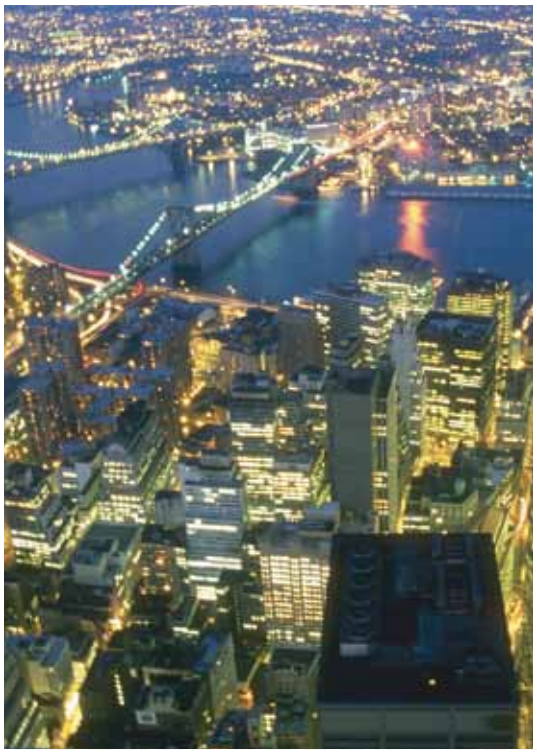
Power Switching & Controls
for Business-Critical Continuity

ASCO SERIES 300 Power Transfer Switches



ASCO®

EMERSON™
Network Power

Maximum Reliability & Excellent Value

With a SERIES 300 Transfer Switch, you get a product backed by ASCO Power Technologies, the industry leader responsible for virtually every major technological advance in the Transfer Switch industry.

The ASCO SERIES 300 was designed for one purpose–to automatically transfer critical loads in the event of a power outage. Each and every standard component was designed by ASCO engineers for this purpose.

The rugged construction and proven performance of the ASCO SERIES 300 assure the user of many years of complete reliability. The SERIES 300 is even designed to handle the extraordinary demands placed on the switch when starting or restarting stalled motors and switching high inrush loads.

ASCO's SERIES 300 modular, compact design makes it easy to install, inspect and maintain. All parts are accessible from the front so switch contacts can be easily inspected.

Fig. 1: ASCO Power Transfer Switch rated 200 amperes shown in Type 3R enclosure

Features

- The SERIES 300 is listed to UL 1008 standard for Transfer Switch Equipment and CSA standard C22.2 for automatic transfer switches.
- Meets NFPA 110 for Emergency and Standby Power Systems and the National Electrical Code (NEC) Articles 700, 701 and 702.
- 30 through 3000 amps in a compact design.
- Available to 600 VAC, single or three phase.
- True double-throw operation: The single solenoid design is inherently inter-locked and prevents contacts from stopping between sources or from being in contact with both sources at the same time.
- There's no danger of the SERIES 300 ATS transferring loads to a dead source because the unique ASCO single-solenoid operator derives power to operate from the source to which the load is being transferred.
- Easy-to-read flush-mounted control and display panel provides LED indicators for switch position and source availability. It also includes test and time-delay bypass switches as standard features.
- Standard engine exerciser for weekly automatic testing of engine generator set with or without load.
- Adjustable time-delay feature prevents switch from being activated due to momentary utility power outages and generator dips.
- Supplied with solid neutral termination.
- Optional switched neutral pole available.
- Accessory kits available.
- Available for immediate delivery.
- Now available for service entrance applications. Contact ASCO for assistance.

UL Listed Withstand & Close-On Ratings

Switch Ratings Amps	Available Symmetrical Amperes RMS		
	When Used With Current Limiting Fuses	Maximum Voltage	When Used With Specific Circuit Breakers
30	100,000	480v/60Hz	10,000
70 - 200	200,000	480v/60Hz	22,000
230	100,000	480v/60Hz	22,000
260, 400	200,000	480v/60Hz	42,000
600	200,000	600v/60Hz	42,000
600	200,000	480v/60Hz	50,000
600	200,000	240v/60Hz	65,000
800,1000,1200	200,000	600v/60Hz	65,000
1600, 2000	200,000	600v/60Hz	85,000
2600, 3000	200,000	600v/60Hz	100,000

Notes:
1. Current – limiting fuse should be Class J type through 400 amps: use Class L type above 400 - amp fuse rating
2. Refer to publication 1128 for specific manufacturer's breakers

ASCO® Series 300 Microprocessor Controller

The ASCO Microprocessor Controller is used with all sizes of Power Transfer Switches. It represents the most reliable microprocessor controller in the industry and includes, as standard, all of the voltage, frequency, control, timing and connectivity functions required for most emergency and standby power applications.

