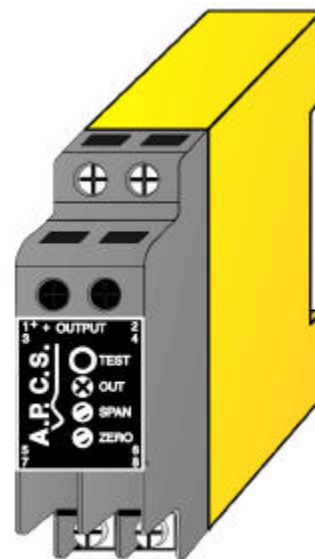


## VIBRATION TRANSMITTER (v2) VBT244

### DESCRIPTION

The VIBRATION TRANSMITTER VBT244 loop powered transmitter offers an economical solution combining compactness with accuracy and flexibility. The VBT244 accepts inputs from a variety of vibration transducers, accelerometers or shock pulse transducers. Due to its total width of only 22.5mm and the 35mm DIN-Rail mounting arrangement the VBT244 is ideal for "nestmounting" in field enclosures or as a "space saver" in larger control cabinets. Standard output is 4-20mA with a minimum supply voltage of 7.5V. This enables the VBT244 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 up to 40Vdc. (3-wire connection is negative referenced). 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 AC input signal from the transducer is available on terminals 5/6 as a buffered signal for connection of vibration analysis equipment. The output process signal is factory calibrated for a defined response mode, such as peak, peak to peak or r.m.s. responding, depending on the application. Special filtering and integration for velocity is available as an option. Signal level amplification is user selectable by coding plugs on the input section of the VBT244. This feature is useful for system optimisation during commissioning, as actual vibration levels are often very hard to determine. 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

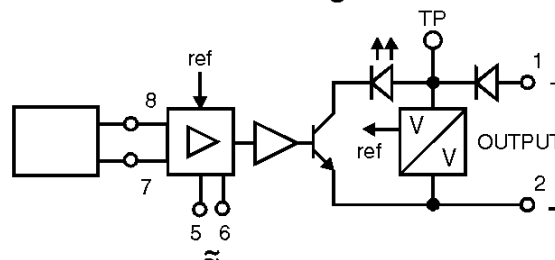
Size:	22.5W x 68H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	Polycarbonate.
Connection:	Screw terminals.
Weight:	100 gr.
Protection class:	IP40.
Calibration accuracy:	<0.2% of range.
Linearity:	<0.5% all ranges.
Ambient operating temperature range:	-20...+70°C.
Temperature drift error:	0.02% / °C within operating range.
• Supply voltage:	7.5 - 40V continuous (50V 30 seconds).
• Load for 4 - 20mA output:	$RL_{max} = \frac{SupplyVoltage - 7.5}{0.02A} [\Omega]$
Load change effect:	0.1% up to RL max.
Front zero adjust:	+20% / -10% typical.
Front span adjust:	±25% typical.
Input sensitivity:	20 mV/g minimum.
Transducer excitation:	5.3Vdc @ 1mA standard 1mA @ 16V is typical for the PR337F04.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

#### • NOTE

The supply voltage range and series loop resistor equation are for the VBT244 only. Serious consideration must be given to supply voltage requirement for the transducer. Swing coil transducers will generally work over the supply voltages quoted. Quartz shear accelerometers such as the PR337F04 require up to 14Vdc bias plus a maximum signal of 5V=19Vdc worst case minimum. There is an additional loss of 3V in the VBT244. Eddy current displacement probes require 24Vdc @ 12mA. For these reasons a 3-wire connection from a 24Vdc supply is required when using the PR337F04 probe and displacement probes.

