

EDS / EFS Series Control Stations

Fully Assembled EFS and EDS Factory Sealed Devices

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

4C

Applications:

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 pushbutton (marked "STOP" and "OFF") and selector switch covers
- Lockout hole for padlock having 1/4" 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 – 1/2" to 1" sizes
- When STOP is indicated, button is automatically red. When START is indicated, button is automatically green. Otherwise, black buttons are standard.

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: 1203
- CSA Standard: C22.2 No. 30

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

Options:

The following special options are available from the factory by adding suffix to Cat. #:

| Description | Suffix |
|--|-------------|
| • Momentary red emergency "STOP" button – front operated mushroom button, breaks normally closed contacts only..... | 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 red emergency "STOP" button with lockout – front operated mushroom button breaks normally closed and makes normally open contacts (push to stop), lockout standard (will not fit with a pilot light if transformer is required) | S769 |
| • Spring return to center from right and left..... | S842 |

EDS bodies and factory sealed cover and device sub-assemblies are available for field assembly (see page 521).

*See suffix GB in Options section.

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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

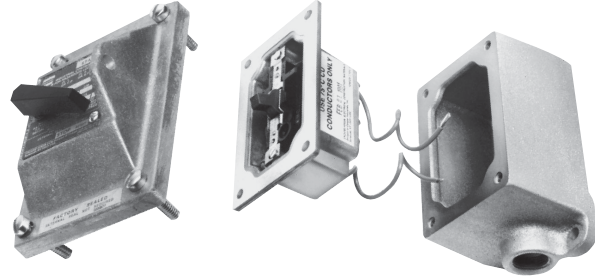
Methods of Factory Sealing

EFS/EDS Series



Factory sealed EDS and EFS pilot light, pushbutton and selector switch control stations do not need external sealing. Device contacts are factory sealed in explosionproof ESWP contact blocks. Small, compact enclosures have accurately ground wide flanges on both the body and cover for a flame-tight joint.

EDS Series

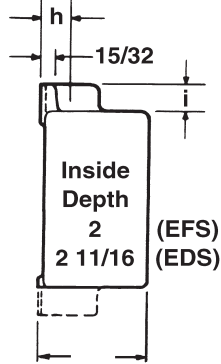


EDS factory sealed snap switches or manual motor starting switches do not need external sealing. The switches are enclosed in a unique sealing well with double flanges which mate with the cover and the body. Small, compact enclosures have accurately ground wide flanges on body, cover and sealing well for flame-tight joints. Wiring pigtails are factory sealed from under the sealing well. Reliable pouring of seals at the factory ensures safe sealing.

Dimensions (Inches) ‡

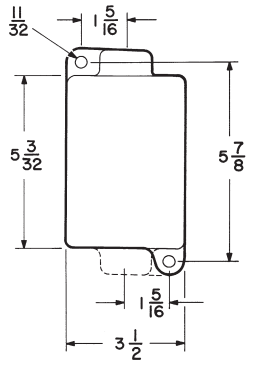
Bodies

| Hub Size | Dim. "h" | Dim. "i" |
|----------|----------|----------|
| 1/2 | 3/4 | 13/16 |
| 3/4 | 7/8 | 13/16 |
| 1 | 1 | 15/16 |

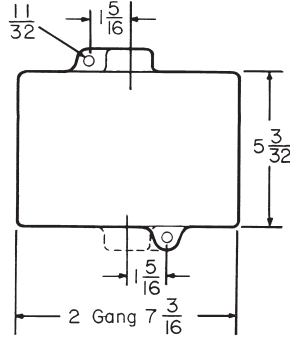


2 1/2 For EFS Series
 3 1/16 For EDS Series

Side View

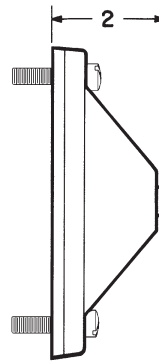


Front View - Single gang

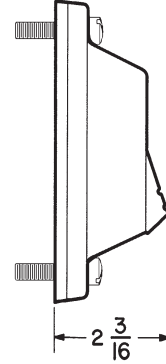


Front View - Two gang

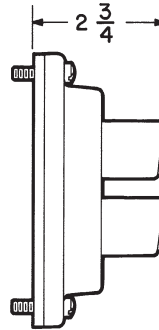
Covers†



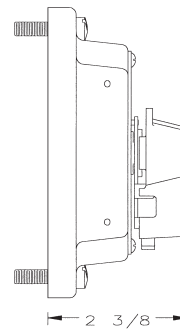
General use snap switch front operated and manual motor starting switch



Pushbutton switch rocker type side operated



Pushbutton switch front operated



Selector switch

*See suffix GB in Options section.

‡Dimensions are approximate, not for construction purposes.

† Surface covers have same length and width as bodies.

EDS / EFS Series Control Stations

Fully Assembled EDS Factory Sealed Selector Switches Maintained Contact, 600VAC Heavy Duty

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

4C

Furnished with pushbuttons, 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.



