



Detonation Flame Arrestor

The Enardo Detonation Flame Arrestor represents the best value in flame arrestor protection. They prevent flame propagation by absorbing and dissipating heat using spiral wound crimped ribbon flame cells. These cells allow maximum flow with maximum protection. They provide protection against flame propagation in piping systems that are manifolded or have long run-up distances. Enardo utilizes a patented (US Patent No. 5415233) element assembly that dampens the high velocities and pressures associated with deflagrations and detonations while quenching the flame front. Our design is unique in the ability to provide larger flame channels which requires less frequent maintenance and greater ease in cleaning when service is required, translating to less down time. Our patented element offers maximum flow to pressure drop characteristics enhancing the value of our product in any system.

They are typically used for extended pipe length or multiple pipe bend configurations to stop high pressures and flame velocities associated with detonations and overdriven detonations. In addition, it stops confined and unconfined, low and high pressure deflagrations. All Enardo units are bi-directional and are proven to stop an ignited flammable vapor mixture approaching from either direction that can be traveling at subsonic or supersonic velocities.



Designed with flanged connections, this Arrestor provides the option of the removal of the flame cell element for easy cleaning and replacement without disconnecting of the pipe connection. Standard housing construction is carbon steel and stainless steel. The element is available in 304 S.S and 316 S.S. Special material and protective coatings are available on request.

U.S. Coast Guard Approved 2" (50mm) - 20" (500mm) IIA (D) and IIB3 (C) Concentric and Eccentric design.

ATEX (EN 12874 Approved) 2" (50mm) - 20" (500mm) IIA and IIB3 Concentric and Eccentric design.

Features and Benefits

- All Enardo Detonation Flame Arrestors **are designed for unstable detonations.**
- Removable Element design allows for easy inspection, cleaning and replacement.
- Fluoropolymer coated hardware provides outstanding corrosion and chemical resistance.
- Standard temperature probe on EN models.

Enardo's large crimp opening provide:

- Maximum flow
- Less Pressure Drop
- Easy Cleaning
- Less Clogging
- Less Maintenance
- Bi-directional Design
- Available in ANSI, DIN and JIS flanges.

Flame Arrestor Specifications

Model	Sizes Available
Detonation Flame Arrestor (DFA) ATEX (EN 12874 Approved) U.S. Coast Guard Approved	1/2" (13 mm) through 36" (900 mm) 2" (50 mm) through 20" (500 mm) 2" (50 mm) through 20" (500 mm)

Materials of Construction

Housing	Cell	Gas Group
Carbon Steel 304 SS 316 SS Hastelloy	304 SS 316 SS Hastelloy	IIA (D) IIB3 (C) IIC (B)



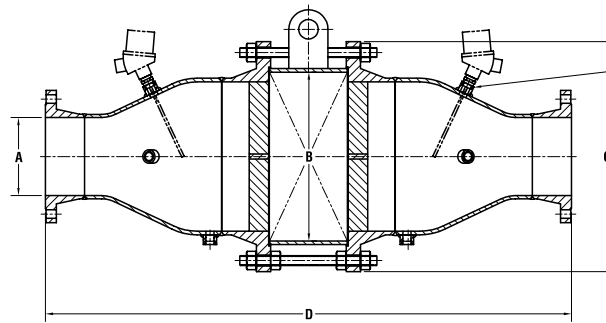
ENARDO

Flame Arrestors

Detonation Flame Arrestor

ATEX Certified Model

see following page for additional ATEX certified models



One thermocouple required
Second thermocouple optional
(Bi-directional design)



