Venting for Protection

Harsh or changing environmental conditions cause pressure changes that can stress outdoor enclosure seals to failure, allowing contaminants to enter and damage sensitive electronics. Gore® Protective Vents effectively equalize pressure and reduce condensation in sealed enclosures, while keeping out solid and liquid contaminants. They can improve the safety, reliability and service life of outdoor electronic devices.

A Venting Portfolio for Any Application

Gore® Vents Screw-In Series is engineered to provide oleo-phobic protection and withstand the mechanical stresses of rugged environments. Choose from a full range of sizes and performance options to meet all your application needs.

- **NEW** Gore® PolyVent XS has a compact, low-profile design that meets some of the industry’s toughest standards, making it ideal for today’s smaller (up to 2 l) housings.
- **NEW** Gore® PolyVent Standard offers reliable venting for volumes up to 5 l, and comes in two colors and two thread sizes for different wall thicknesses, with or without a counter nut.
- **NEW** Gore® PolyVent High Airflow now delivers twice the airflow and the same IP level as before, to better protect housings up to 50 l against pressure differentials due to extreme weather.
- **NEW** Gore® PolyVent XL maintains exceptionally high airflow in extra-large enclosures (volumes up to 200 l) and meets the most rigorous standards, such as solar resistance (IEC 62108).
- **NEW** Gore® MetalVent has an explosion-proof rating and added durability, for the most robust protection and reliable performance in the most extreme conditions.

Increase outdoor enclosure durability in harsh environments

Realize the Benefits of Gore® Vents Screw-In Series:

- **Easy to install**: ensures fast, foolproof integration for durable performance in any application.
- **Increased safety**: the rugged screw-in construction and improved O-ring keep the vent reliably secured in the housing.
- **Reliable protection**: even after immersion, the Gore™ Membrane blocks contaminant ingress.
- **Rugged durability**: engineered for chemical, UV and temperature resistance, and hydrolytic stability.
- **Product quality**: 100% quality control, plus full traceability for all Standard, High Airflow and XS vents.
- **Flammability resistance**: All PolyVent caps, bodies and O-rings are rated UL 94 V-0. PolyVent XS also incorporates a V-0 rated membrane!
## Product Information

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PolyVent XS</th>
<th>PolyVent Standard</th>
<th>PolyVent Standard</th>
</tr>
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<tbody>
<tr>
<td>Thread Size</td>
<td>M6x0.75</td>
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<td>Product Number</td>
<td>PMF100600</td>
<td>PMF100318 (black) / PMF100319 (grey)</td>
<td>PMF100320 (black) / PMF100321 (grey)</td>
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### Product Performance Characteristics

<table>
<thead>
<tr>
<th></th>
<th>PolyVent XS</th>
<th>PolyVent Standard</th>
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<tbody>
<tr>
<td>Typical airflow</td>
<td>300 mL/min (dp = 70 mbar)</td>
<td>450 mL/min (dp = 70 mbar)</td>
<td>450 mL/min (dp = 70 mbar)</td>
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<td>Laminate: membrane / backing material</td>
<td>ePTFE / –</td>
<td>ePTFE / Polyester (PET)</td>
<td>ePTFE / Polyester (PET)</td>
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<td>Membrane characteristic</td>
<td>Oleophobic</td>
<td>Oleophobic</td>
<td>Oleophobic</td>
</tr>
<tr>
<td>Vent body &amp; cap: material</td>
<td>Polyamide (PA6/66)</td>
<td>Polyamide (PA6)</td>
<td>Polyamide (PA6)</td>
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<td>Wrench size</td>
<td>10 mm</td>
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<tr>
<td>O-Ring material</td>
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<td>Silicone 60 Shore A</td>
<td>Silicone 60 Shore A</td>
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<td>Backing nut: material / color / part number</td>
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<td>n/a</td>
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<tr>
<td>Traceability</td>
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<td>Yes: Individually laser-marked</td>
<td>Yes: Individually laser-marked</td>
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</table>

### Design and Dimensions

**Units are in mm**

- **Recommended Installation**
  - Install on a flat, vertical housing surface where water or other contaminants will not pool.
  - Orient the membrane so that it faces the external environment.

