



Critical Loads Demand ASCO

## ASCO 7000 SERIES Power Transfer Switches

### Protecting:

- Healthcare Facilities
- Web Hosting, Internet Data Centers
- Commercial Buildings / Industrial Buildings
- Telecom Central Offices
- Process Manufacturing / Wafer Fabrication Plants
- Distributed Power / Load Management

As we become more dependent on the quality and reliability of electrical power, interruption or complete loss of power can create serious and even crippling financial losses, or impose dangers to life and safety.

ASCO Power Technologies (ASCO) provides the solutions to handle the transfer of critical loads to emergency sources reliably and with state of the art products. Using ASCO products can mean the difference between a minor inconvenience and a major catastrophe. You'll find ASCO Power Transfer Switches wherever there is a critical load to be protected.

When flexibility in power switching is a must, ASCO offers a variety of product solutions to meet virtually every application requirement, including distributed generation applications. That's why the 7000 SERIES is available in open, delayed, closed and closed soft load configurations. Additionally, switched or overlapping neutral options provide for reliable operation of ground fault protection systems and reduction of voltage transients from unbalanced load switching.

ASCO Power Transfer Switches are the first CE Marked, IEC 60947-6-1 compliant Transfer Switches in the world.



The Recognized Leader in Power Transfer Switch Technology Offers the Most Advanced Transfer Switches in the World.



**Fig. 1:** Three Pole 7000 SERIES Automatic Transfer Switch rated 1600 Amperes (shown with optional front connected terminals and Power Manager).

## 7000 SERIES

ASCO Power Transfer Switches are the standard of the industry. High speed transfer of loads between alternate sources of power, regardless of ampacity size, is achieved by a reliable, field proven solenoid operating mechanism. When combined with a programmable microprocessor controller with keypad and LCD display, they offer the most advanced method of transferring all types of loads, such as motors, electronic drives, UPS's and microprocessor based systems. 7000 SERIES Power Transfer Switches are available open or enclosed, in ampacity sizes from 30 through 4000 Amperes with the largest selection of optional accessories offered anywhere. All switching configurations are available with an integrally mounted bypass-isolation switch and/or rated for use in service entrance applications.

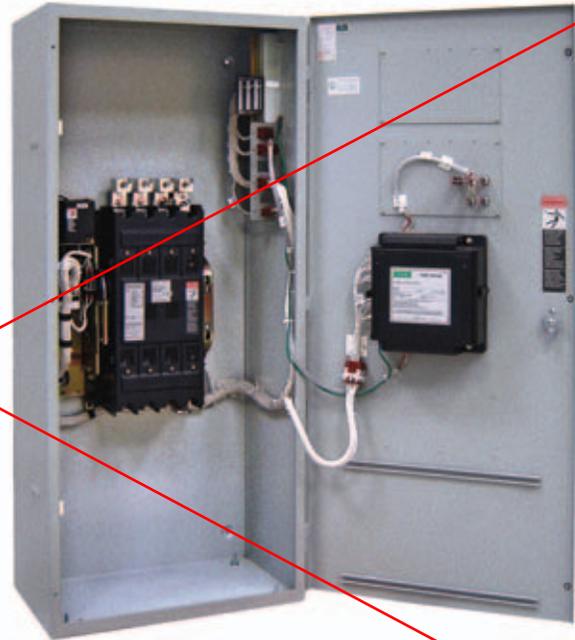
## 7000 SERIES Power Transfer Switches Product Features

- Conventional two-position transfer configuration, plus closed and delayed transition modes of operation. All configurations available with either automatic or non-automatic control.
- UL listed to 1008 Transfer Switch Equipment & CSA certified to CSA 22.2 No.178-1978 Automatic Transfer Switches.
- Qualified and certified to IEC 60947-6-1, CE marked (optional). (Limited to certain accessories.)
- Rated up to 600 VAC, 30 through 4000 Amperes.
- Reliable and field proven solenoid operating mechanism.
- High withstand and close-on ratings including short time withstand current rating for optimum flexibility in circuit breaker coordination (600-4000 Amperes).
- Solid, switched, or overlapping neutral conductor options.
- Front replaceable main and arcing contacts (800-4000 Amperes).
- Programmable microprocessor controller with keypad and LCD display.
- Centrally located terminal block for customer control connections (260-4000 Amperes).
- 16mm, industrial grade control switches and indicating lights.
- Switch position LED indicators and source acceptability lights.
- Standard ground conductor connections.
- Four auxiliary contacts, two contacts closed when switch is in normal position and two contacts closed when switch is in emergency position.
- Local/remote communications capability for interfacing with ASCO POWERQUEST® communication products.

## Non-Automatic Transfer Switching

ASCO Non-Automatic Transfer Switches are electrically operated units which are operated with manual control switches mounted locally or at remote locations.

- Sizes from 30 through 4000 Amperes.
- Microprocessor based controller provides for addition of optional accessories.
- Controller prevents inadvertent operation under low voltage conditions.
- Low control circuit operating currents allow for long line runs between remotely mounted manual control switches and the transfer switch.
- Source acceptability lights inform operator if sources are available to accept load.
- Standard inphase monitor can be activated for transferring motor loads.



**Fig. 4:** Three pole Non-Automatic, electrically operated 400 ampere switch shown in Type 1 enclosure.

## Withstand and Close-On Ratings for all 7000 SERIES Products

UL 1008 Withstand and Close-On Ratings <sup>1</sup>

Frame	Switch Rating (Amps)		Current Limiting Fuses				Specific Breaker		Any Breaker 3		Short Time Ratings (RMS Symmetrical)			
			Ratings		Recommended Fuses		RMS Symmetrical Amps	Volts Max.	RMS Symmetrical Amps	Volts Max.	@ 480V Max.		@ 600V Max.	
	Transfer Switches	Bypass Switches	RMS Symmetrical Amps	Volts Max.	Max Size, A	Class					6	8	18	30
D	30	-	100kA	480V	60	J			10kA	600V	N/A		N/A	
D	70, 100, 125, 150	-	200kA	480V	200	J	22kA	480V	10kA	600V	N/A		N/A	
D	200	-	200kA	480V	200	J	22kA	480V	10kA	480V	N/A		N/A	
D	230	-	100kA	480V	300	J	22kA	480V	10kA	480V	N/A		N/A	
J	150*, 260, 400, 600 *150 for CTS and DTS only	150, 200, 230, 260, 400, 600	200kA	600V	600	J	50kA	480V	65kA	240V	N/A		N/A	
					800	L	42kA	600V	42kA <sup>6</sup>	480V	N/A		N/A	
									35kA	600V	N/A		N/A	
H	800 - 1200	800 - 1200	200kA	600V	1600	L	65kA	600V	50kA	600V	36kA	N/A	N/A	
G	1600 - 2000	-	200kA	600V	2500	L	-	-	85kA <sup>5</sup>	600V	N/A	N/A	N/A	N/A
S	800 - 2000	800 - 2000	200kA	480V	3000	L	-	-	100kA	480V	N/A	N/A	N/A	N/A
S	800 - 2000	800 - 2000	200kA	600V	2500	L	-	-	-	-	65kA		65kA	
S	1600 - 2000	1600 - 2000	200kA	600V	2500	L	-	-	-	-	85kA	N/A	85kA	N/A
G	1600 - 2000	1600 - 2000	200kA	600V	3000	L	125kA	480V	100kA	600V	42kA	N/A	42kA	N/A
G	2600 - 3000	2600 - 3000	200kA	600V	4000	L	-	-	100kA	600V	42kA	N/A	42kA <sup>7</sup>	N/A
G	3200	-	200kA	480V	4000	L	-	-	100kA	480V	N/A		N/A	
G	4000	4000	200kA	600V	5000	L	-	600V	100kA	600V	85kA	65kA	65kA	

Notes: 1) All WCR values indicated are tested in accordance with the requirements of UL 1008. See ASCO Pub. 1128 for more WCR information.  
 2) Application requirements may permit higher WCR for certain sizes of switch. Contact ASCO for guidance if application requires higher WCR.  
 3) Based on 3 cycles for 260-4000A and 1.5 cycles for 30-230A switches. Applicable to circuit breakers with instantaneous trip elements.  
 4) Short Time ratings are provided for applications involving circuit breakers that utilize trip delay settings for system selective coordination.  
 5) Optional front connected service (Accy 40MY and 40NY) limits 1600 and 2000A G Frame switches.  
 6) Not applicable to for switches utilizing overlapping neutral (code "C").  
 7) 3000A ATB does not have 600V short time rating.

## Automatic Transfer Bypass-Isolation Switches



**Fig. 5:** Rated 150-600 Amps



**Fig. 6:** Rated 600-1200 Amps



**Fig. 7:** Rated 800-3000 Amps

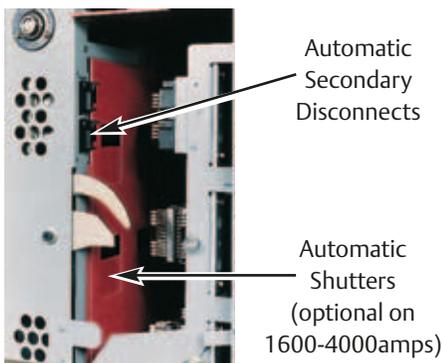


**Fig. 8:** Rated 4000 Amps

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

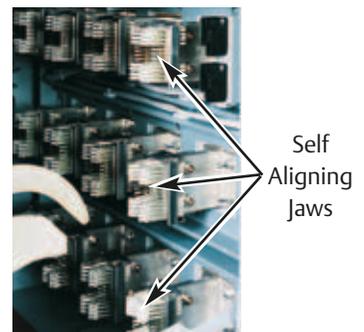
- Available 150 to 4000 Amperes.
- Allows bypass-isolation without load interruption.
- Bypass switch and transfer switch have identical electrical ratings.
- Heavy duty mechanical interlocks prevent undesirable operation.
- Bypass contacts carry current only during bypass mode.
- Transfer switch is drawout design for ease of maintenance.
- Bypass and isolation handles are permanently mounted. The bypass switch has dead front quick-make, quick-break operation for transferring of loads between live sources.
- Bypass switch is fully rated for use as a manual 3-position transfer switch.
- Bypass and isolation functions are simple, requiring a total of two operating handles.
- No toggle switches, push buttons, selector switches or levers are required for bypass-isolation operation.
- Mechanical indicators show bypass and transfer switch positions.
- 800 -1200 ampere available in shallow depth, front connected or rear connected designs.

## Transfer Switch Drawout Features (150-4000 Amperes)



**Fig. 9:** Bypass-Isolation Transfer Switch secondary disconnects and optional automatic shutters.

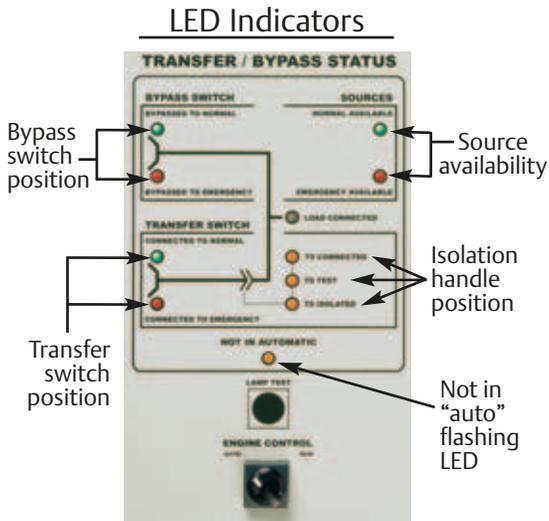
- Automatic secondary disconnects remove all control power as switch is withdrawn.
- Drawout carriage provides for easy transfer switch maintenance and/or removal via commercially available breaker hoists.
- Optional transfer switch lifting yoke kit available
- Optional automatic shutters which close when the transfer switch is withdrawn to provide bus isolation, specify accessory 82C.(1600-4000A only)



**Fig. 10:** Bypass-Isolation Transfer Switch self aligning power jaws.

# ASCO® 7000 SERIES Power Switching Solutions

## Bypass and Isolation Handles - *Simple as 1, 2, 3*



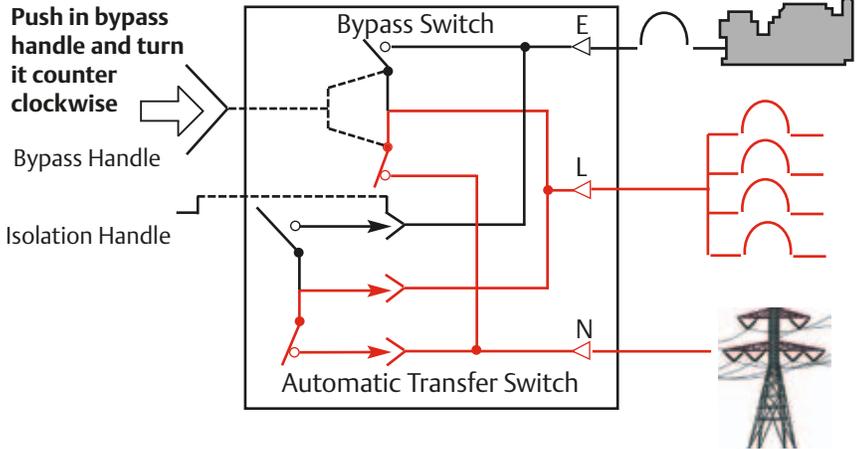
**Fig. 11: Transfer Bypass Status Panel\***

\*Standard on switches up through H 1200A. Specify ACC 82E for G frame 1600-4000A

