Power Generation

PowerCommand® 500/550 Remote Monitoring System

Complete remote monitoring of your power system

The PowerCommand 500 series provides a convenient means of remotely monitoring generator sets, transfer switches, sensors and output controls. Users can access the remote monitoring device from any PC or Mac computer using a Microsoft Silverlight-enabled web browser; no additional software is required. Multiple users can monitor the power system equipment simultaneously.

PowerCommand 500 series users can monitor generator set data, such as annunciator, alternator and engine data, as well as transfer switch data, such as source, load and switch connection status. Expandable I/O modules can provide additional monitoring and controlling capabilities.

Features

- **Communicates:** PowerCommand 500/550 communicates to Cummins Power Generation controls (generator sets, transfer switches and expandable I/O modules) via Modbus. Legacy controls will require a LonWorks to Modbus converter (Modlon II Gateway).
- **Monitors:** PowerCommand 550 monitors up to twelve devices in any combination of generator sets, transfer switches and up to three expandable I/O modules. PowerCommand 500 monitors up to two devices in any combination of generator sets, transfer switches or expandable I/O modules.
- **Controls:** User can remotely start and stop generator sets; remotely start and stop transfer switch tests; and remotely reset and acknowledge warning type faults on generator sets and transfer switches. User can also remotely activate and deactivate output controls.
- **Notifies:** When an event becomes active, the user can choose to receive notifications via SMTP (email), SMS (text) and SNMP traps.
- **User Interface:** PowerCommand 500/550 employs a straightforward, icon-based graphical interface for monitoring data and controlling devices.

Features (continued)

- **Data Logs:** PowerCommand 500/550 data logs contain detailed device data such as alternator, engine, source and load values. The user can extend data log memory with either an SD memory card or a USB flash drive. With the PowerCommand 550, a user can export data logs.
- **Event Logs:** PowerCommand 500/550 stores system and device events, which include faults and warnings triggered on generator sets, transfer switches, sensors and PowerCommand 500/550. With the PowerCommand 550, a user can export event logs.
- **Reports:** Users can create and view device reports containing selected parameters over a specified time duration. With the PowerCommand 550, a user can export these customized reports.
- **Diagnostics:** Users can remotely diagnose Modbus communication status, wireless status and system performance data.
- **Security:** PowerCommand 500/550 has enhanced security with 128-bit Secure Sockets Layer (SSL) encryption. The system is also username and password protected. Users are assigned one of three access levels—Administrator, Operator, Read-Only—providing various operation and functionality at each access level.

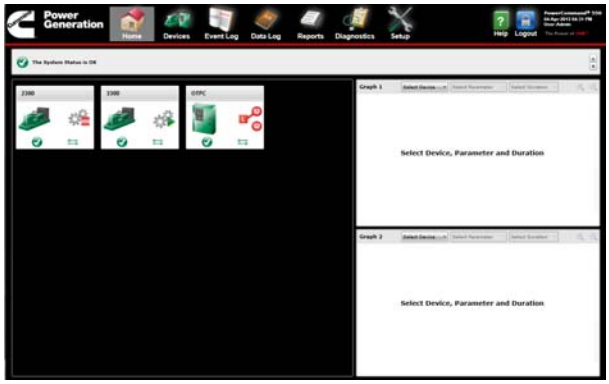
Summary

PowerCommand 500/550 enables remote monitoring of Cummins Power Generation and third-party equipment, including generator sets, transfer switches and sensors and output controls.

Connectivity and notifications

The PowerCommand 500/550 communicates to controls using Modbus RTU communication protocol through two RS485 channels on the device. All Cummins Power Generation generator set controls using Modbus can be directly connected, while Cummins Power Generation generator set and transfer switch controls using PowerCommand LonWorks can communicate via a PowerCommand ModLon II Gateway LonWorks to Modbus converter. The PowerCommand 500/550 is connected to a TCP/IP network through the Ethernet connection. This allows the user to access the web-based user interface, login and view the overall status of the power system over the network. The user can receive notifications via SMTP (e-mail) and SNMP traps. Additional models allow users to receive SMS (texts) by using GSM or CDMA-based cellular modules. The user can set up an account with the wireless service provider of his/her choice.

Home



Home Page allows the user to view the status of all configured devices in one glance.

The Home Page provides an overall system status of all configured devices. Within each configured generator set, there are icons which provide fault, run and communication status. Within each configured transfer switch, there are icons which provide fault, switch position, source availability and communication status. The Home Page also allows the user to create graphs for a particular device by selecting a parameter and a pre-configured duration.

