

# PRODUCT INFORMATION

## EXPLOSION VENTING

# Q-Rohr®-3

Pat.-Nos. DE 38 22 012  
US 7,905,244



**REMBE®** GMBH  
SAFETY+CONTROL

### SAFETY ADVICE

Only the original  
construction of the

### Q-Rohr®-3

guarantees the full effectiveness  
in the event of a dust explosion.  
Copies and imitations present  
an unnecessary safety risk!



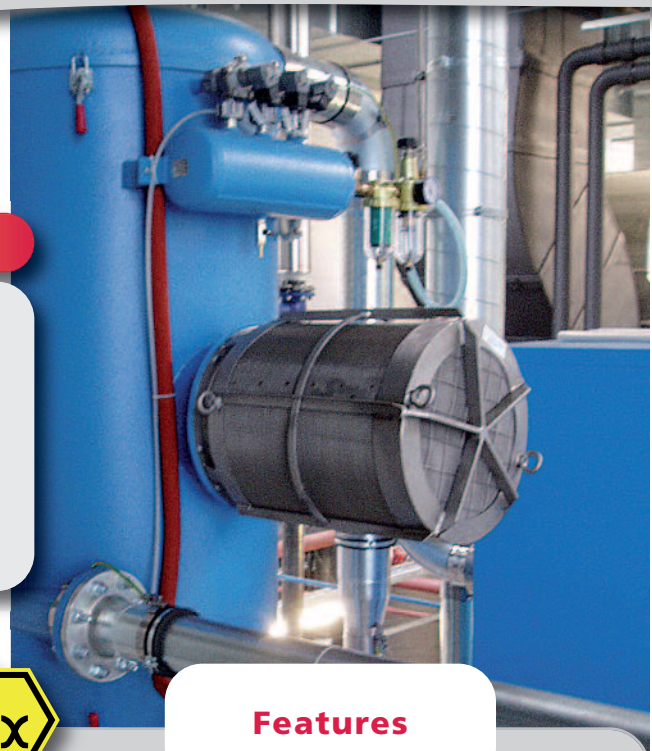
## Indoor Flameless Explosion Venting

During conventional explosion venting, flame propagation as well as shock waves are only permitted to be directed into safe areas. However, those effects could lead to catastrophic consequences for anyone who is located in the immediate vicinity or surrounding areas.

As a certified solution, the Q-Rohr®-3, with its patented system of flame absorbing and dust retaining materials, guarantees hazard-free indoor explosion venting.

Difficult to access machines or facilities located amidst production halls can be quickly, simply and safely vented, without cost-intensive, space issues and time-consuming reconstruction. When deploying this maintenance-free protection system: A purely passive solution; no additional operating costs are incurred.

Q-Rohr®-3 is the only system worldwide that is approved for deployment in Zone 22 according to VDI-3673, EN 14797, DIN EN 16009 and NFPA 68 and certified by FM Global. Insurance companies across the globe recognize the Q-Rohr®-3 as a safe system for flameless explosion venting.



### Features

- Available from 8" up to 32" (DN 200 up to DN 800)
- Unique modular stainless steel construction
- Re-usable quenching chamber made of a special stainless steel mesh filter
- Multilayered stainless steel dust filter with pressure absorbing properties
- Integrated bursting disc with signal unit and gasket
- Bursting discs are also available in aseptic, sanitary and sterile designs\*
- Electronic operational and alarm display
- ATEX and FM type-tested and certified
- Suitable for full vacuum
- Special design for up to 600 °C (1,112 °F)\*
- Sanitary cover keeps the outside clean\*

\* optional

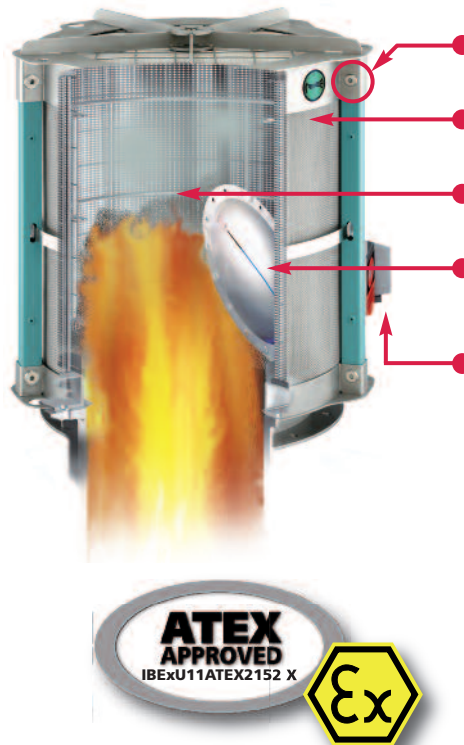




# Proven Safety for Equipment in any Location

Flame gases reaching temperatures of up to 1,500 °C (2,732 °F), are instantaneously cooled down via an energy transfer within the specially developed stainless steel mesh filter inlet.