EN Model Detonation Flame Arrestor Dimensions

Model	A Nominal Conn. Size In. (mm)	B Housing Size In. (mm)	C Outside Diameter In. (mm)	D Overall Length In. (mm)		Approx. Weight Lb. (Kg) Group IIA Models
				Gas Group IIA	Gas Group IIB3	
EN DFA 402	2 (50)	4 (101)	7.5 (188)	25.3 (644)	23.3 (593)	80 (36)
EN DFA 602	2 (50)	6.6 (168)	10 (250)	29.8 (758)	27.8 (707)	118 (54)
EN DFA 603	3 (75)	6.6 (168)	10 (250)	30.3 (771)	28.3 (720)	125 (57)
EN DFA 803	3 (75)	10 (254)	13.5 (338)	33.3 (847)	31.3 (796)	206 (94)
EN DFA 804	4 (100)	10 (254)	13.5 (338)	33.8 (859)	31.8 (809)	215 (98)
EN DFA 1204	4 (100)	14 (356)	19 (475)	38.8 (986)	36.8 (936)	452 (205)
EN DFA 1206	6 (150)	14 (356)	19 (475)	39.8 (1012)	37.8 (961)	468 (212)
EN DFA 1606	6 (150)	18 (457)	23.5 (588)	52.8 (1342)	50.8 (1291)	874 (396)
EN DFA 1608	8 (200)	18 (457)	23.5 (588)	53.8 (1367)	51.8 (1317)	910 (413)
EN DFA 2008	8 (200)	22 (559)	27.5 (688)	67.2 (1707)	65.2 (1656)	1294 (587)
EN DFA 2010	10 (250)	22 (559)	27.5 (688)	67.2 (1707)	65.2 (1656)	1320 (599)
EN DFA 2410	10 (250)	26 (660)	32 (800)	67.8 (1723)	65.8 (1672)	1740 (789)
EN DFA 2412	12 (300)	26 (660)	32 (800)	68.8 (1748)	66.8 (1698)	1800 (817)

Dimensions may vary somewhat from those given above. Allow for a tolerance of $\pm 1.00"$ (25 mm). Specific dimensions available on request.

Key to Enardo EN Model Detonation Flame Arrestor (DFA) Model Number

EN	DFA	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	/	<input type="text"/>	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	-	<input type="text"/>	2	<input type="text"/>
	Detonation Flame Arrestor (Concentric)	Housing Size		Connection Size			IEC Gas Group		Housing Material	Cell Material	Connection Type		Options		
	DFAE if Eccentric	04 = 4" through 24 = 24"	02 = 2" through 12 = 12"				IIC (B) IIB3 (C) IIA (D)		C. Carbon Steel 4. 304 S.S. 6. 316 S.S. H. Hastelloy E. Exotic Material	4. 304 S.S. 6. 316 S.S. H. Hastelloy E. Exotic Material	F. Flat Faced Flange R. Raised Face Flange		1. Drain Plugs 2. Temp. Probe (Std.) 3. Pressure Taps 4. Misc. Fittings 5. Protective Coatings 6. Special Features		

Example:

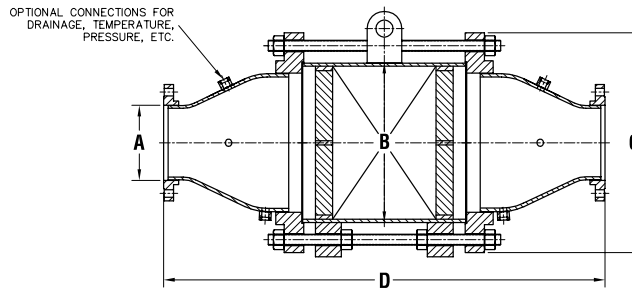
EN **DFA** / **IIA** - **R** -

Indicates a 6" Concentric Detonation Flame Arrestor with a 12" carbon steel housing, ANSI 150 lb. raised faced flange connection and a 304 stainless steel IEC Group "IIA" flame cell element. It also has options of drain plugs, pressure taps and standard temperature probe.