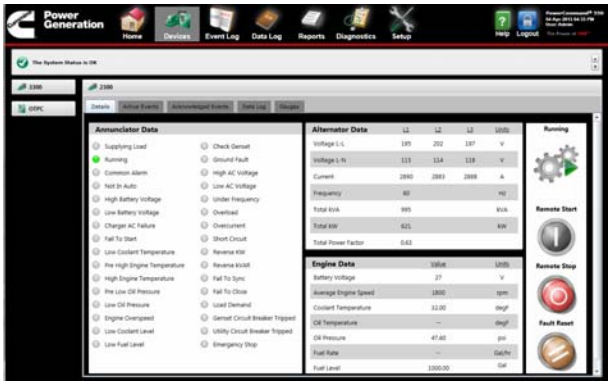
The Menu Bar allows for intuitive and efficient navigation among devices, system event log, system data log, reports, diagnostics and setup. The Systems Status Bar continuously displays active events associated with the configured power system. The Menu and System Status bars are viewable on all pages as the user navigates throughout the user interface.

Setup

Setup Page enables configuration of the device and the network through easy-to-use guided wizards.

The Setup Page has several tiles that allow the user to easily configure their power system for remote monitoring. Through the use of simple wizards, the user can configure the network settings, devices, data log preferences, user profiles, notifications, date/time, and mail settings. Adding to this convenience is the ability to update the PowerCommand 500/550's software. Once the user has saved the updated software file to their personal computer, the software update process can be easily executed remotely through the user interface.

Generator set data



Clicking on the Home Page generator set icon navigates the user to the details page, providing a snapshot of the annunciator, alternator and engine data.

By selecting any configured generator set on the Home Page, the user can view all the commonly used parameters usually accessed through the human machine interface (HMI) or annunciator panel. The display data is shown on three different panels: Annunciator, Alternator and Engine. The annunciator panel displays extended annunciator parameters; whereas, the Alternator and Engine panels display electrical and engine parameters respectively.

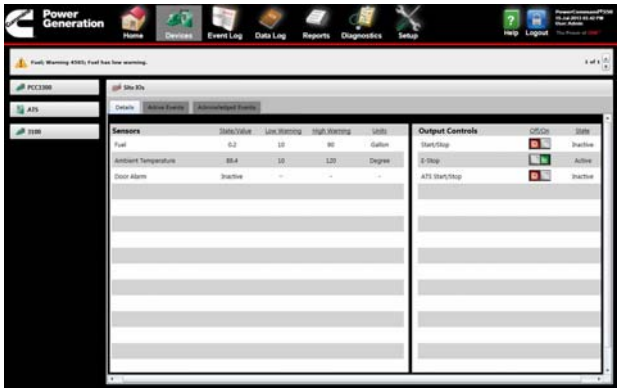
Within this configured generator set detailed view, the user is also able to view event logs, data logs and gauges associated with that particular generator set. The generator set data page also allows the user to start or stop a generator set with the Start and Stop buttons. Additionally, the user can reset the warning type faults associated with that particular generator set with the Fault Reset button.

Transfer switch data

Clicking on the Home Page transfer switch icon navigates the user to the details page, providing a snapshot of annunciator, load and source status data.

By selecting any configured transfer switch on the Home Page, the user can view all the commonly used parameters. The data is displayed using panels, such as Annunciator, Load and Source Status. Similar to the generator set data, the user can access specific event and data logs associated with that configured transfer switch. The transfer switch details page also displays the Source Status visually, while the Start and Stop buttons allow the user to remotely test the transfer switch. Additionally, the user can reset the warning type faults associated with that particular transfer switch with the Fault Reset button.

