HPTM890 Combined
Pressure & Temperature Transmitter

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Overview

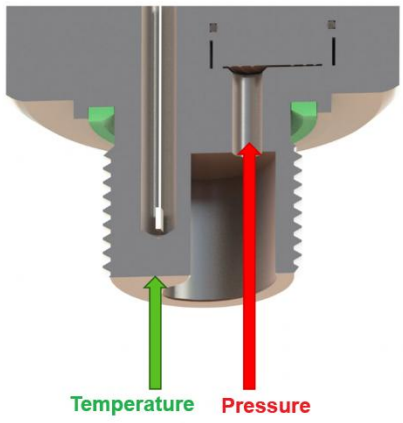
HPTM890 digital display temperature and pressure transmitter integrates a highly stable pressure-sensitive element and a high-precision temperature-sensitive element for independent measurement, enabling simultaneous and accurate measurement of medium pressure and temperature. It can output two standard 4-20mA signals. Additionally, this product features a 4-digit dual-row LED field display that can simultaneously show pressure and temperature values.

Having undergone long-term aging and stability testing, the product boasts reliable and stable performance, making it suitable for harsh environments. It can accurately measure multiple parameters at a single measurement point and is widely used in industrial process control for the simultaneous measurement of fluid pressure and temperature.

Features

- Parallel measurement of pressure and temperature
- Temperature sensor is placed close to the medium being measured, smaller measurement errors.
- Supports temperature probe
- Large LED display showing both pressure and temperature simultaneously

