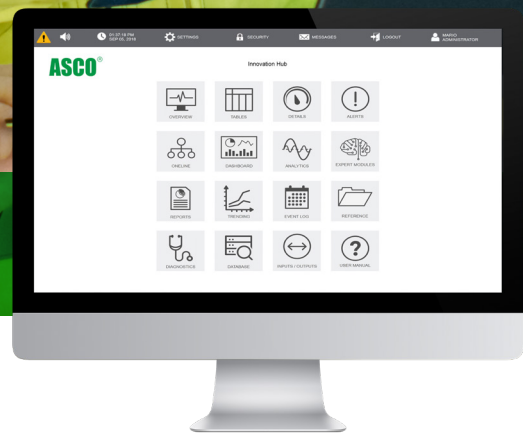




**ASCO** Power Technologies™

5700/5900 SERIES PowerQuest®  
Critical Power Management System



[ascopower.com](http://ascopower.com)

Life Is On

**Schneider**  
Electric

# ASCO 5700/5900 SERIES POWERQUEST® CRITICAL POWER MANAGEMENT SYSTEM

At the heart of every ASCO PowerQuest® Critical Power Management System (CPMS) is advanced software optimized for reliability and durability. The CPMS platform enables users to monitor and manage critical power equipment with greater ease and clarity than ever before. It provides a single, intuitive, user interface to control critical power equipment from ASCO and other major manufacturers. The ASCO CPMS Platform offer a range of features and performance to match the needs of every critical power management application.

## The ASCO PowerQuest CPMS provides:

- Real-time in-depth control and monitoring of critical power systems, including utility power, engine-generators, transfer switches, circuit breakers, load banks, fire pump controllers, surge protection equipment, and more
- Instant notification of power alarms and events via email
- One interface for managing power devices and systems from a single center of expertise
- Complements IT, BMS, and other monitoring systems via BACnet, Modbus, SNMP, and OPC protocols
- Automated generation and distribution of industry-required reports and regulatory documentation
- Customization options to meet any power management need

### INCREASE RELIABILITY

Gain real-time insight to understand power conditions, manage capacity, evaluate events, and enhance reliability.

### EASE COMPLIANCE

Automatically record test and maintenance information and power data. Compile information required to verify regulatory compliance.

### ENHANCE EFFICIENCY

Control systems remotely to enhance operational and energy efficiency. Monitor power quality and optimize energy usage to reduce costs.







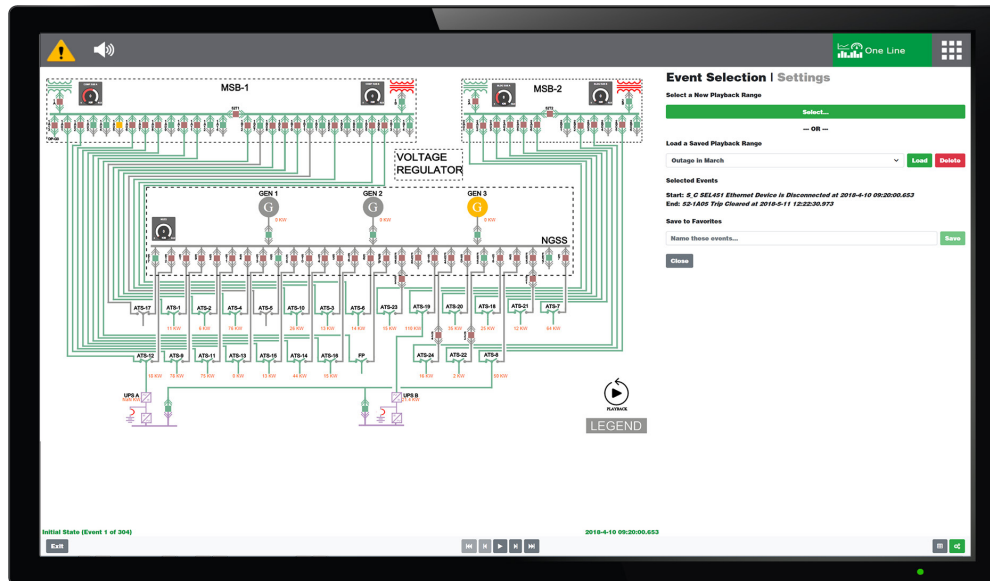
## KEY CAPABILITIES

SIMPLE	ENHANCED	ADVANCED
<b>System Visualization</b> Understand system status in a single view	<b>Event Logging</b> Simplifies forensic analysis by summarizing all device events in a single record	<b>System and Facility Dashboards</b> Quickly assess complex information on floor plans and one-line diagrams
<b>Real-Time Monitoring</b> Clearer insight, detailed understanding, quicker decisions	<b>Automated Reports</b> Streamlines and enhances operational compliance	<b>Multi-Site Power Management</b> Control and monitor multiple facilities from a single system
<b>Alerts and Notifications</b> Instant knowledge about system events and conditions	<b>Reference Library</b> Stores drawings and facility documentation for viewing on CPMS equipment	<b>Visual Event Playback</b> View sequential system events through dynamic one-line diagrams for forensic assessment
	<b>Historical Trending</b> Increase efficiency, manage capacity, and reduce costs	

## NEWEST FEATURES

### Power Event Playback

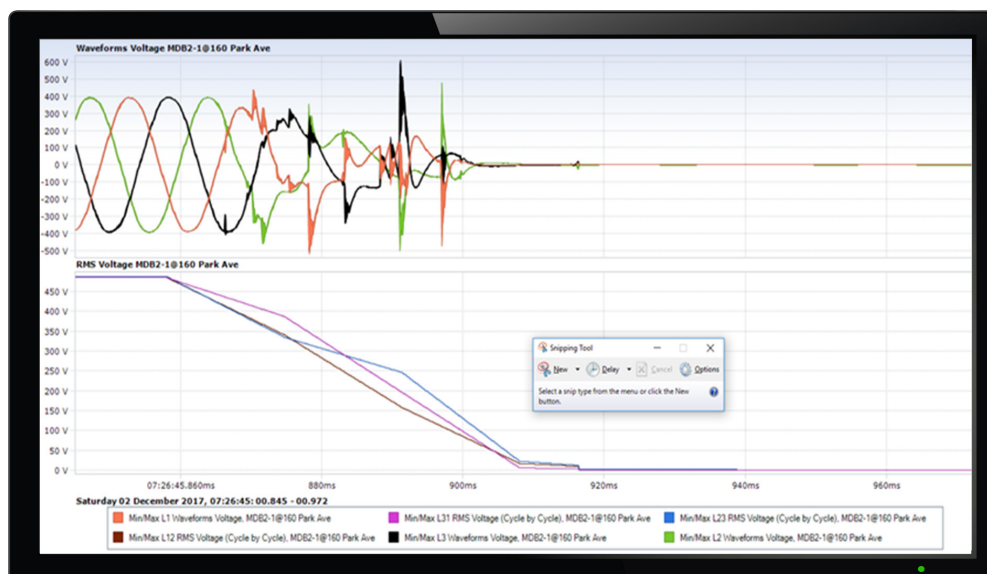
Every PowerQuest CPMS can be provisioned with custom one-line diagrams and floor plans that visually present status and performance information for a facility's entire electrical system. Users can view time-elapse replays of events that occurred before, during, and following an automatically marked power event to assess its cause and effect. Users gain a deeper understanding of the power conditions affecting their facility and their effect on equipment status and power source acceptability. ASCO's CPMS playback features make forensic analysis as easy as watching a video.



Visualize critical power system events sequentially using the CPMS PlayBack feature

### Advanced Analytics

When equipped with ASCO's class-leading Power Quality Meters, the CPMS displays continuously recorded data. Using unique logging technology, the system marks power system events and stores up to one year of power quality data. ASCO's solution provides power quality analytics based on data recorded at a high-resolution that is unavailable from competing providers. Advanced forensic tools guide users through detailed assessments of power events and trends to forecast power needs and evaluate abnormalities.



