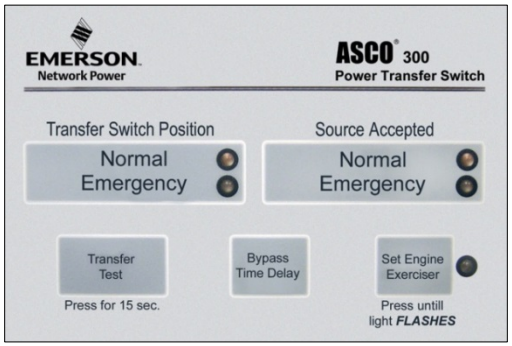
ASCO Power Technologies®

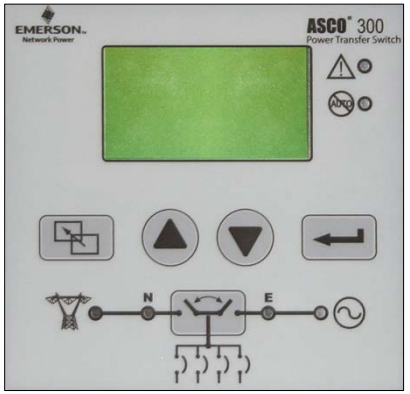
EMERSON Network Power

Group 1 and Group G Improvements

Group 1



Group G Improvements

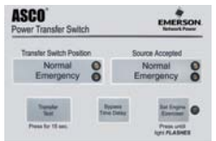


	Group 1	Group G Improvement
Display Panel	Flush-mounted control and display panel with LED indicators for switch position and source availability.	128x64 graphical LCD display with common alarm and not in automatic indicator.
Operation	Open transition operation.	Delayed transition capability.
Time Delays and Timers	Engine Start Delay (1 or 3 sec) Transfer to Emergency (0-5 min) Retransfer to Normal (0-30 min) Engine Cool Down (5 min) Momentary Emergency Source Outage (4 sec)	Engine Start Delay (0-6 sec) Transfer to Emergency (0-60 min) Retransfer to Normal (0-10 hr) Engine Cool Down (0-60 min) Momentary Emergency Source Outage (0-4 sec) Delayed Transition Disconnect Timer (0-5 min) *DTTS only!*
Voltage & Frequency	Adjustable 3-phase under voltage/frequency sensing on normal source (A,B, and C phase) Single phase voltage/frequency sensing on emergency	3-phase under/over voltage and frequency on N&E Single or 3-phase sensing on normal Single phase voltage/frequency sensing on emergency
Selectable Features	In-phase Monitoring Engine Exerciser Pre-Transfer Signal	In-phase Monitoring; Delayed Transition Optional Engine Exerciser with 7 independent programs Pre-Transfer Signal with source availability modules

Accessories	**Programmable Exerciser (11BG):** Weekly/Bi-Weekly operation. **Switch Position Contacts (14AA/14BA):** One additional set of switch position contacts. **Strip Heater (44A/44G):** Heater and thermostat with cord or wired to load. **Communication Module (72E):** Provides RS-485 and RJ-45 connection to monitor ATS with webpage and event log. Cannot remotely change switch position or configuration. **Window Kit (123):** Protective window for secure access to controls.	**Feature Bundle (11BE):** Seven independent routines for engine exercising. **Switch position contacts (14AA/14BA):** Two sets of contacts come standard. **Strip Heater (44A/44G):** Heater and thermostat with cord or wired to load. **Communication Module (72EE):** Provides RS-485 and RJ-45 connection to monitor and manage ATS with webpage and event log. Remotely transfer and configure switch. 128-bit AES encryption. **Load Current Metering (23GA/23GB):** Card to measure either single or 3-phase load current. **Relay Expansion Module (18RX):** Contacts for source availability and extra configurable output relays. **Backup UPS (1UP):** Backup power to run LCD display for up to 3 minutes. **Surge Suppression (73):** Rated 65kA **Audible Alarm (62W):** Alarm sounds whenever switch transfers to emergency. **Load Shed (30A/30B):** Forces switch to normal source to remove load on generator. **Power Metering (135L):** Power meter connected to load side with shorting block and current transformers. **Selective Load Disconnect (31Z):** Circuit to provide a pre/post-transfer signal when transferring.

ASCO *SERIES* 300 Transfer Switch with Group G Controller

Comparison of Features -



Group 1

Group G

Nominal Units	Via Dip Switch	Via Dip Switch
Phase Selection	1 Ø or 3 Ø	1 Ø or 3 Ø
Frequency	50 or 60 Hz	50 to 60Hz
Voltage and Frequency Settings Setting Adjustments	**Via Dip Switch**	**Via built-in Membrane Controls**
Pick up Normal Source Voltage	90% or 95%	85 to 100%
Drop out Normal Source Voltage	70% to 90%	70 to 98%
Pick up Emergency Source Voltage	90% Fixed	85 to 100%
Drop out Emergency Source Voltage	75% Fixed	70 to 98%
Pick up Emergency Source Frequency	95% Fixed	86 to 100%
Drop out Emergency Source Frequency	85% Fixed	85 to 98%
Normal Over Voltage Trip	N/A	102 to 115% (*default set to off)
Emergency Over Voltage Trip	N/A	102 to 115% (*default set to off)
Normal Over Frequency Trip	N/A	101 to 110% (*default set to off)
Emergency Over Frequency Trip	N/A	101 to 110% (*default set to off)
Pick up Normal Source Frequency	N/A	86 to 100%
Drop out Normal Source Frequency	N/A	85 to 98%
Normal & Emergency Voltage Unbalance	N/A	N/A
Pick up Normal Voltage Unbalanced	N/A	3-18%
Drop out Normal Voltage Unbalanced	N/A	5-20%
Time Delay Settings Setting Adjustments	**Via Dip Switch (DS)/Potentiometer (P)**	**Via built-in Membrane Controls**
Override Normal Source Momentary Outage	1 or 3 Seconds - DS	0 to 6 Seconds (Can be extended from 0-60 min 59 secs. via external 24VDC through optoinal REX Module)
Transfer to Emergency	0 to 5 Minutes - P	0 to 60 Minutes 59 Seconds
Re-transfer to Normal Utility Power Loss Mode	1 Sec. to 30 Mins. - P	0 to 60 Minutes 59 Seconds
Engine Cool Down	5 Minutes - Fixed	0 to 60 Minutes 59 Seconds
Override Emergency Source Momentary Outage	4 Seconds - Fixed	0 to 6 Seconds
Inphase Transfer Timer	1.5 Secs	0 to 3 secs
Built-in Emergency Exerciser	Weekly, 20 min. run duration - Fixed - DS	Weekly or Bi-Weekly (20 min. run duration)
Programmable Emergency Exerciser	Weekly/ Bi-Weekly (0- 23h : 59 min. run duration) - with optional 11BG	All, Alt, 1st, 2nd, 3rd, 4th, 5th (0- 23h : 59 min. run duration) - with optional 11BE
Number of Independent Programs with Programmable Emergency Exerciser	1	7 - if with optional 11BE

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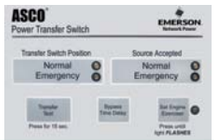
ASCO *SERIES* 300 Transfer Switch with Group G Controller

Comparison of Features -

Group 1



Group G

Indication and Controls Control Type	Via Separate Membrane Controls	Via Built-in Membrane Controls
Load Connected to Normal	Yes	Yes
Load Connected to Emergency	Yes	Yes
Normal Source Available	Yes	Yes
Emergency Source Available	Yes	Yes
Transfer Test Switch	Yes	Yes
By-pass Time Delay	Yes	Yes
In-Phase Monitor	Yes	Yes
Load Disconnect Contacts with Time Delay	Std. (3, 10 , 20 sec. adjustable delays) - DS	Std. (0-5 min. 59 sec. adjustable delays)
Event Log	N/A	Optional (with Acc. 11BE)
Current Measurement Capability	N/A	Optional (with Acc. 23GA/23GB)
Load Shed Capability	N/A	Optional (with Acc.30A or 30B*)
128*64 Graphical LCD Display	N/A	Yes
128*64 Graphical LCD Display multiple language capability	N/A	Yes
Transfer Operating mode	Open Transition only	Open or delayed transition
Commit to Transfer	Yes - Fixed	Enabled/Disabled - Can be adjusted
Pre-mounted Power Meter on load side with CT	N/A	Yes - with optional 135L
Event Logging	N/A	Yes - (with optional 11BE)
System Status	N/A	Yes (Via LCD Display)
Self Diagnostics	N/A	Yes (Via LCD Display)
Statistics And Diagnostics		
Total Transfer	N/A	Yes
Total Transfers Due To Source Failures	N/A	Yes
Days Energized	N/A	Yes
Total Time N Available	N/A	Yes
Total Time E Available	N/A	Yes
Input And Output Status	N/A	Yes

ASCO®

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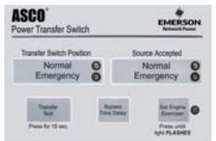
ASCO *SERIES* 300 Transfer Switch with Group G Controller

Comparison of Features - Group 1



Group G

Remote Features / External Inputs Setting Adjustments	Via Dip Switch (DS)/Potentiometer (P)	Via built-in Membrane Controls
Transfer Inhibit	Yes	Yes
Remote Test	Yes	Yes
Remote Transfer to Emergency	Yes	Yes
Remote time delay bypass switch	Yes	Yes
Communications Interface		
RS-485	Yes (If with option 72A/72E Module)	Yes (with option 11BE or 72EE Module)
Ethernet	Yes (If with option 72E Module)	Yes (If with option 72EE Module)
Communications Protocol		
ASCO Bus I	N/A	Yes
ASCO Bus II	Yes	Yes
Modbus RTU	N/A	Yes
Modbus TCP/IP	N/A	Yes
Others		
Back-up Power Supply for the controller	N/A	Yes - (3 Min Back-up power with optional ACC 1UP)

ASCO®

ASCO® Series 300 Power Transfer Switches

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 Series 300 incorporates the Group G controller with enhanced capabilities for dependable operation in any environment. A user friendly control interface with a 128x64 graphical LCD display and intuitive symbols allow for ease of operation while visual LED indicators verify transfer switch status. Operating parameters and feature settings can be adjusted without opening enclosure door.

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 switching stalled motors and 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.

Features

- The Series 300 is listed to UL 1008 standard for total system loads 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.
- Controller is RoHS compliant (Restriction of Hazardous Substances).

UL Listed Withstand & Close-On Ratings

Switch Ratings Amps	Available Symmetrical Amperes RMS			
	Current Limiting Fuses		Specific Breaker	
	480V Max.	600V Max.	480V Max.	600V Max.
30	100kA	-	10kA	10kA
70 - 150	200kA	35kA	22kA	10kA
200	200kA	-	22kA	-
230	100kA	-	22kA	-
260, 400	200kA	-	42kA	-
150,200,230,260,400 Series 3ADTS/3NDTS Only	200kA	200kA	50kA	42kA
600	200kA	200kA	50kA	42kA
800,1000,1200	200kA	200kA	65kA	65kA
1600, 2000	200kA	200kA	85kA	85kA
2600, 3000	200kA	200kA	100kA	100kA

Notes:
1. Current limiting fuse should be class J type through 400 amps: use Class L type above 400 - amp fuse rating
   Current limiting fuse for 3ADTS only 150 - 400 amp should be Class L type
2. Refer to publication 1128 for specific manufacturer's breakers

Fig. 1: ASCO Power Transfer Switch rated 200 amperes

- 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 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 navigate 128x64 graphical LCD display with keypad provides LED indicators for switch position, source availability, not in auto, and alert condition.
- Integrated multilingual user interface for configuration and monitoring.
- Delayed transition operation is now available (Dual Operator Configuration).
- Non-automatic operation can be selected using the key pad without opening enclosure door.
- Relay expansion module with extra relays for accessory outputs (Optional).
- Includes soft keys for test function and time delay bypass as standard features.
- Historical event log (Optional).
- Statistical ATS system monitoring information.
- Diagnostic Functions.
- Password protection to prevent unauthorized tampering of settings.
- 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.
- Field modification accessory kits available.
- Available for immediate delivery.

ASCO® Series 300 Power Transfer Switches

Designed to Fit Anywhere

The ASCO Series 300 product line represents the most compact design of automatic power transfer switches in the industry. With space in electrical closets being at a premium, the use of wall or floor-mounted ASCO Power Transfer Switches assures designers optimum utilization of space.