Measuring principle

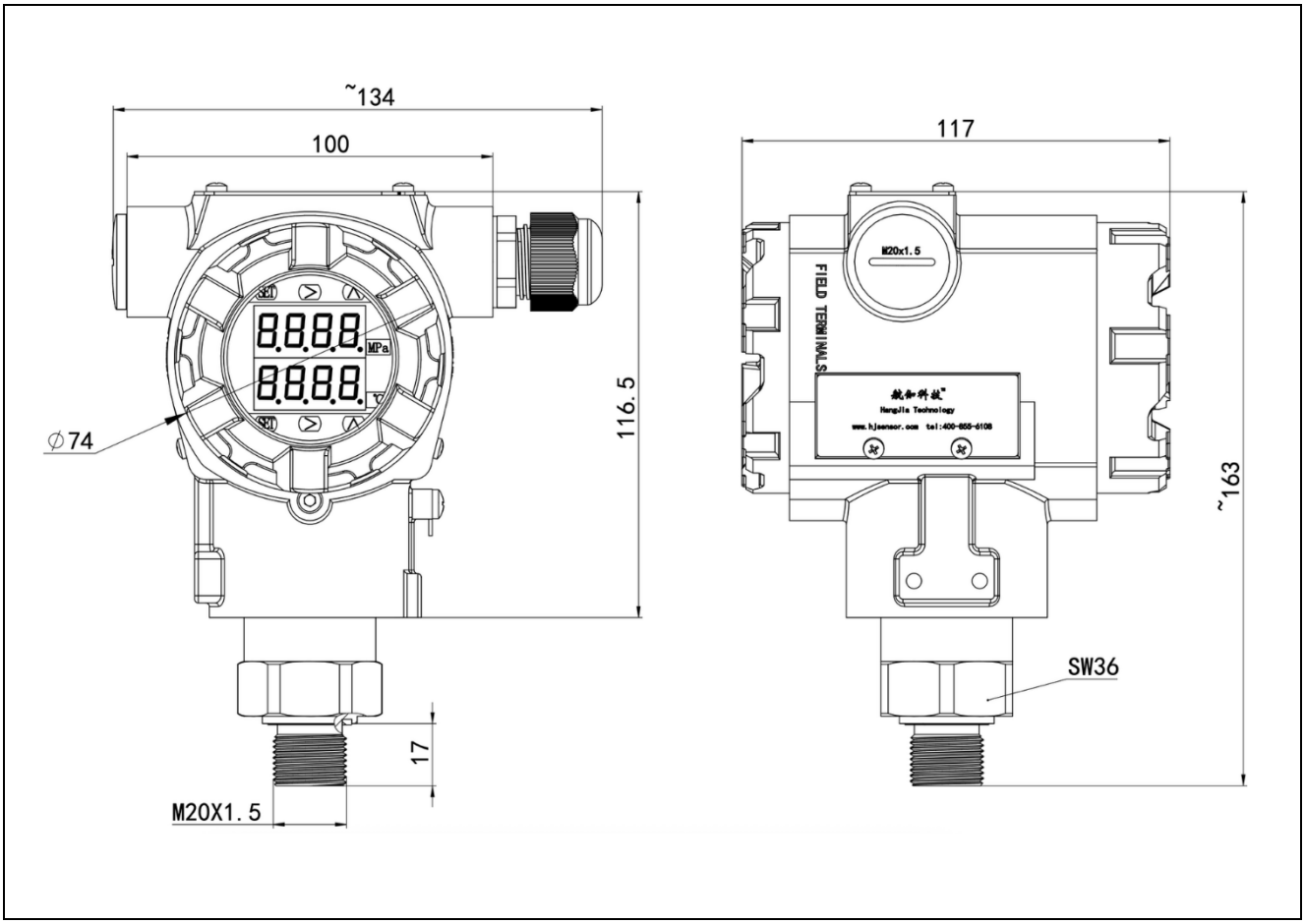


The temperature sensor is a built-in high-precision PT100 or PT1000. The measurement position is close to the medium to be measured, with a small temperature difference and a fast response. Temperature measurement also supports a probe structure to penetrate the center of the temperature to be measured. The pressure measurement channel uses a high-stability and high-precision silicon piezoresistive pressure sensing core. The process pressure acts directly on the isolation diaphragm, causing the diaphragm to deform. The signal conditioning circuit converts the MEMS chip signal into a standard current or voltage signal output.

Parameters

Pressure Range	-100kPa…0~50kPa…40MPa (Gauge) 0~50kPa…40MPa (Absolute)
Overload Pressure	1.5 times full scale
Temperature Range	-40~100℃ Note: Supports customized intermediate range, such as 0~80℃, etc.
Measuring Medium	Various liquids, gases and various compatible with contact materials
Output Signal/Power Supply	Pressure: 4~20mA$_{DC}$ Temperature: 4~20mA$_{DC}$ Vs=24 V$_{DC}$ (9~30V$_{DC}$)
Accuracy	Pressure: ±0.5%FS standard.; ±0.2%FS optional Temperature: ±0.4℃
Compensation temperature (for pressure measure)	-10~70℃
Zero-point Temperature Coefficient (for pressure measure)	±1.5%FS reference 30℃, within temperature compensation range
Full scale Temperature Coefficient (for pressure measure)	±1.5%FS reference 30℃, within temperature compensation range
Medium Temperature	-40~100℃
Temperature Resistance of LED	-30~70℃
Storage Temperature	-30~70℃
Protection grade	IP65
Electric protection	Reverse polarity protection
Mechanical Stability	Vibration 20g(20~5000Hz) Shock resistance 20g(11ms)
Insulation resistance	>100MΩ 500VDC
Dielectric strength	500VAC 50Hz test voltage applied for 1min without breakdown and arcing

Structural Drawings (Unit: mm)



