting lugs on 1½″ centers permit attachment to the web of a standard 3″ angle iron.
- In installation, the actuating line or cable is connected from a fixed point to the loop on the end unit. A pull on the line of the required operating force and with a total movement of ½″ actuates the plunger, opens the switch and trips the red painted indicating arm forward, which locks the plunger in the actuated (switch open) position. Returning the indicating arm to its normal position resets the mechanism. A typical installation would include single end switch units at each end of the conveyor with double end switch units between.
- Depending on the size and length of line, supports at properly spaced intervals may be necessary to ensure that the line or cable weight alone will not actuate switch.

Standard Materials:

- Enclosure – *Feraloy*® iron alloy
- Plunger – stainless steel
- Loop – bronze
- Indicating arm – steel

Electrical Rating

- Control circuit switch – 15 AMP, 600 VAC max.

Options:

- Finish: *Corro-free*™ epoxy powder coat – add suffix S752 to the standard catalog number for coating outside only.

Certifications and Compliances:

AFU SERIES

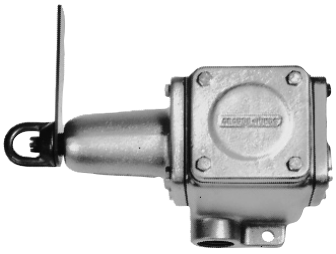
- NEC/CEC:
  Class II, Division 1, Groups E,F,G
  Class II, Division 2, Groups F,G
  Class III
- Encl. 3,5
- NEMA: 3, 4, 9EFG
- IP66
- UL Standard: 698
- CSA Standard: 22.2 No. 30

AFUX SERIES

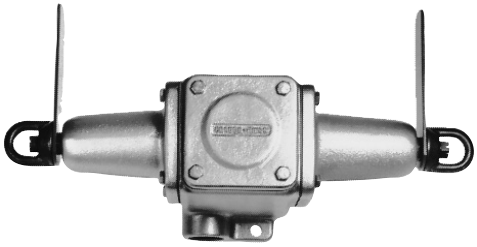
- NEC:
  Class I, Division 1 & 2, Groups C,D
  Class II, Division 1, Groups E,F,G
  Class II, Division 2, Groups F,G
  Class III
- NEMA: 3, 7CD, 9EFG
- IP65
- UL Standard: 698
- cUL

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized with chromate finish (red acrylic paint on indicating arm)
- Bronze – natural



AFU0333-50 Single end left

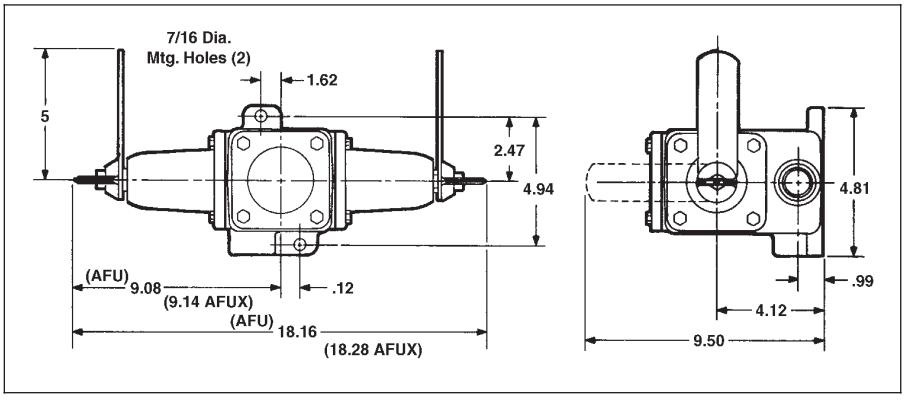


AFU0333-66 Double end

Description	Maximum Weight of Unsupported Line or Cable Without Actuating Switch† (lbs.)	Total Operating Force Required (lbs.)	Contact Arrangements With 2-NO, 2-NC in Each End Unit Cat. #	Cat. #
Single end left	15	25	AFU0333-50	AFUX0333-50
Single end left	25	50	AFU0333-60	AFUX0333-60
Single end right	15	25	AFU0333-05	AFUX0333-05
Single end right	25	50	AFU0333-06	AFUX0333-06
Double end	15	25	AFU0333-55	AFUX0333-55
Double end	25	50	AFU0333-66	AFUX0333-66

† A galvanized steel aircraft cable, supported every 10′ is recommended.

Dimensions (inches)*



* Dimensions are approximate, not for construction purposes.

