5C EFS and EDS Factory Sealed Control Devices and Manual Motor Starting Switches

Dimensions Pg. 430

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

Application:

Factory sealed enclosures are installed in a rigid metallic conduit system for surface mounting adjacent to or remote from equipment being controlled and are used:
- to prevent arcing of enclosed device from causing ignition of a specific hazardous atmosphere or atmospheres external to the enclosure
- 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, or metal handling or finishing areas where atmosphere may contain hazardous gases and/or dust
- in non-hazardous areas where sturdy, durable enclosures are required
- in conjunction with magnetic starters or contactors for remote control of motors

Manual motor starting switch enclosures are used:
- for manual starting of small ac or dc motors
- to provide manual starting and stopping and, in the case of units with heaters, motor running protection

Features:

Factory sealed devices have many distinct advantages:
- reduce installation problems
- eliminate external seals
- lower installation costs
- improve safety
- are used with general purpose snap and pushbutton type switches
- standard neoprene covers for front operated pushbuttons. Prevents accumulation of dirt and entrance of water around operating shafts
- mounting lugs and taper tapped hubs with integral bushings
- large machine screws for fastening covers to bodies
- lockout provisions on front operated push button (marked ''STOP'' and ''OFF'') and selector switch covers
- lockout hole for padlock having ¼″ hasp is provided when used with covers for front lever and side rocker type operation
- close tolerances in machining of wide, mating flanges and journalled shafts and bearings for front button operation, produces flametightness of enclosure joints
- on enclosures with front lever and side rocker type operating handles, threaded type shafts and bushings are used to ensure flametightness
- dead end (EFS or EDS) or through feed (EFSC or EDSC) hubs – ½″ to 1″ sizes

Standard Materials:

- Bodies – *Feraloy*® iron alloy; copper-free aluminum.
- Front operated pushbutton and pilot light covers – *Feraloy* iron alloy
- Side operated type pushbutton covers – copper-free aluminum
- Shafts – stainless steel
- Shaft bushings – stainless steel
- Rocker handle and pushbutton guards – type 6/6 nylon
- Sealing enclosures – copper-free aluminum

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:

- 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: 3,7B*CD,9EFG
- UL Standard: 894, 698
- CSA Standard: C22.2 No. 30

Options:

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

Description	Suffix to be Added to Cat. #
Emergency ''Stop'' button (momentary) – front operated red mushroom button	S111
Lockout provision on front operated pushbutton cover (standard on buttons marked ''OFF'' and ''STOP'')	S153
For 24 VDC operation on pilot lights	S300
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
Bodies and covers (single and two gang units) – copper-free aluminum	SA
Where indicated in the catalog listings, EDS units suitable for Class I, Division 1, Group B usage can be supplied, add suffix - GB, EFS units are suitable for Class I, Division 1, Group B as standard	GB
Maintained contact mushroom head with lockout and guard. Maximum one per cover and cannot be used with a pilot light with a transformer or another standard pushbutton	S769

EDS bodies and factory sealed cover and device sub-assemblies are available for field assembly (see pages 394 to 396).



Suffix S769

* See Options: suffix GB

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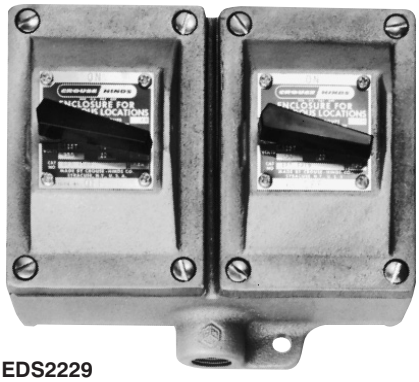
EDS Factory Sealed General Use Snap Switches

