

MID FLORIDA DIESEL



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Bill of Material For Florida Sheriff Association Item #464 - 600 AMP AUTOMATIC TRANSFER SWITCH

ASCO 300 Series AUTOMATIC TRANSFER SWITCH:

ASCO 300 Series Poles: 3 600 amp Rated (Qty: 1)
277/480 Volts, Three-Phase
Open-transition
Solid Neutral
Withstand rating: 200,000 (With Current Limiting
Fuses), 42,000 (Specific Breaker), N/A (Any Breaker)
Test Switch
Manual Bypass of Transfer to Normal TD
ATS Switch Position Indicating Lights
Source Available Indicating Lights
Automatic Engine Exerciser with Load/No Load Selector Switch
ATS Position Indicating Contacts (1 Normal, 1 Emergency)
Provisions for Remote Transfer Contact (Peak Shaved) bypassed if Emergency Fails
In-Phase Monitor for Motor Load Control
Selective Load Disconnect
Provisions for Inhibiting Transfer to Emergency
Time Delay Momentary Outage Override (Normal)
Time Delay Momentary Outage Override (Emergency)
Time Delay Transfer to Emergency
Time Delay Re-transfer to Normal
Time Delay Engine Cool Down
WARRANTY - Two (2) Year Basic ATS Standby Limited Warranty
NEMA: 3R Steel Enclosure (Outdoor Mounting)
Accessories:
Exerciser

MISCELLANEOUS:

Certified Factory Test
Manual – One (1) Instruction Manuals

ASCO SERIES 300 Power Transfer Switches



ASCO®


EMERSON™
Network Power



24-hour protection no matter
when trouble strikes

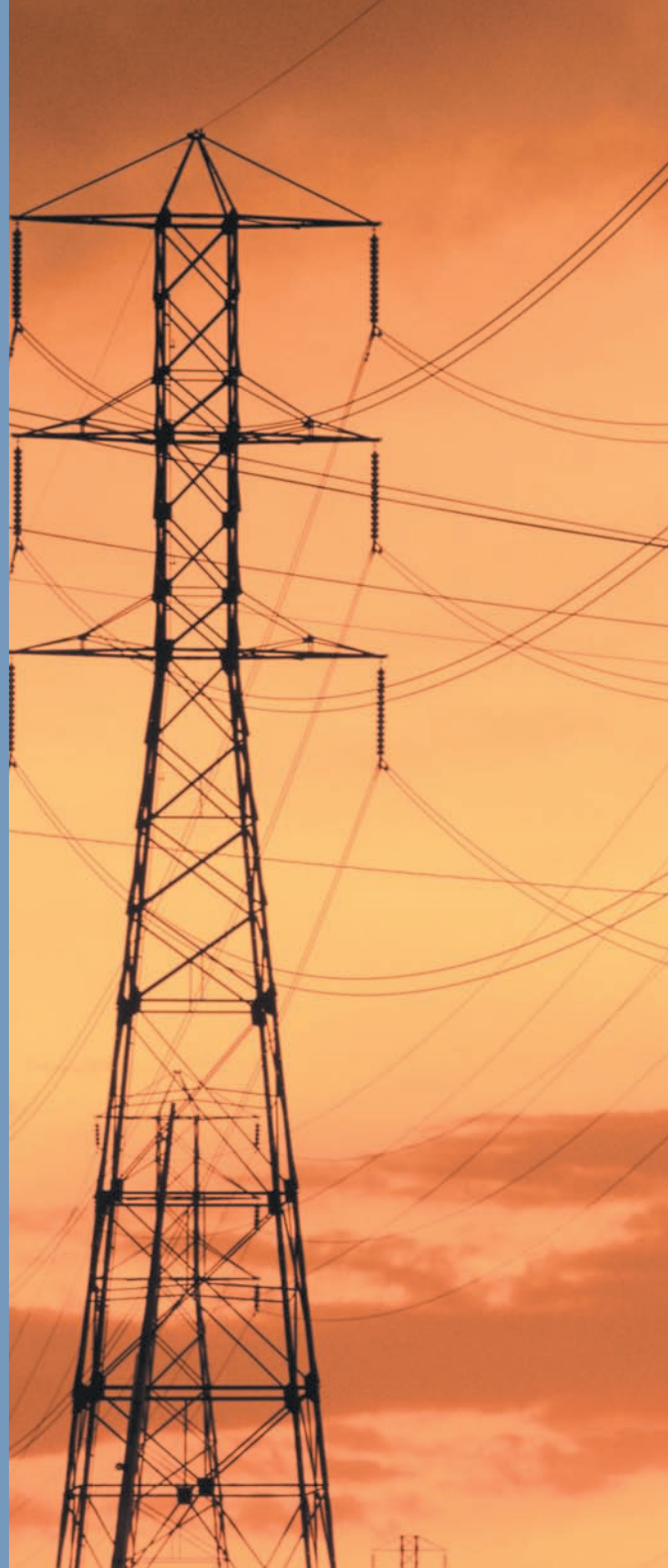
ASCO SERIES 300 Power Transfer Switches for Power Outage Protection

Where would you be without a constant flow of electrical power? We often take for granted that power will always be around when we need it. In reality, power failures are very common. And when the power goes out, your business suffers. Power failures are unpredictable. They can occur at any time and for any number of reasons—a bolt of lightning, a power surge, a blackout, an accident or even equipment failure. They come without warning and often at the most inconvenient times.

It's for this reason that many businesses and other entities have invested in emergency power backup systems. Typically, the system consists of an engine

generator and an automatic transfer switch (ATS) which transfers the load from the utility to the generator.

An ATS with built-in control logic monitors your normal power supply, senses interruptions and unacceptable abnormalities. When the utility power fails, the ATS automatically starts the engine and transfers the load after the generator has reached proper voltage and frequency. This happens in a matter of seconds after the power failure occurs. When the utility power has been restored, the ATS will automatically switch the load back, and after a time delay, it will shut down the engine. With an Automatic Transfer Switch, you are protected 24 hours a day, seven days a week.





Typical Applications

Telecom

In the telecommunications industry, providing a high level of service and dependability is crucial. Lost power means an interruption in service for your customers and lost business for your company. For instance, with cell sites scattered across a wide geographical region and in many remote areas, the chances of an interruption in power are increased, making Automatic Transfer Switches a valuable resource at each location. To maintain dependable service, each cell site must be monitored 24 hours a day. This can be very difficult without some type of remote monitoring and testing capability. The SERIES 300 Transfer Switch, combined with ASCO's monitoring and control management system, is a cost-effective, packaged solution which can help meet both of these challenging objectives without a major investment at each cell site. With ASCO's connectivity solutions you can remotely monitor and control numerous sites from around the corner or around the world.