All transfer switches through 2000 amps are designed to be completely front accessible. This permits the enclosures to be installed flush to the wall and still allows installation of all power cabling and connections from the front of the switch. Cable entrance plates are also standard on the 1600 and 2000 amp units to install optional side-mounted pull boxes for additional cable bending space.

Fig. 2: ASCO Power Transfer Switch rated 200 amperes

Fig. 3: ASCO Power Transfer Switch rated 400 amperes

Fig. 4: ASCO Power Transfer Switch rated 600 Amperes

Fig. 5: ASCO Power Transfer Switch rated 1000 amperes

Fig. 6: ASCO Power Transfer Switch rated 2000 amperes shown in Type 3R enclosure

Fig. 7: ASCO Power Transfer Switch rated 3000 amperes

ASCO® Series 300 New Microprocessor Controller

The Series 300 incorporates the group "G" controller with enhanced capabilities for dependable operation in any environment.

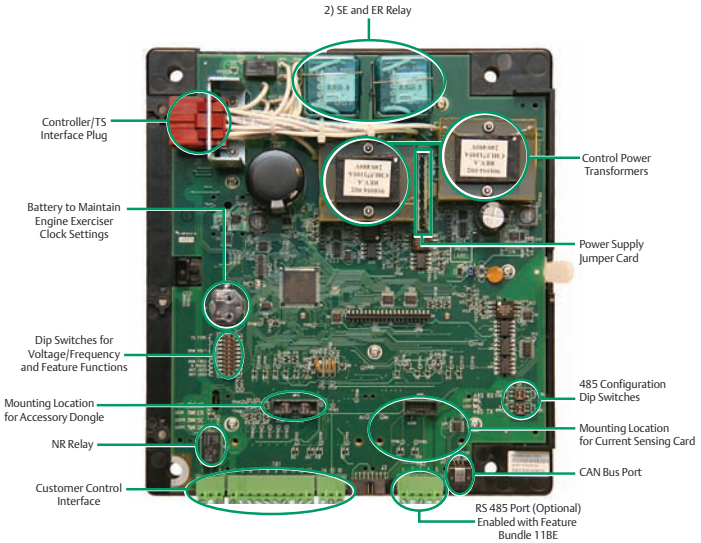


Fig. 8: ASCO Series 300 Microprocessor Controller

Control and Display Panel

- Easy to navigate 128x64 graphical LCD display with keypad provides LED indicators for switch position, source availability, not in auto, and alert condition. It also includes test and time delay bypass soft keys.

Voltage & Frequency Sensing

- 3 — Phase under and over voltage settings on normal and single phase sensing on emergency source.
- Under and over frequency settings on normal and emergency.
- True RMS Voltage Sensing with +/-1% accuracy Frequency Sensing Accuracy is +/- 0.1Hz
- Voltage and Frequency parameters adjustable in 1% increments
- Selecting settings : single or three phase voltage sensing on normal, and single phase sensing on emergency; 50 or 60 Hz
- Load current sensing card (Optional)

Time Delays

- Engine start time delay – delays engine starting signal to override momentary normal source outages – adjustable to 0 to 6 seconds (Feature 1C)
- Transfer to emergency time delay – adjustable 0 to 60 minutes (Feature 2B)
- Emergency source stabilization time delay to ignore momentary transients during initial generator set loading – adjustable 0 to 4 seconds (Feature 1F)
- Re-transfer to normal time delay – adjustable 0 to 10 hours (Feature 3A)
- Unloaded running time delay for engine cooldown – adjustable 0 to 60 minutes (Feature 2E)
- Pre and post signal time delay for selective load disconnect with a programmable bypass on source failures – adjustable 0 to 5 minutes (specify ASCO Optional accessory 31Z)
- Optional fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi weekly or monthly basis (Specify ASCO optional accessory feature bundle 11BE)
- Delayed transition load disconnect time delay – adjustable 0 to 5 minutes.

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—with or without load 20 minutes not adjustable.
- Commit to transfer.
- Selective load disconnect control contacts (two provided) which operate with time delay prior to and/or after load transfer and re-transfer.
- 60Hz or 50Hz selectable switch. Three – phase/single - phase selectable switch.

Remote Control Features

External Inputs for connecting:

- Remote test switch.
- Remote contact for test or for peak shaving applications. If emergency source fails, switch will automatically transfer back to normal source if acceptable.
- Inhibit transfer to emergency
- Remote time delay bypass switch emergency to normal

ASCO® Series 300 Group G Offers Sophisticated Functionality

The new Group G controller offers an intuitive, easy to navigate 128*64 graphical LCD display with soft keypad and provides (6) LED indicators

- Switch Position (green for normal, red for emergency LED)
- Source Availability (green for normal, red for emergency LED)
- "Not In Auto" (amber LED)
- Common Alarm (amber LED)

The ASCO group "G" controller is self contained with an integrated display (no other components are required for efficient operation).

The controller allows for open or delayed transition transfer operation (both automatic, and non automatic configurations).

Integrated multilingual user interface for configuration and monitoring (this design approach allows greater application flexibility).

Multiple source sensing capabilities of voltage, frequency (under frequency sensing on normal and emergency sources), and optional current card, single and three phase (Does not require an external metering device).

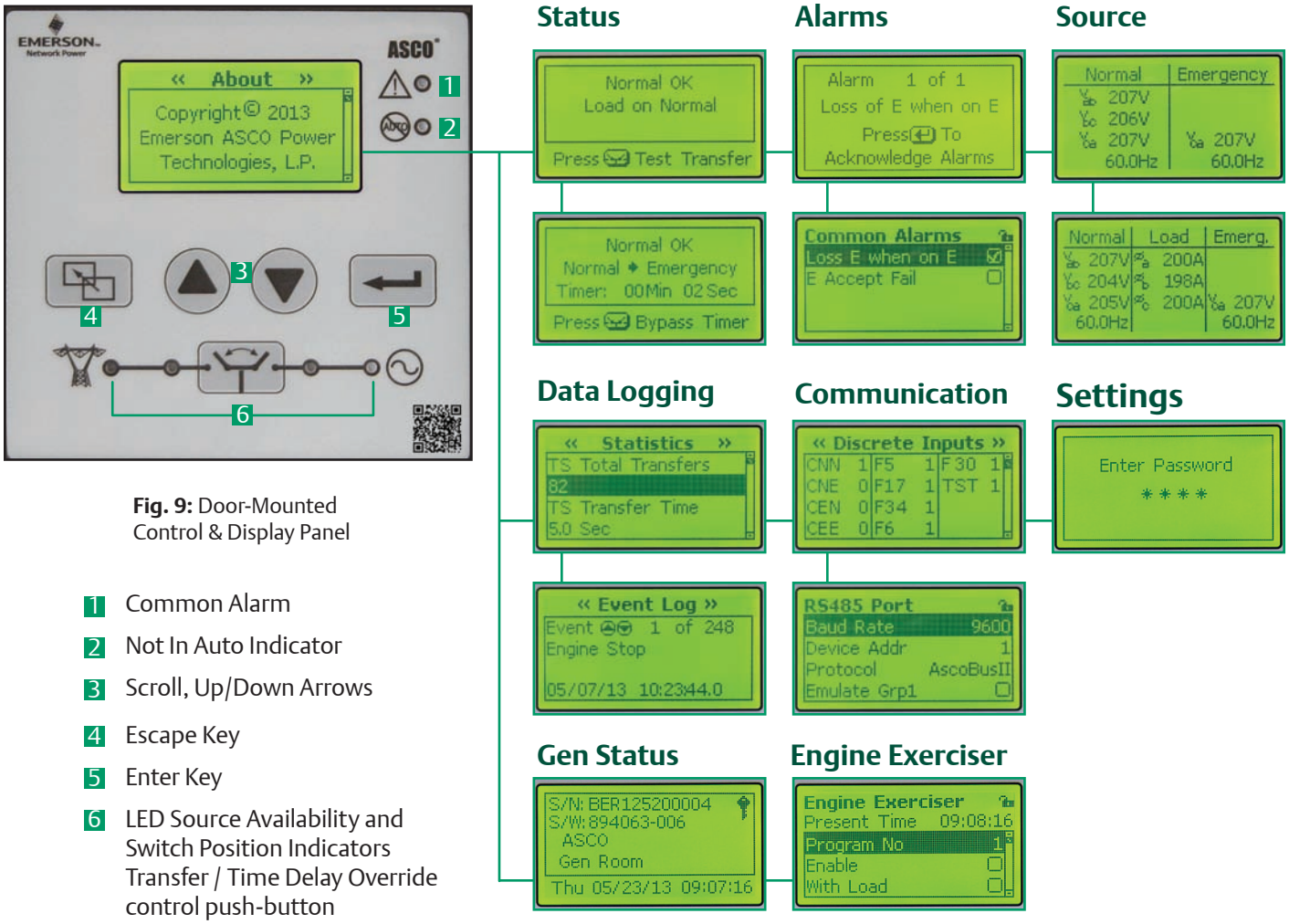


Fig. 9: Door-Mounted Control & Display Panel

1. Common Alarm
2. Not In Auto Indicator
3. Scroll, Up/Down Arrows
4. Escape Key
5. Enter Key
6. LED Source Availability and Switch Position Indicators Transfer / Time Delay Override control push-button

ASCO® Series 300 ATS Optional Accessories

Accessory 1UP
UPS back up power to allow controller to run with LCD display for 30 seconds without AC power

Accessory 11BE Feature Bundle Consists of:
A fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi – weekly or monthly basis. Engine exerciser setting can be displayed and changed from the user interface keypad.

Event Log display shows the event number, time and date of event, event type, and event reason (if applicable). A maximum of 300 events can be stored.

RS 485 Communications Port Enabled
Common Alarm Output Contact

Accessory 18RX
Relay expansion module (REX) provides for some commonly used accessory relays, includes one form C contact for source availability of normal (18G), and one contact for availability of emergency (18B) (contact rating 5 amps @ 30Vdc or @125 Vac resistive). Additional output relay is provided, the default is to indicate a common alarm. (See operator's manual for configurable options).

Accessory 23GA[1] (Single Phase), and 23GB (Three Phase)
Load current metering card, measures either single or three phase load current
Note1: This feature is not available with a Power Meter Option (135L)

Accessory 14AA/14BA
Auxiliary contacts to indicate position of main contacts. Two (2) for normal and two (2) for emergency position (one set is standard).

Accessory 44A
Strip Heater with thermostat for extremely cold areas to prevent condensation and freezing of this condensation. External 120 volt power source required.

Accessory 44G
Strip Heater with thermostat, wired to load terminals: 208-240, 360-380, 460-480, 550-600 volts. Contains wiring harnesses for all transfer switch sizes.

Field Conversion Kits for Series 300 Transfer Switches

Kit No.	Description
935147	Feature Bundle Includes Engine Exerciser/Event Log/RS 485/ Common Alarm Output Contact (Acc. 11BE) Dongle
935148	REX Module with Source Availability Contacts (Acc. 18RX)
935149	UPS to allow controller to run for 3 minutes minimum without AC Power (Acc. 1UP)
935150	1/3 Phase load current sensing card only (Acc. 23GA/GB)
K613127-001	Strip Heater (125 watt) 120 volt (Acc.44A)
K613127-002	Strip Heater (125 watt) 208 - 480 volt (Acc.44G)
948551	Quad - Ethernet Module (Acc. 72EE)
K609027	Cable Pull Box (1600 - 2000 amp)

Accessory 72EE
Connectivity Module, enabling remote monitoring and control capabilities (Pages 12-14)

Accessory 31Z
Selective load disconnect circuit to provide a pre – transfer and/or post transfer signal when transferring from emergency to normal and/or normal to emergency.

Accessory 73
Surge Suppressor (TVSS) Rated 65kA

Accessory 62W
Audible alarm with silencing feature to signal each time switch transfers to emergency (City of Chicago requirement)

Accessory 37B
6' Extension harness for units shipped open type to accommodate customer mounting of controls and switch

Accessory 37C
9' Extension harness for units shipped open type to accommodate customer mounting of controls and switch

Accessory 135L[2]
Power Meter on load side (Includes shorting block and CT's)
Note2: This feature is not available with Load Current Metering Option (23GA, or 23GB)

Accessory 30AA[3]
Load – shedding circuit initiated by opening of a customer – supplied contact

Accessory 30BA[3]
Load – shedding circuit initiated by removal of customer – supplied voltage (* Specify voltage)
Note3: Accessory 30AA, and 30BA are only available for 3ADTS/3NDTS (Delayed Transition Transfer Switch)

Fig. 10: Strip Heater Kit (Accessory 44G)

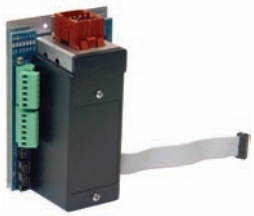


Fig. 11: Relay Expansion Module (Accessory 18RX)

Fig. 12: Load Current Card (Accessory 23GA/GB)

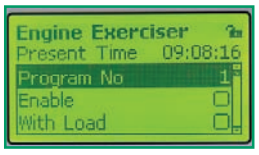


Fig. 13: Programmable Engine Exerciser

Fig. 14: Accessory 1UP UPS Backup Power

Series 300 Non-Automatic Transfer Switching (3NTS)

ASCO 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. They can also be arranged for remote control via ASCO's connectivity products.

