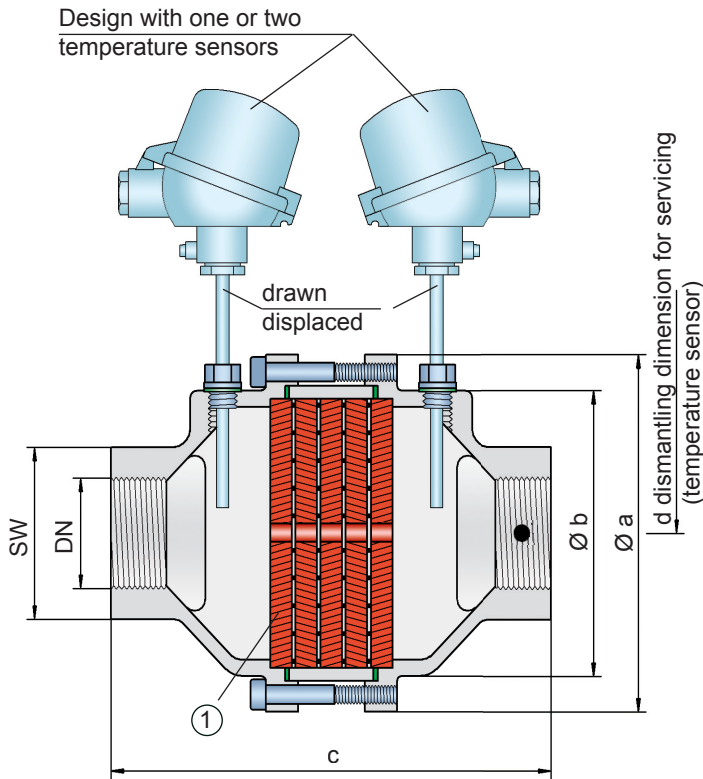


In-Line Detonation Flame Arrester

for stable detonations and deflagrations in a straight through design,
bidirectional

PROTEGO® DA-G



● Connection to the protected side
(only for type DA-G-T-...)

d dismantling dimension for servicing
(temperature sensor)

that can be used for all explosion groups, IIA, IIB3 and IIC (NEC Group D, C MESG ≥ 0.65 mm and B). The standard design can be used up to an operating temperature of $+60^{\circ}\text{C}$ / 140°F and an absolute operating pressure up to 1.1 bar / 15.9 psi. Devices with special approvals can be obtained for higher pressures (see table 4) and higher temperatures upon request.

The device is bidirectional and equipped with a threaded connection. The thread can be executed to international standards. The detonation arrester can be used at any location in the pipe, independently from the location of the ignition source.

Type-approved according to ATEX Directive 94/9/EC and EN ISO 16852 as well as other international standards.

Special Features and Advantages

- bidirectional
- modular design
- the individual FLAMEFILTER® discs can be quickly removed and installed
- the individual FLAMEFILTER® discs are easy to service and replace
- different application possibilities
- possible installation of temperature sensors
- cost efficient spare parts

Design Types and Specifications

There are three different designs available:

Basic design of the DA-G in-line detonation flame arrester, size $\frac{1}{2}$ " to 2" **DA-G-**

In-line detonation flame arrester with integrated temperature sensor* as additional protection against short burning from one side, size $\frac{1}{2}$ " to 2" **DA-G-**

In-line detonation flame arrester with two integrated temperature sensors* as additional protection against short time burning from both sides, size $\frac{1}{2}$ " to 2" **DA-G-**

*Resistance thermometer for device group II, category (1) 2 (GII cat. (1) 2)

Flange connection available upon request

Function and Description

The PROTEGO® DA-G series is a compact in-line detonation flame arrester for installation in pipes with diameters up to 2", and is used, for example, in industrial applications such as gas analyzing lines.

Once a detonation enters the flame arrester, energy is absorbed from the shock wave, and the flame is extinguished in the narrow gaps of the FLAMEFILTER® (1).

The PROTEGO® flame arrester unit consists of several FLAMEFILTER® discs firmly held in a housing. The gap size and number of FLAMEFILTER® discs are determined by the operating data and parameters of the mixture flowing in the line (explosion group, pressure, temperature).

