

**SIEMENS**



VBII Selection and Application Guide

# Safety Switches

[usa.siemens.com/safetyswitches](http://usa.siemens.com/safetyswitches)

# You asked for it. Siemens listened.

Siemens asked contractors for everything they wanted in an enclosed safety switch. Their input helped create the toughest, most reliable, most hassle-free enclosed safety switch in the business – the Siemens Type VBII Safety Switch. It's a switch that's right for any commercial, industrial or special use application. The Siemens Safety Switch line offers a list of important features that gives contractors a competitive edge:

- Highly visible, easy-to-grip red handle
- Visible blade construction
- Door that opens greater than 180°
- Quick-make, quick-break mechanism
- 200% optional neutrals (100-600 Amps)
- All copper current-carrying parts on heavy duty switches (except lugs)
- Positive two- and three-point mounting

## Ratings

- 30-1200 amps
- 240 and 600 volts AC
- 250 and 600 volts DC
- 100 AIC for general duty switches
- 200 AIC for heavy duty switches
- Design E horsepower rated
- Suitable for use as service equipment
- Provisions for UL Class T, R, J, L and H fuses
- 12X overload rating that exceeds industry standard of 10X

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# One tough switch: Siemens Type VBII Safety Switch

Siemens now offers a complete line of enclosed switches featuring unique and innovative designs that are unparalleled in the industry.

## General and Heavy Duty switches feature a time-proven design

Like the time-proven Vacu-Break design, the Siemens VBII double-break switching action breaks the arc in two places. This reduces heat generation and increases switching speed by doubling the breaking distance. The result is enhanced performance and increased longevity. We also provide the most visible blade design available today. Unlike conventional knife blade switches, the blades are self-aligning to ensure positive contact. In addition, they have no wear and friction point since the “electrical hinge” has been eliminated. The result is a very fast, positive and reliable switching action for even the most severe applications.

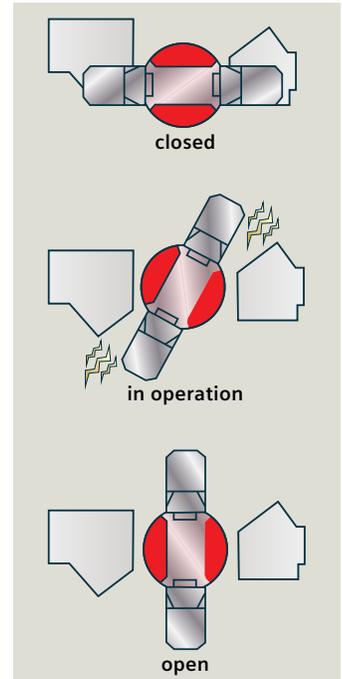
## One tough switch: More rugged and durable in demanding applications

Siemens engineers tackled the problem of designing a switch that would stand up under

the most demanding industrial conditions, such as those in steel mills and mining operations. These environments require a switch that must work reliably and safely in the midst of falling liquids, airborne fibers, dust, metal particles, coolants and other contaminants.

## Tested and retested

All Siemens safety switches have been tested not only to meet but to exceed all UL requirements. These tests include those for general purpose enclosed switches and those designed for more specialized purposes where applicable. The result is a rugged, reliable design that will provide superior performance in a wide variety of applications.



# General and heavy duty features

## Type VBII Safety Switch

### Application

#### General duty switches

General Duty Switches are intended for applications where reliable performance and continuity of service are needed, but where duty requirements are not severe and usual service conditions prevail. These switches are intended for use primarily with supply circuits rated 240V AC or less where the available fault current is less than 100,000A when used with Class R or T fuses or 10,000A max. when used with Class H fuses.

### Application

#### Heavy duty switches

Heavy Duty Switches are intended for use in applications where:

1. Rugged construction, reliable performance, continuity of service and ease of maintenance are emphasized
2. Available fault currents higher than 10,000A are likely to be encountered, such as in manufacturing plants, mass production industries and commercial, institutional and other large buildings served by network systems or transformers of higher capacities
3. System voltage is 600V AC or DC max
4. A Type 12 or 4 / 4X enclosure is required

### Short-circuit withstand ratings

#### General duty switches

Suitable for use on systems capable of delivering not more than 100,000 RMS symmetrical amperes of fault current when Class R fuses are installed. Also rated 100,000 AC max. in 200-600A ratings with Class J and T fuses.

### Short circuit withstand ratings

#### Heavy duty switches

Suitable for use on systems capable of delivering not more than 200,000 RMS<sup>①</sup> symmetrical amperes of fault current when Class J or R fuses are installed except the 800 and 1200A switches, which are suitable for use on circuits capable of delivering not more than 200,000 RMS symmetrical amperes of fault current when Class L fuses are installed. 100-1200A switches with Class T fuses and field adapter kit are also 200,000 RMS symmetrical rated.

### Fuses

#### General duty switches

Fusible switches will accept the following UL class fuses:

Class H

Class K

Class R—Class R fuse clip rejecter kits are required.

Class T—200-600A switches (200A switches require field adapter kit)

#### Heavy duty switches

Fusible switches will accept the following UL class fuses:

Class H

Class K

Class R—Class R fuse clip rejecter kits are required

Class J—240 and 600V switches 600V switches are field convertible

Class L—800 and 1200A switches only

Class T—100-1200A switches (100 and 200A switches require an adapter kit)

### Cover interlocks

#### General duty switches

Defeatable-cover interlocks on Type 1 switches and 60-600A Type 3R switches prevent the switch door from being opened when in the ON position.

#### Heavy duty switches

Defeatable dual cover interlocks are standard on all heavy duty switches. Prevents cover from being opened when switch is in the ON position and prevents switch from being turned ON when door is opened.

### Padlocks

#### General and heavy duty switches

Padlockable cover latch and multiple padlock provisions on handle.

### NEMA specifications

Meets NEMA standard KS-1-1990 for type GD and HD switches.

① 100,000 RMS for 60 A compact non-fusible switches.

**Underwriters’ Laboratories Inc.**

Listed by UL under file #E4776 as enclosed switches and also suitable for use as service equipment except on 1200A switches on Y systems of more than 150V to ground.

Meets UL98 standard for enclosed switches and enclosures.

Type 1 switches—general purpose enclosures (Type 1)

Type 3R switches—rainproof enclosures (Type 3R)

Type 4/4X switches—special purpose enclosures (Type 4/4X)

Type 12 switches—special purpose enclosures (Type 12).

**Groundable neutrals**

General and Heavy Duty Switches  
Switches designed for use on systems requiring neutrals to have groundable neutral blocks.

Feature comparison			
General duty	Heavy duty	Double throw	Features / Ratings
●	●	●	30-600 Amps
	●	●	800 and 1200 Amps
●	●	●	240 Volts AC
	●	●	600 Volts AC
●	●	●	250 Volts DC
●	●	●	600 Volts DC
●	●	●	Double-break visible blade design (30-200A)
●	●	●	Quick-make, quick-break switching action
●	●	●	Highly visible ON/OFF handle indication
	●		Handle design for hook stick operation
●	●	●	Padlockable cover latch
●	●	●	Padlockable handle
●③		●	Single voidable cover interlock
	●	●	Dual voidable cover interlock
●	●	●	Type 1 enclosure
●	●	●	Type 3R enclosure
	●	●	Type 12 enclosure
	●	●	Type 4/4X enclosure
●	●	●	Generous wiring gutters that meet UL and NEC wire-bending space requirements
●	●	●	Lugs suitable for copper or aluminum at 60°C or 75°C
●	●	●	CU/AL wire lugs that meet UL 486B requirements
	●	●	Suitable for field-convertible compression connectors
⑥	●	●	All plated copper current carrying parts (except lugs)
●	●	●	Spring reinforced Fuse Clips (except 30A general duty)
	●	●	Clear pivoting line terminal shield
●	●	●	Replacement parts
	●		Field addable 200% neutral
●⑦	●⑦	●①	Provisions for UL Class T, R and H fuses
	●	●①	Provisions for UL Class J and L fuses
	●	●	Metal nameplate
	●	●	Aux. switch kit
	④		Type 4X with stainless steel interior parts
●⑤	●		Rolled flange enclosure design (30-200A)
	●		UL approved HP ratings for high efficiency motors
	●	●	Isolated ground kits

① 400 & 600A fusible, double-throw switches accept only Class J or T fuses.  
 ② 30A general duty switches have fuse clips constructed of spring type copper.  
 ③ Not supplied on 30A outdoor & plug fuse switches.  
 ④ 30-200A Type VBII in stainless steel enclosures.  
 ⑤ 60-200A  
 ⑥ 200A general duty switches have aluminum neutral assemblies.  
 ⑦ 100-600A GD and 100-1200A HD switches will accept Class T fuses.

# Type 1 enclosure

**Type 1 enclosures** are intended for indoor use primarily to provide protection against contact with the enclosed equipment in locations where unusual service conditions do not exist.

## Features

- Tangential knockouts in all box surfaces (30-600A HD and 60-600 GD)
- Two- and three-point mounting with top keyhole
- Door that opens greater than 180°
- Formed flange enclosure edges
- 180° plus side opening door  
Drawn cover design for increased durability and resistance to damage (30-600A)
- Rugged metal handle with a red insulating grip
- Front operable cover interlock release with positive rotating release action (30-1200A heavy duty and 60-600A general duty)
- Metal nameplates on all heavy duty switches



# Type 3R enclosure

**Type 3R enclosures** are intended for outdoor use primarily to provide a degree of protection against falling rain and sleet, and must remain undamaged by the formation of ice on the enclosure. They are not intended to provide protection against conditions such as dust, internal condensation or internal icing.

## Features

- Tangential knockouts in all box surfaces below lowest live parts (30-600A)
- Two- and three-point mounting with top keyhole
- Formed flange enclosure edges
- Formed flange enclosure edges
- 180° plus side opening door
- Double overlap enclosure door top to provide superior protection against entry of rain
- Type HA hub provision 30A general duty release action (30-1200A)
- Type HS hub provision (30-200A switches)
- Galvanized steel construction
- Drawn cover design for increased durability and resistance to damage (30-200A)
- Rugged metal handle with a red insulating grip
- Front operable cover interlock release with positive rotating release action (30-1200A heavy duty and 60-600A general duty)
- Metal nameplates on all heavy



# Type 4/4X enclosure

**Type 4/4X enclosures** are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust, rain, splashing water and hose-directed water. They are not intended to provide protection against conditions such as internal condensation or internal icing. Also meets 4X definition by providing a high degree of protection against corrosion.

## Features (Standard 4X)

- Ground lugs installed as standard
- External mounting feet with two-, three- and four-point mounting
- Formed front gasket flange with continuously welded seams
- Heavy duty front opening low-profile stainless steel latches
- Stainless steel enclosure
- Stainless steel interior parts on 30-200A switches
- Formed out enclosure flanges that prevent liquid entry when door is open
- Rugged hinge design
- 180°-plus opening door
- Rugged metal handle with a red insulating grip
- Front operable cover interlock release with positive rotating release action (30-1200A heavy duty)
- Stainless steel nameplate

## Features (Non-Metallic 4X)

- External mounting
- Ground lug installed as standard
- Fiberglass reinforced polyester enclosure
- No external metal parts
- Removable door for easy wiring
- Front operable cover interlock release with positive rotating release action



# Type 3R/12 enclosure

**Type 3R / 3S** enclosures are intended to provide a degree of protection against windblown dust, and to allow operation when ice-laden. They are not intended to provide protection against conditions such as condensation or internal icing.

**Type 12** enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping water. They are not intended to provide protection against conditions such as internal Command.

### Features

- External mounting feet with two, three and four-point mounting
- Formed front gasket flange
- Unique heavy duty front opening low-profile latches
- Galvanized steel enclosure
- Formed out enclosure flanges that provide an added degree of protection against entry of dust
- Rugged hinge design
- 180°-plus opening door
- 3R / 3S / 12 rating as standard allows outdoor use
- Rugged metal handle with a red insulating grip
- Front operable cover interlock release with positive rotating release action (30-1200A heavy duty)
- Metal nameplates on Type 3S/12 enclosures



# Type 7 and 9 enclosure

**Type 7** enclosures are intended for indoor use in locations classified as Class I, Groups A, B, C or D as defined in the National Electrical Code.

**Type 9** enclosures are intended for indoor use in locations classified as Class II, Groups E, F or G as defined in the National Electrical Code.

## Features

- Molded case switch available in 30-600A ratings
- Cast aluminum enclosure
- External door clamps
- External mounting feet
- Metal nameplate



# General duty switches

## Plug fuse and special application types

### Features

- Compact size
- Visible blade, double-break switching action
- Quick-make, quick-break operating mechanism
- Highly visible ON/OFF indicators
- Padlock-off handle feature
- Door padlock provision
- Bondable neutral (where indicated)
- Lugs suitable for copper or aluminum wire
- 30A cartridge fuse switches rated 100,000 AC with Class R fuses



Ampere rating	Indoor - Type 1			Outdoor - Type 3R			Horsepower rating ⑥	
	Catalog number	Ship. wgt.*①	Dwg. fig.	Catalog number	Ship. wgt.*①	Dwg. fig.	1-Phase, 2-Wire	
							Std.	Max
<b>120/240 Volt Fusible (Plug Fuse Type) 10,000 AIC Max</b>								
<b>1-Pole and Solid Neutral</b>							<b>120 Volt – 1-Phase, 2-Wire</b>	
30	LF111N	31	1	LF111NR	35	12	½	2
<b>2-Pole and No Neutral</b>							<b>120/240V – 1-Phase, 2-Wire</b>	
30	—	—	—	Use 2-Pole and solid neutral				
<b>2-Pole and Solid Neutral</b>							<b>120/240V – 1-Phase, 2-Wire</b>	
30	LF211N	37	1	LF211NR	35	12	1 ½	3
<b>240 Volt Non-Fusible (Special Application)</b>								
<b>2-Pole 240 Volt – 1- or 2-Pole – No Fuse</b>							<b>240 Volt – 1-Phase, 2-Wire</b>	
60	—	—	—	LNF222R ②	35	12 ②	—	10

### Selection Information – Fused/Non-fused pullouts ②

Ampere rating	Number of poles	Number of blades	Number of fuses	Catalog number	Shipping weight*	Dimensions (inches)		
						Height	Width	Depth
<b>Fused Pullout – 1-Phase, 2-Wire ③ 10,000 AIC Max</b>								
30 ⑦	2	2	2	WF2030	21 ⑧	9 ⅛	5 ⅝	3 ⅞
60 ⑦	2	2	2	WF2060	5	9 ⅛	5 ⅝	3 ⅞
<b>Non-Fused Pullout – 1-Phase, 2-Wire ④</b>								
60	2	2	—	WN2060	15 ⑧	7 ⅝	5 ⅝	3 ⅞

\* In pounds (lbs).

① Package of 10.

② No hub provision with this switch.

③ Fuses - not included.

④ Max. horsepower rating - 10.

⑤ Features apply to 30A General Duty and Plug Fuse Type Switches.

⑥ Dual horsepower ratings:

Std.- applies when non-time delay fuses are installed.

Max.- applies when time-delay fuses are installed.

⑦ Max. horsepower rating – 3.

⑧ Package of 6.

# General duty switches(60-600A)

## Features



- |                                                                                |                                                                                   |                                                                                                                                                 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Cover interlock                                                             | 5. Generous wiring gutters that meet or exceed NEC wirebending space requirements | 9. Informative door labeling which includes replacement parts list                                                                              |
| 2. Tangential knockouts through 600A for easy conduit lineup                   | 6. Visible blade, double-break switch action                                      | 10. Handle and cover padlocking provisions                                                                                                      |
| 3. Quick-make, quick-break operating mechanism that ensures positive operation | 7. Positive two- or three-point mounting                                          | 11. Side-hinged door that opens 180 degrees for easier wiring                                                                                   |
| 4. Provisions for T, R, J, H and K class fuses (T & J 200-600A)                | 8. Highly visible red handle grip                                                 | 12. A unique enclosure design that adds rigidity and strength. Its rolled edge prevents cuts and scrapes to conductors and to installers' hands |

# General duty switches



System	Ampere rating	Indoor – Type 1			Outdoor – Type 3R			Horsepower ratings <sup>①</sup> 240V AC						250 volt DC
		Catalog number	Ship. wgt. (lbs) Std. pkg.	Dwg. fig	Catalog number	Ship. wgt. (lbs) Std. pkg.	Dwg. fig	1-Phase, 2-Wire		2-Phase, 4-Wire		3-Phase, 3-Wire		
								Std.	Max.	Std.	Max.	Std.	Max.	
<b>240 Volt Fusible</b>														
<b>2-Pole, 2-Fuse, and Solid Neutral<sup>② ③ ④</sup></b>														
	30	GF221N	35 <sup>⑦</sup>	1	GF221NR <sup>⑥</sup>	35 <sup>⑦</sup>	12	1 1/2	3	—	—	3	7 1/2	5
	60	GF222N	14	4	GF222NR	14	15	3	10	—	—	7 1/2	15	10
	100	GF223N	23	6	GF223NR	23	17	7 1/2	15	—	—	15	30	20
	200	GF224N	47	7	GF224NR	48	18	15	—	—	—	25	60	40
<b>3-Pole, 3-Fuse, and Solid Neutral<sup>④</sup></b>														
	30	GF321N	24 <sup>⑥</sup>	2	GF321NR <sup>⑥</sup>	24 <sup>⑥</sup>	13	1 1/2	3	—	—	3	7 1/2	5
	60	GF322N	15	4	GF322NR	15	15	3	10	—	—	7 1/2	15	10
	100	GF323N	25	7	GF323NR	25	17	7 1/2	15	—	—	15	30	20
	200	GF324N	49	7	GF324NR	50	18	15	—	—	—	25	60	40
	400	GF325NA	94.6	9	GF325NRA	94.6	20	15	—	—	—	50	125	50
600	GF326NA	95.6	9	GF326NRA	95.6	20	15	—	—	—	75	200	—	
<b>240 Volt Non-Fusible<sup>③ ④</sup></b>														
<b>2-Pole or 3-Pole</b>														
	30	GNF321	24 <sup>⑥</sup>	2	GNF321R <sup>⑥</sup>	24 <sup>⑥</sup>	13	—	3	—	—	7 1/2	—	5
	60	GNF322	12	3	GNF322R	13	14	—	10	—	—	15	—	10
	100	GNF323	23	6	GNF323R	24	17	—	15	—	—	30	—	20
	200	GNF324	46	7	GNF324R	47	18	—	15	—	—	60	—	40
	400	GNF325	114	8	Use 600V Switch — HNF365RA			—	15	—	—	125	—	50
	600	GNF326	116	8	Use 600V Switch — HNF366RA			—	15	—	—	200	—	—

① Dual horsepower ratings: Std.- applies when non-time delay fuses are installed. Max.- applies when time-delay fuses are installed.

② These switches are UL-listed for application on grounded B-phase systems.

③ Suitable for use on 3-phase motor loads.

④ Service entrance labeled.

⑤ Has provision for ECHA type hub.

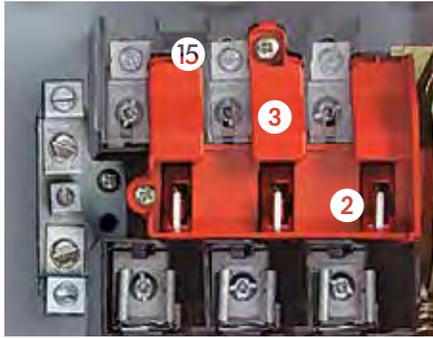
⑥ 5 switches per standard package.

⑦ 10 switches per standard package.

⑧ Height reduced switch (45.25 rather than 56 inches in height) for use with 500MCM or smaller conductors.

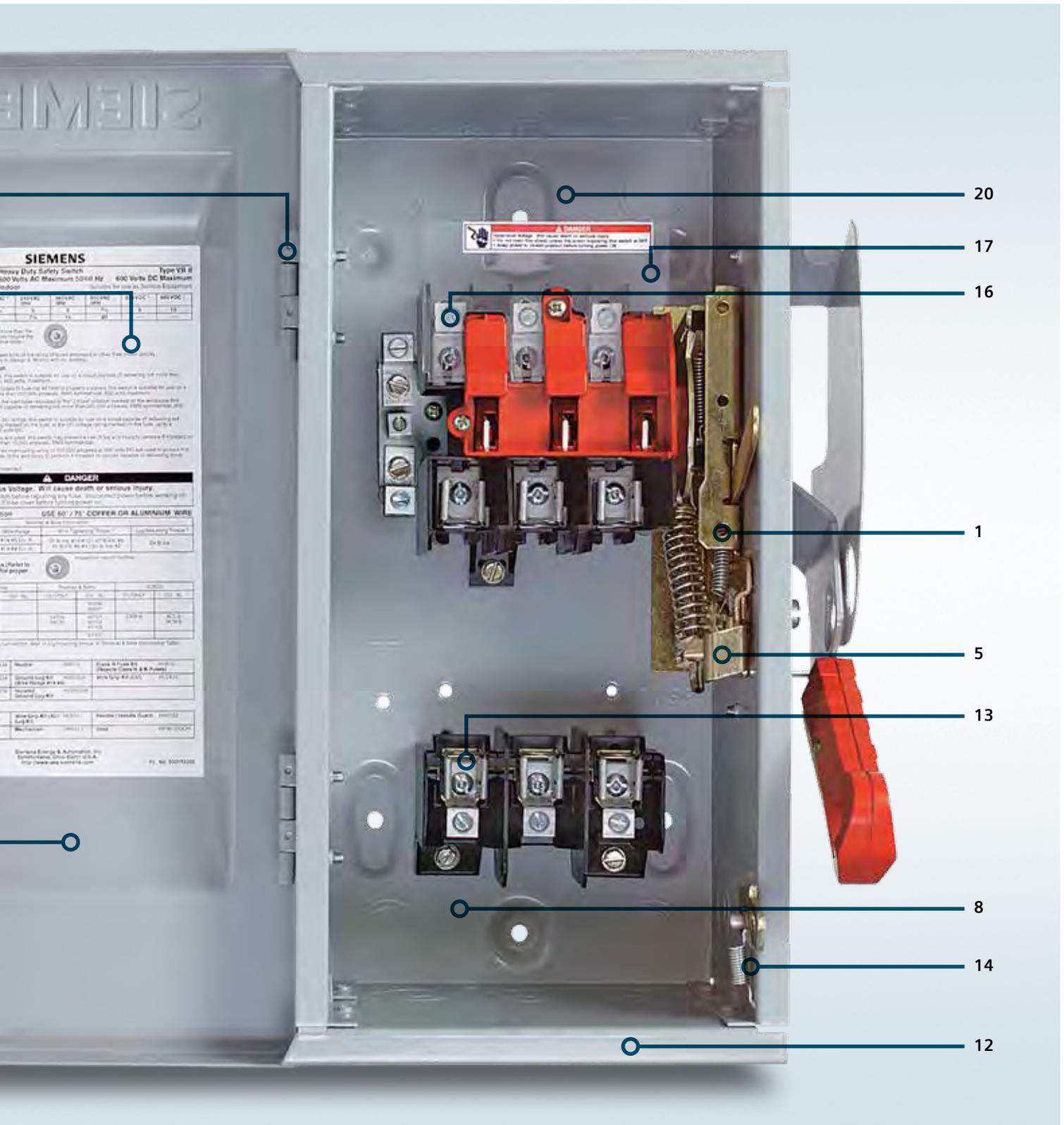
# Heavy duty switches

## Features



1. Quick-make, quick-break operating mechanism that ensures positive operation
2. Visible blade, double-break switching action
3. Arc chutes dissipate heat and prolong switch life
4. Highly visible red handle grip designed for hook stick operation
5. Defeatable dual cover interlock
6. Center punch provided for field drilling to allow ON padlocking
7. Handle can be padlocked in the OFF position with up to three padlocks with 5/16" hasps
8. Generous top, bottom and side gutters that meet or exceed NEC wire-bending space requirements
9. Informative door labeling, which includes replacement parts list
10. Tangential knockouts through 600A for easy conduit lineup
11. Side-hinged door that opens past 180 degrees for easier wiring
12. Unique enclosure design increases rigidity and prevents cuts and scrapes to conductors and installers' hands
13. Spring reinforced fuse clips that assure reliable contact for cool operation
14. Door latch securely holds door closed and allows cover padlocking
15. Front removable mechanical lugs that are suitable for CU/Al 60°C or 75°C conductors
16. Lugs are field convertible to copper body and to a wide variety of compression connectors
17. Hinged clear line terminal shield with probe holes for inspecting or testing line side terminals
18. Embossed aluminum nameplate on Heavy Duty Switches provides highly visible ON/OFF indication
19. Drawn cover for increased rigidity and resistance to abuse
20. Top key hole and bottom mounting holes provide easy two- or three-point mounting





**SIEMENS**  
 Heavy Duty Safety Switch Type VII II  
 600 Volts AC Maximum 50/60 Hz 600 Volts DC Maximum  
 Outdoor Suitable for use in Switch Equipment

AC	STANDARD RATED	MAXIMUM RATED	DC	MAXIMUM RATED
1	100	100	100	100
2	75	75	75	75
3	50	50	50	50

**CAUTION**  
 High Voltage - Will cause death or serious injury.  
 All conductors carrying live lines should be treated as energized until proven otherwise.

**USE 60/75 COPPER OR ALUMINUM WIRE**

Wire Size	AC Ampacity	DC Ampacity
1/2"	100	100
3/4"	125	125
1"	150	150
1 1/4"	200	200
1 1/2"	250	250
2"	300	300
2 1/2"	350	350
3"	400	400

Siemens Energy & Automation, Inc.  
 Bannockburn, Illinois 60015 U.S.A.  
 http://www.siemens.com

**CAUTION**  
 High Voltage - Will cause death or serious injury.  
 All conductors carrying live lines should be treated as energized until proven otherwise.

- 20
- 17
- 16
- 1
- 5
- 13
- 8
- 14
- 12

# Heavy duty switches



System	Ampere rating	Indoor – Type 1			Outdoor – Type 3R			Horsepower rating <sup>①</sup>					
		Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. fig	Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. fig	240V AC		250 Volt DC			
								1-Phase, 2-Wire	2-Phase, 4-Wire	3-Phase, 3-Wire	Std.		

## 240 Volt Fusible<sup>④</sup>

### 2-Pole, 2-Fuse, and Solid Neutral<sup>②</sup> (Also used for 2-Pole, 2-Wire Applications) 240 Volt AC/250 Volt DC

	30	HF221N	12	4	HF221NR	13	15	1 1/2	3	—	—	3	7 1/2	5
	60	HF222N	18	5	HF222NR	19	16	3	10	—	—	7 1/2	15	10
	100	HF223N	23	6	HF223NR	24	17	7 1/2	15	—	—	15	30	20
	200	HF224N	47	7	HF224NR	48	18	15	—	—	—	25	60	40
	400	HF225NA	91.1	9	HF225NRA	91.1	20	15	—	—	—	50	125	50
	600	HF226NA	95.6	9	HF226NRA	95.6	20	15	—	—	—	75	200	50
	800	HF227N	365	11	HF227NR	365	22	—	—	—	—	100	250	50
1200	HF228N■	385	11	HF228NR■	385	22	—	—	—	—	100	250	50	

### 3-Pole, 3-Fuse, and Solid Neutral (Also used for 3-Pole, 3-Wire Applications) 240 Volt AC/250 Volt DC

	30	HF321N	14	4	HF321NR	15	15	1 1/2	3	—	—	3	7 1/2	5
	60	HF322N	19	5	HF322NR	20	15	3	10	—	—	7 1/2	15	10
	100	HF323N	25	6	HF323NR	26	17	7 1/2	15	—	—	15	30	20
	200	HF324N	49	7	HF324NR	50	18	15	—	—	—	25	60	40
	400	HF325NA	94.6	9	HF325NRA	94.6	20	15	—	—	—	50	125	50
	600	HF326NA	99.6	9	HF326NRA	99.6	20	15	—	—	—	75	200	50
	800	HF327N	375	11	HF327NR	375	22	—	—	—	—	100	250	50
1200	HF328N	395	11	HF328NR	388	22	—	—	—	—	100	250	50	

## 240 Volt Fusible<sup>④</sup>

### 2-Pole, 2-Fuse<sup>③</sup> 240 Volt AC/250 Volt DC

		Type 4/4X Stainless <sup>⑤</sup>			Type 12 Industrial <sup>⑤</sup>									
		Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. fig	Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. fig							
	30	HF221S	13	24	HF221J	13	24	1 1/2	3	—	—	3	7 1/2	5
	60	HF222S	19	25	HF222J	19	25	3	10	—	—	7 1/2	15	10
	100	HF223S	24	26	HF223J	24	26	7 1/2	15	—	—	15	30	20
	200	HF224S	48	27	HF224J	48	27	15	—	—	—	25	60	40

### 3-Pole, 3-Fuse<sup>③</sup> (Also used for 2-Pole, 2-Wire Applications in 400–800A Ratings) 240 Volt AC/250 Volt DC

	30	HF321S	14	24	HF321J	14	24	1 1/2	3	—	—	3	7 1/2	—
	60	HF322S	20	25	HF322J	20	25	3	10	—	—	7 1/2	15	10
	100	HF323S	25	26	HF323J	25	26	7 1/2	15	—	—	15	30	20
	200	HF324S	49	27	HF324J	49	27	15	—	—	—	25	60	40
	400	HF325SA	93	30	HF325JA	93	31	15	—	—	—	50	125	50
	600	HF326SA	98	30	HF326JA	98	31	15	—	—	—	75	200	50
	800	HF327S■	370	33	HF327J■	365	33	—	—	—	—	100	250	50

■ Built to order. Allow 3-5 weeks for delivery.  
 ① Dual horsepower ratings: Std. - applies when non-time delay fuses are installed. Max. - applies when time-delay fuses are installed.

