VBII Selection and Application Guide

safety SWITCHES

SIEMENS

Type VBII

You Asked for It. Siemens Listened.

Contents

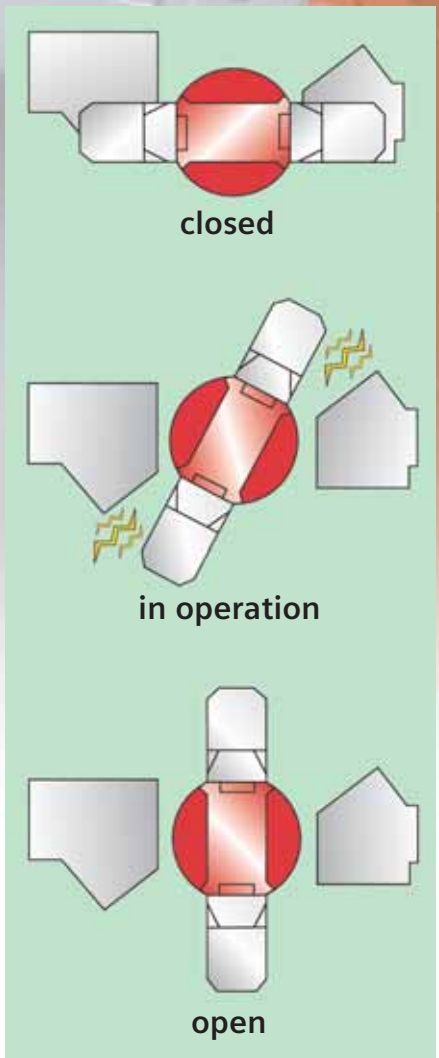
Siemens asked contractors for everything they wanted in an enclosed safety switch. Their input helped create the toughest, most reliable, most hassle-free enclosed safety switch in the business—the Siemens Type VBII Safety Switch. It's a switch that's right for any commercial, industrial or special use 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 industrystandard of 10X

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
Siemens 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 RMS① 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)

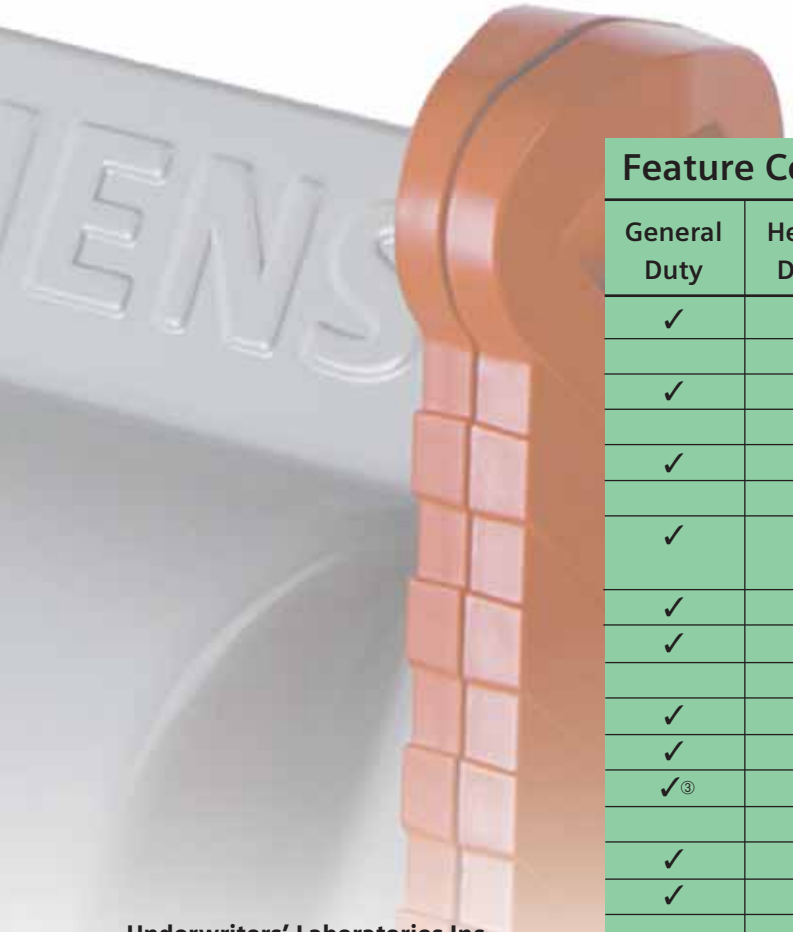
Cover Interlocks
General Duty Switches
Defeatable-cover interlocks on Type 1 switches and 60-600A Type 3R switches prevent the switch door from being opened when in the ON position.

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 & 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 & 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

Siemens Type VBII Safety Switch

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 & 60-600 GD)
- Two- and three-point mounting with top keyhole
- 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
- 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
- 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 duty switches

Type 4/4X Enclosure
Siemens Type VBII Safety Switch

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
Siemens Type VBII Safety Switch

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 *ƒ*

- 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 Ratings ⑥	
	Catalog Number	Ship. Wgt.*①	Dwg. Fig.	Catalog Number	Ship. Wgt.*①	Dwg. Fig.	1-Phase, 2-Wire Std.	1-Phase, 2-Wire Max
120/240 Volt Fusible (Plug Fuse Type) 10,000 AIC Max								
1-Pole and Solid Neutral							120 Volt - 1-Phase, 2-Wire	
30	LF111N	31	1	LF111NR	35	12	1/2	2
2-Pole and No Neutral							120/240V - 1-Phase, 2-Wire	
30	—	—	—	Use 2-Pole and Solid Neutral				
2-Pole and Solid Neutral							120/240V - 1-Phase, 3-Wire	
30	LF211N	37	1	LF211NR	35	12	1 1/2	3
240 Volt Non-Fusible (Special Application)								
2-Pole 240 Volt - 1- or 2-Pole - No Fuse							240 Volt - 1 Phase, 2 Wire	
60	—	—	—	LNF222R ②	35	12 ②	—	10

Ampere Rating	Number of Poles	Number of Blades	Number of Fuses	Catalog Number	Shipping Weight*	Dimensions (Inches) Height	Width	Depth
Selection Information - Fused/Non-Fused Pullouts ②								
Fused Pullout - 1-Phase, 2-Wire ③ 10,000 AIC Max								240 Volts AC
30 ⑦	2	2	2	WF2030	21 ⑧	9 1/8	5 5/32	3 7/16
60 ④	2	2	2	WF2060	5	9 1/8	5 5/32	3 7/16
Non-Fused Pullout - 1-Phase, 2-Wire ④								240 Volts AC
60	2	2	—	WN2060	15 ⑧	7 3/8	5 5/32	3 7/16

* 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-Features (60-600A)

1. Cover interlock

2. Tangential knockouts through 600A for easy conduit lineup

3. Quick-make, quick-break operating mechanism that ensures positive operation

4. Provisions for T, R, J, H and K class fuses (T & J 200-600A)

5. Generous wiring gutters that meet or exceed NEC wire-bending space requirements

6. Visible blade, double-break switch action

7. Positive two- or three-point mounting

8. Highly visible red handle grip

9. Informative door labeling which includes replacement parts list

10. Handle and cover padlocking provisions

11. Side-hinged door that opens 180 degrees for easier wiring

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 Catalog Number	Ship. Wgt.*	Dwg. Fig	Outdoor - Type 3R Catalog Number	Ship. Wgt.*	Dwg. Fig.	Horsepower Ratings ① 240 Volt AC 1-Phase, 2-Wire Std.	Max.	2-Phase, 4-Wire Std.	Max.	3-Phase, 3-Wire Std.	Max.	250 Volt DC Std.
240 Volt Fusible														
2-Pole, 2-Fuse and Solid Neutral ②														**240 Volt AC / 250 Volt DC**
	30	GF221N	35 (10)	1	GF221NR	35 (10)	12	1 1/2	3	—	—	3	7 1/2	5
	60	GF222N	12	4	GF222NR	13	15	3	10	—	—	7 1/2	15	10
	100	GF223N	20	6	GF223NR	21	17	7 1/2	15	—	—	15	30	20
	200	GF224N	43	7	GF224NR	44	18	15	—	—	—	25	60	40
	400	GF225NH③	128	9	GF225NRH③	130	20	15	—	—	—	50	125	50
	400	GF225N	160	9	GF225NR	163	20	15	—	—	—	50	125	50
	600	GF226NH③	133	9	GF226NRH③	135	20	15	—	—	—	75	200	—
	600	GF226N	161	9	GF226NR	170	20	15	—	—	—	75	200	—
3-Pole, 3-Fuse and Solid Neutral 240 Volt AC / 250 Volt DC														
	30	GF321N	24 (5)	2	GF321NR	24 (5)	13	1 1/2	3	—	—	3	7 1/2	5
	60	GF322N	13	4	GF322NR	13	15	3	10	—	—	7 1/2	15	10
	100	GF323N	21	6	GF323NR	22	17	7 1/2	15	—	—	15	30	20
	200	GF324N	44	7	GF324NR	45	18	15	—	—	—	25	60	40
	400	GF325NH③	136	9	GF325NRH③	138	20	15	—	—	—	50	125	50
	400	GF325N	169	9	GF325NR	168	20	15	—	—	—	50	125	50
	600	GF326NH③	138	9	GF326NRH③	141	20	15	—	—	—	75	200	—
	600	GF326N	171	9	GF326NR	172	20	15	—	—	—	75	200	—
4-Pole, 4-Fuse Vacu-Break Type														**240 Volt AC / 250 Volt DC**
	30	JF421	12	—	—	—	—	—	—	3	10	—	—	—
	60	JF422	13	—	—	—	—	—	—	7 1/2	20	—	—	—
	100	JF423	23	—	—	—	—	—	—	15	30	—	—	—
	200	JF424	56	—	—	—	—	—	—	30	50	—	—	—
	400	JF425	150	—	—	—	—	—	—	—	—	—	—	—
	600	JF426	165	—	—	—	—	—	—	—	—	—	—	—
240 Volt Non-Fusible														
2-Pole or 3-Pole														**240 Volt AC / 250 Volt DC**
	30	GNF321	24 (5)	2	GNF321R	24 (5)	13	3	—	—	—	7 1/2	—	5
	60	GNF322	11	3	GNF322R	11	14	10	—	—	—	15	—	10
	100	GNF323	19	6	GNF323R	20	17	15	—	—	—	30	—	20
	200	GNF324	41	7	GNF324R	42	18	15	—	—	—	60	—	40
	400	GNF325	125	8	Use 600V Switch - HF365R			15	—	—	—	125	—	50
	600	GNF326	132	8	Use 600V Switch - HF366R			15	—	—	—	200	—	—

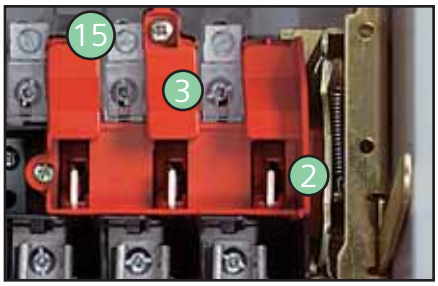
* In pounds (lbs).

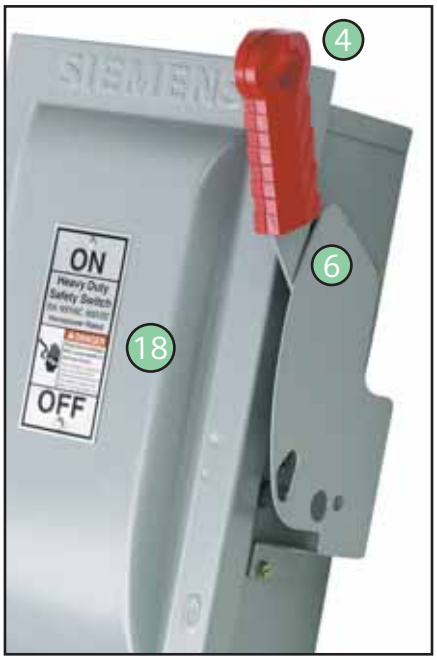
① Dual horsepower ratings: Std.- applies when non-time delay fuses are installed. Max.- applies when time-delay fuses are installed.

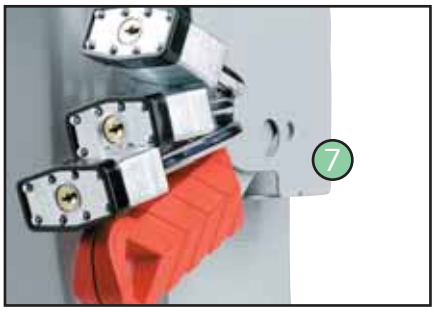
② These switches are UL-listed for application on grounded B-phase systems.

③ Height reduced switch with 500 MCM max. wire bending space.

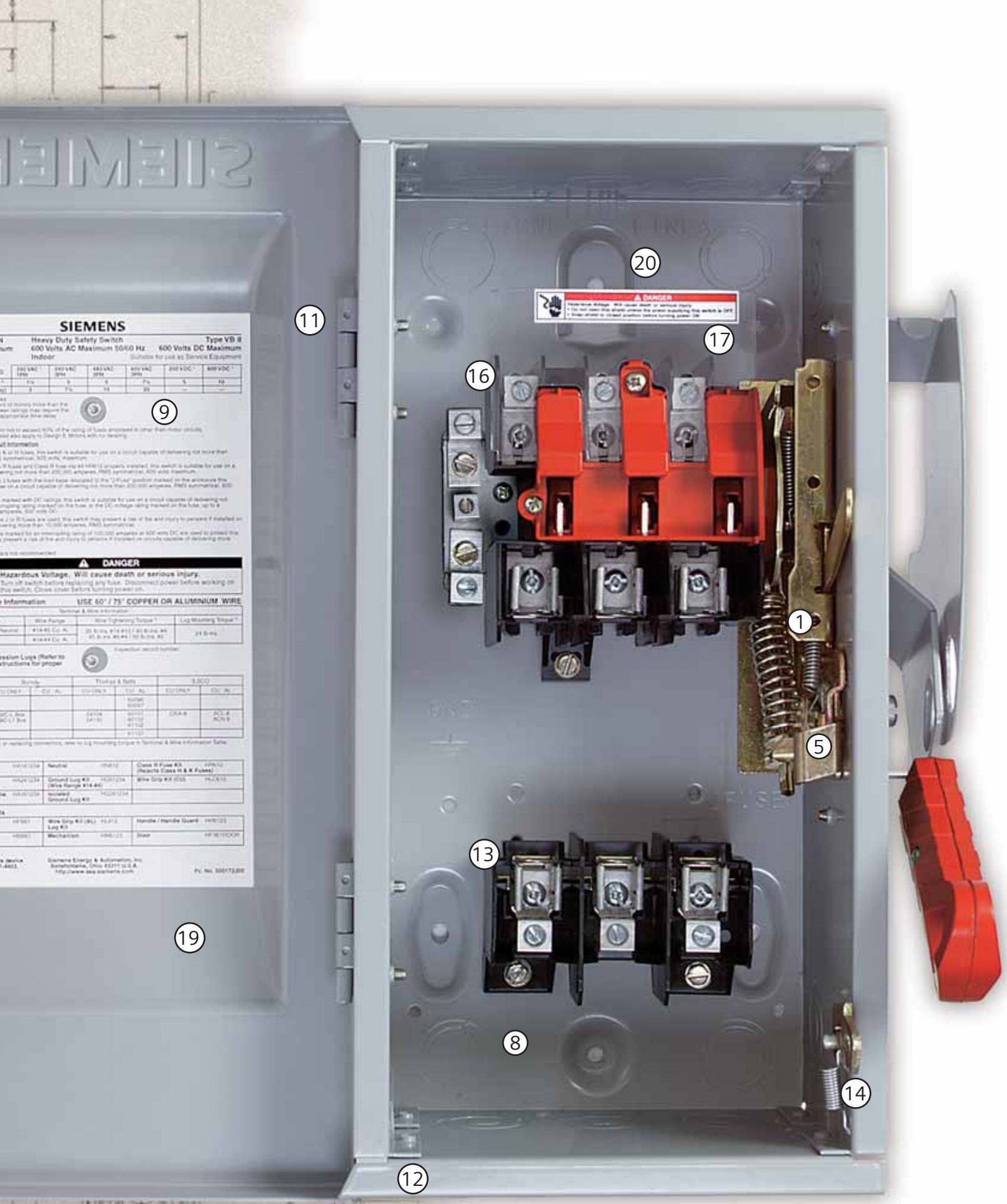
Heavy Duty Switches
Features







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/AI 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

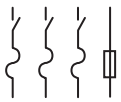

SIEMENS
Heavy Duty Safety Switch
600 Volts AC Maximum 50/60 Hz
Indoor
Type VB II
600 Volts DC Maximum
DANGER
USE 60° / 75° COPPER OR ALUMINUM WIRE
1
5
8
9
11
12
13
14
16
17
19
20

Heavy Duty Switches

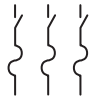
System	Ampere Rating	Indoor - Type 1 Catalog Number	Ship. Wgt.*	Dwg. Fig.	Outdoor - Type 3R Catalog Number	Ship. Wgt.*	Dwg. Fig.	Horsepower Ratings ① 240 Volt AC 1-Phase, 2-Wire Std.	Max.	2-Phase, 4-Wire Std.	Max.	3-Phase, 3-Wire Std.	Max.	250 Volt DC
240 Volt Fusible														
2-Pole, 2-Fuse and Solid Neutral ②		**(Also used for 2-Pole, 2-Wire Applications)**												**240 Volt AC / 250 Volt DC**
	30	HF221N	13	4	HF221NR	13	15	1 1/2	3	—	—	3	7 1/2	5
	60	HF222N	16	5	HF222NR	17	16	3	10	—	—	7 1/2	15	10
	100	HF223N	21	6	HF223NR	22	17	7 1/2	15	—	—	15	30	20
	200	HF224N	44	7	HF224NR	48	18	15	—	—	—	25	60	40
	400	HF225NH③	129	9	HF225NRH③	131	20	15	—	—	—	50	125	50
	400	HF225N	150	9	HF225NR	157	20	15	—	—	—	50	125	50
	600	HF226NH③	133	9	HF226NRH③	135	20	15	—	—	—	75	200	—
	600	HF226N	159	9	HF226NR	162	20	15	—	—	—	75	200	—
	800	HF227N	360	11	HF227NR ①	362	22	—	—	—	—	100	250	—
	1200	HF228N	362	11	HF228NR ①	364	22	—	—	—	—	100	250	—
3-Pole, 3-Fuse and Solid Neutral		**(Also used for 3-Pole, 3-Wire Applications)**												**240 Volt AC / 250 Volt DC**
	30	HF321N	13	4	HF321NR	14	15	1 1/2	3	—	—	3	7 1/2	5
	60	HF322N	17	5	HF322NR	18	16	3	10	—	—	7 1/2	15	10
	100	HF323N	22	6	HF323NR	22	17	7 1/2	15	—	—	15	30	20
	200	HF324N	49	7	HF324NR	50	18	15	—	—	—	25	60	40
	400	HF325NH③	137	9	HF325NRH③	138	20	15	—	—	—	50	125	50
	400	HF325N	164	9	HF325NR	162	20	15	—	—	—	50	125	50
	600	HF326NH③	139	9	HF326NRH③	142	20	15	—	—	—	75	200	—
	600	HF326N	165	9	HF326NR	169	20	15	—	—	—	75	200	—
	800	HF327N	380	11	HF327NR ①	383	22	—	—	—	—	100	250	—
	1200	HF328N	382	11	HF328NR ①	385	22	—	—	—	—	100	250	—
240 Volt Fusible														
2-Pole, 2-Fuse		**Type 4 / 4X Stainless**			**Type 12 Industrial**									**240 Volt AC / 250 Volt DC**
	30	HF221S	17	24	HF221J	16	24	1 1/2	3	—	—	3	7 1/2	5
	60	HF222S	23	25	HF222J	22	25	3	10	—	—	7 1/2	15	10
	100	HF223S	28	26	HF223J	26	26	7 1/2	15	—	—	15	30	20
	200	HF224S	52	27	HF224J	48	27	15	—	—	—	25	60	40
3-Pole, 3-Fuse		**(Also used for 2-Pole, 2-Wire Applications in 400-800A Ratings)**												**240 Volt AC / 250 Volt DC**
	30	HF321S	17	24	HF321J	16	24	—	—	—	—	3	7 1/2	—
	60	HF322S	23	25	HF322J	23	25	—	—	—	—	7 1/2	15	10
	100	HF323S	29	26	HF323J	26	26	—	—	—	—	15	30	20
	200	HF324S	56	27	HF324J	53	27	—	—	—	—	25	60	40
	400	HF325S	170	29	HF325J	165	29	—	—	—	—	50	125	50
	600	HF326S	170	29	HF326J	166	29	—	—	—	—	75	200	—
	800	HF327S	367	31	HF327J ①	367	31	—	—	—	—	100	250	—

* In pounds (lbs).
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 Height reduced switch with 500 MCM max. wire bending space.