High-resolution, power quality information reveals sub-cycle anomalies that other technologies can miss.



This edition of NFPA 110, *Standard for Emergency and Standby Power Systems*, was prepared by the Technical Committee on Emergency Power Supplies and released by the Correlating Committee on the National Electrical Code®. It was issued by the Standards Council on May 26, 2015, with an effective date of June 15, 2015, and supersedes all previous editions.

This edition of NFPA 110 was approved as an American National Standard on June 15, 2015.

### Origin and Development of NFPA 110



## Streamlined Compliance Reporting

NFPA 110 provides guidance for emergency power system testing, which is necessary to meet Joint Commission requirements and other industry standards. To demonstrate compliance, engine-generators must be tested at regular intervals for prescribed durations to show that they can run reliably, and must be run at a minimum load to avoid wet stacking. Electronic reporting programs offer the most efficient method for documenting emergency power system tests.

The PowerQuest 5700 SERIES CPMS automatically compiles and evaluates operating data and prepares corresponding reports. This reduces opportunity for human error, reduces logistical preparations for test events, and allows allocation of resources to other tasks. It also enables facilities to use data from outages to fulfill testing requirements. For these reasons, automated reporting eases compliance with industry standards while reducing costs.

**ASCO®**

**TEST REPORT**

**Facility Name**  
160 Park Avenue  
Florham Park, NJ 07932

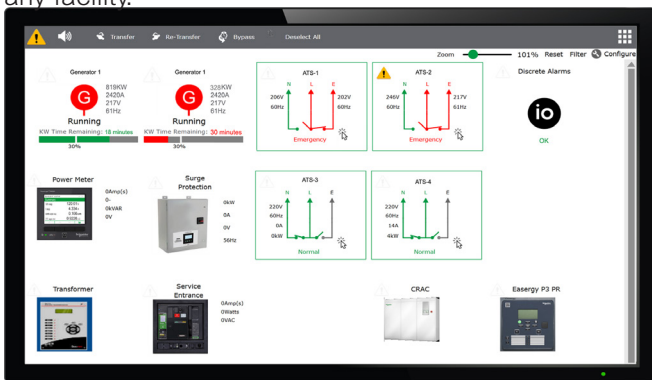
Generated By : Automated  
Created : Nov 30, 2018 at 12:55:36 PM  
Period : Nov 30, 2018 to Nov 30, 2018

Software Part Number : 1016361-004  
Software Release Date : Oct 12 2017



## SYSTEM VISUALIZATION AND REAL-TIME MONITORING

The PowerQuest CPMS provides power equipment monitoring and visualization capabilities shaped by more than 100 years of critical power management experience. ASCO's CPMS capabilities are shown in its detail-rich display screens, which show equipment status, power measurements, and historical trends. The following key screens represent a sample of the scope of information that can be viewed, assessed, and reported using the CPMS. ASCO can provide unparalleled support by developing custom screens and solutions to optimize management of mission critical power for any facility.



### Equipment Overview

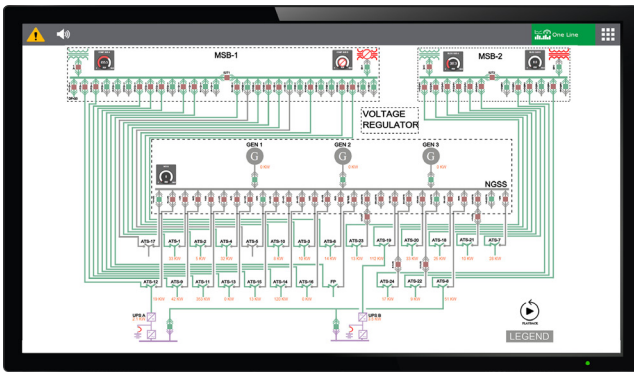
- Summarizes information for all devices on a single screen
- Accesses each device to display additional detail
- Presents energy usage and load demand data
- Supports dedicated screens for equipment groups
- Filters equipment by type, name, or location
- Tests multiple transfer switches & generators simultaneously



### Alarm Dashboard

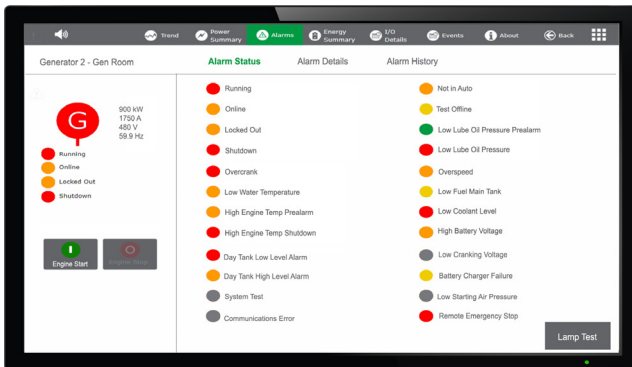
- Displays alarm status of all equipment in a single view
- Simplifies viewing by intelligently combining alarms
- Assesses and displays the most critical alarms
- Provides fast access to individual alarm details





## Dynamic One-Line Diagrams

- Displays a custom responsive layout of the power network
- Shows equipment state on a one-line image
- Displays power flow throughout the electrical distribution system



## Generator Dashboard

- Displays NFPA 110 indicators and shutdowns
- Activates LED indicator and audible signal whenever alarm conditions are detected
- Displays information about engine speed, oil pressure coolant temp, power output, fuel level, and more

Event ID	Event Name	Event Type	Event Severity	Event Date	Event User
10000001	Generator 2 - Running	Running	Normal	2015-01-05 10:00:00	Admin
10000002	Generator 2 - Online	Online	Normal	2015-01-05 10:00:00	Admin
10000003	Generator 2 - Locked Out	Locked Out	Warning	2015-01-05 10:00:00	Admin
10000004	Generator 2 - Shutdown	Shutdown	Warning	2015-01-05 10:00:00	Admin
10000005	Generator 2 - Overcrank	Overcrank	Warning	2015-01-05 10:00:00	Admin
10000006	Generator 2 - Low Water Temperature	Low Water Temperature	Warning	2015-01-05 10:00:00	Admin
10000007	Generator 2 - High Engine Temp Prealarm	High Engine Temp Prealarm	Warning	2015-01-05 10:00:00	Admin
10000008	Generator 2 - High Engine Temp Shutdown	High Engine Temp Shutdown	Warning	2015-01-05 10:00:00	Admin
10000009	Generator 2 - Day Tank Low Level Alarm	Day Tank Low Level Alarm	Warning	2015-01-05 10:00:00	Admin
10000010	Generator 2 - Day Tank High Level Alarm	Day Tank High Level Alarm	Warning	2015-01-05 10:00:00	Admin
10000011	Generator 2 - System Test	System Test	Normal	2015-01-05 10:00:00	Admin
10000012	Generator 2 - Communications Error	Communications Error	Warning	2015-01-05 10:00:00	Admin
10000013	Generator 2 - Not in Auto	Not in Auto	Warning	2015-01-05 10:00:00	Admin
10000014	Generator 2 - Test Offline	Test Offline	Warning	2015-01-05 10:00:00	Admin
10000015	Generator 2 - Low Lube Oil Pressure Prealarm	Low Lube Oil Pressure Prealarm	Warning	2015-01-05 10:00:00	Admin
10000016	Generator 2 - Low Lube Oil Pressure	Low Lube Oil Pressure	Warning	2015-01-05 10:00:00	Admin
10000017	Generator 2 - Overcrank	Overcrank	Warning	2015-01-05 10:00:00	Admin
10000018	Generator 2 - Low Fuel Main Tank	Low Fuel Main Tank	Warning	2015-01-05 10:00:00	Admin
10000019	Generator 2 - Low Coolant Level	Low Coolant Level	Warning	2015-01-05 10:00:00	Admin
10000020	Generator 2 - High Battery Voltage	High Battery Voltage	Warning	2015-01-05 10:00:00	Admin
10000021	Generator 2 - Low Cranking Voltage	Low Cranking Voltage	Warning	2015-01-05 10:00:00	Admin
10000022	Generator 2 - Battery Charger Failure	Battery Charger Failure	Warning	2015-01-05 10:00:00	Admin
10000023	Generator 2 - Low Starting Air Pressure	Low Starting Air Pressure	Warning	2015-01-05 10:00:00	Admin
10000024	Generator 2 - Remote Emergency Stop	Remote Emergency Stop	Warning	2015-01-05 10:00:00	Admin