② These switches are UL-listed for application on grounded B-phase systems and are suitable for 3-phase motor applications.  
 ③ When a neutral is required use a field installed neutral kit.

④ Suitable for use as service entrance equipment.  
 ⑤ Also rated Type 3S/3R.  
 ⑥ 304 grade stainless steel.

# Heavy duty switches



Systems	Ampere rating	Indoor – Type 1			Outdoor – Type 3R			Horsepower rating <sup>④</sup>									
		Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. fig	Catalog number	Ship wt. (lbs.) Std. pkg	Dwg. Fig	480V AC				600V AC				250 volt DC	600 volt DC
								1-Phase, 2-Wire		3-Phase, 3-Wire		1-Phase, 2-Wire		3-Phase, 3-Wire			
								Std.	Max.	Std.	Max.	Std.	Max.	Std.	Max.		

## 600 Volt Fusible<sup>⑤</sup>

### 2-Pole, 2-Fuse<sup>③</sup>

### 480 Volt AC/600 Volt AC/600 Volt DC

	30	HF261	15	4	HF261R	15	15	3	7 <sup>1/2</sup>	—	—	3	10	—	—	5	15
	60	HF262	20	5	HF262R	20	16	5	20	—	—	10	25	—	—	10	30
	100	HF263	26	6	HF263R	27	17	10	30	—	—	15	40	—	—	20	50

### 3-Pole, 3-Fuse

### 480 Volt AC/600 Volt AC/250 Volt DC<sup>①</sup>

	30	HF361	14	4	HF361R	15	15	3	7 <sup>1/2</sup>	5	15	3	10	7 <sup>1/2</sup>	20	5	—
	30	HF361L <sup>⑦</sup>	19	5	HF361RL <sup>⑦</sup>	20	16	3	7 <sup>1/2</sup>	5	15	3	10	7 <sup>1/2</sup>	20	5	—
	60	HF362	19	5	HF362R	20	16	5	20	15	30	10	25	15	50	10	30 <sup>⑧</sup>
	60	—	—	—	HF362RL <sup>⑦</sup>	25	17	5	20	15	30	10	25	15	50	10	30 <sup>⑧</sup>
	100	HF363	24	6	HF363R	25	17	5	20	25	60	15	40	30	75	20	50 <sup>⑧</sup>
	200	HF364	48	7	HF364R	49	18	25	50	50	125	30	50	60	150	40	50
	400	HF365A <sup>①</sup>	93	9	HF365RA <sup>①</sup>	157	20	—	—	100	250	—	—	125	350	50	—
	600	HF366A <sup>①</sup>	98	9	HF366RA <sup>①</sup>	161	20	—	—	150	400	—	—	200	500	50	—
	800	HF367	365	11	HF367R	365	22	—	—	200	500	—	—	250	500	50	—
	1200	HF368	366	11	HF368R	385	22	—	—	200	500	—	—	250	500	50	—

### 3-Pole, 3-Fuse and Solid Neutral

### 480 Volt AC/600 Volt AC/600 Volt DC<sup>①</sup>

	30	HF361N	14	4	HF361NR	15	15	3	7 <sup>1/2</sup>	5	15	3	10	7 <sup>1/2</sup>	20	5	—
	60	HF362N	19	5	HF362NR	20	16	5	20	15	30	10	25	15	50	10	30 <sup>⑧</sup>
	100	HF363N	25	6	HF363NR	26	17	10	30	25	60	15	40	30	75	20	50 <sup>⑧</sup>
	200	HF364N	49	7	HF364NR	50	18	25	50	50	125	30	50	60	150	40	50
	400	HF365NA	94.6	9	HF365NRA	94.6	20	—	—	—	250	—	—	125	350	50	—
	600	HF366NA	99.6	9	HF366NRA	99.6	20	—	—	—	400	—	—	200	500	50	—
	800	HF367N	375	11	HF367NR	374	22	—	—	—	500	—	—	250	500	50	—
	1200	HF368N	395	11	HF368NR	388	22	—	—	—	500	—	—	250	500	50	—

## 600 Volt Fusible<sup>⑤</sup> (For 2-Pole Applications use outside poles of 3-Pole Switches)

### 2-Pole, 2-Fuse<sup>③</sup>

### 480 Volt AC/600 Volt AC/600 Volt DC

		Type 4/4X Stainless <sup>⑨</sup>			Type 12 Industrial <sup>⑨</sup>												
		Cat. No.	Ship wt. (lbs.) Std. pkg	Dwg. fig	Cat. No.	Ship wt. (lbs.) Std. pkg	Dwg. fig										
	30	HF261S	16	24	HF261J	15	24	3	7 <sup>1/2</sup>	—	—	3	10	—	—	5	15
	60	HF262S	20	25	HF262J	20	25	5	20	—	—	10	25	—	—	10	30
	100	HF263S	27	26	HF263J	27	26	10	30	—	—	20	40	—	—	20	50

### 3-Pole, 3-Fuse

### 480 Volt AC/600 Volt AC/250 Volt DC<sup>①</sup>

	30	HF361S	13	24	HF361J	14	24	—	—	5	15	—	—	7 <sup>1/2</sup>	20	5	—
	60	HF362S	20	25	HF362J	20	25	—	—	15	30	—	—	15	50	10	30 <sup>⑧</sup>
	100	HF363S	25	26	HF363J	25	26	—	—	25	60	—	—	30	75	20	50 <sup>⑧</sup>
	200	HF364S	49	27	HF364J	49	27	—	—	50	125	—	—	60	150	40	50
	400	HF365SA <sup>①</sup>	93	30	HF365JA <sup>①</sup>	93	31	—	—	100	250	—	—	125	350	50	—
	600	HF366SA <sup>①</sup>	98	30	HF366JA <sup>①</sup>	98	31	—	—	150	400	—	—	200	500	50	—
	800	HF367S	370	33	HF367J	365	33	—	—	200	500	—	—	250	500	50	—
	1200	HF368S	388	—	HF368J	388	33	—	—	250	500	—	—	250	500	50	—

■ Built to order. Allow 3-5 weeks for delivery.

① 60-600A 3-Pole switches are also rated 600V DC.

② Height reduced switch (45.25 rather than 56 inches in height) for use with 500MCM or smaller conductors.

③ Use 3-Pole switch for 200A applications.

④ Dual horsepower ratings: Std.- applies when non-time delay fuses are installed. Max.- applies when time-delay fuses are installed.

⑤ Suitable for use as service entrance equipment except on 1200 Amp solidly grounded wye systems per NEC 230.95.

⑥ Also rated Type 3S/3R.

⑦ Indicates oversized enclosure (30A switch with 60A lugs in a 60A enclosure or 60A switch with 100A lugs in a 100A enclosure).

⑧ 600V DC & 600V DC horsepower rating shown requires (2) poles to be connected in series.

⑨ 304 grade stainless steel.

# Heavy duty switches



System	Ampere rating	Indoor – Type 1			Outdoor – Type 3R			Horsepower rating							
		Catalog number	Ship wt. (lbs.)	Dwg. fig.	Catalog number	Ship wt. (lbs.)	Dwg. fig.	240V AC		480 Volt		600 Volt		250V DC	600V DC
								1-Phase	3-Phase	1-Phase	3-Phase	1-Phase	3-Phase		

## 600 Volt Non-Fusible<sup>④</sup>

### 2-Pole<sup>③</sup>

### 480 Volt AC / 600 Volt AC / 600 Volt DC



30	HNF261	12	3	HNF261R	13	14	—	—	7 <sup>1/2</sup>	—	10	—	5	15
60	HNF262	19	5	HNF262R	20	16	—	—	20	—	25	—	10	30
100	HNF263	24	6	HNF263R	25	17	—	—	25	—	40	—	20	50

### 3-Pole

### 480 Volt AC / 600 Volt AC / 600 Volt DC



30	HNF361	12	3	HNF361R	13	14	5	10	7 <sup>1/2</sup>	20	10	30	5	—
30	—	—	—	HNF361RL <sup>⑥</sup>	19	16	5	10	7 <sup>1/2</sup>	20	10	30	5	—
60	HNF362H <sup>②</sup>	11	3	HNF362RH <sup>②</sup>	11	14	10	20	20	50	20	40	10	—
60	HNF362 <sup>①</sup>	18	5	HNF362R <sup>①</sup>	19	16	10	20	20	50	25	60	10	30 <sup>⑦</sup>
60	—	—	—	HNF362RL <sup>⑥</sup>	24	17	10	20	20	50	25	60	10	30 <sup>⑦</sup>
100	HNF363 <sup>①</sup>	23	6	HNF363R <sup>①</sup>	24	17	15	40	30	75	40	100	20	50 <sup>⑦</sup>
200	HNF364 <sup>①</sup>	46	7	HNF364R <sup>①</sup>	47	18	15	60	50	125	50	150	40	50
400	HNF365A <sup>①</sup>	75	8	HNF365RA <sup>①</sup>	75	19	15	125	50	250	50	350	50	—
600	HNF366A <sup>①</sup>	77	8	HNF366RA <sup>①</sup>	77	19	15	200	50	400	50	500	50	—
800	HNF367	295	10	HNF367R	295	21	15	250	50	500	50	500	50	—
1200	HNF368	305	10	HNF368R	307	21	15	250	50	500	50	500	50	—

## 600 Volt Non-Fusible<sup>④</sup>

### 2-Pole<sup>③</sup>

### 480 Volt AC / 600 Volt AC / 600 Volt DC



Ampere rating	Type 4/4X Stainless <sup>⑧</sup>			Type 12 Industrial <sup>⑤</sup>			Dwg. fig.	Horsepower rating	250V DC	600V DC	
	Catalog number	Ship wt. (lbs.)	Dwg. fig.	Catalog number	Ship wt. (lbs.)	Dwg. fig.					
30	HNF261S	13	3	HNF261J	13	23	—	7 <sup>1/2</sup>	—	5	15
60	HNF262S	20	5	HNF262J	20	25	—	20	—	10	30
100	HNF263S■	25	6	HNF263J■	25	26	—	30	—	20	50

### 3-Pole

### 480 Volt AC / 600 Volt AC / 250 Volt DC



30	HNF361S	13	23	HNF361J	13	23	5	10	7 <sup>1/2</sup>	20	10	30	5	—
60	HNF362SH <sup>②</sup>	15	23	HNF362JH <sup>②</sup>	14	23	10	20	20	50	20	40	10	—
60	HNF362S <sup>①</sup>	19	25	HNF362J <sup>①</sup>	19	25	10	20	30	50	25	60	10	30 <sup>⑦</sup>
100	HNF363S <sup>①</sup>	24	26	HNF363J <sup>①</sup>	24	26	15	40	40	75	40	100	20	50 <sup>⑦</sup>
200	HNF364S <sup>①</sup>	47	27	HNF364J <sup>①</sup>	47	27	15	60	50	125	50	150	40	50
400	HNF365SA <sup>①</sup>	75	28	HNF365JA <sup>①</sup>	75	29	15	125	50	250	50	350	50	—
600	HNF366SA <sup>①</sup>	77	28	HNF366JA <sup>①</sup>	77	29	15	200	50	400	50	500	50	—
800	HNF367S	295	32	HNF367J■	295	32	15	250	50	500	50	500	50	—
1200	HNF368S■	310	—	HNF368J■	310	32	15	250	50	500	50	500	50	—

■ Built to order. Allow 3-5 weeks for delivery.

① 60-600A 3-Pole switches are also rated 600V DC.

② Compact switch (11.1"H, 6.6"W box less cover and handle). Short circuit withstand rating—100,000 RMS sym. amps.

③ Use 3-Pole switch for 200A application.

④ Suitable for use as service entrance equipment except for 1200 when used on a 480 or 600V grounded wye system.

⑤ Also rated type 3S / 3R.

⑥ Indicates oversized enclosure (30A switch in a 60A enclosure or a 60A switch in a 100A enclosure).

⑦ 600V DC and 600V DC horsepower rating shown requires (2) poles to be connected in series.

⑧ 304 grade stainless steel. For switches with enclosures constructed from 316 grade stainless steel, see page 4-16 of Speed Fax.

# Heavy duty switches

## Type 4/4X & 12 with viewing window

### Description

30–600A, 3-pole 600V max. in fusible and non-fusible versions in Type 4/4X stainless steel and Type 12 enclosures. All allow viewing of visible blade position. 30–200A also allow viewing of indicating type fuses.



### Features

- Rugged installer-friendly enclosure design features a gasket flange with continuously welded seams
- Tool-free cover latches
- Two, three and four point mounting
- Metal handle with large insulating grip features a positive stop in both ON and OFF position
- Ground lugs provided as standard
- Type 12 enclosures are fabricated from galvanized steel and are also rated for 3R/3S outdoor applications
- Type 4X stainless steel switches (30–200A) are provided with stainless steel interior parts
- The widest range of accessories available including 200% neutrals, gold plated PLC auxiliary contacts and isolated ground kits

System	Ampere rating	Catalog number	Ship Wt. (lbs.)	Maximum horsepower rating <sup>②</sup>					
				240V AC		480V AC	600V AC		250V DC
				1-Phase, 2-Wire	3-Phase, 3-Wire	3-Phase, 3-Wire	3-Phase, 3-Wire		
<b>3-Pole, 3-Wire Fusible, Type 3R<sup>④</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60	HF361RW HF362RW	17 22	3 10	7½ 15	15 30	20 50	5 10	— 30 <sup>⑤</sup>
<b>3-Pole, 3-Wire Non-Fusible, Type 3R<sup>④</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60	HNF361RW HNF362RW	14 21	3 10	10 20	20 50	30 60	5 10	— 30 <sup>⑤</sup>
<b>3-Pole, 3-Wire Fusible, Type 12<sup>③④</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60 100 200 400 600	HF361JW HF362JW HF363JW HF364JW HF365JWA HF366JWA	17 22 26 53 93 98	3 10 15 — 125 —	7½ 15 30 60 125 200	15 30 60 125 250 400	20 50 75 150 350 500	5 10 20 40 50 50	— 30 <sup>⑤</sup> 50 <sup>⑤</sup> 50 — —
<b>3-Pole, 3-Wire Non-Fusible, Type 12<sup>③④</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60 100 200 400	HNF361JW HNF362JW HNF363JW HNF364JW HNF365JWA	14 21 25 51 75	3 10 15 15 15	10 20 40 60 125	20 50 75 125 250	30 60 100 150 350	5 10 20 40 50	— 30 <sup>⑤</sup> 50 <sup>⑤</sup> 50 —
<b>3-Pole, 3-Wire Fusible, Type 4X Stainless Steel<sup>④⑥</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60 100 200 400	HF361SW HF362SW HF363SW HF364SW HF365SWA	17 23 28 55 75	3 10 15 — 15	7½ 15 30 60 125	15 30 60 125 250	20 50 75 150 350	5 10 20 40 50	— 30 <sup>⑤</sup> 50 <sup>⑤</sup> 50 —
<b>3-Pole, 3-Wire Non-Fusible, Type 4X Stainless Steel<sup>④⑥</sup></b>				<b>600 Volt AC / 250 Volt DC<sup>①</sup></b>					
	30 60 100 200 400	HNF361SW HNF362SW HNF363SW HNF364SW HNF365SWA	15 23 27 54 75	3 10 15 15 15	10 20 40 60 125	20 50 75 125 250	30 60 100 150 350	5 10 20 40 50	— 30 <sup>⑤</sup> 50 <sup>⑤</sup> 50 —

① 200A switches are also rated 600V DC.

② Maximum HP ratings listed apply only when time delay fuses are used.

③ Also rated 3S/3R for outdoor use.

④ All switches are suitable for use as service entrance equipment. Use outside poles of 3-pole switch for 2-pole application.

⑤ 600V DC and 600V DC horsepower rating shown requires (2) poles to be connected in series.

⑥ 304 grade stainless steel. For switches with enclosures constructed from 316 grade stainless steel, see page 4-16 of Speed Fax.

# Heavy duty

## Special application / Interlocked receptacle switches

### Application

Receptacle Safety Switches provide cord connection protection of heavy-duty portable equipment (welders, infrared ovens, batch feeders, portable conveyors, assembly line fixtures and tools, refrigerator trucks, etc.) under load or fault conditions. All receptacle switches are supplied with 4 prong receptacles. (3 phase, 3W plus ground)

### Description ① ②

Type 12 and 4/4X Receptacle Safety Switches are available with 3-phase, 4-wire grounded type Crouse-Hinds Arktite™ 2 or Pyle-National prewired and mounted receptacles with interlock linkage to the switch mechanism. Insertion or removal of the plug is prevented by the interlock linkage while the switch is in the ON position. Receptacle prevents operation of switch if incorrect plug is inserted.



### Crouse-Hinds interlocked receptacle switches

Ampere rating ③	Type 12 ④ Catalog number	Type 4/4X⑦ Catalog number	Shipping weight Std. pkg.④	Accepts Crouse-Hinds Arktite① plug Catalog number
<b>240V Fusible, 3-Pole, 3-Wire</b>				
30	HF321JCH	HF321SCH	23	APJ3485 & NPJ3485
60	HF322JCH	HF322SCH	30	APJ6485 & NPJ6485
100	HF323JCH	HF323SCH	36	APJ10487 & NPJ10487
<b>600V Fusible, 3-Pole, 3-Wire</b>				
30	HF361JCH	HF361SCH	24	APJ3485 & NPJ3485
60	HF362JCH	HF362SCH	30	APJ6485 & NPJ6485
100	HF363JCH	HF363SCH	36	APJ10487 & NPJ10487
<b>600V Non-Fusible, 3-Pole, 3-Wire</b>				
30	HNF361JCH	HNF361SCH	22	APJ3485 & NPJ3485
60	HNF362JCH	HNF362SCH	29	APJ6485 & NPJ6485
100	HNF363JCH	HNF363SCH	35	APJ10487 & NPJ10487
<b>600V Fusible, 3-Pole, 3-Wire with viewing window</b>				
30	HF361JCHW	HF361SCHW	24	APJ3485 & NPJ3485
60	HF362JCHW	HF362SCHW	30	APJ6485 & NPJ6485
100	HF363JCHW	HF363SCHW	36	APJ10487 & NPJ10487
<b>600V Non-Fusible, 3-Pole, 3-Wire with viewing window</b>				
30	HNF361JCHW	HNF361SCHW	22	APJ3485 & NPJ3485
60	HNF362JCHW	HNF362SCHW	29	APJ6485 & NPJ6485
100	HNF363JCHW	HNF363SCHW	35	APJ10487 & NPJ10487

### Pyle-National interlocked receptacle switches

#### 3 Poles fusible and non-fusible

Ampere rating		Voltage rating	Type 12 Catalog number	Type 12⑦ Stainless Steel Catalog number	Shipping weight Std. pkg.	Accepts Pyle-National QuelArc™ ② ③ plugs
Switch	Recept.					Plug catalog number
30	30	600 (F)	HF361JPN	HF361SPN	23	JPD-83046
		600 (N-F)	HNF361JPN	HNF361SPN	21	
60	60	240 (F)	HF322JPN	—	28	JPD-116046
		600 (F)	HF362JPN	HF362SPN	28	
		600 (N-F)	HNF362JPN	HNF362SPN	27	

① Arktite™ is a registered trademark of the Crouse-Hinds Company. Plugs are not sold or supplied by Siemens.

② Indicates plug with maximum diameter cable bushing.

③ QuelArc™ is a registered trademark of the Pyle-National Company.

④ In pounds (lb).

⑤ Ampere rating of both switch and receptacle.

⑥ Also rated Type 3R/3S

⑦ Enclosure is constructed of Type 304 stainless steel.

# Heavy duty

## Special application 4 and 6 pole switches

### Application

4 & 6 pole switches are commonly used as a disconnecting means for two speed, two-winding motors. Fused switches provide both over current and short-circuit protection. Non-fusible switches normally provide a local disconnection means for two-speed motors, which are remote from their motor controller. 4 pole switches are also used in 3-phase, 4-wire circuits when a switching neutral is required. All 4 & 6 pole switches are service entrance rated.

### Description

4 & 6 pole switches are available in 30-200A ratings and in both fusible and non-fusible versions; 4-pole switches are supplied with either Type 1 or Type 12/3R enclosures. 6-pole switches are available with either Type 12/3R or Type 4X stainless steel enclosures.



Standards	Features
<ul style="list-style-type: none"> <li>UL &amp; CUL listed under File#E4776</li> <li>Meets UL98 for enclosed switches</li> <li>4 &amp; 6 pole switches are suitable for use as service entrance</li> <li>Meets NEMA Standard KS-1 for enclosed switches</li> <li>Meets NEC wire bending space</li> </ul>	<ul style="list-style-type: none"> <li>Visible blade, double break switching action</li> <li>Highly visible ON/OFF indication</li> <li>Defeatable dual cover interlock</li> <li>Padlockable in OFF position</li> <li>All copper current carrying parts ①</li> </ul>
	<ul style="list-style-type: none"> <li>Tangential knockouts (Type 1, 4-pole switches)</li> <li>Type 12 &amp; 4X switches are provided with an equipment ground kit as standard</li> </ul>

### 4 pole Type VBII Switches ① ②

Ampere rating	Indoor Type 1		Type 12/3R Industrial ⑤		Horsepower ratings ③								
	Catalog number	Ship wt. (lbs.)	Catalog number	Ship wt. (lbs.)	240V, 2Ø, 4W		240V, 3Ø		480V, 3Ø		600V, 3Ø		250V DC
					Std.	Max.	Std.	Max.	Std.	Max.	Std.	Max.	
<b>Fusible 600 Volt AC, 250 Volt DC – 4-Pole, 4 Fuse ④</b>													
30	HF461	36	HF461J	36	3	10	3	7½	5	15	7½	20	5
60	HF462	40	HF462J	40	7½	20	7½	15	15	30	15	50	10
100	HF463	43	HF463J	43	15	30	15	30	25	60	30	75	20
200	HF464 ■	88	HF464J ■	88	25	50	25	60	50	125	60	150	40
<b>Non-fusible 600 Volt AC, 250 Volt DC – 4-Pole</b>													
30	HNF461	32	HNF461J	32	–	10	–	10	–	20	–	30	5
60	HNF462	34	HNF462J	34	–	20	–	20	–	50	–	60	10
100	HNF463 ■	36	HNF463J ■	36	–	30	–	40	–	75	–	100	20
200	HNF464 ■	78	HNF464J ■	78	–	50	–	60	–	125	–	150	40

### 6 pole Type VBII Switches ① ② ⑤

Ampere rating	Type 12/3R Industrial		Type 4X Stainless Steel		Horsepower Ratings ③						
	Catalog number	Ship wt. (lbs.)	Catalog number	Ship wt. (lbs.)	240V, 3Ø,		480V, 3Ø		600V, 3Ø		250V DC
					Std.	Max.	Std.	Max.	Std.	Max.	
<b>Fusible 600 Volt AC, 250 Volt DC – 6-Pole, 6 Fuse ④</b>											
30	HF661J	37	HF661S ■	37	3	7½	5	15	7½	20	5
60	HF662J	41	HF662S ■	41	7½	15	15	30	15	50	10
100	HF663J ■	44	HF663S ■	44	15	30	25	60	30	75	20
200	HF664J ■	90	HF664S ■	90	25	60	50	125	60	150	40
<b>Non-fusible 600 Volt AC, 250 Volt DC – 4-Pole</b>											
30	HNF661J	33	HNF661S	33	–	10	–	20	–	30	5
60	HNF662J	35	HNF662S	35	–	20	–	50	–	60	10
100	HNF663J	37	HNF663S	37	–	40	–	75	–	100	20
200	HNF664J	80	HNF664S ■	80	–	60	–	125	–	150	40

■ Built to order. Allow 3-5 weeks for delivery.  
 ① Lugs are aluminum alloy as standard. Optional copper body lugs are available.  
 ② All 4 & 6 pole VBII switches are suitable for use as service equipment when a neutral is installed or equipment ground kit is properly connected.

③ Dual horsepower ratings: Std. – applies when non-time-delay fuses are installed. Max – applies when time delay fuses are installed.  
 ④ Fusible switches accept Class H fuses as the standard. Class R & J fuses can also be installed and increase the rating from 10,000 to 200,000 AIC. For Class J, the load base is moved upward. For class R fuses, rejection kits are required.  
 ⑤ Supplied with factory installed ground lugs.

# Heavy duty

## Special application switches / Non-metallic

### Application

Siemens Non-Metallic Safety Switches have fiberglass reinforced polyester enclosures, which are extremely resistant to a wide range of corrosive atmospheres that can be encountered in waste-water treatment plants and certain other industrial applications.

### Description

30-200A, 600V Max, fusible and nonfusible switches are available in Type 4X enclosures. The fiberglass-reinforced enclosure allows a wide range of operating temperatures and is supplied with a continuous memory retaining gasket for a superior seal against entry of water, dust and other contaminants. The excellent insulating properties of fiberglass virtually eliminate problems caused by internal condensation.

All switches are load break rated and are provided with an equipment ground kit as standard. Class R fuse clip kits and auxiliary switch kits are also available.



### Non-metallic features

- 30, 60, 100 and 200 amp switches
- 240 and 600 volts fusible
- 600 volts non-fusible
- Rated 10,000 AIC with Class H fuses
- Rated 200,000 AIC with Class J or R fuses
- UL-Listed, File E4776
- Horsepower rated
- Suitable for use as service equipment
- Quick-make, quick-break mechanism
- Visible blade construction
- Padlock-off handle feature
- Field installable auxiliary contacts
- Field replaceable line and load bases
- Factory installed ground lug supplied as standard
- Line terminal shields
- Neutrals installed as standard

### Type 4/4X Non-Metallic ②

System	Ampere rating	Catalog number	Ship wt. (lbs)	Horsepower Rating – 3-phase						250 Volts DC	600 Volts DC
				240 Volt AC		480 Volt AC		600 Volt AC			
				Std.	Max.	Std.	Max.	Std.	Max.		
<b>3-Pole, 4-Wire, 240 Volt Fusible, Type 4X ⑤</b>											
	30	HF321NX	21	3	7 1/2	—	—	—	—	5	—
	60	HF322NX▲	22	7 1/2	15	—	—	—	—	10	—
<b>3-Pole, 4-Wire, 600 Volt AC Fusible, Type 4X ②③⑤</b>											
	30	HF361NX	21	3	7 1/2	5	15	7 1/2	20	5	15④
	60	HF362NX	22	7 1/2	15	15	30	15	50	10	30④
	100	HF363NX▲①	39	15	30	25	60	30	75	20	50④
	200	HF364NX▲	83	25	60	50	125	60	150	40	50
<b>3-Pole, 3-Wire, 600 Volt AC Non-Fusible, Type 4X ①②③</b>											
	30	HNF361X	20	—	7 1/2	—	20	—	30	5	15④
	60	HNF362X	20	—	15	—	50	—	60	10	30④
	100	HNF363X▲	38	—	30	—	75	—	100	20	50④
	200	HNF364X▲	81	—	60	—	125	—	150	40	50

### Type 7 and 9 Enclosed Molded Case Switches ⑥⑦



Molded case switch type	Number of poles	Maximum current rating	Enclosure Catalog number	Enclosure Ship. package
ED2, ED4, ED6		15-60	EA	27
HED4, HED6	2-3	70-100	EB	32
FXD6, FD6, HFD6, HFXD6, CFD6	2-3	250	EC2	85
JXD2(A), JXD6(A), JD6(A), SJD6(A)	2-3	200-350	EC4	85
HJD6(A), HJXD6(A), HHJD6, HHJXD6, SHJD6	2-3	300-400	EE	93
LXD6(A), LD6(A), SLD6(A), SLD6(A)	2-3	600	ED6	190
HLD6(A), HLXD6(A), HHL6, HLXD6(A)	2-3	600	ED6	190
HHL6, HHLXD6, SHLD6	2-3	600	ED6	190

▲ Built to order. Allow 6-8 weeks for delivery.