Fig. 8: ASCO Series 300 Microprocessor Controller

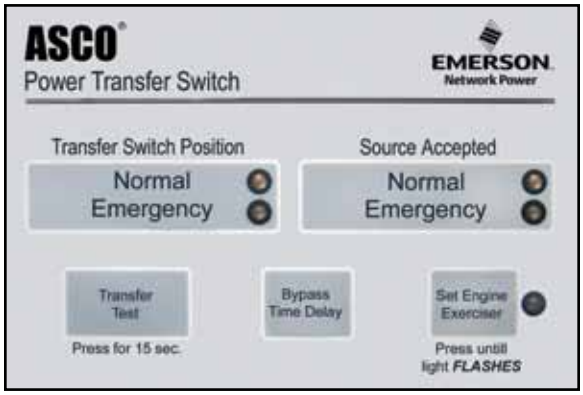


Fig. 9: Door-Mounted Control & Display Panel

Control and Display Panel

- Easy-to-read flush-mounted control and display panel provides LED indicators for switch position and source availability. It also includes test and time-delay bypass switches.

Voltage & Frequency Sensing

- Adjustable three-phase, close-differential voltage sensing on normal source.
- Normal source pickup voltage is adjustable to 95% of nominal; drop-out is adjustable from 70% to 90% of nominal.
- Frequency sensing on emergency source. Pickup at 95% and dropout at 85% of nominal.

Time Delays

- Adjustable time delay to override momentary normal source outages to delay all transfer switch and engine-starting signals.
- Transfer to emergency time delay––Adjustable from 0 to 5 minutes for controlled timing of load transfer to emergency.
- Re-transfer to normal time delay––Adjustable to 30 minutes.
- Five-minute unloaded running time delay for emergency engine generator cool down.
- Four-second time delay to ignore momentary voltage and frequency transients during initial genset loading.

Standard Selectable Features

- Inphase monitor to transfer motor loads, without any intentional off time, to prevent inrush currents from exceeding normal starting levels.
- Engine exerciser to automatically test backup generator each week—Includes control switch for testing with or without load.
- Selective load disconnect, double-throw contact to operate at an adjustable 0 to 20 second adjustable time delay prior to transfer and reset 0 to 20 seconds after transfer.
- 60 Hz or 50 Hz selectable switch.
  Three-phase/single-phase selectable switch.

Remote Control Features

Terminal provisions for connecting:

- Remote test switch.
- Remote contact for test or for peak shaving applications. Circuit will be automatically bypassed if emergency source fails.
  - Remote time-delay bypass switch.

