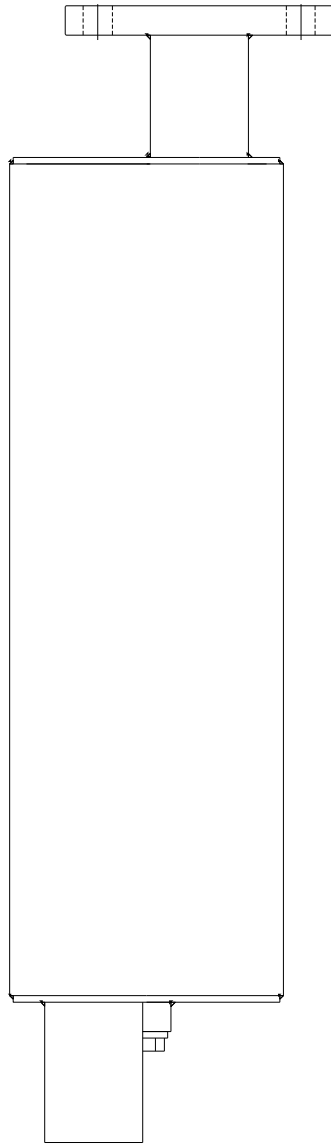


Operating Instruction

End of Line Liquid Product Detonation Flame Arrester 1004-0002



IBExU 09 ATEX 2100 X



G IIB3



1. Preface

These operating instructions apply to end of line liquid product detonation flame arrester 1004–0002 provided the fact that your end of line liquid product detonation flame arrester meet all technical standards described in this document.

Any information required for the assembly, use and maintenance of the protective system may be obtained from these instructions.

Please read the operating instructions on hand carefully to ensure the safe use of this end of line liquid product detonation flame arrester.

All assembly and maintenance work needs to be carried out by qualified staff.

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The operating instructions on hand correspond to the current technical state of End of line liquid product detonation flame arrester 1004-0002. Content subject to change, errors excepted.

In case of dispute, the German text shall prevail.

2. Symbols



Pay attention to accompanying documents!
Important instructions for safe usage!

3. Safety regulations and safety instructions

3.1 Safety regulations

The following regulations and guidelines are to be observed for the use of this protection system:

- EC type examination number IBExU 09 ATEX 2100 X
- EN ISO 16852 Flame arresters
- European Directive 2014/34/EU
- Country-specific safety regulations
- Country-specific provisions for the protection of workers and employees

3.2 Safety instructions

The following instructions are to be observed to guarantee workers' protection and occupational safety:

- Safety regulations in compliance with section 3.1
- Compliance with laws and protective provisions in force at point of application.
Operators and supervising staff are responsible for the fact that these provisions are observed.
- Assembly and maintenance work is to be carried out by qualified staff.

4. Intended application

End of line liquid product detonation flame arrester type 1004-0002 prevents light-back at deflagration and stable detonation of potentially explosive vapor-air, and or gas-air mixtures of explosives group IIA1, IIA, IB1, IIB2 and IIB3 at an absolute working pressure $p_{abs} \leq 1.10$ bar in a pipe that is located upstream of the ignition source presenting with a maximum nominal diameter of DN50 mm.



Warning!

Flame arresters are limited in mounting and use.

Pay attention to the following hints according to EN ISO 16852

| | | | |
|------|--------|---------|---|
| Type | DET4 | | Detonation flame arrester for stable detonation without restriction |
| Lu/D | n/a | | Pipe length not limited |
| BC | c | | Not suitable for stabilized burning |
| EX | G IIB3 | | Explosion group |
| To | 60 | [°C] | Maximum operating temperature |
| po | 1.10 | [bar] | Maximum absolute operating pressure |

4.1 Special requirements for safe use

- Maximum connector's nominal diameter DN : DN50
- Maximum pipe length between source of ignition and protective system : unrestricted
- Fitting position : vertical
- Combustible gases, i.e. combustible fluids that occur during operation have to be listed in explosives groups IIA1, IIA, IIB1, IIB2 or IIB3 with a standard gap (MESG) ≥ 0.65 mm.
- The End of line liquid product detonation flame arrester only works in filling direction, e.g. the connection side has to be the filling side.
- The End of line liquid product detonation flame arrester only works after total filling with the actual used liquid product for storage or transport.
- The End of line liquid product detonation flame arrester is only usable for filling applications. A usage for e. g. siphoning is not permitted.
Sucking off the liquid buffer means losing the flame protective function!
- It is to be ensured that the End of line liquid product detonation flame arrester always remains filled.
- The End of line liquid product detonation flame arrester may only be used, if the materials resist against the mechanical and/or chemical influences under the actual operating conditions, in such a way, that explosion protection is always guaranteed.