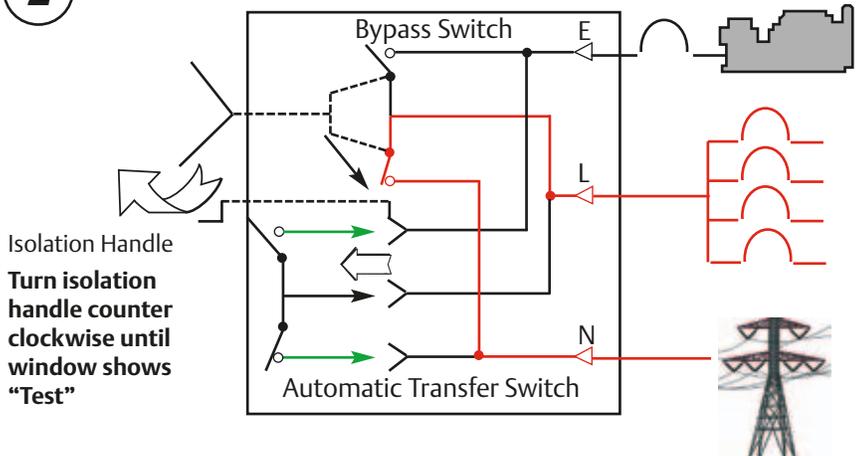


**Fig. 12: Bypass-Isolation Switch user interface**

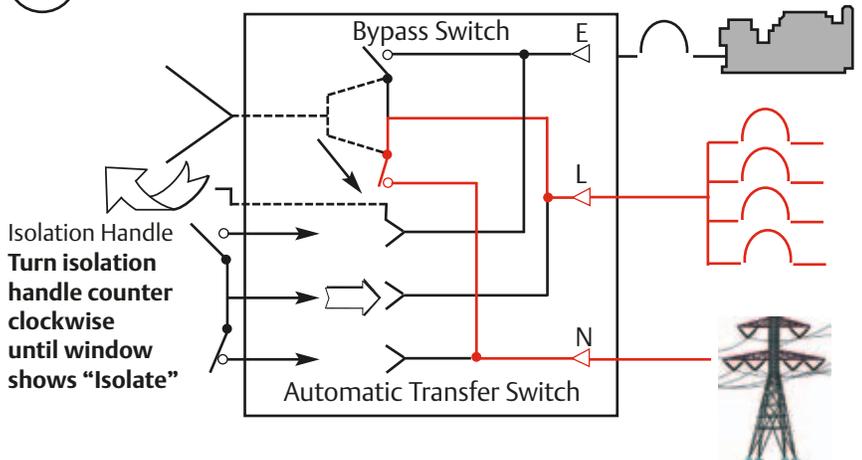
### 1 Bypass to Normal



### 2 Test Position



### 3 Isolation Position



**Key:**

- Red line: Represents Current Flow
- Green line: In test position control panel energized to allow for electrical operation of a transfer switch.

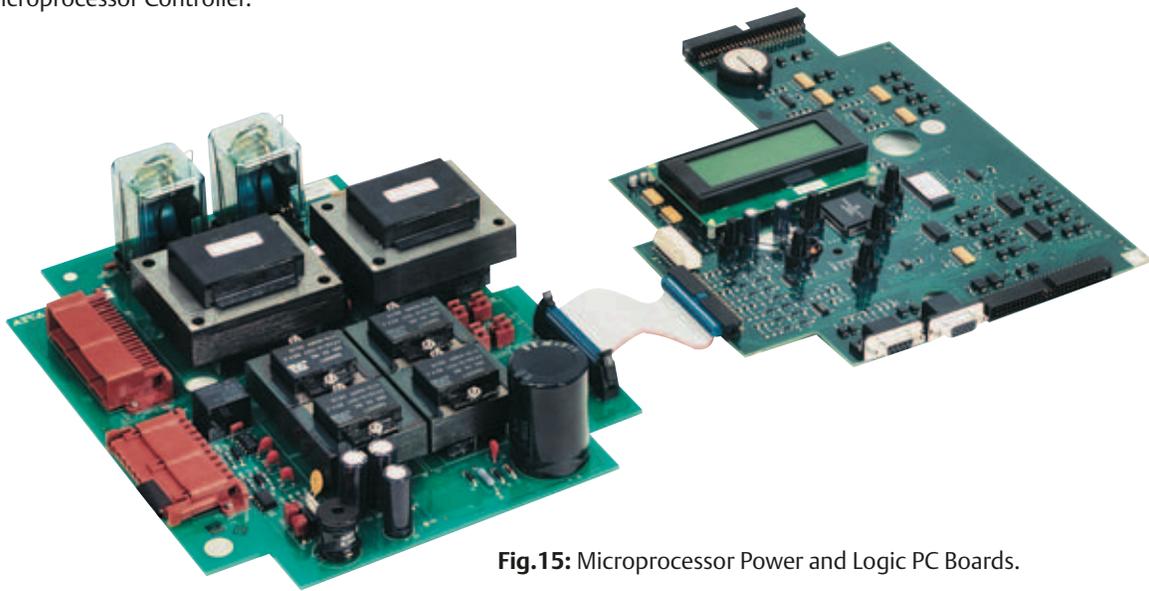
# ASCO<sup>®</sup> 7000 SERIES Microprocessor Controller



**Fig. 14:** 7000 SERIES Microprocessor Controller.

The 7000 SERIES Microprocessor Based Controller is used with all sizes of Power Transfer Switches from 30 through 4000 Amperes. It represents the most advanced digital controller in the industry and includes, as standard, all of the voltage, frequency, control, timing and diagnostic functions required for most emergency and standby power applications.

Because of severe voltage transients frequently encountered with industrial distribution systems, the microprocessor logic board is separated and isolated from the power board as shown below. This improves electrical noise immunity performance and helps assure compliance with the rigorous transient suppression standards highlighted below.



**Fig.15:** Microprocessor Power and Logic PC Boards.

7000 SERIES Microprocessor Based Controller	
Emission Standard - Group 1, Class A	EN 55011:1991
Generic Immunity Standard, from which:	EN 50082-2:1995
Electrostatic Discharge (ESD) Immunity	EN 61000-4-2:1995
Radiated Electromagnetic Field Immunity	ENV 50140:1993
Electrical Fast Transient (EFT) Immunity	EN 61000-4-4:1995
Surge Transient Immunity	EN 61000-4-5:1995
Conducted Radio-Frequency Field Immunity	EN 61000-4-6:1996
Voltage Dips, Interruptions and Variations Immunity	EN 61000-4-11:1994

## Features

- Digital microprocessor.
- Touch pad programming of features and settings without the need for meters, or variable power supplies.
- Sixteen (16) selectable operating voltages available in a single Controller.
- On-board diagnostics provide control panel and ATS status information to analyze system performance.
- Displays and counts down active timing functions.
- Selectable multi-language display (English, German, Portuguese, Spanish, or French. For others contact ASCO).
- Password protection to prevent unauthorized tampering of settings.
- Remote monitoring and control with ASCO POWERQUEST® communications products. Specify optional accessory 72E.
- Load shed option for bus optimization applications. Specify optional accessory 30B.
- Historical event log
- Statistical ATS systems monitoring information

## Voltage and Frequency Sensing

- 3-Phase under and over voltage settings on normal and emergency sources.
- Under and over frequency settings on normal and emergency.
- True RMS Voltage Sensing with +/- 1% accuracy; Frequency Sensing Accuracy is +/- 0.2%.
- Selectable settings: single or three phase voltage sensing on normal and emergency; 50 or 60Hz.
- Phase sequence sensing for phase sensitive loads.
- Voltage unbalance detection between phases.

## Status and Control Features

- Output contact (N/O or N/C) for engine-start signals.
- Selection between “commit/no-commit” on transfer to emergency after engine start and normal restores before transfer.
- Advanced inphase algorithm which automatically measures the frequency difference between the two sources and initiates transfer at appropriate phase angles to minimize disturbances when transferring motor loads.
- Event log displays 99 logged events with the time and date of the event, event type and event reason.
- Output signals for remote indication of normal and emergency source acceptability
- Statistical ATS/System monitoring data screens which provide:
  - Total number of ATS transfers.
  - Number of ATS transfers caused by power source failure.
  - Total number of days ATS has been in operation.
  - Total number of hours that the normal and emergency sources have been available.

## Time Delays

- Engine start time delay - delays engine starting signal to override momentary normal source outages - adjustable 0 to 6 seconds.
- Transfer to emergency time delay - adjustable 0 to 60 minutes.
- Emergency source stabilization time delay to ignore momentary transients during initial generator set loading - adjustable 0 to 6 seconds.
- Retransfer to normal time delay with two settings:
  - Power failure mode - 0 to 60 minutes.
  - Test mode - 0 to 10 hours.
- Unloaded running time delay for engine cooldown - adjustable 0 to 60 minutes.
- Pre and post transfer signal time delay for selective load disconnect with a programmable bypass on source failures - adjustable 0 to 5 minutes. This signal can be used to drive a customer furnished relay, or for (2) sets of double throw contacts rated 3 amps at 480 volts AC, specify ASCO optional accessory 31Z.
- Fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi-weekly or monthly basis.
- Contains all alarm signals, logic and time delays for use with closed transition switches.
  - Insynch time delay - 0 to 3 seconds.
  - Failure to synchronize - 1 to 5 minutes.
  - Extended parallel - 0.1 to 1.0 seconds.
- Delayed transition load disconnect time delay - adjustable 0 to 5 minutes.

## Control Switches and Indicating Lights for Conventional 2-Position Switches

- Switch position indicating lights (16 mm, industrial grade LEDs).
- Source acceptability indicating lights with true indication of the acceptability of each source, as determined by the voltage, frequency, voltage unbalance, and phase sequence settings of the control panel (16mm, industrial grade LEDs).
- Three position (16mm, industrial grade type) selector switch:
- Automatic: Normal maintained position.
- Test: Momentary position to simulate normal source failure for system test function.
- Reset Delay Bypass: Momentary position to bypass transfer and re-transfer time delay.

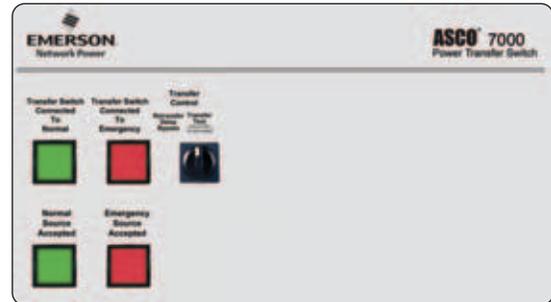


Fig. 16: 7000 SERIES User Controls and Indicators.

## Control Switches and Indicating Lights for Closed Transition Switches

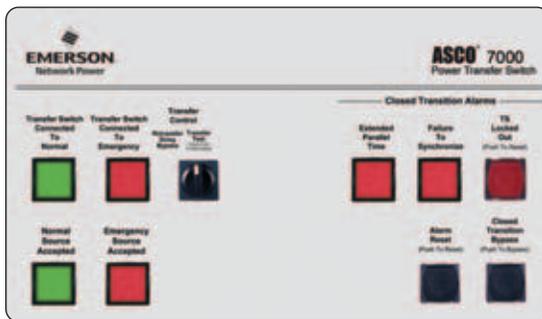


Fig. 17: 7000 SERIES User Controls and Indicators.

- 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 is exceeded, during closed transition transfer operation.
- TS 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.

## 7000 SERIES Power Control Center



Fig. 18: 7000 SERIES Power Control Center.

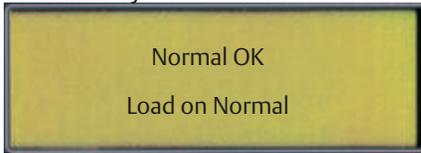
The 7000 SERIES microprocessor controller is a Power Control Center which allows the user to easily access detailed information on: system status; power source parameters; voltage, frequency and time delay settings; optional feature settings; historical event log; and system diagnostics. A four line, (20) character LCD has a backlit display which enables easy viewing under all conditions. The user can navigate through all screens using only six buttons, which also allows selection of: (18) different source parameter settings; (16) standard time delays; (12) standard feature settings; up to seven independent engine exercise routines; and even the language (English, German, Spanish, French, etc.) which appears on the display.

Since the Power Control Center must be visible and operable through the enclosure door, it has been qualified for use in industrial and outdoor applications. This includes installation in Type 3R (outdoor/rainproof), 4 (weatherproof) and 12 (indoor/industrial) enclosures. For applications with regular exposure to direct sunlight a double door for UV protection is recommended.

# ASCO® 7000 SERIES Power Control Center Screens

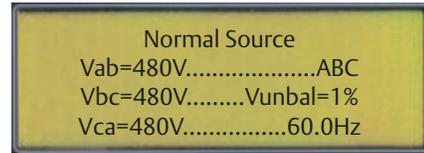
## Status

### System Status



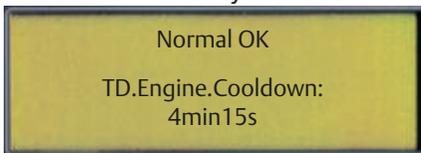
Displays system status in clear, concise language. Message shown indicates normal source is acceptable and the load is connected to the normal source.

### Source Status



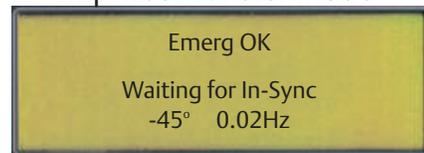
Displays voltage for each phase, frequency, phase rotation and voltage unbalance for both normal and emergency sources.

### Time Delay Status



Active time delay status displays time remaining until next control event.