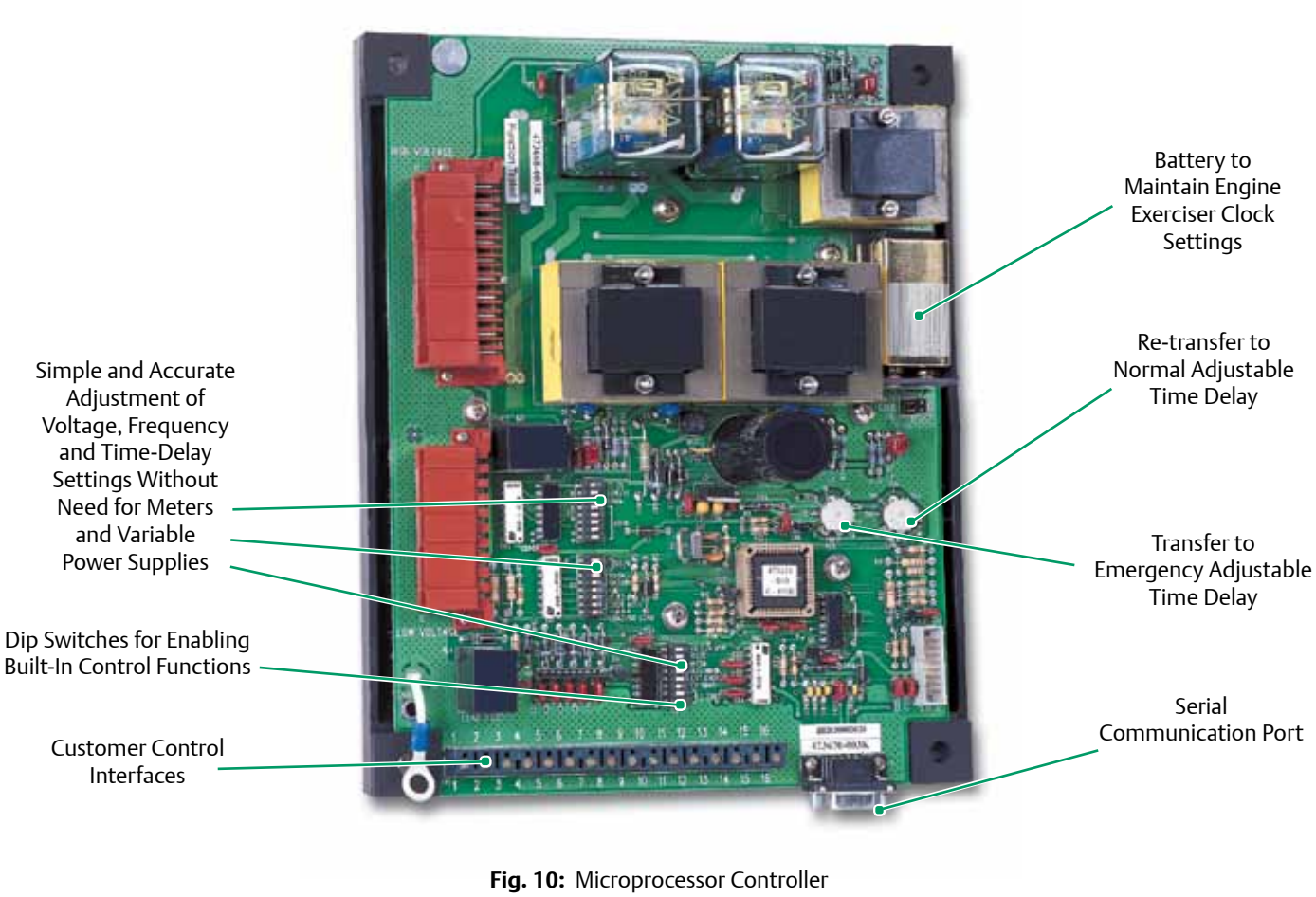


Fig. 10: Microprocessor Controller

Performance Features

- 600 volt spacing per UL and CSA standards.
- Interfacing relays are industrial grade, plug-in type with dust covers.
- Meets or exceeds the requirements for Electromagnetic Compatibility (EMC).

- ANSI C37.90A/IEEE472 Voltage Surge Test
- NEMA ICS-109.21 Impulse Withstand Test
- Digital circuitry isolated from line voltages
- IEC 801-2 Electrostatic discharge (ESD) immunity
- ENV50140 and IEC 803-1: Radiated electromagnetic field immunity
- IEC 801-4 Electrical fast transient (EFT) immunity
- ENV50142 Surge transient immunity
- ENV50141: Conducted radio-frequency field immunity
- EN55011: Group 1, Class A conducted and radiated emissions
- Optically isolated RS-485 Serial Port
- EN61000- 4-11 voltage dips and interruptions immunity

User-Initiated Control

ASCO 386 non-automatic transfer switches are generally used in applications where operating personnel are available and the load is not an emergency type requiring automatic transfer of power. The power-switching mechanism and controller is the same hardware used on the highly reliable ASCO SERIES 300 transfer switches. ASCO 386s are furnished as standard with a momentary-type selector switch to initiate transfer and re-transfer. They can also be arranged for remote control via ASCO's connectivity products.

