Invitation for Bid

UC26-09

Commercial Diesel Generator 400kW

Condition: New

Issued By:
Uintah County Purchasing
152 E 100 N
Vernal, UT 84078

Issue Date:	April 22, 2026
Closing Date:	May 8, 2026
Open Date:	May 13, 2026

Table of Contents

1. Intent

It is the intent of Uintah County, Utah ("County") to obtain bids from qualified vendors to purchase one (1) 400kW standby commercial diesel generator and related equipment for the Western Park facility. Optional services, **including on-site start-up and testing**, are also requested.

2. Submission Deadline and Opening Date

To receive consideration and responses to this request for bid, the County must receive the bid no later than **5:00 PM (Mountain Time) on May 08th 2026.** One copy should be delivered to:

Proposals must be submitted by:

Mailed or Hand-Delivered
The proposal must be sealed and clearly labeled as:

"Sealed Proposal - Uintah County – Commercial Diesel Generator 400kW"

Please ensure that the proposal is delivered to the following address:

Uintah County-Clerk-Auditor
147 E Main
Vernal, Ut 84078

Proposals will be opened in the Uintah County Commission Work Session on **May 13, 2026,** in the Commission Conference Room located at 152 E 100 N, Vernal, UT.

3. Project Scope

The following are Mandatory Minimum Requirements that **MUST** be met or exceeded, and be specifically addressed or referenced in the submitted bid to be eligible for consideration. If the following bullet points are not addressed, the offeror will be considered non-responsive.

A. Technical Specifications

- Commercial Diesel Generator – 400 Kw Standby 60Hz
- Cummins brand or Equivalent
- Condition – New
- Two-Year Base Warranty
- Model Year - 2025 or newer
- Fuel Type – Diesel
- Freight
- Specifications include:
    - U.S. EPA, Stationary Emergency Application
    - Duty Rating – Standby Power (ESP)
    - Emission Certification, EPA, Tier 2, NSPS CI Stationary Emergency
    - Listing – UL 2200

- Cert – Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011
- Voltage – 120/208, 3 Phase, Wye, 4 Wire
- Alternator – 60 Hz, 12 Lead, Broad Range, 125/105C
- Steel Sound Attenuated Level 2 Enclosure, with Exhaust System
- Distribution Panel with prewired AC Features
- Service Receptacle – 120V, 20A, External GFCI, NEMA 5 – 20R
- Fuel Tank – Sub Base, minimum of 660 gallons, UL142 compliant
- Listing, ULC – S601-07
- Fuel Water Separator
- Control Mounting – Left Facing
- Power Command 2.3 Controller or equal
- Analog Meters – AC Output
- LCD Control Display
- Relays – Genset Status
- Relay – Alarm Shutdown
- Control Display Language – English
- Circuit Breaker or Entrance Box or Terminal Box – Right
- Circuit Breaker or Entrance Box or Terminal Box, Left – None
- Circuit Breaker – 1200A, Right Circuit Breaker on Right side, 3 – Pole, UL 600 IEC 690, 100%
- Circuit Breaker or Entrance Box or Terminal Box, Left – None
- Circuit Breaker or Entrance Box – Bottom Entry, Right Side
- Indication – Ground Fault
- Auxiliary contacts/ Trip Alarm – Single Circuit Breaker
- Shunt Trip – 24 Volts DC, Single Circuit Breaker
- Engine Exhaust Connection - None
- Engine Air Cleaner – Normal Duty
- Engine Cooling – Radiator, 50 C Ambient
- Shutdown – Low Coolant Level
- Coolant Heater – 108/240/480 Volts AC, Below 40 F Ambient Temperature

- Related Equipment includes:
  - Annunciator (ModBus RS485)
  - Four 12V Batteries (800 CCA (cold cranking amps), 110 minutes reserve capacity, Amp hour capacity 46Ah (at a 20HR rate))
  - 10A Battery Charger
  - Remote E-Stop (gs120, pilchocov1, pilnccb)
- Transfer Switch Details:
  - The offered generator must be fully compatible with the Power Transfer Switch identified in Attachment 2 and must physically fit within the existing transfer switch configuration without requiring modifications to the transfer switch.
- Generator Configuration:
  - The generator must be compatible with and fit within the existing pad infrastructure at Western Park (see Attachment 1).
  - The generator Circuit Breaker or Entrance Box must be on the Right Side.

- The Control Mounting must be on the Left Side.

B. Pricing Format

Provide a quote that breaks down costs as follows (see *Attachment 3:*

Item Description	**Quantity**	**Unit Price**	**Extended Price**
Commercial Diesel Generator 400kW (minimum)	1	$	$
2-Year 24x7x365 Warranty/Support	1	$	$
Professional Services Installation	1	$	$
Freight	1	$	$
Start Up and Testing	1	$	$
Annunciator	1	$	$
Remote E-stop	1	$	$
Batteries included.	1	$	$
TOTAL BID PRICE			**$**

Note: Uintah County is a tax-exempt government entity. Do not include sales tax in the bid price.

4. Attachments

Attachment 1: Photo of Generator Cement Pad (13' X 25") Configuration at the Western Park.

Attachment 2: Power Transfer Switch Details

Attachment 3: Pricing Bid Form

5. Evaluation of Submission

All bids must be in reference to the terms and conditions stated in this IFB. The awarded bid will be selected based on the County's determination of the top-scoring bid and most advantageous bid, presentation (if held), and completed reference checks. The decision to request interviews/presentations is at the County's discretion. The intent of the presentations, if held, will be to allow the County to clarify and ask questions arising from the initial evaluation. No new information may be brought forward. Presentations are not guaranteed; candidates are advised to fully respond to the IFB at the time of the submission.

The Bid Form referenced in Sections 3 and 4 will be the sole pricing document used by the Purchasing Department to evaluate bids and determine the lowest responsive bidder. While vendors may include their own quote template or pricing form as supplemental information, only the completed Bid Form attachment will be considered in the pricing evaluation.

6. Award

The County will either award a bid or announce that no appointment will be made. There is no implicit or explicit guarantee that the project will proceed. Uintah County reserves the right to accept or reject any or all bids.

7. Terms and Conditions of the IFB

Disclosure. Upon award of the contract, all proposals accepted by the County shall become a matter of public record and shall be regarded as public, except those elements of each proposal that are identified by the Contractor as business or trade secrets and plainly marked as "trade secret," "confidential," or "proprietary." Each element of a proposal that the Contractor desires not to be considered a public record must be clearly marked. Any blanket statement (i.e., regarding entire pages, documents, or other non-specific designations) shall not be sufficient and shall not bind the County in any way whatsoever. If disclosure is required under the Utah Government Records Access Management Act ("GRAMA") or otherwise by law (despite the Contractor's request for confidentiality), the Contractor shall not in any way be liable or responsible for the disclosure of any such records or part thereof.

Failure to Agree. If the County and selected Contractor cannot agree on a satisfactory agreement, the County reserves the right to terminate negotiations. The County may then negotiate an agreement with another RFP applicant, or the County may submit another request for proposals.

Right to Reject. The County reserves the right to reject any and all proposals. In addition, the County will not reimburse costs associated with the preparation or presentation of the proposals.

8. Question & Inquiries

Questions

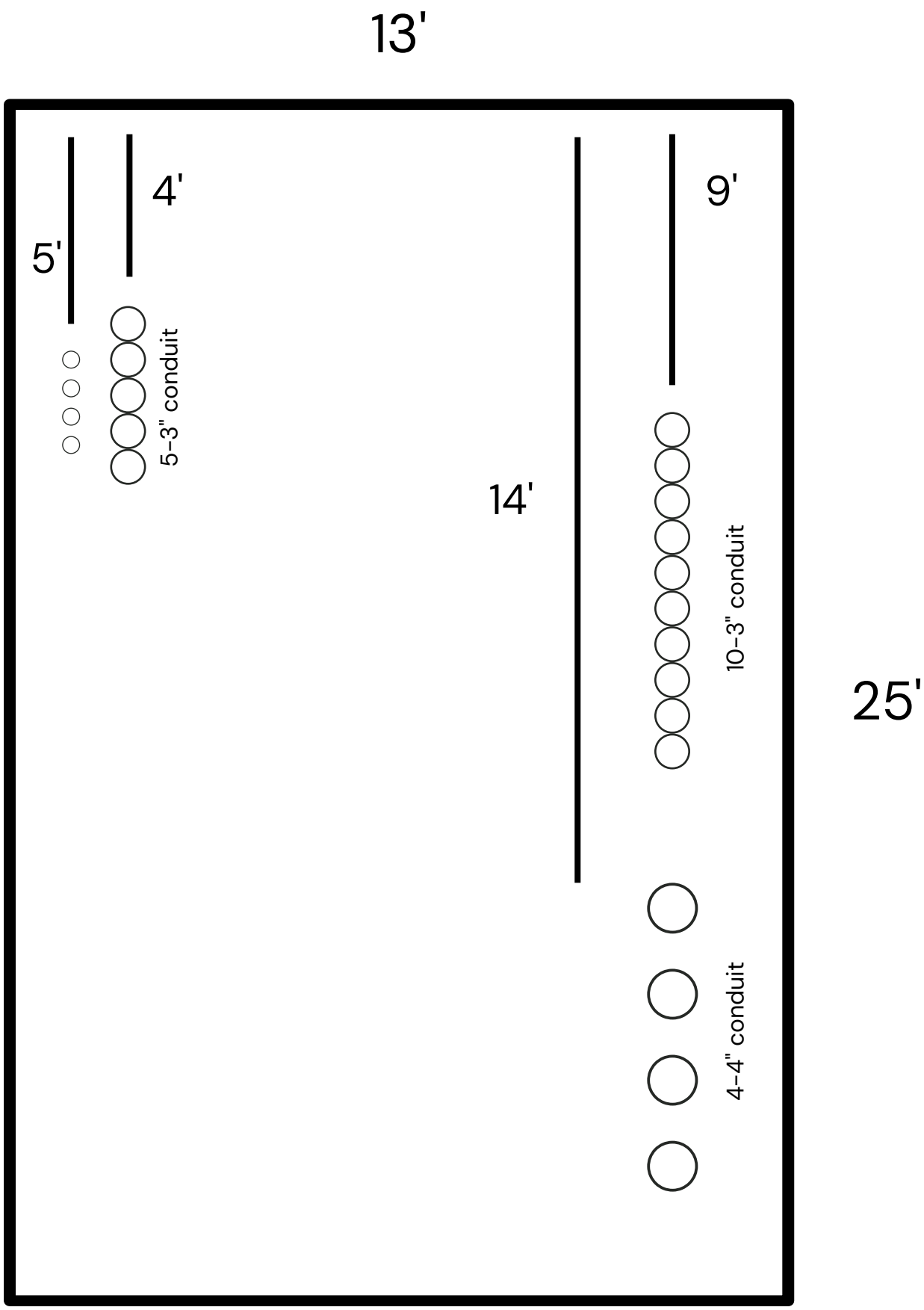
Please address any project-related or procurement questions to Trinna Gardner with a subject heading of “Commercial Diesel Generator 400kW.”

CONTACT INFORMATION

Trinna Gardner
Uintah County Purchasing & Grants
152 E 100 N
Vernal, UT 84078
tgardner@uintah.utah.gov
435-781-5482

Attachment 1

Photo of Generator Cement Pad (13' X 25") Configuration at the Western Park.


13'
25'
5'
4'
5–3" conduit
14'
9'
10–3" conduit
4–4" conduit


RAM
1500

Attachment 2

Power Transfer Switch Details

ASCO Power Technologies™

Western Park UT

POWER TRANSFER SWITCH SUBMITTAL

REVISION 0

[redacted]

AMP Electrical Engineering, LLC

[X] NO EXCEPTIONS TAKEN

[ ] MAKE CORRECTIONS NOTED

[ ] REJECTED/AMEND & RESUBMIT

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OR DIMENSION, QUANTITIES, OR DETAILS.

DATE: 11/20/2024 BY: [redacted]

November 10, 2024

Western Park UT

[redacted]

TRANSFER SWITCH DETAILS									
ATS NAME	QTY	AMPS / POLES (VOLTS)	BYPASS	TRANSITION TYPE	CATALOG NUMBER	ACCESSORIES	OUTLINE DRAWING	WIRING DIAGRAM	BOM NUMBER
	1	1200 / 3 (208V)	N/A	OPEN	H03AUSA31200CGXM	44G	754578-051	1001657, 758574	1037832

QUICK CONNECT POWER PANEL DETAILS								
NAME	QTY	AMPS / POLES	COLOR CODE	CATALOG NUMBER	ACCESSORIES	ENCLOSURE TYPE	OUTLINE DRAWING	BOM NUMBER
	1	1200 / 3	BLK,RED,BLU,WHT,GRN	3QCNCAA31200F00F		3R(F)	1183675	1183675-002

AIC Rating for Service Entrance Rated Units				
ATS NAME	Catalog Number	ATS Ampacity	Square D Breaker Model (Rating)	Fault Current Rating (480V)
	3AUS	1000-1200A	RJF(1000-1200A)	50kA

**For Complete Breaker Details refer to Outline Drawing*

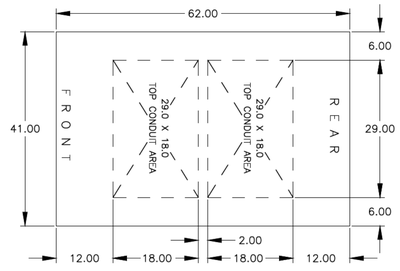
Western Park UT

Transfer Switch Details

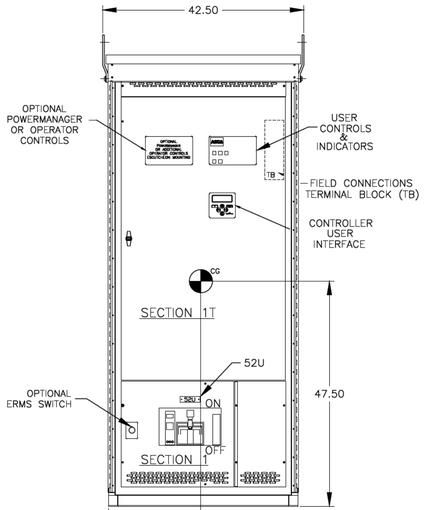
#1	ATS	AMPS: 1200	QTY: 1

Product	:	Series 300	Catalog Number	:	H03AUSA31200CGXM
Service Voltage / Hz	:	208V/60Hz	Optional Accessories	:	44G
Bypass Isolation	:	Not Applicable	Product Description	:	300 Series, Automatic Service Entrance Transfer Switch
No. of Switched Poles: 3	:	3	Neutral Configuration	:	Solid [A]
Withstand Rating: Frame = H, Switch Rating = 1200, Series = 300	:	See WCR Table Below	No. of Cables & Lug Size	:	See Applicable Outline Drawing
Enclosure	:	3R(M)-UL Type 3R secure double door enclosure (See Disclaimer 3)	Service	:	Three Phase, 4-wire
Extended Warranty	:	Not Included	Markings	:	

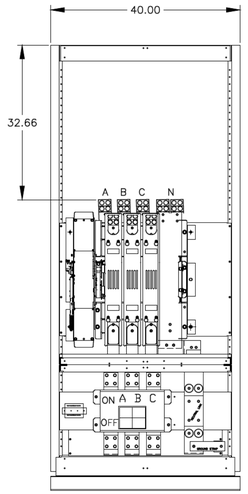
#	ACCESSORY DESCRIPTIONS	
	Accessory Code	Description
1	44G	Strip heater w/ thermostat, wired to load terminals: 208-600 volts



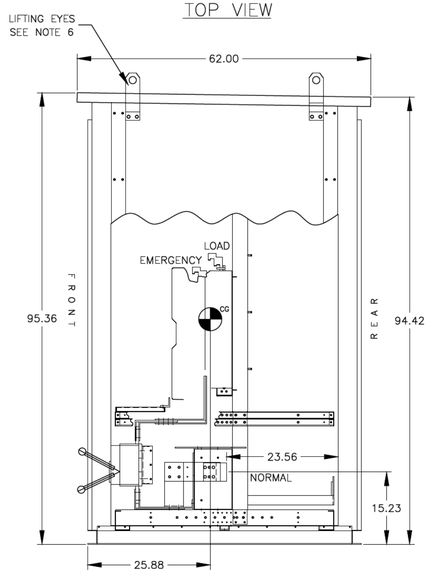
TOP VIEW



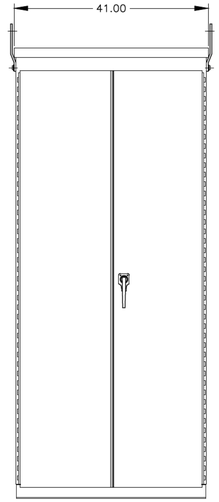
FRONT VIEW



FRONT VIEW WITHOUT COVER

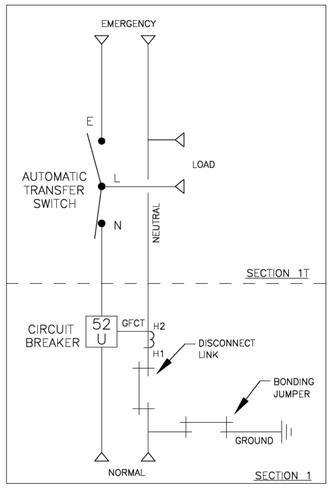


RIGHT SIDE VIEW

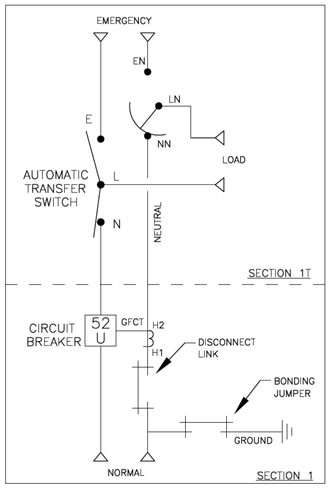


FRONT & REAR VIEW

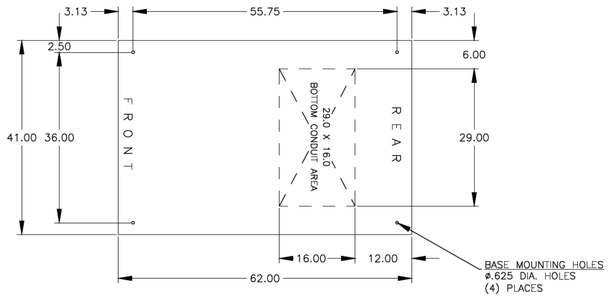
ONE LINE DIAGRAMS



(WITH SOLID NEUTRAL)



(WITH SWITCHED/OVERLAPPING NEUTRAL)



PLAN VIEW

GENERAL NOTES

1. FLOOR MOUNTED ENCLOSURE.
   TYPE 3R CONSTRUCTED FROM CODE GAUGE STEEL.
   FINISH: TYPE 3R, ANSI 61 GRAY POLYESTER SEMI GLOSS ELECTROSTATIC POWDER.
   TYPE 3RX EXTERIOR CONSTRUCTED FROM CODE GAUGE STAINLESS STEEL.
   (R) EXTERIOR CONSTRUCTED FROM TYPE 304 STAINLESS STEEL.
   (S) EXTERIOR CONSTRUCTED FROM TYPE 316 STAINLESS STEEL.
2. EXTERIOR DOORS HAVE PADLOCKABLE HANDLES WITH 3-POINT LATCH
3. DESIGNED FOR FRONT & REAR ACCESS.
4. RECOMMENDED CLEARANCES: FRONT: 36" REAR: 30"
5. EXTERIOR VENTS ARE SUPPLIED WITH POLYESTER DUST FILTERS.
6. LIFTING PLATES: SECTIONS ARE SUPPLIED WITH LIFTING PLATES. INSPECT PLATES FOR DAMAGE AND TORQUE BOLTS TO 45 FT LBS BEFORE USE. REFER TO ANSI/NEMA PB 2.1 FOR PROPER HANDLING OF EQUIPMENT. AFTER INSTALLATION OF SECTION, REMOVE LIFTING PLATES. REINSTALL BOLTS INTO EXTERIOR HOLES AND TORQUE TO APPROXIMATELY 20 FT LBS.
7. EXTERIOR VENTS:
   1000A: NO VENTS.
   1200A: VENTS ARE SUPPLIED WITH POLYESTER DUST FILTERS.
8. CG CENTER OF GRAVITY
9. APPROXIMATE WEIGHT : 2050 lbs

SYSTEM NOTES

1. SYSTEM RATING: 1000 AMPS, 1200 AMPS.
   SHORT CIRCUIT RATING: 50,000 RMS SYM @ 480V.
   THE EMERGENCY SOURCE MUST BE PROTECTED BY A REMOTE OVERCURRENT PROTECTION DEVICE AS LISTED ON THE MARKINGS ON THE TRANSFER SWITCH.
2. ALL BUS IS SILVER-PLATED COPPER, BASED ON 1000A PER SQ. IN. DENSITY.
3. GROUND: 20% RATED.
4. NEUTRAL: 100% RATED.
5. APPLICABLE LABEL(S): U.L. 891, SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT.

