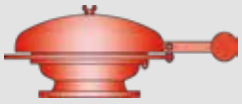
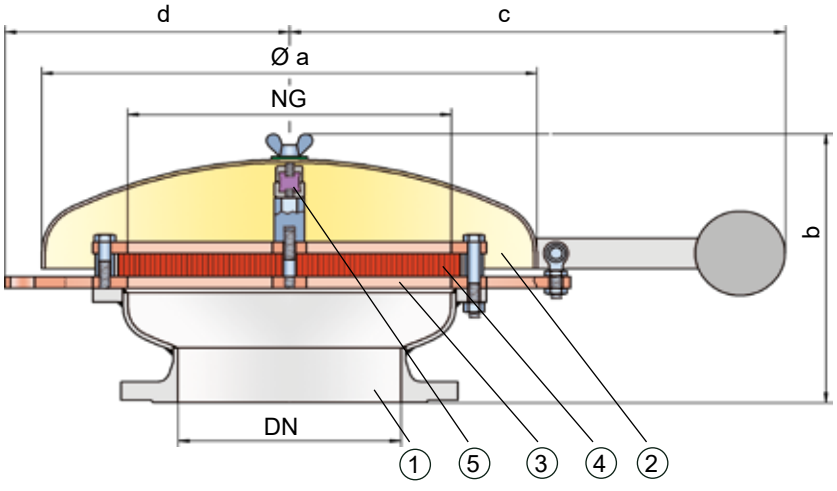


Deflagration Flame Arrester- Endurance burning-proof, End-of-Line

PROTEGO® LH/EB



Function and Description

The PROTEGO® LH/EB end-of-line deflagration flame arrester is used to protect process engineering apparatus and vessels which are not pressurized and process Methane/Air mixtures. The device provides protection against flame transmission through atmospheric deflagration and stabilized flames which can burn for a very long time. This device is specifically applied to vent lines of decommissioned underground mines. Other areas of application are biogas, landfill gas and sewage gas. The device is installed on suction and vent lines, with the goal to prevent flame transmission caused by endurance burning or atmospheric deflagration propagating into the vessel or plant.

The PROTEGO® LH/EB consists of a 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 fusible link (5), located in a center position, will melt and an externally located weight will move the weather hood into the open position. The PROTEGO® flame arrester unit consists of a FLAMEFILTER® (4), which is installed in a FLAMEFILTER® casing.

The PROTEGO® LH/EB series end-of-line deflagration flame arrester is available for substances for explosion group IIA1 - methane (former designation Expl.gr. I).

The standard design can be used with operating temperature of up to +60°C / 140°F.

Special certificates for mining are available and the device is type-approved according to ATEX Directive and EN ISO 16852 as well as other international standards.

Special Features and Advantages

- most efficient deflagration flame arrester for methane/air mixtures
- certificates for mining are available
- protection against atmospheric deflagration and endurance burning
- weather hood protects against environmental impact (i.e. weather, bird nests, etc.)
- weather hood will open and signals the impact of a flame
- fusible link is resistant against chemicals
- maintenance friendly design

Design Type and Specification

End-of-line deflagration flame arrester, basic design	**LH/EB**

Special designs available upon request.

Table 1: Dimensions Dimensions in mm / inches

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

DN	150 / 6"	200 / 8"	250 / 10"	300 / 12"	350 / 14"	400 / 16"
NG	400 / 16"	400 / 16"	400 / 16"	400 / 16"	400 / 16"	400 / 16"
a	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62
b	340 / 13.39	340 /13.39	340 / 13.39	340 / 13.39	340 / 13.39	340 / 13.39
c	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62	600 / 23.62
d	350 / 13.78	350 / 13.78	350 / 13.78	350 / 13.78	350 / 13.78	350 / 13.78

Table 2: Selection of explosion group

MESG	Expl. Gr. (IEC/CEN)	Gas Group (NEC)	Special approvals upon request.
> 1,14 mm	IIA1 (I)*	-	

