



ISO Registered Company

TECHNICAL BULLETIN



Model 7A00

Detonation Flame Arrestor

OBJECTIVE

The Model 7A00 detonation flame arrestor is a device that can be fitted to the opening of an enclosure or to the connecting pipe work of a system of enclosures. Its primary function is to allow the flow of gases or vapor of flammable liquids through the enclosure, but prevent the transmission of a flame. The element inside the housing provides an extinguishing barrier to the ignited vapor mixture by absorbing heat from the flame. The Model 7A00 is used as an independent safety system to ensure explosion protection.

TECHNIQUE

7A00 flame arrestors are designed on the principle of "quenching gap". The crimped SST metal element allows vapor to pass through in order to allow a vessel to breathe, yet prevents the propagation of a flame from the exposed side to the protected side.

CONSTRUCTION

Housing Material: Carbon Steel, Stainless Steel.

Trim Material: Stainless Steel (1.4571) element. Standard element is suitable for explosion group IIA, IIB3 and IIC flammable gases and vapors. Elements for other gas groups are available upon request.

SPECIAL FEATURES

The Model 7A00 is designed, manufactured, and tested according to Directive 2014/34/EU (ATEX114) and ISO 16852.

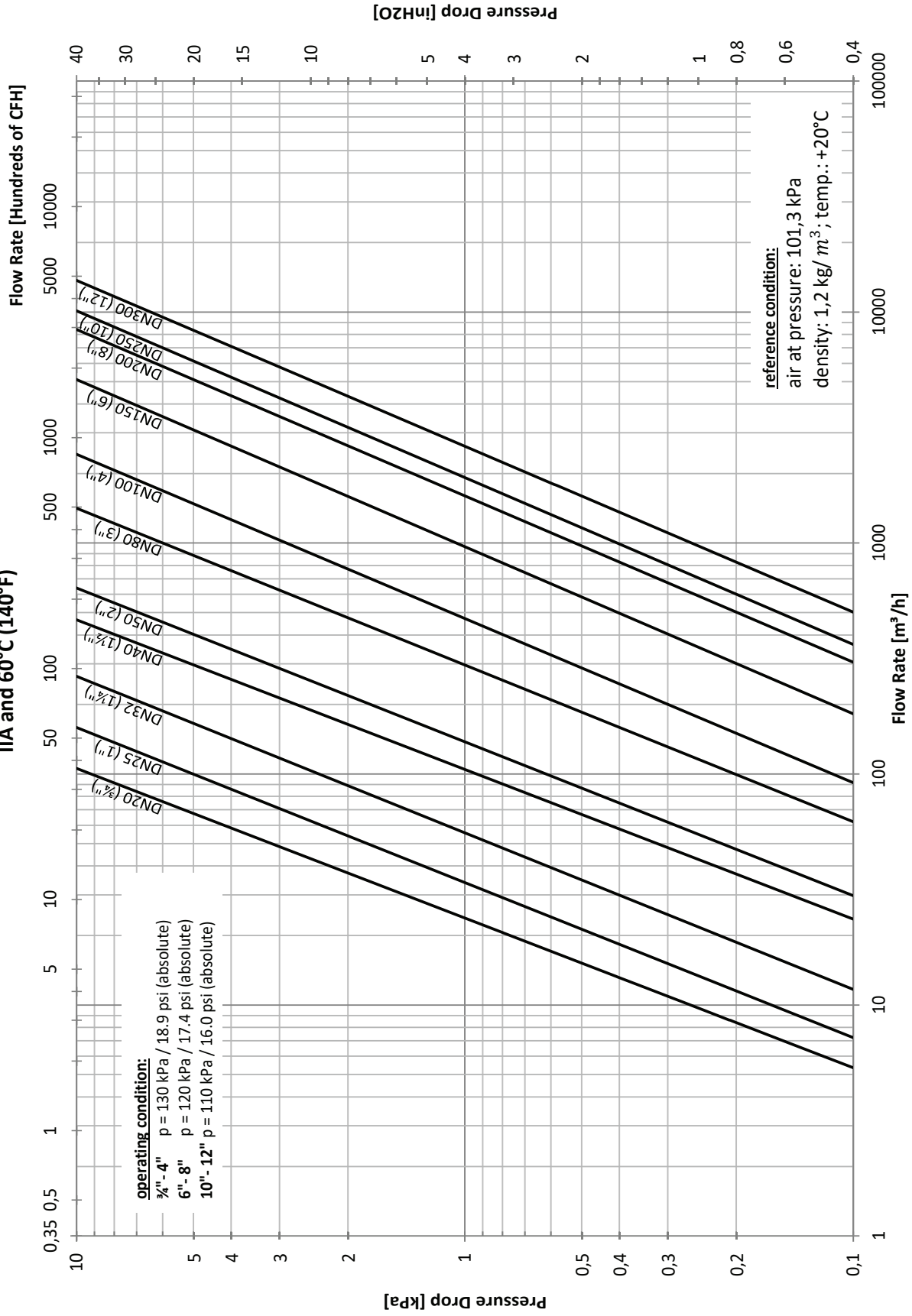
The element design is bidirectional and available for horizontal or vertical installations.