Thus, the emergent resultant gas volumes are reduced and the flames extinguished. At the same time, the typical rise in pressure as well as the noise level associated with an explosion can be reduced to a very low harmless level. The special filter design prevents the escape of the majority of any burnt or unburnt dust particles.



Stainless steel riveted design allows to absorb pressure shock

Reusable flame arrester made of a special stainless steel mesh filter

Stainless steel dust filter with specially developed pressure absorbing coils

Integrated REMBE rupture disc with signal unit and gasket

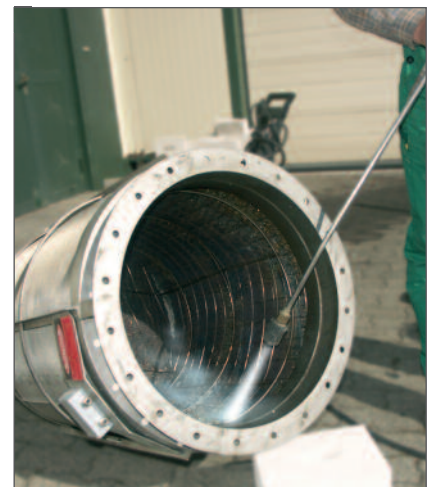
Monitoring unit in cabled IP-65 housing



## Applications

- Dust explosion endangered facilities (gas and hybrid mixtures upon request), e.g. filters, dryers, mills, cyclones, etc. with  $K_{St}$ -Values  $\leq 250 \text{ bar} \times \text{m/s}$  ( $K_{St}$ -Values  $\geq 350 \text{ bar} \times \text{m/s}$  upon request)

After an explosion, the Q-Rohr®-3 can be cleaned locally and the bursting disc replaced, making Q-Rohr®-3 ready for use again, with the minimum of loss of production.



## Your Benefits

- No expensive vent ducts required
- Process-optimised mounting of machines and facilities
- Simple, visual inspection instead of regular maintenance costs

The optional sanitary cover keeps the Q-Rohr®-3 clean on the outside.