Heavy Duty Switches

System	Ampere Rating	Indoor - Type 1 Catalog Number	Indoor - Type 1 Ship. Wgt.*	Indoor - Type 1 Dwg. Fig.	Outdoor - Type 3R Catalog Number	Outdoor - Type 3R Ship. Wgt.*	Outdoor - Type 3R Dwg. Fig.	Horsepower Ratings ③ 480 Volt AC 1-Ø, 2-Wire Std.	480 Volt AC 1-Ø, 2-Wire Max.	480 Volt AC 3-Ø 3-Wire Std.	480 Volt AC 3-Ø 3-Wire Max.	600 Volt AC 1-Ø 2-Wire Std.	600 Volt AC 1-Ø 2-Wire Max.	600 Volt AC 3-Ø 3-Wire Std.	600 Volt AC 3-Ø 3-Wire Max.	250 Volt DC	600 Volt DC
600 Volt Fusible																	
2-Pole, 2-Fuse ②																480 Volt AC / 600 Volt AC / 600 Volt DC	
	30	HF261	13	4	HF261R	13	15	3	7 1/2	–	–	3	10	–	–	5	15
	60	HF262	16	5	HF262R	17	16	5	20	–	–	10	25	–	–	10	30
	100	HF263	21	6	HF263R	22	17	10	30	–	–	15	40	–	–	20	50
	400	HF265	149	9	HF265R	152	20	–	50	–	–	50	–	–	–	40	50
	600	HF266	155	9	HF266R	157	20	–	50	–	–	50	–	–	–	50	50
3-Pole, 3-Fuse																480 Volt AC / 600 Volt AC / 250 Volt DC ①	
	30	HF361	13	4	HF361R	13	15	3	7 1/2	5	15	3	10	7 1/2	20	5	—
	30	HF361L⑤	19	5	HF361RL⑤	19	16	3	7 1/2	5	15	3	10	7 1/2	20	5	—
	60	HF362	19	5	HF362R	19	16	5	20	15	30	10	25	15	50	10	25④
	60	—	—	—	HF362RL⑤	24	17	5	20	15	30	10	25	15	50	10	25④
	100	HF363	24	6	HF363R	24	17	10	30	25	60	15	40	30	75	20	25④
	200	HF364	44	7	HF364R	45	18	25	50	50	125	30	50	60	150	40	50④
	400	HF365H⑥	136	9	HF365RH⑥	137	20	—	—	100	250	—	—	125	350	50	—
	400	HF365	162	9	HF365R	162	20	—	—	100	250	—	—	125	350	50	—
	600	HF366H⑥	138	9	HF366RH⑥	141	20	—	—	150	400	—	—	200	500	—	—
	600	HF366	166	9	HF366R	167	20	—	—	150	400	—	—	200	500	—	—
	800	HF367	380	11	HF367R	382	22	—	—	200	500	—	—	250	500	—	—
	1200	HF368	383	11	HF368R	385	22	—	—	200	500	—	—	250	500	—	—
3-Pole, 3-Fuse and Solid Neutral																480 Volt AC / 600 Volt AC / 250 Volt DC ①	
	**30**	**HF361N**	**13**	**4**	**HF361NR**	**15**	**15**	**3**	**7 1/2**	**5**	**15**	**3**	**10**	**7 1/2**	**20**	**5**	**—**
	60	**HF362N**	**19**	**5**	**HF362NR**	**20**	**16**	**5**	**20**	**15**	**30**	**10**	**25**	**15**	**50**	**10**	**25④**
	100	**HF363N**	**24**	**6**	**HF363NR**	**26**	**17**	**10**	**30**	**25**	**60**	**15**	**40**	**30**	**75**	**20**	**25④**
	200	**HF364N**	**45**	**7**	**HF364NR**	**50**	**18**	**25**	**50**	**50**	**125**	**30**	**50**	**60**	**150**	**40**	**50④**
	400	**HF365N**	**171**	**9**	**HF365NR**	**162**	**20**	**—**	**—**	**100**	**250**	**—**	**—**	**125**	**350**	**50**	**—**
	600	**HF366N**	**172**	**9**	**HF366NR**	**165**	**20**	**—**	**—**	**150**	**400**	**—**	**—**	**200**	**500**	**—**	**—**
	800	**HF367N**	**382**	**11**	**HF367NR**	**386**	**22**	**—**	**—**	**150**	**400**	**—**	**—**	**200**	**500**	**—**	**—**
	1200	**HF368N**	**385**	**11**	**HF368NR**	**388**	**22**	**—**	**—**	**150**	**400**	**—**	**—**	**200**	**500**	**—**	**—**

600 Volt Fusible (For 2-Pole Applications use outside poles of 3-Pole Switches)

2-Pole, 2-Fuse ②		Type 4 / 4X Stainless Standard Cat. No.	Type 4 / 4X Stainless Window Switch Cat. No.	Type 4 / 4X Stainless Ship Wgt.*	Type 4 / 4X Stainless Dwg. Flg.	Type 12 Industrial Standard Cat. No.	Type 12 Industrial Window Switch Cat. No.	Type 12 Industrial Ship Wgt.*	Type 12 Industrial Dwg. Flg.	480 Volt AC / 600 Volt AC / 600 Volt DC									
	30	HF261S	––	17	24	HF261J	—	13	24	3	7 1/2	––	––	3	10	––	––	5	15
	60	HF262S	—	23	25	HF262J	—	22	25	5	20	––	––	10	25	––	––	10	30
	100	HF263S	—	29	26	HF263J	—	27	26	10	30	––	––	15	40	––	––	20	50
	400	HF265S	—	170	29	HF265J	—	165	29	––	50	––	––	50	––	––	––	40	50
	600	HF266S	—	170	29	HF266J	—	166	29	––	50	––	––	50	––	––	––	50	50
3-Pole, 3-Fuse																480 Volt AC / 600 Volt AC / 250 Volt DC ①			
	30	HF361S	HF361SW	17	24	HF361J	HF361JW	17	24	3	7 1/2	5	15	––	––	7 1/2	20	5	––
	60	HF362S	HF362SW	23	25	HF362J	HF362JW	22	25	5	20	15	30	––	––	15	50	10	25④
	100	HF363S	HF363SW	29	26	HF363J	HF363JW	26	26	10	30	25	60	––	––	30	75	20	25④
	200	HF364S	HF364SW	56	27	HF364J	HF364JW	53	27	25	50	50	125	––	––	60	150	40	50④
	400	HF365S	HF365SW	173	29	HF365J	HF365JW	166	29	––	––	100	250	––	––	125	350	50	––
	600	HF366S	––	175	29	HF366J	HF366JW	168	29	––	––	150	400	––	––	200	500	––	––
	800	HF367S	––	380	31	HF367J	––	380	31	––	––	200	500	––	––	250	500	––	––
	1200	HF368S	––	384	––	HF368J	––	384	31	––	––	200	500	––	––	250	500	––	––

* In pounds (lbs).

① 60-200A 3-Pole switches are also rated 600V DC.

② Use 3-Pole switch for 200A applications.

③ Dual horsepower ratings: Std.- applies when non-time delay fuses are installed. Max.- applies when time-delay fuses are installed.

④ 600V DC rating and 600V DC HP rating requires two poles to be connected in series.

⑤ Indicates oversized enclosure (30A switch in a 60A enclosure or a 60A switch in a 100A enclosure).

⑥ Height reduced switch with 500 MCM max. wire bending space.

Heavy Duty Switches

System	Ampere Rating	Indoor - Type 1			Outdoor - Type 3R			Horsepower Ratings							
		Catalog Number	Ship. Wgt.*	Dwg. Fig.	Catalog Number	Ship. Wgt.*	Dwg. Fig.	240 Volt		480 Volt		600 Volt		250V	600V
								1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	DC	DC
600 Volt Non-Fusible (Also used for 240V Applications)															
2-Pole ②														**480 Volt AC / 600 Volt AC / 600 Volt D**	
	30	HNF261	11	3	HNF261R	11	14	—	—	7 1/2	—	10	—	5	15
	60	HNF262	16	5	HNF262R	18	16	—	—	20	—	25	—	10	30
	100	HNF263	19	6	HNF263R	20	17	—	—	30	—	40	—	20	50
	400	HNF265	126	8	HNF265R	129	19	15	—	50	—	50	—	40	50
	600	HNF266	127	8	HNF266R	129	19	15	—	50	—	50	—	50	50
3-Pole														**480 Volt AC / 600 Volt AC / 250 Volt DC①**	
	30	HNF361	12	3	HNF361R	13	14	3	10	7 1/2	20	10	30	5	—
	30	—	—	—	HNF361RL④	19	16	3	10	7 1/2	20	10	30	5	—
	60	HNF362H⑤	12	3	HNF362RH⑤	13	14	10	20	20	50	10	40	5	—
	60	HNF362	18	5	HNF362R	19	16	10	20	20	50	25	60	10	25③
	60	—	—	—	HNF362RL④	24	17	10	20	20	50	25	60	10	25③
	100	HNF363	23	6	HNF363R	24	17	15	40	30	75	40	100	20	25③
	200	HNF364	42	7	HNF364R	43	18	15	60	50	125	50	150	40	50③
	400	HNF365	132	8	HNF365R	129	19	15	125	50	250	50	350	50	—
	600	HNF366	133	8	HNF366R	130	19	15	200	50	400	50	500	—	—
	800	HNF367	302	10	HNF367R ②	305	21	15	250	50	500	50	500	—	—
	1200	HNF368	305	10	HNF368R ②	307	21	15	250	50	500	50	500	—	—

600 Volt Non-Fusible (Also used for 240V Applications)																	
2-Pole ②		Type 4 / 4X Stainless				Type 12 Industrial				480 Volt AC / 600 Volt AC / 600 Volt DC							
		Standard Cat. No.	Window Switch Cat.#	Ship Wgt.*	Dwg. Fig.	Standard Cat. No.	Window Switch Cat.#	Ship Wgt.*	Dwg Fig.								
	30	HNF261S	––	15	23	HNF261J	––	13	23	—	—	7 1/2	—	10	—	5	15
	60	HNF262S	––	24	25	HNF262J	––	21	25	—	—	20	—	25	—	10	30
	100	HNF263S	––	28	26	HNF263J	––	25	26	—	—	30	—	40	—	20	50
	400	HNF265S	––	137	28	HNF265J	––	122	28	15	—	50	—	—	—	40	50
	600	HNF266S	––	138	28	HNF266J	––	128	28	15	—	50	—	—	—	50	50
3-Pole																**480 Volt AC / 600 Volt AC / 250 Volt DC ①**	
	30	HNF361S	HNF361SW	15	23	HNF361J	HNF361JW	14	23	3	10	7 1/2	20	10	30	5	—
	60	HNF362SH⑤	––	15	23	HNF362JH⑤	––	14	23	10	20	20	50	10	40	5	—
	60	HNF362S	HNF362SW	23	25	HNF362J	HNF362JW	19	25	10	20	20	50	25	60	10	25③
	100	HNF363S	HNF363SW	27	26	HNF363J	HNF363JW	25	26	15	40	30	75	40	100	20	25③
	200	HNF364S	HNF364SW	55	27	HNF364J	HNF364JW	51	27	15	60	50	125	50	150	40	50③
	400	HNF365S	HNF365SW	133	28	HNF365J	HNF365JW	129	28	15	125	50	250	50	350	50	—
	600	HNF366S	––	134	28	HNF366J	—	130	28	15	200	50	400	50	500	—	—
	800	HNF367S	––	302	30	HNF367J	—	302	30	15	250	50	500	50	500	—	—
	1200	HNF368S	––	308	––	HNF368J	—	308	30	15	250	50	500	50	500	––	––

* In pounds (lbs)

① 60-200A Three-Pole switches are also rated 600V DC.
② Use Three-Pole switch for 200A application.
③ 600V DC rating and 600V DC HP rating requires two poles to be connected in series.
④ Indicates oversized enclosure (30A switch in a 60A enclosure or a 60A switch in a 100A enclosure).
⑤ Compact switch with 100,000 RMS Sym short circuit rating.

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)

Description① 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 Rating⑤	Type 12⑥ Catalog Number	Type 4/4X⑦ Catalog Number	Shipping Weight Std. Pkg.④	Accepts Crouse-Hinds Arktite① Plug Catalog Number
240V Fusible, 3-Pole, 3-Wire				
30	HF321JCH	HF321SCH	23	APJ3485 & NPJ3485
60	HF322JCH	HF322SCH	30	APJ6485 & NPJ6485
100	HF323JCH	HF323SCH	36	APJ10487 & NPJ10487
600V Fusible, 3-Pole, 3-Wire				
30	HF361JCH	HF361SCH	24	APJ3485 & NPJ3485
60	HF362JCH	HF362SCH	30	APJ6485 & NPJ6485
100	HF363JCH	HF363SCH	36	APJ10487 & NPJ10487
600V Non-Fusible, 3-Pole, 3-Wire				
30	HNF361JCH	HF361SCH	22	APJ3485 & NPJ3485
60	HNF362JCH	HF362SCH	29	APJ6485 & NPJ6485
100	HNF363JCH	HF363SCH	35	APJ10487 & NPJ10487
600V Fusible, 3-Pole, 3-Wire with Viewing Window				
30	HF361JCHW	HF361SCHW	24	APJ3485 & NPJ3485
60	HF362JCHW	HF362SCHW	30	APJ6485 & NPJ6485
100	HF363JCHW	HF363SCHW	36	APJ10487 & NPJ10487
600V Non-Fusible, 3-Pole, 3-Wire with Viewing Window				
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™ ②③ Plugs
Switch	Recept.					Plug Cat. No.
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 & 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

- UL & CUL listed under File#E4776
- Meets UL98 for enclosed switches
- 4 & 6 pole switches are suitable for use as service entrance
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements

Features

- Visible blade, double break switching action
- Highly visible ON/OFF indication
- Defeatable dual cover interlock
- Padlockable in OFF position
- All copper current carrying parts¿
- Tangential knockouts (Type1, 4-pole switches)
- Type 12 & 4X switches are provided with an equipment ground kit as standard

4 Pole Type VBII Switches②

Ampere Rating	Indoor Type 1 Catalog Number	Indoor Type 1 Ship Wt. (lbs.)	Type 12/#R Industrial Catalog Number	Type 12/#R Industrial Ship Wt. (lbs.)	Horsepower Ratings③ 240V, 2Ø, 4W Std.	240V, 2Ø, 4W Max.	240V, 3Ø Std.	240V, 3Ø Max.	480V, 3Ø Std.	480V, 3Ø Max.	600V, 3Ø Std.	600V, 3Ø Max.	250V DC
Fusible 600 Volt AC, 250 Volt DC – 4-Pole, 4 Fuse④													
30	HF461	36	HF461J	36	3	10	3	7 1/2	5	15	7 1/2	20	5
60	HF462	40	HF462J	40	7 1/2	20	7 1/2	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
Non-fusible 600 Volt AC, 250 Volt DC – 4-Pole													
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 Switches②

Ampere Rating	Indoor Type 1 Catalog Number	Indoor Type 1 Ship Wt. (lbs.)	Type 12/#R Industrial Catalog Number	Type 12/#R Industrial Ship Wt. (lbs.)	Horsepower Ratings③ 240V, 3Ø Std.	240V, 3Ø Max.	480V, 3Ø Std.	480V, 3Ø Max.	600V, 3Ø Std.	600V, 3Ø Max.	250V DC
Fusible 600 Volt AC, 250 Volt DC – 6-Pole, 6 Fuse④											
30	HF661J	37	HF461J	37	3	7 1/2	5	15	7 1/2	20	5
60	HF662J	41	HF462J	41	7 1/2	15	15	30	15	50	10
100	HF663J	44	HF463J	44	15	30	25	60	30	75	20
200	HF664J	90	HF464J	90	25	60	50	125	60	150	40
Non-fusible 600 Volt AC, 250 Volt DC – 6-Pole											
30	HNF661J	33	HNF661S	33	—	10	—	20	—	30	5
60	HNF662J	35	HNF662S	35	—	20	—	50	—	60	10
100	HNF663J	37	HNF663S	37	—	30	—	75	—	100	20
200	HNF664J	80	HNF664S	80	—	60	—	125	—	150	40

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.

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.

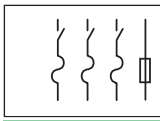
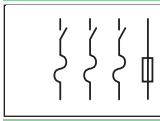
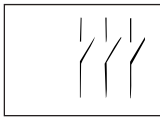
Description

30-200A, 600V Max, fusible and non-fusible 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 on fusible switches

System	Ampere Rating	Catalog Number	Horsepower Rating - 3-Phase 240 Volt AC Std.	240 Volt AC Max.	480 Volt AC Std.	480 Volt AC Max.	600 Volt AC Std.	600 Volt AC Max.	250 Volts DC	600 Volts DC③
3-Pole, 4-Wire, 240 Volts Fusible										
	30	HF321NX	3	7 1/2	—	—	—	—	5	—
	60	HF322NX	7 1/2	15	—	—	—	—	10	—
3-Pole, 4-Wire, 600 Volts Fusible③										
	30	HF361NX	3	7 1/2	5	15	7 1/2	20	5	15
	60	HF362NX	7 1/2	15	15	30	15	50	10	30
	100	HF363NX	15	30	25	60	30	75	20	50
	200	HF364NX	25	60	50	125	60	150	40	50
3-Pole, 3-Wire, 600 Volts Non-Fusible③										
	30	HNF361X	—	7 1/2	—	20	—	30	5	15
	60	HNF362X	—	15	—	50	—	60	10	30
	100	HNF363X	—	30	—	75	—	100	20	50
	200	HNF364X	—	60	—	125	—	150	40	50

Type 7 and 9 Enclosed Molded Case Switches ①②

Molded Case Switch Type	Number of Poles	Maximum Current Rating	Enclosure Catalog Number	Enclosure Wgt. lb./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), HHLD6, HLXD6(A)	2-3	600	ED6	190
HHLD6, HHLXD6, SHLD6	2-3	600	ED6	190

① Neutrals not included. Order neutral kit when required.
② Order molded case switch and enclosure separately.
③ 600V DC rating and 600V DC HP ratings require (2) poles to be connected in series.

General and Heavy Duty
Accessories

Copper Lug Kits

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

Copper Lug Kits

Switch Ampere Rating	Copper Lug Kit Catalog Number	Description
30-60	HLC612	(9) Lugs / Kit #14-6 AWG (1)/Ø
100	HLC63	(9) Lugs / Kit #14-1/0 AWG (1)/Ø
200	HLC64	(9) Lugs / Kit #6 Awg-300 Kcmil (1)/Ø
400-1200	HLC65678	(1) Lug / Kit # 1/0 Awg-600 Kcmil Cu

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.

Equipment Ground Kits

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	HG656	4	#6 AWG-250 Kcmil
800-1200	HG678	8	#6 AWG-250 Kcmil

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.

Isolated Ground Kits

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	HG2656	4	4	#14-2/0 AWG

HA161234

HA261234

Auxiliary Contacts

Auxiliary Contacts are available only for Heavy Duty Switches. The auxiliary contacts 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.

Auxiliary Contacts

Switch Ampere Rating	Aux. Switch Catalog Number	Kit Ampere Rating			Kit Horsepower Rating		
		125V AC Max.	250V AC Max.	28V DC Max.	125V AC Max.	250V AC Max.	28V DC Max.
With 1 NO & 1 NC Isolated Contacts							
30-200	HA161234	10	10	–	1/2	3/4	–
400-1200	HA165678	10	10	–	1/2	3/4	–
With 2 NO & 2 NC Isolated Contacts							
30-200	HA261234	10	10	7	1/2	3/4	–
400-1200	HA265678	10	10	7	1/2	3/4	–
Low Current PLC Type with 1 NO & 1 NC Gold Plated Contacts							
30-200	HA361234	10	10	–	1/2	3/4	–
400-1200	HA365678	10	10	–	1/2	3/4	–

HP61

Fuse Puller Kits

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

Fuse Puller Kits

Switch Ampere Rating	Fuse Puller Kit Catalog Number
30	HP61
60	HP62
100	HP63

Class R Fuse Clip Kits

All 30-600A 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 switch).

HR612

Class R Fuse Clip Kits

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
HR656	400A / 600A Kit

NOTE: For touch-up spray paint (16 oz. can) order catalog number XTP060.

General and Heavy Duty
Accessories

Class J Fuse

All 100-600A General Duty, 100-600A 240V Heavy Duty and 600V, 30-600A Heavy Duty Switches are field convertible to accept Class J fuses by moving the load base to a predrilled J fuse position.

HT63

Class T Fuse Adapter Kits
(1 kit required per pole)

All 200-600A General Duty and 100-1200A Heavy Duty Switches are field convertible to accept Class T fuses. 400 & 600A switches are field convertible to accept Class T fuses by moving the load base to a predrilled T fuse position.

Class T Fuse Adapter Kits

Catalog Number	Description
HT23	100A, 240V Kit
HT63	100A, 600V Kit
HT24	200A, 240V Kit
HT64	200A, 600V Kit
HX327TF	800A, 240V Kit
HX367TF	800A,600V Kit
HX328TF	1200A, 240V Kit

HN264

HN612

Neutral Kits

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

Neutral Kits

Switch Ampere Rating	Kit Catalog Number
30 GD	W410190
30 HD, 60 GD	HN612
60, 100 HD, 100 GD	HN623
200	HN64
400 & 600	HN656
800 & 1200 VBII	HN678

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.

200% Neutral Kits

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	HN656	(2) 1/0 AWG-750 Kcmil
600	HN678	(4) 1/0 AWG-600 Kcmil

General and Heavy Duty
Hub and Lug Data

SSH150

ECHV300

ECHS200

SL0420

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.

Hubs

Conduit Size (inches)	Catalog Number	Used On
Type 3R ①		
3/4 1 1 1/4	ECHA075 ECHA100 ECHA125	30A GD Only
3/4 1 1 1/4 1 1/2 2 2 1/2	ECHS075 ECHS100 ECHS125 ECHS150 ECHS200 ECHS250	60-200A GD 30-200A HD
2 1/2 3 3 1/2 4	ECHV250 ECHV300 ECHV350 ECHV400	400-1200A
Type 4 / 4X		
3/4 1 1 1/4 1 1/2 2	SSH075 SSH100 SSH125 SSH150 SSH200	30-200A

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

Compression Lug Neutral Barrier Kit

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.