TRANSFER SWITCH

1. H FRAME AUTOMATIC TRANSFER SWITCH 1000A – 1200A.
2. TRANSFER SWITCH RATING: 1000 AMPS, 1200 AMPS.
   SHORT CIRCUIT RATING WHEN PROTECTED BY A CIRCUIT BREAKER TIME RESPONSE, MAXIMUM 0.05 SECONDS: 50,000 RMS SYM @ 480V.
   SPECIFIC BREAKER RATING: 65,000 RMS SYM @ 480V.
3. A FULL RATED NEUTRAL CONNECTION FOR EACH SOURCE AND THE LOAD IS OPTIONAL. WHEN PROVIDED IT IS IN ONE OF THE FOLLOWING FORMATS.
   A. SOLID NEUTRAL
   B. SWITCHED NEUTRAL POLE
   C. OVERLAPPING NEUTRAL POLE
4. UL 1008

TERMINATIONS 1000A–1200A

1. SUPPLIED WITH MECHANICAL (SCREW TYPE) LUGS FOR CU/AL CABLE.
   NORMAL: (4) 1/0 – 600MCM PER PHASE & NEUTRAL
   LOAD: (4) 1/0 – 600MCM PER PHASE & NEUTRAL
   EMERGENCY: (4) 1/0 – 600MCM PER PHASE & NEUTRAL
   GROUND: (12) 1/0 – 600MCM
   A. SUITABLE WIRE BENDING SPACE IS PROVIDED AS PER NEC.
2. OPTIONAL LUGS MAY BE SUPPLIED.

CIRCUIT BREAKER: ITEM 52U

1. SQUARE "D" 80% RATED TYPE 'RJF', 3000AF/1000AT, 3000AF/1200AT, STATIONARY MOUNTED, MANUALLY OPERATED, WITH LONG DELAY, SHORT DELAY, INSTANTANEOUS AND GROUND FAULT TRIP SETTINGS. SHORT CIRCUIT RATING: AIC 65,000 RMS SYM @ 480V.
2. OPTIONAL ENERGY REDUCTION MAINTENANCE SETTING SYSTEM MAY B
3. OPTIONAL 100% RATED
4. U.L. 489

Western Park UT
H03AUSA31200CGXM,44G

REV.	ECN NO.	BY	APP.	DATE
F	253087	SG	RN	02/11/15
	SEE ECN			
E	248049	VAK	RN	
	SEE ECN			
D	245413	RN		11-14-13
	SEE ECN			
C	221393	DP	RN	1/14/09
	ADDED "80% RATED"			
B	218107	AE	WK	04/24/08
	SEE ECN			
A	213340	RN		5-10-07
	SEE ECN			
L	306943	SG	MCH	12/28/23
	SEE ECN			
K	295685	YK	RN	5/19/22
	SEE ECN			
J	277317	NC	RN	2/19/19
	SEE ECN			
H	264333	BG	RN	11/23/16
	SEE ECN			
G	261928	RG	RN	07/05/16
	SEE ECN			

PROJECT NAME:

OUTLINE MOUNTING

HAUS, 1000A – 1200A, RJF SE BREAKER ON NORMAL
TYPE 3R/3RX, 96 X 41 X 62

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	RN	04/24/07
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

SCALE 1/16" = 1" SIZE DS

DWG. NO. 754578-051

DRAWING REV. L ECN NO. 306943 SHEET 1 OF 1

THREE PHASE WIRING FOR ASCO® 300 SERIES TRANSFER SWITCHES TYPES H3ATS & H3NTS RATED 800, 1000 & 1200 AMPERES

GENERAL INFORMATION

THIS WIRING APPLIES TO 300 SERIES TRANSFER SWITCHES THAT UTILIZE THE "H" FRAME POWER TRANSFER SWITCH RATED 800–1200 AMPERES.

THE GROUP G CONTROLLER PROVIDES EITHER AUTOMATIC (D3ATS) OR NON–AUTOMATIC [MANUAL] (H3NTS) OPERATION BASED ON ITS FACTORY SETTING ACCORDING TO THE CUSTOMER ORDER REQUIREMENTS.

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

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

INFORMATION FOR INSTALLATION AND TESTING OF THE TRANSFER SWITCH IS PROVIDED IN THE INSTALLATION MANUAL, ASCO 3ATS & 3NTS, H–DESIGN 800–1200 A TRANSFER SWITCHES, PART NUMBER 381333–405.

ENGINE CONTROL CONTACTS

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

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

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

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

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

LOAD DISCONNECT FEATURE

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

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

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

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

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

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

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

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

INPHASE TRANSFER FEATURE FOR LOAD TRANSFER

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

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

SOURCE AVAILABILITY SIGNALS

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

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

COMMON ALARM & NOT IN AUTO SIGNALING FEATURES

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

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

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

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

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

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

EXTERNAL POWER SUPPLY COMPATIBILITY

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

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

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

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

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

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

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

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

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

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

LOAD CURRENT METERING

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

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

ADVANCED-FUNCTION SOFTWARE BUNDLE

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

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

(3 PHASE SENSING ONLY)
- 3 PHASE EMERGENCY SOURCE SENSING.
- PHASE ROTATION SENSING.
- EMERGENCY VOLTAGE UNBALANCE SENSING.

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

NON-AUTOMATIC (MANUAL) OPERATION

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

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

REMOTE CONTROL FEATURES

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

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

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

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

NOTES

1. SWITCH SHOWN DE–ENERGIZED CONNECTED TO NORMAL SOURCE.
2. DEVICE SYMBOLS AND DESIGNATIONS ARE IN ACCORDANCE WITH NEMA PUB. ICS 1, PART 1–101A.
3. ALL WIRING IS #16 AWG, TINNED, STRANDED COPPER UNLESS OTHERWISE INDICATED.
4. O INDICATES CUSTOMER CONNECTION POINTS.
5. ● INDICATES FACTORY CONNECTION POINTS.
6. CONNECTION POINTS THAT HAVE BOTH CUSTOMER CONNECTIONS AND FACTORY CONNECTIONS ARE SHOWN OPEN AS CUSTOMER CONNECTION POINTS.
7. THE TRANSFER UNIT IS MOUNTED ON THE BACK INSIDE SURFACE OF THE ENCLOSURE. THE CONTROL PANEL AND ANY OPTIONAL ACCESSORIES ARE MOUNTED ON THE INSIDE SURFACE OF THE DOOR.
8. AN OPERATOR'S MANUAL IS FURNISHED WITH EACH AUTOMATIC TRANSFER SWITCH. REFER TO THIS PUBLICATION PRIOR TO INSTALLATION AND OPERATION OF THE SWITCH.
9. GROUND STRAP ON CONTROL PANEL IS AFFIXED TO CHASSIS (ENCLOSURE) AT LOWER LEFT CONTROL PANEL MOUNTING STUD.

BASE CATALOG NUMBER					CATALOG NUMBER SUFFIXES			
TS FRAME	CATALOG TYPE	NEUTRAL TYPE	PHASE POLES	AMPS	VOLT CODE	CONTROLLER	OPTIONAL ACCESSORY	ENCLOSURE CODE
H	3ATS 3NTS	A B	3	800 1000 1200	C D E F H J K L M N P Q R	G	X	C E F G H J K L M N P Q
		BLANK FOR NONE					BLANK FOR NONE	BLANK FOR OPEN TYPE

EXPLANATION OF CATALOG NUMBER CODES

CATALOG TYPE		NEUTRAL TYPE		VOLTAGE CODES (3 PHASE (3 OR 4 WIRE) 50 OR 60 Hz)		ENCLOSURE CODES		
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	NOMINAL VOLTAGE	CODE	TYPE	DESCRIPTION
3ATS	AUTOMATIC	A	SOLID			BLANK		OPEN TYPE (NO ENCLOSURE)
3NTS	MANUAL	B	SWITCHING	C	208	C	1	GENERAL PURPOSE, INDOOR
				D	220	E	2	INDOOR, WATER & DUST RESISTANT
				E	230	F	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
				F	240	G	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
						H	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
				H	380	J	4X	TYPE 4 PLUS CORROSION RESISTANCE (FIBERGLASS)
				J	400	K	7	EXPLOSION PROOF
				K	415	L	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
				L	440			(SECURE ENCLOSURES)
				M	460	M	3R	OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT
				N	480	N	4	INDOOR/OUTDOOR, WATERTIGHT & DUSTTIGHT
				P	550	P	4X	TYPE 4 PLUS CORROSION RESISTANCE (STAINLESS STEEL)
				Q	575	Q	12	INDOOR, INDUSTRIAL ENVIRONMENTS, OILTIGHT & DUSTTIGHT
				R	600			

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

Western Park UT
H03AUSA31200CGXM,44G

REV.	TO SHEET	ECN NO.	BY	APP.	DATE
G		278250	TR	BK	04/22/19
		SEE ECN			
F		275211	TR	BK	10/15/18
		SEE ECN			
E		255133	TR	BK	6/4/15
		SEE ECN (REMOVED 600A)			
D		248402	AE	BK	
		SEE ECN			
C		247772	SDH	SDH	4/14/14
		SEE ECN			
B		246325	AE	BK	01/16/14
		SEE ECN			
A		245959	BK	BK	12/23/13
		SEE ECN			
–		245204	BK	BK	11/07/13
		ISSUE			

PROJECT NAME:

WIRING DIAGRAM
300 SERIES (H3ATS/H3NTS) 3PH 800–1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/07/13
CHECKED	BK	11/07/13
PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

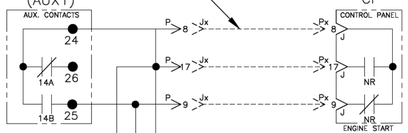
MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP–I–003. FOR PLASTIC PARTS SEE MP–I–055
ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING
SCALE NONE SIZE DS
DWG. NO. 1001657
DRAWING REV. G ECN NO. 278250 SHEET 1 OF 6

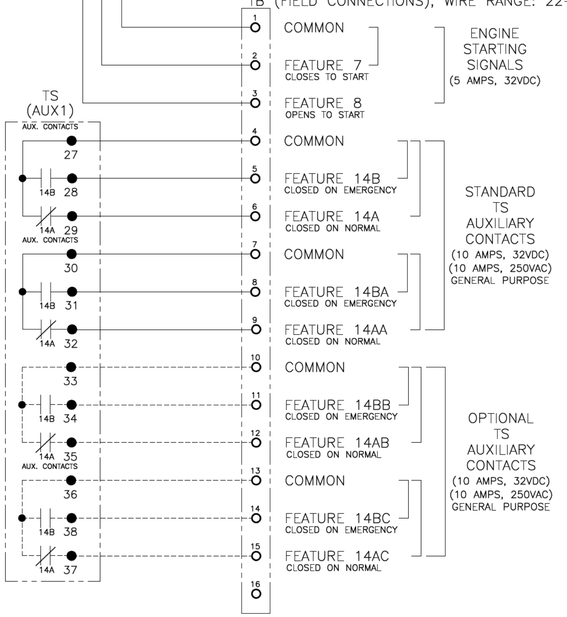
FIELD CONNECTIONS

OPTIONAL EXTENSION HARNESS

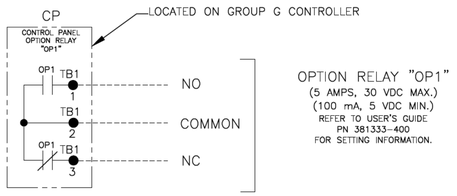


LOCATED ON FRONT OF TRANSFER SWITCH FRAME

TB (FIELD CONNECTIONS), WIRE RANGE: 22–12 AWG

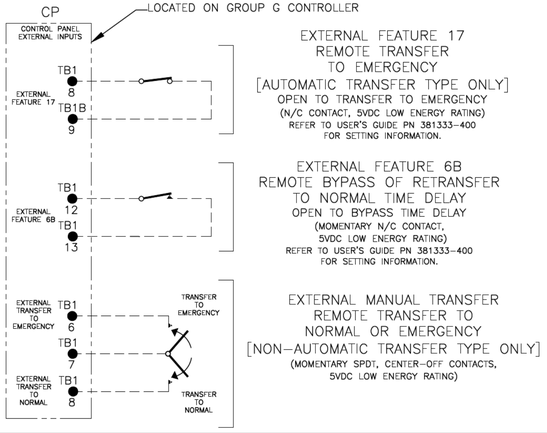


CONTROLLER OPTION RELAY "OP1" (STANDARD)



OPTION RELAY "OP1"
(5 AMPS, 30 VDC MAX.)
(100 mA, 5 VDC MIN.)
REFER TO USER'S GUIDE PN 381333–400 FOR SETTING INFORMATION.

CONTROLLER REMOTE CONTROL FEATURES

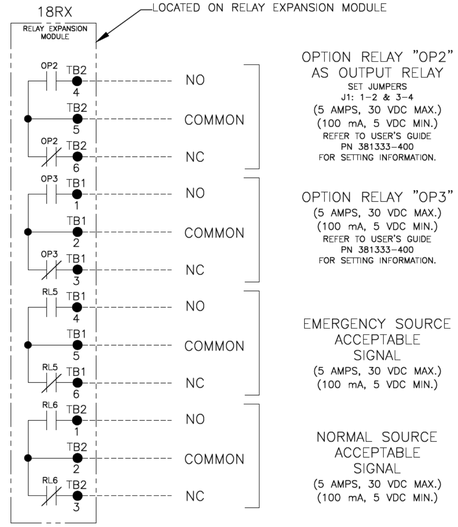


EXTERNAL FEATURE 17
REMOTE TRANSFER TO EMERGENCY
[AUTOMATIC TRANSFER TYPE ONLY]
OPEN TO TRANSFER TO EMERGENCY
(N/C CONTACT, 5VDC LOW ENERGY RATING)
REFER TO USER'S GUIDE PN 381333–400 FOR SETTING INFORMATION.

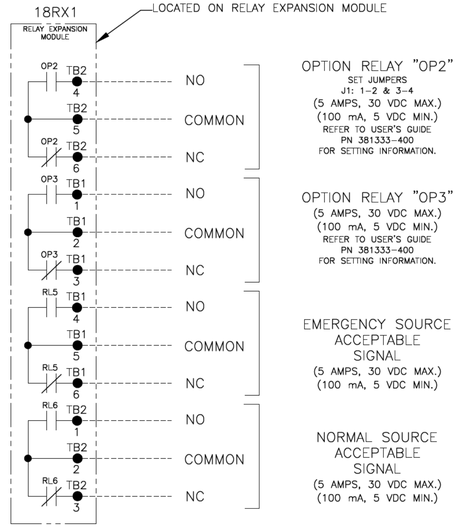
EXTERNAL FEATURE 6B
REMOTE BYPASS OF RETRANSFER TO NORMAL TIME DELAY
OPEN TO BYPASS TIME DELAY
(MOMENTARY N/C CONTACT, 5VDC LOW ENERGY RATING)
REFER TO USER'S GUIDE PN 381333–400 FOR SETTING INFORMATION.

EXTERNAL MANUAL TRANSFER
REMOTE TRANSFER TO NORMAL OR EMERGENCY
[NON–AUTOMATIC TRANSFER TYPE ONLY]
(MOMENTARY SPDT, CENTER–OFF CONTACTS, 5VDC LOW ENERGY RATING)

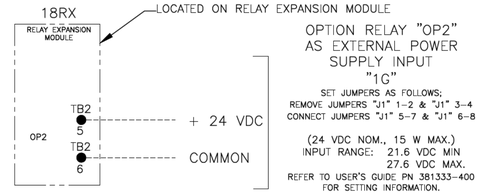
OPTIONAL ACCESSORY 18RX (RELAY EXPANSION MODULE)



OPTIONAL ACCESSORY 18RX1 (SECOND RELAY EXPANSION MODULE)

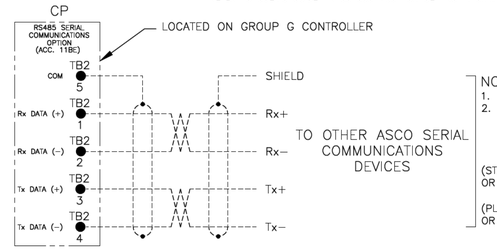


"OP2" OPTIONAL USES



RS485 SERIAL COMMUNICATIONS OPTION

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



NOTES:
1. EARTH GROUND SHIELD AT HOST DEVICE ONLY.
2. FIELD WIRING: USE UL LISTED, STRANDED, TWISTED PAIRS, OVERALL FOIL SHIELD WITH STRANDED DRAIN WIRE SUITABLE FOR RS422 EQUIVALENT TO:

(STANDARD 80°C) BELDEN 9842 OR 9829 OR ALPHA 6202C OR 6222C

(PLENUM RATED) BELDEN 89729 OR 82729 OR ALPHA 58902

REV.	ECN NO.	BY	APP.	DATE
G	278250	TR	BK	04/22/19
	SEE ECN			
F	275211	TR	BK	10/15/18
	SEE ECN			
E	255133	TR	BK	6/4/15
	SEE ECN (REMOVED 600A)			
D	248402	AE	BK	
	SEE ECN			
C	247772	SDH	SDH	4/14/14
	SEE ECN			
B	246325	AE	BK	01/16/14
	SEE ECN			
A	245959	BK	BK	12/23/13
	SEE ECN			
—	245204	BK	BK	11/07/13
	ISSUE			

PROJECT NAME:

WIRING DIAGRAM

300 SERIES (H3ATS/H3NTS) 3PH 800–1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/07/13
CHECKED	BK	11/07/13
PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

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

ASSEM. REF. NO.