AFA and AFAX Conveyor Belt Alignment Switch

Cl. I, Div. 1 & 2, Groups C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,4,7CD,9EFG

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

AFA, AFAX conveyor belt alignment switches are used:

- as emergency or normal ''STOP'' switch for conveyor belts whenever they become misaligned or run off their tracks due to excessive speed, uneven load, leveling, breakage and/or other problems.
- in steel mills, mining and ore and coal handling operations, automotive and other assembly lines, warehouses, loading docks, grain loading and handling facilities, and various other bulk handling operations.
- in the control circuit of magnetic motor starters to shut down motor-driven conveyors in case of abnormal belt misalignment or run-off.

AFA series complies with requirements for use in Class II areas having combustible dusts that may or may not be electrically conductive.

AFA series are also gasketed for use in hosedown areas even when combustible dusts are present.

AFAX series complies with requirements for use in NEC Class I areas which are hazardous due to the presence of flammable vapors or gases. AFAX series also complies with NEC requirements for use in Class II hazardous areas, or for use in NEC hazardous areas classified simultaneously as Class I and Class II.

Features:

- Furnished with precision switches that provide normally open and normally closed contacts (switches have a snap action mechanism).
- Housing consists of a center section which can be mounted either vertically or horizontally, and a switch housing with an attached switch operating arm.
- Enclosure has three 1″ conduit hubs. Cast mounting lugs on 1½″ center permit attachment to the web of a standard 3″ angle iron.
- Operating arm has 3½″ long stainless steel protective roller. Approximately ¾″ lateral movement of operating arm actuates switch.
- Spring loaded operating arm will automatically return switch to normal position when belt interference is removed.
- A severe conveyor belt run-off can rotate the operating arm counter-clockwise up to 85 degrees without damage to the switch mechanism.
- Installation of AFA or AFAX unit on either side of a conveyor belt allows approximately 1″ or a predetermined allowable belt misalignment before switch is actuated. A typical installation would include a pair of AFA or AFAX units at each end of the conveyor belt where belt returns.

Options:

- Finish: *Corro-free*™ epoxy powder coat – add suffix S752 to the standard catalog number for coating outside only.

Electrical Rating:

- Control circuit switches – 15 AMP, 600 VAC max.

Certifications and Compliances:

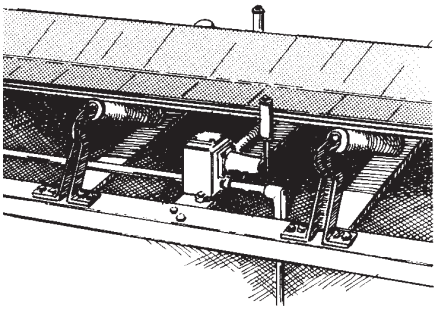
AFA SERIES

- NEC/CEC: Class II, Division 1, Groups E,F,G, Class II, Division 2, Groups F,G Class III
- NEMA: 3, 4, 9EFG
- IP66
- UL Standard: 698
- CSA C22.2 No. 25

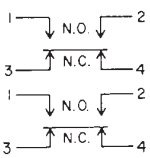
AFAX SERIES

- NEC: Class I, Division 1 & 2, Groups C,D Class II, Division 1, Groups E,F,G Class II, Division 2, Groups F,G Class III
- NEMA: 3, 7CD, 9EFG
- IP65
- UL Standard: 698

Typical AFA Switch Application



Horizontal mounting

Contact Arrangement	Diagram	Cat. #
2 normally open 2 normally closed		AFA20 AFAX20

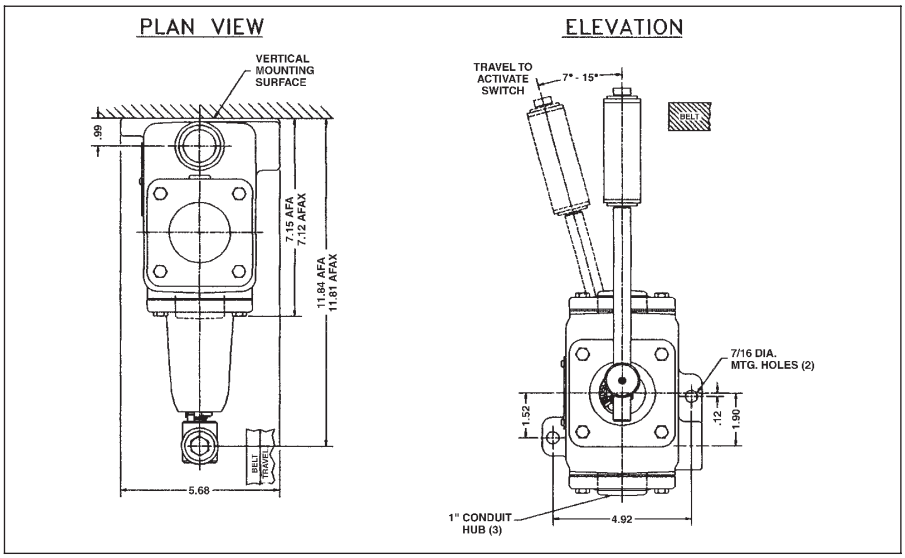
Standard Materials:

- Enclosure – *Feraloy*® iron alloy
- Bearing and operating arm – stainless steel with plastic end caps

Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Stainless steel – natural

Dimensions (inches)*



* Dimensions are approximate, not for construction purposes.

