

PRODUCT OVERVIEW

Accurate pressure and temperature monitoring is critical for system performance, reliability, and operational safety in industrial and infrastructure applications. Engineered for demanding environments, THINKING's validated pressure and temperature sensing solutions include standalone pressure sensor and space-saving pressure and temperature integrated sensor. With versatile mechanical designs and output configurations, these solutions provide flexibility and compatibility for different system designs.

Pressure & Temperature Integrated Sensor / Pressure Sensor (Voltage Output)

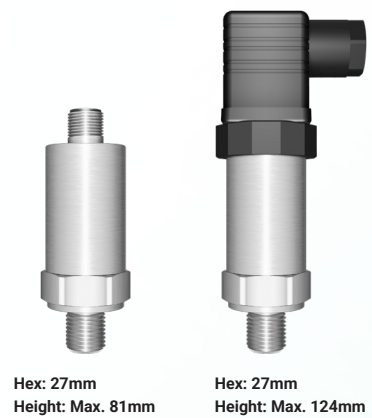
Pressure Sensor Pressure & Temperature sensor



Pressure & Temperature Integrated Transmitter (Digital Output)



Pressure Transmitter (Current Output)



Temperature Parameter

Resistance at 25°C
10K ohm

Thermal Response Time
< 4s (in water)

Temperature Parameter

Temperature Measurement Range
0°C to +100°C

Output Signal
RS485 Modbus RTU

Pressure Parameter

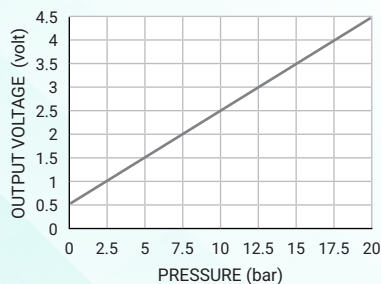
Pressure Range
0 to 20 bar G/A (up to 40 bar available)

Operating Temperature Range
-20°C to +105°C

Accuracy
±1% F.S. at 25°C

Output Signal
0.5 to 4.5 V

Pressure Output Transfer Curve



Pressure Parameter

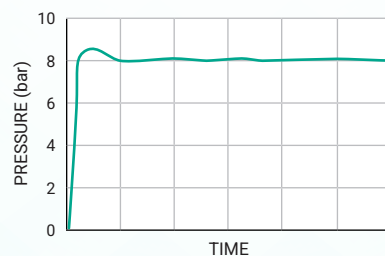
Pressure Range
0 to 10 bar G/A (up to 40 bar available)

Operating Temperature Range
-20°C to +105°C

Accuracy
±0.5% F.S. at 25°C

Output Signal
RS485 Modbus RTU

Real-Time Pressure Monitoring



Pressure Parameter

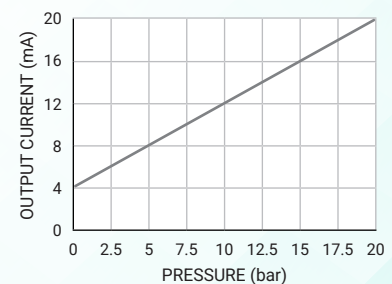
Pressure Range
0 to 20 bar G/A (up to 40 bar available)