COMPUTER GENERATED DRAWING

SCALE NONE SIZE DS

DWG. NO. 1001657

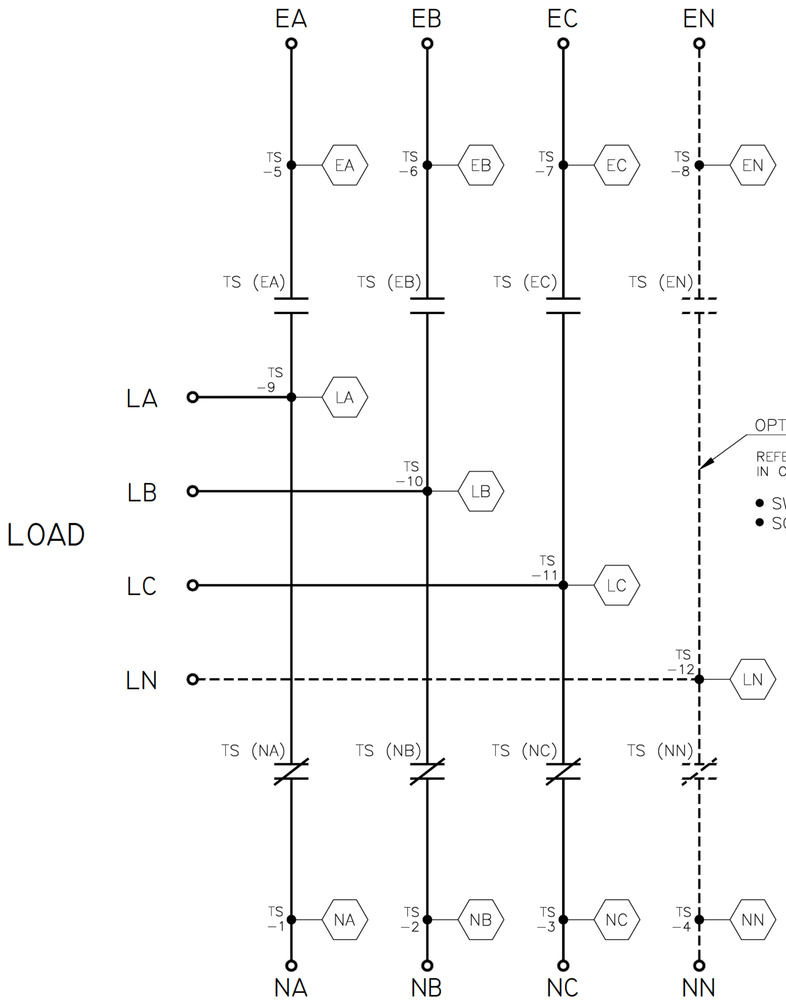
DRAWING REV. G ECN NO. 278250 SHEET 2 OF 6

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

MAIN POWER POLES

TS OPERATOR CIRCUIT

EMERGENCY



OPTIONAL NEUTRAL TYPES

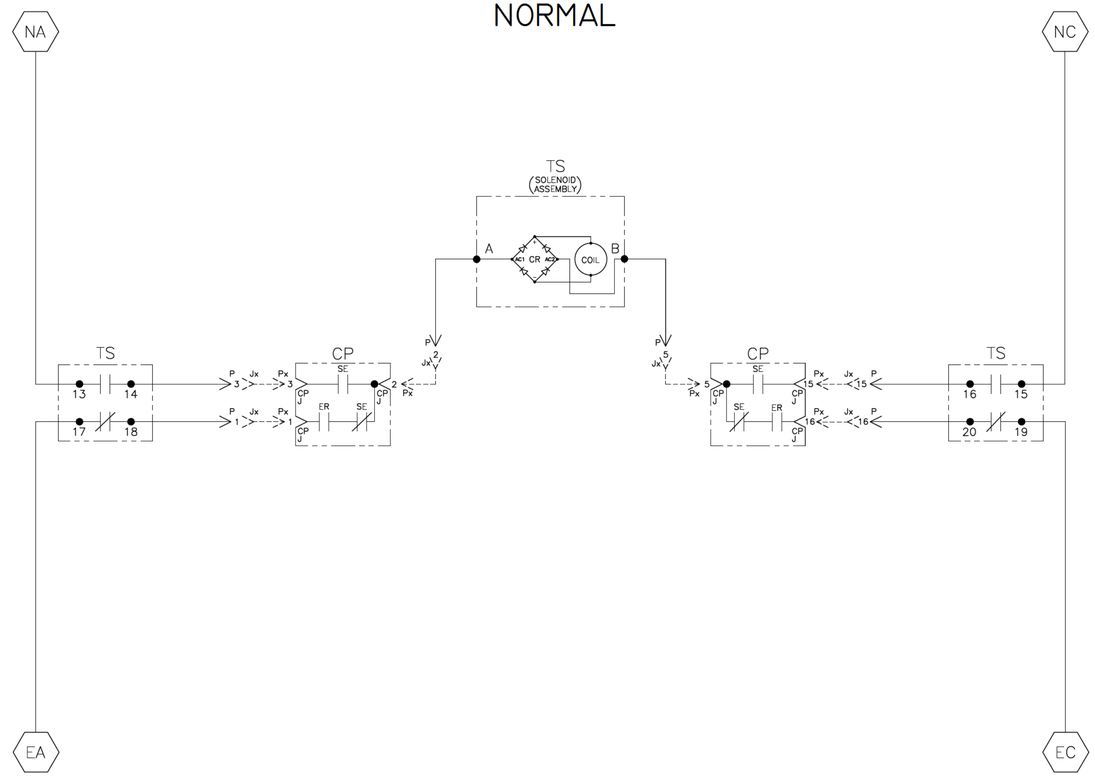
REFER TO "EXPLANATION OF CATALOG NUMBER CODES" IN CATALOG NUMBER CHART ON SHEET 1.

- SWITCHING CONTACTS
- SOLID BUS PLATE

NORMAL

NOTE:
ATS/NTS SHOWN CLOSED ON NORMAL SOURCE.

NORMAL



EMERGENCY

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

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

REV. TO SHEET	ECN NO.	BY	APP.	DATE
G	278250 SEE ECN	TR	BK	04/22/19
F	275211 SEE ECN	TR	BK	10/15/18
E	255133 SEE ECN (REMOVED 600A)	TR	BK	6/4/15
D	248402 SEE ECN	AE	BK	
C	247772 SEE ECN	SDH	SDH	4/14/14
B	246325 SEE ECN	AE	BK	01/16/14
A	245959 SEE ECN	BK	BK	12/23/13
—	245204 ISSUE	BK	BK	11/07/13

PROJECT NAME:

WIRING DIAGRAM

300 SERIES (H3ATS/H3NTS) 3PH 800–1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

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DRAWN BY	DJB	11/07/13
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PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

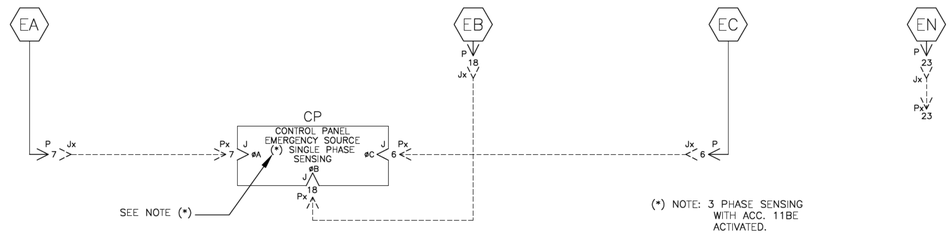
SCALE NONE SIZE DS

DWG. NO. 1001657

DRAWING REV. G ECN NO. 278250 SHEET 3 OF 6

EMERGENCY SOURCE CIRCUITS

EMERGENCY

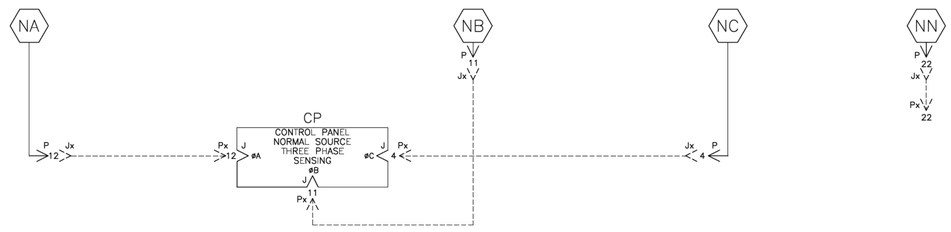


LOAD TERMINAL CIRCUITS

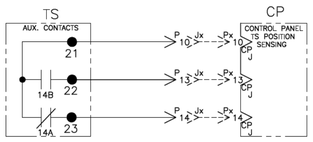
LOAD

NORMAL SOURCE CIRCUITS

NORMAL

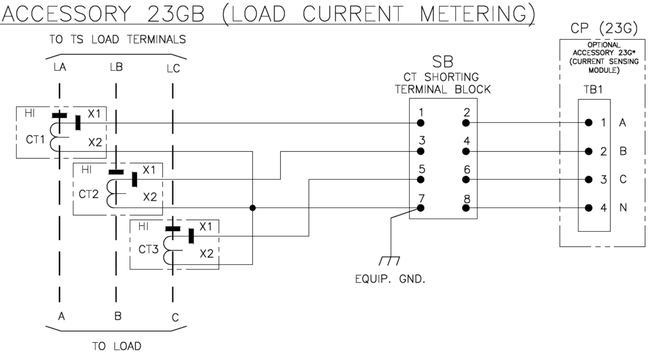


CONTROL CIRCUITS



ADDITIONAL CIRCUITS

OPTIONAL ACCESSORY 23GB (LOAD CURRENT METERING)



CURRENT TRANSFORMER RATIO TABLE	
SWITCH RATING	CT RATIO
800A	800:5A
1000A	1200:5A
1200A	

REV.	ECN NO.	BY	APP.	DATE
G	278250	TR	BK	04/22/19
	SEE ECN			
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	SEE ECN			
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	SEE ECN (REMOVED 600A)			
D	248402	AE	BK	
	SEE ECN			
C	247772	SDH	SDH	4/14/14
	SEE ECN			
B	246325	AE	BK	01/16/14
	SEE ECN			
A	245959	BK	BK	12/23/13
	SEE ECN			
—	245204	BK	BK	11/07/13
	ISSUE			

PROJECT NAME:

WIRING DIAGRAM

300 SERIES (H3ATS/H3NTS) 3PH 800-1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/07/13
CHECKED	BK	11/07/13
PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

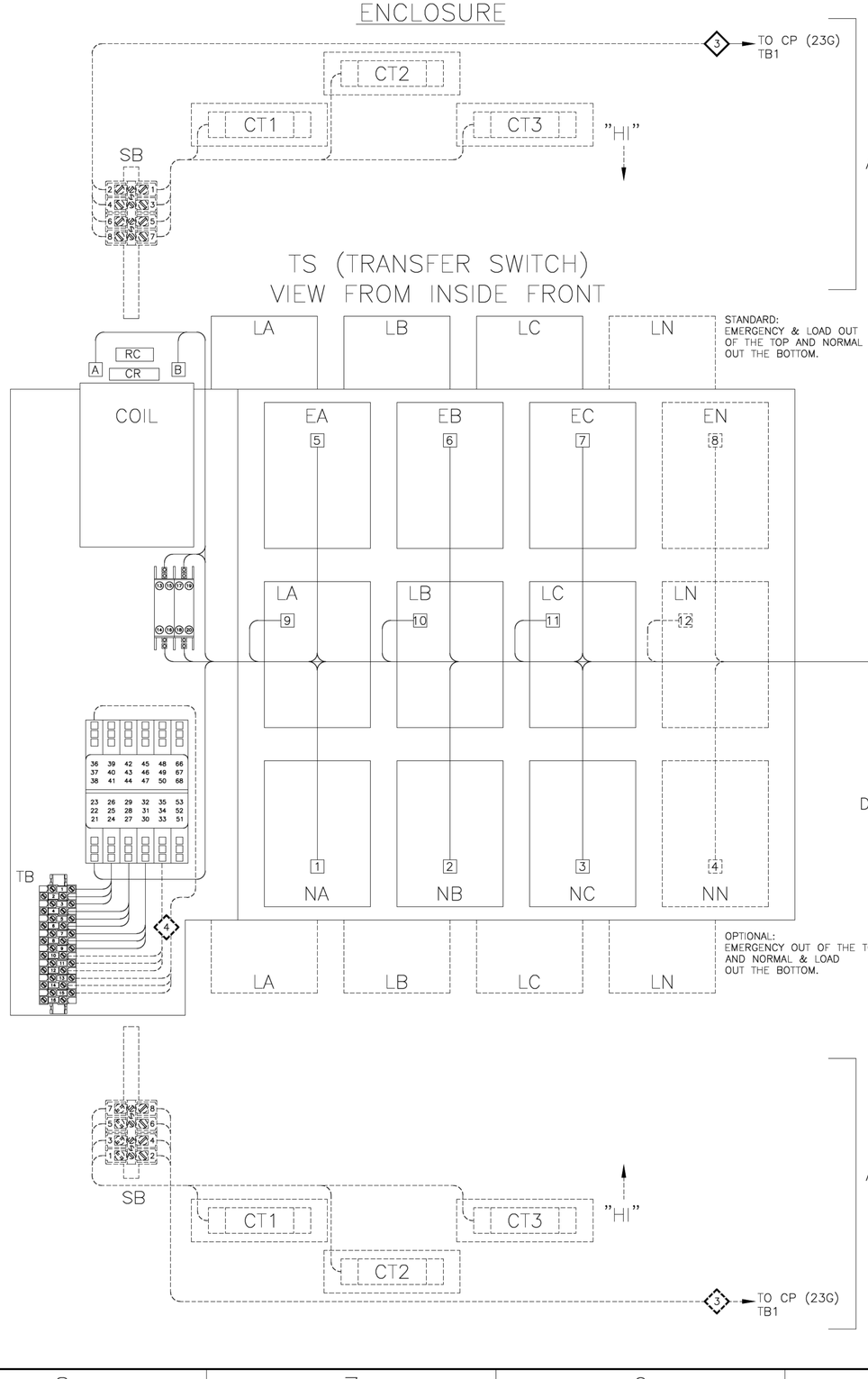
SCALE NONE SIZE DS

DWG. NO. 1001657

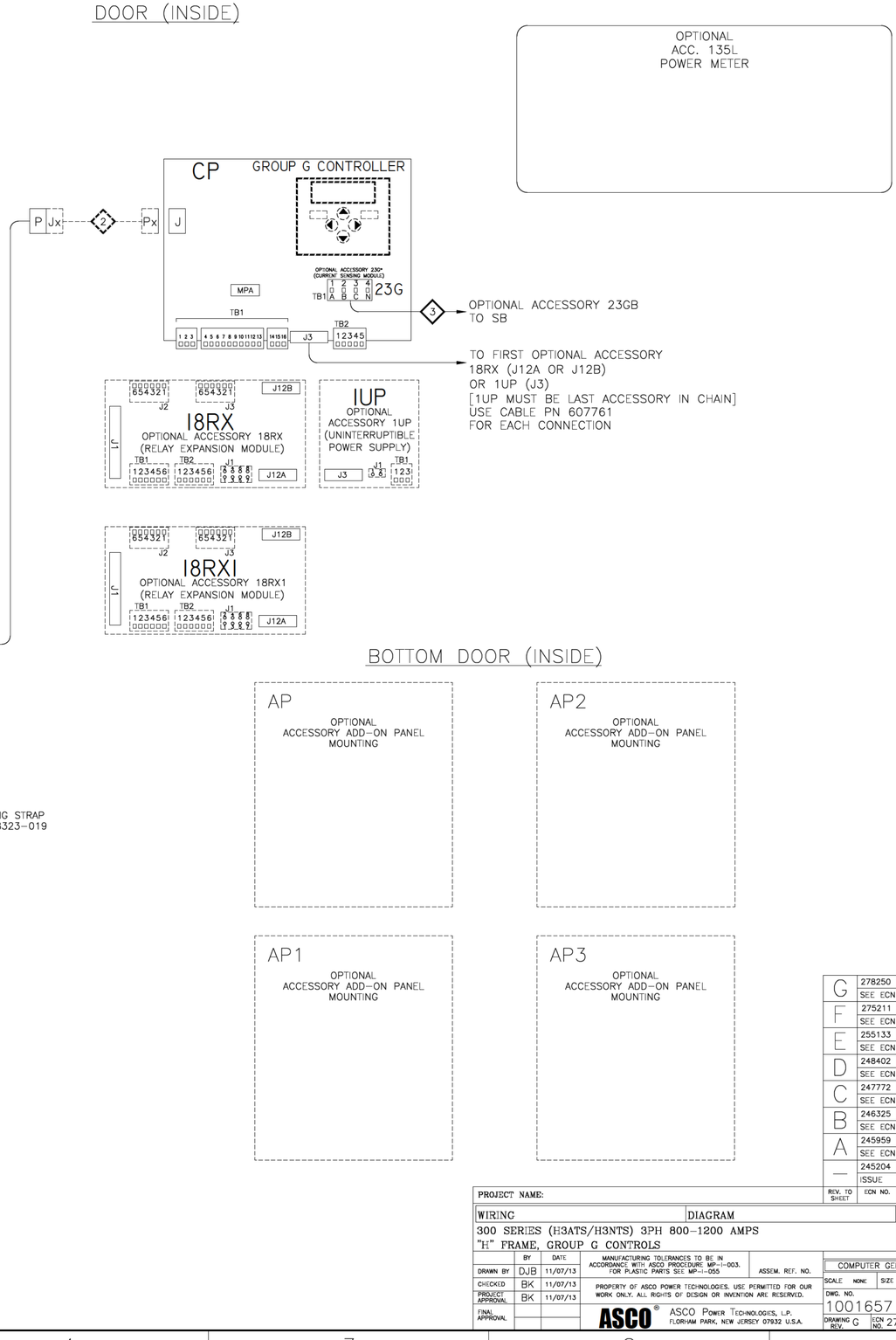
DRAWING REV. G ECN NO. 278250 SHEET 4 OF 6

PHYSICAL DIAGRAM

ENCLOSURE



DOOR (INSIDE)



BOTTOM DOOR (INSIDE)

AP
OPTIONAL ACCESSORY ADD-ON PANEL MOUNTING

AP2
OPTIONAL ACCESSORY ADD-ON PANEL MOUNTING

AP1
OPTIONAL ACCESSORY ADD-ON PANEL MOUNTING

AP3
OPTIONAL ACCESSORY ADD-ON PANEL MOUNTING

REV.	TO SHEET	ECN NO.	BY	APP.	DATE
G		278250	TR	BK	04/22/19
		SEE ECN			
F		275211	TR	BK	10/15/18
		SEE ECN			
E		255133	TR	BK	6/4/15
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		SEE ECN			
—		245204	BK	BK	11/07/13
		ISSUE			

PROJECT NAME:

WIRING | DIAGRAM

300 SERIES (H3ATS/H3NTS) 3PH 800-1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/07/13
CHECKED	BK	11/07/13
PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

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ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

SCALE NONE | SIZE DS

DWG. NO. 1001657

DRAWING REV. G | ECN NO. 278250 | SHEET 5 OF 6

WIRE RUN LISTING

1 ◄— HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☒

WIRE No.	HARNESS 713082 (P) MAIN TS	CLR	AWG
1	P-1,TS-18		16
2	P-2,TS-A		
3	P-3,TS-14		
4	P-4,TS-3		
4	TS-3,TS-15		
5	P-5,TS-B		
6	P-6,TS-7		
6	TS-7,TS-19		
7	P-7,TS-5		
7	TS-5,TS-17		
8	P-8,TS-24		
8	TS-24,TB-1		
9	P-9,TS-25		
9	TS-25,TB-2		
10	P-10,TS-21		
11	P-11,TS-2		
12	P-12,TS-1		
12	TS-1,TS-13		
13	P-13,TS-22		
14	P-14,TS-23		
15	P-15,TS-16		
16	P-16,TS-20		
17	P-17,TB-3		
18	P-18,TS-6		
19	P-19,TS-9		
20	P-20,TS-10		
21	P-21,TS-11		
22	P-22,TS-4		
23	P-23,TS-8		
24	P-24,TS-12		
25	TS-27,TB-4		
26	TS-28,TB-5		
27	TS-29,TB-6		
	ADD WIRES		
31	TS-30,TB-7		
32	TS-31,TB-8		
33	TS-32,TB-9		

2 ◄— HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

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

3 ◄— HARNESS LOCATOR

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

4 ◄— HARNESS LOCATOR

BOX CHECKED IF HARNESS IS MODIFIED ☐

WIRE No.	OPTIONAL AUX. CONTACTS	CLR	AWG
35	TB-10,TS(AUX1)-33		16
36	TB-11,TS(AUX1)-34		
37	TB-12,TS(AUX1)-35		
38	TB-13,TS(AUX1)-36		
39	TB-14,TS(AUX1)-38		
40	TB-15,TS(AUX1)-37		

WIRE No.	ADDITIONAL WIRES	CLR	AWG
			16

REV.	ECN NO.	BY	APP.	DATE
G	278250	TR	BK	04/22/19
	SEE ECN			
F	275211	TR	BK	10/15/18
	SEE ECN			
E	255133	TR	BK	6/4/15
	SEE ECN (REMOVED 600A)			
D	248402	AE	BK	
	SEE ECN			
C	247772	SDH	SDH	4/14/14
	SEE ECN			
B	246325	AE	BK	01/16/14
	SEE ECN			
A	245959	BK	BK	12/23/13
	SEE ECN			
—	245204	BK	BK	11/07/13
	ISSUE			

PROJECT NAME:

WIRING DIAGRAM

300 SERIES (H3ATS/H3NTS) 3PH 800-1200 AMPS
"H" FRAME, GROUP G CONTROLS

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	DJB	11/07/13
CHECKED	BK	11/07/13
PROJECT APPROVAL	BK	11/07/13
FINAL APPROVAL		

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

ASSEM. REF. NO.