Dimensions Pg. 430

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



EDSC2129



EDS2229

General Use Snap Switch – Front Operated

Hub Size	Style†	Amperes 120VAC§	Amperes 277VAC§	Single Gang Dead End Cat. #	Single Gang Through Feed Cat. #	Two Gang‡ Dead End Cat. #	Two Gang‡ Through Feed Cat. #
¾	1-pole	20	20	EDS2129	EDSC2129†	EDS2229	EDSC2229†
¾	2-pole	20	20	EDS218	EDSC218†		EDSC228†
¾	3-way	20	20	EDS2130	EDSC2130	EDS2230	EDSC2230
¾	4-way	20	20	EDS2140	EDSC2140		EDSC2240
1	1-pole	20	20	EDS3129	EDSC3129†	EDS3229	EDSC3229†
1	2-pole	20	20	EDS318	EDSC318†	EDS328	EDSC328†
1	3-way	20	20	EDS3130	EDSC3130	EDS3230	EDSC3230
1	4-way	20	20	EDS3140	EDSC3140	EDS3240	EDSC3240

† ON-OFF standard marking for 1-pole and 2-pole units.

‡ Combinations of switches can be furnished.

§ AC rated switches are tested for resistive, inductive and tungsten filament loads up to the full current rating and for motor loads up to 80% of the ampere rating.

* **Class I, Group B:** All units on this page can be modified for Class I, Group B usage. Add suffix GB to the Cat. No. Seals must be installed within 1½″ of each conduit opening in Division 1. In Canada, for Group B applications consult factory.

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2A EDS and EFD Enclosures

with General Use Snap Switches Front Operated

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

Application:

EDS and EFD enclosures are installed in a rigid metallic conduit system for surface mounting adjacent to or remote from equipment being controlled and are used:
- to prevent arcing of enclosed switch from causing ignition of a specific hazardous atmosphere or atmospheres external to the enclosure
- 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, or metal handling or finishing areas where atmosphere may contain hazardous gases and/or dust
- in non-hazardous areas where sturdy, durable enclosures are required

Features:

- Small and compact in design.
- Used with snap switches.
- Mounting lugs and taper tapped hubs with integral bushings.
- Large machine screws for fastening covers to bodies.
- Lockout hole for padlock having ¼″ hasp is provided.
- Threaded type shafts and bushings are used to insure flametightness.

Standard Materials:

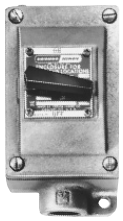
- Bodies and covers – *Feraloy*® iron alloy
- Shafts – stainless steel
- Shaft bushings – stainless steel

Standard Finishes:

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

Certifications and Compliances:

- NEC/CEC: Class I, Div. 1 & 2, Groups B*,C,D
  Class II, Div. 1, Groups E,F,G
  Class II, Div. 2, Groups F,G
  Class III
- NEMA/EEMAC: 3,7B*CD,9EFG,12
- UL Standard: 894
- CSA Standard: C22.2 No. 30



EDS Enclosed Snap Switch

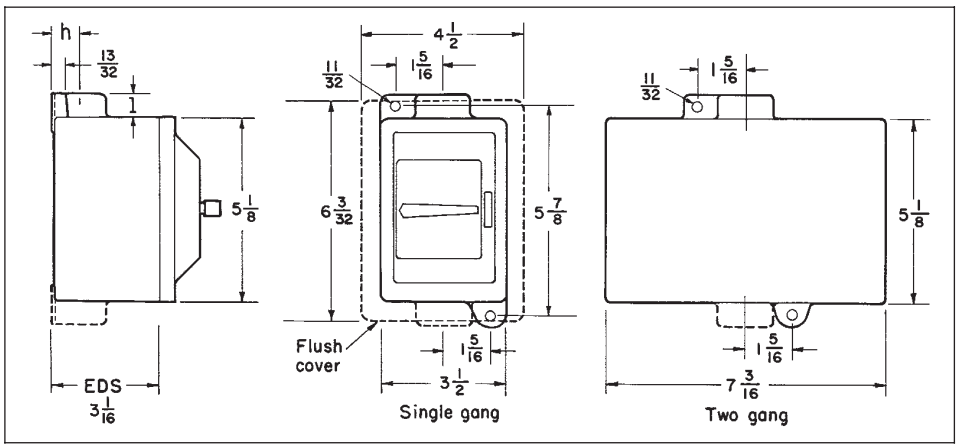
Options:

