

## ADVANCED DRIVER ASSISTANCE SYSTEM VENTING

Effectively Venting & Protecting Critical Electronics from Water, Dust, & Dirt



### CHALLENGE

Advanced driver assistance systems (ADAS) are becoming an integral part of the modern vehicle to increase safety and minimize risks to drivers. Radar lane change assistance is used to warn drivers of potential obstacles near their selected direction of travel in response to their steering input or use of the turn signal. For instance, warning lights in the side-view mirrors become activated and cause the steering wheel to vibrate to alert drivers of a potential hazard. With this life-saving technology, a driver can abort an initiated lane change in time to avoid an accident. Because ADAS components are installed in housings of varying sizes and diverse plastic materials, it is important to include a venting component which allows for adequate air flow while also providing protection against external influences.

Oxyphen was contacted by the customer, a manufacturer of automotive sensor components, to develop and design a hydrophobic membrane venting solution specific to their automotive application which would address three key design challenges:

#### Protection

The membrane should protect against water, dust, oil, and other contaminants.

#### Adequate Air Flow

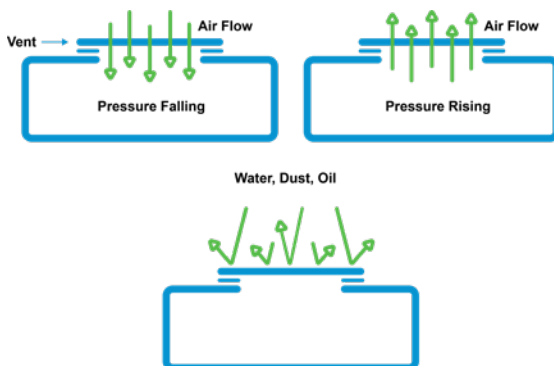
The membrane should maintain adequate pressure compensation during normal operating conditions.

#### Ease of Assembly & Durability

The membrane should be highly durable and easy to attach.



### HOW PRODUCT WORKS



### SOLUTION

Oxyphen worked with the customer, determining that the membrane with the highest water retention was most appropriate. This turnkey solution could be ultrasonically welded and provide the ultimate protection against water entry for the sensor component. The ability to tighten production tolerances and, as a result, increase air flow rates enabled our customer to implement an "end of line" QC check.

### RESULTS

Through a close partnership with the customer, Oxyphen was able to support the manufacture's development of ADAS sensors which have been critically important in a variety of OEM projects and millions of devices being produced today.

**Smallest tolerances** regarding pore sizes and density on the market

**Target specific** pore size and density to affect air flow and water entry pressure

**Smooth flat surface** (non-reinforced)

**Hydrophobic**

**Prevents dust & dirt** from passing through

**Excellent welding** characteristics

## About Track-Etched Membrane Technologies

For nearly 70 years, Oxyphen has specialized in the production of microporous track-etched membranes and membrane products, serving customers around the globe with 60 employees located between two manufacturing facilities in Switzerland and Germany.

Oxyphen has two core competencies: Developing and producing track-etched membranes and processing and assembling complete membrane devices through large volume production. Our wide network of qualified suppliers, particularly those with injection molding expertise, and highly qualified team work together to build a dedicated enterprise that is focused on delivering an unmatched level of service and performance to our customers.



Oxyphen has two manufacturing facilities – one in Germany and another in Switzerland. Both are ISO 9001:2008 and ISO TS 16 949:2008 certified and have full clean-room capability.



### Automotive Solutions

In the challenging automotive environment, protection against liquids and dirt as well as reliable pressure compensations are critical to avoid damage to sensitive electronic components throughout the vehicle's lifetime. Oxyphen's automotive membrane products are designed to ensure continuous functionality of critical components such as battery packs, lighting equipment, and radar systems being used in next generation automotive designs.

Oxyphen technologies and products comply to existing and upcoming regulations without compromising performance needs. With decades of experience in tailored venting solutions, we like to be your partner for sustainable and cost-effective solutions that you can trust on for years.

## Getting Started with Oxyphen

As you think about your design project, consider the below questions and then reach out to us for a design consultation with one of our engineers. It's easy to reach someone at [www.oxyphen.com/about-oxyphen/contact-us](http://www.oxyphen.com/about-oxyphen/contact-us) or click this QR code.