Compression Lug Mounting ② and Neutral Barrier Kits

Switch Ampere Rating	Catalog Number	Kit Description
30	HCL612	Neutral Barrier Kit
60 & 100	HCL623	Neutral Barrier Kit
400 ③	HCL65	1 Pole, Compression Lug Mounting Kit
400 & 600 ④	HCL65678	1 Pole, Compression Lug Mounting Kit
800 & 1200 ④	–	Factory Installed Only

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.

Multiple Padlock Accessory

A tamperproof device to provide for multiple padlocking to meet OSHA or plant requirements. Accepts up to six padlocks. Catalog number SL0420. Standard Carton-12.

Kirk-Key Interlocks

Kirk-Key Interlocks are factory installed only on Type VII Heavy Duty and Double Throw Safety Switches.

Interlocks are used to prevent the authorized operator from making an unauthorized operation. The interlock system is a simple method of applying key interlocks to safety switches so as to require operation in a predetermined sequence.

Before consulting the factory, the following information is required:
- User name and address
- Key number from lock assemblies on any existing locks to be interlocked with
- Complete locking scheme

Consult factory for delivery.

Wire Ranges (Line, Load and Standard Neutral)

Switch Ampere Rating	Wire Range with Wire-Bending Space Per NEC Table 373-6	Lug Range
30GD	#14-8 AWG (Cu/Al) ⑤	#14-8 AWG (Cu/Al) ⑥
30HD	#12-6 AWG (Al) or #14-6 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
30A HD oversized	#14-2 AWG(Cu/Al)	#14-2 AWG (Cu/Al)
60⑦	#12-2 AWG (Al) or #14-3 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
60A HD oversized	#14-1/0 AWG (Cu/Al)	#14-1/0 AWG (Cu/Al)
100	#14-1/0 AWG (Cu/Al)	#14-1/0 AWG (Cu/Al)
200⑧	#6 AWG-250 Kcmil (Cu/Al)	#6 AWG-300 Kcmil (Cu/Al)
400⑥	1/0 AWG-750 Kcmil (Cu/Al) or (2) 1/0 AWG-250 Kcmil (Cu/Al)	(1) 1/0 AWG-750 Kcmil (Cu/Al) or (2) 1/0 AWG-250 Kcmil (Cu/Al)
600⑥	(2) 1/0 AWG-750 Kcmil (Cu/Al) or (4) 1/0-250 Kcmil (Cu/Al)	(2) 1/0 AWG-750 Kcmil (Cu/Al) or (4) 1/0 AWG-250 Kcmil (Cu/Al)
800	(3) 1/0-750 kcmil (Cu/Al) Line and Load or (6) 1/0-250 kcmil (Cu/Al) (4) 1/0-250 kcmil (Cu/Al) neutral	(3) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-600 Kcmil (Cu/Al) neutral
1200	(4) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-600 Kcmil (Cu/Al) neutral	(4) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-600 Kcmil (Cu/Al) neutral

① Hubs suitable for 3R Switches.
② Neutral Barrier kits are required on 30-100A switch only and only with 1-Phase, 3W or 3-Phase and 4W loads. Compression lugs mounting kits are required on 400-1200A switches only.
③ Provides mounting for a single line or load lug.
④ Provides mounting for two compression lugs per phase on line or load one per pole required.
⑤ Line lugs have wire-bending space and are UL approved for #14-6 conductors.
⑥ Max. wire size for height reduced switches is 500 Kcmil (Cu/Al).
⑦ All but 60A GD & Compact HD NF switches are also UL approved for #2 Cu/Al conductors.
⑧ All 200A Heavy Duty Switches have a wire range & wire bending space for one # 6-300 Kcmil (Cu/Al).

Heavy Duty
Crimp Lug Application Data

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

Heavy Duty 30 Amp ①

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
#14-10				60096 60097		
#8	YA8C-L Box YA8C-L1 Box		54104 54130	60101 60102 61102	CRA-8	ACL-8 ACN-8
#6				61107		

Heavy Duty 60 Amp ②

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
#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	

Heavy Duty 100 Amp ②

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
#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	61116	CRB-2 CRB-2L	ACL-2
#1	YA1C-L2 YA1C	—	54108 54947BE	61122	CRB-1-14 CRA-1L	—
1/0	—	—	—	61130	—	—

Heavy Duty 200 Amp

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
#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
1/0	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 54910BE 256-30695-1229	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 60147	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	—	—

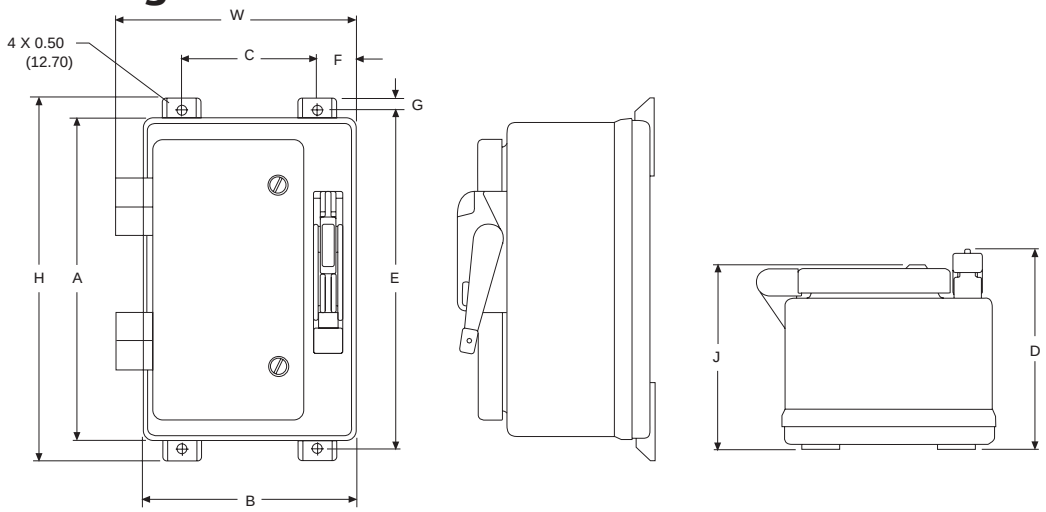
Heavy Duty 400 & 600 Amp ③

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
2/0	YA26-N	YA26-A1	54160 54951BE	—	—	IACL-2/0 ACN-2/0
3/0	YA27-L Box YA27	YA27A3	54165-TB 54965BE	—	CRB-3/0 CRB-3/0L	IACL-3/0 ACN-3/0
4/0	YA28-L Box YA28	YA28A3	54170 54970BE	60150	CRB-4/0 CRB-4/0L	IACL-4/0 ACN-4/0
250 Kcmil	YA29-L Box YA29	YA29A1	54113 54913BE	61156 60156	CRA-250 CRA-250L	IACL-250 ACL-250
300 Kcmil	YA30-L YA30	YA30A1	54414 54914BE	61162 60162	CRA-300 CRA-300L	IACL-300 ACL-300
350 Kcmil	YA31-L YA31	YA31A1	54915BE	61165 60165	CRA-350 CRA-350L	IACL-350 —
400 Kcmil④	YA32-N	—	54116 54916BE	—	—	—
500 Kcmil④	YA34-L6 YA34-N	—	—	61171	—	IACL-500

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

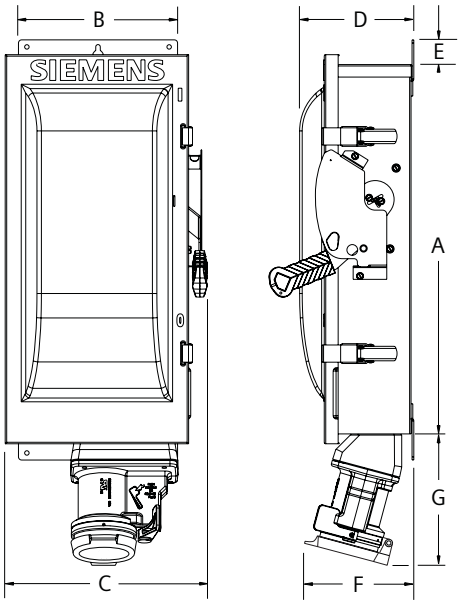
Non-Metallic & Interlocked Receptacle Switch Dimension Drawings



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
HF361NX①	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF362NX①	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HF363NX①	26.95	14.87	13.25	24.84	13.72	6.25	25.75	3.75	.46	12.15
HF364NX①	33.41	27.47	13.19	31.31	26.31	18.50	32.25	3.91	.47	12.10
HNF361NX①	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HNF362NX①	18.75	12.11	10.25	16.59	10.97	7.00	17.50	1.98	.46	9.20
HNF363NX①	26.95	14.87	13.25	24.84	13.72	6.25	25.75	3.75	.46	12.15
HNF364NX①	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
Cr-H Type Fusible (240 & 600V)							
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
Cr-H Type Non-fusible (600V max)							
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
Pyle-National Type Fusible (240 & 600V)							
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
Pyle-National Type Non-fCommandusible (600V max)							
30	11.12	7.42	9.02①	6.22	1.52	3.5	3.0
60	16.27	9.17	11.47①	6.34	1.52	5.0	4.5



Double Throw Switches

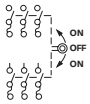
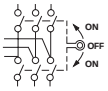
Description & Application

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	Yes③
100 & 200A	Std	Yes (kit)	Yes (kit)	Yes③
400 & 600A DTF	No	No	Yes③	Std④

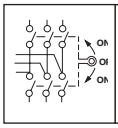
Double Throw Switches

System	Voltage	Number of Poles	Amps	Type 1– Indoor Catalog Number	Type 3R – Outdoor① Catalog Number	Type 12/3R Industrial Catalog Number	Type 4X – Stainless Steel Catalog Number
Heavy Duty Fusible (30-200A with Class H fuse provisions)②							
	240 Volt AC or 250 Volt DC	2	200	DTF224	DTF224R	—	—
		3	30	DTF321	DTF321R	—	—
			60	DTF322	DTF322R	—	—
			100	DTF323	DTF323R	—	—
			200	DTF324	DTF324R	—	—
			400	DTF325	—	—	—
			600	DTF326	—	—	—
	600 Volt AC, 250 Volt DC	3	30	DTF361	—	—	—
			60	DTF362	—	—	—
			100	DTF363	DTF363R	—	F353SSDTK
			200	DTF364	DTF364R	—	F354SSDTK
			400	DTF365	—	—	F355SSDTK④
Heavy Duty Non-Fusible②							
	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	—	—	—
			800	DTNF327	—	—	—
	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	—	—
		4⑤	30	—	NFR451DTK	—	—
			60	—	NFR452DTK	—	—
			100	—	NFR453DTK	—	—
			200	NF454DTK	NFR454DTK	—	NF454SSDTK
			400	NF455DTK	NFR455DTK	—	—
			600	NF456DTK	NFR456DTK	—	—
			800	NF457DTK	NFR457DTK	—	—

① Use HS Type hubs for 30–200A switches; 400A and larger switches do not have hub provisions.
② 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.
③ Move load base.
④ Catalog No. F355SSDTK will accept Class T Fuse only
⑤ 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 – Outdoor① Less Neutral Catalog Number	Type 3R – Outdoor① With Neutral Catalog Number
General Duty Non-Fusible					
	240 Volt AC	2	100	DTGNF223R	DTGNF223NR
			200	DTGNF224R	DTGNF224NR
		3	100	DTGNF323R	DTGNF323NR
			200	DTGNF324R	DTGNF324NR

Accessories – 2 and 3 Pole Type "DT" Switches Only②

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

Accessories – 4 Pole and Type "F" and "NF" 3 Pole Switches Only③

Description		Catalog Number
Auxiliary Switch (two required per switch)	30-800A (1) NO, (1) NC⑤	DS200EK1
	30-800A (2) NO, (2) NC⑤	DS200EK2
Ground Lug Kit④	30-60-100A	DSG100GK
	200A	DSG200GK
	400-600-800A	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 and 400A Type 12 & 4X only)	30-60-100A	DT100NK
	200A	DT200NK
	400A Fusible	DS800NK

Replacement Parts – 2 and 3 Pole Type "DT" Switches Only②

Description		Catalog Number
Type 1, 3R & 12 Replacement Handle	30-200A	HHD61234
Type 4X Replacement Handle	30-200A	HHD61234S
Type 4X Replacement Handle	400-1200A	HHD65678

Wire Ranges (Line, Load and Neutral) per NEC requirements

30-200A – 2, 3 & 4 Pole Switches

Switch Ampere Range	Wire Range (Cu/Al) New VBII Design Line, Load and Neutral
30	(1) #14-6
60	(1) #14-6
100	(1) #14-1/0 AWG
200	(1) #6-250 Kcmil

400-1200A – 2, 3 Pole Switches

Switch Ampere Range	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 Range	Wire Range (Cu/Al) Line, Load and Neutral
400	(1) 1/0 AWG - 300 Kcmil or (2) 1/0 AWG - 750 Kcmil
600	(2) 250- 500 Kcmil
600	(3) 250- 500 Kcmil

Maximum Horsepower Ratings Fused

Ampere Rating	1-Phase AC 240V	3-Phase AC 240V	3-Phase AC 480V	3-Phase AC 600V	250V DC
30	3	7 1/2	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

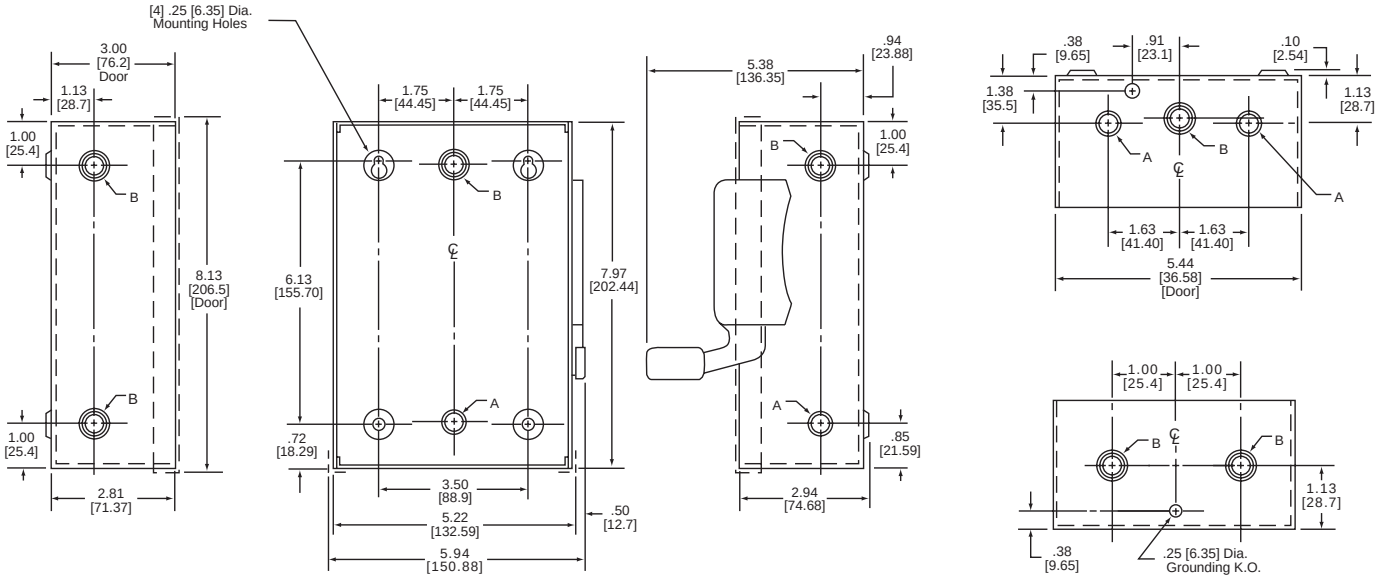
30	5	10	20	30	5
60	10	20	50	60	10
100	15	40	75	100	20
200	15	60	125	150	40
400-800	—	125	250	350	50

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 & 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
Siemens Type VBII Safety Switches

Type 1 (Indoor)
Figure 1

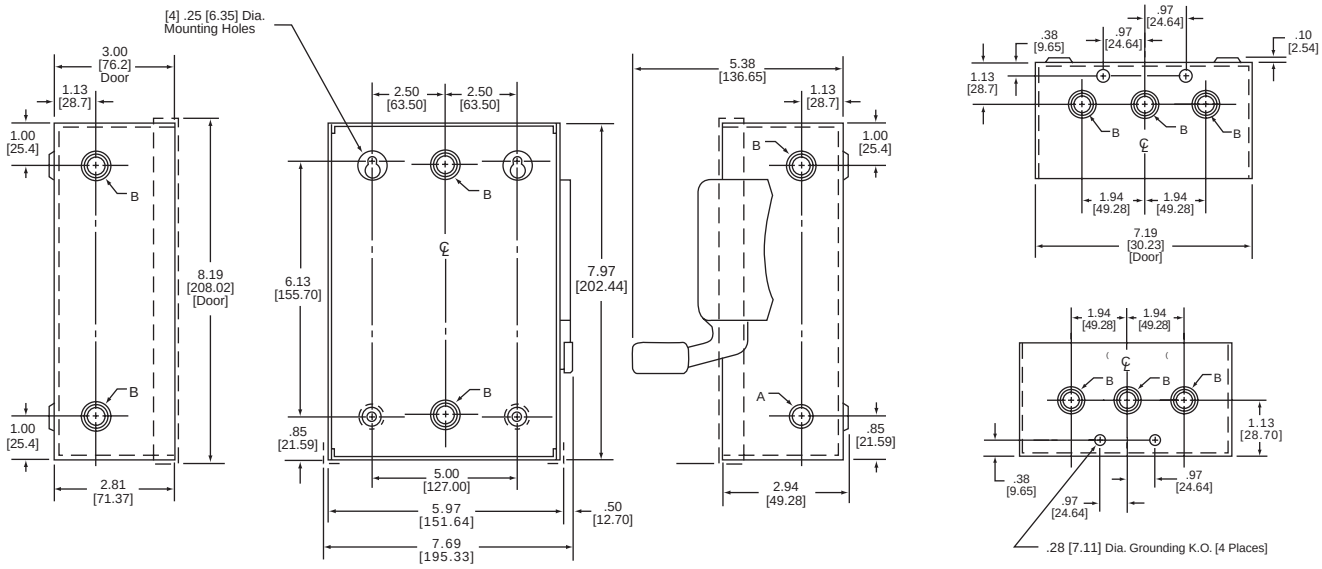
30 Amp General Duty (2-Pole)



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

30 Amp General Duty (3-Pole)

Figure 2

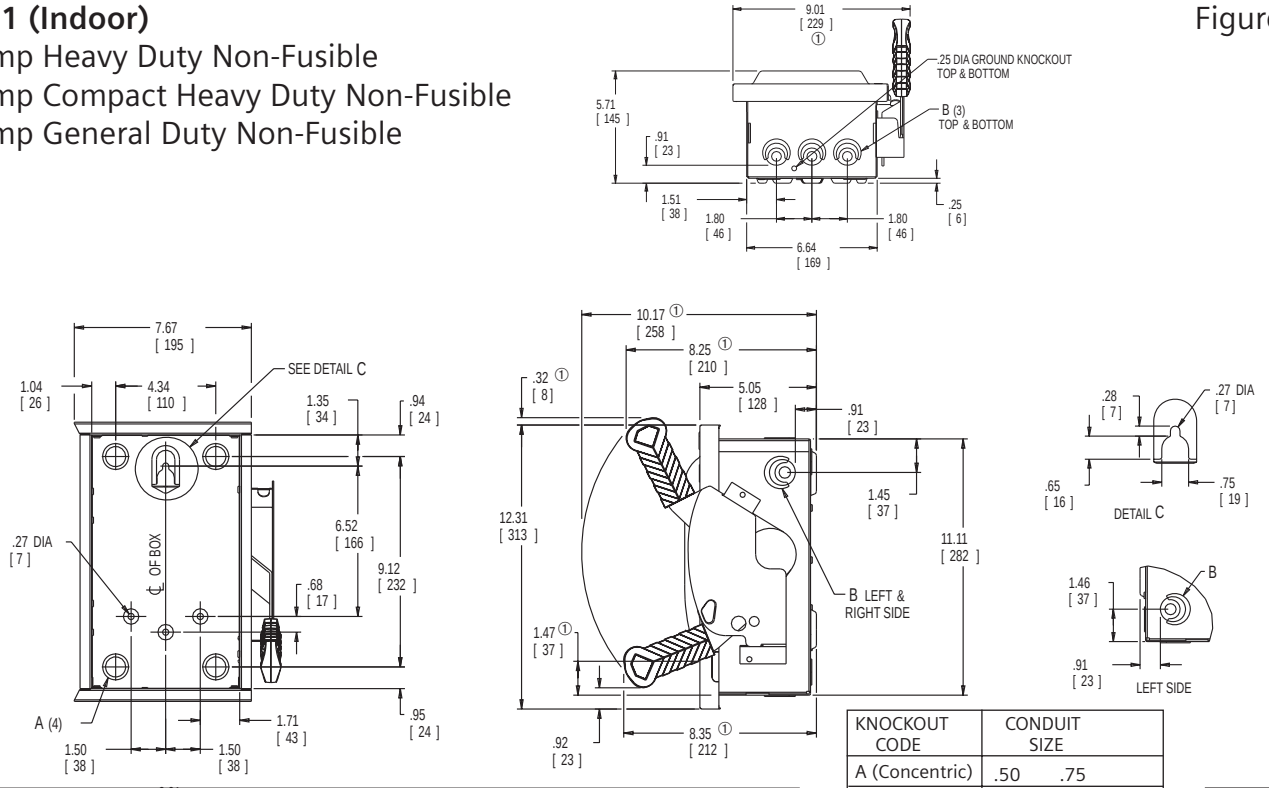


Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.