Easy Maintenance: The Model 7A00 detonation flame arrestor is a passive device with no moving parts. The flame cell element can be easily removed for inspection and cleaning in appropriate solvent solution.

Sizes: Units are available in DN20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300 (3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4", 5", 6", 8", 10", 12") line sizes; thread connections according to ISO7/1, BS21 or ASME B1.20.1. Standard for flange connections to EN1092-1 PN10, ASME B16.5 150#RF or JIS B 2220 10K.

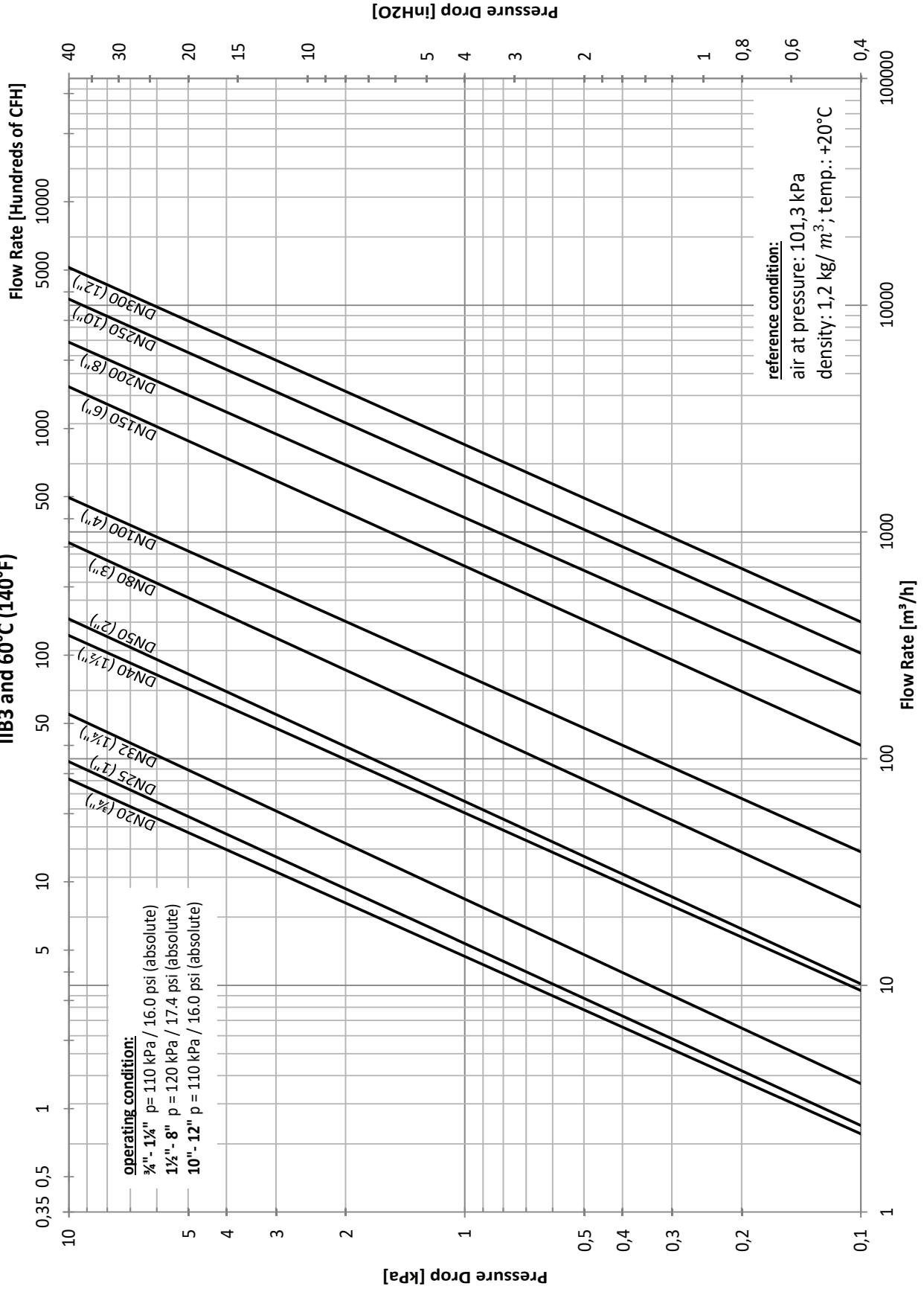
Series 7A00 Flow Curves

IIA and 60°C (140°F)



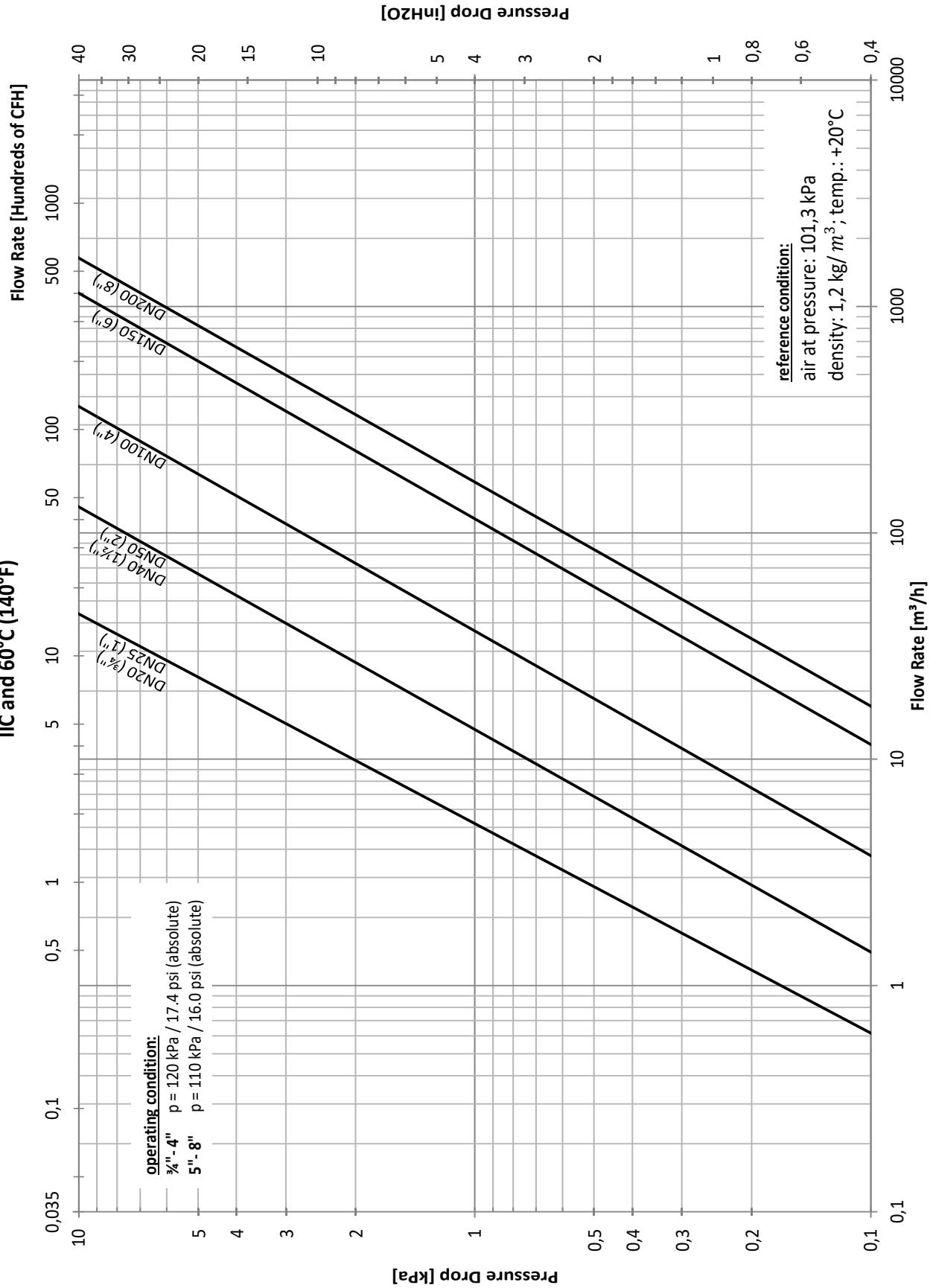
Series 7A00 Flow Curves

IIB3 and 60°C (140°F)

