



# Protective Vents

## SCREW-IN SERIES

### Increase outdoor enclosure durability in harsh environments

#### 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 oleophobic 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.

- **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.
- **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.
- **GORE® PolyVent High Airflow** has the protection level of "Standard" – with nearly 10 times the airflow. For housings up to 50 l, it easily manages the strong pressure differentials caused by extreme weather.
- **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® PolyVent Stainless Steel** offers premium-level durability, corrosion- and chemical resistance, to reliably protect enclosures up to 20 l in the most extreme conditions.



#### 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 vents with thread size M6 and M12.
- **Flammability resistance:** All PolyVent caps, bodies and O-rings are rated UL 94 V-0. PolyVent XS and Stainless Steel also incorporate a UL 94 VTM-0 rated membrane!



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## SCREW-IN SERIES

### PRODUCT INFORMATION



| Product Name                                                                                                                                                                                          | PolyVent XS                    | PolyVent Standard                    | PolyVent Standard                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------|--------------------------------------|
| Thread Size                                                                                                                                                                                           | M6x0.75                        | M12x1                                | M12x1.5                              |
| Product Number                                                                                                                                                                                        | PMF100600                      | PMF100318 (black) / PMF100319 (grey) | PMF100320 (black) / PMF100321 (grey) |
| Product Performance Characteristics                                                                                                                                                                   |                                |                                      |                                      |
| Typical airflow                                                                                                                                                                                       | 300 ml/min (dp = 70 mbar)      | 450 ml/min (dp = 70 mbar)            | 450 ml/min (dp = 70 mbar)            |
| Laminate: membrane/ backing material                                                                                                                                                                  | ePTFE / –                      | ePTFE / Polyester (PET)              | ePTFE / Polyester (PET)              |
| Membrane characteristic                                                                                                                                                                               | Oleophobic                     | Oleophobic                           | Oleophobic                           |
| Vent body & cap: material                                                                                                                                                                             | Polyamide (PA6/66)             | Polyamide (PA6)                      | Polyamide (PA6)                      |
| Vent body & cap: color                                                                                                                                                                                | Black: RAL 9004                | Black: RAL 9011 / Grey: RAL 7035     | Black: RAL 9011 / Grey: RAL 7035     |
| Wrench size                                                                                                                                                                                           | 10 mm                          | 16 mm                                | 16 mm                                |
| O-Ring material                                                                                                                                                                                       | Silicone 60 Shore A            | Silicone 60 Shore A                  | Silicone 60 Shore A                  |
| Counter nut: material / color / part number                                                                                                                                                           | n/a                            | n/a                                  | Plastic / Grey / M10510-009          |
| Traceability                                                                                                                                                                                          | Yes: Individually laser-marked | Yes: Individually laser-marked       | Yes: Individually laser-marked       |
| Design and Dimensions                                                                                                                                                                                 |                                |                                      |                                      |
| Units are in mm                                                                                                                                                                                       |                                |                                      |                                      |
| Recommended Installation                                                                                                                                                                              |                                |                                      |                                      |
| Units are in mm                                                                                                                                                                                       |                                |                                      |                                      |
| <ul style="list-style-type: none"> <li>Install on a flat, vertical housing surface where water or other contaminants will not pool.</li> <li>Install vent with cap on exterior of housing.</li> </ul> |                                |                                      |                                      |
| Recommended torque                                                                                                                                                                                    | 0.3 ± 0.1 Nm                   | 0.7 ± 0.1 Nm                         | 0.7 ± 0.1 Nm                         |
| Through-hole diameter                                                                                                                                                                                 | –                              | –                                    | 12.2 ± 0.1 mm                        |

### ENVIRONMENTAL PERFORMANCE

GORE® Vents Screw-In Series have been tested by independent laboratories and have been verified to meet these performance standards.

All certificates are available upon request.



