Amphenol

Advanced Sensors

Connecting Your World Through

Sensing Innovations

THERMOMETRICS

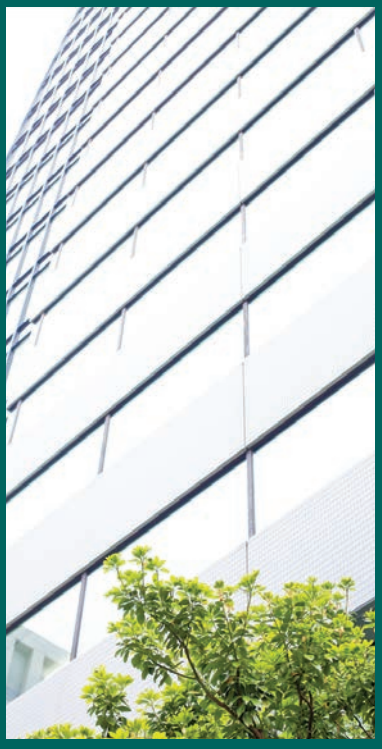
Temperature Sensors

NOVA® SENSOR

MEMS Pressure Sensors

TELAIRE®

CO_2, Humidity & Dust Sensors



Amphenol-Sensors.com

Embedded Sensing Technologies for Transportation, Healthcare and Industrial Applications

Improving Your World

Temperature

- NTC and PTC thermistors and sensor assemblies
- Non-contact infrared temperature sensors
- Inrush current limiting thermistors
- Wide range of customization available

Pressure / MEMS

- MEMS-based piezoresistive pressure sensors
- SenStable® technology for world-class accuracy and low drift
- Low pressure 2” H_2O to 5000 PSI

Carbon Dioxide (CO_2)

- Non-dispersive infrared (NDIR)
- Self-calibrating with lifetime calibration warranty
- Small footprint

Humidity

- Various calibrated outputs (digital and analog)
- Fully-integrated humidity and temperature transmitters
- Harsh environment probes

Dust

- Laser LED versions
- PM 2.5 and PM 10 measurements
- Digital output

Industry Leaders for Over 75 Years

NOVA® SENSOR
MEMS Pressure Sensors

TELAIRE®
CO_2, Humidity and Dust Transmitters and Sensors

THERMOMETRICS
A COMMITMENT TO EXCELLENCE
Temperature Sensors

About Amphenol Advanced Sensors

With a portfolio of industry-leading brands - Thermometrics, NovaSensor, Telaire, Protimeter and Kaye - Amphenol Advanced Sensors is an innovator in advanced sensing technologies and innovative embedded measurement solutions customized for regulatory and industry-driven applications, creating value by providing critical information for real-time decisions.

Our sensing products measure temperature, pressure, liquid level, moisture and humidity, gas concentration, and flow rate for a wide range of applications across the transportation, industrial and healthcare markets.

We offer domain expertise, rapid customization, world-class manufacturing capabilities and lasting customer relationships to deliver the greatest value in cost of ownership to our customers.

Amphenol Advanced Sensors is a member of the USA-based Amphenol Corporation, one of the largest manufacturers of interconnect products in the world. Amphenol designs, manufactures and markets electrical, electronic and fiber-optic connectors, coaxial and flat-ribbon cable, and interconnect systems.

High Performance, Competitively-Priced Products for a Wide Range of Applications

Aerospace
- Anti-icing
- Environmental control systems
- Temperature scanning systems

Transportation
- Engine management
- Dashboard display sensors
- Cabin comfort sensors—non-contact infrared, solar and light
- Circuit protection
- Safety systems
- Coolant/transmission fluid pressure/temperature
- Exhaust gas temperature
- Air quality
- Active/passive incar
- Battery temperature sensors
- Air filtration monitoring

Commercial
- High voltage and short circuit protection
- HVAC
- Energy management
- Liquid level detection
- Telecommunications equipment
- Computers
- Office machines

Industrial
- Circuit protection
- Temperature measurement and control
- Liquid level detection
- High voltage protection
- Short circuit and other hazard protection
- Process control
- Boilers and water heaters
- Battery temperature sensors

Healthcare
- Tympanic temperature
- Heart/lung machines
- Thermal dilution catheters (heart)
- Urinary catheters
- Oral and skin temperature
- Sleep apnea
- Esophageal catheters
- Glucose monitoring
- Body mapping
- Oxygen tents
- Clinical mattresses
- Humidifiers
- Anesthesia
- Fluid heaters
- Sterilizers
- Culture ovens
- Cryogenics
- Blood pressure monitoring
- Oxygenators

Consumer
- Electronics
- Level control
- Appliances
- Overload protection
- Boilers and water heaters
- Food and beverage

Calibration Services
- Primary temperature standard
- NIST calibration services

Critical Information for Real-Time Decisions

For Flight

From cabin comfort to test cell systems monitoring, our sensors play a role in temperature measurement for commercial, civil and military aerospace applications—fixed-wing and rotary, and both engine and airframe.

Sensors monitor engine thrust, reliability and emissions in test cells, while also monitoring test cell throughput. In the cabin, our HVAC sensors provide climate control for a comfortable environment while a variety of other sensors monitor temperature in appliances like coffee makers, microwaves and refrigerators.

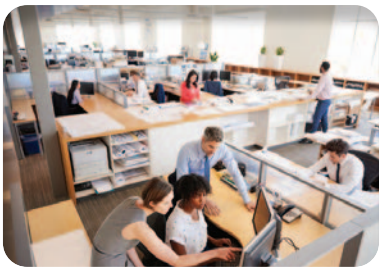
On the Road

Today's increasingly complex engine management systems rely upon sensors to monitor, measure and control vehicle performance including fuel economy, safety, and control of exhaust emissions.

Our comprehensive product range includes temperature sensors for use in coolant or transmission fluid; high temperature sensors to measure exhaust gas temperature; IR, gas and humidity sensors for cabin comfort; and solar and light sensors.

Our single-piece leadframe construction reduces the number of interconnections and ensures more reliable performance.

At the Office



Electronic circuitry and sensitive system components demand thermistor protection and control. Our custom-design capability and problem solving expertise mean that we can offer innovative solutions in circuit protection; and temperature measurement and control.

Our sensors excel at applications such as process control energy management, HVAC systems, power supplies, transformers, motor soft start and general time delay units. They are used to control critical process temperature.

Our simple-to-integrate sensors are designed to meet the rapidly changing demands of deregulated and global markets for high-technology sensors.

Around the Home

Today's consumers expect their everyday appliances to deliver reliable and efficient performance. Electronic sensors offer improved accuracy over electromechanical solutions and are designed to perform over a very wide range of temperatures and specifications. Our sensors play a vital part in measuring and controlling the temperature of water, steam, air and food. They are also used for flow measurement, level control, and overload protection and in combination with other sensors for multiple functions.

Temperature sensors can be found all around the home in boilers and water heaters, washing machines, dishwashers, stoves, microwave ovens, irons, toasters, refrigerators and deep freezers.

For Healthcare

We have developed state-of-the-art, high-performance sensors known for their accuracy, reliability and small size. Used extensively for heart catheters, esophageal stethoscopes, fever thermometers, skin sensors, blood analyzers, incubators, respiration monitors and hypodermic needle sensors, they help meet many temperature and pressure-related requirements.

Innovative work on small precision sensors continues for cancer research. Thermistors measure the temperature of cells, and with precise monitoring, doctors can use heat to destroy diseased cells in tumors. Pressure sensors monitor fluid flow enabling a clear view of the surgical site.

In the Plant

Our custom-design capability and problem solving expertise mean that we can provide innovative solutions in circuit protection, temperature measurement and control, liquid level detection and gas flow measurement. We have one of the most extensive product ranges of industrial temperature sensors in the world.

With new markets emerging worldwide, our global sensor manufacturing centers meet local content demands and allow us to exceed specific customer requirements. Along with the best manufacturing and test equipment, our strict manufacturing processes and quality procedures ensure the highest standards for your applications.

THERMOMETRICS

A COMMITMENT TO EXCELLENCE

Global Excellence in Temperature Sensors

The Thermometrics temperature product line contributes more than 70 years of technology experience in the design and manufacture of high quality sensors to the Amphenol Advanced Sensors portfolio of sensor-based solutions.

Thermometrics pioneered lead frame technology, unifying the probe terminal and thermistor lead into a single constructed metal substrate. This innovation was the building block to today's fully automated volume production process, which ensures the highest degree of quality and performance.

Thermometrics continues to invest in leading edge temperature sensor and sensor packaging technology for the Thermometrics product line, particularly in developing custom solutions for industry and for specific customer application needs. From chips to value-added assemblies and for temperature ranges from -196°C to 1150°C, Thermometrics products play a vital role in measurement, control and protection of industrial- and consumer-based applications worldwide.