4C AFU Mine Signal Switches
600 VAC

NEMA 3
Raintight
Wet Locations

Application:
AFU mine signal switches are used:
- for signalling circuits or remote control of magnetic motor starters
- in non-hazardous areas of mines or process industry facilities where a rugged enclosure is needed for protection from falling ore and other material or dripping water
- mounted on walls or in shaft ways and actuated by pulling line or cable attached to the loop at the bottom

Features:
- Sturdy raintight enclosure with heavy mounting lugs
- Wires enter enclosure through clearance holes in the underside
- Switches are actuated by a spring-loaded plunger which returns to the normal position when the operating force is removed
- Units are furnished with heavy duty motor control push buttons. Several of these may be interconnected electrically for remote control of a magnetic motor starter from more than one location

Standard Materials:
- Enclosure – *Feraloy*® iron alloy
- Plunger – steel
- Loop – bronze

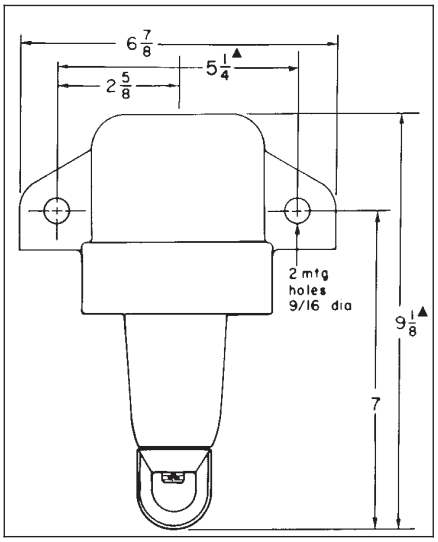
Standard Finishes:
- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized
- Bronze – natural

Certifications and Compliances:
- NEMA: 3

AFU Mine signal switch with push button switch (cover removed)

Maximum Wt. of Line or Cable Without Actuating Switch (lbs.)	Total Operating Force Required (lbs.)	With Push Button Heavy Duty 600 VAC Max. Cat. #
25	50	AFU254

Dimensions (inches)*



* Dimensions are approximate, not for construction purposes.

EGL Static Grounding Indicator

with Automatic Pump Control

Cl. I, Div. 1 & 2, Groups B,C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3,4,7BCD,9FG,12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Applications:

EGL Static Grounding Indicators are connected to tank vehicles, drums or other portable containers before beginning transfer of combustible materials to:

- safely ground static electricity preventing build up of a static charge during pumping
- indicate the presence of safe static grounding before and during loading or unloading operations
- actuate remote devices (lights, horns) to verify completion or interruption of the static ground
- shut down pumps automatically if the EGL static grounding circuit is broken

Features:

- 1″ conduit hub with ¾″ reducer on bottom right hand side of enclosure
- one or two pilot lights (LED)
- Standard LED pilot lights are available in either red (J1) or green (J3)
- Heavy duty clamp for static ground connection
- Breather and drain standard
- Intrinsically safe ground detecting circuit
- Control relay with two sets of contacts to control operation of electrically operated pumps, valves, or for energizing remote indicators
- Static ground verification system to ensure a continuous closed ground loop
- Neoprene gasket for cover opening to make enclosure watertight
- 25 ft. cord with clamp assembly
- External flange design — wide unobstructed cover opening provides a completely accessible interior for wiring and maintenance.
- Triple-lead, captive, stainless steel cover bolts provide quick access and superior corrosion protection. Provides clear indication that cover bolts are fully retracted from the body.
- Detachable mounting feet provide flexibility. No need to replace enclosure if mounting foot is broken.
- Copper-free aluminum hinges provide convenient and easy access for inspection, maintenance, and system changes.
- Waterguard™ desiccant packet provided to absorb and remove water/moisture and protect the enclosed equipment from damage.

