

# BRILEX Venting Solutions

*Professionally mitigate risks.*



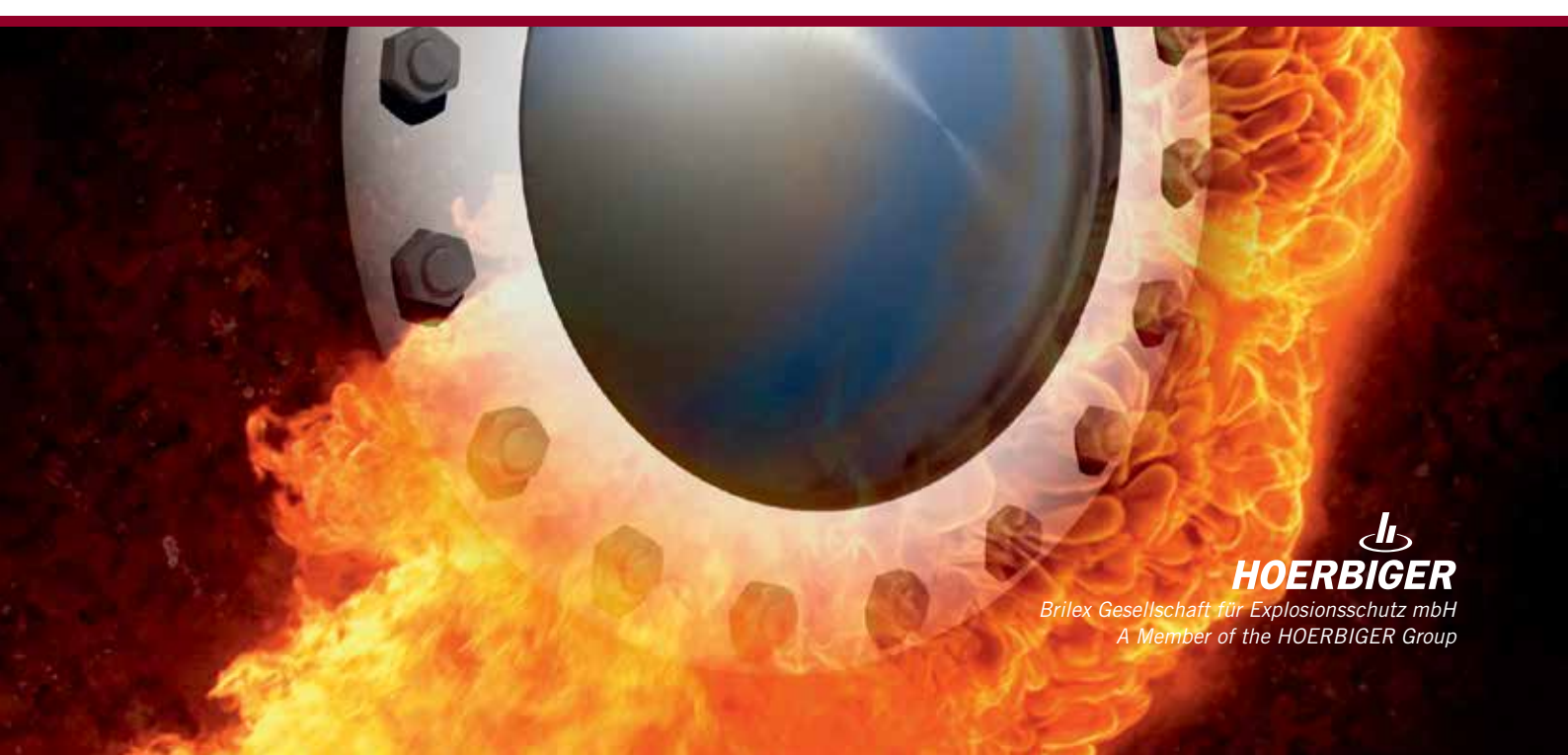
## CMC TECHNOLOGIES

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Alexandria, NSW, 2015  
AUSTRALIA



**HOERBIGER**

Brilex Gesellschaft für Explosionsschutz mbH  
A Member of the HOERBIGER Group

*More than 20 years of experience!*  
*How long can you stay cool?*

BRILEX Gesellschaft für Explosionsschutz mbH

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# BRILEX Venting Solutions

## BRILEX Explosion Vents

Explosion Venting

## BRILEX IndoorVents

Flameless Venting Inside Production Buildings

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# BRILEX is specialised in the production and sales of explosion venting and isolation equipment.

