GREYSTONE ENERGY SYSTEMS INC

POWER MONITOR
WHT Series

Precision power monitoring

FEATURES:

- Measures voltages up to 600 Vac directly (Up to 32000 Vac with the use of PT's)
- Models for support of 0.333 Vac safe CT's or 5 Amp CT's
- Standard analog 4-20 mA and pulsed outputs
- Optional BACnet® or Modbus output
- Optional on-board data logging
- IP65/NEMA 4 enclosure

Peace of mind through reliable power monitoring

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

DESCRIPTION:

The WHT is a two processor based power monitoring device that monitors and records numerous power system parameters. It continuously measures voltage and current to calculate and display over 57 values. Voltages of 120 to 600V can be monitored without the need of potential transformers. Voltages of 601 to 32000 V can be monitored with the use of potential transformers. All scaling calculations are handled by the meter.

The WHT comes standard in an IP65/NEMA 4 rated enclosure ready to be mounted. A data port is provided on the front interface for easy setup and trend retrieval via desktop software. Built for the future, the WHT allows for upgrades through the data port.

FEATURES:

- NEMA 4 enclosure
- KWH Accuracy class 0.5% ANSI C12.20 for meter alone with unmatched CT's OR for meter with factory calibrated matched CT's
- Data port for setup and trend retrieval
- Measure voltages up to 32000 VAC (voltages over 600 Vac require the use of a potential transformer, not included)
- Supports 0.333V safe CT's and 5 AMP CT's (must use optional 5 AMP adapter board)
- Supports 1V and 2V CT's (must use GES-2VT/1V-ADPTR)
- BACnet® MSTP and Modbus RTU available
- Password protected configuration
- Powered by separate 24 Vac supply
- On-board data logging
- Auto-configuration
- Upgradable firmware through data port
- Bi-directional power measurement
- California Solar Initative (CSI) approved

SPECIFICATIONS:

Supply Voltage	24 Vac ± 10% 60 Hz
Supply Current	250 mA maximum
Monitored Voltage	Line to Line: 120 to 600 Vac Line to Line with potential transformer: 601 to 32000 Vac
Monitored Current	5 - 6000 Amp using current transformers
System Type	2-Wire Single Phase 3-Wire Single Phase 4-Wire Wye 3-Wire Delta 4-Wire Delta
Communication Data Port	Serial interface to desktop software
OPTIONAL Communications	BACnet® MS/TP or Modbus RTU
Analog Output	4-20 mA (loop-powered)
Accuracy	0.5% full scale
Maximum Loop	Supply Voltage: 30 Vdc Max. Impedance: 850Ω @ 24 Vdc
Digital Output	2X Optically isolated solid state FET switch
Rated Voltage	28 Vac/40 Vdc maximum
Rated Current	00 mA maximum
Operating Temperature	-30 - 70 °C (-22 - 158 °F)
Opertaing Humidity	0 - 95% (non-condensing)
Enclosure	IP65/NEMA 4, UL94-5VA
Dimensions	16.5 x 16.5 x 10.1 cm (6.5" x 6.5" x 4")
Weight	1.4 kg (3.1 lb)
Approvals	ETL, CE File #4004284
RoHS Statement	Yes
Warranty	1 year

PRODUCT ORDERING INFORMATION:

MODEL	Product Description
WHT	Power Monitor Series

CODE	CT Input
200	0.333 Vac Input
250	5 Amp Input

CODE	Optional Communications Output
BAC	BACnet® Communications
MOD	Modbus Communications

CODE	Options
T	Trend Data Logging

WHT	200	BAC	-

Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

Note: CT's and PT's are ordered separately and not included in the above part numbers.
Contact Greystone for CT and PT availablility

GREYSTONE ENERGY SYSTEMS, INC.

