THREE PHASE WIRING FOR ASCO® 300 SERIES TRANSFER SWITCHES (J3ATS/J3NTS) 260, 400, & 600 AMPERES WITH GROUP G CONTROLS

GENERAL INFORMATION

THIS WIRING APPLIES TO 300 SERIES TRANSFER SWITCHES THAT UTILIZE THE "J" FRAME POWER TRANSFER SWITCH RATED 26, 400, & 600 AMPERES.

THE GROUP G CONTROLLER PROVIDES EITHER AUTOMATIC (J3ATS) OR NON–AUTOMATIC [MANUAL] (J3NTS) OPERATION BASED ON ITS FACTORY SETTING ACCORDING TO THE CUSTOMER ORDER REQUIREMENTS.

THE TYPE OF TRANSFER SWITCH PROVIDED CAN BE DETERMINED FROM THE PRODUCT IDENTIFICATION MARKINGS LOCATED ON BOTH THE POWER TRANSFER SWITCH AND THE COVER OF THE GROUP G CONTROLLER.

ALL OPERATIONAL SETTINGS AND SEQUENCES OF THE GROUP G CONTROLLER AND ITS RELATED OPTIONAL ACCESSORIES (1UP, 18RX, 23G) ARE PROVIDED IN THE USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400.

INFORMATION FOR INSTALLATION AND TESTING OF THE TRANSFER SWITCH IS PROVIDED IN THE INSTALLATION MANUAL, ASCO 3ATS, 3ADTS, 3NTS & 3NDTS, J–DESIGN 150–600 A TRANSFER SWITCHES, PART NUMBER 381333–404.

ENGINE CONTROL CONTACTS

FEATURE 7 & FEATURE 8:
ONE SET OF FORM C CONTACTS "NR" (FEAT. 7 N/C, FEAT. 8 N/O) THAT CHANGE POSITION ON EXPIRATION OF THE FEATURE 1C, OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES TIME DELAY, AND RESET ON EXPIRATION OF THE FEATURE 2E ENGINE COOLDOWN TIME DELAY.
AN AUXILIARY CONTACT THAT IS CLOSED WHEN THE TRANSFER SWITCH IS CONNECTED TO THE EMERGENCY SOURCE, IS CONNECTED ACROSS THE N/C CONTACT (FEATURE 7).

AN ADDITIONAL SET OF ENGINE STARTING CONTACTS ARE AVAILABLE ON THE GROUP G CONTROLLER WHEN THE FEATURE SETTING OF THE CONTROLLER OUTPUT CONTACTS "OP1" IS SET TO OPERATE AS "NR2".

ADDITIONAL, OPTIONAL ENGINE STARTING CONTACTS "NR2" ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2" AND/OR "OP3" PROVIDE THE ENGINE STARTING FUNCTION WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "NR2".

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

LOAD DISCONNECT FEATURE

FEATURE 31: INCLUDES SUB–FEATURES 31F, 31G, 31M, 31N
A SET OF FORM C CONTACTS ARE PROVIDED ON THE GROUP G CONTROLLER AS "OP1". WHEN THE FEATURE SETTING OF "OP1" IS SET TO OPERATE THE CONTACTS AS "FEATURE 31", THE TIME DELAY SETTINGS OF THE SUB–FEATURES ARE AVAILABLE.

"OP1" CAN BE SET TO OPERATE TO PROVIDE THE FOLLOWING FUNCTIONS USING THE TIME DELAY SETTINGS ASSOCIATED WITH EACH SUB–FEATURE;

31F – NORMAL TO EMERGENCY PRE–TRANSFER SIGNAL
31G – EMERGENCY TO NORMAL PRE–TRANSFER SIGNAL
31M – NORMAL TO EMERGENCY POST–TRANSFER SIGNAL
31N – EMERGENCY TO NORMAL POST TRANSFER SIGNAL

THE "OP1" OUTPUT CONTACTS CHANGE POSITION FOLLOWING EACH OF THE ABOVE TIME DELAYS.

ADDITIONAL LOAD DISCONNECT CONTACTS, "FEATURE 31" ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2 AND/OR "OP3" WILL PROVIDE LOAD DISCONNECT FUNCTIONS WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "FEATURE 31".

ALL OUTPUT CONTACTS ("OP1", "OP2", "OP3") SET TO OPERATE AS "FEATURE 31", SHARE THE COMMON TIME DELAY SETTINGS OF SUB–FEATURES 31F, 31G, 31M, AND 31N.

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

INPHASE TRANSFER FEATURE FOR LOAD TRANSFER

INPHASE TRANSFER CONTROL INITIATES AN INPHASE TRANSFER OF LOADS BETWEEN LIVE SOURCES. THIS IS USED TO PREVENT NUISANCE TRIPPING OF DISTRIBUTION CIRCUIT BREAKERS AND POSSIBLE DAMAGE TO MECHANICAL LOADS ASSOCIATED WITH OUT OF PHASE TRANSFER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

SOURCE AVAILABILITY SIGNALS

SIGNALS INDICATING THE AVAILABILITY OF THE NORMAL & EMERGENCY SOURCES IS PROVIDED WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "RL5" (EMERGENCY SOURCE AVAILABLE) AND "RL6" (NORMAL SOURCE AVAILABLE) CHANGE POSITION WHEN THE SOURCE IS ACCEPTABLE.

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

COMMON ALARM & NOT IN AUTO SIGNALING FEATURES

A SET OF FORM C CONTACTS IS PROVIDED ON THE GROUP G CONTROLLER AS "OP1". THE FEATURE SETTING OF "OP1" CAN BE SET TO OPERATE THE CONTACTS AS A "NOT IN AUTO" SIGNAL.

WHEN "OP1" IS SET FOR "NOT IN AUTO", THE OUTPUT CONTACTS CHANGE POSITION WHEN THE TRANSFER IS BEING INHIBITED FROM TRANSFERRING TO THE EMERGENCY SOURCE (FEATURE 34B) OR THE TRANSFER SWITCH HAS BEEN SET FOR NON–AUTOMATIC (MANUAL) OPERATION.

WHEN OPTIONAL ACCESSORY 11BE "SOFTWARE BUNDLE" IS PART OF THE TRANSFER SWITCH ASSEMBLY, "OP1" MAY ALTERNATIVELY SET FOR A "COMMON ALARM" SIGNAL. THE OUTPUT CONTACTS CHANGE POSITION WHEN A "COMMON ALARM" IS NOT PRESENT AND RESET WHEN A "COMMON ALARM" CONDITION IS PRESENT. THE "COMMON ALARM" SIGNAL CONDITIONS ARE SELECTABLE.

ADDITIONAL "COMMON ALARM" AND "NOT IN AUTO" CONTACTS ARE AVAILABLE WHEN OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2 AND/OR "OP3" WILL PROVIDE SIGNAL FUNCTIONS WHEN THE FEATURE SETTING OF EACH IS SET TO OPERATE AS "COMMON ALARM" OR "NOT IN AUTO".

CONTACTS ARE RATED 5 AMPS RESISTIVE AT 30 VDC MAXIMUM, 100 mA AT 5 VDC MINIMUM.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

EXTERNAL POWER SUPPLY COMPATIBILITY

USE OF AN EXTERNAL POWER SUPPLY IS USEFUL WHEN REQUIRED TO EXTEND THE FOLLOWING CONTROLLER TIME DELAYS BEYOND 6 SECONDS;

FEATURE 1C – OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES
FEATURE 1F – OVERRIDE MOMENTARY EMERGENCY SOURCE OUTAGES

AN EXTERNAL POWER SUPPLY IS ALSO USEFUL WHEN THE TRANSFER SWITCH IS USED WITH COMMUNICATIONS FEATURES BY ENABLING THE CONTROLLER TO CONTINUE COMMUNICATING.

AN EXTERNAL POWER SOURCE MAY BE PROVIDED TO THE CONTROLLER, UNTIL THE NORMAL SOURCE OR EMERGENCY SOURCE IS AVAILABLE, BY USE OF;

– AN EXTERNAL 24 VDC POWER SUPPLY WITH ACCESSORY 18RX (RELAY EXPANSION MODULE)
OR
– OPTIONAL ACCESSORY 1UP (UNINTERRUPTIBLE POWER SUPPLY MODULE)

EXTERNAL 24 VDC POWER SUPPLY "1G":
AN EXTERNAL 24 VDC POWER SUPPLY MAY BE USED TO POWER THE CONTROLLER WHEN ACCESSORY 18RX (RELAY EXPANSION MODULE) IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY. OUTPUT CONTACTS "OP2" WILL PROVIDE EXTERNAL 24 VDC POWER SUPPLY FUNCTIONALITY WHEN ITS FEATURE SETTING IS SET TO OPERATE AS "1G". ADDITIONALLY, JUMPERS MUST BE RECONFIGURED ON ACCESSORY 18RX (RELAY EXPANSION MODULE) TO ENABLE THIS FUNCTION AS FOLLOWS;

REMOVE JUMPERS "J1" 1–2 & "J1" 3–4
CONNECT JUMPERS "J1" 5–7 & "J1" 6–8

THE OUTPUT CONTACTS CHANGE POSITION WHEN EITHER THE NORMAL SOURCE OR EMERGENCY SOURCE IS AVAILABLE AND RESET WHEN NEITHER SOURCE IS AVAILABLE. THE "OP2" N/C CONTACT SWITCHES CUSTOMER PROVIDED +24 VDC FROM THE EXTERNAL POWER SUPPLY TO THE CONTROLLER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

ACCESSORY 1UP (UNINTERRUPTIBLE POWER SUPPLY):
WHEN OPTIONAL ACCESSORY 1UP IS INCLUDED IN THE TRANSFER SWITCH ASSEMBLY, THE CONTROLLER IS PROVIDED WITH LIMITED RESERVE POWER (APPROXIMATELY 3 MINUTES).

