

UEA Series

In-Line Detonation Flame Arresters



With Eccentric Body and Replaceable Element for NEC Explosion Gas Group D

The Protectoseal UEA Series prevents the spread of gas or vapor explosions in pipelines, when a horizontal installation is required or when the pipe system is very close to other objects or a wall and an eccentric design is a better fit. It does it under the harshest conditions, including unstable detonation, stable detonation and deflagration. It's eccentric housing design avoids condensation build up in and around the element, ensuring maximum life and optimal performance.



Principle of Operation

The UEA Series combines Protectoseal's HEDS® (High Energy Dissipation System) and E-Flow® (Enhanced Crimped Ribbon Technology) to mitigate the effects of an explosion by preventing its spread.

The UEA Series utilises a crimped ribbon element that allows gas or vapor to pass through with minimal pressure loss.

The UEA Series conforms to Protectoseal's long-term strategy for the protection of both plant and personnel, while maintaining market-leading flow versus pressure drop performance.

Operating Conditions

The Protectoseal UEA Series is ATEX-approved for a maximum operating temperature of **140°F** or **60°C**.

Explosion Gas Groups

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

Standards Compliance

Protectoseal's UEA Series of In-Line Detonation Flame Arresters has been type-tested to **EN ISO 16852** and approved according to **ATEX Directive 2014/34/EU**.

Each UEA 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

- Outstanding flow capacity with minimal pressure drop
- Prevents condensation buildup for horizontal installations
- Short-time burn capabilities
- Bi-directional protection
- Elements feature replaceable, easy-to-clean crimped-ribbon
- Superior performance reduces ongoing expenses
- Unique element design is less prone to fouling and clogging
- No placement restrictions or additional protection required
- Sizes and materials to accommodate a vast array of applications
- Options for end connections include flanged or threaded
- Lightweight for installation convenience

Lightweight element design

By removing the fasteners that hold the element between the internal flanges, the element housing can be quickly disassembled.

Labelled element banks*

To ensure proper realignment after cleaning, each element is clearly labelled with its housing position.

Separate elements for complete access

Once the element housing has been disengaged, the central bolt (not shown) can be removed to facilitate the cleaning of individual element banks.

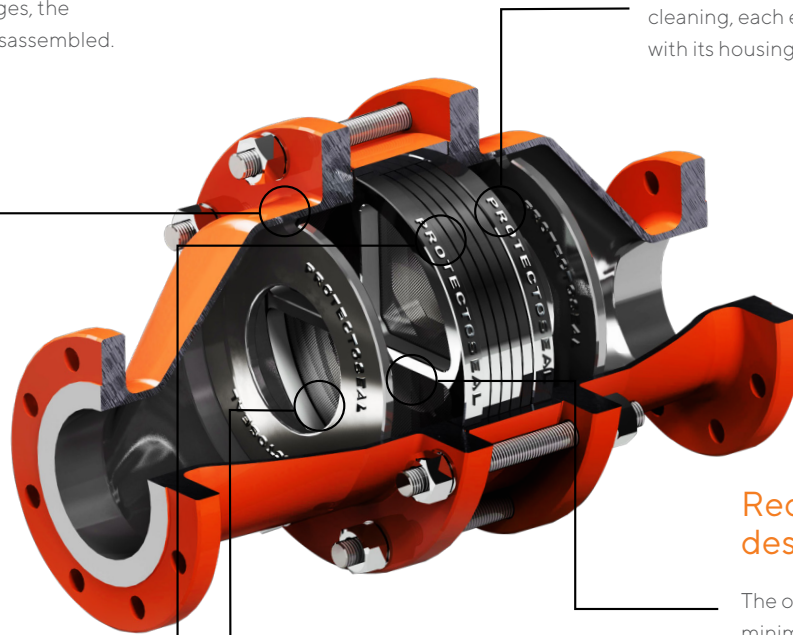
Reduced fouling design

The optimized element banks minimize flow resistance, reduce fouling and clogging, and permit condensate drainage.

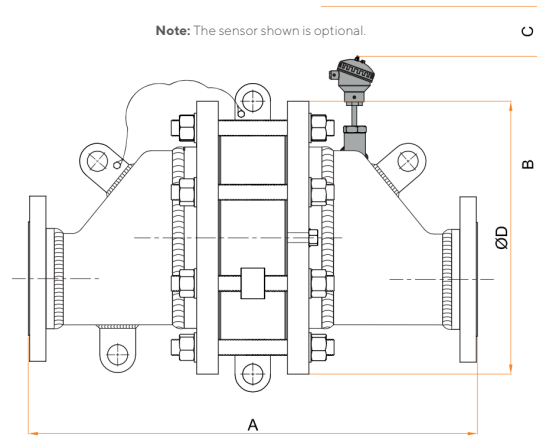
HEDS® (High Energy Dissipation System)

Protectoseal's innovative HEDS® technology functions as both a shock-attenuation system and an energy baffle, extending the UEA Series' ability to contain an explosion and enhancing the arrester's effectiveness. Additionally, the design protects the element from debris, thereby extending the maintenance interval.