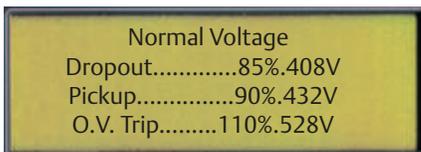
### Inphase Transfer Mode



Displays the relative phase angle between sources and frequency differential to indicate the controller is awaiting an inphase condition.

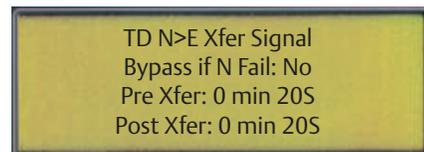
## Settings

### Voltage and Frequency Settings



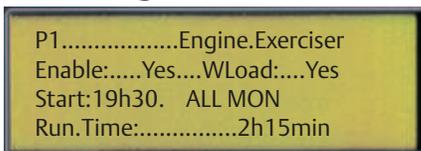
Provides voltage and frequency setting values for normal and emergency sources. Voltage pick-up, dropout and trip settings are set in percentage of nominal voltage and are also displayed in rms voltage values.

### Time Delay Settings



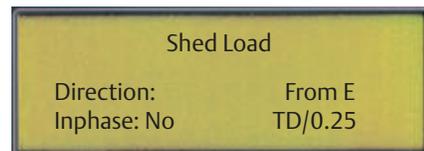
Provides direct reading display for setting time delays.

### Engine Exerciser



Seven independent programs, load/no load selection, flexible run times and daily, weekly, bi-weekly and monthly exercise routines.

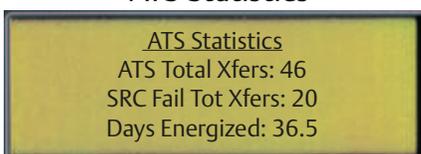
### Feature Settings



Standard features can be activated with the keypad. As an example, when enabled, the “shed load” option causes the transfer switch to transfer the load off of the specified source. If desired, the load shed transfer can be made inphase.

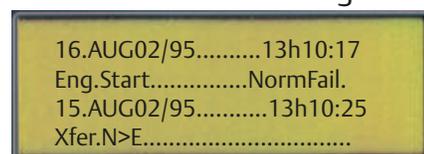
## Data Logging

### ATS Statistics



Instant availability of statistical information on total number of ATS transfers, number of transfers caused by power failures and total days controller has been energized, plus more.

### Historical Event Log



Displays detailed information for last 99 events, including time of occurrence, length of event, date and reason for event.

# ASCO<sup>®</sup> 7000 SERIES Optional Accessories

## Time Delays

- 2C** Provides an extended time delay on engine starting. The standard feature one time delay is adjustable from zero to six seconds. Accessory 2C allows this time delay to be adjustable from zero to sixty minutes in one second intervals factory set at five minutes.
- 1G** Similar to accessory 2C except using 24 volt DC external input signal. 7000 SERIES controller remains active when both power sources are de-energized\*
- 1GB** Same as accessory 1G except using 120 volt AC external input\*

\* add suffix 1 to include external power to power manager or power meter when applicable

## Manual Controls for Automatic Transfer Switches

- 6C** Reset switch for manual retransfer to normal with automatic retransfer in the event of emergency source failure.
- 6D** Selector switch for automatic/manual retransfer to normal. Automatic bypass if emergency fails.

## Indicators

- 14A/14B** Additional auxiliary contact sets to indicate switch position. Two sets are standard. Specify total number of sets if more are required.
- 18B** Two-pole, double-throw contacts operate when emergency source voltage is present at transfer switch terminals.
- 18G** Two-pole, double-throw contacts operate when normal source voltage is present at transfer switch terminals.
- 99** "Push-to-Test" feature on all pilot light indicators.

## Customer Control Circuits

- 30A** Load-shedding circuit initiated by opening of a customer-supplied contact.
- 30B\*** Load-shedding circuit initiated by removal of customer-supplied control voltage. \*(Specify voltage).
- 31Z** Selective load disconnect control contacts (two provided) which operate with time delay prior to and/or after load transfer and retransfer.
- 43R** Terminal block for all customer control connections on 30-150 amp only (standard on all other sizes).

Note: An externally operable quick-make, quick-break (QMQB), manual handle is available on some 7000 SERIES product configurations. (Consult ASCO for guidance.)

## Neutral Conductor Options

- Solid neutral, with fully-rated terminals. (AL-CU) UL Listed.
- Conventional neutral switching pole.
- Overlapping neutral transfer contacts. Allows for proper ground-fault sensing and avoids generator voltage transients during transfer.

Note: Specify neutral option in catalog number, see page 22 for instructions.

## Extension Harness

- 37B** Six foot (6') extension harness to increase distance between transfer switch and control panel on open-type units.

## Communications

- 72E** 5150 Ethernet Connectivity Module offers communication to transfer switch and metering with embedded webpages.
- 72SW** An Industrial Ethernet Switch mounted in the enclosure used in conjunction with 5150 Connectivity Module (acc. 72E) metering device. Includes 2 available Ethernet ports and 2 multimode ST Fiber connectors.

## Surge Protection

- ASCO Pulsar 450 rated 65KA
- 73AC1** Normal source protection. (3Ø, 4wire WYE)
- 73AC2** Emergency source protection. (3Ø, 4wire WYE)
- 73AC3** Load side protection. (3Ø, 4wire WYE)

Note: Other distribution voltages available (Contact ASCO).

## Special Applications

- 45** Custom Alphanumeric nameplate mounted on the front of the switch
- 111A** Generator - to - Generator for Standby Applications
- 111B** Generator - to - Generator for Prime Power Applications
- 125** Seismic Certification to the requirements of the international building code for electrical equipment
- 131** Certification of compliance with the American Recovery & Reinvestment ACT (Buy American Provision) - Must be specified at time of order placement

## 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.
- 82C** Automatic shutters for bus isolation when transfer switch is withdrawn. (see page 6 for details)
- 82E** LED Bypass status indicator, optional on G frame 1600A-4000A only. Standard for all other size switches

## ASCO 5200 SERIES METERING

### Power Manager

The ASCO 5200 SERIES Power Meters are microprocessor based metering devices that provides real-time measurement of single and three phase power systems. The 5200 SERIES uses digital signal processing technology to measure voltage and current per phase; real, reactive and apparent power, and bi-directional energy. All measurements can be viewed locally with a backlit liquid crystal display and/or displayed remotely with ASCO POWERQUEST® products.

Direct voltage input for systems up to 600 Volts AC can be monitored without the use of external potential transformers (PTs). Measures three phase currents and a fourth current input is available for measuring current in the neutral conductor. The 5200 SERIES includes one discrete input for transfer switch position.

### Power Metering

- Voltage:
  - Line - Line: VAB, VBC, VCA, VAVERAGE
  - Line - Neutral: VAN, VBN, VCN, VAVERAGE
- Frequency: 45.0 to 66.0 Hertz
- Current: IA, IB, IC, IAVERAGE
- Unbalance %: Voltage, Amps
- Real Power: KWA, KWB, KWC, KWNET
- Reactive Power: KVARA, KVARB, KVARC, KVARNET
- Apparent Power: KVAA, KVAB, KVAC, KVANET
- Real Energy: KWHIMPORT, KWHEXPORT, KWHNET
- Reactive Energy: KVARHIMPORT, KVARHEXPORT, KVARHNET
- Power Factor: PFA, PFB, PFC, PFNET

### 5220 Power Manager Data Access

- Eight digital inputs, four relay outputs.
- Input/Output 15-character, user definable screen display for identification of input/output signals.

### Communications

- Modbus RTU and TCP/IP capability
- Ethernet compatible when combined with 5150 Connectivity Module (72E).



Fig. 19: ASCO 5210 SERIES Power Meter.



Fig. 20: ASCO 5220 SERIES Power Manager.

### Configurable Designations

- Local - A four line, 20 character LCD backlit display.
- 5220 Power Manager provides user programmable setpoints based on twelve metering and I/O parameters. Each setpoint allows the user to select the parameter, the trip & reset levels, the trip & reset time delays and the alarm type or relay output to trigger. This can be used for protective relaying and peak shaving applications.
- 100 event data logging feature.

### Integrated ATS Features

When configured on load of ATS:

- Displays ATS position.
- Displays power data as a function of ATS position (normal/emergency).
- Accumulates energy data separately for normal and emergency sources.

### Optional Configurations and Connection Arrangements

Connected To:	5210	5220
Load	Acc. 135L	Acc. 85L
Normal	Acc. 135L	Acc. 85N
Emergency	Acc. 135E	Acc. 85M
Load (BPS only)	N/A	Acc. 85SB*

Add suffix A1 to above metering designation if neutral conductor monitoring is required

Note: Accessory 85 and 135 includes component mounting, CTs, shorting blocks and all necessary interwiring.

\*Bypass & isolation switch contacts wired to discrete Power Manager inputs.

Note: The ASCO Power Manager is also available as a separate unit for monitoring electrical parameters anywhere in the power distribution system.

# ASCO® 7000 SERIES Ordering Information

To order an ASCO 7000 SERIES Power Transfer Switch, complete the following catalog number:

7   A     TS   +   A   +   3   +   400   +   N   +   5X   +   C  

		Product		Neutral Code*		Phase Poles	Amperes		Voltage Code		Grp Code	Enclosure		
A	Automatic	TS	Conventional 2-Position	---	No Neutral	2	30	A	115	5	5X-optional accessories	---	No enclosure	
			TB	Open Transition Bypass	A	Solid Neutral	3	70	B			120	C	Type 1 enclosure
N	Non-Automatic	CTS	Closed Transition	B	Switched Neutral	2	100	C	208	260	400	F	Type 3R enclosure	
							150	D	220			G	Type 4 enclosure	
							200*	E	230			H	Type 4X enclosure (stainless steel)	
M	Manually Operated	DTB	Delayed Transition Bypass	C	Overlapping Neutral	2	230*	N	480	400	400	400	L	Type 12 enclosure
							260						M	Type 3R secure double door
							400						P	Type 4 secure double door
							600						Q	Type 4X secure double door
							800						R	Type 12 secure double door
1000														
							1200							
							1600							
							2000							
							2600							
							3000							
							4000							

\*Notes: Conventional switch neutral is provided on delayed transition transfer products when specified.  
200 and 230 amp switch limited to 480 volts maximum, on 7ATS, 7CTS and 7DTS only.

The Example Catalog Number above is 7ATS3400N5XC  
(X is used to specify optional accessories).

**Transfer Switch Configurations**  
7A TS, 7N TS, 7A DTS, 7A CTS, 7N DTS, 7N CTS  
Sizes of UL-Listed Solderless Screw-Type Terminals for External Power Connections

Switch Rating amps	Max # of Conductors per Terminal	Range of AL-CU Conductor Sizes
30 -230 <sup>3</sup>	One	#14 to 4/0 AWG
150*, 260, 400 *150 for CTS and DTS Only	One	#4 AWG to 600 MCM
	Two	#1/0 AWG to 250 MCM
600	Two	#1/0 AWG to 600 MCM
800-1200 <sup>1</sup>	Four	#1/0 AWG to 600 MCM
1600-2000 <sup>2</sup>	Six	#1/0 AWG to 600 MCM
2600, 3000 <sup>2</sup>	Twelve	#1/0 AWG to 600 MCM
4000 <sup>2</sup>	Twelve	#2/0 AWG to 600 MCM

Notes: 1. Unit is designed for top cable entry of emergency and load and bottom entry of normal. Optionally, the switch may be supplied with reverse source and/or bottom entry load, when specified.  
2. All main terminals are rear connected.

**Transfer/Bypass Configurations**  
7A TB, 7N TB, 7A DTB, 7A CTB, 7N DTB, 7N CTB  
Sizes of UL-Listed Solderless Screw-Type Terminal for Power Connections

Switch Rating amps	Max # of Conductors per Terminal	Range of AL-CU Conductor Sizes
150, 200, 230 260,400	One	# 4 AWG to 600 MCM
	Two	# 1/0 AWG to 250 MCM
600 <sup>4</sup>	Two	# 2 AWG to 600 MCM
800,1000,1200 <sup>4</sup>	Four	# 1/0 AWG to 600 MCM
1600-2000 <sup>4</sup>	Six	# 1/0 AWG to 600 MCM
2600, 3000 <sup>4</sup>	Ten	# 2 AWG to 600 MCM
4000 <sup>4</sup>	Twelve	# 2 AWG to 600 MCM

3. 200 and 230 amp rating for copper conductors only for transfer switch configurations only.  
4. All main terminals are rear connected. A front connected version is available in 600 and 1200 amp ratings only with top cable entry only. See pages 25-27 for dimensional data and additional information.  
5. Type 304 stainless steel standard. Specify 316 ST. Steel for installations subject to salt water and corrosive environments

**Automatic Transfer Bypass-Isolation Switching  
with Transfer Switch Engaged 7A TB, 7N TB**

Switch Rating amps	Power Connection Configuration	Poles	Width inches (mm)	Height inches (mm)	Depth inches (mm)
<b>Enclosed UL Type 1</b>					
150, 200, 230, 260, 400 <sup>1,600</sup>	Front Connected	2, 3 or 3 with neutral A/B/C	34 (864)	85 (2159)	28 (711)
800 <sup>1,3</sup>	Front Connected	2, 3 or 3 with neutral A/B/C	38 (965)	91 (2311)	32 (813)
1000, 1200	Front Connected	2, 3 or 3 with neutral A/B/C	38 (965)	91 (2311)	34 (864)
800, 1000, 1200 <sup>1,2</sup>	Side/Rear Connected	2, 3 or 3 with neutral A/B/C	38 (965)	91 (2311)	48 (1219)
1600, 2000 <sup>1,2</sup>	Side/Rear Connected	2, 3 or 3 with neutral A/B/C	38 (965)	91 (2311)	60 (1524)
2600, 3000 <sup>1,2</sup>	Side/Rear Connected	3 or 3 with neutral A/B/C	38 (965)	91 (2311)	72 (1829)
4000 <sup>1,2</sup>	Rear Connected	3 or 3 with neutral A/C	60(1524)	91 (2311)	96 (2438)
<b>Open Configuration</b>					
150, 200, 230, 260, 400 <sup>1</sup>	Front Connected	2, 3 or 3 with neutral B/C	19-3/4 (500) <sup>4</sup>	61-1/2 (1553) <sup>4</sup>	28(711) <sup>4</sup>
600, 800, 1000, 1200 <sup>1,2</sup>	Rear Connected	2, 3 or 3 with neutral B/C	38 (965)	72 (1829)	38 (965)
1600, 2000, 2600, 3000 <sup>1,2</sup>	Rear Connected	2, 3 or 3 with neutral B/C	38 (965)	72 (1829)	38 (965)
4000 <sup>1,2</sup>	Rear Connected	3 or 3 with neutral A/C	60(1524)	91 (2311)	96 (2438)

- Notes: 1. Handles extend 6-1/4 inches (159mm).  
 2. Recommended clearance to enclosure: 3 feet (914mm) from rear, 4 feet (1219mm) from front (25 inches required for transfer switch drawout). Side or rear access required.  
 3. Specify optional accessory 40JY for 800 Amp front, 40KY for 1000 Amp, and 40LY for 1200 Amp - connected arrangement. All service and load cables limited to top entry only.  
 4. Contact ASCO for details.

