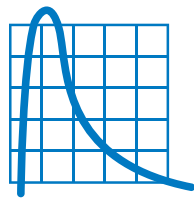


# Amphenol Sensors



THERMOMETRICS

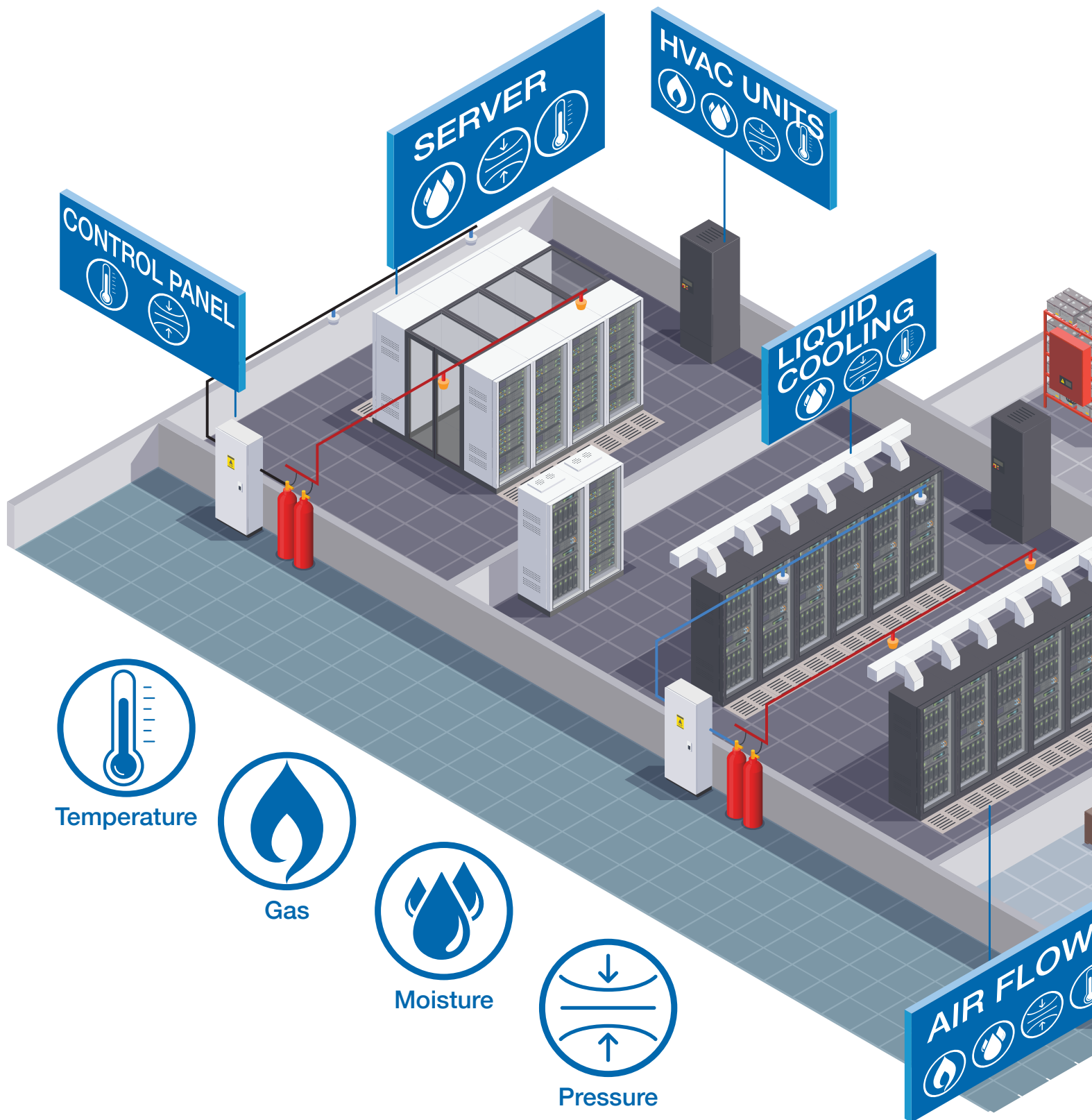
**NOVA**  
S E N S O R

**TELAIRE**

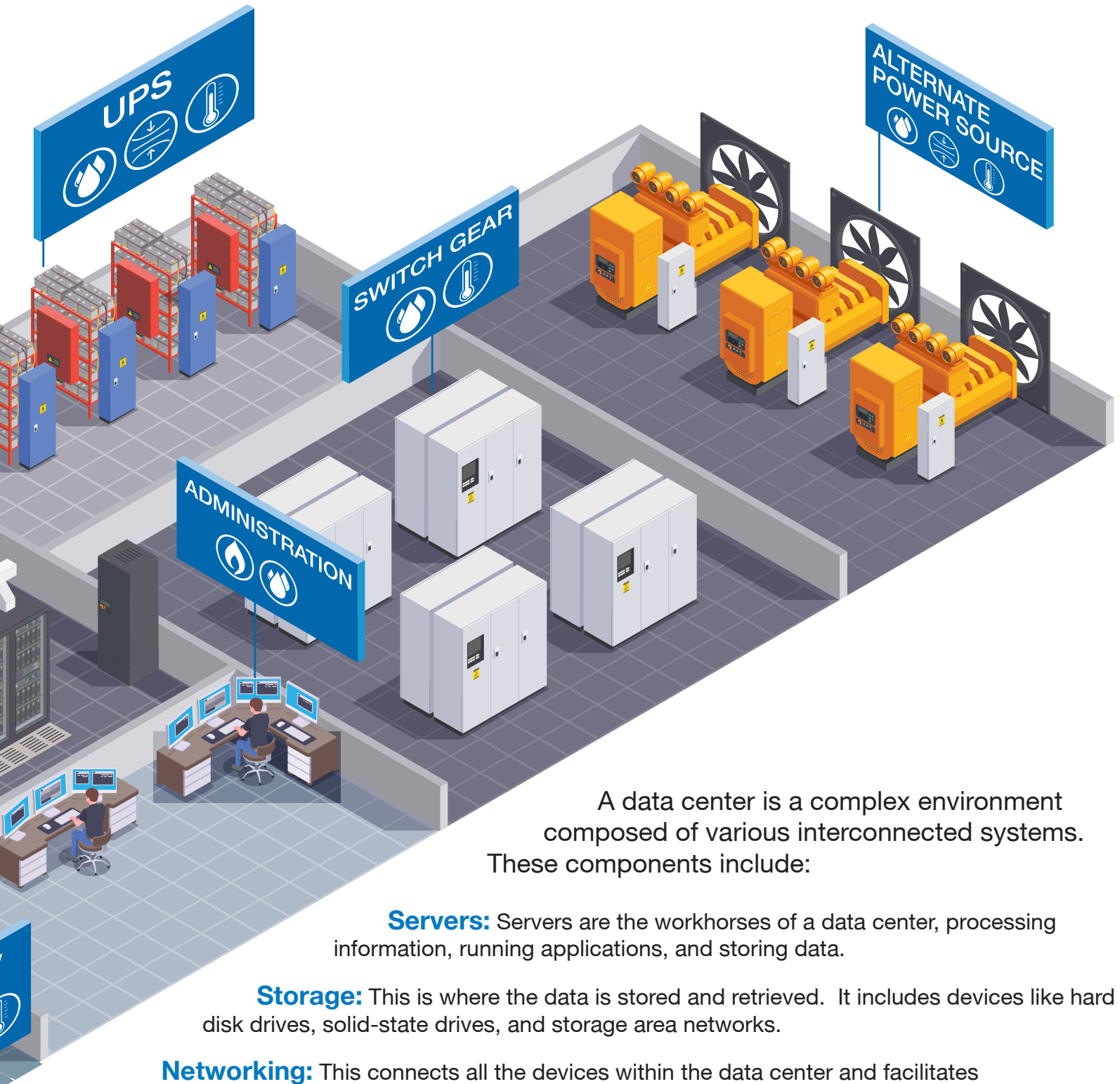
Smarter Data Centers  
Start with Amphenol Sensors

**Maintaining optimal environmental conditions within a data center is crucial for the proper functioning and longevity of IT equipment.**

Amphenol Sensors is a leading innovator in sensing technologies and measurement solutions. Offering the most diverse sensor portfolio of standard and customized products for the world's most demanding regulatory and industry-driven applications, creating value by providing critical information for real-time decisions.