Type 1 (Indoor)

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

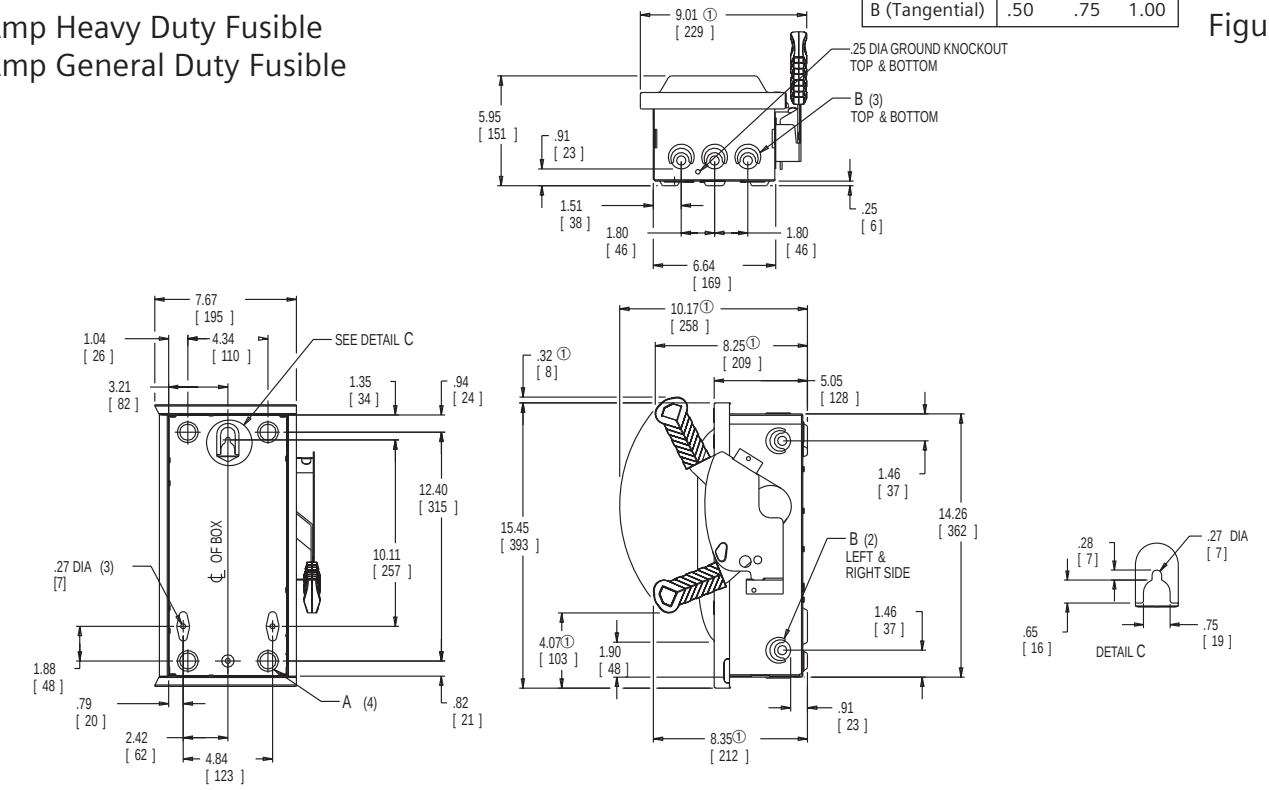
Figure 3



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

30 Amp Heavy Duty Fusible
60 Amp General Duty Fusible

Figure 4

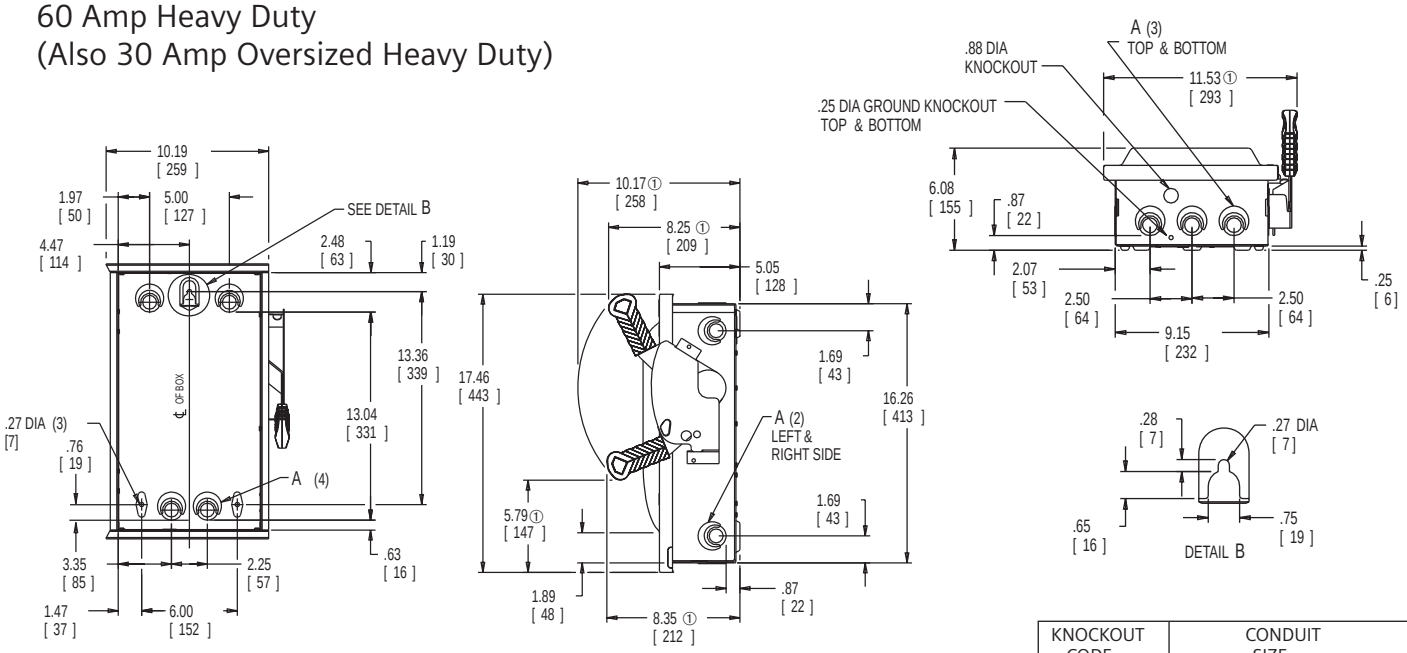


Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.
① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings
Siemens Type VBII Safety Switches

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

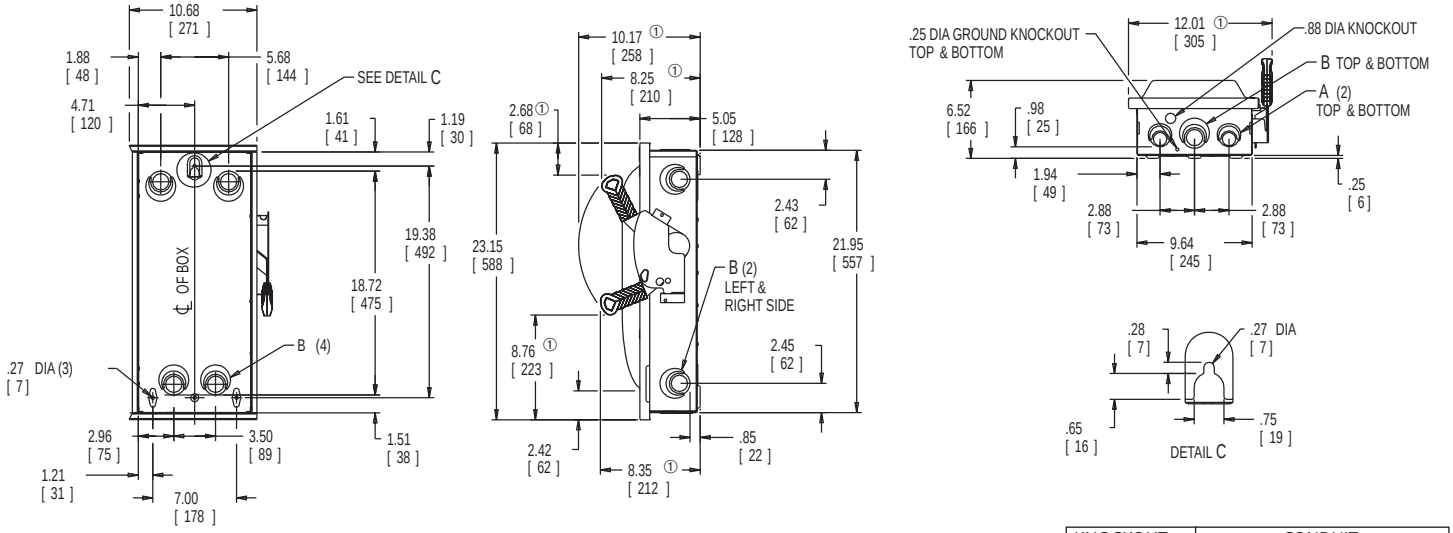
Figure 5



KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	.50	.75	1.00	1.25

100 Amp General and Heavy Duty

Figure 6



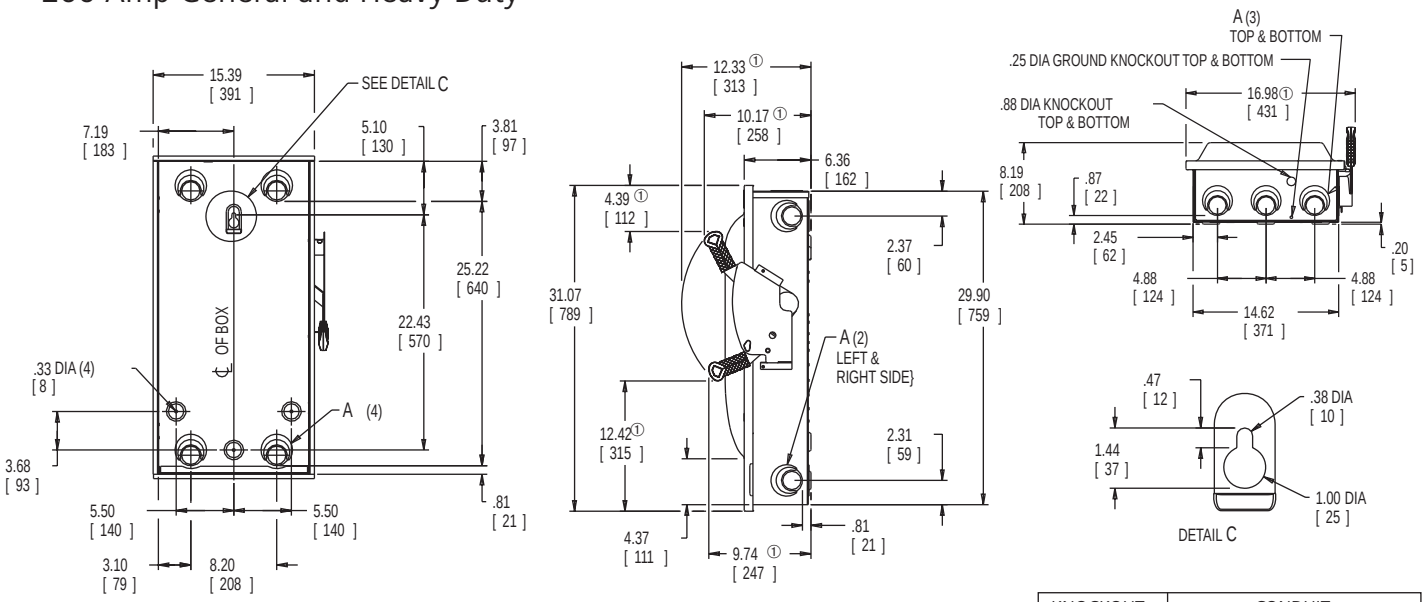
KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	.75	1.00	1.25	1.50
B (Tangential)	1.00	1.25	1.50	2.00

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)

Figure 7

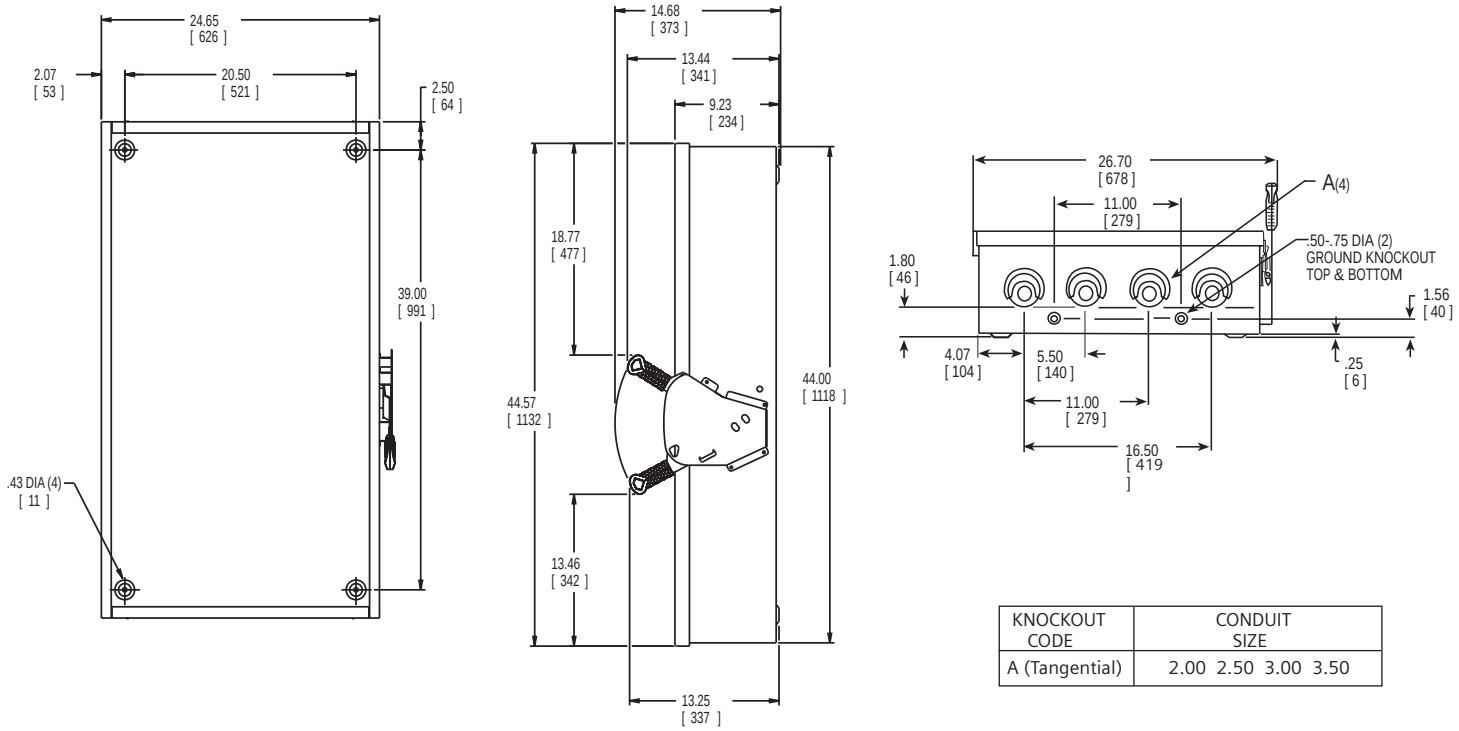
200 Amp General and Heavy Duty



KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	1.25	1.50	2.00	2.50

400 / 600 Amp General and Heavy Duty Non-Fusible

Figure 8



KNOCKOUT CODE	CONDUIT SIZE
A (Tangential)	2.00 2.50 3.00 3.50

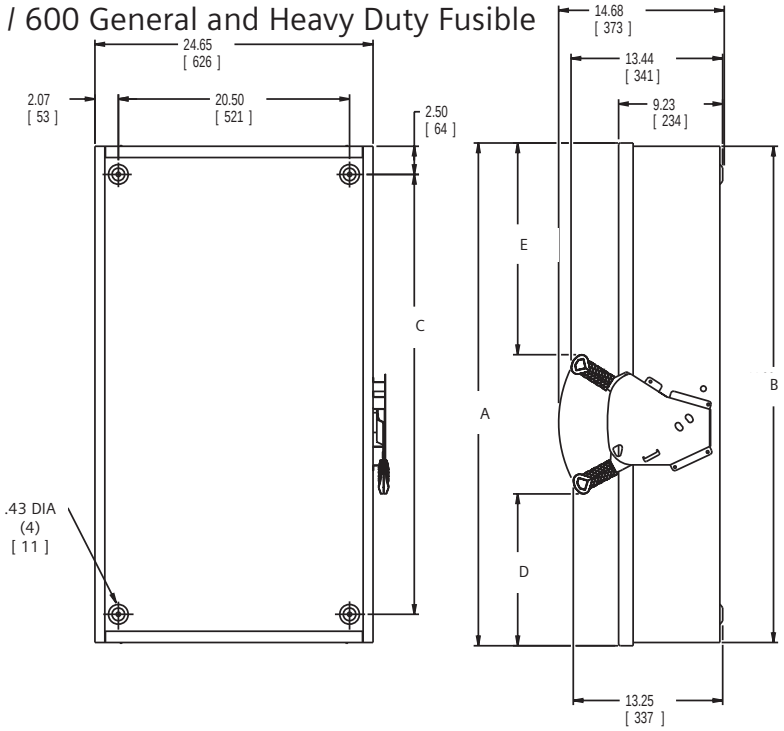
Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.
① Dimensions shown apply to heavy duty switches only.

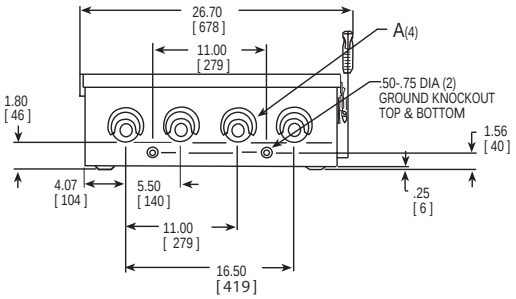
Detailed Dimension Drawings
Siemens Type VBII Safety Switches

Type 1 (Indoor)

Figure 9

400 / 600 General and Heavy Duty Fusible



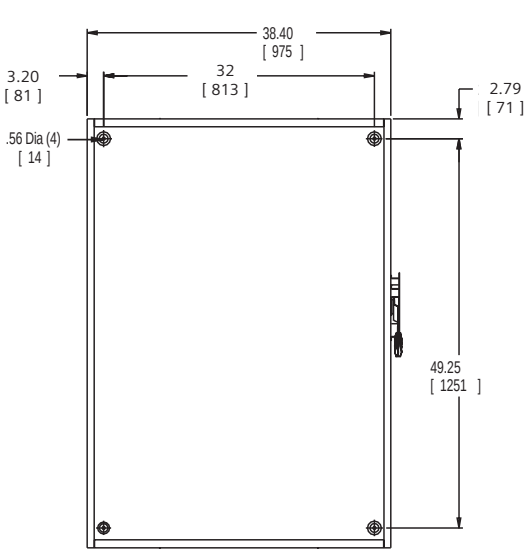


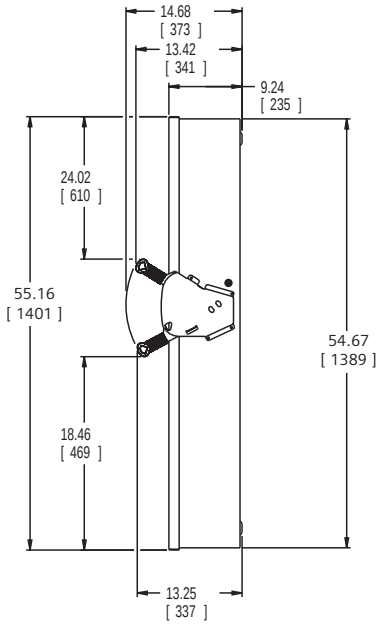
SWITCH TYPE	DIMENSIONS				
	A	B	C	D	E
STANDARD	56.57[1437]	56.07[1424]	51.00[1295]	25.46[647]	18.77[477]
HEIGHT REDUCED	45.82[1164]	45.31[1151]	40.25[1022]	20.99[533]	12.49[317]

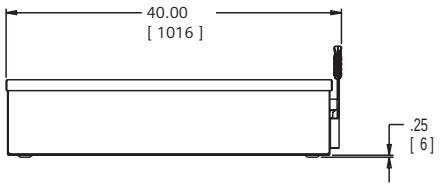
KNOCKOUT CODE	CONDUIT SIZE
A	2.00 2.50 3.00 3.50

800 / 1200 Amp Heavy Duty Non-Fusible

Figure 10







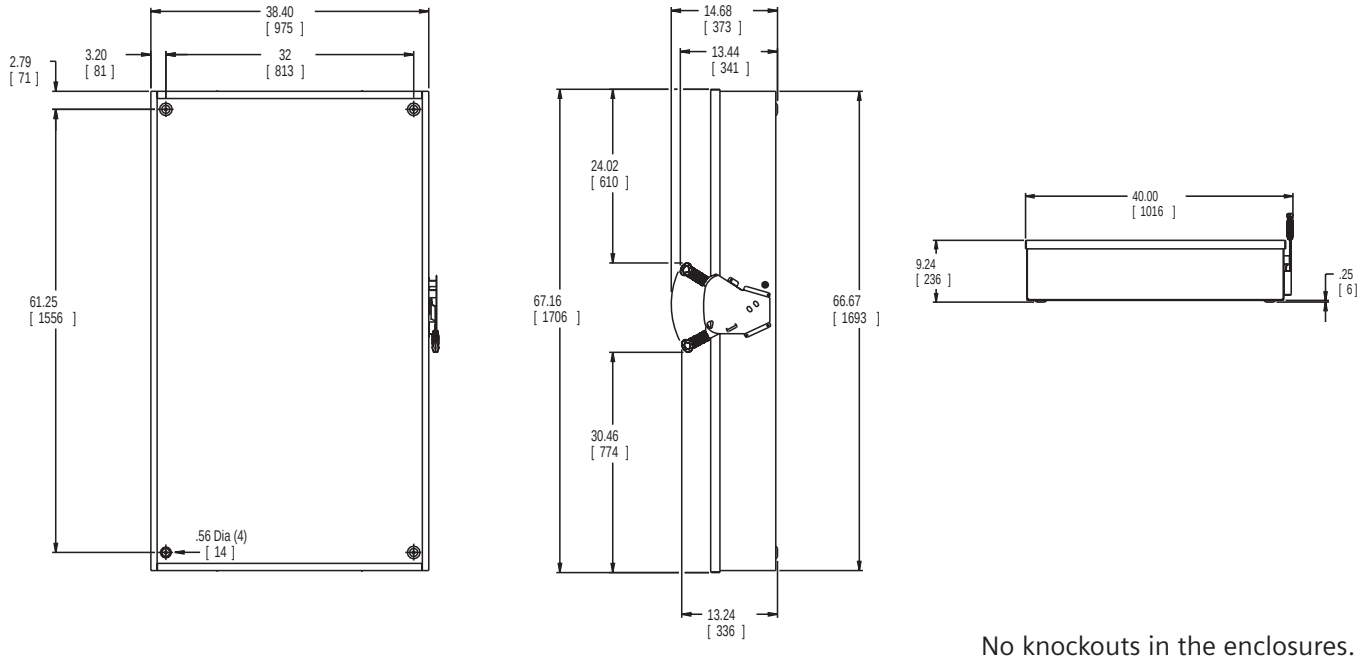
No knockouts in the enclosures.

