

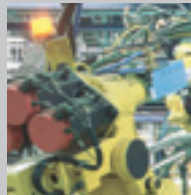
Heavy Duty
Safety Switches
Type VBII



selection and application GUIDE

SIEMENS

Global network of innovation



You Asked for It. Siemens Listened.

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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:

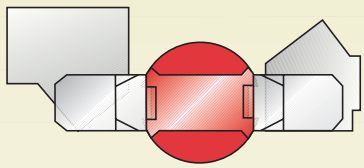
- **Highly visible, easy-to-grip red handle**
- **Visible blade construction**
- **Door that opens greater than 180°**
- **Quick-make, quick-break mechanism**
- **200% optional neutrals (100-600 Amps)**
- **All copper current-carrying parts on heavy duty switches (except wire grips)**

Ratings

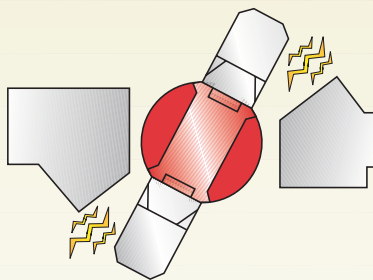
- **30-1200 amps**
- **240 and 600 volts AC**
- **250 and 600 volts DC**
- **200 AIC for heavy duty switches**
- **Design E horsepower rated**
- **Suitable for use as service equipment**
- **Provisions for CSA/UL Class T, R, J, L and H fuses**
- **12X overload rating that exceeds industry standard of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



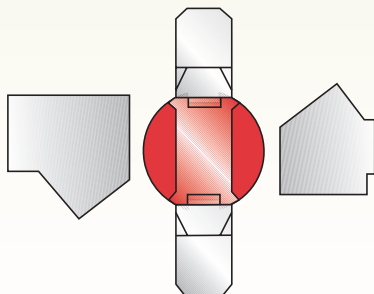
One Tough Switch: Siemens Type VBII Safety Switch



closed



in operation



open

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

Siemens Heavy Duty Switches Feature a Time-Proven Vacu-Break 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 CSA/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.



Heavy Duty Features

Siemens Type VBII Safety Switch

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

Heavy Duty Switches

Suitable for use on systems capable of delivering not more than 200,000 RMS^① 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.

Heavy Duty Switches

Fusible switches will accept the following CSA/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)

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

Heavy Duty Switches

Padlockable cover latch and multiple padlock provisions on handle.

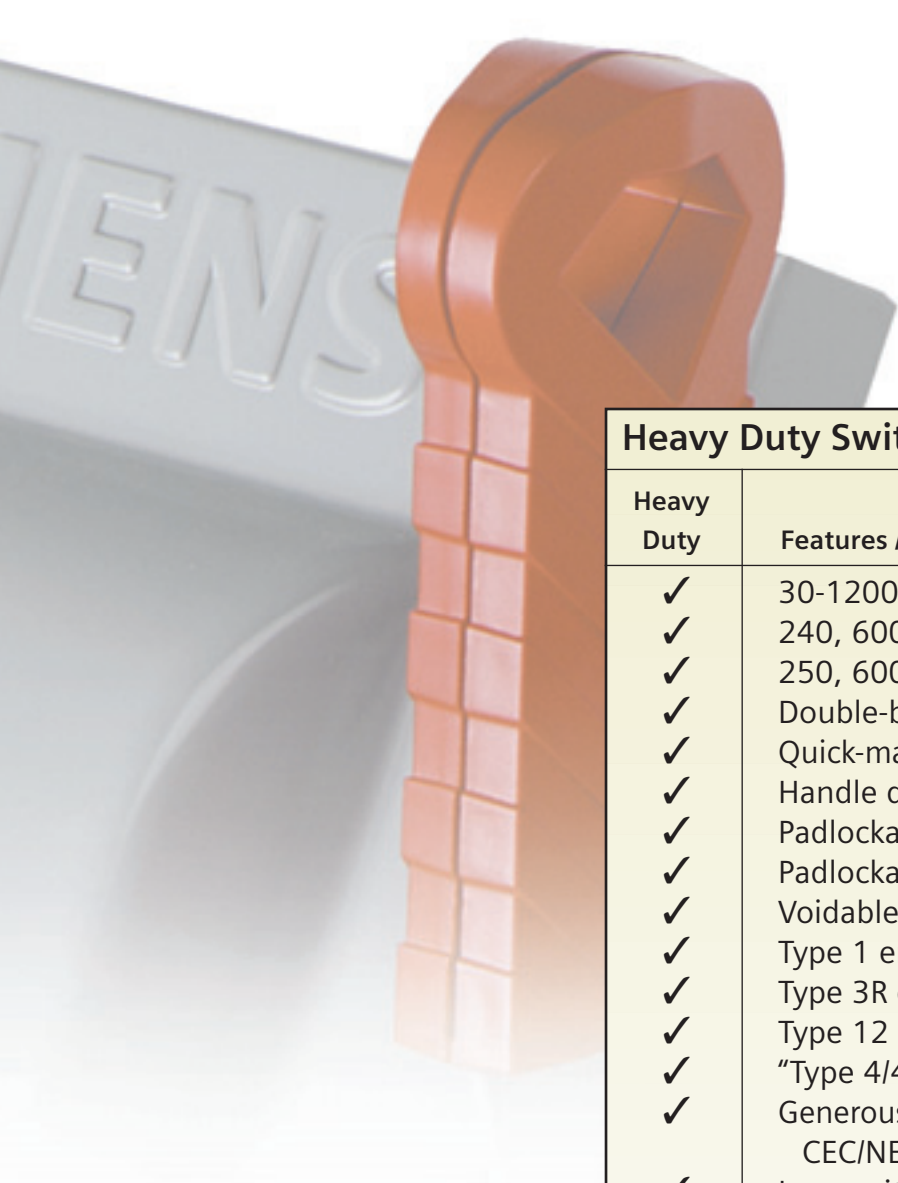
Specifications

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

Meets CSA C22 No. 4 and listed under CSA #1079316.

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



Heavy Duty Switch Features

Heavy Duty	Features / Ratings
✓	30-1200 Amps
✓	240, 600 Volts AC
✓	250, 600 Volts DC
✓	Double-break visible blade design (30-200A)
✓	Quick-make, quick-break switching action
✓	Handle design for hook stick operation
✓	Padlockable cover latch
✓	Padlockable handle
✓	Voidable dual cover interlock
✓	Type 1 enclosures
✓	Type 3R enclosures
✓	Type 12 enclosures
✓	"Type 4/4X" enclosures
✓	Generous wiring gutters that meet CSA/UL and CEC/NEC wire-bending space requirements
✓	Lugs suitable for copper or aluminum at 60°C or 75°C
✓	CU/AL wire lugs that meet CSA C22.2 No. 65-03 requirements
✓	Suitable for field-convertible compression connectors
✓	All plated copper current carrying parts (except wire grips)
✓	Spring reinforced fuse clips
✓	Clear pivoting line terminal shield
✓	Replacement parts
✓	Field addable 200% neutral
✓	Provisions for CSA/UL Class T, R and H fuses
✓	Provisions for CSA/UL Class J and L fuses
✓	Metal nameplate

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

Type 1 Enclosure

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)
- 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)
- Metal nameplates on all heavy duty switches
- 30 & 60A Heavy Duty switches have tangential knockouts which are CSA/UL approved for bonding conduits for non-service entrance conductors.



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 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)
- 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



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.

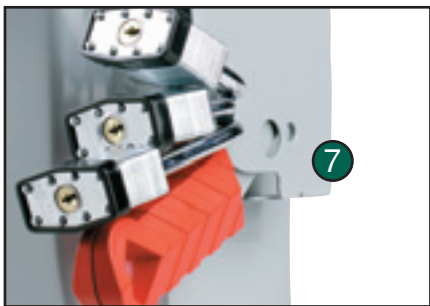
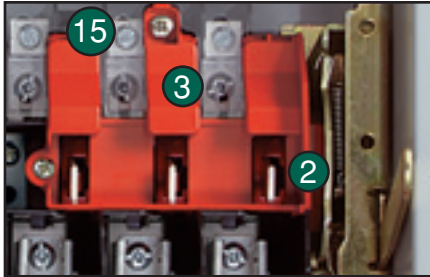
Type 12 enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping water. They are not intended to provide protection against conditions such as internal Command.

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

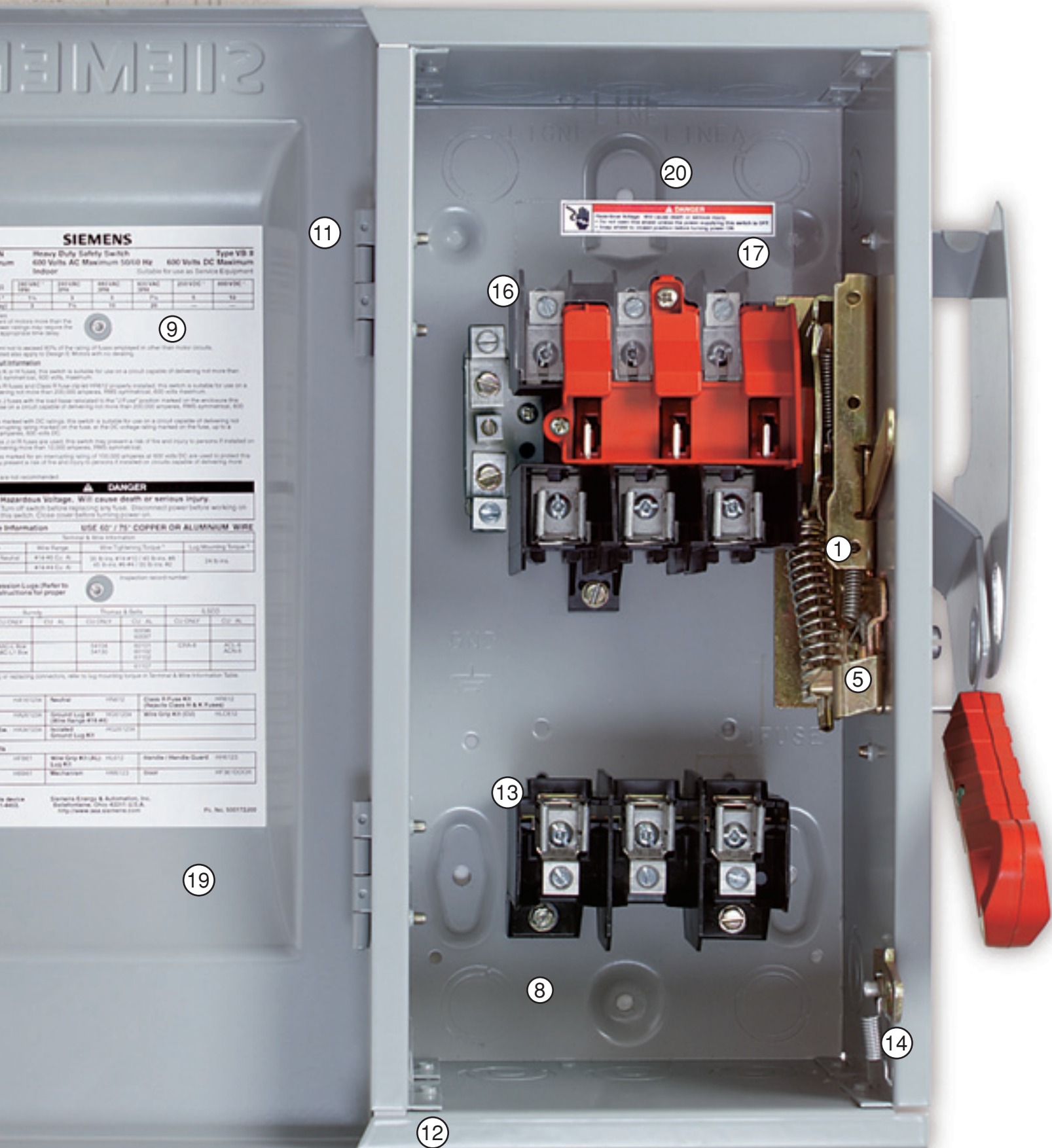
Heavy Duty Switches

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 CEC 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 CUI/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
19. Drawn cover for increased rigidity and resistance to abuse
20. Top key hole and bottom mounting holes provide easy two- or three-point mounting





SIEMENS

Heavy Duty Safety Switch Type YB-B
600 Volts AC Maximum 50/60 Hz **600 Volts DC Maximum**
Indoor Suitable for use as Service Equipment

Size	250V AC 3P	250V AC 3P	250V AC 3P	250V AC 3P	250V AC 3P	250V AC 3P
1	15	15	15	15	15	15
2	25	25	25	25	25	25
3	35	35	35	35	35	35
4	45	45	45	45	45	45
5	55	55	55	55	55	55
6	65	65	65	65	65	65
7	75	75	75	75	75	75
8	85	85	85	85	85	85
9	95	95	95	95	95	95
10	105	105	105	105	105	105

Information USE 60 / 75 COPPER OR ALUMINUM WIRE

Wire Range	Wire Tightening Torque*	Log Mounting Torque**	
Neutral	#12-40 Cu-Al	30 to 40 in-lb (4.1-5.5 Nm)	24 to 30
	#12-40 Cu-Al	40 to 50 in-lb (5.5-7.0 Nm)	24 to 30

Insulation Levels (Refer to sections for proper)

Rating	Neutral & Bare	Line	Line to Line
600V AC	1000V	1000V	1000V
600V DC	1000V	1000V	1000V

Dimensions

Part Number	Neutral	Line	Line to Line	Line to Line
10001204	10001204	10001204	10001204	10001204
10001204	10001204	10001204	10001204	10001204

Notes

Part Number	Wire Size (AWG)	Material / Handle Guard	Part Number
10001204	10001204	10001204	10001204
10001204	10001204	10001204	10001204

Siemens Energy & Automation, Inc.
 Bethlehem, Ohio 45710, U.S.A.
 http://www.usa.siemens.com

PL No. 50071200

⚠ DANGER ⚠
 Disconnect all power before working on this switch.
 Disconnect all power before working on this switch.
 Disconnect all power before working on this switch.

Heavy Duty Switches



System	Ampere Rating	Indoor - Type 1		Outdoor - Type 3R			Horsepower Ratings ①							
		Catalog Number	Ship. Wgt.*	Dwg. Fig.	Catalog Number	Ship. Wgt.*	Dwg. Fig.	240 Volt AC				250 Volt DC		
								1-Phase, 2-Wire		2-Phase, 4-Wire			3-Phase, 3-Wire	
						Std.	Max.	Std.	Max.	Std.	Max.			
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	HFC221N	13	4	HFC221NR	13	15	1 1/2	3	—	—	3	7 1/2	5
	60	HFC222N	16	5	HFC222NR	17	16	3	10	—	—	7 1/2	15	10
	100	HFC223N	21	6	HFC223NR	22	17	7 1/2	15	—	—	15	30	20
	200	HFC224N	44	7	HFC224NR	48	18	15	—	—	—	25	60	40
	400	HFC225NH③	129	9	HFC225NRH③	131	20	15	—	—	—	50	125	50
	400	HFC225N	150	9	HFC225NR	157	20	15	—	—	—	50	125	50
	600	HFC226NH③	133	9	HFC226NRH③	135	20	15	—	—	—	75	200	—
	600	HFC226N	159	9	HFC226NR	162	20	15	—	—	—	75	200	—
	800	HFC227N	360	11	HFC227NR ①	362	22	—	—	—	—	100	250	—
1200	HFC228N	362	11	HFC228NR 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	HFC321N	13	4	HFC321NR	14	15	1 1/2	3	—	—	3	7 1/2	5
	60	HFC322N	17	5	HFC322NR	18	16	3	10	—	—	7 1/2	15	10
	100	HFC323N	22	6	HFC323NR	22	17	7 1/2	15	—	—	15	30	20
	200	HFC324N	49	7	HFC324NR	50	18	15	—	—	—	25	60	40
	400	HFC325NH③	137	9	HFC325NRH③	138	20	15	—	—	—	50	125	50
	400	HFC325N	164	9	HFC325NR	162	20	15	—	—	—	50	125	50
	600	HFC326NH③	139	9	HFC326NRH③	142	20	15	—	—	—	75	200	—
	600	HFC326N	165	9	HFC326NR	169	20	15	—	—	—	75	200	—
	800	HFC327N	380	11	HFC327NR ①	383	22	—	—	—	—	100	250	—
1200	HFC328N	382	11	HFC328NR 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	HFC221S	17	24	HFC221J	16	24	1 1/2	3	—	—	3	7 1/2	5
	60	HFC222S	23	25	HFC222J	22	25	3	10	—	—	7 1/2	15	10
	100	HFC223S	28	26	HFC223J	26	26	7 1/2	15	—	—	15	30	20
	200	HFC224S	52	27	HFC224J	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	HFC321S	17	24	HFC321J	16	24	—	—	—	—	3	7 1/2	—
	60	HFC322S	23	25	HFC322J	23	25	—	—	—	—	7 1/2	15	10
	100	HFC323S	29	26	HFC323J	26	26	—	—	—	—	15	30	20
	200	HFC324S	56	27	HFC324J	53	27	—	—	—	—	25	60	40
	400	HFC325S	170	29	HFC325J	165	29	—	—	—	—	50	125	50
	600	HFC326S	170	29	HFC326J	166	29	—	—	—	—	75	200	—
800	HFC327S	367	31	HFC327J 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		Outdoor - Type 3R			Horsepower Ratings ③										
		Catalog Number	Ship. Wgt.*	Dwg. Fig.	Catalog Number	Ship. Wgt.*	Dwg. Fig.	480 Volt AC		600 Volt AC		250 Volt DC	600 Volt DC				
								1-Ø, 2-Wire		3-Ø 3-Wire				1-Ø 2-Wire		3-Ø 3-Wire	
								Std.	Max.	Std.	Max.			Std.	Max.	Std.	Max.