THERMOMETRICS

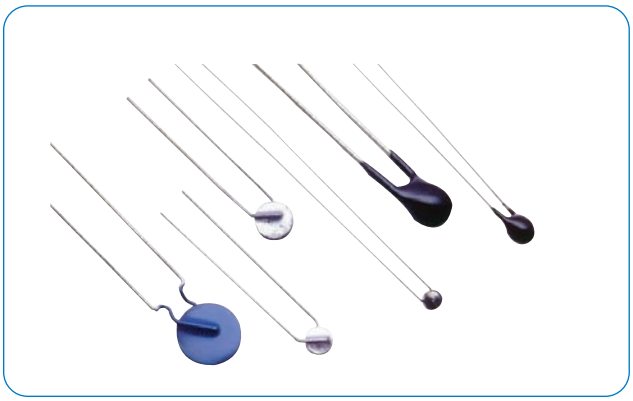
Thermistor Selection - NTC or PTC?

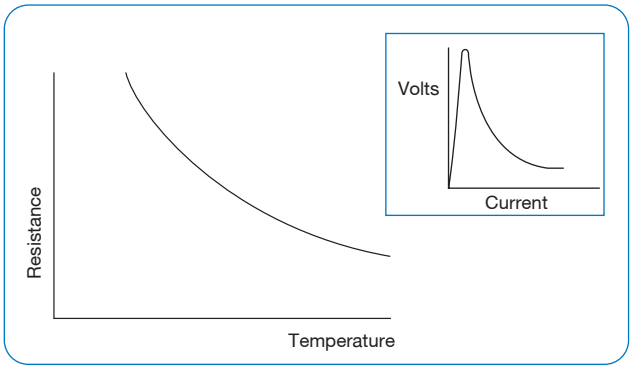
Thermistors are thermally-sensitive resistors with either a negative resistance/temperature coefficient (NTC) or positive resistance/temperature coefficient (PTC).

Thermometrics offers a wide range of both NTC and PTC Thermistors from component-level through complete assemblies. Both types are solid state ceramic components, known for their exceptional quality and long life.

NTC Thermistors

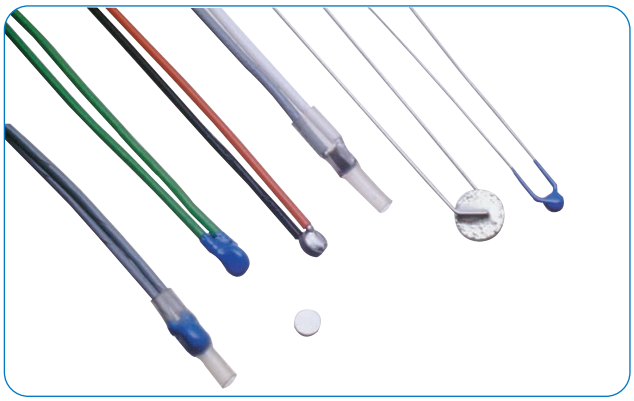
Manufactured from the oxides of transition metals and can operate over the range of -196°C to 1000°C. Choose an NTC thermistor when a continuous change of resistance with temperature is required.

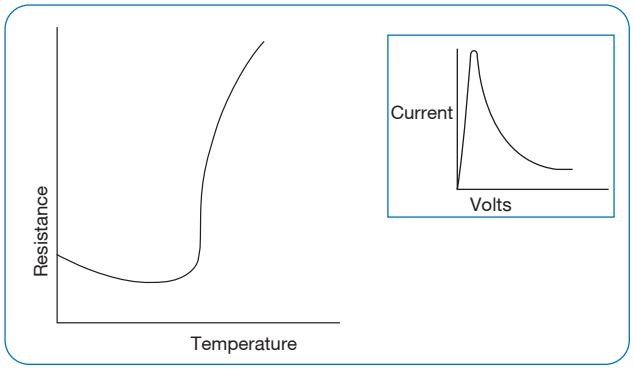




PTC Thermistors

Temperature-dependent resistors manufactured from doped barium titanate and are available with transition temperatures from 60°C to 200°C. Choose a PTC thermistor for self reset-capable fuse and heater applications.





Key Characteristics of NTC Thermistors

- Defined sensitivity to temperature
- Sensitivity to electrical power input
- Sensitivity to changes in thermal conductivity

Common Applications for NTC Thermistors

- Temperature measurement and control
- Temperature compensation
- Surge suppression
- Power measurement
- Fluid level-flow detection
- Customized solutions

Key Characteristics of PTC Thermistors

- Large change in resistance at a preset temperature
- Ability to self-regulate temperature
- Current-limiting capability
- Sensitivity to changes in thermal conductivity
- Standard and custom design geometries

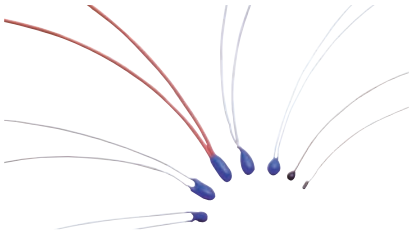
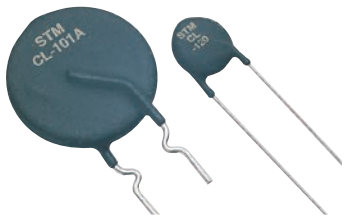
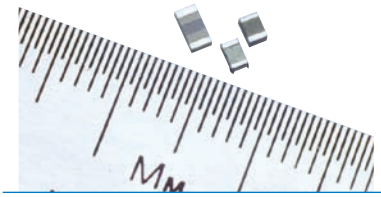
Common Applications for PTC Thermistors

- Over-temperature protection
- Over-current protection
- Surge generation
- Current stabilization
- Fluid level-flow detection
- Self-regulating heaters

Thermometrics is a world leader in beta curve selections and high voltage circuit applications.

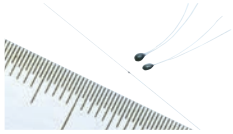
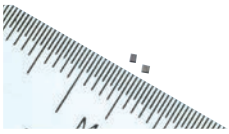
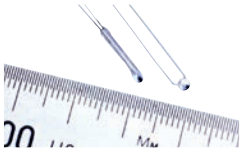
THERMOMETRICS

NTC Thermistors

Description	Part Codes	Temperature Measurement Control	Temperature Compensation	Surge Suppression	Power Measurement	Fluid Level/Flow Detection	Key Features	Typical Uses
Epoxy and silicone-coated chip thermistors 	TK95 DC95 EC95 MC65 MF65 SC30 SC50 ND NK MS C100 NDK NDP NDM NDL TC	✓	✓			✓	• Interchangebility options down to ±0.1°C accuracy 0 to 100°C range • Head size 0.8 to 2.4 mm • Automated assembly	Automotive engine management, air conditioning, medical, clinical thermometers, blood analysis
Glass encapsulated DO-35 package 	DK GE TH	✓	✓				• Tmax 300°C • Hermatic seal • High voltage insulation • Bandoliered for auto PCB insertion	Battery packs, toasters, hair dryers, automotive transmissions, smoke detectors, environmental control
Discs with radial leads 	RL10 RL14 RL20 RL30 RL35/40/45	✓	✓	✓			• Operation at high currents • Wide range of resistance vs temperature curves • Custom design	Automotive engine temperature, temperature compensation
Discs for inrush current limiting 	CL TP T5D			✓			• Continuous current ratings 1.1 to 16 A • Cold resistances 0.7 to 120 W • Some UL-approved versions	Soft start for switch mode power supplies, filament lamp circuits
Surface mount chips 	NHQ NHQM NHQMM TM	✓	✓				• 0402,0603, 0805, 1206 sizes • Ni barrier terminations • Resistance tolerances down to ±1%	Rechargeable battery packs, LCD temperature compensation
Glass-encapsulated surface mount chips 	DKM MELF	✓	✓				• Tmax 250°C • Suitable for harsh environments and soldering profiles	SMD circuitry

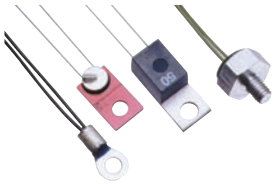
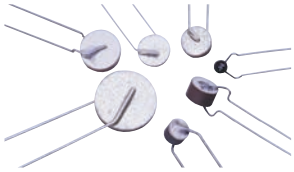
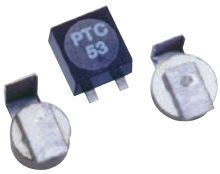
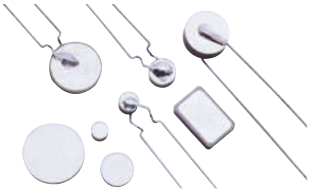
THERMOMETRICS

NTC Thermistors (cont.)