① Also used for 240 volt applications.

② Add "L" to end of catalog number for switches less line & load lugs with mounting hardware for crimp type or copper body lugs.

③ 200A switches are also rated 600V DC max.

④ 600V DC voltage and horsepower rating shown requires (2) poles to be connected in series.

⑤ Supplied with factory installed neutral.

⑥ Neutrals not included. Order neutral kit when required.

⑦ Order Molded case switch and enclosure separately.

# General and heavy duty Accessories

## Copper lug kits

Heavy duty switches are UL approved to accept field installed copper lug kits.

Switch ampere rating	Copper lug Catalog number	Description
30-60	HLC612	(9) Lugs/Kit #14-4 AWG Cu
100	HLC63▲	(9) Lugs/Kit #14-1/0 AWG Cu
200	HLC64▲	(9) Lugs/Kit #6 AWG-300 Kcmil Cu
400-600	HCU656A■	(1) Lugs/Kit #1/0 AWG-600 Kcmil Cu
800-1200	HLC65678	(1) Lugs/Kit #1/0 AWG-600 Kcmil Cu



HLC612

## Equipment ground kits

Equipment Ground Lug Kits are available for all General and Heavy Duty Switches. They are field installable in Type 1 and Type 3R Switches and are factory installed as standard in Type 4/4X and Type 12 Switches.

Switch ampere rating	Catalog number	Number of terminals	Wire range per terminal (Cu/Al)
30A GD	GSGK60	2	#14-8 AWG
60-200 GD	HG61234	2	#14-4 AWG
30-200 HD	HG61234	2	#14-4 AWG
400 & 600	HG656A	4	2/0-6 AWG
800-1200	HG678	8	#6 AWG-250 Kcmil



HG261234

## Isolated ground kits

Isolated Ground Kits are available on 30-600A Heavy Duty Switches. They are normally used on circuits with a high content of computer or other electronic loading which require a ground which is isolated from the building ground and neutral circuits. The kit includes both isolated and grounded terminals as listed below.

Switch ampere rating	Catalog number	Number of terminals		Wire range per terminal (Cu/Al)
		Isolated	Grounded	
30-200	HG261234	2	2	#14-4 AWG
400-600	HG2656A	4	4	2/0-14 AWG 2/0-6 AWG

▲ Built to order. Allow 6-8 weeks for delivery.  
■ Purchase field replacement fit along with lugs.

# General and heavy duty

## Accessories

### Auxiliary contacts

Auxiliary contacts are available only for Heavy Duty Switches. The auxiliary contact are available in 1 normally open and 1 normally closed or 2 normally open and 2 normally closed configurations. Siemens offers a PLC auxiliary switch (30-200A) that has very low resistance for low voltage and current typical in PLC circuits. All auxiliary contacts make after and break before the main switch contacts.

Switch ampere	Aux. switch Catalog number	Kit ampere rating			Horsepower rating	
		125V AC Max.	250V AC Max.	28V DC Max.	125V AC Max.	250V AC Max.
<b>With 1 NO &amp; 1 NC Isolated Contacts</b>						
30-600	HA161234	10	10	7	1/2	3/4
800-1200	HA165678	10	10	—	1/2	3/4
<b>With 2 NO &amp; 2 NC Isolated Contacts</b>						
30-600	HA261234	10	10	7	1/2	3/4
800-1200	HA265678	10	10	7	1/2	3/4
<b>Low Current PLC Type with 1 NO &amp; 1 NC Gold Plated Contacts</b>						
30-600	HA361234	10	10	7	1/2	3/4
800-1200	HA365678	10	10	—	1/2	3/4



HA161234



HA261234

### Fuse puller kits

Fuse puller kits are field installable in 30-100A Type VBII Heavy Duty Switches (one kit required per switch).

Switch ampere rating	Fuse puller kit Catalog number
30	HP61
60	HP62▲
100	HP63▲



HP61

### Class R fuse clip kits

All General Duty and Heavy Duty Switches are field convertible to accept Class R fuse clip kits. The kits prevent the installation of Class H and K fuses (one kit required per 3-pole switch).

Catalog number	Description
GSRK321	30A, 240V Kit (GD only)
HR21	30A, 240V Kit (HD only)
HR612	30A, 600V Kit/60A, 240V Kit
HR62	60A, 600V Kit
HR63	100A Kit
HR64	200A Kit
HR65A	400A Kit
HR66A	600A Kit



HR612

NOTE: For touch-up spray paint (16 oz. can) order catalog number XTP060.  
▲ Built to order. Allow 6-8 weeks for delivery.

# General and heavy duty

## Class J fusing

All 30-600A, 600V and 100-600A, 240V fusible Heavy Duty Switches are field convertible to accept Class J fuses by moving the load base to a pre-drilled J fuse position. All 100-600A, 240V fusible General Duty switches can also be field converted to accept Class J fuses.

### Class J fuse kits

Catalog number	Description
HJ66A	600A, 240V/600V Kit

## Class T fuse adapter kits ①

All 100-600A, General Duty and 100- 200Amp and 1200Amp Heavy Duty Switches are field convertible to accept Class T fuses. 800A switches are field convertible to accept Class T fuses by moving the load base to a pre-drilled T fuse position.

Catalog number	Description
HT23	100A, 240V Kit
HT63	100A, 600V Kit
HT24	200A, 240V Kit
HT64▲	200A, 600V Kit
HT25A	400A, 240V Kit
HT65A	400A, 600V Kit
HT26A	600A, 240V Kit
HT66A	600A, 600V Kit
TFAK82	1200A, 240V Kit



HT63

## Neutral kits

Standard Neutral Kits can be field installed in General and Heavy Duty Switches.

Switch ampere rating	Kit catalog number
30 GD	W410190
30 HD, 60 GD	HN612
60, 100 HD, 100 GD	HN623
200	HN64
400 & 600	HN656A
800 & 1200	HN678



HN612

## 200% neutral kits

UL listed 200% Neutrals are available on 100-600A Heavy Duty Switches. They are typically used with nonlinear transformers or where increased neutral ampacity/ lug capacity is required.

Switch ampere rating	Kit catalog number	Wire range line & load lugs (Cu/Al)
100	HN263	(2) #14-1/0 AWG
200	HN264	(2) #6 AWG-300 Kcmil
400	HN656A	(2) 1/0 AWG-600 Kcmil (2) #6 AWG-300 Kcmil
600	HN678A	(2) 1/0 AWG-600 Kcmil (2) #6 AWG-300 Kcmil



HN264

▲ Built to order. Allow 6-8 weeks for delivery.

① One kit per pole required.

# General and heavy duty

## Hub and lug data

### Interchangeable hubs

Conduit hubs are available for Type 3R, 12 and 4/4X applications. 30-200A Type 3R Switches are provided with a conduit hub provision and a removable hub plate on their top rainsheds.



SSH150



ECHV300



ECHS200

### Field replacement kits and neutral barrier kits

All Heavy Duty Switches are field convertible for crimp type lugs. When compression lugs are required for 30- 100A switches, a neutral barrier kit is required for 1-Phase, 3W or 3-Phase, 4W applications. When compression lugs are required on 400-1200A switches, lug mounting kits are required.

### Field replacement kits and neutral barrier kits

Switch ampere rating	Catalog number	Kit description
30	HCL612	Neutral Barrier Kit
60 & 100	HCL623	Neutral Barrier Kit
400	HCM65A	240V/600V Fusible Kit
400	HNCM65A	240V/600V Non-Fusible Kit
600	HCM66A	240V/600V Fusible Kit
600	HNCM66A	240V/600V Non-Fusible Kit
800 & 1200 ⑤	HCL65678 ■	1 Pole, Compression Lug Mounting Kit

### Multiple padlock accessory

A tamper-proof device to provide for multiple padlocking to meet OSHA or plant requirements. Accepts up to 6 1/4" padlocks. Catalog number **SL0420**. Standard Carton-12.

### Lugs

30-100A Switches are suitable for use with 60°C or 75°C wire. 100-1200A are suitable for use with 75°C rated wire.

### Wire ranges (Line, load and standard neutral)

Switch ampere rating	Wire range with wire bending space per NEC requirements	Lug wire range
30GD	#14-8 AWG (Cu/Al) ⑥	#14-6 AWG (Cu/Al)
30HD	#14-6 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
60 ⑧ ⑩	#14-3 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
100 ⑩	#14-1/0 AWG (Cu/Al)	#14-1/0 AWG (Cu/Al)
200 ⑩	#6 AWG-250 Kcmil (Cu/Al)	#6 AWG-300 Kcmil (Cu/Al)
400 ⑦	(1) 1/0 AWG-600 Kcmil (Cu/Al) (2) 1/0 AWG-500 Kcmil (Cu/Al)	(2) 1/0 AWG-600 Kcmil (Cu/Al)
600 ⑦	(1) 1/0 AWG-600 Kcmil (Cu/Al) (2) 1/0 AWG-500 Kcmil (Cu/Al)	(2) 1/0 AWG-600 Kcmil (Cu/Al)
800	(3) 1/0 AWG-750 Kcmil (Cu/Al) Line Load (4) 1/0 AWG-750 Kcmil (Cu/Al) neutral	(3) 1/0 AWG-750 Kcmil (Cu/Al) Line Load (4) 1/0 AWG-750 Kcmil (Cu/Al) neutral
1200	(4) 3/0 AWG-750 Kcmil (Cu/Al) Line Load (4) 1/0 AWG-750 Kcmil (Cu/Al) neutral	(4) 1/0 AWG-750 Kcmil (Cu/Al) Line Load (4) 1/0 AWG-750 Kcmil (Cu/Al) neutral

Conduit size (inches)	Catalog number	Used on
<b>Type 3R ①</b>		
Cover	ECHA000	30A GD Only
3/4	ECHA075	
1	ECHA100	
1 1/4	ECHA125	60-200A GD 30-200A HD
Cover	ECHS000	
3/4	ECHS075	
1	ECHS100	
1 1/4	ECHS125	
1 1/2	ECHS150	
2	ECHS200	
2 1/2	ECHS250	400-1200A
2 1/2	ECHV250	
3	ECHV300	
3 1/2	ECHV350	
4	ECHV400	
<b>Type 4/4X ②</b>		
3/4	SSH075	30-200A
1	SSH100	
1 1/4	SSH125	
1 1/2	SSH150	
2	SSH200	
2 1/2	SSH250	400-600A
3	SSH300	
3 1/2	SSH350	
4	SSH400	

**Note:** 30 thru 200A. Type 3R Switches have removable hub plates on rainshed. 400A and larger Type 3R Switches have no provisions for mounting hubs. Drill or punch hole in the field to accommodate hub size desired.



SL0420

■ Built to order. Allow 3-4 weeks for delivery.

- ① Hubs suitable for 3R Switches.
- ② Also suitable for Type 12 applications.
- ③ Neutral Barrier kits are required on 30-100A switches only and only with 1-Phase / 3W or 3-Phase / 4W loads. Compression Lugs mounting kits are required on 400-1200A switches only.
- ④ Provides mounting for a single line or load lug.
- ⑤ Provides mounting for (2) compression lugs per phase on line or load.
- ⑥ Line base lugs (only) are UL approved to accept #14-6 CU/Al cable.
- ⑦ Max. wire size for height reduced switches is 500 kcmil (Cu/Al).
- ⑧ All but 60A GD & Compact HD NF switches are also UL approved for #2 Cu/Al conductors.
- ⑨ All 200A Heavy Duty Switches have a wire range & wire bending space for (1) #6-300 Kcmil (Cu/Al).
- ⑩ Also for 30A oversized heavy duty switches.
- ⑪ Also for 60A oversized heavy duty switches.

# Heavy Duty

## Crimp lug application data

Heavy Duty Switches are UL approved to accept the following field installed compression lugs:

Wire size	Burndy		Thomas-Betts		Ilsco						
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL					
<b>Heavy Duty 30 Amp ①</b>											
#14-10	—	—	—	60096 60097	—	—					
#8	YA8C-L Box YA8C-L1 Box	—	54104 54130	60101 60102 61102	CRA-8	ACL-8 ACN-8					
#6	—	—	—	—	—	—					
<b>Heavy Duty 60 Amp ②</b>											
#14-10	—	—	256-30695-1352	60097	—	—					
#8	YA8C-L1 Box YA8C-TC14	YA8CA3	54130 54930BE	60102 61102	—	ACL-8					
#6	YA6C-L Box	YA6C	YA6CA1	54105 54905BE	60107 61107	CRB-6 CRB-6L	ACL-6				
#4	—	—	54106	61112	CRB-4	—					
<b>Heavy Duty 100 Amp ②</b>											
#6	YA6C-L Box	YA6C	YA6CA1	54105	54905BE	61107	60107	CRB-6	CRB-6L	ACL-6	
#4	YA4C-L Box	YA4C	YA4CA1	54106	54906BE	61112	60112	CRB-4	CRB-4L	ACL-4	
#2	YA2C-L2 Box	YA2C	YA2CA5	54107	54907BE	61116	—	CRB-2	CRB-2L	ACL-2	
#1	YA1C-L2	YA1C	—	54108	—	61122	—	CRB-1-14	CRA-1L	—	
1/O	—	—	—	—	—	61130	—	—	—	—	
<b>Heavy Duty 200 Amp</b>											
#2	YA2C-L Box	YA2C	YA2CA1	54142-TB	—	60117	—	CRB-2	CRB-2L	IACL-2	ACN-2
#1	YA1C-L Box	YA1C	YA1CA1	54147	54947BE	60123	—	CRA-1-38	CRA-1L	ACN-1	—
1/O	YA25-L Box	YA25	YA25A1	54153-TB	54949BE	60129	61130	CRA-0	CRA-1/0L	IACL-1/0	ACN-1/0
2/0	YA26-L3	YA26	YA26A6	54158 256-30695-1229	54910BE	60135	61136	CRA-2/ 0	CRA-2/0L	ACL-2/0	IACL-2/0
3/0	YA27-L3	YA27	YA27A1	54163-TB	—	60141	61142	CRC-3/0	CRB-3/0L	IACL-3/0	ACL-3/0
4/0	YA28-L3 YA28-TC38	—	YA28A1	54168 256-30695-1253	—	61148 61147	—	CRC-4/0	CRB-4/0L	IACL-4/0	ACL-4/0
250 Kcmil	YA29-L7	—	—	54173	54913BE	61156	—	CRA-250	CRA-250L	IACL-250	—
300 Kcmil	—	—	—	—	—	61162	—	—	—	—	—
<b>Heavy Duty 400 Amp &amp; 600 Amp ③</b>											
#10	YA25-L4 Box YA25-TC38	—	YA25A3	54109	54909BE	60130	—	—	—	ACL-1/0	—
#2/0	YA26-L Box	YA26	YA26A6	54110	54910BE	60136	—	CSWS-2/0-38 CLNS-2/0-38	—	ALNN-2/0-38 ACL-2/0	—
#3/0	YA27-L4 Box	—	YA27A1	54111 54965BE06	—	60142	—	CSWS-3/0-38 CLNS-3/0-38	—	ALNN-3/0-38 ACL-3/0	—
#4/0	YA28-L4 Box YA28-TC38	—	YA28A1	54112 54970BE06	—	60148	—	CSWS-4/0-38 CLNS-4/0-38	—	ALNN-4/0-38 ACL-4/0	—
250 Kcmil	YA29-L4	—	—	54174 54913BE06	—	61156 60154	—	CSWS-250-38 CLNS-250-38	—	ALNN-250-38	—
300 Kcmil	YA30-L24	—	—	54179 54914BE60B	—	61162	—	CSWS-300-38 CLNS-300-38	—	ALNN-300-38	—
350 Kcmil	YA31-L11	—	—	256-30695-112	—	61165 60165	—	CSWS-350-38 CLNS-350-38	—	—	—
400 Kcmil	—	—	—	54116NT06 54916BENT06	—	60168NT06	—	CSWN-500-38	—	—	—
500 Kcmil	—	—	—	54118NT06	—	—	—	—	—	—	—

① If compression lugs are used for the neutral, order compression lug neutral barrier kit HCL612.

② If compression lugs are used for the neutral, order compression lug neutral barrier kit HCL623.

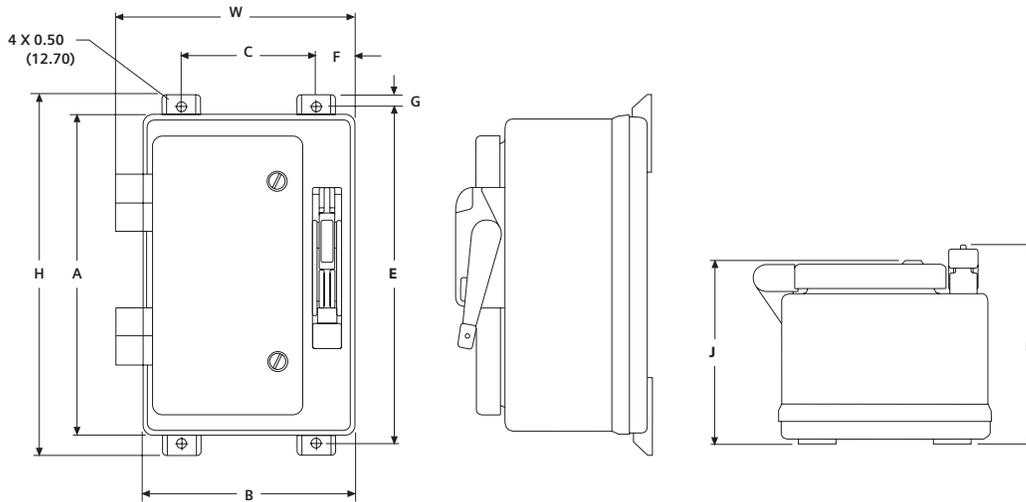
③ Use compression lug mounting kit per table on previous page.

④ Not applicable to height reduced switches.

# Special application safety switches

## Non-metallic and interlocked receptacle switch

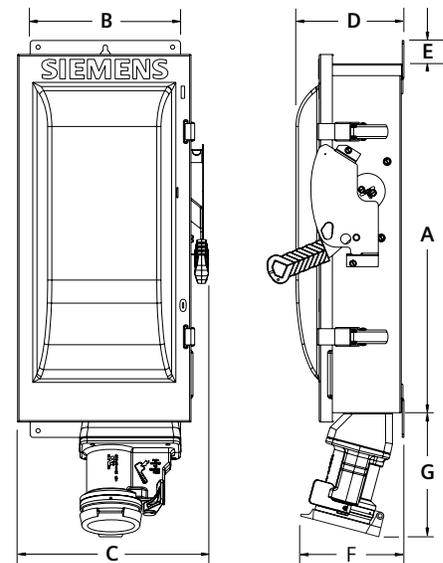
### Dimension drawings



Catalog number	Dimensions (Inches) non-metallic									
	H	W	D	A	B	C	E	F	G	J
HF321NX	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF322NX	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF361NX <sup>①</sup>	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF362NX <sup>①</sup>	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF363NX <sup>①</sup>	26.95	14.87	13.25	24.84	13.72	6.25	25.75	3.75	.46	12.15
HF364NX <sup>①</sup>	33.41	27.47	13.19	31.31	26.31	18.50	32.25	3.91	.47	12.10
HNF361NX <sup>①</sup>	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HNF362NX <sup>①</sup>	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HNF363NX <sup>①</sup>	26.95	14.87	13.25	24.84	13.72	6.25	25.75	3.75	.46	12.15
HNF364NX <sup>①</sup>	33.41	27.47	13.19	31.31	26.31	18.50	32.25	3.91	.47	12.10

### VBII interlocked receptacle switches

Ampere rating	Dimensions (Inches)						
	A	B	C	D	E	F	G
<b>Cr-H Type Fusible (240 &amp; 600V)</b>							
30	14.27	7.42	9.02	6.22	1.52	6.1	6.0
60	16.27	9.17	11.47	6.34	1.52	6.4	7.4
100	21.96	9.65	12.02	6.80	1.52	6.5	7.6
<b>Cr-H Type Non-fusible (600V max)</b>							
30	11.12	7.42	9.02	6.22	1.52	6.1	6.0
60	16.27	9.17	11.47	6.34	1.52	6.4	7.4
100	21.96	9.65	12.02	6.80	1.52	6.5	7.6
<b>Pyle-National Type Fusible (240 &amp; 600V)</b>							
30	14.27	7.42	9.02	6.22	1.52	3.5	3.0
60	16.27	9.17	11.47	6.34	1.52	5.0	4.5
<b>Pyle-National Type Non-fusible (600V max)</b>							
30	11.12	7.42	9.02 <sup>①</sup>	6.22	1.52	3.5	3.0
60	16.27	9.17	11.47 <sup>①</sup>	6.34	1.52	5.0	4.5



<sup>①</sup> Dimensions also apply to "L" suffix switches (less lugs).

# Double throw switches

## Description and application

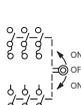
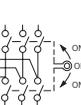
Double throw safety switches are intended to transfer loads from one power source to another. All two- and three pole double throw switches are suitable for use as service equipment. All are UL listed. Switches are rated for use on systems up to 10,000A when protected with Class H fuses or 100,000A when protected with Class R or Class T fuses. They can also be used to connect a single source of power to either of two loads. In this application it is necessary to field modify fusible switches so that the fuses are on the load side of the switching mechanism. A cover interlock is provided on all ampere ratings. The operating handle may be padlocked in the OFF position.



## Fuse capabilities of fusible switches

Amp rating	Fuse type			
	H	R	T	J
30 & 60A, 240V	Std	Yes (kit)	No	No
30 & 60A, 600V	Std	Yes (kit)	No	Yes <sup>③</sup>
100 & 200A	Std	Yes (kit)	Yes (kit)	Yes <sup>③</sup>
400 & 600A DTF	No	No	Yes <sup>③</sup>	Std <sup>④</sup>

## Double throw switches

System	Voltage	Number of poles	Amps	Type 1 – Indoor Catalog number	Type 3R – Outdoor <sup>①</sup> Catalog number	Type 12/3R Industrial Catalog number	Type 4X – Stainless Steel Catalog number
<b>Heavy Duty Fusible (30-200A with Class H fuse provisions)<sup>②</sup></b>							
	240 Volt AC or 250 Volt DC	2	200	DTF224	DTF224R	—	—
			30	DTF321	DTF321R	—	—
			60	DTF322	DTF322R	—	—
			100	DTF323	DTF323R	—	—
			200	DTF324	DTF324R	—	—
			400	DTF325	—	—	—
	600 Volt AC, 250 Volt DC	3	30	DTF361	—	—	—
			60	DTF362	—	—	—
			100	DTF363	DTF363R	—	F353SSDTK
			200	DTF364	DTF364R	—	F354SSDTK
			400	DTF365	—	—	F355SSDTK <sup>④</sup>
			—	—	—	—	—
<b>Heavy Duty Non-Fusible<sup>②</sup></b>							
	240 Volt AC or 250 Volt DC	2	30	DTNF221	—	—	—
			60	DTNF222	—	—	—
			100	DTNF223	—	—	—
			200	DTNF224	DTNF224R	—	—
			400	DTNF225	DTNF225R	—	—
			—	—	—	—	—
		3	30	DTNF321	—	—	—
			60	DTNF322	—	—	—
			100	DTNF323	DTNF323R	—	—
			200	DTNF324	DTNF324R	—	—
			400	DTNF325	—	—	—
			600	DTNF326	—	—	—
	600 Volt AC or 250 Volt DC	3	30	DTNF361	DTNF361R	DTNF361J	DTNF361S
			60	DTNF362	DTNF362R	DTNF362J	DTNF362S
			100	DTNF363	DTNF363R	DTNF363J	DTNF363S
			200	DTNF364	DTNF364R	DTNF364J	DTNF364S
			400	DTNF365	DTNF365R	NF355HDTK	NF355SSDTK
			600	DTNF366	DTNF366R	—	—
		800	DTNF367	DTNF367R	—	—	
		1200	DTNF368	DTNF368R	—	—	
		4 <sup>⑤</sup>	30	—	NFR451DTK	—	—
			60	—	NFR452DTK	—	—
			100	—	NFR453DTK	—	—
			200	NF454DTK	NFR454DTK	—	NF454SSDTK
400	NF455DTK		NFR455DTK	—	—		
600	NF456DTK		NFR456DTK	—	—		
800	NF457DTK	NFR457DTK	—	—			

<sup>①</sup> Use HS Type hubs for 30–200A switches; 400A and larger switches do not have hub provisions.

<sup>②</sup> All Heavy Duty double throw switches with catalog numbers starting with “DT” are rated 200,000 AIC max. when protected by Class R, J or T fuses. Fuse ampere rating must not exceed switch ampere rating.

<sup>③</sup> Move load base.

<sup>④</sup> Catalog No. F355SSDTK will accept Class T Fuse only.

<sup>⑤</sup> Four pole switches are not approved for service entrance.

# Double throw switches

## General duty, accessories, lug data and horsepower ratings

### Double throw switches

System	Voltage	Number of poles	Amps	Type 3R – Outdoor ① less neutral	Type 3R – Outdoor ① with neutral
<b>General Duty Non-Fusible</b>					
	240 Volt AC	2	100 200	DTGNF223R DTGNF224R	DTGNF223NR DTGNF224NR
		3	100 200	DTGNF323R DTGNF324R	DTGNF323NR DTGNF324NR

### Accessories – 2 and 3 pole type "DT" switches only ②

Description	Catalog number
Neutral Kits 30A 60 & 100A 200A 400 & 600A 800 & 1200A	HNC612 HN263 HNC264 HN678 HND678
Equipment Ground Kit 30-200A (2) #14-4 AWG 400& 600A (1) #14-2/0 400& 600A (8) #6-350 Kcmil	HG61234 HG656 HG678
Auxiliary Contacts (HD only) (two required per switch) ⑤ 30-200A with (1) NO & (1) NC Contacts 30-200A with (2) NO & (2) NC Contacts 400-1200A with (1) NO & (1) NC Contacts 400-1200A with (2) NO & (2) NC Contacts	HA161234 HA261234 HA165678 HA265678
Class R Fuse Clip Kits (two required per switch) 30A, 240V Kit 30A, 600V Kit / 60A, 240V Kit 60A, 600V Kit 100A Kit 200A Kit	HR21 HR612 HR62 HR63 HR64
Class T Fuse Adapter Kits (two required per pole) 100A, 240V Kit 100A, 600V Kit 200A, 240V Kit 200A, 600V Kit	HT23 HT63 HT24 HT64
Type 3R Hubs (30-200A) For ¾" Conduit For 1" Conduit For 1¼" Conduit For 1½" Conduit For 2" Conduit For 2½" Conduit	HS075 HS100 HS125 HS150 HS200 HS250

### Accessories – 4 pole and type "F" and "NF" switches only ③

Description	Catalog number
Auxiliary switch (two required per switch) 30-800A (1) NO, (1) NC ⑤ (2) NO, (2) NC ⑤	DS200EK1 DS200EK2
Ground lug kit ④ 30-60-100A 200A 400-600-800A	DSG100GK DSG200GK DSG468GK
Hubs 30-60-100A Use Type HR hubs 200-400A Use Type SSH 4, 4X hubs 600-800A Use Type SSH 4, 4X hubs	— — —
Neutrals (for fusible stainless steel and 400A Type 12 & 4X only) 30-60-100A 200A 400A Fusible	DT100NK DT200NK DS800NK

### Replacement parts – 2 and 3 pole type "DT" switches only ②

Description	Catalog number
Type 1, 3R & 12 replacement handle Type 4X Replacement handle	30-200A 30-200A
Type 4X replacement handle	400-1200A

### Wire ranges (Line, load and neutral) per NEC requirements 30-200A – 2, 3 & 4 pole switches

Switch ampere rating	Wire range (Cu/Al) New VBII design Line, load and neutral
30	(1) #14-6
60	(1) #14-2
100	(1) #14-1/0 AWG
200	(1) #6-250 Kcmil

### 400-1200A – 2, 3 pole switches

Switch ampere rating	Wire range (Cu/Al) New VBII design Line, load and neutral
400	(1) 1/0 AWG - 750 Kcmil or (2) 1/0 AWG - 250 Kcmil
600	(2) 1/0 AWG-500 Kcmil
800	(2) 1/0 AWG - 750 Kcmil or (3) 1/0 AWG - 500 Kcmil
1200	(3) 1/0 AWG - 600 Kcmil or (4) 1/0 AWG - 500 Kcmil

### 400-800A – 4 pole switches

Switch ampere rating	Wire range (Cu/Al) New VBII design Range line, load and neutral
400	(2) 1/0 AWG-300 kcmil or (1) 1/0 AWG-750 kcmil
600	(2) 250-500 Kcmil
800	(3) 250-500 Kcmil

### Maximum horsepower ratings fused

Ampere rating	1-Phase AC		3-Phase AC			250V DC
	240V	240V	480V	600V	250V DC	
30	3	7½	15	20	5	
60	10	15	30	50	10	
100	15	30	60	75	20	
200	15	60	125	150	40	
400	—	125	125	125	50	
600	—	125	—	—	50	

### Maximum horsepower ratings non-fused

Ampere rating	1-Phase AC		3-Phase AC			250V DC
	240V	240V	480V	600V	250V DC	
30	5	10	20	30	5	
60	10	20	50	60	10	
100	15	40	75	100	20	
200	15	60	125	150	40	
400-800	—	125	250	350	50	

① Use HS Type hubs for 30-200A switches.

