



压力调节和紧急泄压 产品组合

随着汽车电气化持续转型，在双向压力的平衡和管理方面，给车辆设计带来了新的挑战。

DIaVent 产品组合是理想的压力管理解决方案，适用于纯电动和混合动力汽车所搭载的大尺寸动力电池包、电桥、电机、逆变器充电装置及其它一系列系统和应用。DIaVent 产品组合能够为客户提供一系列解决方案，包括双向压力平衡、紧急排气、有油环境中的双向透气等。



为客户带来的价值

- 多功能集成设计，大幅降低成本和复杂度
- 安全性更强，性能更优秀
- 定制尺寸和解决方案，能够满足特定的设计要求
- 快速安装

特性和优势

产品属性	DIaVent Highflow	DIaVent	DIaVent Light
应用	大尺寸动力电池包	大尺寸动力电池包	大尺寸动力电池包、电驱动桥、干腔电机、逆变器充电装置
尺寸	60 mm 外径 21 mm 外部安装高度	55 mm 外径 15.4 mm 外部安装高度	24 mm 外径 9 mm 安装高度
防护等级	IP6K9K – 高压水流喷射 IP67 – 1m 水深浸泡 30 min IPXXD – 防异物侵入 UL94 V0 – 阻燃等级 耐盐雾	IP6K9K – 高压水流喷射 IP67 – 1m 水深浸泡 30 min IPXXD – 防异物侵入 UL94 V0 – 阻燃等级 耐盐雾	IP6KX – 灰尘防护 IP67 – 1m 水深浸泡 30 min IPX9K – 飞溅水防护 IPXXD – 防异物侵入
相对湿度范围	20% ~ 95%	20% ~ 95%	20% ~ 95%
使用温度	-40°C ~ 150°C	-40°C ~ 150°C	-40°C ~ 150°C
透气速率	DIaVent Highflow	DIaVent	DIaVent Light
正常工况	10 L/min @ 100 mbar	10 L/min @ 100 mbar	8 L/min @ 100 mbar
紧急排气	90 L/s @ 300 mbar	18 L/s @ 300 mbar	

www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

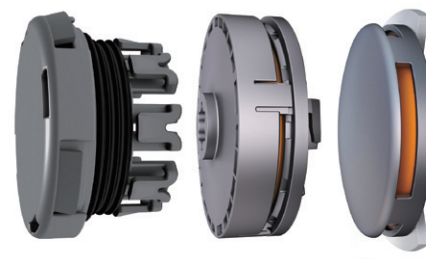
以上信息均真实可靠，但对其准确性和适用性需要视实际情况而定。
以上信息基于实验室测试，并不一定代表最终产品的性能，具体产品性能需要客户实机测试并确认。

NOK-FREUDENBERG
恩福(中国)

Pressure Regulation and Emergency Degassing Portfolio

The transition towards E-Mobility brings new challenges to vehicle design in respect to pressure management and equalization.

Our innovative DIAvent product portfolio is the ideal pressure management solution intended for large-scale batteries, E-axles, E-motors, inverters chargers and many other systems and applications in electric and hybrid vehicles. It offers a spectrum of solutions including bidirectional pressure equalization, emergency degassing, and soon the two-way ventilation of an oily environment.



Values for the Customer

- Multi-function design reduces cost and complexity
- Improved safety, optimized performance
- Customizable sizes and solutions to meet unique design requirements
- Quick assembly

Features and Benefits

Material Property	DIAvent Highflow	DIAvent	DIAvent Light
Application	Large-scale batteries	Large-scale batteries	Large-scale batteries, dry E-axles, dry E-motors, inverters chargers
Dimensions	60 mm outer diameter 21 mm vertical packaging height	55 mm outer diameter 15.4 mm vertical packaging height	24 mm outer diameter 9 mm vertical packaging height
Compliant with	IP6K9K – high pressure water jet IP67 – submersion in 1m water for 30 min IPXXD – ingress protection UL94 V0 – flammability standard Salt spray resistant	IP6K9K – high pressure water jet IP67 – submersion in 1m water for 30 min IPXXD – ingress protection UL94 V0 – flammability standard Salt spray resistant	IP6KX – dust resistant IP67 – submersion in 1m water for 30 min IPX9K – splashing water protection IPXXD – ingress protection
Relative humidity range	20% ~ 95%	20% ~ 95%	20% ~ 95%
Temperature range	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C
Permeation Rates	DIAvent Highflow	DIAvent	DIAvent Light
Normal operation	10 L/min at 100 mbar	10 L/min at 100 mbar	8 L/min at 100 mbar
Emergency ventilating	90 L/s at 300 mbar	18 L/s at 300 mbar	

