BadgerWare

Digital Panel Instruments

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A C V O L T A G E T R A N S D U C E R

TV-1 system Single phase, average sensing
TV-3 system Three phase, average sensing
TV-1T system Single phase, True rms sensing
TV-3T system Three phase, True rms sensing

These voltage transducers are available as average sensing devices calibrated in rms or as true rms units, either with a DC output proportional to the input.

This output signal enables several receivers to be operated simultaneously – such as indicators, recorders, alarm units, etc. The input current can be connected directly or via a P.T.

FEATURES

- High accuracy ±0.2% R.O.
- Precision measurement even for distorted waves
- High immunity to external noise
- Wide selection of input and output range
- Quick and easy mounting

SPECIFICATION

Accuracy: ±0.2% R.O.
(±0.1% R.O. Option)
Temp. coefficient: 100ppm at 23°C ±3°C
(Option 60ppm at 23°C ±3°C)
Temp. range: -20 to 60 °C
Operating 0~50°C
Humidity range: Up to 95% RH
Isolation: Input/output/power/case
Dielectric test: DIN-IEC 688. 2K Vrms 50/60 Hz, 1 min. Between terminal to terminal. 2.8K Vrms/1min. Between terminal to case.
Surge test: DIN-IEC 255-4, ANSI C37. 90a/1974. 5KV (1.2 x 50μs)
Insulation resistance: 100MΩ or more, DC 500V
Housing material: Steel sheet
Mounting: Wall mounting
Power supply: AC 115/230V ±15%, 50/60 Hz, 3VA

INPUT

AC input: 0~150V, 0~300V, 0~600V
Frequency: 45Hz~65Hz
Burden: ≤0.1VA (TV-1, TV-1T), ≤0.3VA (TV-3)
Response sensitivity: ≤0.5% of measuring range end value
Overload capacity: 1.25 x rated continuous
2 x rated 10 sec
4 x rated 5 sec
or 6000V rms continuous

OUTPUT

Output variables: DC voltage or current
Ripple: <0.5% p-p max.
Response time: < 0.4 sec. or less
Zero adjustment: ±5% minimum
Span adjustment: ±10% minimum
DC current: 0~20mA DC (max.)

Output	Load resistance	
4~20mA	≤ 600Ω	Load voltage 12V
0~20mA	≤ 600Ω	$R = \frac{12V}{\text{Output current}}$
0~10mA	≤ 1200Ω	
0~5mA	≤ 2400Ω	(R = load resistance)
0~1mA	≤ 12KΩ	

DC voltage: 0~12V DC (max.)

Output	Load resistance	
0~10V	≥ 1000Ω	Load capacity 10mA
0~5V	≥ 500Ω	$R = \frac{\text{Output voltage}}{10mA}$
1~5V	≥ 500Ω	
0~1V	≥ 100Ω	

CODE NUMBER

Model-Input/Output/Power
Example: TV-1-111
Input: AC 0~150V
Output: DC 4~20 mA
Power: AC 115/230V

A C V O L T A G E T R A N S D U C E R

ORDERING INFORMATION

TA-1 — ☐ ☐ ☐
TA-1T — ☐ ☐ ☐
TA-3 — ☐ ☐ ☐
TA-3T — ☐ ☐ ☐

MODEL
TV-1: 1ϕ, average
TV-1T: 1ϕ, true rms
TV-3: 3ϕ, average
TV-3T: 3ϕ, true rms

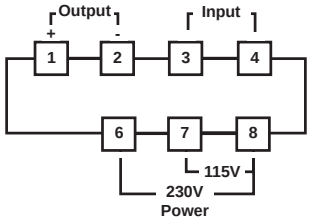
INPUT
1: AC 0~150V
2: AC 0~300V
3: AC 0~600V
Y: Option (0~600V max.)

OUTPUT
1: DC 4~20mA
2: DC 0~20mA
3: DC 0~10mA
4: DC 0~5mA
5: DC 0~1mA
A: DC 0~10V
B: DC 0~5V
C: DC 1~5V
D: DC 0~1V
Y: Option (0~20mA, 0~12V max.)

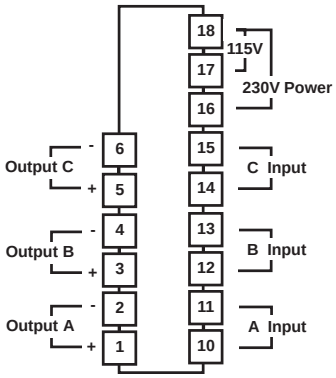
POWER SUPPLY
1: AC 115/230V ±15%
Y: Option

CONNECTION DIAGRAMS

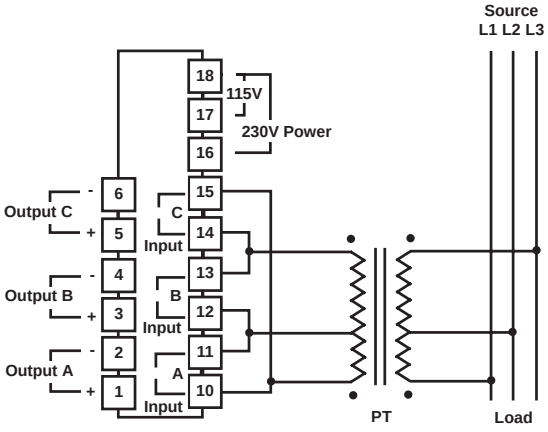
MODEL: TV-1, TV-1T (CASE A)



MODEL: TV-3, TV-3T (CASE B)



3ϕ 3-WIRE VOLTAGE TRANSDUCER CONNECTION
MODEL: TV-3, TV-3T (CASE B)



3ϕ 4-WIRE VOLTAGE TRANSDUCER CONNECTION
MODEL: TV-3, TV-3T (CASE B)