Description	Part Codes	Temperature Measurement Control	Temperature Compensation	Surge Suppression	Power Measurement	Fluid Level/Flow Detection	Key Features	Typical Uses
Bare bead thermistor 	BB05/07/11	✓	✓		✓	✓	• Fast time constant, 0.11 seconds • Extremely small size 0.13 to 0.25 mm • High stability	RF and microwave power measurements
Glass-coated beads 	B05/07/10/14 B35/43	✓	✓		✓	✓	• Hermetically sealed • Small size, 0.13 mm to 1.1 mm • Tmax 300°C	Gas chromatography, thermal conductivity analysis, gas flow measurement, liquid level sensing
Glass-encapsulated beads, rods, probes 	BR11/14/16/23 BR32/42/55 P20/25/30 P60/65/85/100 R60/65/85/100 P60/65/85/100 FP07/10/14	✓	✓	✓		✓	• Robust • Hermetically sealed • Tmax 300°C • Interchangeable matched pairs available • Some models with intermittent operation to 600°C	Liquid level sensing, gas flow measurement, fluid temperature, pulse suppression
Glass-encapsulated chips with leads 	GC32 GC14/16 GC11	✓	✓	✓		✓	• Long-term stability • Chip technology • Size • Response • Accuracy	Medical catheters military/aerospace, airflow, blood analysis
Leadless chip thermistors 	NDU HM	✓	✓				• Silver or gold electrodes suitable for wire bonding • Small size	Hybrid circuits, glucose monitors, digital thermometers
Cryogenic thermistors 	RL1004 RL060628 CTP60 CTP65 CTP85 CTP100	✓	✓			✓	• Suitable for use at very low temperatures—down to -196°C	Cryogenic temperature measurement
Unleaded discs 	KU UD20 0706 1403 1703 1803 2006 3006	✓	✓				• Wide range of resistance vs temperature curves • Custom design	Automotive engine temperature sensing
Harsh environment thermistors 	NKA	✓	✓				• High thermal shock resistance • Small body diameter • Fast response • Water immersion	Automotive, HVAC, white goods, marine, aerospace, military, industrial, healthcare

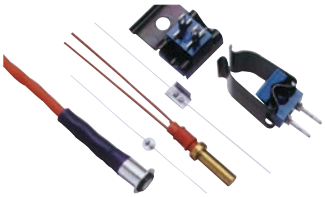
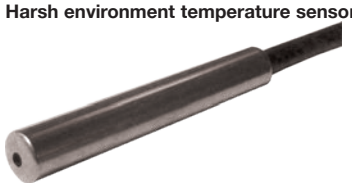
THERMOMETRICS

PTC Thermistors

Description	Part Codes	Over Temperature	Over Current	Surge Generation	Current Stabilization	Fluid Level/Flow Detection	Self Regulating Heaters	Key Features	Typical Uses
Motor protection 	YA YB YC YD YF YG PTD	✓						• Small insulated head • Long insulated flexible wire • Switch temperatures 30°C to 180°C • DIN compliance • MOD approval	Protection of industrial motors and transformers, submarine motors
Surface sensors 	YK YR PTA PTE	✓						• Screw-in or bolt-on configurations • Flexible or solid wire • Switch temperature 30°C to 140°C	Semi-conductor heat sinks, enclosure panels, power supplies
Wired devices - general purpose 	YM120 YP YS4019 YS4020 PTF PTO		✓	✓	✓			• Ratings up to 1000 Vrms • Switch currents up to 2A	Transformer protection, electronic lighting, instrument/DMM protection
Surface mount devices 	YSM YSM 4021 PTSM		✓	✓	✓			• High power SMD PTCs • Compatible with SMD assembly • Ratings up to 1000 Vrms • Switch currents up to 2A • Conformance to ITU-T K20/21	Telecom line protection, DMM instrument protection, electronic lighting control
Circuit protection 	YS	✓	✓		✓			• Custom designed for electronic circuit applications • Excellent thermal shock and power handling performance • Conformance to ITU-T K20/21	Telecom primary and secondary protection
Self-regulating heaters 	YH PTH						✓	• Temperature regulation on range of supply voltage • Voltage ratings 12 V to 240 V • Reference temperatures 40°C to 180°C • Custom shapes	Medical equipment, in-line diesel fuel heaters, LCD heaters, stabilization of electronic components, wax motors, saw devices, air fresheners, outside camera lenses
Liquid level sensing 	YL JYA					✓		• Water resistant housing • High sensitivity • Axial and radial formats	Tea urns, fuel storage systems, industrial plants, laboratory water stills, vending machines

THERMOMETRICS

Temperature Sensor Assemblies

Description	Part Codes	Transportation	Industrial	Medical	Key Features	Typical Uses
General purpose sensors 	GT JA JB JE JF JP M series T series		✓		• Tmax 225°C • Range of fittings	Domestic ovens, combination microwave ovens, industrial process control
Fast response surface sensors 	JC JW JD JS2945 Substrate	✓	✓		• Response time down to 250 ms • Voltage insulation 1500 V • Environmental protection • Pipe ranges 13 mm to 22 mm	Gas boiler control, domestic water systems, air conditioners, showers, vending machines, radiator inlet-outlet, automotive temperature sensing, aerospace de-icing
Refrigeration, low temperature 	JL JM JI EVAP A1424 EVAP for HVAC A1447-A1450	✓	✓		• Low temperature • Resistant to moisture ingress	Low temperature appliances, air conditioning evaporators, industrial and domestic refrigeration, automotive
Medical assemblies 	AB6 MA100 MA400			✓	• Clinically-approved materials • Custom designs • Size • Accuracy	Thermometer probes, skin sensors, fluid flow, catheters (thermodilution, esophageal, foley, ablation), vital sign monitors
Harsh environment temperature sensor 	JS8746	✓	✓		• HACT Exposure: +14 days • Environmental Protection: IP68 • Resistant to: Salt solutions, Ozone, UV and a variety of marine environment cleaning detergents	Marine container ship applications, compressors, condensing units, heat pumps, air conditioning, refrigerated truck and trailer, reefer containers
Waterproof IP68 temperature sensors 	JI JIC		✓		• Waterproof to IP68 • Withstands freeze/ thaw cycling • Range of wire lengths	Ventilation, refrigeration, heat pumps, water heaters, weather stations, outdoor temperature measurement, under-floor heating, fish tanks, evaporators
Inline flow-through fluid temperature sensors 	GE-1935 GE-2102 GE-2103	✓	✓		• SAE J-1231 Interface • USCAR sealed connection system • Available in 3 standard hose sizes	Engine coolant temperature, battery pack coolant line temperature, process flow measurement, HVAC water management, home appliances

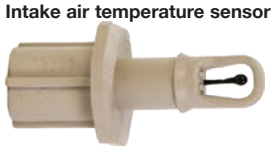
THERMOMETRICS

Temperature Sensor Assemblies (cont.)

Description	Part Codes	Transportation	Industrial	Medical	Key Features	Typical Uses
Integrated pipe clip surface temperature sensor 	JS8741	✓	✓		• Quick mount spring-loaded clip of galvanized steel • Integrated connector with locking mechanism • VW75174 approved connector system • IP57 ingression protection rating	Engine coolant temperature, battery pack coolant line temperature, process flow measurement, HVAC water management, home appliances
Self-adhering surface temperature sensor 	JS		✓		• Excellent heat transfer • Long-term stability • Multiple adhesive tape sizes and shapes available	Industrial HVACR, water tank and boiler reservoirs, solar panel heating systems with reservoir tanks
Leadframe subassemblies 	Lead frame	✓			• Designed for automated assembly • Reduced overall sensor cost • Enhanced reliability	Automotive engine temperature
Brass assemblies 	Brass assemblies, etc.	✓	✓		• Custom design • In-house overmolding capability • Large variety of connector options	Automotive coolant temperature indication
Coolant temperature sensor (CTS) 	WTF083B001	✓	✓		• Compact IP67 design with integrated connector • Customizable to meet application installation needs • Variety of RvT curves and terminal plating available • Operating temperatures to 100°C • Fast response, proven design	EV/PHEV battery coolant temperature, HVAC refrigerant lines
HVAC refrigerant temperature sensor 	GE-1920	✓	✓		• High accuracy and long term stability • Fast response time • Integral connector • Existing field proven design • Alternate RvT curves available • 100°C max operating temperature • Plated steel body • Other resistance and beta values available	Battery coolant temperature, high pressure line temperature of the condenser and receiver/ drier unit side, low pressure refrigeration line temperature measurement of the evaporator side

THERMOMETRICS

Temperature Sensor Assemblies (cont.)