600 Volt Fusible

2-Pole, 2-Fuse ②		480 Volt AC / 600 Volt AC / 600 Volt DC															
	30	HFC261	13	4	HFC261R	13	15	3	7 1/2	—	—	3	10	—	—	5	15
	60	HFC262	16	5	HFC262R	17	16	5	20	—	—	10	25	—	—	10	30
	100	HFC263	21	6	HFC263R	22	17	10	30	—	—	15	40	—	—	20	50
	400	HFC265	149	9	HFC265R	152	20	—	50	—	—	50	—	—	40	50	
	600	HFC266	155	9	HFC266R	157	20	—	50	—	—	50	—	—	50	50	

3-Pole, 3-Fuse		480 Volt AC / 600 Volt AC / 250 Volt DC ①															
	30	HFC361	13	4	HFC361R	13	15	3	7 1/2	5	15	3	10	7 1/2	20	5	—
	30	HFC361L ⑤	19	5	HFC361RL ⑤	19	16	3	7 1/2	5	15	3	10	7 1/2	20	5	—
	60	HFC362	19	5	HFC362R	19	16	5	20	15	30	10	25	15	50	10	25 ④
	60	—	—	—	HFC362RL ⑤	24	17	5	20	15	30	10	25	15	50	10	25 ④
	100	HFC363	24	6	HFC363R	24	17	10	30	25	60	15	40	30	75	20	25 ④
	200	HFC364	44	7	HFC364R	45	18	25	50	50	125	30	50	60	150	40	50 ④
	400	HFC365H ⑥	136	9	HFC365RH ⑥	137	20	—	—	100	250	—	—	125	350	50	—
	400	HFC365	162	9	HFC365R	162	20	—	—	100	250	—	—	125	350	50	—
	600	HFC366H ⑥	138	9	HFC366RH ⑥	141	20	—	—	150	400	—	—	200	500	—	—
	600	HFC366	166	9	HFC366R	167	20	—	—	150	400	—	—	200	500	—	—
800	HFC367	380	11	HFC367R	382	22	—	—	200	500	—	—	250	500	—	—	
1200	HFC368	383	11	HFC368R	385	22	—	—	200	500	—	—	250	500	—	—	

3-Pole, 3-Fuse and Solid Neutral		480 Volt AC / 600 Volt AC / 250 Volt DC ①															
	30	HFC361N	13	4	HFC361NR	15	15	3	7 1/2	5	15	3	10	7 1/2	20	5	—
	60	HFC362N	19	5	HFC362NR	20	16	5	20	15	30	10	25	15	50	10	25 ④
	100	HFC363N	24	6	HFC363NR	26	17	10	30	25	60	15	40	30	75	20	25 ④
	200	HFC364N	45	7	HFC364NR	50	18	25	50	50	125	30	50	60	150	40	50 ④
	400	HFC365N	171	9	HFC365NR	162	20	—	—	100	250	—	—	125	350	50	—
	600	HFC366N	172	9	HFC366NR	165	20	—	—	150	400	—	—	200	500	—	—
	800	HFC367N	382	11	HFC367NR	386	22	—	—	150	400	—	—	200	500	—	—
1200	HFC368N	385	11	HFC368NR	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				Type 12 Industrial				480 Volt AC / 600 Volt AC / 600 Volt DC																			
	30	Standard Cat. No.	Window Switch Cat. No.	Ship Wgt.*	Dwg. Fig.	Standard Cat. No.	Window Switch Cat. No.	Ship Wgt.*	Dwg. Fig.	3	7 1/2	—	—	3	10	—	—	5	15										
		HFC261S	—	17	24	HFC261J	—	13	24											5	20	—	—	10	25	—	—	10	30
		HFC262S	—	23	25	HFC262J	—	22	25											10	30	—	—	15	40	—	—	20	50
		HFC263S	—	29	26	HFC263J	—	27	26											—	50	—	—	50	—	—	40	50	
		HFC265S	—	170	29	HFC265J	—	165	29											—	50	—	—	50	—	—	50	50	
600	HFC266S	—	170	29	HFC266J	—	166	29	—	50	—	—	50	—	—	50	50												

3-Pole, 3-Fuse		480 Volt AC / 600 Volt AC / 250 Volt DC ①																	
	30	HFC361S	HFC361SW	17	24	HFC361J	HFC361JW	17	24	3	7 1/2	5	15	—	—	7 1/2	20	5	—
	60	HFC362S	HFC362SW	23	25	HFC362J	HFC362JW	22	25	5	20	15	30	—	—	15	50	10	25 ④
	100	HFC363S	HFC363SW	29	26	HFC363J	HFC363JW	26	26	10	30	25	60	—	—	30	75	20	25 ④
	200	HFC364S	HFC364SW	56	27	HFC364J	HFC364JW	53	27	25	50	50	125	—	—	60	150	40	50 ④
	400	HFC365S	HFC365SW	173	29	HFC365J	HFC365JW	166	29	—	—	100	250	—	—	125	350	50	—
	600	HFC366S	—	—	175	29	HFC366J	HFC366JW	168	29	—	—	150	400	—	—	200	500	—
	800	HFC367S	—	—	380	31	HFC367J	—	380	31	—	—	200	500	—	—	250	500	—
1200	HFC368S	—	—	—	—	HFC368J	—	384	31	—	—	200	500	—	—	250	500	—	

* In pounds (lbs).

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

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

② Use 3-Pole switch for 200A applications.

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

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.

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 DC													
	30	HNFC261	11	3	HNFC261R	11	14	—	—	7 1/2	—	10	—	5	15
	60	HNFC262	16	5	HNFC262R	18	16	—	—	20	—	25	—	10	30
	100	HNFC263	19	6	HNFC263R	20	17	—	—	30	—	40	—	20	50
	400	HNFC265	126	8	HNFC265R	129	19	15	—	50	—	50	—	40	50
	600	HNFC266	127	8	HNFC266R	129	19	15	—	50	—	50	—	50	50
3-Pole		480 Volt AC / 600 Volt AC / 250 Volt DC ①													
	30	HNFC361	12	3	HNFC361R	13	14	3	10	7 1/2	20	10	30	5	—
	30	—	—	—	HNFC361RL④	19	16	3	10	7 1/2	20	10	30	5	—
	60	HNFC362H⑤	12	3	HNFC362RH⑤	13	14	10	20	20	50	10	40	5	—
	60	HNFC362	18	5	HNFC362R	19	16	10	20	20	50	25	60	10	25③
	60	—	—	—	HNFC362RL④	24	17	10	20	20	50	25	60	10	25③
	100	HNFC363	23	6	HNFC363R	24	17	15	40	30	75	40	100	20	25③
	200	HNFC364	42	7	HNFC364R	43	18	15	60	50	125	50	150	40	50③
	400	HNFC365	132	8	HNFC365R	129	19	15	125	50	250	50	350	50	—
	600	HNFC366	133	8	HNFC366R	130	19	15	200	50	400	50	500	—	—
800	HNFC367	302	10	HNFC367R ②	305	21	15	250	50	500	50	500	—	—	
1200	HNFC368	305	10	HNFC368R 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	HNFC261S	—	15	23	HNFC261J	—	13	23	—	—	7 1/2	—	10	—	5	15
	60	HNFC262S	—	24	25	HNFC262J	—	21	25	—	—	20	—	25	—	10	30
	100	HNFC263S	—	28	26	HNFC263J	—	25	26	—	—	30	—	40	—	20	50
	400	HNFC265S	—	137	28	HNFC265J	—	122	28	15	—	50	—	—	—	40	50
600	HNFC266S	—	138	28	HNFC266J	—	128	28	15	—	50	—	—	—	50	50	
3-Pole		480 Volt AC / 600 Volt AC / 250 Volt DC ①															
	30	HNFC361S	HNFC361SW	15	23	HNFC361J	HNFC361JW	14	23	3	10	7 1/2	20	10	30	5	—
	60	HNFC362SH⑤	—	15	23	HNFC362JH⑤	—	14	23	10	20	20	50	10	40	5	—
	60	HNFC362S	HNFC362SW	23	25	HNFC362J	HNFC362JW	19	25	10	20	20	50	25	60	10	25③
	100	HNFC363S	HNFC363SW	27	26	HNFC363J	HNFC363JW	25	26	15	40	30	75	40	100	20	25③
	200	HNFC364S	HNFC364SW	55	27	HNFC364J	HNFC364JW	51	27	15	60	50	125	50	150	40	50③
	400	HNFC365S	HNFC365SW	133	28	HNFC365J	HNFC365JW	129	28	15	125	50	250	50	350	50	—
	600	HNFC366S	—	134	28	HNFC366J	—	130	28	15	200	50	400	50	500	—	—
	800	HNFC367S	—	302	30	HNFC367J	—	302	30	15	250	50	500	50	500	—	—
	1200	HNFC368S⑥	—	—	—	HNFC368J	—	308	30	15	250	50	500	50	500	—	—

* In pounds (lbs)

- 14 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.
 ⑥ UL only.

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.

Description

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



Crouse-Hinds Interlocked Receptacle Switches

Ampere Rating ^⑤	Type 12 ^⑥	Type 4/4X ^⑦	Shipping Weight Std. Pkg. ^④	Accepts Crouse-Hinds Arktite ^① Plug Catalog Number
	Catalog Number	Catalog Number		
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

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

④ In pounds (lb).

⑥ Also rated Type 3R/3S

⑤ Ampere rating of both switch and receptacle.

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 CEC 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^①
- Tangential knockouts (Type1, 4-pole switches)
- Type 12 & 4X switches are provided with an equipment ground kit as standard

4 Pole Type VBII Switches^②

Ampere Rating	Indoor Type 1		Type 12/3R Industrial		Horsepower Ratings ^③								
	Catalog Number	Ship Wt. (lbs.)	Catalog Number	Ship Wt. (lbs.)	240V, 2Ø, 4W		240V, 3Ø		480V, 3Ø		600V, 3Ø		250V DC
					Std.	Max.	Std.	Max.	Std.	Max.	Std.	Max.	

Fusible 600 Volt AC, 250 Volt DC – 4-Pole, 4 Fuse^④

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 Switches^②

Ampere Rating	Type 12/3R		Type 4X		Horsepower Ratings ^③						
	Catalog Number	Ship Wt. (lbs.)	Catalog Number	Ship Wt. (lbs.)	240V, 3Ø		480V, 3Ø		600V, 3Ø		250V DC
					Std.	Max.	Std.	Max.	Std.	Max.	

Fusible 600 Volt AC, 250 Volt DC – 6-Pole, 6 Fuse^④

30	HF661J	37	HF661S	37	3	7 1/2	5	15	7 1/2	20	5
60	HF662J	41	HF662S	41	7 1/2	15	15	30	15	50	10
100	HF663J	44	HF663S	44	15	30	25	60	30	75	20
200	HF664J	90	HF664S	90	25	60	50	125	60	150	40

Ampere Rating	Indoor Type 12		Type 4X		Horsepower Ratings ^③						
	Catalog Number	Ship Wt. (lbs.)	Catalog Number	Ship Wt. (lbs.)	240V, 3Ø		480V, 3Ø		600V, 3Ø		250V DC
					Std.	Max.	Std.	Max.	Std.	Max.	

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 Accessories

Class J Fuse

100-600A 240V 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 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 Heavy Duty Switches.

Neutral Kits	
Switch Ampere Rating	Kit Catalog Number
30A	HNC612
60, 100	HNC623
200	HNC64
400 & 600	HNC656
800 & 1200 VBII	HNC678

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	HNC263	(2) #14-1/0 AWG
200	HNC264	(2) #6 AWG-300 Kcmil
400	HNC656	(2) 1/0 AWG-750 Kcmil
600	HNC678	(4) 1/0 AWG-600 Kcmil

Heavy Duty Accessories

Copper Lug Kits

Heavy duty switches are CSA/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-750 Kcmil Cu

Equipment Ground Kits

Equipment Ground Lug Kits are available for all 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.

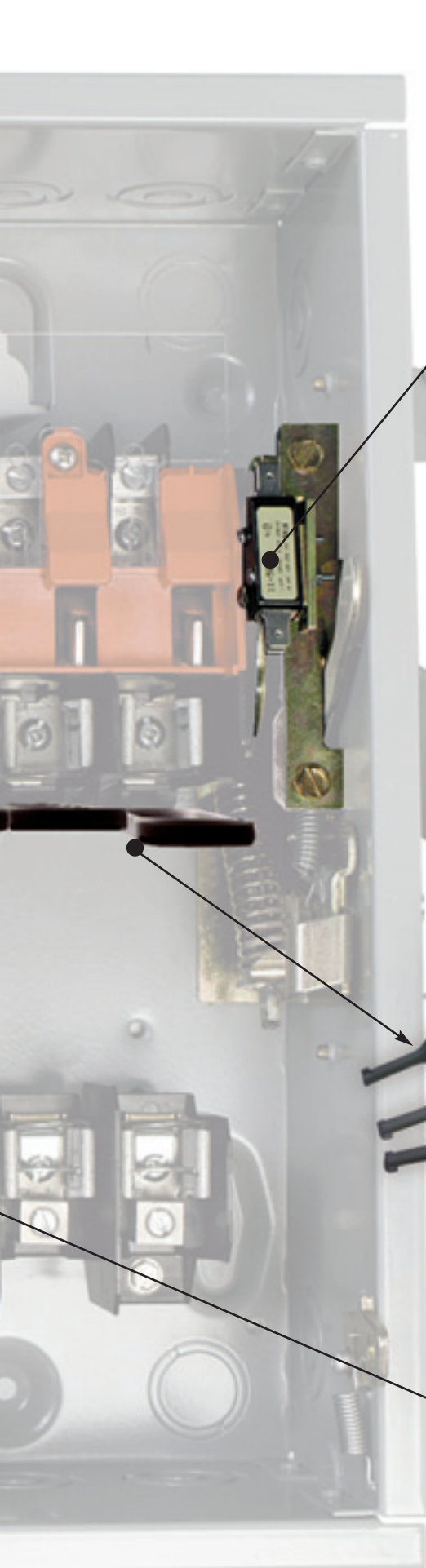
Equipment Ground Kits			
Switch Ampere Rating	Catalog Number	Number of Terminals	Wire Range Per Terminal (Cu/Al)
30-200	HG61234	2	#14-4 AWG
400 & 600	HG656	4	#6 AWG-250 Kcmil
800-1200	HG678	8	#6 AWG-250 Kcmil

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

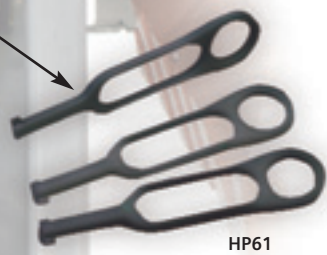




Auxiliary Contacts

Auxiliary Contacts are available 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	–



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 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).



Class R Fuse Clip Kits	
Catalog Number	Description
HR21	30A, 240V Kit
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.

Heavy Duty Hub and Lug Data



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.

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.

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
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Type 3R ①

3/4	ECHS075	30-200A
1	ECHS100	
1 1/4	ECHS125	
1 1/2	ECHS150	
2	ECHS200	
2 1/2	ECHS250	
2 1/2	ECHV250	400-1200A
3	ECHV300	
3 1/2	ECHV350	
4	ECHV400	

Type 4 / 4X

3/4	SSH075	30-200A
1	SSH100	
1 1/4	SSH125	
1 1/2	SSH150	
2	SSH200	

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 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.

Kirk-Key Interlocks

Kirk-Key Interlocks are factory installed only on Type VBII 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
30	#12-6 AWG (Al) or #14-6 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
30A oversized	#14-2 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
60 ^⑦	#12-2 AWG (Al) or #14-3 AWG (Cu/Al)	#14-2 AWG (Cu/Al)
60A 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)
200 ^⑧	#6 AWG-250 Kcmil (Cu/Al)	#6 AWG-300 Kcmil (Cu/Al)
400 ^⑧	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)
600 ^⑧	(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 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-750 neutral Kcmil Cu/Al	(3) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-750 neutral Kcmil Cu/Al
1200	(4) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-750 neutral Kcmil Cu/Al	(4) 1/0 AWG-750 Kcmil (Cu/Al) Line and Load (4) 1/0 AWG-750 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 Compact HD NF switches are also CSA/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 CSA 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	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	—	YA28A1	54168	—	61148		CRC-4/0	CRB-4/0L	IACL-4/0 ACL-4/0
	YA28-TC38	—	—	256-30695-1253		60147		—		—
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	54501	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.

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 fusible double throw switches are suitable for use as service equipment. All are CSA/UL listed. Switches are rated for use on systems up to 10,000A when protected with Class H fuses or 200,000 when protected with Class R or Class T fuses^②. They can also be used to connect a single source of power to either of two loads. In this application it is neces-

sary 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	Yes ^③
30 & 60A, 600V	Std	Yes (kit)	No	Yes ^③
100 & 200A	Std	Yes (kit)	Yes (kit)	Yes ^③

Double Throw Switches					
System	Voltage	Number of Poles	Amps	Type 1 – Indoor	Type 3R – Outdoor ^①
				Catalog Number	Catalog Number
Heavy Duty Fusible (30-200A with Class H fuse provisions)^②					
	240 Volt AC or 250 Volt DC	3	30	DTFC321	DTFC321R
			60	DTFC322	—
			100	DTFC323	—
			200	DTFC324	—
	600 Volt AC, 250 Volt DC	3	30	DTFC361	—
			60	DTFC362	—
100			DTFC363	—	
200			DTFC364	—	
Heavy Duty Non-Fusible^②					
	240 Volt AC or 250 Volt DC	2	30	DTNFC221	—
			60	DTNFC222	—
			100	DTNFC223	—
			200	DTNFC224	—
			400	DTNFC225	DTNFC225R
			600	DTNFC226	—
	240 Volt AC or 250 Volt DC	3	30	DTNFC321	—
			60	DTNFC322	—
			100	DTNFC323	DTNFC323R
			200	DTNFC324	DTNFC324R
			400	DTNFC325	—
			600	DTNFC326	—
	600 Volt AC or 250 Volt DC	3	30	DTNFC361	DTNFC361R
			60	DTNFC362	DTNFC362R
			100	DTNFC363	DTNFC363R
			200	DTNFC364	DTNFC364R
			400	DTNFC365	DTNFC365R
			600	DTNFC366	DTNFC366R

^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.