Agriculture

Maintaining electrical power is vital to an agriculture operation. If the flow of power is interrupted, your operation could be at risk unless the backup generator is quickly activated. A prolonged power outage can affect numerous aspects of the operation, from housing and feeding livestock to processing and producing the end product. With an ASCO SERIES 300 Transfer Switch, power will automatically be transferred over to your backup generator, eliminating the need to manually switch from utility to generator. When power is restored, the ASCO SERIES 300 Transfer Switch will, after an adjustable time delay to allow for utility stabilization, automatically switch the load back to the utility service.

Commercial / Retail, Light Industrial

The retail industry is very competitive. An electrical power failure can have a dramatic impact on a retailer's bottom line. If power is interrupted during peak shopping times, the effect could be extremely damaging to present and future business. A power interruption will not only suspend shopping, it can also create safety problems, result in lost transaction data, lost account information and damage to data collection equipment. In addition, retailers who rely on controlled climates to protect valuable inventory could suffer even greater losses, especially if the power failure occurs at a time when no one is available to rectify the situation. To avoid any of these power outage problems, simply install a backup generator with an ASCO SERIES 300 Transfer Switch and power outage concerns will be a thing of the past.

Municipal

The ASCO SERIES 300 Transfer Switch can be a critical component of a municipal government's emergency power backup system. Residents of townships, cities and counties rely on police, fire, ambulance/first aid and other critical public sector services. An interruption in power would affect the ability of emergency services to effectively respond to the needs of the community. When time is a critical factor, such as when responding to a fire alarm or an emergency call, an ASCO SERIES 300 Transfer Switch can be a lifesaver, switching power to the backup generator. While not all municipal services are a matter of life and death, they are always expected to be there.

ASCO[®] SERIES 300 Power Transfer Switches

Maximum Reliability & Excellent Value

With a SERIES 300 Transfer Switch, you get a product backed by ASCO Power Technologies, the industry leader responsible for virtually every major technological advance in the Transfer Switch industry.

The ASCO SERIES 300 was designed for one purpose—to automatically transfer critical loads in the event of a power outage. Each and every standard component was designed by ASCO engineers for this purpose.

The SERIES 300 incorporates the Group G controller with enhanced capabilities for dependable operation in any environment. A user friendly control interface with a 128x64 graphical LCD display and intuitive symbols allow for ease of operation while visual LED indicators verify transfer switch status. Operating parameters and feature settings can be adjusted without opening enclosure door.

The rugged construction and proven performance of the ASCO SERIES 300 assure the user of many years of complete reliability. The SERIES 300 is even designed to handle the extraordinary demands placed on the switch when switching stalled motors and high inrush loads.

ASCO's SERIES 300 modular, compact design makes it easy to install, inspect and maintain. All parts are accessible from the front so switch contacts can be easily inspected.

Features

- The SERIES 300 is listed to UL 1008 standard for total system loads and CSA standard C22.2 for automatic transfer switches.
- Meets NFPA 110 for Emergency and Standby Power Systems and the National Electrical Code (NEC) Articles 700, 701 and 702.
- Controller is RoHS compliant (Restriction of Hazardous Substances).

UL Listed Withstand & Close-On Ratings

Switch Ratings Amps	Available Symmetrical Amperes RMS			
	Current Limiting Fuses		Specific Breaker	
	480V Max.	600V Max.	480V Max.	600V Max.
30	100kA	-	10kA	10kA
70 - 150	200kA	35kA	22kA	10kA
200	200kA	-	22kA	-
230	100kA	-	22kA	-
260, 400	200kA	-	42kA	-
150,200,230,260,400 Series 3ADTS/3NDTS Only	200kA	200kA	50kA	42kA
600	200kA	200kA	50kA	42kA
800,1000,1200	200kA	200kA	65kA	65kA
1600, 2000	200kA	200kA	85kA	85kA
2600, 3000	200kA	200kA	100kA	100kA

- Notes:**
1. Current limiting fuse should be class J type through 400 amps: use Class L type above 400 - amp fuse rating
Current limiting fuse for 3ADTS/3NDTS only 150 - 400 amp should be Class L type
 2. Refer to publication 1128 for specific manufacturer's breakers



Fig. 1: ASCO Power Transfer Switch rated 200 amperes

- 30 through 3000 amps in a compact design.
- Available to 600 VAC, single or three phase.
- True double-throw operation: The single solenoid design is inherently inter-locked and prevents contacts from being in contact with both sources at the same time.
- There's no danger of the SERIES 300 ATS transferring loads to a dead source because the unique ASCO single-solenoid operator derives power to operate from the source to which the load is being transferred.
- Easy to navigate 128x64 graphical LCD display with keypad provides LED indicators for switch position, source availability, not in auto, and alert condition.
- Integrated multilingual user interface for configuration and monitoring.
- Delayed transition operation is now available (Dual Operator Configuration).
- Non-automatic operation can be selected using the key pad without opening enclosure door.
- Relay expansion module with extra relays for accessory outputs (Optional).
- Includes soft keys for test function and time delay bypass as standard features.
- Historical event log (Optional).
- Statistical ATS system monitoring information.
- Diagnostic Functions.
- Password protection to prevent unauthorized tampering of settings.
- Adjustable time-delay feature prevents switch from being activated due to momentary utility power outages and generator dips.
- Supplied with solid neutral termination.
- Optional switched neutral pole available.
- Field modification accessory kits available.
- Available for immediate delivery.

Designed to Fit Anywhere

The ASCO SERIES 300 product line represents the most compact design of automatic power transfer switches in the industry. With space in electrical closets being at a premium, the use of wall or floor-mounted ASCO Power Transfer Switches assures designers optimum utilization of space.

All transfer switches through 2000 amps are designed to be completely front accessible. This permits the enclosures to be installed flush to the wall and still allows installation of all power cabling and connections from the front of the switch. Cable entrance plates are also standard on the 1600 and 2000 amp units to install optional side-mounted pull boxes for additional cable bending space.