Fig. 15: ASCO 3NTS 400 Amp Type 1 Enclosure

3NTS Features:

- ASCO Non-Automatic Transfer Switches are electrically held, manually initiated via soft keys on the user interface panel.
- Sizes from 30 through 3000 amps.
- Microprocessor based controller provides for addition of optional accessories.
- Controller prevents inadvertent operation under low voltage condition.
- Source acceptability lights inform operator if sources are available to accept load.
- Source inphase monitor to transfer motor loads between live sources.
- One auxiliary contact closed when transfer switch is connected to normal and one closed on Emergency standard feature 14A/14B

Fig. 16: ASCO 3ADTS/3NDTS 400 Amp Type 1 Enclosure

Series 300 Delayed Transition Transfer Switching (3ADTS/3NDTS)

ASCO Delayed Transition Transfer Switches are designed to provide transfer of loads between power sources with a timed load disconnect position for an adjustable period of time.

3ADTS/3NDTS Features:

- Sizes from 150 through 3000 amps.
- Reliable field proven dual solenoid operating mechanisms.
- Mechanical interlocks to prevent direct connection of both sources.
- Adjustable time delay for load disconnect (0 to 5 minutes).
- Available in manual operation configuration (3NDTS).
- Available with optional load shed feature for 3ADTS.

ASCO® Series 300 Transfer Switch Ordering Information

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

3 + A + TS + A + 3 + 600 + N + GX + C

		Product		Neutral Code		Phase Poles	Amperes	Voltage Code		Controller Code	Enclosure	
A	Automatic	TS	Conventional 2 Position	A	Solid Neutral	2 Poles 1ϕ	Continuous rating	A[3]	115	G	0 (zero)	Open Type
N	Non-Automatic	DTS	Delayed Transition	B[1]	Switched Neutral	3 Poles 3ϕ	30[2], 70[2], 100[11] 104[2], 150[5], 200[4,5], 230[2,4,5], 260[2,5], 400[2,5], 600[5], 800[5], 1000[5], 1200[5], 1600[5], 2000[5], 2600[5], 3000[5]	B[3]	120	GX Optional Accessories	C	Type 1 (Standard)
								C	208		F	Type 3R Non-Secure[2]
								D	220		G	Type 4[2] Non-Secure
								E	230		H	Type 4X[2] Non-Secure
								F	240		L	Type 12[2] Non-Secure
								H	380		M	Type 3R Secure
								J	400		N	Type 4 Secure
								K	415		P	Type 4X Secure Double Door 304 SS
								L	440		Q	Type 12 Secure Double Door
								M	460		R	Type 3RX[7,8] Secure Double Door 304 SS
								N	480			
								Q	575			
								R	600			

Notes:

1. Specify neutral code "C" for 260 and 400 amperes only for 3ATS/3NTS
2. Available 30-600 ampere size switches available in non - secure type enclosures
3. 115-120 volt available 30-400 amps only. For other voltages contact ASCO.
4. 200 and 230 amp rated switches for use with copper cable only.
5. Switch sizes 800 - 3000 ampere, and 150 - 400 ampere 3ADTS/3NDTS provided in secure type outdoor enclosures when required.
6. Use 3R for 1200, 2000, 2600, and 3000
7. Type 304 stainless steel is standard. Suitable for indoor or outdoor use where there may be caustic or alkali chemicals in use. To provide an improved reduction in corrosion of salt and some chemicals, optional type 316 stainless steel is recommended. This is the preferred choice for marine environments.
8. Available on switches rated 1200, 2000, 2600, and 3000 amps.
9. 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 (Type 3R,4) are ordered for installation outdoors.
10. Extra shelter protection should be considered for wind blown rain and snow, since ventilated type 3R enclosures due not protect against these conditions.
11. Series 3NTS only

Series 300 External Power Connections

Sizes UL-Listed Solderless Screw-Type Terminals

Switch Rating (Amps)	Ranges of AL-CU Wire Sizes (Unless Specified Copper Only)
30 - 230[2]	One #14 to 4/0 AWG
260, 400	Two 1/0 AWG to 250 MCM or One #4 AWG to 600 MCM
600	Two 2/0 AWG to 600 MCM
800, 1000, 1200	Four 1/0 to 600 MCM
1600, 2000	Six 1/0 to 600 MCM
2600, 3000	Twelve 3/0 to 600 MCM

Notes:

1. All Series 300 switches are furnished with a solid neutral plate (unless switched neutral configuration is specified) and terminal lugs.
2. 200 and 230 amp rated switches for use with copper cable only. Refer to paragraph 310.15 of the NEC for additional information.
3. Use wire rated 75°C minimum for all power connections.

Extended Warranties for Series 300 Transfer Switches (3ATS/3NTS/3ADTS)

Catalog No.	Description
3EXW300	Three-Year Extended Warranty (Parts & Labor)
4EXW300	Four-Year Extended Warranty (Parts & Labor)
5EXW300	Five-Year Extended Warranty (Parts & Labor)

Notes:

1. Standard Warranty is (24) months, 2 years from date of shipment. Extended warranty is in addition to the two years, for total of 3,4, or 5 years.

ASCO® Series 300 Transfer Switch Dimensions and Shipping Weights

UL Type 1 Enclosure[1,2,3,4,5]

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
30[4],70[4],100[4]*,104[4] 150[4], 200[4] *Series 3NTS only	2	A	18(457)	31 (787)	13 (330)	69 (32)
	2	B	18(457)	31 (787)	13 (330)	72 (33)
	3	A	18(457)	31 (787)	13 (330)	72 (33)
	3	B	18(457)	31 (787)	13 (330)	75 (34)
230[3], 260, 400	2	A	18 (457)	48 (1219)	13 (330)	117 (53)
	2	B[3] or C	18 (457)	48 (1219)	13 (330)	125 (57)
	3	A	18 (457)	48 (1219)	13 (330)	125 (57)
	3	B[3] or C	18 (457)	48 (1219)	13 (330)	133 (61)
150,200,230, 260,400 Series 3ADTS/3NTS only	2	A	24(610)	56(1422)	14(356)	196 (89)
	2	B	24(610)	56(1422)	14(356)	202 (92)
	3	A	24(610)	56(1422)	14(356)	202 (92)
	3	B	24(610)	56(1422)	14(356)	208 (94)
600	2	A	24 (610)	63 (1600)	17 (432)	316 (143)
	2	B	24 (610)	63 (1600)	17 (432)	324 (147)
	3	A	24 (610)	63 (1600)	17 (432)	324 (147)
	3	B	24 (610)	63 (1600)	17 (432)	332 (150)
800, 1000	2	A	34 (864)	72 (1829)	20 (508)	431 (196)
	2	B	34 (864)	72 (1829)	20 (508)	460 (209)
	3	A	34 (864)	72 (1829)	20 (508)	460 (209)
	3	B	34 (864)	72 (1829)	20 (508)	489 (222)
1200	2	A	38 (965)	87 (2210)	23 (584)	581 (264)
	2	B	38 (965)	87 (2210)	23 (584)	611 (277)
	3	A	38 (965)	87 (2210)	23 (584)	611 (277)
	3	B	38 (965)	87 (2210)	23 (584)	639 (290)
1600, 2000[1]	3	A	38 (965)	87 (2210)	23 (584)	1160 (525)
	3	B	38 (965)	87 (2210)	23 (584)	1160 (525)
2600, 3000[2]	3	A	38 (965)	91 (2311)	60 (1524)	1430 (649)
	3	B	38 (965)	91 (2311)	60 (1524)	1495 (679)

Notes:

1. Unit is designed for top cable entry of emergency & load and bottom entry of normal. A cable pull box is also available for all top or bottom cable access when required (optional accessory kit #K609027). Not required for type 3R, 4X & 12 enclosures where available.
2. Enclosures for 2600, 3000 amps are free-standing with removable top, sides & back.
3. Neutral Code "B" for 230 amperes only.
4. Dimensions for 30-200 amperes when furnished with a power meter, 18"W - 41"H - 13"D
5. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

UL Type 3R, 4 or 12 Enclosure[1,2,3,4,5]

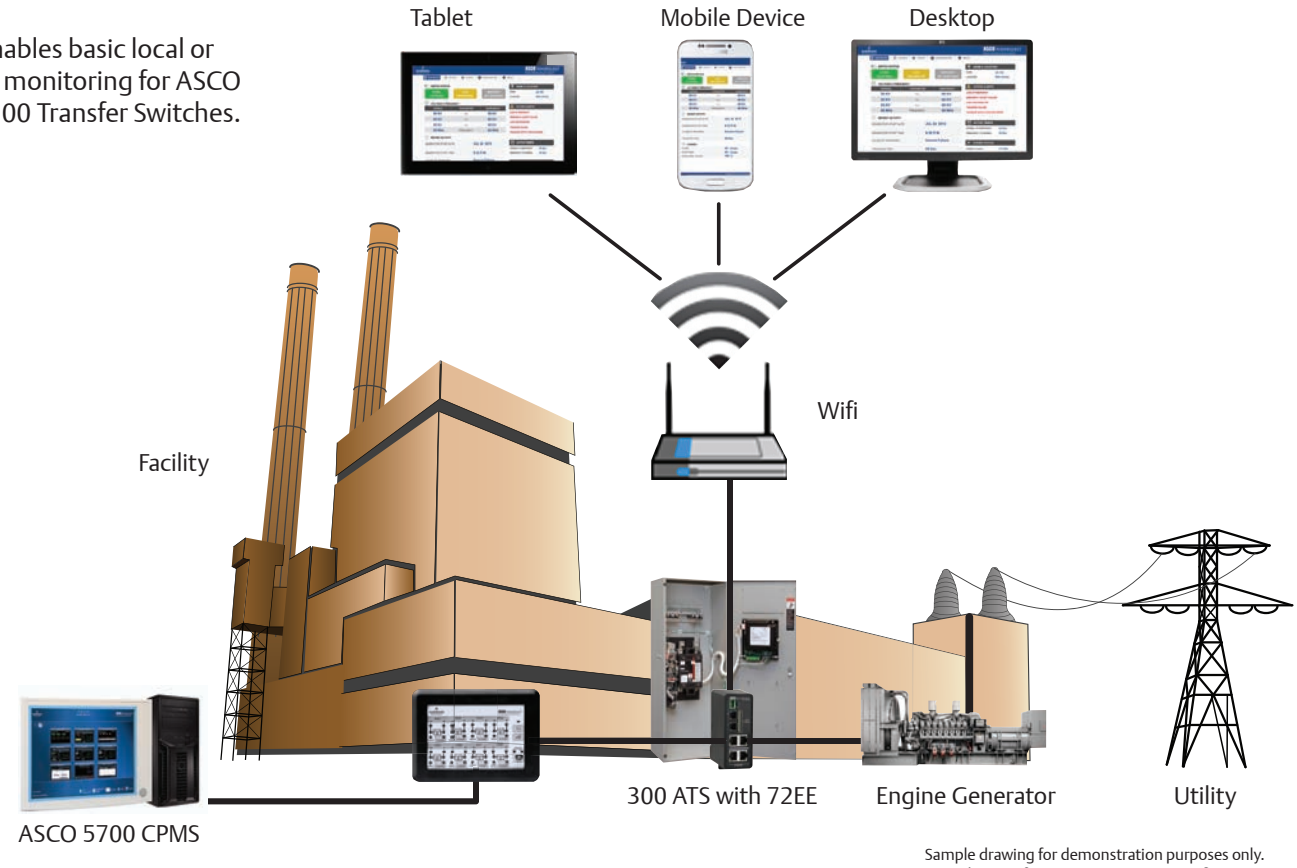
Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
30[3],70[3],100[3]*,104[3] 150[3], 200[3] *Series 3NTS only (Non Secure Enclosure)	2	A	17 1/2 (445)	35 (886)	11 5/8 (295)	84 (38)
	2	B	17 1/2 (445)	35 (886)	11 5/8 (295)	87 (40)
	3	A	17 1/2 (445)	35 (886)	11 5/8 (295)	87 (40)
	3	B	17 1/2 (445)	35 (886)	11 5/8 (295)	90 (41)
230[2], 260, 400 (Non Secure Enclosure)	2	A	18 (458)	50 1/2 (1284)	14 1/3 (364)	132 (60)
	2	B[3] or C	18 (458)	50 1/2 (1284)	14 1/3 (364)	140 (63)
	3	A	18 (458)	50 1/2 (1284)	14 1/3 (364)	140 (63)
	3	B[3] or C	18 (458)	50 1/2 (1284)	14 1/3 (364)	148 (67)
150, 200, 230 260, 400 *Series 3ADTS/3NDTS only (Non Secure Enclosure)	2	A	24 (607)	63 (1593)	18 1/5 (468)	234 (106)
	2	B	24 (607)	63 (1593)	18 1/5 (468)	241 (109)
	3	A	24 (607)	63 (1593)	18 1/5 (468)	241 (109)
	3	B	24 (607)	63 (1593)	18 1/5 (468)	246 (112)
600 (Non Secure Enclosure)	2	A	24 (607)	63 (1593)	18 1/5 (468)	320 (145)
	2	B	24 (607)	63 (1593)	18 1/5 (468)	328 (148)
	3	A	24 (607)	63 (1593)	18 1/5 (468)	328 (148)
	3	B	24 (607)	63 (1593)	18 1/5 (468)	336 (152)
800, 1000 (Non Secure Enclosure)	2	A	34 (859)	72 (1821)	20 (506)	519 (236)
	2	B	34 (859)	72 (1821)	20 (506)	543 (246)
	3	A	34 (859)	72 (1821)	20 (506)	543 (246)
	3	B	34 (859)	72 (1821)	20 (506)	565 (257)
1200[6] (Non Secure Enclosure)	2	A	41 (1037)	95 1/2 (2415)	33 1/2 (848)	1131 (513)
	2	B	41 (1037)	95 1/2 (2415)	33 1/2 (848)	1160 (526)
	3	A	41 (1037)	95 1/2 (2415)	33 1/2 (848)	1160 (526)
	3	B	41 (1037)	95 1/2 (2415)	33 1/2 (848)	1189 (539)
1600, 2000[2] (Non Secure Enclosure)	3	A	41 (1037)	95 1/2 (2415)	62 (1569)	1705 (775)
	3	B	41 (1037)	95 1/2 (2415)	62 (1569)	1830 (832)
2600, 3000 (Non Secure Enclosure)	3	A	41 (1037)	96 (2429)	74 (1872)	2150 (976)
	3	B	41 (1037)	96 (2429)	74 (1872)	2230 (1012)

