ASCO Power Technologies®

SWITCH SUBMITTAL

REVISION 1

TRANSFER SWITCH DETAILS

ATS NAME	QTY	AMPS / POLES (VOLTS)	BYPASS	TRANSITION TYPE	CATALOG NUMBER	ACCESSORIES	OUTLINE DRAWING	WIRING DIAGRAM	BOM NUMBER
	4	4000 / 4 (480V)	N/A	OPEN	G07ATSB34000N5XM	31BG1,44G	844459-002	844627-127	1572913

Transfer Switch Withstand and Closing Ratings

ATS NAME	FRAME SIZE	SWITCH RATING AMPS		300, 4000 & 7000 Series																		
				CURRENT LIMITING FUSES				SPECIFIC BREAKER			TIME BASED				Short Time Ratings[3] (sec)							
															480V Max.				600V Max.			
		Transfer Switches	Bypass Switches	480V Max.	600V Max.	MAX SIZE, A	CLASS	240V Max.	480V Max.	600V Max.	Time(Sec)	240V Max.	480V Max.	600V Max.	.13	.2	.3	.5	.1	.13	.3	.5
-	G	2600-3000	2600 - 3000	200kA	200kA	4000	L	125kA[6]	125kA[6]	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
-	G	4000	4000	200kA	200kA	5000	L	100kA	100kA	100kA	0.05	100kA	100kA	100kA	85kA	65kA			65kA			

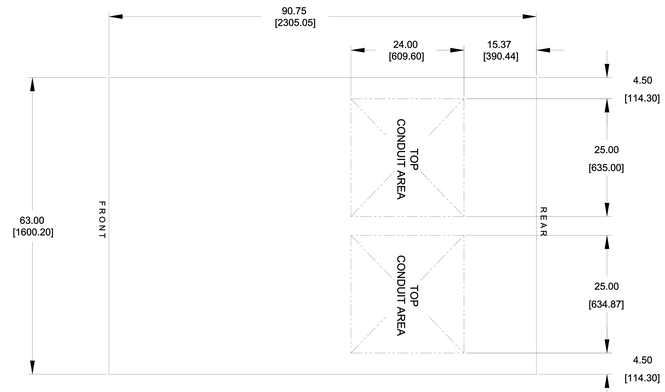
NOTES:
1) All WCR values indicated are tested in accordance with the requirements of UL 1008, 7th Edition.
2) Application requirements may permit higher WCR for certain switch sizes.
3) Short Time ratings are provided for applications involving circuit breakers that utilize trip delay settings for system selective coordination

Transfer Switch Details

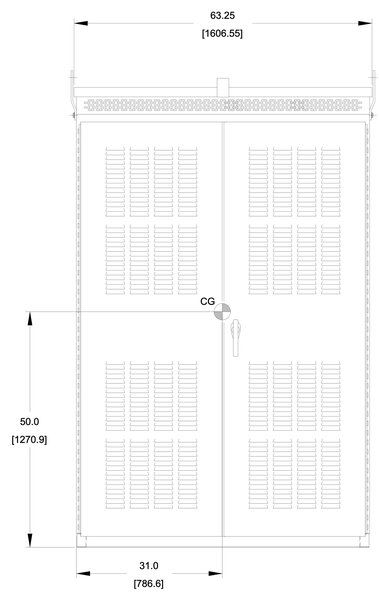
#1	ATS	AMPS: 4000	QTY: 4

Product	:	7000 Series Transfer Switches	Catalog Number	:	G07ATSB34000N5XM
Service Voltage / Hz	:	480V/60Hz	Optional Accessories	:	31BG1,44G
Bypass Isolation	:	Not Applicable	Product Description	:	7000 Series, Automatic Open Transition Transfer Switch
No. of Switched Poles: 4	:	4	Neutral Configuration	:	Switched [B]
Withstand Rating: Frame = G, Switch Rating = 4000, Series = 7000	:	See WCR Table Below	No. of Cables & Lug Size	:	12, #3/0 AWG to 750 MCM
Enclosure	:	3R(M)-UL Type 3R secure double door enclosure (See Disclaimer 3)	Service	:	Three Phase, 4-wire
Extended Warranty	:	Not Included	Markings	:	

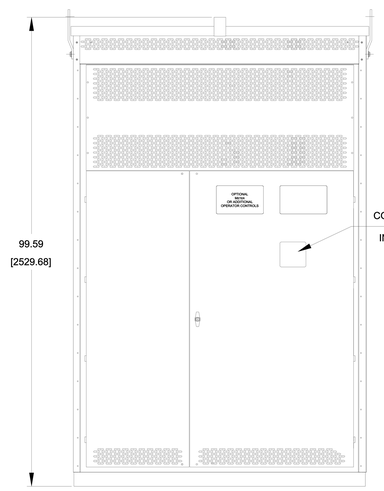
#	ACCESSORY DESCRIPTIONS	
	Accessory Code	Description
1	31BG1	Status Relay Bundle- Provides dry contacts for each of the following statuses, (2) Form-C contacts for Normal Source Acceptability, (2) Form-C contacts for Emergency Source Acceptability, and (4) Form-C Contacts for Pre/Post Transfer Signaling. Each set of contacts is rated for 6A at 120Vac, 250Vac Max.
2	44G	208-240VAC and or 440-480VAC Accessory 44 Strip heater is designed to keep humidity and or temperature within the ATS enclosure at acceptable levels. This accessory consists of a mounting bracket with strip heater, thermostat and terminal block. Heater powered from load side of TS.



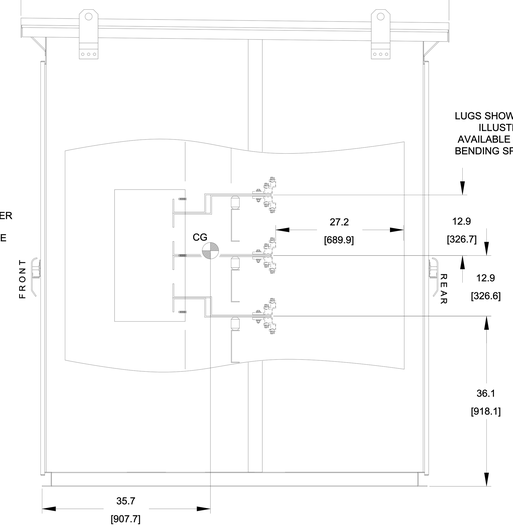
TOP VIEW



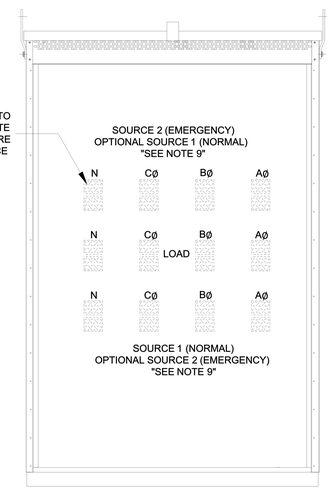
FRONT VIEW



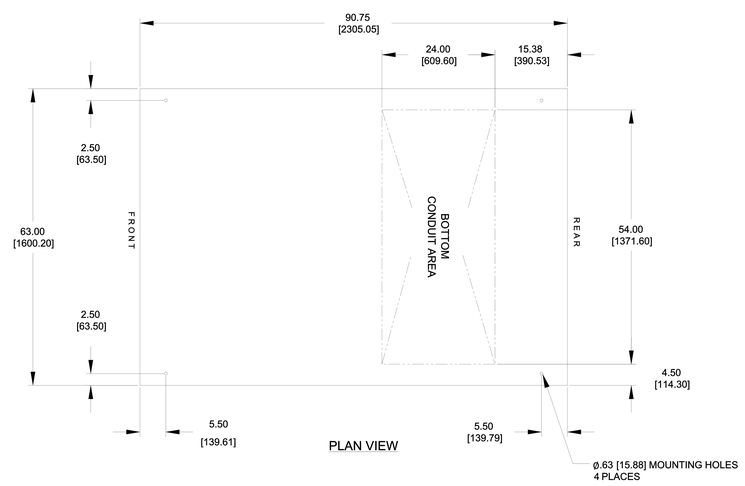
FRONT VIEW



SIDE VIEW



REAR VIEW



PLAN VIEW

GENERAL NOTES

1. FLOOR MOUNTED ENCLOSURE.
   TYPE 3R (M) CONSTRUCTED FROM CODE GAUGE STEEL.
   FINISH TYPE: ANSI 61 GRAY POLYESTER SEMI GLOSS ELECTROSTATIC POWDER.
   TYPE 3RX (R) EXTERIOR CONSTRUCTED FROM CODE GAUGE TYPE 304 STAINLESS STEEL.
   TYPE 3RX (S) EXTERIOR CONSTRUCTED FROM CODE GAUGE TYPE 316 STAINLESS STEEL.
2. EXTERIOR DOOR HAVE PADLOCKABLE HANDLES WITH 3-POINT LATCH
3. DESIGNED FOR FRONT & REAR ACCESS.
4. RECOMMENDED CLEARANCES: FRONT: 36 [914.40] REAR: 36 [914.40]
5. EXTERIOR VENTS ARE SUPPLIED WITH POLYESTER DUST FILTERS.
6. LIFTING PLATES: SECTIONS ARE SUPPLIED WITH LIFTING PLATES. INSPECT PLATES FOR DAMAGE AND TORQUE BOLTS TO 45 FT LBS [61 N m] BEFORE USE. REFER TO ANSI/NEMA PB 2.1 FOR PROPER HANDLING OF EQUIPMENT. AFTER INSTALLATION OF SECTION, REMOVE LIFTING PLATES. REINSTALL BOLTS INTO EXTERIOR HOLES AND TORQUE TO APPROXIMATELY 20 FT LBS [27 N m].
7. ● NTER OF GRAVITY
8. APPROXIMATE SHIPPING WEIGHT: 3425 LB [1553.5 KG].
9. ACCESSORY 40, OPTIONAL SOURCE LOCATIONS IS AVAILABLE ON SERIES 7000 ONLY.
10. SEE SHEET 3 FOR TERMINATION DETAILS.

TRANSFER SWITCH

1. G FRAME AUTOMATIC/NON-AUTOMATIC TRANSFER SWITCH.
2. TRANSFER SWITCH RATING: 4000 AMPS.
   WITHSTAND AND CLOSING RATING WHEN PROTECTED BY A CIRCUIT BREAKER WITHOUT AN ADJUSTABLE SHORT TIME RESPONSE,
   MAXIMUM 0.05 SECONDS: 100,000 RMS SYM @ 240V, 480V, 600V.
   WITHSTAND AND CLOSING RATING WHEN PROTECTED BY A CIRCUIT BREAKER WITH AN ADJUSTABLE SHORT TIME RESPONSE,
   MAXIMUM 0.13 SECONDS: 85,000 RMS SYM @ 240V, 480V.
   MAXIMUM 0.50 SECONDS: 65,000 RMS SYM @ 240V, 480V, 600V.
3. A FULL RATED NEUTRAL CONNECTION FOR EACH SOURCE AND THE LOAD IS OPTIONAL. WHEN PROVIDED IT IS IN ONE OF THE FOLLOWING FORMATS.
   A. SOLID NEUTRAL
   B. SWITCHED NEUTRAL POLE
   C. OVERLAPPING NEUTRAL POLE (NOT AVAILABLE ON ADTS, ACTS, NDTS & NCTS UNITS)
4. UL 1008 OR CSA C22.2 No. 178.1

TERMINATIONS 4000A

1. SWITCH CAN BE SUPPLIED WITHOUT LUGS (SEE SHEET 2).
   A. SOURCES, LOAD AND GROUND LUG KITS ARE ORDERED SEPARATELY.
2. MECHANICAL (SCREW TYPE) LUGS FOR COPPER (CU) OR ALUMINUM (AL) CABLE WHEN ORDERED WITH SWITCH.
   SOURCE 1 (NORMAL): (12) 1/0-600MCM [50-300mm²] PER PHASE & NEUTRAL
   LOAD: (12) 1/0-600MCM [50-300mm²] PER PHASE & NEUTRAL
   SOURCE 2 (EMERGENCY): (12) 1/0-600MCM [50-300mm²] PER PHASE & NEUTRAL
   GROUND: (36) 1/0-600MCM [50-300mm²]
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED AS PER NEC.

WIRING/CABLING

1. USE 90°C MINIMUM CU/AL WIRE FOR POWER CABLES.
2. WIRE SIZE TO BE BASED ON AMPACITY OF 75°C WIRE.
3. USE 60°C MINIMUM CU WIRE FOR CONTROLS.

DIMENSION ARE IN INCHES [MILLIMETERS]

REV. TO SHEET	ECN NO.	BY	APP.	DATE
N	310007	SV	JPB	07-10-24
	SEE ECN			
M	308223	SV	JPB	03-22-24
	SEE ECN			

PROJECT NAME:

OUTLINE — MOUNTING

GATS 4000A, PROVISION FOR MECHANICAL LUG
TYPE 3R/3RX 100 X 63 X 91

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SV	04-21-23
CHECKED	RN	04-21-23
PROJECT APPROVAL		
FINAL APPROVAL	RN	09-04-23
	JPB	09-04-23

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

ASSEM. REF. NO.