LOAD CURRENT METERING

WHEN OPTIONAL ACCESSORY 23GB IS PART OF THE TRANSFER SWITCH ASSEMBLY, THREE PHASE CURRENT MEASUREMENTS ARE AVAILABLE FOR DISPLAY ON THE GROUP G CONTROLLER.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR INFORMATION ON USE.

FOUR-FUNCTION SOFTWARE BUNDLE

WHEN OPTIONAL ACCESSORY 11BE IS PART OF THE TRANSFER SWITCH ASSEMBLY, A FOUR–FUNCTION SOFTWARE BUNDLE IS AVAILABLE TO PERFORM THE FOLLOWING FUNCTIONS;

– SERIAL COMMUNICATIONS (RS–485)
– PROGRAMMABLE ENGINE EXERCISER
– EVENT LOG
– COMMON ALARM SIGNAL CAPABILITY ON GROUP G CONTROLLER "OP1" OUTPUT.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR INFORMATION ON THESE FUNCTIONS.

NON-AUTOMATIC (MANUAL) OPERATION

TRANSFER SWITCH ASSEMBLIES FACTORY SET FOR NON–AUTOMATIC OPERATION PROVIDE USER INITIATED, ELECTRICAL OPERATION OF THE TRANSFER SWITCH TO EITHER AVAILABLE SOURCE. THE TRANSFER SWITCH ASSEMBLY IS PHYSICALLY IDENTICAL TO THAT OF THE AUTOMATIC TYPE.

WHEN THE TRANSFER SWITCH IS SET FOR NON–AUTOMATIC OPERATION, A CUSTOMER PROVIDED SELECTOR SWITCH MAY BE USED TO OPERATE IT FROM A REMOTE LOCATION.

REMOTE CONTROL FEATURES

THE FOLLOWING CONTROL PANEL INPUTS PROVIDE REMOTE CONTROL FUNCTIONS FOR THE TRANSFER SWITCH. EACH FUNCTION CAN BE IMPLEMENTED BY THE CUSTOMER PROVIDING THE FORM OF CONTROL DESCRIBED. EACH CONTROL CONTACT MUST BE SUITABLE FOR A 5 VDC LOW ENERGY CIRCUIT.

EXTERNAL FEATURE 17: REMOTE TRANSFER TO EMERGENCY FEATURE (FOR AUTOMATIC TRANSFER TYPE ONLY) – REQUIRES A CUSTOMER SUPPLIED, NORMALLY CLOSED CONTACT. OPENING OF THE CONTACT CAUSES ENGINE START AND TRANSFER TO THE EMERGENCY SOURCE. RE–CLOSURE OF THE CONTACT ACTIVATES THE FEATURE 3A "RETRANSFER TO NORMAL (IF JUST TEST) TIME DELAY PRIOR TO RETRANSFER. IN THE EVENT THAT THE EMERGENCY SOURCE FAILS WHILE THE TRANSFER SWITCH IS CONNECTED TO EMERGENCY AND THE CUSTOMER SUPPLIED CONTACT IS OPEN, THE TRANSFER SWITCH WILL AUTOMATICALLY RETRANSFER TO THE NORMAL SOURCE.

EXTERNAL FEATURE 6B: REMOTE BYPASS OF RETRANSFER TO NORMAL TIME DELAY – REQUIRES A CUSTOMER SUPPLIED, NORMALLY CLOSED CONTACT. OPENING OF THE CONTACT BYPASSES FEATURE 3A RETRANSFER TO NORMAL DELAY IF ACTIVE.

REFER TO USER'S GUIDE, ASCO GROUP G CONTROLLER FOR AUTOMATIC & NON–AUTOMATIC TRANSFER SWITCHES, PART NUMBER 381333–400 FOR SETTING INFORMATION.

NOTES

1. SWITCH SHOWN DE–ENERGIZED CONNECTED TO NORMAL SOURCE.
2. DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUB. ICS 1, PART 1–101A.
3. O INDICATES CUSTOMER CONNECTION POINTS.
4. ● INDICATES FACTORY CONNECTION POINTS.
5. CONNECTION POINTS THAT HAVE BOTH CUSTOMER CONNECTIONS AND FACTORY CONNECTIONS ARE SHOWN OPEN AS CUSTOMER CONNECTION POINTS.
6. THE TRANSFER UNIT IS MOUNTED ON THE BACK INSIDE SURFACE OF THE ENCLOSURE. THE CONTROL PANEL AND ANY OPTIONAL ACCESSORIES ARE MOUNTED ON THE INSIDE SURFACE OF THE DOOR.
7. AN OPERATOR'S MANUAL IS FURNISHED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE SWITCH.
8. GROUND STRAP ON CONTROL PANEL IS AFFIXED TO CHASSIS (ENCLOSURE) AT LOWER LEFT CONTROL PANEL MOUNTING STUD.

CATALOG NUMBER SUFFIXES

TS FRAME	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
J	3ATS 3NTS	A B	3	260 400 600	C D E F G H J K L M N P Q R	G	X	C F G H L M N P Q BLANK FOR NONE	BLANK FOR OPEN TYPE

EXPLANATION OF CATALOG NUMBER CODES

NEUTRAL TYPE		VOLTAGE CODES 3 PHASE (3 OR 4 WIRE) 50 OR 60 Hz		ENCLOSURE CODES		
CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION
A	SOLID			BLANK		OPEN TYPE (NO ENCLOSURE)
B	SWITCHING			C	1	GENERAL PURPOSE, INDOOR
		C	208			
		D	220	F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
		E	230	G	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
		F	240	H	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
		G	277	L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
		H	380			
		J	400			(SECURE ENCLOSURES)
		K	415	M	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
		L	440	N	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
		M	460	P	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
		N	480	Q	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
		P	550*			
		Q	575*			
		R	600*			

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

REV. TO SHEET	ECN NO.	BY	APP.	DATE
D	251210 SEE ECN	AJ	MM	10/17/14
C	247770 SEE ECN	SDH	SDH	4/14/14
B	246325 SEE ECN	AE	BK	01/16/14
A	242580 SEE ECN	SDH	SDH	5/30/13
—	242255 ISSUE	SDH	SDH	5/6/13

PROJECT NAME:
WIRING DIAGRAM
300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SDH	5/6/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	5/6/13

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP–I–003. FOR PLASTIC PARTS SEE MP–I–055
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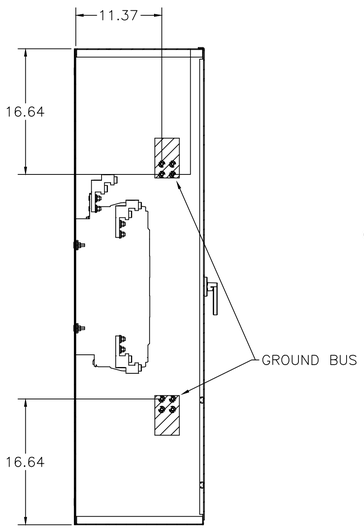
DWG. NO. 978745
DRAWING REV. D ECN NO. 251210 SHEET 1 OF 6

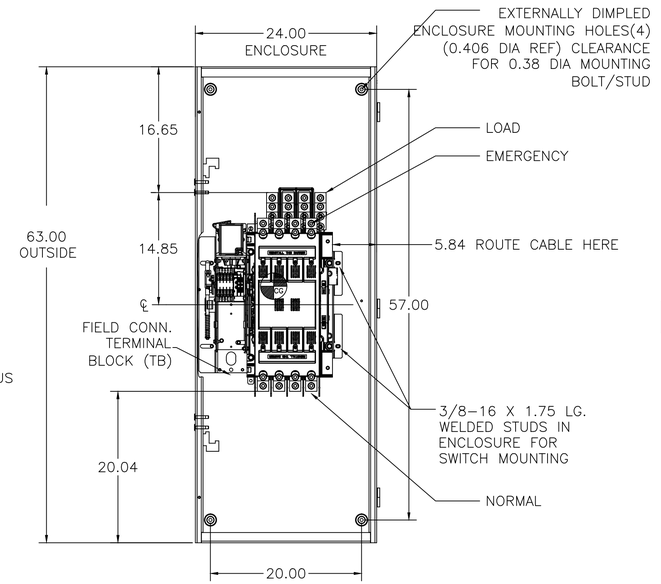
ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.