② Not for fusible stainless or 400A Type 12 & 4X switches.

③ Also for fusible stainless and 400A Type 12 & 4X switches.

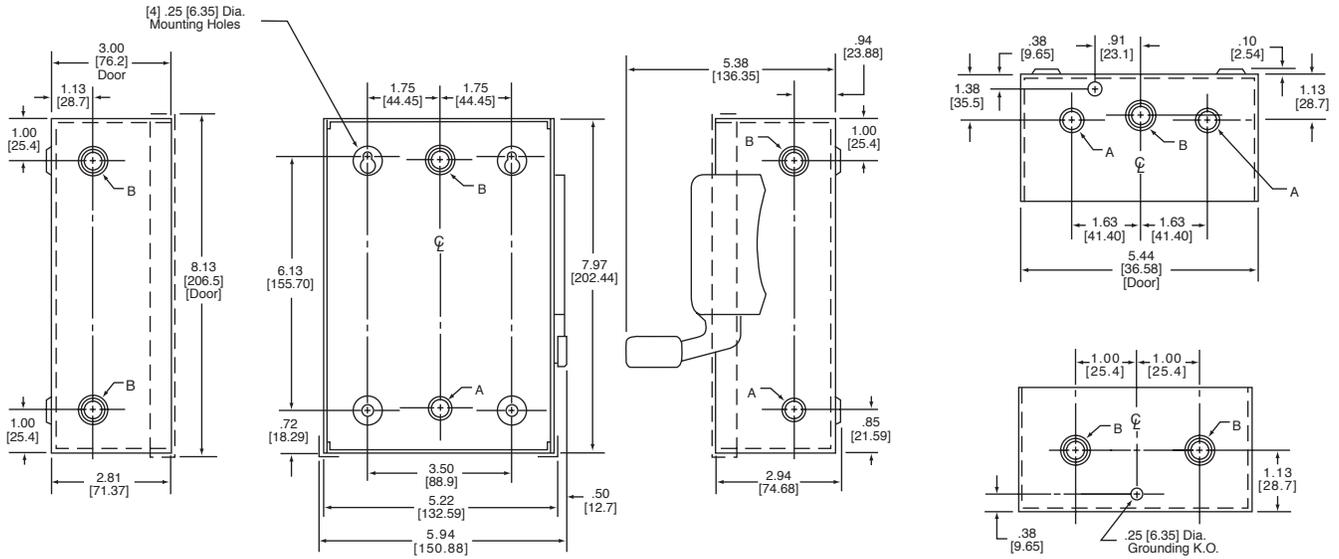
④ The following ground lugs are provided as standard in 200A and larger switches  
200-(1) #14-4 Cu/Al 400-800A-(3) #6-250MCM Cu/Al.

⑤ One aux. required for normal and one required for emergency switch line base.

# Detailed dimension drawings

**Type 1 (Indoor)**  
30 Amp General Duty (2-Pole)

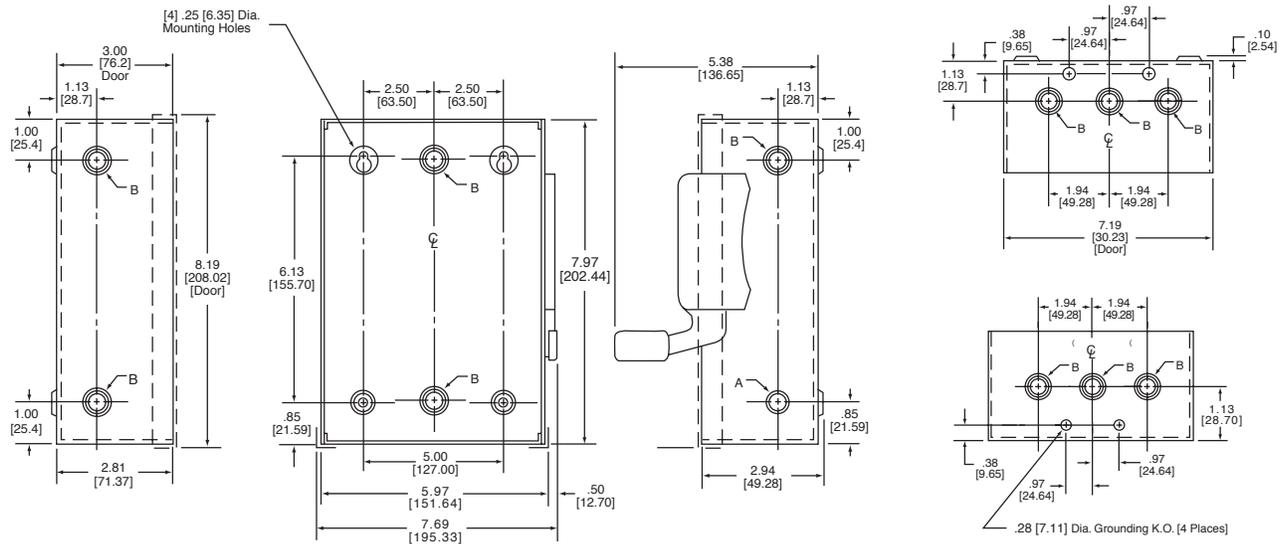
Figure 1



KNOCKOUT CODE	CONDUIT SIZE	
	A (Concentric)	.50
B (Concentric)	.50	.75 1.00

30 Amp General Duty (3-Pole)

Figure 2



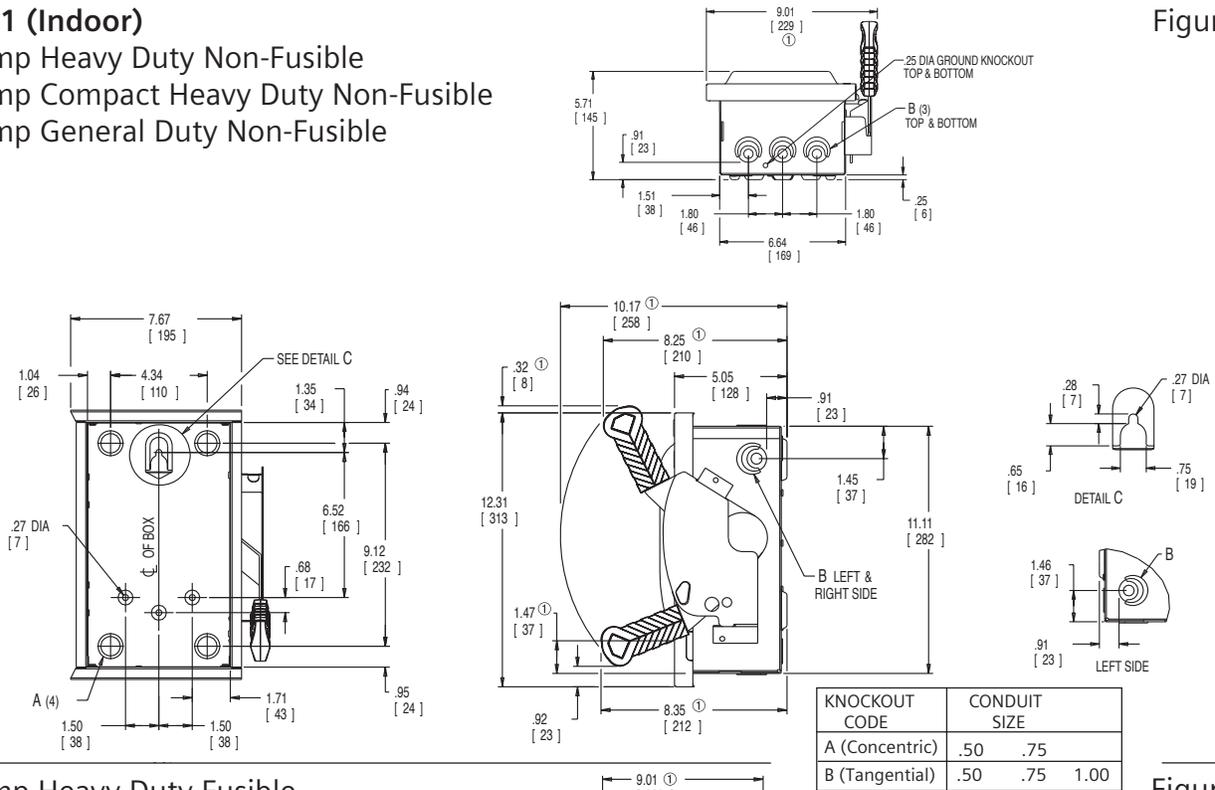
Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to ± 1/8 inch.

# Detailed dimension drawings

## Type 1 (Indoor)

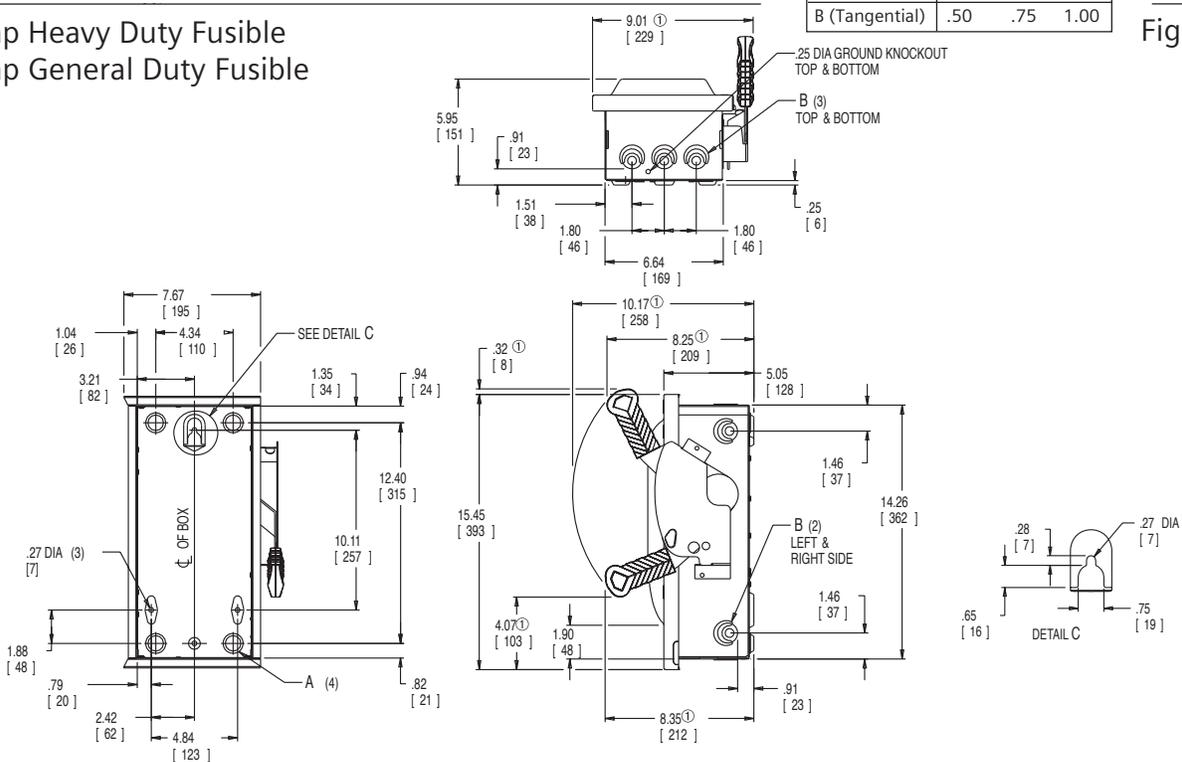
30 Amp Heavy Duty Non-Fusible  
 60 Amp Compact Heavy Duty Non-Fusible  
 60 Amp General Duty Non-Fusible

Figure 3



30 Amp Heavy Duty Fusible  
 60 Amp General Duty Fusible

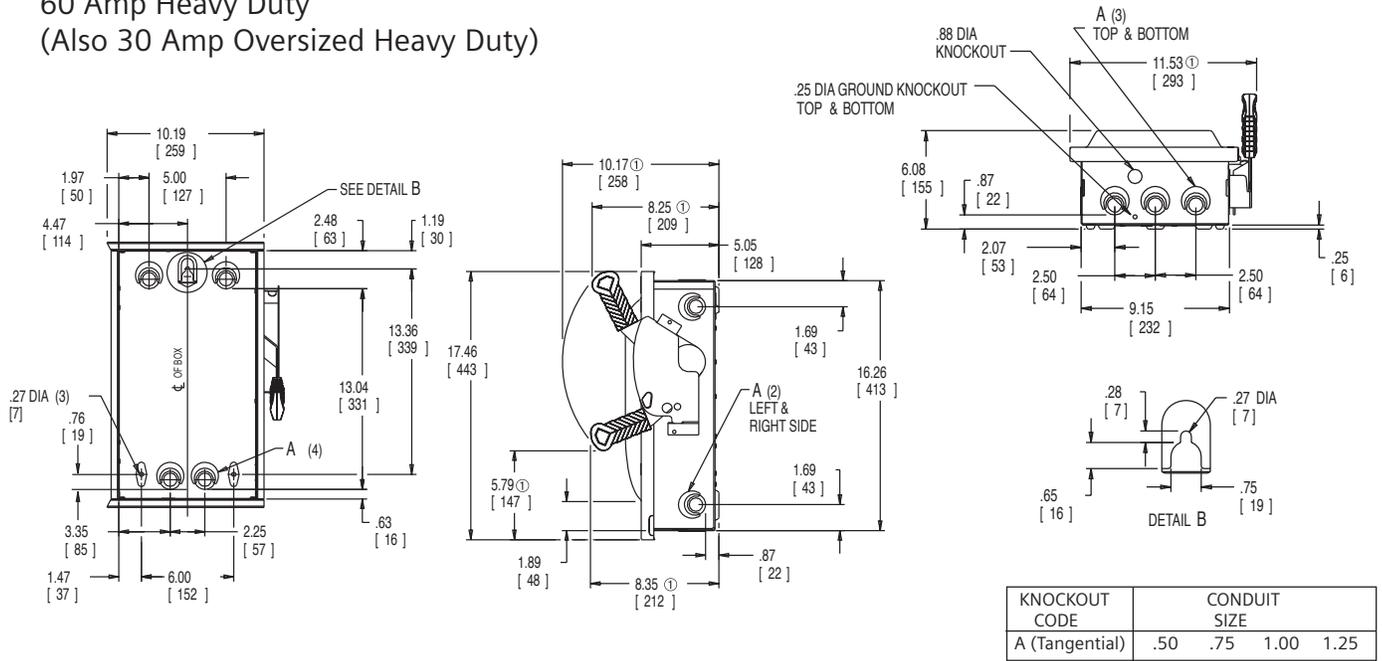
Figure 4



Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.  
 Ⓢ Dimensions shown apply to heavy duty switches only.

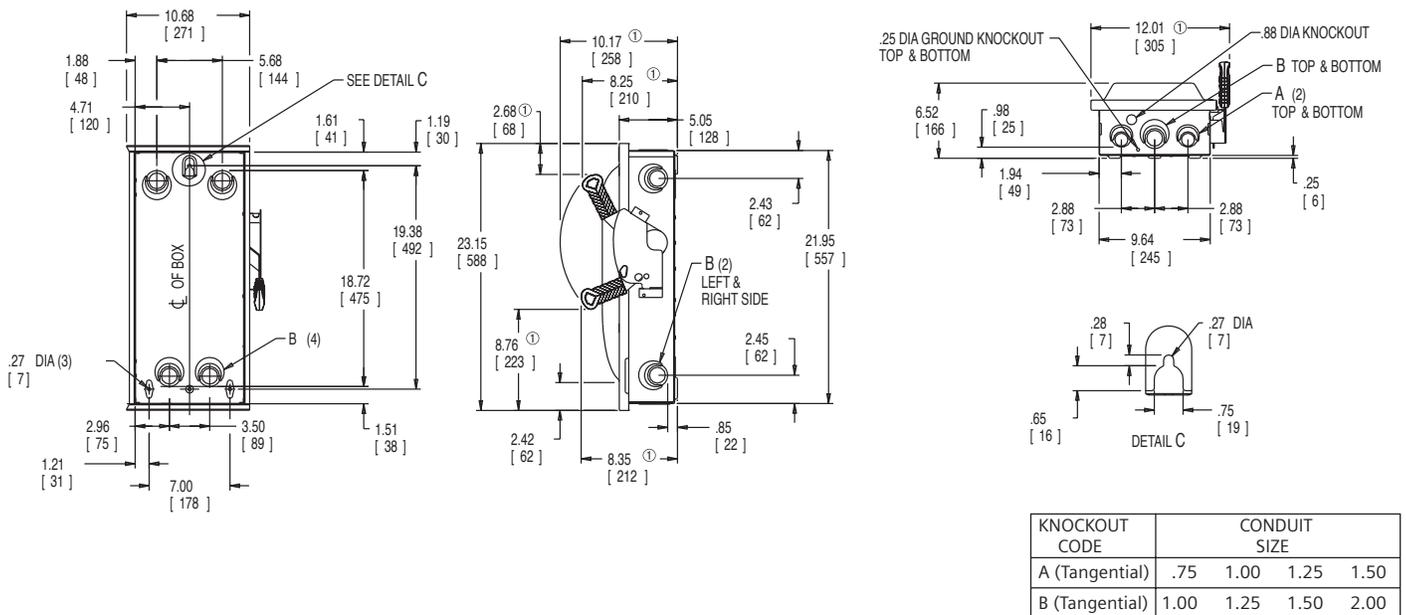
**Type 1 (Indoor)**  
**60 Amp Heavy Duty**  
**(Also 30 Amp Oversized Heavy Duty)**

Figure 5



**100 Amp General and Heavy Duty**

Figure 6

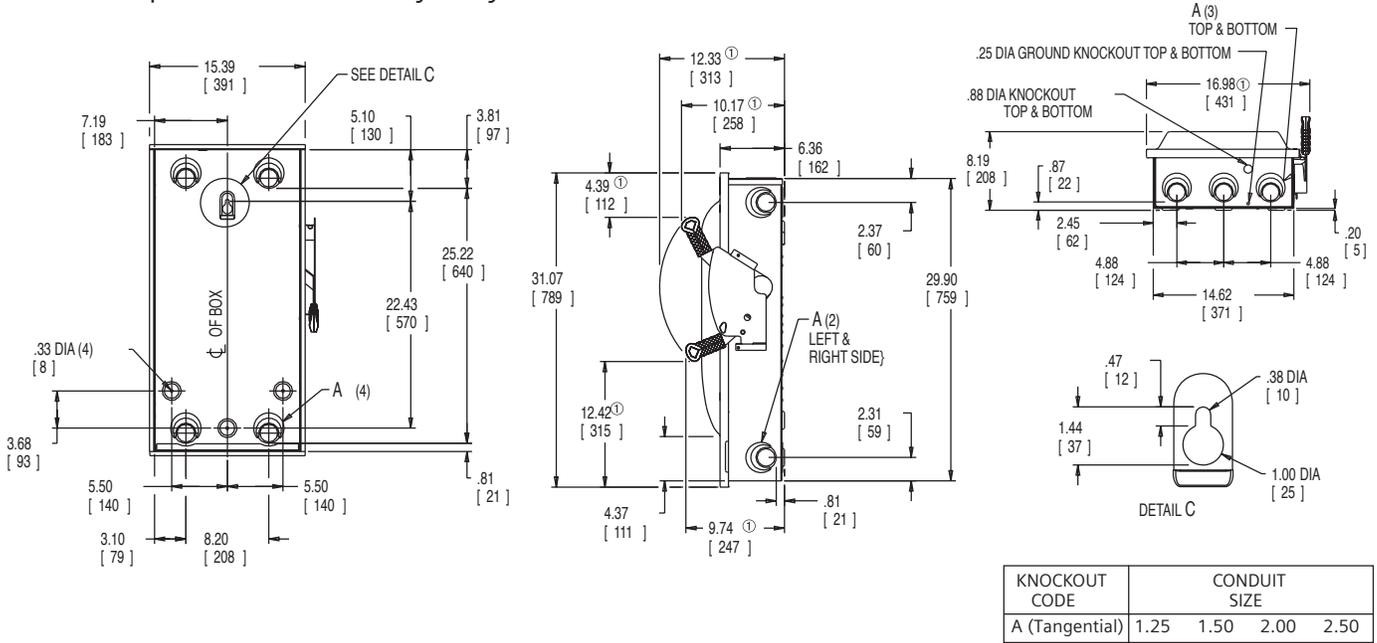


Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.  
 ① Dimensions shown apply to heavy duty switches only.

# Detailed dimension drawings

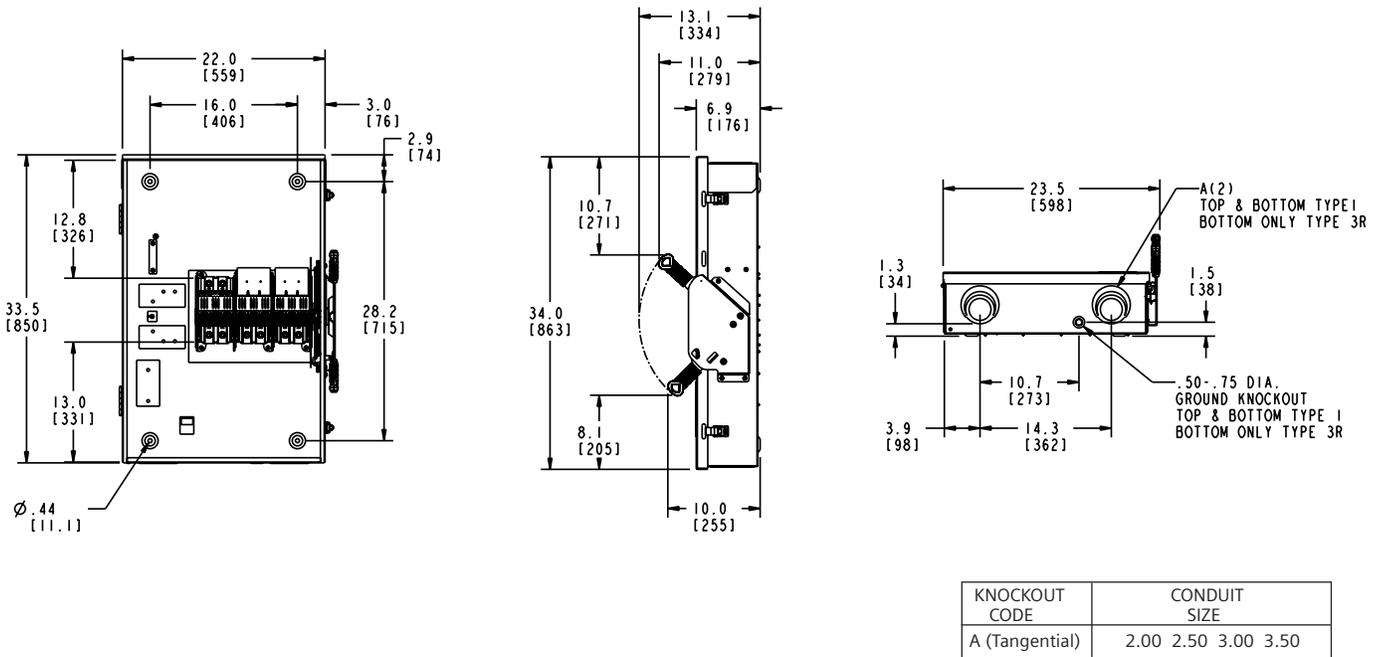
**Type 1 (Indoor)**  
200 Amp General and Heavy Duty

Figure 7



400 / 600 Amp General and Heavy Duty Non-Fusible

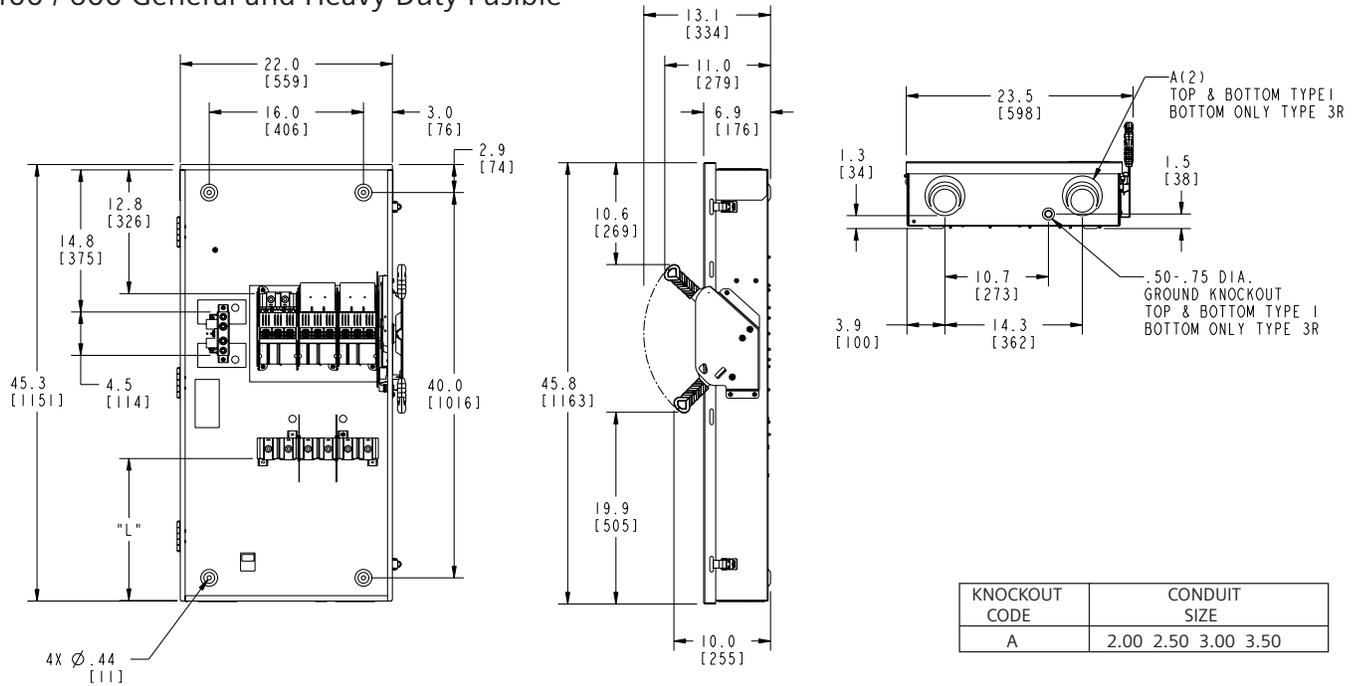
Figure 8



Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.  
 ① Dimensions shown apply to heavy duty switches only.