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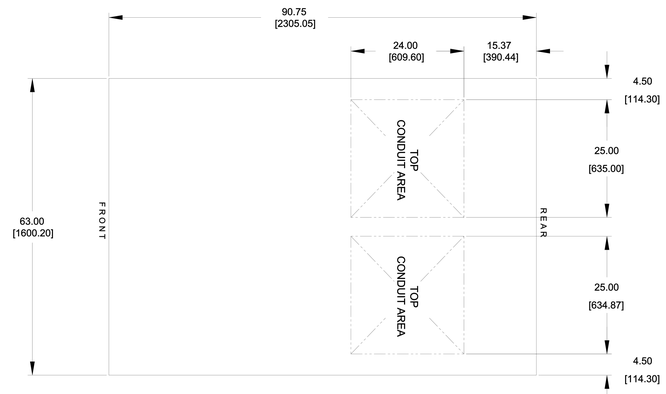
COMPUTER GENERATED DRAWING

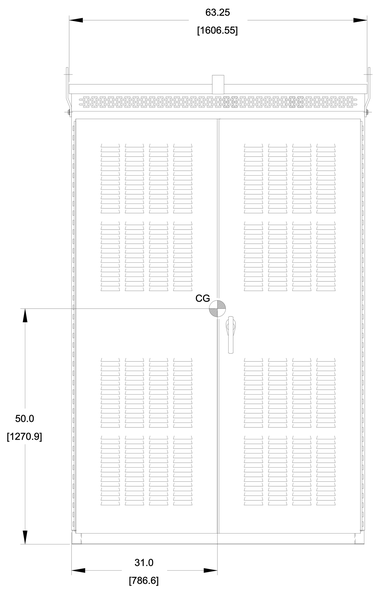
SCALE 1/16" = 1" | SIZE DS

DWG. NO. 844459-002

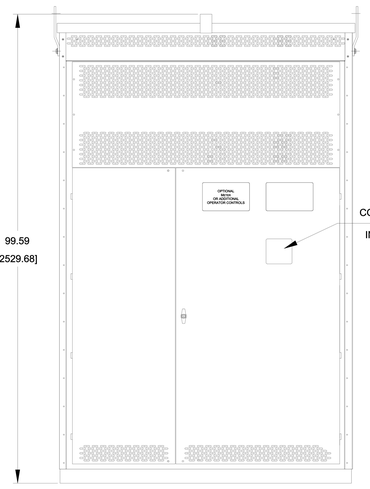
DRAWING REV. N | ECN NO. 310007 | SHEET 1 OF 3



TOP VIEW



FRONT VIEW



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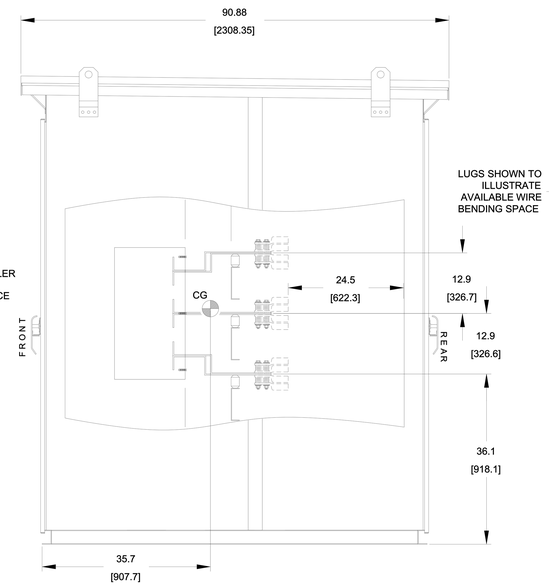
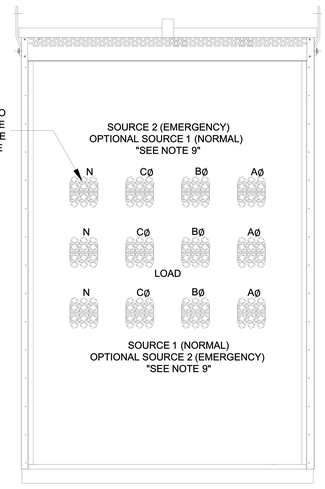


SIDE VIEW



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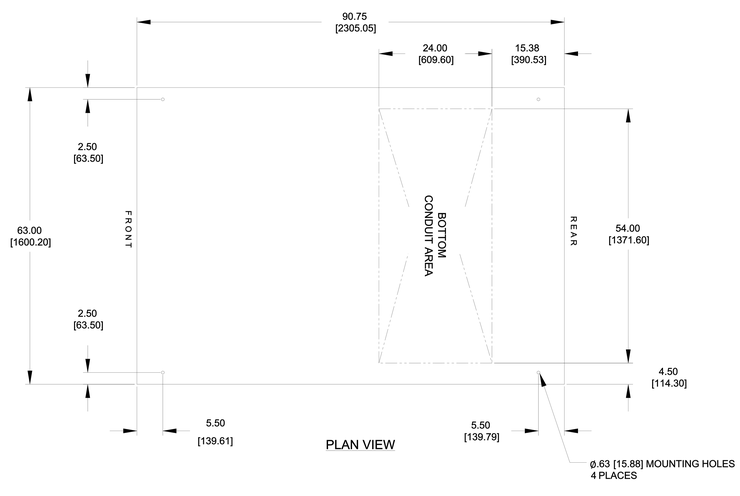

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GENERAL NOTES

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7. ● NTER OF GRAVITY
8. APPROXIMATE SHIPPING WEIGHT: 3425 LB [1553.5 KG].
9. ACCESSORY 40, OPTIONAL SOURCE LOCATIONS IS AVAILABLE ON SERIES 7000 ONLY.
10. SEE SHEET 3 FOR TERMINATION DETAILS.

TRANSFER SWITCH

1. G FRAME 7000 SERIES AUTOMATIC/NON-AUTOMATIC TRANSFER SWITCH.
2. TRANSFER SWITCH RATING: 4000 AMPS.
   WITHSTAND AND CLOSING RATING WHEN PROTECTED BY A CIRCUIT BREAKER WITHOUT AN ADJUSTABLE SHORT TIME RESPONSE,
   MAXIMUM 0.05 SECONDS: 100,000 RMS SYM @ 240V, 480V, 600V.
   WITHSTAND AND CLOSING RATING WHEN PROTECTED BY A CIRCUIT BREAKER WITH AN ADJUSTABLE SHORT TIME RESPONSE,
   MAXIMUM 0.13 SECONDS: 85,000 RMS SYM @ 240V, 480V.
   MAXIMUM 0.50 SECONDS: 65,000 RMS SYM @ 240V, 480V, 600V.
3. A FULL RATED NEUTRAL CONNECTION FOR EACH SOURCE AND THE LOAD IS OPTIONAL. WHEN PROVIDED IT IS IN ONE OF THE FOLLOWING FORMATS.
   A. SOLID NEUTRAL
   B. SWITCHED NEUTRAL POLE
   C. OVERLAPPING NEUTRAL POLE (NOT AVAILABLE ON ADTS, ACTS, NDTS & NCTS UNITS)
4. UL 1008 OR CSA C22.2 No. 178.1

TERMINATIONS 4000A

1. SWITCH SUPPLIED WITHOUT LUGS.
   A. SOURCES, LOAD AND GROUND LUG KITS ARE ORDERED SEPARATELY.
2. CRIMP LUGS FOR COPPER (CU) OR ALUMINUM (AL) CABLE.
   SOURCE 1 (NORMAL): (12) 600MCM [300mm²] PER PHASE & NEUTRAL
   LOAD: (12) 600MCM [300mm²] PER PHASE & NEUTRAL
   SOURCE 2 (EMERGENCY): (12) 600MCM [300mm²] PER PHASE & NEUTRAL
   GROUND: (48) 600MCM [300mm²]. "CONTACT ASCO FOR NEEDS BEYOND THESE SIZE & QUANTITIES."
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED AS PER NEC.
   B. OPTIONAL LUGS MAY BE SUPPLIED (MAY AFFECT ENCLOSURE SIZE).

WIRING/CABLING

1. USE 90°C MINIMUM CU/AL WIRE FOR POWER CABLES.
2. WIRE SIZE TO BE BASED ON AMPACITY OF 75°C WIRE.
3. USE 60°C MINIMUM CU WIRE FOR CONTROLS.

REV. TO SHEET	ECN NO.	BY	APP.	DATE
N	310007	SV	JPB	07-10-24
	SEE ECN			
M	308223	SV	JPB	03-22-24
	SEE ECN			

PROJECT NAME:

OUTLINE — MOUNTING

GATS 4000A, PROVISION FOR CRIMP LUG
TYPE 3R/3RX 100 X 63 X 91, 7000 SERIES TRANSFER SWITCH ONLY

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SV	04-21-23
CHECKED	RN	04-21-23
PROJECT APPROVAL		
FINAL APPROVAL	RN	09-04-23
	JPB	09-04-23

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

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COMPUTER GENERATED DRAWING

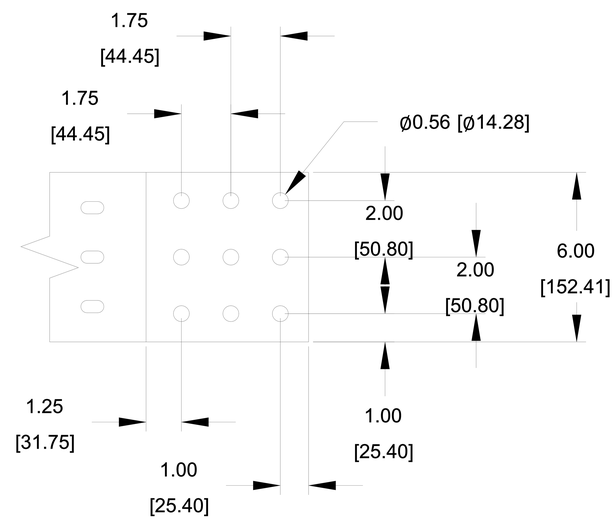
SCALE 1/16" = 1" | SIZE DS

DWG. NO. 844459-002

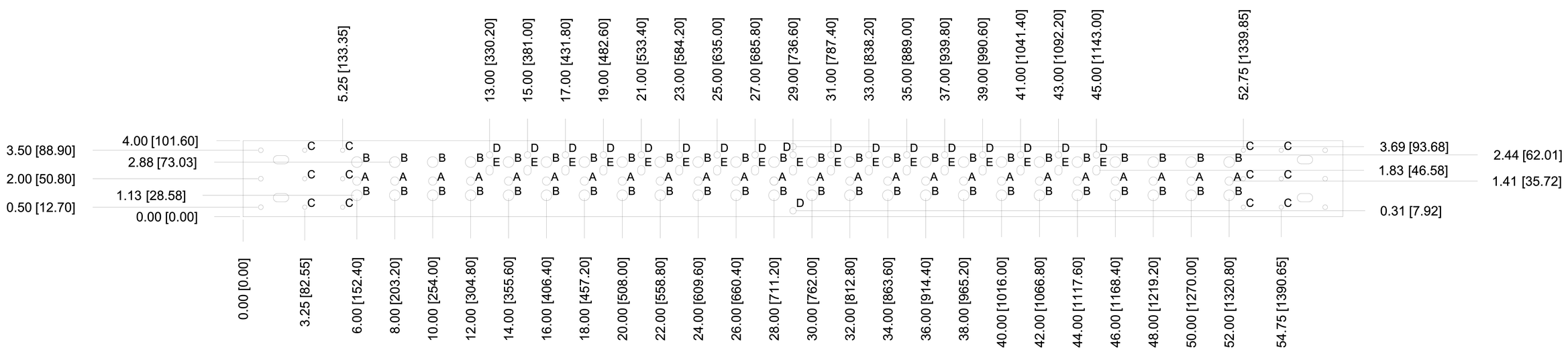
DRAWING REV. N | ECN NO. 310007 | SHEET 2 OF 3

DIMENSION ARE IN INCHES [MILLIMETERS]

"SOURCE & LOAD TERMINATION DETAIL"



"GROUND TERMINATION DETAIL"



HOLE DATA	
E	0.375 [9.525] WIDE X 0.50 [12.70] SLOT
D	0.340 [8.636] DIA.
C	0.228 [5.791] DIA.
B	0.562 [14.275] DIA.
A	0.437 [11.099] DIA.

DIMENSION ARE IN INCHES [MILLIMETERS]

REV. TO SHEET	ECN NO.	BY	APP.	DATE
N	310007 SEE ECN	SV	JPB	07-10-24
M	308223 SEE ECN	SV	JPB	03-22-24

PROJECT NAME:

GATS 4000A
TERMINATION DETAILS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SV	04-21-23
CHECKED	RN	04-21-23
PROJECT APPROVAL		
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COMPUTER GENERATED DRAWING

SCALE 1/4" = 1" SIZE DS

DWG. NO. 844459-002

DRAWING REV. N ECN NO. 310007 SHEET 3 OF 3

THREE PHASE WIRING FOR ASCO® 7000 SERIES AUTOMATIC TRANSFER SWITCHES TYPE G07ATS RATED 1000-3000 AMPERES

FEATURES, SETTINGS, OPERATION, ACCESSORIES & NOTES

THE FOLLOWING FEATURES AND RELATED SETTINGS ARE PART OF THE GROUP 5 CONTROL PANEL'S USER CONFIGURABLE PARAMETERS. FOR DETAILED INFORMATION REGARDING THE CONFIGURATION OF THESE PARAMETERS AND OTHER FEATURES OF THE GROUP 5 CONTROL PANEL, REFER TO THE GROUP 5 CONTROL PANEL FOR 7000 SERIES AUTOMATIC TRANSFER SWITCHES USER'S GUIDE (PART NO. 381333-126) PROVIDED WITH EVERY 7000 SERIES AUTOMATIC TRANSFER SWITCH.

THE NOMINAL OPERATING VOLTAGE & FREQUENCY IS PRE-PROGRAMMED AT THE FACTORY BASED ON THE NAMEPLATE DATA PRINTED ON THE TRANSFER SWITCH & CONTROL PANEL NAMEPLATES.

VOLTAGE & FREQUENCY SENSING

THE FOLLOWING SETTINGS ARE EXPRESSED AS A PERCENTAGE OF THE CONTROL PANEL'S NOMINAL VOLTAGE SETTING UNLESS STATED OTHERWISE. ALL SETTINGS ARE ADJUSTABLE IN INCREMENTS OF 1%.

A. RMS VOLTAGE SENSING ON ALL PHASES OF THE NORMAL & EMERGENCY SOURCES.

PARAMETER	RANGE OF SETTINGS	DEFAULT SETTING
NORMAL VOLTAGE DROPOUT	70-98%	85%
NORMAL VOLTAGE PICKUP	85-100%	90%
NORMAL OVER VOLTAGE TRIP	102-115%	OFF
NORMAL VOLTAGE UNBALANCE	YES/NO	NO
NORMAL VOLTAGE UNBALANCE DROPOUT	5-20% OF AVG. NORMAL VOLTAGE	20% (if ON)
NORMAL VOLTAGE UNBALANCE PICKUP	3-18% OF AVG. NORMAL VOLTAGE	10% (if ON)
EMERGENCY VOLTAGE DROPOUT	70-98%	75%
EMERGENCY VOLTAGE PICKUP	85-100%	90%
EMERGENCY OVER VOLTAGE TRIP	102-115%	OFF
EMERGENCY VOLTAGE UNBALANCE	YES/NO	NO
EMERGENCY VOLTAGE UNBALANCE DROPOUT	5-20% OF AVG. EMERGENCY VOLTAGE	20% (if ON)
EMERGENCY VOLTAGE UNBALANCE PICKUP	3-18% OF AVG. EMERGENCY VOLTAGE	10% (if ON)

B. FREQUENCY SENSING OF THE NORMAL & EMERGENCY SOURCES.

PARAMETER	RANGE OF SETTINGS	DEFAULT SETTING
NORMAL FREQUENCY DROPOUT	85-98%	90%
NORMAL FREQUENCY PICKUP	90-100%	95%
NORMAL OVER FREQUENCY TRIP	102-110%	OFF
EMERGENCY FREQUENCY DROPOUT	85-98%	90%
EMERGENCY FREQUENCY PICKUP	90-100%	95%
EMERGENCY OVER FREQUENCY TRIP	102-110%	OFF

TIME DELAYS

THE FOLLOWING TIME DELAY SETTINGS ALL HAVE AN ADJUSTABLE RANGE OF 0-60 min 59 sec UNLESS STATED OTHERWISE. ADJUSTABLE IN INCREMENTS OF 1 sec.
NOTE: SOME TIME DELAYS MAY BE EFFECTED BY CUSTOMER REQUESTED ACCESSORIES PROVIDED WITH THE UNIT. REFER TO THE DESCRIPTIONS PROVIDED UNDER THE "ACCESSORIES" NOTES ON THIS PAGE.

FEATURE	NAME	DEFAULT SETTING
1C	NORMAL SOURCE FAILURE TO ENGINE START	1 sec
2B	TRANSFER TO EMERGENCY ON AVAILABILITY OF EMERGENCY SOURCE	0 sec
1F	EMERGENCY SOURCE FAILURE RETRANSFER (NORMAL SOURCE AVAILABLE)	0 sec
2E	ENGINE COOLDOWN FOLLOWING RETRANSFER TO NORMAL	5 min
3A	RETRANSFER TO NORMAL (NORMAL FAILURE MODE)	30 min
3A	RETRANSFER TO NORMAL (TEST MODE)	30 sec

DESCRIPTIONS OF TIME DELAYS:

FEAT. 1C - DELAY ON NORMAL SOURCE OUTAGE. STARTS ON FAILURE OF NORMAL SOURCE. RESETS IF NORMAL SOURCE IS ACCEPTED BEFORE EXPIRATION. INHIBITS ENGINE STARTING AND AUTOMATIC TRANSFER UNTIL EXPIRATION.