Fig. 2: ASCO Power Transfer Switch rated 200 amperes



Fig. 3: ASCO Power Transfer Switch rated 400 amperes



Fig. 4: ASCO Power Transfer Switch rated 600 Amperes



Fig. 5: ASCO Power Transfer Switch rated 1000 amperes



Fig. 6: ASCO Power Transfer Switch rated 2000 amperes shown in Type 3R enclosure



Fig. 7: ASCO Power Transfer Switch rated 3000 amperes



The SERIES 300 incorporates the group “G” controller with enhanced capabilities for dependable operation in any environment.

Time Delays

- Engine start time delay – delays engine starting signal to override momentary normal source outages – adjustable to 0 to 6 seconds (Feature 1C)
- Transfer to emergency time delay – adjustable 0 to 60 minutes (Feature 2B)
- Emergency source stabilization time delay to ignore momentary transients during initial generator set loading – adjustable 0 to 4 seconds (Feature 1F)
- Re-transfer to normal time delay – adjustable 0 to 10 hours (Feature 3A)
- Unloaded running time delay for engine cooldown – adjustable 0 to 60 minutes (Feature 2E)
- Pre and post signal time delay for selective load disconnect with a programmable bypass on source failures – adjustable 0 to 5 minutes (specify ASCO Optional accessory 31Z)
- Optional fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi weekly or monthly basis (Specify ASCO optional accessory feature bundle 11BE)
- Delayed transition load disconnect time delay – adjustable 0 to 5 minutes.

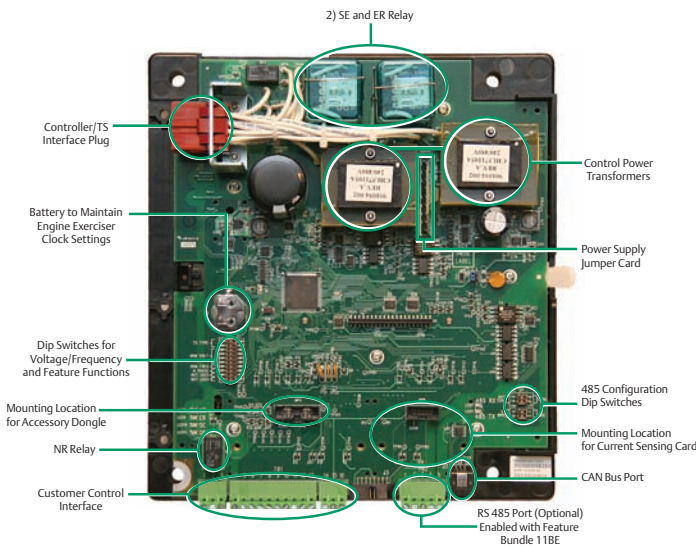


Fig. 8: ASCO SERIES 300 Microprocessor Controller

Control and Display Panel

- Easy to navigate 128x64 graphical LCD display with keypad provides LED indicators for switch position, source availability, not in auto, and alert condition. It also includes test and time delay bypass soft keys.

Voltage & Frequency Sensing

- 3 – Phase under and over voltage settings on normal and single phase sensing on emergency source.
- Under and over frequency settings on normal and emergency.
- True RMS Voltage Sensing with +/-1% accuracy
Frequency Sensing Accuracy is +/- 0.1Hz
- Voltage and Frequency parameters adjustable in 1% increments
- Selecting settings : single or three phase voltage sensing on normal, and single phase sensing on emergency; 50 or 60 Hz
- Load current sensing card (Optional)

Standard Selectable Features

- Inphase monitor to transfer motor loads, without any intentional off time, to prevent inrush currents from exceeding normal starting levels.
- Engine exerciser to automatically test backup generator each week—with or without load 20 minutes not adjustable.
- Commit to transfer.
- Selective load disconnect control contacts (two provided) which operate with time delay prior to and/or after load transfer and re-transfer.
- 60Hz or 50Hz selectable switch.
Three – phase/single - phase selectable switch.

Remote Control Features

External Inputs for connecting:

- Remote test switch.
- Remote contact for test or for peak shaving applications. If emergency source fails, switch will automatically transfer back to normal source if acceptable.
- Inhibit transfer to emergency
- Remote time delay bypass switch emergency to normal

ASCO® SERIES 300 Group G Offers Sophisticated Functionality

The new Group G controller offers an intuitive, easy to navigate 128*64 graphical LCD display with soft keypad and provides (6) LED indicators

- Switch Position (green for normal, red for emergency LED)

- Source Availability (green for normal, red for emergency LED)

- “Not In Auto” (amber LED)

- Common Alarm (amber LED)

The ASCO group “G” controller is self contained with an integrated display

(no other components are required for efficient operation).

The controller allows for open or delayed transition transfer operation (both automatic, and non automatic configurations).

Integrated multilingual user interface for configuration and monitoring (this design

approach allows greater application flexibility).

Multiple source sensing capabilities of voltage, frequency (under frequency sensing on normal and emergency sources), and optional current card, single and three phase (Does not require an external metering device).

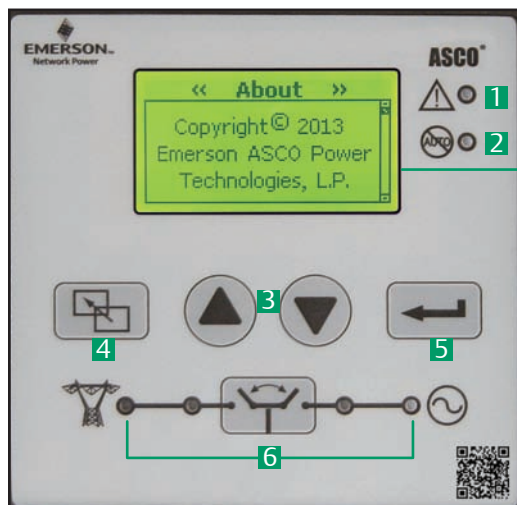


Fig. 9: Door-Mounted Control & Display Panel

- 1 Common Alarm
- 2 Not In Auto Indicator
- 3 Scroll, Up/Down Arrows
- 4 Escape Key
- 5 Enter Key
- 6 LED Source Availability and Switch Position Indicators Transfer / Time Delay Override control push-button

