

## Model 9100H Head Mount Sensor-Mate® HART Temperature Transmitter



- Head Mount Design (DIN Form B)
- 0.08% Accuracy
- Universal Inputs
- Microprocessor-Based Design
- HART® Communications
  - Handheld Configuration
  - PC Configuration
- Excellent Long-term Stability
- Input - Output Isolation
- Custom Input / Linearization Capabilities
- Two Year Warranty

The Model 9100H Sensor-Mate HART Temperature Transmitter is a highly accurate microprocessor-based temperature transmitter. The 9100H accepts a wide range of inputs - RTDs, Thermocouples, Resistance and Millivolt. The 9100H is loop-powered and provides 4-20mA and HART output signals. Configure the 9100H through HART Communications with HART Communicator or a PC and WeedComm Software. The 9100H is a DIN Form B design for mounting in a sensor connection head. The transmitter can also be mounted in virtually any other enclosure or wall mounted.



### Optional Digital Display/Meter

The Weed Instrument Digital Display for the Model 9100H Temperature Transmitter provides local indication of the process temperature in °F or °C; 0-100% of scale; or the 4-20mA output. The transmitter and display are mounted in a windowed explosion proof instrument enclosure.

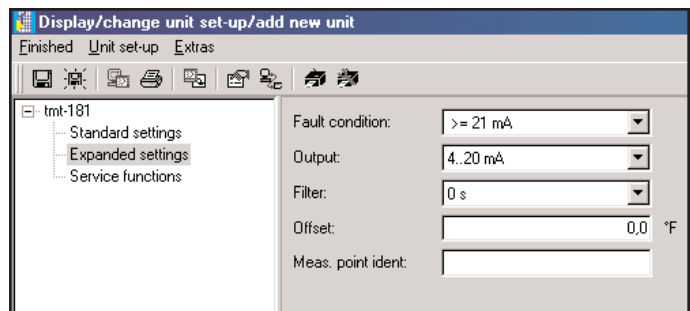
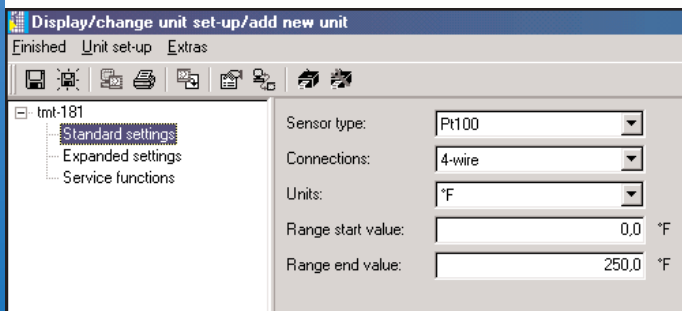
### HART Communications

Configuration of the Model 9100H temperature transmitter can be achieved with the HC275 HART Communicator. You must have the 9100H Sensor-Mate Device Description (DD) loaded on the HC275 to achieve full functionality between the handheld device and the transmitter.



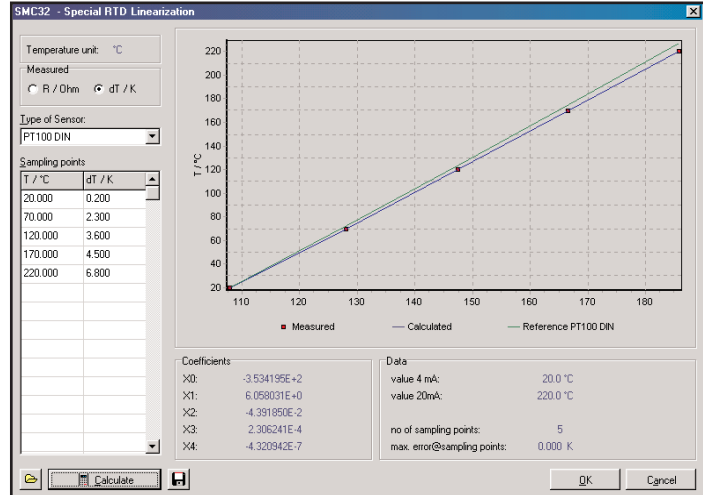
### WeedComm Software

The WeedComm Software allows users to configure the 9100H transmitter using a PC and HART Modem. The software is menu driven, clear and concise. Configurations can be completed off-line, saved and loaded to the transmitter at a later time. Saved configurations can be looked up by filename. Use the WeedComm Software for Custom Linearization features.



## Linearization

The 9100H offers the capability of entering custom linearization for non-standard electrical inputs or increased accuracy of the temperature measurement system. The result is a linear 4-20mA output for nearly any type of RTD, Thermocouple, Resistance or Millivolt input.. Data is entered through the WeedComm Software.