FEAT. 2B - DELAY PRIOR TO TRANSFER TO THE EMERGENCY SOURCE. DELAY STARTS ON EXPIRATION OF FEAT. 1C AND WHEN THE EMERGENCY SOURCE HAS BEEN ACCEPTED. DELAY RESETS IF THE EMERGENCY SOURCE FAILS PRIOR TO EXPIRATION. ON EXPIRATION, TRANSFER TO EMERGENCY IS INITIATED UNLESS THE NORMAL SOURCE HAS RECOVERED AND THE "COMMIT TO TRANSFER" FEATURE IS SET TO "NO" COMMIT. PROVIDES A PERIOD FOR EMERGENCY SOURCE STABILIZATION OR STAGING OF MULTIPLE TRANSFER SWITCH CONTROLLED LOADS TO THE EMERGENCY SOURCE.

FEAT. 1F - DELAY ON RETRANSFER TO NORMAL IN THE EVENT OF EMERGENCY SOURCE FAILURE. DELAY BEGINS ON FAILURE OF THE EMERGENCY SOURCE IF THE NORMAL SOURCE IS ACCEPTABLE. ON EXPIRATION, RETRANSFER TO NORMAL WILL BE INITIATED.

FEAT. 2E - DELAY ON ENGINE SHUTDOWN (ENGINE COOL DOWN PERIOD). DELAY STARTS FOLLOWING RETRANSFER TO THE NORMAL SOURCE. PROVIDES A PERIOD FOR THE ENGINE-GENERATOR SET TO RUN UNLOADED PRIOR TO SHUTDOWN.

FEAT. 3A - RETRANSFER TO NORMAL DELAY (NORMAL FAILURE MODE)
DELAY STARTS WHEN NORMAL SOURCE IS ACCEPTED (FOLLOWING IT'S FAILURE) AND WHILE THE LOAD IS CONNECTED TO EMERGENCY. RESETS IF NORMAL FAILS PRIOR TO EXPIRATION OR IF THE EMERGENCY SOURCE FAILS BEFORE EXPIRATION AND FEAT. 1F EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE). PROVIDES A PERIOD FOR THE NORMAL SOURCE TO STABILIZE PRIOR TO RETRANSFER.

FEAT. 3A - RETRANSFER TO NORMAL DELAY (TEST MODE)
DELAY STARTS WHEN THE "TRANSFER TEST" SWITCH IS RESET TO "AUTO" (FOLLOWING A USER INITIATED TRANSFER TEST) AND WHILE THE LOAD IS CONNECTED TO EMERGENCY. RESETS IF NORMAL FAILS PRIOR TO EXPIRATION OR IF THE EMERGENCY SOURCE FAILS BEFORE EXPIRATION AND FEAT. 1F EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE).

MOTOR LOAD TRANSFER FEATURE

FEAT. 27 - INPHASE TRANSFER CONTROL LOGIC TO INITIATE AN INPHASE TRANSFER OF LOADS BETWEEN LIVE SOURCES. USED TO PREVENT NUISANCE TRIPPING OF CIRCUIT BREAKERS AND POSSIBLE DAMAGE TO MECHANICAL LOADS CAUSED BY OUT OF PHASE TRANSFER.
ACTIVATED VIA THE GROUP 5 CONTROL PANEL USER INTERFACE (TRANSFER CONTROL CENTER) BY SELECTING "IN-PHASE MONITOR ENABLE" = YES. AN ADJUSTABLE DELAY (0.0-3.0 sec, FACTORY SET TO 1.5 sec, IN INCREMENTS OF 0.1 sec) DELAYS SENSING TO PERMIT STABILIZATION OF THE SOURCES PRIOR TO SENSING. FACTORY SETTING IS DISABLED UNLESS SPECIFIED TO BE FACTORY ACTIVATED AT THE TIME OF ORDER.

ENGINE EXERCISER

THE ENGINE EXERCISER FEATURE PROVIDES A MEANS TO PERFORM AUTOMATIC EXERCISING OF THE ENGINE-GENERATOR SET EITHER WITH OR WITHOUT LOAD TRANSFER.
THE USER CAN PROGRAM UP TO SEVEN DIFFERENT EXERCISE ROUTINES. EACH ROUTINE INCLUDES;

1. ENABLE OR DISABLE THE ROUTINE
2. ENABLE OR DISABLE TRANSFER OF THE LOAD DURING THE ROUTINE
3. SET START TIME OF ROUTINE -
   - TIME OF DAY
   - DAY OF WEEK
   - WEEK OF MONTH (1st, 2nd, 3rd, 4th, ALTERNATE OR ALL)
4. SET THE DURATION OF THE ROUTINE

PARAMETER		RANGE OF SETTING	DEFAULT SETTING
MONTH	(CLOCK SET)	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	CURRENT DATE
DAY		1-31	
YEAR		00-99	
HOUR		0-23	Eastern Standard Time
MINUTE		0-59	
ENABLE ROUTINE	(ROUTINE 1-7)	YES/NO	NO
TRANSFER LOAD		YES/NO	NO
START HOUR		0-23	0
START MINUTE		0-59	0
RUN WEEK		ALL, ALTERNATE, 1st, 2nd, 3rd, 4th, 5th	ALL
RUN DAY		SUN MON TUE WED THU FRI SAT	SUN
DURATION HOURS		0-23	0
DURATION MINUTES		0-59	0

SIGNALS & AUXILIARIES

A. FEATURES 7 & 8- ENGINE START SIGNAL
SIGNAL INITIATED BY DROPOUT OF CONTROL PANEL RELAY (NR) FOLLOWING EXPIRATION OF THE FEATURE 1C TIME DELAY (DELAY TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES). FEATURE 7 CLOSES TO SIGNAL ENGINE START. FEATURE 8 OPENS TO SIGNAL ENGINE START. ENGINE STARTING SIGNAL RESETS FOLLOWING RETRANSFER TO THE NORMAL SOURCE AND EXPIRATION OF THE FEATURE 2E (ENGINE COOL DOWN) TIME DELAY. FEATURES 7 & 8 ARE PROVIDED AS A SINGLE FORM C CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACT RATED 5 AMPS AT 32 VDC/120VAC RESISTIVE.

B. FEATURES 14AG & 14BG - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS.
EIGHT (8) FORM C CONTACTS TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) OR EMERGENCY (14B). CONTACTS CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 10 AMPS, 32 VDC, 250 VAC.

C. FEATURE 17 - REMOTE TRANSFER TO EMERGENCY.
REQUIRES A CUSTOMER SUPPLIED NORMALLY OPEN CONTACT. CLOSING OF THE CONTACT CAUSES ENGINE START AND TRANSFER TO THE EMERGENCY SOURCE. OPENING OF THE CONTACT ACTIVATES THE FEATURE 3A (RETRANSFER TO NORMAL) DELAY PRIOR TO RETRANSFER. IN THE EVENT THE EMERGENCY SOURCE FAILS WHILE THE TRANSFER SWITCH IS CONNECTED TO EMERGENCY AND THE REMOTE CONTACT IS CLOSED, THE TRANSFER SWITCH WILL RETRANSFER TO THE NORMAL SOURCE. CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB).

OPERATION

IF THE NORMAL SOURCE FAILS, THE TRANSFER SWITCH INITIATES STARTING OF THE ENGINE-GENERATOR SET. WHEN PROPER VOLTAGE AND FREQUENCY HAVE BEEN ATTAINED, THE LOAD WILL BE TRANSFERRED TO THE EMERGENCY SOURCE.

WHEN THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A (RETRANSFER TO NORMAL) TIME DELAY SETTING, THE LOAD WILL BE RETRANSFERRED TO THE NORMAL SOURCE.

THE ENGINE WILL CONTINUE TO RUN FOR THE ENGINE COOL DOWN PERIOD, FEATURE 2E.

USER CONTROLS AND INDICATIONS

A. FEATURES 5 & 6B - TRANSFER TEST/RETRANSFER TIME DELAY BYPASS CONTROLS.

TRANSFER TEST:
OPERATION CAUSES A NORMAL SOURCE FAILURE SEQUENCE.
ACTIVATE AND HOLD FOR AT LEAST 15 SECONDS TO ALLOW TIME FOR THE ENGINE-GENERATOR TO START.

RETRANSFER TIME DELAY BYPASS:
OPERATION WILL BYPASS THE FEATURE 3A (RETRANSFER TO NORMAL DELAY).

B. FEATURES 9A & 9B - TRANSFER SWITCH POSITION INDICATORS.
FEATURE 9A: TRANSFER SWITCH CLOSED ON NORMAL (GREEN LED)
FEATURE 9B: TRANSFER SWITCH CLOSED ON EMERGENCY (RED LED)

C. FEATURES 9C & 9D - SOURCE ACCEPTANCE INDICATORS.
FEATURE 9C: NORMAL SOURCE ACCEPTED (GREEN LED)
FEATURE 9D: EMERGENCY SOURCE ACCEPTED (RED LED)

GENERAL NOTES

1. SWITCH SHOWN DE-ENERGIZED AND CONNECTED TO THE NORMAL SOURCE.
2. DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUBLICATION ICS 1-1983, PART 1-101A.
3. ALL WIRING IS #16 AWG, TINNED, STRANDED COPPER UNLESS OTHERWISE INDICATED.
4. ON TERMINAL BLOCKS INDICATES AVAILABLE FIELD CONNECTION POINT.
5. ● ON TERMINAL BLOCKS INDICATES FACTORY CONNECTION POINT.
6. CONTROL AND ACCESSORY WIRING IS ROUTED IN ACCORDANCE WITH ASCO ASSEMBLY PROCEDURE GS451261.
7. AN OPERATOR'S MANUAL IS FURNISHED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE UNIT.

ACCESSORIES

ACC. 31BG1 QTY 2 FORM C CONTACTS THAT OPERATE WHEN EMERGENCY SOURCE IS ACCEPTABLE AT TRANSFER SWITCH TERMINALS.

QTY 2 FORM C CONTACTS THAT OPERATE WHEN NORMAL SOURCE IS ACCEPTABLE AT TRANSFER SWITCH TERMINALS

QTY 4 FORM C CONTACTS FOR LOAD DISCONNECT. PROVIDING A PRE-TRANSFER AND/OR POST TRANSFER SIGNAL WHEN TRANSFERRING FROM EMERGENCY TO NORMAL AND/OR NORMAL TO EMERGENCY. ADDITIONALLY, THE SIGNAL CAN BE PROGRAMMED TO OCCUR DURING ALL TRANSFERS OR ONLY WHEN THE TRANSFER IS OCCURRING BETWEEN TWO LIVE SOURCES. THE LENGTH OF THE PRE AND POST TRANSFER DELAYS CAN BE SET TO 0-5 MINUTES, 59 SECONDS. FACTORY SETTINGS:

.....PARAMETER.....SETTING..
PRE-TRANSFER N>E (31F TIMER) 3 SEC
POST TRANSFER N>E (31M TIMER) 3 SEC
BYPASS 31F & 31M ON SOURCE FAIL NO
PRE-TRANSFER E>N (31G TIMER) 3 SEC
POST TRANSFER E>N (31N TIMER) 3 SEC
BYPASS 31G & 31N ON SOURCE FAIL NO

REFER TO GROUP 5 CONTROL PANEL USER'S GUIDE (PN 381333-126)

BASE CATALOG NUMBER / CATALOG NUMBER SUFFIXES

CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
G07ATS	A B C 0 FOR NONE	3	4000	C D E F H J K L M N P Q R	5	X 0 FOR NONE	C E F G H J K L M N P Q 0 FOR OPEN TYPE

EXPLANATION OF CATALOG NUMBER CODES

NEUTRAL TYPE

CODE	DESCRIPTION
0	NONE
A	SOLID
B	SWITCHING
C	OVERLAPPING

VOLTAGE CODES (3 PHASE (3 OR 4 WIRE) 50 OR 60 Hz)

CODE	NOMINAL VOLTAGE
C	208
D	220
E	230
F	240
H	380
J	400
K	415
L	440
M	460
N	480
P	550
Q	575
R	600

ENCLOSURE CODES

CODE	TYPE	DESCRIPTION
0		OPEN TYPE (NO ENCLOSURE)
C	1	GENERAL PURPOSE, INDOOR
F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
G	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
H	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
		(SECURE ENCLOSURES)
M	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
N	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
P	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
Q	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT

CATALOG NUMBER
ASCO® CERTIFIED TO S.O.
BY
DATE
FORM REV A

REV. TO SHEET	ECN NO.	BY	APP.	DATE
A	304826	CLR	PB1	08/03/2023
	AMP CORRECTION, SEE ECN			
-	293097	C.R.	MZ	12/20/21
	NEW ISSUE			

PROJECT NAME:
WIRING DIAGRAM
7000 SERIES (G7ATS) 3PH 4000 AMPS
"G" FRAME, GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	C.R.	12/20/21
CHECKED	MZ	12/20/21
PROJECT APPROVAL	CB	12/20/21
FINAL APPROVAL		