EDS11273

Dimensions

see page 526

Ordering Information - Single Gang

| Style | Position 1 | Position 2 | Position 3 | Replacement Contact Blocks† | Enclosure with Switch | | | | | |
|--------------------------------|------------|------------|------------|-----------------------------|-----------------------|-----------------|---------------------|-----|------------|-------------|
| | | | | | Hub Size | Dead End Cat. # | Through Feed Cat. # | | | |
| Two-Position, Two-Circuit | A1 | | | ED11 | 1/2 | EDS11271 ① | EDSC11271 ① | | | |
| | A2 | | | | 3/4 | EDS21271 ① | EDSC21271 ① | | | |
| | | | | | 1 | EDS31271 ① | EDSC31271 ① | | | |
| Two-Position, Four-Circuit | A1 | | | ED12 | 1/2 | EDS11272 ① | EDSC11272 ① | | | |
| | A2 | | | | 3/4 | EDS21272 ① | EDSC21272 ① | | | |
| | B1 | | | | 1 | EDS31272 ① | EDSC31272 ① | | | |
| | B2 | | | | | | | | | |
| Three-Position, Two-Circuit ‡ | A1 | | | ED11 | 1/2 | EDS11273 ① | EDSC11273 ① | | | |
| | A2 | | | | 3/4 | EDS21273 ① | EDSC21273 ① | | | |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EDS11274 ① | EDSC11274 ① | | | |
| | A2 | | | | 3/4 | EDS21274 ① | EDSC21274 ① | | | |
| | B1 | | | | 1 | EDS31274 ① | EDSC31274 ① | | | |
| | B2 | | | | | | | | | |
| | A1 | | | | | | ED12 | 1/2 | EDS11275 ① | EDSC11275 ① |
| | A2 | | | | | | | 3/4 | EDS21275 ① | EDSC21275 ① |
| | B1 | | | 1 | EDS31275 ① | EDSC31275 ① | | | | |
| | B2 | | | | | | | | | |

① If desired, markings on indicating plates may be added to catalog number. Select from the list of standard markings below:

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 Class I, Group B: Consider using EFS series selector switches, see page 534. All enclosures listed above can be modified for Class I, Group B, Div. 1 usage. Add suffix GB to the Cat. No. Seals must be installed within 1/2" of each conduit opening in Division 1. These products are suitable for Group B, Div. 2 as listed, without external seals. In Canada, for Group B applications consult factory.

† For replacement contact blocks, see page 571.

‡ Suffixes S634 or S635 may be used on these catalog numbers. See page 525 for explanation of options.

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4C EDS / EFS Series Control Stations

**Fully Assembled EFS Factory Sealed
Selector Switches
Maintained Contact, 600VAC Heavy Duty**

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

Furnished with pushbuttons, 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.



EFS11273

Dimensions

see page 526

4C

Ordering Information - Single Gang

| Style | Position 1 | Position 2 | Position 3 | Replacement Contact Blocks† | Enclosure with Switch | | |
|-----------------------------------|------------|------------|------------|-----------------------------|-----------------------|-----------------|---------------------|
| | | | | | Hub Size | Dead End Cat. # | Through Feed Cat. # |
| Two-Position, Two-Circuit | A1 | | | ED11 | 1/2 | EFS11271 ① | EFSC11271 ① |
| | A2 | | | | 3/4 | EFS21271 ① | EFSC21271 ① |
| | | | | | 1 | EFS31271 ① | EFSC31271 ① |
| Two-Position, Four-Circuit | A1 | | | ED12 | 1/2 | EFS11272 ① | EFSC11272 ① |
| | A2 | | | | 3/4 | EFS21272 ① | EFSC21272 ① |
| | B1 | | | | 1 | EFS31272 ① | EFSC31272 ① |
| | B2 | | | | | | |
| Three-Position, Two-Circuit ‡ | A1 | | | ED11 | 1/2 | EFS11273 ① | EFSC11273 ① |
| | A2 | | | | 3/4 | EFS21273 ① | EFSC21273 ① |
| | | | | | 1 | EFS31273 ① | EFSC31273 ① |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EFS11274 ① | EFSC11274 ① |
| | A2 | | | | 3/4 | EFS21274 ① | EFSC21274 ① |
| | B1 | | | | 1 | EFS31274 ① | EFSC31274 ① |
| | B2 | | | | | | |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EFS11275 ① | EFSC11275 ① |
| | A2 | | | | 3/4 | EFS21275 ① | EFSC21275 ① |
| | B1 | | | | 1 | EFS31275 ① | EFSC31275 ① |
| | B2 | | | | | | |

① If desired, markings on indicating plates may be added to catalog number. Select from the list of standard markings below:

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 | |

*Class I, Group B: All enclosures listed above are suitable for Class I, Group B, Div. 1 usage. Seals only have to be installed on 1 inch conduit within 5 ft. in Division 1.
† For replacement contact blocks, see page 571.
‡ Suffixes S634 or S635 may be used on these catalog numbers. See page 525 for explanation of options.