To provide an optimum result between the housing size, number of FLAMEFILTER® discs and their gap size, a device was developed

Table 1: Dimensions

Dimensions in mm / inches, SW = width across flats

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

DN	G 1/2"	G 3/4"	G 1"	G 1 1/4"	G 1 1/2"	G 2"
a	80 / 3.15	80 / 3.15	100 / 3.94	100 / 3.94	155 / 6.10	155 / 6.10
b	55 / 2.17	55 / 2.17	76 / 2.99	76 / 2.99	124 / 4.88	124 / 4.88
c (IIA)	112 / 4.41	112 / 4.41	122 / 4.80	122 / 4.80	205 / 8.07	205 / 8.07
c (IIB3 and IIC)	135 / 5.31	135 / 5.31	145 / 5.71	145 / 5.71	205 / 8.07	205 / 8.07
d	—	—	—	—	400 / 15.75	400 / 15.75
SW	32 / 1.26	32 / 1.26	50 / 1.97	50 / 1.97	75 / 2.95	75 / 2.95

Table 2: Selection of the explosion group

MESG	Expl. Gr. (IEC/CEN)	Gas Group (NEC)	Special approvals upon request
> 0,90 mm	IIA	D	
≥ 0,65 mm	IIB3	C	
< 0,50 mm	IIC	B	

Table 3: Selection of max. operating pressure

		DN	G 1/2"	G 3/4"	G 1"	G 1 1/4"	G 1 1/2"	G 2"	P _{max} = maximum allowable operating pressure in bar / psi (absolute), higher operating pressure upon request
Expl. Gr.	IIA	P _{max}	1.2/17.4	1.2/17.4	1.1/15.9	1.1/15.9	1.1/15.9	1.1/15.9	
	IIB3	P _{max}	1.1/15.9	1.1/15.9	1.1/15.9	1.1/15.9	1.4/20.3	1.4/20.3	
	IIC	P _{max}	1.1/15.9	1.1/15.9	1.1/15.9	1.1/15.9	1.6/23.2	1.6/23.2	

Table 4: Specification of max. operating temperature

≤ 60°C / 140°F	higher operating temperatures upon request
T60	T _{maximum allowable operating temperature in °C}

Table 5: Material selection for housing

Design	A	B	C	* the FLAMEFILTER® are also available in the materials Tantalum, Inconel, Copper, etc. when the listed housing materials are used.
Housing	Steel	Stainless Steel	Hastelloy	
Gasket	PTFE	PTFE	PTFE	
FLAMEFILTER® *	Stainless Steel	Stainless Steel	Hastelloy	

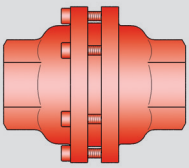
Special materials upon request

Table 6: Type of connection

Pipe thread DIN ISO 228-1	DIN	other types of thread upon request
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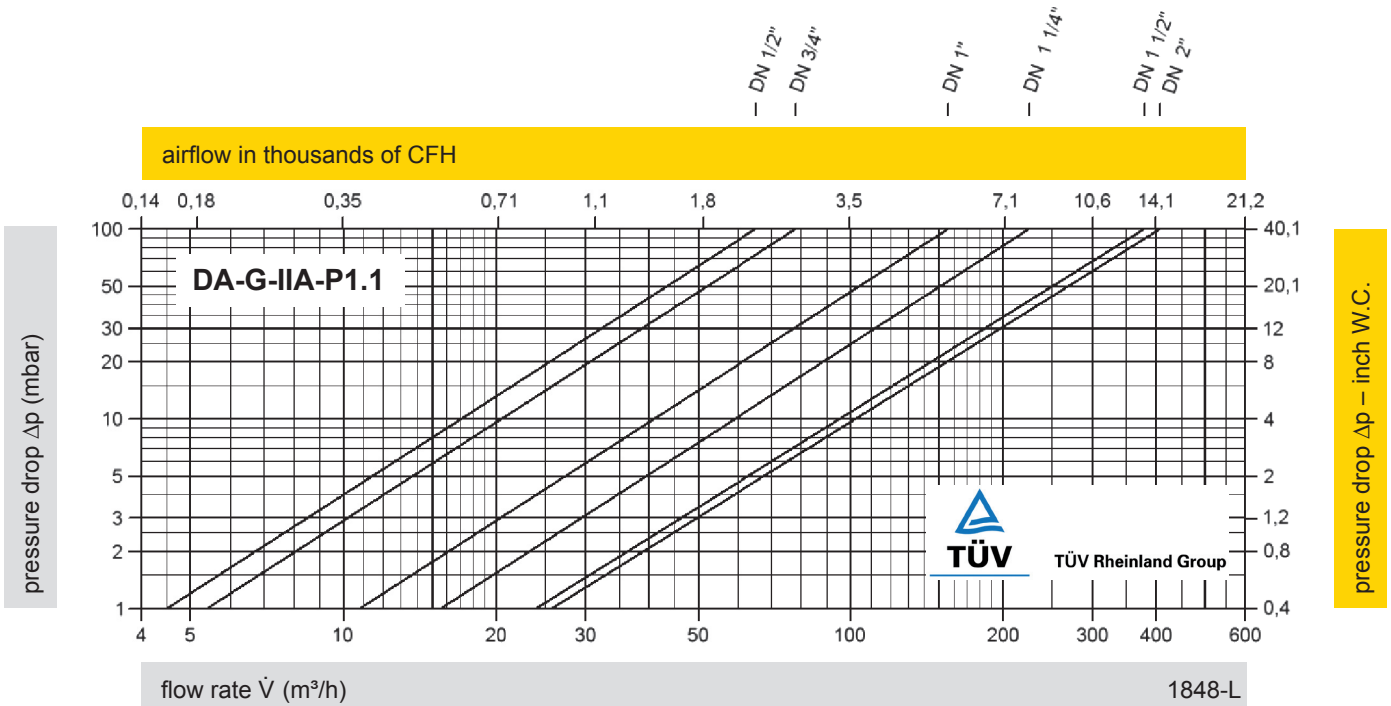
for safety and environment



