

PowerCommand Cloud™ Remote Monitoring System



Power Generation Telematics

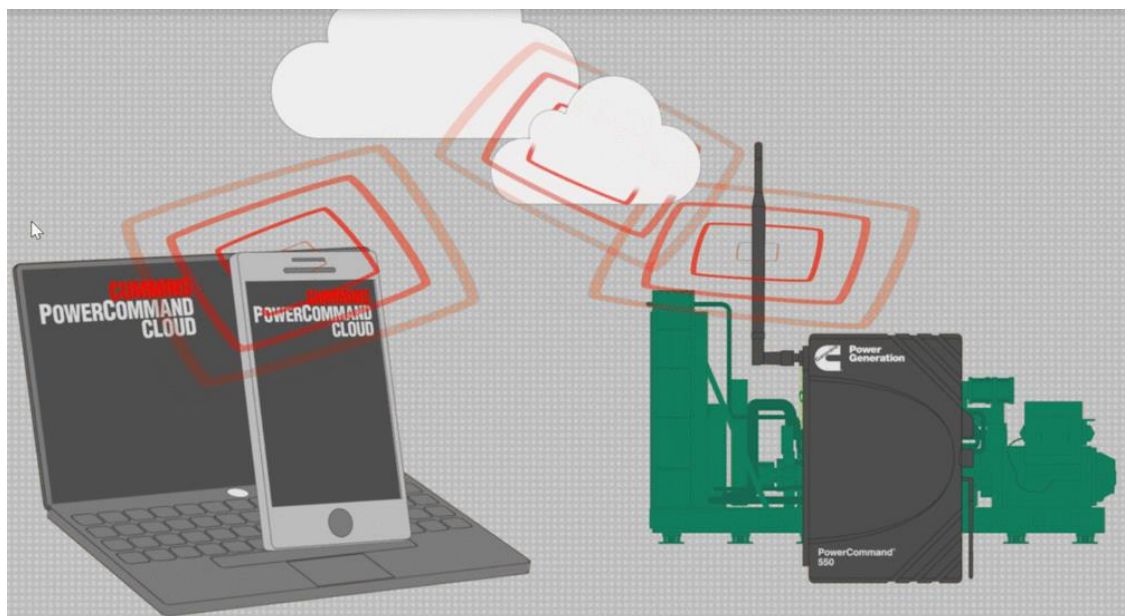
Description

The PowerCommand Cloud™ is a robust and reliable remote monitoring system that provides information and send notifications to ensure your generator is available when you need it.

With easy-to-use mobile and web interfaces, it sends notifications and gives you instant access to your equipment enabling real-time monitoring and control so you can make the right decisions, right away – thus minimizing downtime and maximizing power system performance.

Highlights

- Site and asset status at a glance
- Notifications
- Real-time Remote Monitoring through PowerCommand Cloud™
- Asset Control
- Convenient access through web UI and mobile app
- Multiple sites and equipment management
- Secure data transmission and storage
- Data Trending
- PowerCommand Controls are supported by a worldwide network of independent distributors who provide parts, service and warranty support



Features

- **Communication:** The PowerCommand 500/550 **Cloud Link** communicates to the Power Generation asset controls and communicates telemetry data to the PowerCommand Cloud™.
- **Monitoring:** The PowerCommand **Web and Mobile app** monitors customer account and site information along with monitoring asset data (generator, transfer switch and sensors).
- **Asset Control:** The PowerCommand **Web and Mobile app** can control the system with start, stop and fault reset commands.
- **Notification:** The PowerCommand **Cloud** has the capability to notify users through email to users when an event becomes active.
- **Account/Fleet Management:** The PowerCommand **Web app** offers fleet management capability.
- **User Interface:** The PowerCommand 500/550 **Cloud Link** has a user interface for setup purposes and the web and mobile app monitoring purposes.
- **Event Storage and Export:** The PowerCommand **Cloud** stores the event log while the web and mobile app enables the user to monitor the event logs.
- **Data Storage and Export:** The PowerCommand **Cloud** stores the data and the web app enables data export and graphing of data trends.
- **On Device Diagnostics:** The PowerCommand 500/550 **Cloud Link** offers on device diagnostics.
- **Software Update:** The PowerCommand 500/550 **Cloud Link** offers local software update capability while the PowerCommand 500/550 **Web app** enables execution of the remote software updates.