COMPUTER GENERATED DRAWING

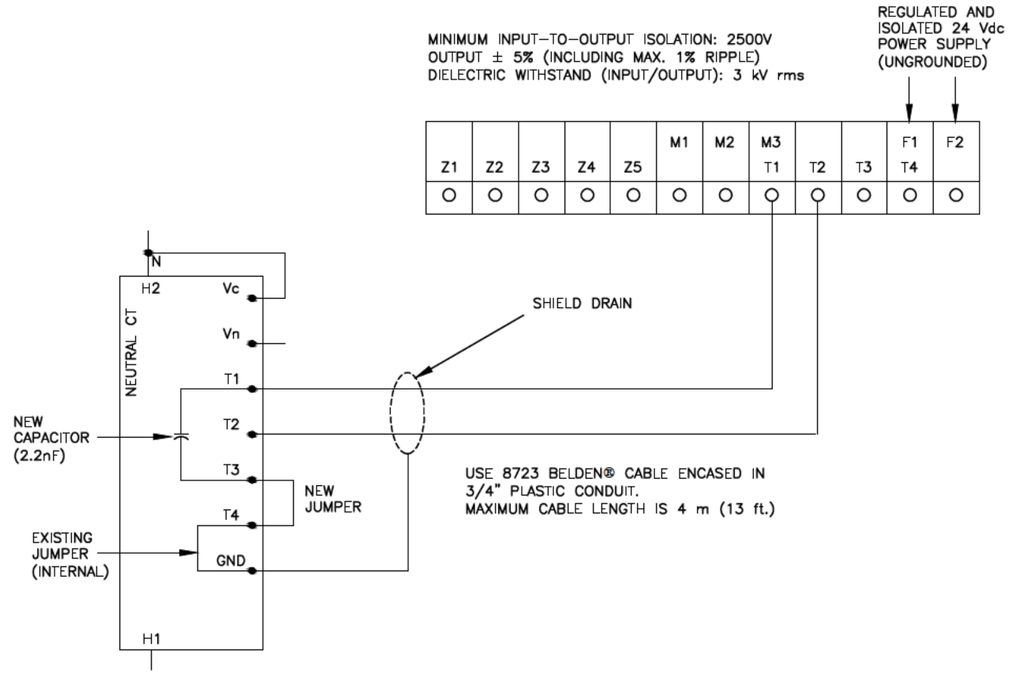
SCALE NONE SIZE DS

DWG. NO. 1001657

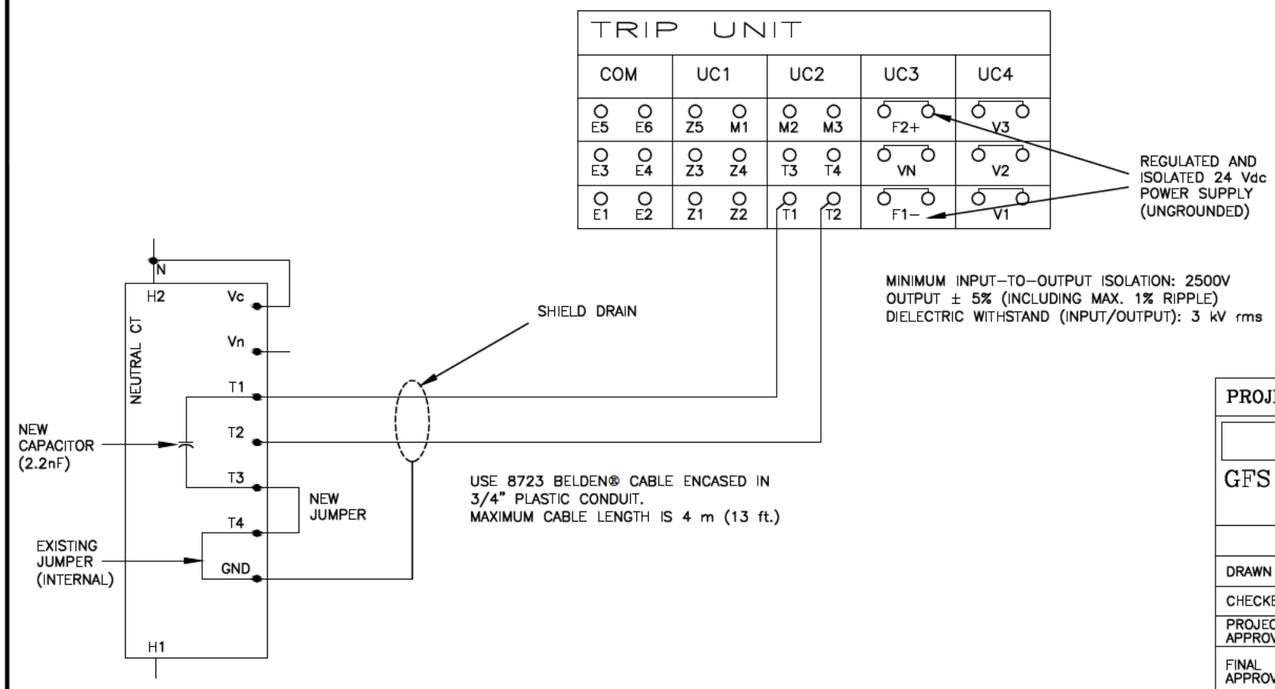
DRAWING REV. G ECN NO. 278250 SHEET 6 OF 6

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

WIRING SCHEMATIC FOR POWERPACT P– & R–FRAME CIRCUIT BREAKERS



WIRING SCHEMATIC FOR 800–3000 A NT/NW CIRCUIT BREAKERS



REV. TO SHEET	ECN NO.	BY	APP.	DATE
F	257650	TRD	MM	10/23/15
	SEE ECN			
E	227403	TRD	WK	05/13/10
	SEE ECN			
D	226452	AE	BK	03/16/10
	SEE ECN			
C	223197	DAJ	BK	10/20/09
	SEE ECN			
B	211947	MJB	BK	2/7/07
	SEE ECN			
—	167055	CC	BK	05/13/04
	ISSUE			

PROJECT NAME:

GFS CIRCUITRY.

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	CC	05/13/04
CHECKED	BK	05/13/04
PROJECT APPROVAL	BK	05/13/04
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

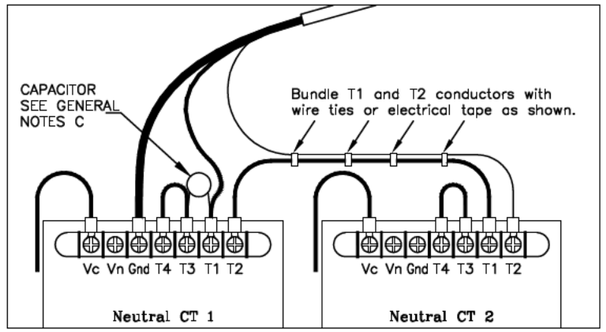
COMPUTER GENERATED DRAWING

SCALE | SIZE BS

DWG. NO. 758574

DRAWING REV. F | ECN NO. 257650 | SHEET 1 OF 2

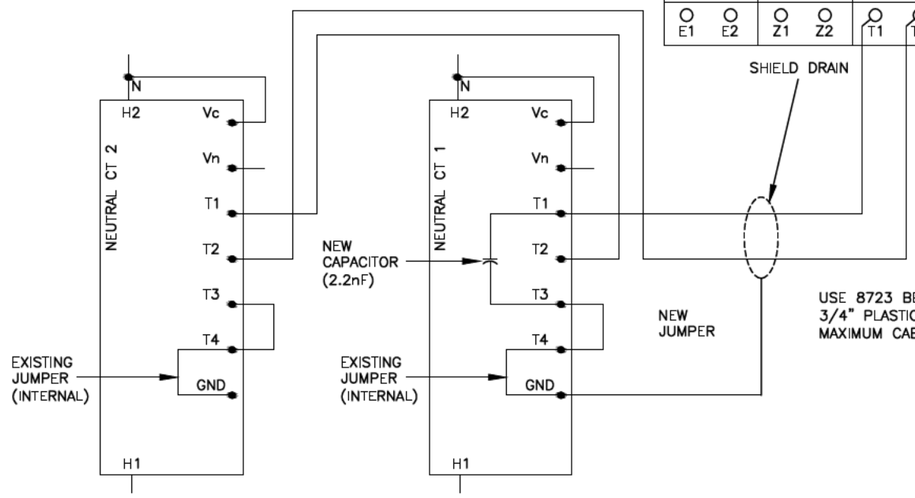
WIRING SCHEMATIC FOR 3200–6000 A NW CIRCUIT BREAKERS



TRIP UNIT										
COM		UC1		UC2		UC3		UC4		
E5	E6	Z5	M1	M2	M3	F2+		V3		
E3	E4	Z3	Z4	T3	T4	VN		V2		
E1	E2	Z1	Z2	T1	T2	F1–		V1		

REGULATED AND ISOLATED 24 Vdc POWER SUPPLY (UNGROUNDED)

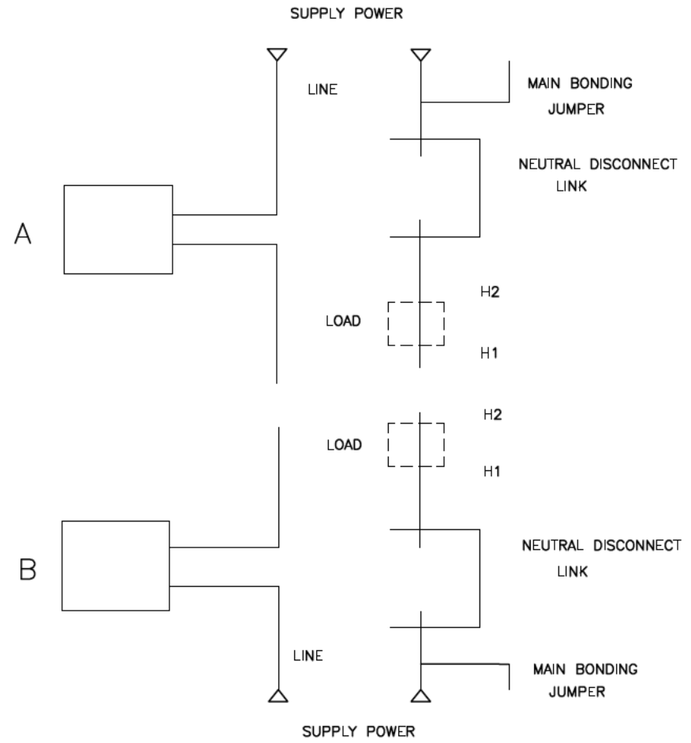
SHIELD DRAIN



MINIMUM INPUT–TO–OUTPUT ISOLATION: 2500V
OUTPUT ± 5% (INCLUDING MAX. 1% RIPPLE)
DIELECTRIC WITHSTAND (INPUT/OUTPUT): 3 kV rms

USE 8723 BELDEN® CABLE ENCASED IN 3/4" PLASTIC CONDUIT.
MAXIMUM CABLE LENGTH IS 4 m (13 ft.)

LINE DIAGRAM FOR NW BREAKER



REV. TO SHEET	ECN NO.	BY	APP.	DATE
F	257650	TRD	MM	10/23/15
	SEE ECN			
E	227403	TRD	WK	05/13/10
	SEE ECN			
D	226452	AE	BK	03/16/10
	SEE ECN			
C	223197	DAJ	BK	10/20/09
	SEE ECN			
B	211947	MJB	BK	2/7/07
	SEE ECN			
—	167055	CC	BK	05/13/04
	ISSUE			

GENERAL NOTES

A. IF LOAD IS CONNECTED TO LOWER END OF CIRCUIT BREAKER, CONNECT THE LOAD NEUTRAL TO THE H1 END OF THE NEUTRAL CURRENT TRANSFORMER.

B. IF SUPPLY POWER IS CONNECTED TO THE LOWER END OF THE CIRCUIT BREAKER ,CONNECT THE SUPPLY NEUTRAL TO THE H1 END OF THE NEUTRAL CURRENT TRANSFORMER.

C. CAPACITOR 2.2NF IS PROVIDED WITH CIRCUIT BREAKER.

PROJECT NAME:

GFS CIRCUITRY.

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	CC	05/13/04
CHECKED	BK	05/13/04
PROJECT APPROVAL	BK	05/13/04
FINAL APPROVAL		

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

SCALE | SIZE BS

DWG. NO. 758574

DRAWING REV. F | ECN NO. 257650 | SHEET 2 OF 2

Western Park UT

Quick Connect Details

#2	Quick Connect	AMPS: 1200	QTY: 1

Product	:	Input Quick Connect Panel	Catalog Number	:	3QCNCAA31200F00F
Service Voltage / Hz	:	120V-240V/50-60Hz	Optional Accessories	:	
Bypass Isolation	:	Not Applicable	Product Description	:	Input Panel,Type 3R(F),120V-240V,1200A,3P+N+G, 600V MAX,CC: BLK,RED,BLU,WHT,GRN
No. of Poles: 3	:	3	Neutral Configuration	:	Solid [A]
Short Circuit Rating: Other Ratings May Apply. Contact ASCO For Details.	:	Refer to product outline drawing	No. of Cables & Lug Size	:	1, 1/0AWG to 600MCM
Enclosure	:	3R(F)-UL Type 3R Enclosure (See Disclaimer 3)	Ground	:	100% Ground
Extended Warranty	:	Not Included	Markings	:	

NOTES:

1) INLET PANELS:
   –FOR USE ONLY FOR CONNECTION OF A GENERATOR TO THE SOURCE TERMINALS OF A TRANSFER SWITCH, SUCH THAT THE INLETS ARE ENERGIZED FROM THE GENERATOR
   –ETL LISTED TO UL1008, TRANSFER SWITCH ACCESSORY
2) OUTLET PANELS:
   –FOR CONNECTION OF A LOAD BANK TO A POWER SOURCE
   –ETL LISTED TO UL891
3) PANEL RATINGS: 600V MAX, 50/60 Hz, 1200A AND 1600A, 3PH/3W OR 3PH/4W
4) SHORT CIRCUIT RATING:
   22K RMS SYMMETRICAL AMPS, 600 VAC MAX., 50 mS
5) ENCLOSURE:
   RATING – TYPE 3R CONSTRUCTION, FOR OUTDOOR USE ONLY
   FINISH – ANSI 61 GREY

SITE PREP:

- PREPARE INSTALLATION SITE ACCORDING TO LOCAL CODES
- SURFACE TO WHICH PANEL IS TO BE INSTALLED MUST BE CAPABLE OF SUPPORTING THE WEIGHT OF THE PANEL AS WELL AS THE WEIGHT OF THE CABLES ATTACHED TO IT.
  * 1200 AMP QUICK CONNECT PANEL 485 LBS.
  * 1600 AMP QUICK CONNECT PANEL 505 LBS.
- PROPER CLEARANCE MUST BE ALLOWED IN FRONT OF THE PANEL, NO LESS THAN SIX (6) FEET FROM THE FACE OF THE PANEL TO ALLOW FOR CABLE CONNECTIONS.

INSTALLATION:

- THE PANEL IS TOP HEAVY AND THE CENTER OF GRAVITY IS ABOVE THE FORKLIFT SLOTS. USE CARE WHEN LIFTING AND MOVING THE PANEL.
- PANEL INSTALLATION IS TO BE CARRIED OUT BY QUALIFIED PERSONNEL IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- THE PANEL IS TO BE FASTENED TO AN EXTERNAL PAD USING 3/8" DIA. FASTENERS.
  * THE EXTERNAL PAD MUST BE LEVEL AND PLUMB TO ALLOW FOR PROPER DRAINAGE FROM THE PANEL WEEP HOLES.

CABLING:

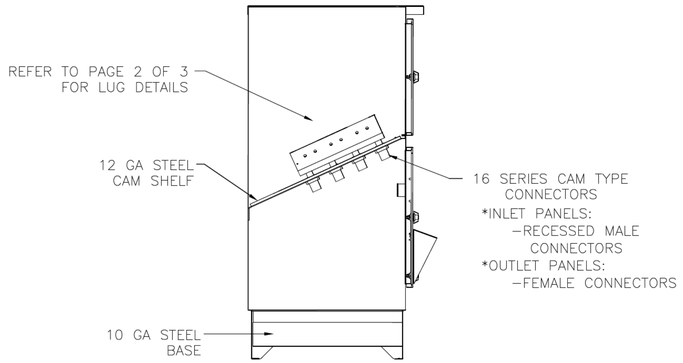
- CONDUIT/CABLE ENTRY IS TO BE THROUGH THE BOTTOM, TOP OR REAR OF THE PANEL, USING PROPER SEALING PROCEDURES TO MAINTAIN TYPE 3R RATING COMPLIANCE. FOR BOTTOM CABLE ENTRY ACC. 40QC OR ACC. 171QC IS REQUIRED.