www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

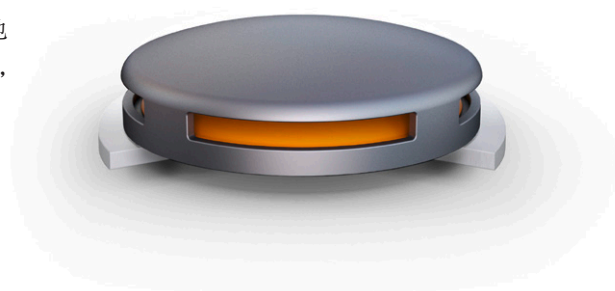


DIAvent[®] 调压阀

热失控会造成电池包壳体内压力积聚，如果不将压力迅速排出，可能导致电池爆炸。DIAvent 调压阀借助于完全可逆的伞阀结构，可迅速释放电池包内部压力，稳定实现内外压力平衡。

为客户带来的价值

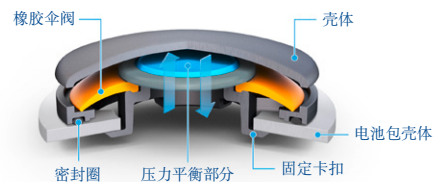
- 多功能集成设计，大幅降低成本和复杂度
- 在极端情况下，安全性得到大幅提升
- 定制尺寸和解决方案，能够满足特定的设计要求
- 快速安装



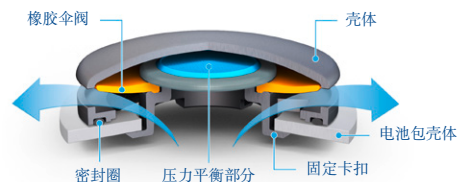
特性和优势

属性	DIAvent
尺寸	55 mm 外径 15.4 mm 外部安装高度
防护等级	IP6K9K – 高压水流喷射 IP67 – 1m 水深浸泡 30 min IPXXD – 防异物侵入 UL94 V0 – 阻燃等级 耐盐雾
相对湿度范围	20% ~ 95%
使用温度	-40°C ~ 150°C
透气速率	DIAvent
正常工况	10 L/min @ 100 mbar
紧急排气	18 L/s @ 300 mbar

正常工况时:



紧急排气时:



www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

以上信息均真实可靠，但对其准确性和适用性需要视实际情况而定。
以上信息基于实验室测试，并不一定代表最终产品的性能，具体产品性能需要客户实机测试并确认。

NOK-FREUDENBERG
恩福(中国)

DIaVent[®]

Thermal runaways create a pressure buildup in battery housings. The pressure must be evacuated quickly. If not, the risk of an explosion becomes a reality. DIaVent relieves this pressure, swiftly thanks to the fully reversible umbrella valve. It also passively regulates the internal pressure to that of atmospheric pressure.



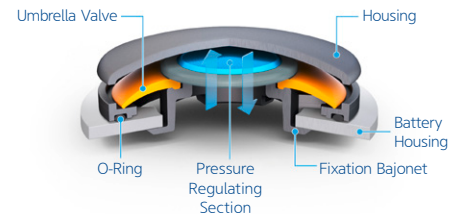
Values for the Customer

- Integrated system lowers total cost and complexity
- Improved safety under extreme conditions
- Customizable solutions to meet your needs
- Greater mounting flexibility

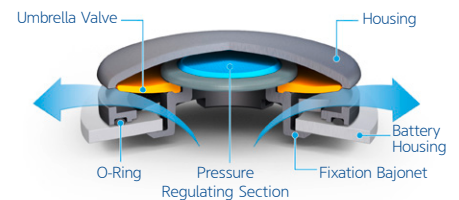
Features and Benefits

Properties	DIaVent
Dimensions	55 mm outer diameter 15.4 mm vertical packaging height
Compliant with	IP6K9K – high pressure water jet IP67 – submersion in 1m water for 30 min IPXXD – ingress protection UL94 V0 – flammability standard Salt spray resistant
Relative humidity range	20% ~ 95%
Temperature range	-40°C to 150°C
Permeation Rates	DIaVent
Normal operation	10 L/min at 100 mbar
Emergency ventilating	18 L/s at 300 mbar

During normal operation:



For emergency ventilating:



www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

NOK-FREUDENBERG
恩福(中国)