\*All dimensions and weights shown are approximate and should not be used for construction purposes. Certified dimensions can be furnished upon request.

\*\* For S Frame dimensions contact ASCO.

**Shipping Weights  
Automatic Transfer Bypass-Isolation Switching  
with Transfer Switch Engaged 7A TB, 7N TB**

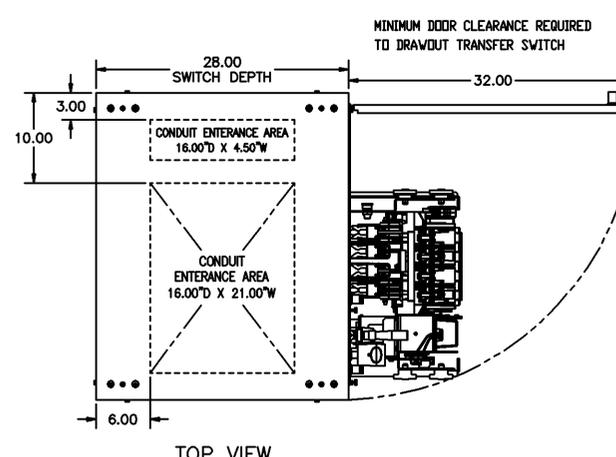
Switch Rating amps	Poles	Enclosed* lb (kg)	Open* lb (kg)
150, 200, 230, 260, 400, 600	2	990 (450)	Contact ASCO
150, 200, 230, 260, 400, 600	3	1050 (477)	Contact ASCO
150, 200, 230, 260, 400, 600	3 with B/C	1110 (505)	Contact ASCO
800, 1000, 1200	2	1510 (685)	920 (417)
800, 1000, 1200	3	1580 (717)	990 (449)
800, 1000, 1200	3 with B/C	1650 (748)	1060 (481)
1600, 2000	2	2180 (989)	1300 (589)
1600, 2000	3	2360 (1070)	1550 (702)
1600, 2000	3 with B/C	2540 (1152)	1800 (815)
2600, 3000	3	2730 (1240)	1690 (768)
2600, 3000	3 with B/C	3360 (1525)	1980 (899)
4000	3	6300 (2858)	-
4000	3 with B/C	6900 (3130)	-

- Notes: 1. Open weights include transfer switch, bypass-isolation switch and controller.  
 1600-4000 amp enclosures require ventilation openings, refer to drawings for details.  
 Export shipments may require a wooden box, contact ASCO for weights and dimensions.

\*All dimensions and weights shown are approximate and should not be used for construction purposes. Certified dimensions can be furnished upon request.

\*\* For S Frame dimensions contact ASCO.

# OUTLINE & MOUNTING FOR ASCO® 7000 SERIES FRONT CONNECTED AUTOMATIC TRANSFER & BYPASS-ISOLATION SWITCHES TYPES J7ATB, J7ACTB & J7ADTB RATED 150-600 AMPS



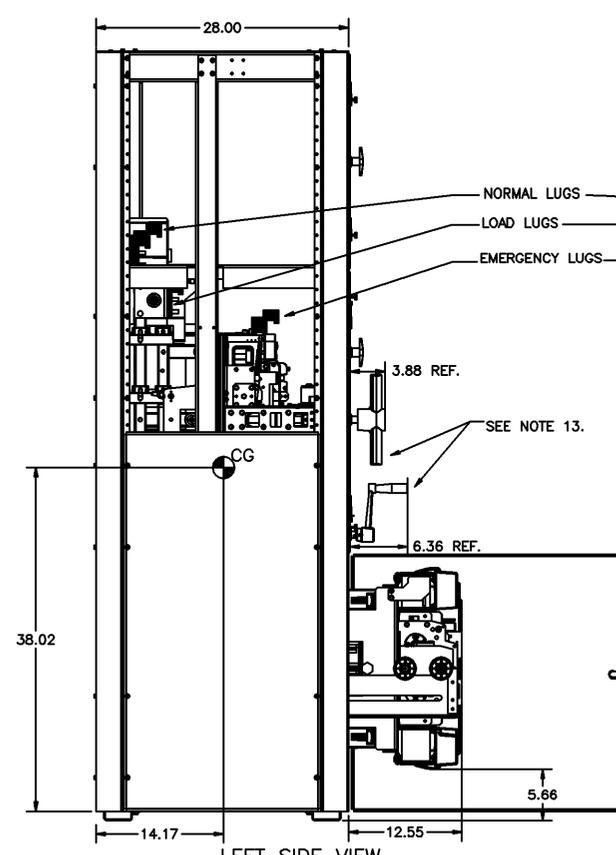
TOP VIEW

POLE 4  
NEUTRAL  
(3ph/4w & 2ph/3w UNITS)  
SWITCHED, OR OVERLAPPING TYPES

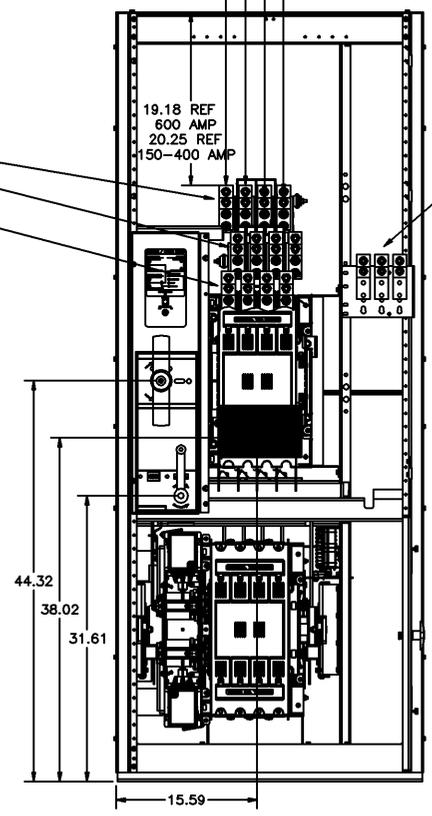
POLE 3  
PHASE C (3ph UNIT)  
PHASE L2 (2ph UNIT)

POLE 2  
PHASE B (3ph UNIT)  
BLANK (2ph UNIT)

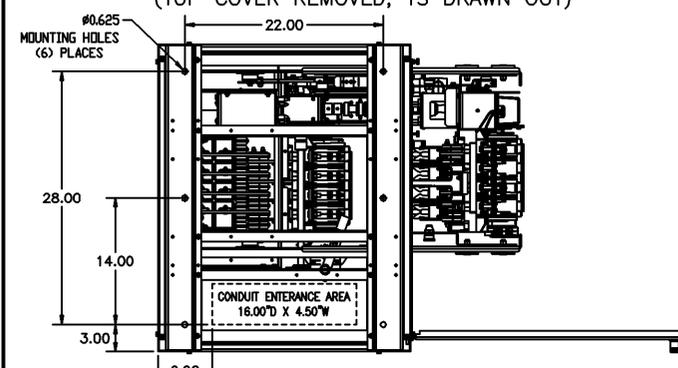
POLE 1  
PHASE A (3ph UNIT)  
PHASE L1 (2PH UNIT)



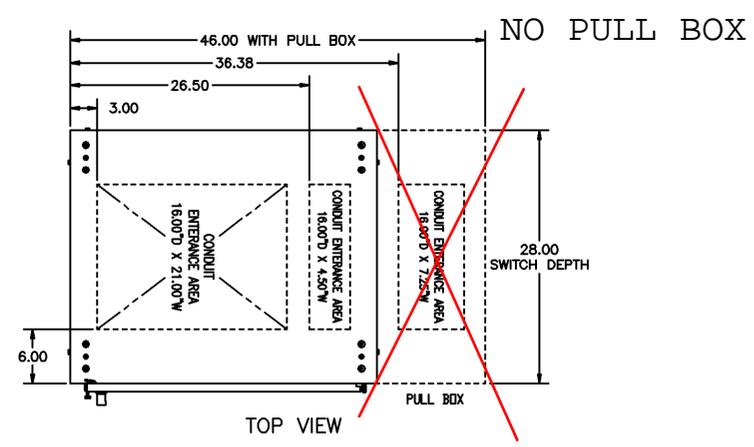
LEFT SIDE VIEW  
(TOP COVER REMOVED, TS DRAWN OUT)



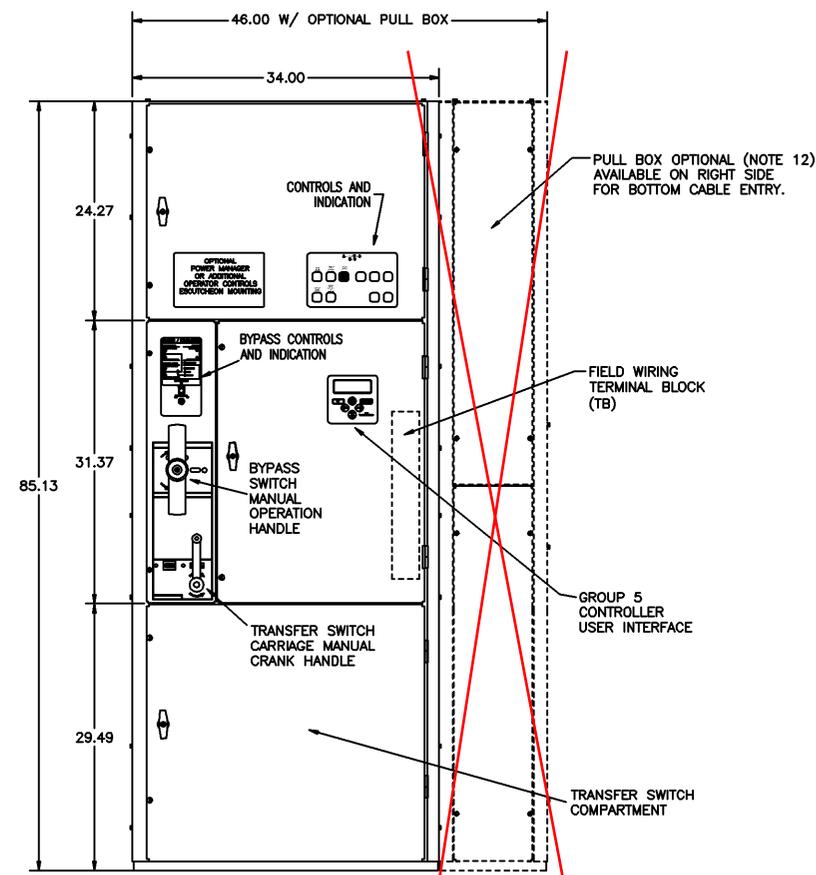
FRONT VIEW  
(COVERS AND DOORS REMOVED)



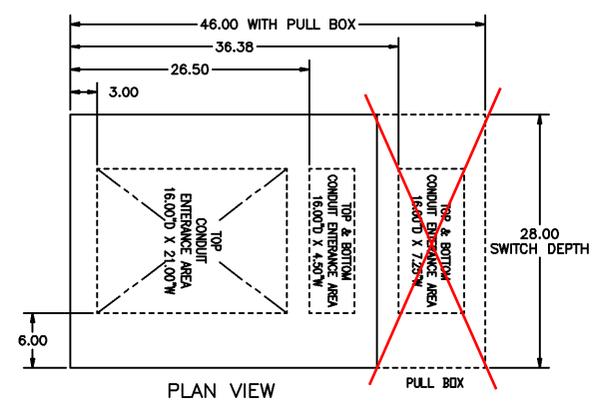
BOTTOM VIEW



TOP VIEW



FRONT VIEW  
(DOORS INSTALLED)