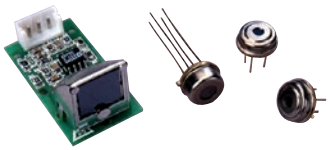
Description	Part Codes	Transportation	Industrial	Medical	Key Features	Typical Uses
Motor coil temperature sensor 	A-1737	✓	✓		• High accuracy and long term stability • Existing field proven design • Weld connections covered by PTFE Heat Shrink • Meets the temperature and vibration demands of EV/HEV traction motors • Alternate RvT curves available • Custom packages available to meet various motor configurations • Various terminal and connector options	EV/HEV motor coil, HVACR motor protection, industrial automation and control
Ring terminal temperature sensor 	A-1266 JR	✓	✓		• Surface mount sensing with screw-fix location • Fast response time • Tailored resistance versus temperature • IP57 environmental protection	EV/HEV battery pack temperature, engine block, transmission block, household appliances, heaters/ ventilators, air conditioners, power management, heat sink over-temperature
Outside air temperature sensor (OAT) 	GE-1923	✓			• High sensitivity • Wide application range • Compact design • Integral sealed connector • Single hand installation with no tools • Alternate RvT curves available • Different geometries to meet package requirements	Outside air temperature, under-hood temperature
Intake air temperature sensor (IAT) 	GE-1856	✓		✓	• Integral sealed connector • Easy installation and service • High accuracy • Long term stability • Fast response time	Engine intake air temperature, HVAC air duct temperature measurement
Active incar temperature sensor 	JS6780	✓			• Easy to attach and repair • High sensitivity and low noise • Wide application range	Fully-automated temperature control systems, active motor temperature sensors
Integral active incar temperature sensor (AIT) 	AIT	✓			• Electronics integrated into one assembly with temperature sensor • Small size and flexible packaging • Low noise, high air flow • Low current consumption • Long-term stability, even in extreme humidity environments	In-cabin temperature measurement for vehicles with automated temperature control systems

THERMOMETRICS

Temperature Sensor Assemblies (cont.)

Description	Part Codes	Transportation	Industrial	Medical	Key Features	Typical Uses
Solar sensors 	SUF	✓			• Fast response time • Easy to install • Compact design • Single, dual and multi configurations	Automotive air conditioner and HVAC systems
High temperature sensors 	JTC JTR PT100 PT200 PT1000	✓	✓		• Operation up to 1150°C • Flexible sensor • Industry standard connection • Customized OEM solutions • RTD, thermocouples and NTC technologies	Industrial and process control, food and beverage processing, automotive
Laboratory grade calibration standards 	S AS ES		✓	✓	• Long term stability • Rugged construction • Suitable for liquid immersion • Typically not affected by shock and vibration • Traceable to NIST	General laboratory and hospital use, clinical applications, process and test temperature measurement

Non-Contact Temperature Sensors

Description	Part Codes	Temperature Measurement Control	Temperature Compensation	Surge Suppression	Power Measurement	Fluid Level/Flow Detection	Key Features	Typical Uses
Infrared (IR) thermopile sensors 	ZTP	✓	✓				• Non-contact temperature sensing • Fast response • Temperature-compensated • Sensing elements/ modules • Single and dual zone available	Microwave ovens, automotive air conditioning, ear thermometers, cooktop surface control

THERMOMETRICS
A COMMITMENT TO EXCELLENCE

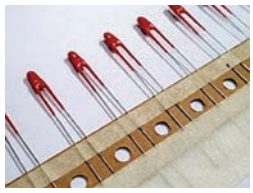
Application Spotlight

Battery Temperature Sensing

Amphenol Advanced Sensors provides an array of sensing products for automotive EV/HEV battery temperature sensing (BTS) and industrial portable power applications.

Reliable and accurate temperature sensing measurement is critical to long-term battery performance. Amphenol produces temperature solutions, including NTC thermistors, that are highly accurate with a high degree of stability that set the performance standard.

Product Applications

Cell Connection System (CCS) Temperature and voltage sensing of the battery cells and high voltage connectivity via busbars. FPC and wired solutions.		Motor Coil Interlaced into the stator coil. Provides temperature feedback on the operating condition of an electric motor.	
Noise Immune NTC Thermistor with capacitive element to prevent self heating due to EMI effects.		Battery Coolant Direct immersion into coolant flow. Splash-proof and sealed connector options.	
In-Line Battery Coolant Flow-through temperature sensor for in-line installation. Multiple tube sizes.		Battery Coolant Push-in clip-in-place design.	
Inverter Monitors temperature of the electrical inverter on EV/HEV applications.		Thin-Film Flexible Surface temperature measurement. Perfect for tight locations. Will conform to contour.	

NOVA® SENSOR

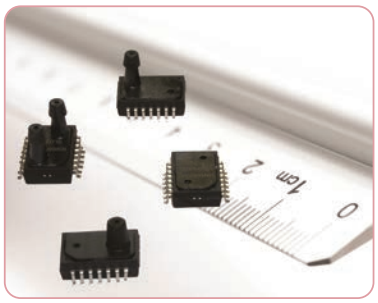
Pressure Sensors

Equipped with the most advanced design tools and cutting edge laboratories, NovaSensor is a leader in the design, model and fabrication of Microelectromechanical Systems (MEMS) Pressure Sensors.

The NovaSensor pressure sensor product line includes state-of-the-art, high performance and cost effective sensor solutions known for their accuracy, reliability and size. Our MEMS pressure sensing solutions include families of surface mount, hybrid and media-isolated sensors, available in all levels of calibration from uncalibrated to fully-calibrated, amplified analog and digital output versions.

Applications

- Disposable blood pressure
- Ventilation
- Anesthesia
- Sleep apnea
- Respiratory applications
- Catheter pressure
- Portable gauges and manometers
- Altimeters and barometers
- Pressure switches and controllers
- Pneumatic controls



NPA Series | Surface Mount Pressure Sensors

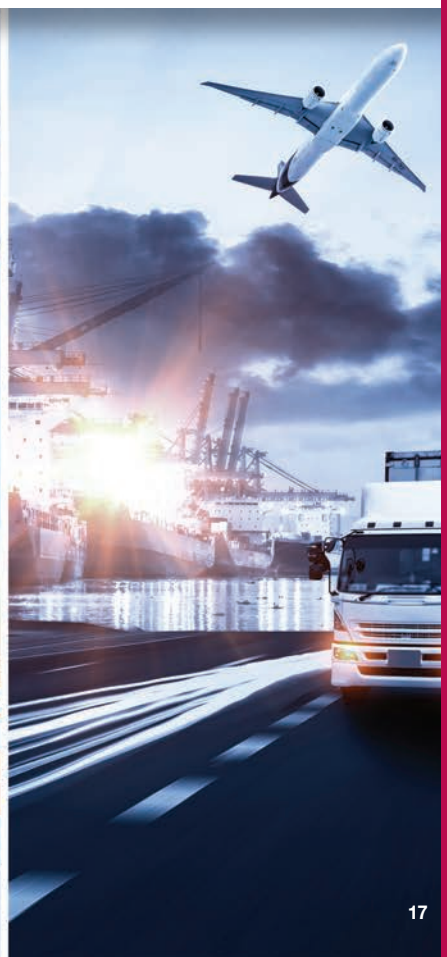
The NovaSensor NPA series is provided in a miniature size as a cost effective solution for applications that require calibrated performance. Packaged in a SOIC14 pin surface mount, the NPA Series is available in Gauge, Absolute or Differential pressure ranges with either mV, amplified analog or digital outputs. The sensor is intended for printed circuit board mounting and delivered in tape and reel form to simplify manufacturing handling.

Features

- Surface-mountable
- Differential, gauge, absolute and low pressure ranges
- Full scale: 2" H_2O (0 - 5 mbar) to 30 psi (0-2.07 bar)
- Output options - amplified analog, digital serial (14-bit), digital I^2C, Uncalibrated mV
- On-chip temperature sensor in digital mode
- Operating temperature range: -40°C to 125°C
- Total error band: < ±1.5% FSO
- Barbed, manifold, or non-ported styles available
- Proof pressure: Up to 60 psi

Applications

- Respiratory
- Anesthesia monitors
- Sleep apnea
- Critical care monitors
- HVAC - ventilation
- Filter monitoring
- Negative pressure wound therapy
- Compression therapy
- Consumer appliances
- Airspeed indicators



NPI-19 Series | Low & Medium Pressure Sensors

NPI-19 Series are media-isolated sensors designed to operate in hostile environments while providing the outstanding sensitivity, linearity, and hysteresis of a silicon sensor. The piezoresistive sensor chip is housed in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and body. The NPI Series employs SenStable® processing technology, providing excellent output stability. The series is available in either a constant current or constant voltage version.