### Input Range:

#### Resistance Temperature Detector (RTD)

Input	Designation	Settable Range	Minimum Span
(0.00385055)	Pt 100	-328 to 1562°F (-200 to 850°C)	18°F (10°C)
	Pt 500	-328 to 482°F (-200 to 250°C)	18°F (10°C)
	Pt 1000	-328 to 482°F (-200 to 250°C)	18°F (10°C)
	Ni 100	-76 to 482°F (-60 to 250°C)	18°F (10°C)
	Ni 500	-76 to 302°F (-60 to 150°C)	18°F (10°C)
	Ni 1000	-76 to 302°F (-60 to 150°C)	18°F (10°C)

- Connection type: 2, 3 or 4 wire configuration.
- Software compensation of cable resistance possible in the 2 wire system
- Sensor cable resistance max. 20 ohms per cable in the 3 and 4 wire system
- Sensor current: less than or equal to 0.2 mA

#### Resistance Transmitter

Designation	Settable Range	Minimum Span
Resistance	10 to 400 ohms	10 ohms
	10 to 2000 ohms	100 ohms

#### Thermocouples (T/C)

Input	Designation	Measuring Range Limits	Minimum Span
NIST Monograph 175 IEC 584	Type B	32 to 3308°F ( 0 to 1820°C)	900°F (500°C)
	Type E	-454 to 1832°F (-270 to 1000°C)	90°F ( 50°C)
	Type J	-346 to 2192°F (-210 to 1200°C)	90°F ( 50°C)
	Type K	-454 to 2501°F ( 0 to 1820°C)	90°F ( 50°C)
	Type N	-454 to 2372°F (-270 to 1300°C)	90°F ( 50°C)
	Type R	-58 to 3214°F ( -50 to 1768°C)	900°F (500°C)
	Type S	-58 to 3214°F ( -50 to 1768°C)	900°F (500°C)
	Type T	-328 to 752°F (-200 to 400°C)	90°F ( 50°C)
ASTM E988	Type C	32 to 4208°F ( 0 to 2320°C)	900°F (500°C)
	Type D	32 to 4523°F ( 0 to 2495°C)	900°F (500°C)
	Type L	-328 to 1652°F (-200 to 900°C)	90°F ( 50°C)
	Type U	-328 to 1652°F (-200 to 900°C)	90°F ( 50°C)

- Internal cold junction (Pt 100)
- Accuracy of cold junction: +/- 1.8°F (1°C)

Input	Designation	Measuring Range Limits	Minimum Span
Voltage Transmitter(mV)	Millivolt transmitter (mV)	-10 to 75 mV	5mV

