



STRAIN GAUGE TRANSMITTER (v4) BWT227

DESCRIPTION

The BWT227 is primarily designed for use with strain-gauge type pressure transducers. Any other strain gauge devices can be accommodated as long as the bridge resistance is not below 5kΩ for 2-wire output or 350Ω for 3-wire output. Typical applications for separation of transducer and transmitter would be where the transducer is submersed or otherwise inaccessible. Final calibration is trimmed using the front accessible zero and span 15-turn trim adjustments. A front mounted L.E.D. and a test socket verify module function and assist in calibration checks without disconnection of output wires. Standard output is 4-20mA with a minimum supply voltage off 6.3V. This enables the BWT227 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.



GENERAL SPECIFICATIONS

Size: 23.5Wx71.5Hx109D (mm)

Mounting: Clip for 35mm DIN-Rail.

Housing material: ABS.

Connection: Screw terminals.

Weight: 88 g.

Protection class: IP40.

Accuracy error: <0.2% of range.

Linearity error: <0.2% all ranges.

Ambient operating

temperature range: -20...+70°C.

Temperature drift error: 0.02% / °C within operating range.

Supply voltage: 6.3 - 40V continuous (50V 30 seconds).

Load for 4 - 20mA output: $RL \cdot \max = \frac{\text{supply voltage} - 6.3V}{0.02A} [\Omega]$.

Load change effect: 0.1% up to RL max.

Response time: 0.2 sec for T₉₀.

Zero adjust: -20...+10%.

Span adjust: -12...+100% (Gain 0.88...2.10).

Input range: 5mV up to 100mV.

Excitation output: 4.7V @ 1mA max or 1mA constant current. Where a 350 Ω loadcell is used as input, the 3-wire output option allows for 10V excitation.

Input/output isolation: Optional.

Electromagnetic compatibility: Complies with EN 50081-1, EN 50082-2

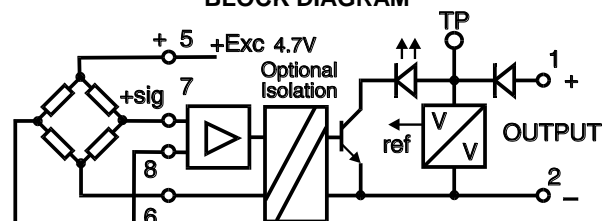


Recommended Transducers

- Philips KS2153 (0.4 - 25 Bar).
- Philips KS2150 (1 - 400 Bar).
- Honeywell 234PC.
- Novasensor NPI-19A.
- Trans Instrument 2000A.

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

BLOCK DIAGRAM



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STRAIN GAUGE TRANSMITTER

BWT227

No. DS 27:10-E Issue: 9 1/08/11

TYPE NO. DESIGNATION

Output:

- | | | | |
|------------------|----------|-------------------------------------|----------|
| 1 = 4 - 20mA. | } 2-Wire | *) 6 = 4 - 20mA. | } 3-Wire |
| 2 = 10 - 50mA. | | | |
| *) 3 = 0 - 1mA. | } 3-Wire | *) 7 = 0 - 5V. min. supply 10.5Vdc. | } 3-Wire |
| *) 4 = 0 - 10mA. | | *) 8 = 0 - 10V. min supply 15.5Vdc. | |
| *) 5 = 0 - 20mA. | | *) 9 = Other (Specify). | |

Input:

- | | |
|----------------|-------------------------|
| 1 = 0 - 5mV. | 6 = 0 - 30mV. |
| 2 = 0 - 7.5mV. | 7 = 0 - 50mV. |
| 3 = 0 - 10mV. | 8 = 0 - 100mV. |
| 4 = 0 - 15mV. | *) 9 = Other (Specify). |
| 5 = 0 - 20mV. | |

Excitation:

- 1 = 4.7V @ 1mA max.
- 2 = 1mA constant (max 5kΩ).
- *) 3 = 3V @ 1mA max.
- *) 4 = Specify Vdc (min 350Ω). Must be 3-wire connection with supply at least 3 volts higher than specified value. Only available with standard non-isolated unit.
- *) 9 = Other (Specify).

Options:

- 0 = None.
- *) 1 = SPAN, remote adjustment Including 1.5m cable tail (Potentiometer extra).
- *) 2 = SPAN and INPUT OFFSET remote adjustment. Including 2 x 1.5m cable tail (Potentiometer extra).
- *) 3 = Reverse action.
- *) 8 = Input / Output isolation > 2kV rms.

*) = Price Extra.

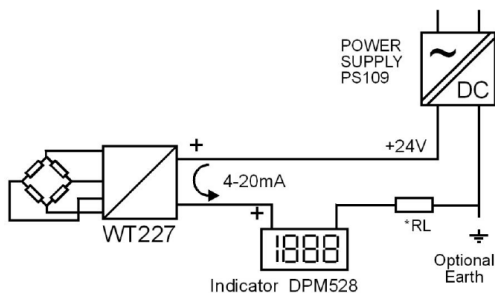
Front Control Explanation

Test socket - output signal access with reference to terminal (1) loop integrity is maintained when digital multimeter Rin < 30Ω is used.

Loop indicator - dim at 4mA, bright at 20mA.

SPAN (full scale) adjust 15 turn.
ZERO (start scale) adjust 15 turn.

Wiring Example



*RL is input load of PLC, VSD, or other process instruments.

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Connection Diagrams

