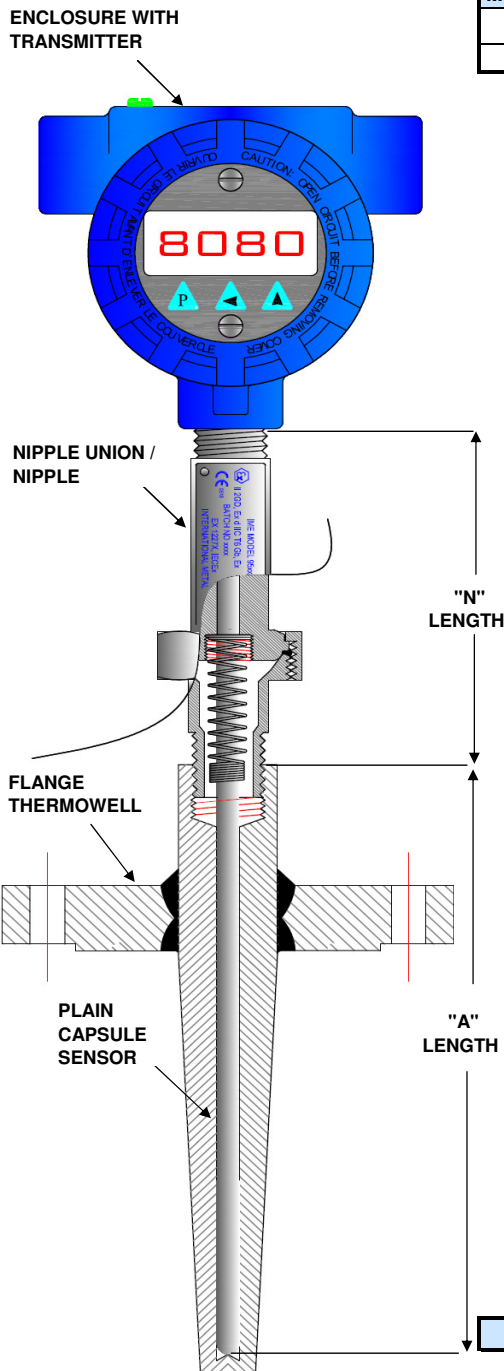


EXPLOSION PROOF TEMPERATURE ASSEMBLY

98 SERIES SPRING LOADED STAINLESS STEEL NIPPLE UNION

Description

The 98 series are ATEX and IECEx approved temperature assemblies. These temperature assemblies encompasses our 8080KN Battery Operated Digital Temperature Indicator, 8080PR Indicating Temperature Temperature switch with Dual Relays, 8080PN Indicating Transmitter Transmitter and our 8080HT Indicating Temperature Trasmmitter with Hart®. See below for ordering information.



Model	Temperature Assembly
94	General Purpose
98	ATEX & IECEx Approved Assembly (See Certification System Below For Details)
Code	Sensor Description
TJ	Type J Thermocouple, Class 1, DIN/EC 584-2-1992
TK	Type K Thermocouple, Class 1, DIN/EC 584-2-1992
TT	Type T Thermocouple, Class 1, DIN/EC 584-2-1992
TE	Type E Thermocouple, Class 1, DIN/EC 584-2-1992
TR	Type R Thermocouple, Class 1, DIN/EC 584-2-1992
TS	Type S Thermocouple, Class 1, DIN/EC 584-2-1992
PA	100 Ohm Platinum Resistance Sensor, Class A, DIN/EC 751-1985, 3 Wire
PB	100 Ohm Platinum Resistance Sensor, Class B, DIN/EC 751-1985, 3 Wire
PF	100 Ohm Platinum Resistance Sensor, Class A, DIN/EC 751-1985, 4 Wire
XX	To Be Specified
Code	Number of Elements
S	Single Element
D	Dual Element
Code	"N" Length
02	2 Inch (General Purpose Only)
03	3 Inch (General Purpose Only)
04	4 Inch
05	5 Inch
06	6 Inch
07	7 Inch
Code	Transmitter Option
8080KN	Battery Operated Digital Temperature Indicator
8080PR	Indicating Temperature Switch with Dual Relays
8080PN	Indicating Temperature Transmitter
8080HT	Indicating Temperature Transmitter with Hart®
xxxxxxx	Any Preferred Transmitter Model of Any Make
Code	Choice Of Enclosure
A	Die Cast Aluminum, Epoxy Painted
T	SS316, Electro Polished
Code	Conduit Entry
01	3/4" NPT
02	1/2" NPT
06	M20x1.5P
23	1/2" BSP
Code	Nipple Union
N	Nipple Only (See Model 93 Series)
U	Nipple Union Nipple Assembly (See Model 92 Series)
Code	Plain Capsule Sensor Diameter
EG	6.4mm
MT	6.0mm
Code	Sensor "A" Length
L0000	SPECIFY "A" in mm