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

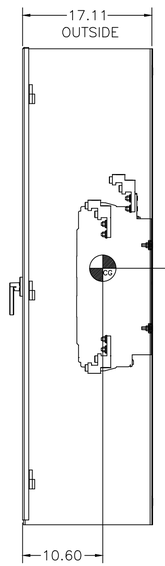
LEFT SIDE WITH DOOR



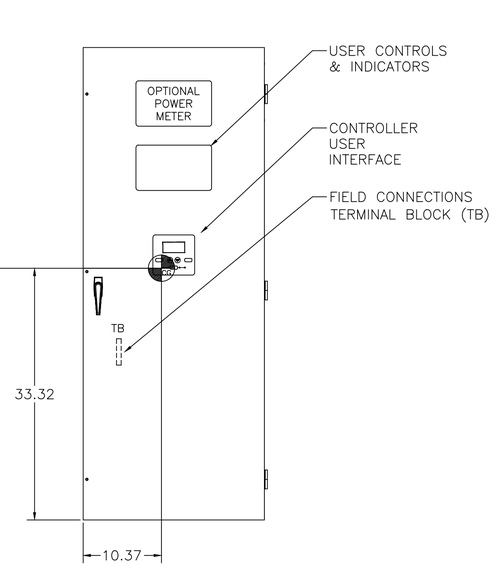
FRONT VIEW WITHOUT DOOR

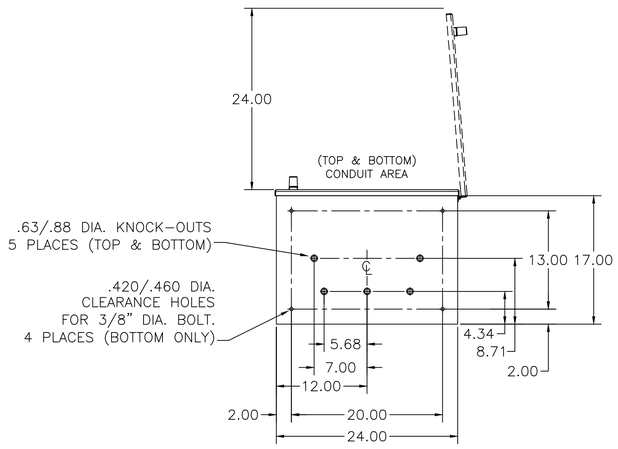


RIGHT SIDE WITH DOOR



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. CG 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-1-003. FOR PLASTIC PARTS SEE MP-1-055

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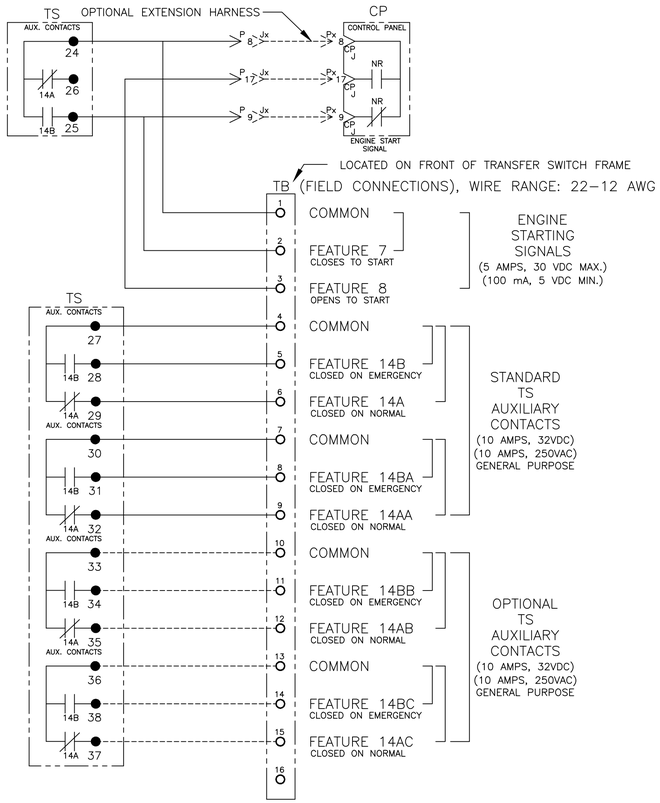
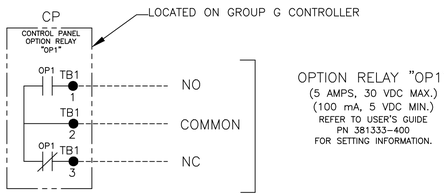
DWG. NO. 1001393-001

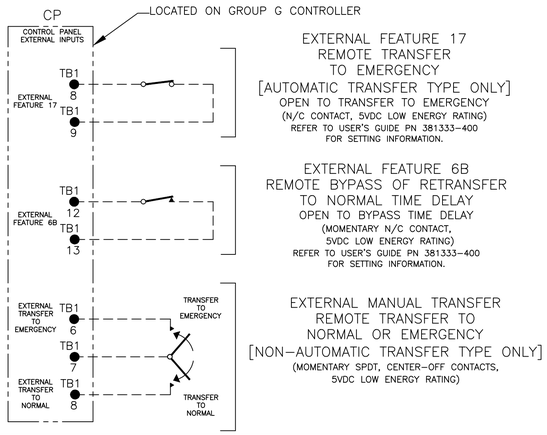
DRAWING REV. — ECN NO. 245094 SHEET 1 OF 1



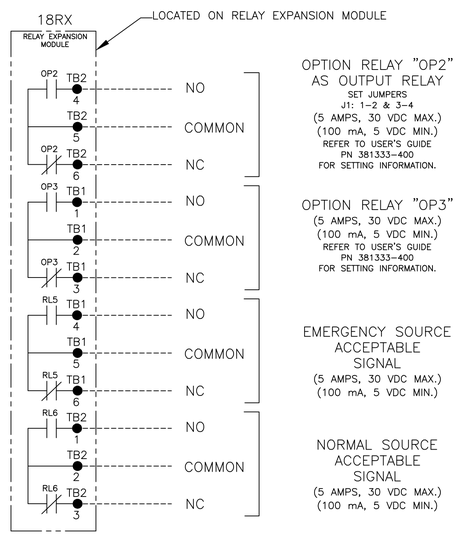
CONTROLLER OPTION RELAY "OP1" (STANDARD)



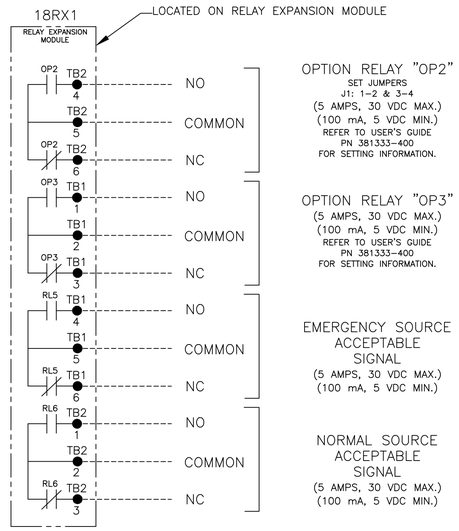
CONTROLLER REMOTE CONTROL FEATURES



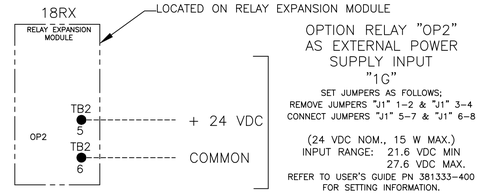
OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE)



OPTIONAL ACCESSORY 18RX1 (SECOND RELAY EXPANSION MODULE)

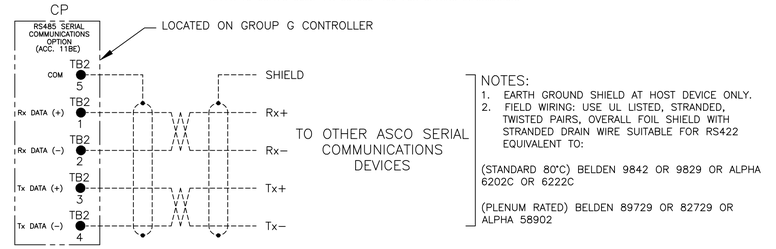


"OP2" OPTIONAL USES



RS485 SERIAL COMMUNICATIONS OPTION

AVAILABLE WITH OPTIONAL ACCESSORY 11BE: FOUR–FUNCTION SOFTWARE BUNDLE
REFER TO USER'S GUIDE PN 381333–400 FOR SETTING INFORMATION.



REV. TO SHEET	ECN NO.	BY	APP.	DATE
D	251210	AJ	MM	10/17/14
	SEE ECN			
C	247770	SDH	SDH	4/14/14
	SEE ECN			
B	246325	AE	BK	01/16/14
	SEE ECN			
A	242580	SDH	SDH	5/30/13
	SEE ECN			
—	242255	SDH	SDH	5/6/13
	ISSUE			

PROJECT NAME:

WIRING | DIAGRAM

300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SDH	5/6/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	5/6/13

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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SCALE NONE | SIZE DS

DWG. NO. 978745

DRAWING REV. D | ECN NO. 251210 | SHEET 2 OF 6

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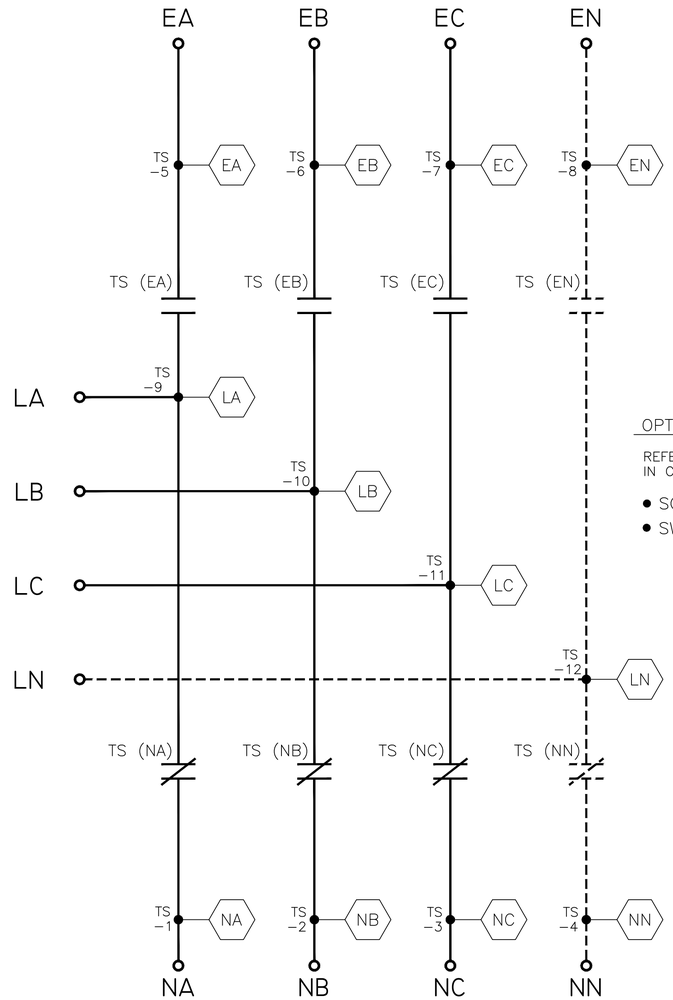
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY



