

**Product model:** HPTM100 Temperature and Pressure integrated Transmitter

**Manufacturer:** Nanjing Hangjia Electronic Technology Co., LTD.

**Product Category:** Integrated Transmitter

**Application:** Industrial Process Control, Water Supply, Compressor, Mechanical Equipment, and other industries.

## Overview

HPTM100 temperature and pressure integrated transmitter can get pressure and temperature signals at the same time. The transmitter is composed of a stainless-steel shell with a pressure and temperature sensor and a high-precision signal conditioning circuit which has been tested for long-term stability and reliability. The integrated structure and standardized signal provide convenience for field use and automatic control. The special cable is sealed with the enclosure and can measure liquid and gas compatible with stainless steel. HPTM100 temperature and pressure integrated transmitter has the characteristics of small volume, light weight, and good long-term stability. Suitable for simultaneous pressure and temperature measurement and control of the industrial site, space saving, convenient wiring.

## Features

- ◆ High accuracy, all stainless-steel structure
- ◆ Two signals of Pressure and Temperature are obtained simultaneously.
- ◆ With polarity reversal protection, over current and overvoltage protection, meet EMI protection requirements.
- ◆ Wide pressure range, available to measure absolute pressure, auge pressure and sealed gauge pressure.
- ◆ Diverse structures, easy installation and use, wide universality
- ◆ Strong anti-jamming, long term stability

## Parameters

<b>Pressure Range</b>	-100kPa...0~2kPa...100MPa (gauge pressure) 0~10kPa...10MPa(absolute pressure)
<b>Temperature Range</b>	-40~100℃