Fig. 14: ASCO 386 400 Amp Type 1 Enclosure w/Optional Accessories 9C, 9D Source Availability Lights

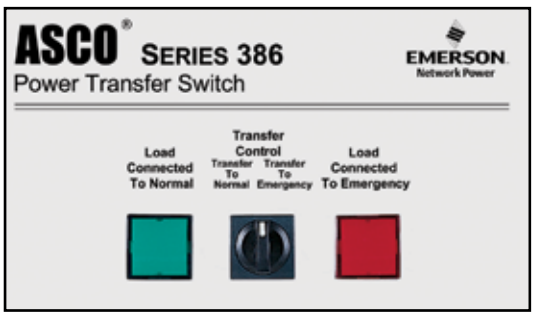


Fig. 15: Control and Display Panel

Electrical Features:

- Listed under UL 1008, CSA certified:
  - UL listed through 480 VAC.
  - CSA certified through 600 VAC.
- Door-mounted selector switch for local, manually initiated electrical control.
- Sizes from 30 through 3000 amps. Available to 600 VAC, 50 or 60 Hz.
- Rated for all classes of load transfer. 100% tungsten load ratings through 400 amps.
- Designed for emergency and standby applications.
- Same withstand and close-on rating as SERIES 300.

Standard Selectable Control Features:

- Inphase monitor to transfer motor loads between live sources, without any intentional off time, to prevent inrush currents from exceeding normal starting levels.
- Selective load disconnect, double-throw contact to operate at an adjustable 0 to 20 second time delay prior to transfer and reset 0 to 20 seconds after transfer.
- High/Low nominal voltage setting. Allows user to adjust for source low reduced voltage conditions in remote areas.
- 60 Hz or 50 Hz selectable switch.
- Single/Three-phase selectable switch.

Control Features:

- Switch position indicating signal lights.
- One auxiliary contact closed when transfer switch is connected to normal and one closed on emergency, standard feature 14A/14B.

Optional Accessories:

- 6Q Key-operated, momentary source selector switch furnished instead of the standard selector switch.
- 9C, 9D Source availability lights to provide operator with a local indication of power source availability.
- Accessory 14AA/14BA auxiliary contacts to indicate position of main contacts. Two (2) for normal position and two (2) for emergency position (one set is standard).
- 72A Serial module (5110) is used to allow local or remote communications with ASCO POWERQUEST® connectivity products.
- Special Enclosures (Specify by appropriate code in catalog number):
  Type 3R: Rain-tight
  Type 4: Weatherproof
  Type 12: Oil Tight
- 72E Connectivity Module 5150 is used to bring several different serial devices that communicate at different baud rates and with different protocols to a common Ethernet media.

ASCO® Series 300SE Power Transfer Switch

The ASCO Service Entrance Power Transfer Switch combines automatic power switching with the necessary disconnecting, grounding, and bonding required for use as service entrance equipment. The power transfer switch meets all National Electrical Code requirements for service entrance use. Transfer switches generally are installed at facilities that have a single utility feed and a single emergency power source.

ASCO Series 300SE products use two types of construction.

Products 400 amperes or less, utilize a single enclosure including a service (utility source) disconnect circuit breaker, as well as the power transfer switch, grounding and bonding provisions.

Products 600 amperes and above, utilize a multi-section switchboard construction including a service equipment section containing the service (utility source) disconnect circuit breaker, grounding, and bonding provisions. A second section contains the power transfer switch.

Product Features:

- Suitable for use as service entrance equipment. Listed to UL 891 (standard for switchboards) for 600 - 3000 amps, sizes and UL 1008 (standard for panel-boards) for 70 - 400 amps.
- Automatic Transfer Switch is listed to UL 1008 for total system loads
- Sizes available from 70 - 3000 amps, 600 VAC, 50 or 60 Hz, single or three phase
- Silver plated copper ground and neutral bus solderless screw type terminals
- Ground fault trip protection provided on sizes 1000 amps and above
- Available with solid or switched neutral

600 - 3000 Amp Construction

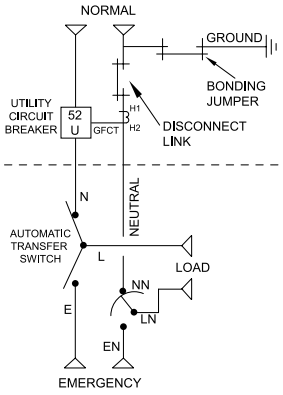


Fig. 16: ASCO Series 300 SE Rated 800 amperes Type 1 enclosure with Service Entrance Equipment