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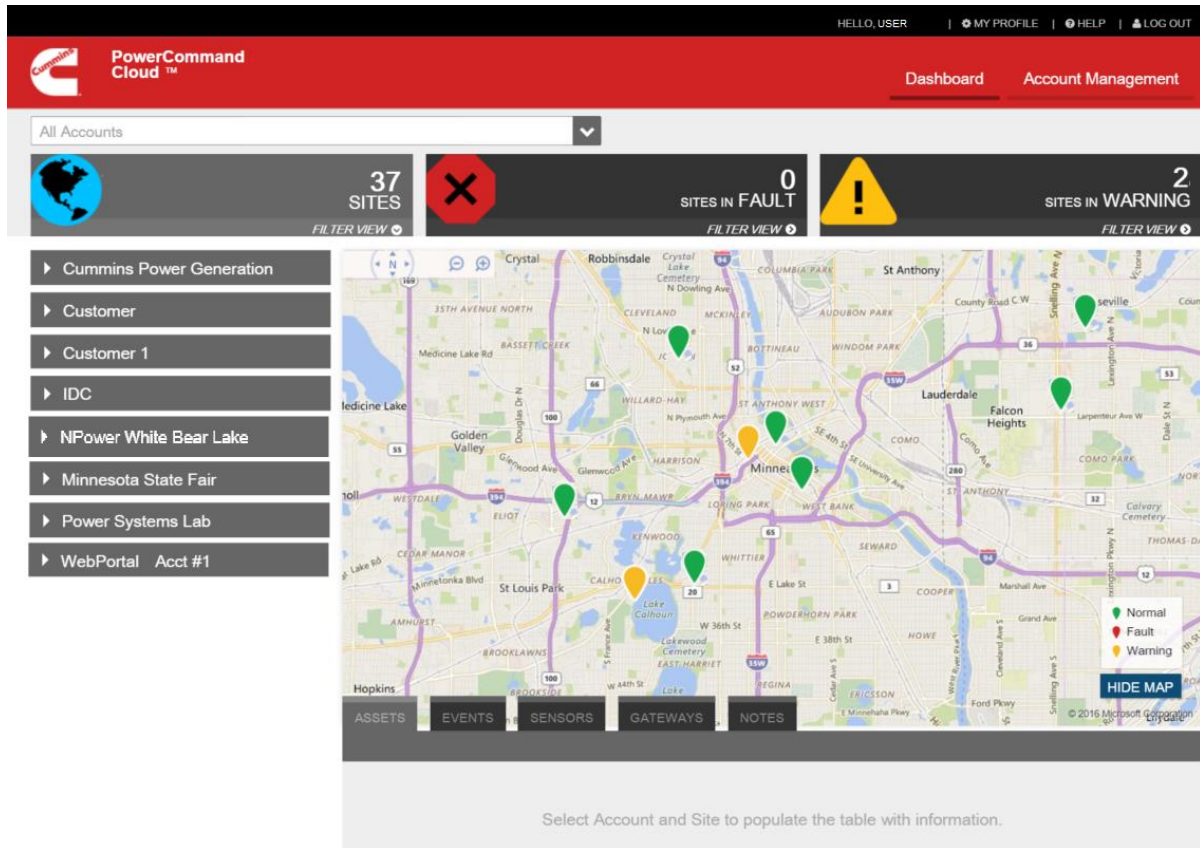
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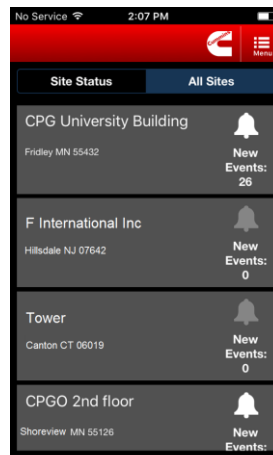
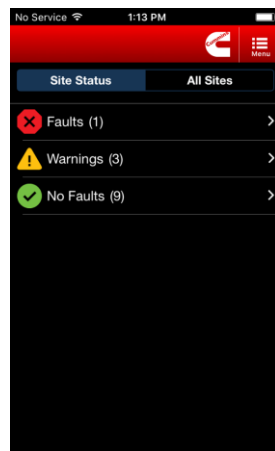
PowerCommand Cloud™ User Interface