Features

- Solid state, high reliability
- 316L stainless steel, ISO sensor design
- Static sccuracy: ±0.5%
- Temperature compensated: 32°F to 158°F (0°C to 70°C)
- FSO: 125 mV (Typical on current version)
- FSO: 75 ±1 mV (Voltage version)
- Thermal errors: < 2% FSO
- Standard configurations: 0.74 in (19 mm) diameter x 0.28 in (7.1 mm) long cylinder with o-ring seals
- Custom configurations and other pressure ranges available

Applications

- Process control systems
- Hydraulic systems and valves
- Biomedical instruments
- Refrigeration and HVAC controls
- Appliances and consumer electronics
- Ship and marine systems
- Aircraft and avionic systems

NPI-15 Series | High Pressure Sensors

NPI-15 Series consists of current-driven, media-isolated high pressure sensors that incorporate state-of-the-art IsoSensor technology, which gives the OEM user the best in price and performance. They are designed to operate in hostile environments and yet give the outstanding sensitivity, linearity, and hysteresis of a silicon sensor.

Features

- Solid state, high reliability
- High Sensitivity: 200 mV typical FSO with 1.0 mA excitation
- 316 L stainless steel, IsoSensor design
- Linearity: 0.1% FSO typical
- Thermal accuracy: 0.2% FSO typical
- Standard configurations include:
  —1/2–20 UNF threaded male port with 1.0 in (25.40 mm) flange
- 0.59 in (15 mm) diameter x 0.87 in (22 mm) long cylinder with o-ring seals
- 1/4–18 NPT male port with 7/8 in flange
- 1/8–27 NPT male port with 7/8 in flange
- Custom configurations and other pressure ranges available

Applications

- Process control systems
- Hydraulic systems and valves
- Automobiles and trucks
- Biomedical instruments
- Refrigeration and HVAC controls
- Appliances and consumer electronics
- Ship and marine systems
- Aircraft and avionic systems

NPC-100/120 | Disposable Medical Pressure Sensors

NPC-100/120 are designed for use in disposable medical applications. The device is compensated and calibrated per the Association for the Advancement of Medical Instrumentation (AAMI) guidelines for industry acceptability. The sensor integrates a high performance pressure sensor die with temperature compensation circuitry and gel protection in a small, low-cost package determine factors, such as altitude.

Features

- Solid state, high reliability
- Media compatibility
- High performance
- Factory filled with dielectric gel
- Small size
- Fully-tested
- Temperature-compensated
- Low cost disposable design
- Designed to AAMI specifications

Applications

- Medical instrumentation
- Blood pressure measurement
- Infusion pumps
- Kidney dialysis machines

NPH Series | Solid State Low & Medium Pressure Sensors

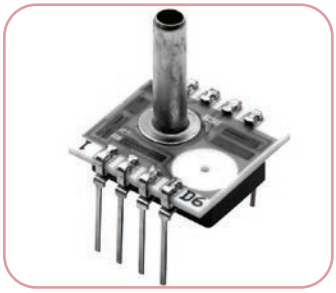
NPH Series consists of an integrated circuit silicon sensor chip housed in a standard TO-8 electrical package that is suitable for PC board mount. Constant current excitation to the sensor produces a voltage output that is linearly proportional to the input pressure. These sensors are compatible with most non-corrosive gases and dry air. A laser-trimmed, thick-film resistor network on a hybrid ceramic substrate provides temperature compensation.

Features

- Solid state, high reliability
- Standard TO-8 package suitable for PC board mount
- Low cost, small size
- Available in gauge, absolute, and differential pressure versions
- Media compatible with non-corrosive gases and dry air
- Thermal accuracy: 0.5% FSO typical
- Overpressure capability to 5x maximum-rated pressure
- Nonlinearity: 0.05% FSO typical
- Standard pressure port: 3/16 in OD
- Ceramic substrate with temperature compensation resistors

Applications

- Process control, P-to-I converters
- Pneumatic control systems
- HVAC controls
- Biomedical: infusion pumps, sphygmomanometers, respirators
- Aerospace: altimeters, barometers, cabin pressure sensors
- Computer peripherals



NPC-1210 Series | Low & Medium Pressure Sensors

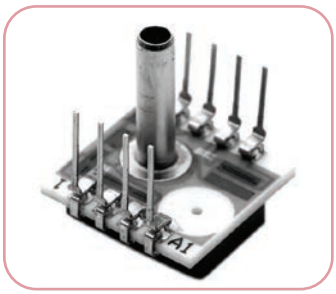
NPC-1210 Series of solid state pressure sensors are designed to provide a cost effective solution for applications that require calibrated performance over a wide temperature range. Packaged in a dual-in-line configuration, the NPC-1210 Series is intended for printed circuit board mounting. Optional pressure port and lead configurations provide superior flexibility in low profile applications where pressure connection orientation is critical.

Features

- High sensitivity
- High accuracy
- Interchangeable
- Temperature compensated: 0°C to 60°C (32°F to 140°F)
- PCB-mountable package
- DIP package
- Solid state reliability
- Individual device traceability

Applications

- Industrial automation
- Air flow monitors
- Process control
- Medical equipment
- Underground cable leak protection
- Ventilation
- Respirator monitoring



NPC-1220 Series | Medium Pressure Sensors

NPC-1220 Series of solid state pressure sensors are designed to provide a cost effective solution for applications that require calibrated performance over a wide temperature range. Packaged in a dual-in-line configuration, the NPC-1220 Series is intended for printed circuit board mounting. Optional pressure port and lead configurations give superior flexibility in low profile applications where pressure connection orientation is critical.

Features

- Accuracy: ±0.1%
- Interchangeable
- Temperature compensated: 32°F to 140°F (0°C to 60°C)
- Absolute, gauge and differential pressure ranges
- PCB-mountable package
- DIP package
- Solid state reliability
- Individual device traceability

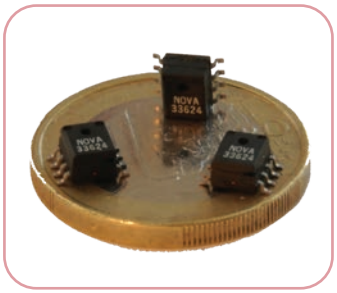
Applications

- Industrial automation
- Air flow monitors
- Process control
- Medical equipment
- Underground cable leak protection

NPP-301 Series | Surface Mount Pressure Sensors

NPP-301 Series features silicon pressure sensors in surface mount packages. An ultra-small Silicon Fusion Bonded (SFB), ultra-high stability SenStable® piezoresistive chip is placed in a plastic package that exploits high volume, leadframe package technology to bring forth a low-cost sensor alternative to the OEM user.

The NPP-301 Series produces a voltage output that is linearly proportional to the input pressure. The user can provide NPP Series products with signal conditioning circuitry to amplify the output signal or to maximize OEM value added. The NPP-301 Series is compatible with most non-corrosive gases and dry air.



Features

- Low-cost
- Surface mount package: SO-8
- Absolute pressure ranges: 100, 200 and 700 kPa (15, 30 & 100 psi)
- Operating temperature range: -40°F to 257°F (–40°C to 125°C)
- Static accuracy: <0.20% FSO maximum
- Suitable for automated component assembly
- Four element wheatstone bridge configuration for circuit design flexibility
- Solid state reliability
- Available in ported version

Applications

- Automotive tire pressure
- Pneumatic controls
- Pressure switches and controllers
- Altimeters and barometers
- Cable leak detection
- Consumer appliances
- Portable gauges and manometers

FMA Series | Filtration Air Restriction (FAR) Sensors

FMA Series accurately measures pressure loss across a variety of air filtration devices utilizing high accuracy NPA piezoresistive technology in a low-profile form factor that is easy to install and maintenance-free.

With configurable thresholds, the FMA Series can be easily installed for use in a variety of applications. With hydrophobic reference port and sealed connection system, it can also be used in a variety of harsh environmental conditions.

FMA Series is available in multiple positive or vacuum pressure ranges, mating with an integrated AMPSEAL 16 (3-way) electrical connector and a 1/8-27 NPT female pressure connection port.

Features

- Supply voltage: 5VDC
- Linear output: 0.5V to 4.5V (ratiometric)
- Diagnostic features: bridge Connection checks, bridge short Detection, power loss detection
- Temperature-compensated
- Integrated AMPSEL 16 (3-way) electrical connector
- Multiple pressure ranges available (vacuum and pressure)
- Fast response
- REACH & RoHS compliant

Applications

- Engine air filter restriction
- Cabin pressure
- HVAC pressure
- Exhaust pressure
- Industrial filters

TELAIRE®

CO_2, Humidity & Dust Sensors

As the world's first and leading manufacturer of Non-Dispersive Infrared (NDIR) Carbon Dioxide (CO_2) Sensors, Telaire has been on the forefront of CO_2 sensing technology for over 25 years. Telaire holds 30+ awarded patents in CO_2 sensing, including the original automatic calibration algorithm - ABC Logic®.