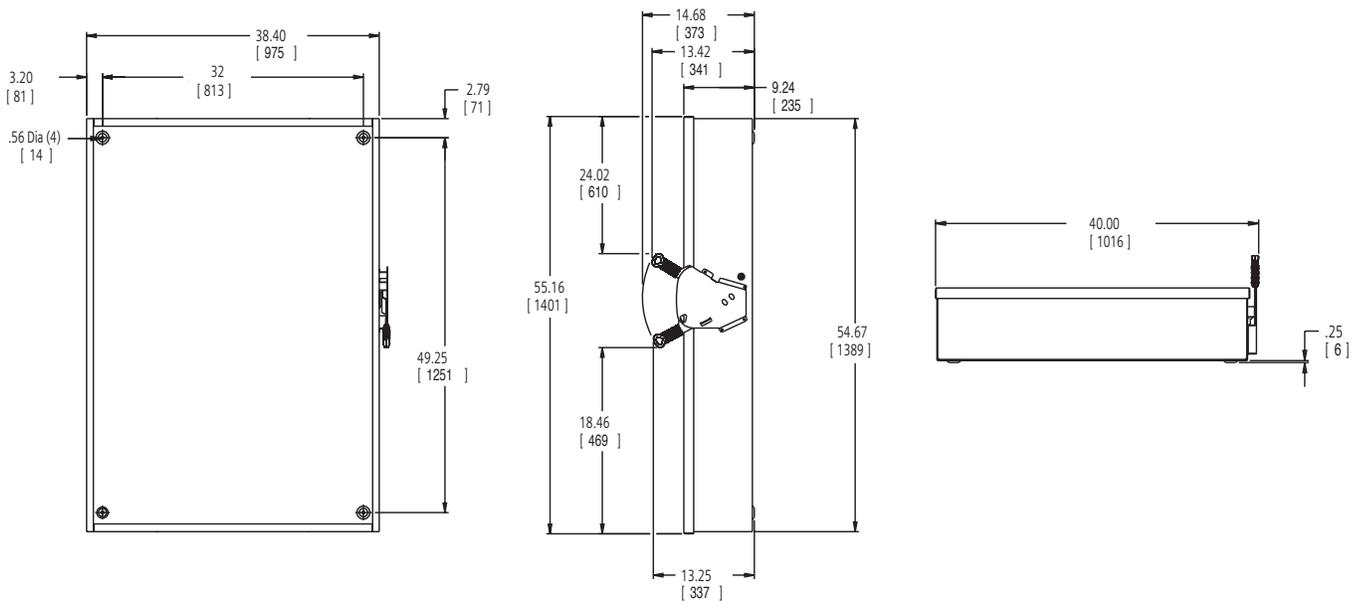
**Type 1 (Indoor)**  
**400 / 600 General and Heavy Duty Fusible**

Figure 9



**800 / 1200 Amp Heavy Duty Non-Fusible**

Figure 10



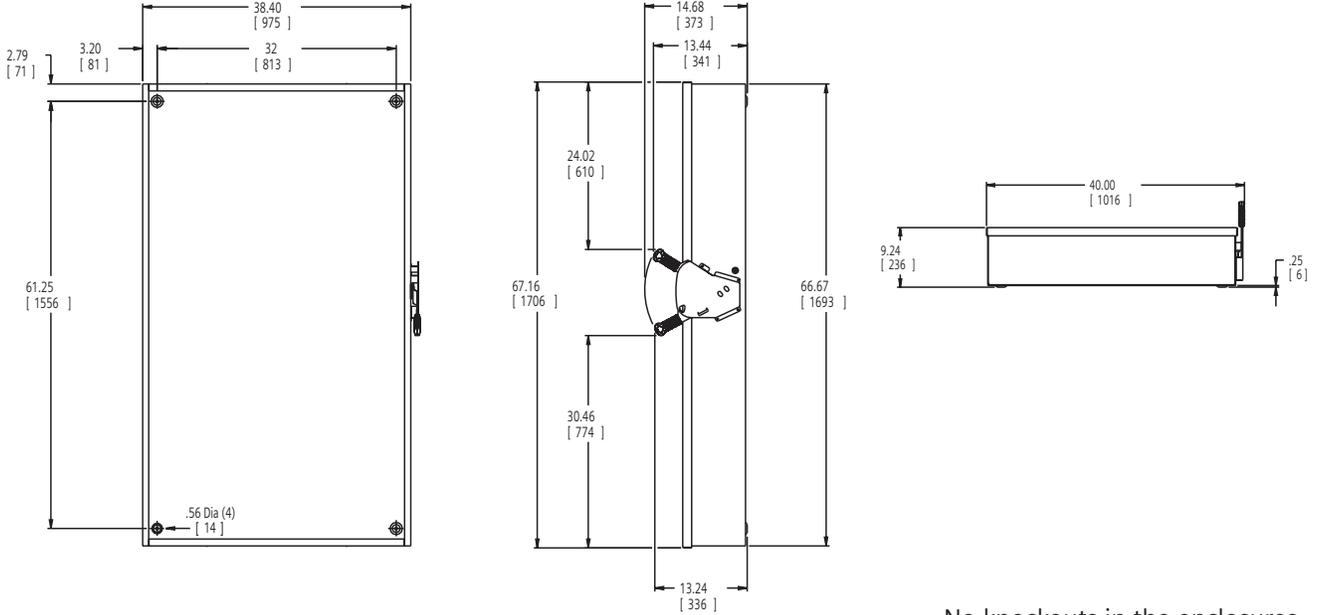
No knockouts in the enclosures.

Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.

# Detailed dimension drawings

**Type 1 (Indoor)**  
800 / 1200 Amp Heavy Duty Fusible

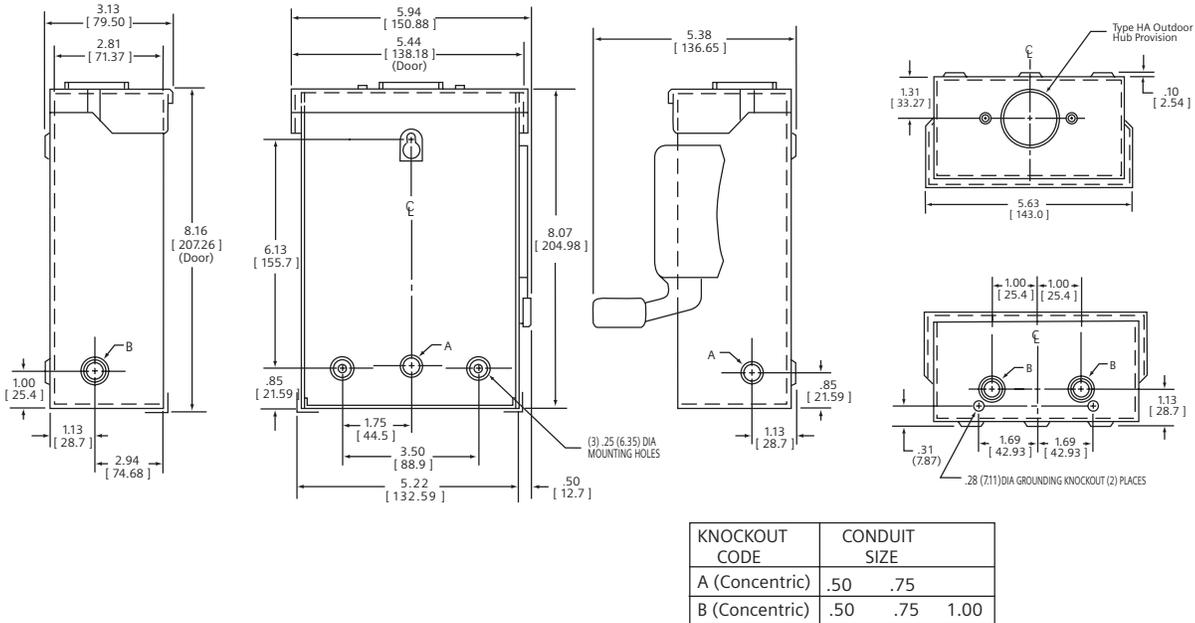
Figure 11



No knockouts in the enclosures.

**Type 3R (Outdoor)**  
30 Amp General Duty (2-Pole)

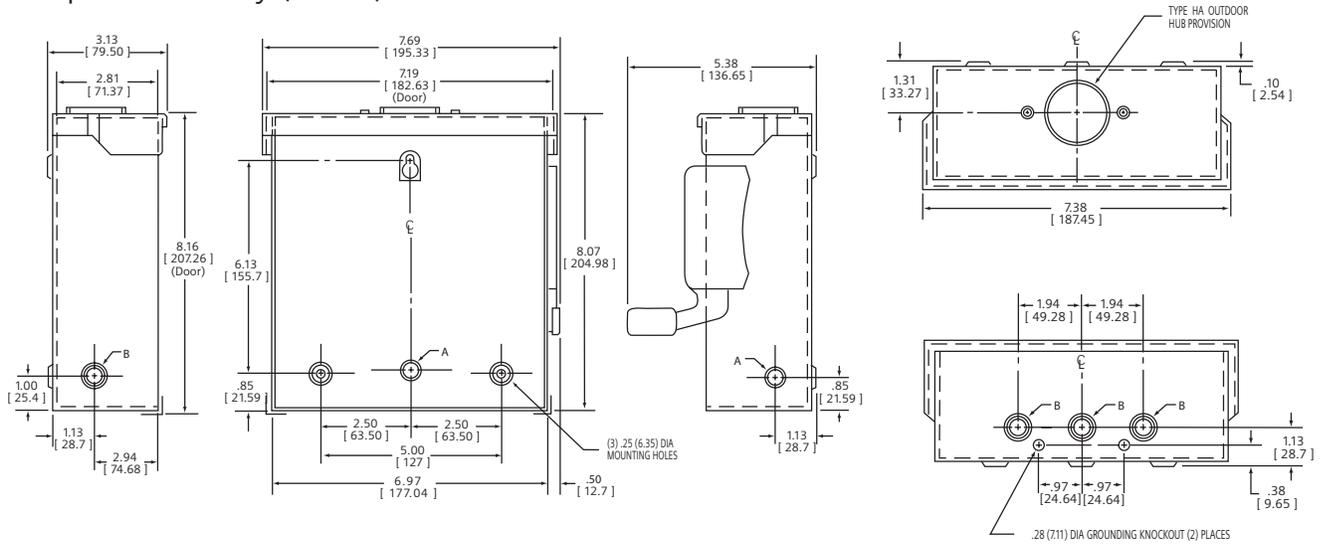
Figure 12



Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

**Type 3R (Outdoor)**  
**30 Amp General Duty (3-Pole)**

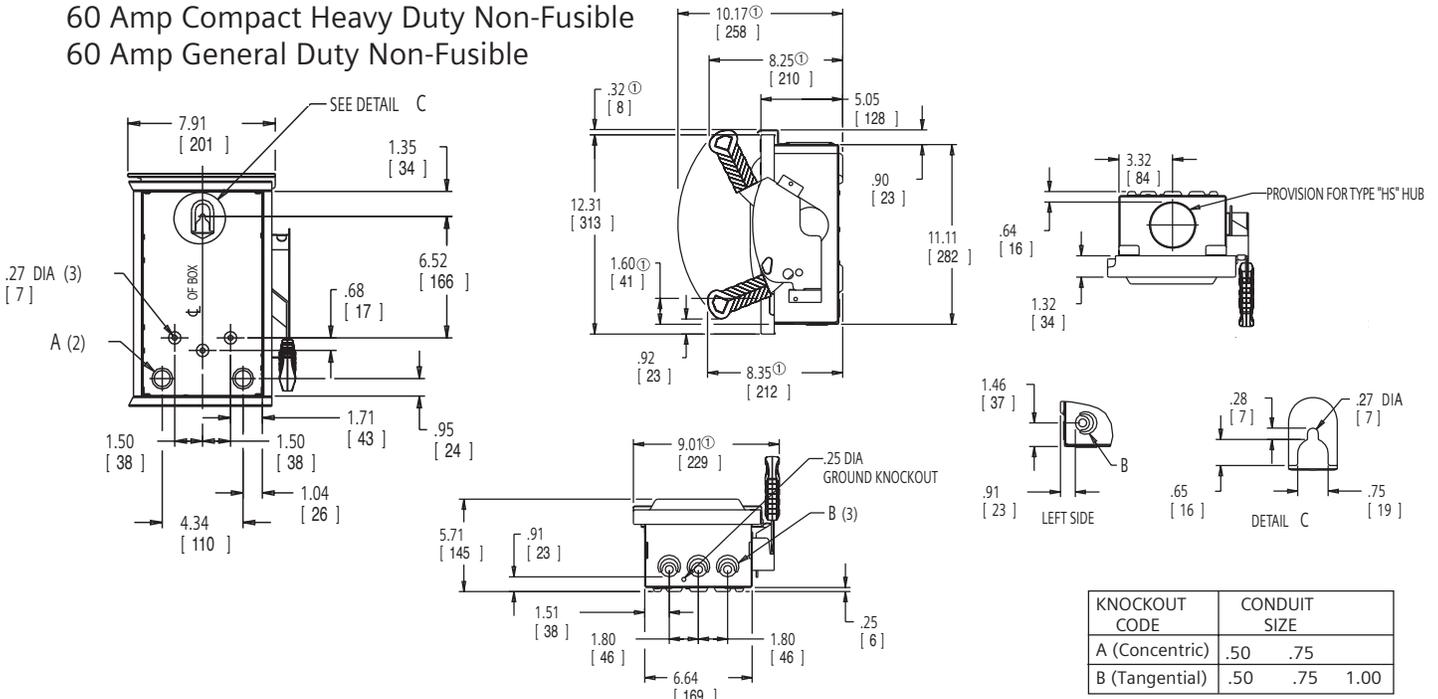
**Figure 13**



KNOCKOUT CODE	CONDUIT SIZE		
A (Concentric)	.50	.75	
B (Concentric)	.50	.75	1.00

**30 Amp Heavy Duty Non-Fusible**  
**60 Amp Compact Heavy Duty Non-Fusible**  
**60 Amp General Duty Non-Fusible**

**Figure 14**



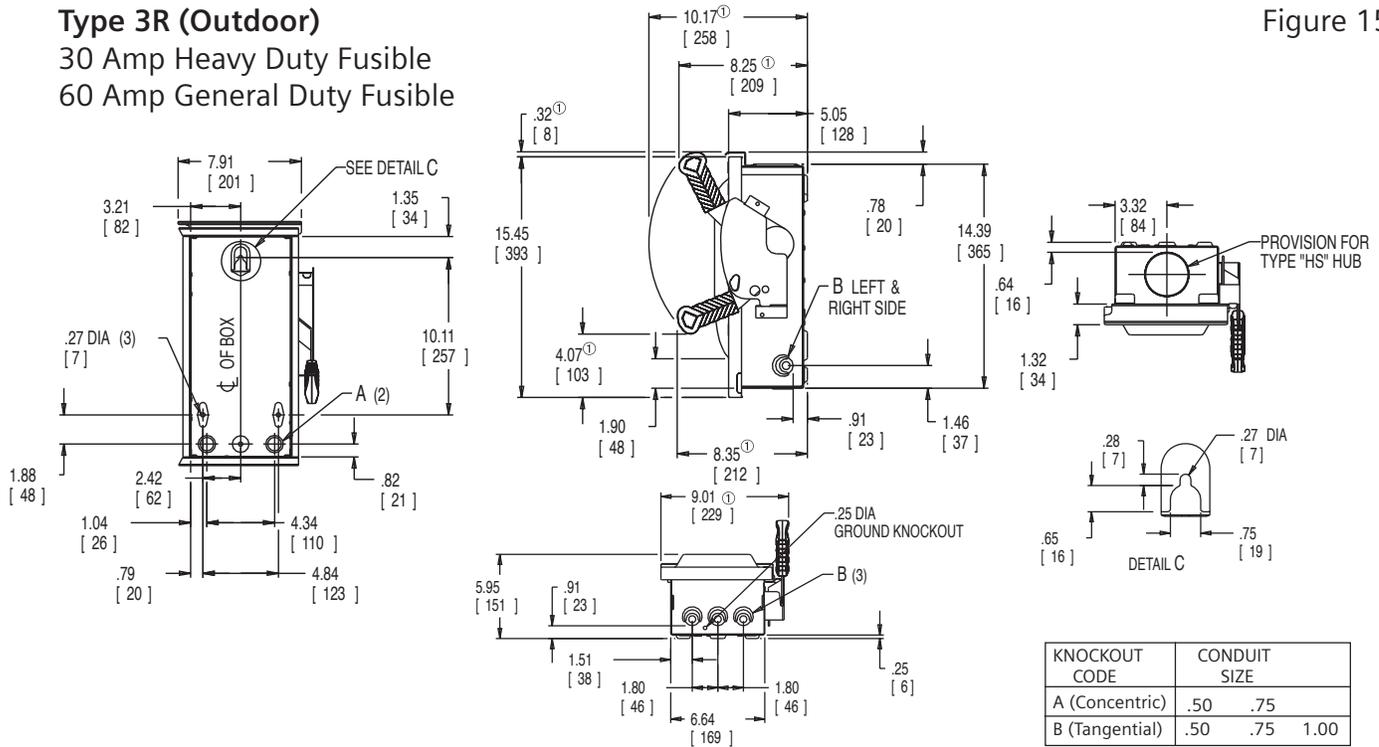
KNOCKOUT CODE	CONDUIT SIZE		
A (Concentric)	.50	.75	
B (Tangential)	.50	.75	1.00

Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.  
 ① Dimensions shown apply to heavy duty switches only.

# Detailed dimension drawings

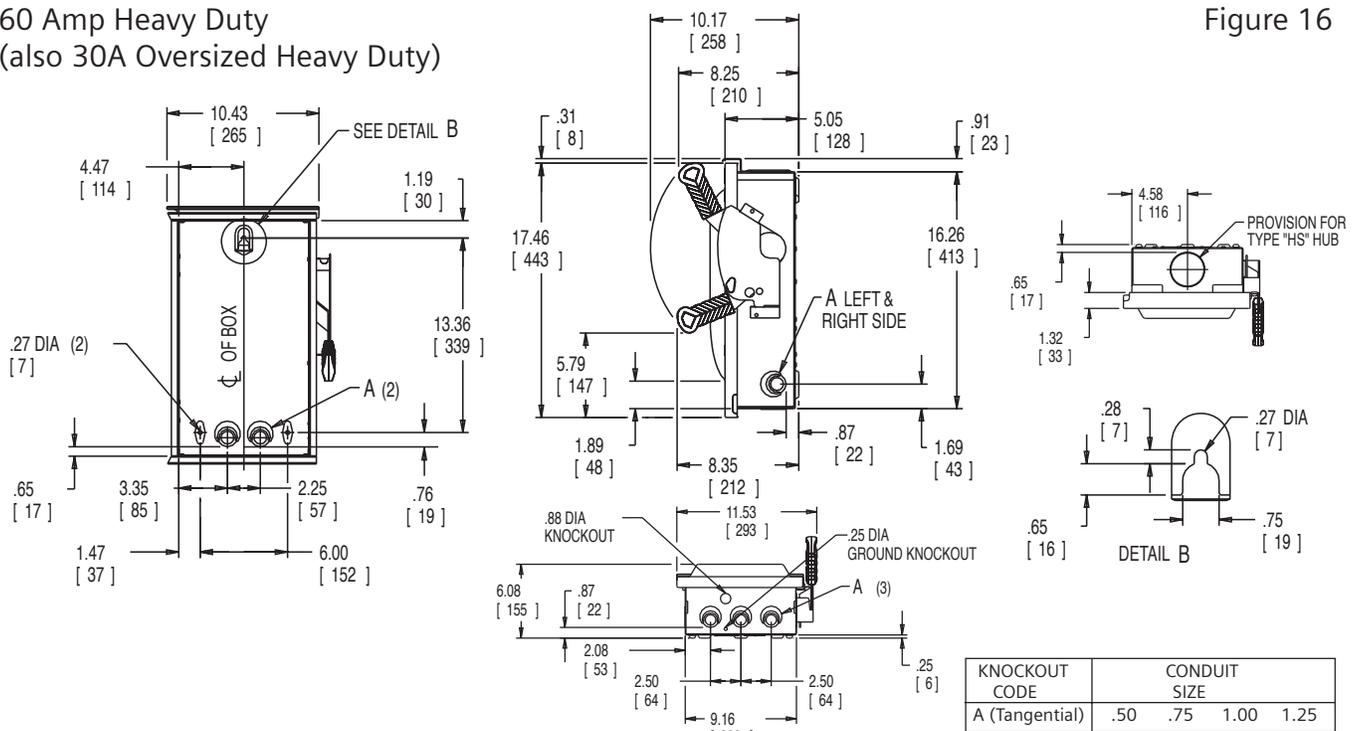
## Type 3R (Outdoor) 30 Amp Heavy Duty Fusible 60 Amp General Duty Fusible

Figure 15



## 60 Amp Heavy Duty (also 30A Oversized Heavy Duty)

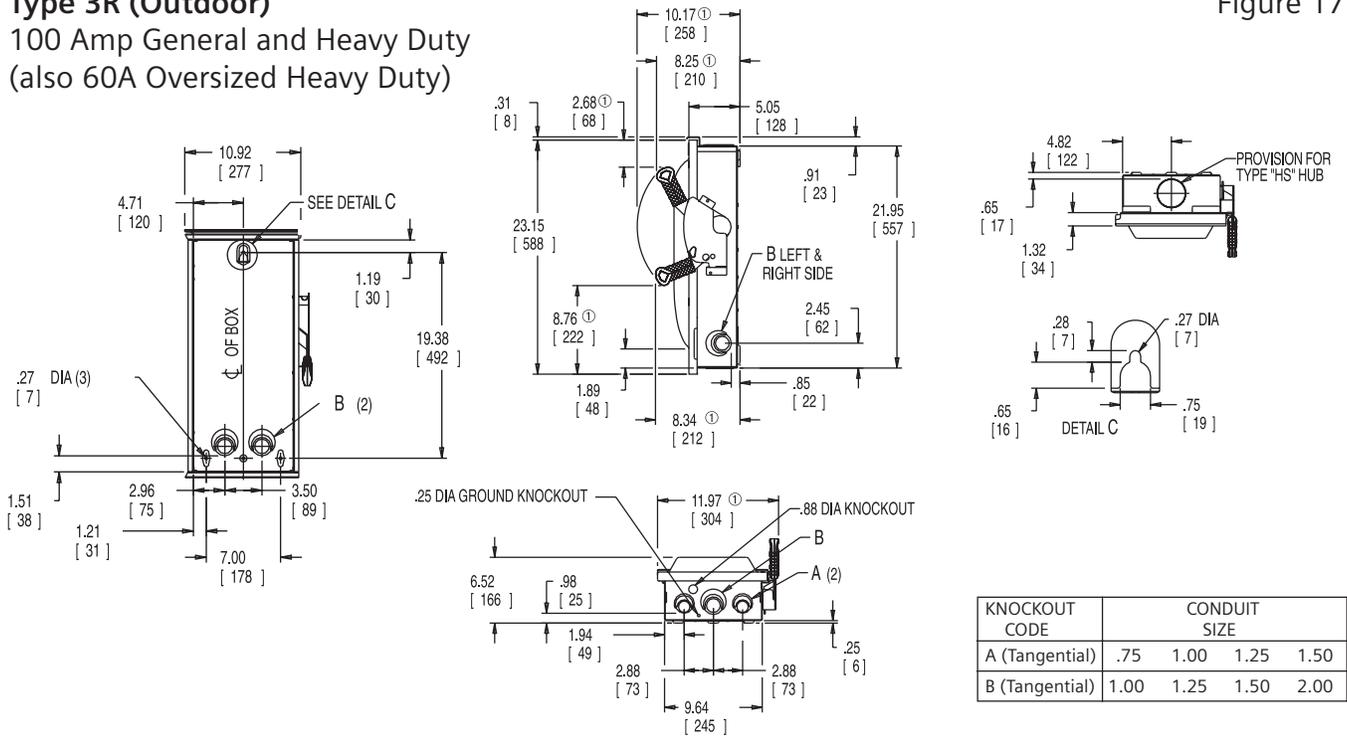
Figure 16



Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to ± 1/8 inch.  
① Dimensions shown apply to heavy duty switches only.

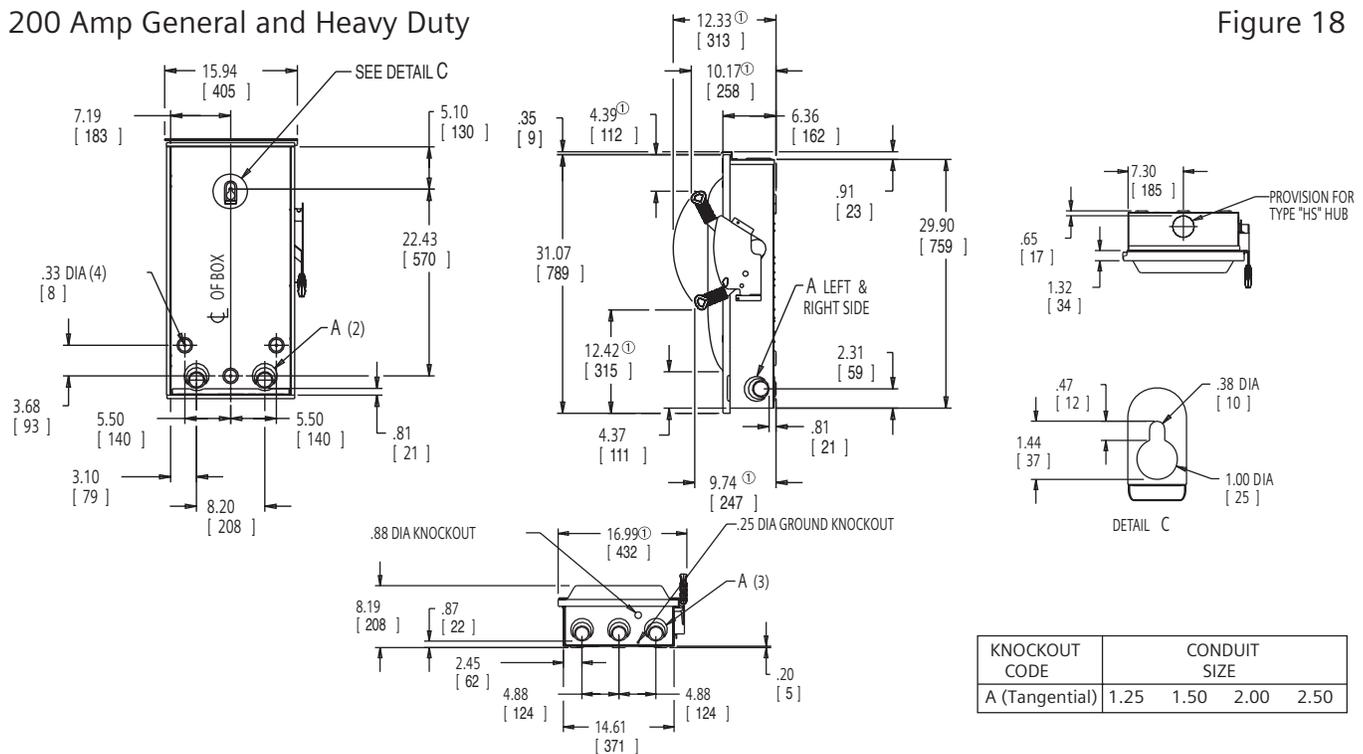
**Type 3R (Outdoor)**  
**100 Amp General and Heavy Duty**  
**(also 60A Oversized Heavy Duty)**

Figure 17



**200 Amp General and Heavy Duty**

Figure 18

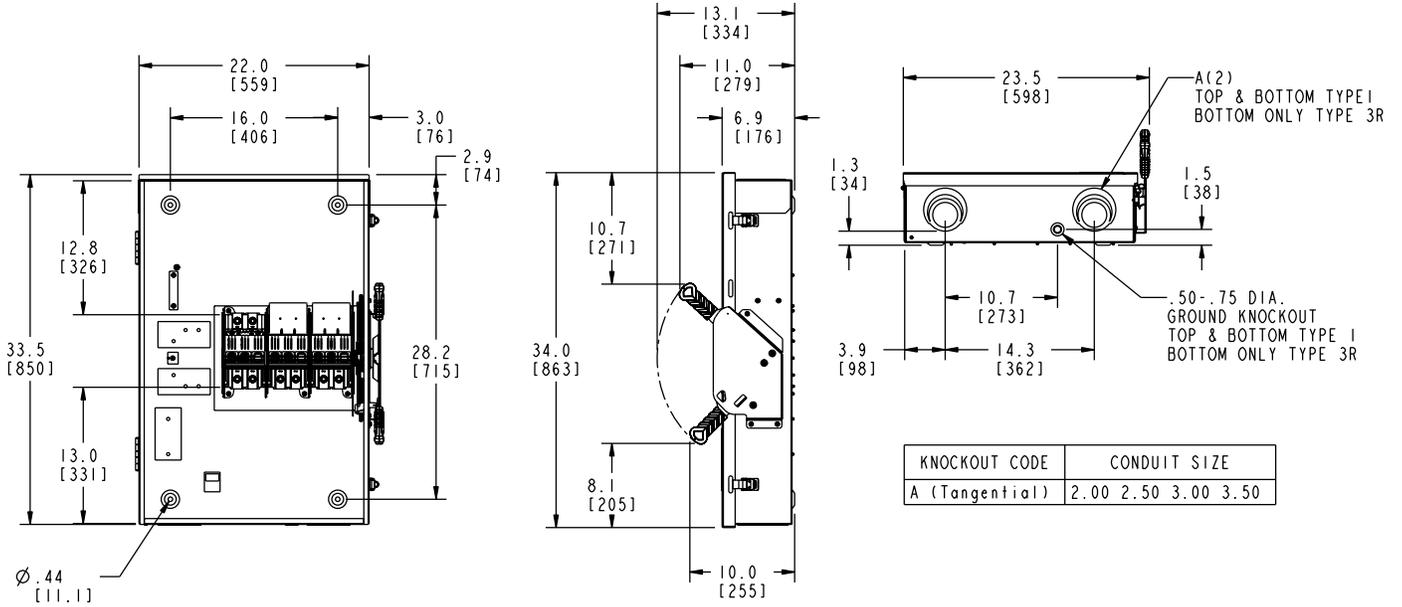


Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.  
 ① Dimensions shown apply to heavy duty switches only.