Operating Temperature Range
-20°C to +105°C

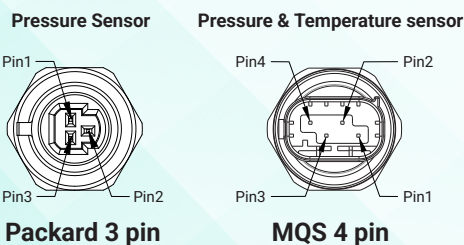
Accuracy
±0.5% F.S. at 25°C

Output Signal
4 to 20 mA

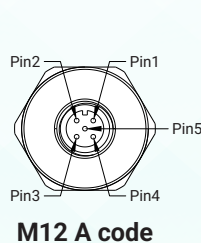
Pressure Output Transfer Curve



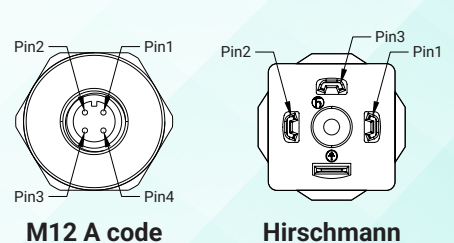
Electrical Connection



Electrical Connection



Electrical Connection

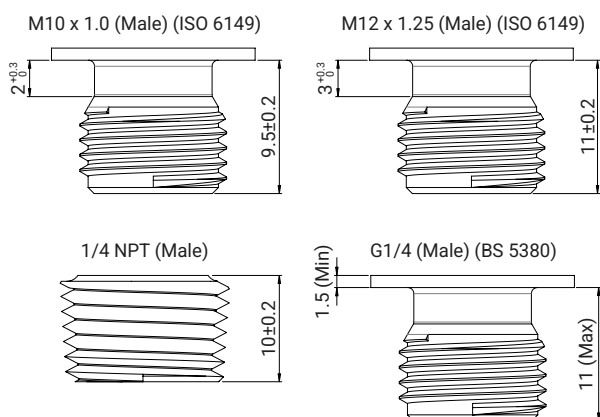


FEATURES

- Rugged designs for integrated pressure and temperature or pressure only measurement
- High accuracy in pressure and temperature measurement
- Gauge and absolute pressure options, customizable up to 40 bar
- Choice of NTC thermistor or platinum (Pt100/ Pt1000) temperature sensing technology
- Voltage, current, and digital outputs (RS485 Modbus RTU) available
- Customizable sensor materials and pressure connections

Customizable Pressure Connection

- Supports BSP, NPT, and ISO pressure port standards



Exceptional Reliability and Stability

- Accuracy maintained within ±0.5% F.S. after testing

2,000,000 CYCLES PRESSURE AND THERMAL CYCLING TEST

Test Condition: 2 bar to 20 bar | 2 Hz | -20°C to +105°C

Value	Zero Output (mA)			Full-Scale Output (mA)		
	Initial	Post-Test	Δ%	Initial	Post-Test	Δ%
#1	3.999	4.004	0.13%	20.001	20.008	0.03%
#2	3.999	4.003	0.10%	19.999	20.012	0.07%
#3	4.001	4.004	0.07%	20.001	20.012	0.05%
#4	3.998	4.003	0.13%	19.999	20.008	0.05%
#5	3.999	4.003	0.10%	19.999	20.011	0.06%
Max.	4.001	4.004	0.13%	20.001	20.012	0.07%
Avg.	3.999	4.003	0.11%	20	20.01	0.05%

APPLICATIONS

- Coolant distribution unit (CDU) of data center, server liquid cooling module
- Heat pump for household, industrial, and automotive applications
- Industrial liquid cooling system
- Off-road vehicle hydraulic system
- EV air conditioning system
- HVAC system

Coolant Distribution Unit



HVAC System



Off-Road Vehicle



PRODUCT OVERVIEW



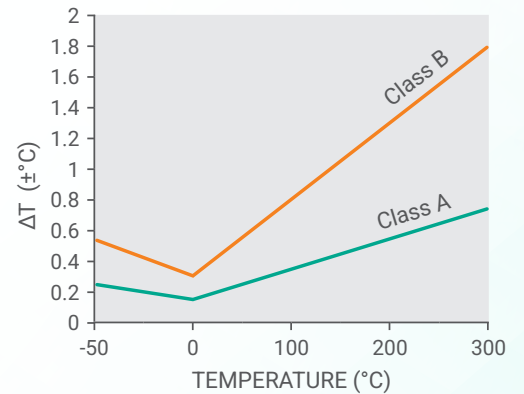
In industrial and liquid cooling applications, precise temperature monitoring is essential to ensure process control, system efficiency, and operational safety. Built for utmost reliability, THINKING platinum temperature sensors and transmitters deliver industry-standard accuracy, versatile structural designs, and wetted materials compatible with diverse measurement media. Furthermore, resistance, 4 to 20 mA, and RS485 output options deliver flexible and seamless integration into existing system architectures.

FEATURES

- High measurement accuracy with excellent moisture resistance
- Near-linear resistance to temperature characteristic for easy and reliable measurement
- Platinum element options from PT100 to PT1000
- DIN EN 60751 Class A or Class B accuracy tolerances
- Versatile output options including resistance, current, and digital (RS485 Modbus RTU)
- Fully customizable design covering sensor materials, lead wires, connectors, and electrical characteristics

Tolerance Class	Tolerance (°C)
A	$\pm (0.15 + 0.002 \times t)$
B	$\pm (0.3 + 0.005 \times t)$

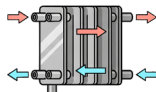
|t| = absolute temperature value of the temperature in °C



APPLICATIONS

Process & Industrial

Pipeline, heat exchanger, hydraulic oil temperature monitoring



Battery Energy Storage

Liquid cooling temperature monitoring



EV Charging Infrastructure

Liquid-cooled DC fast charger, charging cable



Fire Detection

Fire detection and early warning system



Smart Home Appliance

Oven, boiler, water heater



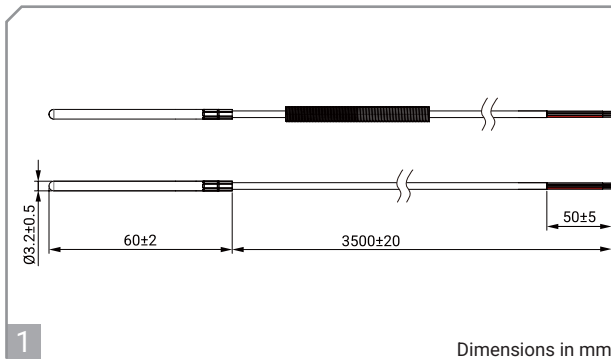
Harsh Environment

Any application demanding stability and accuracy under extreme conditions



SPECIFICATIONS

Platinum Temperature Sensor



Feature | Stainless steel tube with cable

Operating Temperature Range | -40°C to +150°C

R Value | R₀°C= 1000Ω (Class B)