OPTIONAL ACCESSORIES:

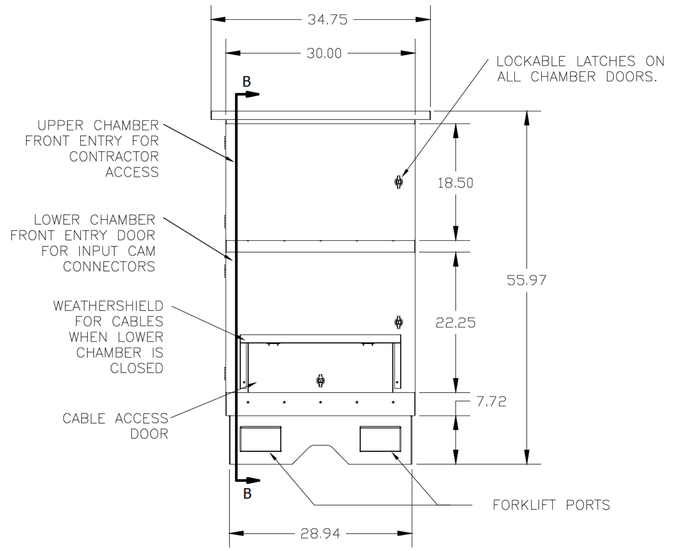
ACC. 40QC – BOTTOM CONDUIT/CABLE ENTRY (REFER TO PAGE 3 OF 3 FOR ACC. 40QC DETAILS)

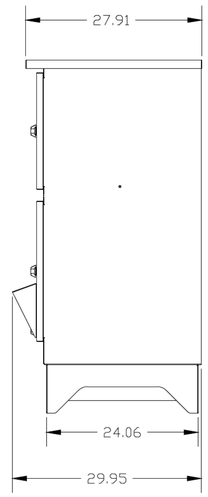
ACC. 147QC – COLOR CODING FOR CANADIAN CAMLOK CONNECTORS
THREE PHASE: RED (PHASE A), BLK (PHASE B), BLU (PHASE C), NEUT. WHEN REQUIRED (WHT)

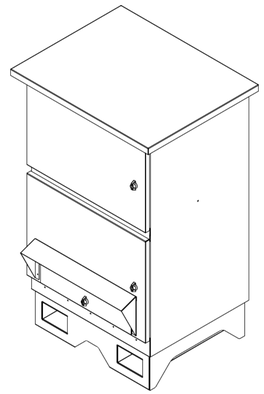
ACC. 171QC – PHASE ROTATION MONITOR, FUSES, ENGINE START TERMINAL POST AND PROVISION FOR TRAP KEY. (REFER TO PAGE 3 OF 3 FOR ACC. 171QC DETAILS)

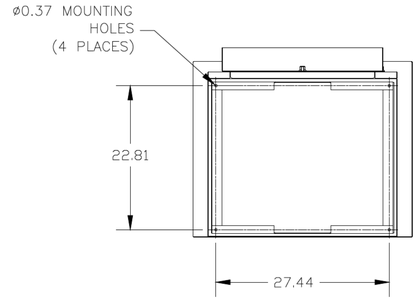


SECTION B–B









CATALOG NUMBER

CATALOG TYPE	INPUT/ OUTPUT	CONNECTOR TYPE	GROUND	NEUTRAL TYPE	POLES	AMPS	VOLT CODE	BLANK	OPTIONAL ACCESSORY	ENCLOSURE CODE
3QC	N U	C	A N	0 A	3	1200 1600	F N R	0	0 X Z	F S R

EXPLANATION OF CATALOG NUMBER CODES

INPUT/ OUTPUT	CONNECTOR TYPE	GROUND TYPE		NEUTRAL TYPE		VOLTAGE CODES			OPTIONAL ACCESSORY	ENCLOSURE CODES		
CODE	CODE	CODE	COLOR	CODE	COLOR	CODE	NOMINAL VOLTAGE	COLOR CODE	CODE	CODE	TYPE	DESCRIPTION
N=INPUT U=OUTPUT	C=CAMLOCK	A=100% N=25%	GREEN	0=NONE A=100%	NONE WHITE	F N R	240 480 600	BLK,RED,BLU BRN,ORG,YEL BLK,BLK,BLK	0=STANDARD X=ACCESSORY Z=SPECIAL	F S R	3R 3R 3R	SECURE ENCLOSURE OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT (STEEL) SECURE ENCLOSURE OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT (316 STAINLESS STEEL) SECURE ENCLOSURE OUTDOOR, RAINPROOF, SLEET & ICE RESISTANT (304 STAINLESS STEEL)

Western Park UT
3QCNCAA31200F00F

REV. TO SHEET	ECN NO.	BY	APP.	DATE
J	302744	MS	NS	03/27/23
	SEE ECN			
H	294528	MM	MM	03/17/18
	SEE ECN			
G	276067	MKA	JPB	12/04/18
	SEE ECN			
F	275149	MKA	JPB	10/11/18
	SEE ECN			
E	274211	MKA	JPB	09/11/18
	SEE ECN			
D	271086	MKA	JPB	02/16/18
	SEE ECN			
C	270482	JPB	JPB	01/02/18
	SEE ECN			
B	269400	MKA	JPB	10/09/17
	SEE ECN			
A	266986	MKA	JPB	05/09/17
	SEE ECN			
—	266191	MKA	JPB	03/22/17
	ISSUE			

PROJECT NAME:

QUICK CONNECT PANEL
1200 AND 1600 AMPS
600V MAX, 3PH/3W OR 3PH/4W

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	MKA	03/22/17
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	JPB	03/22/17

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

ASSEM. REF. NO.

COMPUTER GENERATED DRAWING

SCALE NONE SIZE DS

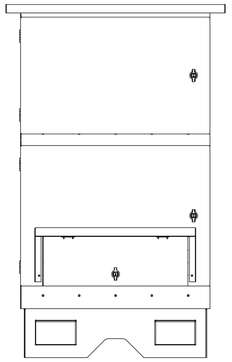
DWG. NO. 1183675

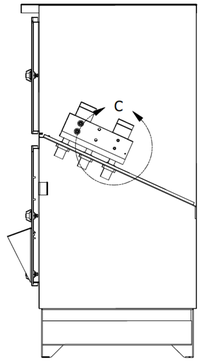
ASCO® ASCO POWER TECHNOLOGIES, L.P. FLORHAM PARK, NEW JERSEY 07932 U.S.A.

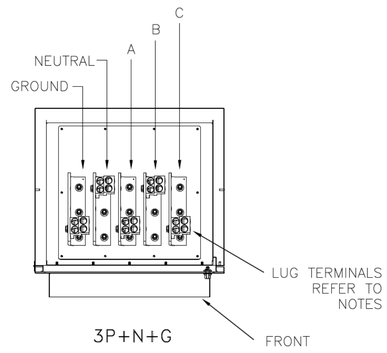
DRAWING REV. J ECN NO. 302744 SHEET 1 OF 3

LUG DETAILS

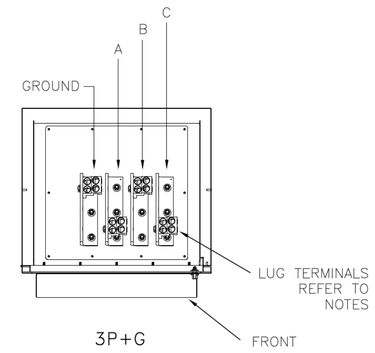
1200 AMP PANEL







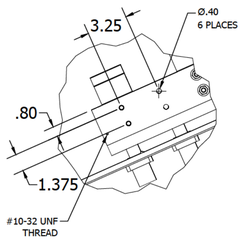
3P+N+G



3P+G

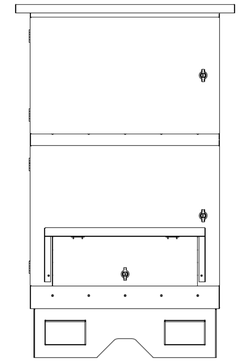
1200 AMP PANEL NOTES:

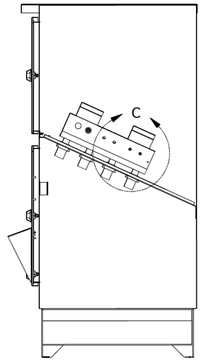
– TERMINALS: SCREW TYPE LUGS FOR EXTERNAL POWER CONNECTIONS
(4) 1/0 AWG TO 750 MCM PER PHASE, NEUTRAL AND GROUND
WIRE TIGHTENING TORQUE – 375 INCH POUNDS

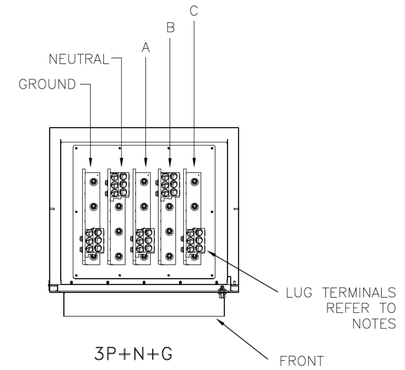


DETAIL C

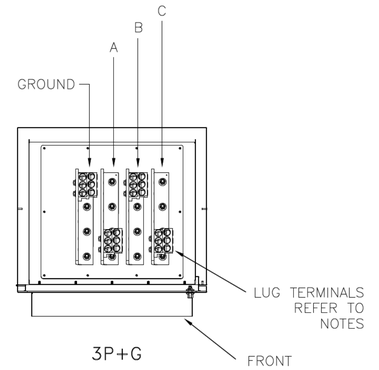
1600 AMP PANEL







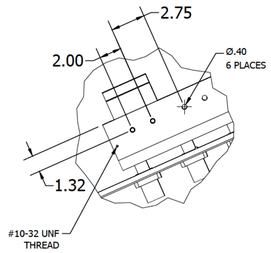
3P+N+G



3P+G

1600 AMP PANEL NOTES:

– TERMINALS: SCREW TYPE LUGS FOR EXTERNAL POWER CONNECTIONS
(6) 1/0 AWG TO 750 MCM PER PHASE, NEUTRAL AND GROUND
WIRE TIGHTENING TORQUE – 375 INCH POUNDS



DETAIL C

REV.	REV. TO SHEET	ECN NO.	BY	APP.	DATE
J		302744	MS	NS	03/27/23
		SEE ECN			
H		294528	MM	MM	03/17/18
		SEE ECN			
G		276067	MKA	JPB	12/04/18
		SEE ECN			
F		275149	MKA	JPB	10/11/18
		SEE ECN			
E		274211	MKA	JPB	09/11/18
		SEE ECN			
D		271086	MKA	JPB	02/16/18
		SEE ECN			
C		270482	JPB	JPB	01/02/18
		SEE ECN			
B		269400	MKA	JPB	10/09/17
		SEE ECN			
A		266986	MKA	JPB	05/09/17
		SEE ECN			
—		266191	MKA	JPB	03/22/17
		ISSUE			

PROJECT NAME:

QUICK CONNECT PANEL
1200 AND 1600 AMPS
600V MAX, 3PH/3W OR 3PH/4W

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	MKA	03/22/17
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	JPB	03/22/17

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

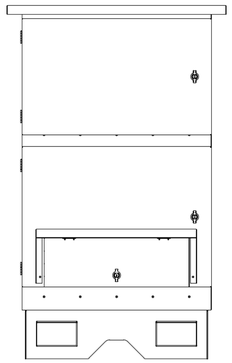
SCALE NONE | SIZE DS

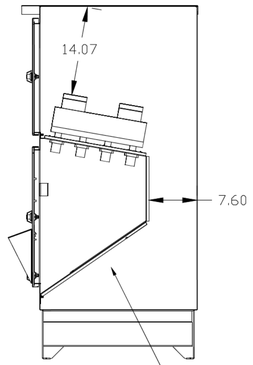
DWG. NO. 1183675

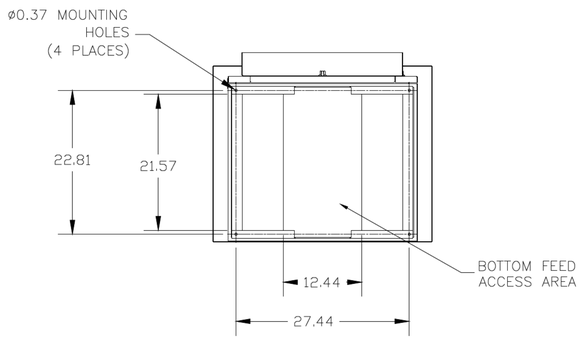
DRAWING REV. J | ECN NO. 302744 | SHEET 2 OF 3

ACCESSORY 40QC

BOTTOM CONDUIT/CABLE ENTRY.
(MUST BE SPECIFIED AT TIME OF ORDER ENTRY).

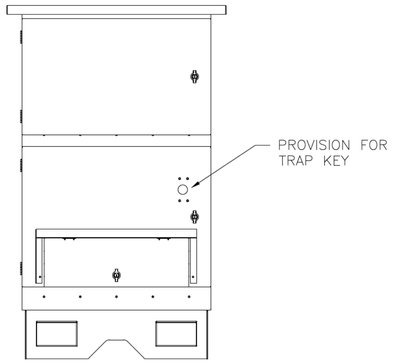


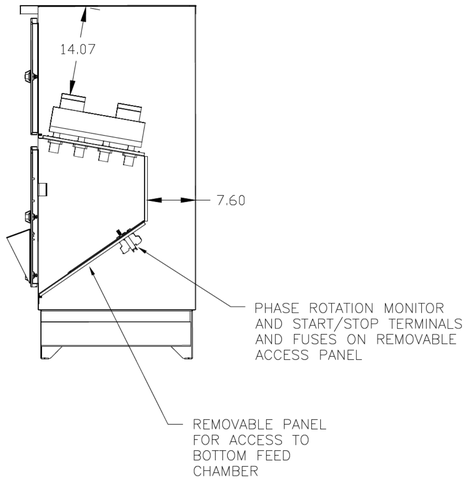


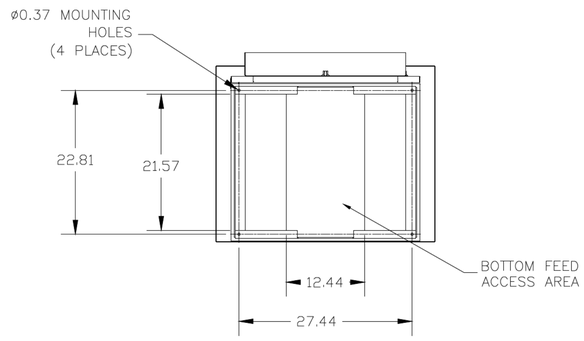


ACCESSORY 171QC

PHASE ROTATION MONITOR, START/STOP TERMINALS AND FUSES.
(INCLUDES ACCESSORY 40QC).







CABLING NOTES:

– USE PROPER SEALING PROCEDURES TO MAINTAIN TYPE 3R RATING COMPLIANCE.

REV. TO SHEET	ECN NO.	BY	APP.	DATE
J	302744	MS	NS	03/27/23
	SEE ECN			
H	294528	MM	MM	03/17/18
	SEE ECN			
G	276067	MKA	JPB	12/04/18
	SEE ECN			
F	275149	MKA	JPB	10/11/18
	SEE ECN			
E	274211	MKA	JPB	09/11/18
	SEE ECN			
D	271086	MKA	JPB	02/16/18
	SEE ECN			
C	270482	JPB	JPB	01/02/18
	SEE ECN			
B	269400	MKA	JPB	10/09/17
	SEE ECN			
A	266986	MKA	JPB	05/09/17
	SEE ECN			
—	266191	MKA	JPB	03/22/17
	ISSUE			

PROJECT NAME:

QUICK CONNECT PANEL
1200 AND 1600 AMPS
600V MAX, 3PH/3W OR 3PH/4W

THIRD ANGLE PROJECTION

	BY	DATE
DRAWN BY	MKA	03/22/17
CHECKED		
PROJECT APPROVAL		
FINAL APPROVAL	JPB	03/22/17

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

ASSEM. REF. NO.

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

COMPUTER GENERATED DRAWING

SCALE NONE SIZE DS

DWG. NO.
1183675

DRAWING REV. J ECN NO. 302744 SHEET 3 OF 3

EQUIPMENT STORAGE REQUIREMENTS

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

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

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

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

ASCO Power Technologies

Engineering Application Information

WITHSTAND AND CLOSING RATINGS
FOR
TRANSFER SWITCH EQUIPMENT

ASCO products comply with all mandatory UL 1008 withstand and closing ratings.

By using the information in this publication and calculating available short circuit currents, the system designer can be assured the transfer switches will be properly rated for the electrical system.

Introduction

This publication provides information on withstand and closing ratings (WCRs) for ASCO transfer switches and related products, including compliance with the optional short time ratings and other revisions to UL 1008. Also included are guidelines for special WCR applications and typical methods for specifying WCR requirements.

Guidelines for using the information in this publication to verify suitability of switches for specific applications based on withstand and closing ratings (WCR).

1. Determine the prospective fault current available (from each source) at the location of the switch.
2. Determine the overcurrent protective devices (OPDs) that will be located ahead of the switch.
3. If the OPD is a circuit breaker, refer to the "Time Based" rating column on Table II of page 4. Select the switch rating necessary to handle the full load current. Compare the fault current available at the switch source terminals to the WCR shown in Table II for the applicable switch ampere size and voltage. If the prospective fault current is equal to or less than the Time Based WCR from Table II, the switch selected is suitable for the application.
4. If the prospective fault current is greater than the Time Based WCR obtained from Table II, refer to the "Specific Breaker" list on Table III on pages 5-7. Compare the fault current to the WCR shown in Table II. If the fault current is equal to or less than the WCR shown in Table II, the switch is suitable for the application when protected by any of the circuit breakers shown. If the specific circuit breaker being used is not shown in the table, contact ASCO Power Technologies.
5. If the prospective fault current is greater than the WCR listed in Table III, refer to *Special Application Considerations* on page 8.
6. When the overcurrent protective devices are fuses refer to the "Current Limiting Fuses" column of Table II on page 4. If there are any questions about the suitability of the switch when protected by current limiting fuses contact ASCO Power Technologies.

The Importance of Proper Ratings

The transfer switch is a unique and critical part of the power system. It is the last distribution device feeding the critical loads of a facility. For that reason, the transfer switch should be located as close as possible to the protected loads. In addition, after a fault (short circuit) is cleared, the transfer switch must remain operable so that it can restore power to the critical loads from the alternate power source.

In the design of an electrical power distribution system, a coordination study should be conducted during the design stage to determine the trip settings required for all circuit breakers. Proper trip settings will assure that a fault is cleared as close to its location as practical. The coordination study considers conductor sizes, quantities and lengths as well as any other relevant circuit impedance. The farther from the source a device is located, the lower the fault current will be at that device. Referring to Figure 1, a fault at point A should be cleared by the switchgear feeder breaker F_2 and not by M. This would leave the other feeder circuits (F_1 & F_3 - F_7) in operation. A coordination study will determine the magnitude of fault current at the load side of the transfer switch and indicate the settings for F_2.

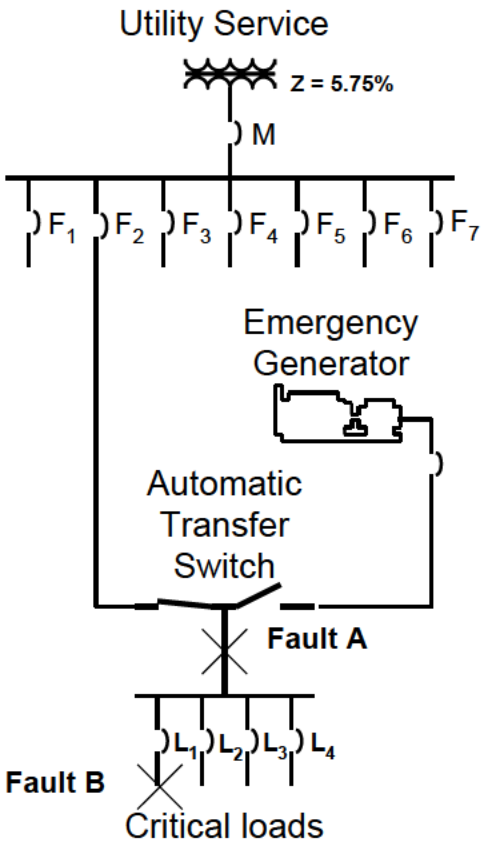


Figure 1. Line diagram of a typical emergency power system.