Notes:

1. When climate conditions at installation site present condensation risk, special precautions should be taken, such as the inclusion of space heaters, to prevent interior condensation and freezing of this condensation.
2. Neutral code "B" for 230 amperes only.
3. Dimensions for 30 - 200 ampere when furnished with a power meter 18"W - 48"H - 13"D
4. 30-1000 ampere switches are available in secure type enclosures, contact ASCO for details
5. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

ASCO® Series 300 72EE Monitoring and Control

72EE enables basic local or remote monitoring for ASCO Series 300 Transfer Switches.



Sample drawing for demonstration purposes only.
Consult ASCO for exact connection specifications.

72EE Features

Control Features

- ATS Transfer/Re-transfer
- ATS Timer Bypass
- Generator Start
- Generator Test

Monitoring Features

- ATS and Generator Stats
- Alarms
- Voltage and Frequency
- Statistics and Activity
- Email Notifications
- Event Log (300 Events)

  Optional Monitoring Features
  — Energy Consumption, Acc 135L Required
  — Power Demand, Acc 135L Required

Connectivity Features

- Modbus (over Ethernet or Serial)
- SNMP Protocol
- AES 128 Bit Encryption
- Four Port Ethernet Switch

72EE Also Enables Enhanced PowerQuest CPMS Functionality

- 5310 Series Single Channel Annunciator
- 5350 Series Eight Channel Annunciator
- 5700 Critical Power Management Systems

ASCO® Series 300 72EE Monitoring Screens

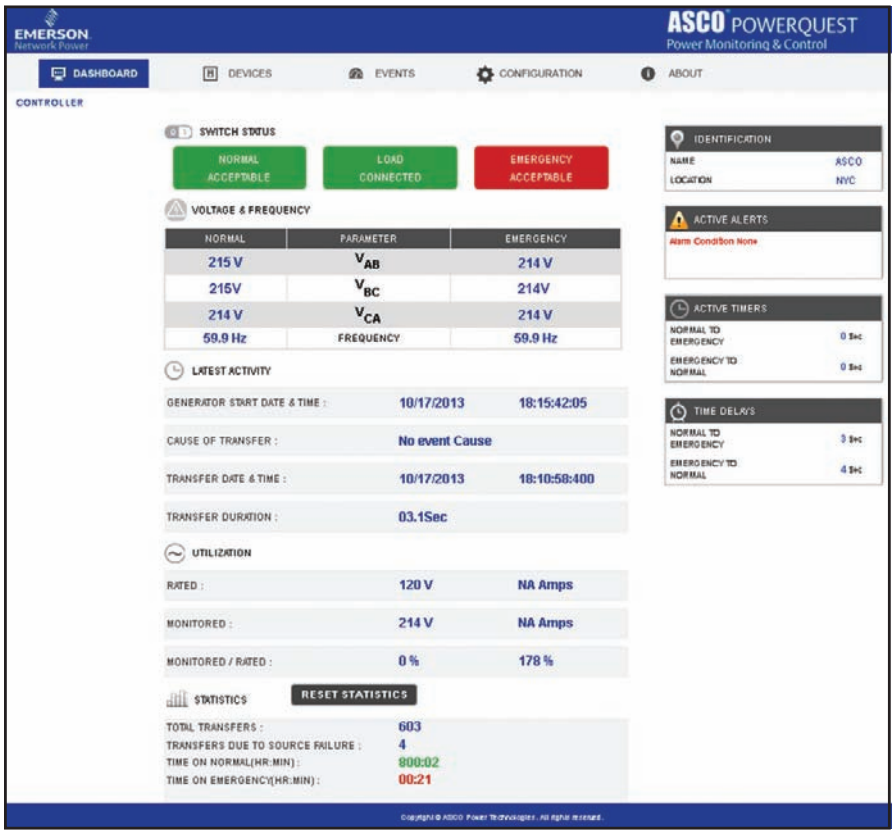


Fig. 17: 72EE Home Page Dashboard

Fig. 18: Power Metering Screen

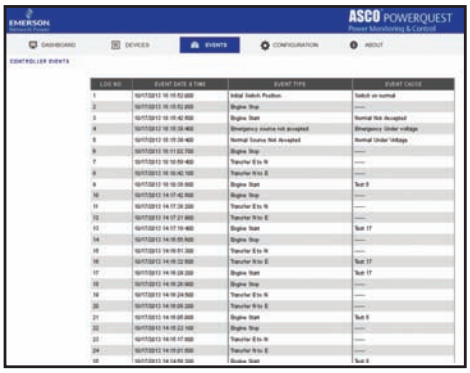


Fig. 19: Events Screen

Fig. 20: Configuration

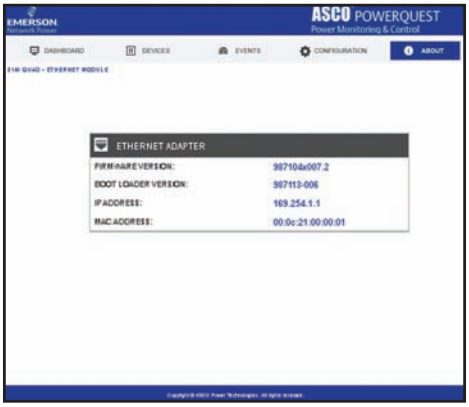


Fig. 21: About

Content rich monitoring screens enable real time information for power metering, event logs, voltages, time delays and alerts. The 72EE also allows for switch transfer remotely.

ASCO® Series 300 72EE Connectivity Module

Fig. 22: Accessory 72EE

The ASCO 72EE Connectivity Module offers remote monitoring for Series 300 ATS's and 5210 Power Meter. For the ATS, the optional accessory 72EE provides remote ATS and Generator Control, Monitoring and Connectivity Features via integrated web page dashboards. Once connected to an Ethernet, Wifi or Cellular connection, the dashboards can easily be pulled up by any mobile or desktop device on the network by multiple users.

Control

The control capabilities allows remote transfer and retransfer of the ATS, while allowing you to view time delays and bypass functions. The generators can also be called to start and stop for emergency situations as well as for testing and maintenance. Running the generator periodically ensures that the battery is charged for power anomalies and increases reliability. Generator Pick-up and drop-out setpoints are also viewable for comprehensive understanding of control events.

Monitoring

Monitor transfer switch and generator health, system state, metering and review calculated transfer statistics and activity. Active control timer information allows the operator to anticipate an automated control action, such as, generator start or ATS transfer. The device can also interface to an email server to keep users up-to-date on alarms and critical power events with alerts.

In addition the 72EE can interface to an optional 5210 Power Meter, (stand alone - or with the ATS Acc. 135L). for enhanced monitoring features, such as, power metering, demand and energy usage.

Connectivity

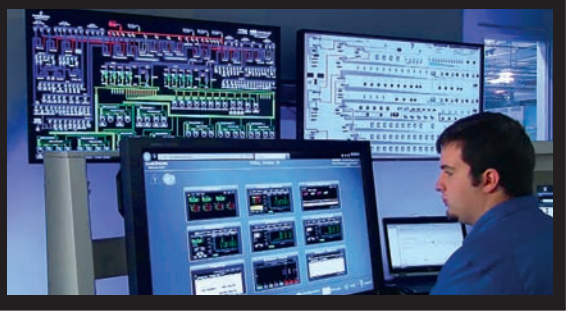
Connect and extract ATS and metering data using industry standard open protocols, such as, Modbus and SNMP. An integrated four port Ethernet Switch maximizes connectivity options and flexibility. Embedded password protection will only allow access to appropriate users, while utilizing AES 128-bit encryption for enhanced data security per National Institute of Standards and Technology (NIST).

Additional Optional PowerQuest Components

5160 Connectivity Module		**The ASCO 5160 Remote Connectivity Unit (RCU)** provides 10 Ethernet and Dual-Fiber Optic connections in a NEMA 3R enclosure.
5210, 5220 Power Manager	 	**ASCO 5210 (left) and 5220 (right) Power Meters** measure, displays and provides single- or 3-phase Energy and Power information
ASCO 5221 Power Manager Unit		**ASCO 5221 Power Manager Unit (PMU)** is used to enable power measurement, discrete inputs for status and output relays for control of generators, breakers and other power equipment via 5700 Series CPMS solutions.
5310, 5350 Annunciators	 	**ASCO 5310(left) and 5350(right) ATS Remote Annunciators** provide distributed monitoring of transfer switch position and source availability as well as transfer test and re-transfer control.
5710, 5750, 5790 Display Terminals		**5700 Critical Power Management Systems (5790 shown)** provides various levels of monitoring, control and management capability of power equipment. It seamlessly monitors ASCO transfer switches as well as generators, breakers, paralleling buss, panel boards and other power equipment via a 5221 PMU. It consists of servers and touch screen interfaces.

FULFILL YOUR NEED

Drill down for a closer look - Each transfer switch, generator, breaker and any other power equipment has its own dedicated screens.



