



Owner's Manual

Installation/Operator's/Service

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**Power
Generation**

PowerCommand® 2100 Controller

Table of Contents

FOREWORD	iii
WARRANTY	iii
IMPORTANT SAFETY INSTRUCTIONS	v
1. INTRODUCTION	1-1
About This Manual	1-1
System Overview	1-1
Test Equipment	1-1
How to Obtain Service	1-1
2. CONTROL INSTALLATION AND CONNECTIONS	2-1
Control Wiring	2-1
TB1 Remote Monitor/Control Connections	2-2
TB1 Wiring	2-2
TB1 Customer Inputs	2-2
TB1 Customer Outputs	2-4
Control Relays (K11, K12, K13)	2-5
3. CONTROL OPERATION	3-1
General	3-1
Control Panel Power On/Off Modes	3-1
Battle Short Mode (Optional)	3-2
Front Panel	3-4
Configurable Indicators	3-5
Menu Display and Buttons	3-6
Main Menus	3-7
Controller Configuration Menu	3-8
Engine Menu	3-10
Alternator Menu	3-12
Adjust Menu	3-14
Faults Menu	3-16
System Menu	3-18
History Menu	3-20
About Menu	3-22
4. CIRCUIT BOARDS	4-1
General	4-1
Base Board	4-3
Connector J1	4-4
Connector J2	4-5
Connector J3	4-5
Connector J4	4-6
Connector J7	4-7
Connector J8	4-8
TB1 Customer Connections	4-8

Table of Contents (Continued)

SECTION	TITLE	PAGE
5. TROUBLESHOOTING		5-1
	General	5-1
	InPower Service Tool	5-1
	Network Applications and Customer Inputs	5-1
	Safety Considerations	5-2
	Troubleshooting Procedure	5-3
6. CONTROL ADJUSTMENT AND SERVICE		6-1
	General	6-1
	Circuit Board Removal/Replacement	6-2
	Circuit Board Removal Safety Precautions	6-2
	Modifying Setup Submenus	6-3
	Password Submenu	6-4
	Crank/Idle Setup Menu	6-6
	Governor/Regulator Setup Menu	6-8
	PCC Control Panel Box Components (Standard/Optional)	6-12
	Relay K4	6-12
	Network Communications Module (Optional)	6-13
	TB1 Customer Inputs	6-14
	TB1 Customer Outputs	6-14
	Control Relays (K10, K11, K12) (Optional)	6-15
	PCCNet Devices	6-16
	Universal Annunciator	6-16
	I/O Module	6-16
	Engine Sensors	6-17
	Oil Temperature / Fuel Level Input	6-17
	Magnetic Speed Pickup Unit (MPU) Installation	6-18
	Current Transformer (CT) Installation	6-18
	CT Installation Requirements	6-18
7. WIRING DIAGRAMS		7-1
	General	7-1
APPENDIX A. CT DETERMINATION		A-1
	Introduction	A-1
	CT Worksheet	A-2
	CT Example	A-3
	Conclusion	A-4
APPENDIX B. UNIVERSAL ANNUNCIATOR SETUP		B-1

Foreword

The purpose of this manual is to provide the users with general control operation and fault code information. Refer to the equipment manufacturer's product support manuals for important safety precautions.

Manufacturers applying this control are respectfully advised that it is their responsibility to employ competent persons to carry out any installation work in the interests of good practice and safety. It is essential that the utmost care is taken with the application of this control device.

Warranty

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ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Remove electric power before removing protective shields or touching electrical equipment. Use rubber insulative mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surface to be damp when handling electrical equipment. Do not wear jewelry. Jewelry can short out electrical contacts and cause shock or burning.
- Use extreme caution when working on electrical components. High voltages can cause injury or death. DO NOT tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag and lock open switches to avoid accidental closure.
- DO NOT CONNECT GENERATOR SET DIRECTLY TO ANY BUILDING ELECTRICAL SYSTEM. Hazardous voltages can flow from the generator set into the utility line. This creates a potential for electrocution or property damage. Connect only through an approved isolation switch or an approved paralleling device.