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

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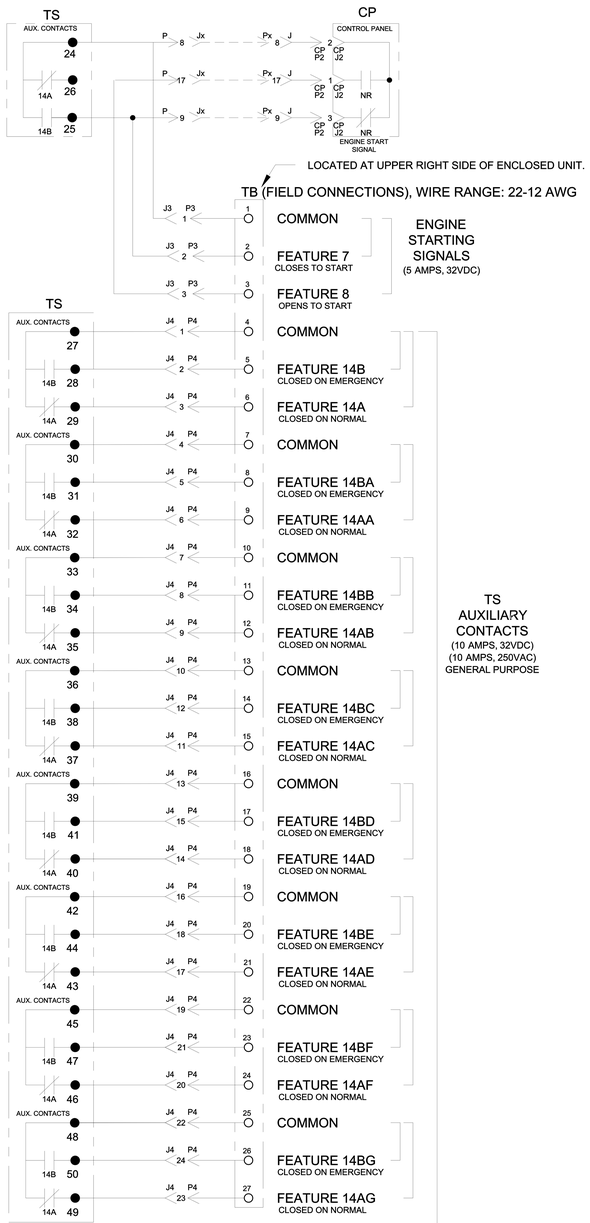
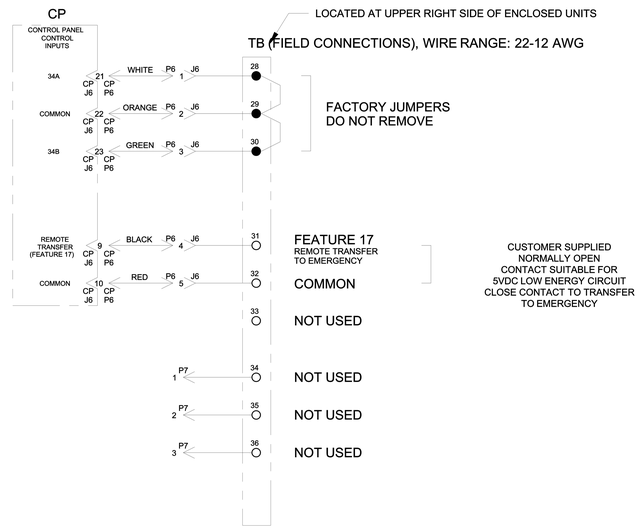
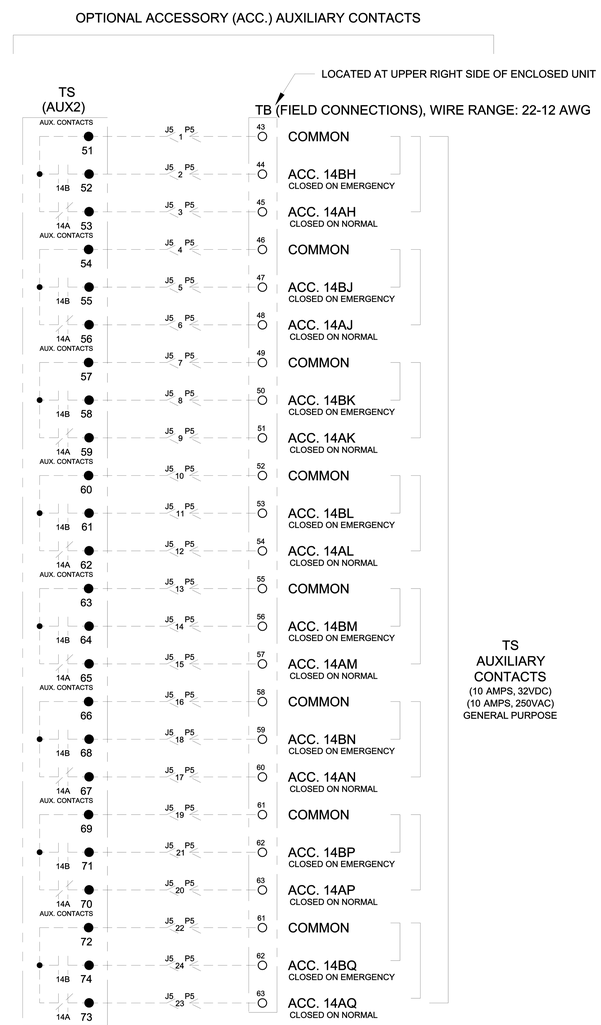
COMPUTER GENERATED DRAWING
SCALE 1:1 SIZE DS
DWG. NO. 844627-127
DRAWING REV. A ECN NO. 304826 SHEET 1 OF 7

FIELD CONNECTIONS



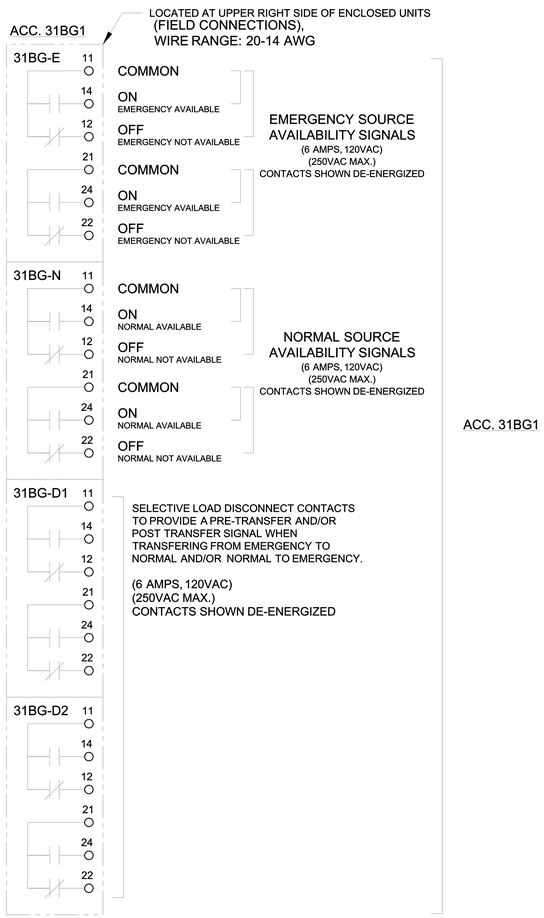




PROJECT NAME:			REV. TO SHEET / ECN NO.	BY	APP. / DATE
WIRING	DIAGRAM				
7000 SERIES (G7ATS) 3PH 4000 AMPS "G" FRAME, GROUP 5 CONTROLS					THIRD ANGLE PROJECTION
	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
DRAWN BY	C.R.	12/20/21			SCALE 1:1 / SIZE DS
CHECKED	MZ	12/20/21	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		DWG. NO. 844627-127
PROJECT APPROVAL	CB	12/20/21			
FINAL APPROVAL			ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING REV. A / ECN NO. 304826 / SHEET 2 OF 7

P3

FIELD CONNECTIONS (CONTINUED)



PROJECT NAME:			REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING	DIAGRAM						
7000 SERIES (G7ATS) 3PH 4000 AMPS "G" FRAME, GROUP 5 CONTROLS							THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	C.R.	12/20/21
CHECKED	MZ	12/20/21
PROJECT APPROVAL	CB	12/20/21
FINAL APPROVAL		

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

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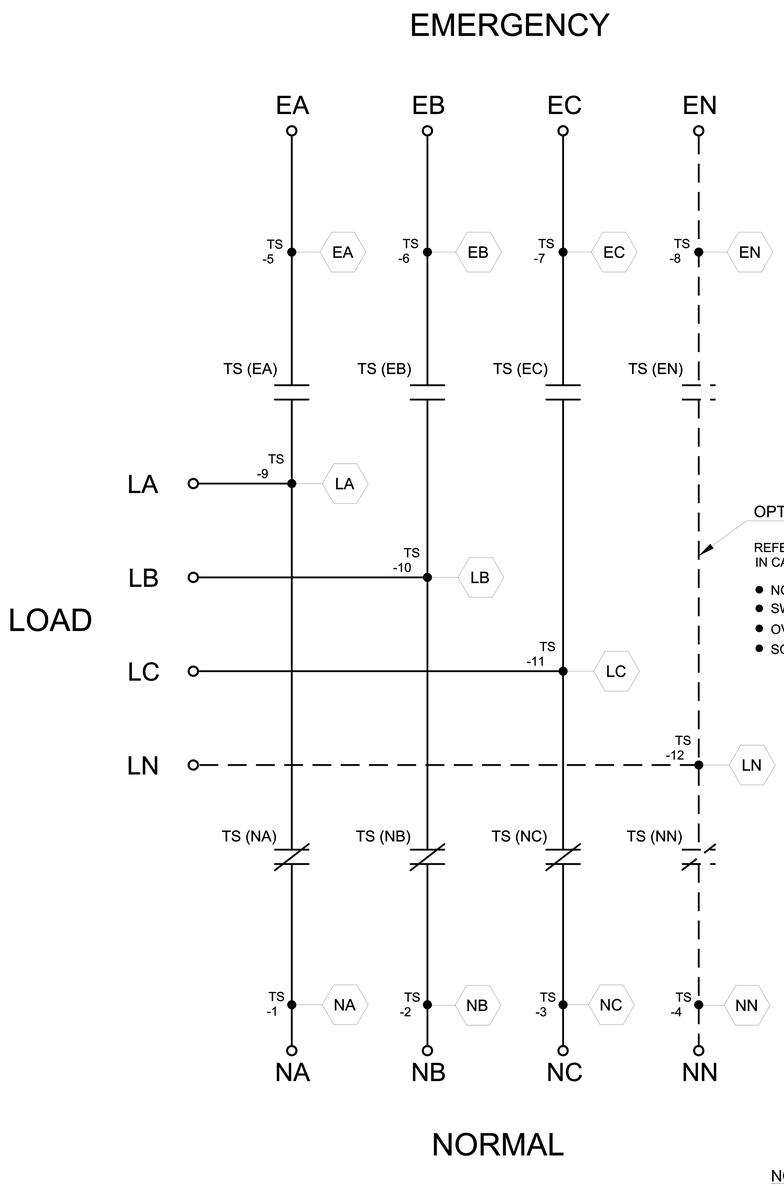
SCALE 1:1 SIZE DS

DWG. NO. **844627-127**

DRAWING REV. A ECN NO. 304826 SHEET 3 OF 7

MAIN POWER POLES



OPTIONAL NEUTRAL TYPES

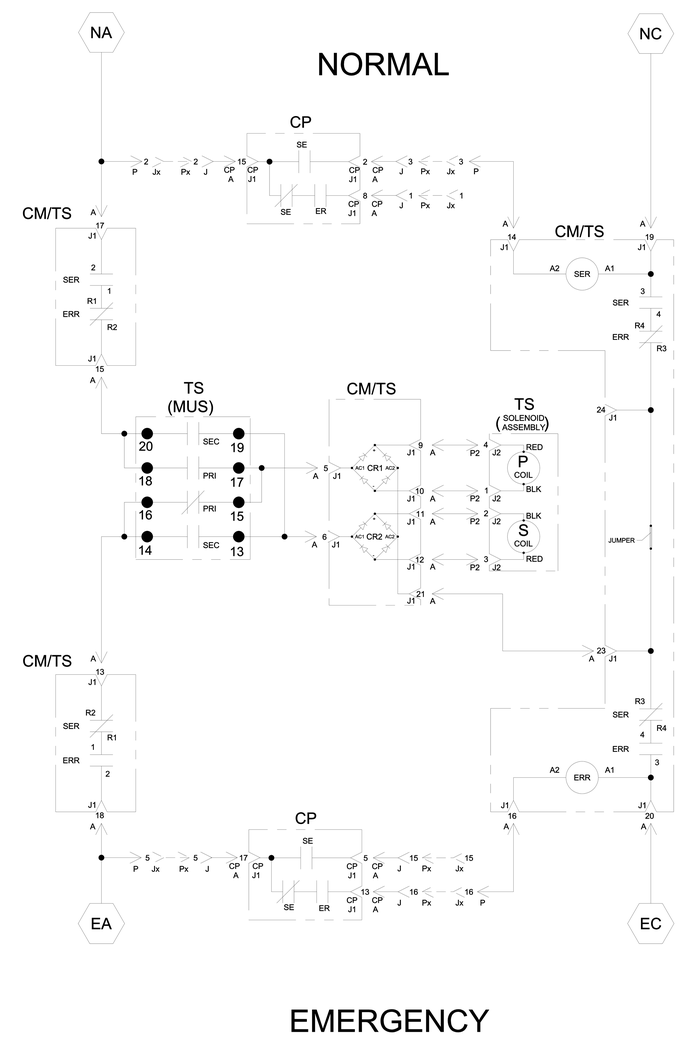
REFER TO "EXPLANATION OF CATALOG NUMBER CODES" IN CATALOG NUMBER CHART ON SHEET 1.

- NONE
- SWITCHING
- OVERLAPPING CONTACTS
- SOLID BUS PLATE

NOTE:

ATS SHOWN CLOSED ON NORMAL SOURCE.

TS OPERATOR CIRCUIT



TS (MUS) CONTACTS					
MUS	SOLENOID POSITION				
	NORM	>	AFTER TDC *	<	EMER
13-14					
15-16					
17-18					
19-20					

* AFTER SOLENOID PASSES THROUGH TOP DEAD CENTER POSITION.

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING	DIAGRAM					
7000 SERIES (G7ATS) 3PH 4000 AMPS "G" FRAME, GROUP 5 CONTROLS						

THIRD ANGLE PROJECTION

	BY	DATE		
DRAWN BY	C.R.	12/20/21	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-055	ASSEM. REF. NO.
CHECKED	MZ	12/20/21	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
PROJECT APPROVAL	CB	12/20/21		
FINAL APPROVAL				

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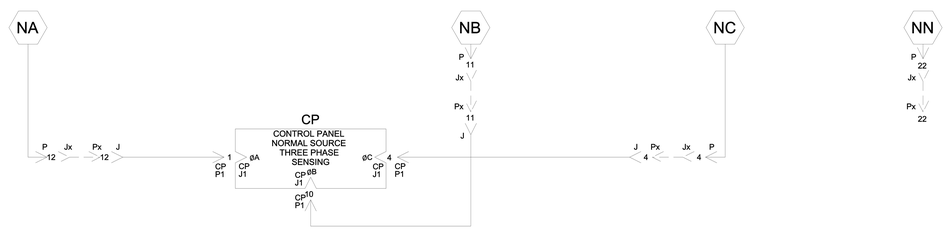
SCALE 1:1 SIZE DS

DWG. NO. 844627-127

DRAWING REV. A ECN NO. 304826 SHEET 4 OF 7

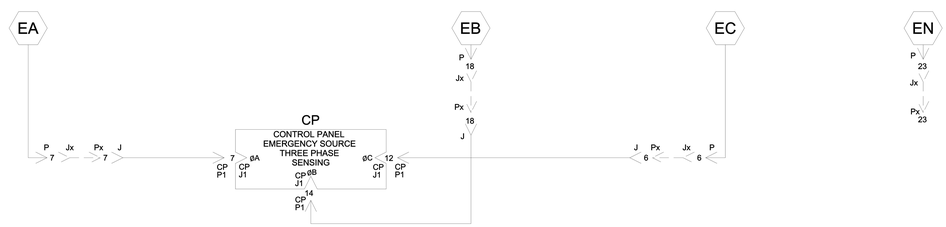
NORMAL SOURCE CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY

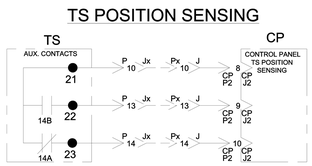


LOAD TERMINAL CIRCUITS

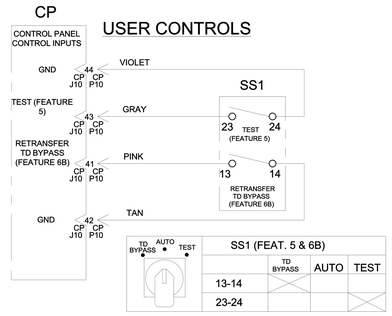
LOAD

CONTROL SIGNALS & INDICATION

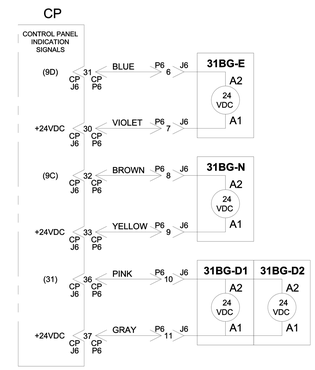
TS POSITION SENSING



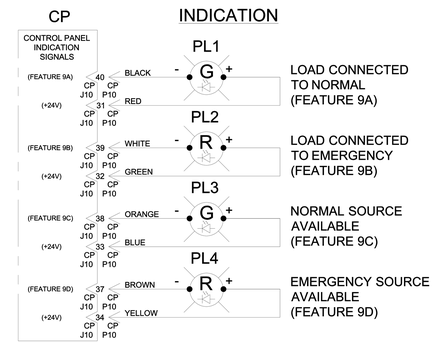
USER CONTROLS



ACC. 31BG1



INDICATION



PROJECT NAME:	REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM 7000 SERIES (G7ATS) 3PH 4000 AMPS "G" FRAME, GROUP 5 CONTROLS					