98	PA	S	05	8080HT	A	01	N	EG	L0120	Typical Model Number
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Certification System



II 2G D
Exd IIC T6 Gb
Ex tb IIIC T85°C Db, IP68
Ta = -40°C to +70°C



Ex d IIC T6 Gb
Ex tb IIIC T85°C Db, IP68
Ta = -40°C to +70°C

DIGITAL TEMPERATURE INDICATORS

MODEL 8080KN BATTERY OPERATED DIGITAL TEMPERATURE INDICATOR

Description

Model 8080KN is a Battery Operated Digital Temperature Indicator which accepts an input from a standard Type J or K Thermocouple or RTD and provides local indication of temperature in degree F or C. The 8080KN becomes a universal instrument since only one instrument will indicate the entire useful range of the thermocouple or RTD (-100 to +1400°C).

Functional Specifications

Sensor

Thermocouple Type J / K or RTD Pt100

Indication Accuracy

0.5 Degree C

Display Height

12.5mm (½") high

Display Units

°C or °F, switch selectable

Battery Life

Approx. 24 Months

Calibration

Single point calibration for enhanced accuracy

MODEL 8080PR TEMPERATURE INDICATING SWITCH WITH DUAL RELAYS

Description

Model 8080PR allows 2 independent alarms to be assigned over the temperature range of the sensor. The unit will accept an input from a Pt100 RTD or Type J or K thermocouple and provide an indication on a bright 4 digit LED. The unit serves a dual purpose since in addition to local indication of temperature, which is switch selectable to read °C or °F, it also serves as an accurate and repeatable temperature switch.

Functional Specifications

Indication Accuracy

0.1% of Calibrated range +/- 1 digit

Set Point Adjustment

10~100% of full scale, user selectable

Reset

Automatically when the input falls below the alarm set point by approximately ±0.5% of full scale.

Alarm Set Point Accuracy

±0.5% of full scale.

Alarm Status Indication

LED on front panel

Display Height

12.5mm (1/2") high

Alarm Output

2 sets SPDT, 1 from C, rated 10A @ 250V AC, 50/60Hz

Stability Over Time

0.1% of calibrated range ± 1 digit over 6 months

Over Range Indication

Flashing of display

Response Time

Typically 75ms

Supply Voltage

18~28V DC

MODEL 8080PN TEMPERATURE TRANSMITTER

Description

Model 8080PN is a two wire indicating transmitter which converts input from a Type J/K Thermocouple or Pt100 sensor into a load independent 4-20mA process signal. A 4 digit bright red LED allows for local indication of Temperature, which is switch selectable to read °C or °F.

LED Meter

Model 8080PN has 4 digit bright red LED and may be configured to read temperature in either degrees C or F. The zero and span setting for 4 to 20mA signal as well as the units of display can be set either using the membrane switches on the front panel, eliminating potentiometric adjustments.

Functional Specifications

Sensor

Type J/K Thermocouple or Pt100 RTD

Indication Accuracy

0.1% of Calibrated range ± 1 digit

Lead Compensation Error

<±0.05/10Ω lead resistance

Stability Over Time

0.1% of calibrated range ±1 digit over 6 months

Temperature Stability

±0.01% per Degree C

Adjustable Span

Over the entire range of sensor (Minimum Span=20°C) (about 30°F)

Burnout Protection

Upscale

Supply Voltage

18~28V DC

Supply and Load Effect

<0.03% of span for full change

MODEL 8080HT TEMPERATURE TRANSMITTER WITH HART®

Description

Model 8080HT is a digital, PC/Hand-Held programmable, isolated 2-wire transmitter with HART® protocol. The unit converts 8 types of thermocouples; 8 types of RTDs, configured as 2, 3 and 4 wires; potentiometer, resistor and millivolt inputs into process current loop.

Exceptional digital accuracy of typical ±0.1 °C is provided for all the sensors regardless of the calibrated span. Extremely accurate cold-junction temperature measurement provides precise compensation throughout the entire ambient range. The unit also accurately measures and compensates the RTD sensor leads in the 3-wire connection.

The transmitter is fully configurable by connecting to a PC or a Hand-Held programmer. The configuration parameters are stored in a non volatile memory. Detection of sensor breakage or disconnection of input leads, forces the output to a pre-defined up/down scale value. The unit continuously monitors the sensor and automatically returns to normal operation mode when the sensor is recovered.