EDS / EFS Series Control Stations

Sub-assembly Reference Guide

For a complete list of components for EDS & EFS Control Stations, see page 514 for FlexStation™ Series

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Control Stations and their Sub-assemblies

| Complete Control Station | Sub-assembly | | Notes and Requirements |
|--|-----------------------|---------------|---|
| | Cover & Device | Cast Back Box | |
| PUSHBUTTONS | | | |
| EDS2184 | DSD918 | EDS271 | |
| EDSC2184 | DSD918 | EDSC271 | |
| EDS215 | DSD922 | EDS271 | Start/ Stop Legend included |
| EDSC215 | DSD922 | EDSC271 | Start/ Stop Legend included |
| EDS2190 | DSD921 | EDS271 | |
| EDSC2190 | DSD921 | EDSC271 | |
| EDS2184-S769-EM-SP | DSD918-S769-EM-SP | EDS271 | Emergency Stop Legend included |
| EDSC2184-S769-EM-SP | DSD918-S769-EM-SP | EDSC271 | Emergency Stop Legend included |
| EDS2284 | (2) DSD918 | EDS272 | |
| EDSC2284 | (2) DSD918 | EDSC272 | |
| EDS225 | (2) DSD922 | EDS272 | Start/ Stop Legend included |
| EDSC225 | (2) DSD922 | EDSC272 | Start/ Stop Legend included |
| EDS2290 | (2) DSD921 | EDS272 | |
| EDSC2290 | (2) DSD921 | EDSC272 | |
| PILOT LIGHTS | | | |
| EFS21524-J* | DSD948-J* | EDS271 † | * Insert pilot light color † When using the EFS Series pilot light in Cl. I, Div. 1, Group B applications, the EFS back box is required in place of the EDS. |
| EFSC21524-J* | DSD948-J* | EDSC271 † | |
| EFS21561-J*-J* | DSD947-J*-J* | EDS271 † | |
| EFSC21561-J*-J* | DSD947-J*-J* | EDSC271 † | |
| PUSHBUTTON / PILOT LIGHT COMBINATIONS | | | |
| EDS21473-J* | DSD958-J* | EDS271 | * Insert pilot light color |
| EDSC21473-J* | DSD958-J* | EDSC271 | * Insert pilot light color |
| EDS22471-J* | DSD948-J* & DSD921 | EDS272 | * Insert pilot light color |
| EDSC22471-J* | DSD948-J* & DSD921 | EDSC272 | * Insert pilot light color |
| EDS22868-J*-J* | DSD947-J*-J* & DSD921 | EDS272 | * Insert pilot light color |
| EDSC22868-J*-J* | DSD947-J*-J* & DSD921 | EDSC272 | * Insert pilot light color |
| SELECTOR SWITCHES | | | |
| EDS21271 | DSD923 | EDS271 | |
| EDSC21271 | DSD923 | EDSC271 | |
| EDS21272 | DSD924 | EDS271 | |
| EDSC21272 | DSD924 | EDSC271 | |
| EDS21273 | DSD925 | EDS271 | |
| EDSC21273 | DSD925 | EDSC271 | |
| EDS21274 | DSD926 | EDS271 | |
| EDSC21274 | DSD926 | EDSC271 | |
| EDS21275 | DSD927 | EDS271 | |
| EDSC21275 | DSD927 | EDSC271 | |
| MANUAL MOTOR STARTER WITH O/L | | | |
| EDS21101 | DS415A & SW13 | EDS271 | "-W * " for heater, or "-0" distributor provided |
| EDSC21101 | DS415A & SW13 | EDSC271 | "-W * " for heater, or "-0" distributor provided |
| EDS21102 | DS415A & SW14 | EDS271 | "-W * " for heater, or "-0" distributor provided |
| EDSC21102 | DS415A & SW14 | EDSC271 | "-W * " for heater, or "-0" distributor provided |
| EDS21093 | DS415A & SW11 | EDS271 | "-G * " for heater, or "-0" distributor provided |
| EDSC21093 | DS415A & SW11 | EDSC271 | "-G * " for heater, or "-0" distributor provided |
| EDS21094 | DS415A & SW12 | EDS271 | "-G * " for heater, or "-0" distributor provided |
| EDSC21094 | DS415A & SW12 | EDSC271 | "-G * " for heater, or "-0" distributor provided |
| EDS2199 | DS415A & SW9 | EDS271 | "-P * " for heater, or "-0" distributor provided |
| EDSC2199 | DS415A & SW9 | EDSC271 | "-P * " for heater, or "-0" distributor provided |
| EDS21100 | DS415A & SW10 | EDS271 | "-P * " for heater, or "-0" distributor provided |
| EDSC21100 | DS415A & SW10 | EDSC271 | "-P * " for heater, or "-0" distributor provided |

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Sub-assembly Reference Guide

