

ACCURATE TO 0.2% OF READING

DESCRIPTION

The GH Watt/Watthour Transducer provides an analog output proportional to time-averaged instantaneous true power and a relay closure or TTL pulse output calibrated in terms of Watthours of energy consumption by the load. Accuracy is ±0.2% of reading.

A Model VGH VAR/VARhour transducer provides an analog output proportional to time-averaged instantaneous reactive power and a relay closure or TTL pulse output calibrated in terms of VARhours for reactive energy. Accuracy is ±0.2% of reading.

In addition, they are used extensively for sub-metering, generation control and appliance testing to verify compliance with federal standards.

Models are available in 1-, 2-, 2½-, or 3-element configuration. Bidirectional Watt and Watthour or VAR and VARhour outputs are available.



5 YEAR WARRANTY

FEATURES

- Accurate regardless of variations in voltage, current, power factor, or load.
- Available with 1-, 2-, 2½- or 3-element configurations.
- Bidirectional Watt/Watthours available.
- Leading/Lagging VARs/VARhours available.
- Accuracy maintained over wide temperature range.
- Calibration traceable to **NIST**.

APPLICATIONS

- Equipment monitoring for process control.
- Integration into energy management systems or a variety of sub-metering applications.
- Measurement using direct connections, current and/or potential transformers.

INPUTS		F.S. WATTS or VARS	STANDARD GH- OR VGH-						RELAY OPTIONS (ADD SUFFIX)			
AC VOLTS	AC AMPS		0±1mAdc	0±10Vdc	4-20mAdc	4-12-20mAdc	0±5Vdc	Wh RELAY	“-T”	“-R”	“-H”	“-K”
0 to 150	0 to 1	100	103B	103D	103E	103EM	103X5	1Wh/Cnt	Wh relay is replaced with a 5Vdc, TTL-compatible pulse	A second Wh relay or pulse is provided to allow bidirectional (Forward/Reverse) energy measurement	Wh relay is replaced with a solid-state, Form C (SPDT) relay	Wh relay is replaced with a solid-state, Form C (SPDT) relay operating in “KYZ” format (50% duty cycle)
	0 to 2.5	200	106B	106D	106E	106EM	106X5	1Wh/Cnt				
	0 to 5	500	001B	001D	001E	001EM	001X5	1Wh/Cnt				
	0 to 10	1000	010B	010D	010E	010EM	010X5	1Wh/Cnt				
	0 to 20	2000	019B	019D	019E	019EM	019X5	1Wh/Cnt				
0 to 300	0 to 1	200	104B	104D	104E	104EM	104X5	1Wh/Cnt				
	0 to 2.5	500	107B	107D	107E	107EM	107X5	1Wh/Cnt				
	0 to 5	1000	002B	002D	002E	002EM	002X5	1Wh/Cnt				
	0 to 10	2000	011B	011D	011E	011EM	011X5	1Wh/Cnt				
	0 to 20	4000	020B	020D	020E	020EM	020X5	1Wh/Cnt				
0 to 600	0 to 1	500	105B	105D	105E	105EM	105X5	1Wh/Cnt				
	0 to 2.5	1000	108B	108D	108E	108EM	108X5	1Wh/Cnt				
	0 to 5	2000	003B	003D	003E	003EM	003X5	1Wh/Cnt				
	0 to 10	4000	012B	012D	012E	012EM	012X5	1Wh/Cnt				
	0 to 20	8000	021B	021D	021E	021EM	021X5	1Wh/Cnt				

To calculate unit scaling when using Current or Potential Transformers (CTs or PTs), multiply the base unit scaling by the CT and/or PT ratio.

Example: GH-001D used with 100:5 CTs
 CT ratio = 100/5 = 20
 F.S. Watt input = 500W x 20 = 10,000W
 (0-10kW input = 0-10V output)
 Wh Relay scaling = 1Wh/Cnt x 20 = 20Wh/Cnt

All standard units require 115Vac instrument power.
 Optional 230Vac instrument power - Add suffix “-22”

Optional self-powered models - Add suffix “G”
 For self-powered models, input voltage ranges are limited to:
 95-135V for 150V models
 200-280V for 300V models
 380-550V for 600V models

50 HERTZ MODELS:
 Add suffix “-50” to part number.

Standard Wh relay is a Form A, SPST

ORDERING INFORMATION

Example: Single-Phase, 120V, 5A Input with ±0-10Vdc Output proportional to ±0-500 Watts, TTL Pulse Output for Watthours, Each Pulse Proportional to 1.0 Watthour.