Users can remotely access real-time information using mobile and web app.



The web Dashboard allows users to view the status of all configured devices in one glance.

The Dashboard provides an overall system status at a glance that may include multiple sites and devices connected to the cloud. Users have the flexibility to filter assets by status and location and then access information about specific sites and equipment.



Mobile APP Dashboard screens.



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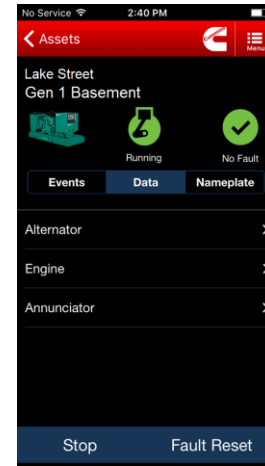
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Genset Information

The screenshot shows the PowerCommand web interface for a Genset2. It includes a navigation bar, a main content area with a Genset2 image and details (Model: C1000 D6, Serial Number: PCC3300, Control Model: PCC3300, Description: Engine Model: GST30G4, Standard Alternator: HCl6K, Frequency: 60Hz), a Run Status section (Stopped), and a Control section (Remote Start, Remote Stop, Fault Reset). Below this are tabs for DETAILS, EVENTS, DATA TRENDING, and NOTES. The DATA TRENDING tab is active, showing three data tables: Annunciator Data, Alternator Data, and Engine Data.

