

Modifications—Flex Centre/Satellites

Introduction

The Safety Switch Flex Centre is a special facility at the site of our Cleveland, Tennessee plant, that is dedicated to providing customized safety switches that meet customer's challenging applications.

In addition, customized safety switches are available through Eaton's Canadian network of eight regional satellite facilities.

The Eaton Flex Centre and Canadian regional Satellites are solution centres that provide real value:

- A dedicated and knowledgeable engineering/manufacturing/customer service team to meet your needs
- A production facility stocked with a full arsenal of equipment to get the job done
- Local accessibility, eight strategically located satellites in Canada
- Quick turnaround
- For pricing of modification contact Eaton Sales, Satellite or Customer Support (1-800-268-3578)

Description	Suffix	Item
Nameplates	NP	1
Fungus proofing	FP	2
Special paint		3
Lock-on provisions on heavy-duty safety switches for most enclosure types	LO	4
Trapped key interlock systems	TK	5
Viewing window	W	6
Solid neutral factory installed for double-throw safety switches	N	7
Switched neutral factory installed for double throw switches	SN	8
Neutral assemblies for single throw Non-fusible/Fusible switches	N or SN	9
200% neutrals factory installed	200	10
Fuse pullers factory installed	FE	11
Special crimp lug pads factory installed for general-duty and heavy-duty switches	CK	12
Copper lugs factory installed	CL	13
Custom lug configurations	L	14
Auxiliary contacts factory installed	2 or 3	15
Control pole factory installed	CP	16
Grade 316 stainless	316	17
Left hand operated	LH	18

1. Nameplates

Price covers up to three lines of text with a maximum of 25 characters per line. Standard nameplates are laser-engraved plastic and have black letters on a white background. Rotary-engraved lamacoid nameplates are also available. Additional colour combinations and larger nameplates are available upon request. Customer must specify the text when placing an order.

Item 1

Description

Plastic nameplate—up to three lines

Lamacoid nameplate—up to three lines

2. Fungus Proofing

All non-metallic components of the switch are coated with a moisture and fungus-resistant varnish. The inhibitor used meets USA military specification: MIL-V-173C for MOISTURE AND FUNGUS-RESISTANT TREATMENT. The treated switch meets USA military specification: MIL-T-152E for MOISTURE AND FUNGUS-RESISTANT TREATMENT OF COMMUNICATIONS, ELECTRONICS AND ASSOCIATED EQUIPMENT. Not UL listed/CSA Certified.

To order, add Suffix **FP** to standard safety switch catalogue number. *Example:* **1HD363FP**.

3. Special Paint

Special paint colours are available for order quantities of five or more switches. Custom colour is applied over the standard ANSI-61 gray finish.

Minimum quantity of five of the same colour is required. For quantities less than five, higher ampere ratings, or other colour request, contact Eaton Sales.

To order, add the following **suffix** to the standard catalogue number:

Red - **RED**
 Orange - **ORG**
 Yellow - **YEL**
 Green - **GRN**
 White - **WHT**
 Black - **BLK**
 Tan - **TAN**
 Brown - **BRN**
Example: 1HD361NF-ORG

4. Lock-ON Provision

Available on 30–800A heavy-duty and double-throw safety switches. Provision will accept a single lock.

To order, add Suffix **LO** to the standard catalogue number. *Example:* **3HD362LO**.

5. Trapped Key Interlock Systems

Available only on heavy-duty and double-throw safety switches. Trapped key systems are used on safety switches to prevent unauthorized operations or to predetermine a series of power transfers by an authorized operator.

Before system construction can begin, the following information must be provided to the Flex Centre:

- User—name, address and telephone number
- Complete coordination (lock scheme) required with order

To order, add Suffix **TK** to the standard catalogue number. *Example:* **12HD363TK**.

6. Viewing Window

Viewing window is centred over the switching contacts to provide visual verification of ON/OFF status. Available on 30 to 1200A heavy-duty single and double throw switches type 12, 4/4X enclosures. To order, **add Suffix W** to the standard catalogue number. *Example: 12HD362NFW.*

Note: Effective August 2003 30–100A window switches are provided with a full view cover window.

Double throw window switches are provided with two windows.

7. Solid Neutral for Double-Throw Safety Switches

Solid neutrals are suitable for non bonded generator applications. For bonded generators **switched neutrals** are required. See item 8.

To order **solid neutral, add Suffix N.**

Example 1: 3DT361NFN non-fusible double-throw, 600V, three phase, 30A switch with factory-installed solid neutral.

8. Switched Neutral Double-Throw

Switching neutrals are required for separately derived systems when bonding the neutral of the generator to a grounding system at the generator.

For non bonded generator application, a solid neutral would apply. See Item 7.

For a switched neutral application order one more pole than number of power phases. *Example:* single phase order 3 pole switch, three phase order 4 pole switch.

Available rating 30 - 800A.

To order, **add Suffix SN** to the standard safety switch catalogue number.