DIavent[®] Highflow 高流量调压阀

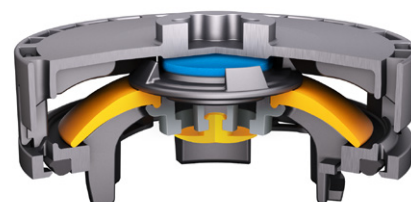
热失控会造成电池包壳体内压力积聚，不将压力迅速排出，可能导致电池爆炸。DIavent Highflow 高流量调压阀借助于完全可逆的伞阀结构，可迅速释放电池包内部压力，稳定实现内外压力平衡。

为客户带来的价值

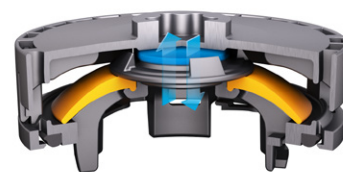
- 多功能集成设计，大幅降低成本和复杂度
- 极高的透气速率，安全性及可靠性得到大幅提升
- 设计灵活性高，能够水平或垂直安装
- 简化组装工序，大幅提高质量
- 针对下一代电动汽车动力电池，可定制解决方案

特性和优势

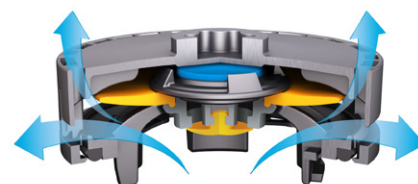
属性	DIavent Highflow
尺寸	60 mm 外径 21 mm 外部安装高度
防护等级	IP6K9K – 高压水流喷射 IP67 – 1m 水深浸泡 30 min IPXXD – 防异物侵入 UL94 V0 – 阻燃等级 耐盐雾
相对湿度范围	20% ~ 95%
使用温度	-40°C ~ 150°C
透气速率	DIavent Highflow
正常工况	10 L/min @ 100 mbar
紧急排气	90 L/s @ 300 mbar



正常工况时：



紧急排气时：



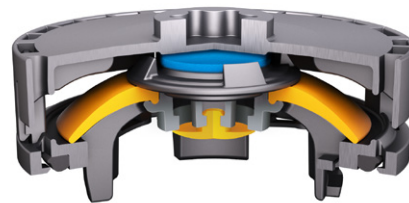
www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

以上信息均真实可靠，但对其准确性和适用性需要视实际情况而定。
以上信息基于实验室测试，并不一定代表最终产品的性能，具体产品性能需要客户实机测试并确认。

NOK-FREUDENBERG
恩福(中国)

DIavent[®] Highflow

Thermal runaways create a pressure buildup in battery housings. The pressure must be evacuated quickly. If not, the risk of an explosion becomes a reality. DIavent Highflow relieves pressure from the thermal runaway swiftly. It also passively regulates the internal pressure to that of atmospheric pressure.



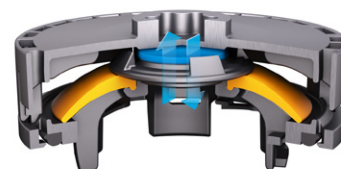
Values for the Customer

- Integrated, multi-function design streamlines supply chain
- Extremely high gas permeation improves safety, reliability
- Horizontal or vertical mounting = greater design flexibility
- Simplified assembly speeds process, improves quality
- Customizable solutions for next-generation EV batteries

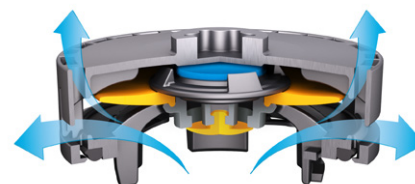
Features and Benefits

Properties	DIavent Highflow
Dimensions	60 mm outer diameter 21 mm vertical pack
Compliant with	IP6K9K – high pressure water jet IP67 – submersion in 1m water for 30 min IPXXD – ingress protection UL94 V0 – flammability standard Salt spray resistant
Relative humidity range	20% ~ 95%
Temperature range	-40°C to 150°C
Permeation Rates	DIavent Highflow
Normal operation	10 L/min at 100 mbar
Emergency ventilating	90 L/s at 300 mbar

During normal operation:



For emergency ventilating:



www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

NOK-FREUDENBERG
恩福(中国)

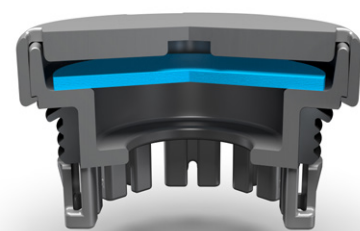


DIaVent[®] Light 透气阀

DIaVent Light 是为系统通风所设计的理想的压力管理解决方案。即使在极其恶劣的工作条件下，DIaVent Light 透气阀特制的防水透气膜也能有效保证双向压力平衡。