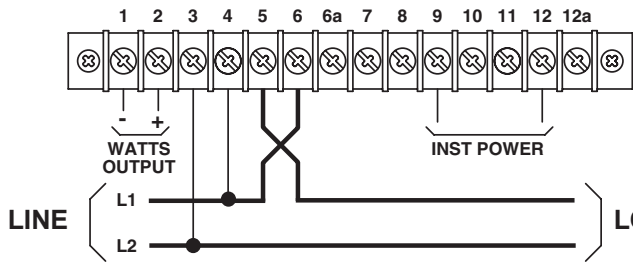
GH-001D-T

ORDERING INFORMATION

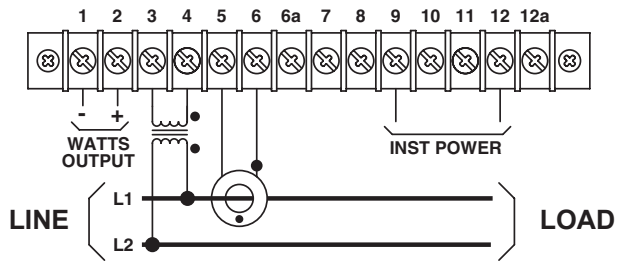
Example: Single-Phase, 120V, 5A Input with ±0-10Vdc Output proportional to ±0-500 VARs, Self-Powered, 1.0 VARhour per Relay Count.

VGH-001DG

SINGLE-PHASE CONNECTIONS (ONE-ELEMENT)

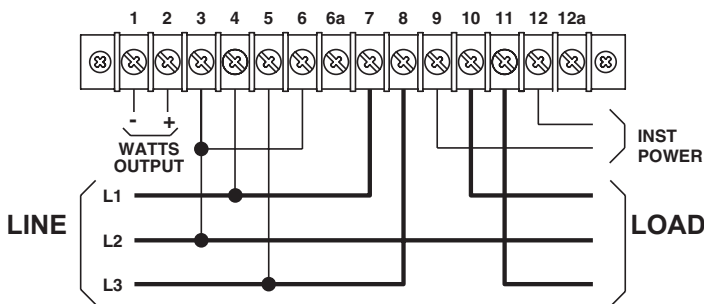


DIRECT CONNECTION

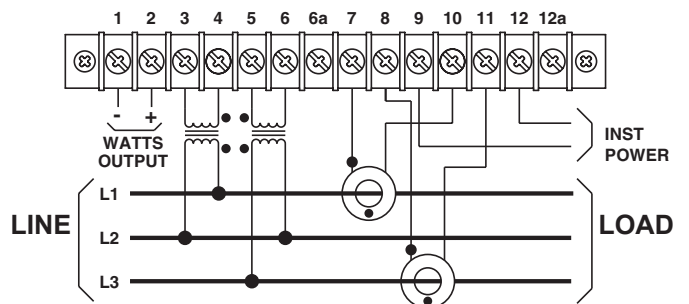


USING CURRENT & POTENTIAL TRANSFORMERS

THREE-PHASE, THREE-WIRE CONNECTIONS (TWO-ELEMENT)

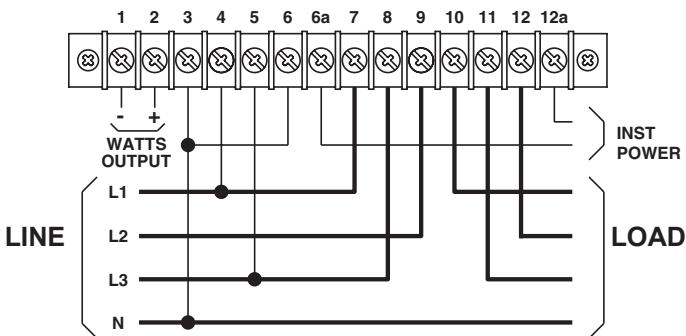


DIRECT CONNECTION

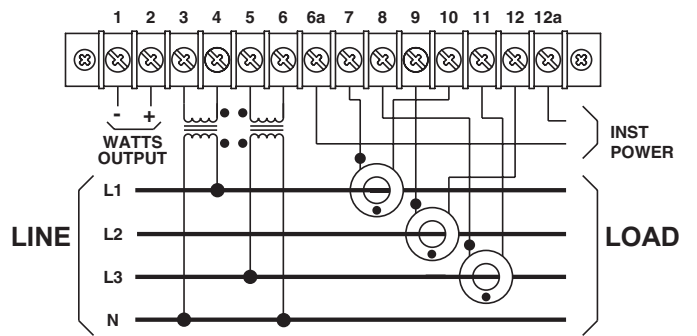


USING CURRENT & POTENTIAL TRANSFORMERS

THREE-PHASE, FOUR-WIRE CONNECTIONS (2½-ELEMENT)