In more recent years, the Telaire has expanded its product line to include other air quality sensors, including Dust (PM2.5 and PM10) and Relative Humidity Sensors. Telaire products are used in commercial and residential building ventilation applications, consumer air quality devices for the home, and controlling air quality conditions in automobiles.

Typical applications include:

- Commercial building Demand Control Ventilation (DCV)
- Commercial building energy conservation and air quality control
- Demand based sensing for residential heat exchangers
- Core technology of HVAC transmitters
- Sensing in refrigerated storage/shipping containers
- Indoor growing CO_2 control
- Agricultural livestock housing ventilation control
- Air purifier control and monitoring
- Automotive in-cabin air quality and safety
- Liquid fuel-based residential heating safety
- Handheld CO_2 and IAQ instruments
- CO_2 leak detection
- Frost monitoring for small ventilation units
- Occupancy detection for wall-mounted heaters
- Gas sensing in incubators

TELAIRE® Miniature CO_2 Sensors

T6700 Series

The Telaire T6700 Series is a range of miniature Non-Dispersive Infrared (NDIR) Carbon Dioxide (CO_2) Sensors with the same accuracy and reliability of many larger sensors. The miniature size allows OEMs to integrate into smaller enclosures and equipment, and uses significantly less power than many other devices on the market.

Available Models:

T6713

The Telaire T6713 Sensor is ideal for applications where CO_2 levels need to be measured and controlled for indoor air quality and energy saving applications, such as demand control ventilation.

All units are factory-calibrated to measure CO_2 concentration levels up to 5000ppm.

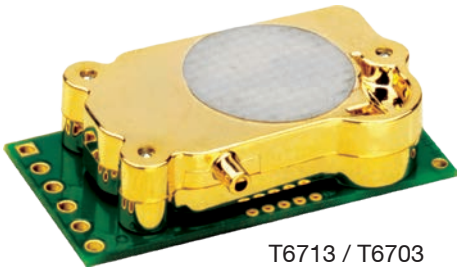
T6703

The Telaire T6703 Sensor is configured for applications where CO_2 levels are less critical, but still require an assessment of indoor air quality, such as residential applications. The minimum order requirement reflects the high volumes of these applications.

All units are factory-calibrated to measure CO_2 concentration levels up to 5000ppm, while maintaining accuracy across the range.

Features

- Eliminates the need for calibration in most applications with Telaire's patented ABC Logic™ Software. Lifetime calibration warranty.
- A reliable sensor design based on 20 years of engineering and manufacturing expertise.
- Self-calibrating dual channel models available for high CO_2 concentration and 24 hour occupancy (T6615).
- Flexible CO_2 sensor platform designed to interact with other microprocessor devices.
- Compact design allows for simple product integration.
- Identical footprint and communication protocols for T6713 and T6703, allowing a single design to accommodate either single or dual channel options.



T6713 / T6703

CO_2 Sensors

T6600 Series

The Telaire T6600 Series is a range of compact Carbon Dioxide (CO_2) Sensor Modules designed to integrate into existing controls and equipment.

Available Models:

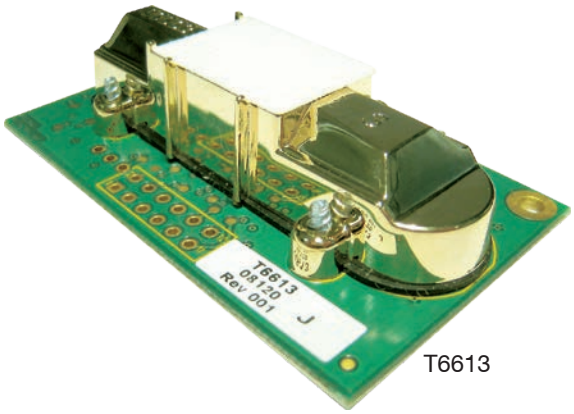
T6613

The Telaire T6613 Sensor Module is designed to meet the volume, cost and delivery expectations of OEMs. The module is ideal for customers who are familiar with the design, integration and handling of electronic components.

All units are factory-calibrated to measure CO_2 concentration levels up to 2000 to 5000 ppm. Telaire dual channel sensors are available for higher concentrations.

Features

- A reliable sensor design based on 15 years of engineering and manufacturing expertise.
- Flexible CO_2 sensor platform designed to interact with other microprocessor devices.
- Eliminates the need for calibration in most applications with Telaire's patented ABC Logic™ software .
- Identical footprint to T6615, allowing a single design to accommodate either single or dual channel options.



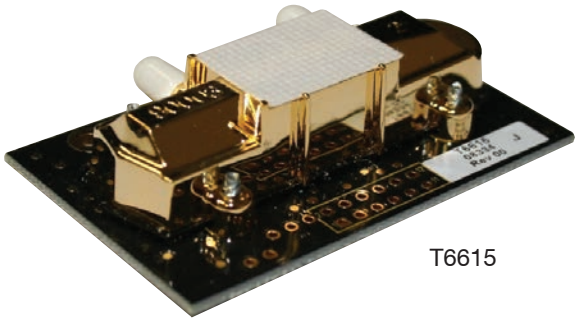
T6613

T6615

The Telaire T6615 Dual Channel Carbon Dioxide (CO_2) Sensor Module is designed to integrate into existing controls and equipment for use in instumentation and applications up to 50,000 ppm. Dual channels consist of one CO_2 channel that measures gas concentration and a second reference channel that measures the sensor signal intensity.

Features

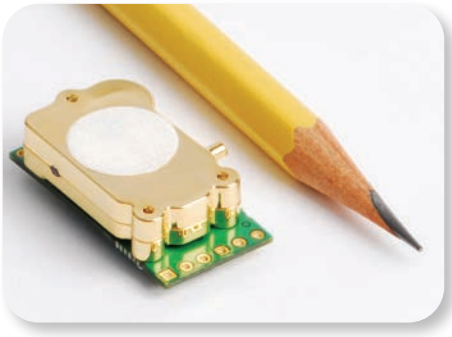
- Flexible platform designed to interact with other microprocessor devices.
- Dual-channel optical system and three-point calibration process for enhanced stability, accuracy and reliability.
- Designed for applications where ABC Logic™ cannot be used.
- Sensor may be field-calibrated. Lifetime calibration warranty.
- Identical footprint to T6613, allowing a single design to accommodate either single or dual channel options.


T6615

Carbon Dioxide (CO_2) Sensor Modules

Module Selection - Single or Dual Channel?

Single and Dual Wavelength Use in Practice

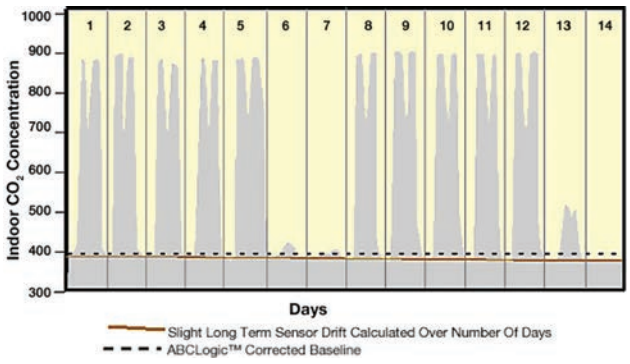


The difference between single and dual wavelength CO_2 sensing is how sensor drift is controlled. Telaire is the only manufacturer that has both technologies within their portfolio. Factory calibration and interfaces are generally the same.

Single wavelength continuously monitors the environment and records the lowest values. It then makes any necessary corrections to the calibration based on these low values. This is Telaire's patented ABC Logic® algorithm. Where applicable, it is the most stable methodology to control long-term drift. Single wavelength should only be used where the environment periodically drops to ambient (~ 400ppm) CO_2 levels.

Dual wavelength makes a continuous comparison with a reference wavelength within the sensor and makes any necessary adjustments accordingly. Whilst not as accurate as ABC Logic™, it does offer stability in environments where the natural lows are not registered. Therefore, it is important to use dual wavelength in any application where the environment does not periodically drop to ambient (~ 400ppm) CO_2 levels.