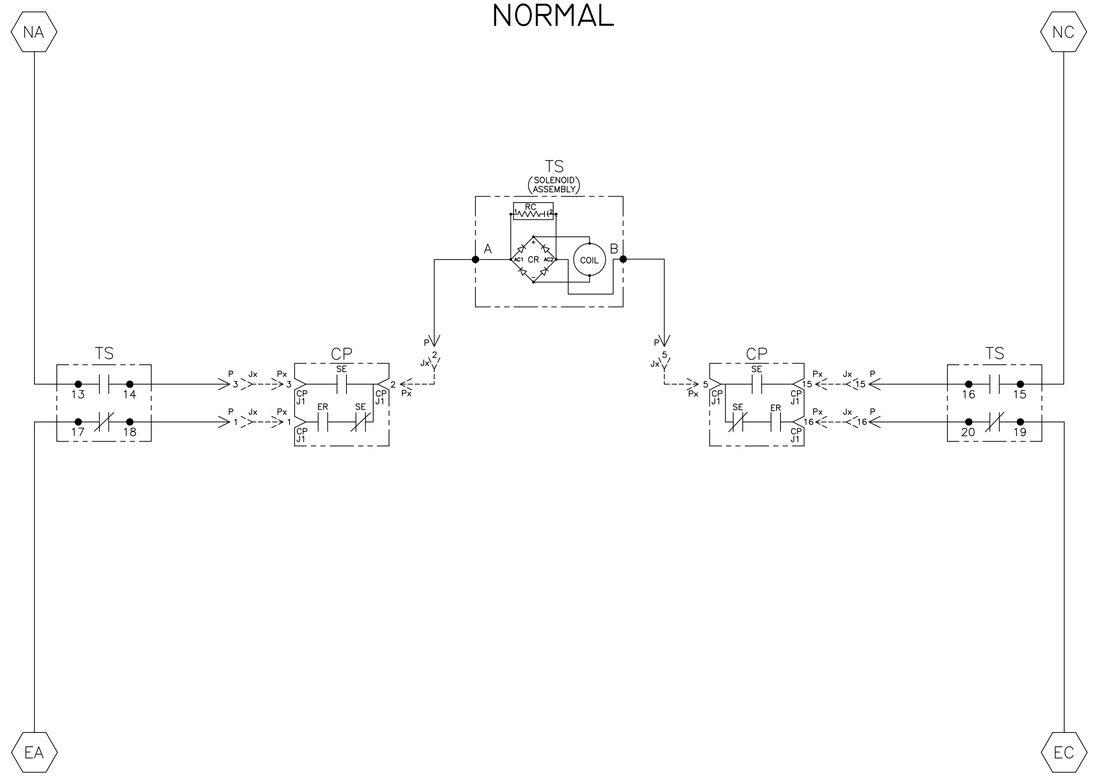
NORMAL

OPTIONAL NEUTRAL TYPES

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

- SOLID BUS PLATE
- SWITCHING CONTACTS

NOTE:
ATS SHOWN CLOSED ON NORMAL SOURCE.



EMERGENCY

TS CONTROL CONTACTS					
TS	SOLENOID POSITION				
	CLOSED NORMAL	BEFORE TDC >	<	BEFORE <TDC	CLOSED EMERG
13–14					
15–16					
17–18					
19–20					

TDC (TOP DEAD CENTER)
TRANSFER SWITCH TEST & ADJUSTMENT PROCEDURE SPECIFIES CONTROL CUT–OFF (CONTACT OPENING) SETTING.

REV.				
D	251210	AJ	MM	10/17/14
	SEE ECN			
C	247770	SDH	SDH	4/14/14
	SEE ECN			
B	246325	AE	BK	01/16/14
	SEE ECN			
A	242580	SDH	SDH	5/30/13
	SEE ECN			
—	242255	SDH	SDH	5/6/13
	ISSUE			

REV. TO SHEET	ECN NO.	BY	APP.	DATE

PROJECT NAME:

WIRING DIAGRAM

300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SDH	5/6/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	5/6/13

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

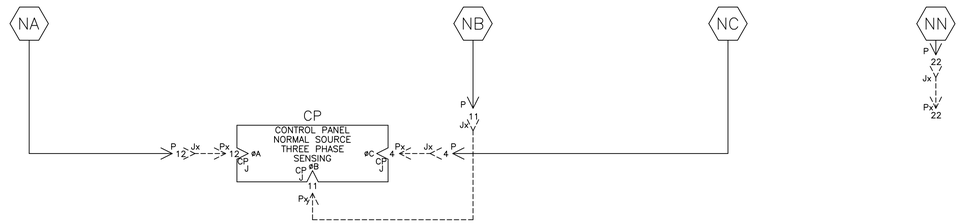
SCALE NONE SIZE DS

DWG. NO. 978745

DRAWING REV. D ECN NO. 251210 SHEET 3 OF 6

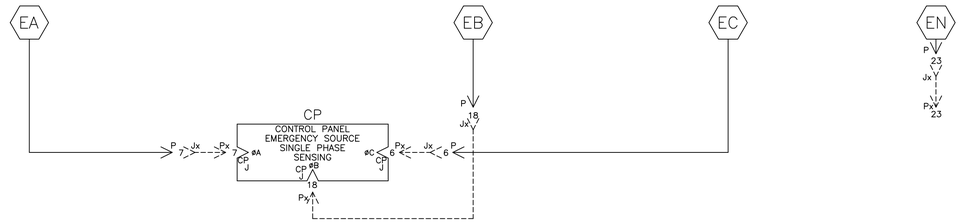
NORMAL SOURCE CIRCUITS

NORMAL



EMERGENCY SOURCE CIRCUITS

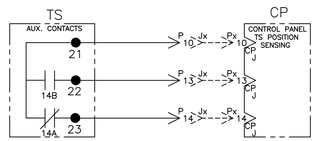
EMERGENCY



LOAD TERMINAL CIRCUITS

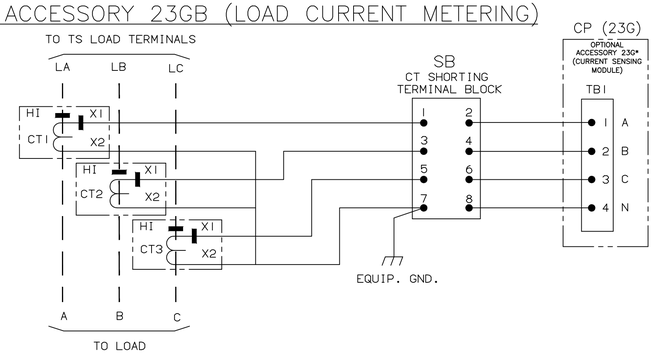
LOAD

CONTROL SIGNALS & INDICATION



ADDITIONAL CIRCUITS

OPTIONAL ACCESSORY 23GB (LOAD CURRENT METERING)



CURRENT TRANSFORMER RATIO TABLE	
SWITCH RATING	CT RATIO
260A	300:5A
400A	400:5A
600A	600:5A

REV.	REV. TO SHEET	ECN NO.	BY	APP.	DATE
D		251210	AJ	MM	10/17/14
		SEE ECN			
C		247770	SDH	SDH	4/14/14
		SEE ECN			
B		246325	AE	BK	01/16/14
		SEE ECN			
A		242580	SDH	SDH	5/30/13
		SEE ECN			
—		242255	SDH	SDH	5/16/13
		ISSUE			

PROJECT NAME:

WIRING DIAGRAM

300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	SDH	5/16/13
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	SDH	5/16/13