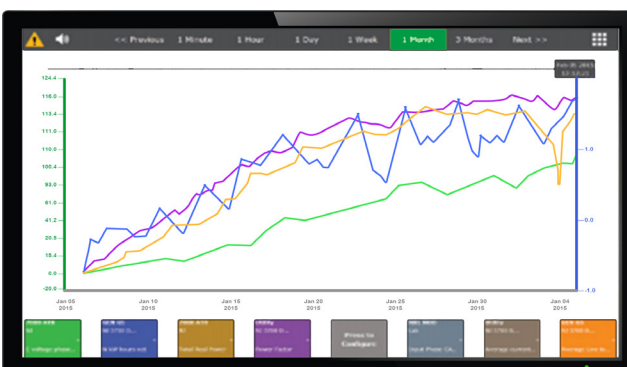
## Event Log

- Aggregates and displays IO events with real-time millisecond time-stamps
- Presents date range, alarm severity, and other information in user-configurable views
- Records alarm acknowledgments with time-stamp and User ID
- Prints filtered events in a single report

Archive	Progress	Status	Action
Event Logs	100%	Finished	Download
Sequence of event logs	100%	Finished	Download

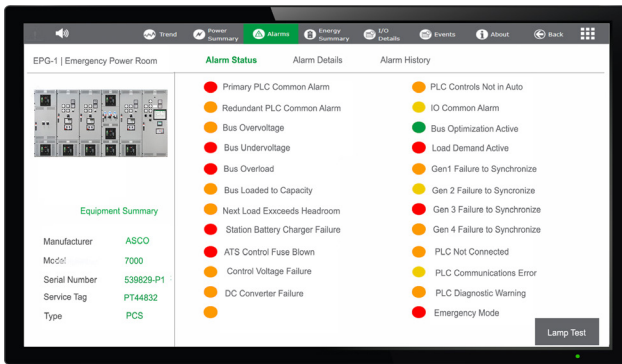
## Data Exporter

- Easy export sequence-of-event logs and trending data as CSV files
- Specify date ranges for data export



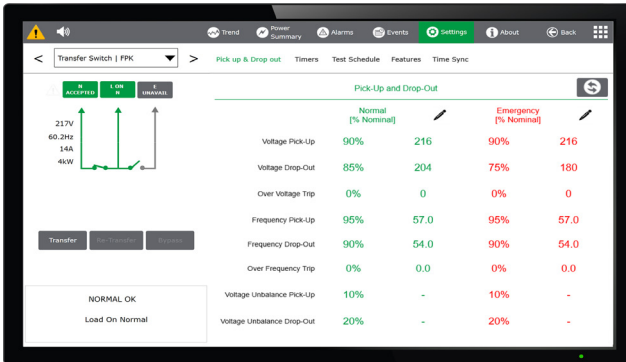
## Trending Screens

- Presents historical trends for monitored parameters
- Compares historic information from one device or concurrent data from multiple units
- Provides viewing resolutions from one minute to several months



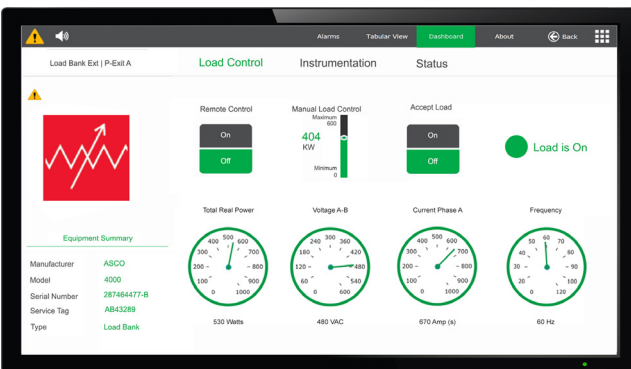
## Power Control Switchgear Detail

- Monitor status of distribution system operation
- Test source paralleling functions
- Visualize Load Management



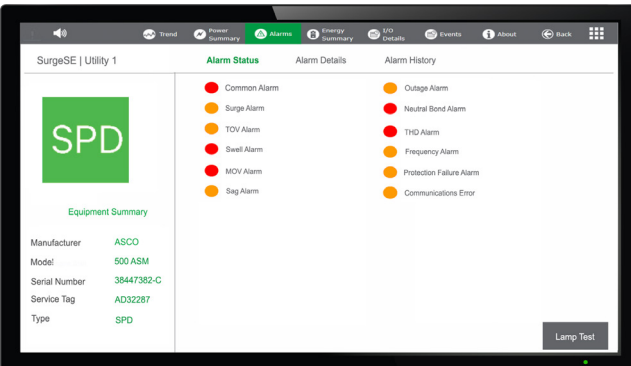
## Transfer Switch Detail Screen

- Presents dynamic one-line diagrams for bypass switches
- Transfers and re-transfers loads
- Manually bypasses time delays
- Enables remote viewing and configuration



## Load Banks Control and Monitoring

- Properly load generators to meet NFPA and other requirements
- Test UPS systems to verify functionality
- Monitor load banks components for proper operation



## Active Surge Monitor

- Monitor and record voltage sags, swells, and transients
- Monitor voltage harmonics, Over/Under Frequency, Protection Failure, and Phase Loss



## Reference Library

- Stores electronic manuals, documents, drawings, and files for access from any CPMS display
- Uploads or downloads reference documents to or from any client using a built-in app
- Optimizes access to files required for monitored equipment

