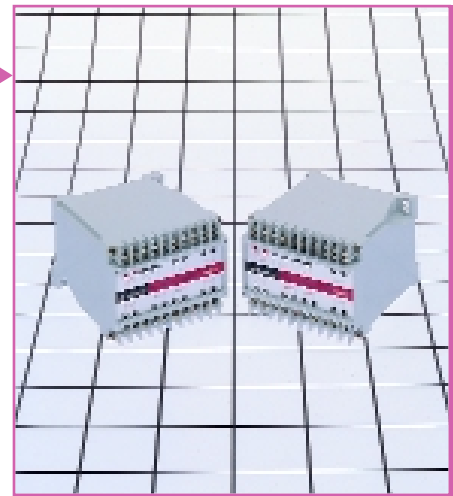


Watt/Watt-Hour Transducer Single or Three Phase WWH-3 VAR/VAR-Hour Transducer Single or Three Phase VVH-3

Function: The WWH-3 and VVH-3 combine Power and Energy transducers in one compact housing. The instruments provide two outputs; one a proportional, linear and highly accurate dc current output representing the measured Watts/VAR and the other a Watt-Hour/VAR-Hour measurement. The Watt-Hour/VAR-Hour outputs can be either a volt-free contact or an open collector output. The instrument has isolation between the inputs, outputs and power supply. The output section of the instruments can be calibrated for a wide range of inputs and the pulse rate of the output Watt-Hour/VAR-Hour measurement can also be calibrated to suit the required scale. Advanced circuit design gives the WWH-3 and VVH-3 true 0.1% accuracy for both Watt/VAR and Watt-Hour/VAR-Hour measurement. The WWH-3 and VVH-3 are housed in polycarbonate plastic enclosures suitable for DIN rail or Bulkhead mounting.



AlphaPOWER Range

SPECIFICATIONS

INPUTS:

Connection

1 Phase or
3 Phase, 3 wire, unrestricted

AC Current

Minimum Span: 1 Amp AC
Maximum Span: 5 Amp AC
Optional Span: 10 Amp AC

Peak Over Load

40 Amp AC RMS for 5 seconds
every 10 minutes
Option: 50 Amp AC RMS for
30 seconds every 1 hour

Input Power Consumption

0.26VA @ 5 Amp AC input

AC Voltage

(factory set)
Minimum Span: 85 Volts AC
Maximum Span: 500 Volts AC

Over Load

1.6 x (nominal rating)
continuous limited to
600 Volt AC

Input Power Consumption

0.15VA @ 150 Volts AC input
0.3VA @ 300 Volts AC input
If self powered from inputs
2.6VA @ 150 Volt AC

INPUTS:

AC Current and Voltage

Over Range
+ 20% of span for full accuracy

Frequency Range

45 to 440 Hz

Frequency Variation Effect

< ±0.02% / Hz (for Watt output)

SUPPLY:

Power Supply Voltage

Self Powered from inputs or
115 Volt AC -15/+25%
230 Volt AC -15/+25%
Option: 380 Volt AC -15/+20%

Power Over Load

Withstand 1.45 x (nominal rating)
continuous

Supply Burden

2.4 to 2.6VA @ 150/300 Volts
AC for a 20mA output

OUTPUT:

(Watts/VAR)

Power Calibration Span

170 to 8500 Watts/VAR

Over Range

+42% for full accuracy

DC Current

Between 0 and 20mA
Minimum span 1mA

Output Load

$R_L \text{ max} = (16/I_o(\text{mA})_{\text{MAX}}) * 1000$
i.e. $I_{o\text{MAX}} = 20\text{mA}$ $R_L \text{ max} = 800$

Load Variation Effect

< ±0.03% for full change

OUTPUT:

(Watt-Hour/VAR-Hour)

1) VOLT FREE CONTACT

SPST Reed Relay (NO)

Contact Rating

10 Watt maximum
Maximum Voltage - 200 Volt
Maximum Current - 0.5 Amp

Maximum Pulse Rate

720 pulses per hour

2) OPEN COLLECTOR

NPN open collector

Isolation

2.5KV dc or peak AC

Maximum Pulse Current

20mA

Minimum Pull-Up Resistor

$R_{\text{MIN}} = V / 0.02$
(V = External DC Voltage)

Maximum Pulse Rate

95,000 pulses per hour

GENERAL:

Power Factor

Unity to, lead or lag, zero

Isolation

4000 Volts RMS / 1 minute
(Voltage and Power Inputs)
2500 Volts RMS / 1 minute
(Current Input)

Accuracy (for 5 to 140% of Input)

±0.1% of span typical

Response Time

< 200mS (10 to 90% of span)