# Typical Data Center Facility



A data center is a complex environment composed of various interconnected systems. These components include:

**Servers:** Servers are the workhorses of a data center, processing information, running applications, and storing data.

**Storage:** This is where the data is stored and retrieved. It includes devices like hard disk drives, solid-state drives, and storage area networks.

**Networking:** This connects all the devices within the data center and facilitates communication with external networks. Key components include routers, switches, firewalls, and load balancers.

# Data Center Challenges: Environmental Conditions and Facility



		Sensor Type	Product Name	Ref. No.
Telaire	Gas	Humidity Sensor	Chip Cap 2 - SIP	CC2D23-SIP
			Chip Cap 2	CCA25
		VOC Sensor	VOC Series	MiCS-VZ-89TE
		Humidity & Temperature Transmitters	Humitrac/Humitrac XR	T9501
				T9602
		Pressure Transmitters	Modus	Series T
Thermometrics	Temperature	IR Digital Sensors	IR Sensors	ZTPD
		IR Sensors		ZTP
		NTC Thermistors	Type NTC	Type NTC
		Temperature Sensor Assemblies	Water Detection Sensor	BAF147
			Waterproof Temperature Sensors	Type JI/JIC
			Self Adhering Surface Temperature Sensors	JS
NovaSensor	Pressure	NPA Pressure Sensors	Type NPA	Type NPA
		NPC Pressure Sensors	Type NPC	Type NPC

# Data Center Challenges: Cooling and Thermal Management



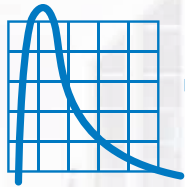
		Sensor / Product Type	Product Name	Ref. No.
Telaire	Gas	Humidity Sensor	HS Series	HS20
			Chip Cap 2 - SIP	CC2D23-SIP
			Chip Cap 2	CCA25
		VOC Sensor	VOC Series	MiCS-VZ-89TE
Thermometrics	Temperature	IR Digital Sensors	IR Sensors	ZTPD
		IR Sensors		ZTP
		NTC Thermistors	Type NTC	Type NTC
			Harsh Environment CR1	CR1
			Type JR NTC	JM 203
		Temperature Sensor Assemblies	Waterproof Temperature Sensors	Type JI/JIC
			Water Detection Sensor	BAF147
			Flow Through Sensors	GE 2102, 1935, and 2103
			Pressure and Temperature Combination Sensors	GE 2098, 2096, 2099
			Coolant Temperature Sensors	WTF083
			Pipe Clip Temperature Sensors	JS9218
			RTS Series	RTS
			JRI Series	JRI
			WTS	GE 1495

# Data Center Challenges: Server and Rack



		Sensor / Product Type	Product Name	Ref. No.
Telaire	Gas	Humidity Sensor	Chip Cap 2 - SIP	CC2D23-SIP
			Chip Cap 2	CCA25
			HS Series	HS20
		VOC Sensor	VOC Series	MiCS-VZ-89TE
Thermometrics	Temperature	IR Digital Sensors	IR Sensors	ZTPD
		IR Sensors		ZTP
		NTC Thermistors	Surface Mount Devices	NHQ/SMD
			Type NKI	NKI100
			Type NTC	Type NTC
			Harsh Environment CR1	CR1
			Type JR NTC	JM 203
			Type NKI	NKI100
		Temperature Sensor Assemblies	Flow Through Sensors	GE 2102, 1935, and 2103
			Pressure and Temperature Combination Sensors	GE 2098, 2096, 2099
			Coolant Temperature Sensors	WTF083
			Pipe Clip Temperature Sensors	JS9218
			RTS Series	RTS
			JRI Series	JRI
			WTS	GE 1495
			Water Detection Sensor	BAF147
			Waterproof Temperature Sensors	Type JI/JIC
			Self-adhering Surface Temperature Sensors	JS
			Surface Mount Foam Sensor	JNI103
			Type FL Temperature Sensors	Type FL
		Current Limiters	CL Series	A-2130
		PTC Thermistors	PTC Series	PTC