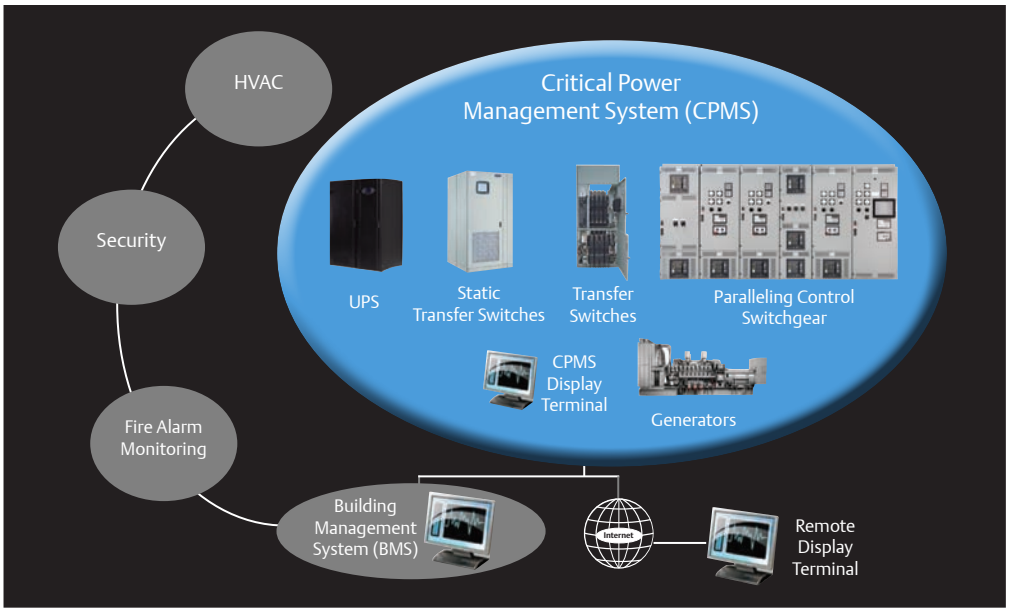
ASCO Power*Quest*® Power Monitoring and Control Systems

The Power*Quest*® family is the most comprehensive communication, monitoring and control solution ever offered by Emerson Network Power. It empowers you. It provides the ability to test, manage loads, optimize the bus bar, remotely monitor and otherwise be aware of the status of your facility's utility source and on-site power. It provides reports for events, tests, energy use or settings and gets data directly from generators and transfer switches.

Whether user's require standard monitoring and control, or a comprehensive Critical Power Management System, Power*Quest* can satisfy your needs.

Hardware. Software. Installation and testing. Service. And upgrades and technology refreshes. A truly complete solution for all your communication, monitoring and control needs.

This web enabled management system is based on open protocols. As communications amongst equipment improve, so does the performance of critical power systems.



PowerQuest provides monitoring, alarming and control of Critical Power Management Systems, which comprise transfer switches, paralleling control switchgear, gensets, circuit breakers, UPS, loadbanks, distribution and other gear. It also integrates with building management systems.

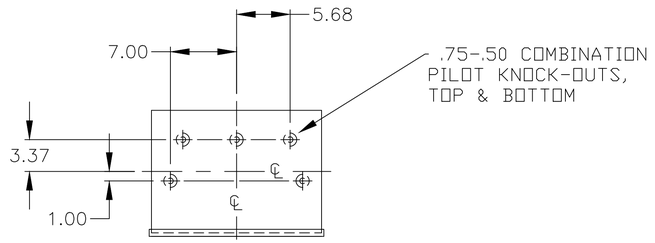
BE EMPOWERED

PowerQuest can enable you to:

- **Monitor and control power transfer switches, paralleling control switchgear, gensets, breakers, UPS, bus bars and other equipment**
- **Monitor normal and emergency voltages and frequency and their settings**
- **Know transfer switch position and source availability**
- **Transfer and re-transfer loads for system testing**
- **View and adjust transfer switch time-delay settings**
- **Receive automatic alerts or selected system alarms on system operation via E-mail or pager**
- **View transfer switch event log and know the transfer switch test schedule**
- **Generate reports for alarms, energy consumption, settings, historical logs and code mandated tests**

For more PowerQuest product information see publication 3245

OUTLINE FOR ASCO® 300 SERIES TRANSFER SWITCHES (D3ATS/D3NTS) 30-230 AMPERES, TYPE 1 ENCLOSURE



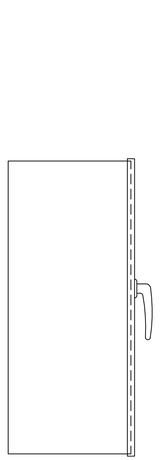
TOP VIEW
TYP. TOP & BOTTOM

GENERAL NOTES

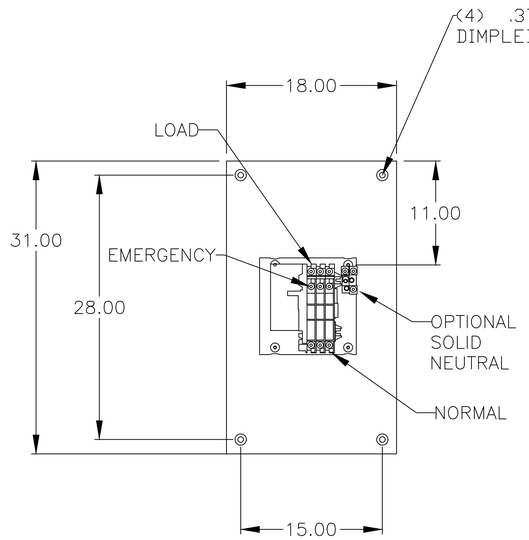
1. TYPE 1 WALL MOUNTED ENCLOSURE.
2. STANDARD FINISH – LIGHT GRAY, ANSI 61.
   OTHER FINISHES AVAILABLE CONSULT FACTORY.
3. KEY LOCKABLE HANDLE.
4. REMOVABLE SINGLE DOOR
5. TERMINALS – SCREW TYPE LUGS FOR EXTERNAL POWER CONNECTIONS.
6. CG = CENTER OF GRAVITY.
7. THREE POLE SWITCH WITH SOLID NEUTRAL SHOWN FOR REFERENCE.
8. NEUTRAL CONFIGURATIONS:

   AN OPTIONAL FULL RATED NEUTRAL CONFIGURATION FOR EACH SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NUMBER NO. NEUTRAL TYPE:
   (A) SOLID (COPPER BUS) NEUTRAL
   (B) SWITCHED NEUTRAL POLE

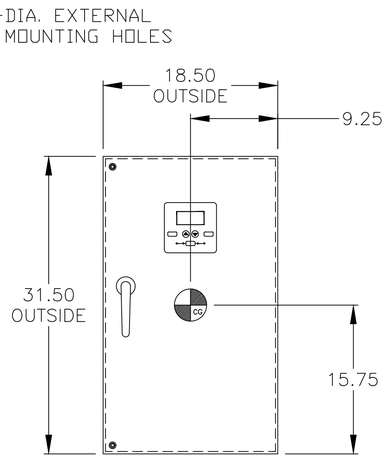
SWITCH RATING (AMPS)	RANGE OF WIRE
30-150	(1) #14 TO 4/0 AWG AL-CU WIRE
200-230	(1) #14 TO 4/0 AWG COPPER WIRE



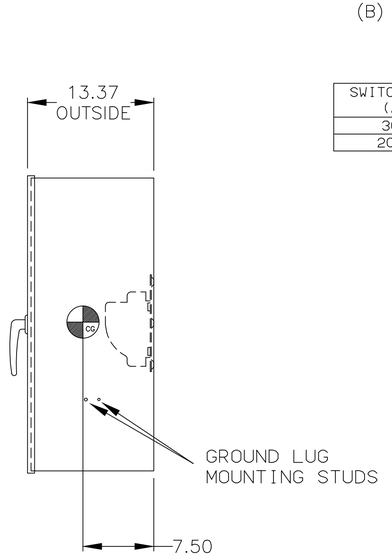
LEFT SIDE



FRONT VIEW
WITHOUT DOOR



FRONT VIEW
WITH DOOR



RIGHT SIDE

GeneratorJoe®
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Santa Rosa, CA 95405
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Fax: 707 542-2227
Email: sales@generatorjoe.Net
Web: www.generatorjoe.NET

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	245035	BWM	SDH	10/24/13
	ISSUE			

PROJECT NAME:

COMPOSITE OUTLINE
300 SERIES, D3ATS/D3NTS RATED 30-230 AMPERES
TYPE 1 ENCLOSURE

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	BWM	10/24/13
CHECKED		
PROJECT APPROVAL	SDH	10/24/13
FINAL APPROVAL		

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

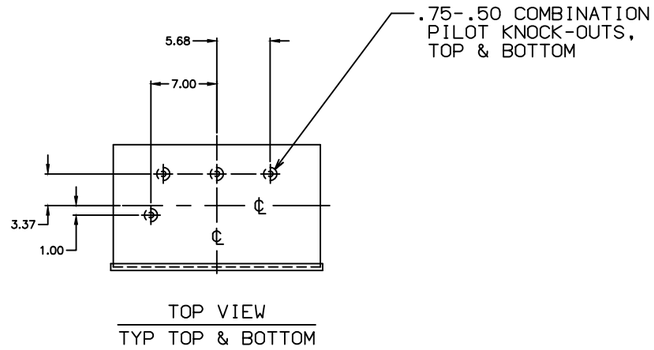
COMPUTER GENERATED DRAWING

SCALE NONE | SIZE DS

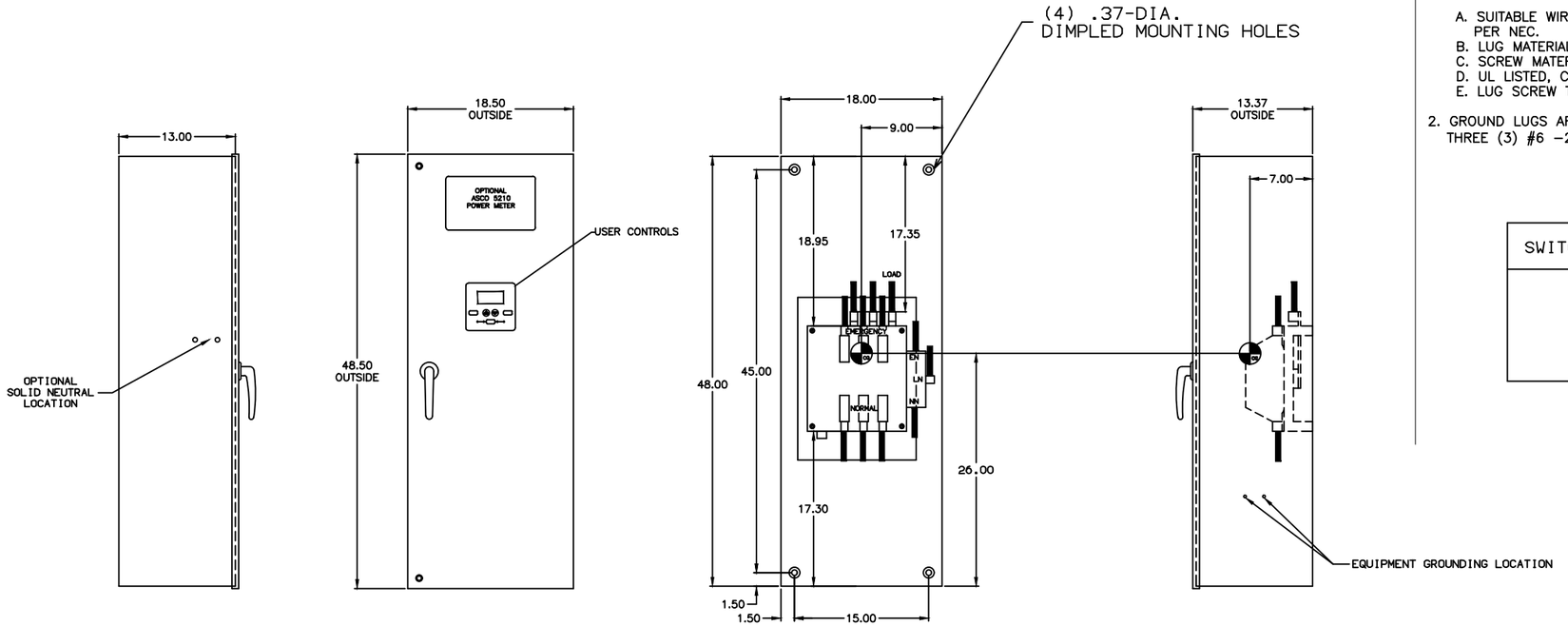
DWG. NO. 978723

DRAWING REV. — | ECN NO. 245035 | SHEET 1 OF 1

OUTLINE FOR ASCO® 300 SERIES TRANSFER SWITCHES (E3ATS/E3NTS) 260 & 400 AMPERES, TYPE 1 ENCLOSURE



TOP VIEW
TYP TOP & BOTTOM



LEFT SIDE

FRONT VIEW
WITH DOOR

FRONT VIEW
WITHOUT DOOR

RIGHT SIDE

GENERAL NOTES

1. UL LISTED (UL 50) TYPE 1 ENCLOSURE. WALL MOUNTED.
2. UL LISTED (UL 1008) TRANSFER SWITCH FOR USE ON EMERGENCY SYSTEMS.
3. PAN TYPE DOOR WITH LOCKABLE HANDLE.
4. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD.
5. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY. THE TRANSFER SWITCH CONFIGURATION PROVIDES TOP LUGS FOR EMERGENCY AND LOAD, BOTTOM LUGS FOR NORMAL.
6. A FULL RATED NEUTRAL IS OPTIONAL. WHEN PROVIDED IT IS ONE OF THE FOLLOWING TYPES AS INDICATED IN THE CATALOG NO. NEUTRAL TYPE DESIGNATION;
   - "A" SOLID NEUTRAL
   - "B" SWITCHED NEUTRAL POLE (PROVIDED ON 2 POLE UNITS ONLY)
   - "C" OVERLAPPING NEUTRAL POLE
7. REFER TO THE OPERATOR'S MANUAL PROVIDED WITH EACH UNIT BEFORE INSTALLING AND OPERATING THE SWITCH.