  **Recommended torque:**
  - 0.3 ± 0.1 Nm
  - 0.7 ± 0.1 Nm
  - 0.7 ± 0.1 Nm
  - 0.7 ± 0.1 Nm
  - 0.7 ± 0.1 Nm

### Environmental Performance

**GORE® Vents Screw-In Series**

- *Ingress Protection Testing*
  - **Method:**
    - IEC 60529
    - IP66
    - IP67
    - IP68 (tested for extended immersion: 2 meters for 1 hour)
    - IP69K (for Standard, High Airflow, XL and Metal vents)

- *Temperature Testing*
  - **Method:**
    - IEC 60068-2-1 (to -40 °C)
    - IEC 60068-2-2 (to +125 °C, or +150 °C for PolyVent XS)
    - IEC 60068-2-14 (cycling: -40 °C to +125 °C, or to +150 °C for PolyVent XS)

- *Humidity Testing*
  - **Method:**
    - IEC 60068-2-78
    - Test conditions:
      - 85 °C
      - 85% relative humidity
      - 1,000 hours

- *Salt Fog Testing*
  - **Method:**
    - IEC 60668-2-11 (salt fog)
    - IEC 60668-2-52 (cyclic salt fog)
### Vibration Testing
(Not applicable to PolyVent XL or MetalVent)

- **Method:**
  - ET SI EN 300 019-2-2
  - IEC 60068-2-64

### Corrosive Gas Testing

- **Method:**
  - EN 300 019-2-2
  - IEC 60068-2-64

### Flammability and UV Resistance Testing
(Not applicable to MetalVent)

- **Method:**
  - UL 94 V-0 and UL 746C
  - PolyVent X5 membrane: UL 94 V-0

### Solar Industry Testing
(PolyVent XL only)

- **Method:**
  - IEC 62108 10.5
  - Humidity freeze – high temperature / humidity followed by freezing temperature

### Explosion Testing
(MetalVent only)

- **Method:**
    - I M2 Ex e I
    - II 2G Ex e II
    - II 1D

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**Table: Vent Performance Characteristics**

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<td>Typical Airflow</td>
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<td>450 ml / min (dp = 70 mbar)</td>
<td>4000 ml / min (dp = 70 mbar)</td>
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**Diagram:**

- **Recommended torque:**
  - 0.7 ± 0.1 Nm
  - 0.9 ± 0.3 Nm

- **Through-hole diameter when using a backing nut:**
  - 12.2 ± 0.1 mm
  - 33 ± 0.5 mm

- **Housing wall:**
  - 60°
  - 60°

- **Center axis of through-hole:**
  - 10.5 mm
  - 14.3 mm

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THE SCIENCE BEHIND THE SOLUTION

GORE® Protective Vents incorporate a membrane of expanded polytetrafluoroethylene (ePTFE). This unique membrane is constructed with billions of pores 700 times larger than an air molecule. These pores allow air to flow freely in and out of the housing, which prevents stress on seals. At the same time, the membrane pores — which are 20,000 times smaller than a drop of water — serve as a barrier against water, dirt and debris. GORE® Protective Vents can be designed with a variety of specific properties for maximum performance in any venting application.

The GORE™ Membrane is:
• chemically inert
• UV-resistant
• non-shedding
• temperature-resistant

ABOUT W. L. GORE & ASSOCIATES

Well known for waterproof, breathable GORE-TEX® fabric, Gore is a technology-driven company focused on product innovation. The company’s portfolio includes everything from high-performance fabrics and implantable medical devices to industrial manufacturing components and aerospace electronics. Gore products have remained at the forefront of creative solutions because they are engineered specifically for challenging applications requiring durable performance where other products fail.

For almost thirty years, Gore has delivered venting solutions for a variety of applications installed in rugged environments throughout the world — applications such as solar, lighting, security, telecommunication and other electronic systems; automotive and heavy-duty vehicles; and chemical and agricultural packaging. Engineered with the latest materials and technology, GORE® Protective Vents are backed by years of research and testing to help extend product life and enhance reliable performance — all to ensure that these venting products maximize performance and extend the life of products used in the most demanding applications.

Headquartered in the United States, Gore employs approximately 10,000 associates in 30 countries worldwide. In Europe, Gore started its first business operations only a few years after the Enterprise’s founding in 1958.

Learn more at gore.com.