Control Stations and their Sub-assemblies

| Complete Control Station | Sub-assembly | | Notes and Requirements |
|-----------------------------|-------------------------|---------------|-------------------------------------|
| | Cover & Device | Cast Back Box | |
| MANUAL MOTOR STARTER | | | |
| EFD218-T8 | DSD916 | EDS271 | |
| Alternative | DS415A & SQ D 2510 KO-1 | EDS271 | SQ D switch provided by distributor |
| EFDC218-T8 | DSD916 | EDSC271 | |
| Alternative | DS415A & SQ D 2510 KO-1 | EDSC271 | SQ D switch provided by distributor |
| EFD2419 | DSD917 | EDS271 | |
| Alternative | DS415A & GE 2368S | EDS271 | GE switch provided by distributor |
| EFDC2419 | DSD917 | EDSC271 | |
| Alternative | DS415A & GE 2368S | EDSC271 | GE switch provided by distributor |
| SNAP SWITCHES | | | |
| EDS2129 | DS652 & SW5 | EDS271 | |
| Alternative | DSD933 | EDS271 | External Sealing Fitting Required |
| EDSC2129 | DS652 & SW5 | EDSC271 | |
| Alternative | DSD933 | EDSC271 | External Sealing Fitting Required |
| EDS218 | DS652 & SW6 | EDS271 | |
| Alternative | DSD634 | EDS271 | External Sealing Fitting Required |
| EDSC218 | DS652 & SW6 | EDSC271 | |
| Alternative | DSD634 | EDSC271 | External Sealing Fitting Required |
| EDS2130 | DS652 & SW7 | EDS271 | |
| Alternative | DSD936 | EDS271 | External Sealing Fitting Required |
| EDSC2130 | DS652 & SW7 | EDSC271 | |
| Alternative | DSD936 | EDSC271 | External Sealing Fitting Required |
| EDS2140 | DS652 & SW8 | EDS271 | |
| Alternative | DSD937 | EDS271 | External Sealing Fitting Required |
| EDSC2140 | DS652 & SW8 | EDSC271 | |
| Alternative | DSD937 | EDSC271 | External Sealing Fitting Required |
| EDS2229 | (2) DS652 & (2) SW5 | EDS272 | |
| Alternative | (2) DSD933 | EDS272 | External Sealing Fitting Required |
| EDSC2229 | (2) DS652 & (2) SW5 | EDSC272 | |
| Alternative | (2) DSD933 | EDSC272 | External Sealing Fitting Required |
| EDSC228 | (2) DS652 & (2) SW6 | EDSC272 | |
| Alternative | (2) DSD634 | EDSC272 | External Sealing Fitting Required |
| EDS2230 | (2) DS652 & (2) SW7 | EDS272 | |
| Alternative | (2) DSD936 | EDS272 | External Sealing Fitting Required |
| EDSC2230 | (2) DS652 & (2) SW7 | EDSC272 | |
| Alternative | (2) DSD936 | EDSC272 | External Sealing Fitting Required |
| EDSC2240 | (2) DS652 & (2) SW8 | EDSC272 | |
| Alternative | (2) DSD937 | EDSC272 | External Sealing Fitting Required |
| ROCKER SWITCHES | | | |
| EDS2596 | DSD949 | EDS271 | |
| EDSC2596 | DSD949 | EDSC271 | |
| EDS2162 | DSD951 | EDS271 | Start/ Stop Legend included |
| EDSC2162 | DSD951 | EDSC271 | Start/ Stop Legend included |
| EDS2194 | DSD950 | EDS271 | |
| EDSC2194 | DSD950 | EDSC271 | |
| EDS2696 | (2) DSD949 | EDS272 | Start/ Stop Legend included |
| EDSC2696 | (2) DSD949 | EDSC272 | Start/ Stop Legend included |
| EDS2262 | (2) DSD951 | EDS272 | |
| EDSC2262 | (2) DSD951 | EDSC272 | |
| EDS2294 | (2) DSD950 | EDS272 | |
| EDSC2294 | (2) DSD950 | EDSC272 | |

Additional notes:

- See Eaton's Crouse-Hinds' installation instructions for any possible additional sealing requirements.
- Part numbers listed with 3/4" hub in back box (Ex. EDS2184). For 1/2" hub, change the "2" to "1" (EDS1184). For 1" hub, change the "2" to "3" (EDS3184).
- Control Stations with "Stop" legend have lockout provided as standard.
- Pilot Light Colors J*- J1= Red, J3= Green, J6= Amber, J10= Clear, J11= Blue. LED pilot lights are available with LED suffix.
- Pilot Light Transformers for voltages over 125V. Suffix T2= 240/220 - 110V, T4= 480/440 - 110V, T5= 600/500 - 110V (not available on double pilot cover).
- Standard legend plate markings are available by adding nomenclature after the part number (EDS2184-Run).
- Selector switch nameplate kits available. 2-Pos = "SS2KIT", 3-Pos = "SS3KIT". See Replacement Parts book for additional information.
- Copper-free aluminum bodies and covers available with SA suffix.
- Additional control station options may be found in Section 4C.
- Group B ratings may be achieved by adding the GB suffix or using the EFS back box. See part number instructions for the item required.
- Group B ratings may already be achieved when used in Class I, Division 2 applications. See Certifications and Compliances for item required.
- Additional control station configurations available through the FlexStation Component Series.

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Cl. III
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Explosionproof
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Applications:

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- 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 pushbutton (marked "STOP" and "OFF") and selector switch covers
- Lockout hole for padlock having 1/4" 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 – 1/2" to 1" sizes
- When STOP is indicated, button is automatically red. When START is indicated, button is automatically green. Otherwise, black buttons are standard.