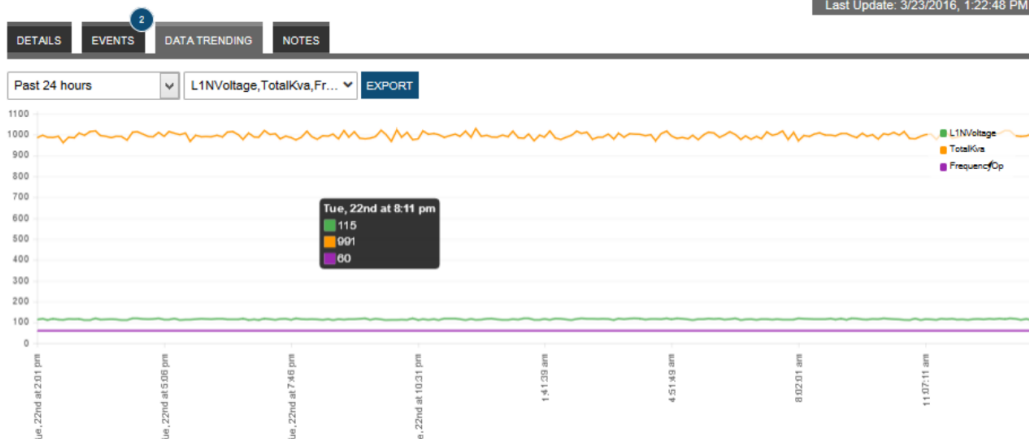
Annunciator Data	Alternator Data	Engine Data																																																										
<ul style="list-style-type: none"> Supplying Load Running Common Alarm Not In Auto High Battery Voltage Low Battery Voltage Charger AC Failure Fall To Start Low Coolant Temperature Pre High Engine Temperature High Engine Temperature Pre Low Oil Pressure Low Oil Pressure 	<table border="1"> <thead> <tr> <th></th> <th>L1</th> <th>L2</th> <th>L3</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>Voltage L-L</td> <td>0</td> <td>0</td> <td>0</td> <td>V</td> </tr> <tr> <td>Voltage L-N</td> <td>0</td> <td>0</td> <td>0</td> <td>V</td> </tr> <tr> <td>Current</td> <td>44</td> <td>43</td> <td>44</td> <td>A</td> </tr> <tr> <td>Frequency</td> <td>0</td> <td></td> <td></td> <td>Hz</td> </tr> <tr> <td>Total kVA</td> <td>0</td> <td></td> <td></td> <td>kVA</td> </tr> <tr> <td>Total kW</td> <td>0</td> <td></td> <td></td> <td>kW</td> </tr> <tr> <td>Total Power Factor</td> <td>1</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		L1	L2	L3	Units	Voltage L-L	0	0	0	V	Voltage L-N	0	0	0	V	Current	44	43	44	A	Frequency	0			Hz	Total kVA	0			kVA	Total kW	0			kW	Total Power Factor	1				<table border="1"> <thead> <tr> <th>Value</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>Battery Voltage</td> <td>27 V</td> </tr> <tr> <td>Average Engine Speed</td> <td>0 rpm</td> </tr> <tr> <td>Coolant Temperature</td> <td>87.80 °F</td> </tr> <tr> <td>Oil Temperature</td> <td>87.80 °F</td> </tr> <tr> <td>Oil Pressure</td> <td>52.20 psi</td> </tr> <tr> <td>Fuel Level</td> <td>- %</td> </tr> <tr> <td>Fuel Rate</td> <td>- Gal/hr</td> </tr> <tr> <td>Engine Runtime</td> <td>1643.90 Hours</td> </tr> </tbody> </table>	Value	Units	Battery Voltage	27 V	Average Engine Speed	0 rpm	Coolant Temperature	87.80 °F	Oil Temperature	87.80 °F	Oil Pressure	52.20 psi	Fuel Level	- %	Fuel Rate	- Gal/hr	Engine Runtime	1643.90 Hours
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The genset status and telemetry information is available via both the mobile app and web app.



- **Asset Details:** Easy access to Generator's details such as model, serial number, and control model.
- **Annunciator Data:** This section displays the key status, warning and fault events where color coding is used (green, amber, red) depending on the event severity according to NFPA110.
- **Alternator Data:** User can access vital electrical genset information.
- **Engine Data:** Engine information is available in this section.
- **Data Trending:** The user can create graphs for a particular device by selecting a parameter and duration. In addition, asset data can be exported to .csv files.

The screenshot shows the 'DATA TRENDING' configuration screen. It includes a 'Select Parameters' dropdown menu with options for L1N Voltage, L2N Voltage, L3N Voltage, L1L2 Voltage, and L2L3 Voltage. There is also an 'EXPORT' button and a 'Last Update' timestamp of 3/23/2016, 1:22:48 PM.



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Automatic Transfer Switch (ATS) Information

ATS status and telemetry information is available on the ATS page. The user can also create data trend graphs for a particular device by selecting a parameter and duration.

The screenshot displays the PowerCommand Cloud interface for an Automatic Transfer Switch (ATS). The top navigation bar includes 'Dashboard' and 'Account Management'. The main content area is divided into several sections:

- ATS Details:** Model: OTPCB, Serial Number, Description: Ampere Rating: 40 - 4000A, Transition Type: Open (In-Phase) and Open (Delayed). A green checkmark indicates 'Normal' status.
- Switch State:** Shows 'Source 1 Connected' and 'Control' buttons: Start Test, Stop Test, and Fault Reset.
- Data Tables:**
 - Annunciator Data:** A list of events with color-coded severity (green, amber, red).
 - Source 1 Data:**

