

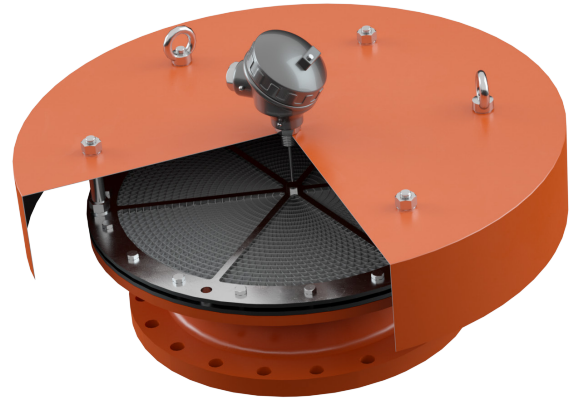
ESA Series

End-of-Line Deflagration Flame Arresters



With Replaceable Element for High Temperature and Short-Time Burn Applications in NEC Explosion Gas Group D

The Protectoseal ESA Series offers the highest level of protection against atmospheric deflagration when the ignition source is external to the piping system.



Principle of Operation

In the event that a flame stabilizes on the element of the ESA Series, a control/monitoring system detects the sudden increase in temperature and implements secondary protection measures (inerting and shut-off valves).

During deflagration, heat dissipation cools the combustion products at the element surface, preventing the fire from spreading past the ESA and into the protected vent line.

Operating Conditions

The Protectoseal ESA Series is ATEX-approved for a maximum operating temperature of **302°F** or **150°C**.

Explosion Gas Groups

The Protectoseal ESA Series is certified for gases in **NEC Group D** and **IEC Group IIA**.

Standards Compliance

Protectoseal's ESA Series of End-of-line Deflagration Flame Arresters has been type-tested to **EN ISO 16852** and approved according to **ATEX Directive 2014/34/EU**.

Each ESA that passes through Protectoseal's facilities undergoes a rigorous inspection and verification of its safety and performance features.

Protectoseal Expertise

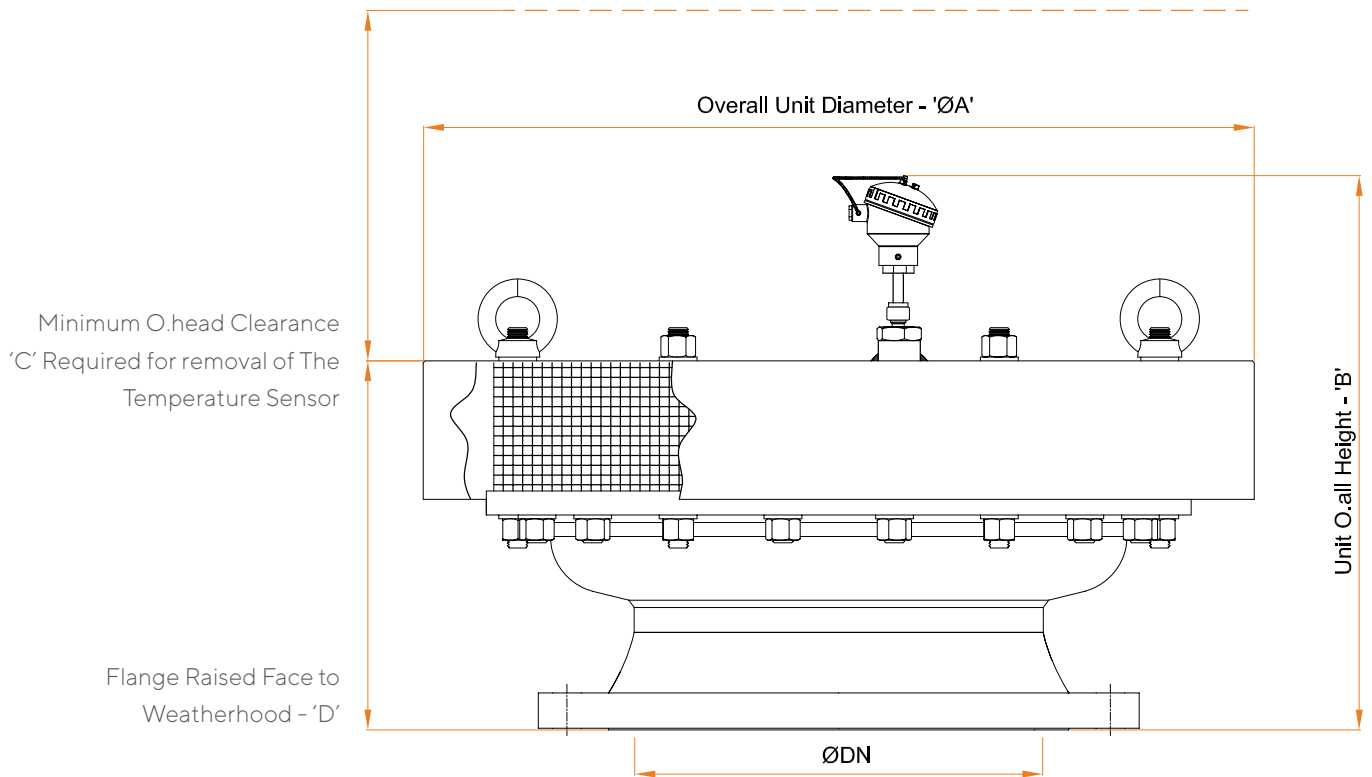
Protectoseal offers industry leading technical leadership with its renowned flame and explosion protection for the most diverse and challenging of industrial applications. By utilizing a range of testing facilities, advanced algorithms and computational fluid dynamics (CFD), our research and development team is constantly looking for new ways to challenge the status quo, thus providing best-in-class innovation.