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: 1203
- CSA Standard: C22.2 No. 30

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

Options:

The following special options are available from the factory by adding suffix to Cat. #:

| Description | Suffix |
|--|-------------|
| • Momentary red emergency "STOP" button – front operated mushroom button, breaks normally closed contacts only..... | 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 red emergency "STOP" button with lockout – front operated mushroom button breaks normally closed and makes normally open contacts (push to stop), lockout standard (will not fit with a pilot light if transformer is required) | S769 |
| • Spring return to center from right and left..... | S842 |

EDS bodies and factory sealed cover and device sub-assemblies are available for field assembly (see page 521).

*See suffix GB in Options section.

4C

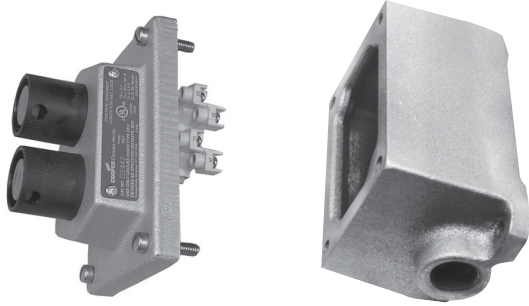
EDS / EFS Series Control Stations

Fully Assembled EFS and EDS Factory Sealed Devices

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

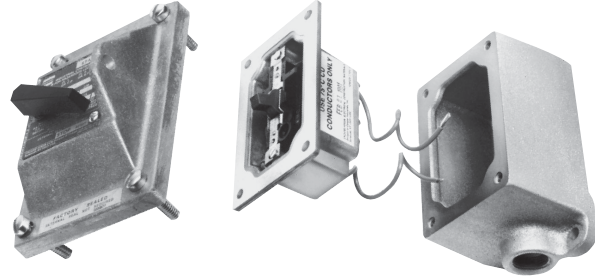
Methods of Factory Sealing

EFS/EDS Series



Factory sealed EDS and EFS pilot light, pushbutton and selector switch control stations do not need external sealing. Device contacts are factory sealed in explosionproof ESWP contact blocks. Small, compact enclosures have accurately ground wide flanges on both the body and cover for a flame-tight joint.

EDS Series

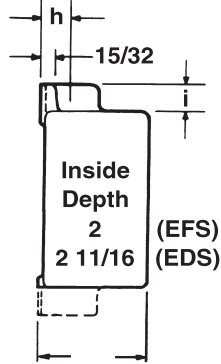


EDS factory sealed snap switches or manual motor starting switches do not need external sealing. The switches are enclosed in a unique sealing well with double flanges which mate with the cover and the body. Small, compact enclosures have accurately ground wide flanges on body, cover and sealing well for flame-tight joints. Wiring pigtails are factory sealed from under the sealing well. Reliable pouring of seals at the factory ensures safe sealing.

Dimensions (Inches) ‡

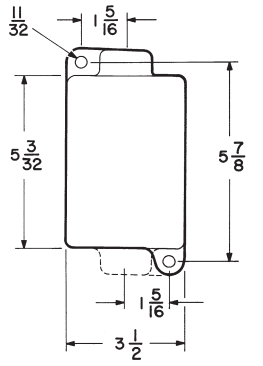
Bodies

| Hub Size | Dim. "h" | Dim. "i" |
|----------|----------|----------|
| 1/2 | 3/4 | 13/16 |
| 3/4 | 7/8 | 13/16 |
| 1 | 1 | 15/16 |

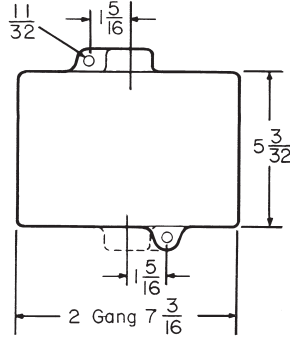


2 1/2 For EFS Series
 3 1/16 For EDS Series

Side View

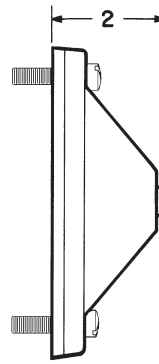


Front View - Single gang

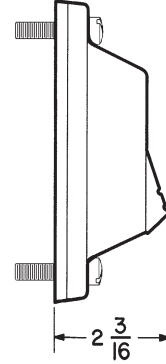


Front View - Two gang

Covers†



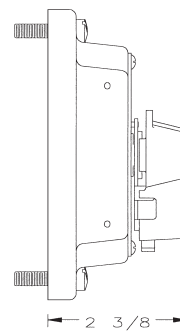
General use snap switch front operated and manual motor starting switch



Pushbutton switch rocker type side operated



Pushbutton switch front operated



Selector switch

*See suffix GB in Options section.
 ‡Dimensions are approximate, not for construction purposes.
 † Surface covers have same length and width as bodies.

EDS / EFS Series Control Stations

Fully Assembled EDS Factory Sealed Selector Switches Maintained Contact, 600VAC Heavy Duty

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

4C

Furnished with pushbuttons, 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.



