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# Switching Device Product Line

General Duty and Heavy Duty Safety  
Switches

**EAT•N**

**Cutler-Hammer**

# Cutler-Hammer Safety Switches



# CUTLER-HAMMER SAFETY SWITCHES

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## **SAFETY SWITCH**

Is An Individually Enclosed Device For  
Disconnecting A Single Circuit



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## **FUSIBLE AND NON-FUSIBLE**

- Fusible
  - Disconnect Device
  - Circuit Protection
- Non-Fusible
  - Disconnect Device
  - No Circuit Protection

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## **SERVICE ENTRANCE**

**230-70**

### **NEC Requires**

- Located In Close Proximity To Entrance Of Utility Service
- Means To Disconnect Main Service
  - ◆ Main Circuit Breaker
  - ◆ Separate Disconnect
    - ✧ Enclosed Circuit Breaker
    - ✧ Safety Switch

Connector To Bond And Ground Neutral Conductor



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## NEMA ENCLOSURES

<u>NEMA TYPE</u>	<u>DESIGN</u>	<u>PROTECTION</u>
1	Indoor	Contact With Enclosed Equipment
3R	Outdoor	Rain, Ice Formation
4	Indoor/Outdoor	Splashing Or Hose-directed Water, Wind-blown Dust Or Rain, Ice Formation
4X	Indoor/Outdoor	Dust, Rain, Splashing Water & Ice Formation, Corrosion Resistant (typically Stainless Steel)
12	Indoor	Dust, Dirt & Noncorrosive Liquids
7/9	Hazardous Locations	NEC C I I Div 1&2 Gr B, C, D NEC C I I Div 1&2 Gr E, F, G NEC C I I I Div 1&2



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## **UL LISTED**

- UL 98 (Safety Switches)
- UL 50 (Enclosures)
- UL 869 (Service Entrance Equipment)
- NEMA Spec KS1 For Enclosed Switches



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## SAFETY SWITCH TYPES

- **General Duty**
  - Plug Fuse (DP)
  - Cartridge Fuse (DG)
  - Double Throw (DT)
- **Heavy Duty**
  - Single Throw (DH)
  - Double Throw (DT)
  - 6 Pole Or Motor Circuit (DH)
  - Mill Duty (DH)
- **Rotary Switches (DR)**
- **EnviroLine**
  - EnviroLine Stainless (DH)
  - Window Switches (DH)
  - Receptacle Switches (DH)
  - Non-Metallic Switches (DH)
  - NEMA 7/9 Hazardous Location (DS)



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## **HEAVY DUTY (Type DH)**

- 240 And 600 VAC (DC Ratings Also Available)
- 30 - 1200 Amps
- NEMA 1, 3R, 4, 4X, 12, 7/9 Enclosures
- Fusible And Non-Fusible Neutrals And Other Accessories Available Either Factory Or Field Installed



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## **DOUBLE THROW SWITCHES (Type DT)**

- DT Switches Are Designed For Use As A Manual Transfer Switch To Transfer Service From A Normal Power Source To An Alternate Source Or Switch From One Load Circuit To Another
- Economical Means Of Transferring Power
- DTs Must Be Manually Operated
- Applications Include Agricultural, Residential, And Light Industrial



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## **THE INDUSTRY'S MOST COMPLETE DT LINE**