Status

Normal OK
Load on Normal
Press Test Transfer

Normal OK
Normal → Emergency
Timer: 00Min 02Sec
Press Bypass Timer

Data Logging

« Statistics »
TS Total Transfers
82
TS Transfer Time
5.0 Sec

« Event Log »
Event 1 of 248
Engine Stop
05/07/13 10:23:44.0

Gen Status

S/N: BER125200004
S/W: 894063-006
ASCO
Gen Room
Thu 05/23/13 09:07:16

Alarms

Alarm 1 of 1
Loss of E when on E
Press To Acknowledge Alarms

Common Alarms
Loss E when on E ☒
E Accept Fail ☐

Communication

« Discrete Inputs »
CNN 1/F5 1/F30 1
CNE 0/F17 1/TST 1
CEN 0/F34 1
CEE 0/F6 1

RS485 Port
Baud Rate 9600
Device Addr 1
Protocol AscoBusII
Emulate Grp1 ☐

Engine Exerciser

Engine Exerciser
Present Time 09:08:16
Program No 1
Enable ☐
With Load ☐

Source

Normal	Emergency
V _b 207V	V _a 207V
V _c 206V	V _a 207V
V _a 207V	V _a 207V
60.0Hz	60.0Hz

Normal	Load	Emerg.
V _b 207V	I _a 200A	V _a 207V
V _c 204V	I _b 198A	V _a 207V
V _a 205V	I _c 200A	V _a 207V
60.0Hz		60.0Hz

Settings

Enter Password
* * * *

ASCO®

SERIES 300 ATS Optional Accessories

Accessory 1UP

UPS back up power to allow controller to run with LCD display for 30 seconds without AC power

Accessory 11BE Feature Bundle Consists of:

A fully programmable engine exerciser with seven independent routines to exercise the engine generator, with or without loads, on a daily, weekly, bi – weekly or monthly basis. Engine exerciser setting can be displayed and changed from the user interface keypad.

Event Log display shows the event number, time and date of event, event type, and event reason (if applicable). A maximum of 300 events can be stored.

RS 485 Communications Port Enabled
Common Alarm Output Contact

Accessory 18RX

Relay expansion module (REX) provides for some commonly used accessory relays, includes one form C contact for source availability of normal (18G), and one contact for availability of emergency (18B) (contact rating 5 amps @ 30Vdc or @125 Vac resistive). Additional output relay is provided, the default is to indicate a common alarm. (See operator's manual for configurable options).

Accessory 23GA¹ (Single Phase), and 23GB (Three Phase)

Load current metering card, measures either single or three phase load current

Note1: This feature is not available with a Power Meter Option (135L)

Accessory 14AA/14BA

Auxiliary contacts to indicate position of main contacts. Two (2) for normal and two (2) for emergency position (one set is standard).

Accessory 44A

Strip Heater with thermostat for extremely cold areas to prevent condensation and freezing of this condensation. External 120 volt power source required.

Accessory 44G

Strip Heater with thermostat, wired to load terminals: 208-240, 360-380, 460-480, 550-600 volts. Contains wiring harnesses for all transfer switch sizes.

Field Conversion Kits for SERIES 300 Transfer Switches

Kit No.	Description
935147	Feature Bundle Includes Engine Exerciser/Event Log/RS 485/ Common Alarm Output Contact (Acc. 11BE) Dongle
935148	REX Module with Source Availability Contacts (Acc. 18RX)
935149	UPS to allow controller to run for 3 minutes minimum without AC Power (Acc. 1UP)
935150	1/3 Phase load current sensing card only (Acc. 23GA/GB)
K613127-001	Strip Heater (125 watt) 120 volt (Acc.44A)
K613127-002	Strip Heater (125 watt) 208 - 480 volt (Acc.44G)
948551	Quad - Ethernet Module (Acc. 72EE)
K609027	Cable Pull Box (1600 - 2000 amp)

Accessory 72EE

Connectivity Module, enabling remote monitoring and control capabilities (Pages 12-14)

Accessory 31Z

Selective load disconnect circuit to provide a pre – transfer and/or post transfer signal when transferring from emergency to normal and/or normal to emergency.

Accessory 73

Surge Suppressor (TVSS) Rated 65kA

Accessory 62W

Audible alarm with silencing feature to signal each time switch transfers to emergency (City of Chicago requirement)

Accessory 37B

6' Extension harness for units shipped open type to accommodate customer mounting of controls and switch

Accessory 37C

9' Extension harness for units shipped open type to accommodate customer mounting of controls and switch

Accessory 135L²

Power Meter on load side (Includes shorting block and CT's)

Note2: This feature is not available with Load Current Metering Option (23GA, or 23GB)

Accessory 30AA³

Load – shedding circuit initiated by opening of a customer – supplied contact

Accessory 30BA³

Load – shedding circuit initiated by removal of customer – supplied voltage (* Specify voltage)

Note3: Accessory 30AA, and 30BA are only available for 3ADTS/3NDTS (Delayed Transition Transfer Switch)



Fig. 10: Strip Heater Kit (Accessory 44G)



Fig. 11: Relay Expansion Module (Accessory 18RX)



Fig. 12: Load Current Card (Accessory 23GA/GB)

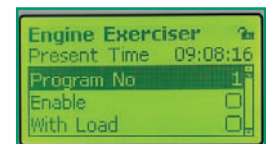


Fig. 13: Programmable Engine Exerciser



Fig. 14: Accessory 1UP UPS Backup Power

ASCO[®] SERIES 300 Power Transfer Switches

SERIES 300 Non-Automatic Transfer Switching (3NTS)

ASCO non-automatic transfer switches are generally used in applications where operating personnel are available and the load is not an emergency type requiring automatic transfer of power. They can also be arranged for remote control via ASCO's connectivity products.



Fig. 15: ASCO 3NTS 400 Amp
Type 1 Enclosure

3NTS Features:

- ASCO Non-Automatic Transfer Switches are electrically held, manually initiated via soft keys on the user interface panel.
- Sizes from 30 through 3000 amps.
- Microprocessor based controller provides for addition of optional accessories.
- Controller prevents inadvertent operation under low voltage condition.
- Source acceptability lights inform operator if sources are available to accept load.
- Source inphase monitor to transfer motor loads between live sources.
- One auxiliary contact closed when transfer switch is connected to normal and one closed on Emergency standard feature 14A/14B



Fig. 16: ASCO 3ADTS/3NDTS 400 Amp
Type 1 Enclosure

SERIES 300 Delayed Transition Transfer Switching (3ADTS/3NDTS)

ASCO Delayed Transition Transfer Switches are designed to provide transfer of loads between power sources with a timed load disconnect position for an adjustable period of time.

3ADTS/3NDTS Features:

- Sizes from 150 through 3000 amps.
- Reliable field proven dual solenoid operating mechanisms.
- Mechanical interlocks to prevent direct connection of both sources.
- Adjustable time delay for load disconnect (0 to 5 minutes).
- Available in manual operation configuration (3NDTS).
- Available with optional load shed feature for (3ADTS).



