

# THREE PHASE WIRING FOR ASCO 7000 SERIES AUTOMATIC CLOSED TRANSITION TRANSFER SWITCHES TYPE 7ACTS RATED 4000 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 ASCO 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%	NO
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%	NO
EMERGENCY VOLTAGE UNBALANCE	YES/NO	OFF
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
1E	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
-	DELAYED TRANSFER (LOAD "OFF" TIME), [0-5 min 59 sec]	3 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. 1E - 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. 1E 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. 1E EXPIRES (AUTOMATIC BYPASS ON EMERGENCY SOURCE FAILURE).

IN SYNC - IN SYNC TIME DELAY BEGINS BEFORE A CLOSED TRANSITION TRANSFER FOLLOWING ACCEPTANCE OF THE SOURCE TO WHICH TRANSFER IS BEING MADE. ON EXPIRATION OF THE DELAY, THE LOGIC AWAITS AN IN SYNC CONDITION FOR SUBSEQUENT CLOSED TRANSITION TRANSFER.

EXTENDED PARALLEL - EXTENDED PARALLEL TIMER BEGINS WHEN THE SOURCES ARE PARALLELED (CN & CE CLOSED). IF THE TWO SOURCES REMAIN IN PARALLEL WHEN THE DELAY EXPIRES, THE CONTROL LOGIC TAKES THE FOLLOWING ACTIONS:

- THE LOGIC WILL ATTEMPT TO OPERATE THE TRANSFER SWITCH TO A "SAFE" STATE WHERE THE SOURCES WILL NO LONGER BE PARALLELED AND THE LOAD WILL BE SERVICED BY AN AVAILABLE SOURCE.
- THE CONTROL PANEL IS LOCKED OUT FROM ANY FURTHER AUTOMATIC OPERATION.
- THE "TS LOCKED OUT" INDICATOR (RED LED) IS LIT.
- THE EXTENDED PARALLEL ALARM TIMER LOCATED ON THE DUAL OPERATOR CONTROL (DOC) IS ENABLED.
- THE UNIT WILL REMAIN LOCKED OUT UNTIL THE "TS LOCKED OUT" LIGHTED PUSH-BUTTON IS DEPRESSED FOR RESET.

FAIL TO SYNC - FAILURE TO SYNC TIMER BEGINS WHEN THE LOGIC BEGINS TO CHECK FOR AN IN SYNC CONDITION FOR WHICH TO ALLOW CLOSED TRANSITION TRANSFER. IF THE DELAY EXPIRES PRIOR TO AN IN SYNC CONDITION OCCURRING, THE "FAILURE TO SYNCHRONIZE" SIGNAL IS ACTIVATED (RED LED) AND CLOSURE OF THE TFR RELAY CONTACT AVAILABLE AT THE FIELD CONNECTIONS TERMINAL BLOCK (TB).

FEAT. 62F - EXTENDED PARALLEL ALARM TIMER BEGINS TIMING WHEN ENABLED FOLLOWING EXPIRATION OF THE EXTENDED PARALLEL TIMER OF THE CONTROL PANEL. THE ENABLING OF THE EXTENDED PARALLEL ALARM TIMER INDICATES THAT THE UNIT HAS ATTEMPTED TO RECOVER TO A "SAFE STATE" AND THAT IT HAS BEEN LOCKED OUT. ON EXPIRATION OF THE DELAY, OUTPUT RELAY (RL3) (2) FORM C CONTACTS, CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TBO), TRANSFER. THE DELAY IS ADJUSTABLE VIA A POTENTIOMETER (P2) LOCATED ON THE DUAL OPERATOR CONTROL (DOC) WHICH IS ADJUSTABLE FROM 0-1 SECOND. FACTORY SET AT 1 SEC.

### 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	
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

### 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 IN AN OPEN TRANSITION (BREAK BEFORE MAKE) OPERATION TO THE EMERGENCY SOURCE.

WHEN THE NORMAL SOURCE IS RESTORED FOR THE DURATION OF THE FEATURE 3A, RETRANSFER TO NORMAL TIME DELAY SETTING, THE CONTROLS WILL BEGIN MONITORING PHASE, FREQUENCY, AND VOLTAGE DIFFERENTIAL BETWEEN NORMAL AND EMERGENCY SOURCES.

WHEN THE TWO SOURCES ARE APPROACHING SYNCHRONISM, A CLOSED TRANSITION (MAKE BEFORE BREAK) TRANSFER TO THE NORMAL SOURCE WILL BE INITIATED. THE NORMAL AND EMERGENCY CONTACTORS (CN & CE) WILL BE IN AN OVERLAP CONDITION FOR LESS THAN 0.1 SECONDS.

CLOSED TRANSITION TRANSFER WILL ALSO BE INITIATED DURING A TRANSFER TEST OPERATION CAUSED BY OPERATION OF THE FEATURE 5 TRANSFER TEST SELECTOR SWITCH. RETRANSFER WILL ALSO OCCUR IN A CLOSED TRANSITION MANNER AT THE END OF THE TEST.

