

WATT HOUR AND VAR HOUR TRANSDUCERS

WATT HOUR AND VAR HOUR TRANSDUCER

MODEL
WVL-45R

FEATURES

- Low Cost
- Universal Voltage Inputs for 3P3W and 3P4W
- Combined KWH/VARH in one unit
- Enclosure NEMA 3 or 4
- Selectable Pulse Rates
- **Accuracy & Linearity ±0.5%FS**



DESCRIPTION

The model WVL-45R Watt Hour and Var Hour Transducer is designed to measure watt hours, var hours and provide a separate relay closure for each. The electronic circuit is laid out on a 7 X 9 inch circuit board with input and output connections made at each end via terminal blocks.

The circuit board layout has been designed to mount directly in a 10 X 8 NEMA enclosure or any standard enclosure capable of holding a 7 X 9 X 1 1/2 inch circuit board.

The unit is set up for a base count rate of 5 watt hour or var hours. A dip switch is provided, on board, to change the count rate from 5 to 2.5, 1.25 or .625 watt hours or var hours per count. Two LED lamps have been installed to indicate operation of each watt hour or var hour circuit.



KVARH



KWH

Optional counters are available to provide local readout of KWH's and KVARH's. Counters are resettable.

Option CW -- KWH Counter
Option CV -- KVARH Counter

NEMA 12 Optional

SPECIFICATIONS

Inputs

Voltage 120,240, 480 Line to Line
120, 277 Line to Neutral
Range ± 15%
Burden3 VA
Phase 3P 3W, 3P 4W
*Current 5 Amps AC
Range 0 to 5 Amps AC
Burden 2.5 VA
Overcurrent (Cont.) 6 Amps

Frequency Range 60Hz
Power Factor5 Lead to .5 Lag
Instrument Power... 120,240, 480 VAC, 60Hz, 5 Watts

Outputs

Relay (Base) 5WH Per Closure, 5VH Per Closure
Relay Rating Dry Contact, 120V, .3A, 10 VA Max
Closure (On Time) 250 mSec
Isolation Input/Output 1500VAC

Accuracy & Linearity ±0.5%FS

Temperature Effect (-20°C to + 60°C) Watts 0.02%/°C
Vars 0.05%/°C

* CAUTION

TO PREVENT DAMAGE TO POWER LINES AND THE TRANSDUCER NEVER CONNECT THE CURRENT INPUTS DIRECTLY, ALWAYS USE CURRENT TRANSFORMERS RATED FOR 600 V CLASS AT 5 AMPERE SECONDARY TO PROVIDE THE REQUIRED ISOLATION.

CALCULATING OUTPUT CLOSURE RATE

The standard base count rate is 5 watt hours and 5 var hours per closure. To calculate the count rate with different current transformer ratio multiply the base rate of 5 by the ratio of the current transformer to be used. For instance, if you are using a current transformer with a 100 ampere primary and 5 amp secondary the ratio is 100:5 or 20:1. So you multiply 20 times 5 to get 100 wathours and varhours per closure.

FLEX-CORE®

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

flexcore@msn.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538

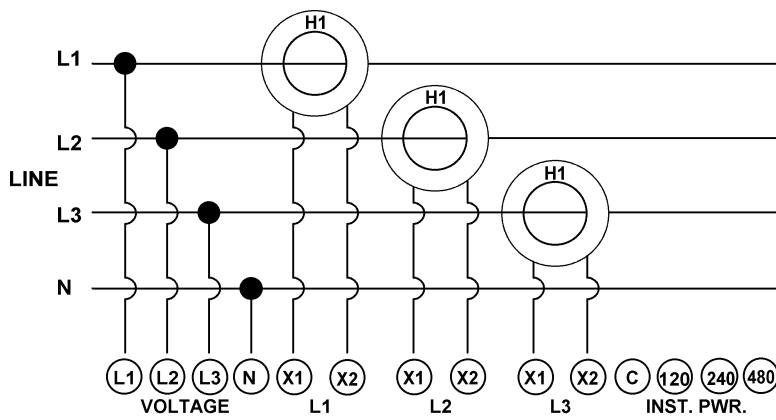
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To increase the count rate of the watt hour or var hour use the 8 pin dip switch provided located on the circuit board. Consult the chart for the multiplier.

MULTIPLIER RATE	DIP SWITCH SETTING	
	WATT HOURS	VAR HOURS
5	1	5
2.5	2	6
1.25	3	7
.625	4	8



ALL "X2" & "N" TERMINALS TIED INTERNALLY

3 PHASE 4 WIRE CONNECTIONS ARE SHOWN. WHEN CONNECTING INSTRUMENT POWER CONNECT FROM COMMON TERMINAL AND TO THE APPROPRIATE INPUT VOLTAGE TERMINAL. FOR 3 PHASE 3 WIRE OPERATION, CONNECT ALL CURRENT TRANSFORMERS AND VOLTAGE LINES EXCEPT FOR NEUTRAL, THIS LINE WILL FLOAT.

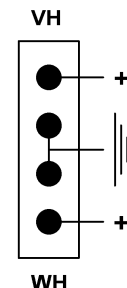
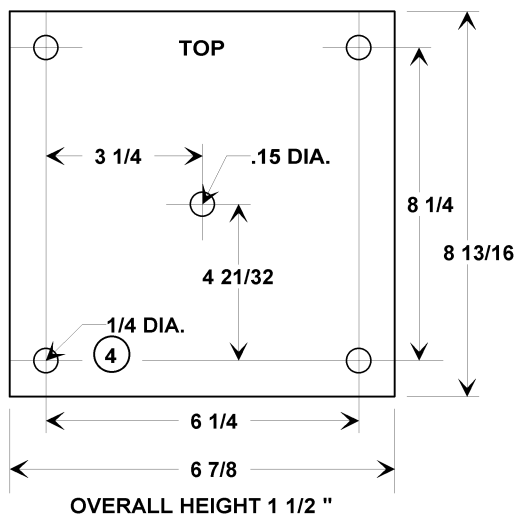
VAR HOUR

WATT HOUR



STANDARD COUNT RATE TERMINAL ARE COMMON "C" TO NORMALLY OPEN "NO". OPTIONAL "M" MERCURY RELAYS ARE ALL TERMINALS.

FOR REMOTE WATT HOUR AND VAR HOUR COUNTING, OPEN COLLECTOR TRANSISTORS HAVE BEEN PROVIDED. CONNECTIONS ARE MADE VIA 4 PIN .1 SPACING CONNECTOR.



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