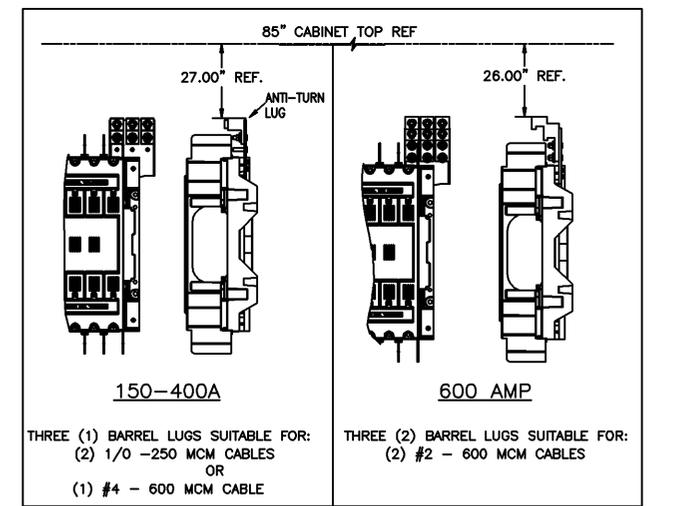
PLAN VIEW

- GENERAL NOTES
- TYPE 1 ENCLOSURES. FREE STANDING. FLOOR MOUNTED. 12 GAUGE FORMED FRAME CONSTRUCTION.
  - NEC STANDARD GAUGE PAN TYPE DOORS WITH LOCKABLE HANDLES AND REMOVABLE COVERS.
  - FINISH: ANSI 61 GRAY, POLYESTER POWDER. UL RECOGNIZED. OTHER ANSI COLORS AVAILABLE. CONSULT FACTORY.
  - CONSTRUCTION IS IN ACCORDANCE WITH UL 1008.
  - PADLOCKING PROVISIONS ARE INCLUDED.
  - ISOLATION HANDLE: THE TRANSFER SWITCH ISOLATION HANDLE MAY BE PADLOCKED WITH THE TRANSFER SWITCH IN THE FULLY ISOLATED (DISCONNECTED POSITION).
  - UNIT CAN BE ADAPTED FOR CONNECTION OF BUS DUCT FLANGES. (CONSULT FACTORY)
  - RECOMMENDED FRONT CLEARANCE: 32 INCHES MINIMUM.
  - A 20% RATED GROUND BUS IS PROVIDED.
  - 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:
    - TYPE A: SOLID (COPPER BUS) NEUTRAL
    - TYPE B: SWITCHED NEUTRAL POLE
    - TYPE C: OVERLAPPING NEUTRAL POLE (NOT AVAILABLE ON 7ADTB & 7ACTB UNITS)

- APPROXIMATE WEIGHT: 950 LBS.
- STANDARD OUTLINE FOR A FOUR POLE 600 AMP TRANSFER SWITCH WITH BYPASS/ISOLATION SWITCH SHOWN. SEE DETAIL "A" FOR LUG CONFIGURATION OF SOLID NEUTRAL.
- IF A PULL BOX IS PROVIDED THE RIGHT SIDE SKINS ARE REMOVED FROM SWITCH ENCLOSURE AND (4) MOUNTING BLOCKS P/N 757047 ARE USED TO CONNECT THE TWO SECTIONS TOGETHER. REFER TO DRAWING 805550 FOR PULL BOX DETAILS. PULL BOX AND SWITCH ENCLOSURE CAN BE SHIPPED AS ONE UNIT OR PULL BOX CAN BE SUPPLIED INDEPENDENTLY.
- BOTH BYPASS SWITCH MANUAL OPERATION HANDLE & TRANSFER SWITCH CARRIAGE MANUAL CRANK HANDLE CAN BE REMOVED. ALSO NOTE THAT THE TRANSFER SWITCH CARRIAGE MANUAL CRANK HANDLE CAN BE LEFT IN PLACE AND FOLDED DOWN.
- CENTER OF GRAVITY.

- CABLING NOTES
- 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 MAX WIRE TIGHTENING TORQUE PER UL 486B: SEE TABLE BELOW.
  - OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. CONSULT FACTORY.
    - A. LUG MATERIAL: HIGH CONDUCTIVITY WROUGHT COPPER FINISH, ELECTRO TIN PLATED.
    - B. UL LISTED, CSA CERTIFIED.
    - C. LUG MOUNTING HARDWARE TIGHTENING TORQUE: (REFER TO WITHSTAND CURRENT RATING LABEL PROVIDED ON EACH TRANSFER SWITCH).
    - D. SUITABLE WIRE BENDING SPACE IS PROVIDED.
  - GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS:
    - (6) #4-600MCM AL/CU CABLES FOR 600 AMP
    - (3) 1/0-250MCM AL/CU CABLES FOR 150-400 AMP.
  - CONSULT FACTORY FOR OTHER TERMINATION REQUIREMENTS.

SIZE	CABLE ACCOMMODATIONS (PER PHASE & NEUTRAL)	LUG TORQUE
150-400	SCREW TYPE (STANDARD)- (2) 1/0 - 250 MCM AL/CU OR (1) #4 - 600 MCM AL/CU	500 IN.-LBS.
600	SCREW TYPE (STANDARD)- (2) #2 - 600 MCM AL/CU	375 IN.-LBS.



REV.	NO.	DATE	BY	APP.
F	217921	04/14/08	WK BK	
E	215066	09/12/07	KH BK	
D	214322	07/20/07	WK BK	
C	213945	06/22/07	EWB JPB	
B	210800	11/15/06	EWB JPB	
A	210436	10/11/06	EWB EWM	
G	219309	07/27/08	WK BK	

PROJECT NAME: **OUTLINE & MOUNTING**

150-600 AMP TYPE 1 TB/CTB/DTB  
FRONT CONNECTED BYPASS

MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005.

ASSEMBLY REF. NO.

COMPUTER GENERATED DRAWING

SCALE: 1/11 SIZE: DS

DWG. NO.: 802093

DRAWING G REV. 219309

ASCO POWER TECHNOLOGIES, LP.  
FLORHAM PARK, NEW JERSEY 07932 U.S.A.

# THREE PHASE WIRING FOR ASCO® 7000 SERIES AUTOMATIC TRANSFER & BYPASS-ISOLATION SWITCHES TYPE J7ATB RATED 150-600 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%	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
-	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. 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:

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

### SIGNALS & AUXILIARIES

A. FEATURE 7 - 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. ENGINE STARTING SIGNAL RESETS FOLLOWING RETRANSFER TO THE NORMAL SOURCE AND EXPIRATION OF THE FEATURE 2E (ENGINE COOL DOWN) TIME DELAY.  
FEATURE 7 CONSISTS OF A FORM A CONTACT CONNECTED TO THE FIELD CONNECTIONS TERMINAL BLOCK (TB). CONTACTS RATED 5 AMPS AT 32VDC/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) AND EIGHT (8) 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).

### 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)

### BYPASS SWITCH & ISOLATION USER CONTROLS & INDICATIONS

A. BYPASS / ISOLATION DISPLAY INDICATORS - LED TYPE, COMMON LAMP TEST

NORMAL SOURCE AVAILABLE - GREEN  
EMERGENCY SOURCE AVAILABLE - RED

TRANSFER SWITCH CONNECTED TO NORMAL - GREEN  
TRANSFER SWITCH CONNECTED TO EMERGENCY - RED

BYPASS SWITCH CONNECTED TO NORMAL - GREEN  
BYPASS SWITCH CONNECTED TO EMERGENCY - RED

LOAD CONNECTED - AMBER

TS IN CONNECTED POSITION - AMBER  
TS IN TEST POSITION - AMBER  
TS ISOLATED - AMBER

UNIT NOT IN AUTOMATIC - AMBER

B. BYPASS / ISOLATION DISPLAY ENGINE CONTROL SWITCH

TWO (2) POSITION  
"AUTO" - ENGINE STARTING CONTROLLED BY TRANSFER SWITCH CONTROL PANEL  
"RUN" - SIGNALS ENGINE TO START

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		ENCLOSURE CODES	
								CODE	DESCRIPTION	CODE	TYPE	DESCRIPTION	
								BLANK	NONE	BLANK		OPEN TYPE (NO ENCLOSURE)	
								A	SOLID	C	1	GENERAL PURPOSE, INDOOR	
								B	SWITCHING			INDOOR, WATER & DUST RESISTANT	
								C	OVERLAPPING			OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT	
	A		150					E	2		3R	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT	
			200					F	3R		4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)	
			230					G	4		4X	TYPE 4 PLUS CORROSION RESISTANCE (FIBERGLASS)	
			240					H	4X		7	EXPLOSION PROOF	
			260					J	4X		12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT	
			400					K	7				
			600					L	12				
								M	3R			(SECURE ENCLOSURES)	
								N	4			OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT	
								P	4X			INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT	
								Q	4X			TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)	
								R	12			INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT	
	BLANK FOR NONE												

C. BYPASS / ISOLATION INTERLOCKS (SOLENOID ACTUATED)  
SL1: INTERLOCKS THE TRANSFER SWITCH ISOLATION CRANK WITH THE TRANSFER AND BYPASS SWITCHES TO INSURE THAT:

THE TRANSFER SWITCH CANNOT BE DISCONNECTED WITHOUT BEING BYPASSED.

THE TRANSFER SWITCH CANNOT BE RECONNECTED UNLESS IT IS IN THE SAME POSITION AS THE BYPASS SWITCH.

SL2: INTERLOCKS THE BYPASS SWITCH OPERATOR WHEN THE TRANSFER SWITCH IS IN THE CONNECTED POSITION TO INSURE THAT THE BYPASS SWITCH CANNOT BE OPERATED TO A SOURCE OTHER THAN THAT WHICH THE TRANSFER SWITCH IS CONNECTED TO.

### GENERAL NOTES

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

## TECHNICAL DATA

### BYPASS SWITCH AUXILIARY CONTACTS

BP AUXILIARY CONTACT	STATUS (*)	BP SWITCH POSITION (AUX3)		
		EMERG	OFF	NORMAL
81-82	●			
83-84	●			
85-86	●			
87-88	●			
89-90	●			
91-92	●			
93-94	●			
101-102	●			
103-104	●			
105-106	●			
107-108	●			
109-110	●			
111-112	●			
113-114	●			
115-116	●			
117-118	●			
125-126	●			
127-128	●			

### BYPASS SWITCH OPERATOR AUXILIARY CONTACTS

BP AUXILIARY CONTACT	STATUS (*)	BP SWITCH HANDLE POSITION			
		NORMAL (CCW)		OFF	EMERGENCY (CW)
		BYPASS (±90°)	<< ±20°	>> ±20°	BYPASS (±90°)
(AUX4) 140-141	●				
(AUX4) 140-142	●				
(AUX4) 146-147	●				
(AUX4) 146-148	●				
(AUX4) 137-138	●				
(AUX4) 137-139	●				
(AUX5) 143-144	●				
(AUX5) 143-145	●				

### ISOLATION (TRANSFER SWITCH CARRIAGE POSITION) AUXILIARY CONTACTS

IS AUXILIARY CONTACT	STATUS (*)	TRANSFER SWITCH CARRIAGE POSITION			
		CONNECT	>	TEST	>
1-2	●				
1-3	●				
4-5	●				
4-6	●				
7-8	●				
7-9	●				
10-11	●				
10-12	●				
13-14	●				
13-15	●				
16-17	●				
16-18	●				
19-20	●				
19-21	●				
22-23	●				
22-24	●				
25-26	●				
25-27	●				
28-29	●				
28-30	●				

(\* CONTACT AVAILABILITY STATUS:

● CONTACT PROVIDED & USED IN CIRCUITRY

○ CONTACT NOT USED, IF PHYSICALLY AVAILABLE, CONTACT IS FOR FACTORY USE ONLY!