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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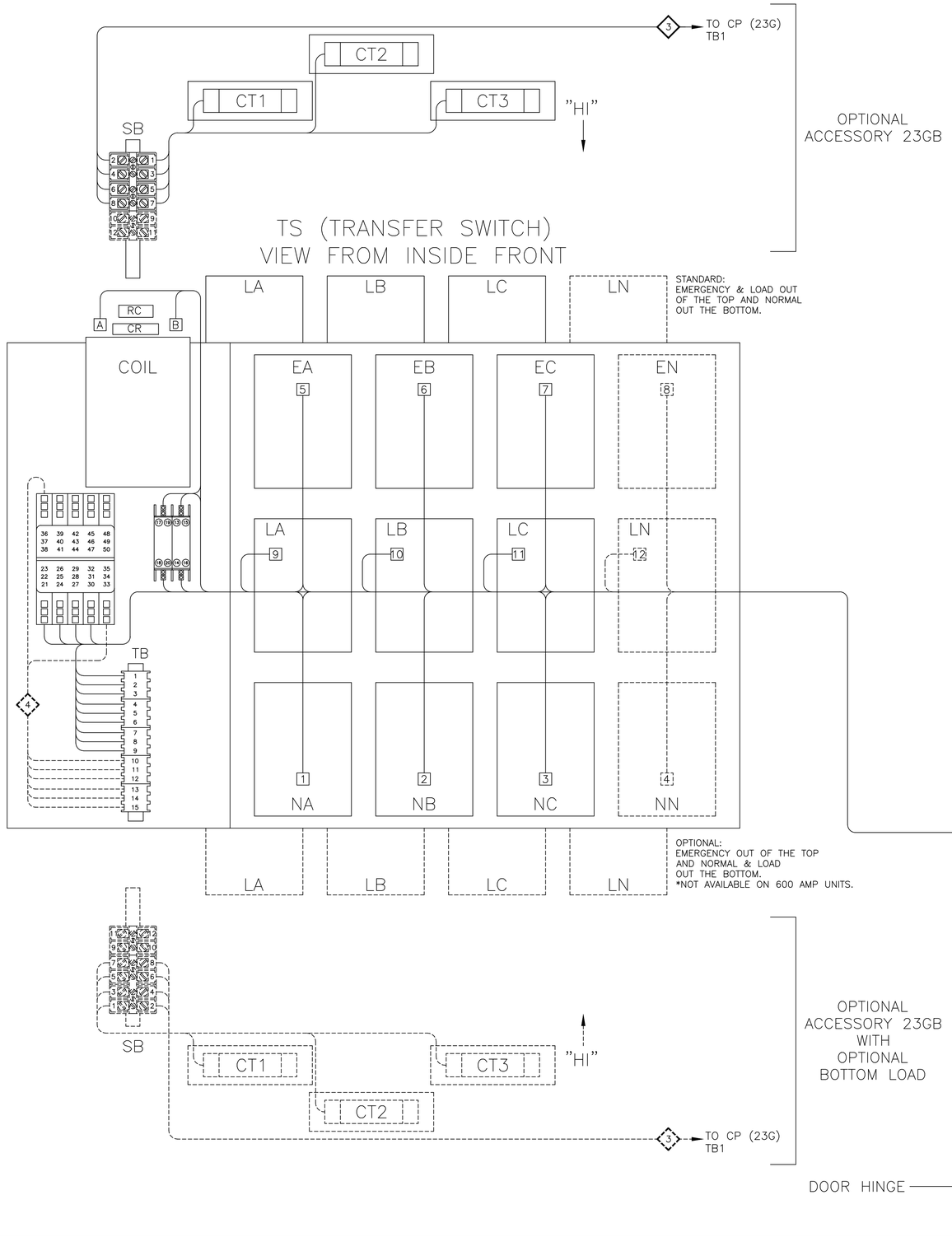
COMPUTER GENERATED DRAWING

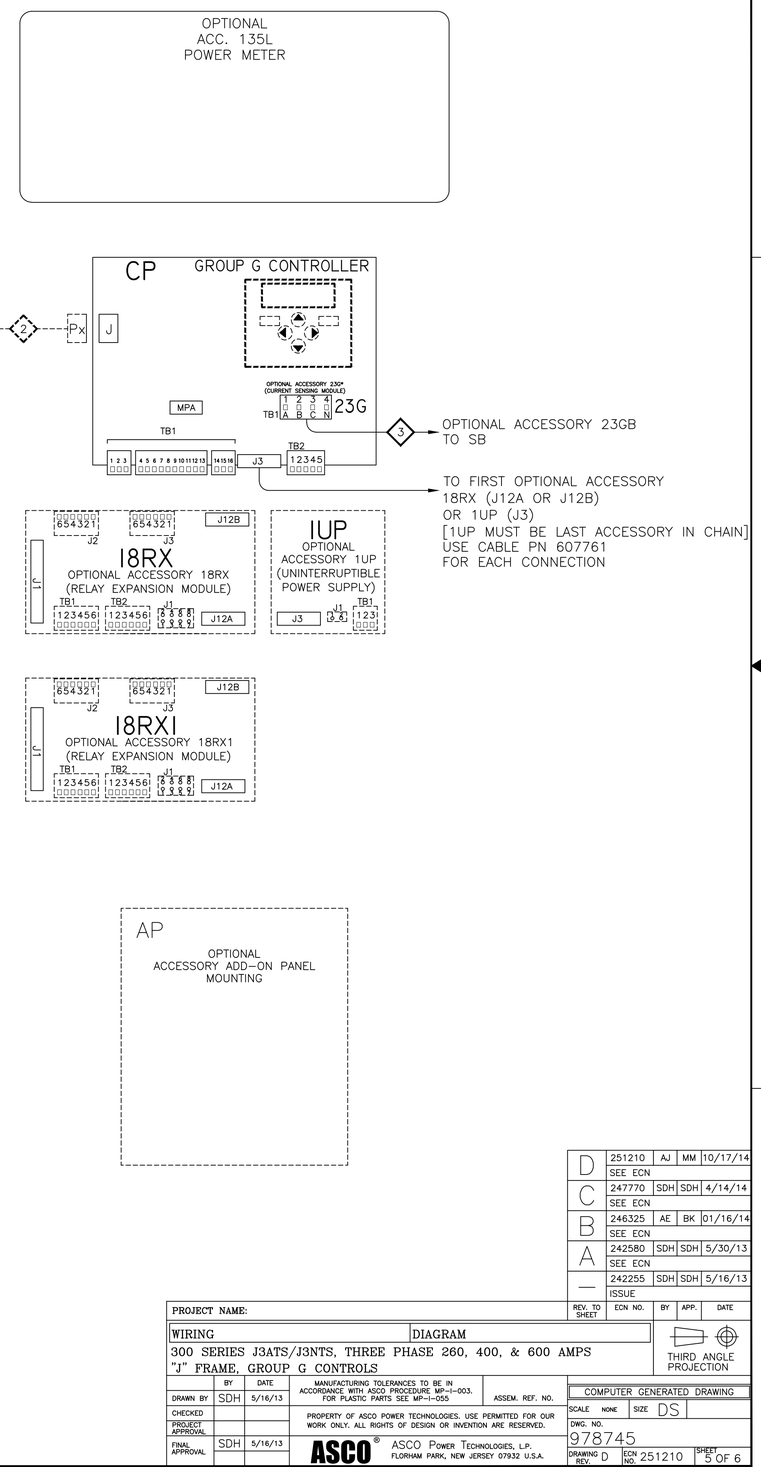
SCALE NONE SIZE DS

DWG. NO. 978745

DRAWING REV. D ECN NO. 251210 SHEET 4 OF 6

PHYSICAL DIAGRAM





D	251210	AJ	MM	10/17/14	SEE ECN
C	247770	SDH	SDH	4/14/14	SEE ECN
B	246325	AE	BK	01/16/14	SEE ECN
A	242580	SDH	SDH	5/30/13	SEE ECN
—	242255	SDH	SDH	5/16/13	ISSUE

REV. TO SHEET	ECN NO.	BY	APP.	DATE

PROJECT NAME:

WIRING DIAGRAM

300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

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FINAL APPROVAL	SDH	5/16/13

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COMPUTER GENERATED DRAWING

SCALE NONE SIZE DS

DWG. NO. 978745

DRAWING REV. D ECN NO. 251210 SHEET 5 OF 6

WIRE RUN LISTING

1 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 781247 (P) MAIN TS

WIRE No.		CLR	AWG
1	P-1,TS-18		18
2	P-2,TS-A		
3	P-3,TS-14		
4	P-4,TS-3		
4	TS-3,TS-15		
5	P-5,TS-B		
6	P-6,TS-7		
6	TS-7,TS-19		
7	P-7,TS-5		
7	TS-5,TS-17		
8	P-8,TS-24		
8	TS-24,TB-1		
9	P-9,TS-25		
9	TS-25,TB-2		
10	P-10,TS-21		
11	P-11,TS-2		
12	P-12,TS-1		
12	TS-1,TS-13		
13	P-13,TS-22		
14	P-14,TS-23		
15	P-15,TS-16		
16	P-16,TS-20		
17	P-17,TB-3		
18	P-18,TS-6		
19	P-19,TS-9		
20	P-20,TS-10		
21	P-21,TS-11		
22	P-22,TS-4		
23	P-23,TS-8		
24	P-24,TS-12		
25	TS-27,TB-4		
26	TS-28,TB-5		
27	TS-29,TB-6		
31	TS-30,TB-7		
32	TS-31,TB-8		
33	TS-32,TB-9		
	REMOVE WIRES		
	ADD WIRES		

2 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

HARNESS 309320-005 (Px,Jx) OPTIONAL 8" EXTENSION HARNESS

WIRE No.		CLR	AWG
1	Px-1,Jx-1		16
2	Px-2,Jx-2		
3	Px-3,Jx-3		
4	Px-4,Jx-4		
5	Px-5,Jx-5		
6	Px-6,Jx-6		
7	Px-7,Jx-7		
8	Px-8,Jx-8		
9	Px-9,Jx-9		
10	Px-10,Jx-10		
11	Px-11,Jx-11		
12	Px-12,Jx-12		
13	Px-13,Jx-13		
14	Px-14,Jx-14		
15	Px-15,Jx-15		
16	Px-16,Jx-16		
24	Px-17,Jx-17		
25	Px-18,Jx-18		
26	Px-19,Jx-19		
27	Px-20,Jx-20		
28	Px-21,Jx-21		
29	Px-22,Jx-22		
30	Px-23,Jx-23		
31	Px-24,Jx-24		
	REMOVE WIRES		
	ADD WIRES		

