

Amphenol Sensors

Connecting your world through
Sensing Innovations

HVAC for Medical Facilities

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, Amphenol creates value by providing critical information for real-time decisions.

The demands of today's healthcare industry require not only the highest criteria in the direct care of a patient, but also the highest quality, accuracy and efficiency in those facilities that allow for that care.

Within a medical facility, the proper operation of its heating, ventilating and air conditioning (HVAC) systems also ensures proper operation of various medical support functions to provide for the health, comfort and safety of that facility's occupants, including patients, visitors and staff.

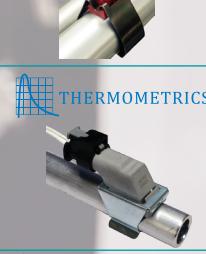
Amphenol Sensors' diverse portfolio of world class sensing solutions touches nearly every facet of a medical facility's HVAC systems to ensure not only the utmost in conditions for patient care and recovery, but also long-term efficiency to achieve green building status.



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HVAC for Medical Facilities

Application		Solution	Technology & Features	
Carbon Dioxide (CO ₂)	Fresh Air Ventilation Control	<ul style="list-style-type: none"> Monitors patient/staff occupancy to ensure proper CO₂ levels For use in temporary medical facilities with no standard Building Automation System (BAS) in place 	<ul style="list-style-type: none"> Dual channel automatic calibration Outputs: 0-10v, 0-5v, 4-20mA, relay, BACnet 	
Oxygen	Inline Oxygen Measurement	<ul style="list-style-type: none"> Aids patient breathing in ventilator equipment 	<ul style="list-style-type: none"> 0-100% Volume Oxygen Wide pressure range Realtime measurements Linear Low power electrochemical sensor 	
Humidity	Humidity Control	<ul style="list-style-type: none"> Prevents condensation that can cause mold growth, in addition to harmful respiratory conditions Ensures human comfort and energy efficiency 	<ul style="list-style-type: none"> Accuracy Options: 2%, 3%, 5% Outputs: 0-10v, 0-5v, 4-20mA Field replaceable Relative Humidity (RH) sensor 	
Pressure	Differential Pressure Measurement	<ul style="list-style-type: none"> Negative-pressure patient isolation room monitoring 	<ul style="list-style-type: none"> Outputs: 0-10v, 0-5v, 4-20mA Range: 0-0.3"WC T30 Range: 0-0.5"WC, T10, T20 Piezoresistive sensor Offsets: 0, 1/4, 1/2 span Units: In. WC, Pa, or mm H₂O Accuracy: $\pm 1\%$ of span 	
		<ul style="list-style-type: none"> Negative-pressure patient isolation room monitoring Fan/filter monitoring Sensing components for ventilators, sleep apnea, and oxygen concentrators 	<ul style="list-style-type: none"> ± 0.5 H₂O and above High volume Accuracy: $\pm 1.5\%$ of span 	
	Climate Control Systems	<ul style="list-style-type: none"> Measures coolant pressure in HVAC systems 	<ul style="list-style-type: none"> Stainless steel pressure sensing element, aluminum housing, RD-connector Pressure Range: -1-10bar to -1-100bar, gauge Temperature Range: -40°C to 125°C (150°C) Outputs: LIN, PWM, analog voltage 	
	HVAC Refrigerant	<ul style="list-style-type: none"> Measures low and high pressures of HVAC refrigerant 	<ul style="list-style-type: none"> Stainless steel, media-isolated 3psi – 7500psi Gauge, sealed and absolute piezoresistive transducers Output Options: 5V, 4-20mA, 4.5V Accuracy: 1% Variety of ports Harness accessories available 	