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	C.R.	12/20/21
CHECKED	MZ	12/20/21
PROJECT APPROVAL	CB	12/20/21
FINAL APPROVAL		

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

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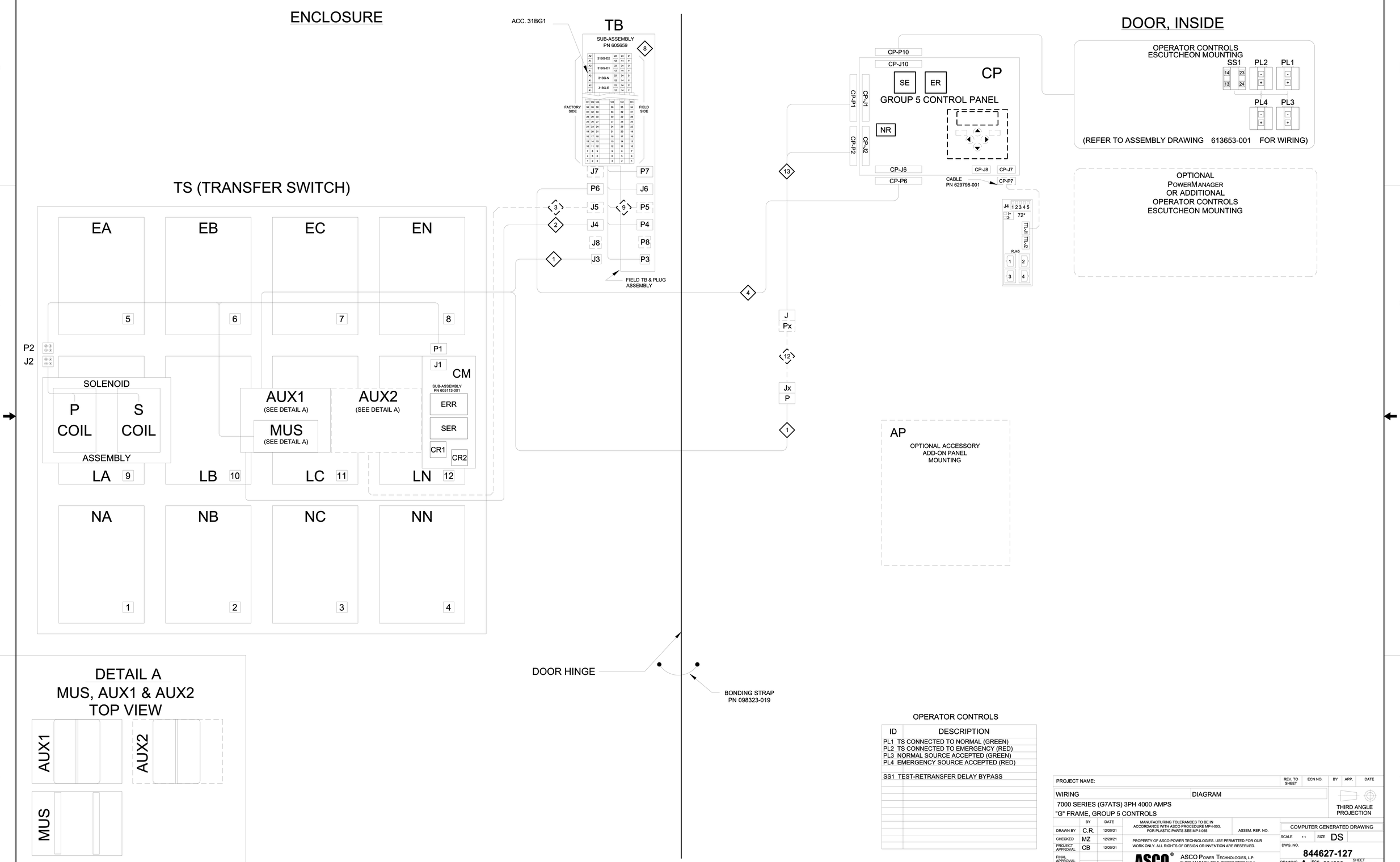
COMPUTER GENERATED DRAWING

SCALE 1:1 SIZE DS

DWG. NO. 844627-127

DRAWING REV. A ECN NO. 304826 SHEET 5 OF 7

PHYSICAL DIAGRAM



OPERATOR CONTROLS

ID	DESCRIPTION
PL1	TS CONNECTED TO NORMAL (GREEN)
PL2	TS CONNECTED TO EMERGENCY (RED)
PL3	NORMAL SOURCE ACCEPTED (GREEN)
PL4	EMERGENCY SOURCE ACCEPTED (RED)
SS1	TEST-RETRANSFER DELAY BYPASS

PROJECT NAME:

REV. TO SHEET	ECN NO.	BY	APP.	DATE

WIRING DIAGRAM

7000 SERIES (G7ATS) 3PH 4000 AMPS

"G" FRAME, GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	C.R.	12/20/21
CHECKED	MZ	12/20/21
PROJECT APPROVAL	CB	12/20/21
FINAL APPROVAL		

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

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COMPUTER GENERATED DRAWING

SCALE 1:1 SIZE DS

DWG. NO. 844627-127

DRAWING REV. A ECN NO. 304826 SHEET 6 OF 7

WIRE RUN LISTING

1 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 844432 (P,P1,P2,J3) MAIN TS	CLR	AWG
1	P-2,TS-1		16
2	P-3,P1-14		
3	P-4,TS-3		
4	P-5,TS-5		
5	P-6,TS-7		
4	P-7,TS-5		
6	P-8,TS(AUX1)-24		
6	TS(AUX1)-24,J3-1		
7	P-9,TS(AUX1)-25		
7	TS(AUX1)-25,J3-2		
8	P-10,TS(AUX1)-21		
9	P-11,TS-2		
10	P-12,TS-1		
11	P-13,TS(AUX1)-22		
12	P-14,TS(AUX1)-23		
13	P-16,P1-16		
14	P-17,J3-3		
15	P-18,TS-6		
16	P-19,TS-9		
17	P-20,TS-10		
18	P-21,TS-11		
19	P-22,TS-4		
20	P-23,TS-8		
21	P-24,TS-12		
22	P1-5,TS(MUS)-17		
22	TS(MUS)-17,TS(MUS)-15		
23	P1-6,TS(MUS)-19		
23	TS(MUS)-19,TS(MUS)-13		
24	P1-9,P2-4		
25	P1-10,P2-1		
26	P1-11,P2-2		
27	P1-12,P2-3		
28	P1-13,TS(MUS)-16		
28	TS(MUS)-16,TS(MUS)-14		
29	P1-15,TS(MUS)-20		
29	TS(MUS)-20,TS(MUS)-18		
1	P1-17,TS-1		
4	P1-18,TS-5		
3	P1-19,TS-3		
5	P1-20,TS-7		
30	P1-21,P1-23		
	ADD WIRES		
200	P-1		
222	P-15		
201	P1-1		
202	P1-2		
203	P1-3		
204	P1-4		
205	P1-7		
206	P1-8		
207	P1-16		
208	P1-22		
209	P1-24		
221	J3-4		

2 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 844432-001 (J4) STANDARD AUX. CONTACTS	CLR	AWG
40	J4-1,TS(AUX1)-27		16
41	J4-2,TS(AUX1)-28		
42	J4-3,TS(AUX1)-29		
43	J4-4,TS(AUX1)-30		
44	J4-5,TS(AUX1)-31		
45	J4-6,TS(AUX1)-32		
46	J4-7,TS(AUX1)-33		
47	J4-8,TS(AUX1)-34		
48	J4-9,TS(AUX1)-35		
49	J4-10,TS(AUX1)-36		
50	J4-11,TS(AUX1)-37		
51	J4-12,TS(AUX1)-38		
52	J4-13,TS(AUX1)-39		
53	J4-14,TS(AUX1)-40		
54	J4-15,TS(AUX1)-41		
55	J4-16,TS(AUX1)-42		
56	J4-17,TS(AUX1)-43		
57	J4-18,TS(AUX1)-44		
58	J4-19,TS(AUX1)-45		
59	J4-20,TS(AUX1)-46		
60	J4-21,TS(AUX1)-47		
61	J4-22,TS(AUX1)-48		
62	J4-23,TS(AUX1)-49		
63	J4-24,TS(AUX1)-50		

3 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 844432-002 (J5) OPTIONAL AUX. CONTACTS	CLR	AWG
70	J5-1,TS(AUX2)-51		16
71	J5-2,TS(AUX2)-52		
72	J5-3,TS(AUX2)-53		
73	J5-4,TS(AUX2)-54		
74	J5-5,TS(AUX2)-55		
75	J5-6,TS(AUX2)-56		
76	J5-7,TS(AUX2)-57		
77	J5-8,TS(AUX2)-58		
78	J5-9,TS(AUX2)-59		
79	J5-10,TS(AUX2)-60		
80	J5-11,TS(AUX2)-61		
81	J5-12,TS(AUX2)-62		
82	J5-13,TS(AUX2)-63		
83	J5-14,TS(AUX2)-64		
84	J5-15,TS(AUX2)-65		
85	J5-16,TS(AUX2)-66		
86	J5-17,TS(AUX2)-67		
87	J5-18,TS(AUX2)-68		
88	J5-19,TS(AUX2)-69		
89	J5-20,TS(AUX2)-70		
90	J5-21,TS(AUX2)-71		
91	J5-22,TS(AUX2)-72		
92	J5-23,TS(AUX2)-73		
93	J5-24,TS(AUX2)-74		

4 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 619510-005 (P6) FIELD INPUTS	CLR	AWG
100	P6-1,CP-P6-21	WHT	22 (12 COND)
101	P6-2,CP-P6-22	ORG	
102	P6-3,CP-P6-23	GRN	
103	P6-4,CP-P6-9	BLK	
104	P6-5,CP-P6-10	RED	
	REMOVE WIRES		
	ADD WIRES		
105	P6-6, CP-P6-31	BLU	22 (WIRES LOCATED IN HARNESS 619510 -005)
106	P6-7, CP-P6-30	VIO	
107	P6-8, CP-P6-32	BRN	
108	P6-9, CP-P6-33	YEL	
109	P6-10, CP-P6-36	PNK	
110	P6-11, CP-P6-37	GRY	
111	P6-12		16
112	P6-13		
113	P6-14		
114	P6-15		
115	P6-16		
116	P6-17		
117	P6-18		
118	P6-19		
119	P6-20		
120	P6-21		
121	P6-22		
122	P6-23		
123	P6-24		

5 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS (J7) FIELD OUTPUTS	CLR	AWG
130	J7-1		16
131	J7-2		
132	J7-3		
133	J7-4		
134	J7-5		
135	J7-6		
136	J7-7		
137	J7-8		
138	J7-9		
139	J7-10		
140	J7-11		
141	J7-12		
142	J7-13		
143	J7-14		
144	J7-15		
145	J7-16		
146	J7-17		
147	J7-18		
148	J7-19		
149	J7-20		
150	J7-21		
151	J7-22		
152	J7-23		
153	J7-24		

8 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	SUB-ASSEMBLY 605659 (P3,P4,J6,P7,TB) STD. FIELD TB	CLR	AWG
6	TB-1,P3-1		16
7	TB-2,P3-2		
14	TB-3,P3-3		
40	TB-4,P4-1		
41	TB-5,P4-2		
42	TB-6,P4-3		
43	TB-7,P4-4		
44	TB-8,P4-5		
45	TB-9,P4-6		
46	TB-10,P4-7		
47	TB-11,P4-8		
48	TB-12,P4-9		
49	TB-13,P4-10		
51	TB-14,P4-12		
50	TB-15,P4-11		
52	TB-16,P4-13		
54	TB-17,P4-15		
53	TB-18,P4-14		
55	TB-19,P4-16		
57	TB-20,P4-18		
56	TB-21,P4-17		
58	TB-22,P4-19		
60	TB-23,P4-21		
59	TB-24,P4-20		
61	TB-25,P4-22		
63	TB-26,P4-24		
62	TB-27,P4-23		
100	TB-28,J6-1		
101	TB-29,J6-2		
102	TB-30,J6-3		
103	TB-31,J6-4		
104	TB-32,J6-5		
130	TB-34,P7-1		
131	TB-35,P7-2		
132	TB-36,P7-3		
	JUMPERS		
	TB-28,TB-29		
	TB-29,TB-30		
	ADD WIRES		
221	P3-4		
105	J6-6, 31BG-E-A2		
106	J6-7, 31BG-E-A1		
107	J6-8, 31BG-N-A2		
108	J6-9, 31BG-N-A1		
109	J6-10, 31BG-D1-A2		
110	J6-11, 31BG-D1-A1		
111	J6-12		
112	J6-13		
113	J6-14		
114	J6-15,		
115	J6-16		
116	J6-17		
117	J6-18		
118	J6-19		
119	J6-20		
120	J6-21		
121	J6-22		
122	J6-23		
123	J6-24		
133	P7-4		
134	P7-5		
135	P7-6		
136	P7-7		
137	P7-8		
138	P7-9		
139	P7-10		
140	P7-11		
141	P7-12		
142	P7-13		
143	P7-14		
144	P7-15		
145	P7-16		
146	P7-17		
147	P7-18		
148	P7-19		
149	P7-20		
150	P7-21		
151	P7-22		
152	P7-23		
153	P7-24		

9 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 605454-008 (P5,TB) OPT. AUX. CONTACTS	CLR	AWG
70	TB-43,P5-1		16
71	TB-44,P5-2		
72	TB-45,P5-3		
73	TB-46,P5-4		
74	TB-47,P5-5		
75	TB-48,P5-6		
76	TB-49,P5-7		
77	TB-50,P5-8		
78	TB-51,P5-9		
79	TB-52,P5-10		
80	TB-53,P5-11		
81	TB-54,P5-12		
82	TB-55,P5-13		
83	TB-56,P5-14		
84	TB-57,P5-15		
85	TB-58,P5-16		
87	TB-59,P5-18		
86	TB-60,P5-17		
88	TB-61,P5-19		
90	TB-62,P5-21		
89	TB-63,P5-20		
91	TB-64,P5-22		
93	TB-65,P5-24		
92	TB-66,P5-23		

