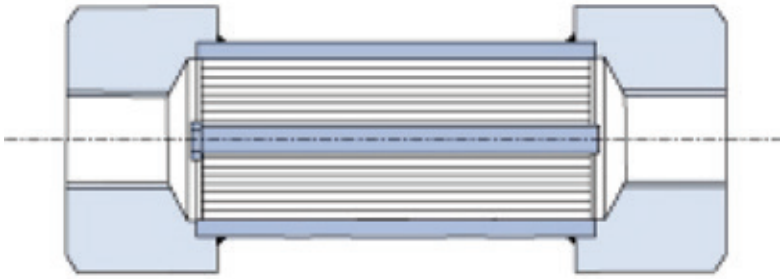
ANDERSON GREENWOOD AMAL LIRD/LIRDE FLAME ARRESTERS

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



FEATURES

- Concentric or eccentric model variants available.
- Fabricated construction.
- 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 LIRD/LIRDE 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 6 to 150 (⅛" to 6")
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; PED 97/23/EC

* Up to and including DN 150 (6")

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 LIRD/LIRDE are designed to handle both stable and unstable detonation.

MATERIALS AND CONNECTION OPTIONS

Materials

Carbon steel and stainless steel.

Connection pipe size

Threaded DN 6 to 40 (⅛" to 1½")
Flanged DN 15 to 150 (½" to 6")

NOTE

Accessories, special materials and connections are available on request.

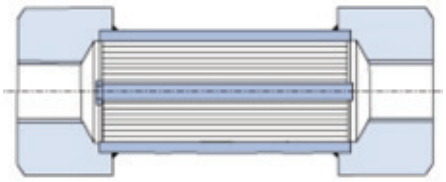
Gas groups

- IIA
- IIB1
- IIB2
- IIB3
- IIB
- IIC[1]

NOTES

1. Multiple element design on DN 100 to 150 (4" to 6") sizes.

LIRD SCREWED (DS VERSION)



TEMPERATURE RANGE

Type	Connection	Gas group	Size range	Short burn	Max. temperature	Element
LIRD/LIRDE	Flanged	IIA	DN 12/150	Yes	-20 /+60°C	1 x 0.6/0.45 mm
LIRD/LIRDE	Flanged	IIB1/IIB3	DN 12/150	Yes	-20 /+60°C	1 x 0.45/0.38 mm
LIRD/LIRDE	Flanged	IIA	DN 12/150	No	-20 /+165°C	1 x 0.45 mm
LIRD/LIRDE	Flanged	IIB1/IIB3	DN 12/150	No	-20 /+165°C	1 x 0.38 mm
LIRD/LIRDE	Flanged	IIB	DN 12/400	Yes	-20 /+60°C	1 x 0.3 mm
LIRD/LIRDE	Flanged	IIC	DN 12/80	Yes	-20 /+60°C	1 x 0.15 mm
LIRD/LIRDE	Flanged	IIB	DN 12/150	No	-20 /+165°C	1 x 0.3 mm
LIRD/LIRDE	Flanged	IIC	DN 12/80	No	-20 /+165°C	1 x 0.15 mm
LIRD	Screwed	IIA	DN 6/40	Yes	-20 /+60°C	1 x 0.6 mm
LIRD	Screwed	IIB1/IIB3	DN 6/40	Yes	-20 /+60°C	1 x 0.45 mm
LIRD	Screwed	IIA	DN 6/40	No	-20 /+165°C	1 x 0.45 mm
LIRD	Screwed	IIB1/IIB3	DN 6/40	No	-20 /+165°C	1 x 0.38 mm
LIRD	Screwed	IIB	DN 6/40	No	-20 /+165°C	1 x 0.3 mm
LIRD	Screwed	IIC	DN 6/40	No	-20 /+165°C	1 x 0.15 mm
LIRD	Flanged	IIA	DN 80 x 100	No	-20 /+60°C	1 x 0.45 mm

NOTES

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

SELECTION GUIDE

Example:	LIRD	50	DR	100	76	45	S3	S3
Model								
LIRD								
LIRDE								
Connection diameter, mm (in)								
Threaded								
DN 6 to 40 (⅛" to 1½") - LIRD with DS element only								
Flanged								
DN 15 to 150 (½" to 6")								
Element code								
DS LIRD only								
DR								
Element diameter, mm (in)								
DN 25 to 50 (1" to 2") - LIRD with DS element only								
DN 40 to 300 (1½" to 12")								
Element width, mm (in)								
76 76 mm (3.0")								
114 114 mm (4.5")								
152 152 mm (6.0")								
190 190 mm (7.5")								
Cell height, mm (in)								
60 0.60 mm (0.024")								
45 0.45 mm (0.018")								
38 0.38 mm (0.015")								
30 0.30 mm (0.012")								
15 0.15 mm (0.006")								
Element material								
S3 Stainless steel								
C Carbon steel								
Body material								
S3 Stainless steel								
C Carbon steel								