Standard Materials:

- Copper-free aluminum

Standard Finishes:

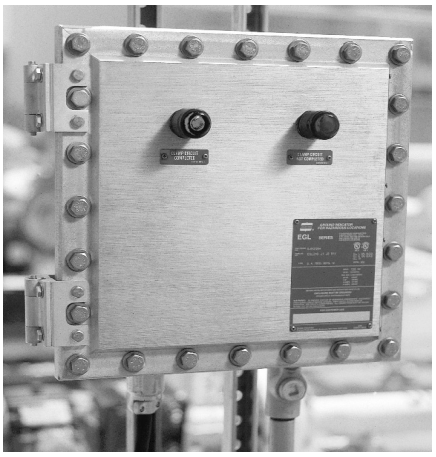
- Natural

Electrical Rating Ranges:

- 120 volt AC supply
- Control relay interlocking contact: 15A at 277 VAC; 10A at 600 VAC

Certifications and Compliances:

- Class I, Division 1 & 2, Groups B,C,D
  Class II, Div. 1, Groups E,F,G
  Class II, Div. 2, Groups F,G
  Class III



Catalog Numbers:

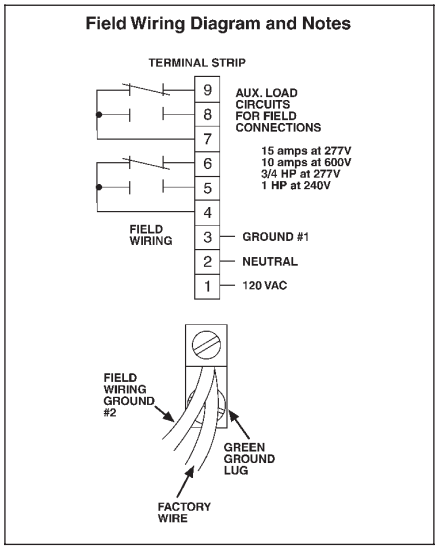
EGL Indicators:

Description	Cat. #
Indicator less pilot lights	EGL210
Indicator with one pilot light	EGL210-J‡
Indicator with two pilot lights*	EGL210-J1-J3

Options:

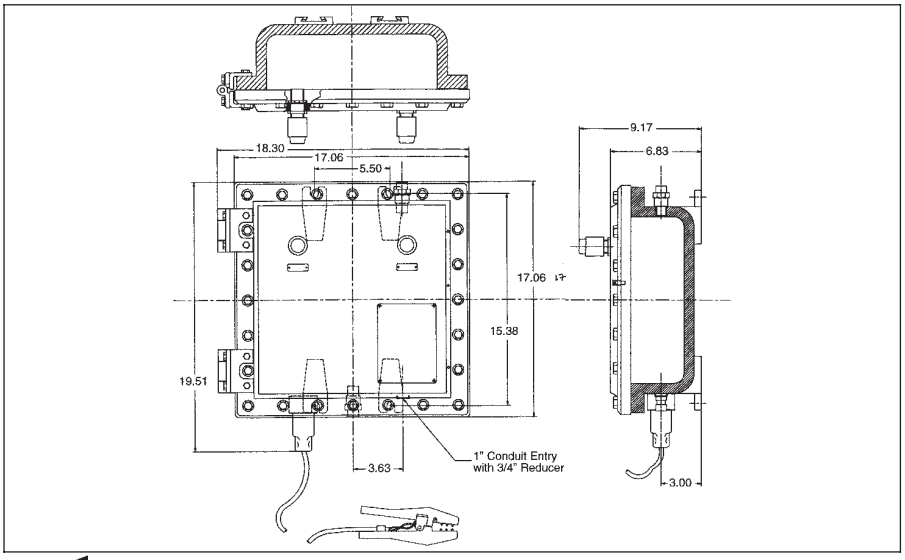
- Corro-free™ epoxy finish for use in severely corrosive environments . . . . . add suffix S752
- Epoxy finish, internal and external add suffix S753
- Internal space heaters . . . . . add suffix R11
- 50 VA power transformer for 240 VAC input FT502
- 50 VA power transformer for 480 VAC input FT504

Field Wiring Diagram and Notes



CAUTION:
To ensure proper operation of the EGL210, two separate ground leads from the electrical supply panel must be provided: one to terminal #3 on the terminal strip and the other to the green ground lug in the enclosure.

Dimensions: (inches)



Replacement Parts:

Description	Cat. #
Ground clamp	EGL-K1
Ground clamp assembly includes 25′ cord, connector and clamp	EGL:20109-B
EGL210 interior only	EGL210-R1 M4
Pilot Lights (Red)	EMP009-J1-LED
(Green)	EMP009-J3-LED
Relay	EGL-K4
Switch Amplifier	GHG122-3121-D-1003
Adaptor Plate (allows Model M4 to be mounted where Model M2 and M3 were located)	0208122
Mounting Feet (Model M4)	EJB-MF1

‡ Specify color: J1=red, J3=green.
* Includes one red and one green pilot light.

4C Cable-Gard Static Discharge Reels

Application:

Static discharge reels are used for grounding portable machines and equipment in hazardous areas, such as fuel-transfer trucks, grain elevators, dockside-loading facilities, and barges. When properly clamped to ground the static discharge reel safely dissipates static electrical buildup and reduces the chance of sparking and the potential for explosion. For hazardous locations, the EGL Static Grounding Indicator (on page 419) can be used as an electrical interlock to control pumping operations.