SERIES 300 Transfer Switch Ordering Information

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

3 + A + TS + A + 3 + 600 + N + GX + C											
		Product		Neutral Code		Phase Poles	Amperes	Voltage Code		Controller Code	Enclosure
A	Automatic	TS	Conventional 2 Position	A	Solid Neutral	2 Poles 1 ϕ	Continuous rating	A ³	115	G	0 (zero) Open Type
N	Non-Automatic	DTS	Delayed Transition	B ¹	Switched Neutral	3 Poles 3 ϕ	30 ² , 70 ² , 104 ² , 150 ⁵ , 200 ^{4,5} , 230 ^{2,4,5} , 260 ^{2,5} , 400 ^{2,5} , 600 ⁵ , 800 ⁵ , 1000 ⁵ , 1200 ⁵ , 1600 ⁵ , 2000 ⁵ , 2600 ⁵ , 3000 ⁵	B ³	120	GX	C Type 1 (Standard)
								C	208	Optional Accessories	F Type 3R Non-Secure ²
								D	220		G Type 4 ² Non-Secure
								E	230		H Type 4X ² Non-Secure
								F	240		L Type 12 ² Non-Secure
								H	380		M Type 3R Secure
								J	400		N Type 4 Secure
								K	415		P Type 4X Secure Double Door 304 SS
								L	440		Q Type 12 Secure Double Door
								M	460		R Type 3RX ^{7,8} Secure Double Door 304 SS
								N	480		
								Q	575		
								R	600		

- Notes:**
- Specify neutral code "C" for 260 and 400 amperes only for 3ATS/3NTS
 - Available 30-600 ampere size switches available in non - secure type enclosures
 - 115-120 volt available 30-400 amps only. For other voltages contact ASCO.
 - 200 and 230 amp rated switches for use with copper cable only.
 - Switch sizes 800 - 3000 ampere, and 150 - 400 ampere 3ADTS/3NDTS provided in secure type outdoor enclosures when required.
 - Use 3R for 1200, 2000, 2600, and 3000
 - Type 304 stainless steel is standard. Suitable for indoor or outdoor use where there may be caustic or alkali chemicals in use.

- To provide an improved reduction in corrosion of salt and some chemicals, optional type 316 stainless steel is recommended. This is the preferred choice for marine environments.
- Available on switches rated 1200, 2000, 2600, and 3000 amps.
 - When temperatures below 32°F can be experienced, special precautions should be taken, such as the inclusion of strip heaters, to prevent condensation and freezing of this condensation. This is particularly important when environmental (Type 3R,4) are ordered for installation outdoors.
 - Extra shelter protection should be considered for wind blown rain and snow, since ventilated type 3R enclosures due not protect against these conditions.

SERIES 300 External Power Connections

Sizes UL-Listed Solderless Screw-Type Terminals

Switch Rating (Amps)	Ranges of AL-CU Wire Sizes (Unless Specified Copper Only)
30 - 230 ²	One #14 to 4/0 AWG
260, 400	Two 1/0 AWG to 250 MCM or One #4 AWG to 600 MCM
600	Two 2/0 AWG to 600 MCM
800, 1000, 1200	Four 1/0 to 600 MCM
1600, 2000	Six 1/0 to 600 MCM
2600, 3000	Twelve 3/0 to 600 MCM

Notes:

- All SERIES 300 switches are furnished with a solid neutral plate (unless switched neutral configuration is specified) and terminal lugs.
- 200 and 230 amp rated switches for use with copper cable only. Refer to paragraph 310.15 of the NEC for additional information.
- Use wire rated 75°C minimum for all power connections.

Extended Warranties for SERIES 300 Transfer Switches (3ATS/3NTS/3ADTS)

Catalog No.	Description
3EXW300	Three-Year Extended Warranty (Parts & Labor)
4EXW300	Four-Year Extended Warranty (Parts & Labor)
5EXW300	Five-Year Extended Warranty (Parts & Labor)

Notes:

- Standard Warranty is (24) months, 2 years from date of shipment. Extended warranty is in addition to the two years, for total of 3,4, or 5 years.



SERIES 300 Transfer Switch Dimensions and Shipping Weights

UL Type 1 Enclosure^{1,2,3,4,5}

Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
30 ⁴ , 70 ⁴ , 100 ^{4*} , 104 ⁴ 150 ⁴ , 200 ⁴ *SERIES 3NTS only	2	A	18(457)	31(787)	13(330)	69(32)
	2	B	18(457)	31(787)	13(330)	72(33)
	3	A	18(457)	31(787)	13(330)	72(33)
	3	B	18(457)	31(787)	13(330)	75(34)
230 ³ , 260, 400	2	A	18(457)	48(1219)	13(330)	117(53)
	2	B ³ or C	18(457)	48(1219)	13(330)	125(57)
	3	A	18(457)	48(1219)	13(330)	125(57)
	3	B ³ or C	18(457)	48(1219)	13(330)	133(61)
150, 200, 230, 260, 400 SERIES 3ADTS/3NTS only	2	A	24(610)	56(1422)	14(356)	196(89)
	2	B	24(610)	56(1422)	14(356)	202(92)
	3	A	24(610)	56(1422)	14(356)	202(92)
	3	B	24(610)	56(1422)	14(356)	208(94)
600	2	A	24(610)	63(1600)	17(432)	316(143)
	2	B	24(610)	63(1600)	17(432)	324(147)
	3	A	24(610)	63(1600)	17(432)	324(147)
	3	B	24(610)	63(1600)	17(432)	332(150)
800, 1000	2	A	34(864)	72(1829)	20(508)	431(196)
	2	B	34(864)	72(1829)	20(508)	460(209)
	3	A	34(864)	72(1829)	20(508)	460(209)
	3	B	34(864)	72(1829)	20(508)	489(222)
1200	2	A	38(965)	87(2210)	23(584)	581(264)
	2	B	38(965)	87(2210)	23(584)	611(277)
	3	A	38(965)	87(2210)	23(584)	611(277)
	3	B	38(965)	87(2210)	23(584)	639(290)
1600, 2000 ¹	3	A	38(965)	87(2210)	23(584)	1160(525)
	3	B	38(965)	87(2210)	23(584)	1160(525)
2600, 3000 ²	3	A	38(965)	91(2311)	60(1524)	1430(649)
	3	B	38(965)	91(2311)	60(1524)	1495(679)