**BRILEX Gesellschaft für Explosionsschutz mbH** was established in Brilon in November 1993.

It erected its own first building, which helped considerably increase production, in 1996. Today, after two extensions to the premises, the Company now has around 5000 m<sup>2</sup> of office, production and warehouse space at its disposal. BRILEX is currently staffed by 15 employees.



International contacts, created shortly after the company was founded, led to the first sales agencies being established in other countries. The international network has continued to grow since then and has resulted in the Company having to quickly and efficiently adapt to new markets, which it has been able to do with the help of its development and production departments.

The acquisition by HOERBIGER Holding AG and the integration into the business segment HOERBIGER Safety Solutions will leverage the international expansion of BRILEX.

**BRILEX products** are protective systems that safeguard production processes all over the world from the destructive power of dust explosions. The manufacture of such sensitive systems require production processes that both comply with international standards and directives and that meet the requirements set out by several different quality assurance systems. Many of the Company's explosion vents and flameless pressure relief systems have been awarded international patents.

The Company is currently working on bidirectional decoupling systems that deliver considerable flow benefits over conventional units.

**BRILEX is a leading manufacturer** with its unique patented explosion vent delivering 100% pressure relief capacity and its flameless relief systems utilising replacement sets that allow them to be reused after explosions.

**More than 20 years of experience** in the field of safety engineering has allowed the Company to specialise in the provision of protection against dust explosions. As an innovative and reliable partner, BRILEX protects its customers all over the world from the effects of dust and gas explosions. We see ourselves as a partner to our customers and we guarantee to satisfy their needs with advice, quality and reliable deliveries.

## Milestones

Established in **1993**

First office and production building erected in **1996**;  
sales agencies set up in other countries in the same year

Patent awarded for a explosion vent with 100% relief capacity in **1999**

Patent awarded for a reusable, flameless pressurere relief system in **2003**

Introduction of non-return valves for decoupling dust explosions in **2006**

Introduction of explosion diverter and explosion vent GE-DIV for Index bidirectional decoupling in **2015**

Acquired by HOERBIGER Holding AG and integrated into the business segment HOERBIGER Safety Solutions **2016**

# The Explosion Vents

## BRILEX Explosion Vents

BRILEX Explosion Vents combine safety and shorter opening times. The light-weight and simple construction guarantees a quick and safe opening of the vent. The higher service life enables their use under the hardest conditions. This can be as high as a “sixty-fold” benefit compared to traditional triple section designs that are now “out-of-date”.

## Dust Explosion Venting

Venting of dust explosions has been practiced for more than 50 years and provides the best protection for facilities where dust explosions can occur. When specifying explosion vents, the immense impact of pressure waves and flame propagation in the outside area need to be considered. Explosion relief must therefore be directed to a safe area.

## General

BRILEX Explosion Vents are specially designed for relief of dust explosions. By early relief of an incipient explosion, BRILEX Explosion Vents protect people and industry worldwide.

## Designs and Applications

BRILEX provides the appropriate explosion vent depending on the application. The wide range of vents available is divided into three standard types that can be adapted for the customer's specific requirements.

## Certificates

### Guidelines and Certificates

The basis for our controlled quality is the quality management system according to DIN ISO 9001:2008. All products are examined and certificated according to 94/9/EC. The requirements by VDI 3673, EN 14491 and NFPA68 have been met. All products are in agreement with CE and are labeled appropriately.