Description	Suffix to be Added to Encl. Cat. #
• Two or three gang bodies can be supplied with combinations of devices listed for one gang enclosures . . . . Refer to modular listing, section 4C	
• Class I Group B, NEMA 7B – see listing pages	GB
• Flush wall mounting cover with ½″ overhang – single gang only – dull black instrument finish	S173

Complies with U.L. snap switch test requirements as follows:

Type of Test	AC-Rated (only) Switch
Overload	Rated Amp. +380% Power Factor .40-.50 100 cycles, 6-10 cycles per minute
Non-Inductive Endurance	10,000 cycles, 18-24 cycles per minute at rated current – .98 min. P.F.
Inductive Endurance	10,000 cycles, 18-24 cycles per minute – .75-.80 P.F.
Tungsten Filament Lamp Endurance	10,000 cycles, 6-10 cycles per minute at rated current and 120 volts
Temperature Rise	Not to exceed 30°C
Dielectric Withstand	1500 volts

Dimensions† (in inches)



Hub Size	Dim. "h"	Dim. "l"
¾	⅞	13⁄16
1	1	15⁄16

† Dimensions are approximate, not for construction purposes.

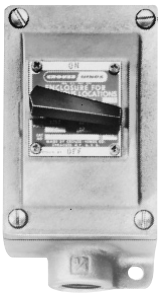
* See suffix GB.

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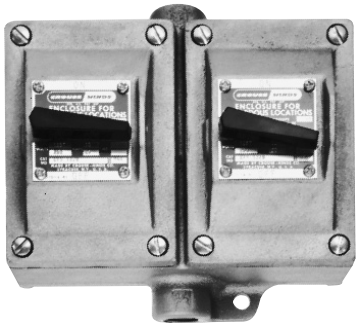
EDS and EFD Enclosures

with General Use Snap Switches Front Operated Single Gang and Two Gang

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



Dead end



Through feed

Hub Size	Style	Amperes§ 120VAC	Amperes§ 277VAC	Single Gang Dead End Cat. #	Single Gang Through Feed Cat. #	Two Gang ♦ Dead End Cat. #	Two Gang ♦ Through Feed Cat. #
¾	1-pole	20	20	EDS2129	EDSC2129†	EDS2229	EDSC2229†
¾	2-pole	20	20	EDS218	EDSC218†		EDSC228†
¾	3-pole	‡	‡	EDS2123	EDSC2123		EDSC2223
¾	3-way	20	20	EDS2130	EDSC2130	EDS2230	EDSC2230
¾	4-way	20	20	EDS2140	EDSC2140		EDSC2240
1	1-pole	20	20	EDS3129	EDSC3129†	EDS3229	EDSC3229†
1	2-pole	20	20	EDS318	EDSC318†	EDS328	EDSC328†
1	3-pole	‡	‡	EDS3123	EDSC3123		EDSC3223
1	3-way	20	20	EDS3130	EDSC3130	EDS3230	EDSC3230
1	4-way	20	20	EDS3140	EDSC3140	EDS3240	EDSC3240
1	1-pole	30	30	EFD3591	EFDC3591†	EFD3691	EFDC3691†
1	2-pole	30	30	EFD3593	EFDC3593†		EFDC3693†
1	3-way	30	30	EFD3594	EFDC3594	EFD3694	EFDC3694

*Class I, Group B:

All units listed on this page can be modified for Class I, Group B usage. Add suffix GB to the Cat. No.. Example: EDS2129-GB. Seals must be installed within 1½″ of each conduit opening for Group B usage.

§ See table on page 556 for AC-rated switch information.
† ON-OFF standard marking for 1-pole and 2-pole units
‡ 15A, 125 VAC; 10A, 250 VAC
♦ Combinations of switches can be furnished.

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