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

### Block Diagram



### TYPE NO. DESIGNATION

#### Output:

1 = 4 - 20mA.	} 2 - wire.	*) 6 = 4 - 20mA.	} 3 - wire.
2 = 10 - 50mA.			
*) 3 = 0 - 1mA.	} 3 - wire.	*) 8 = 0 - 10V min. supply 15.5Vdc.	}
*) 4 = 0 - 10mA.		*) 9 = Other (Specify).	
*) 5 = 0 - 20mA.		0V Ref	

#### Input:

- 1 = Quartz shear transducer.
- 2 = Eddy current displacement transducer. Specify calibration and probe details.  
e.g. 0 - 2g, Probe = PR337F04.
- 3 = Swing coil transducer.
- \*) 9 = Other (Specify type of transducer)

#### Output Response:

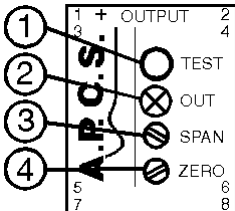
- 1 = Peak
- 2 = Peak to peak.
- 3 = r.m.s. average.

#### Options:

- 0 = None.
- \*) 1 = Customised filtering. (Specify)
- \*) 2 = Integration for velocity.
- \*) 9 = Other.

### Front Control Explanation

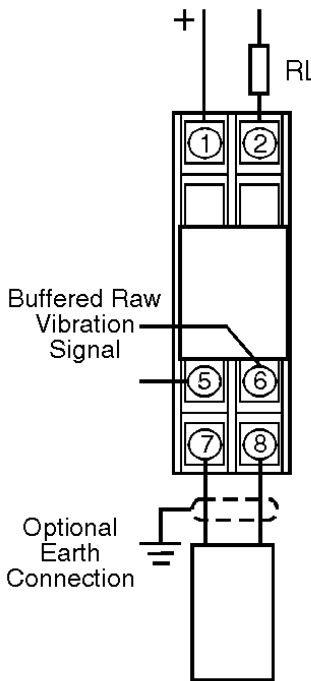
- 1) Test socket - output signal access with reference to terminal (1) loop Integrity is maintained when digital multimeter Rin <30 Ω is used.
- 2) Loop indicator - dim at 4mA, bright at 20mA.
- 3) SPAN (full scale) adjust 15 turn.
- 4) ZERO (start scale) adjust 15 turn.



### Connection Diagrams

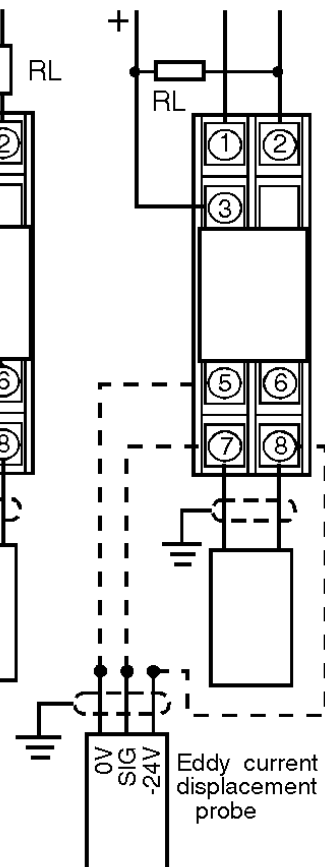
#### 2-wire (Loop Powered)

4-20mA

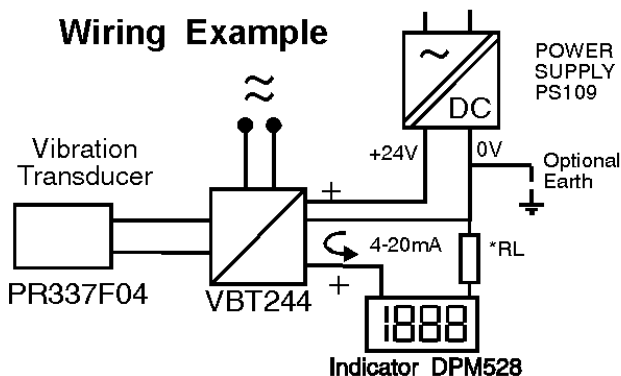


#### 3-wire

Sig +V 0V



### Wiring Example



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

\*) Price Extra.

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