12 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 309320-005 OPTIONAL 8" EXTENSION HARNESS	CLR	AWG
200	Jx-1,Px-1		16
1	Jx-2,Px-2		
2	Jx-3,Px-3		
3	Jx-4,Px-4		
4	Jx-5,Px-5		
5	Jx-6,Px-6		
4	Jx-7,Px-7		
6	Jx-8,Px-8		
7	Jx-9,Px-9		
8	Jx-10,Px-10		
9	Jx-11,Px-11		
10	Jx-12,Px-12		
11	Jx-13,Px-13		
12	Jx-14,Px-14		
222	Jx-15,Px-15		
13	Jx-16,Px-16		
14	Jx-17,Px-17		
15	Jx-18,Px-18		
16	Jx-19,Px-19		
17	Jx-20,Px-20		
18	Jx-21,Px-21		
19	Jx-22,Px-22		
20	Jx-23,Px-23		
21	Jx-24,Px-24		

13 HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL	CLR	AWG
200	J-1,CP-P1-8		16
1	J-2,CP-P1-15		
2	J-3,CP-P1-2		
3	J-4,CP-P1-4		
4	J-5,CP-P1-17		
5	J-6,CP-P1-12		
4	J-7,CP-P1-7		
6	J-8,CP-P2-2		
7	J-9,CP-P2-3		
8	J-10,CP-P2-8		
9	J-11,CP-P1-10		
10	J-12,CP-P1-1		
11	J-13,CP-P2-9		
12	J-14,CP-P2-10		
222	J-15,CP-P1-5		
13	J-16,CP-P1-13		
14	J-17,CP-P2-1		
15	J-18,CP-P1-14		
	ADD WIRES		
16	J-19		
17	J-20		
18	J-21		
19	J-22		
20	J-23		
21	J-24		

ADDITIONAL WIRING

WIRE No.	ADDITIONAL WIRING	CLR	AWG
109	31BG-D1-A2, 31BG-D2-A2		16
110	31BG-D1-A1, 31BG-D2-A1		

PROJECT NAME:	REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM					
7000 SERIES (G7ATS) 3PH 4000 AMPS "G" FRAME, GROUP 5 CONTROLS					

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	C.R.	12/20/21
CHECKED	MZ	12/20/21
PROJECT APPROVAL	CB	12/20/21
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

SCALE 1:1 SIZE DS

DWG. NO. 844627-127

DRAWING REV. A ECN NO. 304826 SHEET 7 OF 7

EQUIPMENT STORAGE REQUIREMENTS

Equipment provided by Schneider-Electric and/or ASCO Power Technologies that is stored for a short-term duration (i.e., days to weeks) or long-term duration (i.e., months to years), must be kept in a cool, dry, temperature-controlled environment. Storage of equipment in open warehouses, locations without proper temperature and humidity control, and/or outdoor storage is not acceptable without the utilization of heating elements, thermostats, humidistats, and protection from weather and dirt. Failure to comply may result in moisture ingress and/or condensation to form resulting in rusting and or corrosion, component and/or equipment failure and replacement, and/or nullification of any manufacturer warranty.

For **General Instructions for Proper Handling, Installation, Operation, and Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less**, refer to ANSI NEMA PB 2.1-2013

Copies of the following documents should be included on the submittals, depending on the units that are on the proposal:

For ASCO Power Technology's **Switchgear and Switchboards**, refer to Instruction Bulletin **381333-393**.
For Schneider-Electric/Square D's **Power Zone 4 (PZ4) Switchgear**, refer to Instruction Bulletin **80298-002-09**.
For Schneider-Electric/Square D's **Power Zone 4 (PZ4) NEMA 3R Walk-In Switchgear**, refer to Instruction Bulletin **80298-156-02**.
For Schneider-Electric/Square D's **Quality, Efficient, Delivery" (QED2) Switchboard**, refer to Instruction Bulletin **80043-055-14**.
For Schneider-Electric/Square D's **Masterclad Metal-Clad Indoor Switchgear**, refer to Instruction Bulletin **6055-30.**

Flexible Power Transfer Solutions for Commercial & Industrial Applications

ASCO Power Technologies™

ASCO SERIES 300
Power Transfer Switches

ascopower.com

Life Is On | Schneider Electric

ASCO SERIES 300 Automatic Transfer Switches

Power outages impact small and large facilities alike. ASCO SERIES 300 Automatic Transfer Switches offer rugged design and reliable performance to small and mid-size commercial and industrial facilities in packaged solutions that are easy to select, procure, install, and operate.

Every SERIES 300 generator transfer switch is engineered with ASCO's reliability expertise in a package that makes backup power accessible for small and mid-size facilities. Leveraging knowledge derived from a century of critical power transfer experience, each SERIES 300 is backed by the same ASCO technical support and service that solves the most demanding critical power challenges facing facilities today.

Product Details

Transfer Switch Overview

ASCO's SERIES 300 lineup offers flexible backup power solutions for businesses of every size.

SERIES 300 Automatic Transfer Switches

Designed to Fit Anywhere

The ASCO SERIES 300 product line provides the most compact design of generator power transfer switches in the industry.

Available to mount on walls or floors, all models through 2000 amperes are designed to be completely front-accessible. This permits installation flush against walls while allowing installation of cabling and connections from the front of the switch. Cable entrance plates are standard on 1600 and 2000 amperes units; these allow use of optional side-mounted pull boxes for additional cable bending space.

- 30 through 3000 amperes in compact designs
- Up to 600 VAC, single or three phase
- Listed to UL 1008 - Standard for Safety - Transfer Switch Equipment
- True double-throw operation: The single solenoid design is inherently interlocked to prevent simultaneous connections of two power sources.
- Will not transfer to a dead source - single solenoid operator derives power from the destination source
- Easy-to-navigate 128x64 graphical LCD display with keypad provides LED indicators for switch position, source availability, not-in-auto mode, and alert conditions.
- Integrated, multilingual, user interface for configuration and monitoring
- Available Delayed Transition operation
- Optional Relay Expansion Module with extra relays for accessory outputs
- Soft keys for test function and time delay bypass
- Emergency source failure alert indication
- Optional Historical Event Log
- Displays statistical ATS monitoring information
- Built-in diagnostic functions
- Password protection to prevent unauthorized actions
- Adjustable delay feature prevents nuisance transfer due to momentary utility power outages and generator dips
- Auxiliary contacts signal position of main contacts - two for normal and two for emergency position
- Standard solid neutral terminals
- Restriction of Hazardous Substances (RoHS) compliant controller
- Standard 2 year warranty. Optional 1, 2, and 3 year extensions

Power Knowledge

Basic Automatic Transfer Switch Functions

SERIES 300 Power Transfer Switch rated 200 amps

SERIES 300 Automatic Switching Solutions

Automatic and Non-Automatic Transfer Switching

ASCO Transfer Switches are available in both automatic and non-automatic types. Both are electrically operated. For automatic transfer switches, the controller initiates transfer between power sources . For non-automatic transfer switches, a user initiates transfer using local or remote controls.

SERIES 300 non-automatic transfer switches offer the following features:

- Models range from 30 through 3000 amperes, up to 600V
- Controller prevents inadvertent operation under low voltage conditions
- Source acceptability lights inform operator when sources are available to accept load
- Standard in-phase monitor for transferring motor loads betweem live sources

Power Knowledge

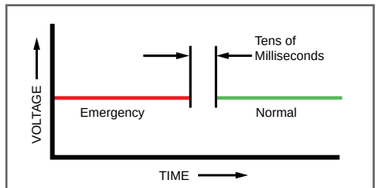
Non-Automatic and Manual Transfer Switches for Backup Power Applications

400 Amp, Type 1 Enclosure

Open Transition Transfer Switching

ASCO Transfer Switches are available with a standard, 2-position, open transition models that reliably transfer loads in less than 100 milliseconds. Open transition switches are suitable for a wide range of applications.

- 30 to 3000 amps
- Single-operator switching mechanism prevents simultaneous connection of both sources
- Available In-Phase Monitor can be activated for transferring motor loads

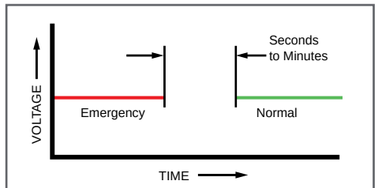


Open Transition

Delayed Transition Transfer Switching

ASCO Delayed Transition Transfer Switches transfer loads between power sources using a timed load disconnect position with an adjustable delay.

- 150 through 3000 amps
- Reliable, field-proven, dual-solenoid operating mechanism
- Mechanical interlocks to prevent simultaneous connection of both power sources
- Adjustable delay for load disconnect - 0 to 5 minutes
- Non-automatic models available in manual operation configuration
- Automatic models available with load shed feature



Delayed Transition

Power Knowledge

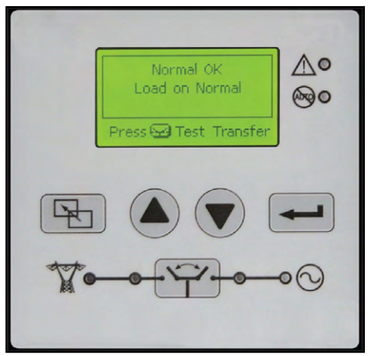
Transition Mode Basics

Transferring Motor Loads between Power Sources

Transferring Loads with Zero Power Interruption

SERIES 300 Group G Controller

The SERIES 300 Group G Controller is reliable and field-proven. It provides all of the voltage, frequency, control, timing, and diagnostic functions required for most emergency and standby power applications.



- Touch pad programming
- Displays active timers
- On-board diagnostics
- Password protection
- Voltage and frequency sensing
- Status and control functions

Product Details

Group G Controller

Transfer Switch Communications and Metering

Options to Customize Functionality and Increase Value

Product Details

5300 SERIES Annunciators

Remote Annunciation

Monitor Power Equipment Status from Anywhere

Monitoring and control transfer switches from across the room, building, or from Internet.

5310 – LED annunciator – Single ATS

5350 – LED annunciator – up to 8 ATSs

Product Details

5140 Connectivity Module

Communication

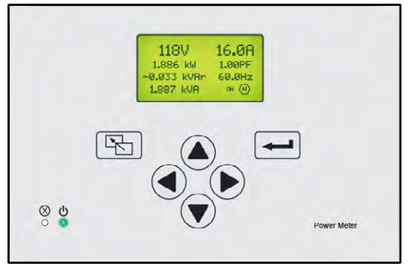
Turn Transfer Switches into Power Information Portals

5140 Connectivity Module – Makes status and power information from a single switch available to via ModBUS, SNMP, and web pages.

Metering

Transfer Switches are the Perfect Place to Monitor Power Flow, Power Conditions, and Power Events

5210 Power Meter – Provides deeper insight into circuit status and conditions.



Product Details

5210 Power Meter

SERIES 300 Optional Accessories

Communications	
11BE	Feature Bundle. Programmable engine exerciser with seven independenct routines run the generator with or without loads, on a daily, weekly, bi-weekly, or monthly basis. Controlled from the user interface keypad. • Event log display shows the event number, time and date, type and reason (if applicable). • Stores up to 300 events • RS485 Communication Port enabled common alarm output contact • On three-phase systems, Accessory 11BE enables line-to-line voltage imbalance sensing and three-phase sensing capabilities for the Emergency power source as well as the Phase Rotation checking for both power sources.
18RX	Relay Expansion Module provides accessory relays and includes one Form C contact for normal source availability (18G), and one Form C contact for emergency source availability (18B) (contact rating 5 amperes @ 30 VDC or @ 125 VAC resistive) (100 ma, 4 VDC min) Additional output relay is provided the default is to indicate a common alarm.
72EE	Connectivity module provides remote monitoring and control capabilities and includes accessory 11BE feature bundle
Environment and Power	
44A	Strip heater with thermostat for cold environment to prevent internal condensation and icing. External 120-volt AC power source required.
44G	Strip heater with thermostat, wired to load terminals on 208-240, 360-380, 460-480, 550-600 volt models. Contains wiring harnesses for all transfer switch sizes.
1UP	UPS back up power runs controller and LCD display for 30 seconds without AC power
Extension Harness	
37B	Six-foot extension harness for open type units to accommodate customer mounting of controls and switch
37C	Nine-foot extension harness for open type units to accommodate customer mounting of controls and switch
Indicators	
62W	Audible alarm with silencing feature to signal transfers to emergency. (For D-frame models, may require oversize enclosure depending on accessory combination).
Customer Control Circuits	
30A	Load-shed circuit initiated by opening of a customer-supplied contact (Open Transition model only)
30B	Load-shed circuit initiated by removal of customer-supplied control voltage (Open Transition model only)
30AA	Load-shed circuit initiated by opening of a customer-supplied contact (Delayed Transition model only)
30BA	Load-shed circuit initiated by removal of customer-supplied control voltage (Delayed Transition model only)
Surge Protection	
73	Surge suppressor rated 65 kA
Metering	
23GA, 23GB	Load Current Metering card measures either single or three-phase load current. Not available with Power Meter option 135L. Use 23GA for Single-Phase, 23GB for Three-Phase.
135L	Power Meter on load side (includes shorting block and current transformers). Not available with Load Current Metering options 23GA or 23GB.

Field Conversion Kits

Kit No.	Description
935147	Advanced Function Bundle Retrofit Kit (11BE) - See above accessory 11BE description for details.
935148	REX Module with Source Availability Contacts (Acc. 18RX)
935149	UPS to allow controller to run for 30 seconds 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 amperes)

Withstand and Close-on Ratings

Withstand and Close-on Ratings for all 7000 SERIES Power Transfer Switches, including 0.5 second (30-cycle) designs.

Frame	Switch Rating (Amps)		Current Limiting Fuses				Specific Breaker			Time Based				Short Time Ratings[3] (sec)							
														480V Max.				600V Max.			
	Transfer Switches	Bypass Switches	480V Max.	600V Max.	Max Size, A	Class	240V Max.	480V Max.	600V Max.	Time (sec)	240V Max.	480V Max.	600V Max.	.13	.2	.3	.5	.1	.13	.3	.5
D	30	-	100kA	-	300	J	22kA	25kA	10kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
			35kA	35kA	200	RK1															
D	70, 100	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	150	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	200	-	200kA	35kA	200	J	200kA	85kA	14kA	0.025	10kA	10kA	10kA	-				-			
			35kA	35kA	200	RK1															
D	230	-	100kA	-	300	J	200kA	85kA	14kA	0.025	10kA	10kA	-	-				-			
E	260, 400	-	200kA	-	600	J	65kA	42kA	22kA	0.05	35kA	35kA	22kA	-				-			
J	150, 200, 230, 260	150, 200, 230, 260	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	400	400	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	600	600	200kA	200kA	800	L	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA[9]		-		-			
			200kA	200kA	600	J															
H[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
P[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
P[8]	800	800 - 1200	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
H	800 - 1200	800 - 1200	200kA	200kA	1600[4]	L	65kA	150kA	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
Q[8]	600-1600	600-1600	200kA	200kA	2000	L	65kA	65kA	65kA	0.05	65kA	65kA	65kA	50kA				50kA			
S[8]	800 - 1200	800 - 1200	200kA	200kA	2500	L	100kA	100kA	65kA	0.05	100kA	100kA	65kA	65kA				65kA			
G[8]	1000 - 1200	1000 - 1200	200kA	200kA	2000	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	-				-			
G	1600 - 2000 (Front Connected TS Only)		200kA	200kA	2500	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	42kA			36kA	-			
G[8]	1600 - 2000	1600 - 2000	200kA	200kA	3000	L	200kA	200kA	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
S[8]	1600 - 2000	1600 - 2000	200kA	200kA	2500	L	100kA	100kA	85kA	0.05	100kA	100kA	85kA	85kA			65kA	85kA			65kA
G	2600 - 3000	2600 - 3000	200kA	200kA	4000	L	125kA[6]	125kA[6]	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
G[8]	3200	-	200kA	-	4000	L	100kA	100kA	-	0.05	100kA	100kA	-	-				-			
G	4000	4000	200kA	200kA	5000	L	100kA	100kA	100kA	0.05	100kA	100kA	100kA	85kA		65kA		65kA			
U[8]	2600 - 4000	2600 - 4000	200kA	200kA	5000	L	125kA	125kA	125kA	0.05	125kA	125kA	125kA	100kA				100kA			

Notes:

1. All WCR values indicated are tested in accordance with the requirements of UL 1008, 7th Edition. See ASCO Pub. 1128 for more WCR information
2. Application requirements may permit higher WCR for certain switch sizes.
3. Short Time ratings are provided for applications involving circuit breakers that utilize trip delay settings for system selective coordination
4. Max fuse rating is 1200A on front connected H frame switches
5. Switches utilizing overlapping neutral (code "C") have 35kA, 0.050 Sec time based rating at 480V Max
6. Rating shown is for Bypass switches only, Transfer Switch rating is 100kA for the G frame and 65kA max for the H and P frames. See ASCO Pub. 1128.
7. See ASCO for Service Entrance Switch ratings
8. These frames are only available on the 7000 Series product
9. Short Time Rating applies to 600A Bypass switch only, the 600A Transfer Switch does not have a Short Time Rating

All units are RMS Symmetrical Amperes.

