

# INFORMATION & SPECIFICATIONS DATA SHEET

## Mp82810 Thermocouple and RTD Linearized 2-wire 4 to 20mA Temperature Transmitter

### Mp82810 Microprocessor Head Mount Temperature Transmitter

The Mp82810 is the smallest, most advanced 2-wire 4 to 20 mA head mounting microprocessor based transmitter available. Able to fit in a small, standard connection head, it is easily and quickly programmed to your exact requirements in the field via a personal computer or hand-held terminal and the optional IF700 interface and software.

The Mp82810 incorporates highly advanced 13th order polynomials to provide the highest accuracy in the industry, 0.1% of set span. It is scalable from -200°C to the upper limit of Pt100 RTDs and Type J, Type K, Type T, Type E and 0°C for Type N Thermocouples. Features include: 25°C minimum span, complete linearization for all sensors; wide power supply capability (10-36 Vdc); selectable upscale/downscale; total RFI-immunity (DC to 1 GHz.); high loop drive capability (600 ohms @ 24 Vdc); and a five (5) year warranty against failure. It even has a 2-Line, 10-character alphanumeric tagging capability. An optional plug-in loop-powered LCD readout and small connection head with a glass window are also available.

There is no longer any reason to stock several different transmitters when a single, low-cost, high accuracy unit can meet all of your requirements. The Mp82810 can easily be programmed in the field with the optional field programming module and PC based "Point 'n Click" software program in less than one minute, the Mp82810 can be used for all your different sensor and range requirements.

#### Specifications

**RTD Input Types:** Pt100

**Thermocouple Input Types:** K, J, T, E, N

**Temperature Ranges:** See Table below

**Minimum Temperature Span:** See Table below

**Minimum Span:** See Table Below

**Output:** 4 to 20mA or 20 to 4mA

**Linearization:** On/Off

**Power Supply \*\*:** 12 to 36 Vdc, Polarity Protected

**Supply Effect:** 0.001%/V

**Max. Ripple:** 10 V PP. Min Vbat=10 Vdc

**Zero Drift:**  $\pm 0.01\%/^{\circ}\text{C}$  or  $\pm 0.02^{\circ}\text{C}/^{\circ}\text{C}$

**Span Drift:**  $\pm 0.005\%/^{\circ}\text{C}$  or  $\pm 0.01^{\circ}\text{C}/^{\circ}\text{C}$

**Long Term Drift:**  $\pm 0.05\%/\text{Year}$

**Cold Junction Drift:**  $\pm 0.01^{\circ}\text{C}/^{\circ}\text{C}$

**Excitation Current, RTD:** 0.1 mA



#### Features

- ▶ Programmable for Types J/K/T/E and N Thermocouples and Pt100 RTD Input
- ▶ Fully-Linearized
- ▶ RFI/EMI-Protected
- ▶ High Accuracy
- ▶ Mounts in Standard Small Protection Head
- ▶ Optional Plug-In Display & Protection Head
- ▶ Small Size (1.7" dia. x 1.1"H)



**SPI-MP (IF700-USB) Programming interface and PC based Software**

**Sensor Lead Resistance, RTD:** 500 Ohm max.

**Sensor Lead Resistance Effect:** 0.001°C/Ohm

**Sensor Lead Resistance, T/C:** 10,000 Ohm max.

**Open Circuit Detection:** Upscale / Downscale

**Load Capability:** Vbat-10V/20 mA

**Response Time:** < 3 sec.

**Startup Time:** 20 sec.

**Warmup Time:** 5 Min.

**Isolation:** 500 VDC

**Ambient Operating Temp.:** -40 to + 85°C

**Storage Temperature:** -40.to +100°C

**Ingress Protection:** IP30

**Housing Material:** Zinc Alloy (ZAMAK 5) epoxy coated

**Housing Dimension:** 43mm Dia. x 27mm H.

**Housing Dimension with Read-Out:**

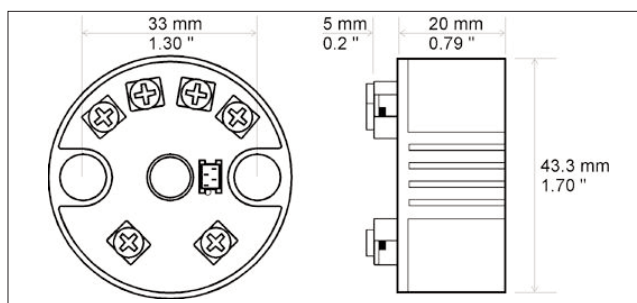
43mm Dia. x 36mm H.

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## Mp82810 Series Thermocouple and RTD Linearized 2-wire 4 to 20 mA Temperature Transmitter

Sensor Type	Temp. Min. °C	Temp. Max. °C	Span Min. °C	Temp. Min. °F	Temp. Max. °F	Span Min. °F
<b>Thermocouple Type</b>						
J (Fe-CuNi)	-150	1200	50	-238	2192	90
K (NiCr-NiAl)	-200	1370	50	-328	2498	90
T (Cu-CuNi)	-200	400	50	-328	752	90
E (NiCr-CuNi)	-270	1000	50	-454	1832	90
N (Microsil-NiSi)	0	1300	50	32	2372	90
<b>RTD Type</b>						
Pt100 IEC751	-200	850	25	-328	1562	45

### Mp82810 Dimension



Order Information	
Part Number	Description
MP82810	Microprocessor Based Thermocouple and RTD transmitter Un-calibrated.
Accessories	Description
	Factory Configuration provide Sensor Type, Min.Max Temperature and Temperature Scale
IF700	PC Based Interface and Software for field programming
MP82-DISPLAY	Plug-In Loop-Powered LCD Readout)
DANW	Dome Connection Head with Glass Window

For factory configuration of the MP82810 please provide Sensor Type, Minimum, Maximum Temperature and Temperature Scale.

PM5600 High Accuracy, LCD  
Display 1/8 DIN Panel Meter

Ordering is easy fast and secure just go to our web site at:

<http://www.tnp-instruments.com>

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