# Detailed dimension drawings

**Type 1 & 3R**  
400/600 Amp Heavy Duty Non-Fusible

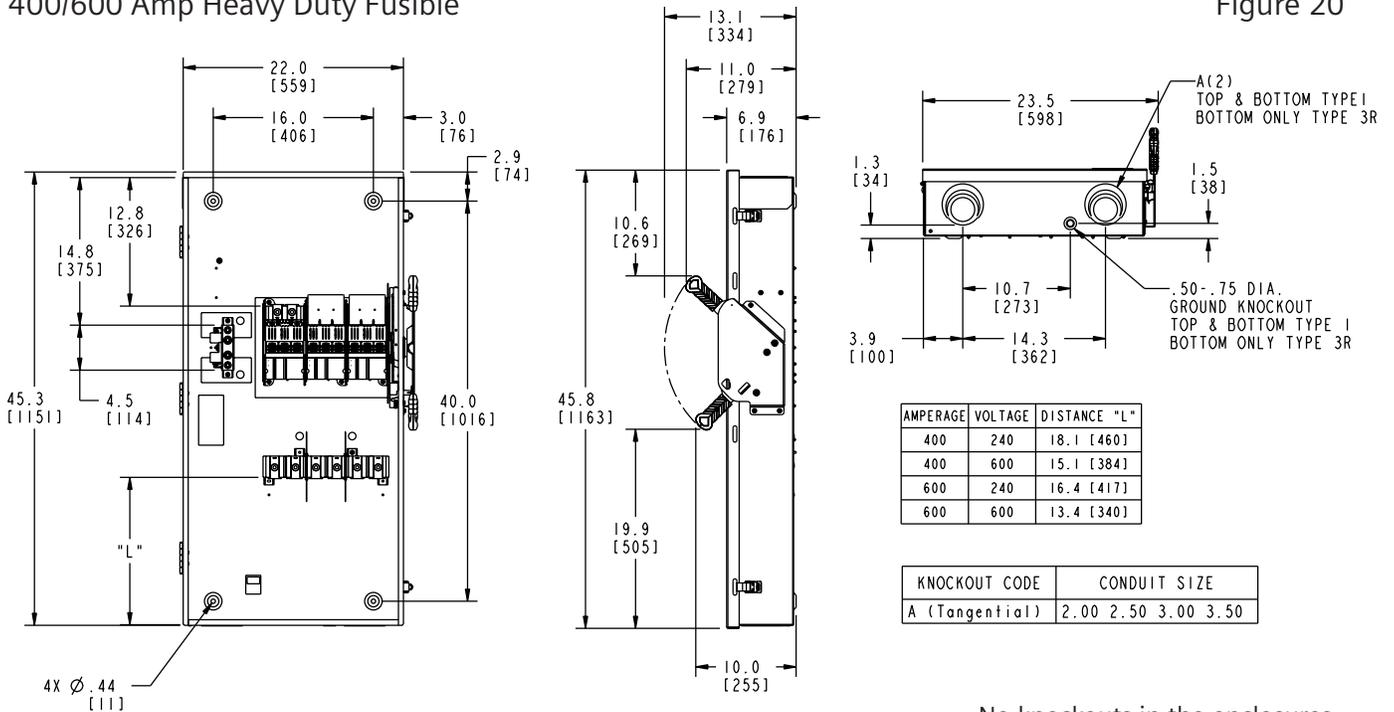
Figure 19



No knockouts in the enclosures.

400/600 Amp Heavy Duty Fusible

Figure 20



No knockouts in the enclosures.

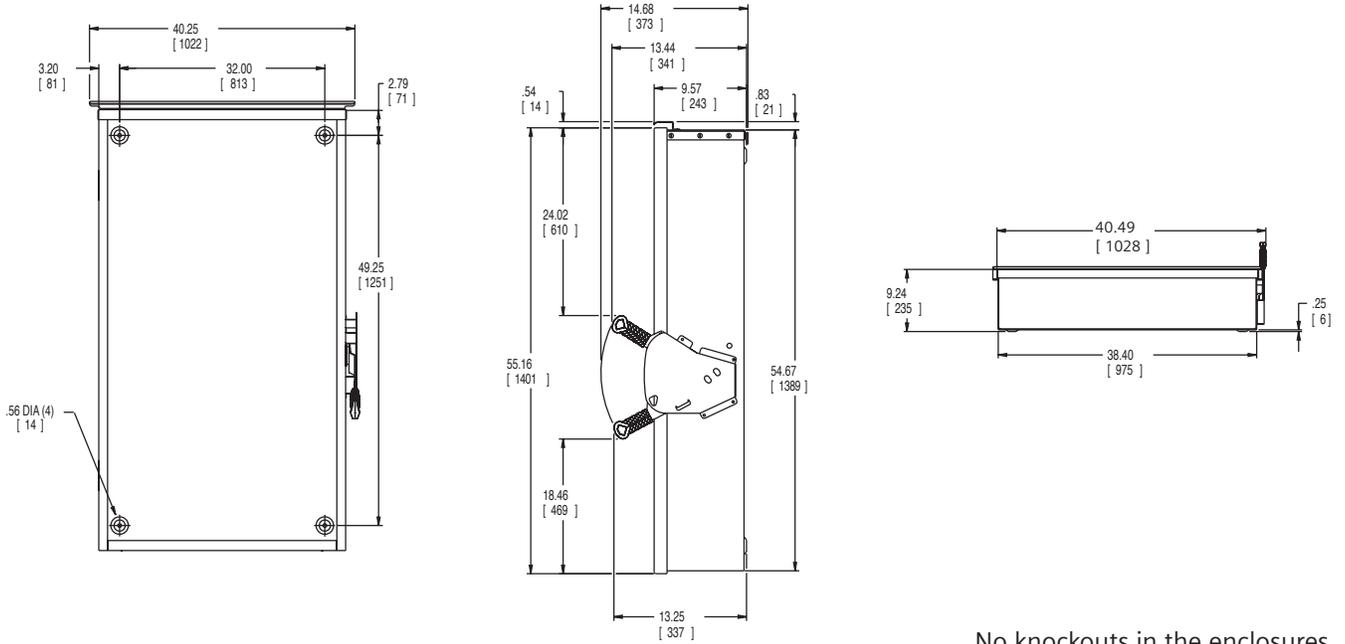
Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to ± 1/8 inch.

1) Enclosure dimensions unique for Type 4X and Type 12 switches at 400 and 600 Amps.

**Type 3R (Outdoor)**

**800 / 1200 General and Heavy Duty Non-Fusible**

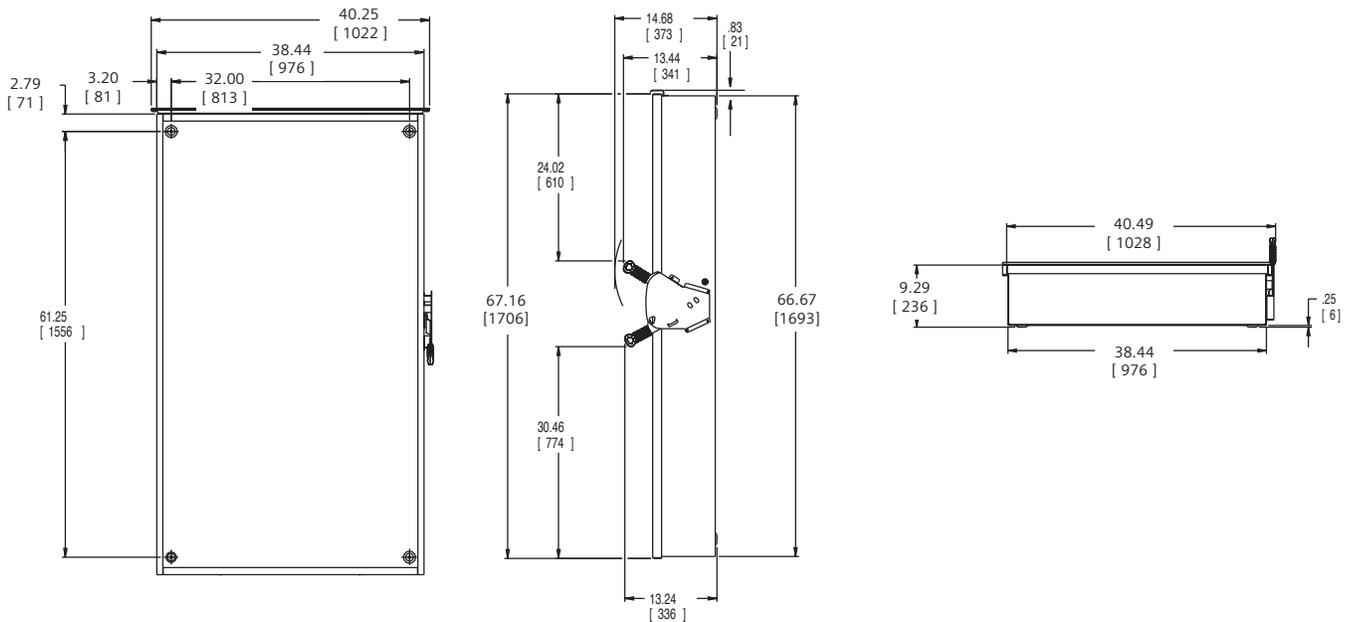
Figure 21



No knockouts in the enclosures.

**800 / 1200 Amp Heavy Duty Fusible**

Figure 22



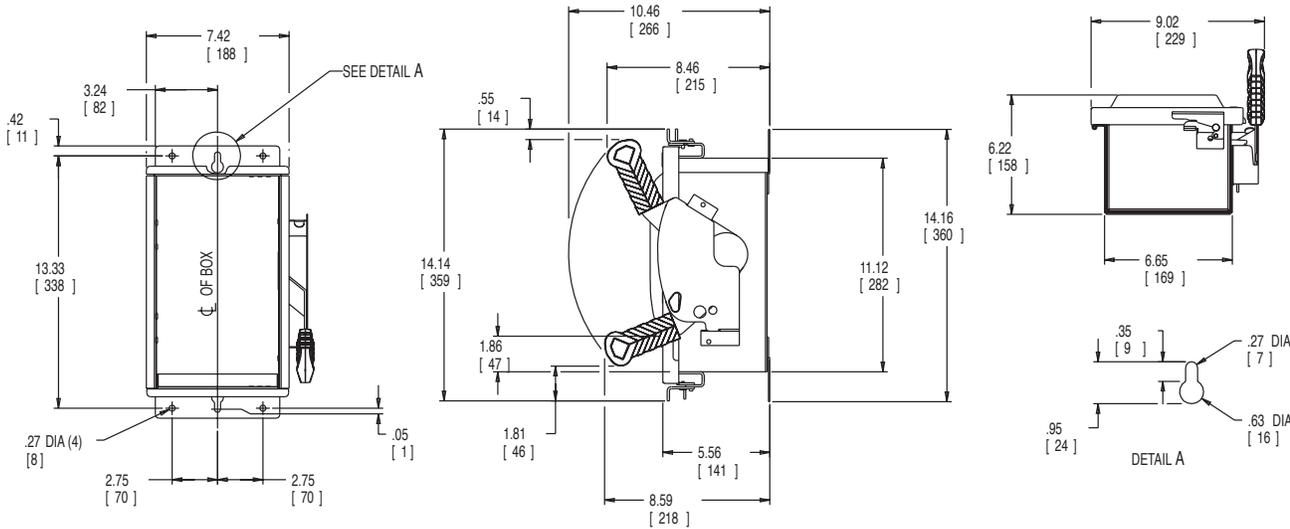
No knockouts in the enclosures.

Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to ± 1/8 inch.

# Detailed dimension drawings

**Type 4X (Stainless); 12 (Industrial)**  
 30 Amp Heavy Duty Non-Fusible  
 60 Amp Compact Heavy Duty Non-Fusible

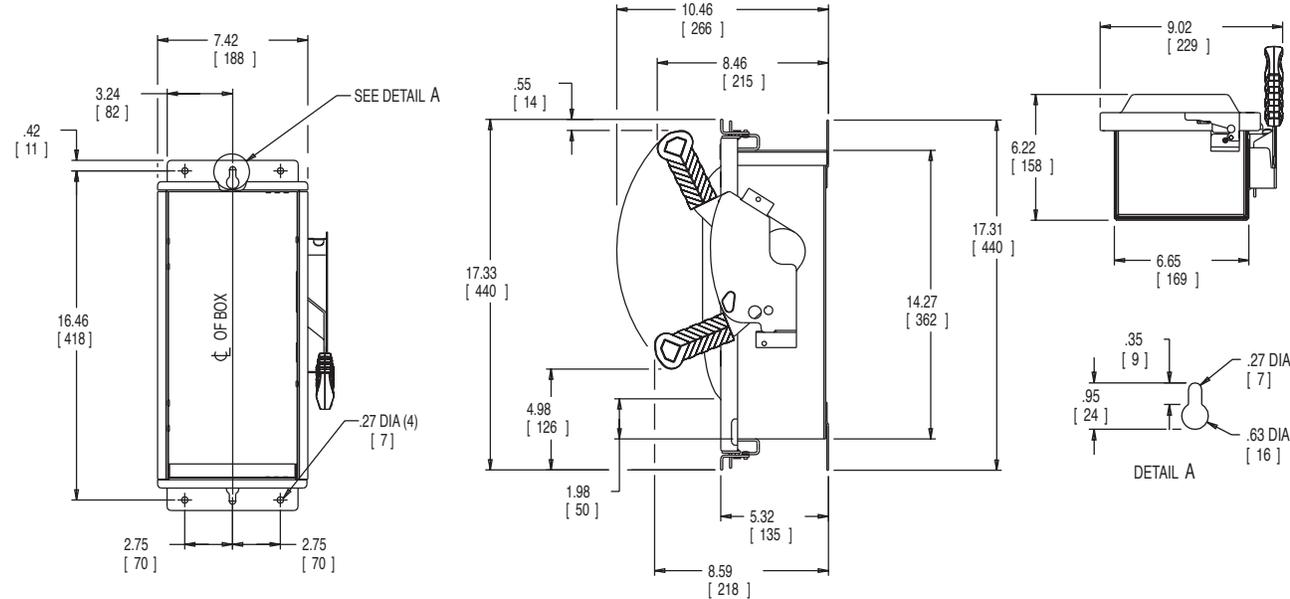
Figure 23



No knockouts in the enclosures.

30 Amp Heavy Duty Fusible

Figure 24

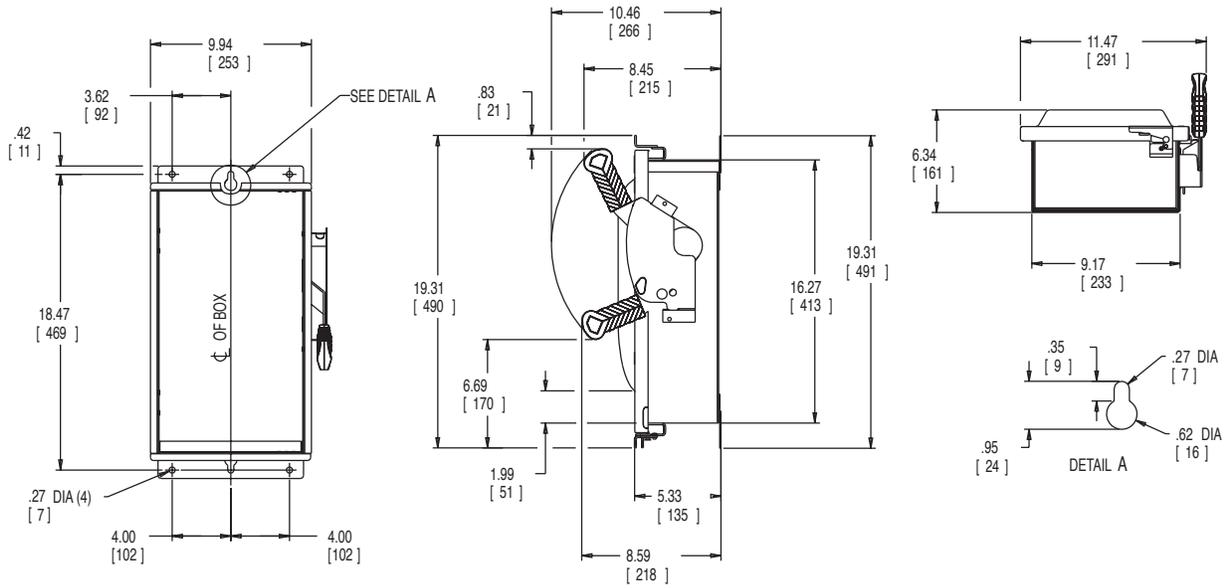


No knockouts in the enclosures.

Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.

**Type 4X (Stainless); 12 (Industrial)**  
**60 Amp Heavy Duty**

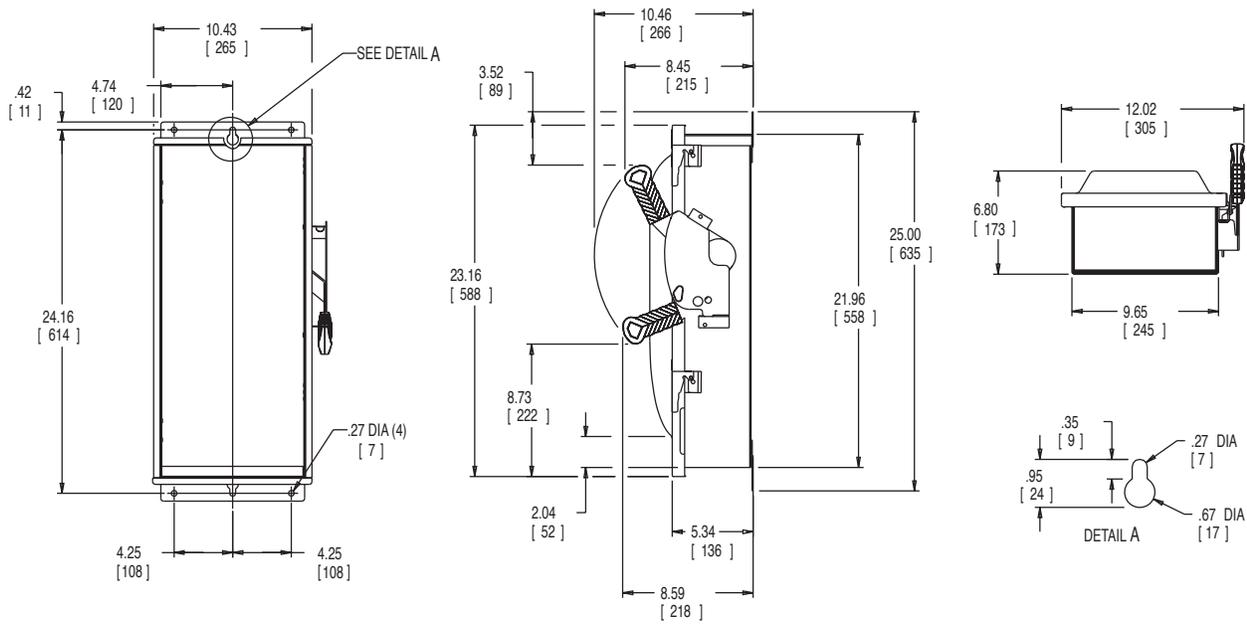
Figure 25



No knockouts in the enclosures.

**100 Amp Heavy Duty**

Figure 26



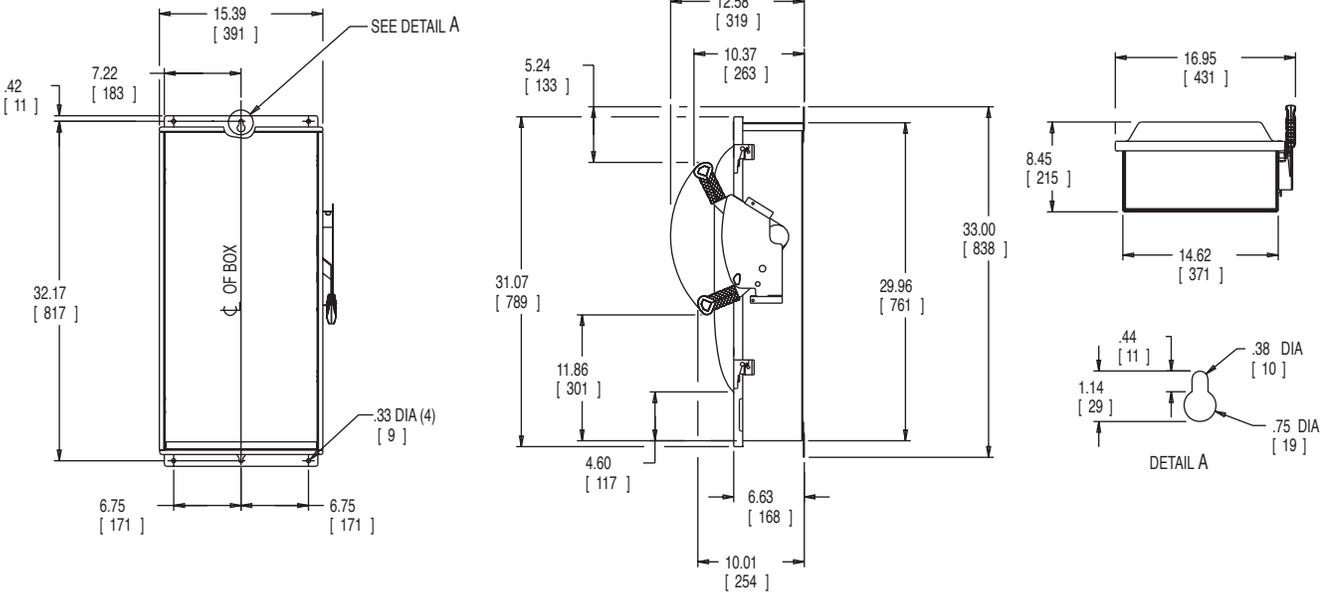
No knockouts in the enclosures.

Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to  $\pm 1/8$  inch.

# Detailed dimension drawings

**Type 4X (Stainless); 12 (Industrial)**  
**200 Amp Heavy Duty**

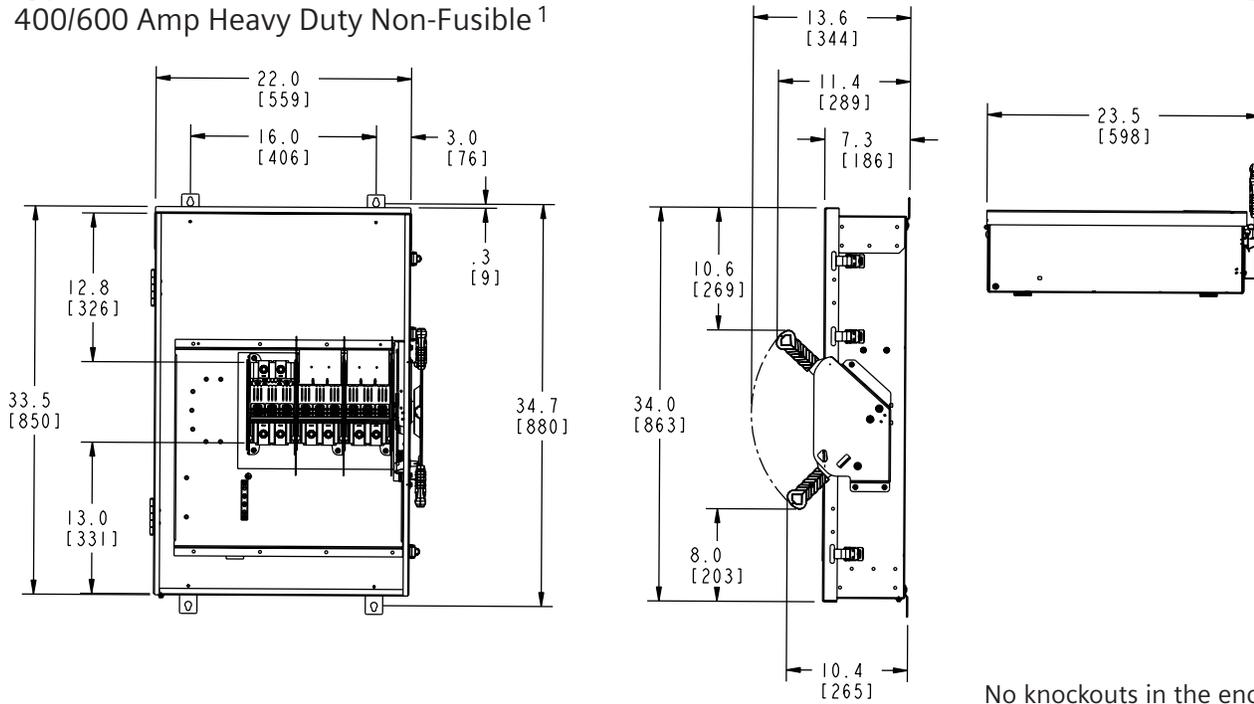
Figure 27



No knockouts in the enclosures.

**Type 4X (Stainless)**  
 400/600 Amp Heavy Duty Non-Fusible <sup>1</sup>

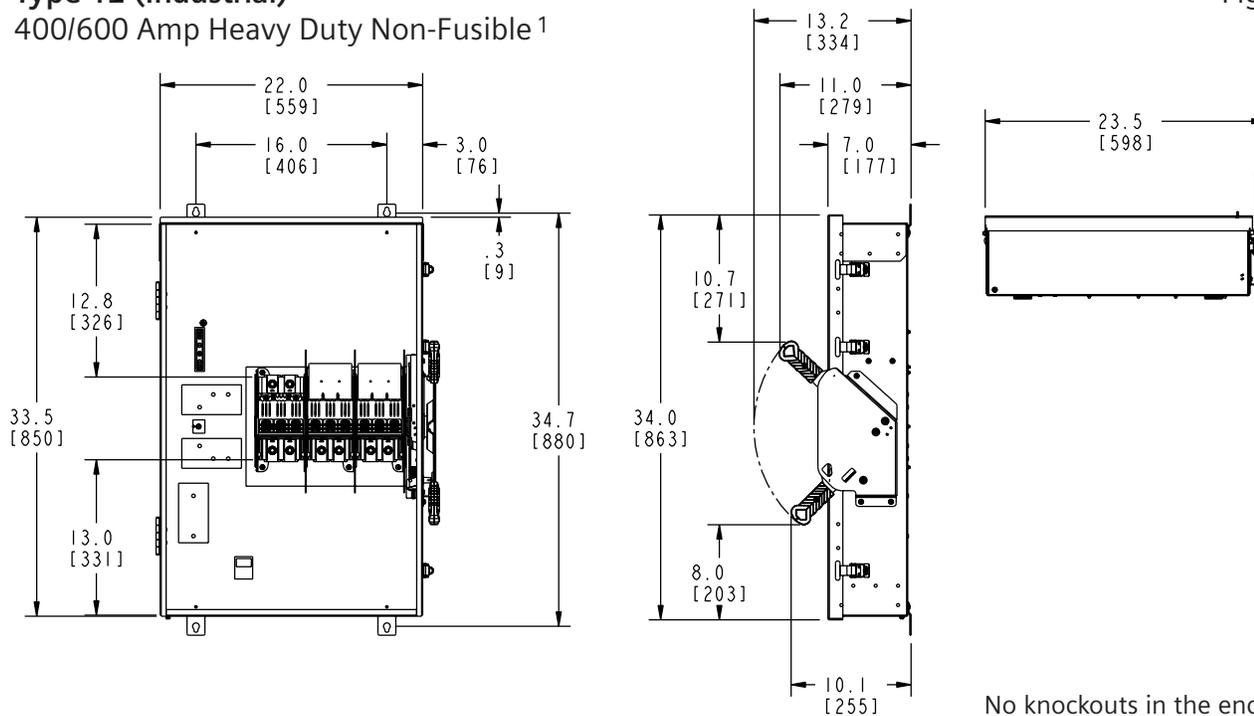
Figure 28



No knockouts in the enclosures.

**Type 12 (Industrial)**  
 400/600 Amp Heavy Duty Non-Fusible <sup>1</sup>

Figure 29



No knockouts in the enclosures.