RoHS COMPLIANT

PARAMETERS:

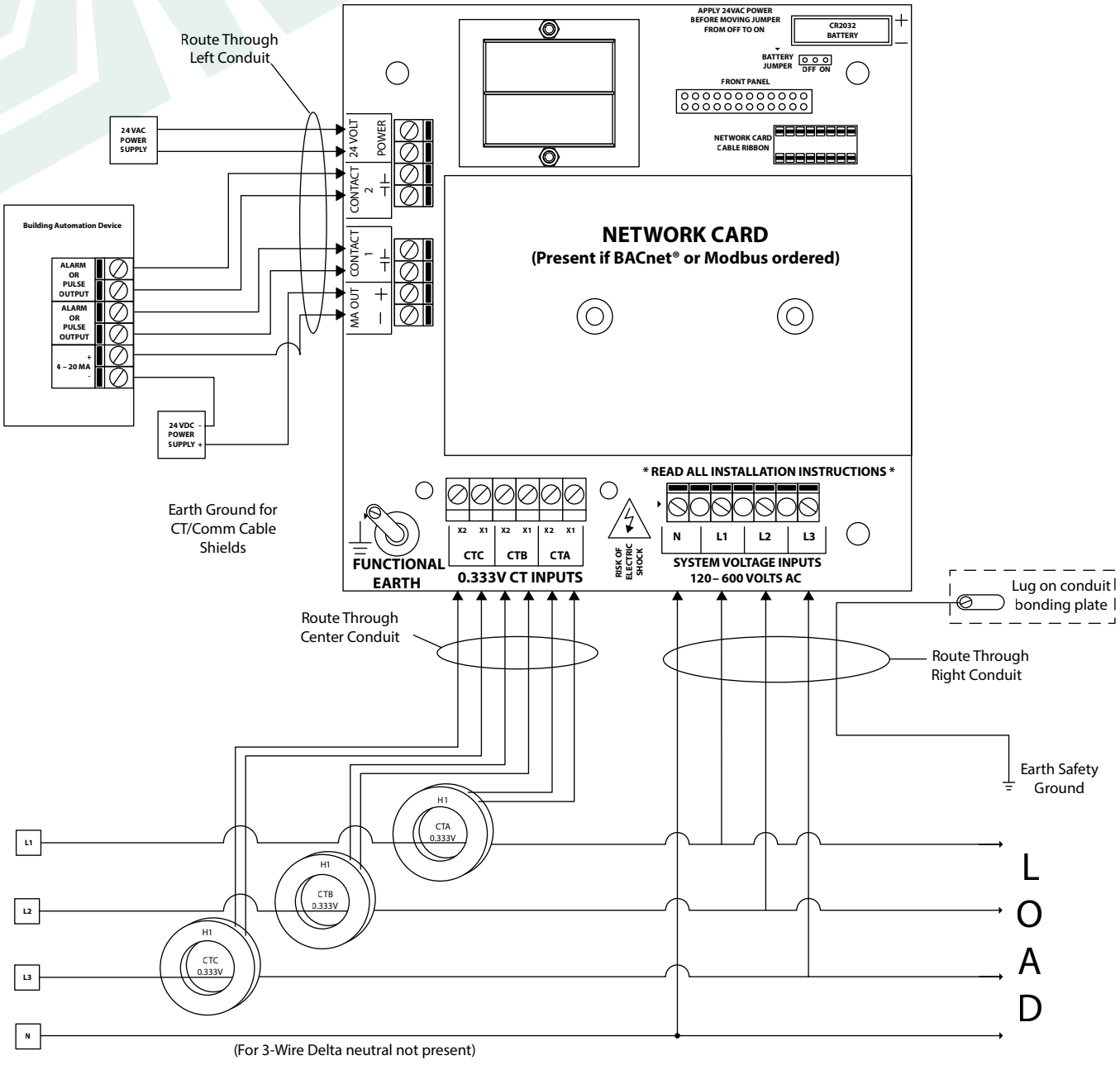
Parameters that can be assigned to 4-20 mA output:

- Total positive KW
- Total bi-directional KW (12 mA = 0 KW)
- Total sliding window KW (user configured, 5 to 60 min.)
- Peak sliding window KW
- Total KVA
- Total PF
- Average system volts
- Average system amps

Parameters that can be assigned to digital outputs:

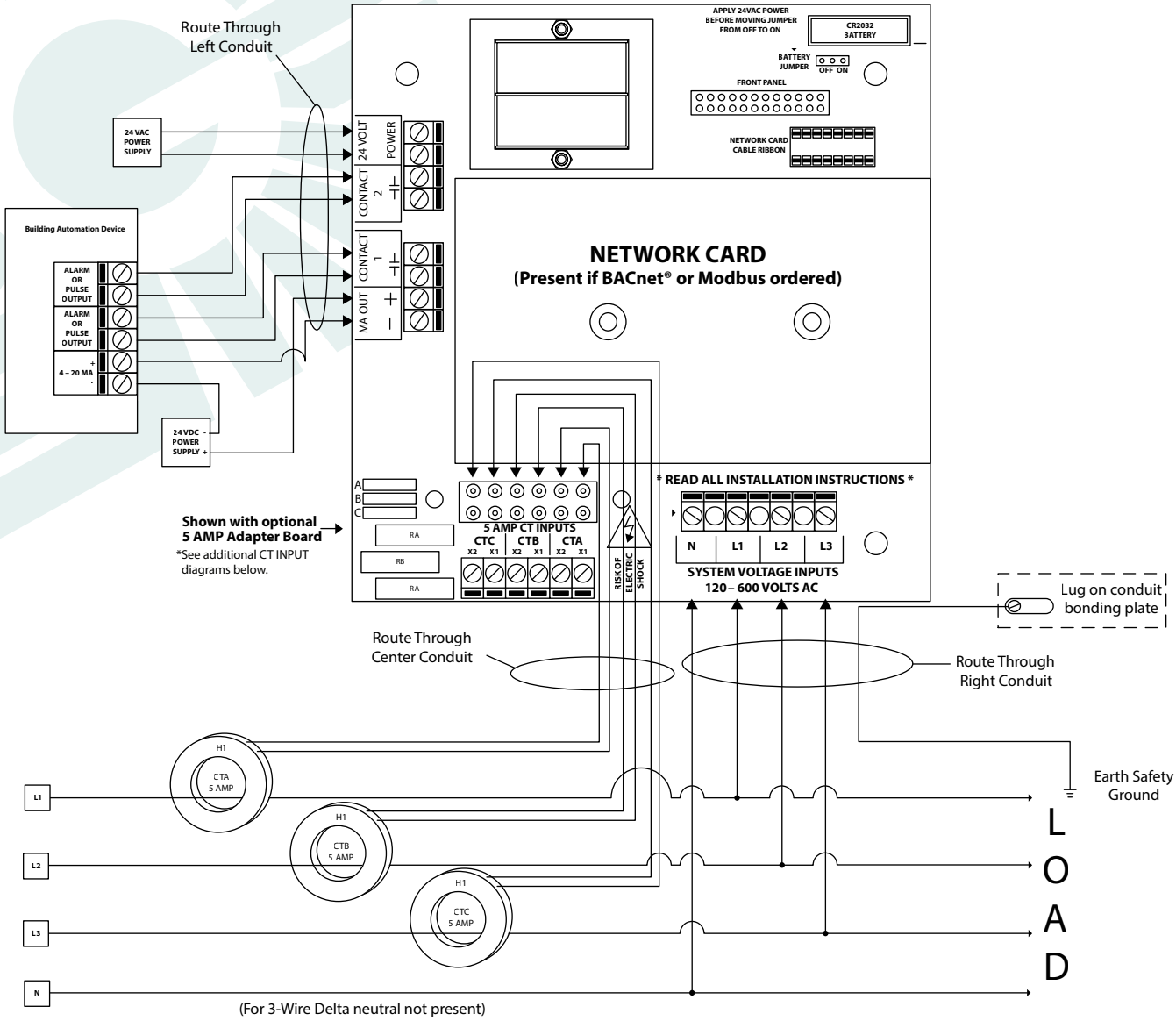
- Positive KWH pulse
- Negative KWH pulse
- Low volts - alarm
- Unbalanced volts - alarm
- Low or unbalanced volts - alarm

WIRING: (WHT200) 0.333 V Current Transformers, 3-Phase Power Systems:

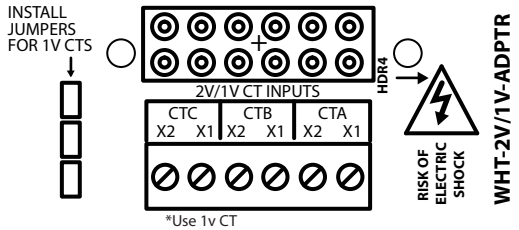


RoHS COMPLIANT

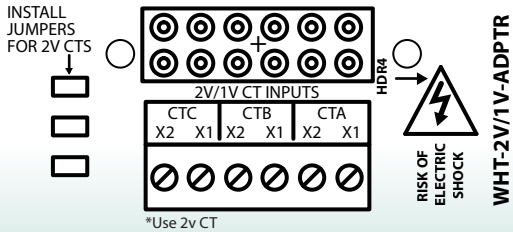
WIRING: (WHT250) 5 Amp Current Transformers, 3-Phase Power Systems:



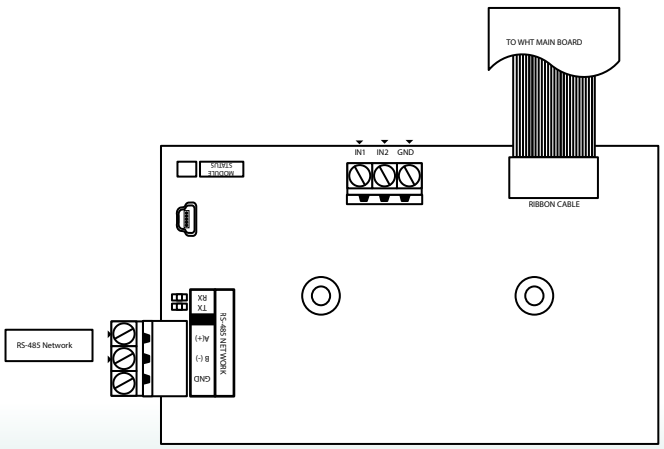
1V CT INPUTS - requires a WHT-2V/1V-ADPTR



2V CT INPUTS - requires a WHT-2V/1V-ADPTR



WIRING: BACnet® or Modbus



GREYSTONE ENERGY SYSTEMS, INC.

RoHS COMPLIANT

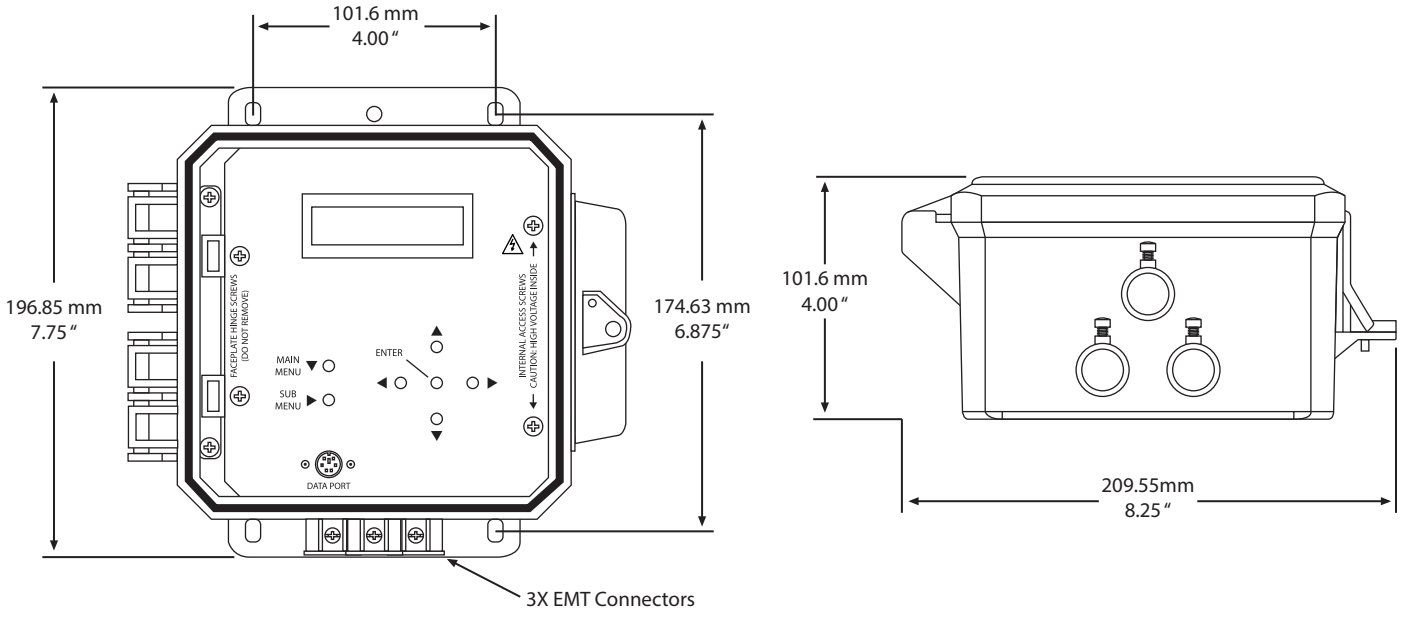
PARAMETERS (BACnet® or Modbus):