CLOSED TRANSITION BYPASS OPERATION: THE "CT BYPASS OPTIONS" DISPLAY OF THE CONTROL PANEL ALLOWS SETTING THE TRANSFER SWITCH'S CLOSED TRANSITION BYPASS BEHAVIOR. CLOSED TRANSITION BYPASS CAUSES THE TRANSFER SWITCH TO INTERRUPT POWER TO THE LOAD DURING TRANSFER. THE AVAILABLE OPTIONS ARE:

- **FAIL TO SYNC AUTO BYPASS ENABLE** - CAUSES A "FAILURE TO SYNCHRONIZE" CONDITION TO RESULT IN AN AUTOMATIC CLOSED TRANSITION BYPASS. DEFAULT SETTING IS **NO** AUTOMATIC BYPASS.
- **CT BYPASS** - ALLOWS SELECTIONS AS TO WHETHER THE CLOSED TRANSITION BYPASS WILL OCCUR WITH OR WITHOUT A DELAYED TRANSFER (LOAD "OFF" TIME). DEFAULT SETTING IS OPEN TRANSITION (NO DELAY).
- **DT BYPASS** - SETS THE LENGTH OF THE DELAYED TRANSFER (LOAD "OFF" TIME) IF THE PREVIOUS PARAMETER HAS BEEN SELECTED TO OPERATE WITH DELAYED TRANSITION. THE DELAY ("OFF" PERIOD) BEGINS FOLLOWING THE OPENING OF THE SOURCE CONTACTOR, (CN OR CE), CONNECTED TO THE SOURCE FROM WHICH TRANSFER IS BEING MADE. UPON EXPIRATION, CLOSURE OF THE OPPOSITE SOURCE CONTACTOR IS INITIATED.

### 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 CLOSURES 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 10 AMPS AT 32 VDC/120VAC RESISTIVE.
- B. FEATURES 14AE & 14BE - TRANSFER SWITCH AUXILIARY POSITION INDICATING CONTACTS. SIX (6) FORM A CONTACTS TO INDICATE CONNECTION OF THE TRANSFER SWITCH TO NORMAL (14A) AND SIX (6) FOR 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).

### 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)
- D. EXTENDED PARALLEL TIME - INDICATES THAT THE MAIN CONTACTORS (CN & CE) HAVE BEEN SIMULTANEOUSLY CLOSED FOR A PERIOD EXCEEDING THE TIME ALLOTTED. (RED LED)
- E. FAILURE TO SYNCHRONIZE - INDICATES THE TWO SOURCES DID NOT MEET THE PARAMETERS REQUIRED FOR A CLOSED TRANSITION TRANSFER. (RED LED)
- F. TS LOCKED OUT - INDICATES THAT A FAILURE OF THE TRANSFER SWITCH OPERATOR HAS OCCURRED AND THAT THE TRANSFER SWITCH HAS TAKEN CORRECTIVE ACTION AS REQUIRED. ONCE THIS FAILURE RECOVERY OPERATION TAKES PLACE, THE TRANSFER SWITCH IS PREVENTED FROM FURTHER OPERATION UNTIL THE CONDITION IS CORRECTED. ONCE THE CONDITION IS CORRECTED, THE TS LOCKED OUT SWITCH MAY BE DEPRESSED TO RESET THE CONTROL PANEL (RED LED).
- G. ALARM RESET SWITCH - RESETS FAILURE TO SYNCHRONIZE AND EXTENDED PARALLEL ALARMS.
- H. CLOSED TRANSITION BYPASS SWITCH - BYPASSES CLOSED TRANSITION TRANSFER WHEN OPERATED DURING THE PERIOD WHILE THE TRANSFER SWITCH CONTROL PANEL IS MONITORING FOR AN INPHASE CONDITION. CAUSES OPEN TRANSITION TRANSFER TO THE OPPOSITE SOURCE IF CONDITIONS PERMIT.

### 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.

BASE CATALOG NUMBER				CATALOG NUMBER SUFFIXES			EXPLANATION OF CATALOG NUMBER CODES							
CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE	NEUTRAL TYPE		VOLTAGE CODES 3 PHASE (3 OR 4 WIRE) 50 OR 60 Hz		ENCLOSURE CODES		
								CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION
7ACTS	A	3	4000		5	X		BLANK	NONE	A	115	BLANK	1	OPEN TYPE (NO ENCLOSURE)
								*A	SOLID	B	120	C	2	GENERAL PURPOSE, INDOOR
								C	OVERLAPPING	C	208	E	3	INDOOR, WATER & DUST RESISTANT
										D	220	F	4	INDOOR, 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	J	4X	TYPE 4 PLUS CORROSION RESISTANCE (FIBERGLASS)
										H	380	K	7	EXPLOSION PROOF
										J	400	L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
										K	415			
										L	440			
										M	460			
										N	480			
										P	550			
										Q	575			
										R	600			
	BLANK FOR NONE					BLANK FOR NONE	BLANK FOR OPEN TYPE	*A	NOT AVAILABLE ON OPEN TYPE UNITS					

