

33J TEMPERATURE SENSOR

INTRODUCTION

The 33J RTD platform is based on platinum thin-film RTD technology, delivering high accuracy, low drift, and long-term stability across a wide operating range.

Designed with a flexible architecture and multiple output options, it simplifies integration across embedded and industrial systems and reduces development time, qualification effort, and total cost of ownership.



KEY BENEFITS



HIGH ACCURACY

Platinum RTD technology ensures precise measurement with minimal drift.



FLEXIBLE OUTPUT

Voltage output and 4–20 mA (in development) for embedded and industrial systems.



RELIABLE DESIGN

Robust construction for harsh environments and long-term thermal stability.



SCALABLE PLATFORM

Common platform across HVAC, industrial, energy, and thermal management applications.

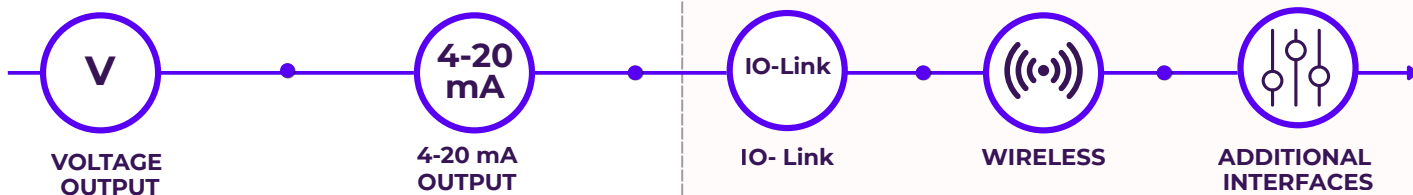
PLATFORM ROADMAP

One platform. Multiple outputs. Future ready.

AVAILABLE NOW

IN DEVELOPMENT

FUTURE EXPANSION



KEY FEATURES



PERFORMANCE

- Platinum RTD sensing technology for high accuracy and long-term stability
- Wide operating capability for demanding temperature environments



INTEGRATION

- Multiple output options: voltage and 4–20 mA (in development)
- Voltage output for cost-optimized designs and flexible integration into MCUs, ADCs, and embedded controllers
- Enables system-level signal conditioning for application-specific requirements
- 4–20 mA output for direct integration with PLC, DCS, and industrial control systems (in development)
- Supports long cable runs with improved noise immunity
- Simplifies system integration by eliminating external signal conditioning



DESIGN FLEXIBILITY

- Compact design suitable for space-constrained and high-volume OEM applications
- Configurable probe lengths and mounting options



RELIABILITY

- Robust mechanical design for harsh conditions
- Designed for long-term reliability and thermal stability

TYPICAL APPLICATIONS



HVAC & REFRIGERATION

- Heat pumps
- Chillers
- Rooftop units
- Commercial refrigeration units



FOOD EQUIPMENT

- Commercial Ovens & Fryers
- Beverage Equipment
- Food Warming Systems
- Ice Machines



INDUSTRIAL & MANUFACTURING

- Process equipment
- Compressors
- Pumps
- Industrial machinery



ENERGY & THERMAL MANAGEMENT

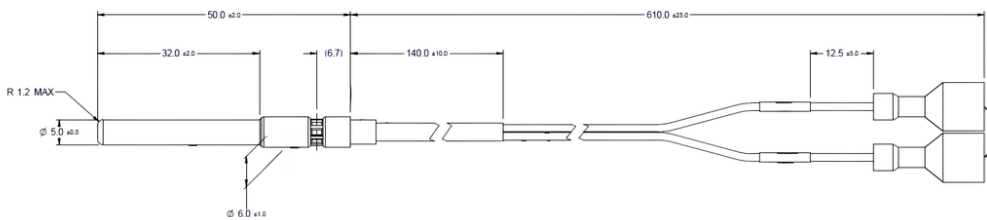
- Battery Energy Storage Systems
- Power Electronics Cooling
- Data Center Thermal Management Systems
- EV Charging Thermal Systems

GENERAL SPECIFICATIONS	
Parameter	Value
Technology	Platinum RTD (Thin Film)
Temperature Range	-40°C to 550°C (-40°F to 1022°F)
Accuracy	IEC 60751 Class A or B
Sensor Body Material	Stainless Steel, Aluminum, or Brass (configurable)
Ingress Protection	Up to IP69K (configurable)
Installation	Contact, Threaded
Designed Life	15 years
Compliance	UL-recognized designs available

OUTPUT SPECIFICATIONS		
Parameter	Analog Conditioned Output	4–20 mA Transmitter (In Development*)
Signal Conditioning	External (system-level)	Integrated
Recommended Excitation Current	0.1–1.0 mA (Pt100); 0.05–0.5 mA (Pt500/Pt1000)	Not required
Cable Length Capability	≤100 m (330 ft)	≤1,000 m (3,280 ft)
Noise Immunity	Good	Excellent

*Platform architecture supports future expansion toward advanced digital connectivity and condition monitoring features.

Mechanical Dimensions



Configurable probe geometry, shell diameter, and mounting options available.

ABOUT US

Sensience is a global leader in highly engineered sensing, control, and sealing technologies, providing mission-critical protection and intelligent data solutions across a wide range of industries, including energy, food and beverage, HVACR systems, appliances, industrial equipment, automotive platforms, and aerospace technologies.

Backed by a broad portfolio of proven products, deep engineering expertise, and dedicated customer support, we help customers innovate with confidence-delivering advanced technologies, technical capabilities, and tailored solutions that enhance performance, reliability, and efficiency in the most demanding environments.

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