

# DEVAR Inc.

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## Instruction Manual DTT

DUCT TEMPERATURE  
TRANSMITTER





# INSTRUCTION MANUAL

## SM-812-EC3 Inexpensive Two Wire Temperature Transmitter for 2 or 3 Wire RTDs.

### SPECIFICATIONS:

#### 1) Performance

1.1) Accuracy  $\pm 0.1\%$  / span, includes effects of linearity, hysteresis, and repeatability referred to temperature input.

1.2) Nonlinearity 0.1% relative to a 100S Pt RTD,  $" = 0.00385$  standard curve for nominal range. 4:1 minimum improvement on nonlinearity otherwise.

#### 1.3) Thermal Effect

1.3.1) Zero Shift of  $\pm 0.02\%$  / Span /  $^{\circ}\text{F}$

1.3.2) Span Shift of  $\pm 0.02\%$  / Span /  $^{\circ}\text{F}$

#### 1.4) Power Supply

1.4.1) Working Voltage of 8 to 35 VDC

1.4.2) Supply Voltage Effect

$< \pm 0.001\%$  / Span / Volt

#### 1.5) Loop Considerations

1.5.1) Loop Resistance Load Effect

$< \pm 0.002\%$  / Span / 300 Ohms

1.5.2) Maximum Loop Resistance

$\text{MLR(S)} = (V_{\text{Supply}} - 8\text{V}) / 0.020\text{A}$

#### 1.6) RFI immunity

Rated class 3-C: 0.25% of span per SAMA PMC 33.1-1987-2abc

#### 1.7) Frequency Response

Output -3dB @ 3Hz Input

#### 2) Environment

##### 2.1) Temperature range

2.1.1) Ambient -13/ $^{\circ}\text{F}$  to 185/ $^{\circ}\text{F}$

2.1.2) Storage -85/ $^{\circ}\text{F}$  to 257/ $^{\circ}\text{F}$

2.2) Humidity 0 to 90% noncondensing

#### 3) Input

3.1) Standard 100S Pt RTD,  $" = 0.00385$

#### 4) Output

4.1) Signal range 4 to 20 mADC

4.2) Absolute Limit 2 to 29 mA

4.3) Open RTD Indication Output  $> 22\text{mA}$

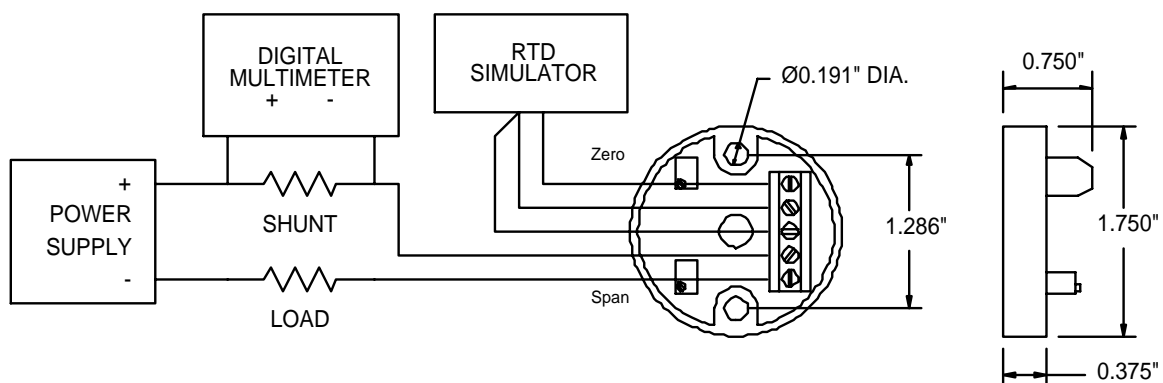
#### 5) Calibration

##### 5.1) Calibration Range Adjustability

5.1.1) Zero 25% of nominal span

5.1.2) Span 25% of nominal span

### WIRING:



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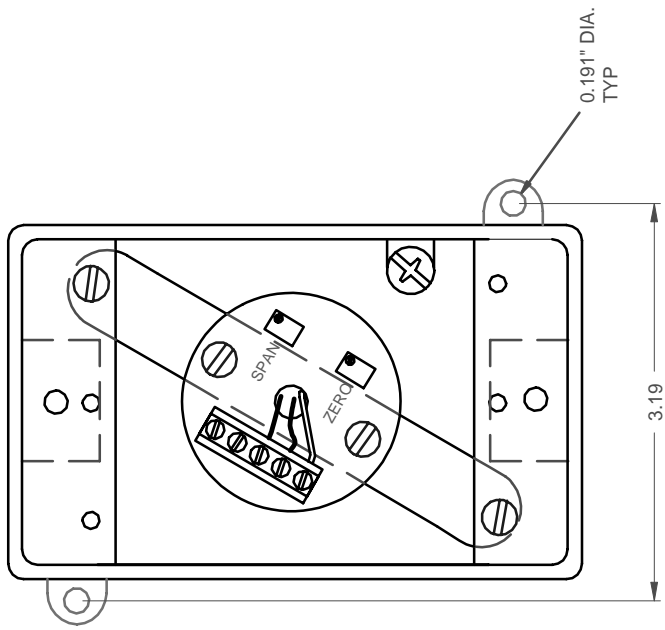