CATALOG NUMBER \_\_\_\_\_ CERTIFIED TO \_\_\_\_\_

ASCO® S.O. \_\_\_\_\_

BY \_\_\_\_\_

DATE \_\_\_\_\_

FORM REV C

PROJECT NAME: \_\_\_\_\_

WIRING \_\_\_\_\_ DIAGRAM \_\_\_\_\_

7000 SERIES (7ACTS)

GROUP 5 CONTROLS

THIRD ANGLE PROJECTION

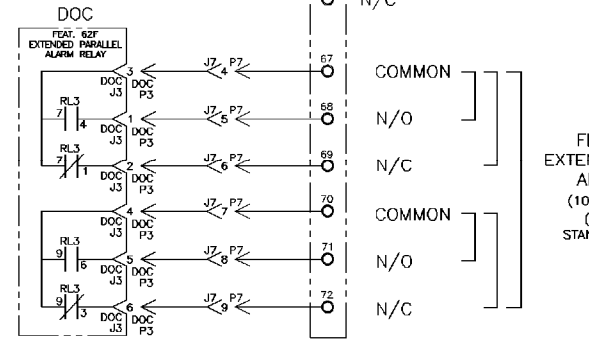
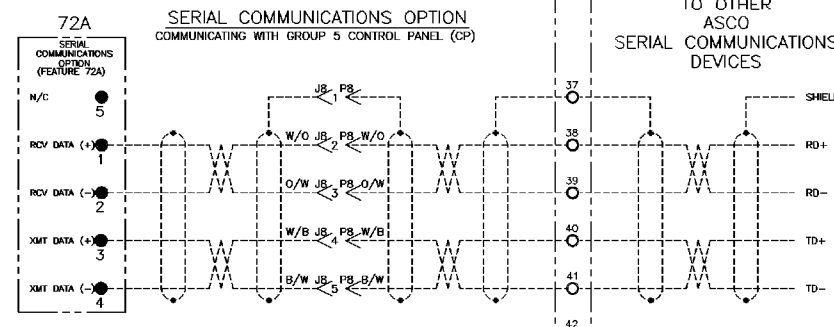
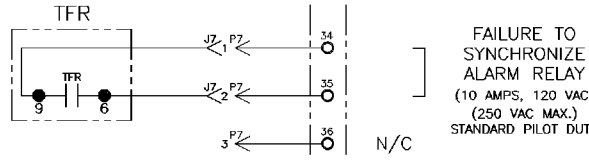
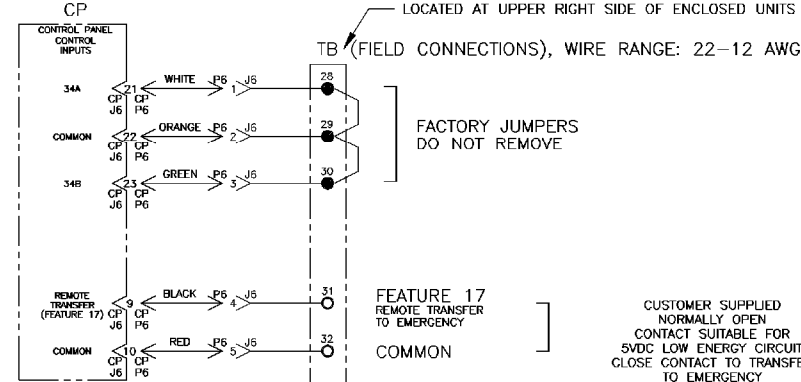
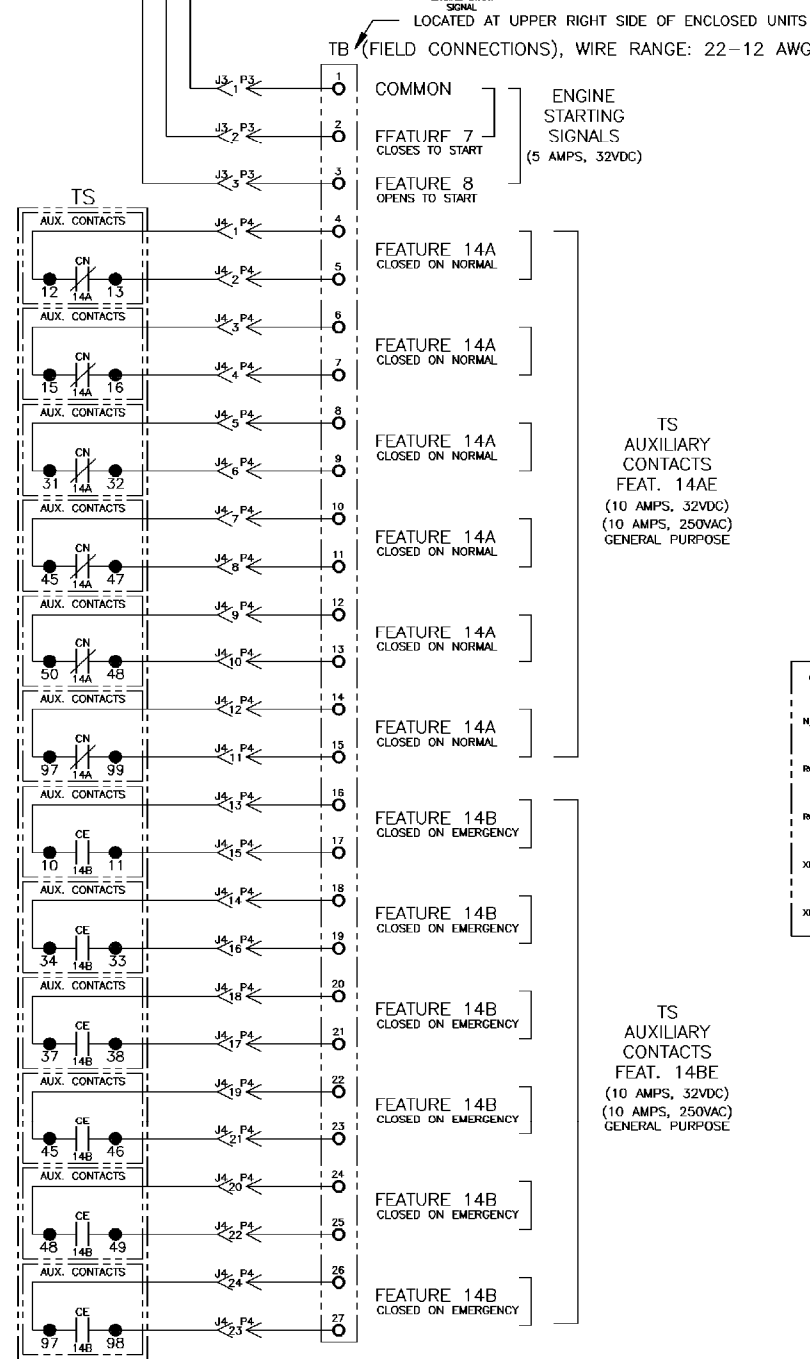
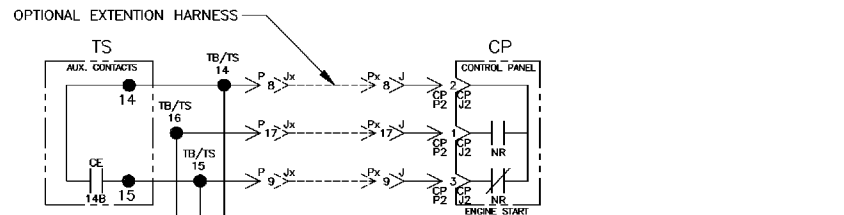
MANUFACTURING: ITB FRAMES: TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003 FOR PLASTIC PARTS SEE MP-1-005