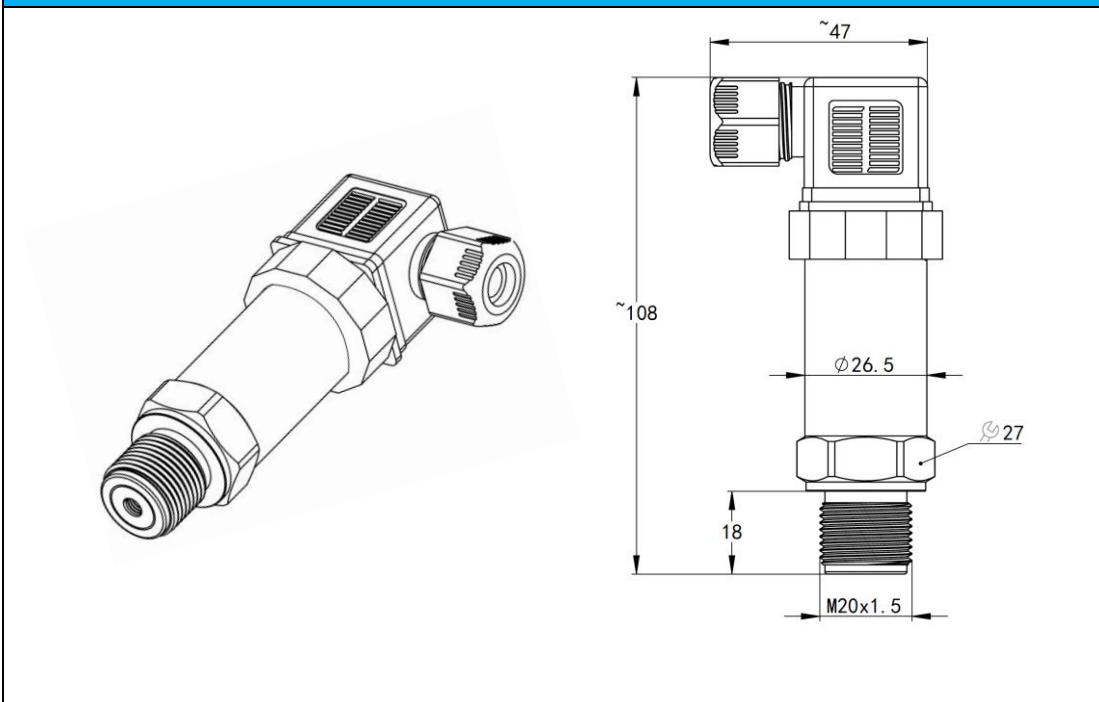
	Note: Supports customized intermediate range, such as 0~80℃, etc.
<b>Measuring Medium</b>	Various liquids, gases and various compatible with contact materials
<b>Output Signal/Power Supply (1)</b>	Pressure: 2-wire 4~20mADC/ Vs=10~30 VDC Temperature: 3-wire PT100/PT1000
<b>Output Signal/Power Supply (2)</b>	Pressure: 2-wire 4~20mADC/ Vs=10~30 VDC Temperature: 2-wire 4~20mADC/ Vs=10~30 VDC
<b>Output Signal/Power Supply (3)</b>	Pressure: 2-wire 0~5VDC / Vs=8.5~30 VDC Temperature: 2-wire 0~5VDC / Vs=8.5~30 VDC
<b>Output Signal/Power Supply (4)</b>	Pressure: 2-wire 0~10VDC / Vs=12~30 VDC Temperature: 2-wire 0~10VDC / Vs=12~30 VDC
<b>Output Signal/Power Supply (5)</b>	4-wire Modbus-RTU/RS485 / Vs=10~30 VDC (Normal) / Vs=3.1~8 VDC (battery supply, low power consumption mode)
<b>Accuracy</b>	±0.5%FS (pressure measure, typical), ±0.2%FS (pressure measure, optional) ±2℃ (temperature measure)
<b>Electrical Connection</b>	DIN43650/ Hirschmann, cable outlet, M12*1
<b>Long-term Stability</b>	±0.25%FS/year
<b>Response Time</b>	≤3ms (pressure)
<b>Start-up Time</b>	≤5s
*Accuracy according to IEC 60770 (non-linearity, hysteresis, repeatability)	
<b>Compensation temperature Range</b>	0~70℃(0.5G) -10~80℃(0.2G)
<b>Temperature Coefficient of Zero</b>	±1.0%FS(Reference 25° C, in compensation range) (Temperature drift of 10kPa range ±2.0%FS, 0~60℃)
<b>Temperature Coefficient of Full Scale</b>	±1.0%FS(Reference 25° C, in compensation range) (Temperature drift of 10kPa range ±2.0%FS, 0~60℃)
<b>Medium Temperature</b>	-40~100℃
<b>Ambient Temperature</b>	-40~85℃
<b>Storage Temperature</b>	-40~85℃
<b>Protection grade</b>	IP65, Hirschmann electrical connection IP66, M12 x 1 connector (housing without breathable design) IP67, cable outlet (housing not designed to breathe)
<b>Electrical Protection</b>	Short circuit protection Reverse polarity protection Electromagnetic compatibility
<b>Mechanical Stability</b>	Vibration 20g(20~5000Hz) Shock resistance 50g(11ms)
<b>Insulation resistance</b>	>20MΩ @500VDC
<b>Dielectric strength</b>	<2mA 500VAC 1min