	L1	L2	L3	Units
Voltage L-L	120	0	0	V
Voltage L-N	120	0	0	V
Frequency	60			Hz
 - Source 2 Data:**

	L1	L2	L3	Units
Voltage L-L	0	0	0	V
Voltage L-N	0	0	0	V
Frequency	0			Hz
 - Load Data:**

	L1	L2	L3	Units
Voltage L-L	120	0	0	V
Voltage L-N	120	0	0	V
Load-Frequency	60			Hz
Kilowatts	0			KW
Power Factor	-0.01			
KVA	3			KVA
KVAR	29			KVAR
 - Source Status:** Shows Source 1 as 'Available' and Source 2 as 'Connected'.

- **Asset Details:** Easy access to ATS's details such as model, serial number, and control model.
- **Annunciator Data:** This section displays the key status, warning and fault events where color coding is used (green, amber, red) depending on the event severity according to NFPA110.
- **Sources Data:** User can access vital electrical source information including status.
- **Load Data:** Load information is available in this section.
- **Data Trending:** The user can create graphs for a particular device by selecting a parameter and duration. In addition, asset data can be exported to .csv files.

Sensors

By selecting the Sensors tab the user can view all configured sensors in the inputs. In addition to device specific Inputs, the user can add an AUX 101 (8-configurable inputs) and an AUX 102 (4-non configurable discrete inputs) for additional remote monitoring capability. The Sensors Page displays configured sensors (states/values, low warnings and high warnings). Similar to the generator set and transfer switch data, the user can access specific event logs associated with all configured sensors.

Notifications

Get notified when your genset needs attention. PowerCommand Cloud™ sends notifications and gives you instant access to your equipment enabling real-time monitoring and control so you can make the right decisions, right away — thus minimizing downtime and maximizing power system performance.



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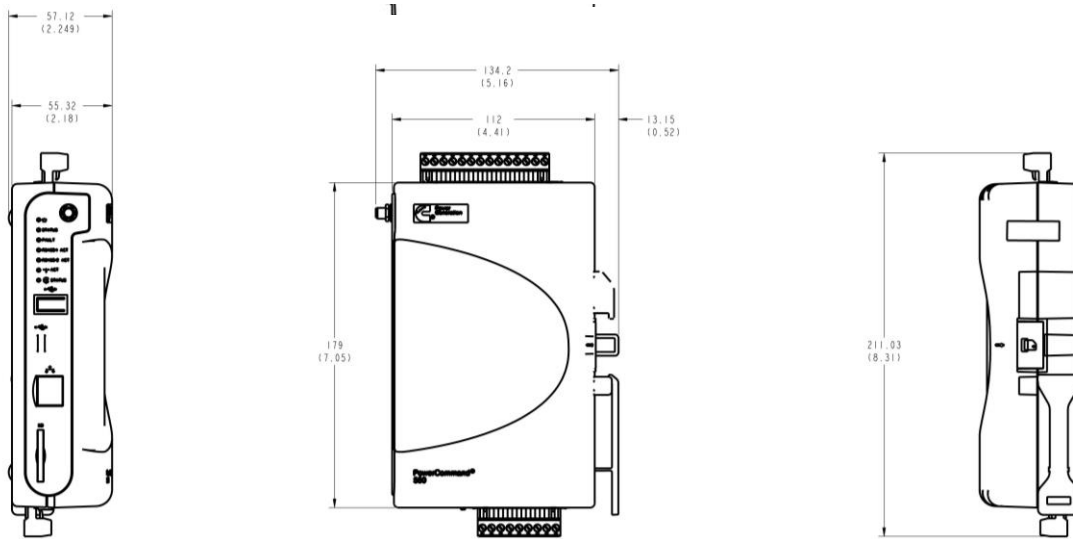
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ICES-003B

Dimensions of the PC 500/550 Cloud Link



Dimensions are millimeters (inches)