Features:

- Compact enclosed design, positive ratchet lock, steel cable installed
- 100 amp universal jaw-type grounding clamp
- Mounts to a clean, unpainted conductive surface to assure electrical continuity through the reel frame

Standard Materials:

- Housing – steel construction

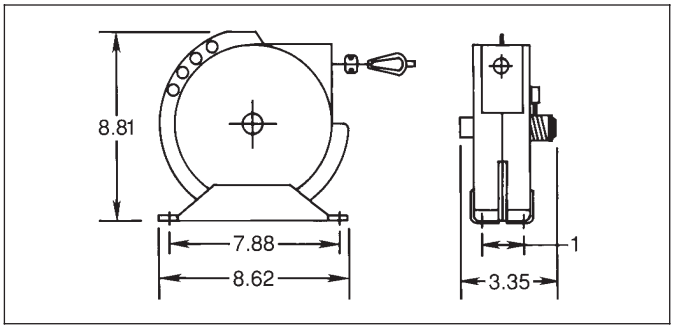
Standard Finishes:

- Housing – Orange polyester; baked on finish

Cable Length (Ft.)	Description	Cat. #
50	Single 7 x 30 steel*	SDR-50
50	35′ plus 2 x 15′ for Y (steel*)	SDR-50Y
50	Nylon covered cable*	SDR-50N

* Static discharge reels are supplied complete with 3/32" steel aircraft cable. DC resistance is approximately one ohm per 50 ft. of steel cable.

Dimensions (inches)



EGF Series
Ground Fault Control Station

Cl. I, Div. 1 & 2, Groups C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA 3, 7CD, 9EFG, 12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

EGF Series of control stations are used:
- for the additional safety of personnel, and for equipment protection in remote areas.

Features:

- Copper-free aluminum construction offers lightweight, corrosion resistance and a long, maintenance-free service life.
- 1¼″ throughfeed conduit hubs with 1¼″-1″ reducers for ease of installation.
- Compact, internally flanged enclosure requires minimum installation area.
- Steel mounting feet with electroplate finish for fast, secure, and corrosion-resistant mounting.
- Accepts #14-#10 copper wire sizes for application flexibility.
- Push-to-test button and pilot light (with 10,000 hour incandescent lamp) for easy and constant operational monitoring of unit.
- Cast aluminum circuit breaker operating handle for durability during use.
- EPD breakers for protection of heat tracing circuits.

Standard Materials:

- Bodies, covers, threaded barrels, guards, collars, and toggle operator – copper-free aluminum
- Pushbuttons – type 6/6 nylon
- Operating shafts – stainless steel

Standard Finishes:

- Copper-free aluminum – natural
- Sheet steel – zinc electroplate with chromate finish
- Stainless steel – natural

Electrical Rating:

- GFI, EPD breakers – 120 VAC (single pole), 120/240 VAC for two pole (10,000 AIC)

Certifications and Compliances:

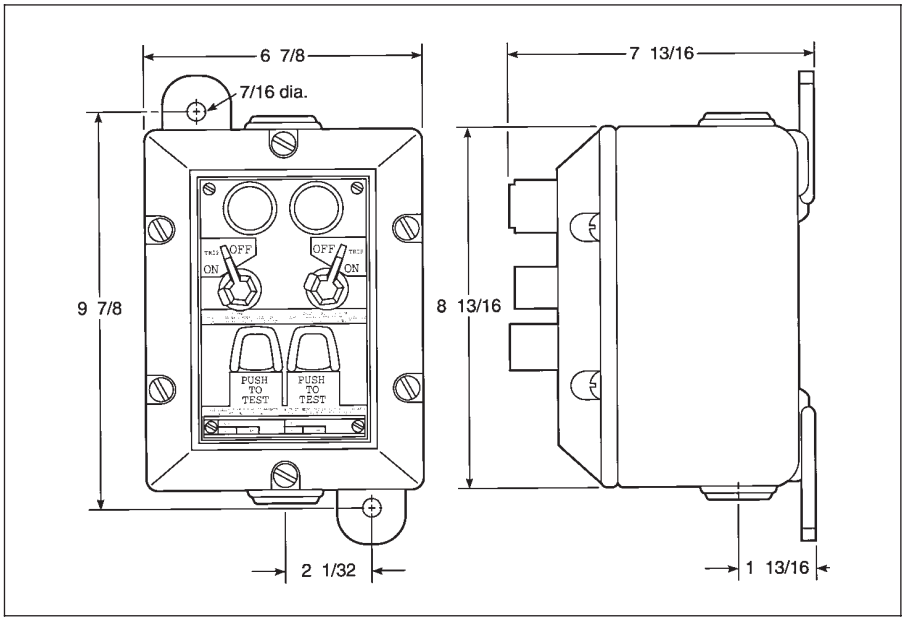
- NEC: Class I, Div. 1 & 2, Groups C,D
  Class II, Div. 1, Groups E,F,G
  Class II, Div. 2, Groups F,G
  Class III
- NEMA 3, 7CD, 9EFG, 12