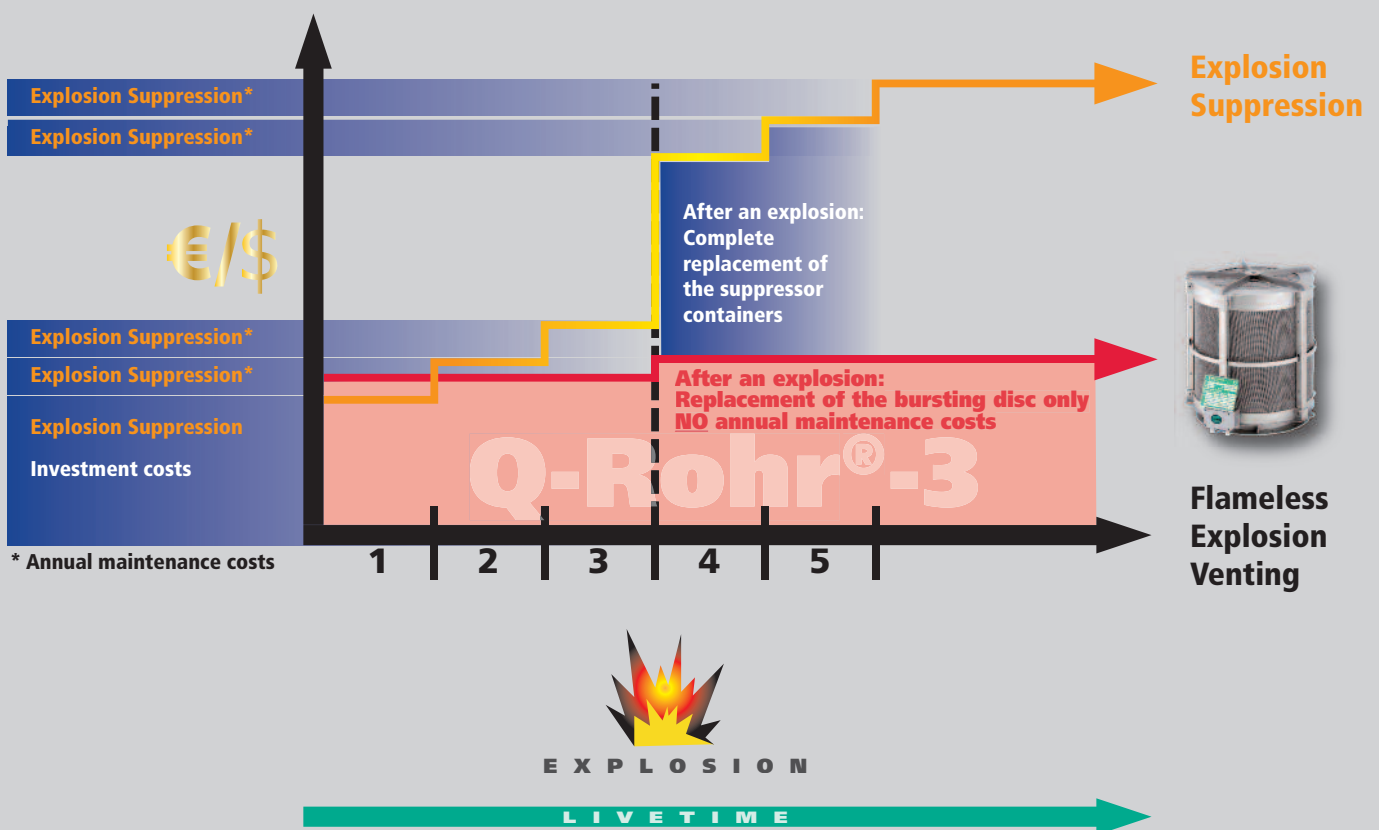




# COMPARISON OF COSTS

**Explosion Suppression** versus  
**Flameless Explosion Venting with**

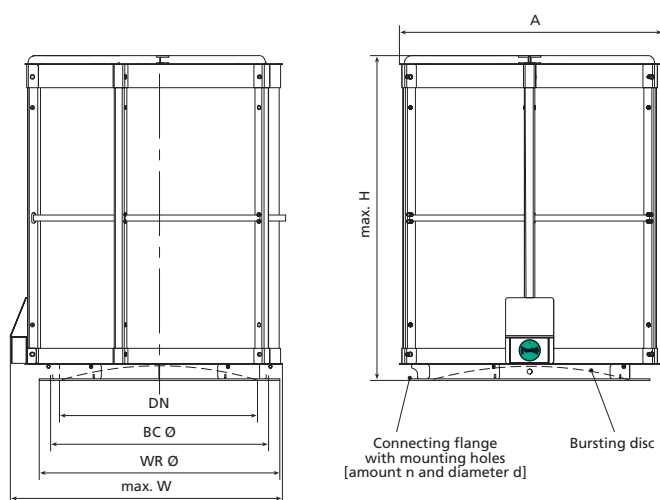
**Q-Rohr®-3**





Technical Data																	
Burst pressure (P <sub>Stat</sub> )									0.1 bar @ 22 °C / 71.6 °F								
P <sub>red</sub>									0.1 bar to 1.3 bar / 1.45 psi to 18.85 psi								
Max. K <sub>St</sub> -value									250 bar / 3,625 psi x m/s								
Operating temperature									-10 °C to +230 °C / 14 °F to 446 °F								
Type	Nominal Size*		max. H*		A*		max. W*		WR-Ø*		BC-Ø*		Ø d*		n*	Weight	
	[NPS]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[kg]	[lbs]
Q-Rohr-3-8	200	8"	600	236	350	13.7	410	16.2	268	10.6	243	9.6	8.5	0.33	8	25	55
Q-Rohr-3-12	300	12"	600	236	450	17.7	500	19.7	390	15.4	355	13.9	11	0.43	12	30	66
Q-Rohr-3-16	400	16"	900	354	550	21.6	600	23.6	500	19.7	443	17.4	13	0.51	16	48	106
Q-Rohr-3-20	500	20"	900	354	650	25.5	700	27.6	600	23.7	544	21.5	13	0.51	20	60	132
Q-Rohr-3-24	600	24"	1400	551	760	29.9	810	31.9	700	27.6	646	25.4	13	0.51	20	125	276
Q-Rohr-3-28	700	28"	1900	784	860	33.8	910	35.8	800	31.5	752	29.6	13	0.51	28	195	430
Q-Rohr-3-32	800	32"	2200	866	960	37.7	1010	39.7	900	35.5	854	33.6	13	0.51	28	240	529
* see below · Further connections, technical drawings on request – see Q-Box II for rectangular connections																	

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## Quality and Certifications

All REMBE® protection systems and devices are EC type-tested and certified in accordance with the ATEX Directive 94/9/EG (ATEX 114). Each production series is manufactured according to normative specifications, e.g. EN 14797 and delivered with an inspection certificate in accordance with DIN-EN 10204.1.

Upon request, our engineers are capable of calculating your required venting areas in accordance with the VDI-Guidelines 3673, EN 14491, EN 14994, NFPA 68 and FM Global, etc.

We are able to assist you by simulating explosions, calculating the required venting areas for your equipment and recommend correct product selections.



Explosion protection at milling hopper in breweries



Q-Rohr® installed in a milk powder factory



Q-Rohr® installed in a recycling plant