Double Throw Switches

Accessories, Lug Data and Horsepower Ratings

Double Throw Switches

Accessories – 2 and 3 Pole Switches Only[®]

Description		Catalog Number
Neutral Kits	30A	HNC612
	60 & 100A	HNC263
	200A	HNC264
	400 & 600A	HNC678
Equipment Ground Kit	30-200A (2) #14-4 AWG	HG61234
	400& 600A (1) #14-2/0	HG656
	400& 600A (8) #6-350 Kcmil	HG678
Auxiliary Contacts (HD only) (two required per switch) ^①	30-200A with (1) NO & (1) NC Contacts	HA161234
	30-200A with (2) NO & (2) NC Contacts	HA261234
	400-600A with (1) NO & (1) NC Contacts	HA165678
	400-600A 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	ECHS075
	For 1" Conduit	ECHS100
	For 1 1/4" Conduit	ECHS125
	For 1 1/2" Conduit	ECHS150
	For 2" Conduit	ECHS200
For 2 1/2" Conduit	ECHS250	

Replacement Parts – 2 and 3 Pole Switches Only[®]

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

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

30-200A – 2, 3 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

400-600A – 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

Maximum Horsepower Ratings Fused

Ampere Rating	1-Phase AC	3-Phase AC			250V DC
	240V	240V	480V	600V	
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

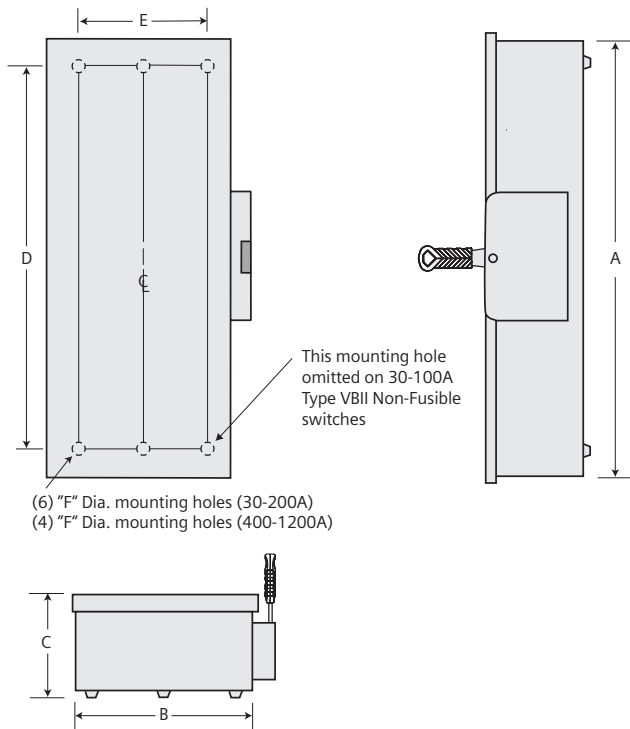
30	5	10	20	30	5
60	10	20	50	60	10
100	15	40	75	100	20
200	15	60	125	150	40
400-800	—	125	250	350	50

^① One aux. required for normal and one required for emergency switch line base.

Detailed Dimension Drawings

Siemens Type VBII Double Throw Switches

Figure 1: Type 1 & 3R



VBII Design Double Throw Dimensions – Inches (mm)						
Catalog Number	Enclosure			Mounting		
	A	B	C	D	E	F
Figure 1 (30-600A Type 1 & 3R)						
DTNFC221, DTNFC321, DTNFC361, DTNFC361R	24.50 (622)	9.53 (242)	6.09 (155)	19.00 (483)	6.75 (171)	0.268 (7)
DTFC321, DTFC321R, DTFC361	29.12 (740)	9.53 (242)	6.09 (155)	23.50 (597)	6.75 (171)	0.268 (7)
DTNFC222, DTNFC322, DTNFC362, DTNFC362R	24.88 (632)	11.50 (292)	6.09 (155)	19.00 (483)	9.38 (238)	0.268 (7)
DTFC322, DTFC362	33.53 (852)	11.50 (292)	6.09 (155)	27.50 (699)	9.38 (238)	0.268 (7)
DTNFC223, DTNFC323, DTNFC323R, DTNFC363, DTNFC363R	27.62 (702)	12.18 (309)	6.09 (155)	19.36 (492)	8.00 (203)	0.268 (7)
DTFC323, DTFC363R	36.44 (926)	12.18 (309)	6.09 (155)	28.11 (714)	8.00 (203)	0.268 (7)
DTNFC224, DTNFC324R, DTNFC324, DTNFC364R, DTNFC364	36.00 (914)	19.12 (486)	6.42 (163)	31.00 (787)	15.00 (381)	0.44 (11)
DTFC324	49.44 (1256)	19.12 (486)	6.42 (163)	44.50 (1130)	15.00 (381)	0.44 (11)
DTNFC225, DTNFC225R, DTNFC325, DTNFC365, DTNFC365R	57.78 (1468)	28.38 (721)	9.38 (238)	49.75 (1264)	16.00 (406)	0.56 (14)
DTNFC326, DTNFC366, DTNFC366R	58.50 (1486)	28.22 (717)	9.44 (240)	49.75 (1264)	16.00 (406)	0.56 (14)

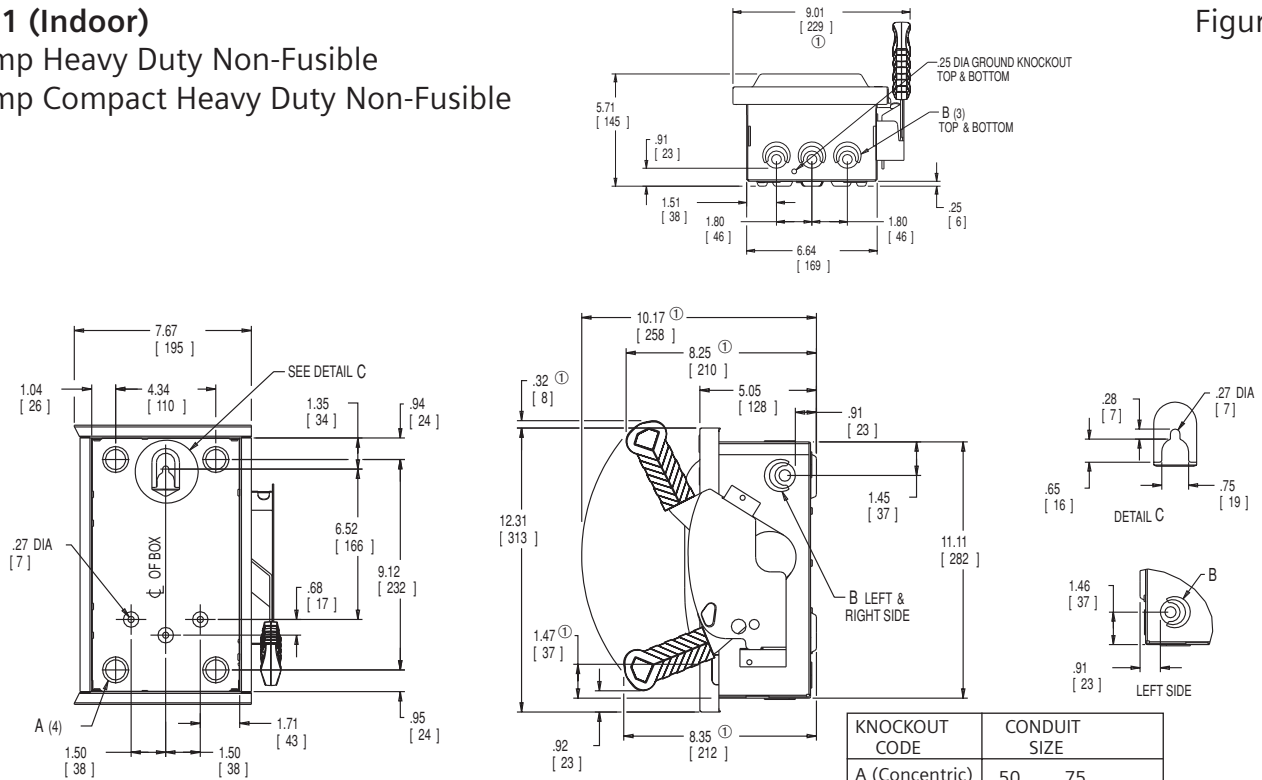
- ① (3) Mounting holes supplied (1 at top).
- ② (4) Mounting holes supplied.
- ③ These switches are not Type VBII design.
- ④ Drip hood not shown but provided on Type 3R enclosures.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

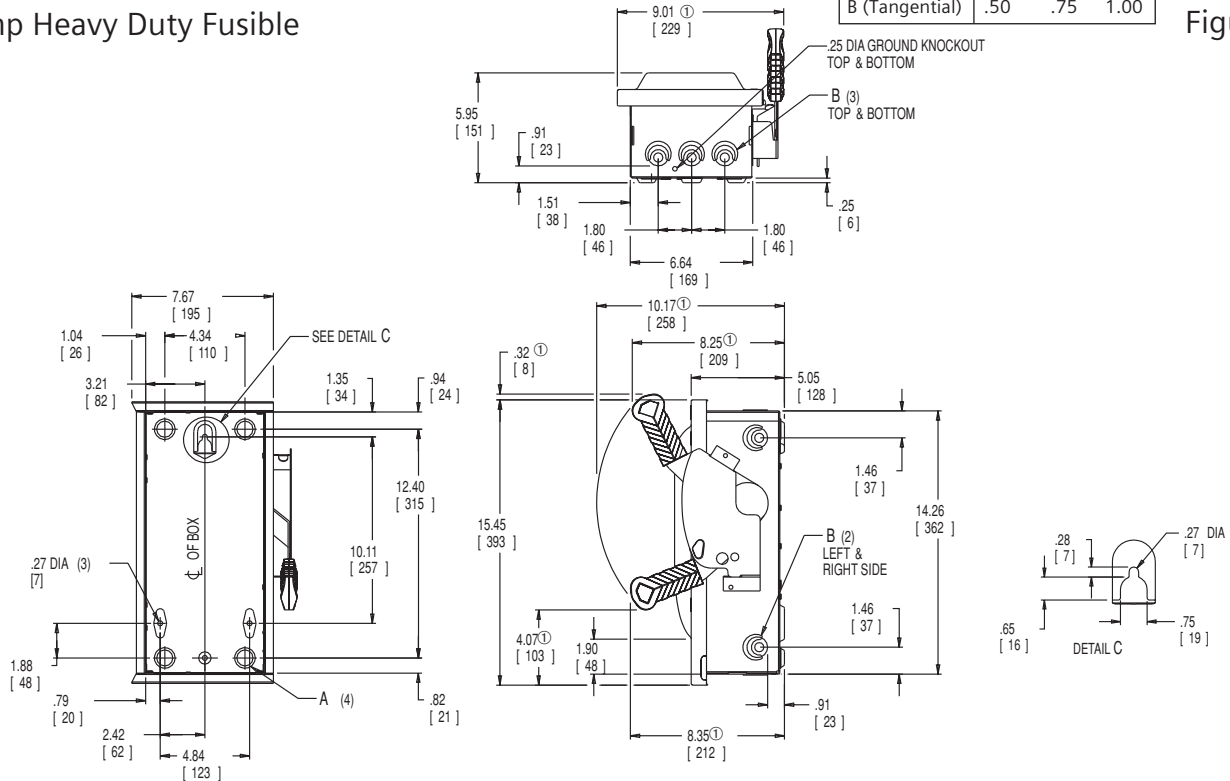
Type 1 (Indoor)
30 Amp Heavy Duty Non-Fusible
60 Amp Compact Heavy Duty Non-Fusible

Figure 3



30 Amp Heavy Duty Fusible

Figure 4



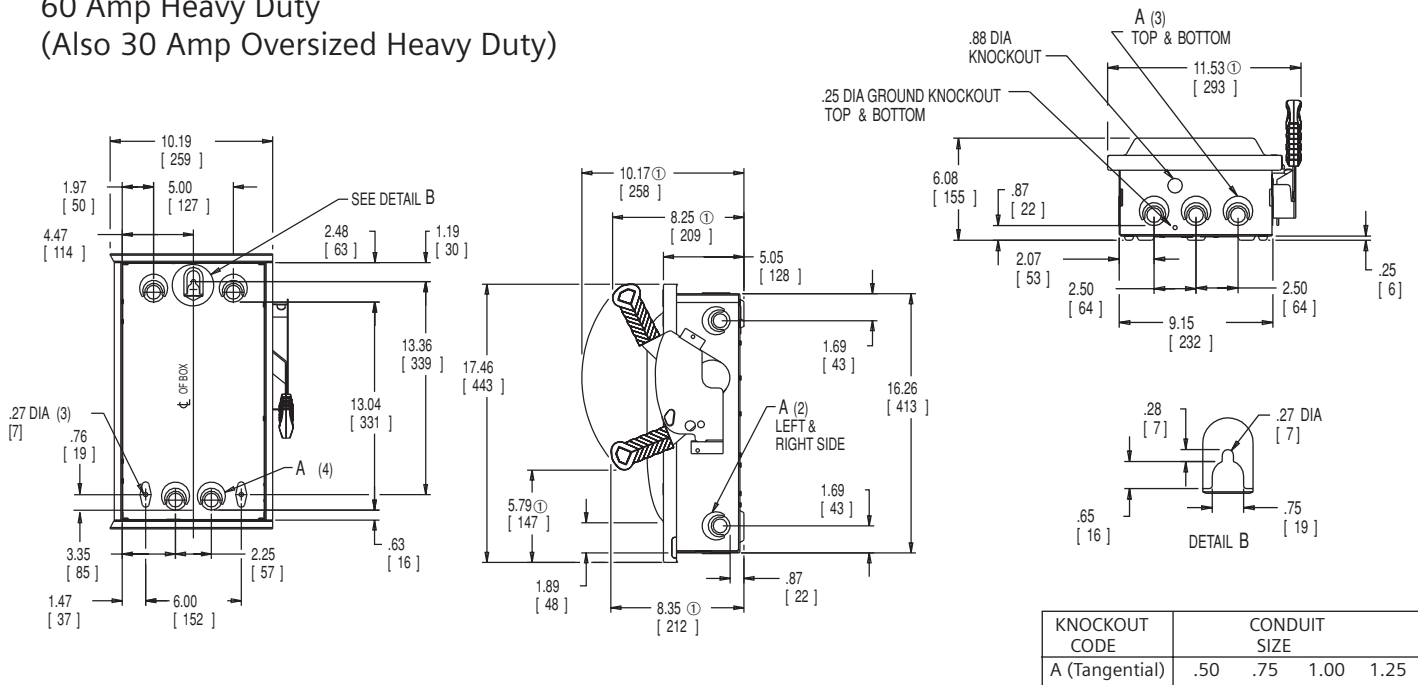
Dimensions shown in inches and millimeters [].
 Dimensions shown accurate to ± 1/8 inch.
 ① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

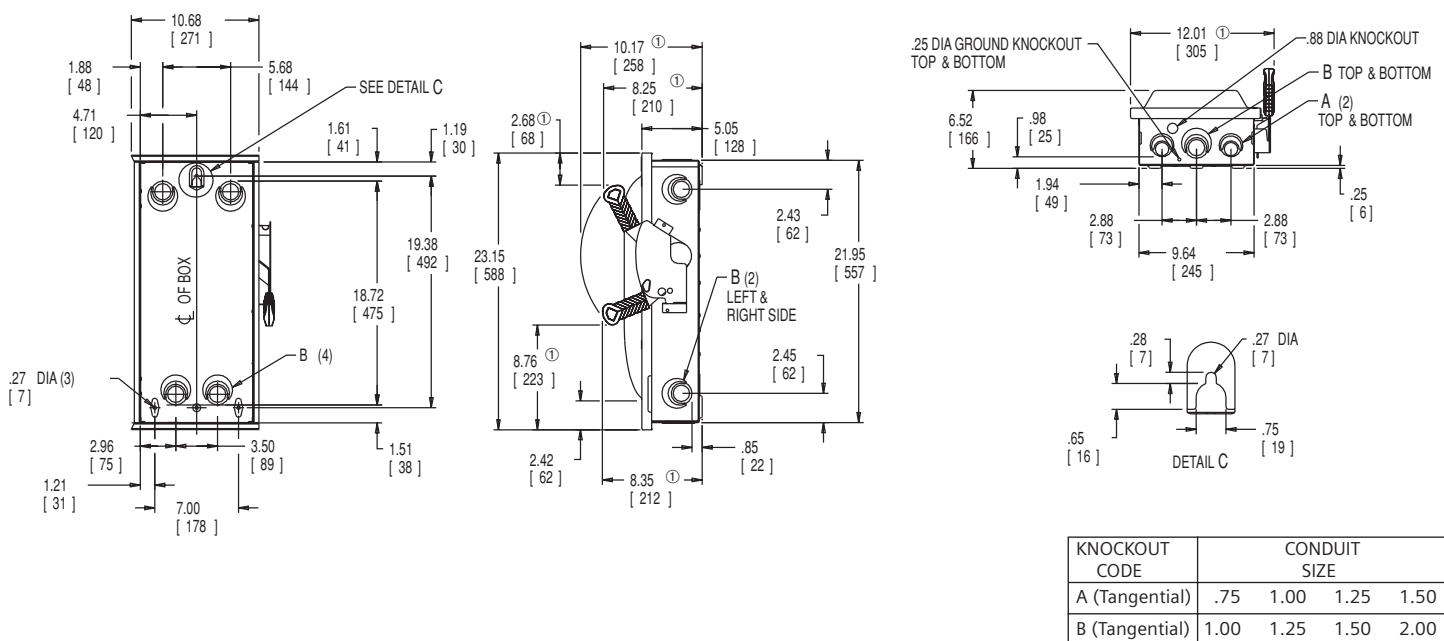
Type 1 (Indoor)
60 Amp Heavy Duty
 (Also 30 Amp Oversized Heavy Duty)