3 ← HARNESS LOCATOR

OPTIONAL ACCESSORY 23GB (CT,SB,CP(23G)-TB1)

WIRE No.		CLR	AWG
300	CT1-X1,SB-1		16
301	CT2-X1,SB-3		
302	CT3-X1,SB-5		
300	SB-2,CP(23G)-TB1-1		
301	SB-4,CP(23G)-TB1-2		
302	SB-6,CP(23G)-TB1-3		
303	CT1-X2,CT2-X2	GRN	
303	CT2-X2,CT3-X2	GRN	
303	CT3-X2,SB-7	GRN	
303	SB-7,EQUIP-GND	GRN	
303	SB-8,CP(23G)-TB1-4	GRN	

4 ← HARNESS LOCATOR — BOX CHECKED IF HARNESS IS MODIFIED ☐

OPTIONAL AUXILIARY CONTACTS (TS,TB) FIELD TERMINATIONS

WIRE No.		CLR	AWG
35	TS-33,TB-10		16
36	TS-34,TB-11		
37	TS-35,TB-12		
38	TS-36,TB-13		
40	TS-37,TB-15		
39	TS-38,TB-14		

ADDITIONAL WIRES

WIRE No.		CLR	AWG
			16

D	251210 SEE ECN	AJ	MM	10/17/14
C	247770 SEE ECN	SDH	SDH	4/14/14
B	246325 SEE ECN	AE	BK	01/16/14
A	242580 SEE ECN	SDH	SDH	5/30/13
—	242255 ISSUE	SDH	SDH	5/6/13

REV. TO SHEET | ECN NO. | BY | APP. | DATE

PROJECT NAME:

WIRING DIAGRAM

300 SERIES J3ATS/J3NTS, THREE PHASE 260, 400, & 600 AMPS
"J" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

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FINAL APPROVAL	SDH	5/6/13

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COMPUTER GENERATED DRAWING

SCALE NONE | SIZE DS

DWG. NO. 978745

DRAWING REV. D | ECN NO. 251210 | SHEET 6 OF 6

⚠ DANGER

DANGER is used in this manual to warn of a hazard situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING is used in this manual to warn of a hazardous situation which, if not avoided, could result death or serious injury.

⚠ CAUTION

CAUTION is used in this manual to warn of a hazardous situation which, if not avoided, could result in minor or moderate injury.

Rating Label

Each transfer switch contains a rating label to define the loads and fault circuit withstand/closing ratings. Refer to the label on the transfer switch for specific values.

Refer to the outline and wiring drawings provided with the 3ATS, 3NTS, 3ADTS, or 3NDTS for all installation and connection details and accessories.

Refer to **User's Guide 381333-400** for the Group G Controller status display messages, time delays, pickup and dropout settings, and adjustments.

⚠ WARNING

Do not exceed the values on the rating label. Exceeding the rating can cause person injury or serious equipment damage.

An experienced licensed electrician must install the transfer switch.

Installation

These transfer switches are factory wired and tested. Installation requires mounting, connecting service cables, and connecting engine start and auxiliary control circuits (if required.).

Table of Contents

INSTALLATION
Mounting 1
Power Connections 2
Engine Starting Contacts 2

FUNCTIONAL TEST
1- Manual Operation 3
2- Voltage Checks 5
3- Electrical Operation 6

TESTING & SERVICE
Transfer Test 7
Preventive Maintenance 7
Manual Load Transfer 7

TROUBLESHOOTING 8

Supporting Foundation

The supporting foundation for the enclosure must be level and straight. Refer to the applicable enclosure outline drawing included with the transfer switch for all mounting details including door opening space.

If bottom cable entry is used, the foundation must be prepared so that the conduit stubs are located correctly. Refer to the enclosure outline drawing for specified area and location. Provide cable bending space and 1 inch minimum clearance to live metal parts. When a concrete floor is poured, use interlocking conduit spacer caps or a wood or metal template to maintain proper conduit alignment.

Mounting

Refer to the outline and mounting diagram and mount the transfer switch according to details and instructions shown on the diagram. Mount it vertically to a rigid supporting structure. Level all mounting points by using flat washers behind the holes to avoid distortion of the transfer switch.

NOTICE

Protect the transfer switch from construction grit and metal chips to prevent malfunction or shortened life of the transfer switch.

381333-404 B

Line Connections

Refer to the wiring diagram provided with the transfer switch. All wiring must be made in accordance with the National Electrical Code and local codes.

⚠ DANGER

De-energize the conductors before making any line or auxiliary circuit connections. Be sure that the Normal and Emergency line connections are in proper phase rotation. Place the engine generator starting control in the OFF position. Make sure engine generator is not in operation.

Testing Power Conductors

Do not connect the power conductors to the transfer switch until they are tested. Installing power cables in conduit, cable troughs, and ceiling-suspended hangers often requires considerable force. The pulling of cables can damage insulation and stretch or break the conductor's strands. For this reason, after the cables are pulled into position, and before they are connected, they should be tested to verify that they are not defective or have been damaged during installation.

Connecting Power Cables

After the power cables have been tested, connect them to the appropriate terminal lugs on the transfer switch as shown on the wiring diagram provided with the transfer switch. Make sure that the lugs provided are suitable for use with the cables being installed. Standard terminal lugs are solderless screw type and will accept the wire sizes listed on the drawings provided with the transfer switch. Be careful when stripping insulation from the cables, avoid nicking or ringing the conductor. Remove surface oxides from cables by cleaning with a wire brush. When aluminum cable is used, apply joint compound to conductors. Tighten cable lugs to the torque specified on rating label.

Harnesses

The transfer switch is connected to the left side of the controller by a plug-in harness.

Auxiliary Circuits

Connect auxiliary circuit wires to appropriate terminals on the transfer switch as shown on the wiring diagram.

Controller Ground

A grounding wire must be connected to the controller's lower left mounting stud. Because the controller is mounted on the enclosure door, a conductive strap must be used between the enclosure and the door. This connection provides proper grounding which does not rely upon the door hinges.

Engine Starting Contacts

The engine control contact connections are located on the transfer switch for 3ATS & 3NTS or upper right of the enclosure for 3ADTS & 3NDTS. Connect signal wires to appropriate terminals as specified on the wiring diagram, Table A, and shown in Figure 1.

Table A. Engine Start Connections.

When normal source fails	Terminals on transfer switch
contact closes	TB1 and TB2
contact opens	TB1 and TB3

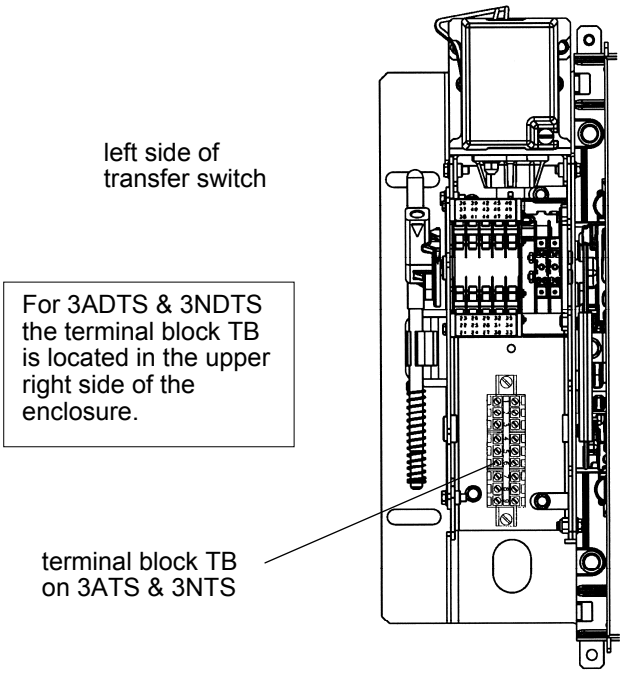


Figure 1. Engine start and auxiliary circuit terminal block TB located on 3ATS & 3NTS transfer switch.

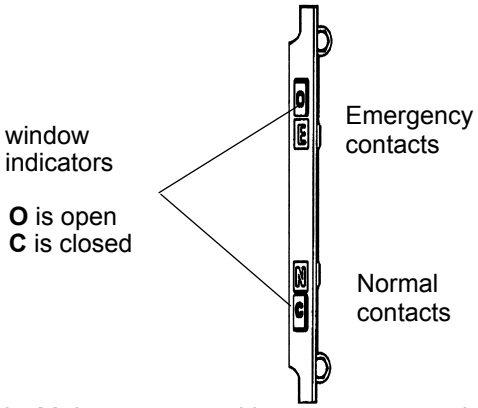


Figure 2. Main contact position indicators on right side.

Functional Test

The functional test consists of three checks: manual operation, voltage checks, and electrical operation.

NOTICE

Do these checks in the order presented to avoid damaging the transfer switch.

1 – Manual Operation

A maintenance handle is provided on the transfer switch for maintenance purposes only. Manual operation of the transfer switch should be checked before it is energized (operated electrically).

⚠ WARNING

Do not manually operate the transfer switch until both power sources are disconnected: open both circuit breakers.

