

Vernay VoltaVent™ Battery Ventilation Solution



Advancements in automotive energy and drive trains continue to drive a need for more complex air flow systems and solutions. Battery packs in electric-powered vehicles are stored in stable protective casings that prevent damage from water and other roadway elements. These battery packs require venting and pressure compensation in normal use. In case of thermal runaway, the resulting pressure peak needs to be released instantly to avoid damage to the battery pack. In response to these challenges, Vernay developed the VoltaVent™ solution.



AN INTEGRAL VENTING SOLUTION FOR BATTERY SYSTEMS

Under normal circumstances, the pressure inside the battery pack will vary based on temperature and altitude differences. If the pressure exceeds a certain threshold, pressure should be relieved to protect the battery pack. What makes Vernay VoltaVent™ unique, is the added “protection zone”. Within a set pressure range there is no exchange of air. By limiting this exchange of air, the amount of moisture that enters the battery pack is significantly reduced.

Vernay VoltaVent™ fulfills three main functions;

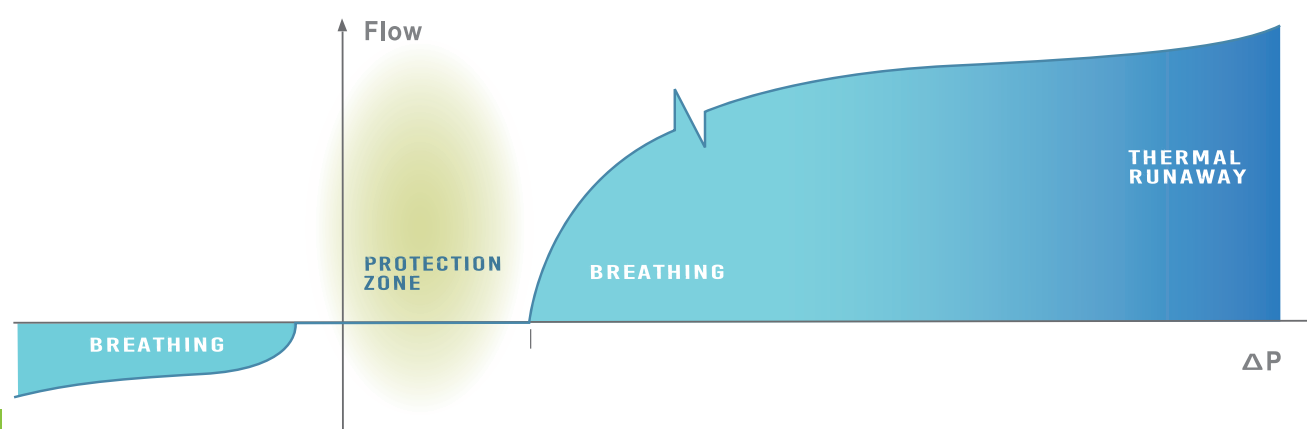
- high flow thermal runaway safety valve with re-sealing capability
- pressure equalization to prevent unwanted pressure buildup in the battery pack
- pressure management within a predefined “protection zone”, there is no exchange of air (humidity). Resulting in a significant reduction of moisture inside the battery pack

With its robust design, the Vernay VoltaVent™ fulfills the most demanding IP69K requirements. Combined with the breathable membrane the Vernay VoltaVent™ is also IP68 compliant.



- A IPX9K
- B IP68
- C Overpressure Relief + Thermal Runaway
- D Underpressure Relief Valve
- E Flammability Resistance UL94VO

VERNAY VOLTAVENT™ WORKING PRINCIPLE



Dimensions	77x55x22,5 mm
Underpressure Release	
Opening pressure	-15 mbar
Flow	2 L/min at -70 mbar
Overpressure release	
Opening pressure	+40 mbar
Flow	3.000 L/min at +300 mbar

IP-rating (ISO 20653)	IP68, IP69k
Flammability	UL 94-VO
Operating temperature	-40 / 120° C

Global Resources, Local Touch

Vernay offers 75 years of design & manufacturing expertise. The Vernay VoltaVent™ provides specific solutions geared to the challenges of battery pack ventilation and thermal runaway, fitting in our historic range of innovative solutions. Vernay also offers solutions for other environmentally friendly drive train applications in coolant and temperature management systems, hydrogen supply fuel cell applications, and more. Please feel free to contact our specialists for any of your flow control challenges.

Customized Solutions

The Vernay VoltaVent™ is a concept solution with features that can be adapted and tuned to your specific requirements. Meeting your criteria for breathability rates, opening pressures, material stability, snap-in features, and dimensions are all part of a customization process that also recognizes space and safety considerations. We design to industry requirements which ensures your venting solution or drain valve meets or exceeds these standards.

Applications

Check Valve and Dynamic Sealing Solutions for:

Coolant and Temperature Management Systems
PHEV/BEV Safety Systems
Brake and Drive Train Systems
Passenger Comfort and Suspension Systems

Window and Sensor Cleaning Systems
Emission and Vapor Recovery Systems
FCEV and Hydrogen Fuel Supply Systems
Fuel Supply and Storage Systems

Product Categories

Bi-Directional Valves
Check Valve Assemblies
Combination Valves
Diaphragms
Duckbill Check Valves

Flow Controls
Inserted Armatures
Molded Strip / Valve Discs
Poppets

Umbrella Check Valves
V-Balls®
V-Tip® Needles

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Global Resources