Figure 5



100 Amp Heavy Duty

Figure 6



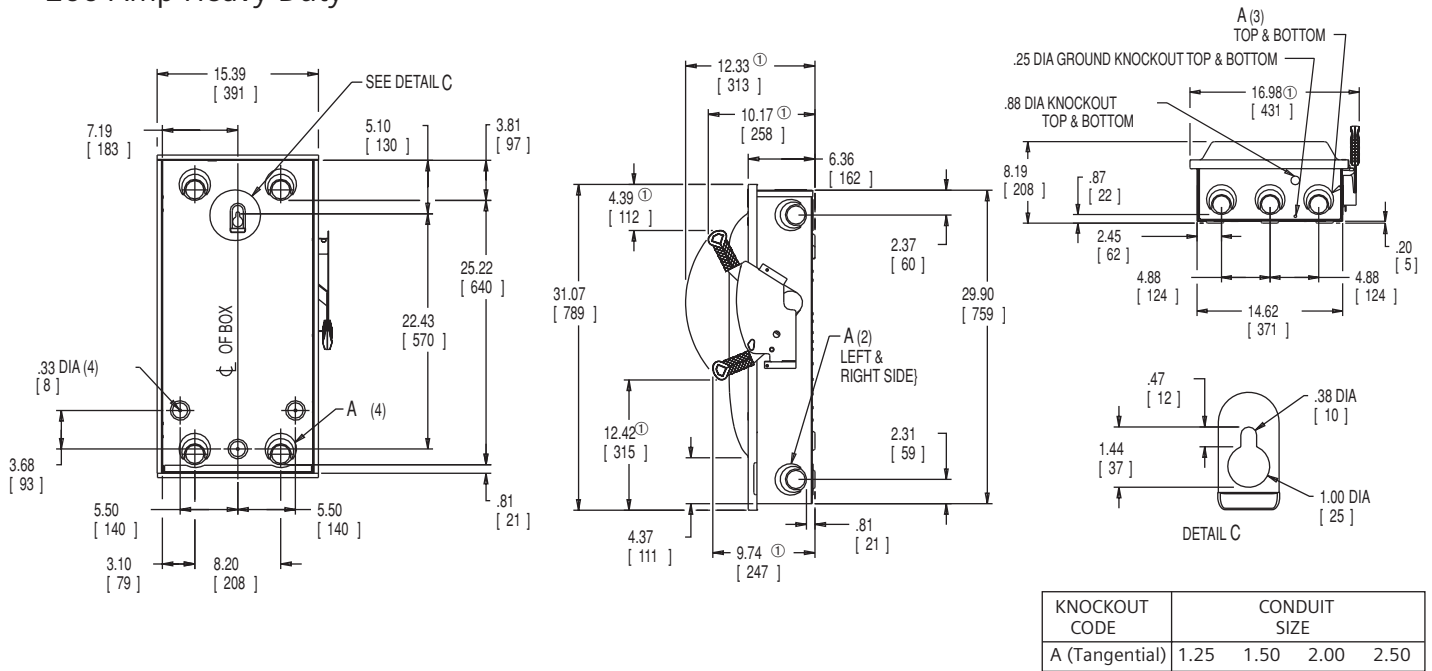
26 Dimensions shown in inches and millimeters [].
 Dimensions shown accurate to ± 1/8 inch.
 ① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

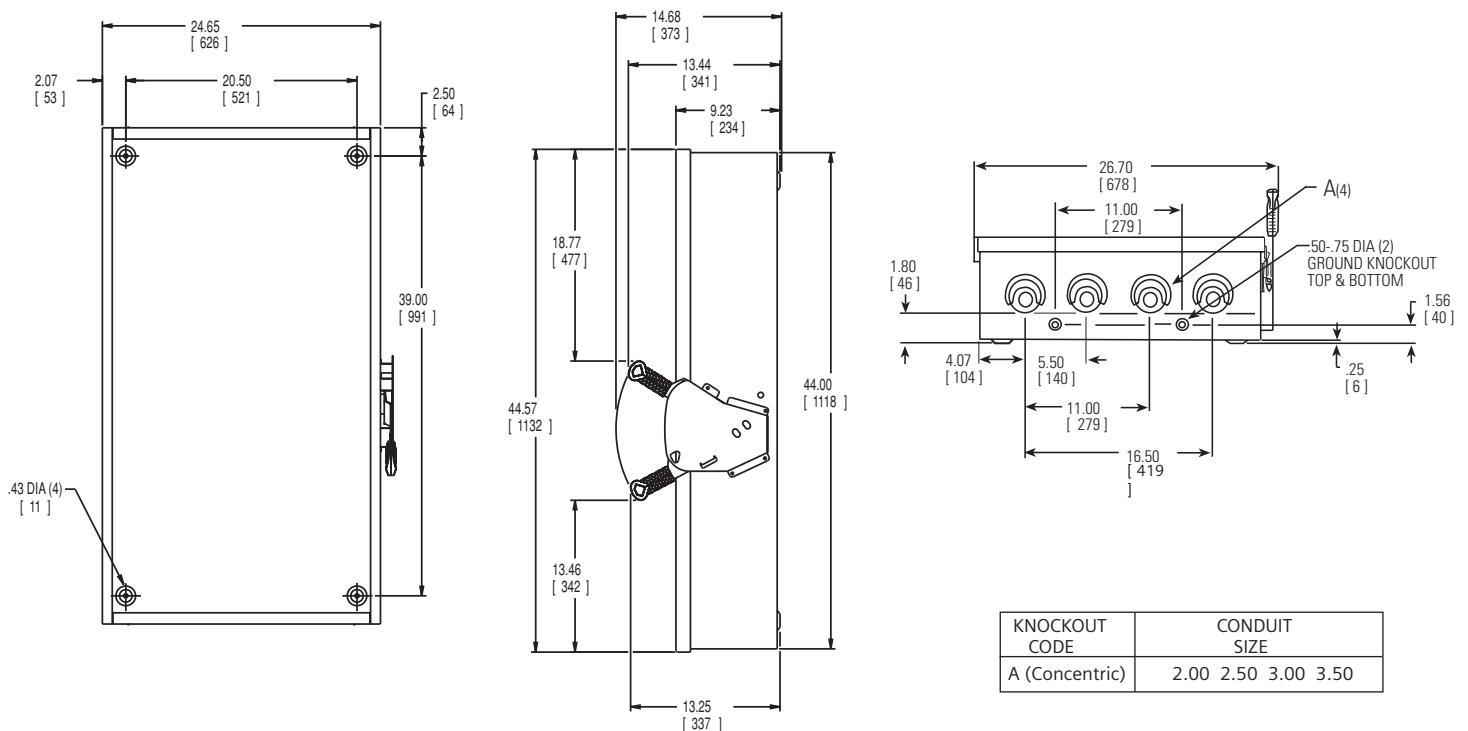
Type 1 (Indoor)
200 Amp Heavy Duty

Figure 7



400 / 600 Amp Heavy Duty Non-Fusible

Figure 8



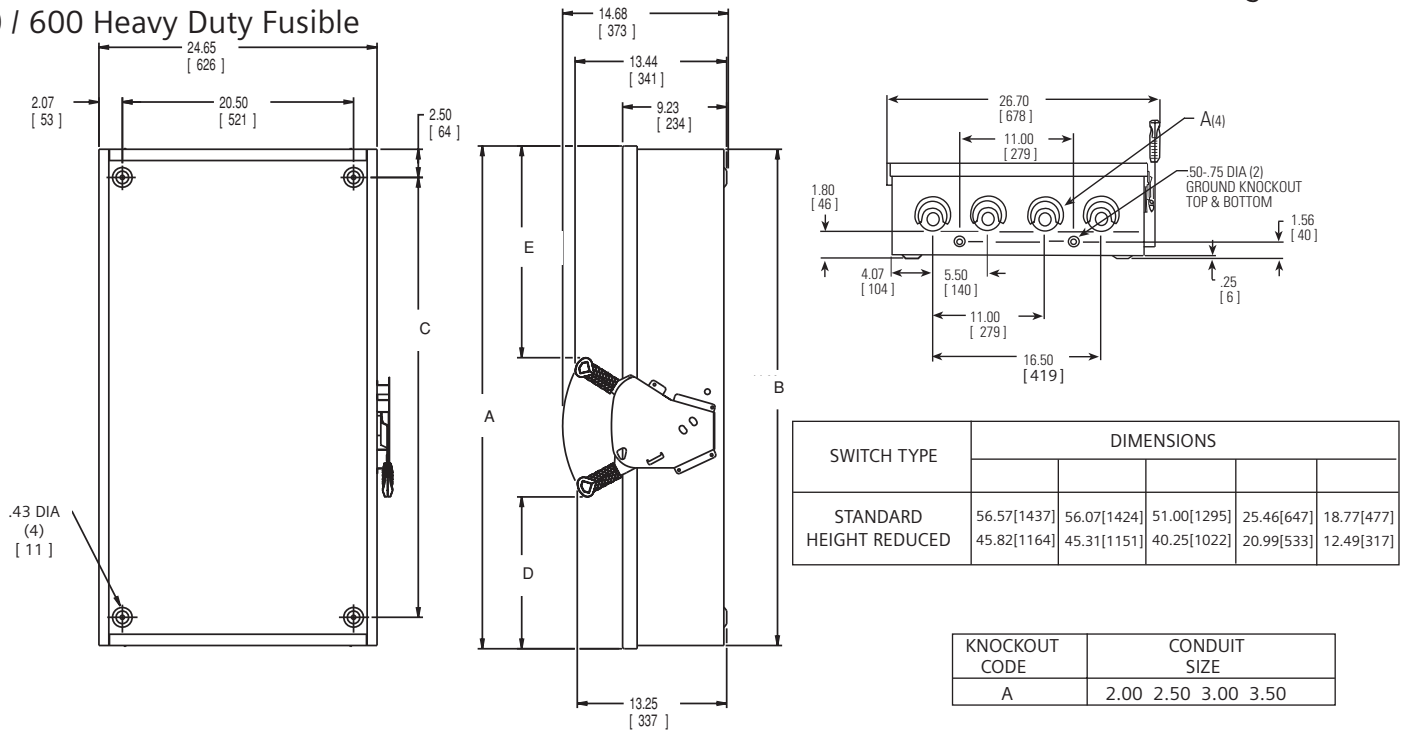
Dimensions shown in inches and millimeters [].
Dimensions shown accurate to ± 1/8 inch.
① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

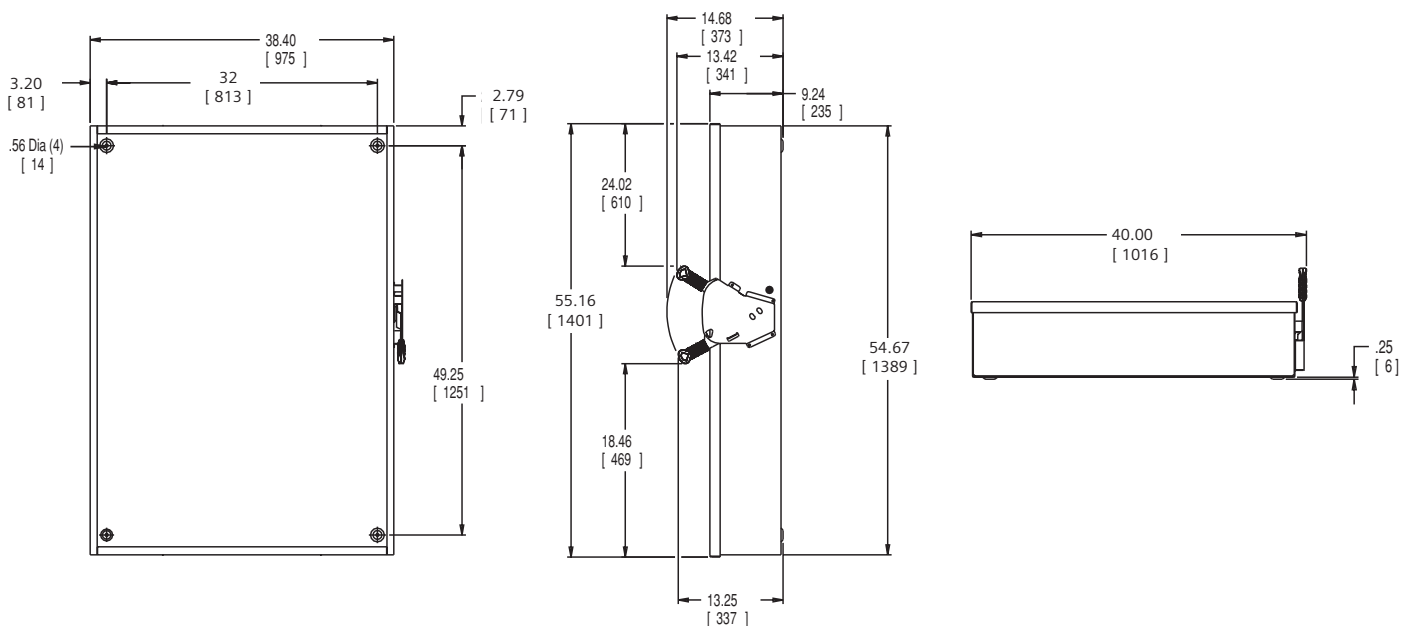
Type 1 (Indoor)
400 / 600 Heavy Duty Fusible

Figure 9



800 / 1200 Amp Heavy Duty Non-Fusible

Figure 10



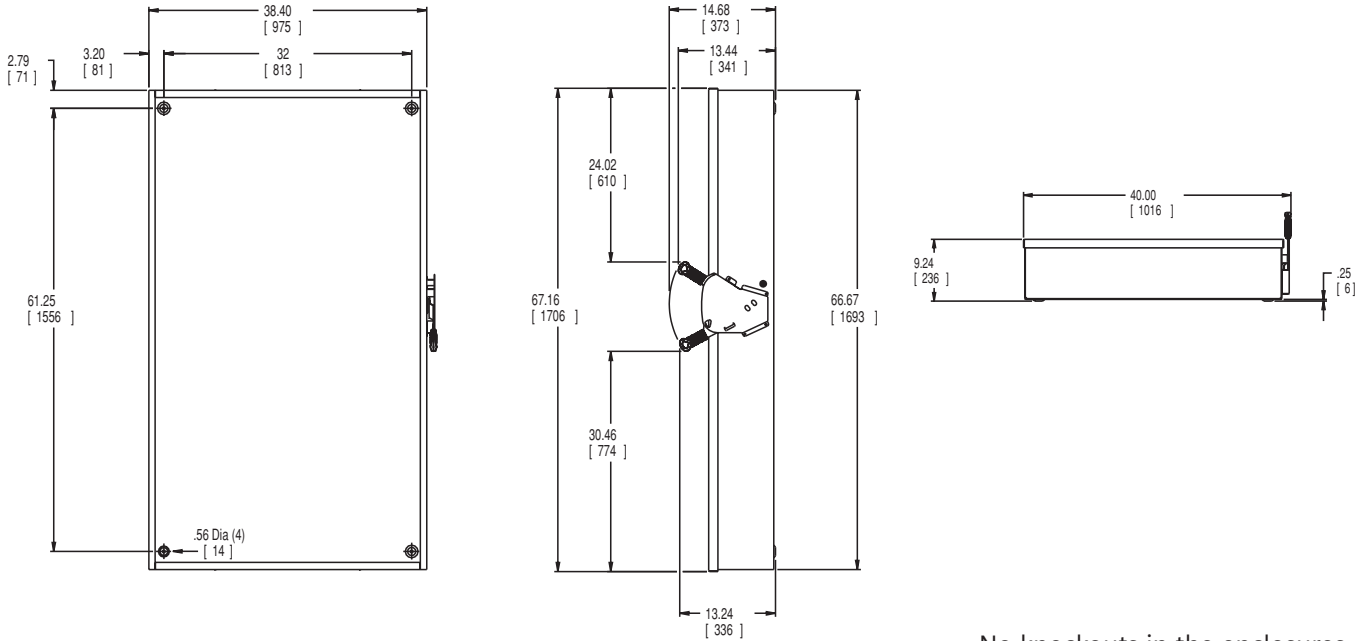
No knockouts in the enclosures.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

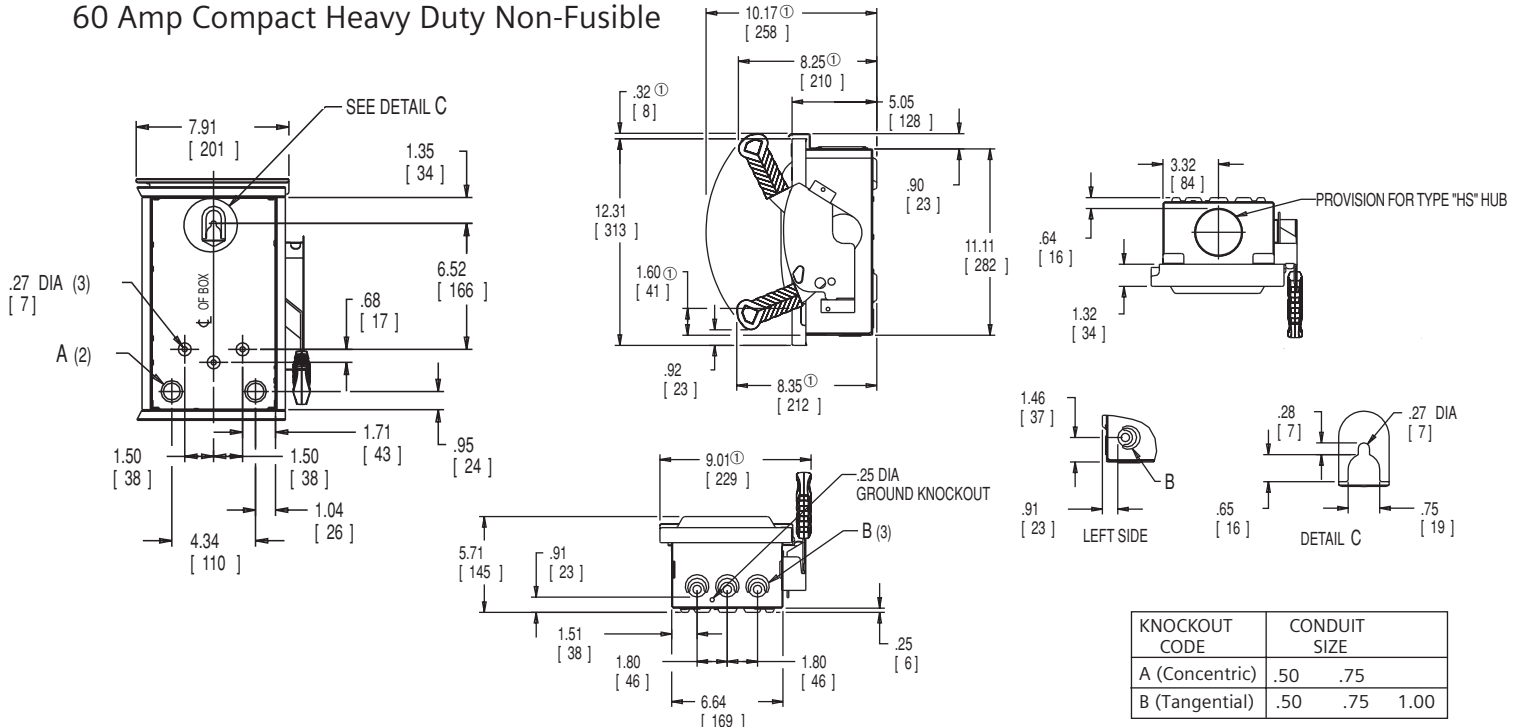
Figure 11



No knockouts in the enclosures.