1. After deenergizing both power sources, open the enclosure door. Locate and remove the maintenance handle from the clip on the left side of the transfer switch. See Figures 3, 4, 5, & 6. See Figure 2 for the contact position indicators.
2. Install the handle into the hole in the molded hub. Move the handle up or down as shown to manually operate the transfer switch. It should operate smoothly without any binding. If it does not, check for shipping damage or construction debris.
3. 3ADTS and 3NDTS have two contact shaft hubs. See Figures 5 and 6 and Table B.
4. Return the transfer switch to the Normal position.

Note: If Normal and Emergency connections are reversed this operation is also reversed.

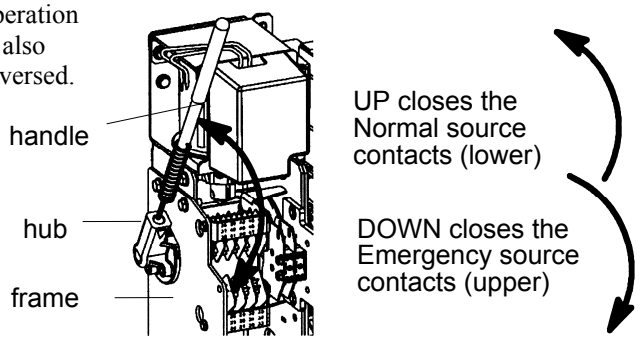


Figure 3. Maintenance handle operation on 3ATS & 3NTS.

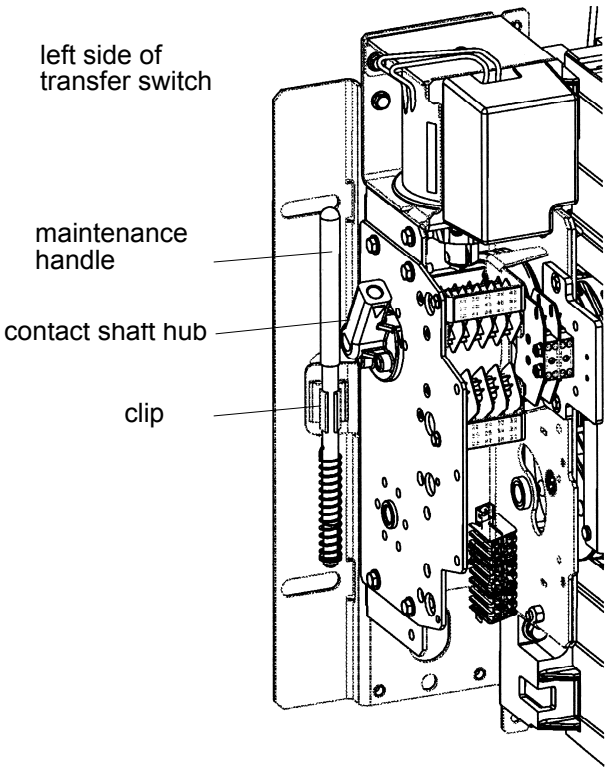


Figure 4. Maintenance handle on 3ATS & 3NTS

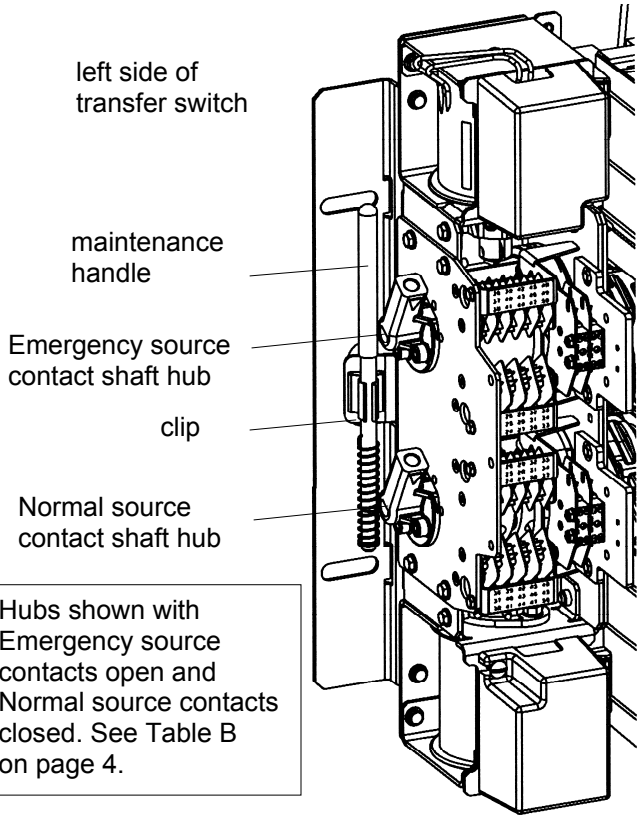


Figure 5. Maintenance handle on 3ADTS & 3NDTS

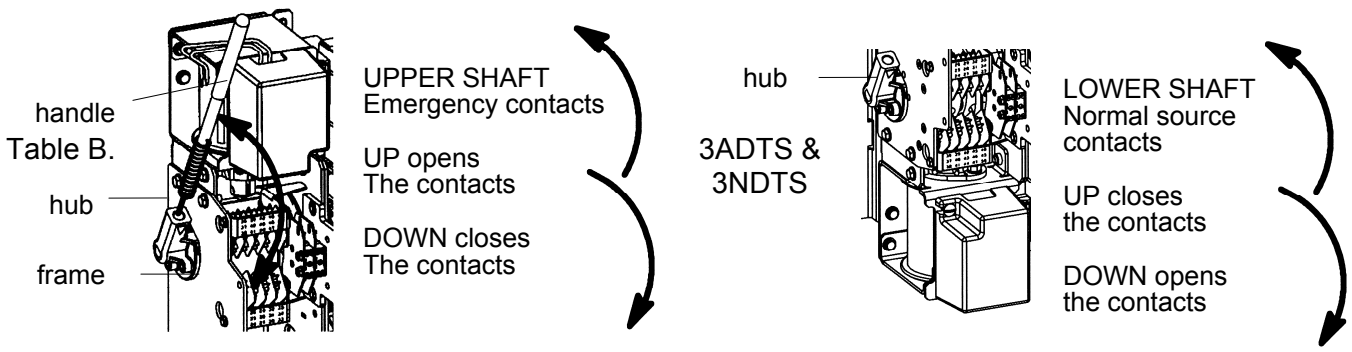
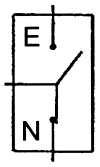
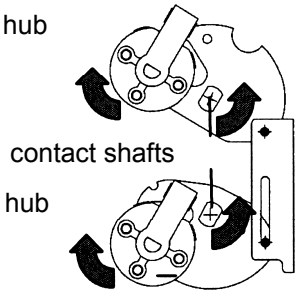
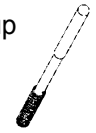
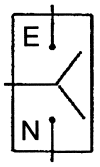
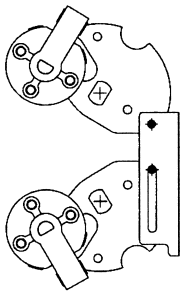
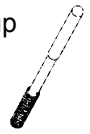
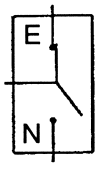
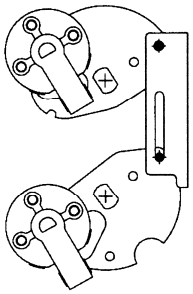


Figure 6. Maintenance handle operation on 3ADTS & 3NDTS

WARNING

Table B. 3ADTS & 3NDTS Maintenance Handle positions. **ALL POWER MUST BE OFF !**

Transfer Switch Position		**Interlocked Shafts** Link between contact shafts prevents closing both N & E contacts	**Maintenance Handle**	**Shaft Indicators**
Normal			 up  up	E = O upper contacts open N = C lower contacts closed
Load Disconnected			 up  down	E = O upper contacts open N = O lower contacts open
Emergency			 down  down	E = O upper contacts closed N = C lower contacts open

Note: The hub and contact shaft turn in opposite directions through a cam follower mechanism.

Note: If Normal and Emergency connections are reversed, this operation is also reversed.

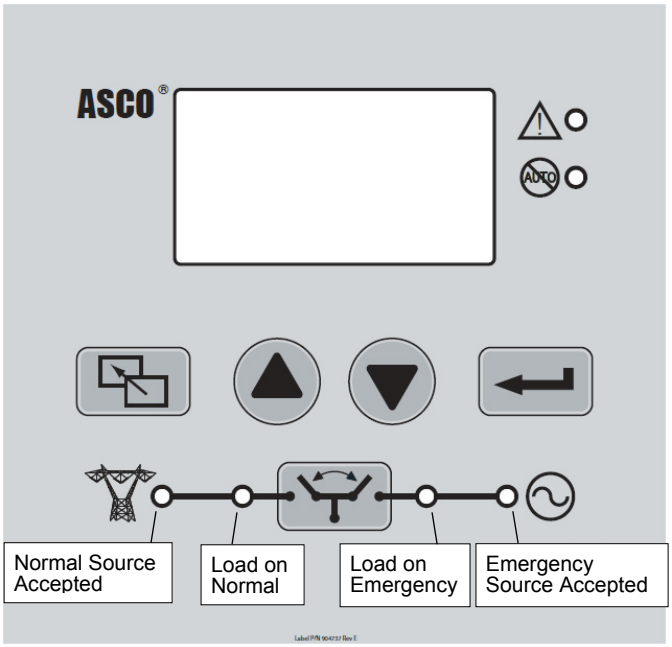


Figure 7. Four indicator lights.