Ordering Information

Number of Breakers	Number of Poles	Milliamp Trip	Catalog Number
1	1	5	EGF11*
1	2	5	EGF12*
2	1	5	EGF21*
1	1	30	EGF11EPD*
1	2	30	EGF12EPD*
2	1	30	EGF21EPD*

* Add 15, 20, 25, or 30 amp breaker rating

Dimensions:



FLEXITITE™ Attachable Pendant Pushbutton Stations

NEMA 3,4X,5,6,12

Raintight
Watertight
Dust-Tight
Wet Locations

Application:

FLEXITITE attachable pendant pushbutton stations are used:

- for safe, multi-function motor circuit control of: Hoists
  Cranes
  Machine Tools
  Electromagnets
- non-hazardous control environments requiring from 2 to 8 functions.
- where washdowns are necessary – in damp, wet, dirty, or corrosive locations.

Features:

- Safety insulated to meet OSHA requirements for enclosing live parts. The entire unit except the strain relief is insulated with neoprene.
- Safety cushioned – neoprene encapsulation protects internal switches and connectors from impact damage and provides extra protection for personnel.
- Stress relief for your cable is built-in. A separate cable grip is not needed unless the optional pilot light kit is used.
- Positive action long life momentary contact switches.
- Maintained Off-On toggle switch is optionally available on 4, 6, and 8 button units.
- Jam resistant operator buttons are raised flexible diaphragms – an integral part of the molded one-piece cover.
- Compact – 3″ x 3″ enclosure easily fits your hand.
- Indicator plates meet OSHA requirements for clear identification of functions. A full set of plates is provided with each station.

Standard Materials:

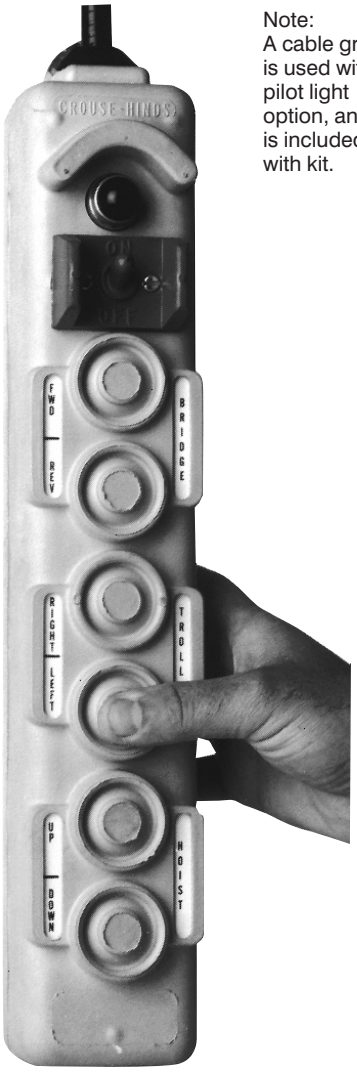
- Body and cover – steel reinforced neoprene
- Strain relief and reinforcement plates – stainless steel
- Exterior hardware – stainless steel

Standard Finishes:

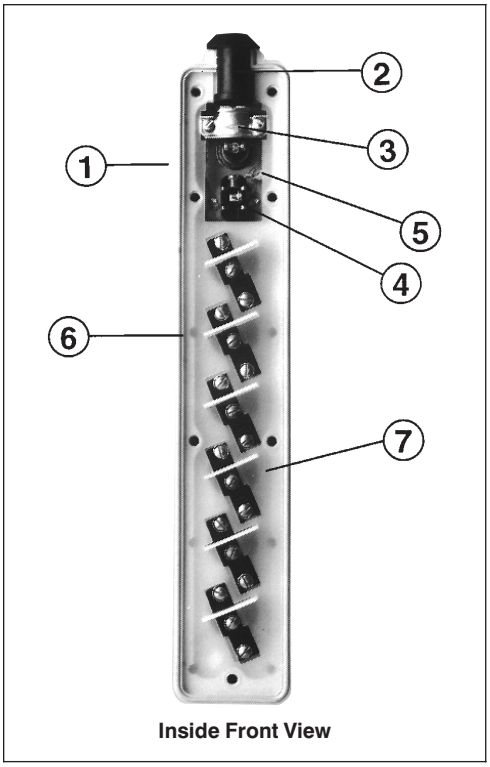
- Neoprene – safety yellow
- Steel – stainless steel

Certifications and Compliances:

- NEMA: 3, 4X,5, 6, 12
- UL Standard: 508
- CSA Approved



Note:
A cable grip is used with pilot light option, and is included with kit.