## Housing Material

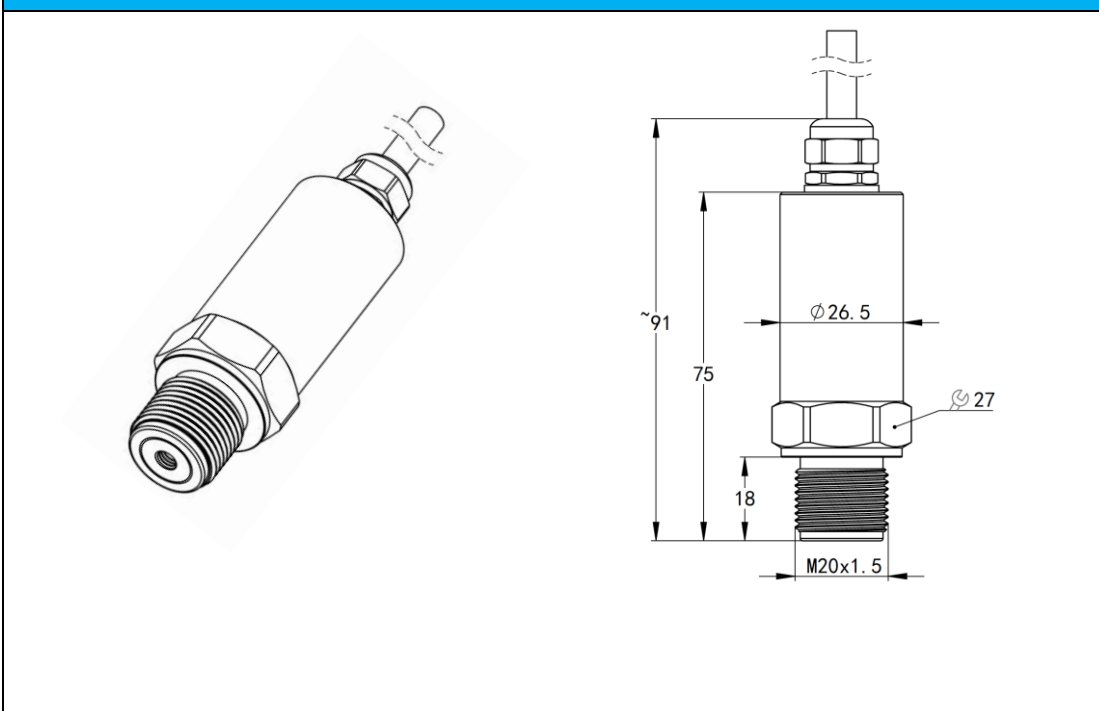
Code	Part	Note
S4	Shell	304
S6		316L
M1	Pressure sensor	316L
F1	O-ring	FKM

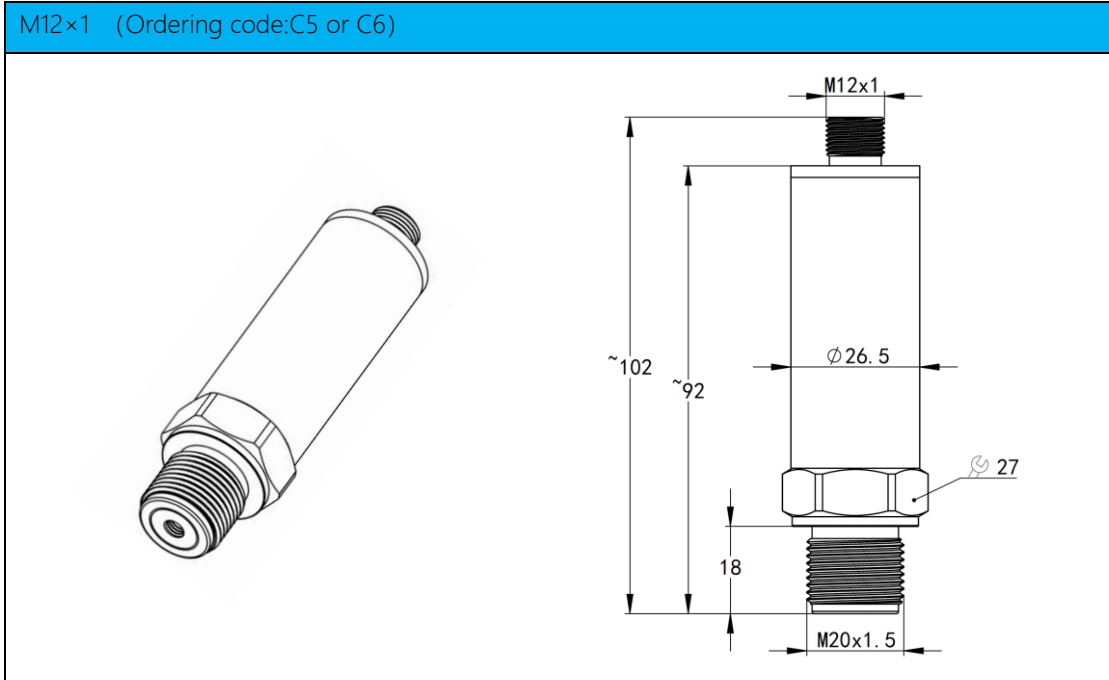
## Structure Drawings (unit: mm)