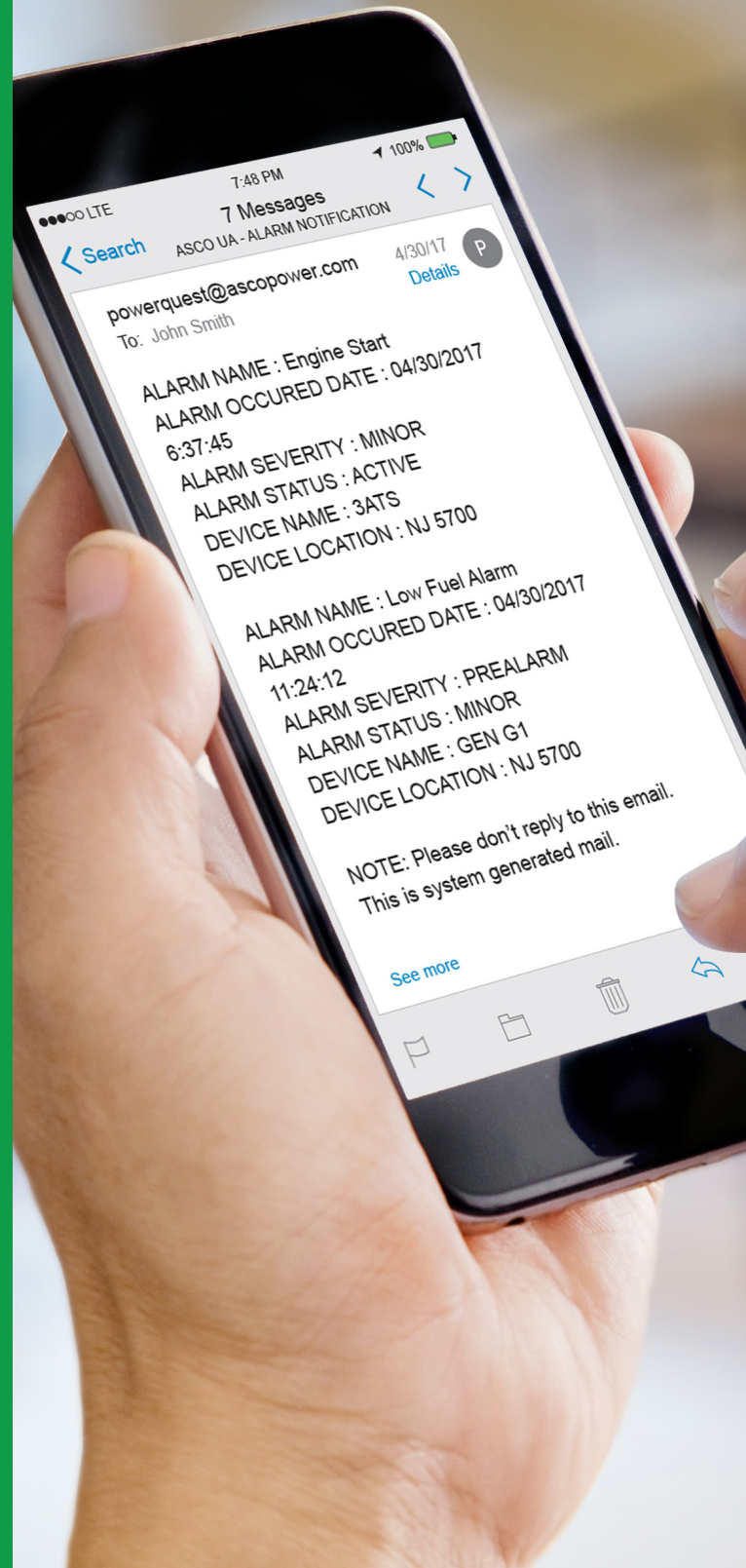


## ALERTS AND NOTIFICATIONS

With the ASCO PowerQuest Critical Power Management System, users always know the exact status of every device in their mission critical power system. Every ASCO CPMS provides users with real-time alerts about changes in power equipment and conditions through Alarm Screens that are viewable on all CPMS displays. Alarms are shown with their severity level to allow users to quickly prioritize responding actions. For in-progress alarms, screens show the name, location, and time stamp for each alarm. When acknowledged, the CPMS automatically records the time and identifies the person who acknowledged the alarm.

When alarms occur, they are displayed on all CPMS displays and are accompanied by an audible signal. With the click of a mouse or a touch of a screen, users can drill-down into details about specific alarm conditions. For generator alarms, the CPMS supplies information required to comply with industry reporting requirements.

Users can configure exactly how alert and alarm notices are transmitted. When power events and conditions meet user-defined criteria, the CPMS can send email alerts to desktop and mobile devices and text messages to smart phones. The CPMS can also utilize SNMP traps to offer advanced alarm communication capabilities. When reportable conditions occur, notices are immediately sent. To avoid nuisance reporting, major and minor alarms occurring during user-defined time-frames are consolidated into a single message.



**Users can receive real-time alerts and notices about power conditions and system events.**

## EVENT LOGGING

The ASCO CPMS provides advanced capabilities for recording and assessing historical data about critical power equipment, conditions, and events. It enables users to examine details about each device in a critical power system.

Severity	Device Name	Alarm Name	Alarm Occurred Date	Status	Alarm Acknowledged Date	Acknowledged By	Overridden Date
Warning	made up #15	Engine Start	5/22/2019 9:18:09 AM	Not Acknowledged	-	-	5/22/2019 9:18:09 AM
Warning	made up #15	Not In Auto	5/22/2019 9:18:28 AM	Acknowledged	5/22/2019 09:19:19 AM	Auto	5/22/2019 9:18:18 AM
Warning	made up #15	Locked Out	5/22/2019 9:18:27 AM	Not Acknowledged	-	-	5/22/2019 9:18:17 AM
Warning	made up #15	Engine Start	5/22/2019 9:17:25 AM	Not Acknowledged	-	-	5/22/2019 9:18:10 AM
Warning	made up #15	Locked Out	5/22/2019 9:17:02 AM	Not Acknowledged	-	-	5/22/2019 9:17:37 AM
Warning	made up #15	Not In Auto	5/22/2019 9:16:46 AM	Acknowledged	5/22/2019 09:17:37 AM	Auto	5/22/2019 9:17:37 AM
Warning	made up #15	Engine Start	5/22/2019 9:16:54 AM	Not Acknowledged	-	-	5/22/2019 9:16:40 AM
Warning	made up #15	Not In Auto	5/22/2019 9:16:18 AM	Acknowledged	5/22/2019 09:16:02 AM	Auto	5/22/2019 9:16:02 AM
Warning	made up #15	Locked Out	5/22/2019 9:16:17 AM	Not Acknowledged	-	-	5/22/2019 9:16:02 AM
Warning	made up #15	Engine Start	5/22/2019 9:14:22 AM	Not Acknowledged	-	-	5/22/2019 9:15:10 AM
Warning	made up #15	Not In Auto	5/22/2019 9:13:36 AM	Acknowledged	5/22/2019 09:14:28 AM	Auto	5/22/2019 9:14:28 AM
Warning	made up #15	Locked Out	5/22/2019 9:13:37 AM	Not Acknowledged	-	-	5/22/2019 9:14:27 AM
Warning	made up #15	Engine Start	5/22/2019 9:13:52 AM	Not Acknowledged	-	-	5/22/2019 9:13:57 AM
Warning	made up #15	Not In Auto	5/22/2019 9:13:08 AM	Acknowledged	5/22/2019 09:13:04 AM	Auto	5/22/2019 9:13:04 AM
Warning	made up #15	Locked Out	5/22/2019 9:13:07 AM	Not Acknowledged	-	-	5/22/2019 9:13:02 AM
Warning	made up #15	Engine Start	5/22/2019 9:13:23 AM	Not Acknowledged	-	-	5/22/2019 9:13:08 AM
Warning	made up #15	Not In Auto	5/22/2019 9:13:27 AM	Acknowledged	5/22/2019 09:13:18 AM	Auto	5/22/2019 9:13:18 AM
Warning	made up #15	Locked Out	5/22/2019 9:13:27 AM	Not Acknowledged	-	-	5/22/2019 9:13:17 AM
Warning	made up #15	Engine Start	5/22/2019 9:09:53 AM	Not Acknowledged	-	-	5/22/2019 9:10:36 AM
Warning	made up #15	Not In Auto	5/22/2019 9:09:47 AM	Acknowledged	5/22/2019 09:09:37 AM	Auto	5/22/2019 9:09:37 AM
Warning	made up #15	Locked Out	5/22/2019 9:09:47 AM	Not Acknowledged	-	-	5/22/2019 9:09:37 AM
Warning	made up #15	Engine Start	5/22/2019 9:09:22 AM	Not Acknowledged	-	-	5/22/2019 9:09:05 AM
Warning	made up #15	Not In Auto	5/22/2019 9:07:12 AM	Acknowledged	5/22/2019 09:07:58 AM	Auto	5/22/2019 9:07:58 AM
Warning	made up #15	Locked Out	5/22/2019 9:07:12 AM	Not Acknowledged	-	-	5/22/2019 9:07:07 AM
Warning	made up #15	Engine Start	5/22/2019 9:06:46 AM	Not Acknowledged	-	-	5/22/2019 9:07:34 AM
Warning	made up #15	Not In Auto	5/22/2019 9:06:32 AM	Acknowledged	5/22/2019 09:06:22 AM	Auto	5/22/2019 9:06:22 AM
Warning	made up #15	Locked Out	5/22/2019 9:06:32 AM	Not Acknowledged	-	-	5/22/2019 9:06:22 AM
Warning	made up #15	Engine Start	5/22/2019 9:05:47 AM	Not Acknowledged	-	-	5/22/2019 9:06:02 AM
Warning	made up #15	Not In Auto	5/22/2019 9:05:36 AM	Acknowledged	5/22/2019 09:04:47 AM	Auto	5/22/2019 9:04:47 AM
Warning	made up #15	Locked Out	5/22/2019 9:05:37 AM	Not Acknowledged	-	-	5/22/2019 9:04:47 AM
Warning	made up #15	Engine Start	5/22/2019 9:02:46 AM	Not Acknowledged	-	-	5/22/2019 9:04:22 AM

