



# Protective Vents

FOR LIQUID AND GAS SENSORS

## Ensure accuracy and reliability for consistent performance

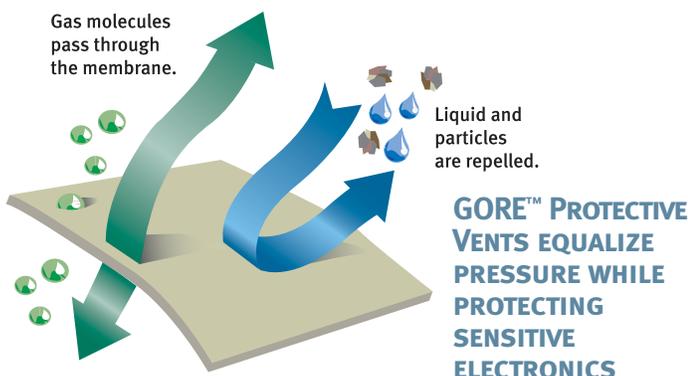
From detecting hazardous gases in an industrial process line or dissolved oxygen in streams, to pH sensors and liquid level sensors in a beverage plant, electronic sensors are becoming smaller with more demanding requirements. Advances in technology allow smaller and more versatile sensors to be used in applications that were not previously possible. These advances have resulted in the sensors being used in extremely harsh environments, which can quickly decrease reliability. For example, high-pressure sprays during cleaning cycles can drastically cool down the sensor housing and cause an internal vacuum of 200 mbar (3 psi) or more. To equalize this vacuum, air and moisture are drawn into the sensor, causing condensation to form, which can affect the measurement accuracy.

Another issue in these environments is the cleanliness of the surrounding air. Sensors are used in environments that include warehouses and manufacturing as well as outside areas. Exposure to contaminants decreases the accuracy and functionality of the sensor.

### VENTING FOR PROTECTION

Installing GORE™ Protective Vents eliminates the negative effects of pressure differentials and fluctuating temperatures. These vents continuously equalize pressure and eliminate the vacuum that draws in air and moisture. They also provide an effective barrier against harsh environmental conditions, such as driving rain, dust and dirt.

GORE™ Protective Vents protect sensors because of the proprietary expanded polytetrafluoroethylene (ePTFE) membrane from Gore. The ePTFE membrane allows air and gases to flow freely in and out of the sensor, providing equal pressure at all times. This free flow of gases also enables short response times because gases can immediately pass through the membrane, preventing inaccuracy and delays in measurement results. The naturally hydrophobic and oleophobic GORE™ Membrane repels water and other contaminants, which means that the sensor is not compromised by potentially harmful materials and liquids. The result — improved reliability, consistent performance and longer product life.



### REALIZE THE BENEFITS OF GORE™ PROTECTIVE VENTS:

- **Accurate and consistent sensor measurements** due to protection from contaminants, water, salts and other corrosive liquids
- **Reduced stress on sensor enclosure seals** through rapid equalization of pressure
- **Longer, trouble-free service life** because of non-degrading, chemically inert ePTFE membrane
- **Excellent gas-permeability** due to microporous structure of the membrane
- **Easy integration for design and manufacturing** with multiple vent options including rugged designs
- **Quick airflow recovery after liquid exposure** due to hydrophobic and oleophobic properties
- **Superior global technical support and broad application knowledge** from Gore's engineering experts, with over 200 million installations worldwide



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## DIVERSE PRODUCT LINE ENGINEERED FOR SIMPLE INTEGRATION

GORE™ Protective Vents are manufactured in many different sizes and shapes, making it easy to choose the right vent for any application. With a diverse product portfolio, these vents are easy to integrate into new or existing designs to meet the needs of a broad range of applications and markets. The versatility of GORE™ Protective Vents is apparent in both their range of protection and their ease of installation. For example, these vents

- tolerate temperatures ranging from -40°C to 125°C
- comply with protection standards up to IP69k
- provide maximum protection for applications in harsh environments through molded plastic or metal vents
- install easily by being adhered, threaded, snapped, bolted or heat/ultrasonic-welded to a variety of enclosure materials
- adhere to the device with adhesive backing for applications with insufficient free space to install a vent inside



## PROVEN APPLICATION EXPERTISE AND EXPERIENCE

With almost fifty years in membrane research and technology, W. L. Gore & Associates, Inc., has combined this expertise with an extensive understanding of electronic device design to create innovative, leading-edge venting solutions. Gore continues to study the design and manufacturing needs of the electronic products industry in areas such as temperature and pressure fluctuations, reliability, testing methods, product standards and performance requirements.

### INTERNATIONAL CONTACTS

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China	86.21.6247.1999	Singapore	65.6733.2882
France	33.1.56.95.65.65	Spain	34.93.480.6912
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## GORE™ PROTECTIVE VENTS PROVIDE VALUE TO A WIDE ARRAY OF SENSORS INCLUDING:

- Humidity / temperature sensors
- Hazardous gas sensors
- Oxygen sensors
- Electrochemical sensors
- Gas detector monitors
- Odor sensors
- Liquid level sensors
- Pressure sensors



The optimal performance of any GORE™ Protective Vent depends on how it is handled and incorporated into the final product. This includes such elements as the device design, sealing method, and assembly method. While Gore is able to provide general guidelines based upon our experience with the GORE™ Protective Vent, it is ultimately the responsibility of the device manufacturer to validate each product and its performance for its intended application. Contact a Gore technical sales associate today for assistance in determining the best GORE™ Protective Vent for your specific application. GORE and designs are trademarks of W. L. Gore & Associates, Inc. All rights reserved.  
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