DIN43650/ Hirschmann (Ordering code:C1)



Cable outlet (Ordering code:C2)

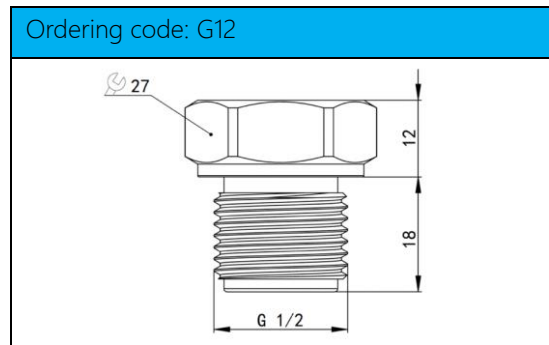
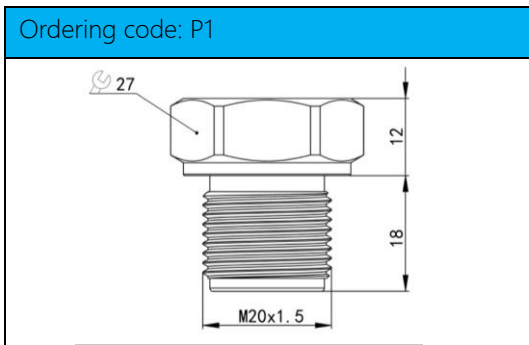




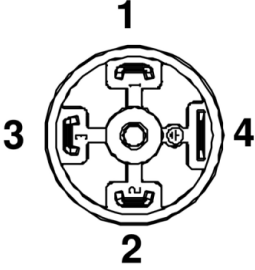
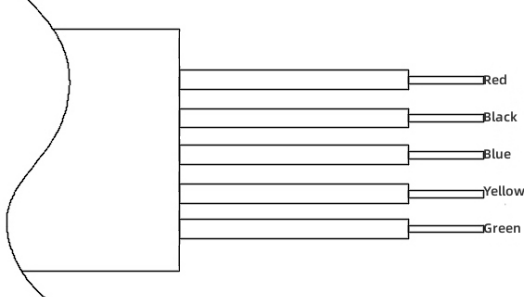
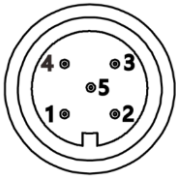
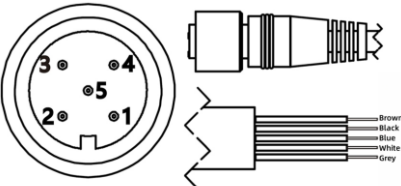
Note:

1. The dimensions listed in the picture may change as the technology is updated.
2. For RS485 communication (24V power supply) products, the height increases by about 25mm.

## Process Connection



## Electrical Interface

Hirschmann/DIN43650	Cable outlet
	
M12×1-5P	M12×1-5P, with cable
 <p>Note: For output signals with only 4 cores, M12×1-4P.</p>	 <p>Note: For output signals with only 4 cores, brown, black, blue, white.</p>