Detonation Flame Arrestor Standard and ATEX/US Coast Guard Certified Model*

ENARDO

Flame Arrestors



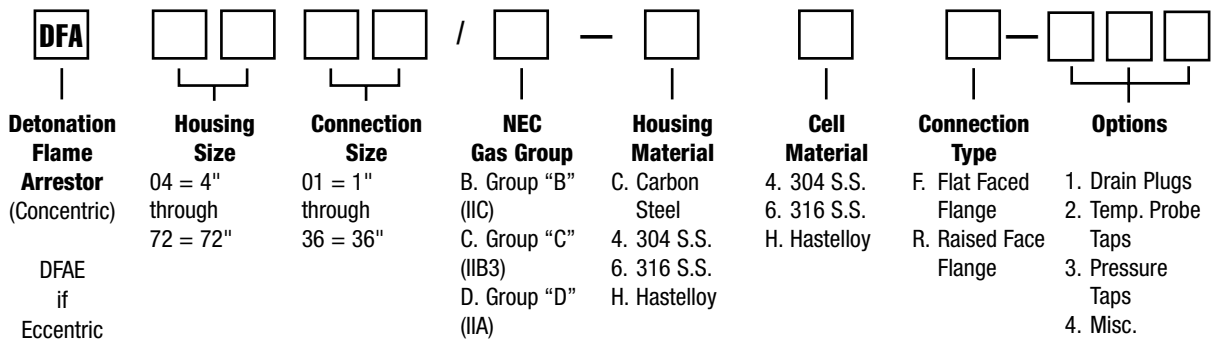
Standard Model Detonation Flame Arrestor Dimensions

Model	A Nominal Conn. Size In. (mm)	B Housing Size In. (mm)	C Outside Diameter In. (mm)	D Overall Length In. (mm)		Approx. Weight Lb. (Kg) Group D Models
				Gas Group B/C	Gas Group D	
DFA-401	1 (25)	4 (100)	9.00 (229)	25.00 (635)	21.00 (533)	90 (40.8)
DFA-602	2 (50)	6 (150)	11.00 (279)	28.00 (711)	24.00 (610)	175 (79.4)
DFA-803	3 (75)	8 (200)	13.50 (343)	30.00 (762)	26.00 (660)	220 (99.8)
DFA-1004	4 (100)	10 (250)	16.00 (406)	32.00 (813)		400 (181.4)
DFA-1206	6 (150)	12 (300)	19.00 (483)	36.00 (914)		500 (226.8)
DFA-1608	8 (200)	16 (400)	25.50 (648)	51.25 (1302)		1360 (616.9)
DFA-2010	10 (250)	200 (50)	30.50 (775)	62.75 (1594)		1945 (882.2)
DFA-2412	2 (300)	24 (600)	36.00 (914)	64.50 (1638)		3000 (1360.8)
DFA-2814	14 (350)	28 (700)	40.75 (1035)	70.00 (1778)		3400 (1542.2)
DFA-3016	16 (400)	30 (750)	43.00 (1092)	79.00 (2007)		3800 (1723.7)
DFA-3418	18 (450)	34 (850)	47.50 (1207)	89.00 (2261)		4800 (2177.2)
DFA-3620	20 (500)	36 (900)	50.00 (1270)	89.00 (2261)		5600 (2540.1)
DFA-4824	24 (600)	48 (1200)	59.50 (1511)	101.00 (2565)		8700 (3946.3)

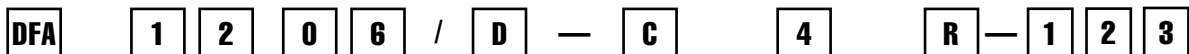
Dimensions may vary somewhat from those given above. Allow for a tolerance of ± 1.00 " (25 mm). Specific dimensions available on request.

*Not all models are available with USCG and ATEX certifications. Consult Flame Arrestor Certifications Chart for more information.

Key to Enardo USCG/Standard Model Detonation Flame Arrestor (DFA) Model Number



Example:



Indicates a 6" Concentric Detonation Flame Arrestor with a 12" carbon steel housing, ANSI 150 lb. raised faced flange connection and a 304 stainless steel NEC Group "D" flame cell element. It also has options of drain plugs, pressure taps and temperature probe connections.