EDS11273

Dimensions

see page 526

Ordering Information - Single Gang

| Style | Position 1 | Position 2 | Position 3 | Replacement Contact Blocks† | Enclosure with Switch | | | | | |
|--------------------------------|------------|------------|------------|-----------------------------|-----------------------|-----------------|---------------------|-----|------------|-------------|
| | | | | | Hub Size | Dead End Cat. # | Through Feed Cat. # | | | |
| Two-Position, Two-Circuit | A1 | | | ED11 | 1/2 | EDS11271 ① | EDSC11271 ① | | | |
| | A2 | | | | 3/4 | EDS21271 ① | EDSC21271 ① | | | |
| | | | | | 1 | EDS31271 ① | EDSC31271 ① | | | |
| Two-Position, Four-Circuit | A1 | | | ED12 | 1/2 | EDS11272 ① | EDSC11272 ① | | | |
| | A2 | | | | 3/4 | EDS21272 ① | EDSC21272 ① | | | |
| | B1 | | | | 1 | EDS31272 ① | EDSC31272 ① | | | |
| | B2 | | | | | | | | | |
| Three-Position, Two-Circuit ‡ | A1 | | | ED11 | 1/2 | EDS11273 ① | EDSC11273 ① | | | |
| | A2 | | | | 3/4 | EDS21273 ① | EDSC21273 ① | | | |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EDS11274 ① | EDSC11274 ① | | | |
| | A2 | | | | 3/4 | EDS21274 ① | EDSC21274 ① | | | |
| | B1 | | | | 1 | EDS31274 ① | EDSC31274 ① | | | |
| | B2 | | | | | | | | | |
| | A1 | | | | | | ED12 | 1/2 | EDS11275 ① | EDSC11275 ① |
| | A2 | | | | | | | 3/4 | EDS21275 ① | EDSC21275 ① |
| | B1 | | | 1 | EDS31275 ① | EDSC31275 ① | | | | |
| | B2 | | | | | | | | | |

① If desired, markings on indicating plates may be added to catalog number. Select from the list of standard markings below:

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 Class I, Group B: Consider using EFS series selector switches, see page 534. All enclosures listed above can be modified for Class I, Group B, Div. 1 usage. Add suffix GB to the Cat. No. Seals must be installed within 1/2" of each conduit opening in Division 1. These products are suitable for Group B, Div. 2 as listed, without external seals. In Canada, for Group B applications consult factory.

† For replacement contact blocks, see page 571.

‡ Suffixes S634 or S635 may be used on these catalog numbers. See page 525 for explanation of options.

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4C EDS / EFS Series Control Stations

**Fully Assembled EFS Factory Sealed
Selector Switches
Maintained Contact, 600VAC Heavy Duty**

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

Furnished with pushbuttons, 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.



EFS11273

Dimensions
see page 526

4C

Ordering Information - Single Gang

| Style | Position 1 | Position 2 | Position 3 | Replacement Contact Blocks† | Enclosure with Switch | | |
|-----------------------------------|------------|------------|------------|-----------------------------|-----------------------|-----------------|---------------------|
| | | | | | Hub Size | Dead End Cat. # | Through Feed Cat. # |
| Two-Position, Two-Circuit | A1 | | | ED11 | 1/2 | EFS11271 ① | EFSC11271 ① |
| | A2 | | | | 3/4 | EFS21271 ① | EFSC21271 ① |
| | | | | | 1 | EFS31271 ① | EFSC31271 ① |
| Two-Position, Four-Circuit | A1 | | | ED12 | 1/2 | EFS11272 ① | EFSC11272 ① |
| | A2 | | | | 3/4 | EFS21272 ① | EFSC21272 ① |
| | B1 | | | | 1 | EFS31272 ① | EFSC31272 ① |
| | B2 | | | | | | |
| Three-Position, Two-Circuit ‡ | A1 | | | ED11 | 1/2 | EFS11273 ① | EFSC11273 ① |
| | A2 | | | | 3/4 | EFS21273 ① | EFSC21273 ① |
| | | | | | 1 | EFS31273 ① | EFSC31273 ① |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EFS11274 ① | EFSC11274 ① |
| | A2 | | | | 3/4 | EFS21274 ① | EFSC21274 ① |
| | B1 | | | | 1 | EFS31274 ① | EFSC31274 ① |
| | B2 | | | | | | |
| Three-Position, Four-Circuit ‡ | A1 | | | ED12 | 1/2 | EFS11275 ① | EFSC11275 ① |
| | A2 | | | | 3/4 | EFS21275 ① | EFSC21275 ① |
| | B1 | | | | 1 | EFS31275 ① | EFSC31275 ① |
| | B2 | | | | | | |

① If desired, markings on indicating plates may be added to catalog number. Select from the list of standard markings below:

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 | |

*Class I, Group B: All enclosures listed above are suitable for Class I, Group B, Div. 1 usage. Seals only have to be installed on 1 inch conduit within 5 ft. in Division 1.
† For replacement contact blocks, see page 571.
‡ Suffixes S634 or S635 may be used on these catalog numbers. See page 525 for explanation of options.