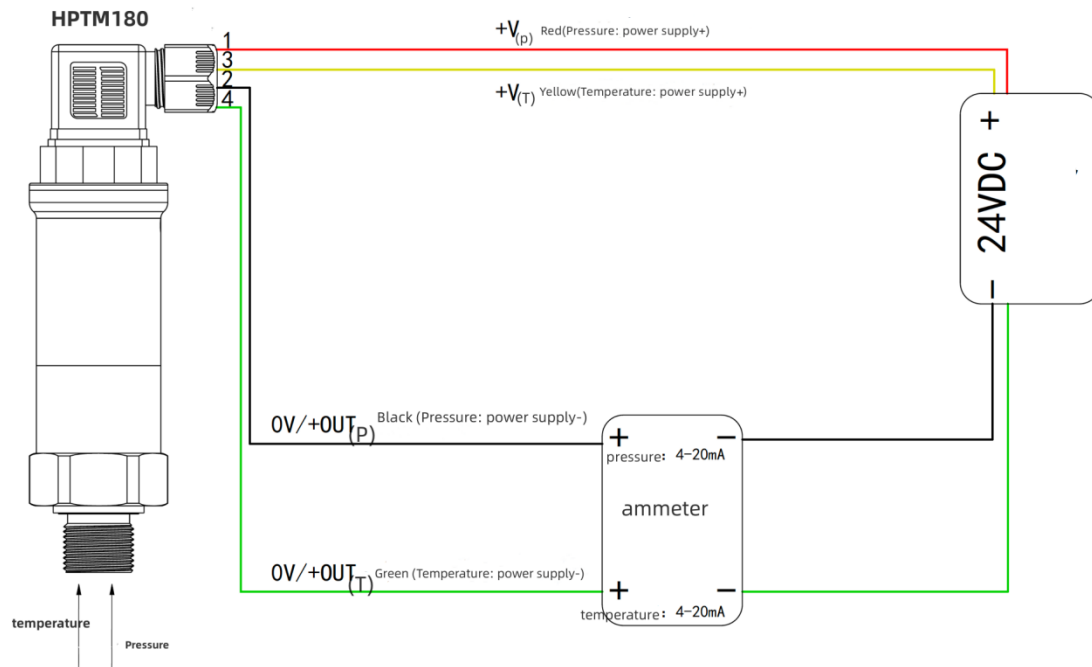
Output signal	Pressure: two-wire 4 ~ 20mA current		Temperature: three-wire PT100/PT1000		
	Power supply+(+V)	Power supply-(0V/+OUT)	A	B	B
Cable outlet	red	black	blue	yellow	green
M12×1	1	2	3	4	5
M12×1, with cable	brown	black	blue	white	grey

Output signal	Pressure: two-wire 4 ~ 20mA current		Temperature: two-wire 4 ~ 20mA current	
	Power supply+(+V)	Power supply-(0V/+OUT)	Power supply+(+V)	Power supply-(0V/+OUT)
Hirschmann /DIN43650	1	2	3	4
Cable outlet	red	black	yellow	green
M12×1	1	2	3	4
M12×1, with cable	brown	black	blue	white

Output signal	Pressure: three wire voltage		Temperature: three wire voltage	
	Power supply+(+V)	Common port (GND)	Pressure output (+OUT)	Temperature output (+OUT)
Hirschmann /DIN43650	1	2	3	4
Cable outlet	red	black	yellow	green
M12×1	1	2	3	4
M12×1, with cable	brown	black	blue	white