### Approvals and Documentation

Each batch of explosion vents is tested in the factory according to EN 14797. Burst tests are witnessed by BRILEX Quality Control (QC) personnel or on request by independently accredited third parties such as TUV or others. The vents are then tagged by BRILEX QC personnel. Works test certificates (burst test certificates) will generally be provided for all products according to EN 10204 3.1 B.

*Explosion venting – how long can you stay cool?  
BRILEX Explosion Vents ensure your safety!*

# BRILEX GE

Filter installations with pneumatic cleaning systems and a very high vacuum operation require an explosion vent that withstands vacuum and positive pressure cycling for a long time. For such requirements the BRILEX GE is the best choice. Its domed design enables negative pressure resistance without the need for an extra vacuum support.

Standard GE features are pressure spike control and integrated flange gaskets.

## Dimensions

### Rectangular Dimensions: (Typ: GE)

Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )
229 x 229	309 x 309	510
205 x 290	285 x 370	580
229 x 305	309 x 385	680
150 x 600	230 x 680	880
220 x 420	300 x 500	900
340 x 385	400 x 445	1280
305 x 457	385 x 537	1380
247 x 610	327 x 690	1450
340 x 440	400 x 500	1480
300 x 620	380 x 700	1860
320 x 640	380 x 700	2000
375 x 655	455 x 735	2400
470 x 610	550 x 690	2800
490 x 590	570 x 670	2850
490 x 490	570 x 570	2370
525 x 668	645 x 788	3400
610 x 610	690 x 690	3650
457 x 890	537 x 970	4050
620 x 670	680 x 730	4100
645 x 645	735 x 735	4100
653 x 653	733 x 733	4200
520 x 1020	600 x 1100	5250
586 x 920	666 x 1000	5350
500 x 1100	580 x 1180	5400
750 x 750	830 x 830	5600
750 x 840	830 x 920	6250
801 x 801	880 x 880	6400
610 x 1118	690 x 1198	6750
645 x 1130	725 x 1210	7280
720 x 1020	800 x 1100	7300
920 x 920	1000 x 1000	8400
915 x 1118	995 x 1198	10000
1020 x 1020	1100 x 1100	10400
1130 x 1130	1220 x 1220	12500

Other sizes on request



## Dimensions

### Round Dimensions:(Typ: GE)

DN	Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )
200	208	268	300
250	261	341	480
300	310	390	680
350	342	422	830
400	393	473	1213
450	465	545	1600
500	494	574	1820
600	596	676	2650
700	696	776	3650
750	762	842	4400
800	797	877	4800
900	894	974	6000
1000	995	1075	7600
1100	1124	1214	9850

Also available for DIN 2632 flanges.

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# BRILEX KE

If the negative pressure is not greater than 60% of the rated rupture pressure, installation of a domed vent has no extra benefit. For this application the KE is an alternative to the domed GE. The BRILEX KE provides long durability and aerodynamic advantages compared to the domed type, for example in cyclones. Pressure spike control, integrated flange gaskets, cross rib and folded edges are standard KE design features.



