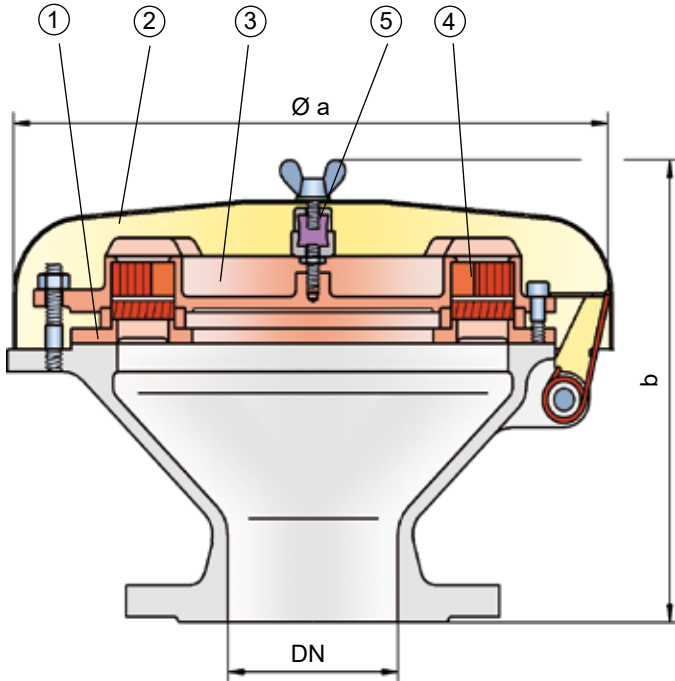




Deflagration Flame Arrester- Endurance burning-proof, End-of-Line

PROTEGO® BE/HR-E



The PROTEGO® BE/HR-E end-of-line deflagration flame arrester is available for alcohols and other substances with a MESG $\geq 0,85$ mm.

The standard design can be used for operating temperatures up to $+60^{\circ}\text{C}$ / 140°F .

EU conformity according to the currently valid ATEX directive. Approvals according to other national/international regulations on request.

Special Features and Advantages

- endurance burning protection for alcohols and hydrocarbons with MESG $\geq 0,85\text{mm}$
- weather hood protects the PROTEGO® flame arrester unit against environmental impact, such as nesting animals and weather conditions
- in case of fire, the weather hood opens, allowing the flame to be seen from a far distance
- centrally aligned melting element is resistant to chemicals
- modular design enables replacement of individual FLAMEFILTER® discs
- trouble-free maintenance
- provides protection against atmospheric deflagrations and endurance burning
- cost-effective spare parts

Design Types and Specifications

There are two different designs:

End-of-line deflagration flame arrester, basic design

BE/HR - E - ☐

End-of-line deflagration flame arrester with heating jacket

BE/HR - E - ☒

Special designs available upon request.

Function and Description

The PROTEGO® BE/HR-E end-of-line deflagration flame arrester was specifically developed for vessels which are not pressurized and store Ethanol or other alcohols with a MESG $\geq 0,85$ mm. The combustion of alcohol requires a modified flame arrester element design to provide protection against endurance burning. In addition, the device provides protection against atmospheric deflagration. It is typically installed on in-breathing and out-breathing vent lines to prevent flame transmission into the vessel or plant caused by endurance burning or atmospheric deflagration.

The PROTEGO® BE/HR-E consists of the housing (1), a weather hood (2), and the PROTEGO® flame arrester unit (3). During normal operation, the metal weather hood is in a closed position. If a flame burns on the flame arrester element surface, the melting element (5), located in a center position, will melt, and the spring-loaded weather hood will open. The PROTEGO® flame arrester unit consists of two FLAMEFILTER® discs (4) which are installed in a FLAMEFILTER® casing.

Table 1: Dimensions

Dimensions in mm / inches

To select the nominal size (DN), please use the flow capacity charts on the following pages.

DN	80 / 3"	100 / 4"
a	353 / 13.90	353 / 13.90
b	250 / 9.84	250 / 9.84

Dimensions for deflagration flame arrester with heating jacket upon request.