All Withstand and Close-on Rating (WCR) values are established by testing in accordance with UL 1008. For the latest ratings, including transfer switch ratings when used with specific circuit breakers, see **ASCO Publication 1128** for more WCR information.

Application characteristics may permit higher WCRs for certain switch sizes.
Contact ASCO Power Technologies for more information.

Power Knowledge

- UL 1008 Transfer Switch Withstand and Closing Ratings
- Performance Testing for Transfer Switches

Additional SERIES 300 Product Information

Transfer Switches and Panels	Controls	Technical Information
Manual Transfer Switch	Group G Controller	Withstand and Closing Ratings
Manual Transfer Switch with Quick Connects		Weights and Dimensions and Ordering Info
Quick Connect Power Panel		Drawings
Dual Purpose Quick Connect Power Panel		Wiring Diagrams

SERIES 300 Manual Transfer Switching and Quick Connection Solutions

ASCO SERIES 300 Manual Transfer Switching and Quick Connection Solutions offer reliable service and application flexibility for a wide range of facilities.

Manual Transfer Switches

- Three-position, easy-to-use center-off switch
- Compact design - easy to install and maintain
- Designed to handle demands of motors and inrush currents

Power Knowledge

Differences Between Manual, Non-Automatic, & Automatic Transfer Switches

Product Details

SERIES 300 Manual Transfer Switch

Quick Connect Panels

- Listed to UL 1008 Transfer Switch Accessory standard
- Utilizes standard Cam-Lok™ receptacles for quick connections
- Standard Type 3R construction is weatherproof with or without cable
- Utilizes standard Series 16 Single Pole quick connect receptacles

Power Knowledge

NEC Requirement for Permanent Manual Switching Means

Product Details

SERIES 300 Quick Connect Power Panel

Manual Transfer Switches with Quick Connects

- The ASCO SERIES 300 Manual Transfer Switch with Integrated Quick Connects provides a total temporary power connection and transfer solution
- Enables connection and control of a temporary or portable generator
- Provides a complete UL 1008-listed solution in a single unit

Product Details

SERIES 300 Manual Transfer Switch with Quick Connects

Dual-Purpose Manual Transfer Switches with Quick Connects

- Provides both supplemental backup power and load testing connectivity through a single device.
- Listed by ETL to UL 891
- Utilizes standard Series 16 Single Pole quick connect receptacles

Product Details

SERIES 300 Dual Purpose Quick Connect Power Panel

Life Is On | Schneider Electric™

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Power Transfer for Mission-Critical Applications

ASCO Power Technologies™

ASCO 7000 SERIES
Low-Voltage Transfer Switches

ascopower.com

Life Is On | Schneider Electric

ASCO 7000 SERIES Power Transfer Switches

ASCO 7000 SERIES Power Transfer Switches provide unmatched reliability and sophisticated control for the most demanding mission-critical backup power needs.

ASCO 7000 SERIES Transfer Switches are widely used in the most complex mission-critical hospital and healthcare facilities, enterprise and cloud-based data centers, telecommunication networks, water treatment plants, and any facility that requires the highest levels of power availability.

Every 7000 SERIES transfer switch is engineered-to-order to optimize switch functionality and provide facilities with the best solution for their specific application, and custom-engineering is available to meet any transfer switching need.

Backed by industry-leading technical support and service knowledge derived from a century of critical power switching experience, the 7000 SERIES solves the most demanding critical power challenges facing facilities today.

Power Knowledge

Transfer Switch Overview

"With nine hospitals on the line, ASCO helps me sleep well at night."

Tom M., Facility Engineering Director

7000 SERIES Power Transfer Switches

ASCO Power Transfer Switches are the standard of the industry. High-speed transfer of loads between alternate sources of power, regardless of ampacity, is achieved using a reliable, field-proven solenoid operating mechanism.

- Listed to UL 1008 Transfer Switch Equipment and Certified to CSA 22.2, No. 178
- Qualified and certified to IEC 60947-6-1, optional CE mark
- Rated up to 600 VAC, 30 through 4000 amps
- 3 to 18-Cycle Withstand and Close-on Rating Standard, 30-Cycle WCR Optional
- High Withstand and Close-on Rating, including Short-Time Ratings, support breaker coordination
- Solid, switched, or overlapping neutral configurations
- Front-replaceable main and arcing contacts on 800-4000 amp models
- Central terminal block for control connections on 260-4000 amp models
- Multiple auxiliary contacts for switch status indication
- Local and remote communications for serial and ethernet monitoring systems such as ASCO monitoring solutions or 3rd party BMS
- Comprehensive 2, 5, or 10 year warranty

Power Knowledge

Basic Automatic Transfer Switch Functions

Three Pole 7000 SERIES Automatic Transfer Switch rated 1600 amps

7000 SERIES Power Switching Solutions

Automatic and Non-Automatic Transfer Switching

ASCO Transfer Switches are available in automatic and non-automatic types. For automatic transfer switches, the controller initiates transfer. For non-automatic transfer switches, a user initiates transfer between power sources using local or remote switches. ASCO 7000 SERIES Transfer Switches offer the following features:

- Rated up to 600VAC, sizes from 30 through 4000 amps
- Low control circuit currents allow for long distances between remotely control switches and transfer switches
- Non-automatic models provide source acceptability lights to inform operator when sources are available to accept load

Power Knowledge

Non-Automatic and Manual Transfer Switches for Backup Power Applications

Four Pole, Non-Automatic, Electrically-Operated 400 Amp Switch in a Type 1 Enclosure

Open Transition Transfer Switching

ASCO Transfer Switches are available with a standard, 2-position, open transition models that reliably transfer loads in a "break-before-make" sequence in less than 100 milliseconds. Open transition switches are suitable for a wide range of applications.

- 30 to 4000 amps
- Fast single-operator switching mechanism prevents simultaneous connection of both sources
- Available In-Phase Monitor can be activated for transferring motor loads

Delayed Transition Transfer Switching

ASCO Delayed Transition Transfer Switches transfer loads between power sources using a timed, load, disconnect position with an adjustable delay. Applications include older variable frequency drives, rectifier banks, and load management applications.

- 150 through 4000 amps
- Mechanical interlocks to prevent interconnection of both sources
- LED Indicator for load disconnect position
- Adjustable time delay for load disconnect position

Closed Transition Transfer Switching

ASCO Automatic Closed Transition Transfer Switches overlap the normal and emergency source to transfer without power interruption. The switch transfers in a make-before-break sequence if both power sources are within acceptable parameters. Control logic continuously monitors source conditions and automatically selects delayed or closed transition according to real-time values.

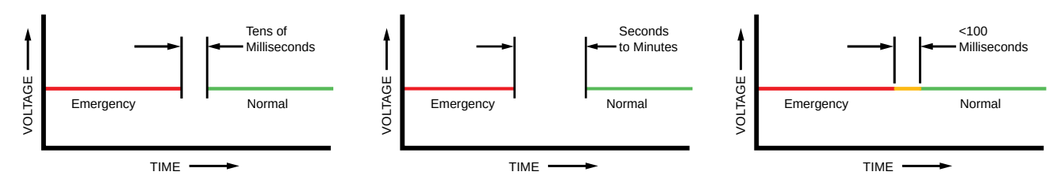
- Available 150 through 4000 amps
- Closed Transition Transfer occurs passively without directly controlling the engine-generator set
- Overlap time is less than 100 milliseconds
- Indications for failure-to-synchronize and extended parallel time
- Protective circuits and sequences to prevent extended paralleling of sources.

Power Knowledge

Transferring Motor Loads between Power Sources

Transition Mode Basics

Transferring Loads with Zero Power Interruption



7000 SERIES Bypass-Isolation Switches

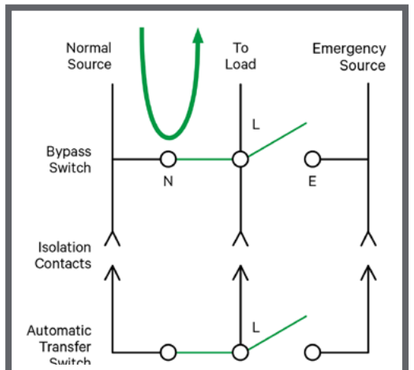
Bypass-Isolation Automatic Transfer Switches

ASCO Bypass-Isolation Automatic Transfer Switches are available in open transition, delayed transition, and closed transition designs. The bypass-isolation features allow the primary automatic transfer switch to be inspected, tested, and maintained without interrupting power to the load. They also provide redundant power transfer if the ATS is disabled or removed from service.

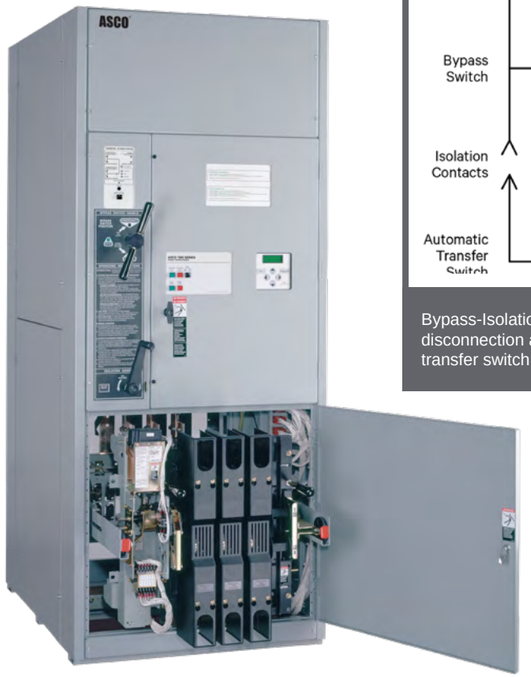
- 150 to 4000 amps
- Bypass switch and transfer switch have identical electrical ratings
- Mechanical interlocks prevent unintended operation
- Bypass contacts carry current only during bypass operation
- Draw-out design eases transfer switch maintenance
- Bypass switch is rated for use as a 3-position manual transfer switch
- Non load break bypass and isolation operations keep continuous power to loads
- Bypass and isolation functions require only two permanently mounted operating handles
- Mechanical indicators show bypass and transfer switch positions
- Shallow depth, front-connected, or rear-connected designs

Power Knowledge

3D Bypass Switch Animation



Bypass-Isolation Transfer Switch allow disconnection and draw-out of the primary transfer switch without disrupting power to loads.



Bypass-Isolation Transfer Switch, J-Frame, 150-600 amps

Product Details

Bypass-Isolation Transfer Switches

7000 SERIES Service Entrance Switches

Service Entrance Power Transfer Switches

The ASCO Service Entrance Power Transfer Switch combines automatic power switching with a disconnect and over-current protection device for the utility source. These switches are installed at facilities that have a single utility feed and a single emergency power source. A circuit breaker serves as the utility disconnect. This product is available up to 600V and 4000 amps in Standard, Delayed, Closed Transition, and Bypass-Isolation configurations.

- Available from 70 to 4000 amps, up to 600V
  - 70 - 400 amp listed to UL 1008
  - 600 - 4000 amp listed to UL 891
- UL 1008 Listed transfer mechanism
- Disconnect links on Neutral and Ground
- Internet-enabled monitoring and control
- ERMS added upon request
- Disconnect and over-current protective device on the utility source. 70 to 2000 amp models use molded case circuit breakers; 2500 to 4000 amp models use insulated case circuit breakers.

Power Knowledge

Applications for Service Entrance Automatic Transfer Switches

Service Entrance Breaker

Product Details

Service Entrance Transfer Switches

Custom-Engineered Transfer Switches

Optimized Solutions for Mission-Critical Performance

Create an exact power control solutions by integrating service equipment and protective devices and incorporating distribution equipment while accommodating unique application requirements. Custom engineered devices can save space, reduce delivery times, streamline installation and commissioning, enhance quality control, and reduce overall cost.

Power Knowledge

Benefits of Custom-Engineered Transfer Switches

Integrated Distribution Breakers

Common distribution breaker applications include:

- Panels to house molded case circuit breakers
- Insulated case circuit breakers, with or without drawout capability
- Manually or electrically operated circuit breakers

Automatic Transfer Switchboard

- Connects multiple automatic transfer switches together in a common switchboard
- Circuit breakers on the normal and load sides of each switch
- An ammeter and voltmeter are also located on the load side of each switch

Transfer Switches can be custom-engineered to integrate service entrance equipment, distribution equipment, and more.

"The maintenance is top notch and the technical support is amazing. ASCO service techs ... do what's right for the hospital, not just the job."

Mark Y., Electrical Management Supervisor

Additional Available Custom Features

These examples are just a few of the configurations and features available through custom-engineered solutions. Additional possibilities include:

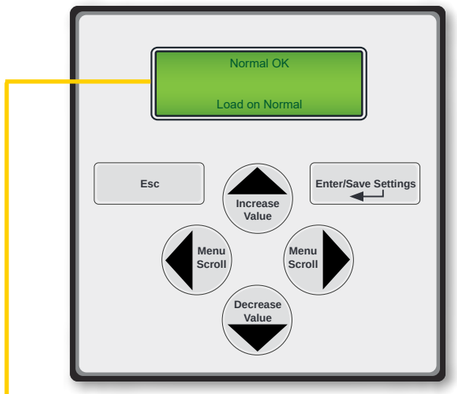
- Custom Metering
- Source Fusing
- Bus Riser
- Utility-Specified Compartments
- Customized or compression lugs

For more information, contact an authorized ASCO Power Technologies Representative.

7000 SERIES Controls and Indicators

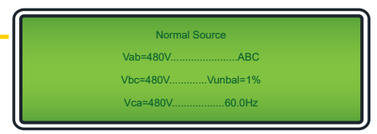
Group 5 Controller

The 7000 SERIES Group 5 Controller is reliable and field-proven. It provides all of the voltage, frequency, control, timing, and diagnostic functions required for most emergency and standby power applications.