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System requirements

Web App

- PC or Macintosh computer, tablet, smart phone
- Browser: Internet Explorer, version 8.0 or later, Google Chrome, Firefox, Safari.
- Minimum screen resolution, 1024 x 768

Gateway

- Browser: Internet Explorer, version 8.0 or later.
- Operating System: Microsoft Windows, Mac OS X or Linux
- Microsoft Silverlight, version 5.0 or later
- Windows Mobile Device Center
- Minimum screen resolution, 1024 x 768
- Network: 10/100 megabit Ethernet for the primary physical connection
- The cellular service provider must have a network to support 3G service

Language

The user interface and manuals are available in English.

Hardware requirements

For installation and communication the following additional hardware may be required:

- SIM card (GSM)
- Modbus cable
- Antenna extension cable
- PowerCommand Input/Output AUX 101 Module
- PowerCommand Input/Output AUX 102 Expansion Module

Modbus controls

There is no additional hardware required for Modbus controls: PS0500, PCC1301, 1302, 2300 and 3300.

LonWorks controls

Required hardware for LonWorks-based controls: PCC2100, 3100, 3200 and 3201 generator set controls and OTPC, BTPC, OHPC and CHPC transfer switch controls:

- PowerCommand Lon Gateway LonWorks to Modbus Converter
- PowerCommand Network Communications Module (NCM)
- ModLon Connection Cable

Additional hardware required for non-communicating OTEC, GTEC or third-party transfer switch controls and third-party generator set controls:

- PowerCommand Lon Gateway LonWorks to Modbus Converter

- PowerCommand Network Communication Module (CCM-G)
- PowerCommand Control Communication Module (CCM-T)
- PowerCommand Input/Output AUX 101 Module
- PowerCommand Input/Output AUX 102 Expansion Module

Modbus communications

A shielded twisted pair cable, Belden 9729 cable or equivalent, is recommended for Modbus communication between the PowerCommand 500/550 and any configured devices.

Power supply requirements

The use of a power supply, with the following specification, is recommended. It is also recommended to connect the power supply and **PowerCommand 500/550 Cloud Link** to an uninterruptible power supply (UPS).

Voltage range	12 to 24VDC
Current (12V typical)	250mA
Current (24V typical)	125mA
Power (typical)	3.0W
Power (maximum)	5.0W

Environment

Operating temperature	-20°C to 70°C (-4°F to 158°F)
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	85% RH, non-condensing

Mounting and installation

PowerCommand 550/500 is DIN rail mountable and should be installed in a location suitable for telecommunications, information technology or networking equipment.

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Standard product contents

- PowerCommand 500 or 550 Cloud Link
- Antenna (GSM)
- USB On-The-Go (OTG) cable
- Ethernet cable
- Quick Start Guide
- Quick Troubleshooting Guide
- Warranty Statement
- CD containing Owner's Manual, Quick Start Guide, Quick Troubleshooting Guide and Warranty Statement in English

Accessories

- A035C381 Antenna Extension (12ft)
- 0541-1291 PowerCommand Input/Output AUX 101 Module
- 0541-0772 PowerCommand Input/Output AUX 102 Expansion Module
- A054V134 Lon Gateway - LonWorks to Modbus Converter
- 0541-0770 Network Genset Communications Module (NCM) for PCC 2100
- 0541-0813 Network Genset Communications Module (GCM) for PCC 3100
- 0541-0809 Network Genset Communications Module (NCM) for PCC 3200/3201
- 0541-0810 Controls Communications Module, generator set (CCM-G)
- 0541-0811 Controls Communications Module, transfer switch (CCM-T)
- 0541-0868 Network Communications Module (NCM) for OTPC/BTPC, >1000 A

Ordering information

Part number	Description
A059Y211	PC 500 Cloud Link N (up to 2 devices)
A059Y210	PC 550 Cloud Link N (up to 12 devices)

See your distributor for more information.

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