Notes:

1. Unit is designed for top cable entry of emergency & load and bottom entry of normal. A cable pull box is also available for all top or bottom cable access when required (optional accessory kit #K609027). Not required for type 3R, 4X & 12 enclosures where available.
2. Enclosures for 2600, 3000 amps are free-standing with removable top, sides & back.
3. Neutral Code "B" for 230 amperes only.
4. Dimensions for 30-200 amperes when furnished with a power meter, 18"W - 41"H - 13"D
5. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

UL Type 3R, 4 or 12 Enclosure^{1,2,3,4,5}

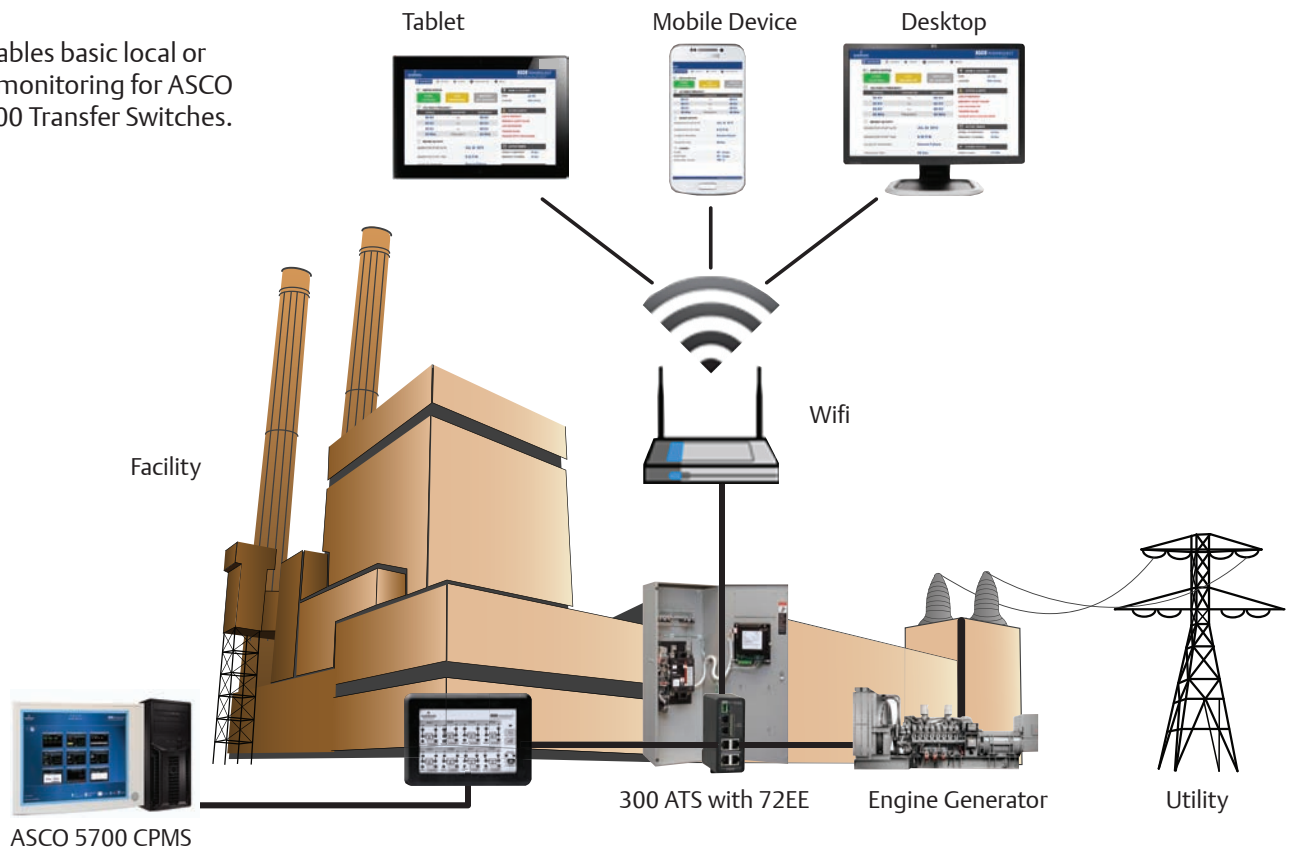
Switch Rating Amps	Phase Poles	Neutral Code	Dimensions, In. (mm)			Approx. Shipping Weight Lb. (kg)
			Width	Height	Depth	
30 ³ , 70 ³ , 100 ^{3*} , 104 ³ 150 ³ , 200 ³ *SERIES 3NTS only (Non Secure Enclosure)	2	A	17 1/2 (445)	35(886)	11 5/8 (295)	84(38)
	2	B	17 1/2 (445)	35(886)	11 5/8 (295)	87(40)
	3	A	17 1/2 (445)	35(886)	11 5/8 (295)	87(40)
	3	B	17 1/2 (445)	35(886)	11 5/8 (295)	90(41)
230 ² , 260, 400 (Non Secure Enclosure)	2	A	18(458)	50 1/2 (1284)	14 1/3 (364)	132(60)
	2	B ³ or C	18(458)	50 1/2 (1284)	14 1/3 (364)	140(63)
	3	A	18(458)	50 1/2 (1284)	14 1/3 (364)	140(63)
	3	B ³ or C	18(458)	50 1/2 (1284)	14 1/3 (364)	148(67)
150, 200, 230 260, 400 *SERIES 3ADTS/3NDTS only (Non Secure Enclosure)	2	A	24(607)	63(1593)	18 1/5 (468)	234(106)
	2	B	24(607)	63(1593)	18 1/5 (468)	241(109)
	3	A	24(607)	63(1593)	18 1/5 (468)	241(109)
	3	B	24(607)	63(1593)	18 1/5 (468)	246(112)
600 (Non Secure Enclosure)	2	A	24(607)	63(1593)	18 1/5 (468)	320(145)
	2	B	24(607)	63(1593)	18 1/5 (468)	328(148)
	3	A	24(607)	63(1593)	18 1/5 (468)	328(148)
	3	B	24(607)	63(1593)	18 1/5 (468)	336(152)
800, 1000 (Non Secure Enclosure)	2	A	34(859)	72(1821)	20(506)	519(236)
	2	B	34(859)	72(1821)	20(506)	543(246)
	3	A	34(859)	72(1821)	20(506)	543(246)
	3	B	34(859)	72(1821)	20(506)	565(257)
1200 ⁶ (Non Secure Enclosure)	2	A	41(1037)	95 1/2 (2415)	33 1/2 (848)	1131(513)
	2	B	41(1037)	95 1/2 (2415)	33 1/2 (848)	1160(526)
	3	A	41(1037)	95 1/2 (2415)	33 1/2 (848)	1160(526)
	3	B	41(1037)	95 1/2 (2415)	33 1/2 (848)	1189(539)
1600, 2000 ² (Non Secure Enclosure)	3	A	41(1037)	95 1/2 (2415)	62(1569)	1705(775)
	3	B	41(1037)	95 1/2 (2415)	62(1569)	1830(832)
2600, 3000 (Non Secure Enclosure)	3	A	41(1037)	96(2429)	74(1872)	2150(976)
	3	B	41(1037)	96(2429)	74(1872)	2230(1012)

