INFORMATION & SPECIFICATIONS DATA SHEET

TEMPERATURE & PROCESS INSTRUMENTS INC

Mp88710 2-Wire 4 to 20mA DIN Rail Mounted Microprocessor Based Temperature Transmitter with HART® Protocol

2-Wire Microprocessor Based DIN Rail Mount Transmitter with Thermocouple, RTD, mV and Ohms Input

The Mp88710 is the industrys most advanced 2-wire DIN rail mounting microprocessor based temperature transmitter. Less than 23 mm (1") wide and mounting on standard DIN rails, it is easily programmed in the field to your exact requirements via an optional "Point N Click" PC based software.

The Mp88710 transmitter 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 9 RTDs and 12 Thermocouple Types; as well as accepting Millivolt and Resistance inputs. Features include: self-diagnostics, small minimum spans, complete isolation (500Vdc), selectable On/Off linearization; wide power supply capability (10 to 36Vdc); selectable upscale/downscale; total RFI-immunity (DC to 1 GHz.)

You no longer have to stock several different transmitters when a single high accuracy programmable transmitter can meet all of your requirements. The Mp88710 transmitter can be factory configured or can easily be programmed in the field with the optional SPI-MP (IF700) programming module and PC based "Point 'n Click" software program in less than one minute, the Mp88710 can be used for all your different sensor and range requirements.

Features

- Microprocessor-Based, HART® Protocol
- 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 0.89" x 2.92" x 3.9 (22.5 x 75 x 99mm)
- Fits on Standard DIN Rails
- Ideal for use in High Density Cabinet Applications

SPI-MP (IF700) Programming Interface and PC Based Software

Temperature & Process Instruments Inc. **Visit us on the web at www.tnp-instruments.com**
1767 Central Avenue * Suite 112 * Yonkers * NY * USA * 10710 * Phone: (914)673-0333 Fax: (866) 292-1456

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Mp88710 DIN Rail Mounted Microprocessor Based Temperature Transmitter Specifications

Specifications
RTD Input: Pt100, Pt250, Pt500, Pt1000, Ni100, Ni500, Ni1000, Cu10, Cu100
Thermocouple Input Types: K, J, L, T, U, E, R, S, B, C, D, N
Other Inputs: mV and Ohms
Minimum Span: See Table Below
Output: 4 to 20mA or 20 to 4mA and HART Protocol
Linearization: On/Off
Supply **: 10 to 40Vdc, Polarity Protected
Supply Effect: 0.001%/V
Max. Ripple: 10 V PP. Min. Vbat =10Vdc
Zero Drift: ± 0.01%/°C or ±0.02°C/°C
Span Drift: ± 0.005%/°C or ±0.01°C/°C
Long Term Drift: ± 0.05%/Year
Cold Junction Drift: ± 0.01°C/°C
Excitation Current RTD: 0.1mA

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 Programmable
Load Capability: Vbat-10V/20mA
Response Time: <3 sec.
Startup Time: 20 sec.
Warmup Time: 5 Min.
Isolation: 500Vdc.1500Vac
Ambient Operating Temp.: -40 to + 85°C.(-40 to 185°F)
Storage Temperature: -40 to +100°C (-40 to 212°F)
Ingress Protection: IP30
Housing Material: Makrolon
Housing Dimension: 0.89" x 2.92" x 3.9 (22.5 x 75 x 99mm)

Sensor Type	Temp. Min. °C	Temp. Max. °C	Span Min. °C	Temp. Min. °F	Temp. Max. °F	Span Min. °F
Thermocouple Type						
J (Fe-CuNi)	-200	1200	50	-328	2192	90
K (NiCr-NiAl)	-270	1370	50	-454	2498	90
T (Cu-CuNi)	-270	400	50	-454	752	90
E (NiCr-CuNi)	-270	1000	50	-454	1832	90
N (Nicrosil-NiSil)	-270	1300	50	-454	2372	90
S (Pt10%Rh-Pt)	-60	1760	250	-76	3200	450
R (Pt13%Rh-Pt)	-60	1760	250	-76	3200	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)	-200	600	50	-328	1112	90
L (DIN Fe-CuNi)	-200	900	50	-328	1652	90
RTD Types						
Pt100 IEC751	-200	850	25	-328	1562	45
Pt250 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 Mp88700 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.

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Intrinsically Safe Ratings
The model Mp88710 comes standard with either EX ATEX Intrinsically-Safe Approval (Ex ia IIC T5).

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

SPI-MP (IF700) Programming Interface and PC Based Software

Order Information		
Part Number	Description	
MP88710	DIN Rail Microprocessor Based Universal transmitter Un-calibrated.	
Accessories	Description	
	Factory Configuration provide Sensor Type, Min.Max Temperature and Temperature Scale	
SPI _MP (F700)	PC Based Interface and Software for field programming	

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

Compainon Mp82710 Microprocessor Based Head Mounted Temperature Transmitter

Mp82710 Shown with optional DANW connection head and 'D' display.

Features

- 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)
- Optional FM or ATEX Approvals
- Optional Plug-In Display and Protection Head

Ordering is easy fast and secure just go to our web site at:
https://www.tnp-instruments.com
and Click on the Online Store Link, for your convenience we accept the following credit cards

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