



Automotive Vents

FOR SNAP-FIT INSTALLATION

Increase durability and performance of automotive electronics

VENTING FOR PROTECTION

Today's sophisticated electrical and electronic modules (EEMs) require reliably-sealed enclosures to protect against harsh road conditions. GORE® Automotive Vents improve reliability and extend component life. These durable vents reduce pressure differentials with continuous airflow in and out of the enclosure, while blocking contaminants such as water, automotive fluids, salts, dirt and mud. As a qualified automotive partner, Gore delivers advanced venting technologies in weldable, adhesive and snap-fit constructions, to fit any application.

VENTING SOLUTIONS FOR ELECTRONIC CONTROL UNITS

Mechanically-rugged Gore Snap-Fit Vents integrate easily and reliably to protect sensitive control units, sensors/actuators, motors and hybrid/electric components. Our engineering team can help you identify the optimal venting solution for your application:

- **Standard Series:** withstands typical automotive fluids and continuous temperatures up to 125 °C, with short-term spikes up to 140 °C.
- **High Temperature Series:** for long-lasting resistance to chemicals and mineral oils even after extended exposure to temperatures up to 150 °C.
- **High Airflow Series:** has 5x the typical airflow of our Standard Series, for very large components/electric motors/batteries for hybrids.
- **Compact Series:** robust protection in a low profile design, for extremely small components. Scannable Digital Matrix Code (DMC) for 100% airflow check and enhanced traceability.



REALIZE THE BENEFITS OF GORE® AUTOMOTIVE VENTS FOR SNAP-FIT INSTALLATION

- **Worry-free venting solution** with total quality control and integrated design that protects the membrane
- **Easy integration** without additional parts or complicated housing designs in either plastic or metal enclosures
- **Easy installation**, whether for a small series in manual or semi-automated installation or for automated installation of high-volume applications
- **Durable protection** against liquids, dust, dirt, salts and corrosive automotive fluids



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PRODUCT INFORMATION



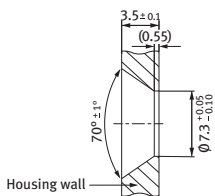
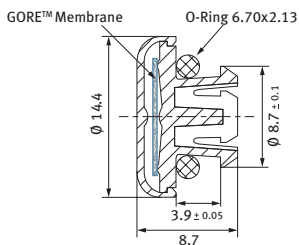
Product Series	PolyVent Standard Series	PolyVent High Temperature Series	PolyVent High Airflow Series
Product Name (order number for samples)	AVS 14	AVS 67	AVS 70
Product Number (order number for series production)	AMF300114	AMF300067	AMF300070
Product Performance			
Minimum water entry pressure*	> 60 kPa / 30 sec	> 60 kPa / 30 sec	> 30 kPa / 30 sec
Minimum airflow*	> 15 l/h at 7 kPa (Δ > 43 cm ³ /min at 1.22 kPa)	> 15 l/h at 7 kPa (Δ > 43 cm ³ /min at 1.22 kPa)	> 105 l/h at 7 kPa (Δ > 305 cm ³ /min at 1.22 kPa)
Typical airflow*	~ 28 l/h at 7 kPa (Δ ~ 81 cm ³ /min at 1.22 kPa)	~ 28 l/h at 7 kPa (Δ ~ 81 cm ³ /min at 1.22 kPa)	~ 140 l/h at 7 kPa (Δ ~ 407 cm ³ /min at 1.22 kPa)
Ingress Protection (IP)	<ul style="list-style-type: none"> • IP68 • Depending on housing geometry: IPX6K, IPX9K 	<ul style="list-style-type: none"> • IP68 • Depending on housing geometry: IPX6K, IPX9K 	<ul style="list-style-type: none"> • IP68 • Depending on housing geometry: IPX6K
Product Characteristics			
Operating temperature	T _{min} = -40 °C T _{max} = +125 °C (140 °C for max 168 hrs)	T _{min} = -40 °C T _{max} = +150 °C	T _{min} = -40 °C T _{max} = +125 °C
Membrane characteristic	Hydrophobic and oleophobic	Hydrophobic and oleophobic	Hydrophobic and oleophobic
Housing material	PBT GF30 hydrostabilized	PBT GF30 hydrostabilized	PBT GF30 hydrostabilized
O-ring material	EPDM 50° Shore A	Silicone 50° Shore A	EPDM 50° Shore A
O-ring color	Black	Red	Black
Laser marking for increased traceability	Yes	Yes	Yes
Design and Dimensions			
Recommended Installation**			

* Measured at standard ambient temperature and pressure.