With over 95 years in the business, we have an established sales and service team to support clients with their initial specifications and throughout the product's life cycle.

Features and Benefits

- Short-time burn rating for early detection of a stabilized flame
- Extended maximum operating temperature limit
- Outstanding flow capacity with minimal pressure drop
- Sizes and materials to accommodate a vast array of applications
- Elements feature replaceable, easy-to-clean crimped-ribbon
- Unique element design is less prone to fouling and clogging
- Options for end connections include flanged or threaded
- Lightweight for installation convenience

General Arrangements:



Selection Key

Positions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Example	E	S	A	-	0	5	0	A	T	-	1	0	0	T	S	-	E	1	.	0	0	-	S	/	0	0	0	W	0
Table	a	b	c	-	d			e	f	-	g			h	j	-	k	l			-	m	/	n	o	p	q	r	
Model No.	E	S	A	-				A		-	X	X	X		S	-	E	1	.	0	0	-	S	/	0		0	W	0

Standard Options		
a	Flame Arrester Type	End-of-Line Deflagration
b	Model Variation	Short-Time Burn
c	Gas Group	D, IIA
d	Size	Refer to Table 1
e	Pipe Connection Type	ANSI 150lb. RF
f	Flame Arrester Housing Material	Refer to Table 2
g	Element Size	XXX <i>(Place Holder - your local Protectoseal representative will fill out this section for you)</i>
h	Element Housing Material	Refer to Table 3
j	Element Core Material	316/316L Stainless Steel
k	Temp Rating	Max Elevated Temperature (302°F, 150°C)
l	Operating Pressure Rating	Atmospheric Pressure (14.7 psia, 1.01 bara)
m	Endurance Burn Capability	Factory Reserved <i>(Refer to EVA, EVB & EHB Series for endurance burn Flame Arresters)</i>

Non-Standard Options		
n	Body Modification	Standard - No Alterations
o	Finish/Paint	Refer to Table 4
p	Gasket/Seal	PTFE
q	Fasteners	316 Stainless Steel
r	Ports/Taps	Standard - No Ports/Taps

Table 1: Sizes

d	Size	ØA	Max B	Min C	D	f	h
015	1/2", 0.5", 15mm	9.65", 245mm	15.35", 390mm	10.63", 270mm	7.56", 192mm	C or S	D or T
020	3/4", 0.75", 20mm	9.65", 245mm	15.55", 395mm	10.63", 270mm	7.76", 197mm	C or S	D or T
025	1", 25mm	9.65", 245mm	15.55", 395mm	10.63", 270mm	7.83", 199mm	D or T	D or T
040	1.5", 40mm	9.65", 245mm	15.75", 400mm	10.63", 270mm	8.07", 205mm	D or T	D or T
050	2", 50mm	9.65", 245mm	15.35", 390mm	10.63", 270mm	7.68", 195mm	D or T	D or T
080	3", 80mm	11.81", 300mm	16.73", 425mm	10.63", 270mm	9.06", 230mm	D or T	D or T
100	4", 100mm	14.17", 360mm	17.32", 440mm	10.63", 270mm	9.69", 246mm	D or T	D or T
150	6", 150mm	19.69", 500mm	20.47", 520mm	11.42", 290mm	12.80", 325mm	D or T	D or T
200	8", 200mm	19.69", 500mm	20.47", 520mm	11.42", 290mm	12.80", 325mm	C or S	D or T
250	10", 250mm	23.62", 600mm	27.17", 690mm	11.42", 290mm	19.37", 492mm	C or S	C or S
300	12", 300mm	25.98", 660mm	28.54", 725mm	11.42", 290mm	20.79", 528mm	C or S	C or S
350	14", 350mm	31.10", 790mm	21.26", 540mm	11.42", 290mm	13.46", 342mm	C or S	C or S
400	16", 400mm	33.07", 870mm	21.46", 545mm	11.42", 290mm	13.78", 350mm	C or S	C or S
450	18", 450mm	37.40", 950mm	23.03", 585mm	13.39", 340mm	15.35", 390mm	C or S	C or S
500	20", 500mm	40.55", 1030mm	23.62", 600mm	13.39", 340mm	15.87", 403mm	C or S	C or S
600	24", 600mm	47.24", 1200mm	25.79", 655mm	13.39", 340mm	18.15", 461mm	C or S	C or S

Note: Some arresters are available with differently sized elements for enhanced flow capabilities.

Table 2: Flame Arrester Housing Materials

f	Flame Arrester Housing (Body) Material	o
C	Fabricated Carbon Steel	O
D	Cast Carbon Steel	O
S	Fabricated 316/316L Stainless Steel	F
T	Cast 316 Stainless Steel	F

Table 3: Element Housing Materials

h	Element Housing (Body) Material
C	Fabricated Carbon Steel
D	Cast Carbon Steel
S	Fabricated 316/316L Stainless Steel
T	Cast 316 Stainless Steel

Table 4: Finish/Paint

o	Finish/Paint
O	Primer & Top Coat Orange
F	Natural, Unpainted

Customer Support

Tel: 1.630.595.0800
Email: info@protectoseal.com
Fax: 1.630.595.8059
225 Foster Avenue Bensenville, IL 60106 U.S.A