70 - 400 Amp Construction

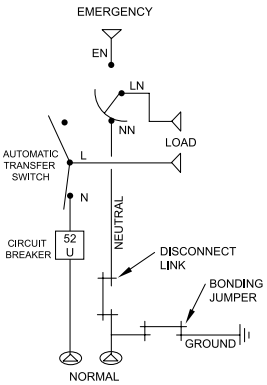


Fig. 17: ASCO Series 300 SE rated 200 amperes in Type 1 enclosure with single source breakers

ASCO® Series 300SE Transfer Switch Ordering Information

To order an ASCO Series 300SE Power Transfer Switch, complete the following catalog number:

3AUS + B + 3 + 400 + N + 1 + X + C + 11CD + 240V/60

Product	Neutral Code	Phase Poles	Amperes Continuous Rating	Voltage Code		Controller	Options	Enclosure		Optional Accessories	Specific Volt & Freq
								Blank	Open Type		
3AUS	B[1] Switched Neutral	2 poles, 1Ø	70, 100, 150, 200[6], 225[6], 250, 400, 600, 800, 1000, 1200, 1600, 2000 2500, 3000	A[3]	115	1	Insert "X" If optional accessories are required	C	Type 1 (Standard)	11BG Programmable Engine Exerciser	This information is necessary to allow correct control settings prior to shipment
3NUS		3 poles, 3Ø		B[3]	120			F	Type 3R	14AA/14BA Auxiliary Contacts (2 sets)	
				C	208			G	Type 4[2]	44G Strip Heater w/Thermostat	
				D	220			H	Type 4X	72A	
				E	230			L	Type 12[2]	Serial Module	
				F	240			M	Type 3R Secure	72E Connectivity Module	
				H	380			N	Type 4 Secure	73A Surge Suppressor	
				J	400			P	Type 4X[6] Secure Double Door SS		
				K	415			R	Type 3RX[7,8] Secure Double Door SS		
				L	440						
				M	460						
				N	480						
				Q	575						
				R	600						

Notes:
1. Specify neutral code "C" for 250 and 400 amperes only.
2. Available 70-1000 ampacity. Use Type 3R for 1200-3000 amp applications.
3. 115-120 volt available 150-400 amps only.
4. A solid neutral is standard on 3AUS.
5. For switch sizes 70 - 225 amperes only.
6. 200, 225 amp rated switch suitable for use with copper cable only.
7. Type 316 Stainless Steel is standard. It provides an improved reduction in corrosion of salt and some chemicals. It is the preferred choice for marine environments.
8. Available only on switches rated 1200, 2000, 2600, and 3000 Amps.

ASCO® Series 300SE Transfer Switch Dimensions and Shipping Weights

UL Type 1 Enclosure[4]

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
70, 100 ,150, 200, 225	2	STD	36.5 (927)	48.5 (1232)	13.25 (337)	400 (185)
	2	B	36.5 (927)	48.5 (1232)	13.25 (337)	408 (188)
	3	STD	36.5 (927)	48.5 (1232)	13.25 (337)	408 (188)
	3	B	36.5 (927)	48.5 (1232)	13.25 (337)	416 (192)
250, 400	2	STD	36.5 (927)	48.5 (1232)	13.25 (337)	400 (185)
	2	C	36.5 (927)	48.5 (1232)	13.25 (337)	408 (188)
	3	STD	36.5 (927)	48.5 (1232)	13.25 (337)	408 (188)
	3	C	36.5 (927)	48.5 (1232)	13.25 (337)	416 (192)
600[1], 800[1]	2	STD	38 (965)	91 (2311)	28 (711)	800 (370)
	2	B	38 (965)	91 (2311)	28 (711)	820 (378)
	3	STD	38 (965)	91 (2311)	28 (711)	820 (378)
	3	B	38 (965)	91 (2311)	28 (711)	846 (390)
1000[1], 1200[1]	2	STD	38 (965)	91 (2311)	48 (1218)	1085 (501)
	2	B	38 (965)	91 (2311)	48 (1218)	1105 (510)
	3	STD	38 (965)	91 (2311)	48 (1218)	1105 (510)
	3	B	38 (965)	91 (2311)	48 (1218)	1134 (523)
1600[1], 2000[1]	3	STD	38 (965)	91 (2311)	48 (1218)	2590 (1198)
	3	B	38 (965)	91 (2311)	48 (1218)	2640 (1218)
2500[1], 3000[1]	3	STD	38 (965)	91 (2311)	72 (1829)	4590 (2118)
	3	B	38 (965)	91 (2311)	72 (1829)	4655 (2148)