Consider a fault at point B on the load side of the breaker feeding L_1 as shown in Figure 1. If the system breakers have been coordinated properly, the breaker feeding L_1 will trip before the upstream breaker or fuse. The transfer switch must withstand this fault current until the circuit breaker or fuse clears the fault. Most automatic transfer switches available today have a standard control circuit time delay of 0.5 seconds or more to override any momentary voltage transients. This is ample time for any over current device to clear the fault, allowing system voltage to return to normal and avoiding any unnecessary operation of the transfer switch.

Now consider a fault at point A of Figure 1. The circuit breakers on the load side of the transfer switch would not see the fault current, but the upstream breaker (F2) would and the instantaneous trip element would be actuated. The transfer switch controller senses there is no voltage from the utility, signals a transfer operation and the transfer switch is now required to close on the fault condition until the generator over current device clears the fault.

If a transfer switch does not have a sufficient withstand and closing rating, severe damage and a potential fire hazard could result from the fault current. Over-rating the transfer switch to achieve a sufficient WCR leads to a less cost-effective design. Good engineering practice requires adequately rated devices in the power distribution system. Therefore, the specified WCR for the transfer switch should be equal to or greater than the available fault current at the location of the transfer switch. Some recommended engineering practices to assist in fault current calculations are referenced at the end of this publication.

How Codes Impact Ratings

Codes often require equipment to be approved for its intended use. For example, one of the most common applications for automatic transfer switches is in Emergency Systems per Article 700 of the National Electrical Code (NEC) ANSI/NFPA 70. Section 700-3 and 700-6 require that all transfer equipment be approved for use on Emergency Systems. How does a manufacturer obtain approval? There are several ways, but perhaps the most common is via a third party certification acceptable to the authority having jurisdiction.

The Role of Underwriters Laboratories

Underwriters Laboratories (UL) is one of several independent testing agencies and is perhaps the most well-known third party certifier. The Standard for Safety under which Underwriters Laboratories tests Transfer Switch Equipment is UL 1008. Equipment which meets UL requirements is listed in UL's *Electrical Construc-*

tion Materials List. This list is frequently used by electrical inspectors and other authorities having jurisdiction in conjunction with the device markings and rating label to approve an electrical installation.

UL has issued several revisions to the UL 1008 Standard, which clarify how a transfer switch is to be tested and marked for fault current withstand and closing ratings. A major revision introduced in the 1989 version of UL 1008 allowed an optional rating category for WCR and closing tests. Its purpose was to permit transfer switch manufacturers to conduct tests without overcurrent protective devices. For transfer switches rated 400A and below for use on 10 kA circuit maximum, the on time of the fault current must be at least 25 ms (1½ cycles). For transfer switches rated above 400A or for use on circuits with available fault currents above 10 kA, the on time of the fault current must be at least 50 ms (3 cycles). When this test is successful, the manufacturer may mark the switch for use with any manufacturer's circuit breaker within its rating. Such *umbrella* ratings give the application engineer more flexibility when specifying and coordinating the transfer switch with overcurrent devices.

Where a transfer switch manufacturer does not opt for this test, the switch can only be marked to show the specific manufacturer's circuit breaker with which the switch was tested, or circuit breakers approved by UL through extension from the original test data. The specific breaker marking can limit the product's application and acceptance by the inspecting authority.

Other issues may develop when the transfer switch WCR is limited to use with specific circuit breakers. Even though a specific breaker is coordinated with the transfer switch upon initial installation, the breaker could possibly be replaced at a later date with another type and/or rating which is not one of the breakers approved by UL. Circuit breakers also change trip characteristics as they age and the tripping time may be become slower, allowing the transfer switch to be subjected to energy above the original short circuit testing values. These issues would not be a concern to the specifying engineer if a transfer switch rated for use with "Time Based" were selected.

Another significant change regarding short circuit testing was made to UL1008 in June of 2002. Since the requirement for selective coordination was added to articles 700, 701 and 708 of the NEC, UL recognized there would be situations where transfer switches would be required to withstand and close on short circuit currents for time durations of 0.1 seconds (6 cycles for 60Hz systems). Consequently, UL added requirements for a new optional short circuit test called "Short Time Current Rating Test". The criteria for a successful test was the same as the short circuit testing in the standard, except the test sample was required to pass a temperature rise test at the conclusion of this new short time test. This meant the transfer switch main contacts had to be virtually "like new" in order to minimize the increase in contact resistance in order to meet the temperature rise limits.

The time duration of the short time test was up to the discretion of the manufacturer and could range from 0.1 to 0.5 seconds. The amount of energy a transfer switch can withstand and close on is based on an I^2T function, which is a measurement of the energy handled by the switch. Since the switch has to handle more energy with the longer time duration and also pass a temperature rise test following this event, the short time ratings will be lower for an identical test sample compared to the short circuit ratings obtained for the requirements in UL1008 prior to 2002.

The 7th Edition of UL 1008 became effective November 1, 2014 and resulted in significant changes to the short-circuit ratings shown on all transfer switch products in the industry. First, the "Any" circuit breaker rating added in 1989 was replaced with a "time based" rating and marking shown in seconds rather than cycles. Generally, these are time durations of 0.025 Sec for short-circuit currents up to 10 kA on switch ratings of 400 amp or less and 0.050 Sec for most other short-circuit levels.

The most significant change is the way that specific circuit breakers are permitted to be added to the label markings. Specific circuit breakers must be short circuit tested with the transfer switch per UL1008 requirements or can be added based on comparing circuit breaker maximum instantaneous clearing times to the actual time durations of short-circuit tests conducted on the transfer switch. UL has made this change to ensure all manufacturers utilize the criteria described in the 7th edition of UL1008 to qualify circuit breakers for use with transfer switches during short circuit testing of their products.

Unfortunately, this limits the listed population of circuit breakers on the WCR labels of many manufacturers' switches and especially on smaller frame transfer switches, because of the manner in which UL previously evaluated adding circuit breakers to manufacturer's markings. In the past, the listing of specific breakers was based on a comparison of the "published" maximum instantaneous clearing time of the breaker tested to non-tested circuit breakers maximum instantaneous clearing times.

The format and appearance of the WCR label was also changed significantly with the addition of more descriptive statements regarding how the ratings should be applied in selecting appropriate over-current protection. An example of these labels is shown on page 8.

ASCO Switches Meet and Exceed UL 1008 Requirements

ASCO Power Technologies provides withstand current ratings on its products to provide maximum flexibility to the electrical consultant when specifying these products. The ratings apply to the ASCO products shown in Table I and are specified in Tables II and III. The ratings apply to single phase and three phase switches. The withstand & closing ratings of the overlapping neutral transfer pole is identical to the WCR of the phase switching poles.

See page 8, *Special Application Considerations*, if ratings beyond those listed are required. Contact ASCO Power Technologies to determine if ratings have been increased or for ratings beyond three cycles which may not be UL Listed, but which are based on other tests.

Table I. Applicable Products (Refer to Specific Rating Tables for Each Products Rating)

ASCO Product	Typical Applications	Product Description	
		Automatic Transfer Switch	Non-Automatic Transfer Switch
Series 165, 185	Residential	Automatic	Manual
Series 300 / 386	Industrial / Light Commercial	Automatic Transfer Switch (Light Commercial Applications)	Non-Automatic – Electrically Operated Transfer Switch
4000 TS 4000 Series Power Transfer Switches	Industrial, Commercial, Institutional	4ATS – Automatic Transfer Switch 4ACTS – Automatic Closed Transition Switch 4ADTS – Automatic Delayed Transition Switch	4NTS – Non-Automatic Transfer Switch 4NCTS – Non-Automatic Closed Transition Switch 4NDTS – Non-Automatic Delayed Transition Switch
7000 TS 7000 Series Power Transfer Switches	Health Care, Critical Power Facilities	7ATS – Automatic Transfer Switch 7ACTS – Automatic Closed Transition Switch 7ADTS – Automatic Delayed Transition Switch 7ASLS – Automatic Soft Load Transfer Switch	7NTS – Non-Automatic Transfer Switch 7NCTS – Non-Automatic Closed Transition Switch 7NDTS – Non-Automatic Delayed Transition Switch 7MTS – Manually Operated Transfer Switch
7000 TB 7000 Series Transfer Switches with Bypass-Isolation Feature	Health Care, Critical Power Facilities, Mission Critical	7ATB – Automatic Transfer Switch with Bypass-Isolation 7ACTB – Automatic Closed Transition Transfer Switch with Bypass-Isolation 7ADTB – Automatic Delayed Transition Transfer Switch with Bypass-Isolation 7ASLB – Automatic Soft Load Transfer Switch with Bypass-Isolation	7NTB – Non-Automatic Transfer Switch with Bypass-Isolation 7NCTB – Non-Automatic Closed Transition Transfer Switch with Bypass-Isolation 7NDTB – Non-Automatic Delayed Transition Transfer Switch with Bypass-Isolation

ASCO UL1008 Withstand and Closing Ratings [1,2,7]
(RMS Symmetrical Amps)

Frame	Switch Rating (Amps)		300, 4000 & 7000 Series																	
			Current Limiting Fuses				Specific Breaker			Time Based				Short Time Ratings[3] (sec)							
														480V Max.				600V Max.			
	Transfer Switches	Bypass Switches	480V Max.	600V Max.	Max Size, A	Class	240V Max.	480V Max.	600V Max.	Time (sec)	240V Max.	480V Max.	600V Max.	.13	.2	.3	.5	.1	.13	.3	.5
D	30	-	100kA	-	300	J	22kA	25kA	10kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
			35kA	35kA	200	RK1															
D	70, 100	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	150	-	35kA	35kA	200	RK1	150kA	85kA	25kA	0.025	10kA	10kA	10kA	-				-			
			200kA	35kA	200	J															
D	200	-	200kA	35kA	200	J	200kA	85kA	14kA	0.025	10kA	10kA	10kA	-				-			
			35kA	35kA	200	RK1															
D	230	-	100kA	-	300	J	200kA	85kA	14kA	0.025	10kA	10kA	-	-				-			
E	260, 400	-	200kA	-	600	J	65kA	42kA	22kA	0.05	35kA	35kA	22kA	-				-			
J	150, 200, 230, 260	150, 200, 230, 260	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	400	400	200kA	200kA	600	J	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA		-		-			
					800	L															
J	600	600	200kA	200kA	800	L	200kA	200kA	100kA	0.05	65kA	42kA[5]	35kA	7.5kA[9]		-		-			
			200kA	200kA	600	J															
H[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
P[8]	600	600	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
P[8]	800	800 - 1200	200kA	200kA	1600	L	65kA	150kA[6]	65kA	0.05	50kA	50kA	50kA	36kA			30kA	36kA			-
H	800 - 1200	800 - 1200	200kA	200kA	1600[4]	L	65kA	150kA	65kA	0.05	50kA	50kA	50kA	36kA			-	36kA			-
Q[8]	600-1600	600-1600	200kA	200kA	2000	L	65kA	65kA	65kA	0.05	65kA	65kA	65kA	50kA				50kA			
S[8]	800 - 1200	800 - 1200	200kA	200kA	2500	L	100kA	100kA	65kA	0.05	100kA	100kA	65kA	65kA				65kA			
G[8]	1000 - 1200	1000 - 1200	200kA	200kA	2000	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	-				-			
G	1600 - 2000 (Front Connected TS Only)		200kA	200kA	2500	L	85kA	85kA	85kA	0.05	85kA	85kA	85kA	42kA			36kA	-			
G[8]	1600 - 2000	1600 - 2000	200kA	200kA	3000	L	200kA	200kA	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
S[8]	1600 - 2000	1600 - 2000	200kA	200kA	2500	L	100kA	100kA	85kA	0.05	100kA	100kA	85kA	85kA			65kA	85kA			65kA
G	2600 - 3000	2600 - 3000	200kA	200kA	4000	L	125kA[6]	125kA[6]	100kA	0.05	100kA	100kA	100kA	42kA			36kA	42kA			-
G[8]	3200	-	200kA	-	4000	L	100kA	100kA	-	0.05	100kA	100kA	-	-				-			
G	4000	4000	200kA	200kA	5000	L	100kA	100kA	100kA	0.05	100kA	100kA	100kA	85KA		65kA		65kA			
U[8]	2600 - 4000	2600 - 4000	200kA	200kA	5000	L	125kA	125kA	125kA	0.05	125kA	125kA	125kA	100kA				100kA			

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

28-Aug-23

Table III. Withstand / Closing Ratings for Transfer Switches
Used with Specific Manufacturer's Molded Case Circuit Breakers

ASCO Transfer Switch Product	Transfer Switch Frame Prefix	Transfer Switch Rating (Amps)	WCR/Closing Rating kA RMS Symmetrical Amps	Volts Max	Circuit Breaker Manufacturer	Circuit Breaker Type or Class	Circuit Breaker Rating (Amp Max) Per NEC
300 TS 7000 TS	D	30	22	480	GE	THED	40
			25		Siemens	ITE CED6	125
300 TS 4000 TS 7000 TS	D	70	150	240	Square-D	HR	250
			125			HL	150
			100			BJ, HJ	125
			65			BG, HG	125
			42			QG, QJ	90
			25			HD	150
						BD	125
			85	480		HL, HR	150
			50			BJ	125
			35			HG, HJ	150
						BG	125
			18			BD, HD	125
			22		GE	THED	90
			25	600	Square-D	HJ, HL, HR	150
						BJ	125
			18			HG	150
						BG	125
			14			HD	150
						BD	125
		100	150	240	Square-D	HR	250
			125			HL	150
			100			BJ, HJ	125
			65			BG, HG	125
			42			QG, QJ	125
			25			HD	150
						BD	125
			85	480		HL, HR	150
			50			BJ	125
			35			HG, HJ	150
						BG	125
			18			BD, HD	125

300 TS 4000 TS 7000 TS	D	150	22		GE	THED	150
			25	600	Square-D	HJ, HL, HR	150
						BJ	125
			18			HG	150
						BG	125
			14			HD	150
						BD	125
			150	240		HR	250
			125			HL	150
			100			BJ, HJ	125
			65			JG, JJ, JL, JR	200
						BG, HG	125
			42			QG, QJ	200
			25			HD	150
						BD	125
			85	480		HL, HR	150
			50			BJ	125
			35			HG, HJ	150
						BG	125
			25			JG, JJ, JL	200
			18			BD, HD	125
			22		GE	THED	150
			25	600	Square-D	HJ, HL, HR	150
						BJ	125
			18			HG	150
						BG	125
			14			HD	150
						BD	125
		200 230	200	240	Square-D	JR	250
			125			JL	250
			100			JJ	250
			65			JG	250
			42			QG, QJ	225
			25			JD	250
			85	480		JL, JR	250
			30			JG, JJ	250
			18			JD	250
			14	600		JD, JG, JJ, JL, JR	250

300 TS	E	260 400	65	240	GE	THLC4	350
			42	480	Cutler Hammer	HMC	800

300 TS	E	400	42	480	GE	THKM3F	1200

300 TS 4000 TS 7000 TS 7000 TB	J	150 200 230 260 400 600	65	240	GE	THQMV	225
						SGL1, SGL4, SGL6, SGP1, SGP4, SGP6	600
					Cutler Hammer	LDC, CLDC, HLD, CHLD	
					Siemens / ITE	HLD6, HLXD6	
					Square-D	QG, QJ	250
			100			LJ (Current Limiting)	600
			125			LL (Current Limiting)	
			200			LR (Current Limiting)	
					Eaton	PD2 (Current Limiting)	225
						PD3 (Current Limiting)	600

300 TS 4000 TS 7000 TS 7000 TS	J	150 200 230	50	480	Cutler Hammer	HFDE, FDC, FDCE	225
						NHH	250
						JDC, JGU, JGX	350
						HKD, CHKD, KDC, HKDB, CHKDB, LHH	400
						HLD, CHLD, LDC, CLDC, LGH*, LGC*, LGU*, LGX*	600
						HMDLB, CHMDLB	800
					GE	SEL, SEP	150
						SFL, SFP, FEN, FEH	250
						TBC4	400
						TJL4V, TJL1S-6S, TBC6, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGN, FGH, FGL, FGP	600
						TB8	800
					Siemens / ITE	HDG, LDG	150
						HFD, HFD6, HFXD, HFXD6, HHFD6, HHFXD6, CFD6, HFG, LFG	250
						HJD, HJD6, HJXD, HJXD6, SHJD, SHJD6, HHJD6, HHJXD6, CJD6, SCJD6, HJG, LJG, LLG	400
						HLD6, HLXD6, HHLD6, HHLXD6, CLD6, SHLD6, SCLD6, HLG	600
					Square-D	HJ, HL	150
						KC, KI, CF250L, NSF250	250

300 TS 4000 TS 7000 TS 7000 TB	J	150 200 230	50	480		CK400N, CK400NN, CK400H, CK400HH, CJ400L, NSJ400	400
						LC, DJ, DL, LI, NSJ600	600
						MasterPact STR 28D, PK, PJ, PL	800
			65			JJ (Current Limiting)	250
						LJ (Current Limiting)	600
			100			JL (Current Limiting)	250
						LL (Current Limiting)	600
			200			JR (Current Limiting)	250
						LR (Current Limiting)	600
			100		Eaton	PD2 (Current Limiting)	225
						PD3 (Current Limiting)	600
			42	600	Cutler Hammer	JGU, JGX, JGH	250
						KDC	400
						LDC,CLDC	600
					GE	TBC4	400
						SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGP	600
					Square-D	HJ, HL, HG	150
						KI, JJ, JL, JR, CF250L	250
						CK400H, CK400HH, CJ400L	400
						LI, MasterPact STR 28D, PK	600
					Siemens / ITE	HJD, CFD6	250
						HHJD6, HHJXD6, CJD6, SCJD6	400
						HHLD6, HHLXD6, CLD6, SCLD6, LNG, LPG, LGC*, LGU*, LGX*	600
			50		Square-D	LL (Current Limiting)	600
			100			LR (Current Limiting)	
			65		Eaton	PD3 (Current Limiting)	

300 TS 4000 TS 7000 TS 7000 TB	J	260	50	480	Cutler Hammer	HFDE, FDCE, HFD, FDC, LHH	225
						JDC, JGH, JGC, JGU, JGX	250
						HKD, HKDB, CHKD, CHKDB, KDC	400
						HLD, CHLD, LDC, CLDC, LGH*, LGC*, LGU*, LGX*, NHH	600