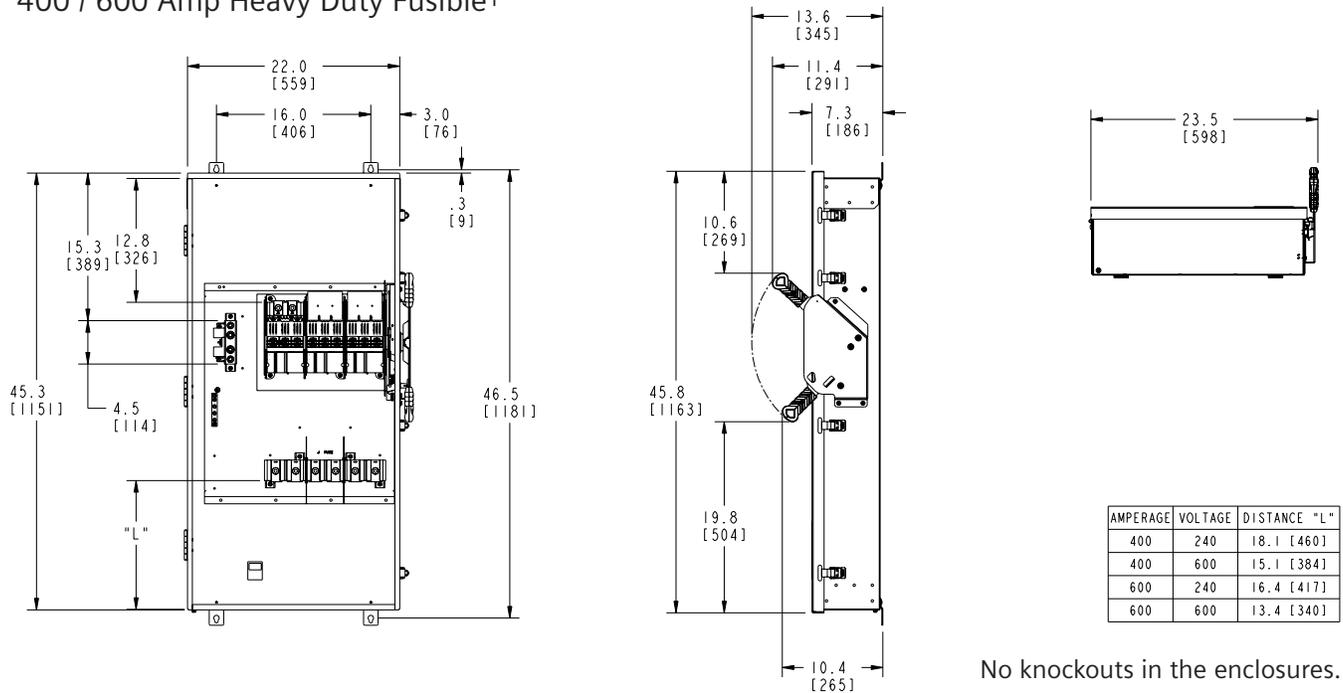
Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to ± 1/8 inch.

<sup>1</sup>) Enclosure dimensions unique for Type 4X and Type 12 switches at 400 and 600 Amps.

# Detailed dimension drawings

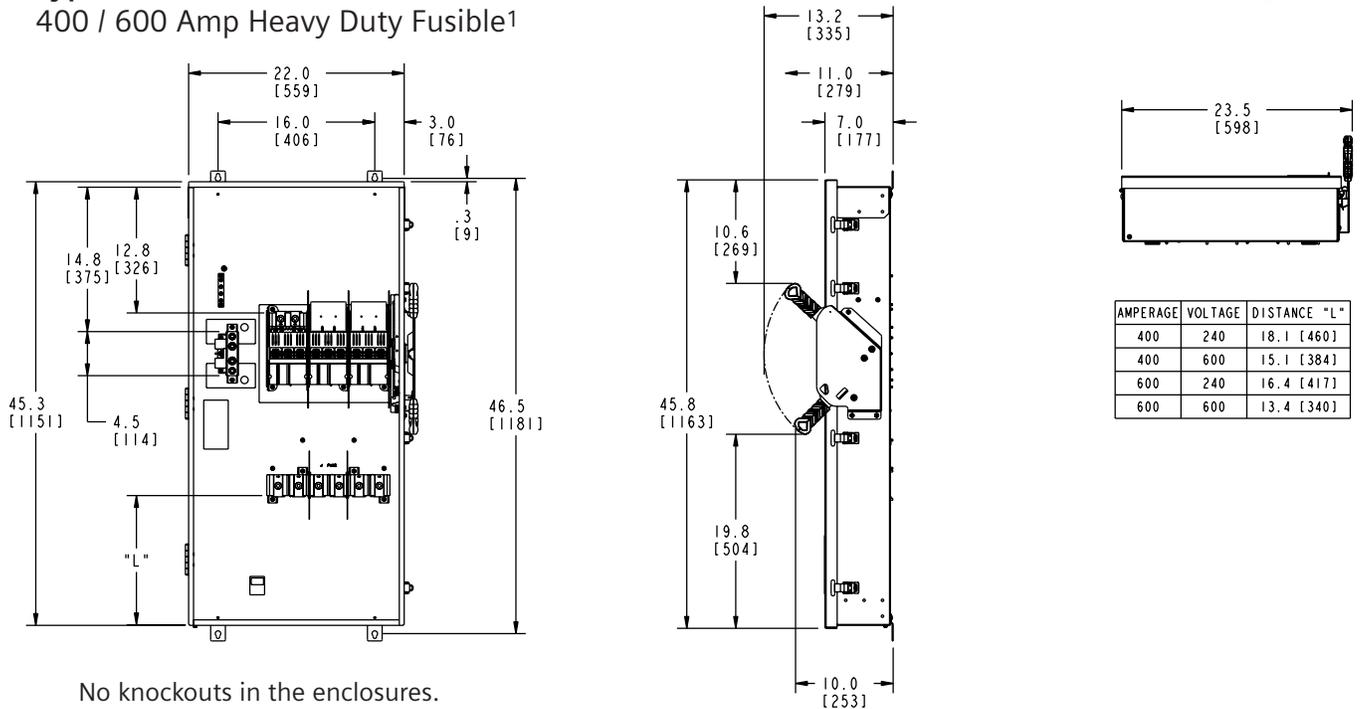
**Type 4X (Stainless)**  
400 / 600 Amp Heavy Duty Fusible<sup>1</sup>

Figure 30



**Type 12 (Industrial)**  
400 / 600 Amp Heavy Duty Fusible<sup>1</sup>

Figure 31



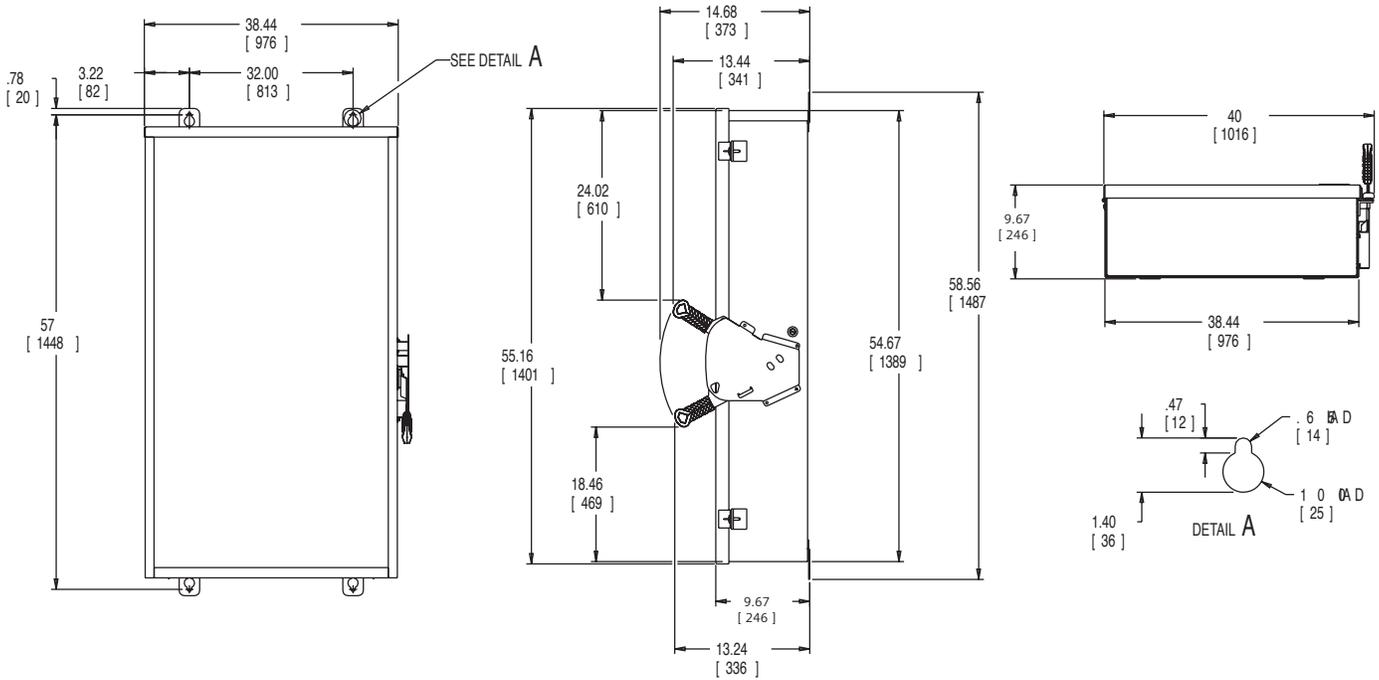
Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to ± 1/8 inch.

<sup>1</sup> Enclosure dimensions unique for Type 4X and Type 12 switches at 400 and 600 Amps.

# Detailed dimension drawings

**Type 4X (Stainless); 12 (Industrial)**  
 800 / 1200 Amp Heavy Duty Non-Fusible

Figure 32



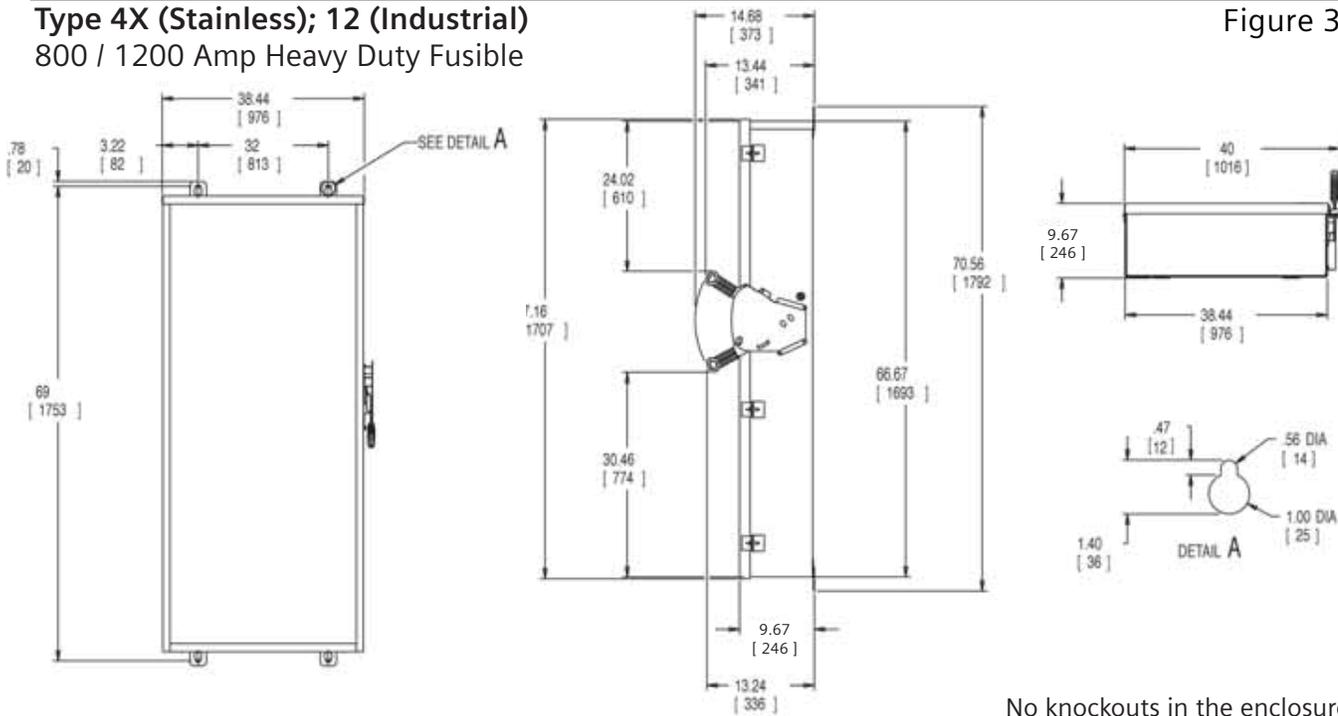
No knockouts in the enclosures.

Dimensions shown in inches and millimeters [ ].  
 Dimensions shown accurate to  $\pm 1/8$  inch.

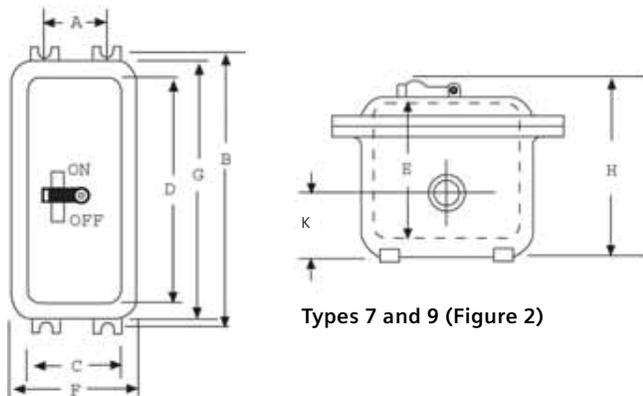
# Detailed dimension drawings

**Type 4X (Stainless); 12 (Industrial)**  
800 / 1200 Amp Heavy Duty Fusible

Figure 33



No knockouts in the enclosures.



Types 7 and 9 (Figure 2)

Dimensions shown in inches and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

Types 7 and 9 (Figure 2)

Breaker Type	Catalog Number	Mounting		Dimensions Command (inches)							Knockouts (4) Conduit Size	
				Inside			Outside				Std.	Max.
		A	B	C	D	E	F	G	H	K		
ED2, ED4, ED6	EA	5 1/2	13 1/8	5 15/16	10 3/4	5 7/16	9 7/16	14 1/4	6 9/16	1 5/8	1 1/4	1 1/4
HED4, HED6	EB	6	18	6 1/2	16	15 9/16	9 7/8	19 3/8	6 1 1/16	2	2	2
FXD6, FD6, HFD6, HFXD6, CFD6, JXD2(A), JXD6(A), JD6, SJD6(A)	EC2	10 1/4	22 5/8	11 3/4	20	6 1/2	15 3/8	23 7/8	8 1/4	2 3/4	2	2 1/2
HJD6, HJXD6(A), HHJD6	EC4	10 1/4	22 5/8	11 3/4	20	6 1/2	15 3/8	23 7/8	8 1/4	2 3/4	2 1/2	3
HHJXD6, SHJD6	EE	8 1/2	27 1/8	10 3/4	24 1/8	7 3/4	13 7/8	27 1/4	9 9/16	4	3	4
LXD6(A), LD6(A), SLD6(A), HLD6(A), HLXD6(A), HHLD6, HHLXD6, SHLD6	ED6	11 7/8	40 3/4	13 3/8	37 7/8	7 7/8	18 1/8	42 5/8	9 7/8	3 5/8	4	4

Figure 1: Type 1

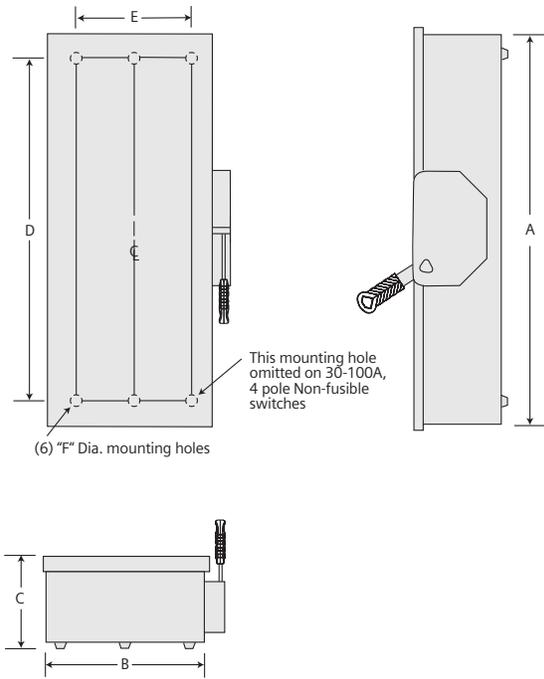
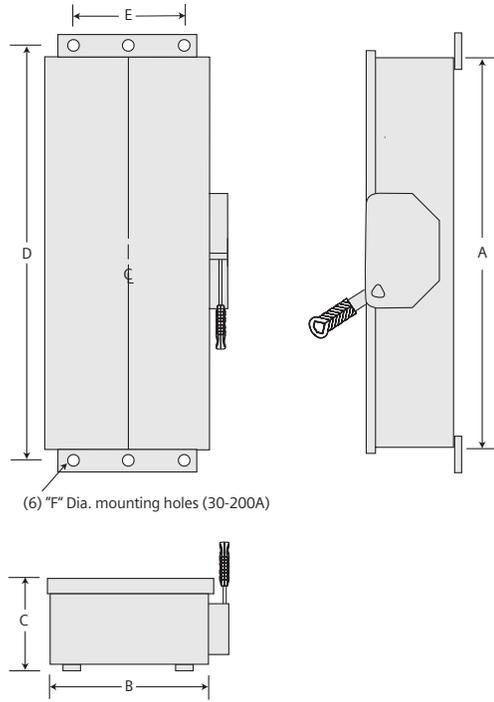


Figure 1: Type 12/3R and 4X



4 & 6 pole safety switch dimensions – inches (mm)

Catalog number	Enclosure			Mounting		
	A	B	C	D	E	F
<b>Figure 1, 4-Pole Fusible and Non-fusible, Type 1</b>						
HNF461	24.50 (622)	9.53 (242)	6.09 (155)	19.00 (483)	6.75 (171)	0.268 (7)
HF461	29.12 (740)	9.53 (242)	6.09 (155)	23.50 (597)	6.75 (171)	0.268 (7)
HNF462	24.88 (632)	11.50 (292)	6.09 (155)	19.00 (483)	9.38 (238)	0.268 (7)
HF462	33.53 (852)	11.50 (292)	6.09 (155)	27.50 (699)	9.38 (238)	0.268 (7)
HNF463	27.62 (702)	12.18 (309)	6.09 (155)	19.36 (492)	8.00 (203)	0.268 (7)
HF463	36.44 (926)	12.18 (309)	6.09 (155)	28.11 (714)	8.00 (203)	0.268 (7)
HNF464	36.00 (914)	19.12 (486)	6.42 (163)	30.88 (784)	15.00 (381)	0.44 (11)
HF464	49.48 (1257)	19.12 (486)	6.42 (163)	45.50 (1130)	15.00 (381)	0.44 (11)
<b>Figure 2, 4 &amp; 6-Pole Fusible Type 12/3R and 4X</b>						
HF461J, HF661J, HF661S	29.50 (622)	9.53 (242)	6.48 (165)	31.65 (804)	5.47 (139)	0.27 (7)
HF462J, HF662J, HF662S	33.53 (852)	11.50 (292)	6.48 (165)	35.69 (907)	8.00 (203)	0.27 (7)
HF463J, HF663J, HF663S	36.44 (926)	12.18 (309)	6.48 (165)	38.67 (982)	8.47 (215)	0.27 (7)
HF464J, HF664J, HF664S	49.48 (1257)	19.12 (486)	6.78 (172)	51.64 (1312)	13.44 (341)	0.33 (8)
<b>Figure 2, 4 &amp; 6-Pole Non-fusible Type 12/3R and 4X</b>						
HNF461J, HNF661J, HNF661S	24.50 (622)	9.53 (242)	6.48 (165)	26.65 (667)	5.47 (139)	0.27 (7)
HNF462J, HNF662J, HNF662S	24.88 (632)	11.50 (292)	6.48 (165)	27.03 (687)	8.00 (203)	0.27 (7)
HNF463J, HNF663J, HNF663S	27.54 (700)	12.18 (309)	6.48 (165)	29.77 (756)	8.47 (215)	0.27 (7)
HNF464J, HNF664J, HNF664S	36.00 (914)	19.12 (486)	6.78 (172)	38.16 (969)	13.44 (341)	0.33 (8)

Figure 1: Type 1 & 3R<sup>®</sup>

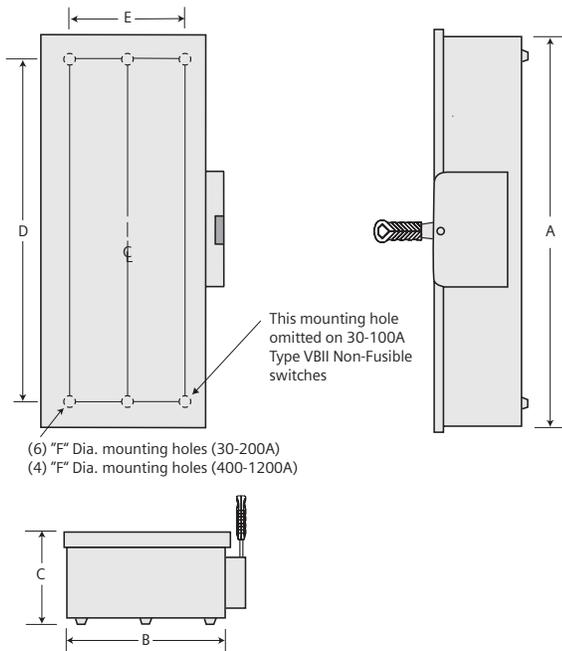
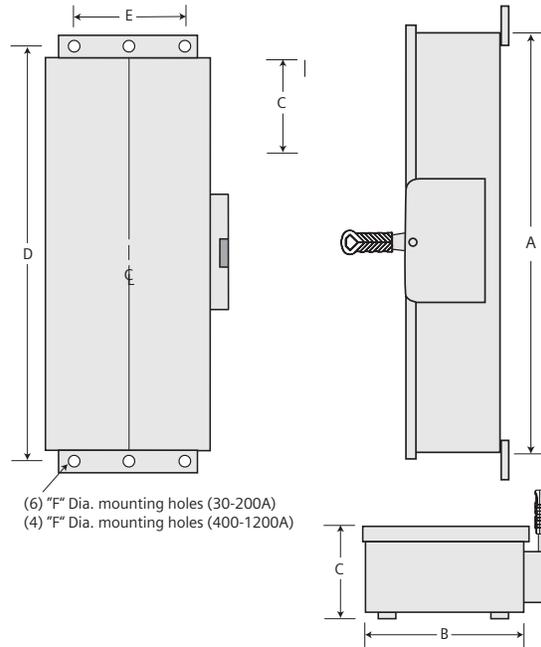


Figure 2: Type 4X & 12



**VBII design double throw dimensions – inches**

Catalog number	Enclosure			Mounting		
	A	B	C	D	E	F
<b>Figure 1 (30-1200A Type 1 &amp; 3R)</b>						
DTNF221, DTNF321, DTNF361, DTNF361R	24.50	9.53	6.09	19.00	6.75	0.268
DTF321, DTF321R, DTF361	29.12	9.53	6.09	23.50	6.75	0.268
DTNF222, DTNF322, DTNF362, DTNF362R	24.88	11.50	6.09	19.00	9.38	0.268
DTF322, DTF322R, DTF362	33.45	11.50	6.09	27.50	9.38	0.268
DTNF223, DTNF323, DTNF323R, DTNF363, DTNF363R, DTGNF223R, DTGNF223NR, DTGNF323R, DTGNF323NR	27.62	12.18	6.09	19.36	8.00	0.268
DTF323, DTF323R, DTF363, DTF363R	36.44	12.18	6.09	28.11	8.00	0.268
DTNF224, DTNF224R, DTNF324R, DTNF324, DTNF364R, DTGNF224R, DTGNF224NR, DTGNF324R, DTGNF324NR	36.00	19.12	6.42	31.00	15.00	0.44
DTF224, DTF224R, DTF324, DTF324R, DTF364, DTF364R	49.44	19.12	6.42	44.50	15.00	0.44
DTF325, DTF326, DTF365	73.54	28.22	9.44	65.50	16.00	0.56
DTNF225, DTNF225R, DTNF325, DTNF365, DTNF365R	57.71	28.22	9.44	49.75	16.00	0.56
DTNF326, DTNF366, DTNF366R	57.71	28.22	9.44	49.75	16.00	0.56
DTNF327, DTNF367, DTNF367R	71.65	41.60	9.44	63.70	32.00	0.56
DTNF368, DTNF368R	71.65	41.60	9.44	63.70	32.00	0.56
NFR451DTK <sup>①</sup> , NFR452DTK <sup>①</sup> , NFR453DTK <sup>①</sup>	24.63	11.63	4.78	21.50	9.25 <sup>①</sup>	0.25 <sup>①</sup>
NF454DTK <sup>②</sup> , NFR454DTK <sup>②</sup>	37.25	19.19	6.32	33.50	16.00 <sup>②</sup>	0.56 <sup>②</sup>
NF455DTK <sup>③</sup> , NF456DTK <sup>③</sup> , NF457DTK <sup>③</sup> , NFR455DTK <sup>③</sup> , NFR456DTK <sup>③</sup> , NFR457DTK <sup>③</sup>	63.31	27.00	8.88	58.50	22.25 <sup>②</sup>	0.56 <sup>②</sup>
<b>Figure 2 (30-200A Type 12 &amp; 4X)</b>						
DTNF361J, DTNF361S	24.42	9.65	6.48	26.65	5.47	0.27
DTNF362J, DTNF362S	24.80	11.61	6.48	27.03	8.00	0.27
DTNF363J, DTNF363S	27.54	12.29	6.48	29.77	8.47	0.27
DTNF364J, DTNF364S	35.93	19.24	6.78	38.16	13.44	0.33
NF355HDTK <sup>②</sup> , NF355SSDTK <sup>②</sup>	53.82	22.66	7.25	56.20	18.00	0.56
F353SSDTK <sup>②</sup> ③	37.00	11.62	5.50	39.50	9.00	0.26
F354SSDTK <sup>②</sup> ③	50.90	19.16	6.48	63.27	16.12	0.50
F355SSDTK <sup>②</sup> ③	74.50	25.00	8.92	76.69	20.25	0.56

① (3) Mounting holes supplied (1 at top).  
② (4) Mounting holes supplied.

③ These switches are not Type VBII design.  
④ Drip hood not shown but provided on Type 3R enclosures.  
Note: For inches/ millimeters conversion, multiply inches by 25.4.

# Replacement parts



HBB612



HNB623



HM6123



HFB656



HFB612



HH6123

Ampere rating	Line base	Load base	Handle/Handle guard		Mechanism assembly	Lugs
			General duty	Heavy duty		
<b>30A General Duty 2- and 3-Pole Fusible and Non-fusible ⑤</b>						
<b>240V Max</b>						
30 Fused, 2-Pole	W410472A	–	–	–	–	– ①
30 Fused, 3-Pole	W410473A	–	–	–	–	– ①
30 Non-fused	W410473B	–	–	–	–	– ①
<b>Fusible 2 and 3-Pole 60-600A General Duty &amp; 30-600A Heavy Duty ⑤ ⑥</b>						
<b>240V Max</b>						
30 HD 240V	HFB21②	HBB21②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 GD	HFB612 ②	HBB612 ②	GH223	–	HM6123	HL612 ①
60 HD 240V ⑩	HFB22②	HBB22 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
100	HFB63②	HBB63 ②	GH223	HH6123 ⑦	HM6123 ⑦	HL63 ①
200	HFB64 ②	HBB64 ②	GH24	HH64 ⑦	HM64 ⑦	HL64 ①
400	HFB65A ③ ④	HBB65A ③ ④	HH656A	HH656A ⑦	HM656A	HL65678 ④
600	HFB66A ③ ④	HBB66A ③ ④	HH656A	HH656A ⑦	HM656A	HL65678 ④
800	HFB67A ② ④	HBB67A ② ④	–	HH65678 ⑦	HM67A	HL67A ④ ⑨
1200	HFB68 ④	HBB68 ④	–	HH68 ⑦	HM678	⑨
<b>Fusible 3-Pole Heavy Duty ⑤ ⑧</b>						
<b>600V Max</b>						
30 600V	HFB612 ②	HBB612 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 600V	HFB62②	HBB62 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60A Oversized	HFB623 ②	HBB623 ②	–	HH6123	HM6123	–
100	HFB63 ②	HBB63 ②	–	HH6123 ⑦	HM6123 ⑦	HL63 ①
200	HFB64 ②	HBB64 ②	–	HH64 ⑦	HM64 ⑦	HL64 ①
400	HFB65A ③ ④	HBB65A ③ ④	HH656A	HH656A ⑦	HM656A	HL65678 ④
600	HFB66A ③ ④	HBB66A ③ ④	HH656A	HH656A ⑦	HM656A	HL65678 ④
800	HFB67A ② ④	HBB67A ② ④	–	HH65678 ⑦	HM67A	HL67A ④ ⑨
1200	HFB68 ④	HBB68 ④	–	HH68 ⑦	HM678	⑨
<b>Non-Fusible 3-Pole 60-600A General Duty and 30-600A Heavy Duty ⑤ ⑧</b>						
<b>600V Max</b>						
30 HD	HNB612 ②	–	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 GD	HNB612 ②	–	GH223	–	HM6123	HL612 ①
60 HD ⑩	HNB623 ②	–	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
100 ⑪	HNB623 ②	–	GH223	HH6123 ⑦	HM6123 ⑦	HL63 ①
200	HNB64 ②	–	GH24	HH64 ⑦	HM64 ⑦	HL64 ①
400	HNB656A ③ ④	–	HH656A	HH656A ⑦	HM656A	HL65678 ④
600	HNB656A ③ ④	–	HH656A	HH656A ⑦	HM656A	HL65678 ④
800	HNB67A ② ④	–	–	HH65678 ⑦	HM67A	HL67A ④ ⑨
1200	HNB68 ② ④	–	–	HH68 ⑦	HM678	⑨

① Three lugs included in kit.