Temperature Coefficient

Better than ±0.1% of span/□ 10°C

Operating Temperature Range

-5 to +65°C

Storage Temperature Range

-35 to +85°C

Operating/Storage Humidity Range

5 to 95% RH non-condensing

Mounting

Standard 35mm DIN rail or Bulkhead

Protection Level

Box to IP40
Terminals to IP20

Weight

WWH-3 600 gms
VVH-3 600 gms



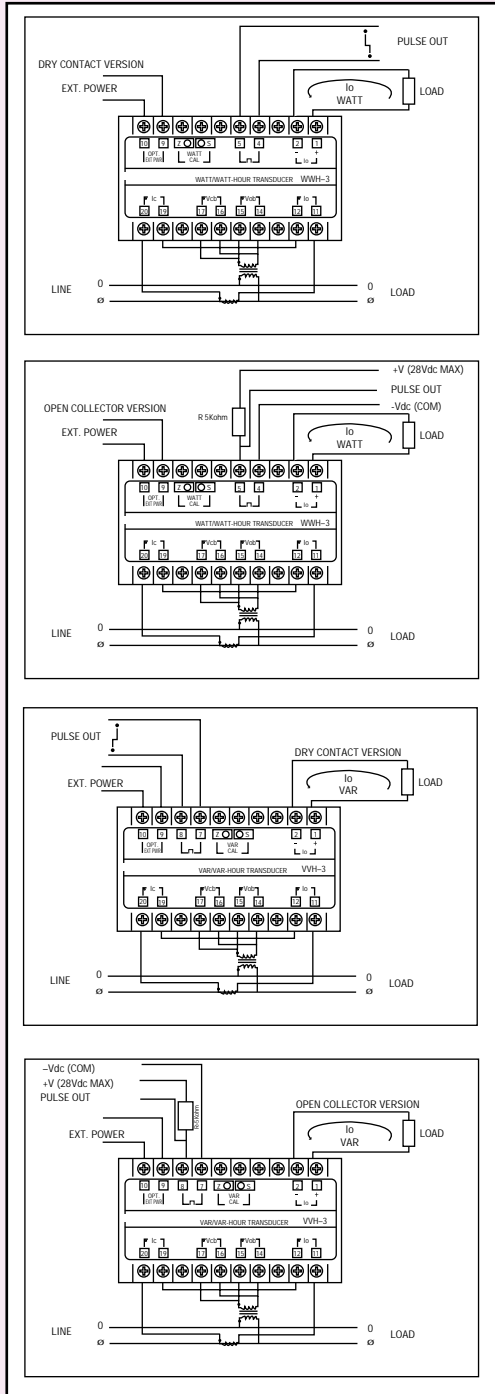
LEE-DICKENS LTD

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Watt/Watt-Hour Transducer Single or Three Phase WWH-3 VAR/VAR-Hour Transducer Single or Three Phase VVH-3

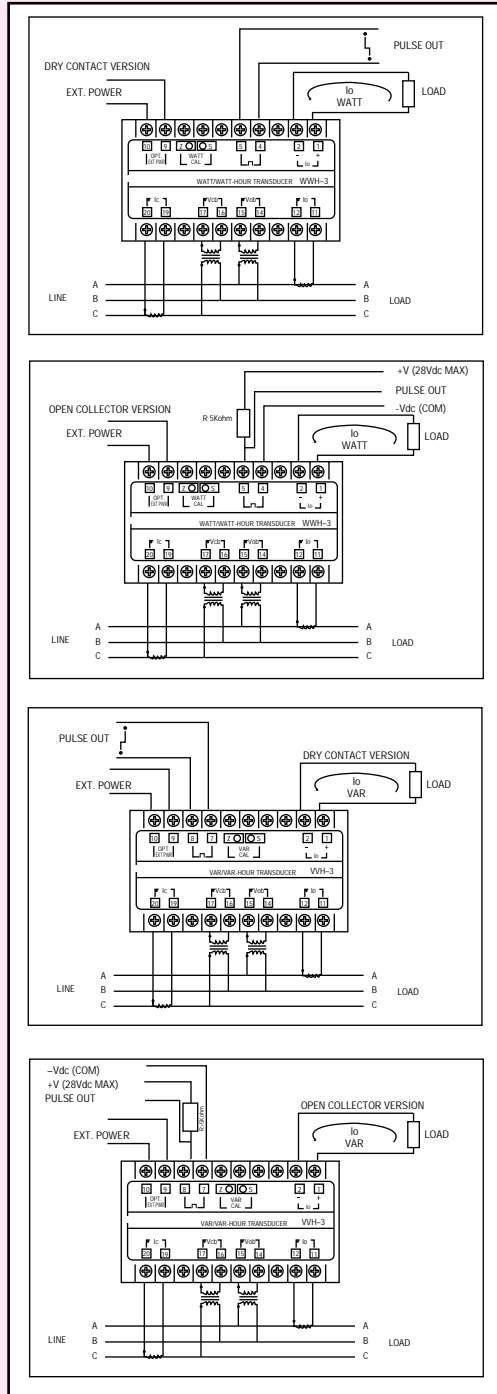
TERMINATION DETAILS

Single Phase Connection

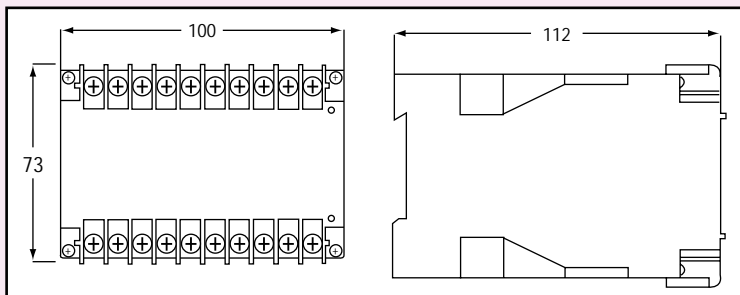


TERMINATION DETAILS

3 Phase 3 Wire Connection



MECHANICAL DETAILS



ORDERING DETAILS

- Give identification code, i.e. WWH-3
- Specify if Single or Three Phase, i.e. 3 Phase
- Give details of Power Supply, i.e. 230 Volt AC
- Give details of frequency range, i.e. 60 Hz
- Give details of input voltage, i.e. 380 Volt AC
- Give details of input current, i.e. 0 to 5 Amp AC
- Give details of output range, i.e. 4 to 20mA
- Give details of output type preferred, i.e. Volt Free Contact
- Give details of maximum output count rate, i.e. 500 counts per hour