

2-Wire Head-Mounted Transmitter -- T/C input

Model LW-242

Cold-junction compensation

Multi-range selectable

Galvanic isolation

Long term stability

Competitive pricing

Descriptions



The Model LW-242 is an analog, isolated 2-wire head-mounted temperature transmitter that converts the thermocouple input into a proportional to the voltage generated by the thermocouple sensor, linear, and highly accurate 4- 20 mA output current in a variety of applications such as process control, automation system, and energy source management.

The LW-242 is performed by means of a DIP-switch array for coarse range setting, and two multi-turn potentiometers (ZERO & SPAN) which are used for the final fine-tuning. The LW-242 is housed in a metal enclosure with a plastic top cover, fitting into DIN B connection heads providing excellent RFI immunity. The LW-242 accepts low level signal from thermocouple, filtered, amplified, and converted to process current to reduce susceptibility transients and noise operations and allow the same two wires to carry the transmitter power and output current simultaneously.

Specifications: (Vloop = 24 VDC, Tamb = 22°F, Rload = 250 ohms)

Output:	4 - 20 mA; Upscale < 26 mA, Downscale < 3.8 mA
Loop power:	12 - 32 Vdc. Reverse polarity protected
Input thermocouple:	J; E; K; T; R; S; B
Supply voltage effect:	! 0.01%/V
Temperature coefficient:	! 0.02% / " (Tamb = 5 to 50 ")
Repeatability:	! 0.01% of voltage input span
Linearity error:	! 0.1% of voltage input span (not temperature input)
Galvanic isolation:	input/output 1000 Vrms, continuous
Cold-junction compensation:	! 2 " max. (Tamb = 5 to 50 ")
Load capability:	50 x (loop power - 12) ohms
Fine adjustment:	5 % of ZERO & SPAN
RFI effect (5W, 470 MHz):	< 10% of span
Response time (0 to 90%):	200 ms
Housing material:	Cast Aluminum with epoxy coating and Polycarbonate, UL94-V0 grade
Connection:	M3, nickel coated brass; 22- 12 AWG
Operation environment:	- 20 to 70 " ; 5 to 85 %, non-condensing
Dimensions:	45mm DIA. x 27mm H
Weight:	65g

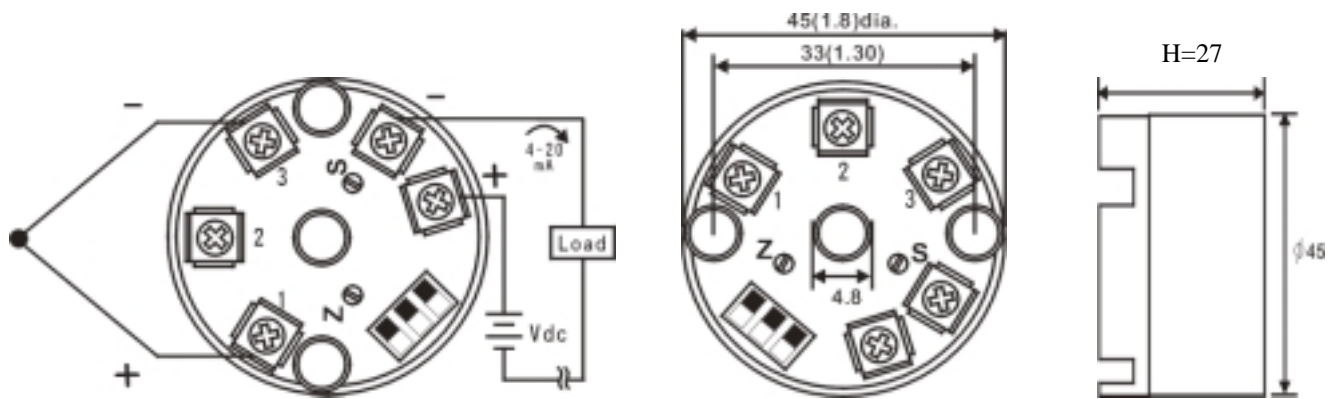
DIP-Switch Setting			T/C-Type & SPAN (°C)							
S1	S2	S3	J	E	K	T	R	S	B	N
ON	ON	ON	75	75	125	50	200	200	200	125
OFF	ON	ON	150	150	250	100	400	400	400	250
ON	OFF	ON	225	225	375	150	600	600	600	375
OFF	OFF	ON	300	300	500	200	800	800	800	500
ON	ON	OFF	375	375	625	250	1000	1000	1000	625
OFF	ON	OFF	450	450	750	300	1200	1200	1200	750
ON	OFF	OFF	525	525	875	350	1400	1400	1400	875
OFF	OFF	OFF	600	600	1000	400	1600	1600	1600	1000

Note:

The DIP-switch is protected by a small tip which has to be moved before setting

Table 1 Switch settings for Span

Wiring Diagram & Dimensions -- mm (inch)



NOTE:

After selecting a different SPAN, adjust the transmitter again for the best accuracy

Adjustments

Connect signal source (calibrator) to the unit, power on warm up 10 minutes.

- Set the calibrator to the desired low temperature (4 mA point) and adjust the potentiometer ZERO to get $I_{out} = 4.00$ mA.
- Set the calibrator to the desired high temperature (20 mA point) and adjust the potentiometer SPAN to get $I_{out} = 20.00$ mA.
- Repeats steps A & B once, if necessary for best accuracy

Order information

- Standard calibrated range

LW242 – T/C Code - U/D ; U/D : Upscale/ Downscale output when Sensor Burnout happened

Example: LW242 - S - D ; Thermocouple type S input, factory calibrated range 0 to1500 " Downscale output when input Sensor Burnout happened

- Customer defined range

LW242 – T/C Code - Low/ High Temp. Unit - U/D ;

Example: LW242- K – 50 / 500 " ; Thermocouple type K input, factory calibrated range 50 to500 "

PISOAMP, Inc

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