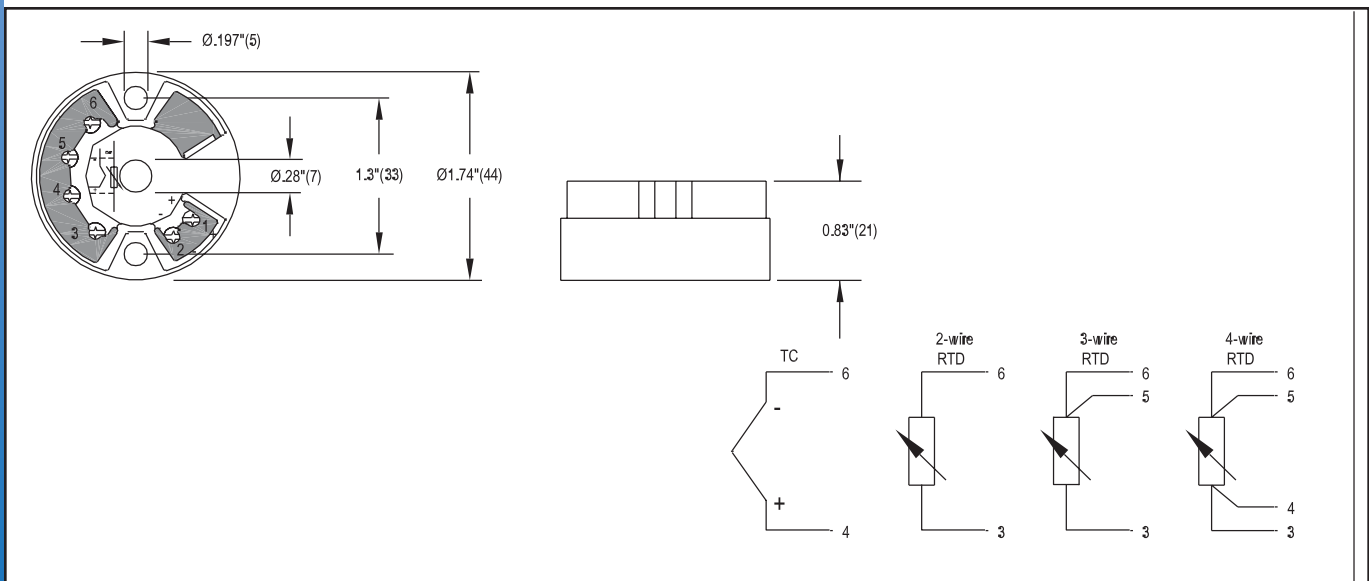


**Specifications:**

Output	4-20mA or 20-4mA. HART Signal (Superimposed on 4-20mA loop signal)	
Zero & Span Adjustments	Use HART Communicator or WeedComm Software. Can be set anywhere within sensor range under input section. Zero & Span are non interacting.	
Failsafe	Downscale 3.6 mA; Upscale 21.5 mA	
Response Time	1 second	
Damping	User settable from 0 to 100 seconds	
Isolation	2000 VAC, Input to Output	
Power Supply:	11.5 to 35 VDC	
Load Resistance:	$R_{Max} \text{ (ohms)} = (V_{Supply} - 11.5V) / .022A$	
Accuracy:	<u>Type</u>	<u>Measurement Accuracy</u>
RTD	Pt 100, Ni 100	0.36°F (0.2°C) or 0.08% of span
	Pt 500, Ni 500	0.9° F (0.5°C) or 0.20% of span
	Pt 1000, Ni 1000	0.54°F (0.3°C) or 0.12% of span
T/C	K, J, T, E, L, U	Typ. 0.9°F (0.5°C) or 0.08% of span
	N, C, D	Typ. 1.8°F (1.0°C) or 0.08% of span
	S, B, R	Typ 3.6°F (2.0°C) or 0.08% of span
Resistance Transmitters (ohms)	<u>Measurement Range</u>	<u>Measurement Accuracy</u>
	10 to 400 ohms	+/- 0.1 ohms or 0.08%
Voltage Transmitters (mV)	10 to 2000 ohms	+/- 0.5 ohms or 0.12%
	-10 to 75mV	+/- 20 μV or 0.08%
Whichever is greater.		
Long-Term Stability	±0.05% of calibrated span per year	
Cold Junction Compensation:	± 1°C (Measured with Pt 100 IEC 751, Class B)	
Temperature Limit	-40°F to 185°F (-40°C to 85°C)	
EMI/RFI Effect	Conforms to European Union Directives (CE Mark). Meets IEC 61326 Amend 1, 1998 and NAMUR NE21.	
Approvals & Standards	Factory Mutual (FM) Intrinsically Safe (IS) optional.	

**Dimensions**

**Terminal Connections**



Model	Description									
9H	Head Mount Sensor-Mate HART Temperature Transmitter									
1	Code	Sensor Type - RTD (3 or 4 wire)								
	Q	Pt. 100, a = 0.0038505								
	C	Pt. 1000, a = 0.0038505								
	D	Ni 100 (DIN 43760)								
	G	Ni 1000 (DIN 43760)								
	P	Programmable/Custom Configuration								
	Code	Thermocouple Type								
	B	Type B								
	E	Type E								
	J	Type J								
	K	Type K								
L	Type L									
N	Type N									
R	Type R									
S	Type S									
T	Type T									
C	Type C									
D	Type D									
L	Type L									
U	Type U									
Code	Other									
O	Potentiometer/Resistance									
M	Millivolt									
2	Code	Linearization								
	T	With Temperature								
	I	With Input								
3	Code	Connection								
	4	4-wires (RTD)								
	C	Cold Junction Compensation (Thermocouple or Millivolt)								
N	No Cold Junction Compensation (Thermocouple, Millivolt or Potentiometer)									
4	Code	Sensor Break (Burnout)								
	U	Upscale								
	D	Downscale								
	N	None								
5	Code	Temperature Sign - Lower Range (4mA)								
	+	Positive								
	-	Negative								
6	Code	Temperature Value - Lower Range (4mA)								
	050	Example: 050 = 50°, 250 = 250°								
7	Code	Temperature Sign - Upper Range (20mA)								
	+	Positive								
	-	Negative								
8	Code	Temperature Value - Upper Range (20mA)								
	0300	Example: 0300 = 300°, 1000 = 1000°								
9	Code	Temperature Units								
	C	Degrees Centigrade								
	F	Degrees Farenheit With Input								
10	Code	Digital Indicator wt Explosion Proof Enclosure								
	21	Scale (4-20 mA)								
	22	Scale (0-100%)								
	23	Scale (degree F, degree C)								
11	Interface Cable with WeedComm Software (Order as separate item)									
9H	Q	T	3	U	-	050	+	0300	C	
Sample Part Number										
Your Part Number										