CATALOG NUMBER \_\_\_\_\_

ASCO® CERTIFIED TO \_\_\_\_\_

S.O. \_\_\_\_\_

BY \_\_\_\_\_

DATE \_\_\_\_\_

FORM REV E \_\_\_\_\_

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

WIRING \_\_\_\_\_

DIAGRAM \_\_\_\_\_

7000 SERIES (J7ATB)

"J" FRAME, GROUP 5 CONTROLS

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

ASSEM. REF. NO. \_\_\_\_\_

PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

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

806095

DRAWING E

ECN NO. 212251 SHEET 1 OF 8

E 212251 MR JPB 03/01/07  
SEE ECN

D 211805 MR JPB 01/26/07  
SEE ECN

C 211529 MR JPB 01/09/07  
SEE ECN

B 211031 JPB JPB 11/27/06  
SEE ECN

A 210925 JPB JPB 11/16/06  
SEE ECN

210421 JPB JPB 10/17/06  
ISSUE

REV. TO SHEET ECN NO. BY APP. DATE

THIRD ANGLE PROJECTION

COMPUTER GENERATED DRAWING

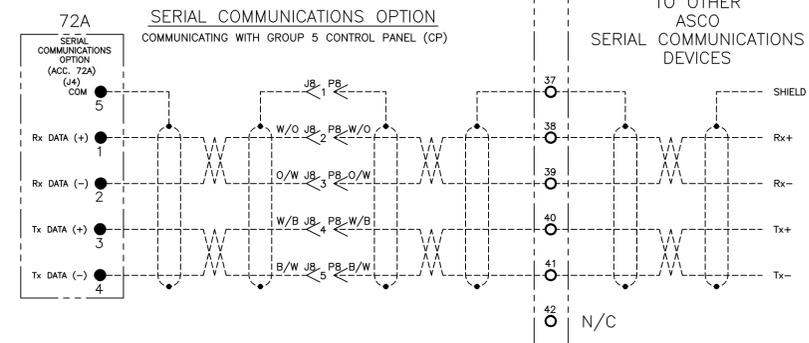
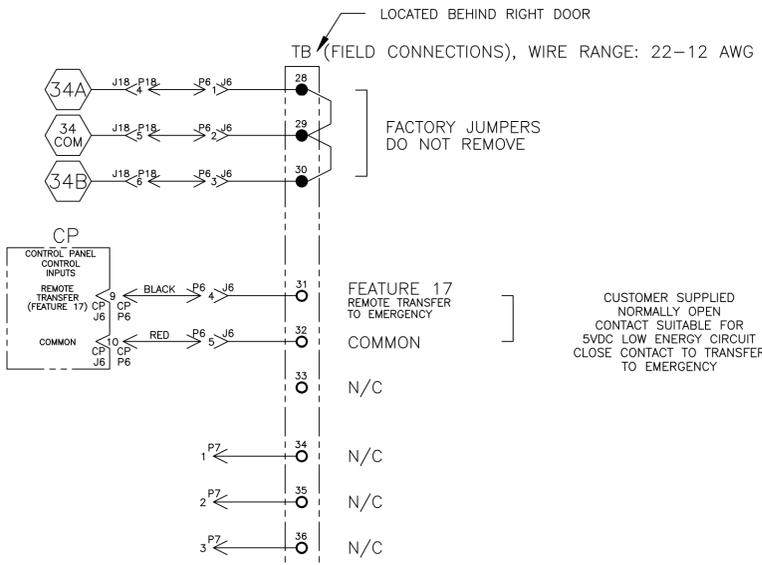
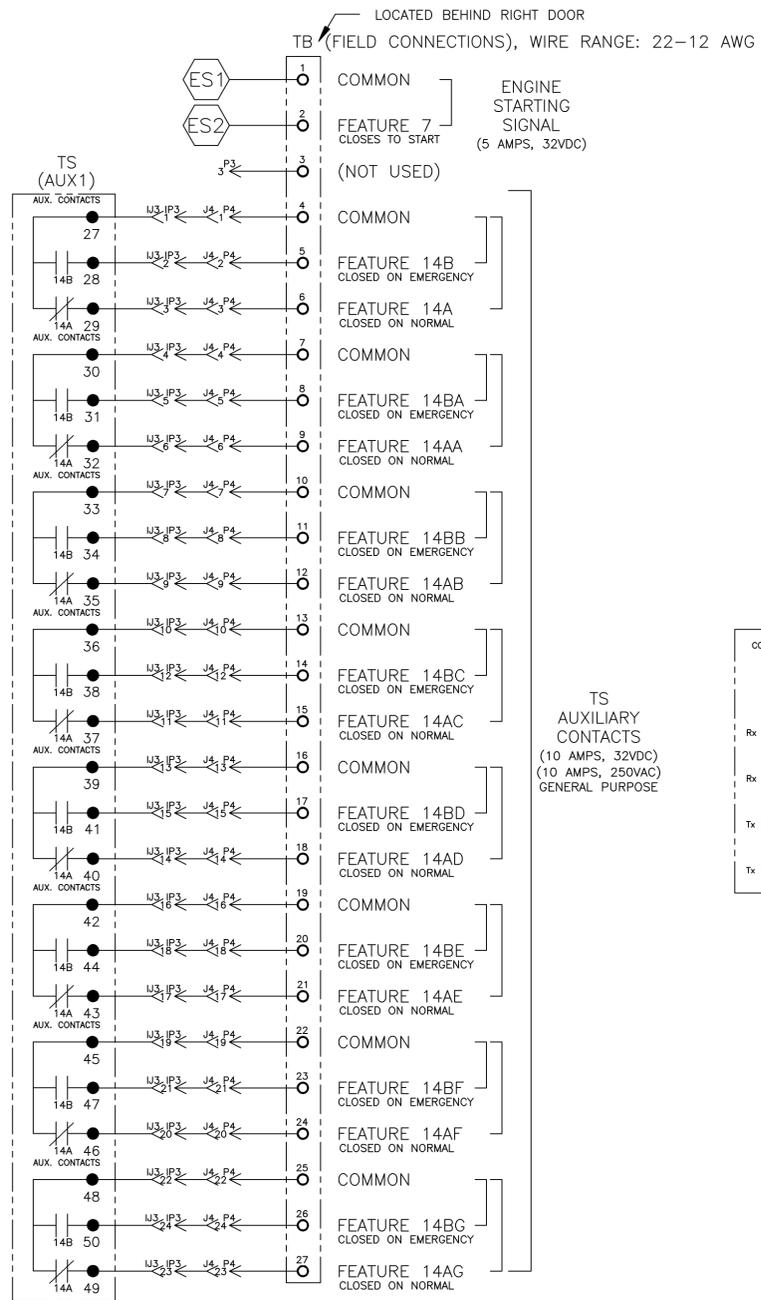
SCALE 1:1 SIZE DS

DWG. NO. 8

# FIELD CONNECTIONS

D  
C  
B  
A

D  
C  
B  
A



E	212251	MR	JPB	03/01/07
D	211805	MR	JPB	01/26/07
C	211529	MR	JPB	01/09/07
B	211031	JPB	JPB	11/27/06
A	210925	JPB	JPB	11/16/06
-	210421	JPB	JPB	10/17/06

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
7000 SERIES (J7ATB) "J" FRAME, GROUP 5 CONTROLS						
DRAWN BY	BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-005	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING	
CHECKED	JPB	10/17/16			SCALE	1:1 SIZE DS
PROJECT APPROVAL			PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		DWG. NO. 806095	
FINAL APPROVAL	JPB	10/17/06	<b>ASCO</b> ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DRAWING E	ECN NO. 212251 SHEET 2 OF 8

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY

NORMAL

EMERGENCY

D

D

C

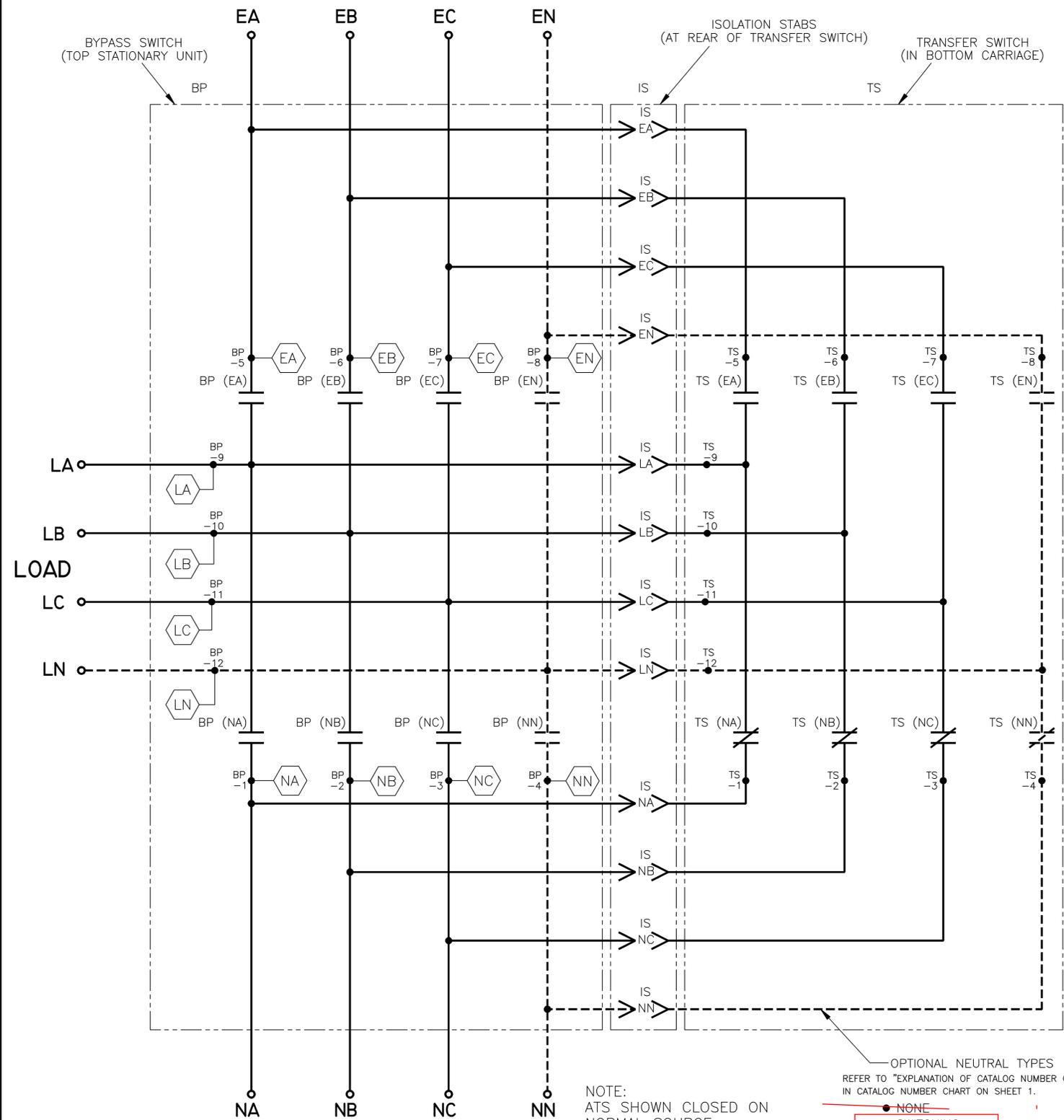
C

B

B

A

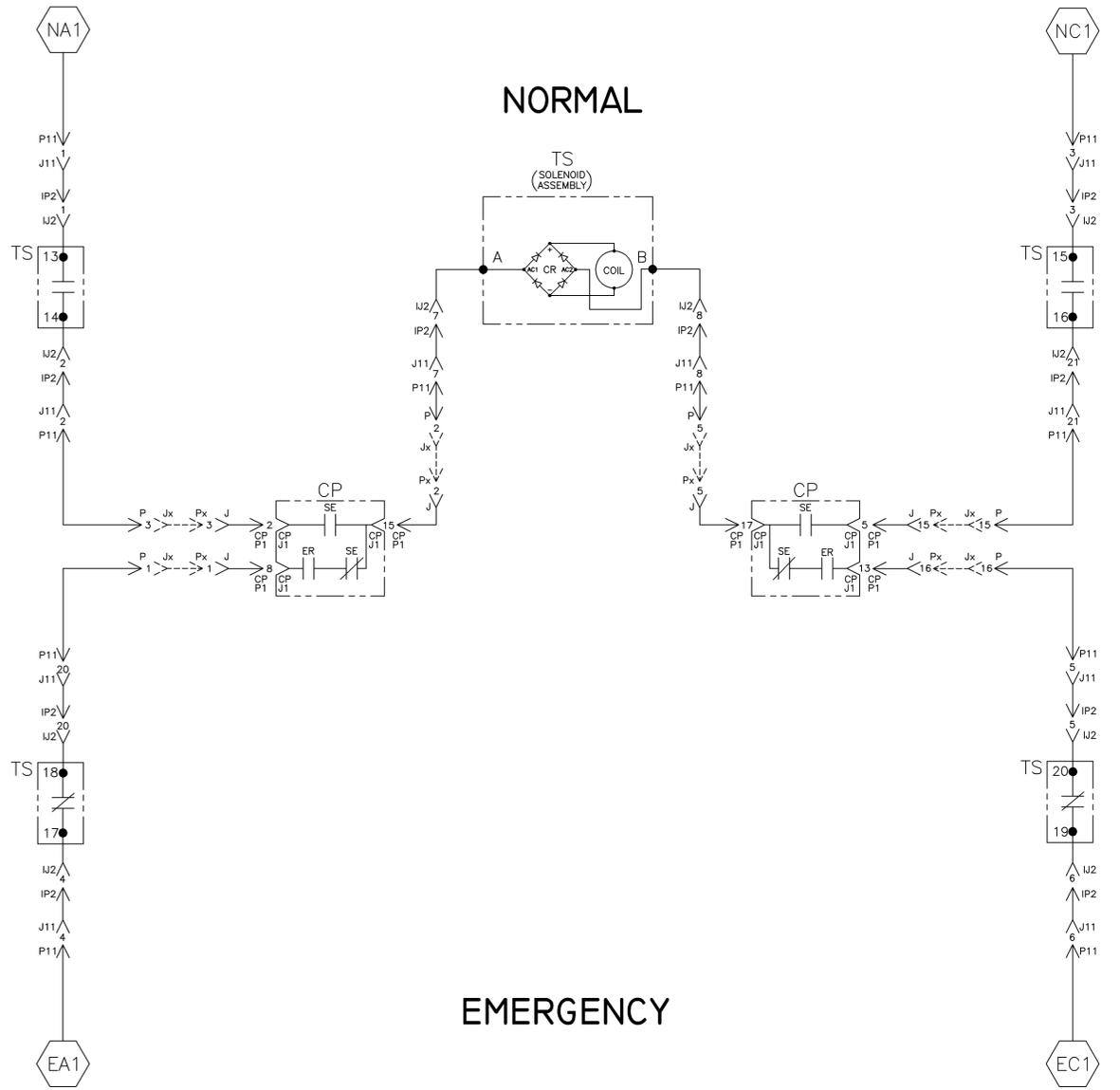
A



NOTE: ATS SHOWN CLOSED ON NORMAL SOURCE. BYPASS SWITCH IN (AUTOMATIC) POSITION.

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

- NONE
- SWITCHING
- OVERLAPPING CONTACTS
- SOLID BUS PLATE



TS	SOLENOID POSITION			
	CLOSED BEFORE NORMAL	BEFORE TDC >	< BEFORE CLOSED	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.