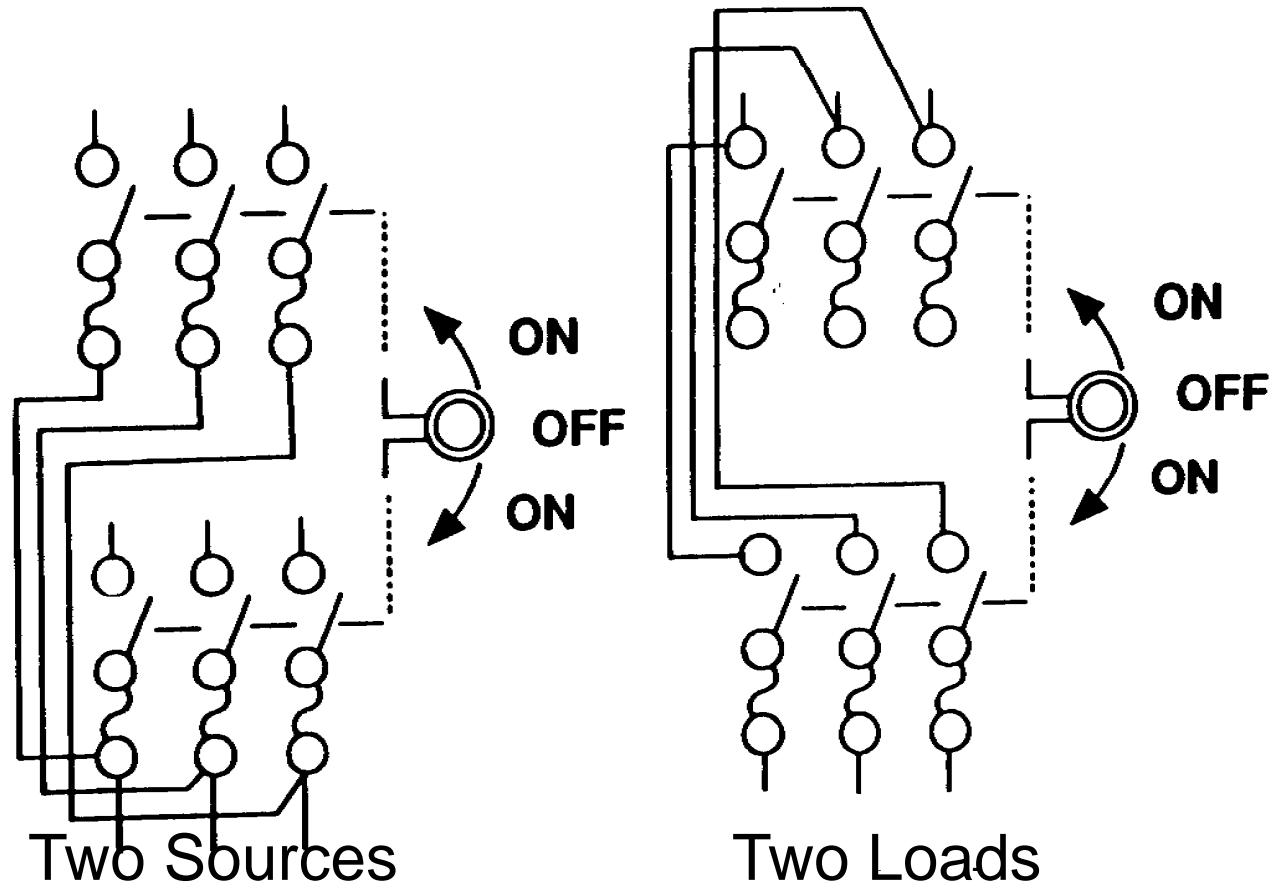
- 240 And 600 VAC, 250 VDC
- General Duty Non-Fusible
  - Compact Design 30-100A Non Quick-Make, Quick-Break
  - Quick-Make, Quick-Break 30-400A Design
- Heavy Duty Fusible NEMA 1 & 3R Through 600A
- Heavy Duty Non-Fusible NEMA 1 & 3R Through 800A
- Heavy Duty Non-Fusible NEMA 4X Through 400A (3 Pole)
- Heavy Duty Non-Fusible NEMA 12 Through 400A (3 Pole)
- Broad Family Of 2, 3, 4, and 6 Pole
- UL Listed Switching Neutral Bonding Kits Available
- Marked "Manual Operated Switch Suitable For Use In Accordance With Article 702 Of The National Electric Code ANSI/NFPA 70"



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## DOUBLE THROW SWITCH SCHEMATIC



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## **MOTOR CIRCUIT**

- Heavy Duty
- 600 VAC
- 30 - 200 Amps
- 6 Poles
- NEMA 12, 4X Enclosures
- Fusible And Non-Fusible
- Used In 2-Speed Motor Applications And Where “Within Sight” Disconnect Is Required Between A Remote Motor Control And Motor



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## **NEMA 7/9 HAZARDOUS LOCATION SWITCHES**