EDS / EFS Series Control Stations

Sub-assembly Reference Guide

For a complete list of components for EDS & EFS Control Stations, see page 514 for FlexStation™ Series

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Control Stations and their Sub-assemblies

| Complete Control Station | Sub-assembly | | Notes and Requirements |
|--|-----------------------|---------------|---|
| | Cover & Device | Cast Back Box | |
| PUSHBUTTONS | | | |
| EDS2184 | DSD918 | EDS271 | |
| EDSC2184 | DSD918 | EDSC271 | |
| EDS215 | DSD922 | EDS271 | Start/ Stop Legend included |
| EDSC215 | DSD922 | EDSC271 | Start/ Stop Legend included |
| EDS2190 | DSD921 | EDS271 | |
| EDSC2190 | DSD921 | EDSC271 | |
| EDS2184-S769-EM-SP | DSD918-S769-EM-SP | EDS271 | Emergency Stop Legend included |
| EDSC2184-S769-EM-SP | DSD918-S769-EM-SP | EDSC271 | Emergency Stop Legend included |
| EDS2284 | (2) DSD918 | EDS272 | |
| EDSC2284 | (2) DSD918 | EDSC272 | |
| EDS225 | (2) DSD922 | EDS272 | Start/ Stop Legend included |
| EDSC225 | (2) DSD922 | EDSC272 | Start/ Stop Legend included |
| EDS2290 | (2) DSD921 | EDS272 | |
| EDSC2290 | (2) DSD921 | EDSC272 | |
| PILOT LIGHTS | | | |
| EFS21524-J* | DSD948-J* | EDS271 † | * Insert pilot light color † When using the EFS Series pilot light in Cl. I, Div. 1, Group B applications, the EFS back box is required in place of the EDS. |
| EFSC21524-J* | DSD948-J* | EDSC271 † | |
| EFS21561-J*-J* | DSD947-J*-J* | EDS271 † | |
| EFSC21561-J*-J* | DSD947-J*-J* | EDSC271 † | |
| PUSHBUTTON / PILOT LIGHT COMBINATIONS | | | |
| EDS21473-J* | DSD958-J* | EDS271 | * Insert pilot light color |
| EDSC21473-J* | DSD958-J* | EDSC271 | * Insert pilot light color |
| EDS22471-J* | DSD948-J* & DSD921 | EDS272 | * Insert pilot light color |
| EDSC22471-J* | DSD948-J* & DSD921 | EDSC272 | * Insert pilot light color |
| EDS22868-J*-J* | DSD947-J*-J* & DSD921 | EDS272 | * Insert pilot light color |
| EDSC22868-J*-J* | DSD947-J*-J* & DSD921 | EDSC272 | * Insert pilot light color |
| SELECTOR SWITCHES | | | |
| EDS21271 | DSD923 | EDS271 | |
| EDSC21271 | DSD923 | EDSC271 | |
| EDS21272 | DSD924 | EDS271 | |
| EDSC21272 | DSD924 | EDSC271 | |
| EDS21273 | DSD925 | EDS271 | |
| EDSC21273 | DSD925 | EDSC271 | |
| EDS21274 | DSD926 | EDS271 | |
| EDSC21274 | DSD926 | EDSC271 | |
| EDS21275 | DSD927 | EDS271 | |
| EDSC21275 | DSD927 | EDSC271 | |
| MANUAL MOTOR STARTER WITH O/L | | | |
| EDS21101 | DS415A & SW13 | EDS271 | "-W * " for heater, or "-0" distributor provided |
| EDSC21101 | DS415A & SW13 | EDSC271 | "-W * " for heater, or "-0" distributor provided |
| EDS21102 | DS415A & SW14 | EDS271 | "-W * " for heater, or "-0" distributor provided |
| EDSC21102 | DS415A & SW14 | EDSC271 | "-W * " for heater, or "-0" distributor provided |
| EDS21093 | DS415A & SW11 | EDS271 | "-G * " for heater, or "-0" distributor provided |
| EDSC21093 | DS415A & SW11 | EDSC271 | "-G * " for heater, or "-0" distributor provided |
| EDS21094 | DS415A & SW12 | EDS271 | "-G * " for heater, or "-0" distributor provided |
| EDSC21094 | DS415A & SW12 | EDSC271 | "-G * " for heater, or "-0" distributor provided |
| EDS2199 | DS415A & SW9 | EDS271 | "-P * " for heater, or "-0" distributor provided |
| EDSC2199 | DS415A & SW9 | EDSC271 | "-P * " for heater, or "-0" distributor provided |
| EDS21100 | DS415A & SW10 | EDS271 | "-P * " for heater, or "-0" distributor provided |
| EDSC21100 | DS415A & SW10 | EDSC271 | "-P * " for heater, or "-0" distributor provided |