Inside Front View

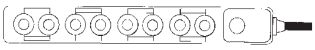
1. BODY SEAL – Compresses against mating half to form a positive seal.
2. REDUCING GROMMETS – Permit use of five different cable sizes while sealing cable entrance.
3. CABLE CLAMP – Secures conductors inside switch. Transfers strain to inner steel core of switch. (Not used with pilot light.)
4. TOGGLE SWITCH (OPTIONAL) – Maintained off-on switch to control power to pendant stations.
5. GREEN GROUNDING SCREW – Makes positive contact between inner steel core and ground wire.
6. INSULATION BARRIERS – On 4- and 6-button models. Position switches and separate N.O. and N.C. switch contacts for added safety.
7. SEPARATOR – For 4- and 6-button models. Tough polypropylene sheet retains switches and forms an insulated wiring channel.
   STRAIN RELIEF – Integral part of the inner steel core – provides tie-off point for strain chain to relieve tension from electrical cable.
   ELECTRICAL INTERLOCK – Schematic furnished to wire switches against opposed operations.
   LOW COST, EASILY INSTALLED – Despite their many advantages, Cooper Crouse-Hinds pendant stations generally cost less than similar metal units.
   RAISED BUMPER – protects lens against damage caused by impact.

FLEXITITE™ Attachable Pendant Pushbutton Stations

NEMA: 3,4X,5,6,12

Raintight
Watertight
Dust-Tight
Wet Locations

One and Two Speed 2, 4, 6 and 8 Buttons

Style	Toggle Switch*	1 Speed 20A 460V 2 hp. 230V	2 Speed 10A 230V ½ hp. 230V	DC 10A 125V ⅛ hp. 125V	Cable Diameter	Shipping Weight (lbs.)	Dimensions Length	Width	Depth
2-Button 	None	X8635-21	X8635-22	X8635-20	.555 thru .665	2½	8¾″	2¼″	3″
4-Button 	3316317	X8635-41B	X8635-42B	X8635-40B	.505 thru .730	3	13½″	3″	3⅝″
6-Button 	3316317	X8635-61B	X8635-62B	X8635-60B	.590 thru .840	6½	17″	3″	3⅝″
8-Button 	3316317	X8635-81	X8635-82**	X8635-80	.698 thru .968	9	21½″	3″	3 7⁄16″

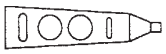
* Should be ordered separately.

Pilot Light Kit for 4, 6 and 8-Button Only

Lamp Voltage	4 and 6 Button Cable Diameter .50 thru .62	.63 thru .74	.75 thru .87	8 Button .69 thru .97
110-125V AC	3316533	3316533-1	3316533-2	3316624
210-250V AC	3316534	3316534-1	3316534-2	3316625

Pilot light kit includes: lamp assembly with lens and bulb, cable support grip, and ''S'' hook. Support grip and ''S'' hook not required on 8-button. NEMA 3,4,5,12 only.

FLEXITITE™ 2-Button Attachable Pendant Switch

Part Number	Contact Style	Voltage	Amps Make	Amps Break
X8995-1 yellow 	Momentary Switch	240 AC 120 AC 24 AC 250 VDC 125 VDC	7.5 15.0 15.0 0.27 .055	0.75 1.5 2.5 0.27 0.55

** 2 speed includes: 6, 2-speed switches and 2, single speed switches.

Indicator Plates (Replacement only - units come with plates standard)

2-Button

Part Number	Description	Part Number	Description
315116-1	Down/West	315116-7	Rev/Left
315116-2	Start/North	315116-8	Up/East
315116-3	Stop/South	315116-9	Raise/Lower
315116-4	Off/In	315116-10	Up/Down
315116-5	On/Out	315116-11	Right/Left
315116-6	Fwd/Right		

4, 6 and 8-Button

Part Number	Description	Part Number	Description
314850-1	Bridge	314850-6	Fwd/Rev.
314850-2	Trolley		North/South
314850-3	Hoist	314850-9	On/Off
314850-4	In/Out		Start/Stop
	Up/Down	314850-12	Raise/Lower
314850-5	Right/Left	314850-13	Inbd/Outbd
	East/West	314850-14	Off/On

Shoulder Bolts for Fastening Front to Back Cover – 2-Button (P/N 1316311-2); 4- & 6-Button (P/N 1316311-1); 8 button (P/N 1316311-3). NOTE: Refer to price list for identification of stock items.

