

# ESA Series

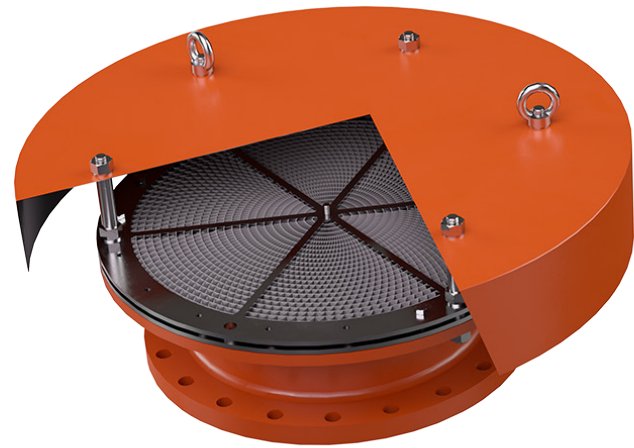
## End-of-line Arresters



Protecting People, Property and our Planet.

### With Replaceable Element for High Temperature and Short-time Burn

Elmac Technologies® ESA Series end-of-line Deflagration Arresters are designed to be installed at the end of a pipeline or exit vent from a vessel, where the ignition source is external, to provide protection against atmospheric deflagration and short time burn events.



### Principle of operation

In the event that a flame stabilises on the arrester element, the sudden increase in temperature would be detected by a control/monitoring system and secondary protection measures implemented (inerting, shut-off valves etc). For a deflagration with no stabilised flame, the combustion products are cooled at the element surface by heat dissipation, preventing continuation of the combustion process through the arrester and into the protected vent line.

### Features and Benefits

The ESA Series incorporates Elmac's E-Flow™ crimped ribbon technology in the flame arresting element, the metal matrix of which has been optimised using Computational Fluid Dynamics to ensure industry leading flow and pressure drop characteristics.

### Gas Groups

Elmac ESA Series End-of-line Arresters are ATEX approved for gases in Explosion Groups IIA1 and IIA.

### Elmac Expertise

Elmac have been manufacturing protection equipment since 1948 and bring enhanced levels of flame and explosion protection to a diverse range of applications.

Elmac offers considerable technical leadership and, using test facilities along with Computational Fluid Dynamics capabilities, employs research teams renowned for developing solutions for the most challenging of industrial applications.

### Elmac Expertise

ESA Flame Arresters have been type-tested to EN ISO 16852 and approved according to ATEX Directive 94/9/EC.

Actual device performance is verified in the Elmac Technologies state of the art in-house test facility.



### Features and benefits

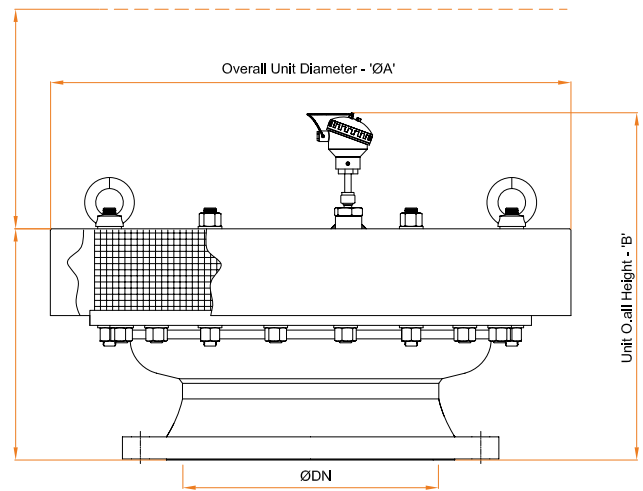
- Short-time burn rated for early warning of stabilised burning event
- Extended upper operating temperature limit
- Exceptional flow capacities with minimal pressure drop
- Easy-clean, replaceable, crimped-ribbon elements
- Unique element design is less susceptible to fouling/clogging
- Sizes and materials to suit a wide range of applications
- End connections include flanged or threaded options
- Light-weight for ease of installation

## High Temperature, End-of-line Flame Arrester with Short-time Burn Capability

### General Arrangements:

Minimum O.head Clearance 'C'  
Required for removal of  
The Temperature Sensor

Flange Raised Face  
to Weatherhood - 'D'



### Dimensions

NB (mm)	15	20	25	32	40	50	65	80	100
ØA ±5.0 (mm)	245	245	245	245	245	245	300	300	360
B max (mm)	390	395	395	395	400	390	425	425	440
C min (mm)	270	270	270	270	270	270	270	270	270
D ±5.0 (mm)	192	197	199	200	205	195	230	230	246

NB (mm)	125	150	200	250	300	350	400	450	500	600
ØA ±5.0 (mm)	420	500	500	600	660	790	870	950	1030	1200
B max (mm)	475	520	520	690	725	540	545	585	600	655
C min (mm)	270	290	290	290	290	290	290	340	340	380
D ±5.0 (mm)	279	325	325	492	528	342	350	390	403	461
Approx Wt (kg)	26.8	41.5	46.3	79.9	103.5	114.2	135.2	157.6	182.3	230.3

\*Some arresters are available with differently sized elements for enhanced flow capabilities. Please contact Customer Support for details.

### Variations

Feature	Standard Fitting	Options*
Arrester Materials	Carbon or Stainless Steel	Low Temperature Carbon Steel, Duplex Steel, Hastelloy
Element Material	316L Stainless Steel	Hastelloy
Connections	ANSI 150 Flange	PN16 Flange, Female BSP/NPT, Male BSP/NPT
Arrester Finish	Painted (Carbon Steel Arresters)	Offshore Paint, PTFE Coated, Others on Request
Bird Screen	316 Stainless Steel	304 Stainless Steel, PTFE Coated

\*May be limited according to arrester size

### Operating conditions

ESA Flame Arresters are equipped with a sensor allowing continuous monitoring of the element's surface temperature. As such they provide short time burn protection for up to 2 minutes, however any secondary protection measure must be implemented within 60 seconds of detection of a short time burn event.

### ESA flow curves

Pressure drop performance varies according to a particular arrester configuration. Further information is available on request from the Elmac Customer Support team.

### Customer Support

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All specifications are correct at time of print, are for guidance purposes only and subject to change without prior notice.



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