

Digital High Resistance Grounding System

Gain distinct advantages over three-phase ungrounded power systems with Powerohm's Digital High Resistance Grounding System:

System Protection: Provides a ground-to-neutral connection for a three-phase power system, while still allowing it to operate as an "ungrounded system." When a system has a neutral that is not grounded, it is vulnerable to potentially damaging ground faults.

Transient Overvoltage Reduction: Reduce the magnitude of transient overvoltages that appear during a ground fault and protect equipment from potential damage throughout the system.

Ground Fault Detection Warning: Instantly provides an alarm signal when the first ground fault occurs through an audible horn and red warning beacon.

Simple Ground Fault Location: Quickly locate a ground fault with the internal pulsing contactor and an optional portable clamp-on ammeter.

Uninterrupted Service: By limiting the magnitude of ground fault currents, the system will continue to operate safely while faults are isolated and removed.

Improve Personnel Safety: Decrease hazards to site personnel by reducing transient over-voltages, fault levels, insulation failures, and arc flash.



Touch Screen Features

- Large 7" color LCD touch screen
- Simultaneous display on home screen for neutral ground current, three phase voltage, and neutral voltage
- On-screen icons for quick start, system set points, user settings, data log, diagnostics, and others for ease of installation and data log/event history retrieval
- The quick start feature guides the user automatically step-by-step through the settings required at start up
- View data log history in calendar screen to easily find a specific event
- Provides graph view of neutral current/ voltage up to one year history, for easy visual observation
- Diagnostics features include voltage/current calibration, ground fault simulation, and automated capacitive charging current detection

Standard Features

- User-selectable ground fault detection method: neutral current or line voltage
- Automatic NGR connectivity test
- Microprocessor based logic with real time clock can run 7+ years without AC power. The clock is accurate to plus/minus two minutes per year over the full temperature range. Includes low battery indicator.
- The on-board data log memory can store over two years of event history (approx. 112,000 events). View the history onscreen or save it to a USB drive. The event history is recorded as a tab delimited file and can be easily opened in Microsoft Excel.
- Password protected
- On-screen language support for English, Spanish, and French
- For added safety, a through-door USB port is provided to access data log history without opening the controller door
- Status LEDs on PCB board inputs/outputs provide visual indication of on/off status
- System self-test on power up
- Serial communication to PCBs reduces the number of wires for improved reliability
- Audible horn with 12-hour, 24-hour, and 48-hour alarm silence
- Remote alarm contacts for ground fault, low voltage, NGR fault, and control power available



Figure 1: Home Screen



Figure 2: Main Menu

4	Month View	/ List View	t View Detail View			May 2023				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday				
Apr 30	May 01	02	03	04	05	06				
07	08	09	10	11	12	13				
14	15 Events: 4	16	17	18	19	20				
21	22	23	24	25	26	27				
28	29	30	31	Jun 01	02	03				
04	05	06	07	08	09	10				
	iiii									



Figure 3: Data log Calendar View



Auxiliary Programs

The controller includes ten discrete auxiliary inputs and eight outputs. All auxiliary I/O can be field programmed using the touchscreen and include the ability to add custom messages for onscreen display and data logging. Expandable 12-Channel I/O board for additional I/O.

Events & Alarms

Each record tracks:

- Date and time
- Neutral Current
- Neutral Voltage
- Line voltage for all connected phases
- Login state
- State of every alarm
- The state of all aux programs (48 aux programs available)

Alarm Messages

- Phase A/B/C Ground Fault
- NGR Fault
- Low Current
- Low Voltage
- Low/Missing Clock Battery
- Pulser Fault

Event Messages

- System Reboot
- User Login
- Logged Out
- Date Changed
- Time Changed
- Pulser Turned ON
- Pulser Turned OFF
- NGR Test Begin
- NGR Test End

Set point changes are recorded in the data log tracking the previous value and the new value.

Model Number Designator												
	HRG	4	W6	С	F	N1	61	E	1	*		
System Voltage	240V	2										
	480V	4										
Voltage	600V	6										
System Type	WYE, 50 Hz		W5									
	WYE, 60 Hz		W6									
	DELTA, 50 Hz		D5									
	DELTA, 60 Hz		D6									
Ground Fault Current	1-5/2-7			A								
	2-5/3-7			В								
	1-7/2-10			С								
	2-7/3-10			D								
	2-10/3-15			E								
Enclosure Style	Wall Mounted (600V or less)				W							
	Floor Mounted				F							
	SWITCHGEAR				P							
	NEMA 1					N1						
	NEMA 3R					N3						
Enclosure Type	NEMA 12					N2						
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	NEMA 4					N4						
	NEMA 4X					NX						
Enclosure	Painted ANSI-61 Gray						61					
	Painted Tiger Black						ТВ					
Finish	Stainless Steel 304						S4					
	Stainless Steel 316						S6					
Language	English							E				
	Spanish							S				
	French							F				
Labels	Printed								1			
	Etched								2			
	Stainless Steel								3			
Options										*		

Options

- AC Anti-Condensation Heater
- AH Edwards Horn
- BS Bug Screens
- MB Modbus over RS485
- ME Modbus over Ethernet
- P1 Amber Pulsing Pilot Light

Consult factory for other options.

- P2 White Pulsing Pilot Light
- ST Shorting Terminal
- WB Warning Beacon
- DL-Lockable Door
- FK-NEMA 12 Fan kit
- MO-MOV Surge Arresters



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