CABLING NOTES

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF: TWO (2) 1/0 –250MCM CU/AL CABLES OR ONE (1) #4 –600MCM CU/AL CABLE.
   - A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO ONE (1) 600MCM CABLE PER TERMINAL PER NEC.
   - B. LUG MATERIAL: ALUMINUM ALLOY WITH ELECTRO TIN PLATED FINISH.
   - C. SCREW MATERIAL: ALUMINUM ALLOY WITH ELECTRO TIN PLATED FINISH.
   - D. UL LISTED, CSA CERTIFIED.
   - E. LUG SCREW TIGHTENING TORQUE PER UL 486B: 600 IN–LBS.
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS; THREE (3) #6 –250MCM CU/AL CABLES.

UNIT WEIGHT

SWITCH RATING (AMPS)	POLES	WEIGHTS LB (KG)
260 & 400	2	117 (53)
	2 & NEUTRAL	125 (57)
	3	125 (87)
	3 & NEUTRAL	133 (61)

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	243089	SDH	SDH	06/26/13
	ISSUE			

PROJECT NAME:

COMPOSITE OUTLINE
300 SERIES, E3ATS/E3NTS RATED 260 & 400 AMPERES
TYPE 1 ENCLOSURE

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SDH	06/26/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	06/26/13

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

COMPUTER GENERATED DRAWING

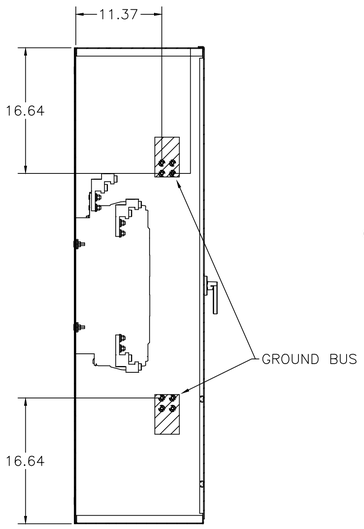
SCALE 1/8" = 1" | SIZE DS

DWG. NO. 978732

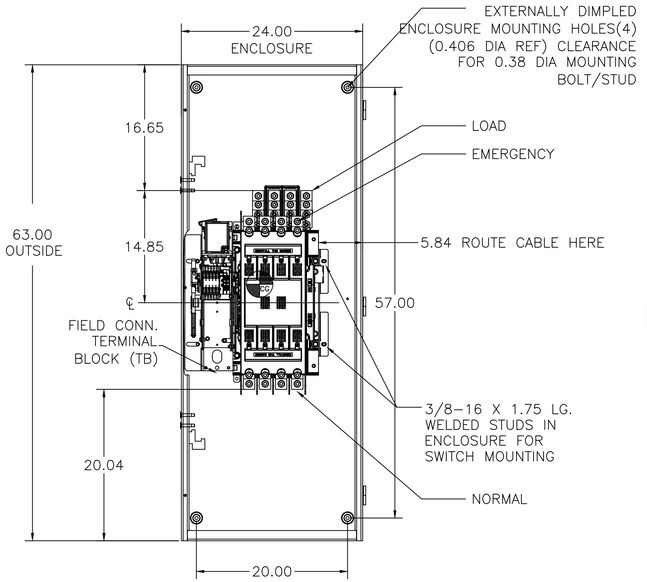
DRAWING REV. — | ECN NO. 243089 | SHEET 1 OF 1

OUTLINE FOR ASCO® 300 SERIES 600 AMPERE "J" FRAME (J3ATS,J3NTS,J3ADTS,J3NDTS) FRONT CONNECTED TRANSFER SWITCHES TYPE 1 ENCLOSURE

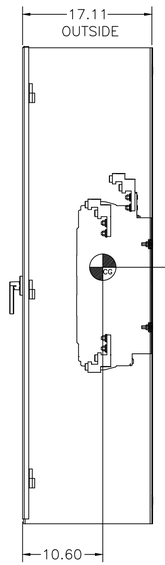
LEFT SIDE WITH DOOR



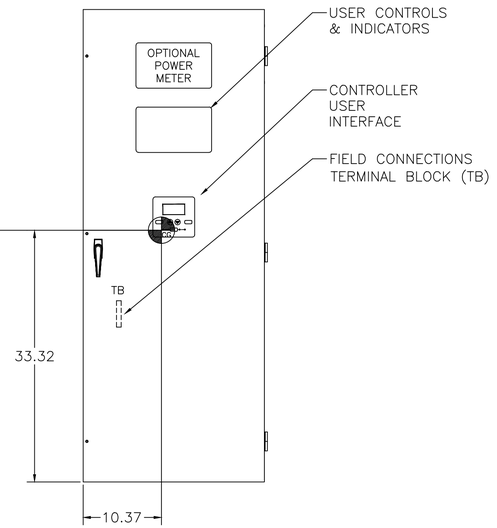
FRONT VIEW WITHOUT DOOR

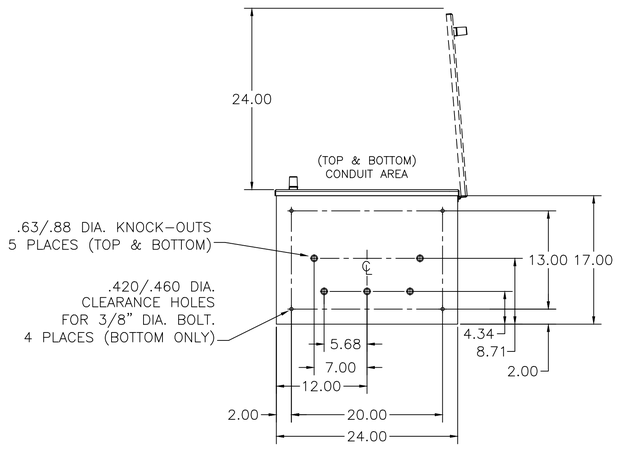


RIGHT SIDE WITH DOOR



FRONT VIEW WITH DOOR





BOTTOM VIEW

GENERAL NOTES

1. TYPE 1 ENCLOSURE. FREE STANDING. FLOOR MOUNTED OR WALL MOUNTED. 12 GAUGE CONSTRUCTION.
2. NEC STANDARD GAUGE PAN TYPE DOOR WITH LOCKABLE HANDLE.
3. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD. OTHER ANSI COLORS AVAILABLE CONSULT FACTORY UL RECOGNIZED.
4. RECOMMENDED CLEARANCES:
   FRONT: 24 INCHES
5. A 20% RATED GROUND BUS IS PROVIDED.
6. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY.
7. A FULL RATED NEUTRAL CONNECTION FOR EACH SOURCE AND THE LOAD IS OPTIONAL. WHEN PROVIDED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NO. NEUTRAL TYPE;
   A. SOLID (COPPER BUS) NEUTRAL
   B. SWITCHED NEUTRAL POLE
8. CENTER OF GRAVITY.

CABLING NOTES

1. ALL SIZES SUPPLIED STANDARD WITH MECHANICAL (SCREW TYPE) LUGS. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: ALUMINUM ALLOY 6061–T6 WITH ELECTRO TIN PLATED FINISH.
   B. SCREW MATERIAL: ALUMINUM ALLOY 6262–T9 WITH ELECTRO TIN PLATED FINISH.
   C. UL LISTED, CSA CERTIFIED.
   D. LUG SCREW TIGHTENING TORQUE PER UL 486B: 19 FT–LBS.
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS. (SEE AMP SIZE BELOW)

NOTES 600 AMP SWITCHES

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF TWO (2) #2 –600MCM CU/AL CABLES.
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO TWO (2) 600MCM CABLE PER TERMINAL PER NEC.
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   SIX (6) #2 –600MCM CU/AL CABLE CONNECTIONS.

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	245094 ISSUED	BWM	SDH	10/28/13

PROJECT NAME:

COMPOSITE OUTLINE
300 SERIES TS "J"
600 AMP TYPE 1

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	BWM	10/28/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	10/28/13

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

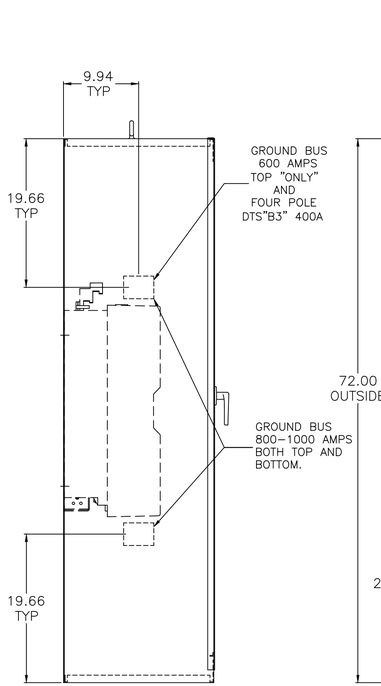
COMPUTER GENERATED DRAWING

SCALE NONE | SIZE DS

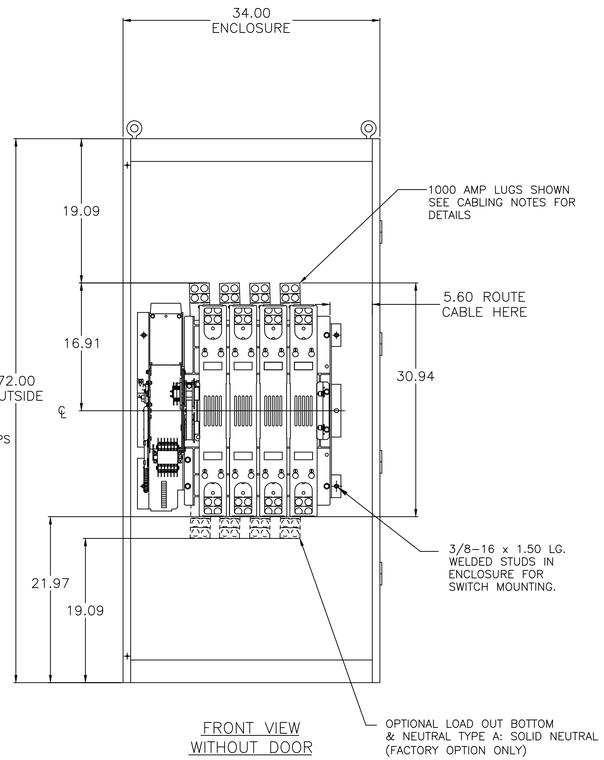
DWG. NO. 1001393–001

DRAWING REV. — | ECN NO. 245094 | SHEET 1 OF 1

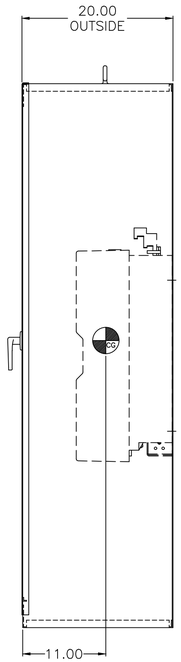
OUTLINE FOR ASCO® 300 SERIES 800-1000 AMPERE "H" FRAME (H3ATS,H3NTS,H3ADTS,H3NDTS) FRONT CONNECTED TRANSFER SWITCHES TYPE 1 ENCLOSURE