** Please contact your Gore representative for more detailed installation drawings.



PolyVent Compact Series
AVS 200
AMF300200
> 80 kPa / 30 sec
Minimum Airflow: > 15 l/h at 7 kPa Maximum Airflow: < 45 l/h at 7 kPa (Δ < 129 cm ³ /min at 1.22 kPa)
~ 28 l/h at 7 kPa (Δ ~ 81 cm ³ /min at 1.22 kPa)
<ul style="list-style-type: none"> • IP68 • Depending on housing geometry: IPX6K, IPX9K
T _{min} = -40 °C T _{max} = +140 °C
Hydrophobic and oleophobic
PBT GF30 hydrostabilized
Silicone 50° µIRHD
Red
Yes



ENVIRONMENTAL PERFORMANCE

GORE® Automotive Vents have been extensively tested according to the following performance standards.

Please contact your Gore representative for more detailed information.

Thermal Shock Resistance Test

Vent durability under changing temperature conditions

METHOD:

- **ISO 16750-4**

TEST CONDITIONS:

- cycling temperatures between T_{min} and T_{max} within 30 seconds
- 30 minutes conditioning at each temperature
- minimum 300 cycles

Climate Resistance Test

Vent durability in hot, humid environments

METHOD:

- **ISO 16750-4**

TEST CONDITIONS:

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

Vibration and Mechanical Shock Resistance Test

Vent performance after exposure to mechanical shocks at various temperatures

METHOD:

- **ISO 16750-3**

Product performance depends on sinusoidal and temperature profile, pulse shape and duration, number of shocks and peak acceleration. Compact Series meets the harshest severity levels.

Temperature Resistance Test

Vent durability under low and high temperature conditions

METHOD:

- **ISO 16750-4**

TEST CONDITIONS:

- T_{max} for 2,000 hours
- T_{min} for 1,000 hours

Ice-Water-Shock-Test (not applic. for AMF300070)

Vent resistance against repeated thermal shock by submersion in ice water

METHOD:

- **ISO 16750-4**

TEST CONDITIONS:

- heating to +125 °C for 60 minutes
- rapid submersion in 5% NaCl ice water for 5 minutes
- 20 cycles

Salt Spray Resistance Test

Vent resistance to salt, water and mist over an extended period

METHOD:

- **ISO 16750-4**

TEST CONDITIONS:

- according to IEC 60068-2-52
- severity level 5 equals a test period of four weeks

Liquid Contamination Test

Vent protection against chemical loads

METHOD:

- **ISO 16750-5**

Product performance depends on application method (i.e., cotton cloth, brush, spray, immersion, pouring) and the specific contaminant applied.

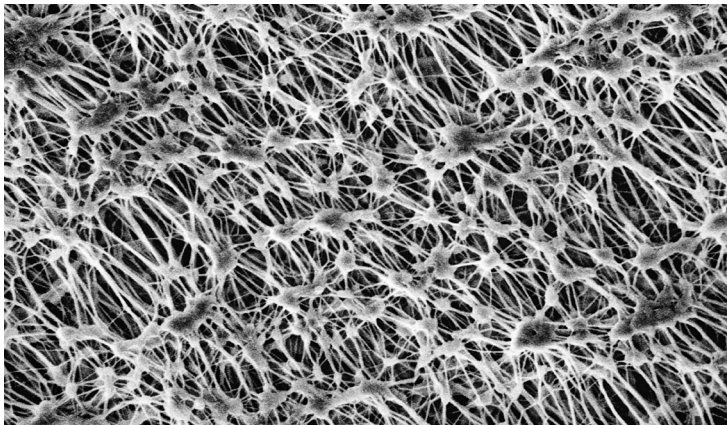


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THE SCIENCE BEHIND THE SOLUTION

GORE® Automotive 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® Automotive Vents can be engineered with a variety of specific properties for maximum performance in any venting application.



Gore's ePTFE membrane magnified 40,000 times.

The GORE™ Membrane is:

- chemically inert
- non-shedding
- UV-resistant
- temperature-resistant

INTERNATIONAL CONTACTS

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ABOUT GORE® AUTOMOTIVE VENTS

Billions of GORE® Automotive Vents have been installed globally, proving their reliable performance in real-world environments. These vents offer best-in-class pressure equalization and contaminant protection of electronics exposed to harsh conditions and automotive fluids.

Gore's global automotive team maintains strong relationships with its customers. With technical support centers and testing facilities in the United States, Germany, Japan, Korea and China, our application engineers work closely with your design team — from initial product concept through integration into the manufacturing process.

ABOUT GORE

W. L. Gore & Associates is a global materials science company dedicated to transforming industries and improving lives. Founded in 1958, Gore has built a reputation for solving complex technical challenges in the most demanding environments — from revolutionizing the outerwear industry with GORE-TEX® fabric to creating medical devices that improve and save lives to enabling new levels of performance in the aerospace, pharmaceutical and mobile electronics markets, among other industries. The company is also known for its strong, team-oriented culture and continued recognition from the Great Place to Work® Institute. Headquartered in Newark, Del., Gore employs approximately 10,000 Associates and generates annual revenues that exceed \$3 billion. www.gore.com.

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