5. Technical specifications

(See also figure 1)

Connection : Flange DN50 EN 1092-1 (DIN 2576) PN10(16)

Pressure loss : see fig. 2

6. Assembly

(See fig. 1)

The End of line liquid product detonation flame arrester 1004-0002 is to be fully connected by the flange onto the end of the filling pipe.



- Note requirements of chapter 4.
- Connections are to be sufficiently sealed with media resistant sealing and checked for leakage. (Maximum test pressure $p_e = 12$ bar).
- Vertical mounting position.
- After assembling fill up completely with the liquid which shall be stored or transported.
- Pay attention to professional earthing!
- Due to possible bimetallic corrosion (contact corrosion), we advise against use galvanized steel fittings in connection with stainless steel installations.

7. Maintenance

To keep flow resistance at a constantly low level, the End of line liquid product detonation flame arrester is to be checked for impurities and, if necessary cleaned, in regular intervals.

The impurities could be removed together with the operating liquid by disassembling the locking screw (Pos.6).



Attention!

- The locking screw has to be sealed by a media resistant liquid seal and fully screwed in after servicing.
- After assembly check all connections for leakage!
- The housing should be examined for corrosion which could cause leakage. Leaky end of line liquid product detonation flame arrester has to be exchanged.
- Fill up completely with the liquid which shall be stored or transported after servicing.

After a detonation:

- Examine the end of line liquid product detonation flame arrester for damages which could suspend explosion protection. In case of e. g. leakage which could cause lost of the liquid buffer exchange the end of line liquid product detonation flame arrester.

8. Spare parts

For ordering spare parts please declare:

- Type of product
- Complete serial number
- Spare part no. (Please refer to **fig. 1** for items)

| Item | Product | Spare part no. |
|------|----------------|----------------|
| 6 | Spare part set | 8001-0010 |

9. Technical Consulting

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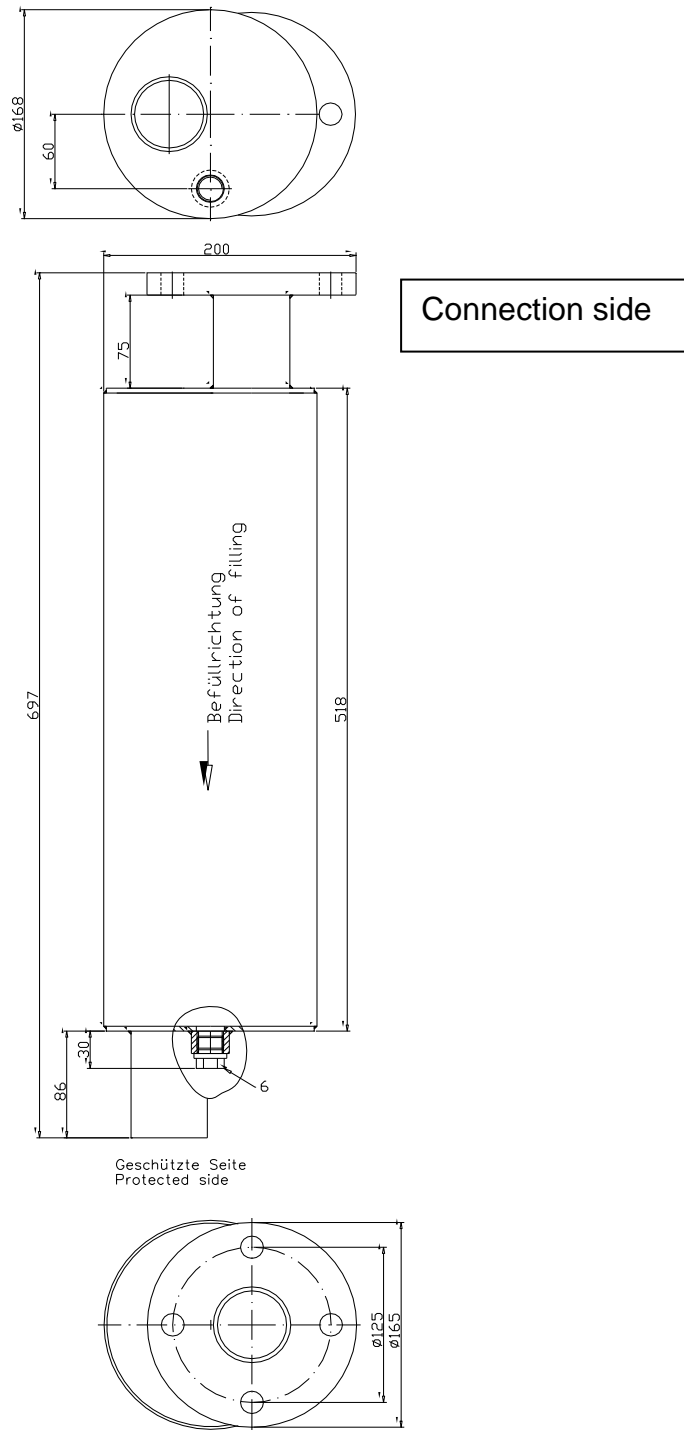


