

- UNIVERSAL SETTINGS WITH HART PROTOCOL FOR VARIOUS INPUT SIGNALS
- 4 TO 20mA ANALOG OUTPUT + HART®
- GALVANIC ISOLATION
- AN INTERNAL TEMPERATURE SENSOR FOR ACTIVE TEMPERATURE COMPENSATION
- WIDE VOLTAGE SUPPLY
- CUSTOMER SPECIFIC MEASUREMENT RANGE SETTINGS
- MULTIPLE BACKLIGHT ROTATABLE LCD DISPLAY
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 DUAL COMPARTMENT ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 9080HT 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 a process current loop.

Description

Model 9080HT Universal Input Temperature Transmitters are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X / IP68, and are certified Explosion Proof by FM(US & CANADA) and ATEX/IECEX.

Exceptional digital accuracy of typical $\pm 0.1^{\circ}\text{C}$ 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.

LCD Glass Display

The process variable and other relevant information is displayed on a white backlit display approx 32 x 23mm, which is visible in a dark environment. The 5 digit 7 segment main display(digit height of approx 8mm) displays the temperature. An additional display(digit height of approx. 5mm) allows the sensor details(PT100, Type K etc.,) to be displayed. The percentage of full scale is also displayed on a 52 bar meter with a 2% resolution and also digitally(5mm height).

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
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	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6
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Mounting

The Model 9080HT can be either remotely mounted or mounted directly on the thermowell/riptide assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See page 4)

Functional Specifications

Sensor

Thermocouple Type B, E, J, K, N, R, S, T, Cu50, Cu100, Pt100, Pt500, Pt1000

Output Signal

4-20mA with HART® (Specify Revision 5 or 7)

Isolation

2KV AC between input and output

Supply Voltage

10.5 to 35V DC

Weight

1.6Kg (3.5LBS) for Aluminum unit and 3.0Kg(6.4LBS) for SS316 Unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N

Optional Accessories

Mounting Brackets (IME model 175RC and 175TR)
(See page 4)

Ordering Information

See Page 3 for complete ordering information.

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	typ. 2.0K or 0.08%
	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 35 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

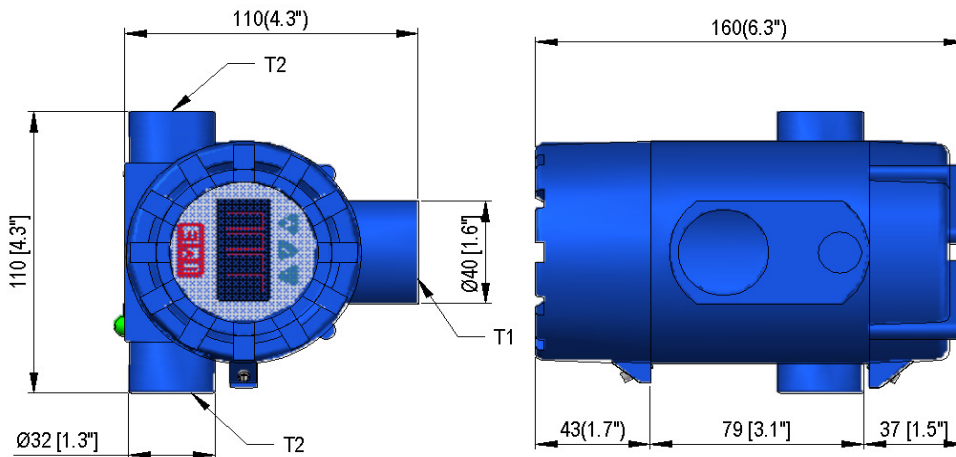
Ambient Temperature Limits	-40 to 85 °C (-40 °F to 195 °F) Without display -20 to 70 °C (-4 °F to 158 °F) With display
Storage Temperature	-40 to 100 °C (-40 °F to 212 °F)
Condensation	100%
Electromagnetic Compatibility (EMC)	Interference immunity and interference emission according to GB/T17626.2-1998),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