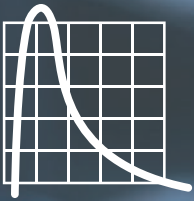
# Amphenol Sensors Product Solutions



THERMOMETRICS

**NOVA**  
S E N S O R

**TELAIRE**



# T H E R M O M E T R I C S

## A C O M M I T M E N T T O E X C E L L E N C E

### BAF147

#### Water Detection Sensor



The Thermometrics Water Detection Sensor is used in data centers to detect leaks and moisture, preventing potential damage to critical IT equipment. By providing early warnings of water presence, it helps maintain operational continuity and supports proactive maintenance.

[Learn More...](#)

### GE 2102, 1935, & 2103

#### Flow Through Sensors



The Thermometrics Flow Through Sensor monitors liquid flow in data center cooling systems to ensure efficient thermal management. By monitoring temperature changes, it helps prevent overheating, optimizes cooling performance, while protecting critical IT infrastructure.

[Learn More...](#)

### GE 2098, 2096, & 2099

#### Pressure and Temperature Combination Sensors



The Thermometrics PT Combination Sensor measures both temperature and pressure in data center cooling systems to ensure efficient thermal management. By providing real-time data, it helps optimize cooling performance, prevent system failures, and protect critical IT equipment.

[Learn More...](#)

### WTF083

#### Coolant Temperature Sensors



The Thermometrics Coolant Temperature Sensor monitors the temperature of coolant fluids in data center cooling systems. By ensuring that coolant remains within optimal temperature ranges, it helps maintain efficient cooling, prevent overheating, and safeguard sensitive equipment.

[Learn More...](#)

### JS9218

#### Pipe Clip Temperature Sensors



The Thermometrics Pipe Clip Sensor is designed to attach directly to pipes in data centers to monitor temperature and provide real-time data on the cooling system's performance. It helps ensure the efficient operation of HVAC systems, preventing overheating and protecting critical infrastructure.

[Learn More...](#)

### JNI103

#### Surface Mount Foam Sensor



The Thermometrics Surface Mount Foam Sensor is designed to be applied to surfaces in data centers, such as server racks, to monitor temperature and detect potential hotspots as discussed in ASHRAE TC9.9. By providing accurate temperature readings, it helps ensure proper cooling and protect sensitive equipment from thermal damage.

[Learn More...](#)

## Type JI/JIC

### Waterproof Temperature Sensors

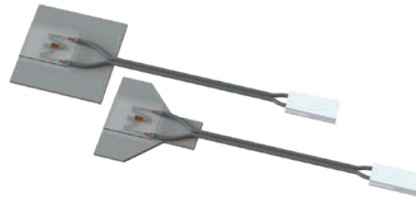


The Thermometrics Type JI/JIC Sensor is an IP68-rated temperature sensor used in data centers to monitor critical temperatures in various systems, including HVAC and cooling. It helps maintain optimal thermal conditions, ensuring the protection of sensitive equipment and improving energy efficiency.

[Learn More...](#)

## JS

### Self Adhering Surface Temperature Sensors



The Thermometrics Self-Adhering Surface Temperature Sensor is designed to be easily attached to surfaces in data centers, such as server racks, to monitor temperature levels as discussed in ASHRAE TC9.9. By providing accurate, real-time temperature data, it helps optimize cooling systems and protect critical equipment from overheating.

[Learn More...](#)

## Type FL

### Type FL Temperature Sensors



The Thermometrics Type FL Sensor is a flexible temperature sensor used in data centers to monitor temperature along pipes, ducts, or other surfaces. Its flexibility allows for easy installation in tight spaces, ensuring efficient thermal management and helping prevent overheating of critical IT equipment.