#### Ingress Protection Testing

Vent protection against ingress of particulates and water

##### METHOD:

- IEC 60529
  - IP66
  - IP67
  - IP68 (extended immersion: 2 meters for 1 hour)
  - IP69k (for Standard, High Airflow, XL and Stainless Steel vents)



#### Temperature Testing

Vent durability in a range of temperatures

##### METHODS:

- 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

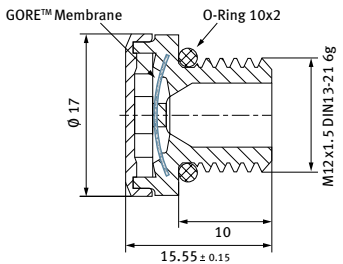
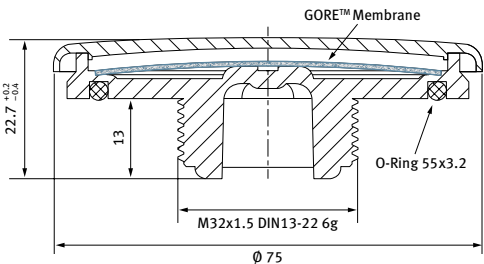
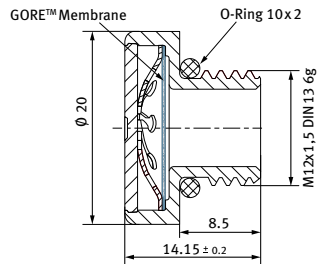
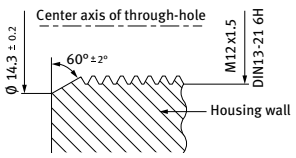
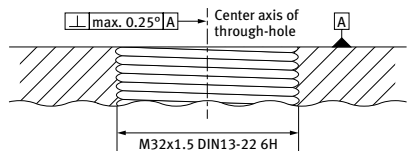
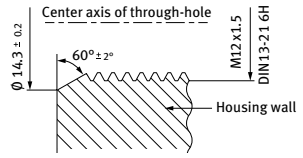
Vent durability in hot, humid environments (accelerated aging test)

##### METHOD:

- IEC 60068-2-78

##### TEST CONDITIONS:

- 85 °C
- 85% relative humidity
- 1,000 hours

|                                                                                                                                                                                                                                                        |                                                                                      |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    |                                                                                      |                                                                                       |
| <b>PolyVent High Airflow</b>                                                                                                                                                                                                                           | <b>PolyVent XL</b>                                                                   | <b>PolyVent Stainless Steel</b>                                                       |
| <b>M12x1.5</b>                                                                                                                                                                                                                                         | <b>M32x1.5</b>                                                                       | <b>M12x1.5</b>                                                                        |
| PMF100585 (black) / PMF100586 (grey)                                                                                                                                                                                                                   | PMF200542                                                                            | PMF200444                                                                             |
| 4000 ml/min (dp = 70 mbar)                                                                                                                                                                                                                             | 16 l/min (dp = 12 mbar)                                                              | 1600 ml/min (dp = 70 mbar)                                                            |
| ePTFE / Polyester (PET)                                                                                                                                                                                                                                | ePTFE / Polyester (PET)                                                              | ePTFE / –                                                                             |
| Oleophobic                                                                                                                                                                                                                                             | Oleophobic                                                                           | Oleophobic                                                                            |
| Polyamide (PA6)                                                                                                                                                                                                                                        | Polycarbonate (PC)                                                                   | Stainless steel (1.4404 / 316L)                                                       |
| Black: RAL 9011 / Grey: RAL 7035                                                                                                                                                                                                                       | Grey: RAL 7035                                                                       | Metallic                                                                              |
| 16 mm                                                                                                                                                                                                                                                  | 70 mm                                                                                | 18 mm                                                                                 |
| Silicone 60 Shore A                                                                                                                                                                                                                                    | Silicone 60 Shore A                                                                  | Silicone 60 Shore A                                                                   |
| Plastic / Grey / M10510-009                                                                                                                                                                                                                            | Plastic / Grey / M10510-010                                                          | Nickel-plated brass / M10510-008                                                      |
| Yes: Individually laser-marked                                                                                                                                                                                                                         | No                                                                                   | Yes: Individually laser-marked                                                        |
|                                                                                                                                                                      |  |  |
|                                                                                                                                                                     |   |  |
| 0.7 ± 0.1 Nm                                                                                                                                                                                                                                           | 5 Nm                                                                                 | 0.9 ± 0.3 Nm                                                                          |
| 12.2 ± 0.1 mm                                                                                                                                                                                                                                          | 33 ± 0.5 mm                                                                          | 12.2 ± 0.1 mm                                                                         |