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C	157574	BWM	5/8/01
SEE ECN			
B	151569	WL WK	5/10/99
SEE ECN			
A	151399	JPB JPB	4/15/99
SEE ECN			
-	149121	BK JPB	8/98
ISSUE			
CHANGE LETTER	ECN NO.	BY	APP
			DATE
SUBSIDIARY DISTRIBUTION			
AE	AN	AM	AL
AG	AV	AA	AS
AD	AP	AC	AR
AF	AW	AX	AT
AG	AP	AC	AS
AE	AN	AM	AL
AG	AV	AA	AS
AD	AP	AC	AR
AF	AW	AX	AT
COMPUTER GENERATED DRAWING			
SCALE	ACAD	FILE	
DRAWN BY	BK	8/98	
CHECKED			
DRAFTING APPROVAL			
FINAL APPROVAL	BK	8/98	
SCALE	DWG. NO.	ACAD	FILE
	DS1623992		
CHANGE LETTER	ECN NO.	157574	SHEET 1 OF 8

# FIELD CONNECTIONS



C	157574	BWM	5/8/01
B	151569	WL WK	5/10/99
A	151399	JPB JPB	4/15/99
	149121	BK JPB	8/98
			ISSUE

PROJECT NAME:		WIRING DIAGRAM	
7000 SERIES (7ACTS)		GROUP 5 CONTROLS	
DRWN BY	BK	DATE	8/98
CHECKED		APPROVED	
FINAL APPROVAL	BK	DATE	8/98

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		DATE	5/8/01

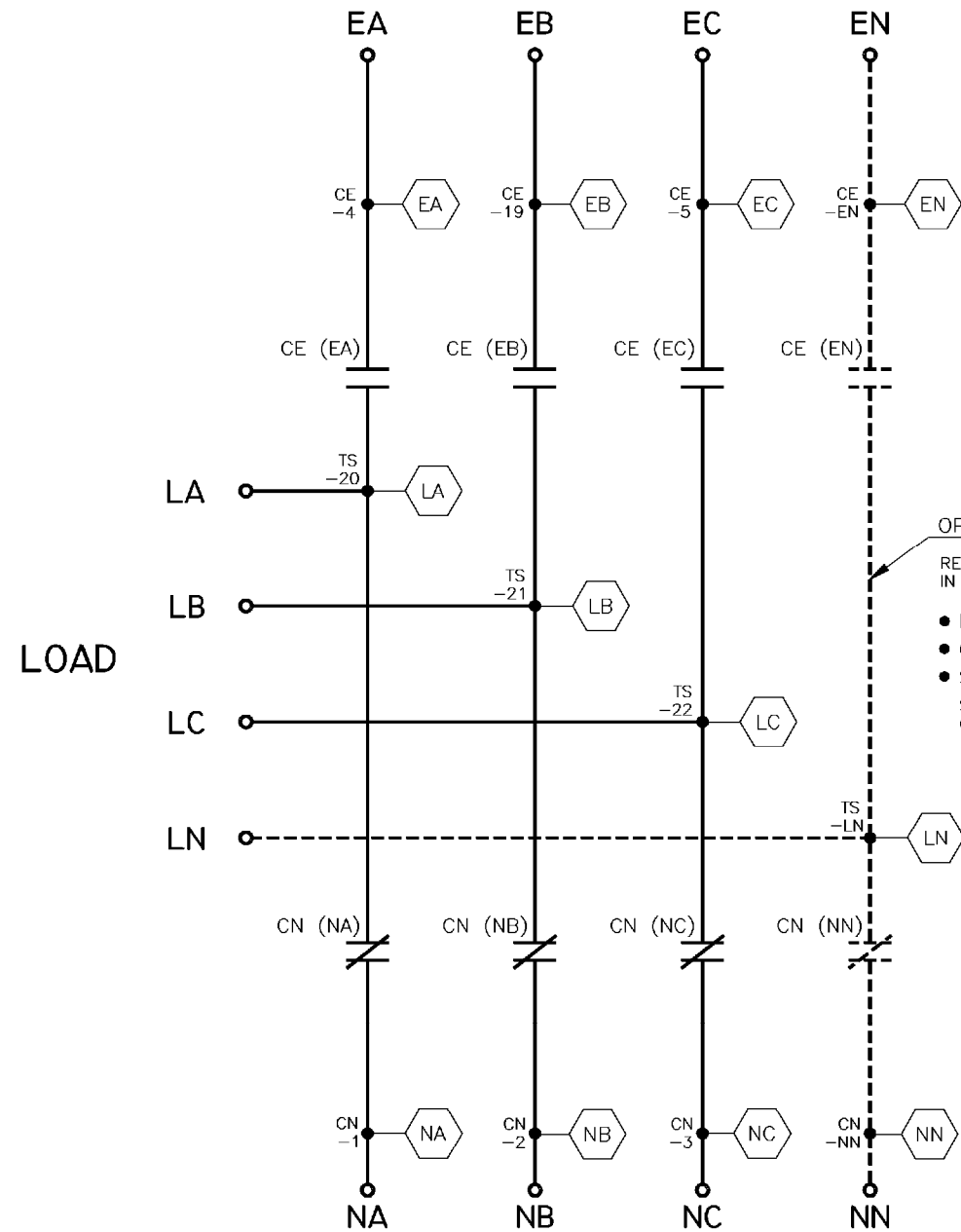
**ASCO** ASCO POWER TECHNOLOGIES, L.P.  
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL