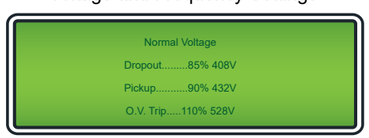
- Touch pad programming
- Displays active timers
- On-board diagnostics
- Password protection
- Voltage and frequency sensing
- Status and control functions

Source Status

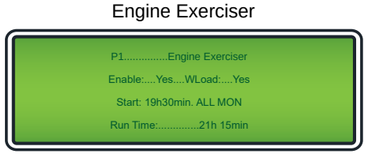


In-phase Transfer Status

Voltage and Frequency Settings



Engine Exerciser

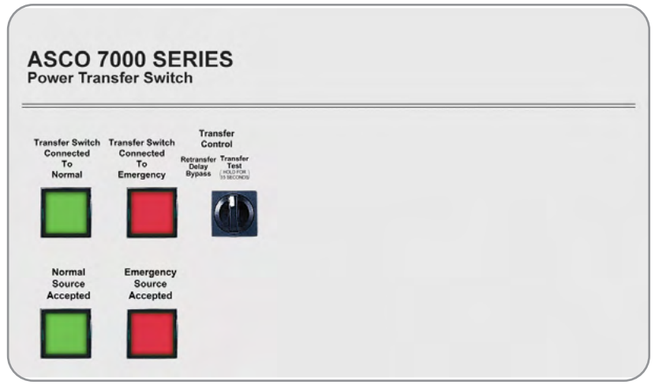


Product Details

Group 5 Controller

Control Switches and Indicating Lights

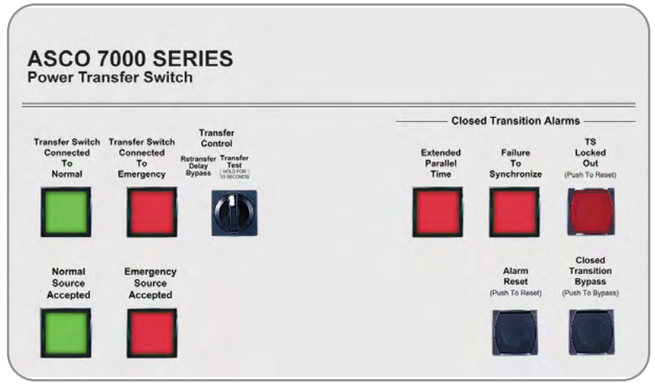
- Switch position indicating lights
- Source acceptability indicator lights
- Three-position selector switch:
  - Automatic: Normal position
  - Test: Simulate normal source failure
  - Reset Delay Bypass: Bypass transfer and re-transfer time delays



Control Switches and Indicating Lights for Closed Transition Switches

Additional controls and Indicators for:

- *Extended Parallel Time* - Provides visual indication when the pre-set extended parallel time has been exceeded. The controls automatically open the emergency or normal main contacts. Separate contact also available to shunt trip external breaker.
- *Failure To Synchronize* - Visually displays a failure to synchronize alarm if the time delay settings are exceeded during closed transition transfer operation.
- *Transfer Switch Locked Out* - Prevents transfer in either direction if the extended parallel time is exceeded.
- *Alarm Reset* - Resets extended parallel and failure to synchronize alarms.
- *Closed Transition Bypass* - Pushbutton allows transfer between sources in an open transition mode.



Transfer Switch Communications and Metering

Options to Customize Functionality and Increase Value

Product Details

- 5300 SERIES Annunciators
- 5700 SERIES Annunciator

Remote Annunciation

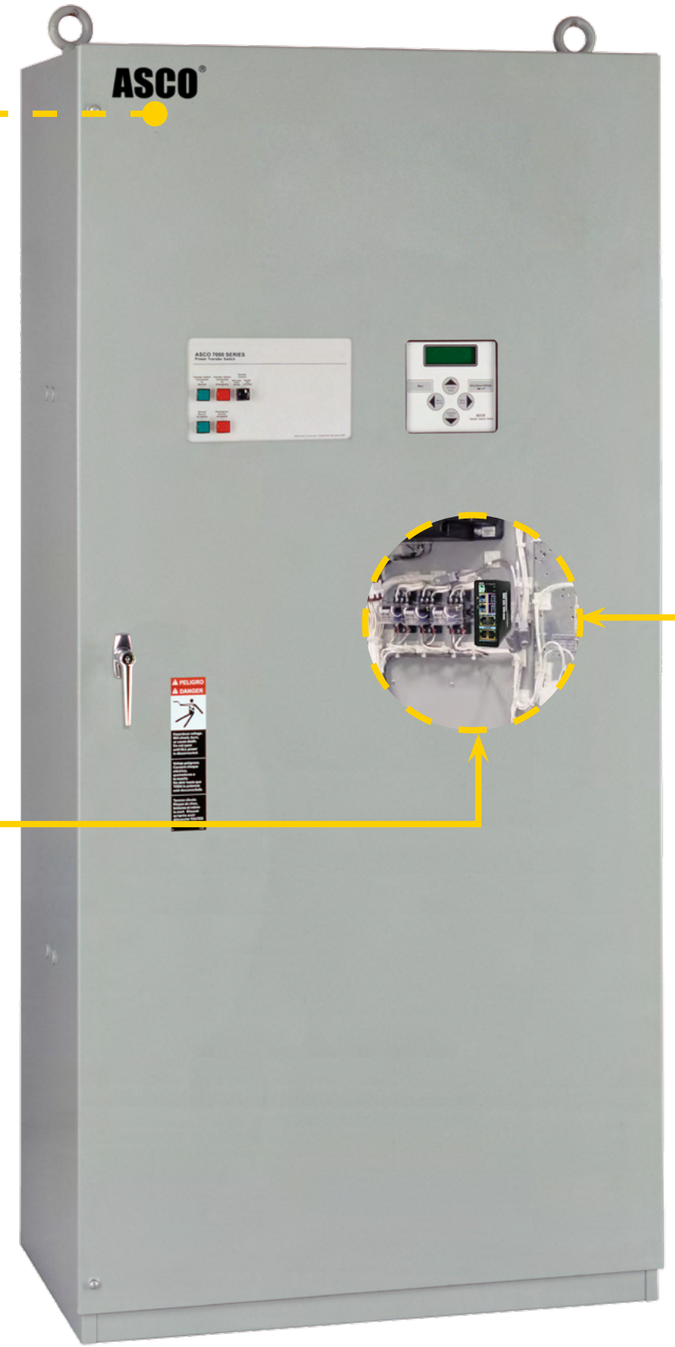
Monitor Power Equipment Status from Anywhere

Monitoring and control transfer switches from across the room, building, or from Internet.

5310 – LED annunciator – Single ATS

5350 – LED annunciator – up to 8 ATSs

5705 – Interactive CPMA-based graphical annunciator – up to 8 ATSs



Product Details

- 5170 Connectivity Module
- 5701 Gateway

Communication

Turn Transfer Switches into Power Information Portals

5170 Connectivity Module – Makes status and power information from a single switch available to via ModBUS, SNMP, and web pages.

5701 8 Device Gateway – Provides centralized monitoring of up to 8 power devices through a transfer switch. Connects generators, transfer switches, load banks, and more to web pages for increased monitoring and control.

Metering

Transfer Switches are the Perfect Place to Monitor Power Flow, Power Conditions, and Power Events

5210 Power meter – Provides deeper insight into circuit status and conditions. Basic metering for current, voltage, frequency, harmonics, real/reactive/apparent power.

PowerLogic PM 8000 – Schneider Electric's compact, high-performance, power meter simplifies power quality and maximizes versatility. Provides additional insights with waveform capture and individual harmonic metering .

Product Details

- 5210 Power Meter
- PowerLogic PM 8000

7000 SERIES Optional Accessories

Time Delays and Extended Control Power	
1G1	Auxiliary power connections provide for external 24VDC source to power control panel and power manager/meter when normal and emergency sources are not present or the switch is in isolation mode. Allows for use of full range of extended engine starting time delay feature 1C (0-60min 59 sec).
1GB1	Same as accessory 1G1 except using 120-volt AC external input.
1PS1	Extended control power ride-through (approx. 25 seconds) for Group 5 ATS controller and select communications and metering accessories, e.g. Acc. 72EE2, 72FC, 135L, etc.
Manual Controls for Automatic Transfer Switches	
6DL	Selector switch for automatic/manual re-transfer to normal. Automatic bypass if emergency fails.
Indicators and Customer Control Circuits	
30A	Load-shed circuit initiated by opening of a customer-supplied contact.
30B3	24 VDC load-shed circuit initiated by removal of customer-supplied control voltage. (6, 12, 48, 120 VDC and 120 VAC also available).
31BG	Provides 2 sets of Form C contacts rated at 6A for each of the following status signals: normal source acceptability, emergency source acceptability, pre/post transfer signal.
99	"Push-to-Test" feature on all pilot light indicators.
Communications	
72EE2	Offers remote Ethernet monitoring via open Mod bus and SNMP protocols, email notifications and embedded monitoring web pages. (Catalog No. 5170 for stand-alone product).
107G	Provides Building Monitoring Systems with transfer switch, bypass, and load power metering information in Modbus TCP/IP, BACnet IP, and SNMP Protocols. Compatible with any Accessory 150 Technology Package or 72EE2.
Surge Protection : ASCO 430 TVSS, rated 200 kA per phase	
73CC1	Normal source protection. (3Ø, 4wire WYE)
73CC2	Emergency source protection. (3Ø, 4wire WYE)
73CC3	Load side protection. (3Ø, 4wire WYE)
Special Applications	
29A	Manual selector switch for designating one of two utility feeds as the preferred source.
111A	Generator - to - Generator for Standby Applications
125A	Seismic Certification to International Building Code for electrical equipment
131	Certification of compliance with the American Recovery & Reinvestment Act (Buy American Provision)
Bypass-Isolation Switch Options	
14A1	Auxiliary contact to close in "Bypass to Normal" position.
14B1	Auxiliary contact to close in "Bypass to Emergency" position.
14T	Auxiliary contact to close when transfer switch is in "Automatic" position.
14U	Auxiliary contact to close when transfer switch is in "Isolate" position.
14V	Auxiliary contact to close when transfer switch is in "Test" position.
82E	LED Bypass status indicator, optional on G frame, 1600 to 4000 amps only. Standard for all other switches.
Metering	
135L	ASCO Digital Power Meter monitors load source voltage, frequency, and current and calculating Power, Energy, and Power Factor.
135SB	ASCO Digital Power Meter monitors load source voltage, frequency, and current and calculating Power, Energy, and Power Factor. With additional IO for bypass position indication through communications.
Heater	
44A	120VAC, 208-240VAC and/or 440-480VAC Accessory 44 Strip heater designed to keep humidity and/or temperature inside ATS enclosure within acceptable levels. Includes mounting bracket with strip heater, thermostat, and terminal block.
Bundles	
150A	ASCO Digital Power Meter (Acc. 135L), Backup Power Source (Acc. 1PS1), Communications Module (Acc. 72EE2)
150B	5210 Power Meter with Moxa IO (Acc. 135SB), Backup Power Source (Acc. 1PS1), Comm. Module (Acc. 72EE2)

Withstand and Close-on Ratings

Withstand and Close-on Ratings for all 7000 SERIES Power Transfer Switches, including 0.5 second (30-cycle) designs.

Frame	Switch Rating (Amps)		Current Limiting Fuses				Specific Breaker			Time Based				Short Time Ratings[3] (sec)							
														480V Max.				600V Max.			
	Transfer Switches	Bypass Switches	480V Max.	600V Max.	Max Size, A	Class	240V Max.	480V Max.	600V Max.	Time (sec)	240V Max.	480V Max.	600V Max.	.13	.2	.3	.5	.1	.13	.3	.5
D	30	-	100kA	-	300	J	22kA	25kA	10kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
			35kA	35kA	200	RK1															
D	70, 100	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	150	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	200	-	200kA	35kA	200	J	200kA	85kA	14kA	0.025	10kA	10kA	10kA	-				-			
			35kA	35kA	200	RK1															
D	230	-	100kA	-	300	J	200kA	85kA	14kA	0.025	10kA	10kA	-	-				-			
E	260, 400	-	200kA	-	600	J	65kA	42kA	22kA	0.05	35kA	35kA	22kA	-				-			
J	150, 200, 230, 260	150, 200, 230, 260	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	400	400	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	600	600	200kA	200kA	800	L	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA[9]		-		-			
			200kA	200kA	600	J															
H[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
P[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
P[8]	800	800 - 1200	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
H	800 - 1200	800 - 1200	200kA	200kA	1600[4]	L	65kA	150kA	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
Q[8]	600-1600	600-1600	200kA	200kA	2000	L	65kA	65kA	65kA	0.05	65kA	65kA	65kA	50kA				50kA			
S[8]	800 - 1200	800 - 1200	200kA	200kA	2500	L	100kA	100kA	65kA	0.05	100kA	100kA	65kA	65kA				65kA			
G[8]	1000 - 1200	1000 - 1200	200kA	200kA	2000	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	-				-			
G	1600 - 2000 (Front Connected TS Only)		200kA	200kA	2500	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	42kA			36kA	-			
G[8]	1600 - 2000	1600 - 2000	200kA	200kA	3000	L	200kA	200kA	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
S[8]	1600 - 2000	1600 - 2000	200kA	200kA	2500	L	100kA	100kA	85kA	0.05	100kA	100kA	85kA	85kA			65kA	85kA			65kA
G	2600 - 3000	2600 - 3000	200kA	200kA	4000	L	125kA[6]	125kA[6]	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
G[8]	3200	-	200kA	-	4000	L	100kA	100kA	-	0.05	100kA	100kA	-	-				-			
G	4000	4000	200kA	200kA	5000	L	100kA	100kA	100kA	0.05	100kA	100kA	100kA	85KA		65kA		65kA			
U[8]	2600 - 4000	2600 - 4000	200kA	200kA	5000	L	125kA	125kA	125kA	0.05	125kA	125kA	125kA	100kA				100kA			

Notes:

1. All WCR values indicated are tested in accordance with the requirements of UL 1008, 7th Edition. See ASCO Pub. 1128 for more WCR information
2. Application requirements may permit higher WCR for certain switch sizes.
3. Short Time ratings are provided for applications involving circuit breakers that utilize trip delay settings for system selective coordination
4. Max fuse rating is 1200A on front connected H frame switches
5. Switches utilizing overlapping neutral (code "C") have 35kA, 0.050 Sec time based rating at 480V Max
6. Rating shown is for Bypass switches only, Transfer Switch rating is 100kA for the G frame and 65kA max for the H and P frames. See ASCO Pub. 1128.
7. See ASCO for Service Entrance Switch ratings
8. These frames are only available on the 7000 Series product
9. Short Time Rating applies to 600A Bypass switch only, the 600A Transfer Switch does not have a Short Time Rating

All units are RMS Symmetrical Amperes.

All Withstand and Close-on Rating (WCR) values are established by testing in accordance with UL 1008. For the latest ratings, including transfer switch ratings when used with specific circuit breakers, see **ASCO Publication 1128** for more WCR information.

Application characteristics may permit higher WCRs for certain switch sizes.
Contact ASCO Power Technologies for more information.

Contact ASCO for Service Entrance Switch ratings.

Power Knowledge

- UL 1008 Transfer Switch Withstand and Closing Ratings
- Performance Testing for Transfer Switches

Additional 7000 SERIES Transfer Switch Information

Transfer Switches	Controls	Technical Information	
Bypass-Isolation	Group 5 Controller & Power Control Center	Drawings	Withstand and Closing Ratings
Service Entrance		Wiring Diagrams	Weights, Dimensions & Ordering Info

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