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

Type 1 (Indoor)

Figure 11

800 / 1200 Amp Heavy Duty Fusible

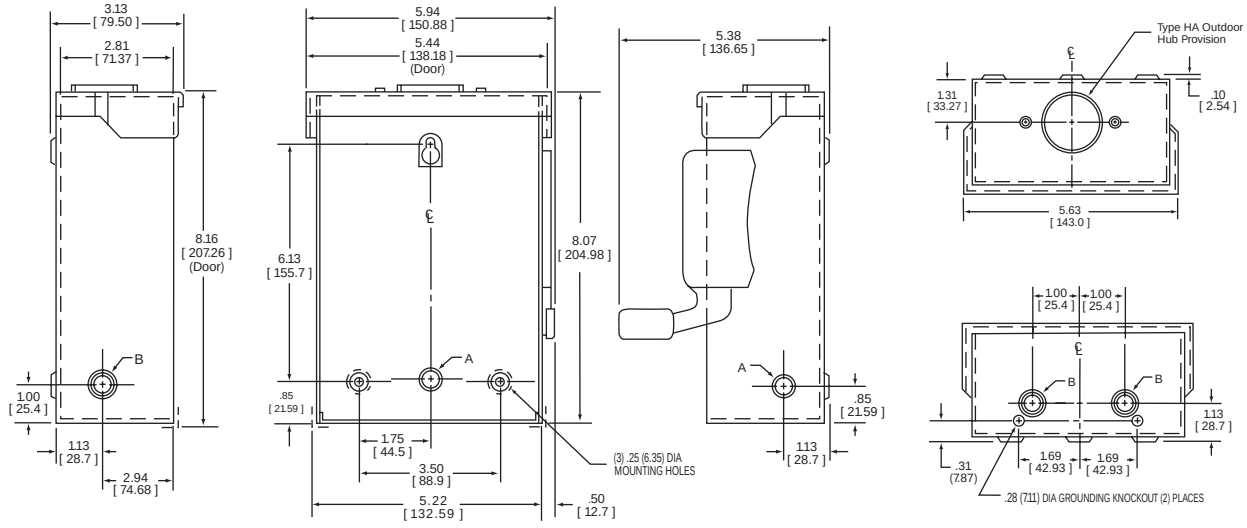


No knockouts in the enclosures.

Type 3R (Outdoor)

Figure 12

30 Amp General Duty (2-Pole)



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

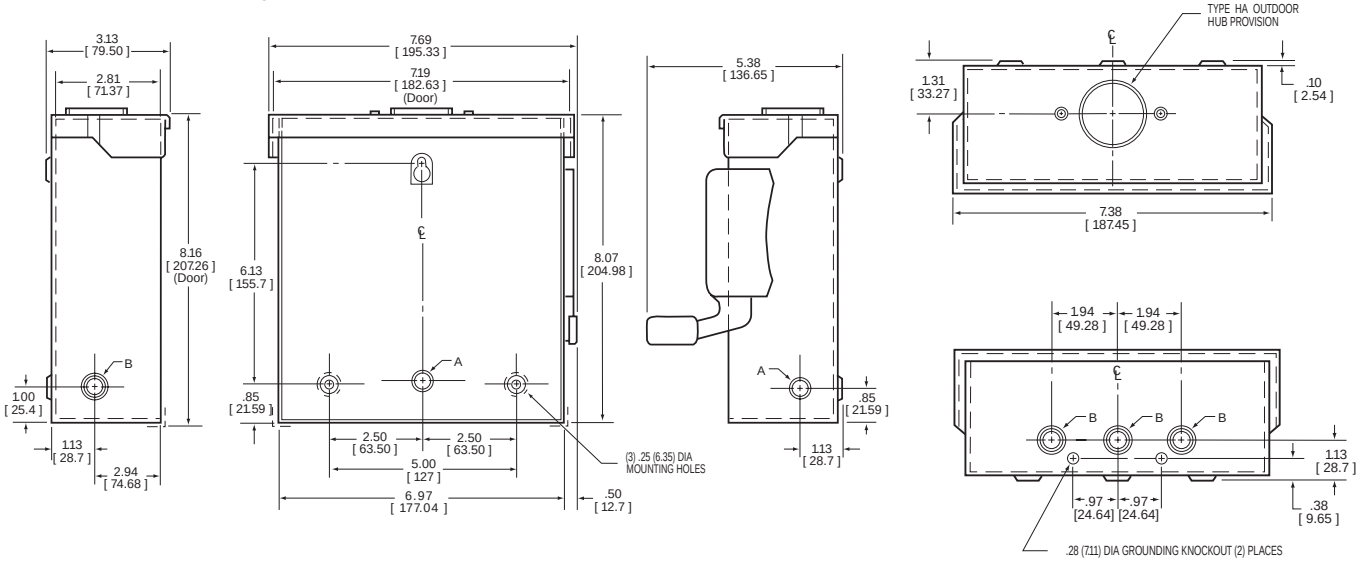
Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.

Detailed Dimension Drawings
Siemens Type VBII Safety Switches

Type 3R (Outdoor)

Figure 13

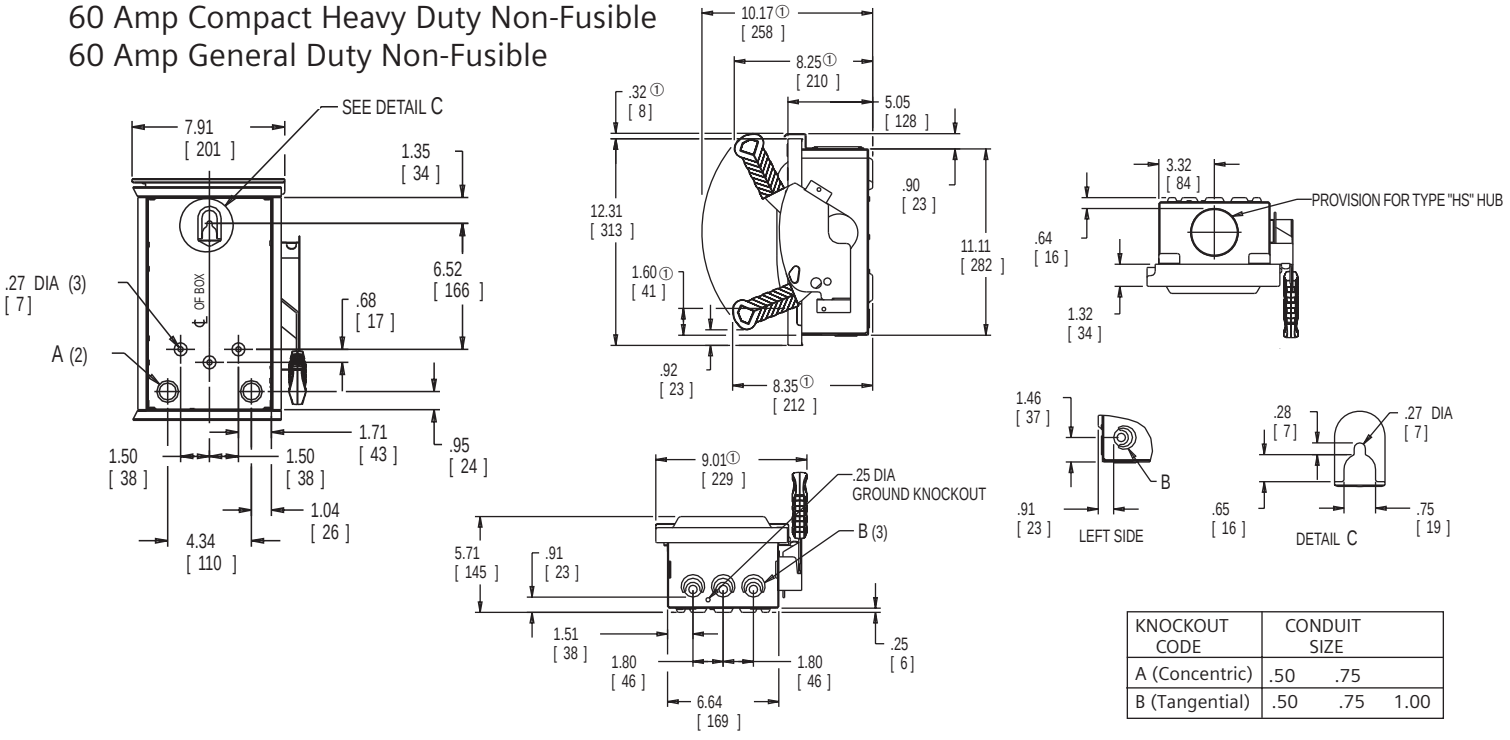
30 Amp General Duty (3-Pole)



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



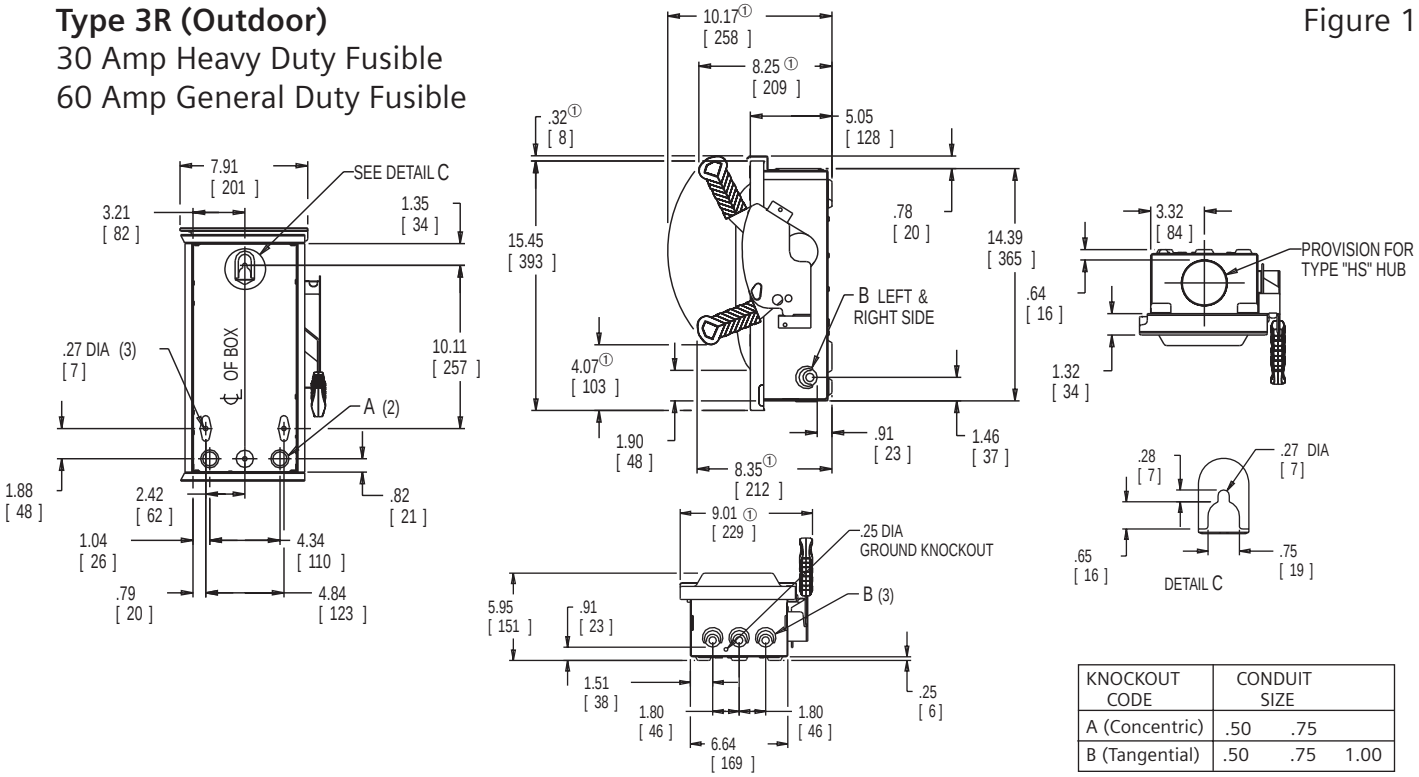
KNOCKOUT CODE	CONDUIT SIZE		
A (Concentric)	.50	.75	
B (Tangential)	.50	.75	1.00

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

Type 3R (Outdoor)

30 Amp Heavy Duty Fusible
60 Amp General Duty Fusible

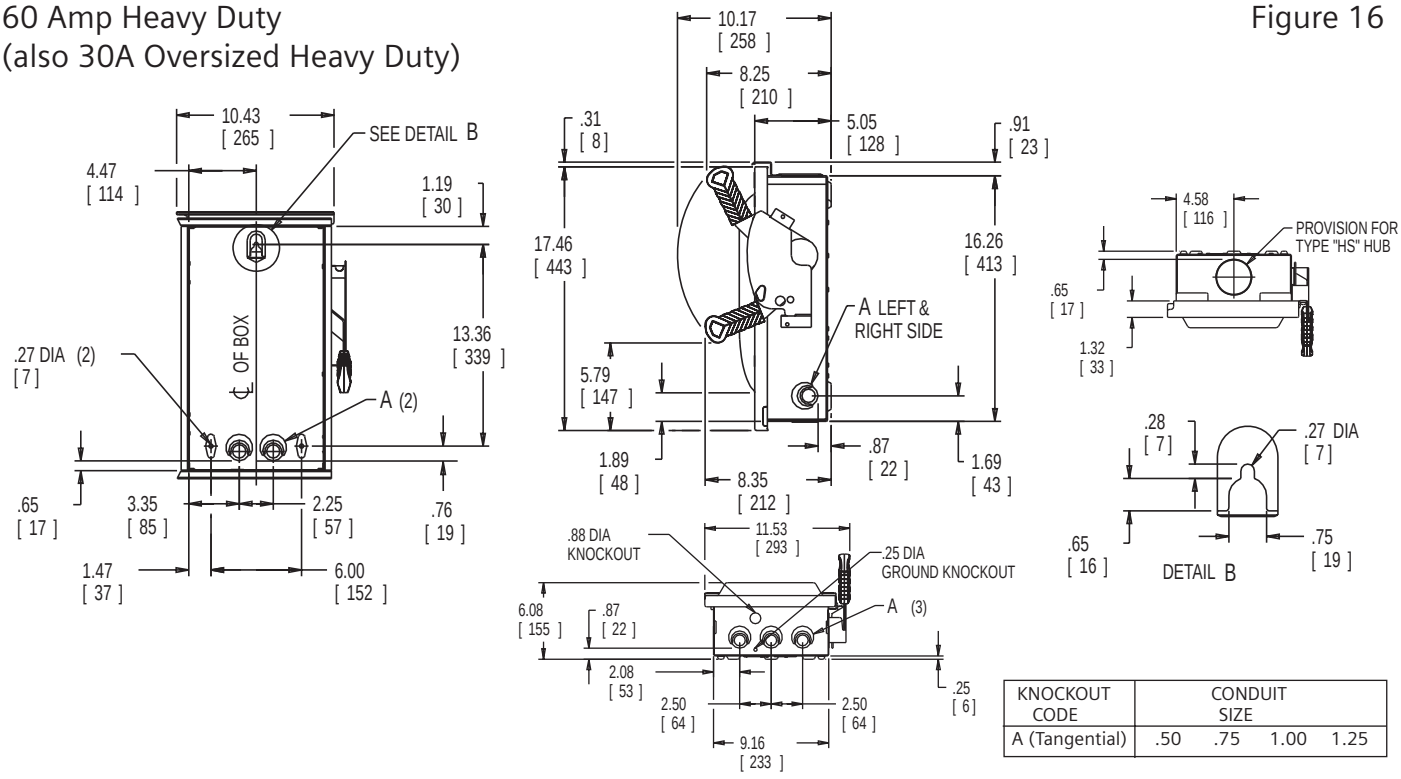
Figure 15



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

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

Figure 16



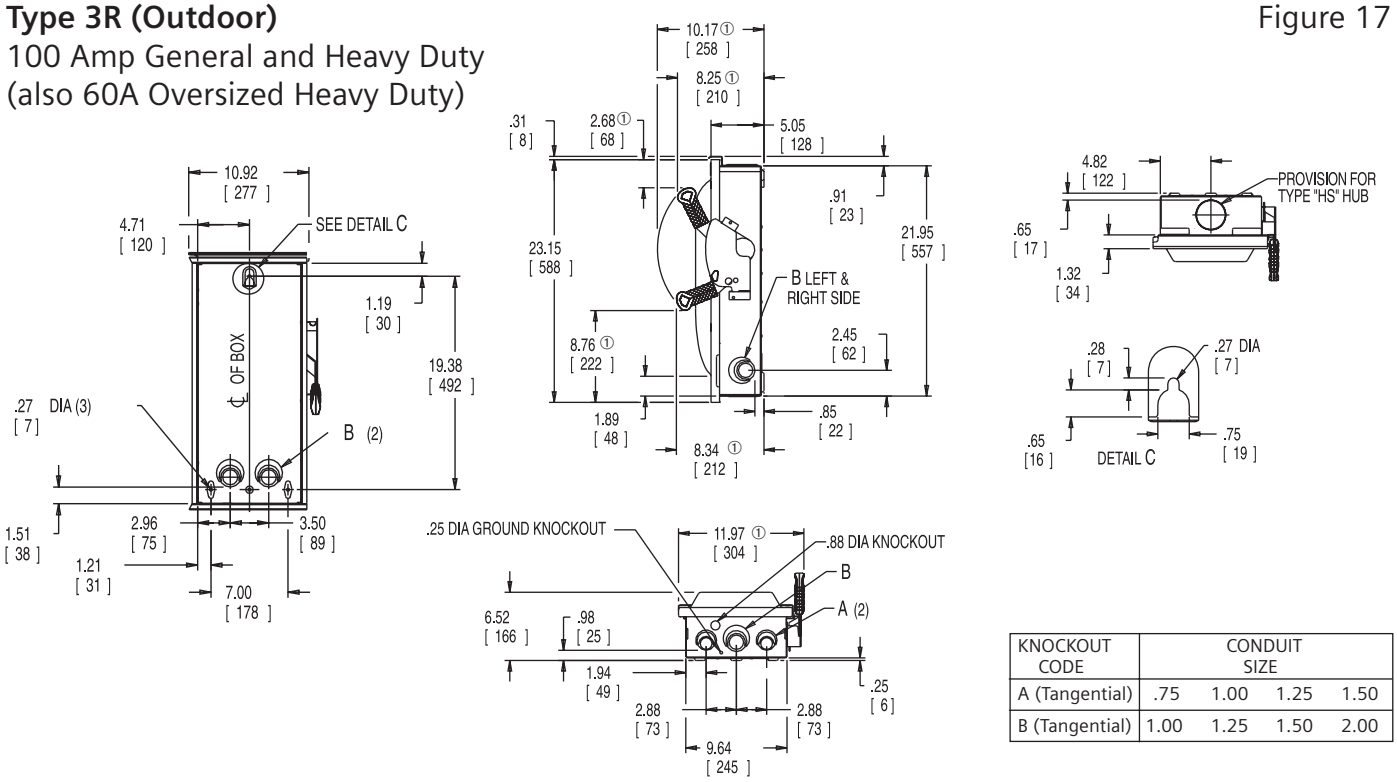
KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	.50	.75	1.00	1.25