ORDERING INFORMATION FOR TEMPERATURE TRANSMITTERS AND FLOW INDICATOR

Model	Description	
9080HT	Indicating Temperature Transmitter with HART®	
	Code	Options, Housing
	A	Die cast Aluminum, Epoxy Coated
	T	SS316, Electro Polished
	Code	Instrument Connection (T1)
	Code	Conduit Size (T2)
	04	1/2"NPT
	05	1/2"NPT
	06	1/2"NPT
	07	3/4"NPT
	08	3/4"NPT
	09	3/4"NPT
	10	1/2"BSP
	11	1/2"BSP
	12	1/2"BSP
	13	M20 x 1.5P
	14	1/2"BSP
	15	M25 x 1.5P
	16	M25 x 1.5P
	17	M25 x 1.5P
	18	M25 x 1.5P
	19	1/2"NPT
	20	3/4"NPT
	21	1/2" BSP
	22	M20 x 1.5P
	23	1" NPT
	24	1" NPT
	25	1" NPT
	26	1" NPT
	27	1" NPT
	Code	Certification
	NN	None
	E1	FM(C+US) / ATEX / IECEx Explosion Proof Certified, NEMA 4X, IP68.
	E2	ATEX / IECEx Explosion Proof Certified, IP68.
	E3	FM(C+US) Explosion Proof Certified, NEMA 4X.
	Code	Accessories
	RC	Model 175RC Mounting Bracket
	TR	Model 175TR Mounting Bracket
	Code	2 Inch "U" Bolt with Nuts and Washers
	00	None
	01	Model 17508, 1 Set (For Model 175RC)
	02	Model 17508, 2 Sets (For Model 175TR)

9080HT	A	04	E1	RC	01	← Typical Model Number
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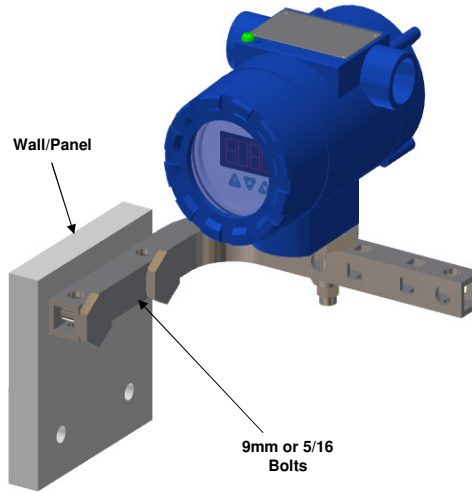
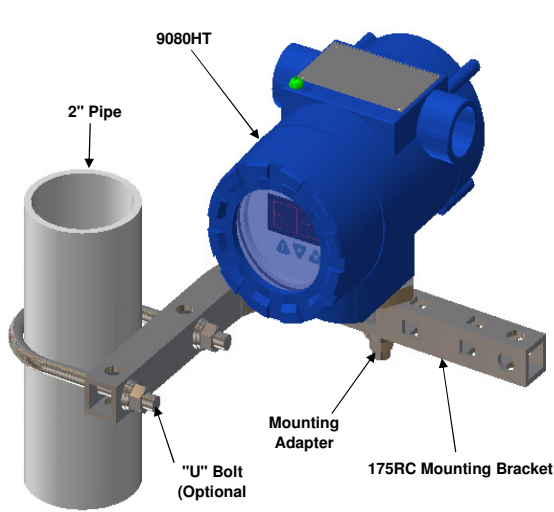
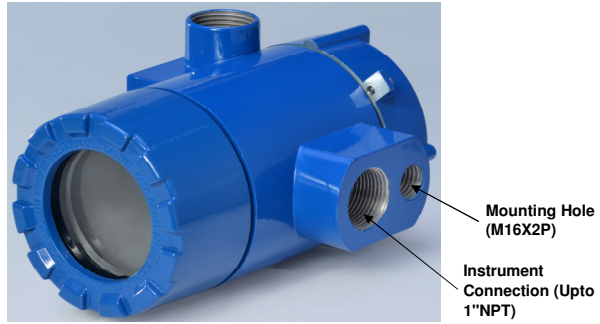
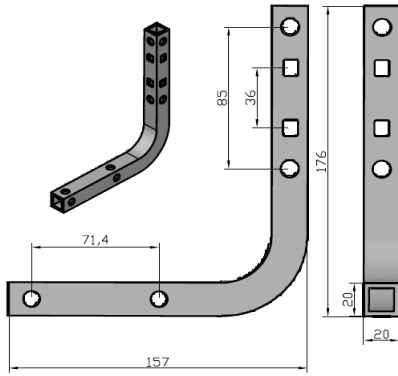
Note:
 1 Ports with M16 x 2P thread are not through holes, they are for Mounting only.