[Learn More...](#)

## CR1

### Harsh Environment CR1



The Thermometrics CR1 Sensor is a temperature sensor commonly used in data centers to monitor air or surface temperatures in critical harsh environments. By providing real-time temperature data, it helps optimize cooling systems and ensure the safe operation of sensitive equipment.

[Learn More...](#)

## NHQ/SMD

### Surface Mount Devices



The Thermometrics Surface Mount Devices (SMD) temperature sensor is integrated directly onto a PCB and is used to monitor the temperature of specific components or the overall board. By directly attaching to the PCB, it provides accurate temperature readings of the server or other critical equipment to help optimize cooling efficiency and prevent overheating of critical IT infrastructure.

[Learn More...](#)

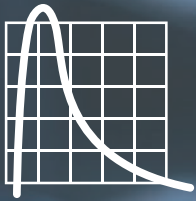
## Type NKI

### NTC Thermistors



The Thermometrics Epoxy-Coated Type NKI of Noise Immune Thermistors are newly developed, consisting of a noise immune NTC thermistor with an integrated radio frequency (RF) decoupling function, providing protection from electromagnetic interference (EMI) at the component level over a wide frequency range.

[Learn More...](#)



# THERMOMETRICS

## A COMMITMENT TO EXCELLENCE

### Type JR NTC

#### Surface Temperature Measurement

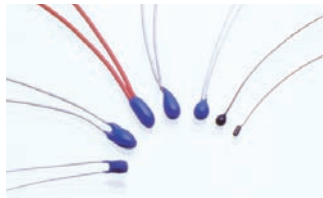


The Thermometrics Type JR NTC Chip Thermistors in Eyelet Tag are chip thermistors with insulated flexible wires and housed in an eyelet tag. They are suitable for surface temperature measurement. Typical applications include semi-conductor heatsinks and enclosure panels.

[Learn More...](#)

### Type NTC

#### NTC Thermistors



The Thermometrics offers a wide range of NTC Thermistors from component-level to complete sensor assemblies. NTC Thermistors are ideal for applications requiring a continuous change of resistance with temperature. They are known for their defined sensitivity to temperature, electrical power input and to changes in thermal conductivity.

[Learn More...](#)

### CL Series

#### Current Limiters



The Thermometrics A-2130 NTC Inrush Current Limiter Kit consists of 32 our most popular styles of Inrush Current Limiters (straight and kinked leads) at a quantity of 5 pieces per style. This kit allows customers, in their initial design stage, to test multiple spec variances to determine which part(s) are best suited for their needs.

[Learn More...](#)

### PTC

#### PTC Thermistors



The Thermometrics Type PTF PTC Type Thermistors consist of a range of radially-wired bare PTC disc thermistors. They are designed for general purpose over-current and short circuit protection.

[Learn More...](#)

### RTS Series

#### Temperature Sensor Assemblies



The Thermometrics RTS Series of Ring Terminal Temperature sensor of an NTC chip thermistor mounted in An eyelet tag for surface temperature measurement.

[Learn More...](#)

### ZTP

#### IR Sensors



The Thermometrics ZTP-115 Thermopile Infrared (IR) Sensors consist of thermo-elements, flat infrared filter and a thermistor for temperature compensation, all in a hermetically-sealed package. There are also a variety of filters available to help maximize performance in specific applications. Thermopile IR Sensors are used for non-contact surface temperature measuring.

[Learn More...](#)

## ZTPD-2210

### IR Digital Sensors



The Thermometrics ZTPD-2210 Series of digital output IR detectors introduces a temperature-compensated digital I2C output. This innovative design integrates both thermopile and ASIC into a single TO-39 metal package, delivering a temperature-compensated temperature output signal. Notably, the ZTPD-2210 ensures seamless compatibility with customer devices, eliminating the need for recalibration.

[Learn More...](#)

## JRI Series

### Temperature Sensor Assemblies



The Thermometrics JRI Series of Noise Immune Ring Terminal Temperature Sensors consists of an NTC chip thermistor mounted in an eyelet tag for surface temperature measurement with a novel radio frequency (RF) decoupling function. These sensors are designed with an integrated bypass capacitor to prevent AC currents, generated from resonant electromagnetic interference (EMI), coupled with the wiring harness, from causing nuisance self-heating of the NTC element.