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
Siemens Type VBII Safety Switches

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

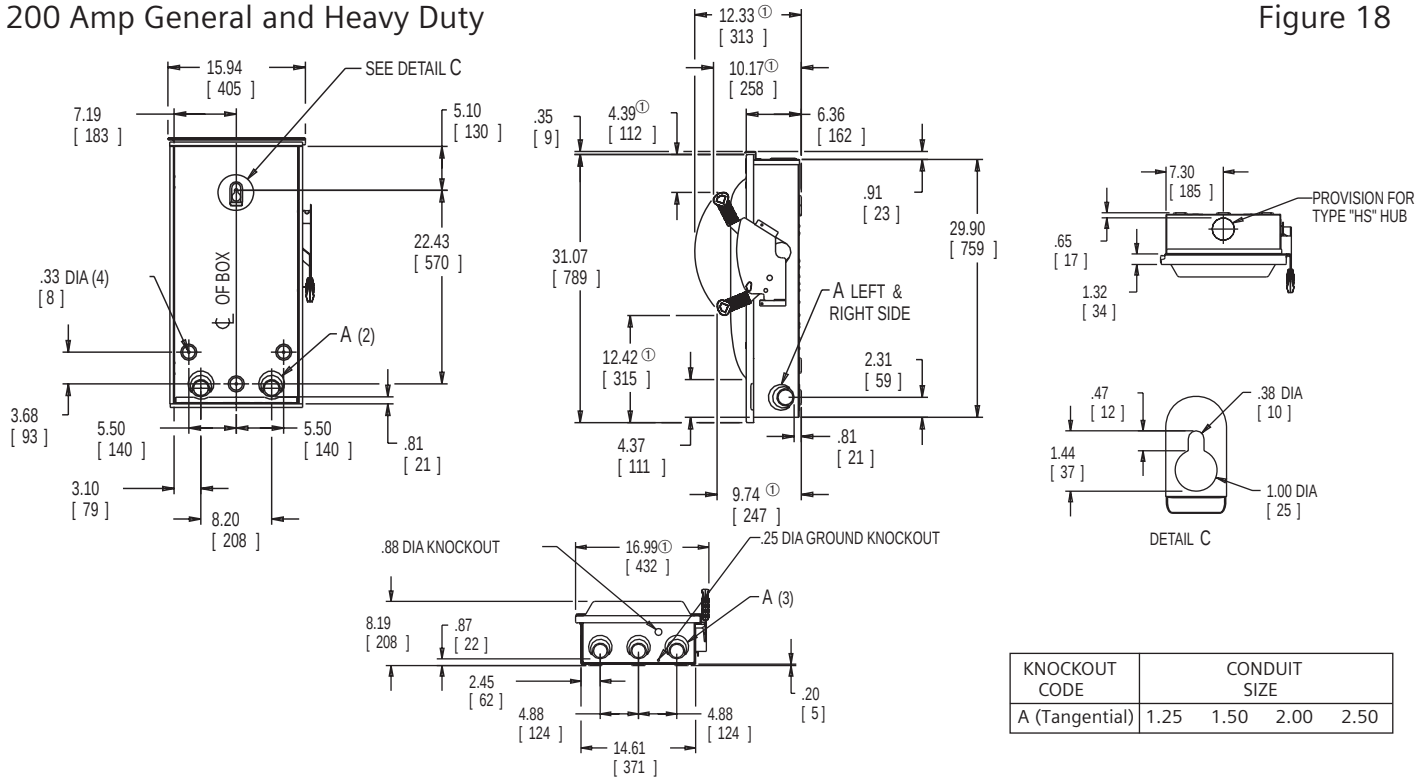
Figure 17



KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	.75	1.00	1.25	1.50
B (Tangential)	1.00	1.25	1.50	2.00

200 Amp General and Heavy Duty

Figure 18



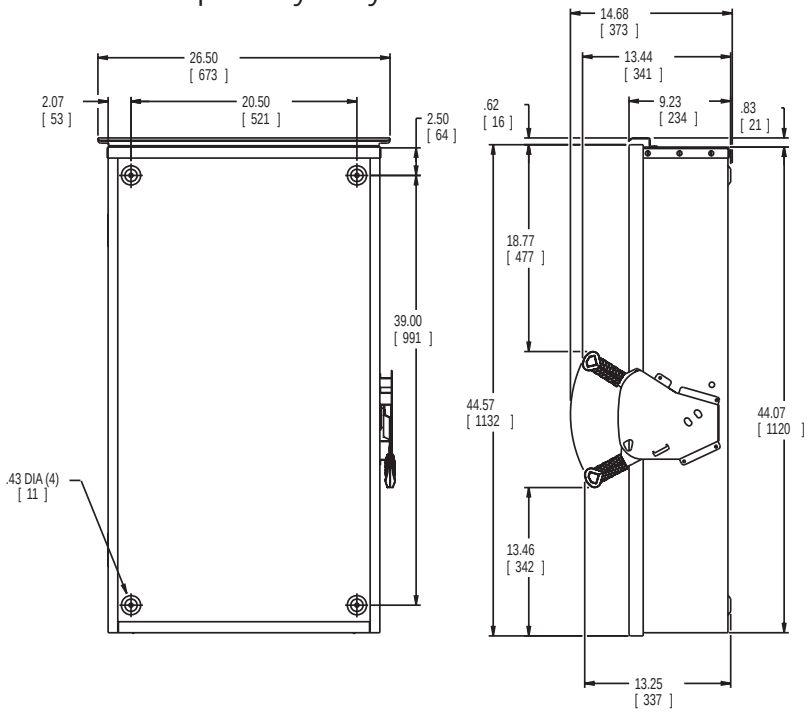
KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	1.25	1.50	2.00	2.50

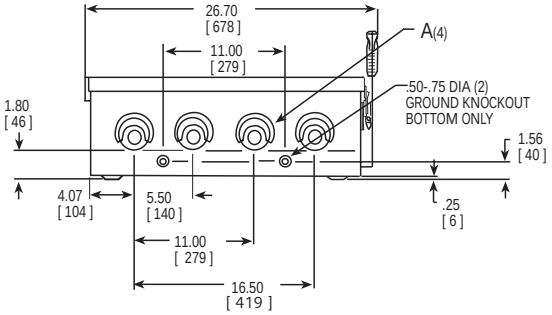
Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.
① Dimensions shown apply to heavy duty switches only.

Type 3R (Outdoor)

Figure 19

400 / 600 Amp Heavy Duty Non-Fusible

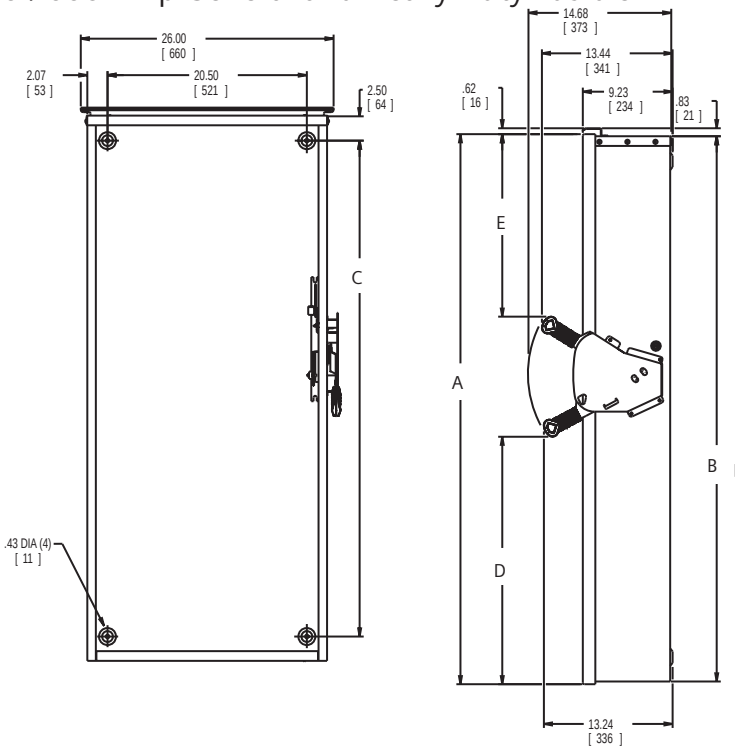




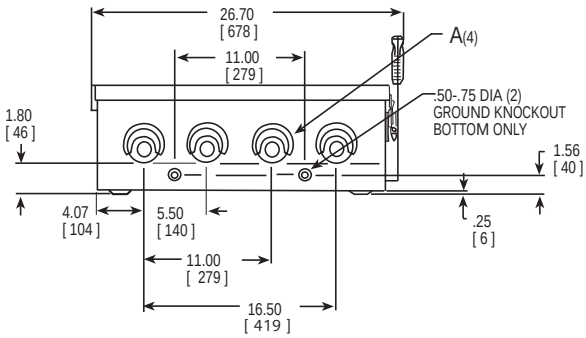
KNOCKOUT CODE	CONDUIT SIZE
A	2.00 2.50 3.00 3.50

400 / 600 Amp General and Heavy Duty Fusible

Figure 20



SWITCH TYPE	DIMENSIONS				
	A	B	C	D	E
STANDARD	56.57[1437]	56.07[1424]	51.00[1295]	25.46[647]	18.77[477]
HEIGHT REDUCED	45.82[1164]	45.31[1151]	40.25[1022]	20.99[533]	12.49[317]



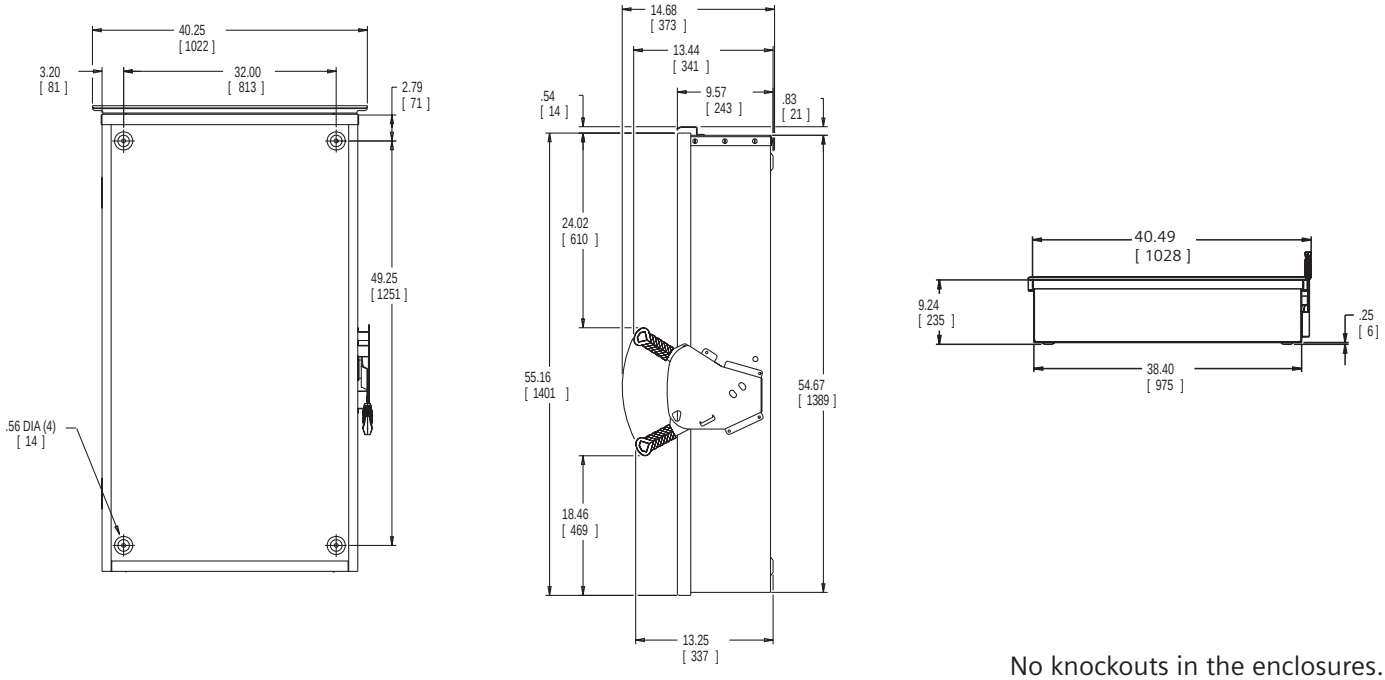
KNOCKOUT CODE	CONDUIT SIZE
A (Tangential)	2.00 2.50 3.00 3.50

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

Detailed Dimension Drawings
Siemens Type VBII Safety Switches

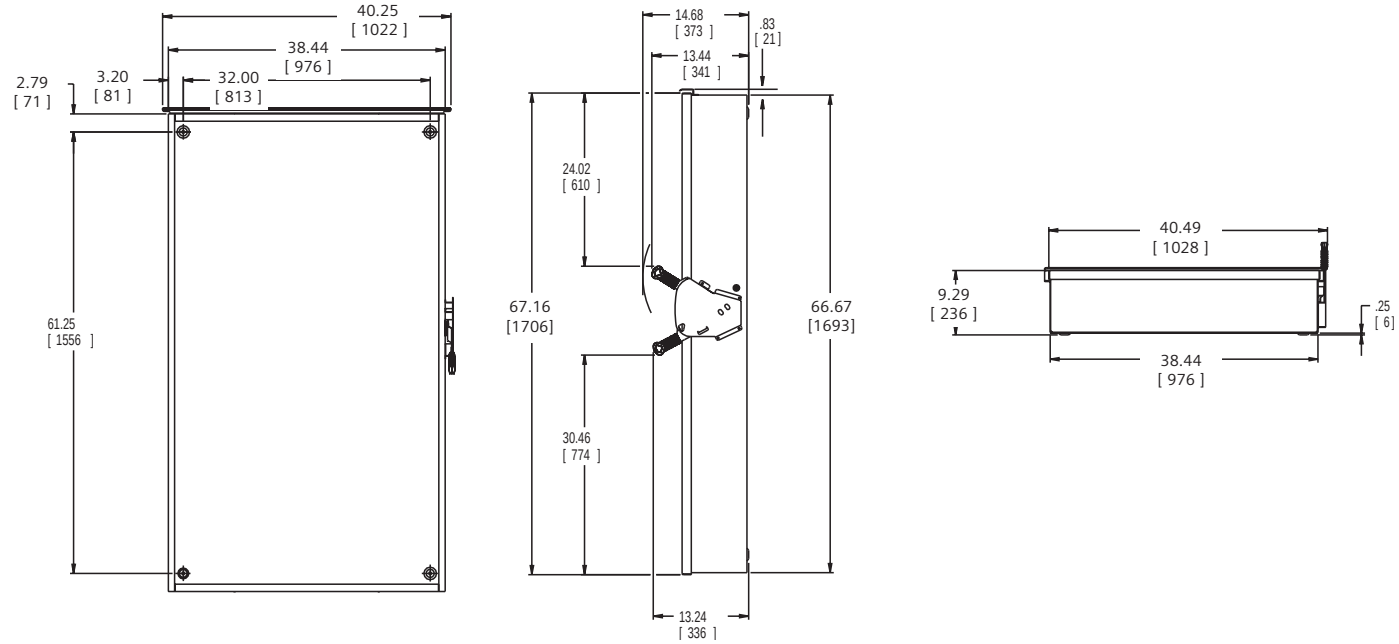
Type 3R (Outdoor) Figure 21

800 / 1200 General and Heavy Duty Non-Fusible



No knockouts in the enclosures.

800 / 1200 Amp Heavy Duty Fusible Figure 22



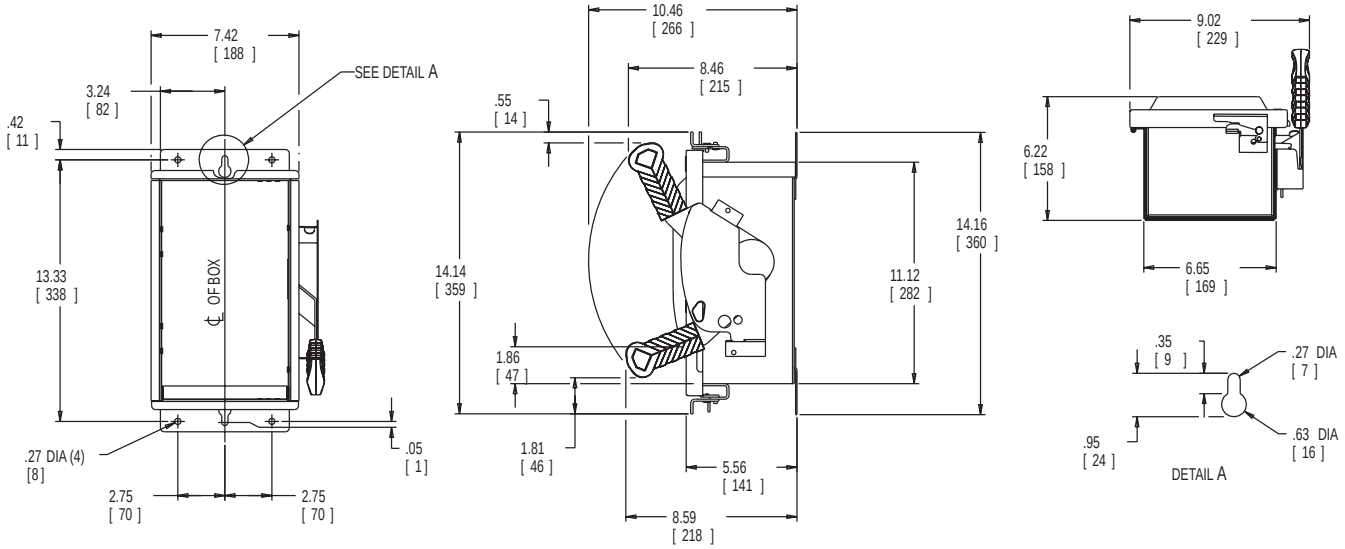
No knockouts in the enclosures.

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

Type 4X (Stainless); 12 (Industrial)

Figure 23

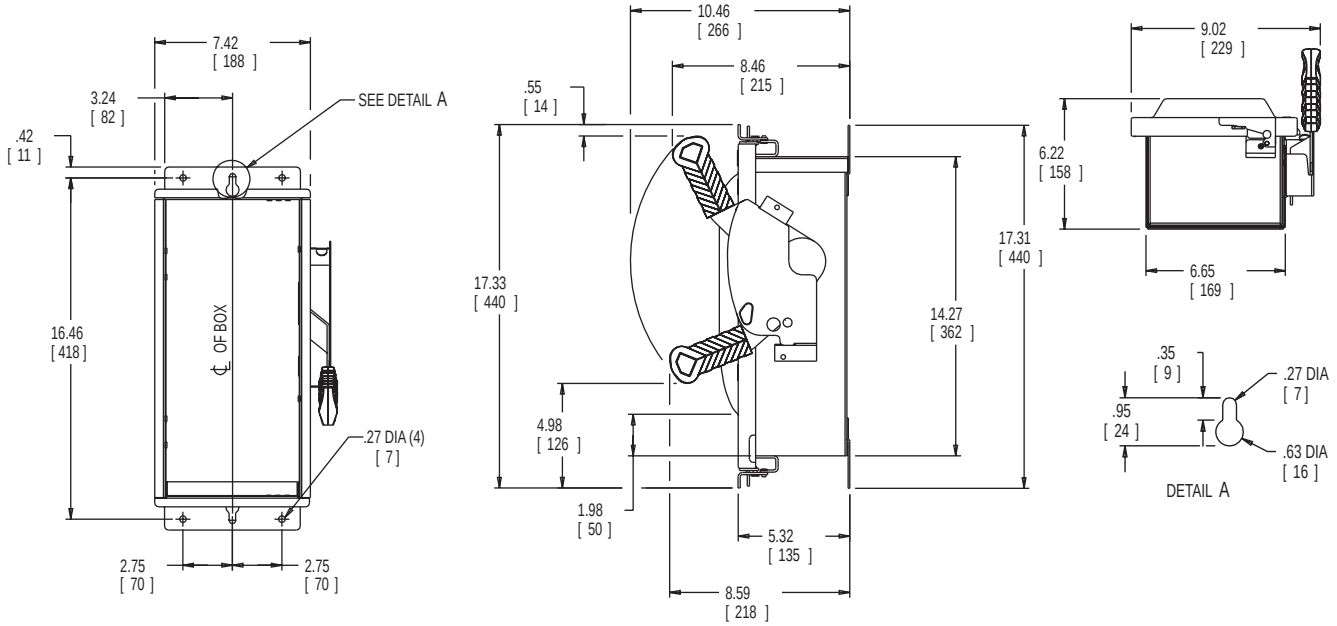
30 Amp Heavy Duty Non-Fusible
60 Amp Compact Heavy Duty Non-Fusible



No knockouts in the enclosures.