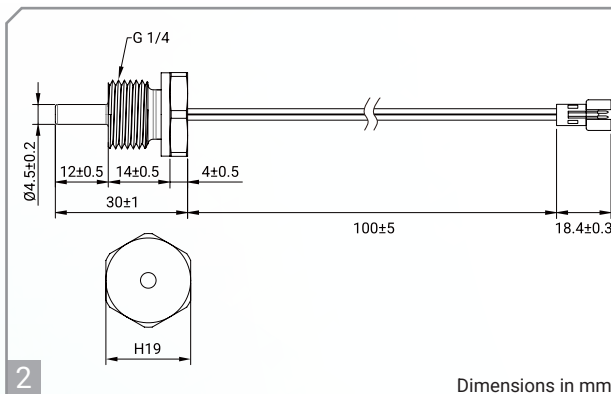
Temperature Coefficient of Resistance | 3850 ppm/K

Response Time | Around 3 seconds (in water)

Insulation Test | DC 500V 100MΩ (Min)

Hi-Pot Test | AC 1000V 0.5mA (Max)

Moisture Resistance | Pass 85°C 85% RH x 1000 hours test



Feature | Stainless steel cap with G 1/4" male thread, lead wire, and connector

Operating Temperature Range | -40°C to +150°C

R Value | R₀°C= 100Ω (Class A)

Temperature Coefficient of Resistance | 3850 ppm/K

Response Time | Around 4 seconds (in water)

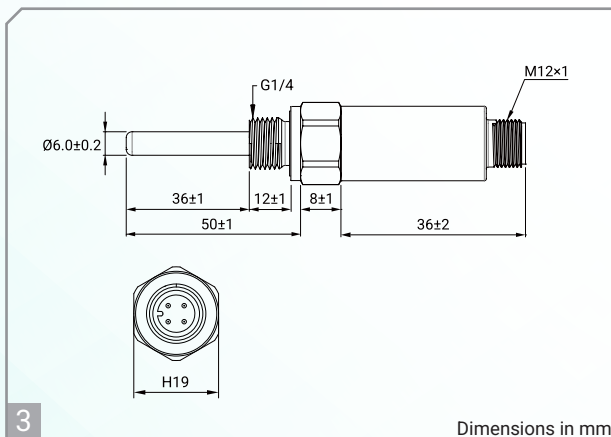
Insulation Test | DC 500V 100MΩ (Min)

Hi-Pot Test | AC 1000V 0.5mA (Max)

Moisture Resistance | Pass 85°C 85% RH x 1000 hours test

Platinum RTD Transmitter

a. Output signal: 4 to 20 mA



Feature | 4–20 mA current output with stainless steel housing, G1/4" male thread, and M12 connector (4-pin)

Operating Temperature Range | -40°C to +150°C

R Value | R₀°C= 100Ω (Class A)

Temperature Coefficient of Resistance | 3850 ppm/K

Response Time | Around 6 seconds (in water)

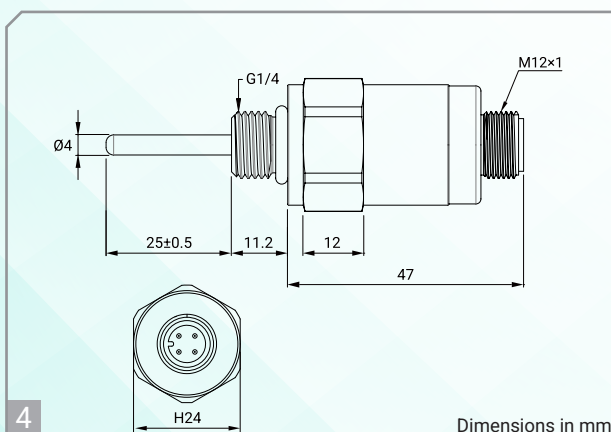
Output Signal | 4 mA to 20 mA

Insulation Test | DC 500V 100MΩ (Min)

Hi-Pot Test | AC 1500V 5 mA (Max)

Moisture Resistance | Pass 85°C 85% RH x 1000 hours test

b. Output signal: RS485 Modbus RTU



Feature | RS485 Modbus RTU output with stainless steel housing, G1/4" male thread, and M12 connector (4-pin)

Operating Temperature Range | -20°C to +105°C (customizable)

Output Signal | RS485 Modbus RTU

Insulation Test | DC 500V 100MΩ (Min)

Hi-Pot Test | AC 1000V 5mA (Max)