|                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Salt Fog Testing</b><br>Vent resistance to salty environments<br>METHODS:<br>• IEC 60068-2-11 (salt fog)<br>• IEC 60068-2-52 (cyclic salt fog) |  <b>Corrosive Gas Testing</b><br>Vent durability in corrosive gas environment (e.g., NO <sub>x</sub> , SO <sub>x</sub> , H <sub>2</sub> S, Cl <sub>2</sub> )<br>METHOD:<br>• GR-3108-CORE |  <b>Vibration Testing</b><br>(Not applicable to PolyVent XL)<br>Vent resistance against vibration<br>METHOD:<br>• ETSI EN 300 019-2-2<br>• IEC 60068-2-64 |  <b>Flammability and UV Resistance Testing</b><br>(Not applicable to stainless steel materials)<br>Resistance to open flame, radiant heat and ultraviolet light<br>METHOD:<br>• UL 94 V-0 and UL 746C f1<br>All non-metal PolyVent caps/bodies<br>• UL 94 V-0<br>All PolyVent O-ring materials<br>• UL 94 VTM-0<br>GORE™ Membranes in PolyVent XS and Stainless Steel |  <b>Solar Industry Testing</b><br>(PolyVent XL only)<br>Durability in solar applications<br>METHODS:<br>• IEC 62108 10.8 (humidity freeze – high temperature / humidity followed by freezing temperature)<br>• IEC 62108 10.9 (hail impact) |
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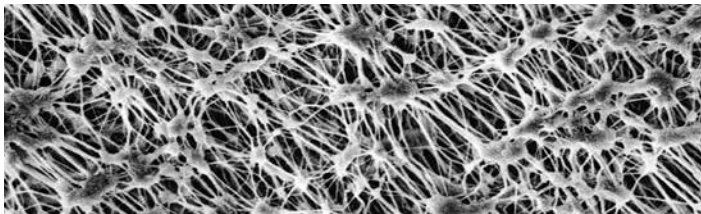
## SCREW-IN SERIES

### 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



Gore's ePTFE membrane magnified 40,000 times.

### ROHS INFORMATION

W. L. Gore & Associates declares that the restricted substances in the products listed in this document are below the thresholds established in EU Commission Decision Directive 2011/65/EC, Directive 2002/95/EC (RoHS) and Directive 2003/11/EC.

### INTERNATIONAL CONTACTS

|           |                  |                |                  |
|-----------|------------------|----------------|------------------|
| Australia | +61 2 9473 6800  | Mexico         | +52 81 8288 1281 |
| Benelux   | +49 89 4612 2211 | Scandinavia    | +46 31 706 7800  |
| Brazil    | +55 11 5502 7800 | Singapore      | +65 6733 2882    |
| China     | +86 21 5172 8299 | South Africa   | +27 11 894 2248  |
| France    | +33 1 5695 6565  | South America  | +55 11 5502 7800 |
| Germany   | +49 89 4612 2211 | Spain          | +34 93 480 6900  |
| India     | +91 22 6768 7000 | Taiwan         | +886 2 2173 7799 |
| Italy     | +39 045 6209 240 | Turkey         | +90 216 393 5749 |
| Japan     | +81 3 6746 2572  | United Kingdom | +44 1506 460123  |
| Korea     | +82 2 393 3411   | USA            | +1 410 506 7812  |

#### W. L. Gore & Associates, Inc.

401 Airport Road • Elkton, MD 21921 • USA  
Phone: +1 410 506 7812 (USA) • Toll-free: +1 800 523 4673 (USA)  
Fax: +1 410 506 8749 • Email: [protectivevents@wlgore.com](mailto:protectivevents@wlgore.com)

[gore.com/protectivevents](http://gore.com/protectivevents)

### 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](http://gore.com).**

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