	Single Wavelength	Dual Wavelength
Part Numbers	T6613-X Sensor Modules T6713-X Sensor Modules	T6615-X Sensor Modules
Typical Uses	• Commercial office monitoring • Residential monitoring • Cinemas • Exhibition halls • Automotive sensing • Railway car monitoring	• 24/7 security suite • Agricultural applications, such as indoor growing, green/glass house, pig shed • Hospitals • Food monitoring and storage • Metering



Dust Sensors

SM-UART-04L | PM2.5 Particulate Dust Sensor

Telaire SM-UART-04L PM2.5 Particulate Dust Sensor is designed for a wide range of air quality applications where fine particle dust needs to be measured. Applications include air quality meters and air purifiers for both residential and light industrial monitoring and control. The optical design leverages laser technology, which allows customers to achieve excellent performance with balanced reliability. SM-UART-04L is an ideal solution for industrial and consumer applications.

SM-UART-04L is a PM2.5 laser-based Particulate Dust Sensor that detects dust particle concentration in air by using an optical sensing method. A laser light emitting diode (laser LED) and a photo sensor are optically arranged in the device. The photo sensor detects the reflected laser LED light by dust particles in air. The dust sensor can detect small particles from large house dust, by the pulse pattern of the signal output.

Features

- Laser Optical Dust Sensing with High Accuracy and Fast Response
- PM2.5 Output
- PM10 Calculated Output
- ROHS and REACH Compliant
- UART Series Digital Output
- Compact Size
- Flexible Mounting Style
- Protected from EMC Intrusion by Metal Case
- Wide Detection Range
- Average Time Before Re-calibration: 40,000 hrs

Applications

- Indoor Air Quality Monitoring
- Air Conditioners and HVAC
- Air Purifiers and Cleaners
- Outdoor Dust Monitoring (with Additional Protection)

Humidity Sensors

ChipCap 2 | Humidity & Temperature Sensor


ChipCap 2

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 CMOS integrated circuit with EEPROM are integrated into one embedded system in a reflow solderable SMD package.

Individually calibrated and tested, ChipCap 2 performs at ±2% from 20% to 80% RH (±3% over entire humidity range). It is simple and ready to use without further calibration or temperature compensation.

ChipCap 2 provides linear output signals in various interfaces to customer requirements, including digital or analog output with alarm function.

ChipCap 2-SIP | Humidity & Temperature Sensor


ChipCap 2 SIP

ChipCap 2-SIP offers all of the features and benefits of the ChipCap 2 in a Single In-line Package (SIP) with ready installed V-core capacitor for easy and convenient application.

Features

- Fully-calibrated and temperature-compensated
- Digital or analog output with alarm function
- Precise and accurate (±2%RH, ±0.3°C, 14 bit)
- Free operating voltage (min 2.7V to max 5.5V)
- Low current consumption
- SMD package for automated assembly
- Reliable in harsh environments

Applications

- **Energy saving HVAC control** - Air conditioning, refrigeration, indoor air quality, vent fans, home appliances, humidifiers/dehumidifiers
- **Process Control & Instrumentation** - Medical instruments, handheld devices, weather stations, food processing, printers, RFIDs
- **Automobile & Transportation** - Cabin climate control, defogging control condensing preventive devices
- **Medical** - Nebulizers, oxygen, CPAP/sleep apnea devices
- **Mass quantity applications** - Custom OEM specifications

HS | Relative Humidity Sensors

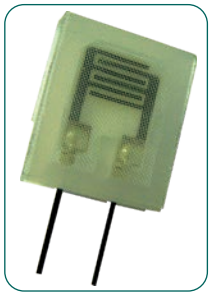
Telaire offers many polymer-based Relative Humidity Sensors that are reliable in harsh environments, instrumentation and HVAC control applications.

Features

- Good, long-term reliability
- Cost-effective performance
- Quick response

Applications

- Humidity monitors and controllers
- Air conditioners
- Humidifiers/dehumidifiers
- Automatic ventilation


HS30P


HS12SP

Harsh Environment Sensors

T9602 | IP67 Harsh Environment Humidity & Temperature Sensor

Telaire T9602 is a fully-calibrated and temperature-compensated combined humidity and temperature sensor supplied in a water-resistant IP67 package, making it the most advanced and cost-effective sensing solution for virtually any type of harsh environment application.

It provides linearized output signals in one of two interfaces – Digital (I^2C) Output or Pulse Density Modulated (PDM) Output convertible to an analog signal – to meet a wider range of customer requirements.

Features

- Ready to use - Fully-calibrated and temperature-compensated
- Water resistant - IP67 certified
- Digital output or pulse sensity modulated (PDM) putput converted to Analog
- Available in multiple flexible cable lengths
- Precise and accurate resolution (±2% RH, ±0.5°C, 14 bit)
- Low current consumption
- Reliable in harsh environments
- Flexible mounting options

HVAC Control Applications:

- Air conditioning
- Refrigeration
- Indoor air quality
- Vent fans
- Home appliances
- Humidifiers/dehumidifiers

Process & Control Instrumentation Applications:

- Medical instruments
- Handheld devices
- Weather stations
- Food processing
- Printers
- RFIDs

T3000 Series | CO_2 Sensors for Harsh Environments

The Telaire T3000 Series is a range of Carbon Dioxide (CO_2) Sensors designed to meet the specific needs of customers who require measuring CO_2 in harsh or difficult environments. Based on a series of modules, the casing offers a number of combinations to meet the needs of range, supply voltage and output type in various applications.

Features

- Easy mount with two external tabs
- Rated up to IP67 (build dependent)
- Available with potting
- Different calibrations available up to 20% CO_2 concentration
- Analog or digital output options
- Non-dispersive infrared (NDIR) measuring technology
- Shipped factory-calibrated
- Accuracy for 10-year life
- Extended operating temperature range
- T3022 Model - Single channel 2000 ppm CO_2 Sensor with I^2C communication and IP65 enclosure for OEM integrations

Applications

- HVAC Control
- Incubators
- Buses
- Refrigerators
- Subway stations
- Railway carriages

T3000

T3022

Engineering Development Kits

AAS-AQS-UNO | Air Quality Evaluation Board

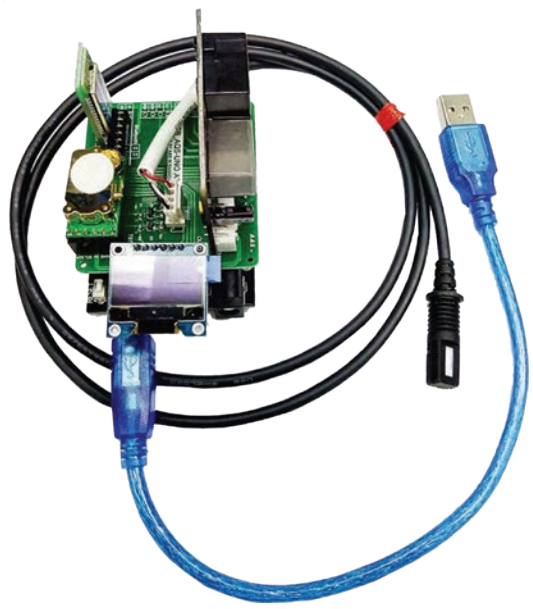
The Telaire AAS-AQS-UNO Air Quality Evaluation Board is used to evaluate Telaire Air Quality Sensors for the rapid development of air quality sensor acquisition systems (temperature and humidity, carbon dioxide and dust, etc.), intelligent apparel devices and low power consumption IOT-based Bluetooth modules. It can support T9602 temperature and humidity sensors, T6713 carbon dioxide sensors, SM-PWM-01C dust sensors and other sensors from the Amphenol range. Moreover, the OLED display and Bluetooth output can be supported at the same time. This evaluation board is designed to speed up evaluation and development of the relevant sensors. The serial output can be configured to send sensor data to a PC over the USB connection for recording and analysis in third-party software.