300 TS 4000 TS 7000 TS 7000 TB	J	260	50	480		MDL, CMDL, HMDL, CHMDL, NGS, NGH, NGC, MDLB, CMDLB, HMDLB, CHMDLB	800
					GE	SFL, SFP, FEN, FEH	250
						TBC4	400
						TBC6, TJL4V, TJL1S-6S, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGN, FGH, FGL, FGP	600
						TBC8, TKL4V, TKH8S-12S, TKL8S-12S, SKH8, SKL8, SKP8, TB8	800
					Siemens / ITE	HFD6, HFXD6, HHFD6, HHFXD6, CFD6, HFG, LFG	250
						HJD6, HJXD6, SHJD6, HHJD6, HHJXD6, CJD6, SCJD6, HJG, LJG, LLG	400
						HLD6, HLXD6, SHLD6, HHLD6, HHLXD6, CLD6, SCLD6, HLG	600
						LMD, LMD6, LMXD, LMXD6, HLMD, HLMD6, HLMXD, HLMXD6, MD, MD6, MXD6, HMG, HMD6, HMXD6, SMD6, SHMD6, CMD6, SCMD6, LMG, MG	800
					Square-D	KI, KC, CF250L, NSF250	250
						CK400N, CK400NN, CK400H, CK400HH, CJ400L, NSJ400	400
						LC, DJ, DL, LJ, LL, LR, LI, NSJ600	600
						CK800N, CK800NN, CK800H, CK800HH, MasterPact STR 28D, MJ, PK, PJ, PL	800
						CK1000HL	1000
						CK1200NN, CK1200HH	1200
			65			JJ (Current Limiting)	250
						LJ (Current Limiting)	600
			100			JL (Current Limiting)	250
						LL (Current Limiting)	600
			200			JR (Current Limiting)	250
						LR (Current Limiting)	600
			100		Eaton	PD2 (Current Limiting)	225

	J	260	100	480	Eaton	PD3 (Current Limiting)	600

300 TS 4000 TS 7000 TS 7000 TB	J	260	42	600	Cutler Hammer	JGU, JGX	250
						KDC	400
						LDC, CLDC	600
					GE	TBC4	400
						TBC6, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGP	600
						TBC8, TKL4V, TKL8S-12S, SKL8, SKP8	800
					Siemens / ITE	HJD, CFD6	250
						HHJD6, HHJXD6, CJD6, SCJD6	400
						HHLD6, HHLXD6, CLD6, SCLD6	600
						HLMD6, HLMXD6, HMXD6, SHMD6, HMD6, CMD6, SCMD6, LMG, LNG, LPG, LGC*, LGU*, LGX*	800
					Square-D	KI, JL, JR, JJ, CF250L	250
						CK400H, CK400HH, CJ400L	400
						LI	600
						CK800H, CK800HH, MasterPact STR 28D, PK	800
			50			LL (Current Limiting)	600
			100			LR (Current Limiting)	600
			65		Eaton	PD3 (Current Limiting)	600

300 TS 4000 TS 7000 TS 7000 TB	J	400	50	480	Cutler Hammer	JGH, JGC, NHH	250
						HKD, CHKD, KDC, HKDB, CHKDB, LHH	400
						CHLD, LDC, CLDC, LGH*, LGC*, LGU*, LGX*	600
						MDL, CMDL, HMDL, CHMDL, NGS, NGH, NGC, MDLB, CMDLB, HMDLB, CHMDLB	800
						NGU	1600
					GE	TBC4	400

300 TS 4000 TS 7000 TS 7000 TB	J	400	50	480		TBC6, TJL4V, TJL1S-6S, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGN, FGH, FGL, FGP	600
						TBC8, TKL4V, TKH8S-12S, TKL8S-12S, SKH8, SKL8, SKP8, TB8	800
					Siemens/ ITE	HFD6, HFXD6, HFG, LFG	250
						HJD6, HJXD6, SHJD6, HHJD6, HHJXD6, CJD6, SCJD6, HJG, LLG, LJG	400
						HLD6, HLXD6, SHLD6, HHLD6, HHLXD6, CLD6, SCLD6, HLG	600
						LMD6, LMXD6, HLMD6, HLMXD6, MD6, MXD6, HMD6, HMXD6, SMD6, SHMD6, CMD6, SCMD6, HMG, LMG	800
					Square-D	CK400N, CK400NN, CK400H, CK400HH, CJ400L, NSJ400	400
						LC, DJ, DL, LJ, LL, LR, LI, NSJ600	600
						CK800N, CK800NN, CK800H, CK800HH, MJ	800
						CK1000HH	1000
						PK, PJ, PL, MH, MasterPact STR 28D, CK1200HH	1200
			65			LJ (Current Limiting)	600
			100			LL (Current Limiting)	
			200			LR (Current Limiting)	
			100		Eaton	PD3 (Current Limiting)	
300 TS 4000 TS 7000 TS 7000 TB	J	400	42	600	Cutler Hammer	KDC	400
						LDC, CLDC, LGC*, LGU*, LGX*	600
					GE	TBC4	400
						TBC6, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGP	600
						TBC8, TKL4V, TKL8S-12S, SKL8, SKP8	800
					Siemens/ ITE	HHJD6, HHJXD6, CJD6, SCJD6	400

300 TS 4000 TS 7000 TS 7000 TB	J	400	42	600		HHLD6, HHLXD6, CLD6, SCLD6	600
						HLMD6, HLMXD6, HMXD6, SHMD6, HMD6, CMD6, SCMD6, LMG	800
						LNG, LPG	1200
					Square-D	CK400H, CK400HH, CJ400L	400
						LI	600
						CK800H, CK800HH	800
						MasterPact STR 28D, PK	1200
			50			LL (Current Limiting)	600
			100			LR (Current Limiting)	
			65		Eaton	PD3 (Current Limiting)	

300 TS 4000 TS 7000 TS 7000 TB	J	600	50	480	Cutler Hammer	JGH, JGC, HFG, LFG	250
						HLD, CHLD, LDC, CLDC, LGH*, LGC*, LGU*, LGX*	600
						MDL, CMDL, HMDL, CHMDL, NGS, NGH, NGC, NGU, MDLB, CMDLB, NF	800
					GE	TBC6, TJL4V, TJL1S-6S, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGN, FGH, FGL, FGP	600
						TBC8, TKL4V, TKH8S-12S, TKL8S-12S, SKH8, SKL8, SKP8, TB8	800
						SKL12, SK12P	1200
					Siemens/ ITE	HLD6, HLXD6, SHLD6, HHLD6, HHLXD6, CLD6, SCLD6, HLG LLG	600
						LMD6, LMXD6, HLMD6, HLMXD6, MD6, MXD6, HMD6, HMXD6, SMD6, SHMD6, CMD6, SCMD6, HMG, LMG	800
						HND6, HNXD6, SND6, SHND6, ND6, NXD6, HNG, LNG, CND6	1200
					Square- D	LC, DJ, DL, LI, NSJ600	600
						CK800N, CK800NN, MJ	800

300 TS 4000 TS 7000 TS 7000 TB	J	600	50	480		MH, CK1200N, CK1200NN, CK1200H, CK1200HH, NT-H, NT-L1, NT-L, NT-LF, PK, PJ, PL	1200
						CM2000HH	2000
						CM2500HH	2500
			85			PL1200	1200
			65			LJ (Current Limiting)	600
			100			LL (Current Limiting)	
			200			LR (Current Limiting)	
			100		Eaton	PD3 (Current Limiting)	
300 TS 4000 TS 7000 TS 7000 TB	J	600	42	600	Cutler Hammer	JGC	250
						TBC4	400
						LDC, CLDC	600
					GE	TBC6, SGL1, SGL4, SGL6, SGP1, SGP4, SGP6, FGP	600
						TBC8, TKL4V, TKL8S-12S, SKL8, SKP8	800
						SKL12, SKP12	1200
					Siemens/ ITE	HHLD6, HHLXD6, CLD6, SCLD6	600
						HLMD6, HLMXD6, HMXD6, SHMD6, HMD6, CMD6, SCMD6, LMG	800
						HND6, HNXD6, HNG, LNG, SHND6	1200
					Square-D	LI	600
						CK800H, CK800HH	800
						CK1000HL	1000
						CK1200H,CK1200HH, NT-H, NT-L, NT-LF, NT-L1, MasterPact STR 28D, PK	1200
			50			LL (Current Limiting)	600
			100			LR (Current Limiting)	
			65		Eaton	PD3 (Current Limiting)	
300 TS 4000 TS 7000 TS	H P**	600 800 960 1000	65	480	Cutler Hammer	HLD, CHLD, LGH, LGC, LGU, LGX, LDC, CLDC	600
						HMDL, CHMDL, HMDLB, CHMDLB	800

7000 TB	H P**	1200	65	480		HND, CHND, NDC, CNDC, NF	1200
						NGH, NGC, NGU	1600
						RGH, RGC	2500
					GE	TBC6, TJL4V, SGL, SGP6	600
						TBC8, SKL8, SKP8	800
						SKL12, SKP12, TKL4V	1200
					Siemens/ ITE	HLXD6, HHLXD6, HHLD6, CLD6, SHLD6, SCLD6, HLG, LLG	600
						HMXD6, HMD6, SHMD6, HMG, LMG, CMD6, SCMD6	800
300 TS		600 800				SHND6, CND6, HNXD6, HNG, LNG	1200
4000 TS 7000 TS 7000 TB		960 1000 1200				HPG, LPG, HPD, HPD6, CPD6, HPXD, HPXD6, SHPD, SHPD6	1600
						HRD6, HRXD6	2000
					Square- D	LI, LE LSI, LE LI, LX, LXI, LJ, LL, LR	600
						MJ, ME, MX, CK800H, CK800HH	800
						CK1000HL	1000
						NT-L1, NT-L, NT-LF, NE, NX, CK1200H, CK1200HH, PJ, PL	1200
						NW, RJ, RL, MTZ	1600
						PE, PX	2500
						SES, SE, SEH (LS or LSI TRIP)	3000
						SE (LI, LSI-E, and LI-E TRIP)	4000
						MasterPact STR 28D	6300
7000 TB			150			MTZ2-16LF1	1600
300 TS 4000 TS 7000 TS 7000 TB			65	600	Cutler Hammer	TRI-PAC NB	800
						RDC	2500
					Siemens/ ITE	CND	1200

7000 TB	G	1600 2000 2600 3000	125	480	Square-D	Master Pact NW-L	3000
7000 TS[1]		1600	150			MTZ2-LF	2000
7000 TB		2000	200			MTZ2-L1/L1F	

*: With Digitrip 310+ LS or LSG Inst. Override set to 12X

**: P Frames only available as 7000TS and 7000TB
Note 1: Rear Connected Only

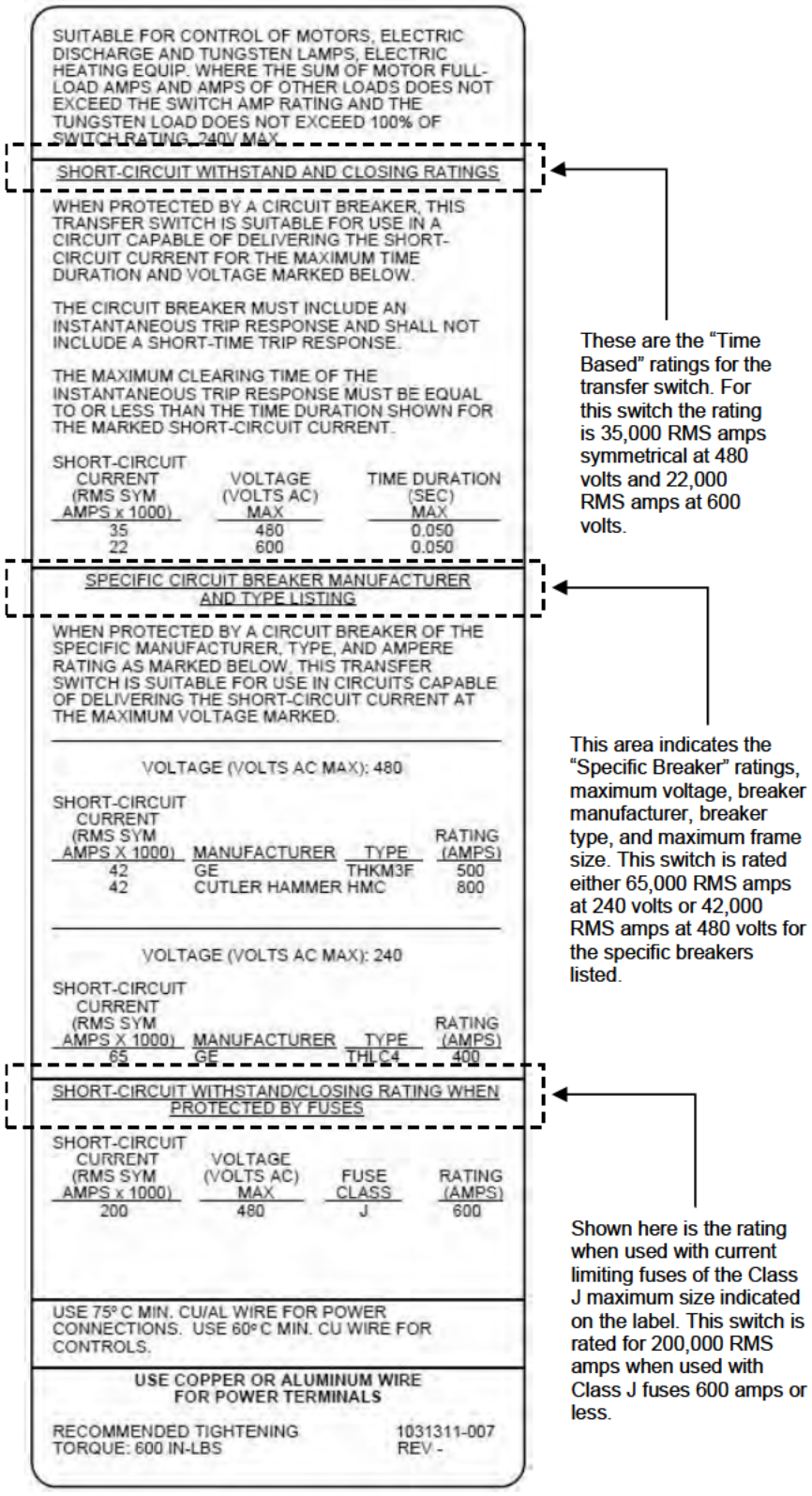


Figure 2. Typical rating label for ASCO 400 amp Transfer Switch.

Marking Requirements

UL requires markings on each switch listing the approved short circuit ratings for each product and its ampacity. ASCO switches display rating labels similar to the one shown in Figure 2.

Special Application Considerations

ASCO Power Technologies provides a line of switches which are highly reliable, utilize latest technology, include features most frequently used by the consulting engineer, and which are rated to meet a wide variety of requirements. For special applications, such as when higher ratings or longer withstand times are needed, the system designer can consider several rating alternatives:

1. Consider relocating the switch closer to the load where the added impedance of the feeder conductors will reduce the available fault current to an acceptable level. This is consistent with good engineering practice of locating transfer switches as close to the load as possible in order to minimize the risk of conductor failures between the load side of the switch and the utilization equipment.
2. Use current limiting fuses or current limiting circuit breakers to reduce fault currents.
3. Use a larger ampacity switch with a higher withstand/closing rating.
4. When the overcurrent protective device ahead of the transfer switch has a clearing time exceeding three cycles, a zone selective interlocking scheme may be considered. Such a scheme permits intentional delays to be over-ridden and the breaker to trip instantaneously whenever the fault is within the breaker's zone of primary protection.
5. Contact ASCO Power Technologies to determine if additional ratings are available.

How To Specify Withstand and Closing Ratings

Calculated values of available fault current should be specified for each transfer switch based on its location in the electrical system. This will assure that a properly rated switch will be applied and avoid specified ratings which are too low for the actual location (resulting in an unsafe practice or ratings which are too high (resulting in unnecessarily higher costs).

A growing number of specifying professionals are adding fault current withstand and closing current tables to the electrical plans showing the calculated values for each switch. A typical arrangement is shown in Table IV.

Table IV. Typical Listings of Transfer Switch Fault Current Ratings on an Electrical Plan

Transfer Switch Ident. No.	No. of Poles	Switched Neutral Y/N	Transfer Switch Ampacity	System Voltage	Calculated Fault Currents		Type of OCD
					RMS Sym. Amperes	X/R Ratio	
ATS-E8	4	Y	260	480/277	29,000	2.3	MCCB
ATS-E9	3	N	400	480	33,000	2.3	MCCB
ATS-LS1	4	Y	100	480/277	7,300	2.1	MCCB
ATS-LS2	4	Y	150	480/277	8,900	2.4	MCCB
ATS-EQ1	3	N	1000	480	48,000	3.2	MCCB

Importance of X/R Ratio

The circuit reactance to resistance ratio (X/R) is a determinant in preparing fault current studies. Consideration should be given to the X/R ratio at each transfer switch location. The actual X/R ratio should not exceed the X/R ratio at which the transfer switch was tested. Table V shows the power factor test requirements of UL 1008 with equivalent X/R ratios. If an application requires higher X/R ratios, consider the *Special Application Considerations* previously discussed or consult ASCO Power Technologies for a recommendation. By using the information in this publication and calculating short circuit currents, the system designer can be assured that the transfer switches will be properly rated for the electrical system.

Table V. UL Maximum Test Factor with Equivalent X/R Ratio

Available Fault Current (amperes)	Maximum Test Power Factor	Equivalent X/R Ratio
10,000 or less	0.50	1.73
10,001 – 20,000	0.30	3.18
greater than 20,000	0.20	4.90

Suggested Fault Current Study Reference Guides

1. The Institute of Electrical and Electronics Engineers, Inc., *IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems*, IEEE Buff Book, ANSI/IEEE Std. 242-1986, New York, N.Y., pp. 45-113.
2. The Institute of Electrical and Electronics Engineers, Inc., *IEEE Recommended Practice for Electric Power Distribution for Industrial Plants,* IEEE Red Book, ANSI/IEEE Std. 141-1993, New York, N.Y., pp. 109-184.
3. The Institute of Electrical and Electronics Engineers, Inc., *IEEE Recommended Practice for Power System Analysis*, IEEE Brown Book, ANSI/IEEE Std. 399-1990, New York, N.Y., pp. 171-194.
4. The Institute of Electrical and Electronics Engineers, Inc., *IEEE Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications,* IEEE Orange Book, ANSI/IEEE Std. 446-1995, New York, N.Y., pp. 175-196.
5. The Institute of Electrical and Electronics Engineers, Inc., *IEEE Recommended Practice for Electric Systems in Health Care Facilities*, IEEE White Book, ANSI/IEEE Std. 602-1996, New York, N.Y., pp. 50-51; 72-74.
6. Frank W. Kussy and Jack L. Warren, *Design Fundamentals for Low-Voltage Distribution and Control*, Marcel Dekker Inc., pp. 104-117, 1987.
7. Hermann W. Reichenstein, Applying Low-Voltage Fuses-Classes and Characteristics, McGraw-Hill Inc., 1979.

In addition to the above, most manufacturers of overcurrent protective devices can provide application data on calculating short circuit currents. Various software packages are also available to assist the application engineer in performing calculations by computer.

ASCO Power Technologies, Florham Park, New Jersey 07932 USA
800-800-2726 (ASCO) www.ascopower.com

Limited Warranty

ASCO Power Technologies®

300, 386, 4000 Series
Power Transfer Switches

This Warranty is given ONLY to purchasers who buy for commercial or industrial use in the ordinary course of each purchaser's business.

General:

ASCO Power Technologies, LP products and systems are in our opinion the finest available. We take pride in our products and are pleased you have chosen them. Under certain circumstances we offer with our products the following Twenty Four Month Limited Warranty Against Defects in Material and Workmanship.

Please read your Warranty carefully. This Warranty sets forth our responsibilities in the unlikely event of defect and tells you how to obtain performance under this Warranty.