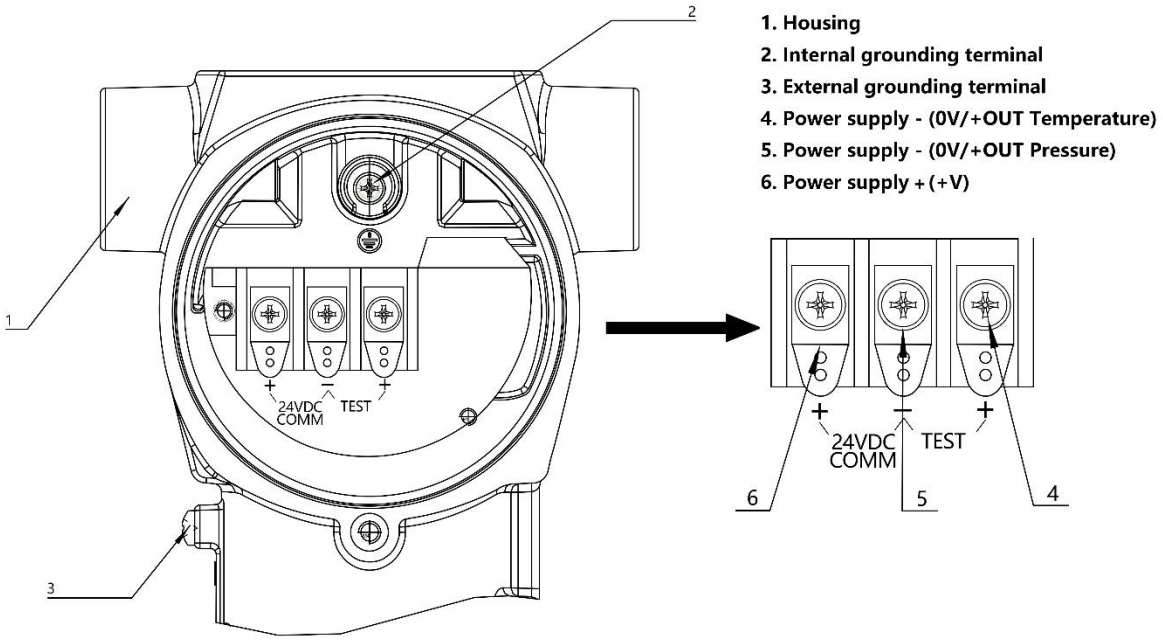
Note:

1. The dimensions listed in the figure may change with the update of the process
2. Support customized appearance structure with temperature probe

Structural Materials

Ordering code	Part	Material
A12	Protection shell	Cast aluminum alloy ADC12 (default)
S4	Pressure port	SS304(default)
S6		SS316L
M1	Pressure sensor	SS316L(default)
FK	O-ring	FKM Fluor rubber sealing rings (applicable temperature range -20~200℃) (default)

Electrical Connections



Output signal	Pressure: 4~20mADC Temperature: 4~20mADC		
Signal Definition	Power+ (+V)	Power-(0V/+OUT Pressure)	Power-(0V/+OUT Temperature)
Terminals	24VDC+	24VDC-	TEST+

Ordering Guide

Model Name	Type							
HPTM890	Combined Pressure & Temperature Transmitter							
	Pressure Range	Pressure measuring range						
	(0~X)kPa	X is upper limit of the range						
		Temperature Range	Pressure measuring range					
		(T1 ~ T2)℃	T1 is the lower limit of the range T2 is the upper limit of the range					
			Code	Output Signal				
			B1B1	Pressure: 4~20mADC Temperature: 4~20mADC				
				Code	Process connection			
				P1	M20×1.5			
				G12	G1/2			
					Code	Electrical connection		
					C7	M20×1.5 female thread, with gland		
						Code	Pressure interface material	
						S4	304	
						S6	316L	
							Code	Pressure interface material
							L	L = insertion depth (mm)
								Code / Additional functions
								G / Gauge pressure (Default)
								A / Absolute pressure
								QF / Factory report
								Other requirements
Eg.: HPTM890	(0 ~ 100)kPa	(0 ~ 100)℃	B1B1	P1	C7	S4	L=0	G QF

Certification Information

Factory certification	
Certification organization	CQM
Quality management system	ISO 9001:2015
Certification scope	Research, development and manufacture of pressure transmitter and temperature transmitter
Certificate No.	00223Q21711R1S

CE	
Certification organization	ECM
Certification scope	Pressure Transmitter
Standard	EN61326-1:2013
	EN61326-2-3:2013
	EN61000-6-2:2005/AC:2005
	EN61000-6-4:2007+A1:2011
Certificate No.	3Z200408.NHET098