Fig. 1
Construction

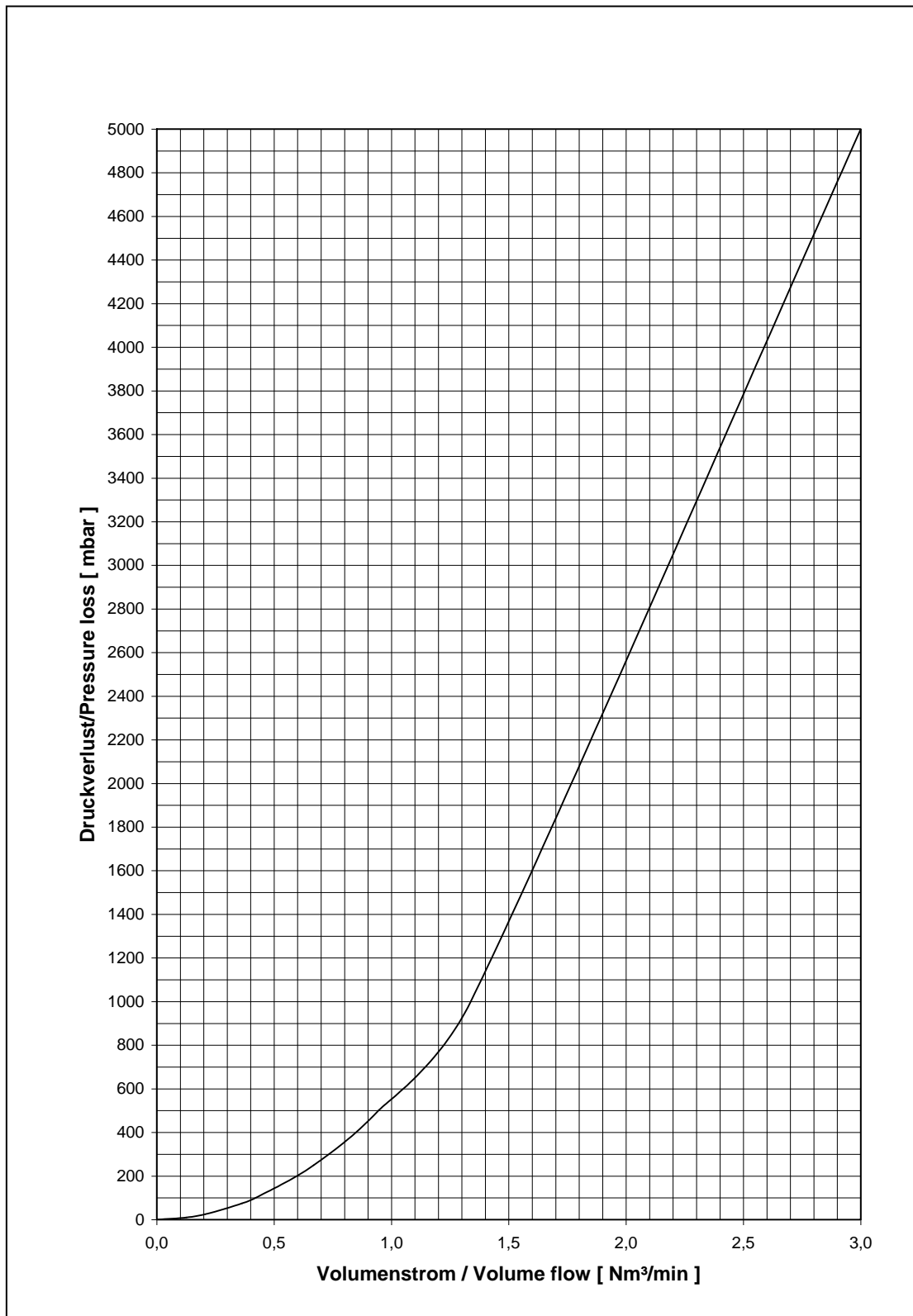
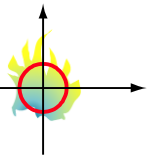


Fig. 2

Pressure loss

Medium : Water, density $\rho = 1000 \text{ kg/m}^3$, $t = 15^\circ\text{C}$