TWENTY FOUR MONTH LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP ASCO PRODUCTS COVERED:

Products Covered	Series 300/300SE/300L/ 386/4000
Automatic Transfer Switch	150, 200, 300 3ATS,3NTS,3ADTS,3NDTS/3AUS/ 3ADUS/3APS/3ARS
Power Transfer Load Center Switch	300L
Non Automatic Transfer Switch - Electrically Operated	386
Automatic Transfer Switches, Open, Delayed, Closed Transition	4ATS,4ADTS,4ACTS
Non-Automatic Transfer Switches – Electrically Operated, Open, Delayed, Closed Transition	4NTS,4NDTS,4NCTS

LIMITED WARRANTY:

ASCO warrants that the ATS will be free from defects in material and workmanship and will conform to ASCO's standard specifications for the ATS for a period of twenty four (24) months from date of product shipment from ASCO (the "Warranty Period"). This Limited Warranty does not extend to subsequent owners of the structure during the Warranty Period.

Terms of Warranty:

The foregoing Limited Warranty is conditioned upon User's compliance with the following:

1. The ASCO Power Transfer Switch is installed in accordance with ASCO specifications and state and local codes and standards by an electrician licensed in the state of installation.

2. The ASCO Power Transfer Switch is maintained in accordance with ASCO instructions and used under normal conditions for the purposes intended by ASCO.

All warranty field-related repairs, replacements or adjustments must be made by ASCO Services Inc. or its duly authorized representative.

Optional Available Extended Warranty

Optional extended warranty coverage may be purchased from ASCO for a specified fee at the time of the original sale. If purchased, warranty period shall be extended up to an additional thirty - six (36) months beyond the standard twenty - four (24) months to provide up to five (5) year coverage applicable to the above referenced products, except for 3AUS, 3APS, and 3ARS products where the warranty period for the circuit breaker shall be limited to 24 months from date of shipment from ASCO. The length of optional extended coverage shall be reflected on the ASCO invoice and/or order acknowledgement document.

Warranty Extends to First Purchaser for Use, Non-transferable:

This Warranty is extended to the first person, firm, association or corporation for whom the ASCO product specified herein is originally installed for use (the "User") in the fifty United States or Canada. This Warranty is not transferable or assignable without the prior written permission of ASCO.

Assignment of Warranties:

ASCO assigns to User any warranties which are made by manufacturers and suppliers of components of, or accessories to, the ASCO product and which are assignable, but ASCO makes NO REPRESENTATIONS as to the effectiveness or extent of such warranties, assumes NO RESPONSIBILITY for any matters which may be warranted by such manufacturers or suppliers and extends no coverage under this Warranty to such components or accessories.

Drawings, Descriptions:

ASCO warrants for the period and on the terms of the Warranty set forth herein that the ASCO product will conform to the descriptions contained in the certified drawings, if any, applicable thereto, to ASCO's final invoices, and to applicable ASCO product brochures and manuals current as of the date of product shipment (“Descriptions”). ASCO does not control the use of any ASCO product. Accordingly, it is understood that the Descriptions are NOT WARRANTIES OF PERFORMANCE and NOT WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE.

Warranty Claims Procedure:

Within a reasonable time, but in no case to exceed thirty (30) days, after User's discovery of a defect, User shall contact **ascopowerwarranty@ascopower.com**. Subject to the limitations specified herein, an ASCO Services field service representative will repair the non-conforming ASCO product warranted hereunder, without charge for parts, labor, or travel expenses. Warranty coverage will apply only after ASCO's inspection discloses the claimed defect and shows no signs of treatment or use that would void the coverage of this Warranty . All defective products and component parts replaced under this warranty become the property of ASCO.

Warranty Performance of Component Manufacturers:

It is ASCO's practice, consistent with its desire to remedy Warranty defects in the most prompt and effective manner possible, to cooperate with and utilize the services of component manufacturers and their authorized representatives in the performance of work to correct defects in the product components. Accordingly, ASCO may utilize third parties in the performance of Warranty work, including repair or replacement hereunder, where, in ASCO's opinion, such work can be performed in less time, with less expense, or in closer proximity to the ASCO product.

Items Not Covered By Warranty:

THIS WARRANTY DOES NOT COVER DAMAGE OR DEFECT CAUSED BY misuse, improper application, wrong or inadequate electrical current or connection, negligence, inappropriate on site operating conditions, repair by non-ASCO designated personnel, accident in transit, tampering, alterations, a change in location or operating use, exposure to the elements, water, or other corrosive liquids or gases, Acts of God, theft or installation contrary to ASCO's recommendations or specifications, or in any event if the ASCO serial number has been altered, defaced, or removed.

THIS WARRANTY DOES NOT COVER shipping costs, installation costs, external circuit breaker resetting or maintenance or service items and further, except as may be provided herein, does NOT include labor costs or transportation charges arising from the replacement of the ASCO product or any part thereof or charges to remove or reinstall same at any premises of User.

REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT OR PART THEREOF DOES NOT EXTEND THE ORIGINAL WARRANTY PERIOD.

THE PRODUCTS LISTED IN THIS WARRANTY ARE NOT FOR USE IN THE CONTROL AREA OR ANY REACTOR CONNECTED OR SAFETY APPLICATIONS OR WITHIN THE CONTAINMENT AREA OF A NUCLEAR FACILITY OR FOR INTEGRATION INTO MEDICAL DEVICES.

Limitations:

THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

USER'S SOLE AND EXCLUSIVE REMEDY IS REPAIR OR REPLACEMENT OF THE ASCO PRODUCT AS SET FORTH HEREIN.

IF USER'S REMEDY IS DEEMED TO FAIL OF ITS ESSENTIAL PURPOSE BY A COURT OF COMPETENT JURISDICTION, ASCO'S RESPONSIBILITY FOR PROPERTY LOSS OR DAMAGE SHALL NOT EXCEED THE NET PRODUCT PURCHASE PRICE.

IN NO EVENT SHALL ASCO ASSUME ANY LIABILITY FOR INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES OF ANY KIND WHATSOEVER, INCLUDING WITHOUT LIMITATION LOST PROFITS, BUSINESS INTERRUPTION OR LOSS OF DATA, WHETHER ANY CLAIM IS BASED UPON

THEORIES OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, TORT, OR OTHERWISE.

Miscellaneous*:*

NO SALESPERSON, EMPLOYEE OR AGENT OF ASCO IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. Warranty terms may be modified, if at all, only in writing signed by an ASCO officer.

ASCO obligations under this Warranty are conditioned upon ASCO timely receipt of full payment of the product purchase price and any other amounts due. ASCO reserves the right to supplement or change the terms of this Warranty in any subsequent warranty offering to User or others.

In the event that any provision of this Warranty should be or becomes invalid and/or unenforceable during the warranty period, the remaining terms and provisions shall continue in full force and effect.

This Warranty shall be governed by, and construed under, the laws of the State of New Jersey, without reference to the conflict of laws principles thereof.

This Warranty represents the entire agreement between ASCO and User with respect to the subject matter herein and supersedes all prior or contemporaneous oral or written communications, representations, understandings or agreements relating to this subject.

ASCO Power Technologies™

SERIES 300 Service Entrance Power Transfer Switch

Data Sheet

The ASCO Service Entrance Power Transfer Switch combines automatic power switching with the disconnecting, grounding, and bonding required for use as service entrance equipment. It meets all National Electrical Code® requirements for service entrance use.

ASCO SERIES 300
SE Rated 800 amperes Type 1 enclosure

ASCO SERIES 300
SE Rated 200 amperes in Type 3R enclosure

Product Features:

- Sizes available from 70 - 3000 amps, 600 VAC, 50 or 60 Hz, single or 3-phase
- 70 - 400 Ampere listed to UL 1008
- 600 - 3000 Ampere listed to UL 891
- Automatic Transfer Switch is listed to UL 1008 for total system loads
- Silver plated copper ground and neutral bus with solderless screw type terminals
- Ground fault trip protection provided on 1000 amps and above
- Available with solid or switched neutral
- Line side breaker barriers available in compliance with NEC2020

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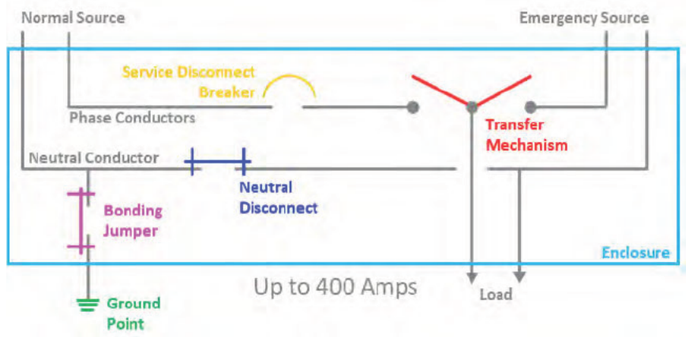
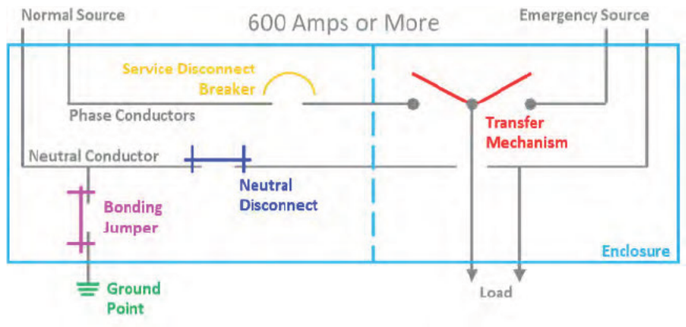
Construction

Products 400 amperes or less, utilize a single enclosure, including a service disconnect circuit breaker, as well as the transfer switch and grounding and bonding provisions.



Products 600 amperes and above provide a service equipment section containing the service disconnect circuit breaker as well as grounding and bonding provisions. A second section contains the power transfer switch.



For additional detail, see the interactive 3-D view in the ASCO Digital Hub.

Order Information

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

J	+ 03AUS	+ B	+ 3	+ 0600	+ N	+ GX	+ C
Frame	Product Type	Neutral Code	Phase Poles	Amperes Continous Rating	Voltage Code	Controller Code	Enclosure
D = 70 - 225 Amp J = 150 - 600 Amp 150A - 225A: 3ADUS/3NDUS Only H = 800 - 1200 Amp G = 1600 - 3000 Amp	03AUS = Automatic 03NUS = Non-Automatic 3ADUS = Automatic Delayed Transition 3NDUS = Non-Automatic, Delayed Transition	A = Solid Neutral B = Switched Neutral	2 3	0070, 0100, 0150, 0200, 0225[3], 0250[3], 0400, 0600, 0800, 1000, 1200, 1600, 2000 2500, 3000	C = 208 D = 220 E = 230 F = 240 H = 380 J = 400 K = 415 L = 440 M = 460 N = 480 P = 550 Q = 575 R = 600	G = No Optional Accessories GX = Optional Accessories	C = Type 1 (Standard) M = Type 3R Secure Double Door N = Type 4[1] Secure Double Door Q = Type 12[1] Secure Double Door V = Type 4X[4,5] Secure Double Door 316 SS

Notes:
1. Available for 70-1600 amperes, use type 3R for 2000-3000 ampere applications.
2. A solid neutral is provided as standard.
3. 200, 225 ampere rated switches suitable for use with copper cable only. Refer to paragraph 310.15 of the NEC for additional information.
4. Type 316 stainless steel is the standard. It provides an improved reduction in corrosion of salt and some chemicals. It is the preferred choice for marine environments.
5. Available only on switches rated 70 - 1600 amperes.

Specifications

ASCO SERIES 300SE Power Transfer Switch Dimensions and Shipping Weights

UL Type 1 Enclosure[4]

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm) Width	Height	Depth	Approx. Shipping Weight Lb. (kg)
70, 100, 150, 200, 225	2	A	36 (914)	48 (1219)	13 (330)	400 (185)
	2	B	36 (914)	48 (1219)	13 (330)	410 (189)
	3	A	36 (914)	48 (1219)	13 (330)	410 (189)
	3	B	36 (914)	48 (1219)	13 (330)	430 (198)
150, 200, 225, SERIES 3ADUS/3NDUS Only	2	A	36 (914)	48 (1219)	13 (330)	400 (185)
	2	B	36 (914)	48 (1219)	13 (330)	408 (188)
	3	A	36 (914)	48 (1219)	13 (330)	408 (188)
	3	B	36 (914)	48 (1219)	13 (330)	420 (193)
2501, 4001	2	A	42 (1067)	48 (1219)	15.5 (394)	420 (193)
	2	B	42 (1067)	48 (1219)	15.5 (394)	430 (198)
	3	A	42 (1067)	48 (1219)	15.5 (394)	430 (198)
	3	B	42 (1067)	48 (1219)	15.5 (394)	450 (207)
6001	2	A	38 (965)	91 (2311)	28 (711)	860 (396)
	2	B	38 (965)	91 (2311)	28 (711)	870 (401)
	3	A	38 (965)	91 (2311)	28 (711)	870 (401)
	3	B	38 (965)	91 (2311)	28 (711)	880 (405)
8001	2	A	38 (965)	91 (2311)	28 (711)	1460 (673)
	2	B	38 (965)	91 (2311)	28 (711)	1470 (677)
	3	A	38 (965)	91 (2311)	28 (711)	1470 (677)
	3	B	38 (965)	91 (2311)	28 (711)	1480 (682)
10001, 12001	2	A	38 (965)	91 (2311)	48 (1218)	1460 (673)
	2	B	38 (965)	91 (2311)	48 (1218)	1470 (677)
	3	A	38 (965)	91 (2311)	48 (1218)	1470 (677)
	3	B	38 (965)	91 (2311)	48 (1218)	1480 (682)
16001, 20001	3	A	38 (965)	91 (2311)	48 (1218)	1580 (727)
	3	B	38 (965)	91 (2311)	48 (1218)	1680 (773)
25001, 30001	3	A	38 (965)	91 (2311)	72 (1829)	4590 (2111)
	3	B	38 (965)	91 (2311)	72 (1829)	4690 (2157)

UL Type 3R Enclosure[4]

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm) Width	Height	Depth	Approx. Shipping Weight Lb. (kg)
70, 100, 150, 200, 225	2	A	36 (914)	48 (1219)	16 (406)	500 (232)
	2	B	36 (914)	48 (1219)	16 (406)	520 (241)
	3	A	36 (914)	48 (1219)	16 (406)	520 (241)
	3	B	36 (914)	48 (1219)	16 (406)	530 (246)
150, 200, 225, SERIES 3ADUS/3NDUS Only	2	A	41 (1041)	96.5 (2424)	33 (838)	500 (232)
	2	B	41 (1041)	96.5 (2424)	33 (838)	520 (241)
	3	A	41 (1041)	96.5 (2424)	33 (838)	520 (241)
	3	B	41 (1041)	96.5 (2424)	33 (838)	530 (246)
2501, 4001	2	A	42 (1067)	48 (1219)	18 (487)	500 (232)
	2	B	42 (1067)	48 (1219)	18 (487)	520 (241)
	3	A	42 (1067)	48 (1219)	18 (487)	520 (241)
	3	B	42 (1067)	48 (1219)	18 (487)	530 (246)
6001	2	A	41 (1041)	96.5 (2425)	33 (838)	1200 (555)
	2	B	41 (1041)	96.5 (2425)	33 (838)	1220 (564)
	3	A	41 (1041)	96.5 (2425)	33 (838)	1220 (564)
	3	B	41 (1041)	96.5 (2425)	33 (838)	1240 (574)
8001	2	A	38 (965)	91 (2311)	28 (711)	1520 (703)
	2	B	38 (965)	91 (2311)	28 (711)	1540 (712)
	3	A	38 (965)	91 (2311)	28 (711)	1540 (712)
	3	B	38 (965)	91 (2311)	28 (711)	1580 (731)
10001, 12001	2	A	38 (965)	91 (2311)	48 (1218)	1520 (703)
	2	B	38 (965)	91 (2311)	48 (1218)	1540 (712)
	3	A	38 (965)	91 (2311)	48 (1218)	1540 (712)
	3	B	38 (965)	91 (2311)	48 (1218)	1580 (731)
16001, 20001	3	A	38 (965)	91 (2311)	48 (1218)	2200 (1018)
	3	B	38 (965)	91 (2311)	48 (1218)	2240 (1036)
25001, 30001	3	A	38 (965)	91 (2311)	72 (1829)	5280 (2479)
	3	B	38 (965)	91 (2311)	72 (1829)	5380 (2475)

Notes:
1. Unit is designed for top and bottom cable entry for all services and load.
2. Enclosures for 600 – 3000 amps are freestanding.
3. A space heater accessory 44G is required with all service entrance (Type 3R) switches to help reduce condensation and protect the circuit breaker. It is recommended when environmental enclosures (Type 4, 12) are ordered for installation outdoors. See Optional Accessories page for space heater options (acc. 44G).
4. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

SERIES 300SE External Power Connections

Sizes UL-Listed Solderless Screw-Type Terminals

Switch Rating	Ranges of AL-CU Wire Sizes
70, 100, 150, 200[2], 225[2]	One #14 to 4/0 AWG
150[3], 200[3], 225[3], 250, 400	One #4 AWG to 600 MCM Two 1/0 to 250 MCM
600	Two 1/0 to 600 MCM
800, 1000, 1200	Four 1/0 to 600 MCM
1600, 2000	Six 1/0 to 600 MCM
2500	Twelve 3/0 to 750 MCM
3000	Twelve 3/0 to 750 MCM

Notes:
1. All SERIES 300 switches default to a solid neutral assembly unless a switched neutral is specified. If no neutral is required, order as solid neutral and left unwired.
2. 200 and 225 ampere rated switches for use with copper cable only. Refer to paragraph 310.15 of the NEC for all additional information.
3. J 150-225 ampere for SERIES 3ADUS/3NDUS only.
4. Use wire rated 75 degrees minimum for all power connections.
5. Refer to the outline drawing for maximum power cable connections for circuit breaker.

Extended Warranties for SERIES 300SE Transfer Switches (3AUS/3NUS/3ADUS/3NDUS)

Description
1 Year Extension (Total of 3 Years)
2 Year Extension (Total of 4 Years)
3 Year Extension (Total of 5 Years)

Notes:
1. Standard warranty is (24) months, 2 years from date of shipment, extended warranty is in addition to the two years, for a total of 3, 4 or 5 years, except where the warranty period for the circuit breaker shall be limited to 24 months from date of shipment from ASCO.
2. Refer to Publication 3223 for warranty terms and conditions.

SERIES 300SE AIC Breaker Rating[1]

Switch Rating	AIC Rating (kA)	Voltage
70, 100, 150, 200, 225	85	480
150, 200, 225 SERIES 3ADUS/3NDUS Only	85	480
250, 400, 600	85	480
800	65	480
1000, 1200	50	480
1600, 2000	65	480
2500, 3000	100	480

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Attachment 3:

Pricing Bid Form

Pricing Bid Form

Item Description	Quantity	Unit Price	Extended Price
Commercial Diesel Generator 450kW	1	$	$
5-Year 24x7x365 Warranty/Support	1	$	$
Professional Services Installation	1	$	$
Freight	1	$	$
Start Up and Testing	1	$	$
Annunciator	1	$	$
Remote E-stop	1	$	$
Batteries	1	$	$
TOTAL BID PRICE			**$**

Note: Uintah County is a tax-exempt government entity. Do not include sales tax in the bid price.