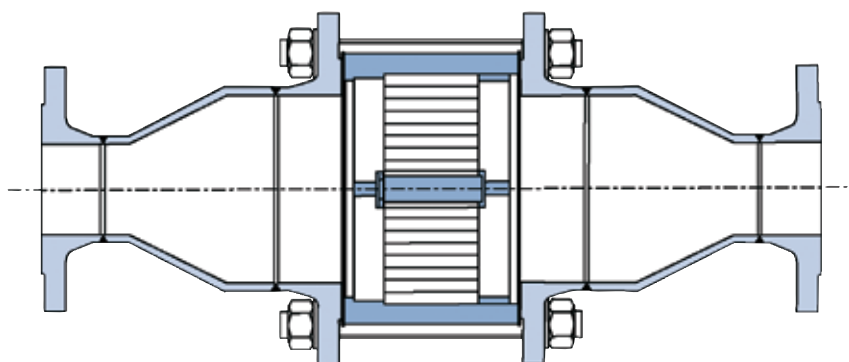


## ANDERSON GREENWOOD AMAL IRDB/IRDBE FLAME ARRESTERS

In-line detonation flame arresters designed to prevent the propagation of supersonic flames



### FEATURES

- Concentric or eccentric model variants available.
- Fabricated construction.
- Replaceable elements.
- Advanced crimped stainless steel element construction as standard. Other materials available.
- Can be positioned anywhere within the pipeline.
- Bi-directional.
- Designed for unstable detonation.
- Independently tested and certified.
- Manufactured to ISO 9001:2008.

### GENERAL APPLICATION

The IRDB/IRDBE are used in applications with supersonic flames and mounted in process or vent lines. They are designed to handle both stable and unstable detonations.

### TECHNICAL DATA

|                    |   |
|--------------------|---|
| Materials:         | Carbon steel, stainless steel           |
| Sizes:             | DN 15 to 600 (½" to 24")                |
| Connections:       | Threaded or flanged                     |
| Temperature range: | -20° to +165°C (-4° to +329°F)          |
| Gas groups:        | IIA, IIB1, IIB2, IIB3, IIB*, IIC*       |
| Certification:     | ATEX Directive 94/9/EC;<br>PED 97/23/EC |

\* Up to and including DN 150 (6")

# ANDERSON GREENWOOD AMAL IRDB/IRDBE FLAME ARRESTERS

## STABLE AND UNSTABLE DETONATION

Detonations can be stable or unstable. A detonation is stable when it progresses through a confined system without significant variations of velocity and pressure characteristics. When a detonation is unstable, the velocity is not constant and the explosion pressure is significantly higher. This occurs in a limited zone during a combustion process from a deflagration into a stable detonation. The IRDB/IRDBE are designed to handle both stable and unstable detonations.

## MATERIALS AND CONNECTION OPTIONS

### Materials

Carbon steel and stainless steel.

### Connection pipe size

Threaded DN 15 to 80 (½" to 3")

Flanged DN 15 to 600 (½" to 24")

## NOTE

Accessories, special materials and connections are available on request.

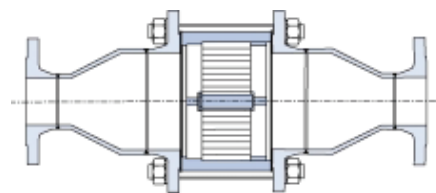
## Gas groups

- IIA<sup>[1]</sup>
- IIB1<sup>[1]</sup>
- IIB2<sup>[1]</sup>
- IIB3<sup>[1]</sup>
- IIB<sup>[2]</sup>
- IIC<sup>[2,3]</sup>

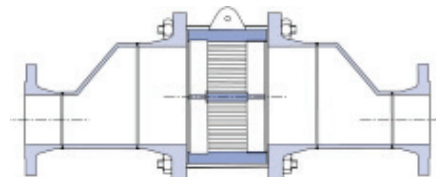
## NOTES

1. Multiple element design on sizes DN 250 (10") and above.
2. Only available up to and including DN 150 (6").
3. Multiple element design on DN 100 to 150 (4" to 6") sizes.