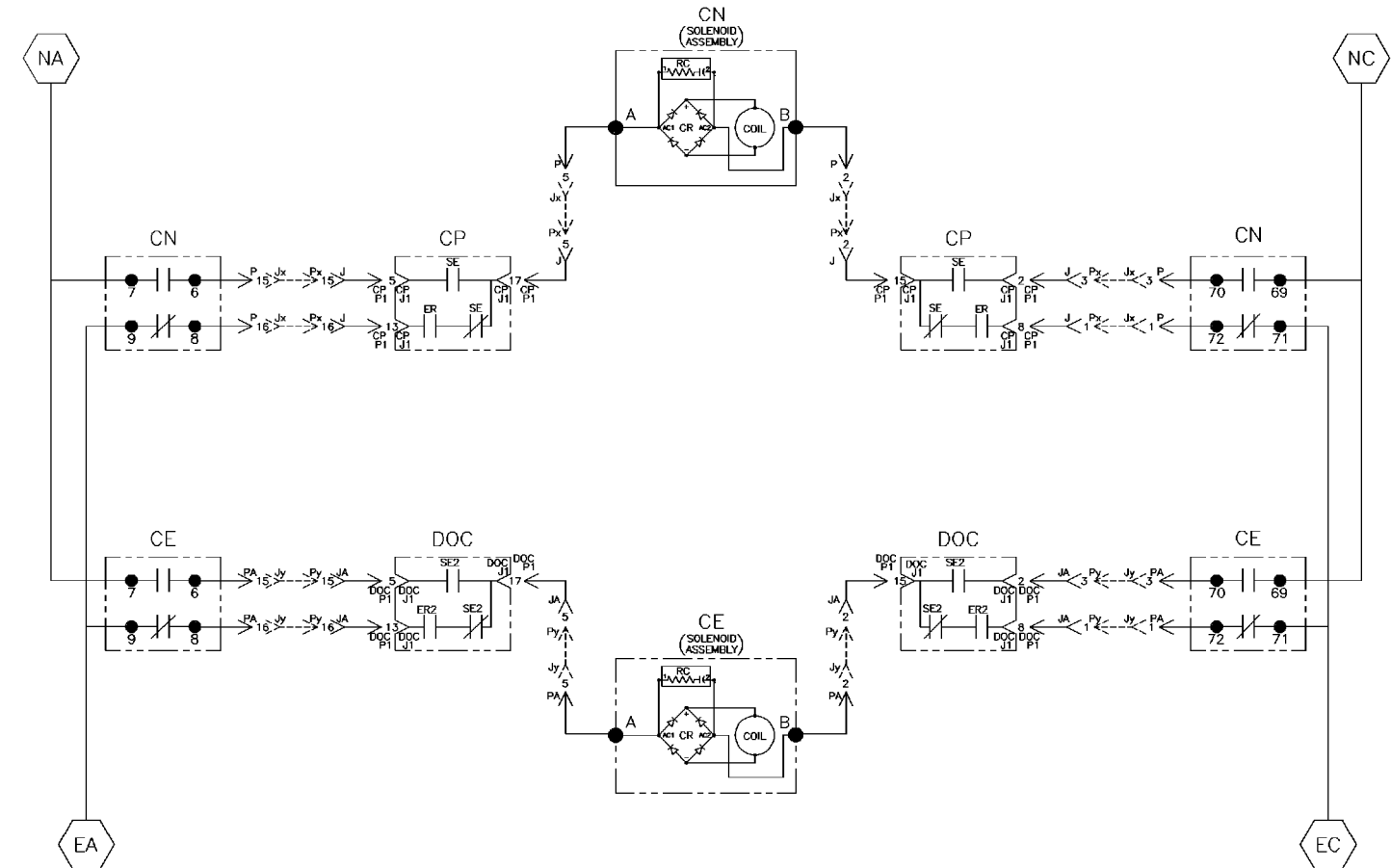
OPTIONAL NEUTRAL TYPES  
 REFER TO "EXPLANATION OF CATALOG NUMBER CODES" IN CATALOG NUMBER CHART ON SHEET 1.