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

Figure 14



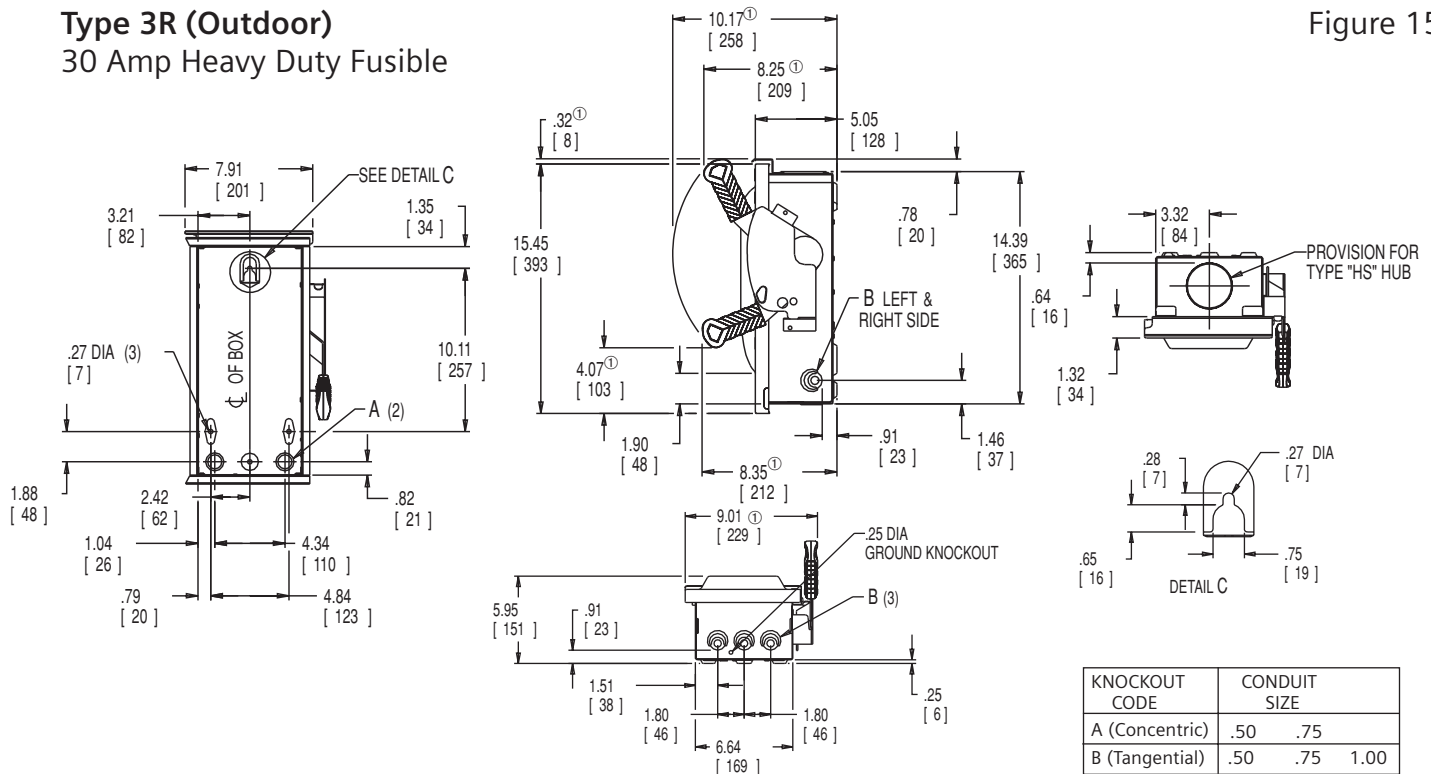
KNOCKOUT CODE	CONDUIT SIZE	
A (Concentric)	.50	.75
B (Tangential)	.50	.75 1.00

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

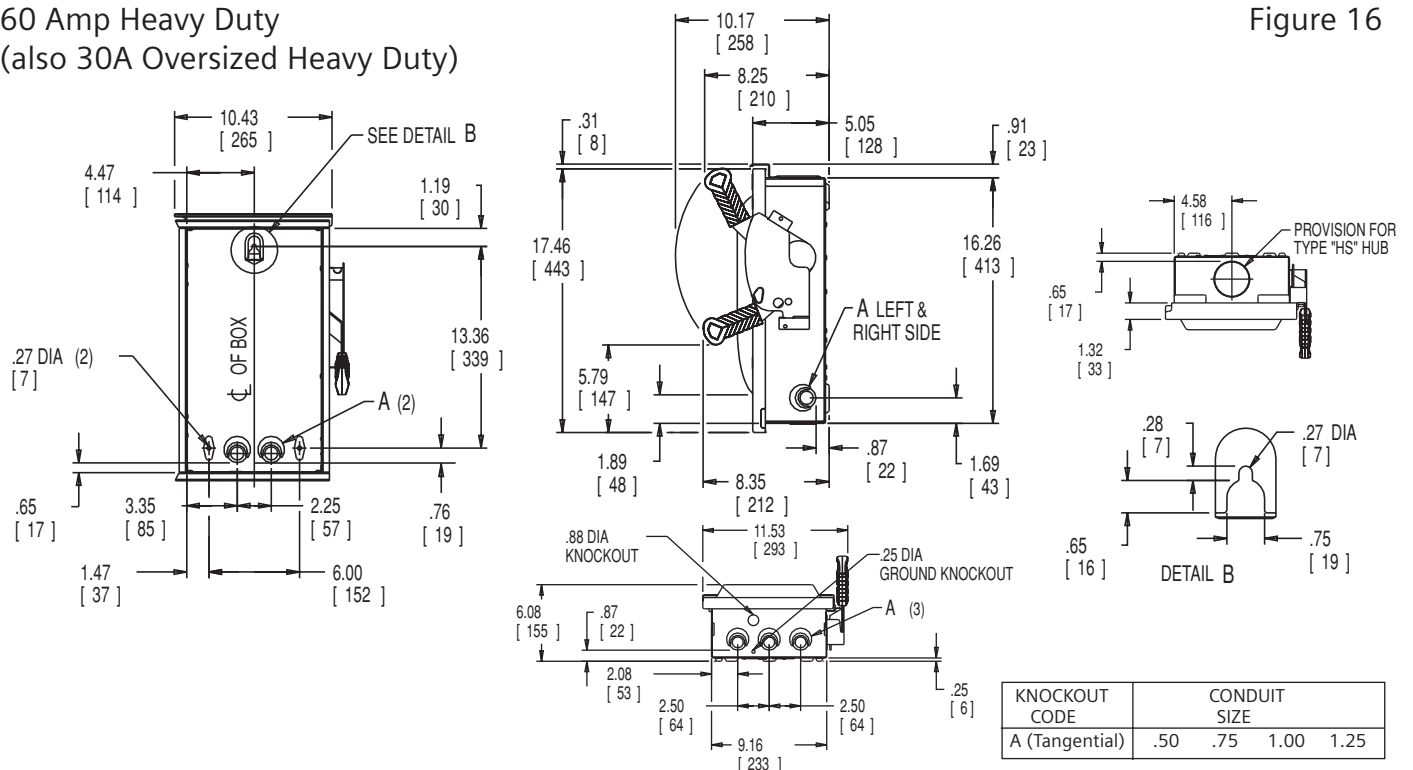
Type 3R (Outdoor)
30 Amp Heavy Duty Fusible

Figure 15



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

Figure 16



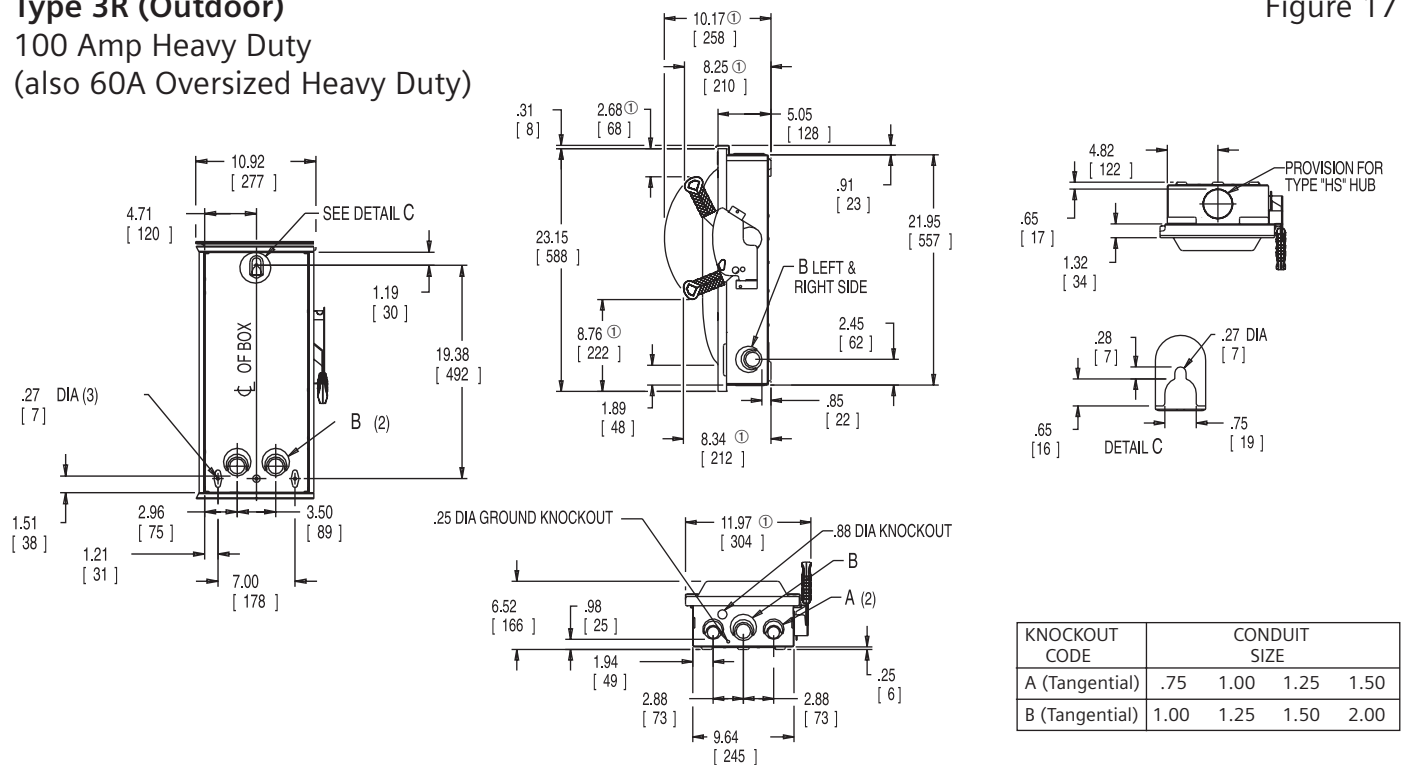
30 Dimensions shown in inches and millimeters [].
Dimensions shown accurate to $\pm 1/8$ inch.
① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

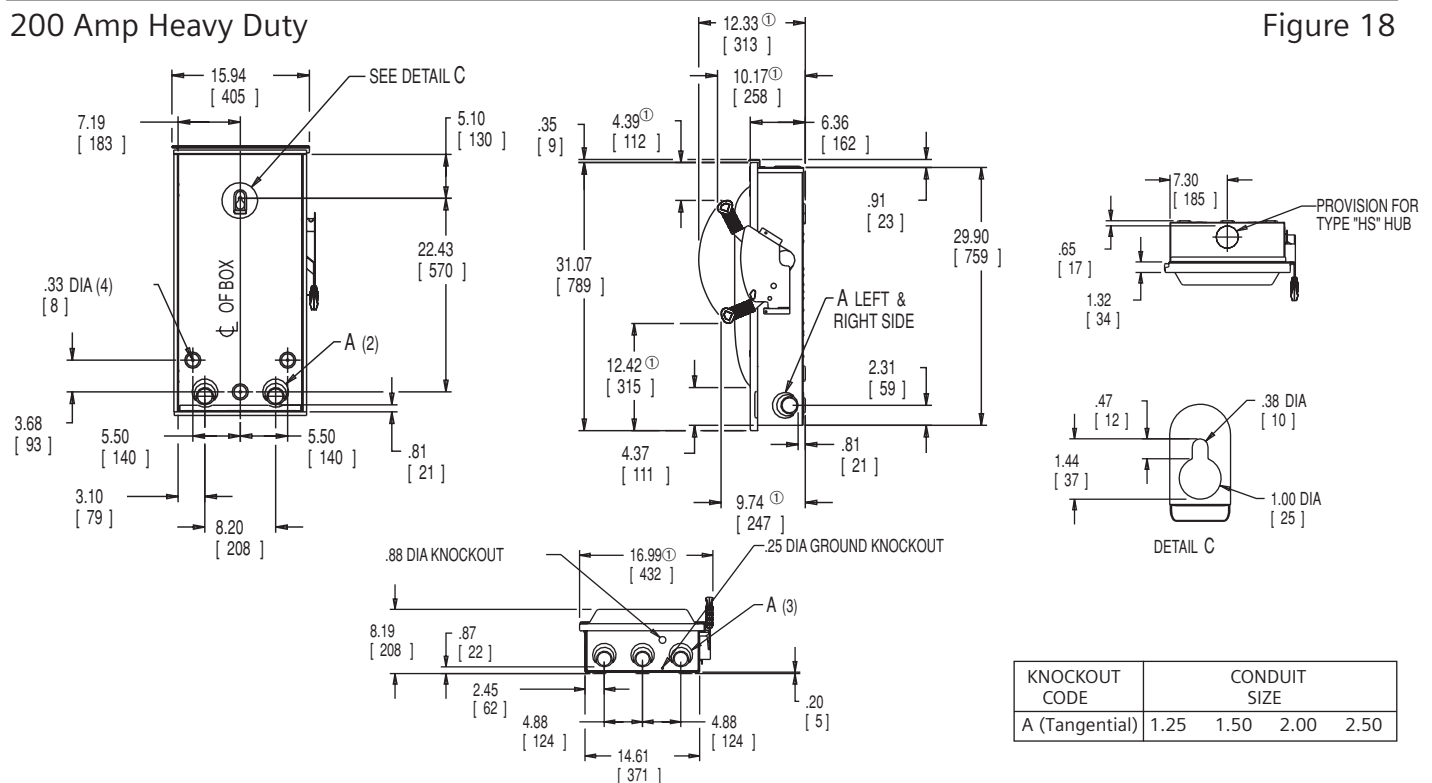
Type 3R (Outdoor) 100 Amp Heavy Duty (also 60A Oversized Heavy Duty)

Figure 17



200 Amp Heavy Duty

Figure 18



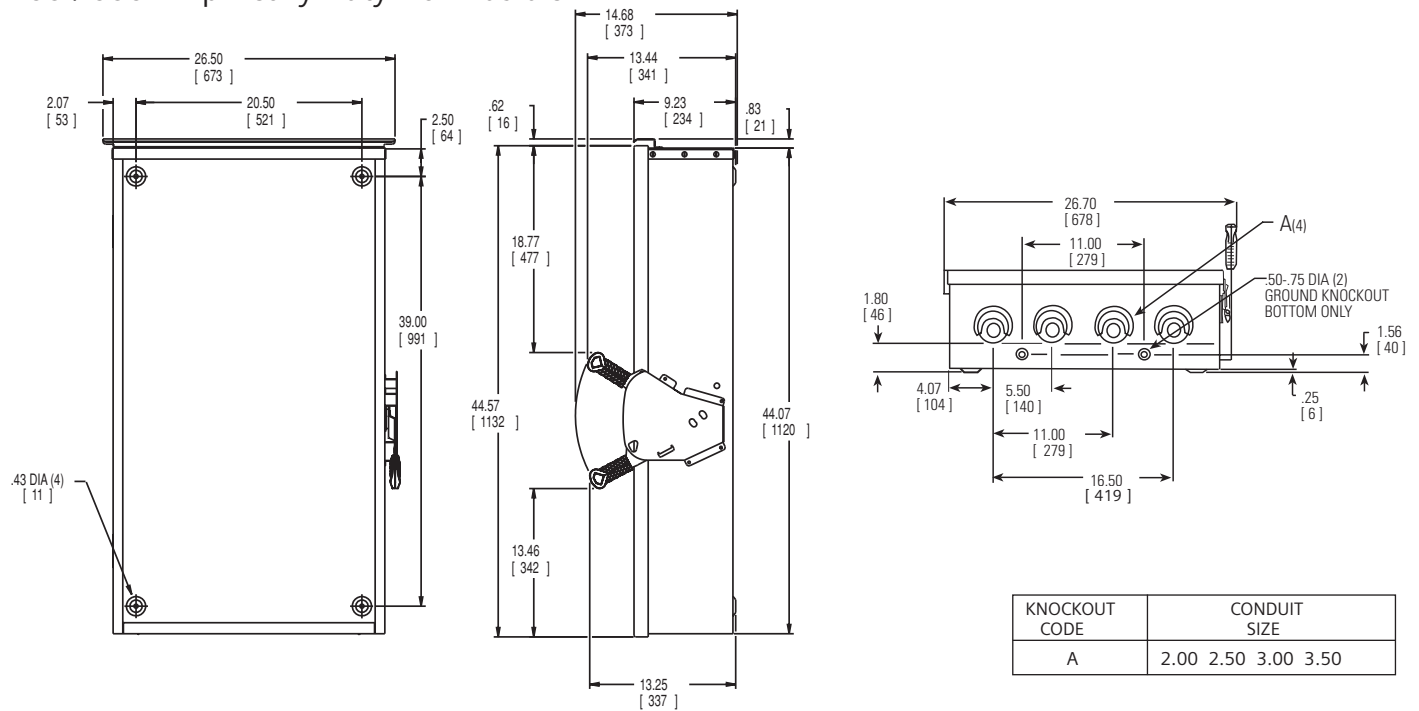
Dimensions shown in inches and millimeters [].
Dimensions shown accurate to ± 1/8 inch.
① Dimensions shown apply to heavy duty switches only.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