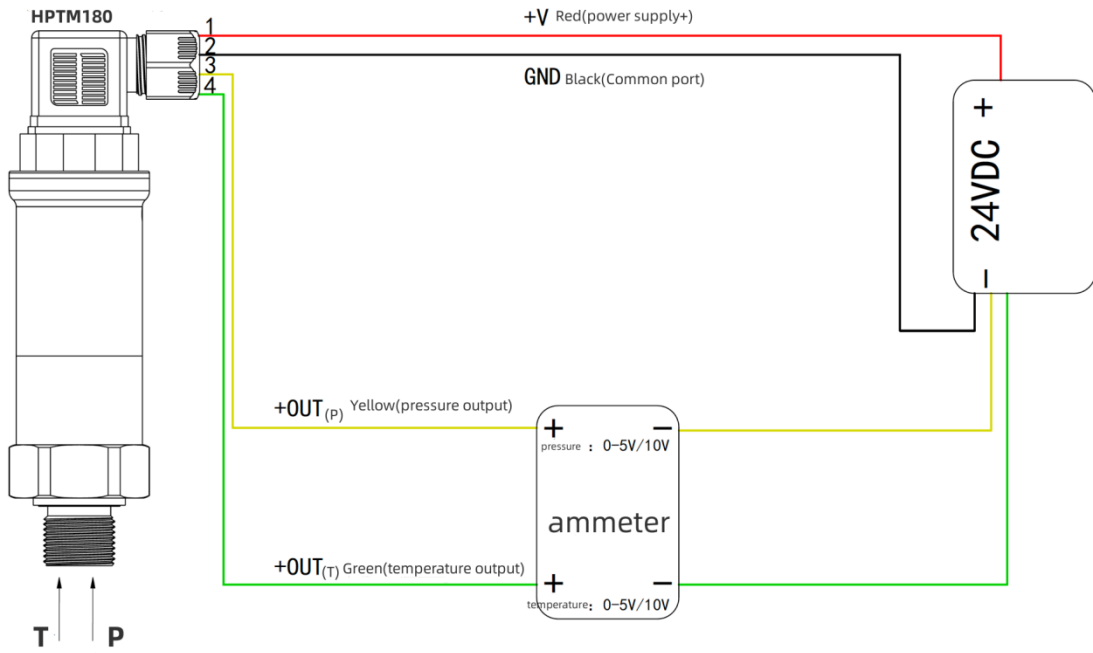
Output signal	Four-wire Modbus-RTU/RS485			
	Power supply+(+V)	Power supply(-V)	RS485A	RS485B
Hirschmann /DIN43650	1	2	3	4
Cable outlet	red	black	yellow	green
M12×1	1	2	3	4
M12×1, with cable	brown	black	blue	white

## Electrical Connection



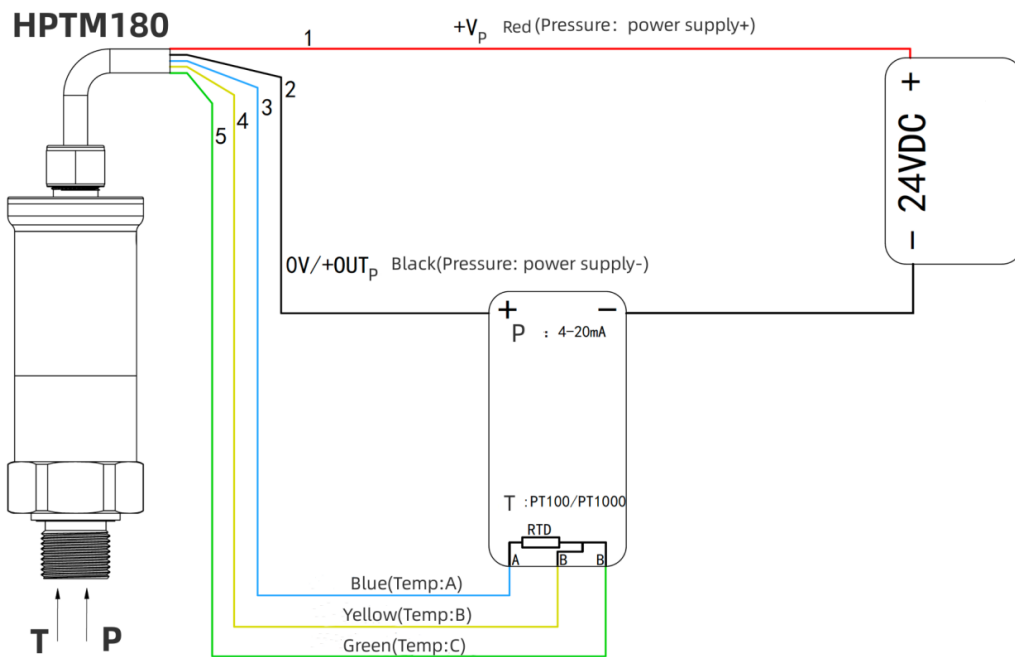
Pressure: 2-wire 4 to 20mA current

Temperature: 2-wire 4 to 20mA current (Hirschmann/DIN43650 electrical connection)