4C

Sub-assembly Reference Guide

Control Stations and their Sub-assemblies

| Complete Control Station | Sub-assembly | | Notes and Requirements |
|-----------------------------|-------------------------|---------------|-------------------------------------|
| | Cover & Device | Cast Back Box | |
| MANUAL MOTOR STARTER | | | |
| EFD218-T8 | DSD916 | EDS271 | |
| Alternative | DS415A & SQ D 2510 KO-1 | EDS271 | SQ D switch provided by distributor |
| EFDC218-T8 | DSD916 | EDSC271 | |
| Alternative | DS415A & SQ D 2510 KO-1 | EDSC271 | SQ D switch provided by distributor |
| EFD2419 | DSD917 | EDS271 | |
| Alternative | DS415A & GE 2368S | EDS271 | GE switch provided by distributor |
| EFDC2419 | DSD917 | EDSC271 | |
| Alternative | DS415A & GE 2368S | EDSC271 | GE switch provided by distributor |
| SNAP SWITCHES | | | |
| EDS2129 | DS652 & SW5 | EDS271 | |
| Alternative | DSD933 | EDS271 | External Sealing Fitting Required |
| EDSC2129 | DS652 & SW5 | EDSC271 | |
| Alternative | DSD933 | EDSC271 | External Sealing Fitting Required |
| EDS218 | DS652 & SW6 | EDS271 | |
| Alternative | DSD634 | EDS271 | External Sealing Fitting Required |
| EDSC218 | DS652 & SW6 | EDSC271 | |
| Alternative | DSD634 | EDSC271 | External Sealing Fitting Required |
| EDS2130 | DS652 & SW7 | EDS271 | |
| Alternative | DSD936 | EDS271 | External Sealing Fitting Required |
| EDSC2130 | DS652 & SW7 | EDSC271 | |
| Alternative | DSD936 | EDSC271 | External Sealing Fitting Required |
| EDS2140 | DS652 & SW8 | EDS271 | |
| Alternative | DSD937 | EDS271 | External Sealing Fitting Required |
| EDSC2140 | DS652 & SW8 | EDSC271 | |
| Alternative | DSD937 | EDSC271 | External Sealing Fitting Required |
| EDS2229 | (2) DS652 & (2) SW5 | EDS272 | |
| Alternative | (2) DSD933 | EDS272 | External Sealing Fitting Required |
| EDSC2229 | (2) DS652 & (2) SW5 | EDSC272 | |
| Alternative | (2) DSD933 | EDSC272 | External Sealing Fitting Required |
| EDSC228 | (2) DS652 & (2) SW6 | EDSC272 | |
| Alternative | (2) DSD634 | EDSC272 | External Sealing Fitting Required |
| EDS2230 | (2) DS652 & (2) SW7 | EDS272 | |
| Alternative | (2) DSD936 | EDS272 | External Sealing Fitting Required |
| EDSC2230 | (2) DS652 & (2) SW7 | EDSC272 | |
| Alternative | (2) DSD936 | EDSC272 | External Sealing Fitting Required |
| EDSC2240 | (2) DS652 & (2) SW8 | EDSC272 | |
| Alternative | (2) DSD937 | EDSC272 | External Sealing Fitting Required |
| ROCKER SWITCHES | | | |
| EDS2596 | DSD949 | EDS271 | |
| EDSC2596 | DSD949 | EDSC271 | |
| EDS2162 | DSD951 | EDS271 | Start/ Stop Legend included |
| EDSC2162 | DSD951 | EDSC271 | Start/ Stop Legend included |
| EDS2194 | DSD950 | EDS271 | |
| EDSC2194 | DSD950 | EDSC271 | |
| EDS2696 | (2) DSD949 | EDS272 | Start/ Stop Legend included |
| EDSC2696 | (2) DSD949 | EDSC272 | Start/ Stop Legend included |
| EDS2262 | (2) DSD951 | EDS272 | |
| EDSC2262 | (2) DSD951 | EDSC272 | |
| EDS2294 | (2) DSD950 | EDS272 | |
| EDSC2294 | (2) DSD950 | EDSC272 | |

Additional notes:

- See Eaton's Crouse-Hinds' installation instructions for any possible additional sealing requirements.
- Part numbers listed with 3/4" hub in back box (Ex. EDS2184). For 1/2" hub, change the "2" to "1" (EDS1184). For 1" hub, change the "2" to "3" (EDS3184).
- Control Stations with "Stop" legend have lockout provided as standard.
- Pilot Light Colors J*- J1= Red, J3= Green, J6= Amber, J10= Clear, J11= Blue. LED pilot lights are available with LED suffix.
- Pilot Light Transformers for voltages over 125V. Suffix T2= 240/220 - 110V, T4= 480/440 - 110V, T5= 600/500 - 110V (not available on double pilot cover).
- Standard legend plate markings are available by adding nomenclature after the part number (EDS2184-Run).
- Selector switch nameplate kits available. 2-Pos = "SS2KIT", 3-Pos = "SS3KIT". See Replacement Parts book for additional information.
- Copper-free aluminum bodies and covers available with SA suffix.
- Additional control station options may be found in Section 4C.
- Group B ratings may be achieved by adding the GB suffix or using the EFS back box. See part number instructions for the item required.
- Group B ratings may already be achieved when used in Class I, Division 2 applications. See Certifications and Compliances for item required.
- Additional control station configurations available through the FlexStation Component Series.