## Dimensions

### Rectangular Dimensions: (Typ: KE)

Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )	Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )
110 x 290	170 x 350	300	653 x 653	733 x 733	4200
229 x 229	309 x 309	510	669 x 669	735 x 735	4350
205 x 290	285 x 370	580	630 x 730	710 x 810	4550
229 x 305	309 x 385	680	520 x 1020	600 x 1100	5250
150 x 600	230 x 680	880	586 x 920	666 x 1000	5350
220 x 420	300 x 500	900	500 x 1100	580 x 1180	5400
340 x 385	400 x 445	1280	750 x 750	830 x 830	5600
305 x 457	385 x 537	1380	420 x 1420	500 x 1500	5950
247 x 610	327 x 690	1450	629 x 1004	689 x 1064	6000
340 x 440	400 x 500	1480	750 x 840	830 x 920	6250
410 x 410	490 x 490	1650	801 x 801	880 x 880	6400
300 x 620	380 x 700	1860	500 x 1350	580 x 1430	6700
320 x 640	380 x 700	2000	610 x 1118	690 x 1198	6750
319 x 765	399 x 845	2350	645 x 1130	725 x 1210	7280
490 x 490	570 x 570	2370	720 x 1020	800 x 1100	7300
375 x 655	455 x 735	2400	920 x 920	1000 x 1000	8400
390 x 620	470 x 700	2400	970 x 970	1050 x 1050	9400
445 x 597	525 x 677	2600	1000 x 1000	1080 x 1080	10000
470 x 610	550 x 690	2800	586 x 1727	666 x 1807	10000
490 x 590	570 x 670	2850	915 x 1118	995 x 1198	10000
420 x 770	500 x 850	3200	1020 x 1020	1100 x 1100	10400
247 x 1345	327 x 1425	3300	790 x 1340	870 x 1420	10500
525 x 668	645 x 788	3400	720 x 1670	800 x 1750	12000
610 x 610	690 x 690	3650	1130 x 1130	1220 x 1220	12500
247 x 1645	327 x 1725	4050	920 x 1380	1000 x 1460	12500
457 x 890	537 x 970	4050	1130 x 1520	1220 x 1610	17150
620 x 670	680 x 730	4100	1130 x 1727	1230 x 1827	19200
645 x 645	735 x 735	4100	1000 x 2000	1080 x 2080	19500

Other sizes on request

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# BRILEX KER

BRILEX provides explosion vents called KER, for simple applications in powder handling and storage. The KER is suitable for plant equipment with static over or under pressure conditions up to 50% of the rated rupture pressure. Edge reinforcement in its design allows the KER to be mounted without an outlet flange. Cross rib and folded edges are other standard KER design features.

## Dimensions

### Rectangular Dimensions: (Typ: KER)

Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )
110 x 290	170 x 35	300
229 x 229	309 x 309	510
205 x 290	285 x 370	580
229 x 305	309 x 385	680
150 x 600	230 x 680	880
220 x 420	300 x 500	900
315 x 410	365 x 460	1250
340 x 385	400 x 445	1280
305 x 457	385 x 537	1380
247 x 610	327 x 690	1450
340 x 440	400 x 500	1480
400 x 400	500 x 500	1550
410 x 410	490 x 490	1650
300 x 600	350 x 650	1800
300 x 260	380 x 700	1860
320 x 640	380 x 700	2000
319 x 765	399 x 845	2350
490 x 490	570 x 570	2370
375 x 655	455 x 735	2400
390 x 620	470 x 700	2400
445 x 597	525 x 677	2600
470 x 610	550 x 690	2800
490 x 590	570 x 670	2850
420 x 770	500 x 850	3200
247 x 1345	327 x 1425	3300
252 x 668	645 x 788	3400
600 x 600	650 x 650	3600
610 x 610	690 x 690	3650
247 x 1645	327 x 1725	4050
457 x 890	537 x 970	4050
620 x 670	680 x 730	4100
645 x 645	735 x 735	4100
653 x 653	733 x 733	4200
669 x 669	735 x 735	4350
630 x 730	710 x 810	4550

