AC Voltage Transducer v2 BAVT248

DESCRIPTION

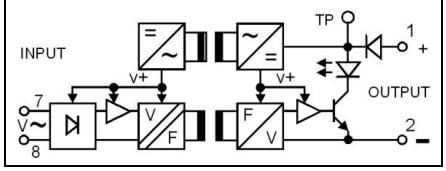
The BAVT248 is a loop powered, isolating transducer that accepts standard ac voltages from 100V to 300Vac in four selectable ranges. The BAVT248 is ideal for field enclosures or as a space saver in larger control cabinets. Standard output is 4 - 20mA with a minimum supply voltage of 8V. This enables the BAVT248 to be used in 12V battery supply systems or in automotive applications. Other factory set output configurations are 10 - 50mA loop powered and 0 - 10mA, 0 - 20mA or voltage output in 3-wire connection. Double surge protection is standard with all Series 200 loop powered transmitters to prevent failure due to spikes induced by DC switched inductive loads. The input circuit features an averaging rectifier to accept sinusoidal waveforms having frequencies in the range 10 to 1000Hz. The input output isolation is greater than 2kV rms. Zero suppression (OFFS) is adjusted internally via an optional 15-turn potentiometer. Final non-interacting ZERO and SPAN adjustments are accessible from the front of the module. A front mounted L.E.D. and a test socket verify module function and assist in calibration checks without disconnection of output wires.

General Specifications

Size:	23.5W x 71.5H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	ABS.
Connection:	Screw terminals.
Weight:	106 g.
Accuracy class as per AS-1384-1973:	Class 0.2.
Input range:	100 / 150 / 200 / 300Vac. (10 - 1000Hz Sine)For other wave forms use BSI239 with rms input.
Protection class:	IP40 (IP65 use additional enclosure).
Accuracy error:	<0.2% from 10% up to 100% of range.
Linearity error:	<0.2% from 10% up to 100% of range.
Frequency dependence:	< 0.2% for 30 to 500Hz swing. 0.5% for 20Hz to 1kHz swing.
Ambient operating range:	-20...+70°C.
Temperature drift error:	<0.5% within operating range.
Supply voltage:	8 - 40V continuous (50V 30 seconds).
Load for 4 - 20mA output:	$RLmax = \frac{\text{Supply Voltage} - 8V}{0.02A}\ [\Omega]$
Load change effect:	< 0.1% up to RL max.
Internal offset adjustment:	-25%. (Zero suppression)
Front zero adjust:	+20% / -10% typical.
Front span adjust:	±25% typical.
Input impedance:	250K ohm.
Response time:	0.5 sec to T90 (typically) additional filtering optional.
Overload continuous:	500% of rated input (up to 100V); 200% of rated input (above 100V).
Input/output isolation:	2kV r.m.s. continuous.
Electromagnetic compatibility:	Complies with EN 50081-1, EN 50082-2, EN 61010-1

CE

Block Diagram



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For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

BAVT248 - X X X X

TYPE NO. DESIGNATION

Output:

1 = 4 - 20mA. } 2-wire.
2 = 10 - 50mA. }

*) 3 = 0 - 1mA. }
*) 4 = 0 - 10mA. } 3-wire. 0V Ref
*) 5 = 0 - 20mA. }

*) 6 = 0 - 1V. }
*) 7 = 0 - 5V, min supply 10.5Vdc } 3-wire. 0V Ref
*) 8 = 0 - 10V.min supply 15.5Vdc }
*) 9 = Other (Specify).

Input:

1 = 4-range Input. (See table 1, specify required input).

Action:

1 = Direct. 2 = Reverse.

Options:

0 = None.
*) 1 = Customised response time (Specify).
*) 2 = Output ramp (external capacitor).

*) 9 = Other (Specify).

4 Range Input

SW1	D	E	F	G	H
0-300V		X	X	X	
0-200V	X				
0-150V	X		X		
0-100V	X	X			

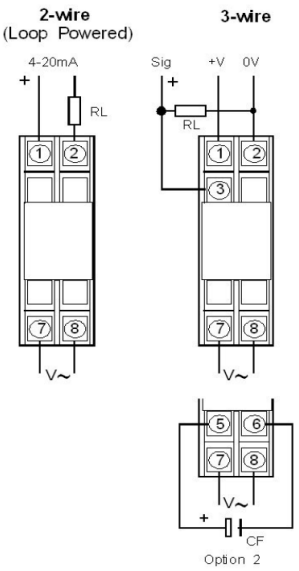
'X' = Link

Response Time

SW1	I	J
5mS		
50mS	X	
500mS		X

Bottom right corner of PCB ^

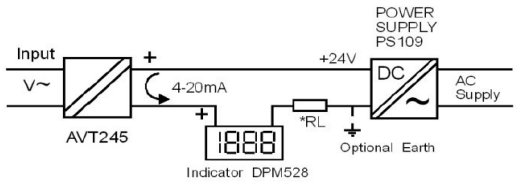
Connection Diagrams



Front Control Explanation

1) Test socket - output signal access with reference to terminal (1) loop integrity is maintained when digital multimeter Rin <30 Ω is used.
2) Loop indicator - dim at 4mA, bright at 20mA.
3) SPAN (full scale) adjust 15 turn.
4) ZERO (start scale) adjust 15 turn.

Wiring Example



*Note: RL is input load of PLC or other process instrument.

*) Price Extra..