Example: 3DT324NFSN non-fusible double-throw, 240V, single phase, 200A switch with factory-installed switching neutral.

9. Neutral Assemblies Factory Installed for Single-Throw Non-Fusible/Fusible Safety Switches

Available on 200–600A general-duty safety switches and 30–1200A heavy-duty safety switches.

To order **Solid Neutral, add Suffix N** to the standard safety switch catalogue number.

Example: 4HD364NFN Heavy-duty, three-pole, 200A, non-fusible with solid neutral.

To order **Switched Neutral**, order one more pole than number of power phases and **add Suffix SN** to catalogue number.

Example: 3HD463SN 3 PH, four-pole, 600V, 100A with switched neutral factory installed.

10. 200% Neutrals Factory Installed

Available on heavy duty 30-600A safety switches.

To order, **add Suffix 200** to standard switch catalogue number.

Example: 1HD324N200 Heavy-duty, 200A, 240V, 3 phase with solid neutral 200% rated.

11. Fuse Pullers Factory Installed**Item 11**

Ampere Rating	Switch Type
30-100	Heavy Duty
200	General Duty, Heavy Duty

To order, **add Suffix FE** to the standard catalogue number.

Example: 3HD361FE

12. Special Crimp Lug Pads Factory Installed for General-Duty and Heavy-Duty Switches (Crimp Lugs are Not Included)

To order **add Suffix CK** to the standard safety switch catalogue number.

Item 12

Ampere Rating

400–600, GD
400–800, HD

Note: Heavy-duty Type HD switches, 30–200A are field adaptable to accept crimp lugs, simply remove the box lugs.

13. Copper Lugs Factory Installed

Item 13

Ampere Rating	Switch Type
30–100	HD, DT
200	HD
400	GD, HD
600	GD, HD

To order, **add Suffix CL** to the standard safety switch catalogue number.

Example: **1HD361CL** heavy-duty, three-pole, 30A fusible switch at 600V with copper lugs factory installed.

14. Custom Lug Configurations

Customer-specified lug arrangements are available on heavy-duty and double-throw safety switches. Contact Eaton.

15. Auxiliary Contacts Factory Installed Provide Early-Make/Early-Break Operation

Item 15

General-Duty Switches 200–600A, Heavy-Duty 30–1200A and Double-Throw Switches 30–800A

Ampere Rating	Description
30–1200	1NO/1NC
	2NO/2NC

To order 1NO/1NC contacts, **add Suffix 2** to the standard safety switch catalogue number.

To order 2NO/2NC contacts, **add Suffix 3** to the standard safety switch catalogue number.

Example: **1HD4232** Heavy-duty, four-pole, 100A fusible switch at 240V with factory-installed 1NO/1NC contacts.

Example: **1DT324NF22** double-throw, three-pole, 200A non-fusible switch at 240V with two factory-installed contacts (one installed in the primary switch ON position and one installed in the secondary switch ON position).

16. Control Pole Factory Installed Provides Late-Make/Early-Break Operation

The DS16CP control pole (1NO aux contact). Approved for use with elevating devices, provides one normally open contact, late-make, early-break operation. It mounts in the exact location as the neutral block using the same pre-drilled holes. This is directly connected to the power pole operating shaft. Direct connection and visible blades provide more secure electrical interlocking than handle linkage operation of a snap/switch type interlock. This reliability meets the requirements of many specifications for four-pole switches when the fourth pole is required for secure electrical interlocking.

Item 16

Ampere Rating	Switch Type
30–1200	HD
30–200	DT
400–600	GD

To order, **add Suffix CP** to the standard safety switch catalogue number.

Example: **1HD364CP** heavy-duty, three-pole, 200A fusible switch at 600V with factory-installed control pole.

17. Grade 316 Stainless Enclosures

Standard stainless enclosures are made from grade 304. For a higher degree of stainless, grade 316 can be specified.

To order, **add -316 to Suffix** of **4HD** standard catalogue number.

Example: **4HD362-316 or >200A 4HD365SS-316.**

18. Left-Hand Operated Safety Switch

Available from 30-200A Heavy Duty, for applications that require an operating handle and door opening of the left side of the enclosure.

To order, add **Suffix LH** to the standard switch catalogue number.

Example: **1HD364NFLH** Heavy Duty 3 pole, 600V, 200A, non-fusible, left hand operated.

Additional Safety Switch Flex/Satellite Centre Design Offerings

- Left-hand design (30–200A)
- Cover-mounted status lights and selector switches
- Integrated:
 - Transient Voltage Surge Suppression (TVSS)
 - Current transformers
- Double-throw receptacle switches
- 200% neutrals
- Seam-welded stainless steel
- Gang-operated kits:
 - Mechanically interlocks two or three separate switches
- Reverse feed
- Integrated wattmeter
- Custom enclosures
- Double-throw switches with windows
- 316 grade stainless steel
- Breather/drains
- Voltage/phase monitor