* When removing, cleaning, and replacing element banks, it is vital that the installation, operation, and maintenance instructions (IOMs) provided by the manufacturer are strictly adhered to.



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	U	E	A	-	0	5	0	A	T	-	1	0	0	T	S	-	N	1	.	2	0	-	N	/	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.	U	E	A	-				A		-	X	X	X		S	-	N	1	.			-		/	0		0		0

Standard Options		
a	Flame Arrester Type	Unstable In-Line Detonation
b	Model Variation	Eccentric
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	Standard (140°F, 60°C)
l	Operating Pressure Rating	Refer to Table 5
m	Short-Time Burn Capability	Refer to Table 6

Non-Standard Options		
n	Body Modification	Standard - No Alterations
o	Finish/Paint	Refer to Table 7
p	Gasket/Seal	CNAF
q	Fasteners	Refer to Table 8
r	Ports/Taps	Standard - No Ports/Taps

Table 1: Sizes

d	Size	Max Operating Pressure	Max Operating Temperature	Overall Length A	ØD	B (Short-Time Burn Models)	Min C	f	h	Approx Weight
025	1", 25 mm	17.4psia, 1.20bara	140°F, 60°C	17.76", 451mm	9.02", 229mm	12.40", 315mm	2.95", 75mm	C or S	D or T	55lbs, 25kg
040	1.5", 40 mm	17.4psia, 1.20bara	140°F, 60°C	17.76", 451mm	9.02", 229mm	12.40", 315mm	2.95", 75mm	C or S	D or T	55lbs, 25kg
050	2", 50 mm	17.4psia, 1.20bara	140°F, 60°C	17.76", 451mm	9.02", 229mm	12.40", 315mm	2.95", 75mm	C or S	D or T	55lbs, 25kg
080	3", 80 mm	17.4psia, 1.20bara	140°F, 60°C	22.87", 581mm	10.98", 279mm	13.98", 355mm	2.95", 75mm	C or S	D or T	119lbs, 54kg
100	4", 100 mm	17.4psia, 1.20bara	140°F, 60°C	25.16", 639mm	13.50", 343mm	15.35", 390mm	2.95", 75mm	C or S	D or T	181lbs, 82kg
150	6", 150 mm	16psia, 1.10bara	140°F, 60°C	25.24", 641mm	19.02", 483mm	17.91", 455mm	3.78", 96mm	C or S	D or T	335lbs, 152kg
200	8", 200 mm	16psia, 1.10bara	140°F, 60°C	29.49", 749mm	23.50", 597mm	20.08", 510mm	3.78", 96mm	C or S	C or S	602lbs, 273kg
250	10", 250 mm	16psia, 1.10bara	140°F, 60°C	35.47", 901mm	27.48", 698mm	23.03", 585mm	7.28", 185mm	C or S	C or S	959lbs, 435kg
300	12", 300 mm	17.4psia, 1.20bara	140°F, 60°C	40.75", 1035mm	32.01", 813mm	26.18", 665mm	7.28", 185mm	C or S	C or S	1398lbs, 634kg
350	14", 350 mm	16psia, 1.10bara	140°F, 60°C	53.35", 1355mm	36.50", 927mm	28.15", 715mm	7.28", 185mm	C or S	C or S	2130lbs, 966kg
400	16", 400 mm	16psia, 1.10bara	140°F, 60°C	55.35", 1406mm	41.73", 1060mm	31.80", 810mm	7.28", 185mm	C or S	C or S	2956lbs, 1341kg

Note: Alternative flange configuration options available on request. The weights are expressed in standard units (short time burn, high temperature and high pressure variants may vary).

Table 2: Flame Arrester Housing Materials

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

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: Operating Pressure Rating

l	Operating Pressure Rating
1.10	16 psia , 1.10 bara
1.20	17.4 psia, 1.20 bara

Table 5: Short-Time Burn Capability

m	Short-Time Burn Capability
N	No Capability
S	Short-Time Burn Single Sensor
T	Short Time Burn Double Sensor (Bi-directional)

Table 6: Finish/Paint

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

Table 7: Fasteners

q	Fasteners
C	Zinc Plated Steel
W	316 Stainless Steel

Customer Support

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