- 30 - 200 Ampere, 600 Volt
- Fused And Non-fused
- Cast Aluminum Enclosure
- Class I Division 1 & 2 Groups B, C, D
- Class II Division 1 & 2 Groups E, F, G
- Class III Division 1 & 2
- Applications Include Petrochemical Facilities, Mining Operations, Pharmaceutical Plants, and WWTP's



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## **MILL DUTY**

- 240 And 600 Volt
- 30 - 600 Ampere
- Fused And Non-fused
- Nema 12 And Nema 4X Stainless Steel
- Fuse Pullers Through 200A
- Factory Installed Ground Lug
- Factory Installed Copper Bodied Lugs



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## FUSE CHARACTERISTICS

### When Used In Conjunction With C-H Safety Switches

FUSE TYPES	VOLTAGE (VAC)	AMPERE RATING (A)	INTERRUPTING CAPACITY (KAIC)	CURRENT-LIMITING	TIME DELAY
Plug Fuse S	125	30	10		X
Plug Fuse T	125	30	10		X
Plug Fuse W	125	30	10		
Class H	600	30-600	10		X
Class J	600	30-600	100 or 200*	X	X
Class L	600	601-1200	200	X	X
Class R	600	30-600	100 or 200*	X	X
Class T	600	200-800	100 or 200*	X	X

\*100 KAIC With General Duty Switches

200 KAIC With Heavy Duty Switches

X: Available



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## **CUTLER-HAMMER K-SERIES SWITCHES**

- Rotary Double Break Action
- Separate, Clear Line Shields
- Front Accessibility For Wiring Ease, Field Conversion & Repair
- Fuse Pullers On All NEMA 4X And NEMA 12 HD Products



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## **UNIQUE OUTSIDE FEATURES**

- Quick Double Track Door Screws - 1 1/2 Turns Instead Of 6 Or 8
- Large “On-Off” Lettering Is Raised Or Engraved - Still Visible If Painted Over
- Easy Palm-Fitting Handle Design - Also Is Very Visible At A Distance



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## **INTERLOCKING & LOCKING**

- Per NEMA Design Standards
- No Turning Switch “On” When Door Is Open
- No Opening Door When Switch Is “On”
  - Except With Hidden Defeater, Not Coin Operable
- Lock Handle “Off” With Up To 3 Padlocks
- All Doors Can Be Padlocked Closed



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## **FLEXIBLE ACCESSORIES**

- Neutral Block Can Be Added In The Field
- Fuse Clips Can Be Changed Out For Type “R” Fusing
- Electrical Interlocks Can Be Added To All Switches
- Unique Control Pole For More Reliable Electrical Interlocking

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## **COMPLETE DOOR LABEL INFORMATION**

- Bright White Color To Show Door Is Open
- Full Lug Wire Size Ranges And Torque Values
- Renewal Parts Listed
- Catalog Numbers Of UL Listed Accessories
- Max HP Ratings - With Time Delay Or Standard (NEC) Fuses



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## **UNIQUE ENCLOSURE FEATURES**

- NEMA 3R Has Side Hinged Doors - Avoids Overhead Problems Of Top Hinged Doors
- NEMA 12 Enclosures Are Also Rated “3R” - Can Be Used In Outdoor Locations By Opening A Factory Installed Drain Hole On 30-800A
- Tangential Knockouts



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## **TANGENTIAL KNOCKOUTS**

- On Top, Bottom, And Sides Of NEMA 1
- On Bottom And Sides Of NEMA 3R Through 200A
- Maintains The Same Distance To Wall For All Sizes Of Conduit
- Reduces The Need For Offsets Or Conduit Bending
- Offers Contractor Flexibility Over Concentric Designs



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## **CUTLER-HAMMER SAFETY SWITCH FLEX CENTER**

- Custom Product Solutions
- 1-3 Day Turn Around On Typical Orders
- Quick Turn Around On Large Quantity Or More Complex Modifications
- Local Engineering Team
- Capable Of Responding Within Hours If Needed
- ISO 9001 Certified