Application		Solution	Technology & Features
Combined Pressure & Temperature	Climate Control Systems	<ul style="list-style-type: none"> Measures pressure and temperature of coolants in HVAC systems 	<ul style="list-style-type: none"> Compatible to all currently used coolants (R134a, R1234yf, R744) High temperature accuracy and fast response time Stainless steel pressure sensing element, aluminum or steel housing, RD-connector or MQS-connector Pressure Range: -1-10bar to -1-200bar, gauge Temperature Range: -40°C to 125°C (150°C) Output: LIN  
Temperature	Equipment Temperature Conditions	<ul style="list-style-type: none"> Monitors critical equipment for over-temperature conditions 	<ul style="list-style-type: none"> Sensing element isolated from tag Dielectric 750 Vac Eyelets to fit M3/M4/M5 screw sizes; additional diameters available Suitable for surface temperature measurement  
	HVAC Systems Temperature	<ul style="list-style-type: none"> Provides temperature control for nearly every aspect of a medical facility, from maintaining the air temperature in an operating room to monitoring hot water temperature supplied to restroom sinks 	<ul style="list-style-type: none"> Configuration: Pipe Clip Designed for 250,000 thermal cycles between 25°C to 85°C Pipe Diameter Range: 13-30 mm (1/2-1-1/8 in)  
			<ul style="list-style-type: none"> Configuration: Integrated Pipe Clip IP57 Ingression Protection Rating AEC Q200 REV (D) - pending Sensing Element: Dielectric 750 Vac Pipe Diameter Range: 15-18 mm (5/8-1 in) Self-adjusts to irregular pipe surfaces
			<ul style="list-style-type: none"> Configuration: Boiler Probe Connector Series: Molex Minifit Full range of TCO temperature ratings according to EN60691 Range of connectors available  
			<ul style="list-style-type: none"> Configuration: Cable Probe IP66 Rating Long-term stability Good thermal response time  
	Floor Heating	<ul style="list-style-type: none"> Provides uniform temperature for in-floor heating 	<ul style="list-style-type: none"> Various resistance values available Various lead lengths available  
	Air Conditioning	<ul style="list-style-type: none"> Directly measures object temperature for automatic adjustments 	<ul style="list-style-type: none"> Auto control of fan and blowing rate Long detection range (~5M)  
Position	Medical Equipment	<ul style="list-style-type: none"> Provides position feedback for respiratory devices, infusion pumps, and electrophoresis devices 	<ul style="list-style-type: none"> Programmable measuring angle with built-in redundancy Truly contactless operation with no wear; maintenance free Immunity to dust, moisture, vibration and extreme temperatures Robust, compact, and low profile up to IP69K Protection Absolute position feedback; position is not lost even on power loss High resolution up to 14-bit  
	Hospital Beds and Wheelchairs	<ul style="list-style-type: none"> Provides rotary angle/position feedback for power beds and power wheelchairs 	<ul style="list-style-type: none"> Low profile Long life Excellent resolution and linearity  
	HMI Controls	<ul style="list-style-type: none"> Provides linear and rotary position sensing for centrifugators, X-ray and imaging systems, ventilators, patient monitor equipment, and HVACR 	<ul style="list-style-type: none"> Low profile Long life Excellent resolution and linearity  

Sensing Technologies

MAJOR MARKETS SERVED	Thermometrics, Inc.	Telaire	NovaSensor	Protimeter	Kaye	SGX Sensortech	Piher Sensing Systems	Wilcoxon Sensing Technologies	Piezo Technologies	i2s	All Sensors	SSI Technologies
	Temperature	Gas & Moisture	Pressure	Moisture Meters	Thermal Validation	Gas	Position	Vibration	Ultrasonic	Pressure & Temperature	Ultra Low Pressure	Level, Quality & Pressure
Aerospace (Commercial)	●		●			●	●				●	●
Agriculture	●	●		●		●	●			●		●
Air Quality		●		●		●					●	●
Automotive	●	●	●			●				●		●
Automation	●	●					●	●			●	
Construction & Restoration				●								●
Electrification (EV/HEV)	●	●	●			●	●			●		●
Energy	●					●		●	●			
Environmental Monitoring					●	●					●	
HVAC - Industrial	●	●	●			●	●	●		●	●	●
HVAC - Medical Facilities	●	●	●			●	●			●	●	●
Air-Conditioning	●											
Climate Control Systems										●		
Differential Pressure Measurement		●	●								●	●
Equipment Conditions	●											
Floor Heating	●											
Fresh Air Ventilation Control		●										
HMI Controls								●				
Hospital Beds and Wheelchairs								●				
Humidity Control		●										
HVAC Refrigerant												●
HVAC Systems	●									●		
Inline Oxygen Measurement						●						
Medical Equipment								●				
Industrial	●	●	●	●		●	●	●		●	●	●
Marine	●					●	●	●				●
Medical	●	●	●				●		●		●	●
Military	●		●			●	●	●	●		●	●
Non-Destructive Testing (NDT)												
Oil & Gas	●		●			●	●	●	●		●	●
Pharmaceutical & Biotech						●					●	●
Railway	●							●				●
Thermal Validation					●							

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