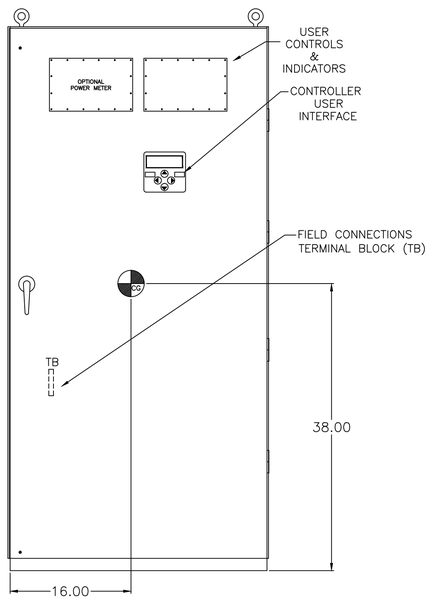
LEFT SIDE
WITH DOOR



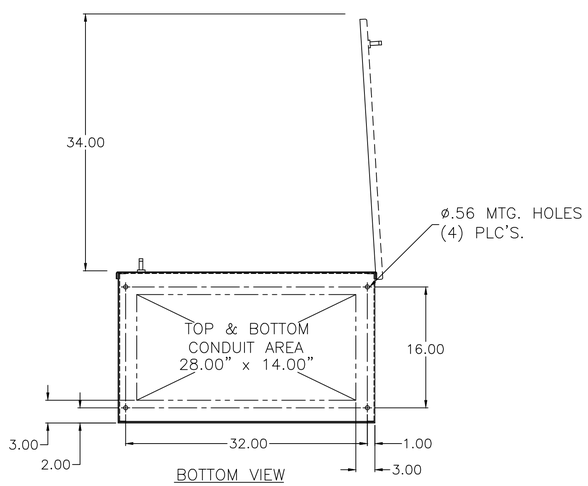
FRONT VIEW
WITHOUT DOOR



RIGHT SIDE
WITH DOOR



FRONT VIEW
WITH DOOR



BOTTOM VIEW

GENERAL NOTES

1. TYPE 1 ENCLOSURE. FREE STANDING. FLOOR MOUNTED. CODE GAUGE FORMED FRAME CONSTRUCTION.
2. NEC STANDARD GAUGE PAN TYPE DOOR WITH LOCKABLE HANDLE.
3. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD. OTHER ANSI COLORS AVAILABLE CONSULT FACTORY UL RECOGNIZED.
4. RECOMMENDED CLEARANCES: FRONT: 36 INCHES
5. A 20% RATED GROUND BUS IS PROVIDED.
6. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY. THE STANDARD SWITCH CONFIGURATION IS FOR TOP LUGS EMERGENCY AND LOAD AND BOTTOM LUGS NORMAL. OPTIONALLY, THE SWITCH MAY BE SUPPLIED WITH REVERSE NORMAL & EMERGENCY LUGS. (REFER TO THE WIRING DIAGRAM FURNISHED WITH EACH TRANSFER SWITCH TO DETERMINE TERMINATION POSITIONS).
7. NEUTRAL CONFIGURATIONS:
   AN OPTIONAL FULL RATED NEUTRAL CONFIGURATION FOR EACH SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NUMBER NO. NEUTRAL TYPE:
   (A) SOLID (COPPER BUS) NEUTRAL
   (B) SWITCHED NEUTRAL POLE
8. CG CENTER OF GRAVITY
9. NO KNOCKOUTS ARE PROVIDED.

CABLING NOTES

1. ALL SIZES SUPPLIED STANDARD WITH MECHANICAL (SCREW TYPE) LUGS. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: ALUMINUM ALLOY 6061-T6 WITH ELECTRO TIN PLATED FINISH.
   B. SCREW MATERIAL: ALUMINUM ALLOY 6262-T9 WITH ELECTRO TIN PLATED FINISH.
   C. UL LISTED, CSA CERTIFIED.
   D. LUG SCREW TIGHTENING TORQUE PER UL 486B: 19 FT-LBS.
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: HIGH CONDUCTIVITY WROUGHT COPPER FINISH, ELECTRO TIN PLATED.
   B. UL LISTED, CSA CERTIFIED.
   C. LUG MOUNTING HARDWARE TIGHTENING TORQUE: (REFER TO WITHSTAND CURRENT RATING LABEL PROVIDED ON EACH TRANSFER SWITCH).
   D. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
3. CONSULT FACTORY FOR OTHER TERMINATION REQUIREMENTS.
4. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS. (SEE AMP SIZE BELOW).

NOTES 600 AMP SWITCHES

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF TWO (2) #2 -600MCM CU/AL CABLE (SEE NOTE "E" BELOW).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO TWO (2) 600MCM CABLES PER TERMINAL PER NEC.
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. UP TO TWO (2) TWO HOLE, LONG BARREL CU CRIMP LUGS RATED FOR UP TO 600MCM. (REFER TO CRIMP LUG INSTALLATION DATA PROVIDED WITH UNIT FOR FULL INSTALLATION DETAILS).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO TWO (2) 600MCM CABLES PER TERMINAL PER NEC.
3. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (6) 1/0 - 750MCM CU/AL CABLE CONNECTIONS.

NOTES 800-1000 AMP SWITCHES

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF FOUR (4) 1/0 -750MCM CU/AL CABLE (SEE NOTE "E" BELOW).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO FOUR (4) 600MCM CABLES PER TERMINAL PER NEC.
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. UP TO FOUR (4) TWO HOLE, LONG BARREL CU CRIMP LUGS RATED FOR UP TO 600MCM. (REFER TO CRIMP LUG INSTALLATION DATA PROVIDED WITH UNIT FOR FULL INSTALLATION DETAILS).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO FOUR (4) 600MCM CABLES PER TERMINAL PER NEC.
3. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (12) 1/0 - 750MCM CU/AL CABLE CONNECTIONS.

NOTES 400A (ADTS "B3" 4 POLE ONLY)

1. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (3) #6 - 250MCM CU/AL CABLE CONNECTIONS.

APPROXIMATE SHIPPING WEIGHT, LBS (KG)

SWITCH RATING (AMPS)	POLES	WEIGHTS LB (KG)
600,800	2	419 (190)
600,800	3	442 (201)
(400A 7ADTS) 600,800	4	465 (211)
1000	2	431 (196)
1000	3	460 (209)
1000	4	489 (222)

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	245452 ISSUED	WK	BK	11/20/13

PROJECT NAME:
OUTLINE
300 SERIES
600-1000 AMP. TYPE 1

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/20/13
CHECKED	BK	11/20/13
PROJECT APPROVAL	BK	11/20/13
FINAL APPROVAL		

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055

ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

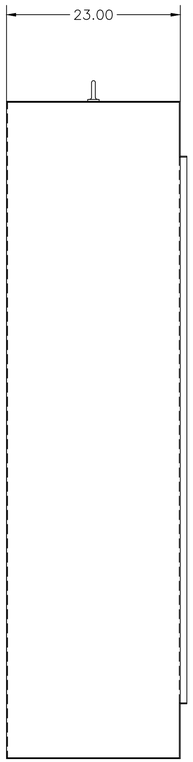
COMPUTER GENERATED DRAWING

SCALE NONE | SIZE DS

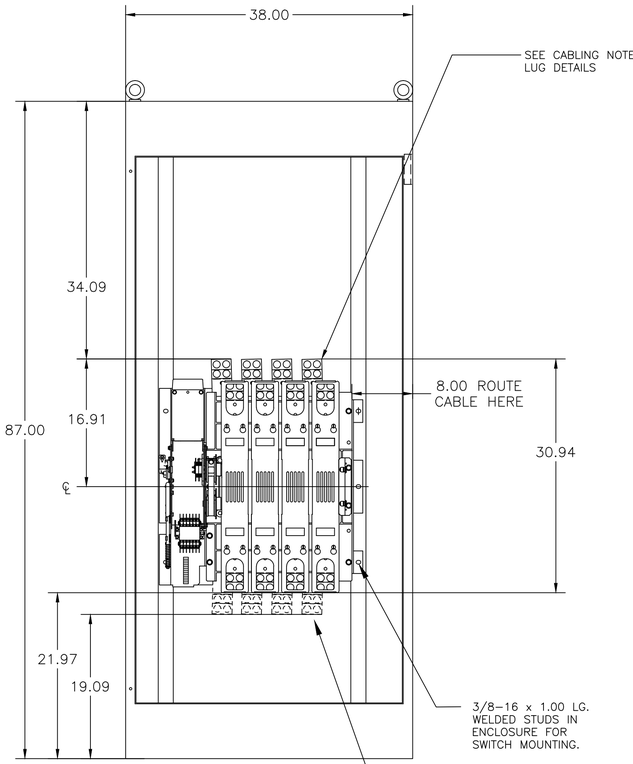
DWG. NO. 1001394

DRAWING REV. — | ECN NO. 245452 | SHEET 1 OF 1

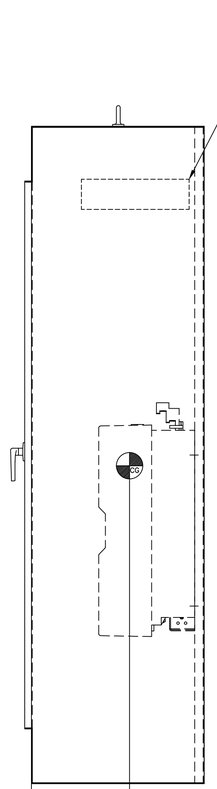
OUTLINE FOR ASCO® 300 SERIES 1200 AMPERE "H" FRAME (H3ATS,H3NTS,H3ADTS,H3NDTS) FRONT CONNECTED TRANSFER SWITCHES TYPE 1 ENCLOSURE



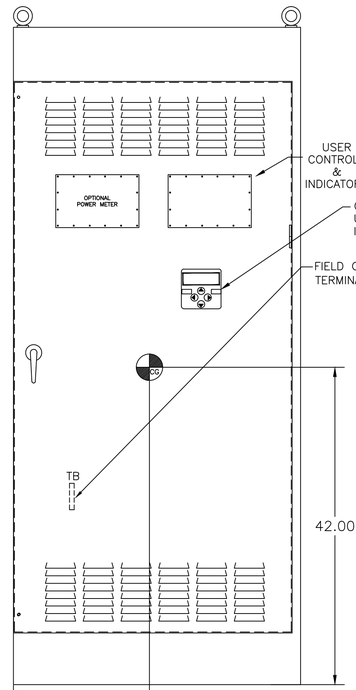
"LEFT SIDE VIEW"



FRONT VIEW WITHOUT DOOR



RIGHT SIDE WITH DOOR



FRONT VIEW WITH DOOR

GENERAL NOTES

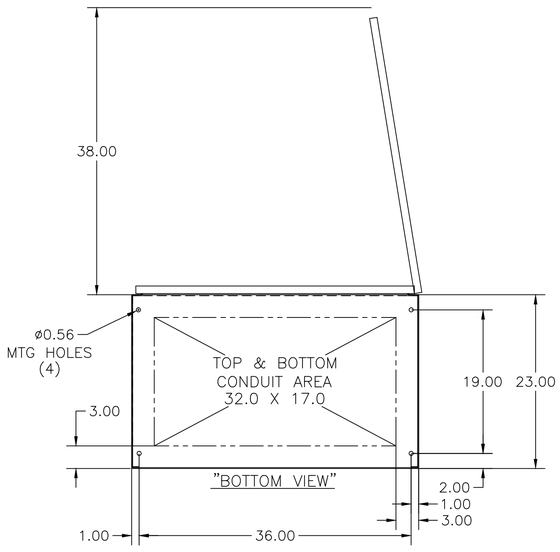
1. TYPE 1 ENCLOSURE. FREE STANDING. FLOOR MOUNTED. CODE GAUGE FORMED FRAME CONSTRUCTION.
2. NEC STANDARD GAUGE PAN TYPE DOOR WITH LOCKABLE HANDLE.
3. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD. OTHER ANSI COLORS AVAILABLE CONSULT FACTORY UL RECOGNIZED.
4. RECOMMENDED CLEARANCES: FRONT: 38 INCHES
5. A 20% RATED GROUND BUS IS PROVIDED.
6. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY. THE STANDARD SWITCH CONFIGURATION IS FOR TOP LUGS EMERGENCY AND LOAD AND BOTTOM LUGS NORMAL. OPTIONALLY, THE SWITCH MAY BE SUPPLIED WITH REVERSE NORMAL & EMERGENCY LUGS. (REFER TO THE WIRING DIAGRAM FURNISHED WITH EACH TRANSFER SWITCH TO DETERMINE TERMINATION POSITIONS).
7. NEUTRAL CONFIGURATIONS:
   AN OPTIONAL FULL RATED NEUTRAL CONFIGURATION FOR EACH SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NUMBER NO. NEUTRAL TYPE:
   (A) SOLID (COPPER BUS) NEUTRAL
   (B) SWITCHED NEUTRAL POLE
8. CG CENTER OF GRAVITY.
9. NO KNOCKOUTS ARE PROVIDED.

