



INFORMATION & SPECIFICATIONS DATA SHEET

TEMPERATURE & PROCESS INSTRUMENTS INC

Mp88700 Series 2-Wire 4 to 20mA DIN Rail Mounted Microprocessor Based Temperature Transmitter

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

The Mp88700 is the industry's 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 Mp88700 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 Mp88700 transmitter can be factory configured or can easily be programmed in the field with the optional IF700 programming module and PC based "Point 'n Click" software program in less than one minute, the Mp88700 can be used for all your different sensor and range requirements.



Features

- ▶ **MP88700 FM or ATEX Approvals Standard**
- ▶ 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



IF700 Programming Interface and PC Based Software



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Mp88700 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 Mp88700 comes standard with either EX ATEX Intrinsically-Safe Approval (Ex ia IIC T5) or FM Intrinsically-Safe Approval (FM: IS/II/ABCD/T6).

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
U _i =	30 V	U _o =	7.2 V
I _i =	100 mA	I _o =	58 mA
P _i =	750 mW	P _o =	103 mW
L _i =	0 mH	L _o =	10 mH
C _i =	0 nF	C _o =	13.5 µF

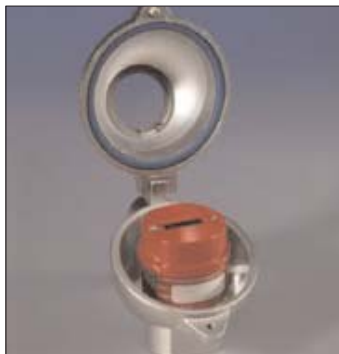


IF700 Programming Interface and PC Based Software

Order Information		List Price
Part Number	Description	
MP88700	DIN RAIL Microprocessor Based Universal transmitter Un-calibrated.with IS or FM Rating	\$215.00
MP88710	Microprocessor Based Universal transmitter Un-calibrated.	\$150.00
Accessories	Description	
	Factory Configuration provide Sensor Type, Min.Max Temperature and temperature Scale	\$15.00
IF700	PC Based Interface and Software for field programming	\$80.00

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

Companion Mp82700 Microprocessor Based Head Mounted Temperature Transmitter



Mp82700 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

Prices Start at \$160.00

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

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

and Click on the Online Store Link, for your convenience we accept the following credit cards



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