[Learn More...](#)

## WTS GE-1495

### Temperature Sensor Assemblies



The Thermometrics Water Temperature Sensor (WTS) monitors the temperature of the coolant that is being pumped around the engine block to cool the engine to notify the driver of the vehicle if the engine starts to overheat. The goal is to relay an over-temperature engine temperature to the driver, so that the vehicle can be stopped and the engine switched off before the heat causes any permanent damage to the engine.

[Learn More...](#)

## T9602

### IP67 Harsh Environment Humidity & Temperature Sensor



The Telaire T9602 is a compact temperature and humidity sensor used in data centers to monitor environmental conditions. It provides accurate, real-time data to optimize cooling systems, prevent equipment overheating, and maintain energy efficiency.

[Learn More...](#)

## T9501

### Humidity & Temperature Sensor



The Telaire T9501 is a high-accuracy temperature and humidity transmitter used in data centers to monitor and control environmental conditions. It helps optimize cooling efficiency, prevent equipment failures, and ensure stable operation by providing real-time humidity and temperature data.

[Learn More...](#)

## HumiTrac

### Relative Humidity and Temperature Transmitter



The Telaire Humitrac is a temperature and humidity transmitter used in data centers to provide continuous environmental monitoring. It helps maintain optimal conditions by integrating with HVAC systems to ensure efficient cooling, prevent condensation, and protect sensitive equipment.

[Learn More...](#)

## HumiTrac XR

### Relative Humidity and Temperature Transmitters



The Telaire Humitrac XR is a dew-point, enthalpy, or wet-bulb transmitter designed for data centers to ensure precise environmental monitoring. It helps optimize HVAC performance, prevent overheating or moisture buildup, and protect critical IT equipment.

[Learn More...](#)

## T8000

### Wall Mount CO<sub>2</sub> & Temperature Transmitter



The Telaire T8000 Series consists of wall-mounted CO<sub>2</sub> sensors used in data center support offices to monitor air quality and optimize ventilation. By providing real-time CO<sub>2</sub> measurements, these sensors help regulate airflow, improve energy efficiency, and maintain ideal operating conditions for sensitive equipment, while maintaining indoor air quality.

[Learn More...](#)

## T5100

### Wall Mount CO<sub>2</sub> Transmitter

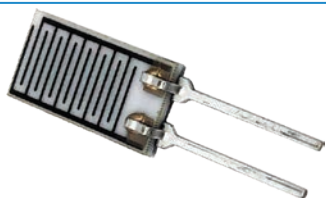


The Telaire T5100 Series consists of duct-mounted CO<sub>2</sub> sensors used in data center support offices to monitor air quality and optimize HVAC performance. By measuring CO<sub>2</sub> levels in airflow, these sensors help regulate ventilation, improve energy efficiency, and maintain optimal environmental conditions for equipment reliability, while maintaining indoor air quality.

[Learn More...](#)

## HS Series

### Humidity Sensor HS20

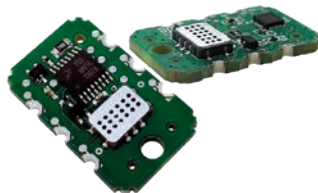


The Telaire HS20 is a bulk-resistance type of Relative Humidity (RH) Sensor providing a variable impedance value in response to the adsorbed water within the sensor's proprietary thin-film polymer. Applied to an interdigitated electrode, the polymer's chemical functional groups disassociate into ionic groups in the presence of water, increasing the sensor's electrical conductivity. Excited by a low voltage alternating current, the sensor's resulting impedance is measured via supporting circuitry.

[Learn More...](#)

## MiCS-VZ-89TE

### VOC Sensor



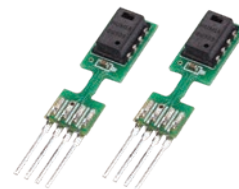
The Telaire MiCS-VZ-89TE Integrated Sensor Module combines state-of-the-art MOS sensor technology with intelligent detection algorithms to monitor VOCs and CO<sub>2</sub> equivalent variations in confined spaces, e.g. meeting rooms or vehicle cabins.