- NONE
- OVERLAPPING CONTACTS
- SOLID BUS PLATE  
 SOLID BUS IS NOT AVAILABLE ON OPEN TYPE UNITS

NOTE:  
 ATS SHOWN CLOSED ON NORMAL SOURCE.

NORMAL

EMERGENCY



MUS	SOLENOID POSITION			
	CLOSED BEFORE NORMAL	BEFORE TDC>	BEFORE <TDC	OPEN
7-6				
69-70				
8-9				
71-72				

MUS	SOLENOID POSITION			
	OPEN	BEFORE TDC>	BEFORE <TDC	CLOSED EMERG.
7-6				
69-70				
8-9				
71-72				

PROJECT NAME: WIRING DIAGRAM 7000 SERIES (7ACTS) GROUP 5 CONTROLS

MANUFACTURING: ITS FRAMES: TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-3-003 FOR PLASTIC PARTS: SEE MP-1-005

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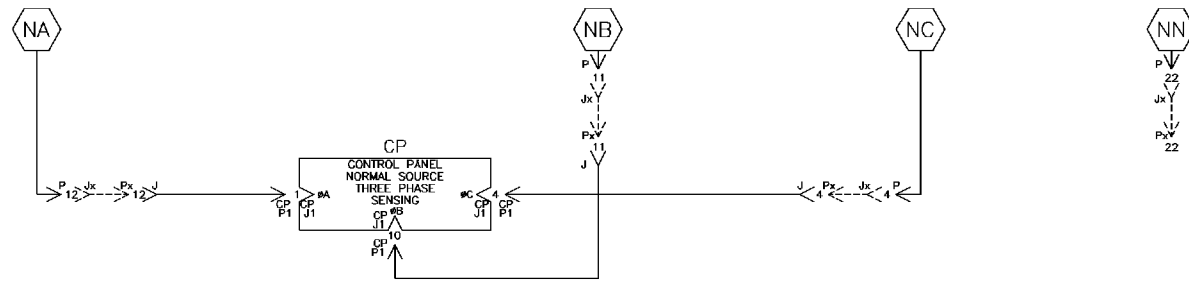
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C	157574	BWM	5/8/01
B	151569	WL WK	5/10/99
A	151399	JPB JPB	4/15/99
-	149121	BK JPB	8/98
-	ISSUE		
CHANGE LETTER	ECH NO.	BY	APP
SUBSIDIARY DISTRIBUTION			
AE	AN	AM	AL
AG	AV	AP	AS
AC	AD	AA	AA
AC	AP	AC	AS
COMPUTER GENERATED DRAWING			
SCALE	ACAD FILE		
SIZE	DWG. NO.		
DS623992			
CHANGE LETTER	ECH NO.	BY	APP
C	157574		