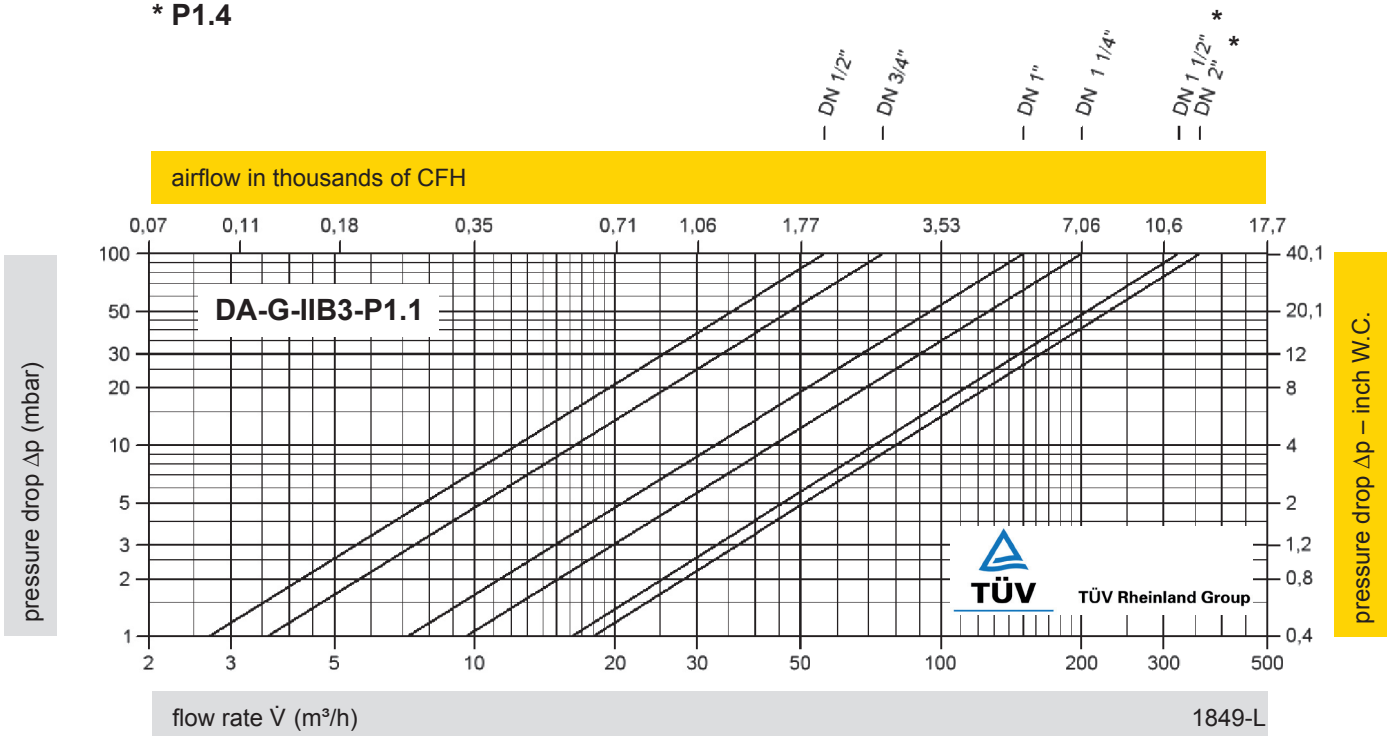
In-Line Detonation Flame Arrester

Flow Capacity Charts

PROTEGO® DA-G



* P1.4



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 ISO 6358 (20°C, 1bar). Conversion to other densities and temperatures refer to Vol. 1: "Technical Fundamentals".

* P1.6