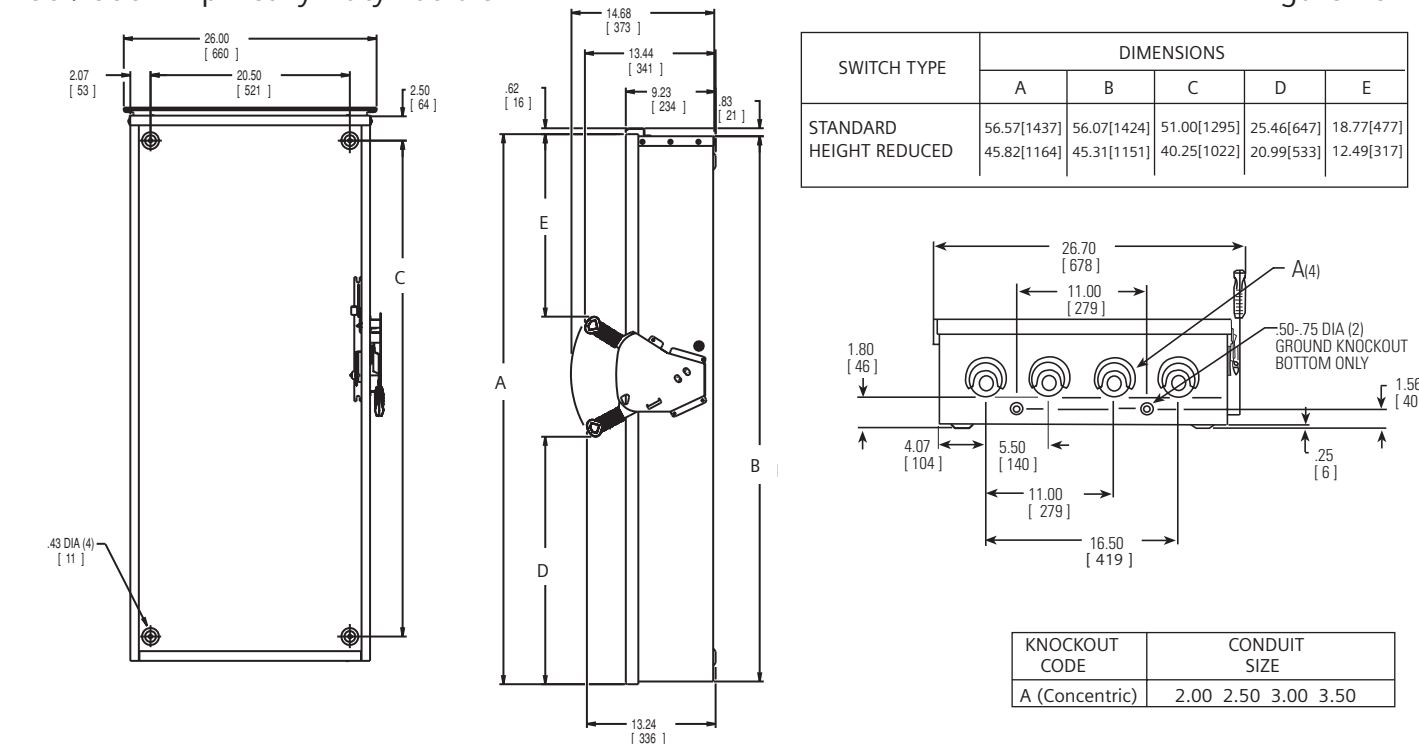
Type 3R (Outdoor)
400 / 600 Amp Heavy Duty Non-Fusible

Figure 19



400 / 600 Amp Heavy Duty Fusible

Figure 20

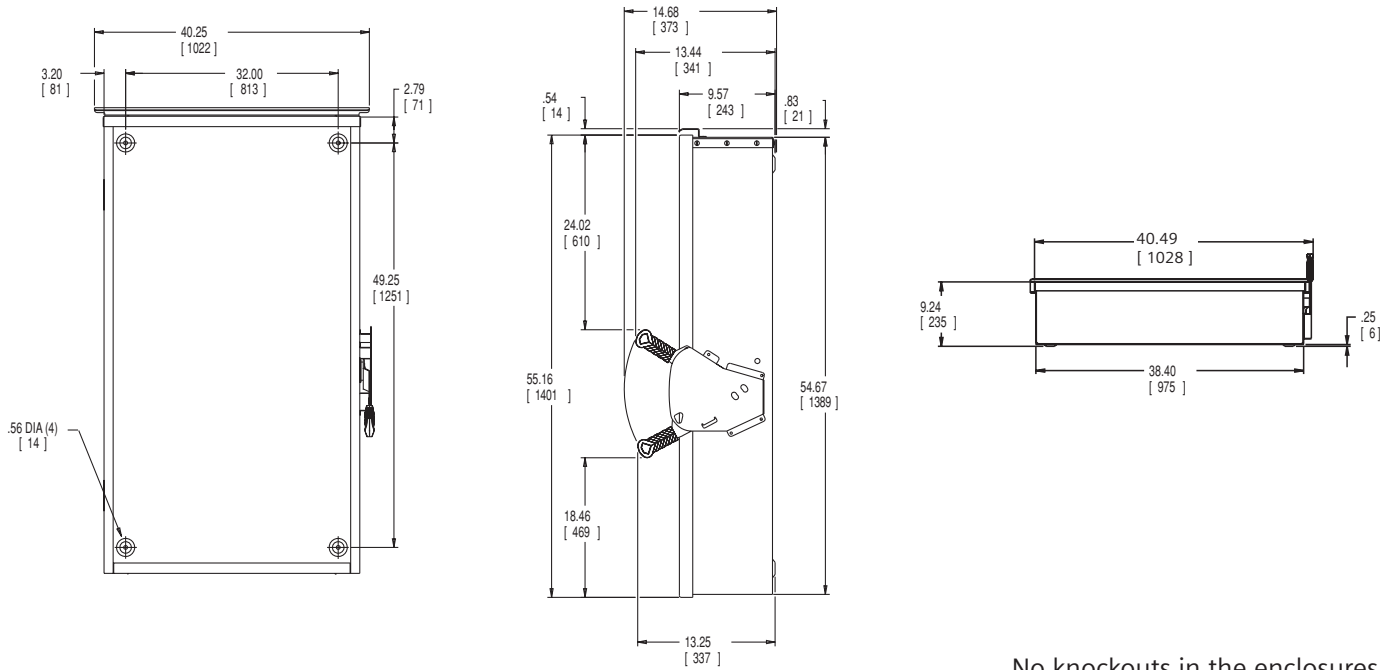


Detailed Dimension Drawings

Siemens Type VBII Safety Switches

Type 3R (Outdoor)
800 / 1200 Heavy Duty Non-Fusible

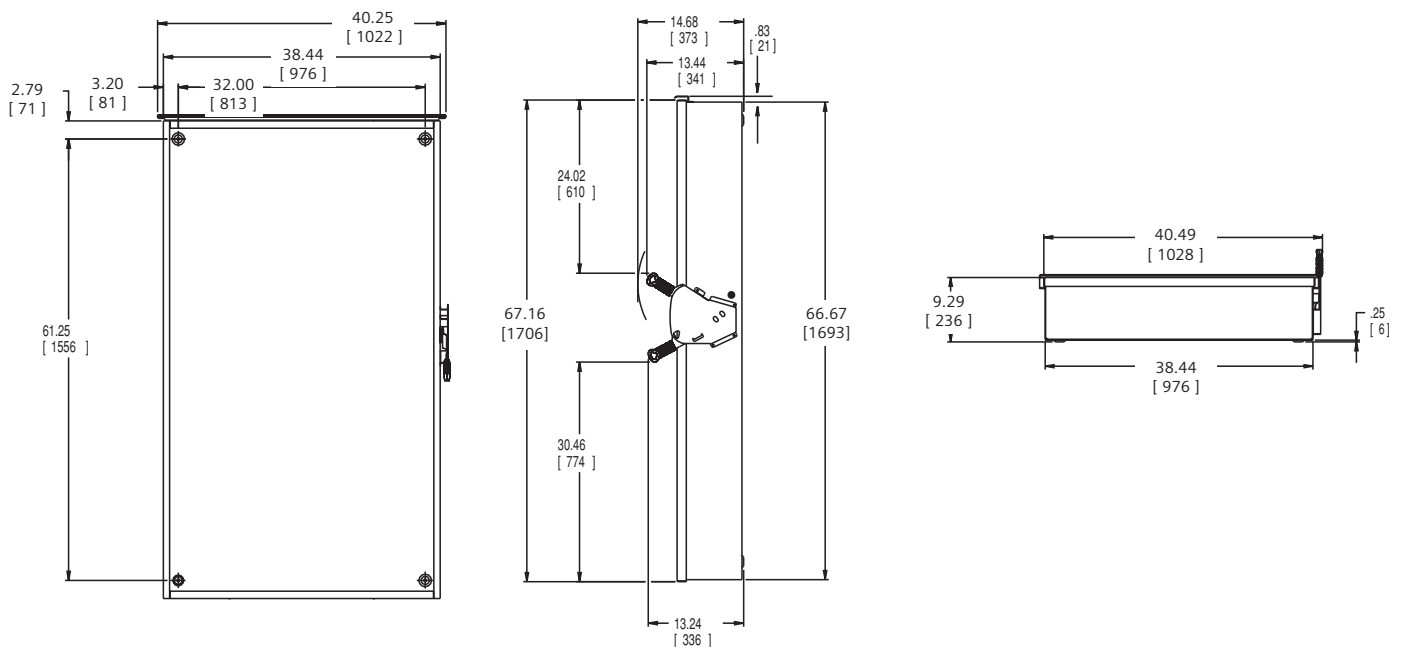
Figure 21



No knockouts in the enclosures.

800 / 1200 Amp Heavy Duty Fusible

Figure 22



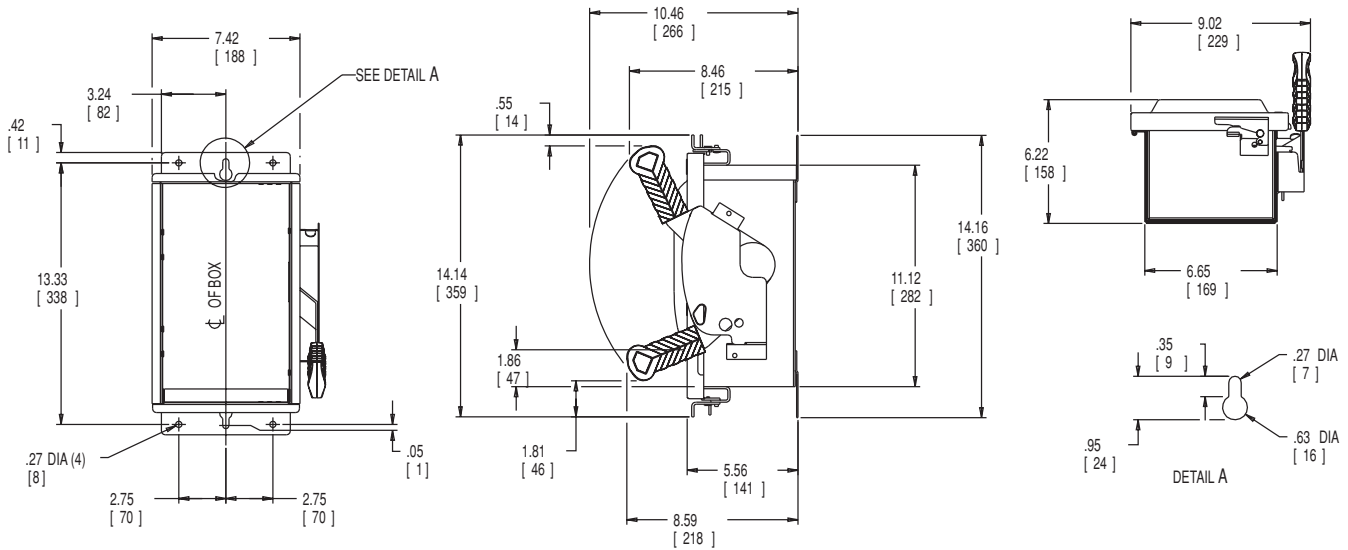
No knockouts in the enclosures.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

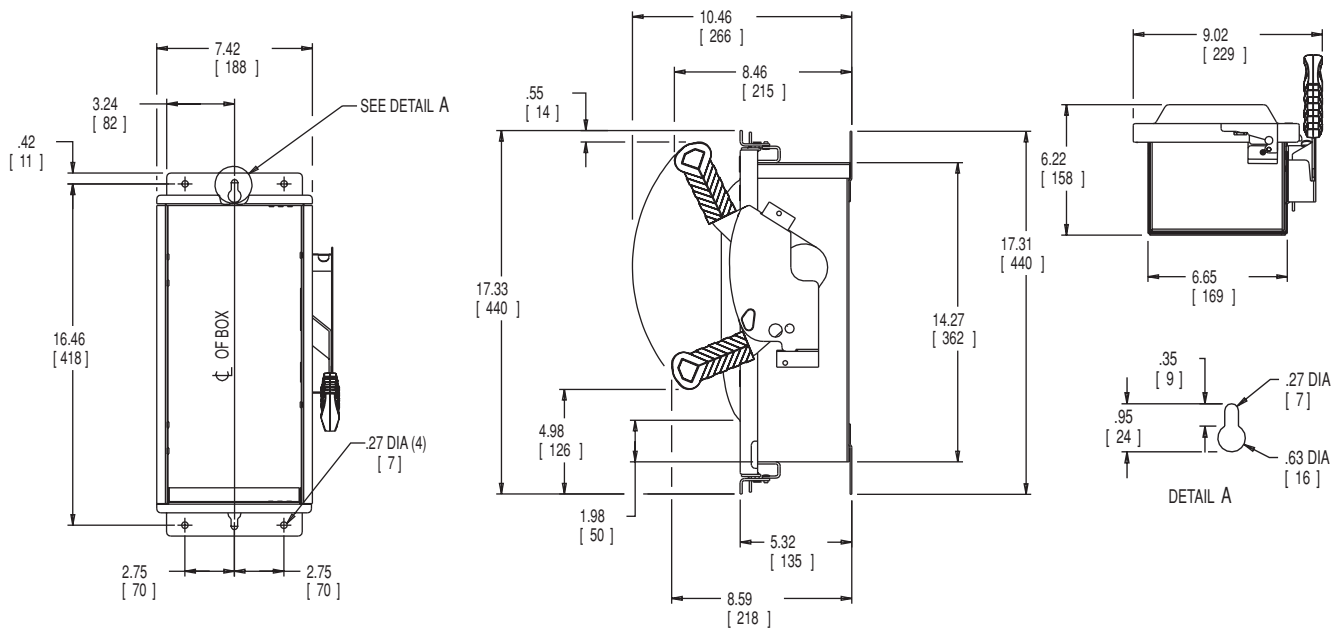
Figure 23



No knockouts in the enclosures.

30 Amp Heavy Duty Fusible

Figure 24



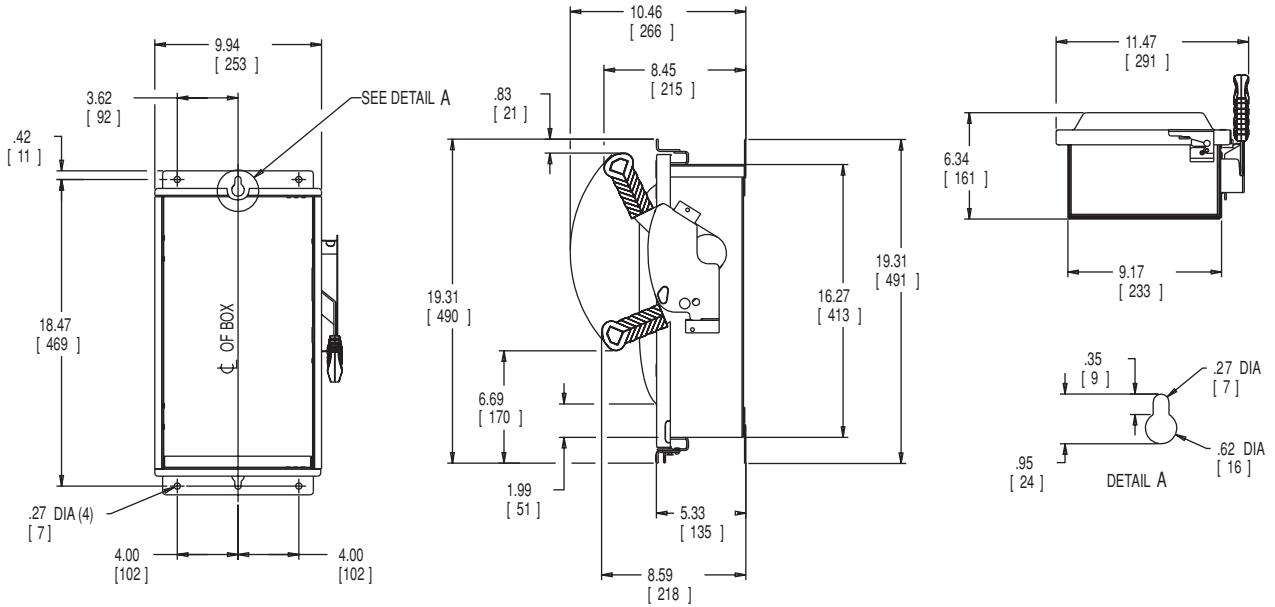
No knockouts in the enclosures.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

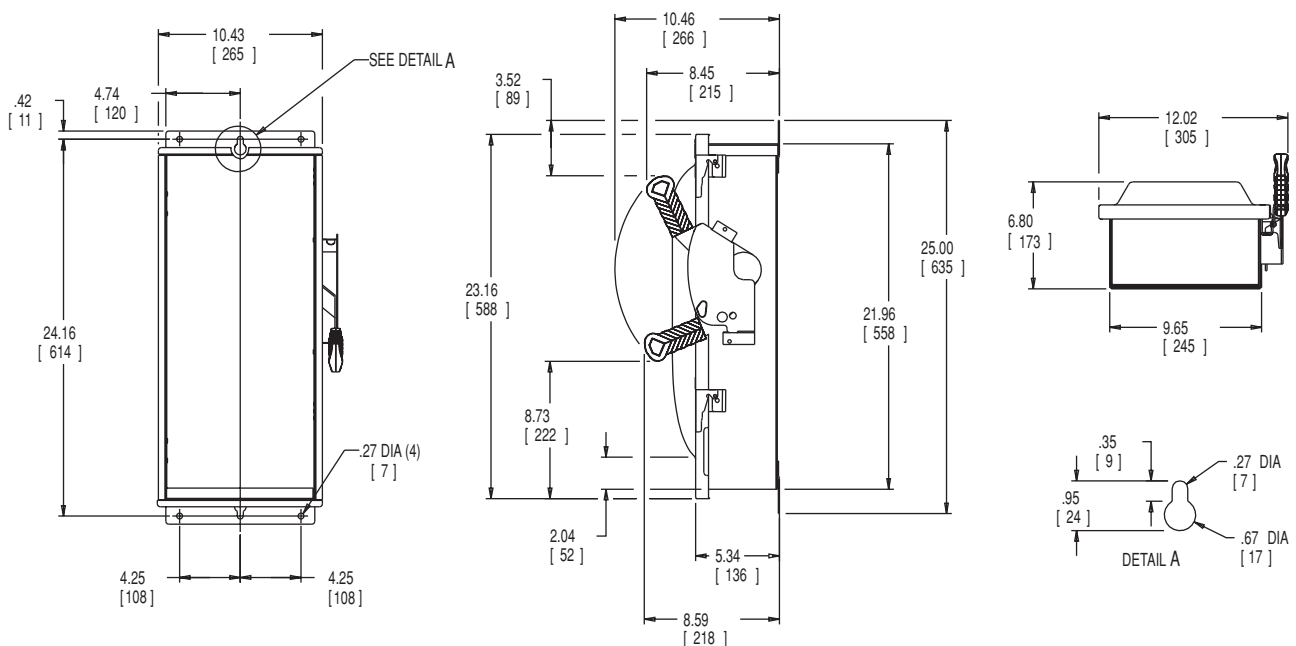
Figure 25



No knockouts in the enclosures.