Functional Specifications

Output

4~20mA with HART® protocol (2 wire)

Supply Voltage

10.5 to 45 VDC (with backlight LCD)

Input

RTD, TC, Ohm, mV

Accuracy (Pt100)

< 0.2K or 0.08%

Cold Junction Compensation

Internal

Galvanic Isolation

2 KVAC (In/Out)

Influence of Ambient Temperature

Negligible

Load Influence

Negligible

Resolution

0.3 µA

Continue on Page 3.

Input

	Type	Measurement Ranges	Min. meas. Ranges	Maximum Measured Error
Resistance Thermocouple (RTD)	Pt100	-200 °C to 850 °C (-328 °F to 1562 °F)	10K	0.2K or 0.08%
	Pt500	-200 °C to 850 °C (-328 °F to 1562 °F)	10K	0.5K or 0.20%
	Pt1000	-200 °C to 850 °C (-328 °F to 1562 °F)	10K	0.3K or 0.12%
	Cu50	-50 °C to 150 °C (-58 °F to 302 °F)	10K	0.2K or 0.08%
	Cu100	-50 °C to 150 °C (-58 °F to 302 °F)	10K	0.3K or 0.12%
	Ni100	-60 °C to 180 °C (-76 °F to 356 °F)	10K	0.2K or 0.08%
	Ni500	-60 °C to 180 °C (-76 °F to 356 °F)	10K	0.5K or 0.20%
	Ni1000	-60 °C to 180 °C (-76 °F to 356 °F)	10K	0.3K or 0.12%
Resistance Transmitter	Resistance (Ω)	0 to 400 Ω	10 Ω	± 0.1Ω or 0.08%
		0 to 2000 Ω	20 Ω	± 1.5Ω or 0.12%
		0 to 10000 Ω	100 Ω	± 7.5Ω or 0.20%
Thermocouple (TC)	B (PtRh30-PtRh6)	0 to 1820 °C (32 to 3308 °F)	500K	
	E (NiCr-CuNi)	-270 to 1000 °C (-454 to 1832 °F)	50K	typ. 0.5K or 0.08%
	J (Fe-CuNi)	-210 to 1200 °C (-346 to 2192 °F)	50K	typ. 0.5K or 0.08%
	K (NiCr-Ni)	-270 to 1372 °C (-454 to 2501 °F)	50K	typ. 0.5K or 0.08%
	N (NiCrSi-NiSi)	-270 to 1300 °C (-454 to 2372 °F)	50K	typ. 1.0K or 0.08%
	R (PtRh13-Pt)	-50 to 1768 °C (-58 to 3214.4 °F)	500K	typ. 2.0K or 0.08%
	S (PtRh10-Pt)	-50 to 1768 °C (-58 to 3214.4 °F)	500K	typ. 2.0K or 0.08%
	T (Cu-CuNi)	-270 to 400 °C (-454 to 752 °F)	50K	typ. 0.5K or 0.08%
Voltage Transmitters (mV)	Millivolt transmitter(mV)	-10 to 75 mV	5 mV	± 20 μV or 0.08%
		-100 to 100 mV	5 mV	± 20 μV or 0.08%
		-100 to 500 mV	6 mV	± 30 μV or 0.08%
		-100 to 2000 mV	20 mV	± 50 μV or 0.08%

Output

Output Signal	4 to 20 mA + Hart®	
Signal On Alarm	Underranging	Linear drop to 3.8 mA
	Overranging	Linear rise to 20.8 mA
	Sensor break; sensor open-circuit	<3.8 mA
Load	Max. (V _{power supply} - 7.5 V) / 0.0208A (without display)	
	Max. (V _{power supply} - 10.5 V) / 0.0208A (with display)	
Linearization/Transmission Behavior	Temperature linear, resistance linear, voltage linear	
Galvanic Isolation	U = 2 KV AC (input/output)	

Power Supply

Supply Voltage (polarity protected)	U _b = 10.5 to 45 VDC
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Performance Characteristic

Response Time	1s
Reference Operating Conditions	Calibration Temperature : 23 °C (73.4 °F) ± 5K
Long Term Stability	≤ 0.05% / year
Switch On Delay	≤ 5s
Self Stability Configuration	0 to 2%
Filter Configuration	0 to 160 μA
Resolution	0.3 μA

Environment Condition

Ambient Temperature Limits	-40 to 85 °C (-40 °F to 195 °F) Without display
	-20 to 70 °C (-4 °F to 158 °F) With display
Storage Temperature	-40 to 100 °C (-40 °F to 212 °F)
Condensation	100%
Electromagnetic Compatibility (EMC)	Interference immunity and interference emission according to GB/T17626.2-1998), compliance with IEC 61000-4-3:1995