② Includes lugs.

③ Lugs are not included.

④ One lug per kit.

⑤ One per switch required unless otherwise noted.

⑥ One required per pole.

④ For type 4 / 4X stainless steel switches add "S" to end of catalog number.

⑤ For replacement door for heavy duty switches add "DOOR" to end of switch catalog number.

⑥ Lugs included with line and load bases.

⑦ Also for oversized 30A HD switches.

⑧ Also for oversized switch HNF362RL.

# Fuse application and selection data

Siemens enclosed safety switches are designed for fuse versatility. Although Siemens is not a manufacturer of fuses, once the type of fuse needed for a particular application is determined, it's easy to select an appropriate switch.

The proper fuse type for the application is selected using the following parameters:

- Voltage requirements
- Conductor ampacity
- Horsepower requirements
- Maximum available RMS fault-current
- UL fuse class when specified

The compatible fusible safety switch is selected following these parameters:

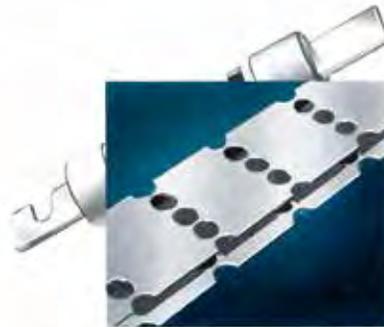
- System voltage requirements
- Fuse amp ratings
- Available fault current
- UL fuse class
- Environmental conditions
- Number of poles required



## One-Time Fuses

One-time fuses are standard for use in situations calling for 1200 amperes or less with maximum voltages for 250 or 600 volts. Specially designed, current carrying links are connected to contact pieces at the ends of the enclosure. When an overload occurs, the circuit quickly opens and the arc is quenched by granular insulating material that surrounds the current carrying links.

Available in all classes.



## Current Limiting Fuses

This design offers the highest degree of circuit protection among fuses. Inside, usually copper or silver alloy links are embedded in pure quartz sand between heavy copper end blocks. The special design is fast-acting and interrupts during the first half-cycle of a fault. This causes a limitation of both fault peak current and let-through current.

Available in Classes J, L, R and T.



## Dual-element Time-delay Fuses

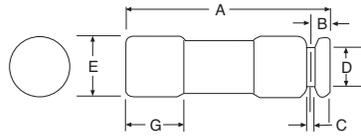
Dual-element fuses may have time delay designation since these fuses employ two distinctly separate types of elements. One provides overload protection with time delay. (UL states that time delay means having a 10-second operating delay at 500 percent of fuse label rating.) The second provides short circuit protection similar to a single-element fuse. Dual-element fuses are most frequently used on motor loads.

# Fuse application and dimensions

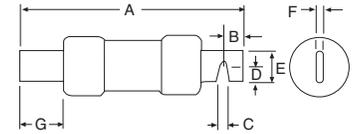
## Class R and H fuses

Class R application: Over-current and short-circuit protection of motors and transformers, service entrance equipment, feeder and branch circuits.  
(General Purpose Protection)

Class R rejection: A UL Class R fuse kit is required that rejects lower-rated fuses (H and K).



Ferrule type 0-60A



Blade type 61-600A

## Class H fuse dimensions

Ampere rating	250 Volts							600 Volts						
	A	B	C	D	E	F	G	A	B	C	D	E	F	G
0-30	2	-	-	-	9/16	-	1/2	5	-	-	-	13/16	-	17/32
35-60	3	-	-	-	13/16	-	21/32	5 1/2	-	-	-	1 1/16	-	21/32
65-100	5 7/8	-	-	-	3/4	1/8	1	7 7/8	-	-	-	3/4	1/8	1
110-200	7 1/8	-	-	-	1 1/8	3/16	1 3/8	9 5/8	-	-	-	1/8	3/16	1 3/8
225-400	8 5/8	-	-	-	1 5/8	1/4	1 7/8	11 5/8	-	-	-	1 5/8	1/4	1 7/8
450-600	10 3/8	-	-	-	2	1/4	2 1/4	13 3/8	-	-	-	2	1/42	1/4

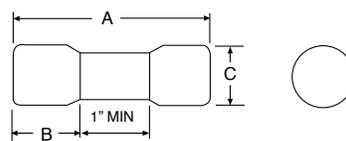
## Class R fuse dimensions

Ampere Rating	250 Volts							600 Volts						
	A	B	C	D	E	F	G	A	B	C	D	E	F	G
0-30	2	5/32	5/64	3/8	9/16	-	1/2	5	3/16	3/32	5/8	13/16	-	17/32
35-60	3	3/16	3/32	5/8	13/16	-	21/32	5 1/2	1/4	3/32	7/8	1 1/16	-	21/32
61-100	5 7/8	3/16	9/32	23/64	3/4	1/8	1	7 7/8	1/2	9/32	23/64	3/4	1/8	1
101-200	7 1/8	11/16	9/32	35/64	1 1/8	3/16	1 3/8	9 5/8	11/16	9/32	35/64	1 1/8	3/16	1 3/8
201-400	8 5/8	15/16	13/32	51/64	1 5/8	1/4	1 7/8	11 5/8	15/16	13/32	51/64	1 5/8	1/4	1 7/8
401-600	10 3/8	1 1/8	13/32	63/64	2	1/4	2 1/4	13 3/8	1 1/8	17/32	53/64	2	1/4	2 1/4

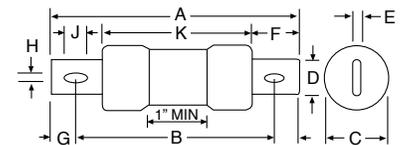
## Class J fuses

Application: Current limiting protection to a wide variety of applications, Panelboards, Switchboards, Busway and Feeder Circuits.

Rejection: Its unique dimensions prevent the substitution of another fuse.



Class J Ferrule type 0-60A



Class J Blade type 61-600A

## Class J fuse dimensions

Ampere rating	A	B	C	D	E	F	G	H	J	K
0-30	2 1/4	1/2	13/16	-	-	-	-	-	-	-
31-60	2 3/8	5/8	1 1/16	-	-	-	-	-	-	-
61-100	4 5/8	3 3/8	1 1/8	3/4	1/8	1	1/2	9/32	3/8	2 5/8
101-200	5 3/4	4 3/8	1 5/8	1 1/8	3/16	1 3/8	11/16	9/32	3/8	3
201-400	7 1/8	5 1/4	2 1/8	1 5/8	1/4	1 7/8	15/16	13/32	17/32	3 3/8
401-600	8	6	2 5/8	2	3/8	2 1/8	1	17/32	11/16	3 3/4

# Fuse application and dimensions

## Class L

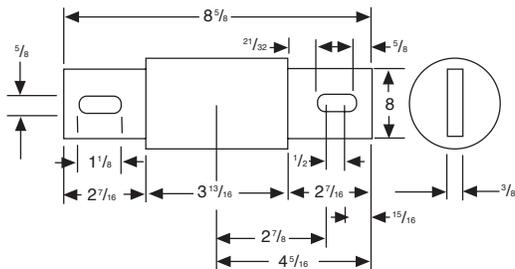
Application: Current limiting protection for service entrance equipment, feeder circuits and metering centers.

Rejection: Its unique dimensions prevent the substitution of another fuse.

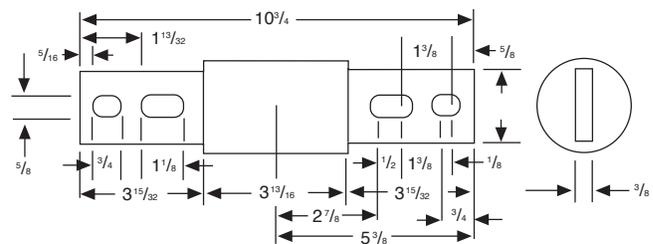
## Class T

Application: It combines two highly desirable features – a high degree of current limitation and a small physical size. Panelboards, Switchboards and Metering Center.

Rejection: Its unique dimensions prevents the substitution of another fuse.



Class L Blade Type 601-800A



Class L Blade type 801-1200A

## Fuse Ratings

Class	Amperes	Volts	Dimensions	Int. Ratings	I <sub>2t</sub> , I <sub>p</sub>	Circuits
H	1-600A	250 and 600V or less AC	NEC standards	10,000A	Less than 10,000A available	General purpose circuits
K5*	1-600A	250 and 600V or less AC	Class H without rejection	100,000A	I <sub>2t</sub> - RK5 up to 100A I <sub>p</sub> - RK5 up to 100A	Feeder circuits
J	1-600A	600V or less	Diff. from Class H	200,000A	I <sub>2t</sub> - Low I <sub>p</sub> - Low	Main & feeder circuits
RK1	1/10-600A	600V or less 250V or less	Class H with rejection feature	200,000A	I <sub>2t</sub> - Slightly>J I <sub>p</sub> - Slightly>J	Main & feeder circuits (motor load small percent)
RK5 (time delay)	1/10-600A	600V or less 250V or less	Class H with rejection feature	200,000A	I <sub>2t</sub> - >RK-1 I <sub>p</sub> - RK-1	Motor starting currents
T	1-1200A	300V AC	Diff. from Class H	200,000A	I <sub>2t</sub> - <J I <sub>p</sub> - <J	Main & feeder circuits
T	1-800A	600V AC	Diff. from Class H	200,000A	I <sub>2t</sub> - =J I <sub>p</sub> - =J	Main & feeder circuits
L	601-6000A	600V or less	Bolt type	200,000A	I <sub>2t</sub> - Low I <sub>p</sub> - Low	Main & feeder circuits

\* Class K5 fuses do not prohibit the use of Class H type fuses in a switch.

# Type VBII Safety Switch

## Ratings and test requirements

### Enclosed switch load ratings

The primary functions of a fusible enclosed switch are to carry current continuously, to provide over current and short-circuit protection, to be capable of disconnecting the circuit, and to provide means for mounting fuses. Safety switches may also have other capabilities covered by load break ratings (in contrast with no-load disconnect switches), such as standard and maximum horsepower ratings and the ability to withstand the maximum I2t energy let-throughs of fuses.

All Siemens safety switches are capable of continuously carrying their full-rated nameplate current at rated voltage. This capability is directly attainable in no-fuse switches and in fusible switches when the fuses are replaced with copper bars, without exceeding permissible temperature rise.

Fuses are capable of carrying their rated current in open air. Under this condition the fuses will not open and will not exceed permissible temperature rise. When fuses are used in a switch or other enclosure, a higher ambient temperature is caused by the switch heat and fuse-generated heat. Since fuses are thermal acting by design, they will not carry full current rating at higher ambient temperatures.

To assist users of fusible equipment, UL requires each fusible switch to carry the statement "Continuous load current not to exceed 80% of the rating of the fuses employed." Good electrical practice may require even further deratings depending on the type of fuse, load, altitude and ambient temperature of the switch location.

### Load break ratings

All Siemens safety switches are load break rated. The load break rating is assigned by UL after the switching unit has successfully performed the following tests for general use enclosed switches:

#### Load break ratings

Switch ampere rating	Number of ON, OFF operations per minute	Number of operations		
		With current	Without current	Total
30-100	6	6000	4000	10000
200	5	6000	2000	8000
400	4	1000	5000	6000
600	3	1000	4000	5000
800	2	500	3000	3500
1200	1	500	2000	2500

### 12X current rating

In addition to the required UL overload testing, all Siemens VBII Safety Switches have been tested at twelve times rated current at 600V AC to assure compliance to automotive and other heavy industry requirements.

### Horsepower ratings

All Siemens safety switches, where appropriate, are horsepower rated. The assignment of such ratings is made by UL only after the switching unit has undergone tests to determine its acceptability. In addition, the unit must successfully perform on an overload test series which includes repeated interruption of the locked rotor current of the motor for which it is to be rated as follows:

#### Horsepower ratings

Max HP rating	Number of ON, OFF Operations per minute	Number of cycles of operation
100	6	50
500	1	10

Most switches have two or more ratings for a particular voltage and current. Siemens safety switches are

UL listed for design E horsepower ratings. With Siemens safety switches no derating is required in most cases. Depending on the switch and its application, various ratings have been achieved. All Siemens switches include a complete list of the ratings on the inside of the cover.

### Horsepower rating charts

The number and variety of horsepower ratings that can be applied to a switching unit makes it impractical, in most instances, to list all such ratings on the front of the unit. Siemens does, however, provide this data by means of a chart on the inside cover.

### Horsepower rating range

UL test procedure include ratings up to 500 HP. Siemens safety switch units in appropriate sizes have successfully passed the locked rotor current interrupting test series for ratings through 500 horsepower at both 480 and 600 volts AC and through 50 horsepower at 600 volts DC.

### Maximum horsepower ratings

The maximum horsepower rating is based upon the largest rating of a time delay fuse: 1) which can be incorporated in the switch and 2) which will permit the motor to be started. Since the fuse has extra time delay, it can hold the starting current of a larger motor longer than a standard fuse.

### Standard horsepower rating

This rating is assigned to a switch after it has successfully completed the locked rotor test series, on the basis of the largest standard fuse rating: 1) which can be incorporated in the switch and 2) which will permit the motor to be started. The standard fuse does not have a designed time delay to allow for motor starting currents.

# Type VBII Safety Switch

## Ratings and test requirements continued

### Multiple-voltage horsepower ratings

A switch may have additional standard and maximum horse-power ratings for different voltages. A switch that is horsepower rated at 240V AC or 250V DC may also have horsepower ratings for motors on 120V AC or 125V DC circuits.

### Multi pole horsepower ratings

A switch may have horsepower ratings applicable to the same current and voltage ratings but with fewer poles if the switch is investigated and found suitable for the assigned rating.

### Short-circuit withstandability

UL test procedures for switches and fuses have been expanded to provide realistic standards of performance with respect to clearing high-level fault currents.

These revised standards deal with the control of destructive energy in the shorted circuit. Two types of potential damage are characteristic of high-level short-circuits: mechanical and thermal. Mechanical damage is caused by the electromagnetic force surrounding conductors; thermal damage is the result of excessive current during the fault-clearing time.

The UL fuse standard defines maximum instantaneous peak let-through current ( $I_p$ ) and maximum destructive energy let-through ( $I^2t$ ) for each fuse (except Class H). Applications of fuses and safety switches on systems having more than 10,000A are available. Short circuits require selections of the proper UL-listed fuses and switches capable of withstanding  $I^2t$  let-throughs. See chart below for withstand ratings on Siemens switches.

### $I^2t$ Rated

Suitability tests for service with ClassH, R, J, L and T fuses have been conducted. Representative switches with test fuses connected in series with each switch were subjected to  $I^2t$  let-through values in excess of the capacities of the largest fuses acceptable by the switches.

To pass the test, the switch must remain operable after being closed into a high-amp available short-circuit current. The test fuse is sized so that higher levels of let-through current and energy will be reached than would ever occur during normal usage in the field. See the chart below for  $I^2t$  ratings on Siemens switches.

### Short-circuit withstand ratings

Fuse rating	Fuse class	Short circuit rating (RMS symmetrical amperes)	
		General duty	Heavy duty
Fusible	Plug	10,000	—
	H or circuit breaker	10,000	10,000
	K	10,000	10,000
	J	100,000	200,000
	R	100,000	200,000
	T	100,000	200,000
	L	—	200,000
Non-Fusible ①	H or circuit breaker	10,000	10,000
	K	10,000	10,000
	J	100,000	200,000 ②
	R	100,000	200,000 ②
	L	—	200,000

① With fuses or circuit breaker in series with switch. Fuse or circuit breaker ampere rating cannot exceed switch ampere rating.

② 60A compact switches are rated 100,000 with 60A max. Class J or R fuses in series with switch.

### $I^2t$ and $I_p$ ratings

Switch rating ampere	$I^2t$ rating (ampere squared seconds)	$I_p$ rating (amps)
30	50,000	14,000
60	200,000	26,000
100	500,000	32,000
200	2,000,000	50,000
400	6,000,000	75,000
600	12,000,000	100,000
800	10,000,000	80,000
1200	15,000,000	120,000

# Type VBII Safety Switch

## Suggested specifications

### A. GENERAL

#### 1. TYPE

1.1. Switches shall be furnished as shown on the drawings and shall be of the type described and specified herein.

#### 2. STANDARDS

Switches shall comply with the following standards:

2.1 UL 98—Enclosed and Dead Front Switches

2.2 NEMA KS 1—Enclosed Switches

#### 3. SUBMITTAL

3.1 Provide outline drawings with dimensions, conduit entry exit locations, cable terminal sizes and equipment ratings for voltage, amperage, horsepower and short-circuit. They also must include replacement parts and accessories.

### B. PRODUCT REQUIREMENTS

#### 1. Switch Mechanism/Handle

1.1 Switch operating mechanism shall be nontearable, positive, quick-make, quick-break such that during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started.

1.2 The operating handle shall be an integral part of the box and not of the cover.

1.3 The handle position, combined with large ON and OFF lettering on the nameplate, shall clearly indicate the switch position.

1.4 The operating handle must be made of steel, with no plastic parts other than the handle grip.

1.5 The operating handle shall be provided with a highly visible red plastic grip and must allow for hook stick operation.

1.6 The operating mechanism must be made of steel, with no plastic parts.

1.7 All Heavy Duty switches (Type 1, 3R, 4/4X stainless steel, 4X non-metallic, 12) shall have a dual-cover interlock mechanism to prevent unintentional opening of the switch cover when the switch is ON and prevent turning the switch ON when the cover is open. The cover interlock mechanism shall have an externally operated override but the override shall not permanently disable the interlock mechanism. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

1.8 30-200A 4X stainless steel switches shall have stainless steel interior parts as standard.

1.9 All switches shall have provisions to accept up to three 5/16 inches hasp padlocks to lock the operating handle in the OFF position.

#### 2. SWITCH INTERIOR

2.1 All switches shall have switch blades that are visible when the switch is OFF and the cover is open. (Type 1, 3R, 4/4X stainless steel, 4X non-metallic, 12).

2.2 Lugs shall be front removable and UL-listed for 60°C or 75°C conductors (30-100A), 75°C conductors (200-1200A) aluminum or copper conductors. Except for 30A General Duty line and load lugs shall be removable with no need to remove line shields and arc suppressors.

2.3 30-100A Heavy Duty switches shall be capable of accepting field installed fuse puller kits.

2.4 Optional copper body and crimp type lugs are to be UL approved for field installation in Heavy Duty 30-1200A ratings.

2.5 Heavy Duty Switches all shall have all-copper current carrying parts other than standard aluminum alloy lugs.

2.6 All current-carrying parts shall be plated to resist corrosion.

2.7 Heavy Duty switches shall have provisions for field installable auxiliary switches. There also must be low current PLC type auxiliary interlock available for 30-200A switches.

2.8 All Heavy Duty switches shall have spring reinforced fuse clips.

# Type VBII Safety Switch

## Suggested specifications continued

### 3. SWITCH ENCLOSURES

3.1 Switch covers shall be attached with pin-type hinges. Except for outdoor General Duty 30A switches, top-hinged doors are not acceptable.

3.2 Enclosures for Type 3R switches through 200A shall have provisions for interchangeable bolt-on hubs in the top endwall. Hubs shall be Siemens Type HS or HA hubs sized as indicated on the plans.

3.3 Switches shall have wire-bending space and lug capacity for one size larger Al/Cu wire than NEC and UL minimum requirements.

3.4 The enclosure shall be finished with [gray baked polyester paint which is electro deposited on cleaned, phosphate pretreated steel (Type 1)], [gray baked polyester paint which is electro deposited on cleaned, phosphate pre-treated galvanized steel (Type 3R & 12)], [a brush finish on type 304 stainless steel (Type 4/4X stainless steel)].

3.5 All Heavy Duty switch enclosures shall have a formed front flange to provide additional strength and rigidity.

3.6 Tangential knockouts shall be provided for switches rated 30-600A in Type 1 and 3R enclosures where permitted.

3.7 Cover latching means for Type 4/4X & 12 rated through 1200A shall be quick-release, lift-lever type.

3.8 Type 12 enclosures shall be dual rated as Type 3S to allow their use in outdoor applications.

3.9 Cover viewing window shall be an available option on 30-400A NEMA 12 and 4/4X stainless steel switches. The window must allow viewing of both visible blades when the switch is OFF and viewing of indicating fuses in 30-200A ratings.

3.10 All Heavy Duty switches shall have metal nameplates, except for non-metallic switches, which must have plastic nameplates.

### 4. SWITCH RATINGS

4.1 All switches shall be UL-listed.

4.2 30-200A Heavy Duty switches shall also be horsepower rated for AC and/or DC as indicated on the plans.

4.3 Switches shall be horsepower rated for design E motors on internal labeling.

4.4 The Heavy Duty switch UL-listed short-circuit current rating shall be: [10,000 RMS symmetrical amperes when used with or protected by Class H or K fuses (30-600 amperes)] [200,000 RMS symmetrical amperes when used with or protected by Class R or Class J fuses (30-600 ampere switches employing appropriate fuse rejection schemes)]. [200,000 RMS symmetrical amperes when used with or protected by Class L fuses (800-1200 amperes)].

4.5 All switches intended for service entrance shall be UL approved for this application.

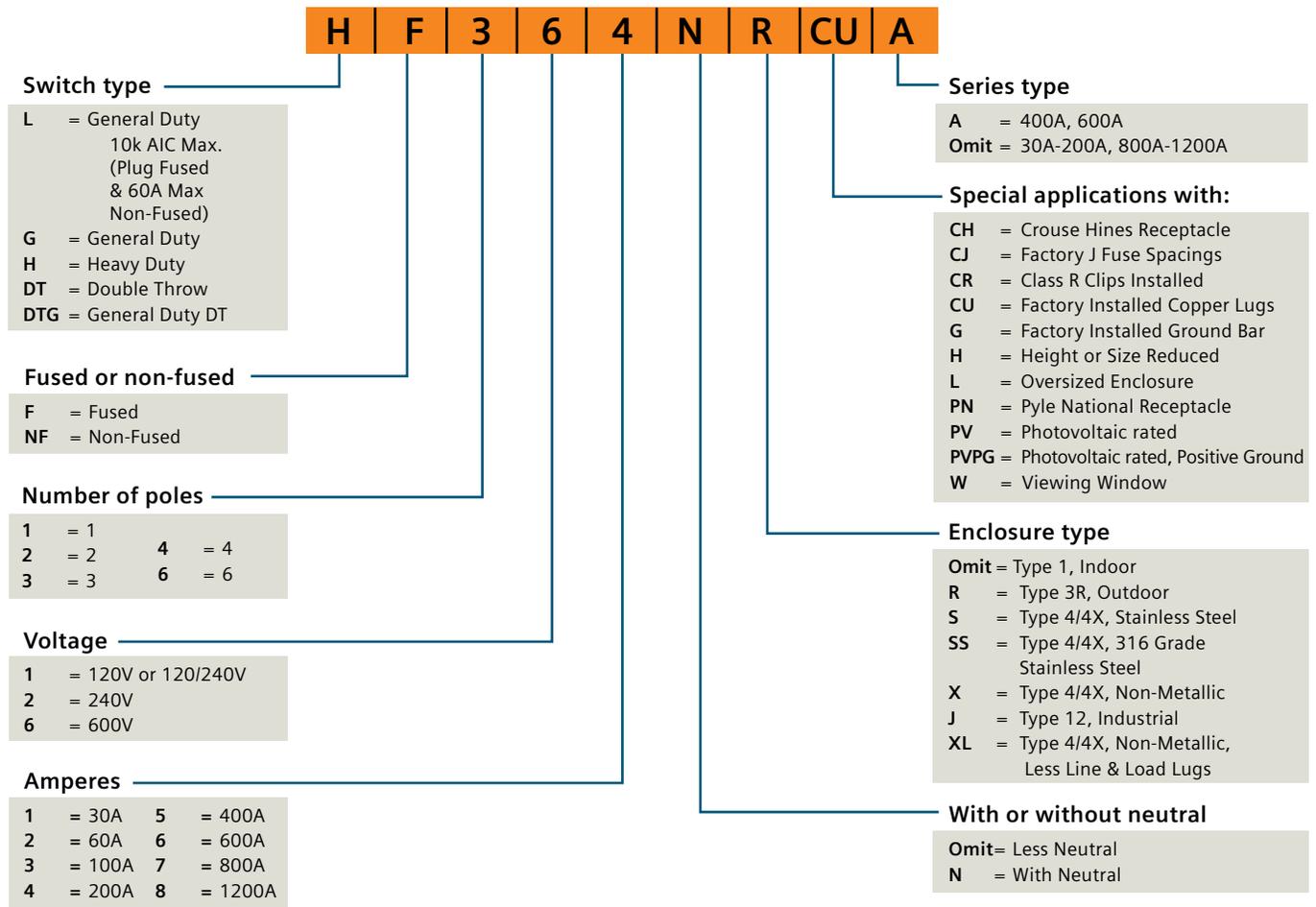
4.6 All Heavy Duty switches shall be I<sup>2</sup>t rated.

### C. APPROVED MANUFACTURERS

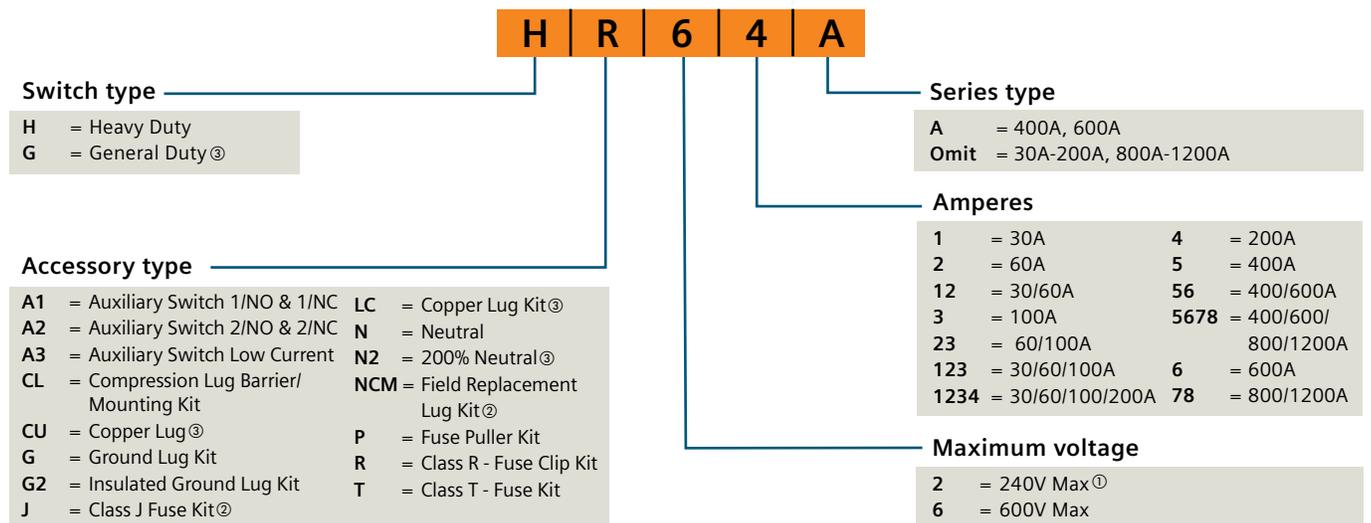
1.1 Switches shall be manufactured by Siemens (no equal) or approved equal.

# Type VBII Safety Switch

## Catalog numbering system



## Accessories catalog numbering system



**Note:** Catalog numbering systems above do not apply to 4-pole & Type "F" & "FR" double throw switches and accessories.

<sup>①</sup> For 400A, 600A use 680V max accessories except for T Fuse Kit.

<sup>②</sup> Only offered for 400A, 600A.

<sup>③</sup> For 30A-200A, 800A-1200A.

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