NORMAL SOURCE CIRCUITS

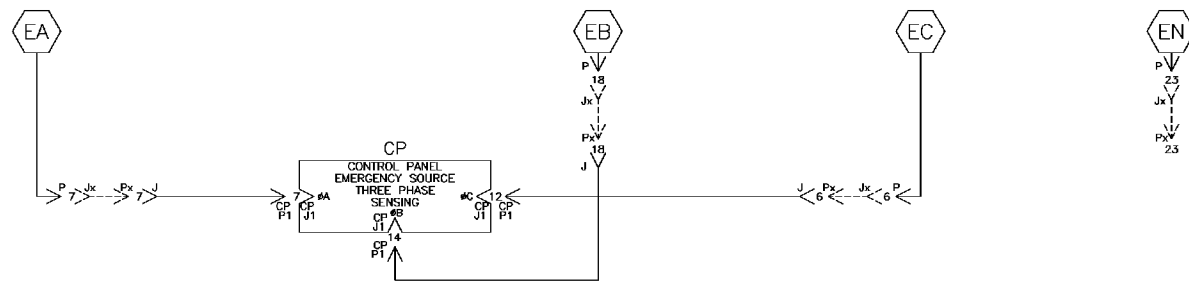
CONTROL SIGNALS & INDICATION

NORMAL



EMERGENCY SOURCE CIRCUITS

EMERGENCY



LOAD TERMINAL CIRCUITS

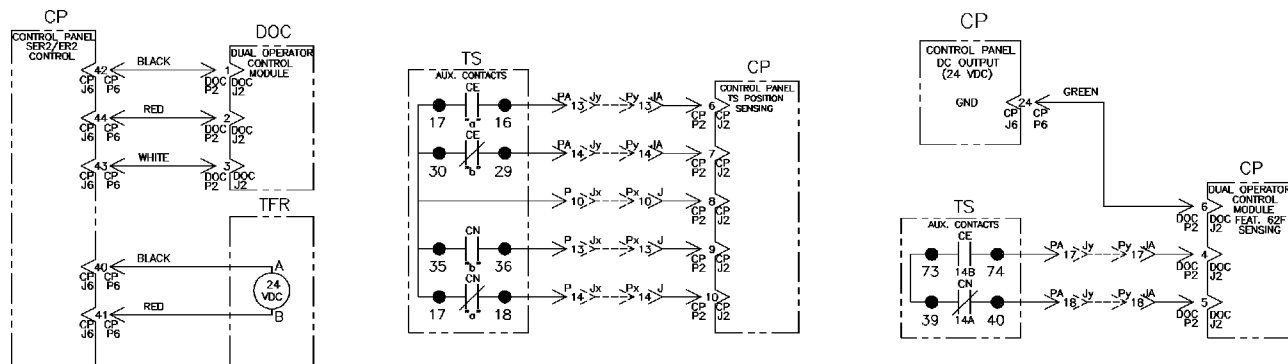
LOAD



CONTROL SIGNALS & INDICATION

SER2/ER2 CONTROL

TS POSITION SENSING



PROJECT NAME:	WIRING DIAGRAM	157574	BWM	5/8/01
DRAWN BY:	BK	8/98	151569	WL WK 5/10/99
CHECKED:			151399	JPB JPB 4/15/99
DRAFTING APPROVAL:			149121	BK JPB 8/98
FINAL APPROVAL:				ISSUE
SUBSIDIARY DISTRIBUTION		AE	AN	AM
THIRD ANGLE PROJECTION		CH	AV	AA
COMPUTER GENERATED DRAWING		AC	AP	AC
SCALE		AS	AS	AS
ASCO POWER TECHNOLOGIES, L.P.		DS	623992	FILE
FLORHAM PARK, NEW JERSEY 07832 U.S.A.		CHANGE LETTER	C	NO. 157574
SHEET 4 OF 6				

PHYSICAL DIAGRAM

DOOR LEFT (INSIDE)

ENCLOSURE

DOOR RIGHT (INSIDE)

AP1  
OPTIONAL  
ACCESSORY ADD-ON PANEL  
MOUNTING

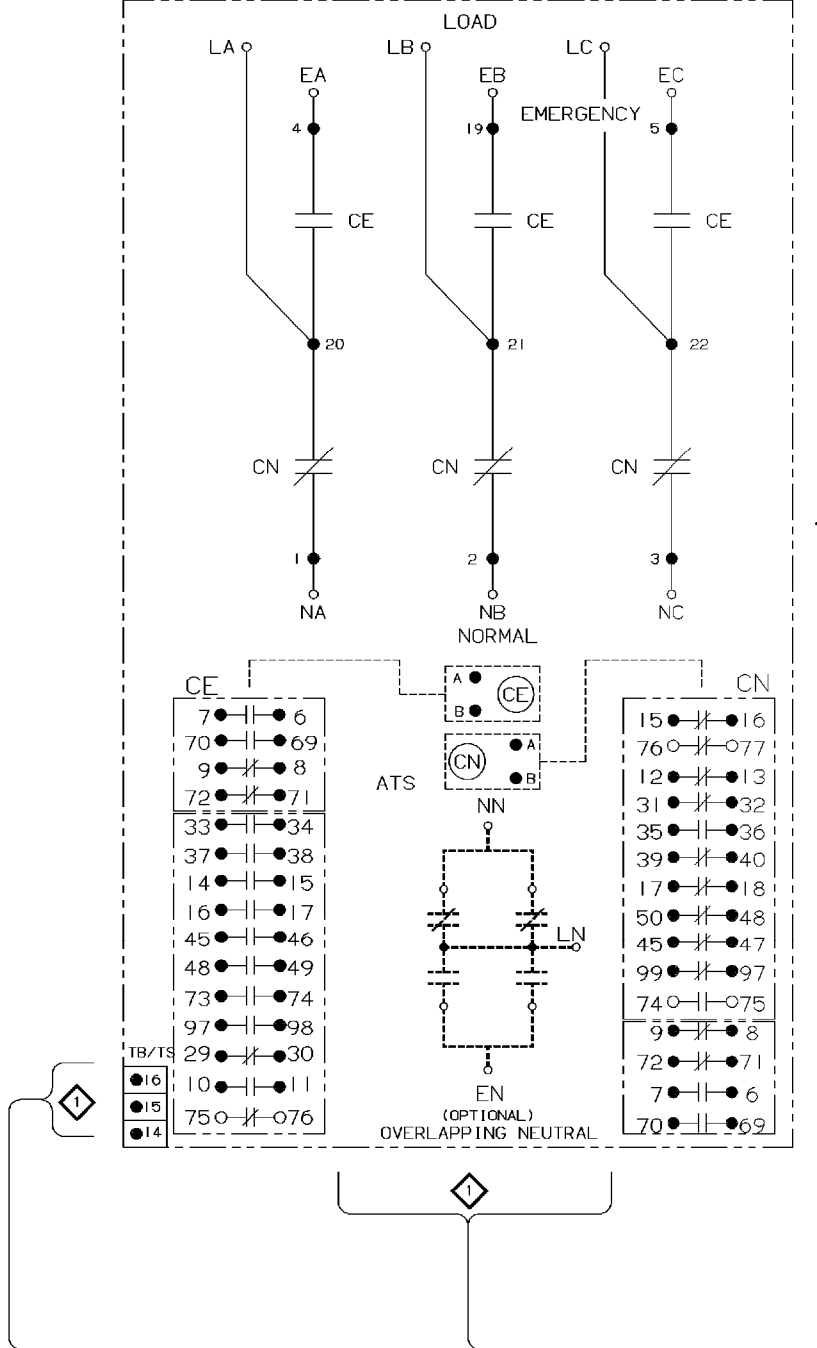
AP2  
OPTIONAL  
ACCESSORY ADD-ON PANEL  
MOUNTING