Notes:

1. When climate conditions at installation site present condensation risk, special precautions should be taken, such as the inclusion of space heaters, to prevent interior condensation and freezing of this condensation.
2. Neutral code "B" for 230 amperes only.
3. Dimensions for 30 - 200 ampere when furnished with a power meter 18"W - 48"H - 13"D
4. 30-1000 ampere switches are available in secure type enclosures, contact ASCO for details
5. Dimensional data is approximate and subject to change. Certified dimensions available upon request.

ASCO[®] SERIES 300 72EE Monitoring and Control

72EE enables basic local or remote monitoring for ASCO Series 300 Transfer Switches.



Sample drawing for demonstration purposes only.
Consult ASCO for exact connection specifications.

72EE Features

Control Features

- ATS Transfer/Re-transfer
- ATS Timer Bypass
- Generator Start
- Generator Test

Monitoring Features

- ATS and Generator Stats
- Alarms
- Voltage and Frequency
- Statistics and Activity
- Email Notifications
- Event Log (300 Events)
- Optional Monitoring Features
 - Energy Consumption, Acc 135L Required
 - Power Demand, Acc 135L Required

Connectivity Features

- Modbus (over Ethernet or Serial)
- SNMP Protocol
- AES 128 Bit Encryption
- Four Port Ethernet Switch

72EE Also Enables Enhanced PowerQuest CPMS Functionality

- 5310 SERIES Single Channel Annunciator
- 5350 SERIES Eight Channel Annunciator
- 5700 Critical Power Management Systems

ASCO® SERIES 300 72EE Monitoring Screens

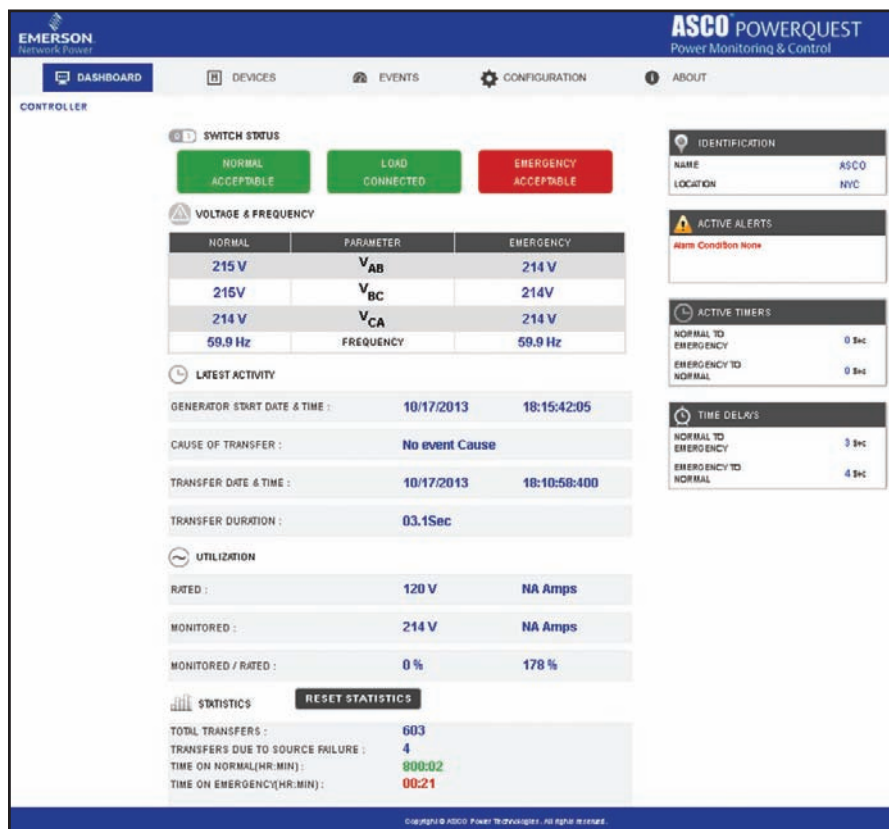


Fig. 17: 72EE Home Page Dashboard



Fig. 18: Power Metering Screen

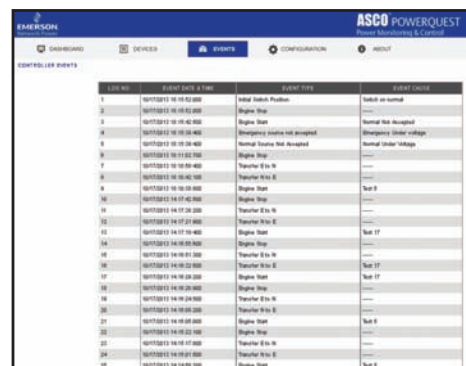


Fig. 19: Events Screen



Fig. 20: Configuration

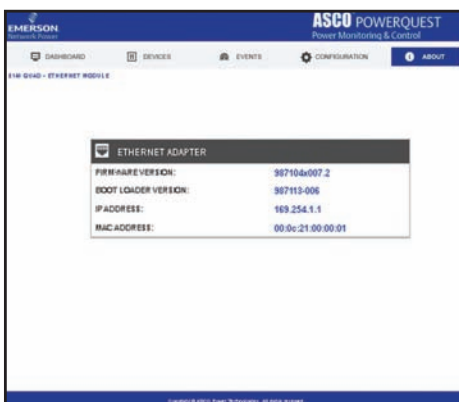


Fig. 21: About

Content rich monitoring screens enable real time information for power metering, event logs, voltages, time delays and alerts. The 72EE also allows for switch transfer remotely.