Replacement Parts

Style	Part Numbers Front Cover	Back Cover	Toggle Switch Kit†	Switch Element Part Numbers 1 Speed 20a. 460V 2hp, 230V	2 speed 10a. 230V ½ hp. 230V	DC 10a. 125V ⅛ hp. 125V	Toggle Off/On Element	Barrier	Separator	Parts Kit††	Pilot Light Kit
2-Button	A335578	A335577-1	Not Avail.	3316480	314896	314903				RX8635-21	See Above Chart
4-Button	3335848-1	3335829-1	3316317	3316480	314896	314903	1316313	314849-1 (4 Req'd)	335616 (1 Req'd)	RX8635-41	
6-Button	3335845-1	3335830-1	3316317	3316480	314896	314903	1316313	314849-1 (6 Req'd)	335571 (1 Req'd)	RX8635-61	
8-Button	3344153	3344154	3316317	3316480	314896	314903	1316313	Not Req'd	Not Req'd	RX8635-80	

† Toggle switch kit – includes: toggle switch, guard, assembly and screws.

†† Parts kit – includes cable grommets, legend plates and assembly screws.

4C D2X Series FLEXITITE™ Attachable Pendant Pushbutton Stations for Class I, Div. 2 Areas

Factory Sealed

NEMA 3,4X,5,6,7BCD(Div. 2),9FG(Div. 2),12
Watertight
Raintight
Dust-tight
Wet Locations

Application:

FLEXITITE attachable pendant pushbutton stations are used:

- for safe multi-function motor circuit control of:
  - Hoists
  - Cranes
  - Machine Tools
  - Electromagnets
- in hazardous areas such as Class I, Division 2, Groups B, C and D (classified) areas or Class II, Division 2, Groups F and G, as defined by the National Electrical Code
- where wash downs are necessary – in damp, wet, dirty or corrosive locations
- for control applications requiring 2 to 8 functions

Features:

- Safety cushioned – neoprene encapsulations protects internal switches and connectors from impact damage and provides extra protection for personnel.
- Stress relief for your cable is built-in. A separate cable grip is not needed.
- Uses Cooper Crouse-Hinds ESWP factory sealed contacts suitable for use in Class I, Division 2, Groups B, C and D
- Switches are rated for 10 amps 600 VAC (NEMA A600).
- Indicator plates meet OSHA requirements for clear identification of functions. A full set of plates is included with each station.
- Jam resistant operator buttons are raised flexible diaphrams – an integral part of the molded one-piece cover.
- Compact design
- Safety yellow finish.

Standard Materials:

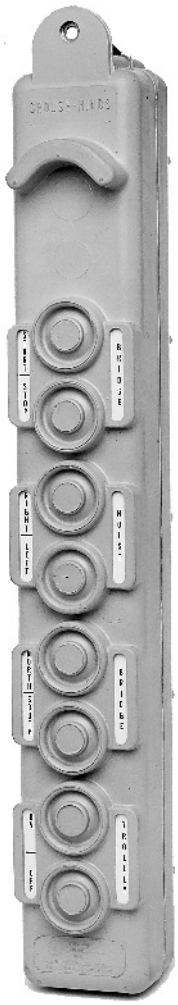
- Body and Cover – steel reinforced neoprene
- Strain relief and reinforcement plates – stainless steel
- Exterior hardware – stainless steel

Standard Finishes:

- Neoprene – safety yellow
- Stainless steel – natural

Certifications and Compliances:

- NEMA: 3,4X,5,6,7BCD(Div. 2),9FG(Div. 2),12
- UL Standard: 508
- CSA Standard C22.2 No. 14



8-Button Control Station

D2X FLEXITITE™ Attachable Pendant Pushbutton Stations for Class I, Div. 2 Areas

Factory Sealed

NEMA 3,4X,5,6,7BCD(Div. 2),9FG(Div. 2),12
Watertight
Raintight
Dust-tight
Wet Locations

Ordering Information

Control Stations

Description	Cable Dia.	Catalog #
2-Button	.31 – .75	D2X8635-210
4-Button	.50 – .75	D2X8635-410
6-Button	.59 – .81	D2X8635-610
8-Button	.59 – .92	D2X8635-810

Replacement Indicator Plates (A full set is included with each control station)

2-Button

Part No.	Description	Part No.	Description
315116-1	Down/West	315116-7	Rev/Left
315116-2	Start/North	315116-8	Up/East
315116-3	Stop/South		
315116-4	Off/In		
315116-5	On/Out		
315116-6	Fwd/Right		

4, 6 and 8-Button

Part No.	Description	Part No.	Description
314850-1	Bridge	314850-6	Fwd/Rev North/South
314850-2	Trolley		
314850-3	Hoist In/Out	314850-9	On/Off Start/Stop
314850-4	Up/Down Right/Left		
314850-5	East/West		

Replacement Switch

Part No.
ESWP126

Dimensions (in inches)