Sensors and output controls data



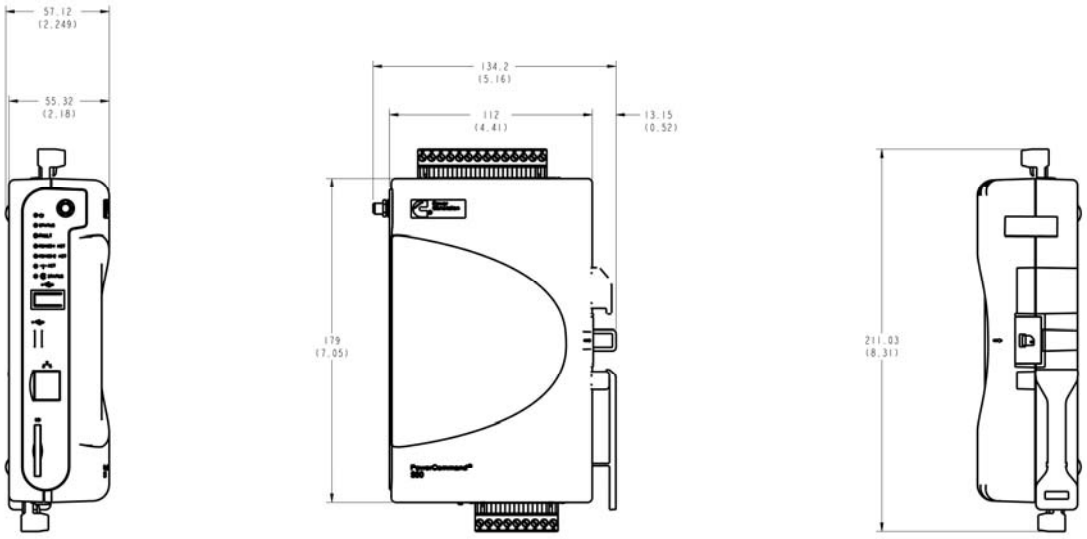
Clicking on the Home Page building icon navigates the user to the details page, providing a snapshot of all configured sensors or output controls.

By selecting the Building icon on the Home Page, the user can view all configured sensors and output controls. In addition to device specific I/Os, the user can add an AUX 101 (8-configurable inputs and 8-discrete outputs) and an AUX 102 (4-non configurable discrete inputs and 8-discrete outputs) for additional remote monitoring and controlling capability. The Sensors and Output Controls Page displays configured sensors (states/values, low warnings and high warnings) and output controls (statuses and states). The user can remotely activate and deactivate output control states by clicking the off/on switch. Similar to the generator set and transfer switch data, the user can access specific event logs associated with all configured sensors.

Certifications

UL	UL 60950-1 Information Technology Equipment, US and Canada Listed	FC	Compliant with Federal Communications Commission Part 15
CSA	CAN/CSA-C22.2 NO. 60950-1-07	RoHS	Compliant with Directive 2002/95/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
CE	Compliant with the provisions of all applicable CE directives		

Dimensions



Dimensions are millimeters (inches)

System requirements

- PC or Macintosh computer
- 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

Languages

The user interface is available in the following languages: English, Brazilian Portuguese, Chinese, French and Spanish.

Modem

The cellular service provider must have a network to support 2G GPRS service.

Hardware requirements

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

- Secure Digital (SD) memory card
- USB 2.0 flash drive
- SIM card
- Modbus cable
- Antenna extension cable
- PowerCommand Input/Output AUX 101 Module
- PowerCommand Input/Output AUX 102 Expansion Module

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 ModLon II 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 ModLon II 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 controls

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

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 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.

Standard product contents

- PowerCommand 500 or 550
- Antenna (GSM or CDMA models only)
- 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 multiple languages

Part numbers

- ☐ A040K848 PowerCommand 550 LAN
- ☐ A040K850 PowerCommand 550 GSM
- ☐ A040K853 PowerCommand 550 CDMA
- ☐ A040X126 PowerCommand 500 LAN
- ☐ A040X127 PowerCommand 500 GSM
- ☐ A040X129 PowerCommand 500 CDMA

Accessories

- ☐ 0541-1291 PowerCommand Input/Output AUX 101 Module
- ☐ 0541-0772 PowerCommand Input/Output AUX 102 Expansion Module
- ☐ 0541-1149 PowerCommand ModLon II 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
- ☐ A035C381 Antenna Extension Cable (12')
- ☐ A040T087 ModLon Connection Cable

Power Generation

Our energy working for you.™
www.cumminspower.com

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA

Phone 763 574 5000
Fax 763 574 5298

Asia Pacific
10 Toh Guan Road #07-01
TT International Tradepark
Singapore 608838

Phone 65 6417 2388
Fax 65 6417 2399

Brazil
Rua Jati, 310
Guarulhos – Sao Paulo
CEP – 07180-140

Phone 55 11 2186 4195
Fax 55 11 2186 4729

Europe, CIS, Middle East & Africa
Manston Park Columbus Ave.
Manston Ramsgate
Kent CT 12 5BF United Kingdom

Phone 44 1843 255000
Fax 44 1843 255902

Specifications are subject to change without notice.

©2013 Cummins Power Generation. All rights reserved. Cummins Power Generation and Cummins are registered trademarks of Cummins Inc. PowerCommand, InPower and "Our energy working for you." are trademarks of Cummins Power Generation.

S-1642a (7/13)