An Event Log lists alerts and events recorded through ASCO equipment or via direct monitoring

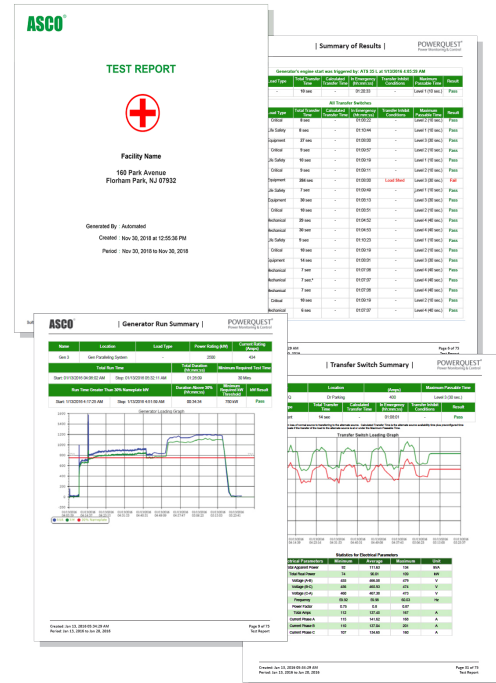
Users can conduct in-depth forensic evaluation by viewing the System Events Screen. This screen displays tracked events and alarm records that include alarm severity and the identity of the acknowledging user. When the CPMS is combined with ASCO recording devices, a Sequence of Events Screen offers even greater detail, chronologically listing system-wide events with real-time millisecond accuracy. These advanced tools enable users to view, sort, and filter data about power events for forensic analysis; generate event reports; and export event sequence records as .CSV files.



## INDUSTRY AND REGULATORY REPORTING

The ASCO CPMS can be configured to generate and distribute documents that make industry and regulatory reporting easy. Engine-generator controllers can be monitored directly, without additional peripheral equipment. The CPMS automatically tracks facility and equipment performance during outages and test events, and begins recording power data when a utility or an engine-generator changes state.

After the last switch has re-transferred to its Normal power source, the CPMS automatically generates a detailed report with an accompanying event log, emails it to recipients, and stores the information for access by all CPMS clients. These documents may be used to comply with industry and regulatory reporting requirements including NFPA 99, NFPA 110, Joint Commission, CALEA, CMS, and even insurers. The following are a few of the reports that can automatically be produced.



## OUTAGE/TEST REPORTS

- Documents performance of individual switches according to user-assigned transfer time requirements
- Provides total and/or calculated transfer time for each switch according to user-configured settings
- For ASCO switches, document accurate transfer times that exclude time-delays to ensure accurate reporting and support compliance

### Generator's engine start was triggered by: DEMO1 at 6/13/2017 2:45:30 PM

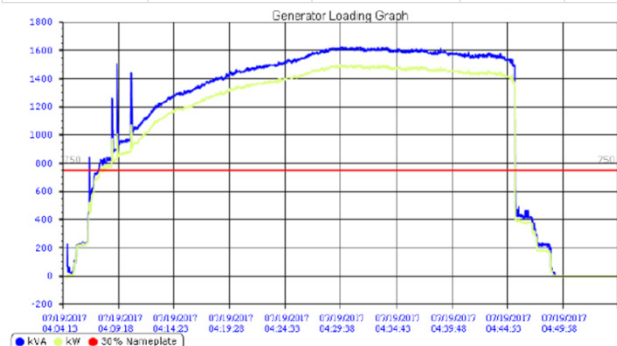
Name	Load Type	Total Transfer Time	Calculated Transfer Time	In Emergency (hh:mm:ss)	Transfer Inhibit Conditions	Maximum Passable Time	Result
DEMO1	-	11 sec.	8 sec.*	00:01:05	-	Level 1 (10 sec.)	Pass

Test reports provided pass/fail results automatically.

## GENERATOR TEST REPORTS

- Directly monitor kW output through an engine-generator's on-board controller
- Monitor exhaust temperature data supplied by generators

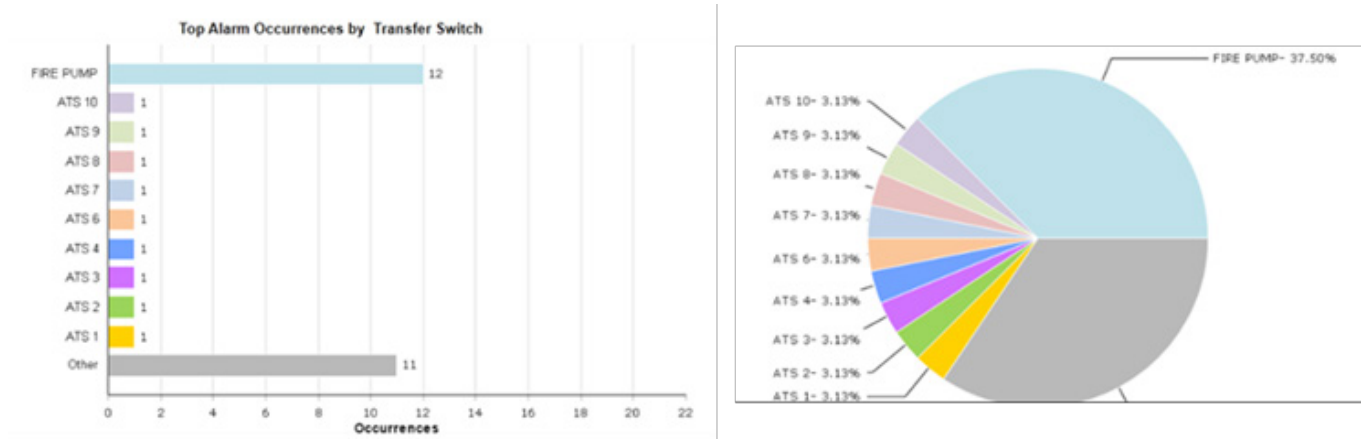
Name	Location	Load Type	Power Rating (kW)	Current Rating (Amps)
Gen 1	ASCO SWGR	EMERGENCY	2500	426
Total Run Time		Total Duration (hh:mm:ss)	Minimum Required Test Time	
Start: 07/19/2017 04:04:18 Stop: 07/19/2018 04:54:41 AM		00:50:23	30 Mins	
Run Time Greater Than 30% Nameplate kW		Duration Above 30% (hh:mm:ss)	Minimum Required kW Threshold	kW Result
Start: 07/19/2017 04:04:18 Stop: 07/19/2018 04:54:41 AM		00:37:29	750 kW	Pass



Generator Test Reports ease regulatory reporting.