为客户带来的价值

- 多功能集成设计，大幅降低成本和复杂度
- 高透气性，有效实现双向压力调节，显著降低压力波动
- 快速安装，适配于各种壁厚和安装方向
- 针对下一代电动汽车，可定制解决方案



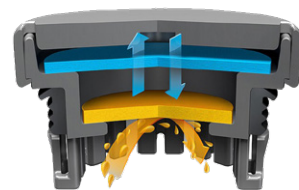
特性和优势

属性	DIaVent Light
尺寸	24 mm 外径 9 mm 安装高度
防护等级	IP6KX – 灰尘防护 IP67 – 1m 水深浸泡 30 min IPX9K – 飞溅水防护 IPXXD – 防异物侵入
相对湿度范围	20% ~ 95%
使用温度	-40°C ~ 150°C
透气速率	DIaVent Light
正常工况	8 L/min @ 100 mbar

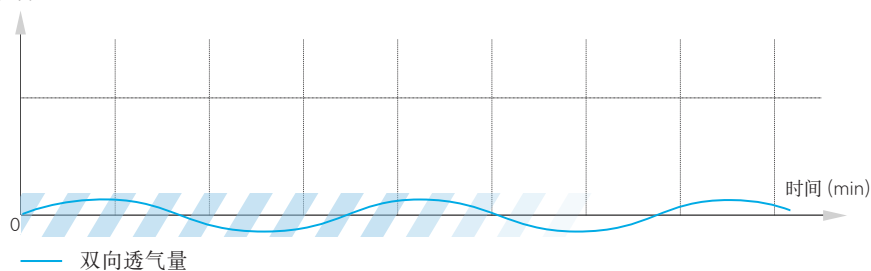
即将推出

DIaVent[®] Light Oil - 适用于有油环境

- 耐油
- 双向压力平衡



相对压力 (mbar)



www.nok-freudenberg.com | info@nok-freudenberg.com | 021-2050 8000

以上信息均真实可靠，但对其准确性和适用性需要视实际情况而定。
以上信息基于实验室测试，并不一定代表最终产品的性能，具体产品性能需要客户实机测试并确认。

NOK-FREUDENBERG
恩福(中国)

DIaVent[®] Light

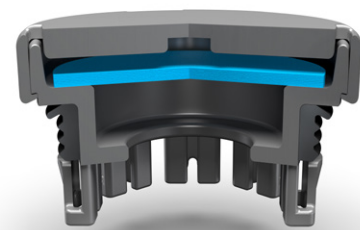
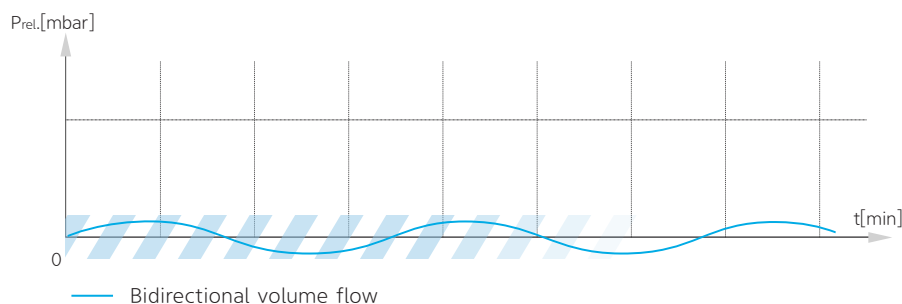
Our innovative DIaVent Light is the ideal pressure management solution engineered for system ventilating. Even in the harshest of operating conditions, DIaVent Light's purpose-built laminate reliably handles bidirectional pressure equalization.

Values for the Customer

- Single-element, multi-function design reduces total cost
- Reduced volatility thanks to bi-directional pressure regulation, exceptional gas permeation
- Simplified design enables quick assembly, accommodates various wall thickness and orientations
- Customizable solutions for robust EV applications

Features and Benefits

Properties	DIaVent Light
Dimensions	24 mm outer diameter 9 mm vertical packing height
Compliant with	IP6KX – dust resistant IP67 – submersion in 1m water for 30 min IPX9K – splashing water protection IPXXD – ingress protection
Temperature range	-40°C to 150°C
Permeation Rates	DIaVent Light
Normal operation	8 L/min at 100 mbar



Coming Soon

DIaVent[®] Light Oil - made for oily

- Resistant to oil
- Bidirectional pressure regulation