Other sizes on request



Inside Dim (mm)	Outside Dim (mm)	Vent Area (cm <sup>2</sup> )
620 x 820	675 x 875	5000
520 x 1020	600 x 1100	5250
586 x 920	666 x 1000	5350
500 x 1100	580 x 1180	5400
750 x 750	830 x 830	5600
420 x 1420	500 x 1500	5950
629 x 1004	689 x 1064	6000
750 x 840	830 x 920	6250
800 x 800	850 x 850	6400
801 x 801	880 x 880	6400
500 x 1350	580 x 1430	6700
610 x 1118	690 x 1198	6750
645 x 1130	725 x 1210	7280
720 x 1020	800 x 1100	7300
920 x 920	1000 x 1000	8400
940 x 940	1000 x 1000	8800
970 x 970	1050 x 1050	9400
1000 x 1000	1080 x 1080	10000
1000 x 1000	1050 x 1050	10000
586 x 1727	666 x 1807	10000
915 x 1118	995 x 1198	10000
1020 x 1020	1100 x 1100	10400
790 x 1340	870 x 1420	10500
720 x 1670	800 x 1750	12000
1130 x 1130	1220 x 1220	12500
920 x 1380	1000 x 1460	12500
940 x 1440	1000 x 1500	13500
1130 x 1520	1220 x 1610	17150
1130 x 1727	1230 x 1827	19200
1000 x 2000	1080 x 2080	19500

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# Accessories

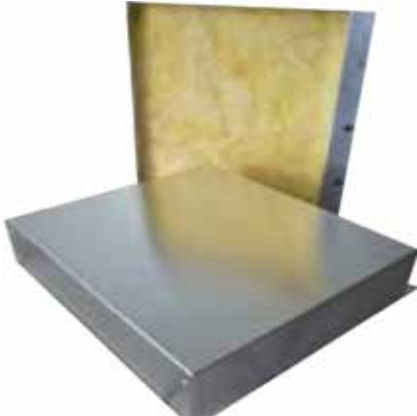


## Gaskets

All vents are supplied with “factory-installed” integrated flange gaskets. The standard material is EPDM and can be used from -40 °C to +120 °C. As an alternative the following standard materials are available:

- White Silicone -50 °C to +200 °C
- Klinger -100 °C to +400 °C
- Ceramic -100 °C to +900 °C

Other materials can be supplied on request.



## Insulation

Insulation consists of a fire-proof mineral wool according to DIN 1259. The insulation is directly mounted to the “vent-side” of the explosion vent and is protected by a light-weight aluminium cover with a water-tight seal. It is secured to the disc to prevent it from flying away during venting. BRILEX insulation does not have any affect on the venting relief capability or efficiency. This has been proved by notified bodies in many dynamic explosion tests. Optional insulation thickness can be supplied to meet the customer's specifications.



## Mounting Frames

The necessary outlet flange for types GE / KE can also be supplied. The following material is available: Zinc plated carbon steel or stainless steel.



## Burst Sensor SE-ATEX und SE-HT

To monitor an installation a burst sensor type SE can be installed. The sensor signals the opening of the explosion vent so that equipment such as fans or rotary valves can be switched off. SE sensors are installed separately and just above the explosion vent. This enables SE sensors to be easily adapted to existing installations. They are also suitable for the food industry.



## Burst Sensor SE-WIRE

The cable loop is torn when the explosion vent is opened. It results in the electric circuit interruption and a continuous, highly resistant signal is generated. The signal communicates explosion and immediate installation cut off.

# IndoorVent

## Indoor Explosion Venting

By using BRILEX Explosion Vents in combination with a unique BRILEX Ceramic Filter, economical venting of dust explosions is possible. When the vent opens during an explosion, the ceramic filter retains the dust and cools down the hot gases.



## Applications

Due to high investigation costs and bad efficiency, design engineers and end users tried to find alternatives. The BRILEX IndoorVent offers a combination of a fast opening BRILEX Explosion Vent with a high efficient ceramic filter. The vent area of the IndoorVent is greater than the vent areas of existing quench pipes. After an explosion the IndoorVent can be reused.



The result is a cost effective solution for plant designers and end users for all industries.