## ALARM REPORTS

- Display and analyze alarms over a user-defined time-frame
- Show the 10 most common alarm types using bar charts and pie graphs
- Display daily total alarm occurrences by equipment type
- List alarm quantities for each device

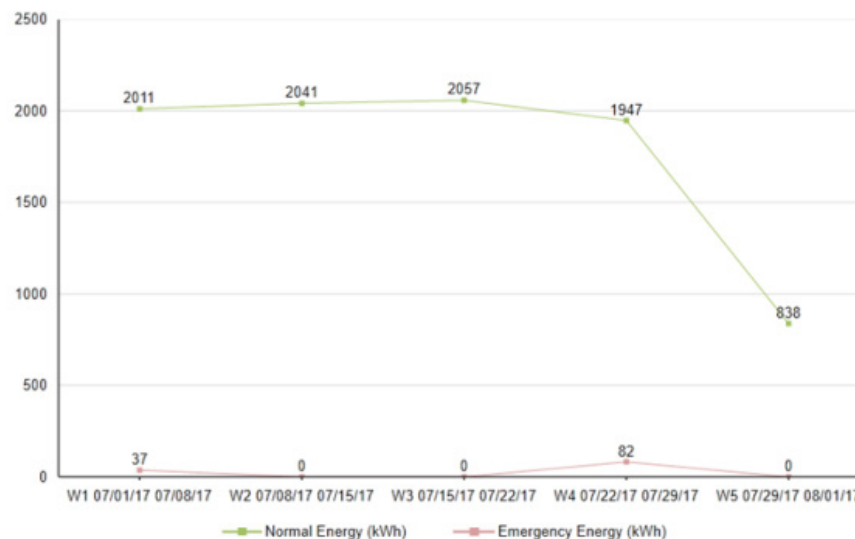


Alarm Reports summarize important information is a single glance.

## ENERGY REPORTS

- Over a user-defined time-frame, compare energy consumption for up to 10 devices by category using a bar chart or pie graph
- Present line graphs of kW usage trends for each monitored device or system
- Aggregates and categorizes data from multiple power meters

Total Transfer Switch Energy Consumption for Report Period					
Name	Location	Rated Ampacity	Type	Maximum Watt Demand	Maximum Watt Demand Occured
ATS 1	GSS	400	-	59.00 kW	7/1/2017 11:46:00 PM
Energy Parameter	Normal		Emergency	Total Energy	Unit
Total Energy Consumption	8,894.00		119.00	9,013.00	Kilowatt Hours



Energy reports detail historical changes in energy consumption



## SETTINGS REPORTS

- Provide an inventory of all monitored electrical devices with their network configurations
- Report full configuration information for all ASCO transfer switch controllers including pickup/dropout, timer, and feature settings
- Report system configuration information, eliminating the need to collect this information manually

DIP Switch Settings	Value	Unit	Normal Source	Value	Unit	Emergency Source	Value	Unit
Software Version	473674-014	-	Voltage Dropout	85	% of nominal	Voltage Dropout	75	% of nominal
Software Date	08/03/09	-	Voltage Pickup	90	% of nominal	Voltage Pickup	90	% of nominal
ATS with Bypass	True	-	Voltage Trip	-	-	Voltage Trip	-	-
Switch Type	OTTS	-	Frequency Dropout	-	-	Frequency Dropout	85	% of nominal
Current Setting	xxxx	amps	Frequency Pickup	-	-	Frequency Pickup	95	% of nominal
Nominal Voltage	255	Vrms	Frequency Trip	-	-	Frequency Trip	-	-
Nominal Frequency is 60 Hz	True	-	Voltage Unbal. Enabled (3Ph N only)	-	-	Voltage Unbal. Enabled (3Ph E only)	-	-
N Voltage Sensing (3 Phase)	True	-	Voltage Unbal. Dropout (3Ph N only)	-	-	Voltage Unbal. Dropout (3Ph E only)	-	-
E Voltage Sensing (3 Phase)	False	-	Voltage Unbal. Pickup (3Ph N only)	-	-	Voltage Unbal. Pickup (3Ph E only)	-	-

Settings Reports list monitored equipment with their network configurations

## ACTIVITY REPORT

- Track valid and invalid login attempts with user names, time-stamps
- Log all control operations completed using the CPMS
- Track changes made to the system or its devices, including adding or deleting equipment, or modifications to configurations with time and user stamps

User	Security Level	Timestamp
mario 165.225.112.89	Admin	11/29/2018 8:15:16 AM
mario 198.22.41.26	Admin	11/29/2018 7:34:13 AM
monitor 104.129.196.158	Monitor	11/28/2018 1:17:23 PM
mario 198.22.41.30	Admin	11/27/2018 12:21:15 PM
mario 198.22.41.30	Admin	11/27/2018 10:54:20 AM
mario 198.22.41.26	Admin	11/27/2018 10:16:51 AM
mario 198.22.41.26	Admin	11/27/2018 9:59:09 AM
mario 198.22.41.26	Admin	11/27/2018 9:54:57 AM
monitor 104.129.196.158	Monitor	11/27/2018 8:46:11 AM
monitor 104.129.196.50	Monitor	11/27/2018 8:15:00 AM
mario 100.8.125.15	Admin	11/27/2018 12:31:52 AM
monitor 104.129.196.158	Monitor	11/26/2018 3:51:12 PM
monitor 104.129.196.158	Monitor	11/26/2018 3:42:53 PM
mario 198.22.41.26	Admin	11/26/2018 3:22:09 PM
mario 198.22.41.26	Admin	11/26/2018 3:18:05 PM

Function	Parameter	Action	Timestamp	User
Dashboard Navigation	3 - Button Text	Modified	11/9/2018 8:22:25 PM	mario 100.8.125.15
Dashboard Navigation	2 - Screen	Deleted	11/9/2018 8:22:25 PM	mario 100.8.125.15
Dashboard Navigation	4 - Uri	Modified	11/9/2018 8:20:58 PM	mario 100.8.125.15

Device Name	IP Address	Action	Timestamp	User
Generator	169.254.1.2	Modified	11/23/2018 12:46:31 PM	mario 100.8.125.15
Easergy P3 PR	192.1.1.1	Modified	11/23/2018 12:18:01 PM	mario 100.8.125.15
PCS4000	192.12.12.12	Modified	11/23/2018 12:08:32 PM	mario 100.8.125.15
CRAC	192.1.1.1	Modified	11/23/2018 12:04:12 PM	mario 100.8.125.15
Protective Relay	192.1.1.1	Modified	11/23/2018 12:00:35 PM	mario 100.8.125.15

Activity Reports track login activity and configuration changes with user IDs and time-stamps



## EVENT AND SEQUENCE OF EVENT REPORTS

- Event Reports list historic events according to time-stamps assigned by the central CPMS Event Log
- Sequence of Event Reports list events according to time-stamps assigned by the originating ASCO devices
- Document when alarms begin and end, and record when they were acknowledged, together with user identity
- Arrange event log data by any combination of parameters and automatically produce associated reports

Sequence Of Events   
 Alarms   
 Event Log

From date

To date

Filter

Clear Filter

Event Id	Event Name	Start Time	Cause	Equipment Location	Equipment Name
1836	Over THD V3	14-Feb-2019 03:35:55.000 AM	V3 THD 3s - 166.6666	Server Room	ION9000
1833	RSP2 Status	14-Feb-2019 03:35:51.000 AM	VSL1 V2 - 0	Server Room	ION9000
1823	Power Down	14-Feb-2019 03:30:12.000 AM	External - PM8000	Server Room	ION9000
1813	Power Down	08-Feb-2019 04:07:03.000 AM	External - PM8000	Server Room	ION9000
1807	SS1 DistState	08-Feb-2019 04:05:04.000 AM	Sag/Swell 1 - Disturbance Start	Server Room	ION9000
1806	SS1 DistState	08-Feb-2019 04:05:04.000 AM	Sag/Swell 1 - VoltsMode changed	Server Room	ION9000
1800	PM1 Volts Mode	08-Feb-2019 04:05:04.000 AM	Front Panel - Changed Setup - user=USER0	Server Room	ION9000
1799	Over THD V3	08-Feb-2019 04:00:06.000 AM	V3 THD 3s - 379.4731	Server Room	ION9000
1795	RSP2 Status	08-Feb-2019 04:00:02.000 AM	VSL1 V2 - 3366.609	Server Room	ION9000
1787	Power Down	28-Jan-2019 10:46:12.000 PM	External - PM8000	Server Room	ION9000
1786	Over THD V3	28-Jan-2019 10:21:14.000 PM	V3 THD 3s - 257.4843	Server Room	ION9000
1782	RSP2 Statue	28-Jan-2019 10:21:11.000 PM	VSI 1 V2 - 3366.651	Server Room	ION9000

1 2 3 4 5 6 7 8 9 10 11 12

PQM Message

Auto-Update   
 Print   
 Export CSV

Event reports detail important information about user-defined events.