30 Amp Heavy Duty Fusible

Figure 24

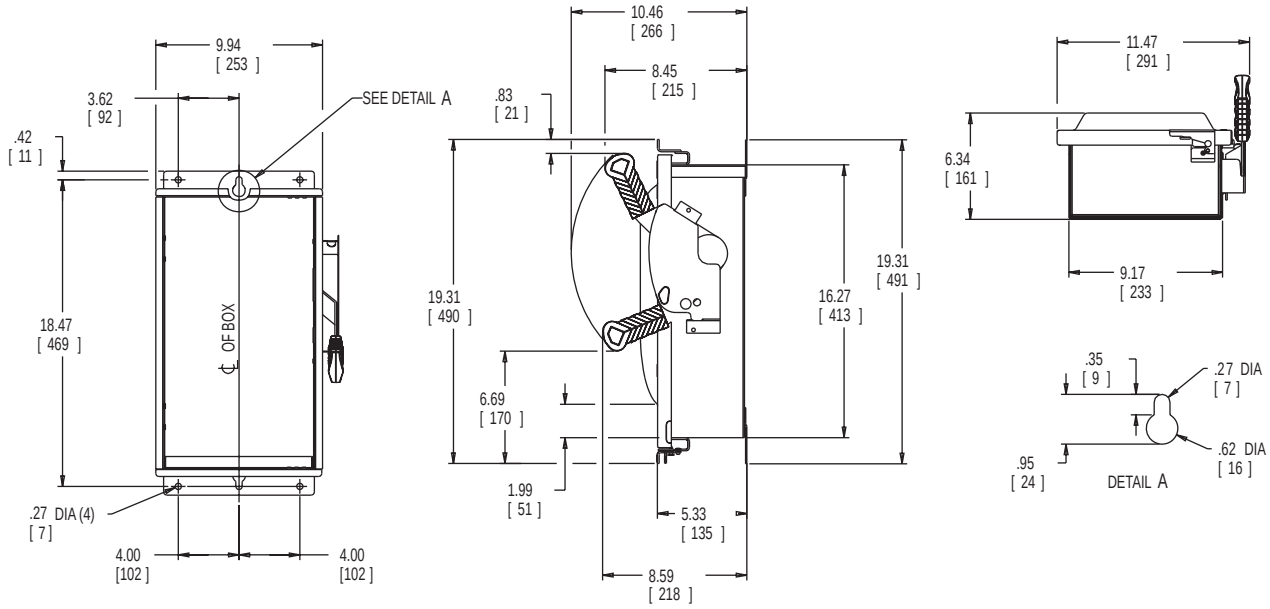


No knockouts in the enclosures.

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

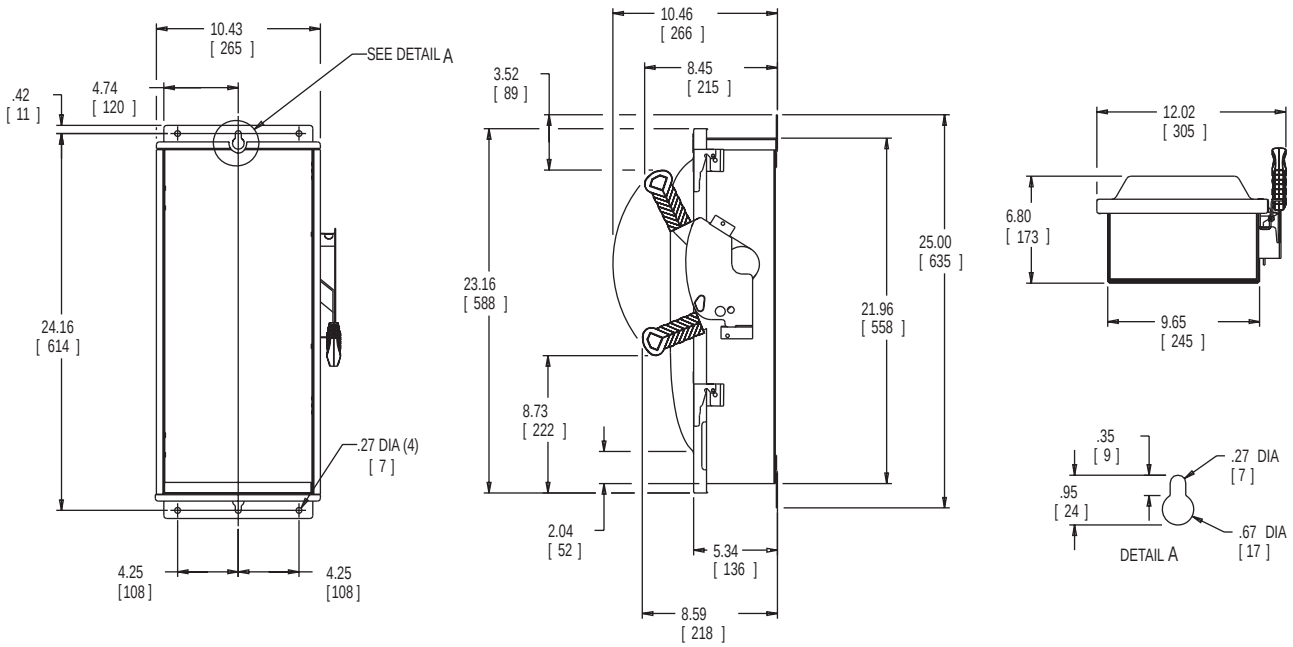
Detailed Dimension Drawings
Siemens Type VBII Safety Switches

Type 4X (Stainless); 12 (Industrial) Figure 25
60 Amp Heavy Duty



No knockouts in the enclosures.

100 Amp Heavy Duty Figure 26



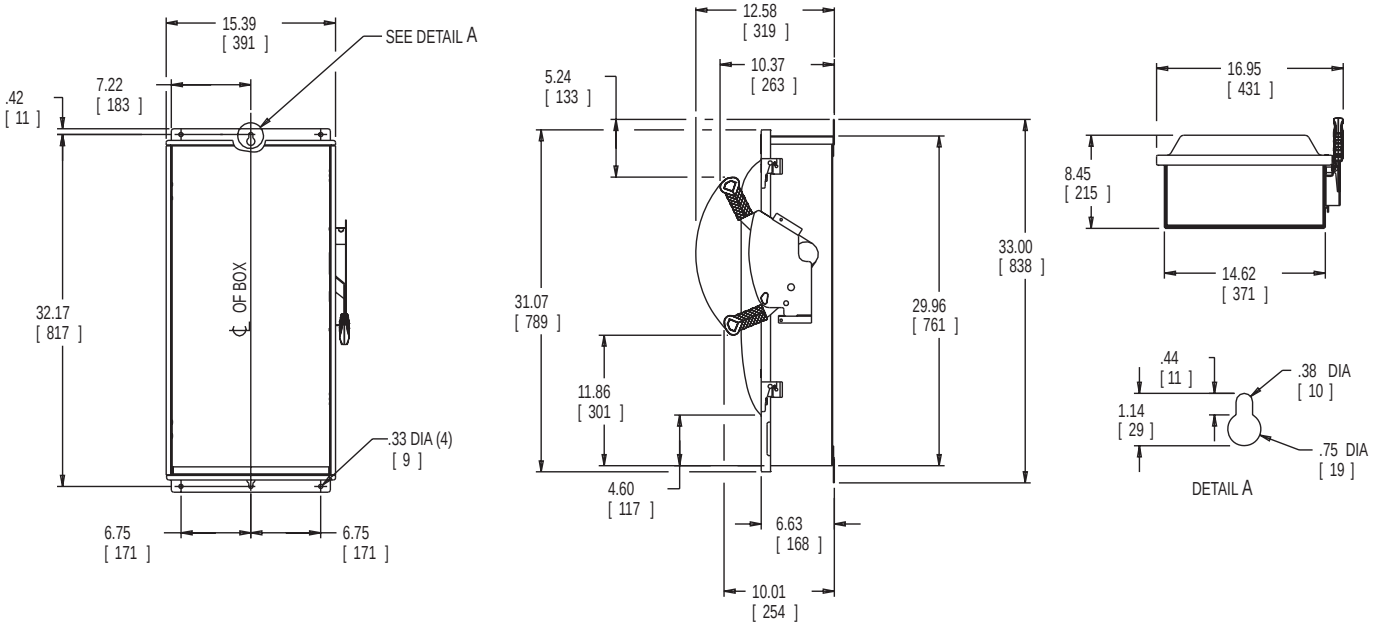
No knockouts in the enclosures.

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

Type 4X (Stainless); 12 (Industrial)

Figure 27

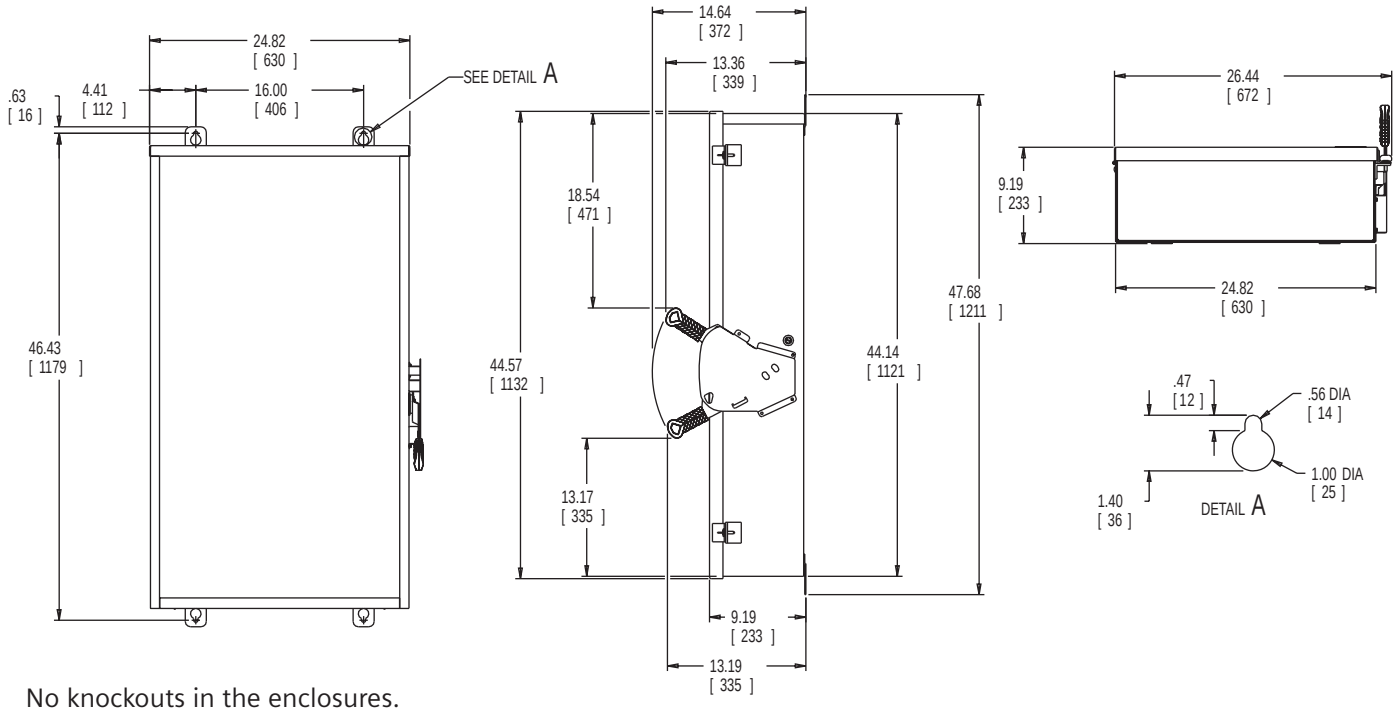
200 Amp Heavy Duty



No knockouts in the enclosures.

400 / 600 Amp Heavy Duty Non-Fusible

Figure 28



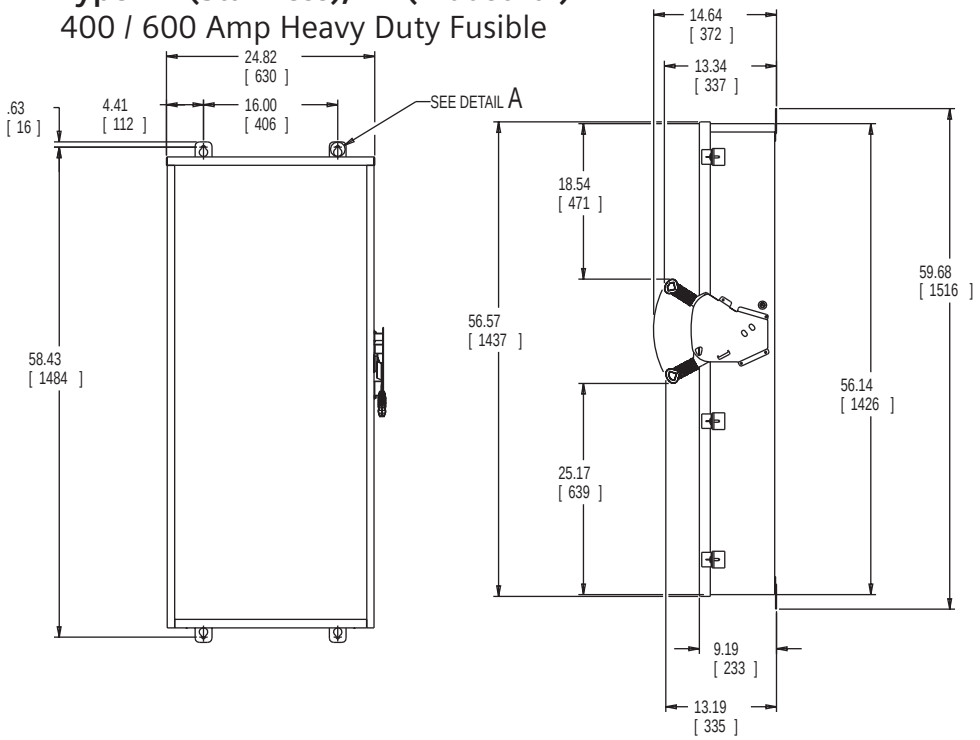
No knockouts in the enclosures.

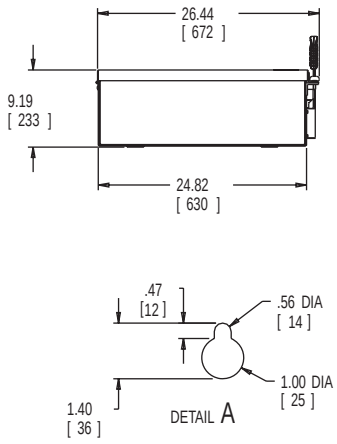
Dimensions shown in inches and millimeters [ ].
Dimensions shown accurate to ± 1/8 inch.

Detailed Dimension Drawings
Siemens Type VBII Safety Switches

Type 4X (Stainless); 12 (Industrial)
400 / 600 Amp Heavy Duty Fusible

Figure 29

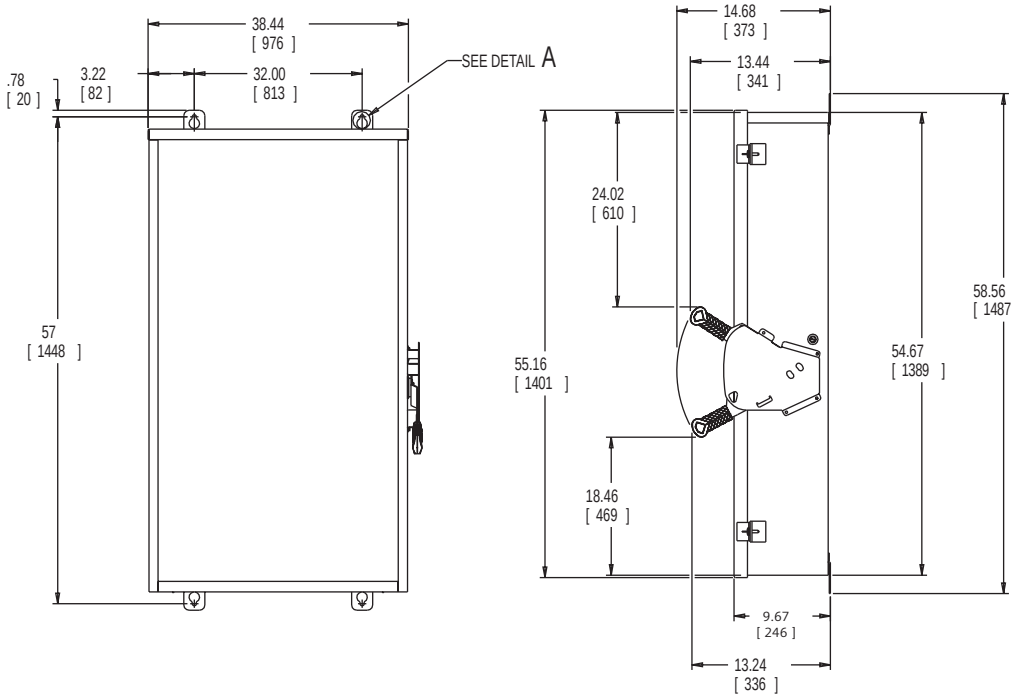


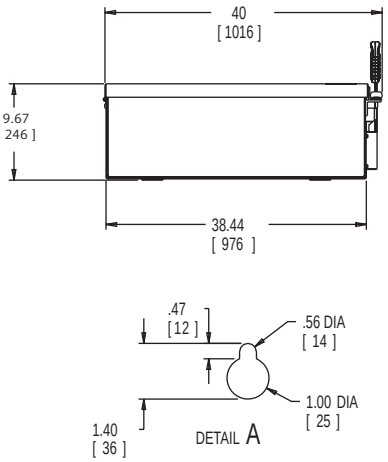


No knockouts in the enclosures.

800 / 1200 Amp Heavy Duty Non-Fusible

Figure 30





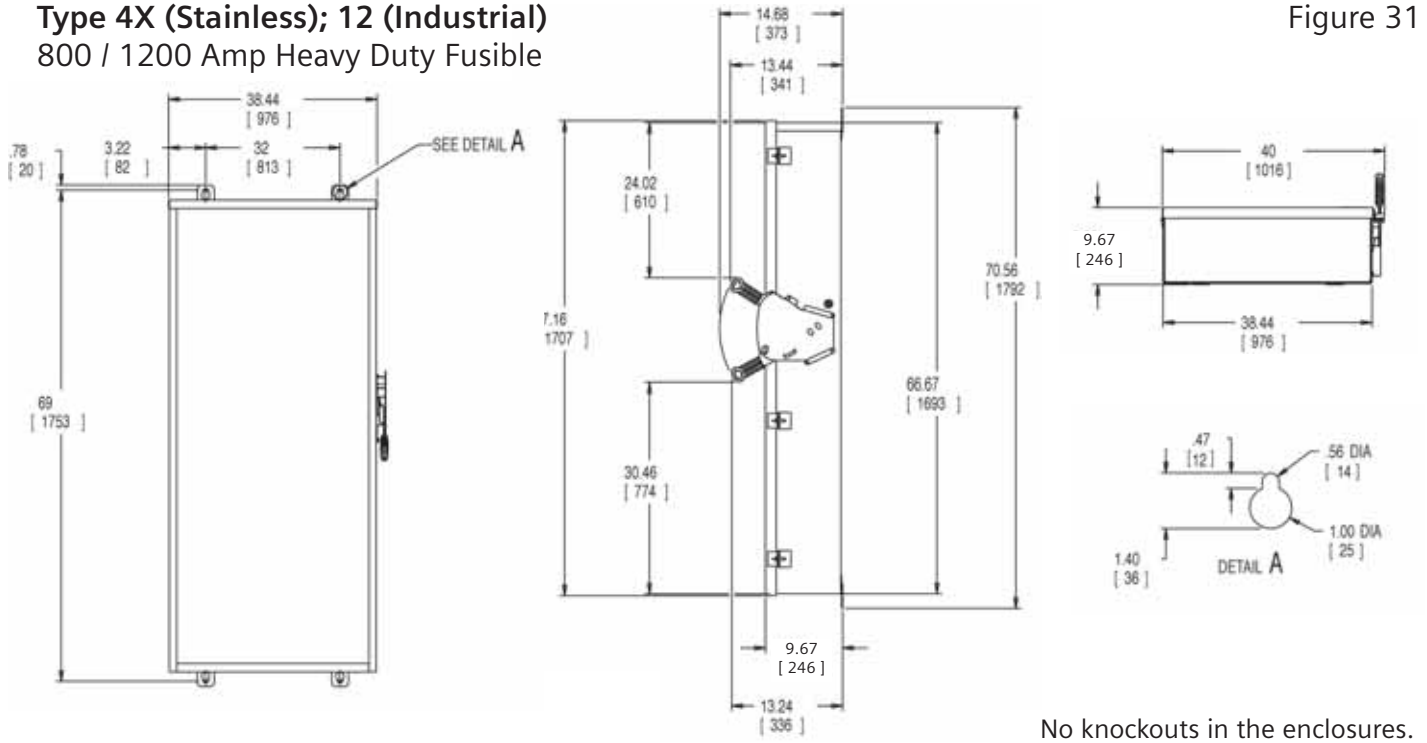
No knockouts in the enclosures.

