

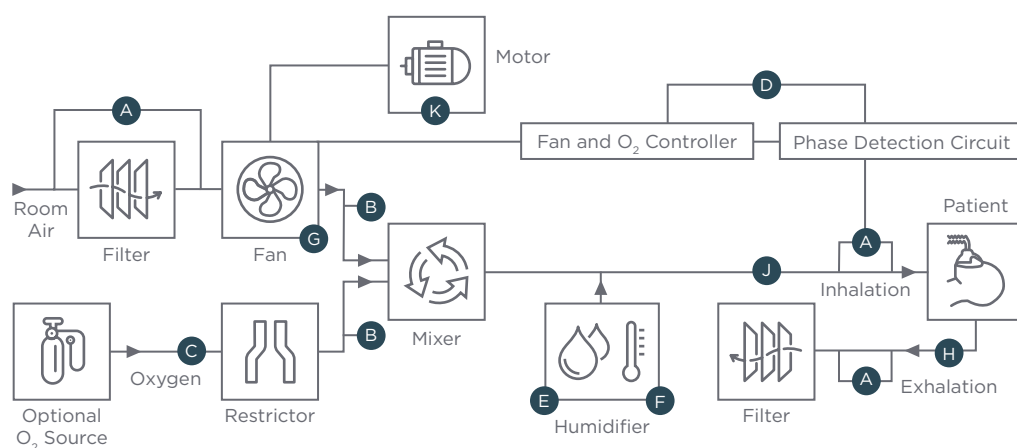
NON-INVASIVE VENTILATOR SENSORS

Non-Invasive ventilators are life saving devices for patients who are unable to breathe unassisted or need additional oxygen intake. Non-Invasive ventilators pump air with optional supplemental oxygen via a mask that is placed over the patient's mouth and nose. These units may be used in a hospital or as home units. TE Connectivity's (TE) sensor technologies provide highly reliable and accurate measurements for these life critical applications. This offering expands to temperature, humidity, Oxygen and CO₂ sensors as well as equipment for motor control.

TE CONNECTIVITY ADVANTAGES

- Portfolio Breadth
- Medical Experience
- Manufacturing Scale
- Customization Capability

NON-INVASIVE VENTILATOR



- A Pressure 0 to 5 cmH₂O (flow +300 slpm measured via Δp)
- B Pressure 30 to 40 cmH₂O
- C Pressure 35 to 90 PSI
- D Barometric Air Pressure
- E Temperature 60 to 120 F
- F Humidity 33 to 44 mg H₂O/L
- G Rotation 15,000 to 60,000 RPM
- H CO₂ Level 30,000 to 40,000 ppm
- J O₂ Sensors
- K Position and Vibration

NON-INVASIVE VENTILATOR SENSORS

	Sensor Technology	Application	Key Product Features	Benefits
A	Pressure SM9000 SM7000	 - Air flow and respiration control - Filter cleanliness monitoring	- MEMS board mount pressure sensor - Ultra-low pressure ranges as low as 125 Pa 16-bit digital output - Insensitive to mounting orientation	- Detects minimal changes in pressure - Simplified signal read-out - Easy system integration
A	Pressure LMI LME	 - Air flow and respiration control - Filter cleanliness monitoring	- SMD hybrid ultra low pressure sensor 25 to 2500 Pa - I²C and SPI outputs	- System design flexibility - High resolution and accuracy for enhanced system performance - Low power for battery operation
B	Pressure SM6000	 Fan pressure	- MEMS board mount pressure sensor - Digital or dual (digital and analog) output ±1% FS accuracy (digital) - Insensitive to mounting orientation	- System design flexibility - Reliable and accurate measurements over time
C	Pressure MS4525 MS4525DO	 Oxygen flow control for compressed air and gas pressure	- MEMS board mount pressure sensor - Analog or digital output interface - Total error band less than ±1.0% - Various ceramic package configurations available	- System design flexibility - Reliable and accurate measurements over time
C	Pressure HDI	 Oxygen flow control for compressed air and gas pressure	- MEMS board mount pressure sensor 12-bit ADC - I²C and analog output +0.5% FS accuracy	- System design flexibility - High accuracy - Reliable and accurate measurements over time
C	Pressure HMA-Series	 Oxygen flow control for compressed air and gas pressure	- MEMS board mount pressure sensor 12-bit ADC - SPI/I²C and analog output ±0.75% FS total accuracy	- System design flexibility - Reliable and accurate measurements over time
C	Pressure HCLA	 Oxygen flow control for compressed air and gas pressure	- MEMS board mount pressure sensor - Robust to anesthesia - Low pressure as low as 250 Pa - Analog and I²C output, 12-bit ADC	- Detects minimal changes in pressure - Simplified signal read-out - Easy system integration
D	Pressure SM11X1	 Barometric compensation	- MEMS board mount pressure sensor - Compact SOIC-8 housing - Digital or analog version available	- Compact design - System design flexibility
D	Pressure MS5611	 Barometric compensation	- MEMS board mount pressure sensor - I²C and SPI interface up to 20 MHz - Minimal footprint package 5.0 x 3.0 x 1.0 mm³	- Excellent long-term stability - Fast conversion speed - Low power consumption
E	Temperature TSYS03	 Air and gas temperature management	- Digital temperature measurement - Available in super small 1.5 mm x 1.5 mm package - Resolution up to 0.01°C - Supply voltage range from 2.4 V to 5.5 V	- Ultra-compact design - Precise digital output - Low power consumption
E	Temperature 44000 Series	 Air and gas temperature management	- NTC (Negative Temperature Coefficient) thermistor - Miniaturized components - Rapid time response	- High sensitivity - Proven long-term stability and reliability
E	Temperature PTF Family	 Air and gas temperature management	- RTD (Resistance Temperature Detector) sensor - Thin film platinum deposited on ceramic substrate, glass coated - Tube outline available - Dimensions 1.2 x 4.0 x 1.1 mm³	- Long-term stability - High electrical insulation - Small dimensions
E	Humidity and Temperature HTU31	 Air and gas mixture humidity and temperature management	- Digital or analog output available - Fast response time of t63% in 10 sec after condensation - Optional filter membrane for protection	- Humidity and temperature combined - System design flexibility - Environmental robustness
G	Position KMT36H	 Fan speed regulation	- Magnetic angle sensor for precise position feedback for fans and motors - Three bridge signals with 120° phase difference - Accuracy better than ±0.5°	- Contactless absolute angular measurement over full 360° - Highly sensitive
H	CO ₂ Detection TS418	 Exhalation carbon dioxide level measurement	- Filter for NDIR CO₂ gas detection 4.26 μm narrow band pass - Small TO-18 package	- Accurate reference sensor - Very high signal - Compact design
J	Oxygen Sensor P19-OXYZ	 Home therapy devices, medical ventilators, oxygen concentrators	- No degradation of sensitivity over time - No short term recalibration or sensor replacement required	- Does not consume or chemically alter the gas sample - Immune to vibrations and mounting orientation - Temperature, relative humidity, and barometric pressure data
K	Position KMA36	 Motor speed control	- Magnetic angle sensor with 360° - Digital output with resolution up to 0.01° - Small TSSOP package	- Contactless - Maintenance free operation - Precise and reliable measurements
K	Vibration 820M1	 Motor condition monitoring	- Board mountable accelerometer - Amplified analog output - Hermetically sealed LLC package	- Reliable and long-term stable output - Low power consumption

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