ASCO® SERIES 300 72EE Connectivity Module



Fig. 22:
Accessory
72EE

The ASCO 72EE Connectivity Module offers remote monitoring for SERIES 300 ATS's and 5210 Power Meter. For the ATS, the optional accessory 72EE provides remote ATS and Generator Control, Monitoring and Connectivity Features via integrated web page dashboards. Once connected to an Ethernet, Wifi or Cellular connection, the dashboards can easily be pulled up by any mobile or desktop device on the network by multiple users.

Control

The control capabilities allows remote transfer and retransfer of the ATS, while allowing you to view time delays and bypass functions. The generators can also be called to start and stop for emergency situations as well as for testing and maintenance. Running the generator periodically ensures that the battery is charged for power anomalies and increases reliability. Generator Pick-up and drop-out setpoints are also viewable for comprehensive understanding of control events.

Monitoring

Monitor transfer switch and generator health, system state, metering and review calculated transfer statistics and activity. Active control timer information allows the operator to anticipate an automated control action, such as, generator start or ATS transfer. The device can also interface

to an email server to keep users up-to-date on alarms and critical power events with alerts.

In addition the 72EE can interface to an optional 5210 Power Meter, (stand alone - or with the ATS Acc. 135L). for enhanced monitoring features, such as, power metering, demand and energy usage.

Connectivity

Connect and extract ATS and metering data using industry standard open protocols, such as, Modbus and SNMP. An integrated four port Ethernet Switch maximizes connectivity options and flexibility. Embedded password protection will only allow access to appropriate users, while utilizing AES 128-bit encryption for enhanced data security per National Institute of Standards and Technology (NIST).

Additional Optional PowerQuest Components

5160
Connectivity
Module



The **ASCO 5160 Remote Connectivity Unit (RCU)** provides 10 Ethernet and Dual-Fiber Optic connections in a NEMA 3R enclosure.

5210, 5220
Power
Manager



ASCO 5210 (left) and 5220 (right) Power Meters measure, displays and provides single- or 3-phase Energy and Power information

ASCO 5221
Power Manager
Unit



ASCO 5221 Power Manager Unit (PMU) is used to enable power measurement, discrete inputs for status and output relays for control of generators, breakers and other power equipment via 5700 Series CPMS solutions.

5310, 5350
Annunciators



ASCO 5310(left) and 5350(right) ATS Remote Annunciators provide distributed monitoring of transfer switch position and source availability as well as transfer test and re-transfer control.

5710,
5750, 5790
Display
Terminals



5700 Critical Power Management Systems (5790 shown) provides various levels of monitoring, control and management capability of power equipment. It seamlessly monitors ASCO transfer switches as well as generators, breakers, paralleling buss, panel boards and other power equipment via a 5221 PMU. It consists of servers and touch screen interfaces.



FULFILL YOUR NEED

Drill down for a closer look - Each transfer switch, generator, breaker and any other power equipment has its own dedicated screens.



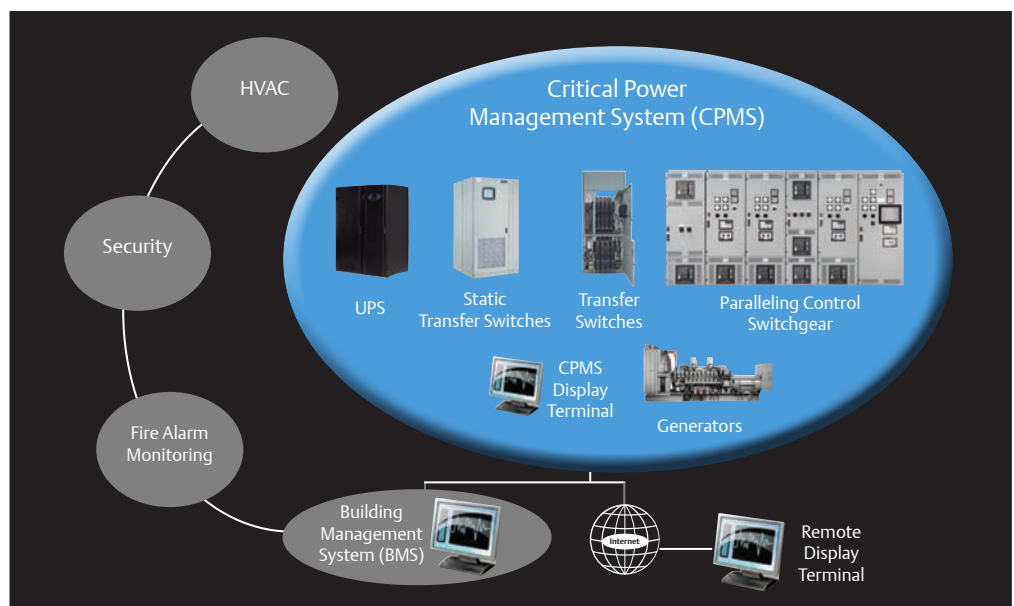
ASCO PowerQuest® Power Monitoring and Control Systems

The PowerQuest® family is the most comprehensive communication, monitoring and control solution ever offered by Emerson Network Power. It empowers you. It provides the ability to test, manage loads, optimize the bus bar, remotely monitor and otherwise be aware of the status of your facility's utility source and on-site power. It provides reports for events, tests, energy use or settings and gets data directly from generators and transfer switches.

Whether user's require standard monitoring and control, or a comprehensive Critical Power Management System, PowerQuest can satisfy your needs.

Hardware. Software. Installation and testing. Service. And upgrades and technology refreshes. A truly complete solution for all your communication, monitoring and control needs.

This web enabled management system is based on open protocols. As communications amongst equipment improve, so does the performance of critical power systems.



PowerQuest provides monitoring, alarming and control of Critical Power Management Systems, which comprise transfer switches, paralleling control switchgear, gensets, circuit breakers, UPS, loadbanks, distribution and other gear. It also integrates with building management systems.

BE EMPOWERED

PowerQuest can enable you to:

- Monitor and control power transfer switches, paralleling control switchgear, gensets, breakers, UPS, bus bars and other equipment
- Monitor normal and emergency voltages and frequency and their settings
- Know transfer switch position and source availability
- Transfer and re-transfer loads for system testing
- View and adjust transfer switch time-delay settings
- Receive automatic alerts or selected system alarms on system operation via E-mail or pager
- View transfer switch event log and know the transfer switch test schedule
- Generate reports for alarms, energy consumption, settings, historical logs and code mandated tests

For more PowerQuest product information see publication 3245

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