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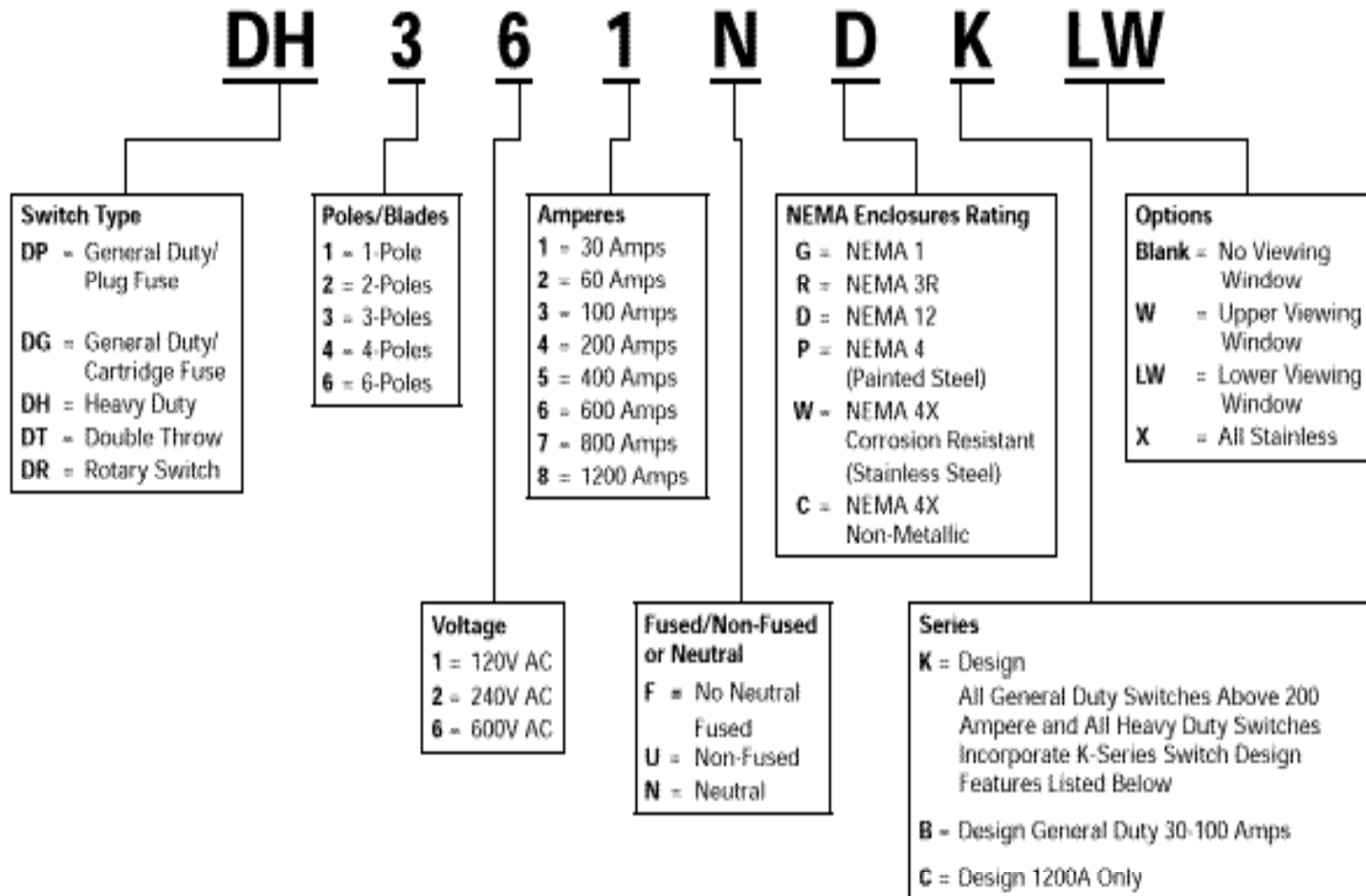
## FLEX CENTER MODIFICATIONS

- Special Paint Color
- Phenolic Nameplates
- Fungus Proof Treatment
- Indicating Lights
- Factory Installed Accessories
- Class R, T, or J Fuse Clips Installed (As Applicable)
- Custom Engineered Product



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