E	212251	MR	JPB	03/01/07
D	211805	MR	JPB	01/26/07
C	211529	MR	JPB	01/09/07
B	211031	JPB	JPB	11/27/06
A	210925	JPB	JPB	11/16/06
-	210421	JPB	JPB	10/17/06

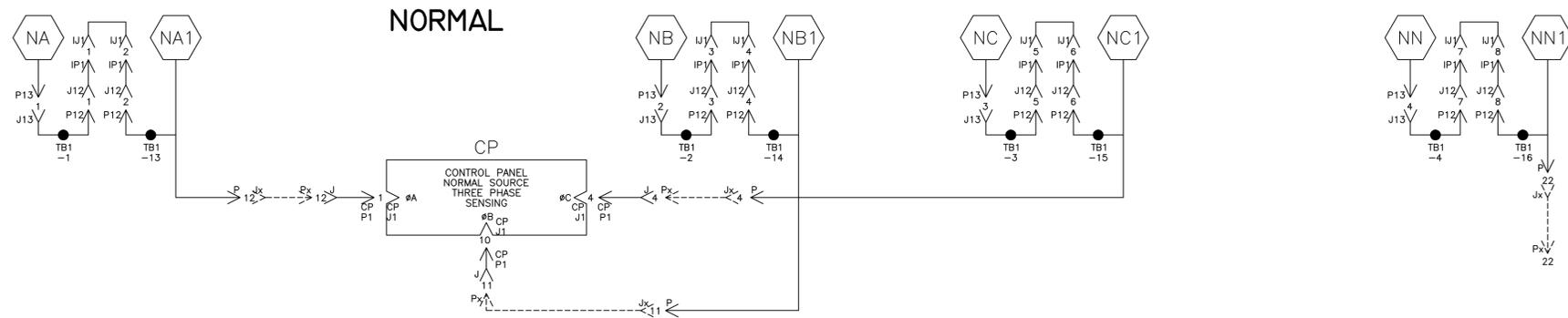
PROJECT NAME: WIRING DIAGRAM

7000 SERIES (J7ATB) "J" FRAME, GROUP 5 CONTROLS

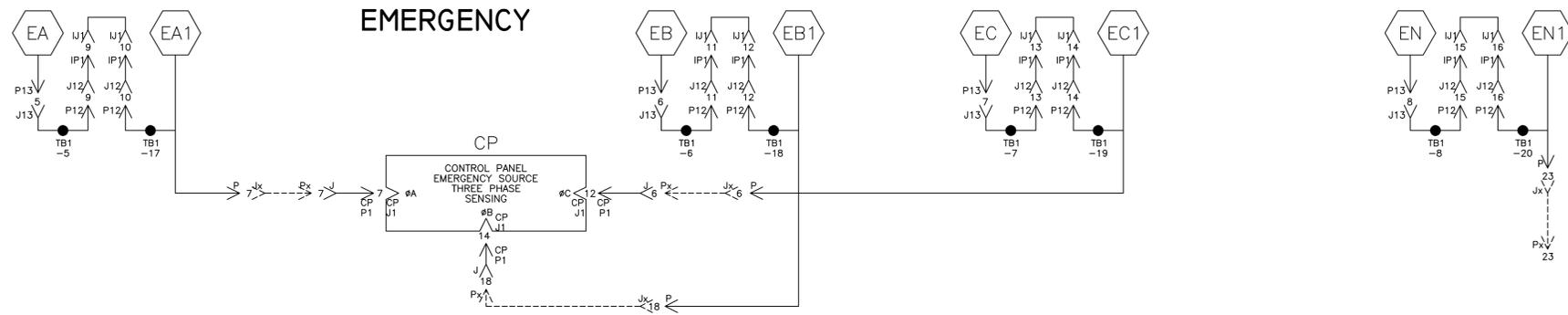
DRAWN BY	JPB	DATE	10/17/06	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055	ASSEM. REF. NO.	COMPUTER GENERATED DRAWING
CHECKED				PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE: 1:1 SIZE: DS
APPROVAL	JPB	10/17/06		ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.		DWG. NO. 806095

REV. TO SHEET: E ECN NO.: 212251 SHEET 3 OF 8

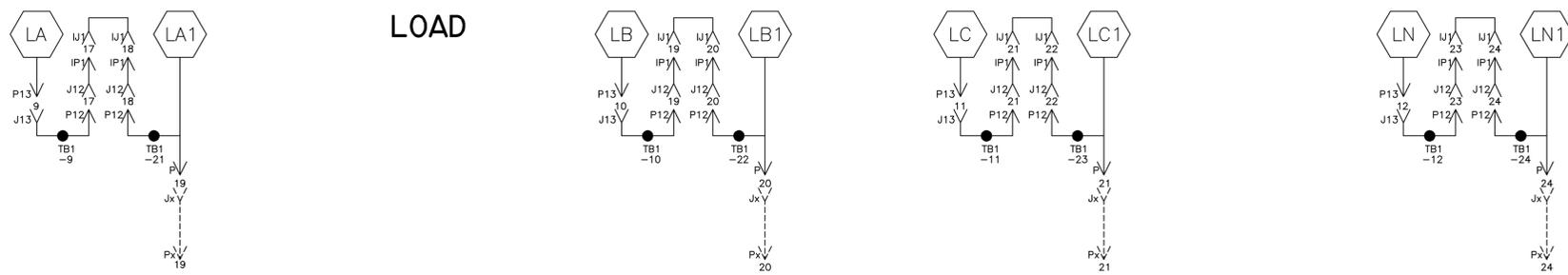
NORMAL SOURCE CIRCUITS



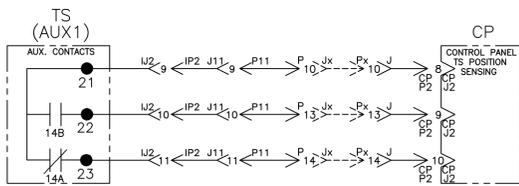
EMERGENCY SOURCE CIRCUITS



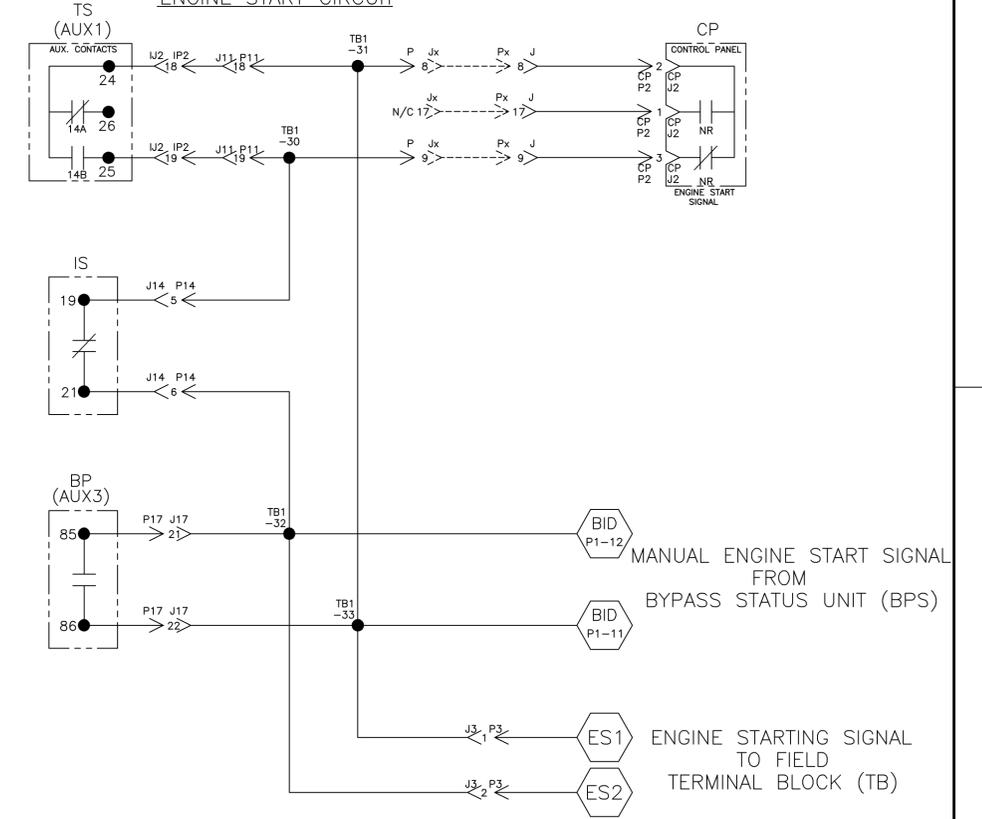
LOAD TERMINAL CIRCUITS



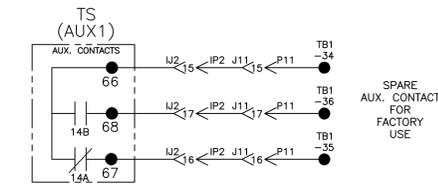
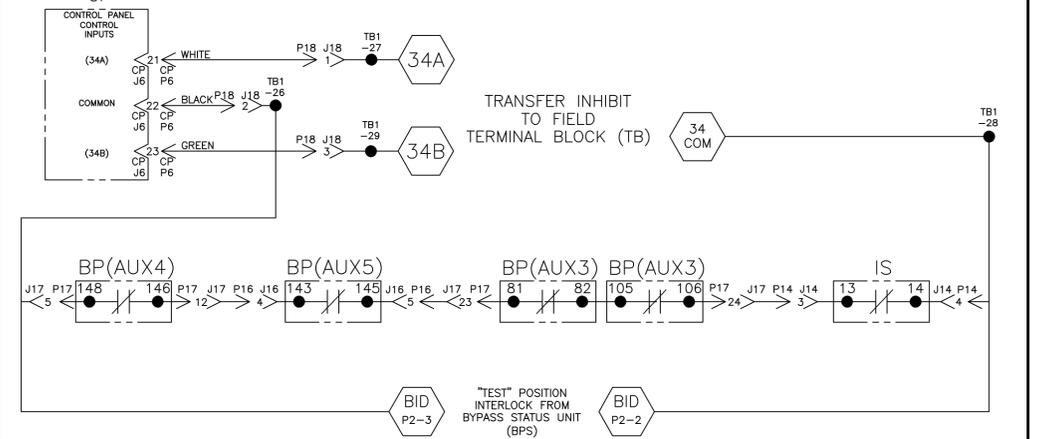
CONTROL SIGNALS & INDICATION



ENGINE START CIRCUIT



CONTROL PANEL/BYPASS-ISOLATION INTERLOCKS



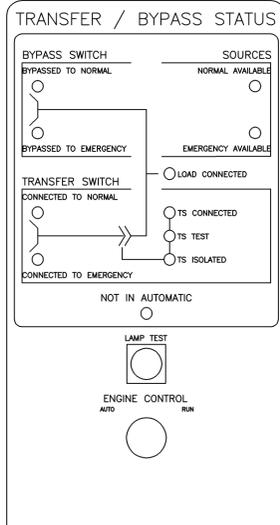
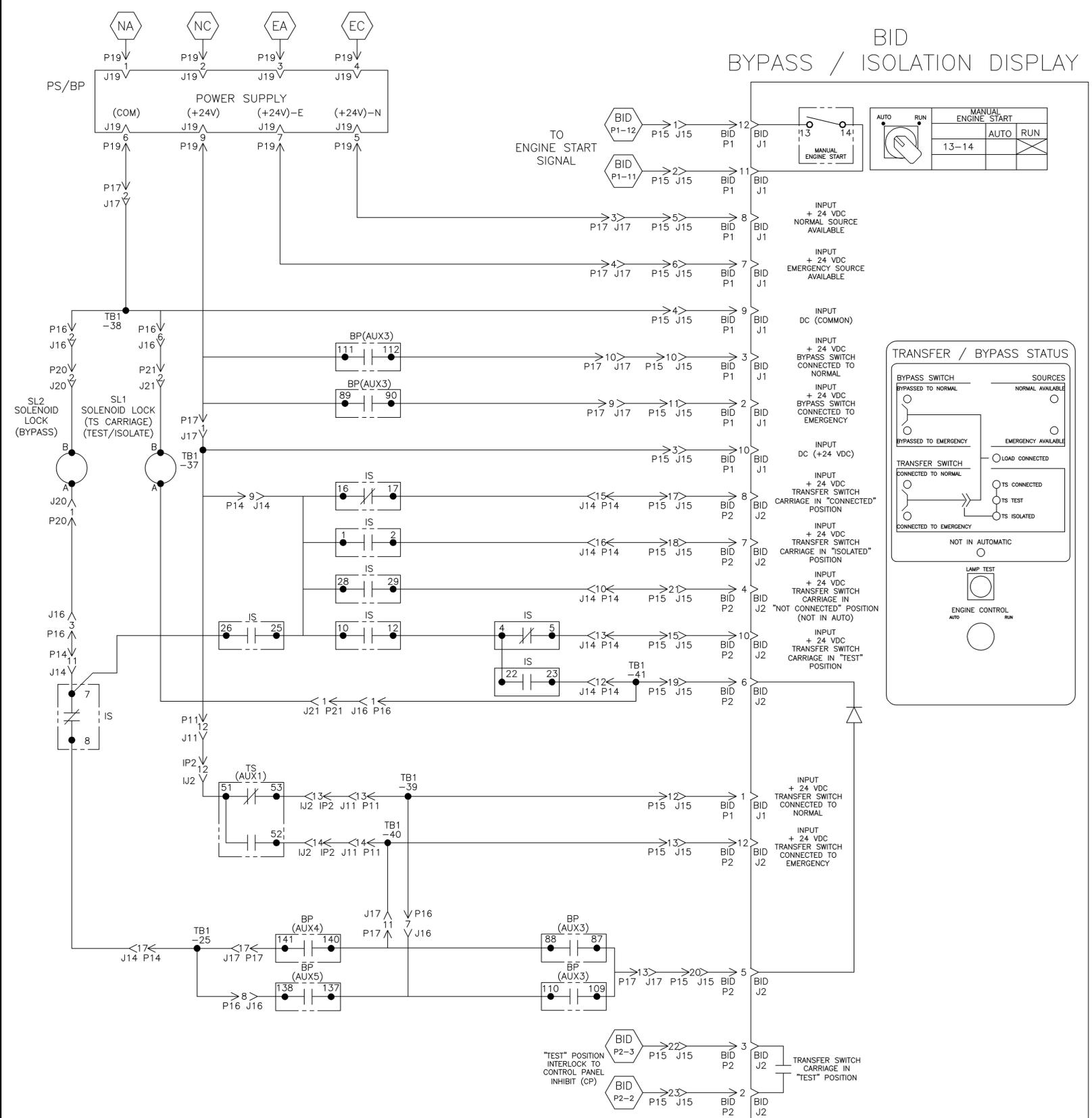
E	212251	MR	JPB	03/01/07
	SEE ECN			
D	211805	MR	JPB	01/26/07
	SEE ECN			
C	211529	MR	JPB	01/09/07
	SEE ECN			
B	211031	JPB	JPB	11/27/06
	SEE ECN			
A	210925	JPB	JPB	11/16/06
	SEE ECN			
-	210421	JPB	JPB	10/17/06
	ISSUE			