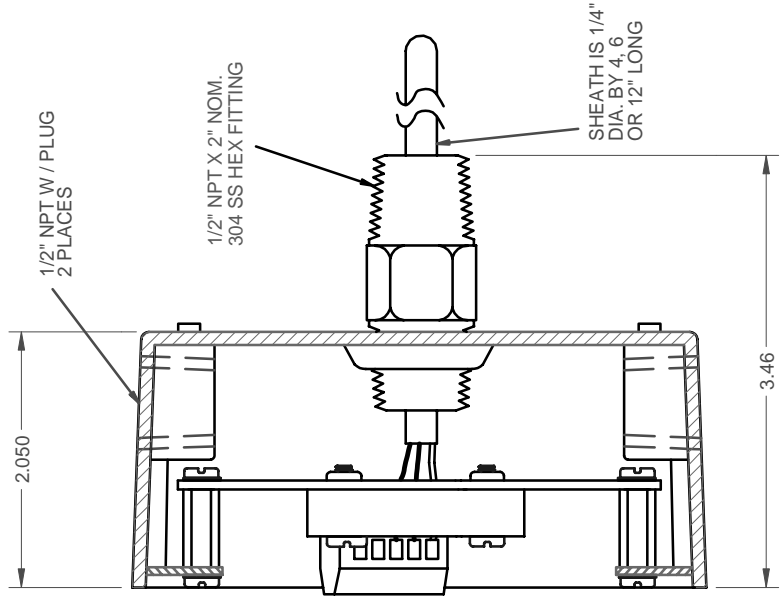
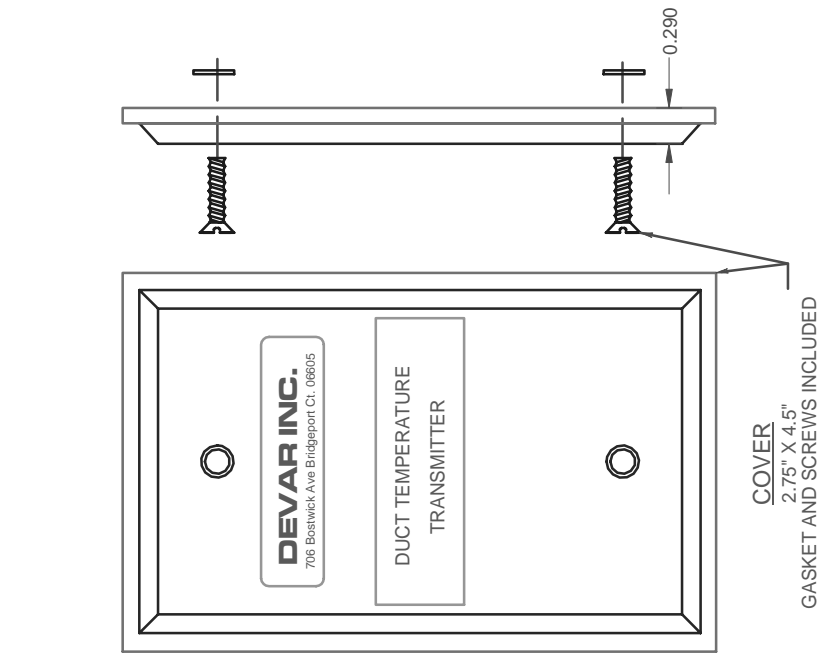
Input		0%	25%	50%	75%	100%
Model	Range °F	" = 0.00385 100S Pt RTD Values at % of Input Span				
-0011	-40/120	84.27	93.03	101.74	110.38	118.97
-0012	0/200	93.03	103.90	114.68	125.37	135.97
-0013	0/300	93.03	109.30	125.37	141.24	156.90
-0014	0/500	93.03	120.04	146.48	172.36	197.69
-0015	0/750	93.03	133.33	172.36	210.14	246.65
-0016	0/1000	93.03	146.48	197.69	246.65	293.38
-0017	-30/130	86.47	95.21	103.90	112.53	121.11
-0018	40/140	101.74	107.15	112.53	117.90	123.24
-0019	50/85	103.90	105.80	107.69	109.57	111.46
-0021	0/150/C	100.00	114.57	128.98	143.23	157.31
-0022	0/100	93.03	98.48	103.90	109.30	114.68
-0023	20/120	97.39	102.82	108.22	113.61	118.97
-0024	0/150	93.03	101.19	109.30	117.36	125.37
-0025	0/200/C	100.00	119.40	138.50	157.31	175.84
-0026	30/100	99.57	103.36	107.15	110.92	114.68
-0027	35/85	100.65	103.36	106.07	108.76	111.46
-0028	0/250	93.03	106.61	120.04	133.33	146.48
-0029	-40/25°C	84.27	90.69	97.07	103.42	109.73
-0030	0/50°C	100.00	104.88	109.73	114.57	119.40
-0031	32/122	100.00	104.88	109.73	114.57	119.40
-0032	-200/0	48.46	59.80	71.00	82.07	93.03
-0033	0/100°C	100.00	109.73	119.40	128.98	138.50
-0034	30/110	99.57	103.90	108.22	112.53	116.83
-0035	-100/0°C	60.25	70.33	80.31	90.19	100.00

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### CALIBRATION DATA (continued):

Input		0%	25%	50%	75%	100%
Model	Range °F	" = 0.00385 100S Pt RTD Values at % of Input Span				
-0036	-50/50°C	80.31	90.19	100.00	109.73	119.40
-0037	0/320°C	100.00	130.90	161.04	190.45	219.12
-0038	30/130	99.57	104.98	110.38	115.75	121.11
-0039	-30/20	86.47	89.21	91.94	94.67	97.39
-0040	-40/25	84.27	87.84	91.40	94.94	98.48
-0041	30/65	99.57	101.46	103.36	105.25	107.15
-0042	50/100	103.90	106.61	109.30	111.99	114.68
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Duct Temperature Transmitter  
Dimension Drawing