Mounting Brackets

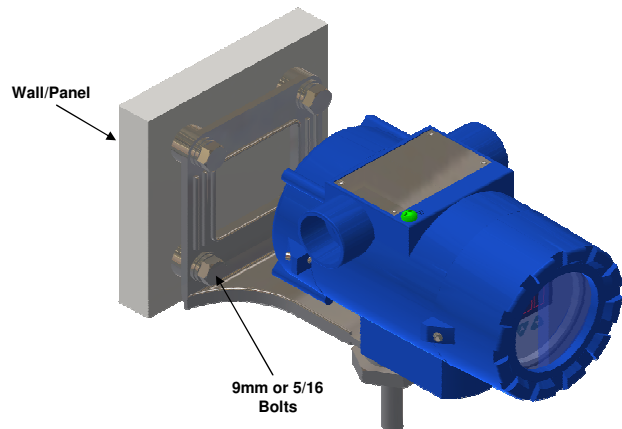
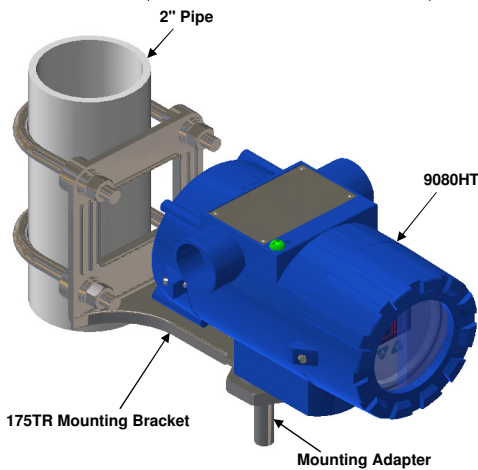
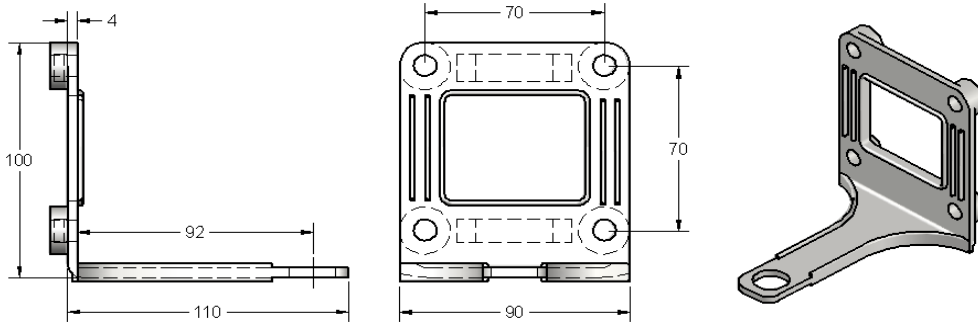
The Model 175 RC

This simple hollow square mounting bracket constructed out of SS316 Stainless Steel, can be used to mount a variety of field devices, either on a wall or panel or a 2" Pipe. When mounting on a 2" pipe, a "U" Bolt is required, which can be supplied optionally.



The Model 175 TR

IME MODEL 175TR is Stainless Steel low cost Mounting Brackets made exclusively for IME MODEL 9080HT Instrument Enclosure to mount either on a wall or panel or a 2 " Pipe. The 175TR is symmetrical, so it can be rotated 90° to suit the viewing position of the Indicator/Transmitter.



Vertical pipe positioning

Wall or Panel positioning