



User's Guide

Ω OMEGA®

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DRA-WVT-3
Combined Watt-Var Transducer
Operator's Manual



OMEGA®

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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient connected applications.

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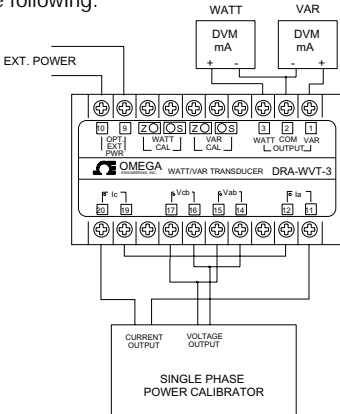
1. CALIBRATION INSTRUCTIONS

The DRA-WVT-3 is a precision instrument and was carefully and accurately calibrated.

Please do not change the internal potentiometers' setting.

In order to change slightly the calibration setting, please use the external Zero & Span potentiometers on the unit's panel

Please connect the unit to the calibrator according to the following:



For single-phase unit, the calibrator calculated power (CP)

is: $CP = P_{max}$

For Three-phase unit, the calibrator calculated power (CP)

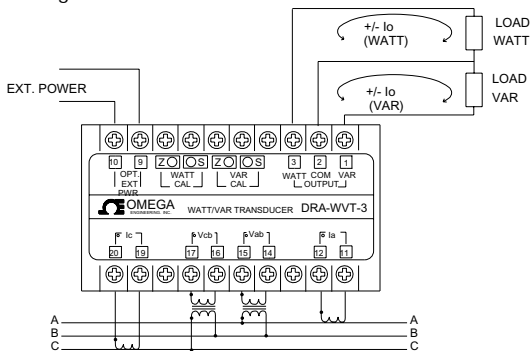
is: $CP = P_{max}/2$

Please follow the following instructions:

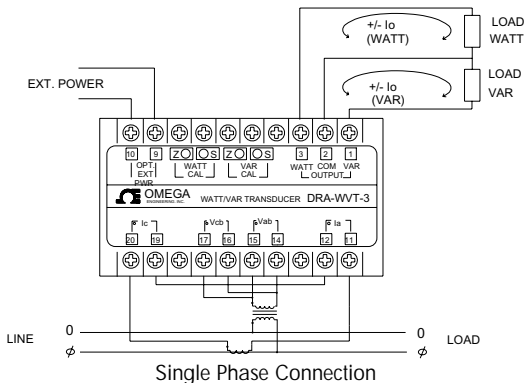
- Set the calibrator to the desired maximum input voltage. Set the output calculated power (CP). Set Power Factor (P.F) = 1.0
- With no power delivered to the DRA-WVT-3 unit, set the Watt and Var potentiometers for 4.000mA reading in both current meters.
- Turn on the calibrator for full power. Tune the Watt's Span potentiometer to 20.000mA.
- Set the P.F = 0 and tune the Var's Span potentiometer to 20.000mA.

2. CONNECTION DIAGRAMS

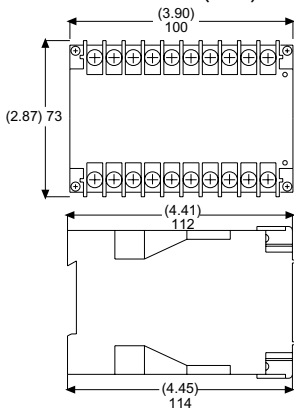
The power transducer is phase sensitive. Please keep the voltage/current phases according to the following diagrams.



Three-Phase Connection



3. DIMENSIONS mm (inch)



4. SPECIFICATIONS

INPUTS

CONNECTION: 1 or 3 phase, 3 wire, unrestricted

POWER FACTOR: Unity - to lead or lag zero

POWER CALIBRATION SPAN: 170 to 8500 Watt/Var

OVER RANGE: +42% (at full accuracy)

CURRENT

CURRENT RANGES: 0 - 1 to 0 - 5 Aac RMS

CURRENT OVER RANGE: +20% (at full accuracy)

PEAK OVERLOAD: 40 Aac RMS, for 5 sec. every 10 min.

VOLTAGE

VOLTAGE RANGES: 0 - 85 to 0 - 500 Vac

VOLTAGE OVER-RANGE: +20% (at full accuracy)

VOLTAGE OVERLOAD

(maximum 600 Vac): Withstand 1.6 x [nom. rating]
continuous, limited to 600Vac

POWER SUPPLY

SUPPLY RANGES: 115, 230 Vac -15/+25%
and Self-powered

POWER OVERLOAD: Withstand 1.45 x [nom. rating]
continuous

INPUT BURDEN

CURRENT: 0.26 VA @ 5 Aac

VOLTAGE: 0.15 VA @ 150 Vac, 0.3 VA @
300 Vac

VOLTAGE (Vab) (at Self-
power configuration): 2.6 VA @ 150 Vac

SUPPLY: 2.4 - 2.6 VA @ 150/300
Vac at 20 mA output

ISOLATION:

CURRENT INPUTS: 2.5 KV RMS /1 minute
VOLTAGE AND POWER
IINPUTS: 4KV RMS /1 minute
FREQUENCY RANGES: 50, 60, 400 Hz (Factory set)
FREQUENCY VARIATION < 0.02%/Hz for Watt output
EFFECT: < 0.1%/Hz for Var output

OUTPUTS (Watt or Var)

OUTPUT SPANS: -20 to +20mA, 0..1 to 0/4..20 mA
MAXIMUM OUTPUT LOAD: 800 Ω
LOAD VARIATION EFFECT: < $\pm 0.03\%$ (for full change)
RESPONSE TIME: < 200 msec (10-90% of span)

ACCURACY

$\pm 0.1\%$ of span (typical), $\pm 0.25\%$
of span (max)

TEMPERATURE

OPERATING: -5 to +65⁰C
STORAGE: -35 to +85⁰C
TEMPERATURE STABILITY: Better than $\pm 0.01/1^{\circ}\text{C}$
HUMIDITY: 5 - 95% relative, non-condensed
HOUSING: Plastic Polycarbonate
PROTECTION LEVEL: Box: According to IP-40
Terminals: According to IP-20
WEIGHT: 0.6 Kg

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY / DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible.

This affords our customers the latest in technology and engineering.

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