GENERAL SAFETY PRECAUTIONS

- Coolants under pressure have a higher boiling point than water. DO NOT open a radiator or heat exchanger pressure cap while the engine is running. Allow the generator set to cool and bleed the system pressure first.
- Used engine oils have been identified by some state or federal agencies as causing cancer or reproductive toxicity. When checking or changing engine oil, take care not to ingest, breathe the fumes, or contact used oil.
- Keep multi-class ABC fire extinguishers handy. Class A fires involve ordinary combustible materials such as wood and cloth; Class B fires, combustible and flammable liquid fuels and gaseous fuels; Class C fires, live electrical equipment. (ref. NFPA No. 10).
- Make sure that rags are not left on or near the engine.
- Make sure generator set is mounted in a manner to prevent combustible materials from accumulating under the unit.
- Remove all unnecessary grease and oil from the unit. Accumulated grease and oil can cause overheating and engine damage which present a potential fire hazard.
- Keep the generator set and the surrounding area clean and free from obstructions. Remove any debris from the set and keep the floor clean and dry.
- Do not work on this equipment when mentally or physically fatigued, or after consuming any alcohol or drug that makes the operation of equipment unsafe.
- Substances in exhaust gases have been identified by some state or federal agencies as causing cancer or reproductive toxicity. Take care not to breathe or ingest or come into contact with exhaust gases.
- Do not store any flammable liquids, such as fuel, cleaners, oil, etc., near the generator set. A fire or explosion could result.
- Wear hearing protection when going near an operating generator set.
- To prevent serious burns, avoid contact with hot metal parts such as radiator, turbo charger and exhaust system.

KEEP THIS MANUAL NEAR THE GENSET FOR EASY REFERENCE

1. Introduction

ABOUT THIS MANUAL

This manual provides operating, troubleshooting, and repair information regarding the PowerCommand® 2100 Control (PCC). Engine service instructions are in the applicable engine service manual.

This manual does not have instructions for servicing printed circuit board assemblies. After determining that a printed circuit board assembly is faulty, replace it. Do not repair it. Attempts to repair a printed circuit board can lead to costly damage to the equipment.

This manual contains basic (generic) wiring diagrams and schematics that are included to help in troubleshooting. Service personnel must use the actual wiring diagram and schematic shipped with each unit. The wiring diagrams and schematics that are maintained with the unit should be updated when modifications are made to the unit.

Read **Safety Precautions** and carefully observe all instructions and precautions in this manual.

SYSTEM OVERVIEW

The PowerCommand Control (PCC) is a microprocessor-based control. All generator set control functions are contained on one circuit board (Base board). The Base board provides engine speed governing (optional), main alternator voltage output regulation, and complete generator set control and monitoring.

The operating software provides control of the generator set and its performance characteristics, and displays performance information on a digital display panel. It accepts menu-driven control and set-up input from the push button switches on the front panel.

TEST EQUIPMENT

To perform the test procedures in this manual, the following test equipment must be available

- True RMS meter for accurate measurement of small AC and DC voltages. Fluke models 87 or 8060A are good choices.
- Grounding wrist strap to prevent circuit board damage due to electrostatic discharge (ESD).
- Jumper Leads
- Tachometer or Frequency Meter
- Wheatstone Bridge or Digital Ohmmeter
- Variac
- Load Test Panel
- InPower Service Tool (PC based genset service tool)

HOW TO OBTAIN SERVICE

Contact your generator set manufacturer when seeking additional service information or replacement parts. Provide model and serial number information.

⚠ WARNING *Incorrect service or replacement of parts can result in severe personal injury or death, and/or equipment damage. Service personnel must be qualified to perform electrical and mechanical service. Read and follow Safety Precautions, on pages v and vi.*

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