* former designation Expl.gr. I

Table 3: Material selection for housing

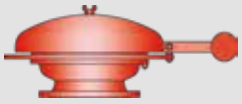
Design	A	B	Special materials upon request.
Housing	Steel	Stainless Steel	
Weather hood	Steel	Stainless Steel	
Flame arrester unit	A, B	B	

Table 4: Material combinations of flame arrester unit

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

Table 5: Flange connection type

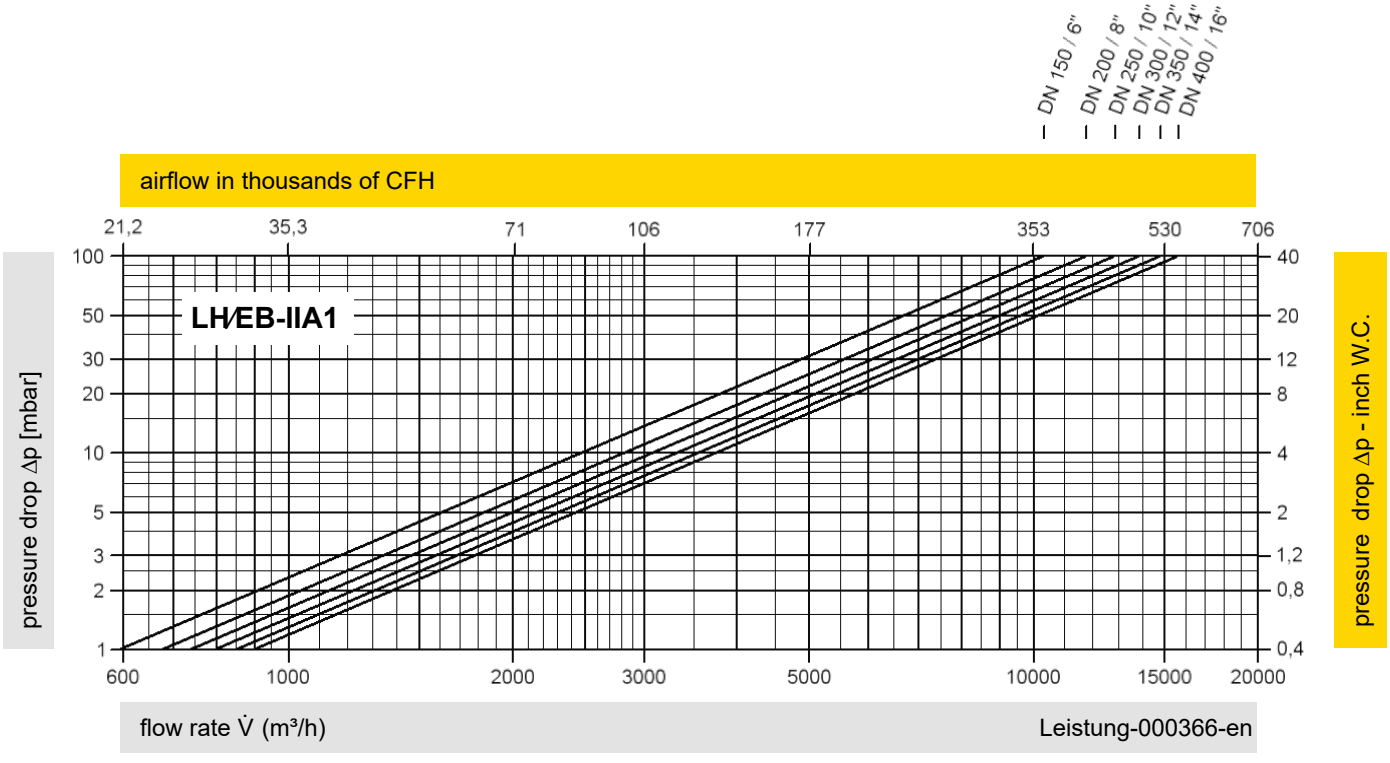
EN 1092-1; Form B1	Other types upon request.
ASME B16.5 CL 150 R.F.	



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

Flow Capacity Chart

PROTEGO® LH/EB



The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig.

Volume flow V̇ 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.”