Demonstration of endurance burning
Video

Table 2: Selection of explosion group

MESG	Expl. Gr. (IEC/CEN)	Gas Group (NEC)	Special approvals upon request.
≥ 0,85 mm	IIB1	–	

Table 3: Material selection for housing

Design	B	C	Special materials upon request.
Housing	Steel	Stainless Steel	
Weather hood	Steel	Stainless Steel	
Flame arrester unit	A	A, B	

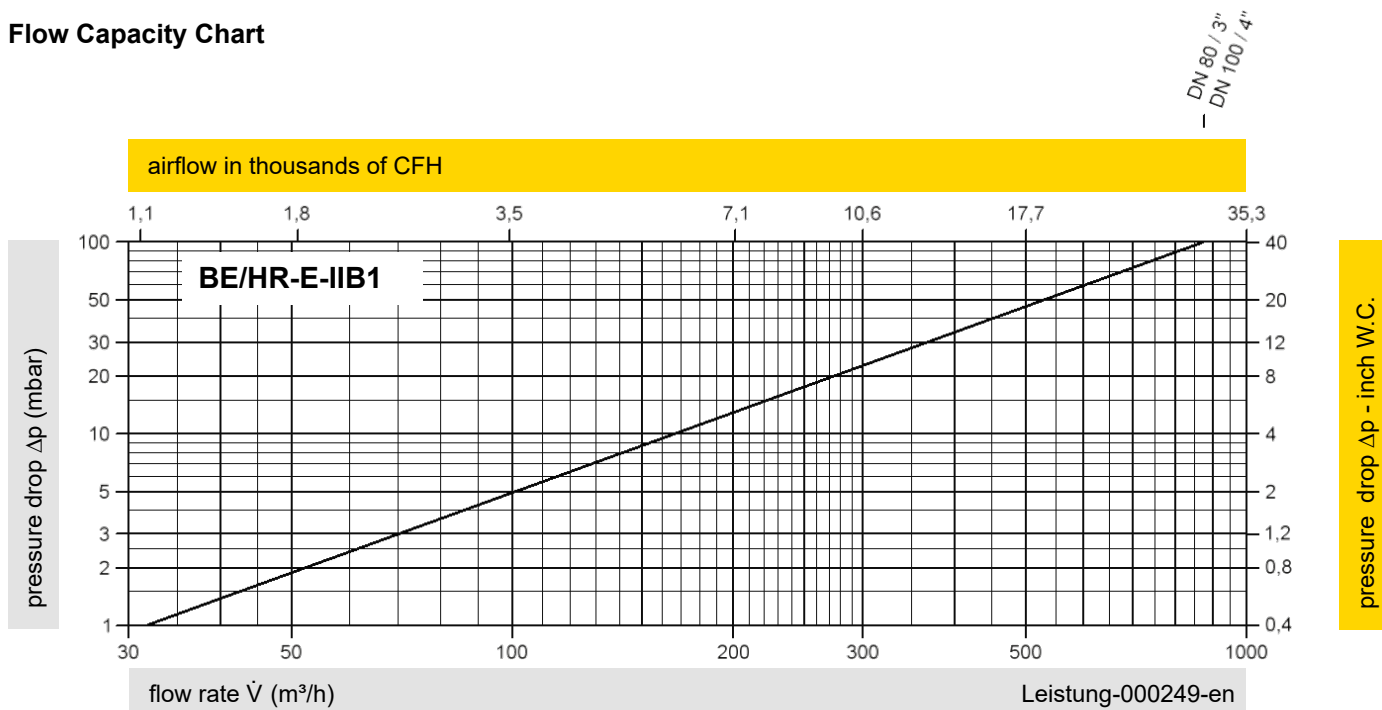
Table 4: Material combinations of flame arrester unit

Design	A	B	Special materials upon request.
FLAMEFILTER® casing	Stainless Steel	Stainless Steel	
FLAMEFILTER®	Stainless Steel	Hastelloy	
Spacer	Stainless Steel	Hastelloy	

Table 5: Flange connection type

EN 1092-1; Form B1	Other types upon request.
ASME B16.5 CL 150 R.F.	

Flow Capacity Chart



The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig.
Volume flow $\dot{V}$ in (m³/h) and CFH refer to the standard reference conditions of air in ISO 6358 (20°C, 1bar).
For conversion to other densities and temperatures, refer to Sec. 1: "Technical Fundamentals."