2 – Voltage Checks

First check the nameplate on the transfer switch; rated voltage must be the same as normal and emergency line voltages.

DANGER

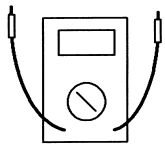
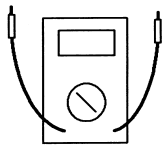
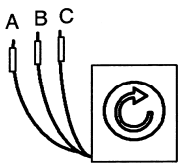
Use extreme caution when using a meter to measure voltages in the following steps.
Do not touch power terminals; shock, burns, or death could result!

Perform steps 1 through 6 at the right. Observe the indicator lights. See Figure 7.

- ● Black circle means the light is on.
- ○ White circle means the light is off.

* If necessary, adjust the voltage regulator on the generator according to the manufacturer's recommendations. The transfer switch will respond only to the rated voltage specified on the transfer switch nameplate.

Also see User's Guide 381333-400 for voltage settings in the controller.

1	Close the normal source circuit breaker. The normal source accepted and the load on normal lights should come on. 	
2	Use an accurate voltmeter to check phase to phase and phase to neutral voltages present at the transfer switch normal source terminals.	
3	Close the emergency source circuit breaker. (Start generator, if necessary.) The emergency source accepted light should come on. 	
4	Use an accurate voltmeter to check phase to phase and phase to neutral voltages present at the transfer switch emergency source terminals.*	
5	Use a phase rotation meter to check phase rotation of emergency source; it must be the same at the normal source.	
6	Shut down the engine-generator, if applicable. The emergency source accepted light should go off. Then put the starting control selector switch (on the generator set) in the automatic position. Close the enclosure door. 	

Continue to **3 – Electrical Operation** on the next page.

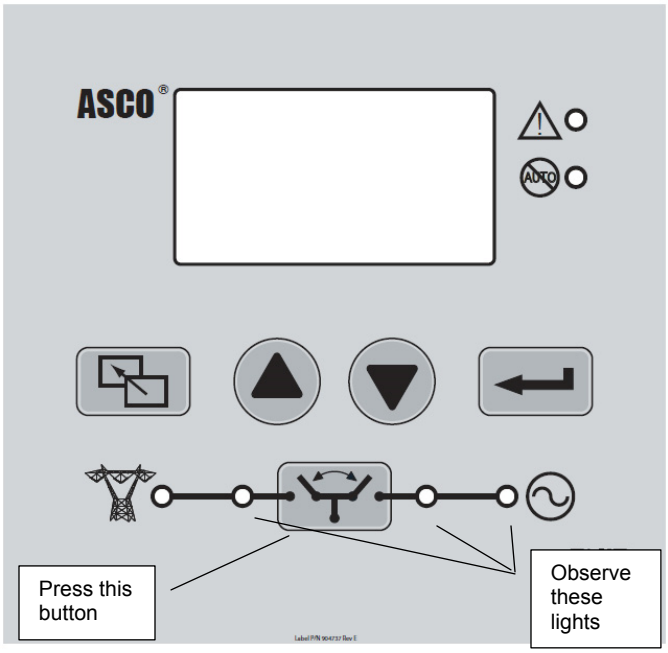


Figure 8. Transfer button and indicator lights.

3 – Electrical Operation

This procedure will check the electrical operation of the transfer switch.

WARNING

Close the transfer switch enclosure door and tighten the screws before you test electrical operation.

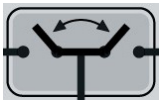
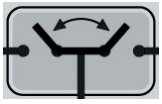
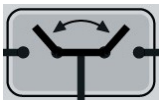
Perform steps 1 through 5 at the right. Observe the status lights. See Figure 8.

- ● Black circle means light is on.
- ○ White circle means light is off.

NOTE: For 3NTS manually start the emergency generator at the generator. Then press the transfer button for load transfer. If the inphase transfer feature is activated, transfer may not occur immediately. Transfer will occur when the phase relationship between sources is correct. Press the transfer button again for load retransfer to normal, then manually stop the generator at the generator.

Also see User's Guide 381333-400 for inphase transfer and time delay settings in the controller.

This completes the functional test of the transfer switch. Leave the engine-generator starting control in the automatic position.

1	The normal source must be available and the generator must be ready to start. Check that the normal source accepted light is on. 
2	For 3ATS & 3ADTS press the transfer button. The engine should start and run within 15 seconds. For 3NTS & 3NDTS the generator must be started manually at the generator. 
	The emergency source accepted light should come on. 
3	For 3ATS & 3ADTS the transfer switch should transfer to the emergency position. The load on emergency light should come on and the load on normal light should go off. For 3NTS & 3NDTS press the transfer button for load transfer. For 3ADTS & 3NDTS both lights will be off during the delayed-transition transfer time delay.
	If the transfer to emergency delay is used, the transfer occurs after a time delay. For immediate transfer (bypass timer) press the transfer button again. 
	
4	For 3ATS & 3ADTS the transfer switch should transfer back to the normal position. The load on normal light should come on and the load on emergency light should go off. For 3NTS & 3NDTS press the transfer button for load retransfer. For 3ADTS & 3NDTS both lights will be off during the delayed-transition transfer time delay.
	If the retransfer to normal delay is used the retransfer should occur after a time delay. For immediate retransfer (bypass timer) press the transfer button again. 
	
5	For 3ATS & 3ADTS the unloaded running delay keeps the generator running for a cool-down period. Then the generator should stop and the emergency source accepted light should go off. For 3NTS & 3NDTS manually stop the generator at the generator (after a cool-down period). 

Testing & Service

Transfer Test

Operate the transfer switch at least once a month by following the ***Electrical Operation*** procedure on page 6.

Preventive Maintenance

Reasonable care in preventive maintenance will insure high reliability and long life for the transfer switch. An annual preventive maintenance program is recommended.

ASCO Services, Inc. (ASI) is ASCO Power Technologies' national service organization. ASI can be contacted at 1-800-800-2726 for information on preventive maintenance agreements.

Yearly Inspection

DANGER

Hazardous voltage capable of causing shock, burns, or death is used in this transfer switch. Deenergize both Normal & Emergency power sources before performing inspections!

Clean the enclosure. Deenergize all sources, then brush and vacuum away any excessive dust accumulation. Remove moisture with a clean cloth.

Inspect the transfer switch contacts. Deenergize all sources, then remove the transfer switch barriers and check the contact condition. The non-replaceable main contacts are designed to last the life of the transfer switch. Reinstall the barriers carefully.

Maintain transfer switch lubrication. Under normal operating conditions no further lubricating is required. Renew factory lubrication if the transfer switch is subjected to severe dust, abnormal operating conditions, or if the TS coil(s) is replaced. Order lubrication kit 75-100.

Check all cable connections & retighten them. Torque to values shown on the transfer switch label.

Replacement Parts

When ordering replacement parts provide the Serial No., Bill of Material No. (BOM), and Catalog No. from the transfer switch nameplate. In the US call 800-800-2726 (ASCO) or contact customercare@asco.com.

Manual Load Transfer

This procedure will manually transfer the load if the controller is disconnected.

WARNING

Do not manually operate the transfer switch until both power sources are disconnected: open both circuit breakers.

1. Deenergize both the normal and emergency source (open both circuit breakers).
2. Use the maintenance handle to manually operate the transfer switch to the opposite source. See pages 3 and 4, ***Manual Operation***.
3. Close the enclosure door. If the transfer switch is in the emergency position, manually start the generator and then close the emergency source circuit breaker.

Troubleshooting

Problem	Check in Numerical Sequence		
	1 Operation	2 Generator	3 Voltage
For 3ATS & 3ADTS the engine-generator set does not start when the transfer test button is pressed or when the Normal source fails.	The outage must be long enough to allow for the feature 1C time delay plus engine cranking and starting time.	Starting control must be in automatic position. Batteries must be charged and connected. Check wiring to the engine starting contacts.	-
For 3ATS & 3ADTS the transfer switch does not transfer the load to the emergency source after the gen-set starts.	Wait for the feature 2B time delay. For immediate transfer, press the transfer button (bypass timer). If inphase transfer is active, wait for inphase condition. For 3NTS & 3NDTS press the transfer button.	Is the generator accepted light on? Generator output circuit breaker must be closed. Generator frequency must be correct.	Voltmeter should read at least 90% of nominal phase to phase voltage between transfer switch terminals EA and EC (or EL1 and EL2 for 2 pole switches). * * There are factory settings.
For 3ATS & 3ADTS the transfer switch does not transfer the load to normal source when normal returns or after transfer test.	Wait for the feature 3A time delay. For immediate retransfer, press the transfer button (bypass timer). If inphase transfer is active, wait for inphase condition. For 3NTS & 3NDTS press the transfer button.	-	Voltmeter should read at least 90% of nominal phase to phase voltage between transfer switch terminals NB and NC, NC and NA, and NA and NB (or NL1 and NL2 for 2 pole switches).
For 3ATS & 3ADTS the generator does not stop after load retransfer to the normal source.	Wait for the feature 2E delay.	Starting control must be in automatic position.	-
For 3ADTS & 3ADTS the load is deenergized (off). *Load Disconnect Timer* on display.	Wait for the delayed-transition transfer timer. See User's Guide 381333-400.		-
 Not in auto light is always on.	For 3NTS & 3NDTS this light is always on, indicating it is a manual transfer switch.	-	-
 Alert light is on.	Read the display for more information. Refer to User's Guide 381333-400.	-	-

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