Parameters Available Via Display/Network	
Total KW	Phase B Amps
Total Sliding Window KW (period programmable 5-60 minutes)	Phase C Amps
Total KVAR	Total Positive KWh
Total KVA	Total Negative KWH
Phase A KW	Total Absolute KWH (Sum of positive and negative)
Phase B KW	Total Net KWH (Positive minus negative)
Phase C KW	Phase A Positive KWH
Phase A KVAR	Phase B Positive KWH
Phase B KVAR	Phase C Positive KWH
Phase C KVAR	Phase A Negative KWH
Phase A KVA	Phase B Negative KWH
Phase B KVA	Phase C Negative KWH
Phase C KVA	Total Positive KVARH
Total PF	Total Negative KVARH
Phase A PF	Total Absolute KVARH
Phase B PF	Total Net KVARH
Phase C PF	Phase A Positive KVARH
Average L-N Volts	Phase B Positive KVARH
Average L-L Volts	Phase C Positive KVARH
L1-L2 Volts*	Phase A Negative KVARH
L2-L3 Volts*	Phase B Negative KVARH
L3-L1 Volts*	Phase C Negative KVARH
L1-N Volts*	Timestamp (When energy counters were last cleared)
L2-N Volts*	Peak Sliding Window KW (since last cleared)
L3-N Volts*	Timestamp (when Peak Sliding Window occured)
Average Amps	Timestamp (when Peak Sliding Window KW was last cleared)
Phase A Amps	

* For Delta System
Phase A = L1-L2
Phase B = L2-L3
Phase C = L3-L1

For WYE System
Phase A = L1-N
Phase B = L2-N
Phase C = L3-N

DIMENSIONS:



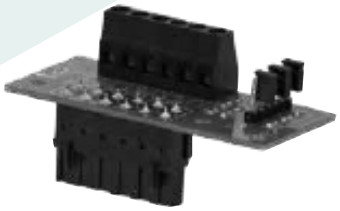
GREYSTONE ENERGY SYSTEMS, INC.

RoHS COMPLIANT

ACCESSORIES:

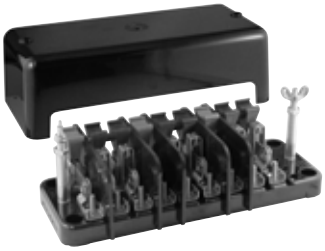
WHT-SOFTWARE - The desktop software is conveniently loaded on a USB drive. This software will enable you to easily and conveniently interact with the WHT intelligent power monitor via the data cable. You can quickly program one power monitor, save to your desktop/laptop and then program several more power monitors in a timely fashion. You will also be able to download the information from the WHT and analyze the data.

WHT-CABLE - The WHT-CABLE is a 0.9 m (36") data cable which is required to interact with the WHT via the desktop software. LED lights indicate when the desktop software is transmitting data to the WHT intelligent power monitor and when data is being downloaded into the computer.



WHT-2V/1V-ADPTR - Use this adapter board to retrofit the WHT to accept safe CTs with either 2V or 1V secondary output. The same board can be used for either application. Just change the DIP switches to the configuration you need.

WHT-485 - The WHT-485 is a communication module for the WHT intelligent power monitor. It reads data from the WHT's main processor, formats the data, and transmits it to a network. It allows all of the power system parameters measured by the WHT to be monitored over a single pair of wires. The WHT-485 contains BACnet® and Modbus communication protocols. The chosen communication protocol is selected either through the front panel display/keypad or the desktop software. The WHT-485 features 2 contact-closure inputs for monitoring external equipment. Each input can be configured to read contact state (On/Off) or as a pulse counter to count pulses from flow meters or other power meters. In the pulse counter mode, a clear command is available to reset the pulse count when desired.



A3504 - The A3504 is a 9-pole disconnect switch block that provides a means for disconnecting power monitoring equipment. It provides isolation from line voltage and will short out and disconnect current transformer secondaries, preventing transformer damage that may occur when the circuit is opened under load. One side of the switch is connected to the circuits being measured; the other side of the switch is connected to the power monitoring equipment. The black plastic cover is constructed so that all switches must be in the closed position before the cover can be sealed.

GREYSTONE
ENERGY SYSTEMS INC
Greystone Energy Systems, Inc.

RoHS COMPLIANT

Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems. We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

Copyright © Greystone Energy Systems Inc. All Rights Reserved
WHT-SPE-001 01/15
PRINTED IN CANADA