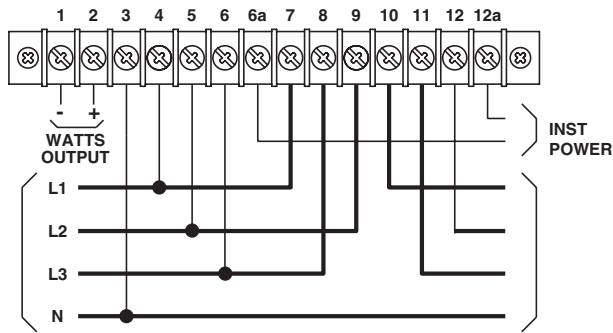


DIRECT CONNECTION

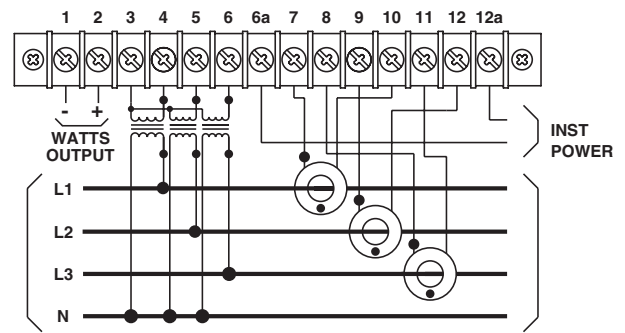


USING CURRENT & POTENTIAL TRANSFORMERS

THREE-PHASE, FOUR-WIRE CONNECTIONS (THREE-ELEMENT)

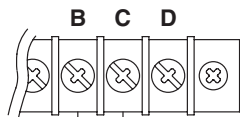


DIRECT CONNECTION

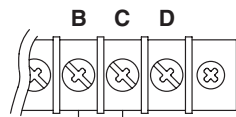


USING CURRENT & POTENTIAL TRANSFORMERS

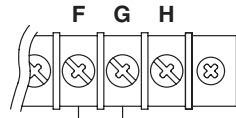
WATTHOUR OR VARHOUR OUTPUT CONNECTIONS



**OPTION "-T"
TTL OUTPUT**



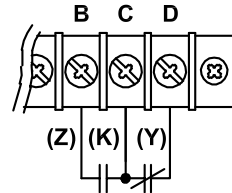
**FORWARD
(VGH = LAGGING)**



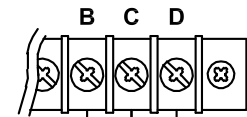
**REVERSE
(VGH = LEADING)**

**STANDARD OUTPUT
SPST RELAY
(VGH = LAGGING)**

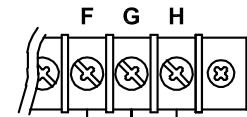
**OPTION "R"
BIDIRECTIONAL
SPST RELAY**



**OPTION "H" OR "K"
SPDT RELAY
(VGH = LAGGING)**



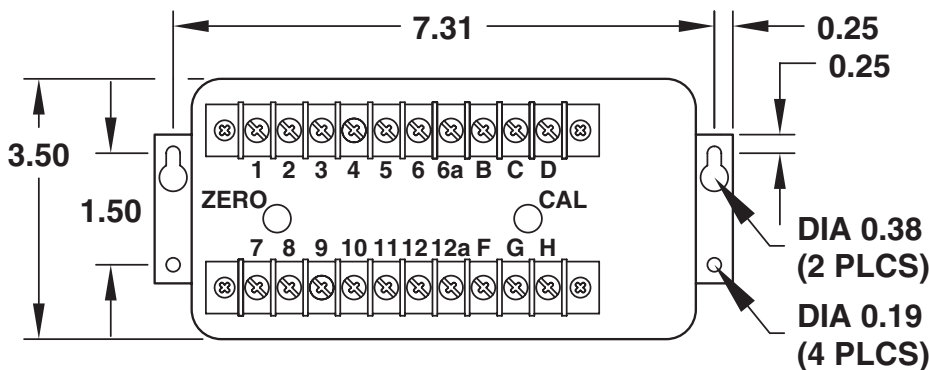
**FORWARD
(VGH = LAGGING)**



**REVERSE
(VGH = LEADING)**

OPTION "RH" OR "RK"

CASE DIMENSIONS



All dimensions in inches

CASE HEIGHT 5.88"	
1PH 2W	2.9 LBS
3PH 3W	3.3 LBS
3PH 4W	3.8 LBS