## ENERGY TRENDING

The ASCO CPMS offers two levels of trend analysis for assessing power equipment performance. ASCO CPMS features trending screens for essential power information. A CPMS can also be equipped with tools for performing sophisticated forensic analyses.

## System Trending

The CPMS records and stores data for monitored equipment, and uses this data to create charts and graphs of power trends. Users can simultaneously view trends for up to 8 power devices in a single graph. The ASCO CPMS makes it easy to assess data from a single device or compare data from multiple devices.



## Comparing up to 8 different power trends in a single view eases forensic evaluation



## CPMS ENGINEERING SERVICES

To provide the greatest value, ASCO delivers technical support for every PowerQuest CPMS we deliver. Available CPMS Engineering Services include:

### **Dedicated Project Management:**

From project inception to equipment commissioning, all CPMS Engineering Services are overseen by a designated ASCO-employed Project Manager.

### **Facility and Equipment Surveys:**

CPMS Integration Specialists evaluate existing facilities and power systems, assess beneficial CPMS applications, and review network resources.

### **Network Design and Configuration:**

From basic communications to sophisticated self-healing typologies, ASCO CPMS Engineers design new networks or configure existing networks to optimize the function and performance of critical power monitoring and control equipment.

### **Custom Interactive Dashboard Design:**

ASCO can customize system displays to provide:

- One-line diagrams that visualize real-time power flow and equipment status to improve insight into critical power system operation
- Floor plans that show equipment locations and network conditions to quickly locate and address technical issues
- Riser diagrams that overlay real-time equipment metrics, status, and alarms in a vertical, multi-floor view to show electrical dependencies and equipment locations
- Complete fuel system diagrams including valve status, tank capacity, and flow

### **In-House System Integration:**

ASCO provides technical services to fully integrate power equipment and peripheral devices into a CPMS and enable communication with external building management systems.

### **Continuing Technical Support and Service:**

ASCO can optimize critical power reliability and the CPMS user experience throughout the service life of each system.

**On-site Startup** – ASCO Integration Specialists and Technicians provide services that streamline CPMS installation and commissioning

**Technical Support** – ASCO Field Service technicians have access to CPMS Specialists 24 x 7 x 365. This assures the highest level of service and quick response times

**Field Services** - Whether its routine maintenance, emergency repair, or value-added upgrades, ASCO Specialists can provide on-site services needed to maintain reliability, optimize performance, update software, and enhance security



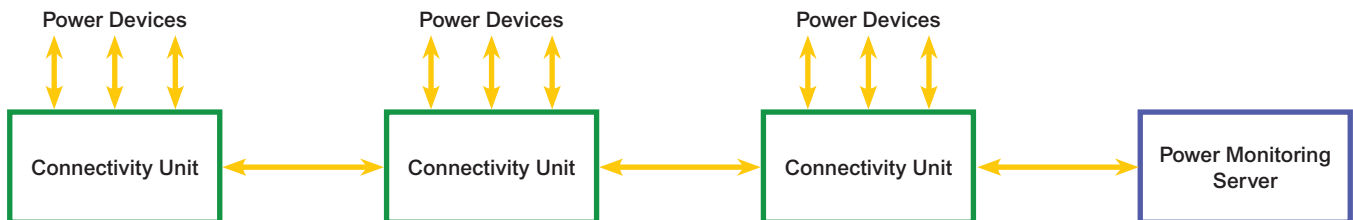
ASCO Model 5160 Connectivity Unit

## 5100 SERIES CONNECTIVITY UNITS

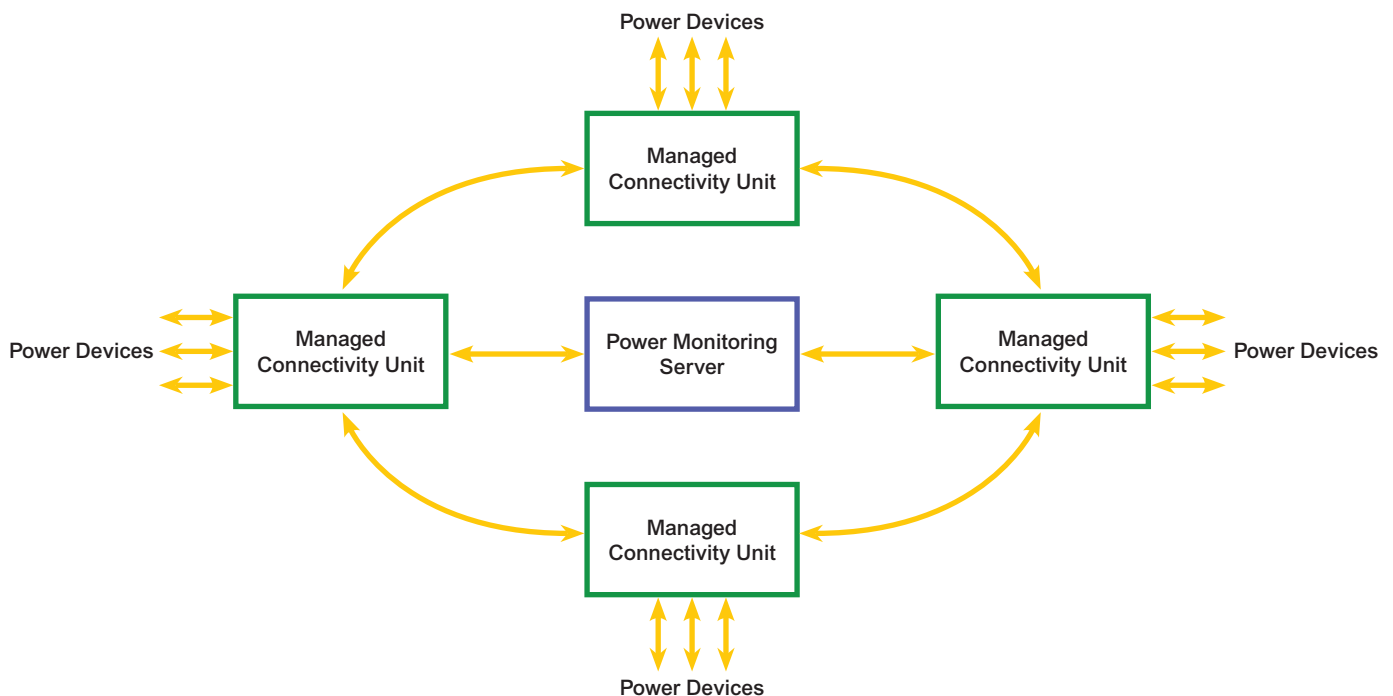
Every ASCO CPMS relies on a network that transmits data using Ethernet. ASCO Connectivity Units convert power communications to Ethernet and connect power devices to the CPMS platform. Using ASCO 5160 SERIES Connectivity Units, it is easy to create a state-of-the-art power management network that maximizes the value of the ASCO CPMS.