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

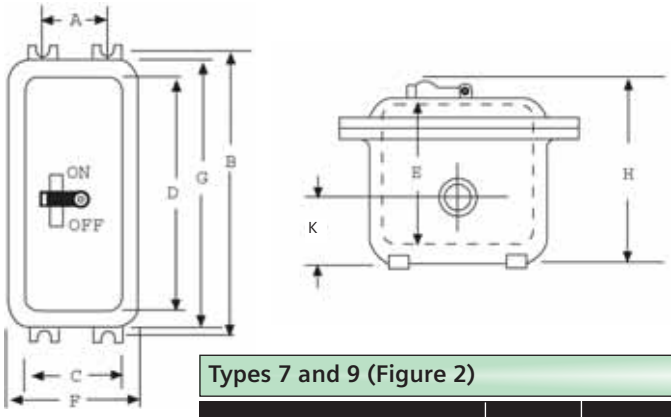
Type 4X (Stainless); 12 (Industrial)

800 / 1200 Amp Heavy Duty Fusible

Figure 31



No knockouts in the enclosures.



Types 7 and 9 (Figure 2)

Breaker Type	Catalog Number	Mounting		Dimensions Command (inches) Inside			Outside				Knockouts (4) Conduit Size	
		A	B	C	D	E	F	G	H	K	Std.	Max.
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 5/8	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 11/16	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

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

Detailed Dimension Drawings
Siemens Type VBII Safety Switches

Figure 1: Type 1

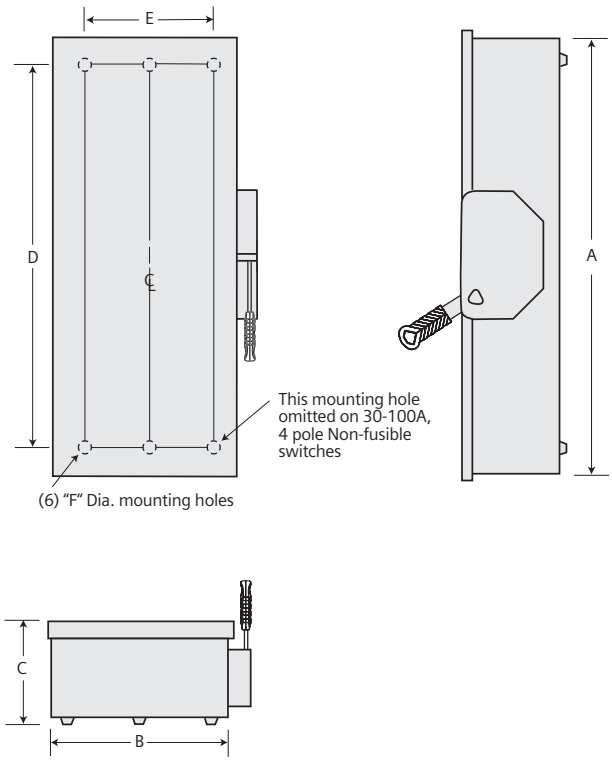
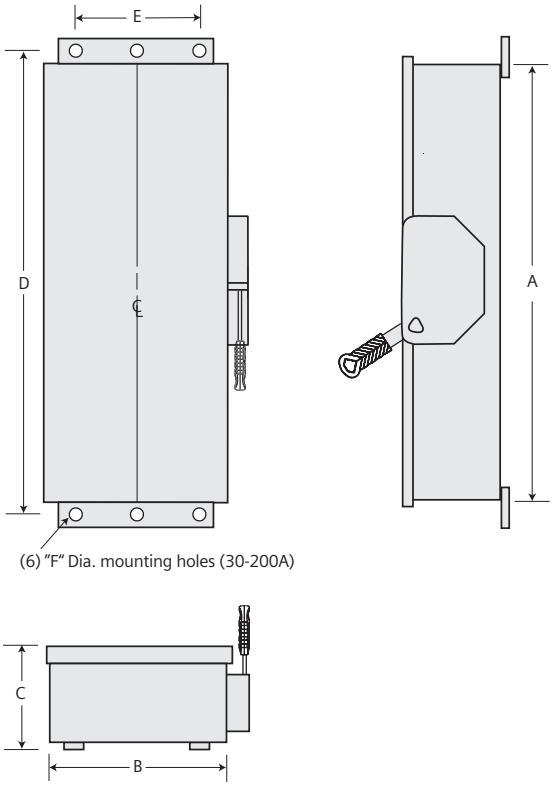


Figure 1: Type 12/3R and 4X



4 & 6 Pole Safety Switch Dimensions – Inches (mm)

Catalog Number	Enclosure			Mounting		
	A	B	C	D	E	F
Figure 1, 4-Pole Fusible and Non-fusible, Type 1						
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)
Figure 2, 4 & 6-Pole Fusible Type 12/3R and 4X						
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)
Figure 2, 4 & 6-Pole Non-fusible Type 12/3R and 4X						
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 & 3R④

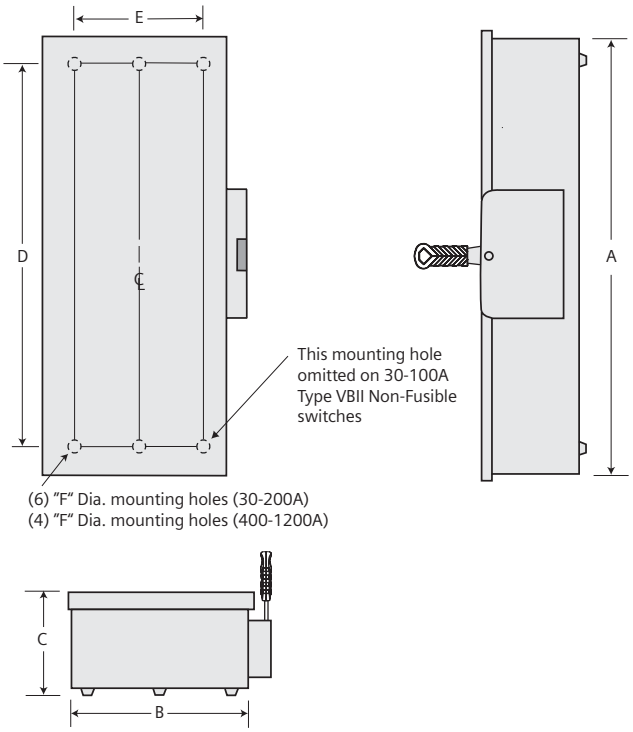
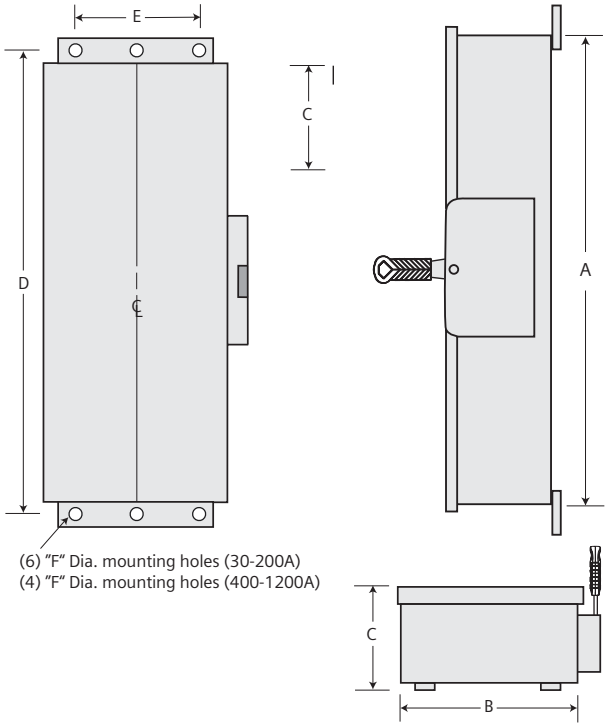


Figure 2: Type 4X & 12



VBII Design Double Throw Dimensions – Inches

Catalog Number	Enclosure			Mounting		
	A	B	C	D	E	F
Figure 1 (30-1200A Type 1 & 3R)						
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
NFR451DTK③, NFR452DTK③, NFR453DTK③	24.63	11.63	4.78	21.50	9.25①	0.25①
NF454DTK②③, NFR454DTK②③	37.25	19.19	6.32	33.50	16.00②	0.56②
NF455DTK③, NF456DTK③, NF457DTK③ NFR455DTK③, NFR456DTK③, NFR457DTK③	63.31	27.00	8.88	58.50	22.25②	0.56②
Figure 2 (30-200A Type 12 & 4X)						
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
NF355HDTK②, NF355SSDTK②	53.82	22.66	7.25	56.20	18.00	0.56
F353SSDTK②③	37.00	11.62	5.50	39.50	9.00	0.26
F354SSDTK②③	50.90	19.16	6.48	63.27	16.12	0.50
F355SSDTK②③	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
Siemens Type VBII Safety Switch


HBB612


HNB623


HM6123


HFB656


HFB612


HH6123

Ampere Rating	Line Base	Load Base	Handle/Handle Guard		Mechanism Assembly	Lugs
			General Duty	Heavy Duty		
30A General Duty 2- and 3-Pole Fusible and Non-fusible ⑤						**240V Max**
30 Fused, 2-Pole	W410472A	–	–	–	–	– ①
30 Fused, 3-Pole	W410473A	–	–	–	–	– ①
30 Non-fused	W410473B	–	–	–	–	– ①
Fusible 2 and 3-Pole 60-600A General Duty & 30-600A Heavy Duty ⑤⑧						**240V Max**
30 HD 240V	HFB21 ②	HBB21 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 GD	HFB612 ②	HBB612 ②	GH223	–	HM6123	HL612 ①
60 HD 240V⑩	HFB22 ②	HBB22 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
100	HFB63 ②	HBB63 ②	GH223	HH6123 ⑦	HM6123 ⑦	HL63 ①
200	HFB64 ②	HBB64 ②	GH24	HH64 ⑦	HM64 ⑦	HL64 ①
400	HFB65 ③⑥	HBB656 ③⑥	HH65678	HH65678 ⑦	HM65	HL65678 ④
600	HFB66 ③⑥	HBB656③⑥	HH65678	HH65678 ⑦	HM66	HL65678 ④
800	HFB67A ②⑥	HBB67A ②⑥	–	HH65678 ⑦	HM67A	HL67A⑥⑨
1200	HFB68 ⑥	HBB68 ⑥	–	HH68⑦	HM678	⑨
Fusible 3-Pole Heavy Duty ⑤⑧						**600V Max**
30 600V	HFB612 ②	HBB612 ②	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 600V	HFB62 ②	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	HFB65 ③⑥	HBB656 ③⑥	–	HH65678 ⑦	HM65	HL65678 ④
600	HFB66 ③⑥	HBB656 ③⑥	HH65678	HH65678 ⑦	HM66	HL65678 ④
800	HFB67A ②⑥	HBB67A ②⑥	–	HH65678 ⑦	HM67A	HL67A⑥⑨
1200	HFB68 ⑥	HBB68 ⑥	–	HH68⑦	HM678	⑨
Non-Fusible 3-Pole 60-600A General Duty and 30-600A Heavy Duty ⑤⑧						**600V Max**
30 HD	HNB612 ②	–	–	HH6123 ⑦	HM6123 ⑦	HL612 ①
60 GD	HNB612 ②	–	GH223	–	HM6123	HL612 ①
60 HD⑩	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	HNB65 ③⑥	–	HH65678	HH65678 ⑦	HM65	HL65678 ④
600	HNB66 ③⑥	–	HH65678	HH65678 ⑦	HM66	HL65678 ④
800	HNB67A ②⑥	–	–	HH65678 ⑦	HM67A	HL67A⑥⑨
1200	HNB68 ②⑥	–	–	HH68⑦	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.
⑦ For type 4 / 4X stainless steel switches add "S" to end of catalog number.
⑧ For replacement door for heavy duty switches add "DOOR" to end of switch catalog number.
⑨ Lugs included with line and load bases.
⑩ Also for oversized 30A HD switches.
⑪ Also for oversized switch HNF362RL.

Fuse Application and Selection Data
Siemens Type VBII Safety Switch

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:

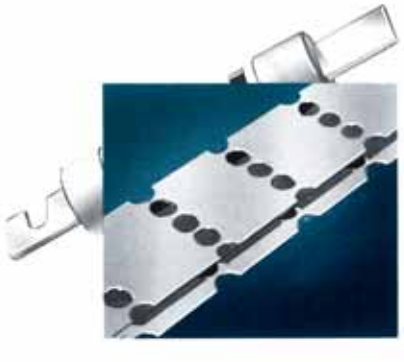
- Voltage requirements
- Conductor ampacity
- Horsepower requirements
- Maximum available RMS fault-current
- UL fuse class when specified

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.

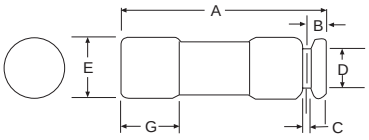
Dual-element Time-delay Fuses
Dual-element fuses may have time-delay designation since these fuses employ two distinctly separate types of elements. One provides overload protection with time delay. (UL states that time delay means having a 10-second operating delay at 500 percent of fuse label rating.)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

Fuse Applications and Dimensions
Siemens Type VBII Safety Switch

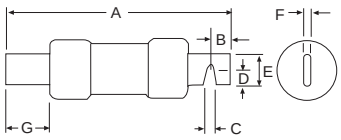
Class R and H Fuses

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

	250 Volts							600 Volts						
Ampere Rating	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

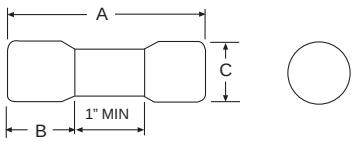
Class R Fuse Dimensions

	250 Volts							600 Volts						
Ampere Rating	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	1/2	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

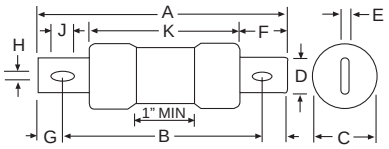
Class J

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 5/8	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	13/8	11/16	9/32	3/8	3
201-400	7 1/8	5 1/4	2 1/8	1 5/8	1/4	17/8	15/16	13/32	17/32	3 3/8
401-600	8	6	2 5/8	2	3/8	21/8	1	17/32	11/16	3 3/4

Class L

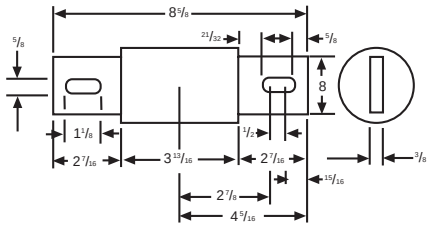
Application: Current limiting protection for service entrance equipment, feeder circuits and metering centers.

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

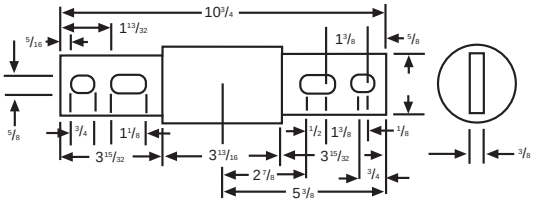
Class T

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

Rejection: Its unique dimension 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	I2t, Ip	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^2t - RK5 up to 100A I_p - RK5 up to 100A	Feeder circuits
J	1-600A	600V or less	Diff. from Class H	200,000A	I^2t - Low I_p - Low	Main & feeder circuits
RK1	1/10-600A	600V or less 250V or less	Class H with rejection feature	200,000A	I^2t - Slightly>J I_p - 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^2t - >RK-1 I_p - RK-1	Motor starting currents
T	1-1200A	300V AC	Diff. from Class H	200,000A	I^2t - <J I_p - <J	Main & feeder circuits
T	1-800A	600V AC	Diff. from Class H	200,000A	I^2t - =J I_p - =J	Main & feeder circuits
L	601-6000A	600V or less	Bolt type	200,000A	I^2t - Low I_p - Low	Main & feeder circuits

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

Ratings and Test Requirements
Siemens Type VBII Safety Switch

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 Ops 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.

Siemens Type VBII Safety Switch

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.

Multipole 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.

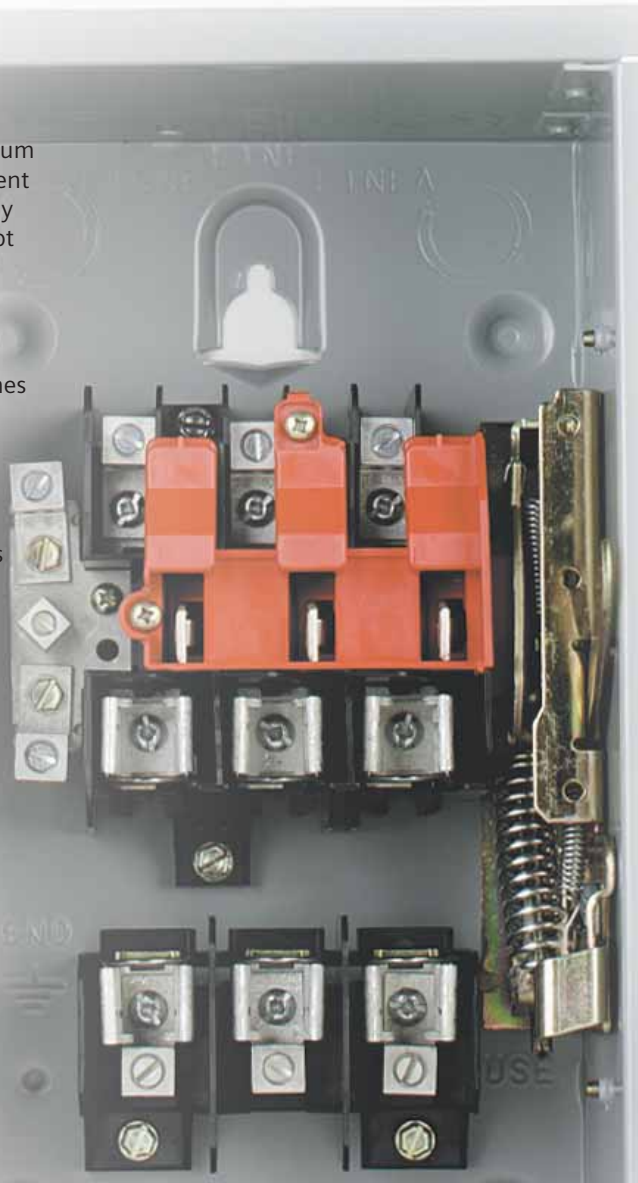
Short-circuit Withstandability
UL test procedures for switches and fuses have been expanded to provide realistic standards of performance with respect to clearing high-level fault currents.

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 (Ip) and maximum destructive energy let-through (I2t) 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 I2t let-throughs. See chart below for withstand ratings on Siemens switches.

I2t Rated
Suitability tests for service with Class H, R, J, L and T fuses have been conducted. Representative switches with test fuses connected in series with each switch were subjected to I2t 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 I2t 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	200,000②
	R	100,000	200,000②
	L	––	200,000

I^2t and I_p Ratings

Switch Rating Ampere	I^2t Rating (Amp2 x sec.)	Ip 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

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.

Siemens 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 nonteasible, 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.

Siemens 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 electrodeposited on cleaned, phosphate pre-treated steel (Type 1)], [gray baked polyester paint which is electrodeposited 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 orprotected 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 I2t rated.

C. APPROVED MANUFACTURERS

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

Type VBII Safety Switch Catalog Numbering System

H	F	3	6	4	N	R	CU

Switch Type

L	= General Duty 10k AIC Max. (Plug Fused & 60A Max Non-Fused)
G	= General Duty
H	= Heavy Duty
DT	= Double Throw
DTG	= General Duty DT

Fused or Non-Fused

F	= Fused
NF	= Non-Fused

Number of Poles

1	= 1
2	= 2
3	= 3
4	= 4
6	= 6

Voltage

1	= 120V or 120/240V
2	= 240V
6	= 600V

Special Applications With:

CH	= Crouse Hines Receptacle
CJ	= Factory J Fuse Spacings
CR	= Class R Clips Installed
CU	= Factory Installed Copper Wire Grips
G	= Factory Installed Ground Bar
H	= Height or Size Reduced
L	= Oversized Enclosure
PN	= Pyle National Receptacle
W	= Viewing Window

Enclosure Type

Omit	= Type 1, Indoor
R	= Type 3R, Outdoor
S	= Type 4/4X, Stainless Steel
J	= Type 12, Industrial
X	= Type 4/4X, Non-metallic
XL	= Type 4/4X, Non-metallic less lugs

With or Without Neutral

Omit	= Less Neutral
N	= With Neutral

Amperes

1	= 30A	**5**	= 400A
2	= 60A	**6**	= 600A
3	= 100A	**7**	= 800A
4	= 200A	**8**	= 1200A

Accessories Catalog Numbering System

H	N	6	4

Switch Type

H	= Heavy Duty
G	= General Duty

Accessory Type

A1	= Auxiliary Switch 1/NO & 1/NC	**LC**	= Copper Lug Kit
A2	= Auxiliary Switch 2/NO & 2/NC	**N**	= Neutral
A3	= Auxiliary Switch Low Current	**N2**	= 200% Neutral
CL	= Compression Lug Barrier/ Mounting Kit	**P**	= Fuse Puller Kit
		R	= Class R - Fuse Clip Kit
G	= Ground Lug Kit	**T**	= Class T - Fuse Kit
G2	= Insulated Ground Lug Kit		

Amperes

1	= 30A	**4**	= 200A
2	= 60A	**5**	= 400A
12	= 30/60A	**56**	= 400/600A
3	= 100A	**5678**	= 400/600/ 800/1200A
23	= 60/100A		
123	= 30/60/100A	**6**	= 600A
1234	= 30/60/100/200A	**78**	= 800/1200A

Maximum Voltage

2	= 240V Max
6	= 600V Max

Siemens Energy & Automation, Inc.
3333 Old Milton Parkway
Alpharetta, GA 30005

1-800-964-4114
info.sea@siemens.com

www.sea.siemens.com/power

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