IRDB (DT VERSION)



IRDBE (DT VERSION)



## TEMPERATURE RANGE

| Gas group | Size range | Short burn | Max. temperature | Element              |
|-----------|------------|------------|------------------|----------------------|
| IIA       | DN 12/200  | Yes        | -20 /+60°C       | 1 x 0.6/0.45 mm      |
| IIA       | DN 250/450 | Yes        | -20 /+60°C       | 2 x 0.45 mm          |
| IIA       | DN 12/200  | No         | -20 /+165°C      | 1 x 0.45 mm          |
| IIA       | DN 250/450 | No         | -20 /+165°C      | 2 x 0.45 mm          |
| IIB1/IIB3 | DN 12/150  | Yes        | -20 /+60°C       | 1 x 0.45/0.38 mm     |
| IIB1/IIB3 | DN 200/400 | Yes        | -20 /+60°C       | 2 x 0.45/3 x 0.38 mm |
| IIB1/IIB3 | DN 12/150  | No         | -20 /+165°C      | 1 x 0.38 mm          |
| IIB1/IIB3 | DN 200/400 | No         | -20 /+165°C      | 3 x 0.38 mm          |
| IIB       | DN 12/150  | Yes        | -20 /+60°C       | 1 x 0.3 mm           |
| IIB       | DN 12/100  | No         | -20 /+165°C      | 1 x 0.3 mm           |
| IIC       | DN 12/150  | Yes        | -20 /+60°C       | 1 x 0.15/2 x 0.15 mm |
| IIC       | DN 100     | No         | -20 /+165°C      | 2 x 0.15 mm          |
| IIC       | DN 12/80   | No         | -20 /+165°C      | 1 x 0.15 mm          |

## NOTES

All sizing and selection must be conducted by the factory.  
Standard elements are double the pipe size.

## ANDERSON GREENWOOD AMAL IRDB/IRDBE FLAME ARRESTERS

### SELECTION GUIDE

| Example:                            | IRDB | 50 | DT | 100 | 76 | 45 | S3 | S3 |
|-------------------------------------|------|----|----|-----|----|----|----|----|
| <b>Model</b>                        |      |    |    |     |    |    |    |    |
| <b>IRDB</b>                         |      |    |    |     |    |    |    |    |
| <b>IRDBE</b>                        |      |    |    |     |    |    |    |    |
| <b>Connection diameter, mm (in)</b> |      |    |    |     |    |    |    |    |
| <b>Threaded</b>                     |      |    |    |     |    |    |    |    |
| DN 15 to 80 (½" to 3")              |      |    |    |     |    |    |    |    |
| <b>Flanged</b>                      |      |    |    |     |    |    |    |    |
| DN 15 to 600 (½" to 24")            |      |    |    |     |    |    |    |    |
| <b>Element code</b>                 |      |    |    |     |    |    |    |    |
| <b>DT</b>                           |      |    |    |     |    |    |    |    |
| <b>Element diameter, mm (in)</b>    |      |    |    |     |    |    |    |    |
| DN 25 to 2000 (1" to 80")           |      |    |    |     |    |    |    |    |
| <b>Element width, mm (in)</b>       |      |    |    |     |    |    |    |    |
| <b>76</b> 76 mm (3.0")              |      |    |    |     |    |    |    |    |
| <b>114</b> 114 mm (4.5")            |      |    |    |     |    |    |    |    |
| <b>152</b> 152 mm (6.0")            |      |    |    |     |    |    |    |    |
| <b>190</b> 190 mm (7.5")            |      |    |    |     |    |    |    |    |
| <b>Cell height, mm (in)</b>         |      |    |    |     |    |    |    |    |
| <b>60</b> 0.60 mm (0.024")          |      |    |    |     |    |    |    |    |
| <b>45</b> 0.45 mm (0.018")          |      |    |    |     |    |    |    |    |
| <b>38</b> 0.38 mm (0.015")          |      |    |    |     |    |    |    |    |
| <b>30</b> 0.30 mm (0.012")          |      |    |    |     |    |    |    |    |
| <b>15</b> 0.15 mm (0.006")          |      |    |    |     |    |    |    |    |
| <b>Element material</b>             |      |    |    |     |    |    |    |    |
| <b>S3</b> Stainless steel           |      |    |    |     |    |    |    |    |
| <b>C</b> Carbon steel               |      |    |    |     |    |    |    |    |
| <b>Body material</b>                |      |    |    |     |    |    |    |    |
| <b>S3</b> Stainless steel           |      |    |    |     |    |    |    |    |
| <b>C</b> Carbon steel               |      |    |    |     |    |    |    |    |

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