CABLING NOTES

1. ALL SIZES SUPPLIED STANDARD WITH MECHANICAL (SCREW TYPE) LUGS. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: ALUMINUM ALLOY 6061-T6 WITH ELECTRO TIN PLATED FINISH.
   B. SCREW MATERIAL: ALUMINUM ALLOY 6262-T9 WITH ELECTRO TIN PLATED FINISH.
   C. UL LISTED, CSA CERTIFIED.
   D. LUG SCREW TIGHTENING TORQUE PER UL 486B: 19 FT-LBS.
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: HIGH CONDUCTIVITY WROUGHT COPPER FINISH, ELECTRO TIN PLATED.
   B. UL LISTED, CSA CERTIFIED.
   C. LUG MOUNTING HARDWARE TIGHTENING TORQUE: (REFER TO WITHSTAND CURRENT RATING LABEL PROVIDED ON EACH TRANSFER SWITCH).
   D. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
3. CONSULT FACTORY FOR OTHER TERMINATION REQUIREMENTS.
4. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS. (SEE AMP SIZE BELOW).

NOTES 1200 AMP SWITCHES

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF FOUR (4) 1/0 -750MCM CU/AL CABLE (SEE NOTE "E" BELOW).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO FOUR (4) 600MCM CABLES PER TERMINAL PER NEC.
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. UP TO FOUR (4) TWO HOLE, LONG BARREL CU CRIMP LUGS RATED FOR UP TO 600MCM. (REFER TO CRIMP LUG INSTALLATION DATA PROVIDED WITH UNIT FOR FULL INSTALLATION DETAILS).
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO FOUR (4) 600MCM CABLES PER TERMINAL PER NEC.
3. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (12) 1/0 - 750MCM CU/AL CABLE CONNECTIONS.



APPROXIMATE SHIPPING WEIGHT, LBS (KG)

SWITCH RATING (AMPS)	POLES	WEIGHTS LB (KG)
1200	2	581 (264)
1200	3	610 (277)
1200	4	639 (290)

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	245452	WK	BK	11/20/13
	ISSUED			

PROJECT NAME:

OUTLINE
300 SERIES
1200 AMP. TYPE 1

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/20/13
CHECKED	BK	11/20/13
PROJECT APPROVAL	BK	11/20/13
FINAL APPROVAL		

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055

ASSEM. REF. NO.

COMPUTER GENERATED DRAWING

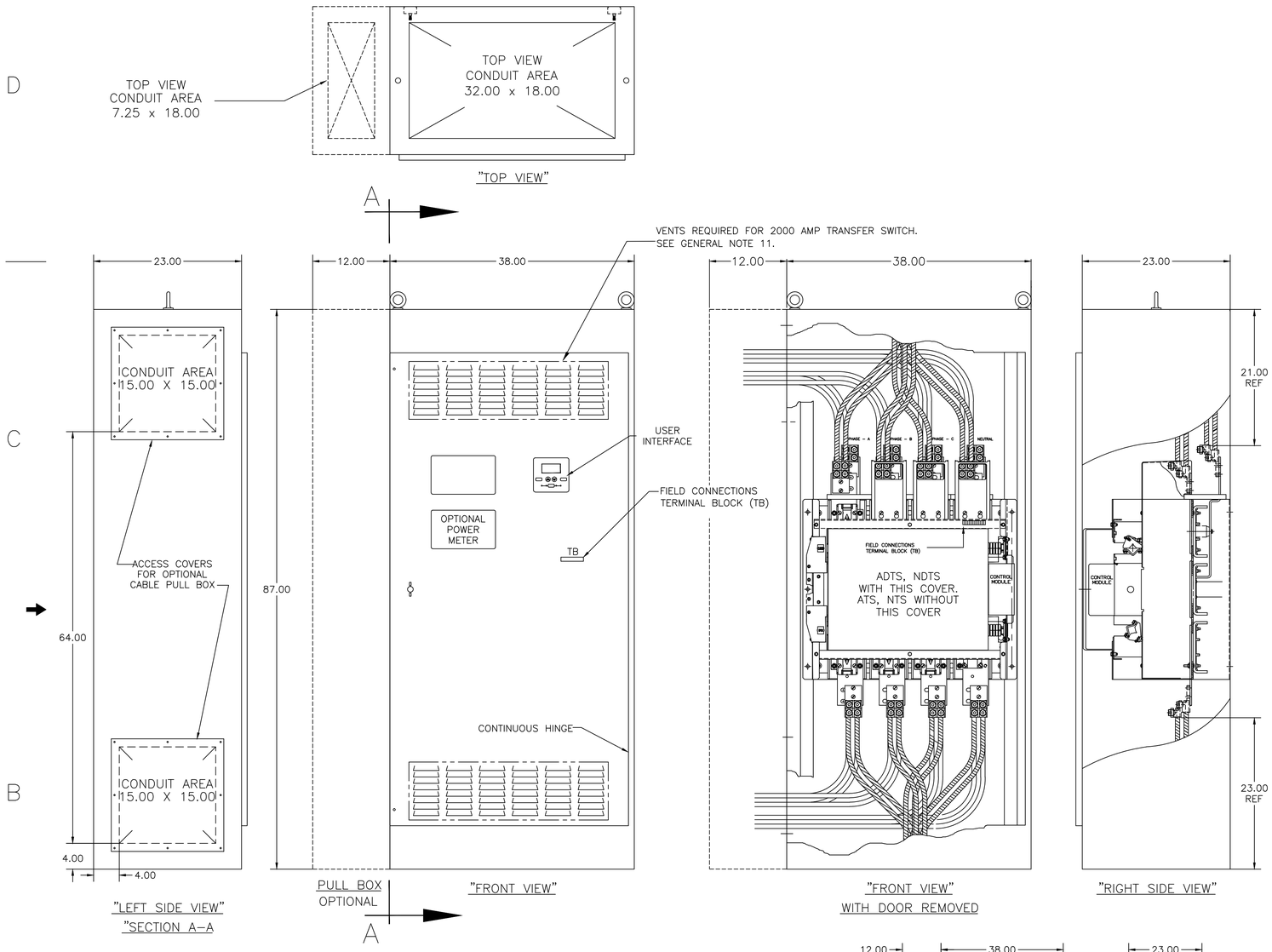
SCALE NONE SIZE DS

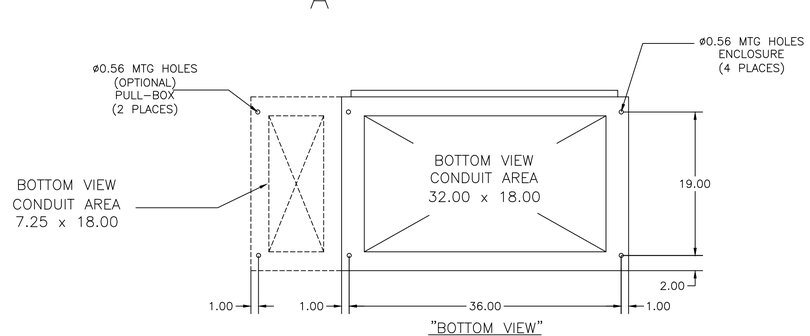
DWG. NO. 1001394-001

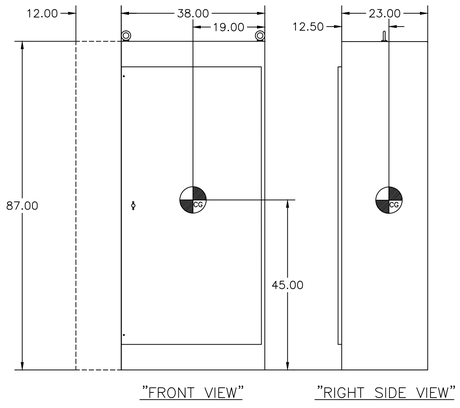
DRAWING REV. — ECN NO. 245452 SHEET 1 OF 1

ASCO® ASCO Power Technologies, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.

OUTLINE FOR ASCO® 300 SERIES 1000-2000 AMPERE "G" FRAME (G3ATS,G3NTS,G3ADTS,G3NDTS) FRONT CONNECTED TRANSFER SWITCHES TYPE 1 ENCLOSURE







GENERAL NOTES

1. TYPE 1 ENCLOSURE. FREE STANDING. FLOOR MOUNTED. CODE GAUGE FORMED FRAME CONSTRUCTION.
2. NEC STANDARD GAUGE PAN TYPE DOOR WITH LOCKABLE HANDLE.
3. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD. OTHER ANSI COLORS AVAILABLE CONSULT FACTORY. UL RECOGNIZED.
4. CONSTRUCTION IS IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF UL 1008.
5. RECOMMENDED CLEARANCES:
   FRONT: 36 INCHES
6. A 20% RATED GROUND BUS IS PROVIDED.
7. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY.

IMPORTANT NOTE:
UNDER NO CIRCUMSTANCES SHOULD POWER CABLES BE ROUTED ALONG THE SIDES OF THE TRANSFER SWITCH. AN OPTIONAL CABLE PULL BOX WHICH MOUNTS ON THE LEFT SIDE OF THE ENCLOSURE IS AVAILABLE WHEN CONDITIONS EXIST FOR WHICH CABLES MUST RUN BETWEEN THE TOP AND BOTTOM OF THE UNIT. GROUND CONDUCTORS ONLY MAY BE RUN ALONG THE LEFT SIDEWALL OF THE ENCLOSURE.

8. NEUTRAL CONFIGURATIONS:
   AN OPTIONAL FULL RATED NEUTRAL CONFIGURATION FOR EACH SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NUMBER NO. NEUTRAL TYPE:
   (A) SOLID (COPPER BUS) NEUTRAL.
   (B) SWITCHED NEUTRAL POLE.
9. CG CENTER OF GRAVITY.
10. NO KNOCKOUTS ARE PROVIDED.
11. 2000 AMP TRANSFER SWITCH ONLY.
12. (OPTIONAL) LEFT SIDE PULL BOX AVAILABLE FOR TOP AND BOTTOM CABLE ACCESS WHEN REQUIRED. CONTACT FACTORY FOR DETAILS AND SHIPPED SEPARATELY.
    A. TO ATTACH PULL BOX TO THE LEFT SIDE OF THE ENCLOSURE. REMOVE CONDUIT SIDE COVERS FROM ENCLOSURE. MOVE PULL-BOX INTO POSITION. USE HARDWARE FROM CONDUIT SIDE COVERS TO ATTACH THE PULL-BOX TO ENCLOSURE.

CABLING NOTES

1. ALL SIZES SUPPLIED STANDARD WITH MECHANICAL (SCREW TYPE) LUGS. (SEE AMP SIZE BELOW)
   A. LUG MATERIAL: ALUMINUM ALLOY 6061-T6 WITH ELECTRO TIN PLATED FINISH.
   B. SCREW MATERIAL: ALUMINUM ALLOY 6262-T9 WITH ELECTRO TIN PLATED FINISH.
   C. UL LISTED, CSA CERTIFIED.
   D. LUG SCREW TIGHTENING TORQUE PER UL 486B: 19 FT-LBS.
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS. (SEE AMP SIZE BELOW)

NOTES 1000-1200 AMPS

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF FOUR (4) 1/0 -750MCM CU/AL CABLE (SEE NOTE "E" BELOW).
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO FOUR (4) 600MCM CABLES PER TERMINAL PER NEC.
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (12) 1/0 - 750MCM CU/AL CABLE

NOTES 1600-2000 AMPS

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. ONE (1) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF SIX (6) 1/0 -750MCM CU/AL CABLE (SEE NOTE "E" BELOW).
   E. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO SIX (6) 750MCM CABLES PER TERMINAL PER NEC.
2. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
   (12) 1/0 - 750MCM CU/AL CABLE

REV. TO SHEET	ECN NO.	BY	APP.	DATE
—	245058	BWM	SDH	10/25/13
	ISSUED			

PROJECT NAME:
OUTLINE
300 SERIES
1000-2000 AMP (F/C ONLY)

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	BWM	10/25/13
CHECKED	SDH	10/25/13
PROJECT APPROVAL		
FINAL APPROVAL	SDH	10/25/13

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055
ASSEM. REF. NO.

ASCO® ASCO POWER TECHNOLOGIES, L.P.
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

COMPUTER GENERATED DRAWING
SCALE NONE SIZE DS
DWG. NO. 1001395
DRAWING REV. — ECN NO. 245058 SHEET 1 OF 1