

Mp82710 Microprocessor Based Programmable 2-wire 4 to 20mA Temperature Transmitter

2-Wire 4 to 20mA Microprocessor Based Head-Mount Transmitter with Thermocouple, RTD, mV and Ohms Input

The Mp82710 is an advanced 2-wire 4 to 20mA head mounting microprocessor based transmitter. Now the MP82710 includes ATEX IS Intrinsically Safe as standard. The Mp82710 can fit in a small, standard connection head, it is easily field programmable to your exact requirements via an optional PC based "Point 'N Click" software.

The Mp82710 incorporates highly advanced mathematical functions to provide the highest accuracy in the industry - 0.1% of set span. It is scalable over the entire range of 8 RTDs and 12 Thermocouple Types; as well as accepting Millivolt and Resistance inputs.

Features include: small minimum spans, complete isolation (1000 V); selectable 0n/Off linearization; wide power supply capability (10- 36 VDC); selectable upscale/downscale; total RFI-immunity (DC to 1 GHz.); a five (5) year warranty against failure; and optional intrinsic

safety approval. It even has an optional plug-in loop-powered readout and connection head with window.

You no longer have to stock several different transmitters when a single, low-cost, high accuracy unit can meet all of your requirements. The Mp82700 can easily be programmed in the field with the optional field programming module and PC based

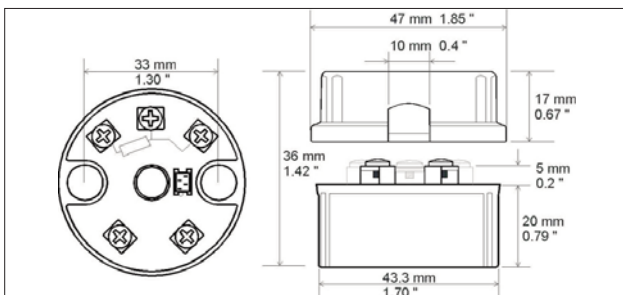


"Point 'n Click" software program in less than one minute, the Mp82700 can be used for all your different sensor and range requirements.

Features

- ▶ Programmable Microprocessor-Based
- ▶ Universal Input Thermocouples, RTD, millivolts and Ohms
- ▶ Field Programmable with optional Programming Kit and PC Software
- ▶ Fully-Isolated and Linearized
- ▶ RFI/EMI-Immune
- ▶ High Accuracy 0.1%
- ▶ Small Size (1.7" dia. x 1.1"H)
- ▶ **New ATEX Approvals Standard**
- ▶ Optional Plug-In Display and Protection Head

IF700-USB Programming interface and PC based Software Available with USB Interface





INFORMATION & SPECIFICATIONS DATA SHEET

TEMPERATURE & PROCESS INSTRUMENTS INC

MP82710 Microprocessor Based 2-wire 4 to 20mA Temperature Transmitter

Specifications

MP82710 Approval Rating: ATEX EExib ib IIc T5

RTD Input Types: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu10, Cu100

Thermocouple Input Types: K, J, L, T, U, E, R, S, B, C, D, N

Temperature Ranges: See Table below

Minimum Temperature Span: See Table below

Input: V

Input: Ohm

Minimum Span: See Table Below

Output: 4 to 20mA or 20 to 4mA

Linearization: On/Off

Power Supply **: 10. to 36Vdc, 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: $\pm 0.05\%/Year$

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

Excitation Current, RTD: 0.1 mA

Sensor Lead Resistance, RTD: 500 Ohm max.

Sensor Lead Resistance Effect: $0.001^{\circ}\text{C}/\text{Ohm}$

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.

Sensor Type

Sensor Type	Temp. Min.	Temp. Max.	Span Min.	Temp. Min.	Temp. Max.	Span Min.
	$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{F}$	$^{\circ}\text{F}$
Thermocouple Type						
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 (Nicrosil-NiSil)	0	1300	50	32	2372	90
S (Pt10%Rh-Pt)	0	1765	250	32	3209	450
R (Pt13%Rh-Pt)	0	1765	250	32	3209	450
B (Pt30%Rh-Pt6%Rh)	0	1820	600	32	3308	1080
C (W5%Re-W26%Re)	0	2300	150	32	4172	270
D (W3%Re-W25%Re)	0	2300	150	32	4172	270
U (DIN Cu-CuNi)	-100	600	50	-148	1112	90
L (DIN Fe-CuNi)	-150	900	50	-238	1652	90
RTD Types						
Pt100 IEC751	-200	850	25	-328	1562	45
Pt500 IEC751	-200	850	25	-328	1562	45
Pt1000 IEC751	-200	850	25	-328	1562	45
Ni100 IEC751	-60	250	25	-76	482	45
Ni500 IEC751	-60	250	25	-76	482	45
Ni1000 IEC751	-60	250	25	-76	482	45
Cu10	-200	250	25	-328	482	45
Cu100	-200	250	25	-328	482	45
Process Signals Types						
mV	0	1000	10			
Ohm	0	10000	100			

The Mp82700 can be programmed in the field with the optional PC based software and IF-700 Configuration Interface, or can be supplied factory configured. For factory configuration please provide Sensor type, Minimum temperature, Maximum temperature and temperature scale.

Mp82710 Microprocessor Based 2-wire 4 to 20mA Temperature Transmitter Accessories

ATEX parameters KEMA 03ATEX 1419 X			
Mp82700		CE 0344 Ex II 1 G EEx ia IIC T4...T6	
Maximum Ambient Temperature		Temperature Class	
+ 60 °C		T6	
+ 75 °C		T5	
+ 85 °C		T4	
* Supply circuit	KL5 and KL6	Input circuit	KL1...KL4
Ui =	30 V	Uo =	7.2 V
Ii =	100 mA	Io =	58 mA
Pi =	750 mW	Po =	103 mW
Li =	0 mH	Lo =	10 mH
Ci =	0 nF	Co =	13.5 µF



Mp82710 Shown with optional DANW connection head and MP82-Display.



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

Order Information	
Part Number	Description
MP82710	Microprocessor Based Universal 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
BI	Explosion-Proof Head w/ Large LCD Readout
D	Plug-In Loop-Powered LCD Readout)
DANW	Dome Connection Head with Glass Window

For factory configuration of the MP82710 Series, please provide Sensor Type, Min.Max Temperature and Temperature Scale. Example MP82710 - 0- 100-C

* Price Subject to change without notice, please visit our web site for the latest pricing and specifications. All prices Shown in US Dollars.

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