UL Type 3R Enclosure[4]

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
70, 100 ,150, 200, 225 must specify	2	STD	36(914)	48(1219)	16 (406)	180 (83)
	2	B	36(914)	48(1219)	16 (406)	188 (87)
	3	STD	36(914)	48(1219)	16 (406)	188 (87)
	3	B	36(914)	48(1219)	16 (406)	196 (90)
250, 400	2	STD	36(914)	48(1219)	16 (406)	440 (203)
	2	C	36(914)	48(1219)	16 (406)	448 (207)
	3	STD	36(914)	48(1219)	16 (406)	448 (207)
	3	C	36(914)	48(1219)	16 (406)	485 (225)
600[1], 800[1]	2	STD	41(1041)	95.5(2426)	34(864)	990 (458)
	2	B	41(1041)	95.5(2426)	34(864)	1010 (467)
	3	STD	41(1041)	95.5(2426)	34(864)	1010 (467)
	3	B	41(1041)	95.5(2426)	34(864)	1036 (479)
1000[1], 1200[1]	2	STD	41(1041)	95.5(2426)	62(1575)	1305 (604)
	2	B	41(1041)	95.5(2426)	62(1575)	1325 (613)
	3	STD	41(1041)	95.5(2426)	62(1575)	1325 (613)
	3	B	41(1041)	95.5(2426)	62(1575)	1354 (626)
1600[1], 2000[1]	3	STD	41(1041)	95.5(2426)	62(1575)	2890 (1337)
	3	B	41(1041)	95.5(2426)	62(1575)	2940 (1360)
2500[1], 3000[1]	3	STD	41(1041)	96(2438)	85(2159)	5350 (2474)
	3	B	41(1041)	96(2438)	85(2159)	5415 (2504)

Notes: 1. Unit is designed for top and bottom cable entry for all services and load.
2. Enclosures for 600 – 3000 amps are freestanding.
3. When temperatures below 32° F can be experienced, special precautions should be taken, such as the inclusion of strip heaters, to prevent condensation and freezing of this condensation. This is particularly important when environmental enclosures (Type 3R, 4 & 12) are ordered for installation outdoors. See Optional Accessories page for space heater options (acc. 44G).
4. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

Extended Warranties for Series 300SE Transfer Switches

Catalog No.	Description
2EXW300SE	Two-Year Extended Warranty (Parts & Labor)
3EXW300SE	Three-Year Extended Warranty (Parts & Labor)
4EXW300SE	Four-Year Extended Warranty (Parts & Labor)
5EXW300SE	Five-Year Extended Warranty (Parts & Labor)

Series 300SE AIC Rating

Switch Rating	AIC Rating	Voltage
70, 100, 150, 200, 225	25,000	480
250, 400	35,000	480
600	50,000	480
800, 1000,1200, 1600, 2000	65,000	480
2500, 3000	100,000	480

Series 300SE External Power Connections

Sizes UL-Listed Solderless Screw-Type Terminals

Switch Rating	Ranges of AL-CU Wire Sizes (Unless Specified Copper Only)
70, 100, 150, 200*, 225*	One #14 to 4/0 AWG
250, 400	Two 1/0 AWG to 250 MCM or One #4 AWG to 600 MCM
600	Two 1/0 AWG to 600 MCM
800, 1000, 1200	Four 1/0 to 600 MCM
1600, 2000	Six 1/0 to 600 MCM
2500	Twelve 3/0 to 600 MCM
3000	Twelve 3/0 to 600 MCM

Note: All Series 300SE switches are furnished with a solid neutral plate (unless switched neutral configuration is specified) and terminal lugs.
* 200 and 225 amp rated switch for use with copper cable only.