The dual signal output can be used to control ventilation on-demand, saving energy and reducing cost-of-ownership

[Learn More...](#)

## ChipCap 2 - SIP

### Humidity and Temperature Sensor



The Telaire ChipCap 2-SIP is a Single In-line Package (SIP) type of ChipCap with ready installed V-core capacitor for easy and convenient application. ChipCap offers the most advanced and cost effective humidity and temperature sensing solution for virtually any type of applications. Individually calibrated and tested, ChipCap 2-SIP performs  $\pm 2\%$  from 20% to 80%RH ( $\pm 3\%$  over entire humidity range), and yet is simple and ready to use without further calibration or temperature compensation.

[Learn More...](#)

## ChipCap 2

### Humidity and Temperature Sensor



The Telaire ChipCap 2 offers the most advanced and cost effective humidity and temperature sensing solution for virtually any type of application. A capacitive polymer sensor chip and a CMOS integrated circuit with EEPROM are integrated into one embedded system in a re-flow solderable SMD package.

[Learn More...](#)

## Modus Series T

### Pressure Transmitter

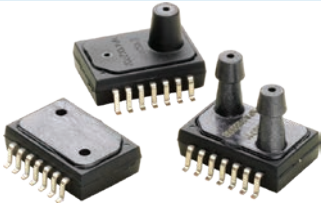


The Series T Transmitters are an excellent choice for many HVAC, process and automation monitoring requirements. These transmitters monitor: filter differential pressures, fan static pressures, clean room pressures, variable air volume systems and velocity pressures. They have been used for bubbler level systems, leak detection and in medical and analytical instruments.

[Learn More...](#)

## NPA

### NPA



The NovaSensor NPA Sensor is a SMT pressure sensor used in data centers to monitor filter cleanliness and room differential pressures. By monitoring pressure variations, it helps optimize HVAC system performance and environmental pressure conditions, ensuring efficient cooling, environmental cleanliness and preventing equipment overheating.

[Learn More...](#)

## NPC

### NPC 410, 1210



The NovaSensor NPC Sensor is a PCB-mounted high-precision pressure sensor used in data centers to monitor filter cleanliness and room differential pressures. By monitoring pressure variations, it helps optimize HVAC system performance and environmental pressure conditions, ensuring efficient cooling, environmental cleanliness and preventing equipment overheating.

[Learn More...](#)

## NPH

### Pressure Sensors



The NovaSensor NPH Series of Solid State Pressure Sensors consist of an integrated circuit silicon sensor is housed in a standard TO-8 electrical package that is printed circuit board mountable. The latest techniques in micro-machining have been used to ion-implant piezoresistive strain gauges into a Wheatstone bridge configuration that is integrally formed on a micro-machined silicon diaphragm.

[Learn More...](#)

## NPI

### NPI 12, 15, & 19



The NovaSensor NPI Sensor is a media-isolated pressure sensor designed to operate in hostile environments and is used in data centers to monitor pressure in HVAC and liquid cooling systems. By detecting pressure variations, it helps optimize media flow, ensure proper thermal management, and maintain efficient cooling performance to protect sensitive equipment.

[Learn More...](#)

# Amphenol Sensors

## What sets us apart...

- Brand recognition (Amphenol & Legacy Brands)
- Amphenol Sensors controls the entire manufacturing process and supply chain from design to delivery
- Rich history of customer loyalty with 10+ years, 20+ years, 30+ years and even 40+ years
- Amphenol Sensors has Field Application Engineers in-region to help our customers find winning solutions
- Broadest selection of NTC beta values in the world
- Accuracy and stability second to none, the United States Government uses Amphenol products to validate its standards
- TS 16949 quality rating at all manufacturing sites
- Ability to design and manufacture custom assemblies based on individual customer specifications
- Global manufacturing and global footprints



# Amphenol Sensors



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resources*