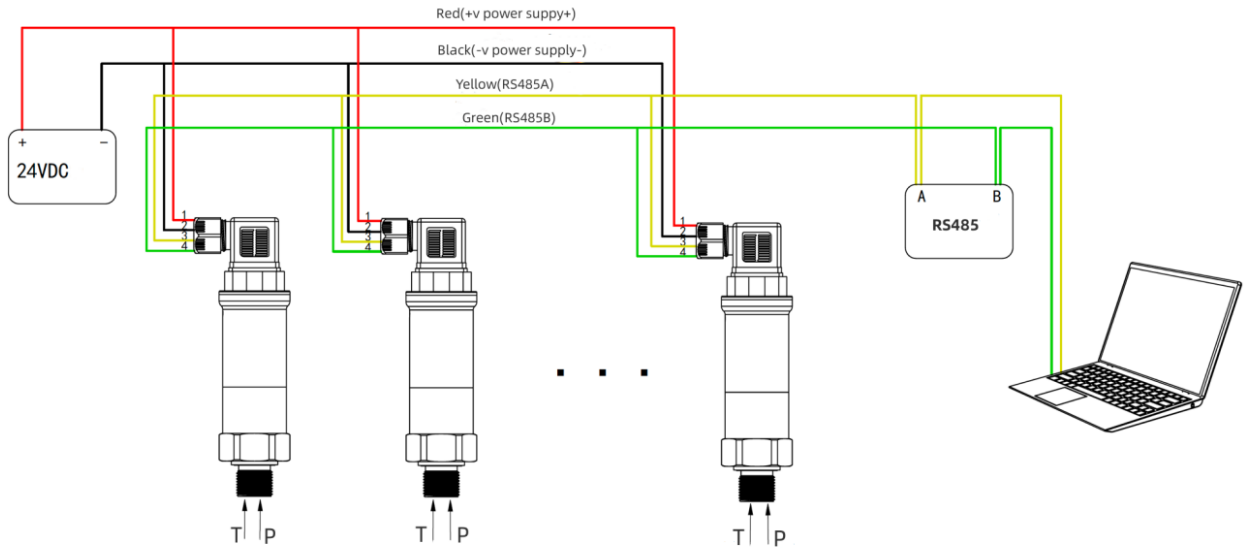
Pressure: 3-wire voltage output

Temperature: 3-wire voltage output (Hirschmann/DIN43650 electrical connection)



Pressure: 2-wire 4 to 20mA current

Temperature: 3-wire PT100/PT1000 (Direct cable outlet)



4-wire Modbus-RTU/RS485 (Hirschmann/DIN43650 Electrical Connection)

## Ordering Guide

Item No.	Type							
HPTM100	Pressure and Temperature Integrated transmitter							
	Pressure Range	Measuring Range						
	(X1 - X2)kPa	X1 is the lower limit X2 is the upper limit						
	Temperature range	Measuring Range						
	(T1 - T2)°C	T1 is the lower limit T2 is the upper limit	Code	Pressure Output Signal	Temperature Output Signal			
			B1PT100	(4 - 20)mA	3-wire PT100			
			B1PT1000	(4 - 20)mA	3-wire PT1000			
			B1B1	(4 - 20)mA	(4 - 20)mA			
			B3B3	(0 - 10)V	(0 - 10)V			
			B4B4	(0 - 5)V	(0 - 5)V			
			B7	Modbus-RTU/RS485				
			Code	Thread Spec				
			P1	M20×1.5				
			G12	G1/2				
			G14	G1/4				
			Code	Electronic Connection				
			C1	DIN43650				
			C2	Cable outlet				
			C5	M12x1.4P				
			C6	M12x1.5P				
			Code	Thread material				
			S4	SS304				
			S6	SS316L				
			Code	Additional				
			G	Gauge Pressure(default)				
			A	Absolute Pressure				
			QF	Factory Report				
				Other requirement				
HPTM100	(0 - 3)kPa	(0 - 60)°C	B1/B1	P1	C2	M1A	G	

## 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.	00223Q21711R15