100 Amp Heavy Duty

Figure 26



No knockouts in the enclosures.

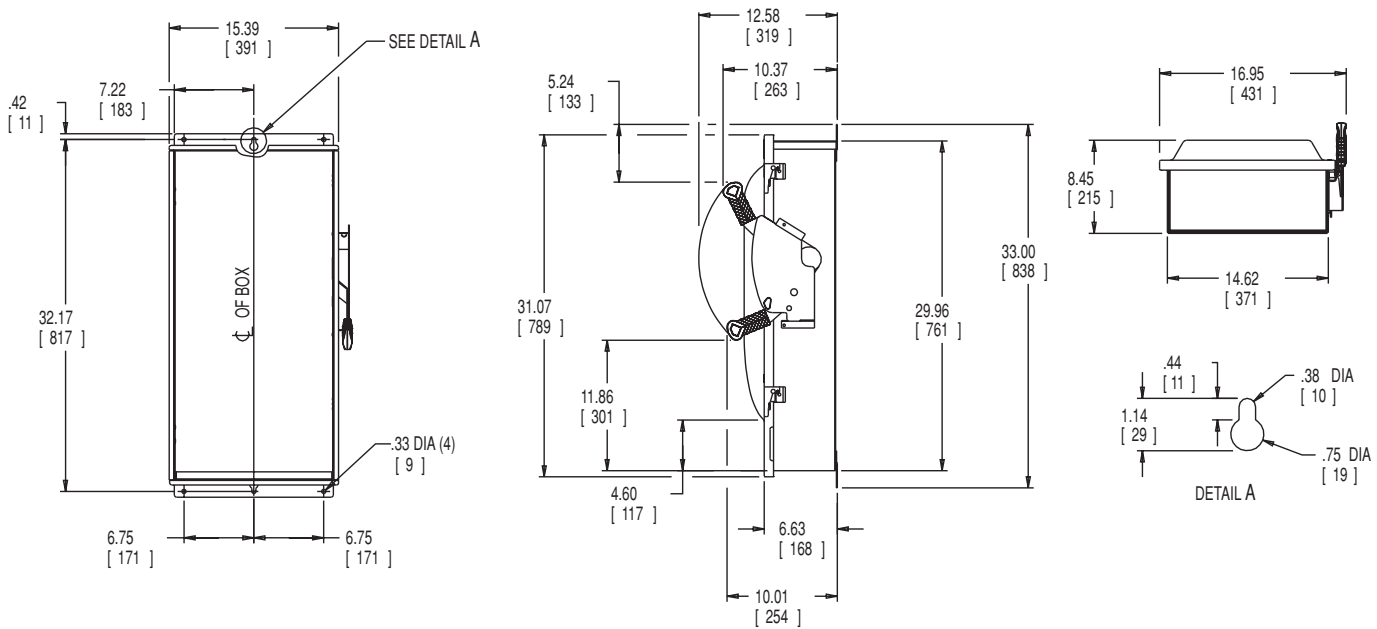
Dimensions shown in inches and millimeters [].
Dimensions shown accurate to $\pm 1/8$ inch.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

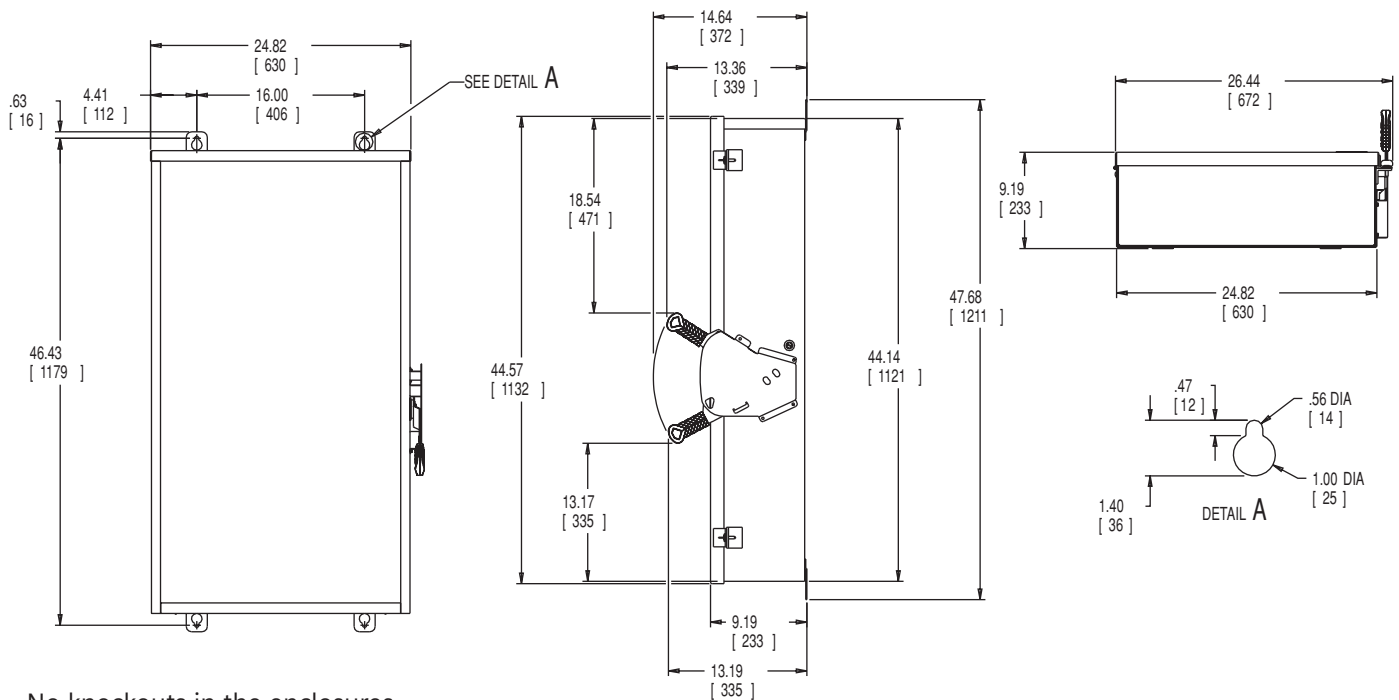
Figure 27



No knockouts in the enclosures.

400 / 600 Amp Heavy Duty Non-Fusible

Figure 28



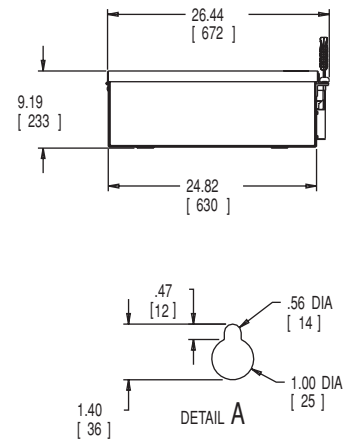
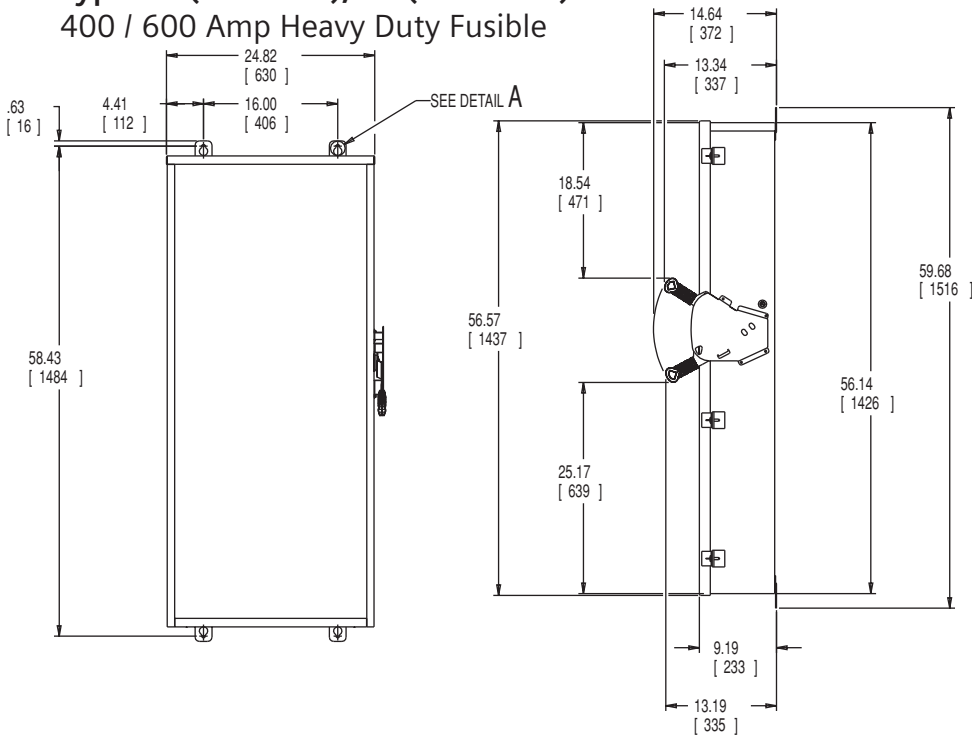
No knockouts in the enclosures.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

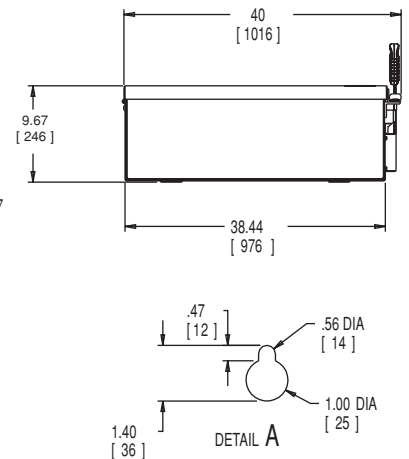
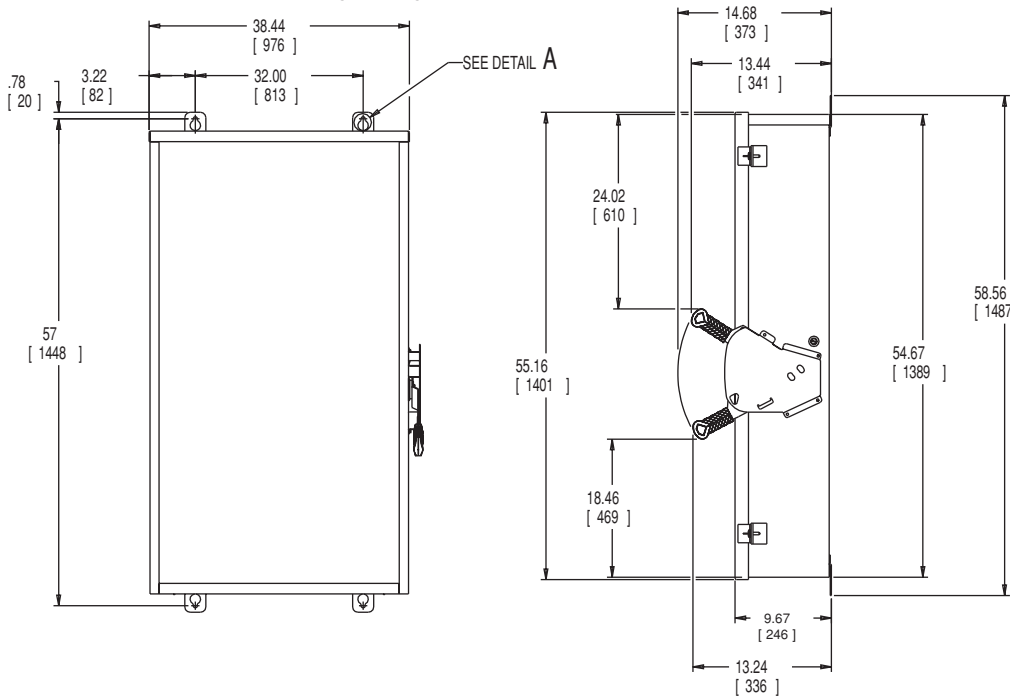
Figure 29



No knockouts in the enclosures.

800 / 1200 Amp Heavy Duty Non-Fusible

Figure 30



No knockouts in the enclosures.

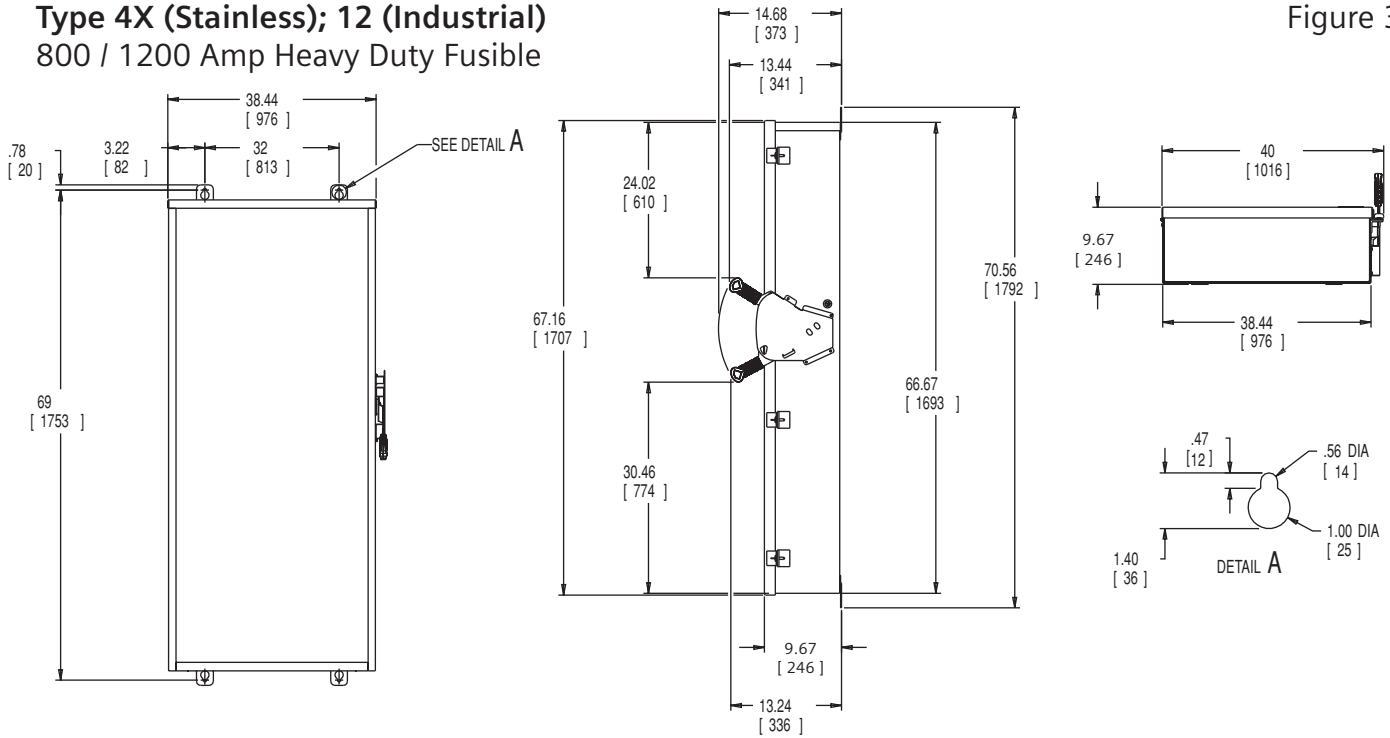
Dimensions shown in inches and millimeters [].
 Dimensions shown accurate to ± 1/8 inch.

Detailed Dimension Drawings

Siemens Type VBII Safety Switches

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

Figure 31



No knockouts in the enclosures.