## Parameters

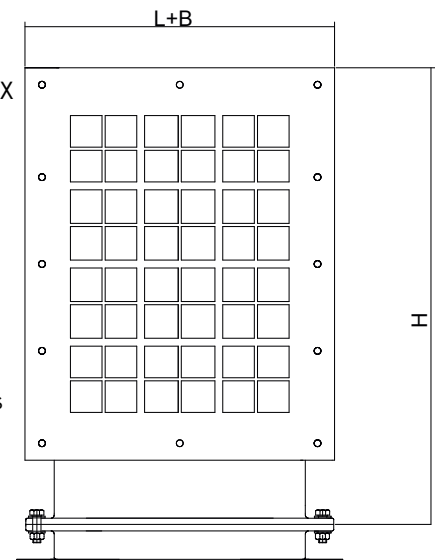
The BRILEX IndoorVent can be used for reduced explosion pressures ( $P_{red}$ ) between 0.2 to 1.5 bar g and K st values up to 250 bar m/sec.

## Delivered Products

BRILEX delivers complete units consisting of the IndoorVent and a pre-installed BRILEX explosion vent including integrated flange gaskets and monitoring sensor. A spare parts kit for immediate use after an explosion consisting of explosion vent and filter cartridges.

## After an Explosion

Times have changed since explosion quenching systems had to be thrown into the waste bin after single use. The BRILEX IndoorVent can be re-used after changing the filter cartridges and the explosion vent. Maintenance time of approximately 30 minutes is only needed before it can be used again. BRILEX guarantees this after each dust explosion.



## Technical data

Type	IV 240	IV 600	IV 1000	IV 1600	IV 2200	IV 3200	IV 4200
Flange	DN 200	DN 300	DN 400	DN 500	DN 600	DN 700	DN 800
Vent Area (cm <sup>2</sup> )	240	600	1000	1600	2200	3200	4200
H Height (mm)	535	609	748	1035	1257	1750	1850
L /B Lenght / width (mm)	359	410	558	666	785	983	1096
Weight (kg)	38	56	75	119	171	238	312
Max. raw gas volume (m <sup>3</sup> )pro IV	1	4,4	4,4	9,7	9,7	25	25
Max. $P_{red}$ (bar)	1,5	1,5	1,5	1,5	1,5	0,6	0,6

*Explosion venting in the production building – stay cool – simply flameless!*

# IndoorVent EXL

BRILEX IndoorVent EXL for venting of dust explosion in production buildings.

- Cost reduction due to optimised manufacturing
- Higher Certified Effective vent areas due to extendable modules
- Extendable from 1900 cm<sup>2</sup> to 3100 cm<sup>2</sup>
- Integrated explosion vent and sensor
- Tested up to P red max 0,9 bar
- Certified for dusts up to KST 200 bar.m/sec
- Guaranteed re-usability after an explosion

## Approvals

The BRILEX IndoorVent has been tested by well-known institutions and is certified according to the 94/9/EC standard.

BRILEX is certified to DIN EN ISO 9001:2008 Approvements and Certificates.



## Technical data

Type	IV EXL 457 x 890 SB	IV EXL 457 x 890 DB	IV EXL 457 x 890 DB
Flange	457 x 890	457 x 890	457 x 890
Vent Area (cm <sup>2</sup> )	1900	3100	2100
Lenght/ width/ height (mm)	970/540/875	970/540/1635	970/540/1635
Weight (kg)	90	163	163
Max. raw gas volume (m <sup>3</sup> ) pro IV	<=4,4	<=4,4	>4,4 -<=9,6
Max. P red (bar)	0,9	0,9	0,9
Max. Kst – Value (bar m/s)	200	200	200

*Explosion venting in the production building – stay cool – simply flameless!*

*Our aim is your safety.*

*Over 20 years in the field of providing protection against dust explosions and the quality of our protective systems make us your innovative and competent partner to help you prevent and protect against explosions.*



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BRILEX Gesellschaft für Explosionsschutz mbH, a member of the HOERBIGER Group, is one of the world's leading providers of explosion vents and flameless vents. The company based in Brilon, Germany, has 20 years of experience. BRILEX products mitigate the devastating effects of combustible dust or vapor explosions, protecting processing equipment from severe damage.

HOERBIGER Safety Solutions – Together We Save Lives!