Product Data Sheet
2021-2022

Head-Mounted Temperature Transmitter

PEK 301HH with HART Protocol

Application Area

Head mounted temperature transmitter TT311H works with HART protocol for measuring temperature through a wide variety of input signals from Resistance Temperature Devices (RTDs) with 2-, 3-, and 4-wire connection and Thermocouples (TCs) and generating 4 to 20 mA output current.

Input Types

This transmitter can be used with a wide variety of temperature sensors, including 2-, 3-, and 4-wire RTDs, most popular thermocouples. The following is a general list of transmitter input types:

- Platinum RTDs, 2- , 3- and 4-wire
- Copper RTDs
- Nickel RTDs
- Thermocouples

Features

- High performance and accuracy in total ambient temperature range
- communication and configuration through HART protocol communicator or PC-based configuration
- Self-diagnostics function ensures long-term performance and lower cost of ownership
- Supporting internal cold junction compensation for Thermocouples

Technical Data

Power Supply			
Supply Voltage	18 - 36V DC		
Input Types and Ranges			
Input Sensor	Type	Measurement Range	Minimum Resistance Ranges
Resistor Temperature Device (RTD)	PT100	-200°C to 850°C (-328oF to 1562oF)	10K
	PT200	-40°C to +649°C (-40°F to +1200°F)	10K
	PT500	-200°C to 250°C (-328oF to 482oF)	10K
	PT1000	-200°C to 250°C (-328oF to 482oF)	10K
Thermocouple	B(PtRh30-PtRh6)	0 to 1820 °C (-32°F to 3308 F)	500K
	E(NiCr-CuNi)	-270°C to 1000°C (-454°F to 1832°F)	50K
	J(Fe-CuNi)	-210°C to 1200°C (-346°F to 2192°F)	50K
	K(NiCr-Ni)	-270 °C to 1372°C (-454°F to 2501°F)	50K
	N(NiCrSi-NiSi)	-270 to 1300°C (-454°F to 2372°F)	50K
	R(PtRh13-Pt)	-50 to 1768°C (-58°F to 3214.4°F)	500K
	S(PtRh10-Pt)	-50 to 1768°C (-58°F to 3214.4°F)	500K
	T(Cu-CuNi)	-270 to 400°C (-454°F to 752°F)	50K
Input Connections			
(RTD) measurement		2, 3 & 4 wire connections	
Thermocouple Temperature compensation			Internal
Performance Characteristics			
Accuracy	± 0.1°C to ± 1°C according to sensor type		
Others			
Display Type	N/A		
Weight	Approx. 300 g		
Display Range	N/A		
Materials	Plastic		

Electromagnetic Compatibility (EMC) Standards		
Stability	RTD (for 24 month)	±0.2% of output reading or ±0.2°C (whichever is greater)
	Thermocouple (for 12 month)	±0.3% of output reading or ±0.5°C (whichever is greater)
5 Years Stability	RTD	±0.5% of output reading or ±0. 5°C (whichever is greater)
	Thermocouple	±0.7% of output reading or ±1°C (whichever is greater)
Noise suppression for noise frequency	50/60 Hz	
Update time	< 0.5 sec	
Response Time	2 sec	
Switch on Delay	3 sec	
Influence of Ambient	Negligible	
Load Influence	Negligible	
Power Supply Influence	Negligible	
Resolution	1µA	
Electromagnetic Compatibility (EMC) Standards		
Electromagnetic Compatibility (EMC) Standards	IEC/EN 61326-1: 2006 IEC/EN 61326-2-3: 2006	
EMC	ESD	4KV Contact 8KV Air
	Radiated	80-1000MHz @ 10V/m AM
	Burst	1KV
	Surge	0.5KV Line-Line 1KV Line-Earth
	Conducted	150KHz to 80MHz @ 10V
	Magnetic	50Hz @ 30A/m
	Emission	30-230MHz, 30dB (uV/m) @ 10m 230-1000MHz, 37dB (uV/m) @ 10m
Vibration Effect	10 to 60 Hz : 0.21mm peak Displacement 60 to 500 Hz : 3g	
Operating Temperature	Without LCD: -40˚C to +85˚C	
Relative humidity	0% to 95%	
Protection rating (Enclosure)	IP67	

Electrical Connection

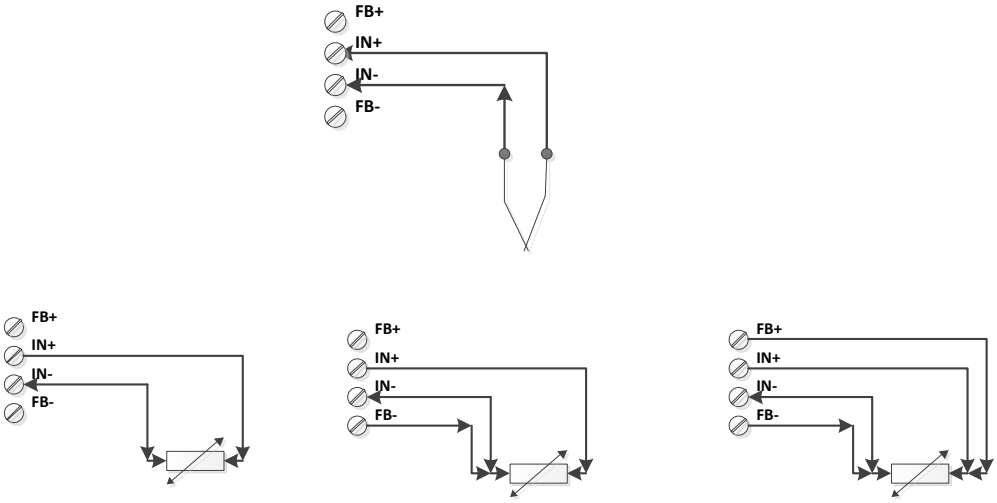

Figure : RTD Connections (2- ,3- & 4- Wires)

Connection	Description
IOUT1	HART Network Connector (without polarization)
IOUT2	HART Network Connector (without polarization)
IN+	Sensor Connection
IN-	Sensor Connection
FB+	Sensor Connection
FB-	Sensor Connection

Electrical Field Connection Diagram

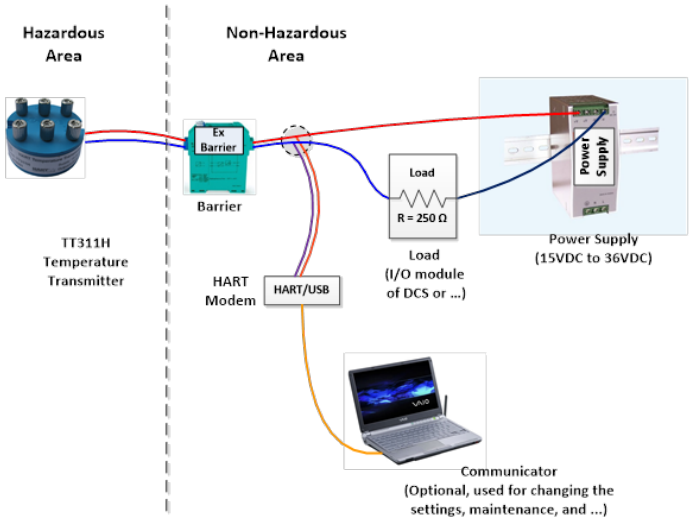

Figure : Electrical Field Connection Diagram