Detailed Dimension Drawings

Siemens Type VBII 4 & 6 Pole Safety Switches

Figure 1: Type 1

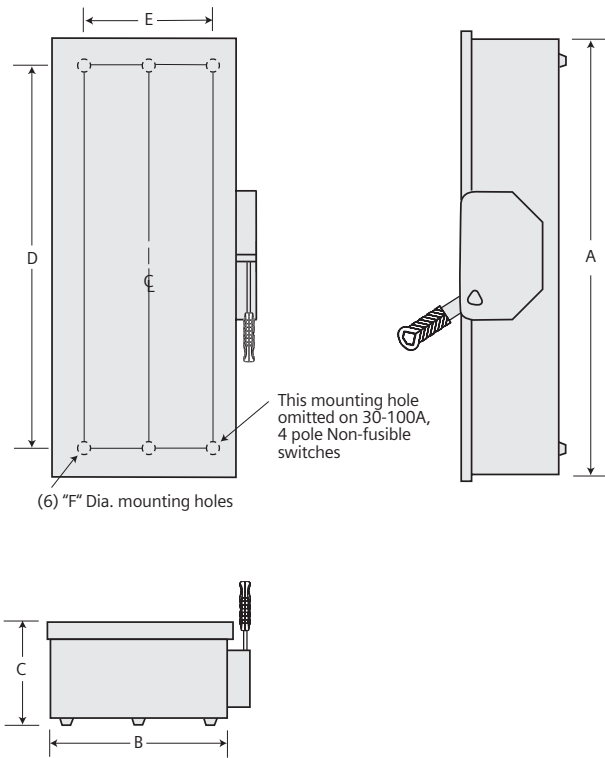
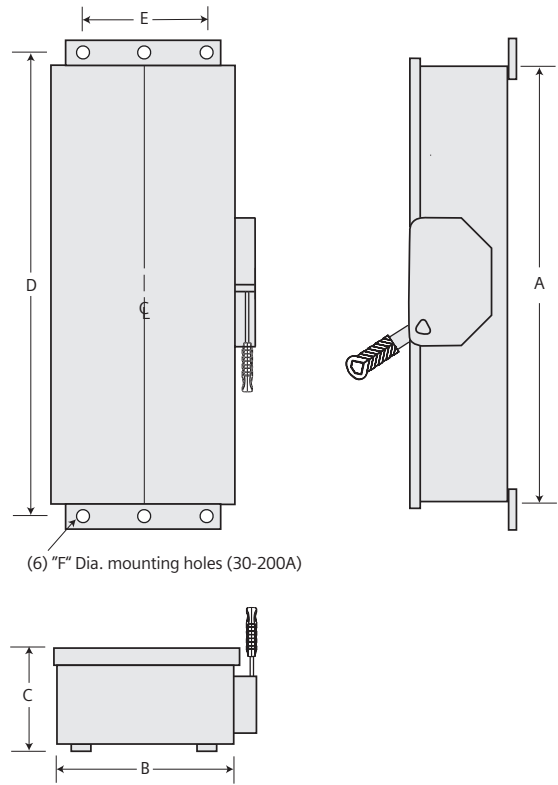


Figure 1: Type 12/3R and 4X



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

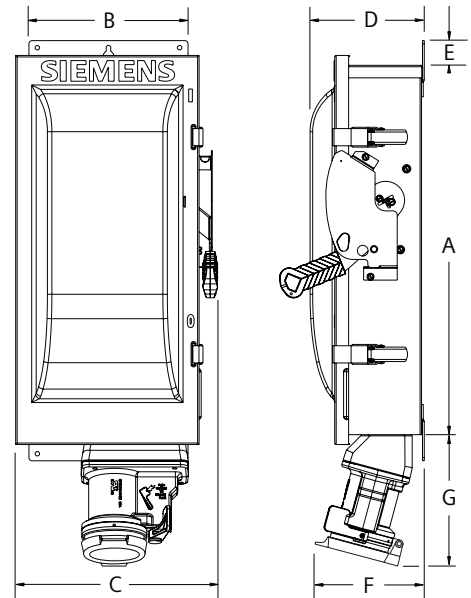
Catalog Number	Enclosure			Mounting		
	A	B	C	D	E	F
Figure 1, 4-Pole Fusible and Non-fusible, Type 1						
HNF461	24.50 (622)	9.53 (242)	6.09 (155)	19.00 (483)	6.75 (171)	0.268 (7)
HF461	29.12 (740)	9.53 (242)	6.09 (155)	23.50 (597)	6.75 (171)	0.268 (7)
HNF462	24.88 (632)	11.50 (292)	6.09 (155)	19.00 (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)

Dimension Drawings

Special Application Safety Switches

Interlocked Receptacle Switch

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



Replacement Parts

Siemens Type VBII Safety Switch



Ampere Rating	Line Base	Load Base	Handle/Handle Guard Heavy Duty	Mechanism Assembly	Lugs
Fusible 2 and 3-Pole 30-600A Heavy Duty ⑤⑧					240V Max
30 HD 240V 60 HD 240V ^⑩	HFB21 ② HFB22 ②	HBB21 ② HBB22 ②	HH6123 ⑦ HH6123 ⑦	HM6123 ⑦ HM6123 ⑦	HL612 ① HL612 ①
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 ⑦	HM66	HL65678 ④
800	HFB67 ⑥	HBB67 ⑥	HH65678 ⑦	HM678	⑨
1200	HFB68 ⑥	HBB68 ⑥	HH65678	HM678	⑨
Fusible 3-Pole Heavy Duty ⑤⑧					600V Max
30 600V 60 600V 60A Oversized	HFB612 ② HFB62 ② HFB623 ②	HBB612 ② HBB62 ② HBB623 ②	HH6123 ⑦ HH6123 ⑦ HH6123	HM6123 ⑦ HM6123 ⑦ HM6123	HL612 ① HL612 ① -
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	HM65	HL65678 ④	
600	HFB66 ③⑥	HBB656 ③⑥	HH65678 ⑦	HM66	HL65678 ④
800	HFB67 ⑥	HBB67 ⑥	HH65678 ⑦	HM678	⑨
1200	HFB68 ⑥	HBB68 ⑥	HH65678	HM678	⑨
Non-Fusible 3-Pole 30-600A Heavy Duty ⑤⑧					600V Max
30 HD 60 HD ^⑩ 100 ^⑩	HNB612 ② HNB623 ② HNB623 ②	- - -	HH6123 ⑦ HH6123 ⑦ HH6123 ⑦	HM6123 ⑦ HM6123 ⑦ HM6123 ⑦	HL612 ① HL612 ① HL63 ①
200	HNB64 ②	-	HH64 ⑦	HM64 ⑦	HL64 ①
400	HNB65 ③⑥	-	HH65678 ⑦	HM65	HL65678 ④
600	HNB66 ③⑥	-	HH65678 ⑦	HM66	HL65678 ④
800	HNB67 ⑥	-	HH65678 ⑦	HM678	⑨
1200	HNB68 ⑥	-	HH65678	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
- CSA/UL fuse class when specified

The compatible fusible safety switch is selected following these parameters:

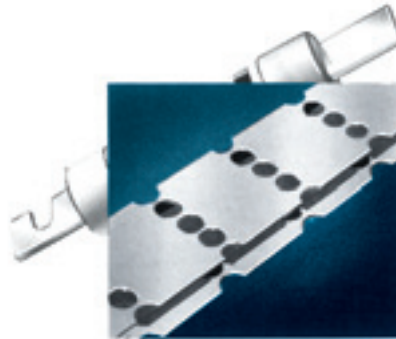
- System voltage requirements
- Fuse amp ratings
- Available fault current
- CSA/UL fuse class
- Environmental conditions
- Number of poles required



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. (CSA/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

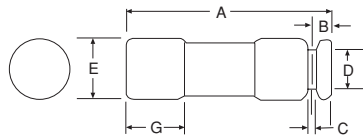
Siemens Type VBII Safety Switch

Class R and H Fuses

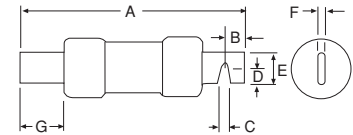
Class R Application: Over-current and short-circuit protection of motors and transformers, service entrance equipment, feeder and branch circuits. (General Purpose Protection)

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

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



Ferrule Type 0-60A



Blade Type 61-600A

Class H Fuse Dimensions

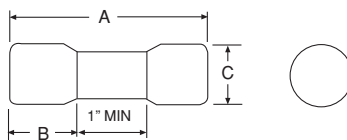
Ampere Rating	250 Volts							600 Volts						
	A	B	C	D	E	F	G	A	B	C	D	E	F	G
0-30	2	—	—	—	9/16	—	1/2	5	—	—	—	13/16	—	17/32
35-60	3	—	—	—	13/16	—	21/32	5 1/2	—	—	—	1 1/16	—	21/32
65-100	5 7/8	—	—	—	3/4	1/8	1	7 7/8	—	—	—	3/4	1/8	1
110-200	7 1/8	—	—	—	1 1/8	3/16	1 3/8	9 5/8	—	—	—	1/8	3/16	1 3/8
225-400	8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

Class R Fuse Dimensions (Rejection Feature)

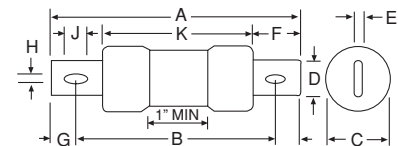
Ampere Rating	250 Volts							600 Volts						
	A	B	C	D	E	F	G	A	B	C	D	E	F	G
0-30	2	5/32	5/64	3/8	9/16	—	1/2	5	3/16	3/32	5/8	13/16	—	17/32
35-60	3	3/16	3/32	5/8	13/16	—	21/32	5 1/2	1/4	3/32	7/8	1 1/16	—	21/32
61-100	5 7/8	1/2	9/32	23/64	3/4	1/8	1	7 7/8	1/2	9/32	23/64	3/4	1/8	1
101/200	7 1/8	11/16	9/32	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.



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

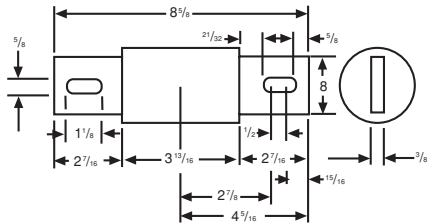
Fuse Applications and Dimensions

Siemens Type VBII Safety Switch

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.

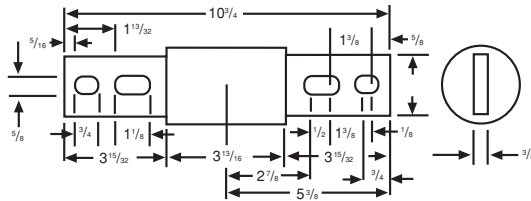


Class L Blade Type 601-800A

Class T

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

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



Class L Blade Type 801-1200A

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, CSA/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 de-ratings 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 CSA/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 CSA/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 CSA/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 CSA/UL listed for design E horse-

power ratings. With Siemens safety switches no de-rating 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

CSA/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 horsepower 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.

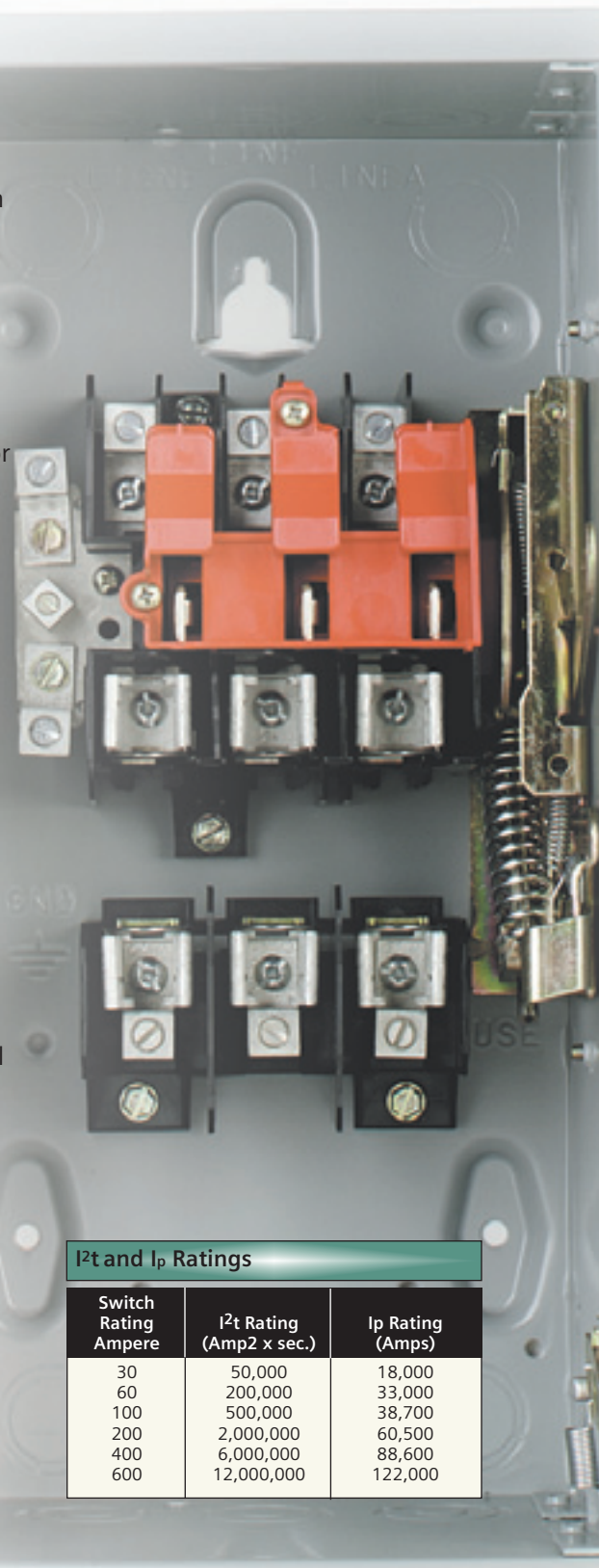
The CSA/UL fuse standard defines maximum instantaneous peak let-through current (I_p) and maximum destructive energy let-through (I^2t) for each fuse (except Class H).

Applications of fuses and safety switches on systems having more than 10,000A are available. Short circuits require selections of the proper CSA/UL-listed fuses and switches capable of withstanding I^2t let-throughs. See chart below for withstand ratings on Siemens switches.

I^2t Rated

Suitability tests for service with 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 I^2t let-through values in excess of the capacities of the largest fuses acceptable by the switches.

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



Short-circuit Withstand Ratings		
Fuse Rating	Fuse Class	Short Circuit Rating (RMS Symmetrical Amperes)
		Heavy Duty
Fusible	Plug	–
	H	10,000
	K	10,000
	J	200,000
	R	200,000
	T	200,000
	L	200,000
Non-Fusible ①	H	10,000
	K	10,000
	J	200,000②
	R	200,000②
	L	200,000

I^2t and I_p Ratings		
Switch Rating Ampere	I^2t Rating (Amp ² x sec.)	I_p Rating (Amps)
30	50,000	18,000
60	200,000	33,000
100	500,000	38,700
200	2,000,000	60,500
400	6,000,000	88,600
600	12,000,000	122,000

46 ① With fuses in series with switch. Fuse 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 Meets CSA C22 4 for Switches and CSA C22 2 No. 94 enclosures

2.2 UL 98—Enclosed and Dead Front Switches

2.3 NEMA KS 1—Enclosed Switches

3. SUBMITTAL

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

B. PRODUCT REQUIREMENTS

1. Switch Mechanism/Handle

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

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

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

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

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

1.6 All switches (Type 1, 3R, 4/4X-5 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.

1.7 30-200A 4X stainless steel switches shall have stainless steel interior parts as standard.

1.8 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. Line and load lugs shall be removable with no need to remove line shields and arc suppressors.

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

2.4 Optional copper body and crimp type lugs are to be CSA approved for field installation in 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 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. 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 enamel paint which is electrodeposited on cleaned, phosphate pre-treated steel (Type 1)], [gray baked enamel 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 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 3R/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 CSA or CUL-listed, and meet federal specification WS865C and NEMA specification KS-1.

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

4.5 The CSA-listed short-circuit rating of the switches shall be 100,000 RMS symmetrical amperes 600VDC when used with or protected by Class R or J fuses.

4.6 All switches intended for service entrance shall be CSA/UL approved for this application.

4.7 All switches shall be I²t rated.

C. APPROVED MANUFACTURERS

1.1 Switches shall be manufactured by Siemens

Siemens Type VBII Safety Switch

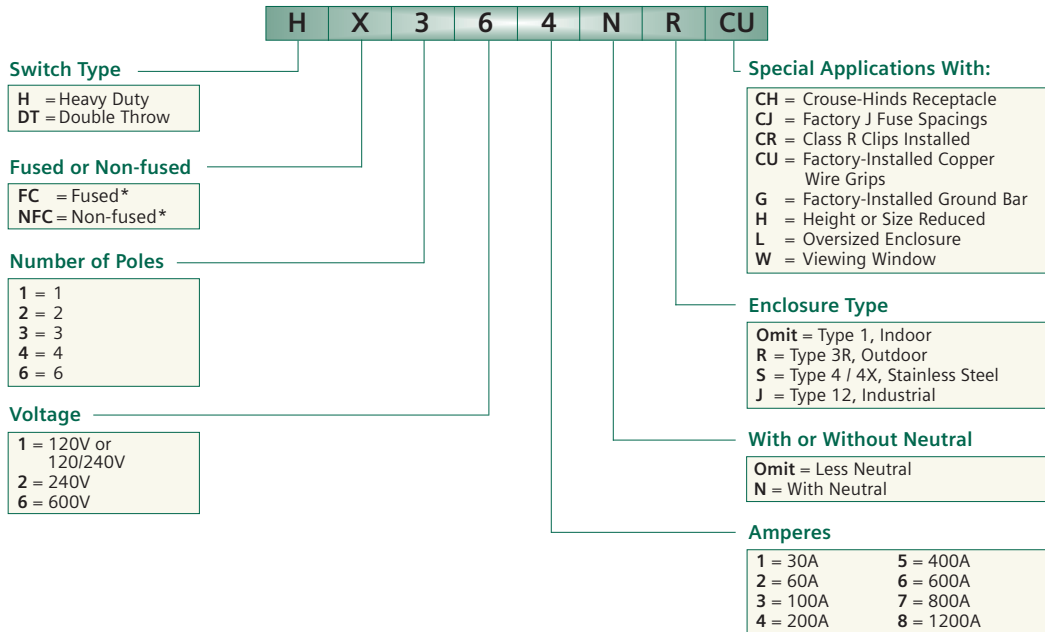
Notes

Siemens Type VBII Safety Switch

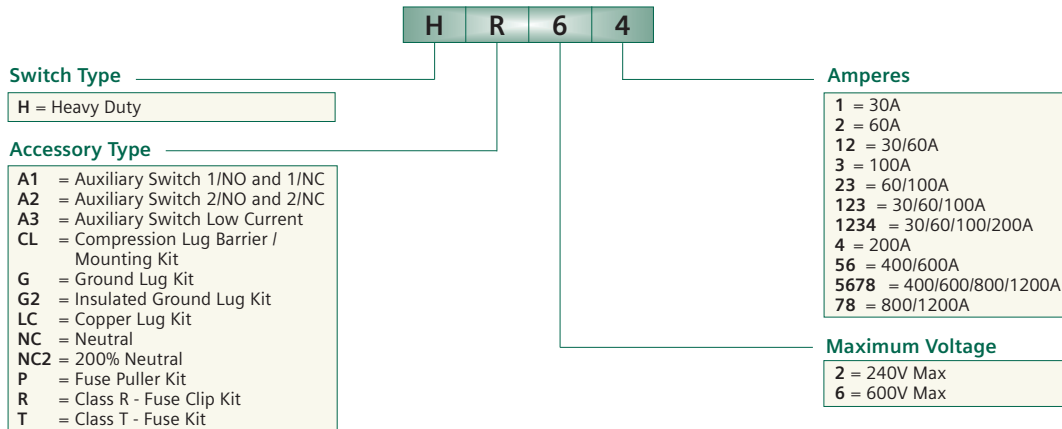
Notes

Siemens Catalog Numbering System

Type VBII Safety Switch Catalog Numbering System



Siemens Accessories Catalog Numbering System



* Except 4 & 6 Pole
* Interlocked Receptacle

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