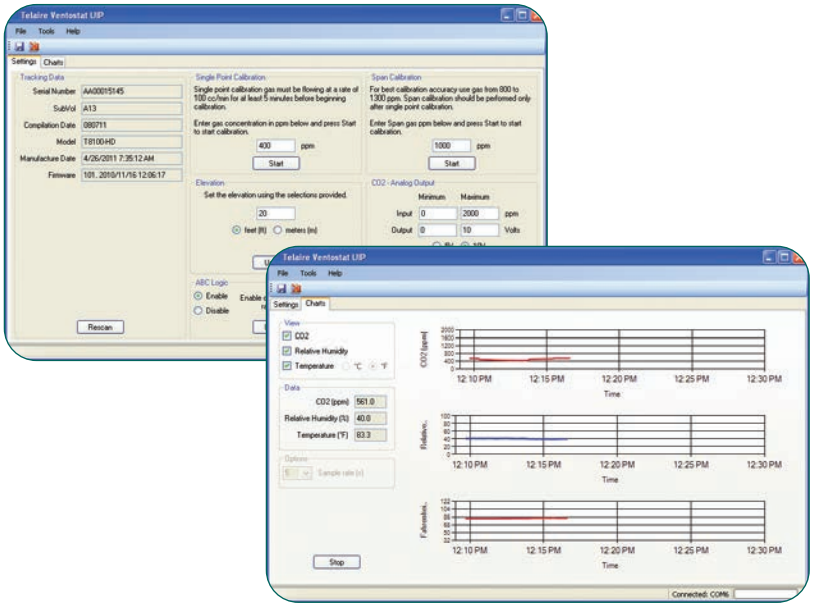
Available Kits

- AAS-AQS-UNO
- AAS-AQS-UNO-RH-CO_2

Features

- Arduino development platform, open source code
- Reserved SM-PWM-01C Dust Sensor interface
- Reserved T6713 CO_2 Sensor interface
- Reserved T9602 Temperature & Humidity Sensor interface
- Reserved Laser Dust Sensor interface
- Supports Bluetooth BLE4.0 OSPF module
- Supports 128 * 64 OLED screen
- External USB power supply
- Sample code available on www.Github.com





Amphenol Sensors

THERMOMETRICS

TEMPERATURE

With 70+ years of experience in the development, design and manufacture of high quality sensors, Thermometrics offers one of the most comprehensive ranges of temperature measurement and sensing products in the world today. Technologies include high accuracy NTC and PTC thermistors, non–contact infrared (IR) sensors, sensor assemblies and custom design capabilities.

Thermometrics.com

TELAIRE®

GAS & MOISTURE

For more than 30 years, Telaire has been a leading manufacturer of Carbon Dioxide (CO_2), Dust and Humidity Sensors for the commercial HVAC, consumer goods and automotive industries. Telaire holds more than 30 awarded patents in CO_2 sensing, including the original automatic calibration algorithm – ABC Logic®.

Telaire.com

NOVA® SENSOR

PRESSURE

NovaSensor is a leader in MEMS pressure sensors, elements and advanced packaging solutions. Our product line includes cost effective families of surface mount, hybrid and media–isolated sensors that serve medical, industrial and transportation applications. Available in all levels of calibration, from uncalibrated to fully–calibrated, amplified analog and digital output versions.

NovaSensor.com

PROTIMETER

MOISTURE METERS

Protimeter offers a leading line of handheld moisture meters and thermo–hygrometers for building survey, building restoration, construction and agriculture. With nearly 60 years of experience in the design and manufacture of moisture measurement products, Protimeter leads the way in design, innovation, performance and integrity.

Protimeter.com

EXATHERMOMETRICS

TEMPERATURE SENSORS

Exa Thermometrics leads the way in the design and manufacture of high quality thermistors for advanced temperature sensing. With state-of-the-art polycrystalline semi-conductor fabrication capabilities, Exa manufactures NTC thermistor chips, discs and rings/polos, a variety of glass-encapsulated chips, lead frame coated devices, microchip-based catheter thermistor probes, and OEM customer-specific temperature probes.

ExaThermometrics.co.in

PCB PIEZOTRONICS

VIBRATION, PRESSURE, FORCE & ACOUSTICS

PCB manufactures sensors used by design engineers and testing professionals to measure vibration, shock, pressure, force/strain, and acoustics in research and development, as well as monitoring applications for aerospace and defense, automotive, transportation, civil engineering, and general R&D industries. Our primary sensor technologies include piezoelectric, piezoresistive, and capacitive MEMS.

PCB.com

IMI SENSORS

VIBRATION & PRESSURE

IMI Sensors offers a wide range of industrial vibration sensors, bearing fault detectors, mechanical vibration switches, panel meters, cables, and accessories for predictive maintenance and equipment protection. For power generation and energy applications requiring precision measurements, IMI also offers pressure sensors and accelerometers.

PCB.com/IMI-Sensors

ENDEVCO

VIBRATION, PRESSURE & MEMS

Endevco provides a complete range of dynamic test and measurement sensor solutions, including piezoelectric and MEMS accelerometers, shock sensors, miniature pressure transducers, signal conditioners, cables, and accessories. Our brand is known for providing high reliability products for a wide range of testing applications, including automotive design and crash testing, aircraft/space vehicle testing, weapons/munition testing, and general lab testing.

Endevco.com

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.

KAYE

VALIDATION

The Kaye product range is relied upon by the world's leading pharmaceutical and biotechnology companies to validate and monitor critical assets and processes, such as sterilization, as required by governing regulatory bodies. Kaye products are designed to meet the most demanding requirements for process improvement, thermal validation and environmental monitoring.

KayeInstruments.com

SGX SENSORTECH

GAS

SGX Sensortech has been designing and manufacturing gas and air quality sensors and modules for over 50 years. We offer a wide range of gas sensor detection technologies, catalytic, infrared, metal oxide and electrochemical, along with a sensor portfolio offering flammable and toxic gas solutions for automotive and industrial air quality applications.

SGXSensortech.com

PIHER sensing systems

POSITION

Piher Sensing Systems is a specialty manufacturer of standard and custom position sensor solutions. With a broad portfolio of contactless sensors (magnetic and inductive technologies), potentiometers and printed electronics, Piher offers rotary and linear position, speed, and switch solutions for applications requiring the highest level of accuracy and reliability under extreme environmental conditions.

Piher.net

Wilcoxon SENSING TECHNOLOGIES

VIBRATION

Wilcoxon Sensing Technologies has a strong legacy of success in vibration monitoring with hundreds of thousands of sensors currently in service around the world. Built for long use and excellent performance, our high quality accelerometers, 4–20 mA sensors, transmitters and instrumentation provide accurate and reliable measurements for demanding applications across many markets.

Wilcoxon.com

Piezo Technologies™

ULTRASONIC

Piezo Technologies manufactures a world–renowned line of piezoelectric ceramic materials, as well as engineered solutions and sensor designs for custom ultrasonic transducers, devices, next higher assemblies and systems. Piezo's specialized piezoceramic formulations and integrated ultrasonic systems enable precision measurements, sensors, acoustic events and more.

PiezoTechnologies.com

ALL SENSORS® an Amphenol company

ULTRA-LOW PRESSURE

Notable for high accuracy and repeatability, All Sensors is an industry leader in the design and manufacture of ultra–low pressure sensors. Well-suited for flow measurement and control applications, pressure ranges are available as low as 0.25 in H_2O and as high as 150 PSI. Custom options are available, including port fittings, packaging, pressure ranges and performance values.

AllSensors.com

i2s an Amphenol company

PRESSURE & TEMPERATURE

i2s is your first point of contact when it comes to developing and producing pressure sensors, temperature sensors, mass air flow sensors and combined sensors for multiple physical quantities. For nearly 20 years, customers in the automotive and commercial vehicle industries, mechanical engineering, and measurement and testing technology have relied upon our experience and expertise.

i2s-Sensors.de

SSI Technologies, LLC

ULTRASONIC LEVEL & QUALITY

SSI Technologies is an innovative company committed to precision engineering and customer support. We design and manufacture pressure, magnetic speed and position, and ultrasonic level and quality sensors for the automotive and industrial markets.

SSITechnologies.com

THE MODAL SHOP

SOUND & VIBRATION

The Modal Shop, Inc., offers structural vibration and acoustic sensing systems and services for various applications in design and test laboratories, as well as manufacturing facilities. The Modal Shop also offers an extensive sound and vibration rental program, precision calibration systems, modal shakers, non–destructive test systems, and digital sensors, which are all designed to simplify testing.

ModalShop.com

ACCUMETRICS

TELEMETRY

Accumetrics, Inc., offers digital telemetry systems used in a wide variety of applications from aerospace to power generation. Systems transmit sensor data from rotating structures using wireless techniques. Measurement solutions range from single channel solutions, measuring torque, temperature or voltage, to advanced rotor ground fault detection systems.

Accumetrix.com

LARSON DAVIS

NOISE & VIBRATION

Larson Davis offers a full line of noise and vibration measurement instrumentation, such as sound level meters, outdoor noise monitoring systems, personal noise dosimeters, and human vibration meters. Instrumentation is used in a range of applications from community and environmental noise monitoring to industrial hygiene measurements.

LarsonDavis.com

Temposonics

MAGNETOSTRICTIVE LINEAR POSITION

Temposonics is recognized as an industry leader in sensor technologies and solutions for precise and dynamic measurements of position and speed in advanced automation and safety–relevant applications. With a versatile and ever–increasing product portfolio, Temposonics works closely with customers to optimize performance and reduce downtime.

Temposonics.com

Amphenol
Advanced Sensors

www.amphenol-sensors.com

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