PROJECT NAME:		WIRING DIAGRAM	
7000 SERIES (J7ATB)		"J" FRAME, GROUP 5 CONTROLS	
BY	DATE	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-1-003. FOR PLASTIC PARTS SEE MP-1-055	ASSEM. REF. NO.
DRAWN BY	JPB	10/17/06	
CHECKED			
PROJECT APPROVAL			
FINAL APPROVAL	JPB	10/17/06	
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SCALE 1:1		SIZE DS	
806095		DRAWING E	
REV. E		ECN NO. 212251	
ASCO POWER TECHNOLOGIES, L.P.		SHEET 4 OF 8	
FLORHAM PARK, NEW JERSEY 07932 U.S.A.			

BYPASS / ISOLATION INTERLOCKING & INDICATION

ADDITIONAL CIRCUITS

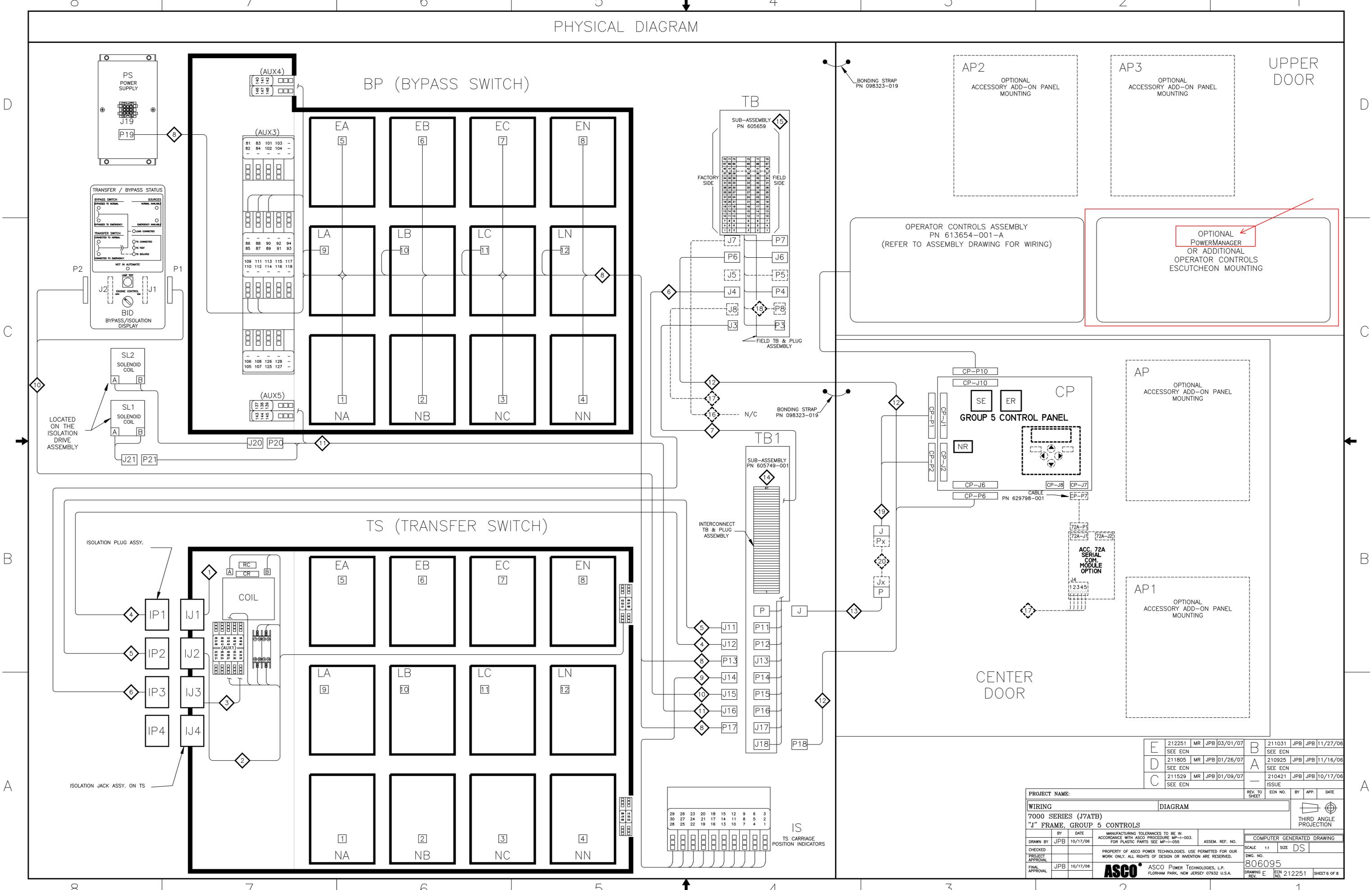
BID  
BYPASS / ISOLATION DISPLAY



E	212251	MR	JPB	03/01/07
D	211805	MR	JPB	01/26/07
C	211529	MR	JPB	01/09/07
B	211031	JPB	JPB	11/27/06
A	210925	JPB	JPB	11/16/06
-	210421	JPB	JPB	10/17/06
				ISSUE

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
7000 SERIES (J7ATB)		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003. FOR PLASTIC PARTS SEE MP-I-005.		ASSEM. REF. NO.		COMPUTER GENERATED DRAWING
"J" FRAME, GROUP 5 CONTROLS		PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE 1:1 SIZE DS		DWG. NO. 806095
DRAWN BY	JPB	DATE	10/17/06	ASCO POWER TECHNOLOGIES, L.P.		DRAWING E
CHECKED				FLORHAM PARK, NEW JERSEY 07932 U.S.A.		ECN NO. 212251
PROJECT APPROVAL						SHEET 5 OF 8
FINAL APPROVAL	JPB	DATE	10/17/06			

PHYSICAL DIAGRAM



E	212251	MR	JPB	03/01/07	B	211031	JPB	JPB	11/27/06
	SEE ECN					SEE ECN			
D	211805	MR	JPB	01/26/07	A	210925	JPB	JPB	11/16/06
	SEE ECN					SEE ECN			
C	211529	MR	JPB	01/09/07		210421	JPB	JPB	10/17/06
	SEE ECN					ISSUE			

PROJECT NAME:		REV. TO SHEET	ECN NO.	BY	APP.	DATE
WIRING DIAGRAM						
7000 SERIES (J7ATB) "J" FRAME, GROUP 5 CONTROLS						
DRAWN 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		
CHECKED	10/17/06	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE	1:1	SIZE DS
PROJECT APPROVAL				806095		
FINAL APPROVAL	10/17/06			DRAWING E	ECN NO.	212251
				REV.		SHEET 6 OF 8



WIRE RUN LISTING

HARNESS LOCATOR 4 HARNESS 605674-001 (J1) TS WIRE No. CLR AWG 16

HARNESS LOCATOR 4 HARNESS 605674-006-D (IP1,J12) STATIONARY FRAME WIRE No. CLR AWG 16

HARNESS LOCATOR 4 HARNESS 605674-007-A (J3,TB1) ENGINE START WIRE No. CLR AWG 16

HARNESS LOCATOR 9 HARNESS 806064-007 (J14,S) ISOLATION AUX. CONTACTS WIRE No. CLR AWG 16

HARNESS LOCATOR 12 HARNESS 736828-004 (P6,P18) INTERNAL CONTROL & FIELD INPUTS WIRE No. CLR AWG 22 (4 COND) 16 (2 COND)

HARNESS LOCATOR 2 HARNESS 806064-001 (J2) TS WIRE No. CLR AWG 16

HARNESS LOCATOR 8 HARNESS 806064-004 (P13, P17, P19, BP) BP WIRE No. CLR AWG 16

HARNESS LOCATOR 5 HARNESS 605674-006-D (IP2,J11) STATIONARY FRAME WIRE No. CLR AWG 16

HARNESS LOCATOR 10 HARNESS 736883 (J15, BID-P1, BID-P2) BYPASS ISOLATION DISPLAY WIRE No. CLR AWG 22

HARNESS LOCATOR 13 HARNESS 309320-006 (P,J) CONTROL PANEL EXTENSION WIRE No. CLR AWG 16

HARNESS LOCATOR 3 HARNESS 806064-002 (J3) TS STD. AUX. CONTACTS WIRE No. CLR AWG 16

HARNESS LOCATOR 6 HARNESS 605674-006-C (IP3,J4) STATIONARY FRAME WIRE No. CLR AWG 16

HARNESS LOCATOR 14 HARNESS 806064-006 (J16, P20, P21) BP/IS INTERLOCKS WIRE No. CLR AWG 16

HARNESS LOCATOR 3 HARNESS 309320-006 (P,J) CONTROL PANEL EXTENSION WIRE No. CLR AWG 16

HARNESS LOCATOR 13 HARNESS 309320-006 (P,J) CONTROL PANEL EXTENSION WIRE No. CLR AWG 16

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HARNESS LOCATOR 3 HARNESS 806064-002 (J3) TS STD. AUX. CONTACTS WIRE No. CLR AWG 16

HARNESS LOCATOR 6 HARNESS 605674-006-C (IP3,J4) STATIONARY FRAME WIRE No. CLR AWG 16

HARNESS LOCATOR 14 HARNESS 806064-006 (J16, P20, P21) BP/IS INTERLOCKS WIRE No. CLR AWG 16

HARNESS LOCATOR 3 HARNESS 309320-006 (P,J) CONTROL PANEL EXTENSION WIRE No. CLR AWG 16

HARNESS LOCATOR 13 HARNESS 309320-006 (P,J) CONTROL PANEL EXTENSION WIRE No. CLR AWG 16

PROJECT NAME: WIRING DIAGRAM 7000 SERIES (J7ATB) 'J' FRAME, GROUP 5 CONTROLS. Includes revision table, drawing info, and manufacturer details for ASCO Power Technologies, L.P.

WIRE RUN LISTING

Table 1: HARNESS LOCATOR for SUB-ASSEMBLY 605749-001. Columns include WIRE No., SUB-ASSEMBLY, MAIN INTERCONNECT ASSEMBLY, CLR, and AWG. Lists various wire connections like P-2, P11-1, J13-1, etc.

Table 2: HARNESS LOCATOR for SUB-ASSEMBLY 605749-001 (CONTINUED). Columns include WIRE No., SUB-ASSEMBLY, MAIN INTERCONNECT ASSEMBLY, CLR, and AWG. Lists connections like J18-1, P14-1, J17-1, etc.

Table 3: HARNESS LOCATOR for SUB-ASSEMBLY 605659. Columns include WIRE No., SUB-ASSEMBLY, STD. FIELD TB, CLR, and AWG. Lists connections like TB-1, TB-2, TB-3, etc.

Table 4: HARNESS LOCATOR for HARNESS 605454-005 (J8). Columns include WIRE No., HARNESS, OPTIONAL SERIAL I/O, CLR, and AWG. Lists connections like J8-1, J8-2, J8-3, etc.

Table 5: HARNESS LOCATOR for HARNESS 605454-007 (P8, TB). Columns include WIRE No., HARNESS, OPTIONAL SERIAL I/O, CLR, and AWG. Lists connections like P8-1, P8-2, P8-3, etc.

Table 6: HARNESS LOCATOR for HARNESS 483763 (J, CP-P1, CP-P2). Columns include WIRE No., HARNESS, CONTROL PANEL, CLR, and AWG. Lists connections like J-1, J-2, J-3, etc.

Table 7: HARNESS LOCATOR for HARNESS 309320-005. Columns include WIRE No., HARNESS, OPTIONAL 8 IN. EXTENSION HARNESS, CLR, and AWG. Lists connections like Jx-1, Jx-2, Jx-3, etc.

Table 8: Revision table with columns for revision number, date, and initials. Shows revisions 1 through 5.

Form 9: Project information including PROJECT NAME, WIRING DIAGRAM, 7000 SERIES (J7ATB) 'J' FRAME, GROUP 5 CONTROLS, and drawing details like DATE, SCALE, and SHEET 8 OF 8.