AP3  
OPTIONAL  
ACCESSORY ADD-ON PANEL  
MOUNTING

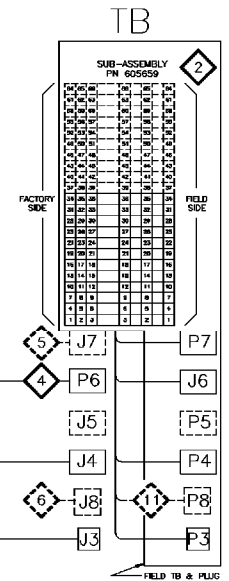
BONDING STRAP  
PN 098323-019

BONDING STRAP  
PN 098323-019

4000 AMP

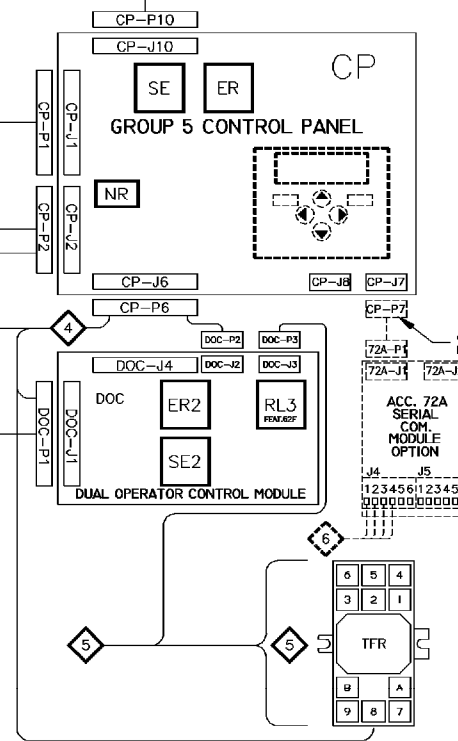


(OPTIONAL)  
SOLID BUS PLATE  
NEUTRAL  
NOT AVAILABLE ON  
OPEN TYPE UNITS



OPTIONAL  
POWERMANAGER  
OR ADDITIONAL  
OPERATOR CONTROLS  
ESCUTCHEON MOUNTING

OPERATOR CONTROLS  
PN 613657-001  
(REFER TO ASSEMBLY DRAWING FOR WIRING)



AP  
OPTIONAL  
ACCESSORY ADD-ON PANEL  
MOUNTING

C	157574	BWM	5/8/01
B	151969	WL WK	5/10/99
A	151399	JPB JPB	4/15/99
	149121	BK JPB	8/98
			ISSUE
CHANGE LETTER	ECN NO.	BY	APP
			DATE
SUBSIDIARY DISTRIBUTION			
AE	AN	AM	AL
CH	AV	AS	AR
AC	AP	AC	AS
COMPUTER GENERATED DRAWING			
SCALE	ACAD	FILE	
DS623992			
CHANGE LETTER C	ECN NO.	157574	SHEETS OF 6

PROJECT NAME: WIRING DIAGRAM  
7000 SERIES (7ACTS)  
GROUP 5 CONTROLS

MANUFACTURING: ITR FRAMES: TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003 FOR PLASTIC PARTS: SEE MP-1-005

ASCO POWER TECHNOLOGIES, L.P.  
FLORHAM PARK, NEW JERSEY 07832 U.S.A.

DATE: 8/98  
BY: BK  
CHECKED: [ ]  
DRAWING APPROVAL: [ ]  
FINAL APPROVAL: [ ]

ASSEMBLY REF. NO.: [ ]  
SCALE: [ ]  
FILE: [ ]

WIRE RUN LISTING

HARNESS LOCATOR 1 HARNESS 619510-013 (P,PA,J4) MAIN TS CLR AWG 16

HARNESS LOCATOR 2 SUB-ASSEMBLY 605659 (P3,P4,J6,P7,TB) STD. FIELD TB CLR AWG 16

HARNESS LOCATOR 3 HARNESS 483763 (J,CP-P1,CP-P2) CONTROL PANEL CLR AWG 16

HARNESS LOCATOR 6 HARNESS 605454-005 (J8) OPTIONAL SERIAL I/O CLR AWG 22 (4 COND)

HARNESS LOCATOR 9 HARNESS 309320-005 OPTIONAL 8" EXTENSION HARNESS CLR AWG 16

WIRE No. ADDITIONAL WIRING CLR AWG

WIRE No. ADDITIONAL WIRING CLR AWG

HARNESS LOCATOR 7 HARNESS 619385 (JA,DOC,CP-P2) CONTROL MODULE CLR AWG 16

HARNESS LOCATOR 10 HARNESS 309320-005 OPTIONAL 8" EXTENSION HARNESS CLR AWG 16

HARNESS LOCATOR 5 HARNESS (J7) OPTIONAL FIELD OUTPUTS CLR AWG 16

HARNESS LOCATOR 11 HARNESS 605454-007 (P8,TB) OPTIONAL SERIAL I/O CLR AWG 22 (4 COND)

Revision table with columns for change letter, ECN no., by, app, date, and issue.

Project information and drawing details including project name, scale, drawing number (DS1623992), and manufacturer (ASCO).