- Accept RS-485 serial, Ethernet, and discreet inputs to ModBUS TCP/IP to interact with power devices from major manufacturers
- Sends information to the CPMS platform using Ethernet over fiber or copper.
- Available as Unmanaged Connectivity Units for linear Ethernet networks
- Available as Managed Connectivity Units for redundant communication pathways to increase reliability.

### Install Linear Networks using Unmanaged Connectivity Units

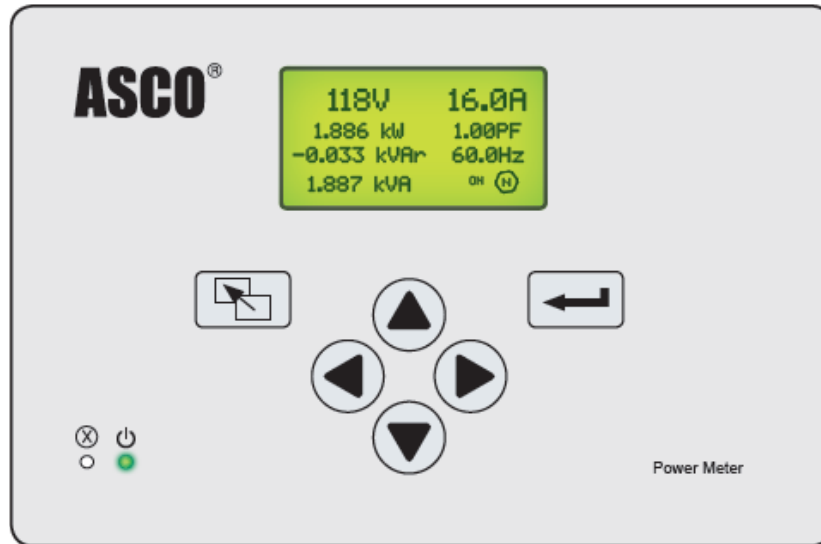


### Install Redundant Networks using Managed Connectivity Units



## 5200 SERIES POWER METERS

ASCO 5200 SERIES Power Meters are used to monitor, display, and communicate key electrical measurements that are critical to understanding the status and condition of power sources and loads. These meters provide the CPMS with information needed to make key decisions about energy, utilization, and load planning. For detailed information about the 5200 SERIES models, see our brochure entitled “ASCO 5210 Digital Power Meter”.



ASCO Model 5210 Power Meter

## 5400 SERIES POWER QUALITY METERS

ASCO Power Quality Meters can be used to increase power reliability while decreasing infrastructure and energy costs. These meters continuously record waveforms at high-speed and identify transients, voltage sags, voltage swells, and harmonics. This information is retained for assessment, reporting, and forensic evaluation. ASCO Sequence of Event Recorders time-stamp power data at the source equipment to enable chronological review of power system events with millisecond accuracy. For detailed information about the 5400 SERIES models, see our brochure entitled “ASCO 5400 SERIES CPMS Power Quality Meters”.



ASCO 5490 Power Quality Meter



ASCO 5400 SERIES Display



# SELECTING A SYSTEM

At the center of every ASCO power management system is an ASCO PowerQuest CPMS server. The following features are found on every CPMS:

- Real-time equipment monitoring and remote access
- Touchscreen display
- Capability to share information with power and building management systems via Modbus, BACnet, and SNMP
- Real-time notifications about power events and alarms via email and text messages
- Ability to control engine-generator, transfer switches, load banks, and more from a single intuitive interface

Offering multiple off-the-shelf configurations and a wide range of custom engineered options, there is an ASCO CPMS system for every need.

- **Choose a 5700 SERIES system** for high-value features and robust performance in packages that ship, install, and commission quickly.
- **Choose a 5900 SERIES system** to enhance any application with custom-engineered one-line electrical diagrams. These provide interactive metrics for real-time at-a-glance visualization and forensic playback capabilities for power events.

5700 SERIES		
5710	5750	5790
Water/Wastewater Facilities Small Data Facilities Small & Midsize Commercial	Single-Building Healthcare Mid-Range Data Centers Complex Commercial Industrial Process Operations	Single-Building Hospitals Complex Data Centers Very Large Commercial Buildings Multi-Building Campuses
5900 SERIES		
All 5900 SERIES systems enhance any application with custom-engineered one-line electrical diagrams. These provide interactive metrics for real-time at-a-glance visualization and provide forensic playback capabilities for power events.		

The capabilities and features of each SERIES are detailed below. Contact an ASCO representative to optimize a CPMS configuration.





### 5700 SERIES Critical Power Management Systems

In the 5700 SERIES, three models provide a comprehensive range of features for monitoring power systems with up to 247 critical power devices and 100 clients. These preconfigured solutions can be shipped and installed quickly.

			CAPABILITIES											HARDWARE FEATURES	
			SIMPLE			ENHANCED				ADVANCED				Redundant Storage & Power	Redundant Servers
Model	Application	Max Devices/Clients	System Visualization	Real-Time Monitoring	Alarming & Notification	Event Logging	Energy Trending	Automated Reports	Reference Library	System & Facility Dashboards	Multi-Facility Management	Visual Event Playback			
5700 SERIES – Comprehensive Capabilities in Off-the-Shelf Solutions															
5710	Essential monitoring & control	32/3	Yes			No			Optional Preconfigured	Optional Preconfigured	Optional Preconfigured	No	No		
5750	Enhanced monitoring, control, & compliance/ event reporting	64/25	Yes			Yes						No	No		
5790	Comprehensive visibility & redundant components	256/100	Yes			Yes						Yes	No		

### Ordering Information

5700 SERIES CPMS Servers		
Model	BOM	Description
5710	1024296	5710 Critical Power Management System with power quality analytics, HD Touchscreen, Server, and CPMS software for up to 32 devices. <b>Startup services recommended</b>
5750	1024297	5750 Critical Power Management System with power quality analytics, automated reports, HD Touchscreen, Server, and CPMS and Power Quality software for up to 64 devices. <b>Startup services recommended.</b>
5790	1024299	5790 Critical Power Management System with power quality analytics, automated reports, HD Touchscreen, Server with expanded data storage, and CPMS software for up to 247 devices. Includes server rack rails. <b>Startup services recommended.</b>



5900 SERIES Critical Power Management Systems

The 5900 SERIES serves the largest and most sophisticated systems. Every ASCO 5900 SERIES system is custom engineered meet virtually any power monitoring and management need. These servers provide detailed insight into power systems of any scale, whether they are located across the building or across the globe.

		Max Devices/Clients	CAPABILITIES										HARDWARE FEATURES	
			SIMPLE			ENHANCED				ADVANCED			Redundant Storage & Power	Redundant Servers
Model	Application	System Visualization	Real-Time Monitoring	Alarming & Notification	Event Logging	Energy Trending	Automated Reports	Reference Library	System & Facility Dashboards	Multi-Facility Management	Visual Event Playback			
5900 SERIES – Engineered-to-Order for Any Critical Power Need*														
5910	Custom hardware configurations & facility-based screens for monitoring, controlling, & compliance/event reporting for sophisticated power systems	Engineered per Project Specification	Yes	Yes				Engineered per Project Specification				No	No	
5950	Custom hardware configurations & facility-based screens — comprehensive visibility & redundant components for large power systems & multi-building sites		Yes	Yes								Yes	No	
5990	Redundant servers & components together with custom screens & dashboards for the most sophisticated facilities		Yes	Yes								Yes	Yes	

Ordering Information

5900 Series	
Model	Send Request for Quote to Corporate at <a href="mailto:CAMSolutions@ascopower.com">CAMSolutions@ascopower.com</a>
5910	
5950	
5990	







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