Powerohm Resistors Digital HRG System

Alarm Messages and Troubleshooting Guide

This manual provides alarm descriptions, troubleshooting steps, and alarm set point configuration information for Powerohm Resistors Digital HRG System.

POWEROHM RESISTORS

HUBBELL®

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History of Changes

Rev. No.	Date	Descritpion of Changes
-	April 2019	Initial Release
A	May 2020	Update tech support phone number

Introduction

This manual provides alarm descriptions, troubleshooting steps, and alarm set point configuration information for all alarm conditions for the controller.

For instructions for navigating the Operator Interface Device (OID) and for configuration set points, please refer to Publication 247, *Powerohm Resistors Digital HRG System Setup and Operating Instructions.*

NOTICE Read these instructions thoroughly before troubleshooting the controller. If there are still questions, contact your Metron factory representative for assistance.

Precautions

CAUTION

To avoid risk of **SERIOUS INJURY or DEATH,** and to avoid damage to the controller, READ THIS SECTION CAREFULLY. If questions or concerns still exist, contact the Metron factory for further clarification.

ARC FLASH

HAZARD

Do not operate controls or open covers without appropriate personal protection equipment. Failure to comply may result in **SERIOUS INJURY or DEATH!** Refer to NFPA70E for PPE requirements.

If work must be carried out on the motor or controller, ensure the controller is ISOLATED AND LOCKED OFF from the AC mains supply before work commences. Lockout/Tag out procedures should be followed in accordance with NFPA standard and any local standards that may apply.

Ground Fault Alarms

Phase A/B/C Ground Fault

Description

A ground fault condition has been detected on the specified phase.

Troubleshooting

- Check your facility for a ground fault. The ground fault can be quickly located by using the Pulser feature of the Digital HRG, along with a portable clamp-on current detector.

If a ground fault does not exist:

- Perform a *Charging Current* test and verify that your resistor taps are set correctly.
  - MENU: *Diagnostics & Tests* → *Charging Current*
- Verify the voltage and/or current trip point set points.
- If the ground fault is a nuisance alarm (e.g. occurs when a large motor is started), increase the *Ground Fault Time Delay* set point.

Related Set Points

MENU: *System Set Points* →

Ground Fault Settings: Ground Fault Current
Ground Fault Settings: Ground Fault Voltage Level
Ground Fault Settings: Ground Fault Time Delay
Pusler Settings: Resistor Tap

Low Current

Description

This alarm occurs when the neutral current is at or below the configured *Low Current Alarm Level* for a minimum period set by the *Ground Fault Time Delay*. This can occur if a load is removed from the facility.

Troubleshooting

- Perform a *Charging Current* test and verify that your resistor taps are set correctly.
  - MENU: *Diagnostics & Tests* → *Charging Current*

- Adjust the *Low Current Alarm Level* set point

Related Set Points

MENU: *System Set Points* →

Alarm Settings: Low Current Alarm Option
Alarm Settings: Low Current Alarm Level
Ground Fault Settings: Ground Fault Time Delay

Low Voltage

Description

This alarm occurs when voltage on any connect phase is at or below the configured *Low Voltage Alarm Level* for a minimum period set by the *Ground Fault Time Delay* set point.

Troubleshooting

- Verify the *Line Voltage Connections* set point matches that actual connections to the Digital HRG.
- Adjust the *Low Voltage Alarm Level*.
- Check fuses F4, F5, and/or F6.

Related Set Points

MENU: *System Set Points* →

Alarm Settings: Low Voltage Alarm Option
Alarm Settings: Low Voltage Alarm Level
Alarm Settings: Line Voltage Connections
Ground Fault Settings: Ground Fault Time Delay

NGR Fault

Description

This alarm occurs when an issue with the Neutral Ground Resistor or with the test resistor circuit is detected. The alarm can be tripped when using the *Simulate Fault* feature or by the *Auto Resistor Test Option*.

Troubleshooting

- Check continuity of the NGR and test resistor; verify wiring.
- Check the F2 and F3 fuses.
- Check the TR contactor.

Related Set Points

MENU: *System Set Points* →

HRG Resistor Settings: Auto Resistor Test Option
HRG Resistor Settings: Auto Resistor Test Period

Pulser Fault

Description

This alarm occurs when the Pulser feature is turned on, but the system does not detect a change in neutral current.

Troubleshooting

- Check the PC contactor.
- Check the CC contactor.
- Check the F2 and F3 fuses.

Related Set Points

None

PCB Alarms

Low/Missing Clock Battery

Description

The clock backup battery has low voltage, is faulty, or is missing.

Troubleshooting

Replace coin battery on HC90772002 board with the same part number as is installed on the board.

Related Set Points

None

Problem with 12-Channel I/O PCB

Description

This alarm indicates that I/O communication with the 12-Channel I/O board is not working as expected.

Troubleshooting

- Verify cables are securely connected to the board.
- Verify that the issue is not with the Power Monitor board:
  1. With power turned off, disconnect the Power Monitor board from the 12-Channel I/O board J2 connector.
  2. Reapply power.
  3. If the “Problem with 12-Channel I/O PCB” alarm reoccurs, replace the 12-Channel I/O board (P/N HC90776002).
  4. If the “Problem with 12-Channel I/O PCB” alarm *does not* occur, the issue may be with Power Monitor Board. Replace the Power Monitor board (P/N HC90777002M or P/N HC90777003).

Problem with Power Monitor PCB

Description

This alarm indicates that I/O communication with the Power Monitor board is not working as expected.

Troubleshooting

- Verify cables are securely connected to the board.
- Verify that the issue is not with the 12-Channel I/O board:
    - With power turned off, disconnect the Power Monitor board from the 12-Channel I/O board J2 connector, and reconnect to the J3 connector.
    - Reapply power.
    - If the “Problem with Power Monitor PCB” alarm reoccurs, replace the Power Monitor board (P/N HC90777002M or P/N HC90777003).
    - If the “Problem with Power Monitor PCB” alarm *does not* occur, the issue may be with the J2 connector on the 12-Channel I/O board. Replace the 12-Channel I/O board (P/N HC90776002).

Troubleshooting

1. The displayed voltage does not match my calibrated voltmeter readings.
   - Calibrate the voltage.
   - Replace the Power Monitor board with P/N HC90777002M or P/N HC90777003.

2. This displayed neutral current does not match my calibrated ammeter readings.
   - Calibrate the current with a calibrated current source
   - Replace the Power Monitor board with P/N HC90777002M or P/N HC90777003.

3. The Charging Current test says current is too high
   - Check for a ground fault
   - Check fuse F3
   - Check the TR and CC contactors.
   - If charging current is near the fault current for the connected tap, move the taps up one position.

4. The tap recommended by the Charging Current test causes a ground fault alarm.
   - Verify the voltage trip and/or current trip set points.
   - Check the CC contactor.

Replacement Parts

For replacement parts, contact your local Powerohm Resistors office or the Hubbell Powerohm Resistors factory at:

Telephone: (800) 838-4694
Email: sales@powerohm.com

Technical Support

Telephone: (336) 434-2800 ext. 2803
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