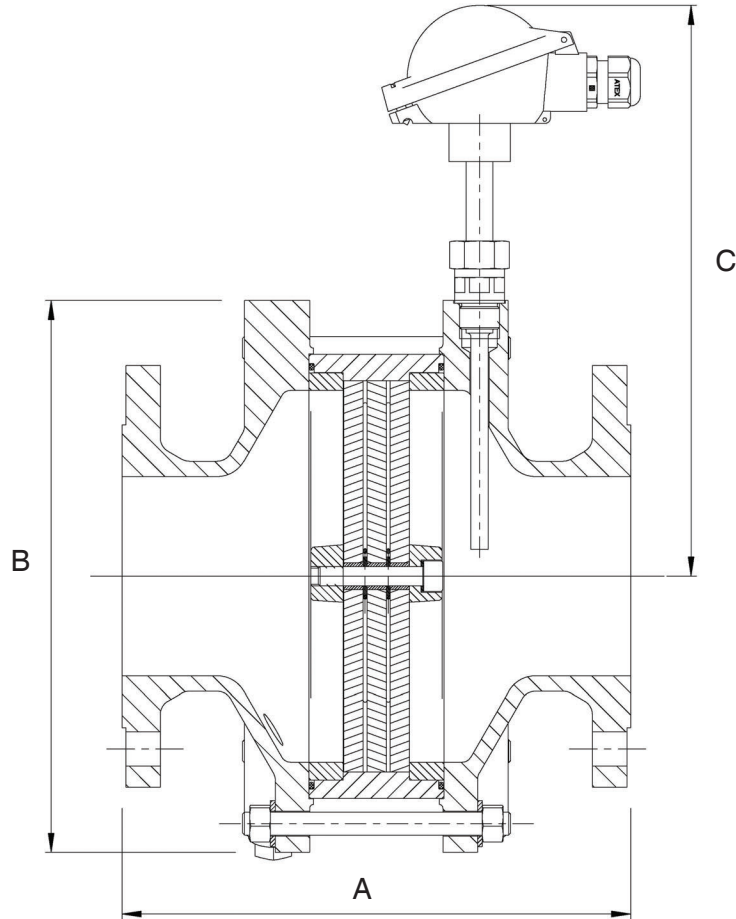


Series 7A00 Flow Curves

IIC and 60°C (140°F)



DIMENSIONS



Metric Units - mm					
SIZE	A			Ø B	C
Rp, BSP, NPTF	IIA	IIB3	IIC		
3/4"	139	139	151	115	210
1"	139	139	151	115	210
1-1/4"	139	139	175	132	220
1-1/2"	139	139	194	175	242
2"	139	139	194	175	242
DIN, JIS, ASME (*)	IIA	IIB3	IIC	Ø B	C
DN25	183	183	195	115	210
DN50	199	199	254	175	242
DN65 (**)	229	229	-	215	262
DN80	248	248	309	240	275
DN100	266	266	327	290	300
DN125 (**)	337	337	386	445	380
DN150	337	337	386	445	380
DN200	370	370	419	545	430
DN250	434	409	-	665	490
DN300	473	448	-	765	540

(*) DIN (PN10) Flange, JIS 10K Flange, ASME 150RF Flange
 (**) NOT available with ASME 150RF Flange

English Units - in					
SIZE	A			Ø B	C
Rp, BSP, NPTF	IIA	IIB3	IIC		
3/4"	5.5	5.5	5.9	4.5	8.3
1"	5.5	5.5	5.9	4.5	8.3
1-1/4"	5.5	5.5	6.9	5.2	8.7
1-1/2"	5.5	5.5	7.6	6.9	9.5
2"	5.5	5.5	7.6	6.9	9.5
DIN, JIS, ASME (*)	IIA	IIB3	IIC	Ø B	C
1"	7.3	7.2	7.7	4.5	8.3
2"	7.8	7.8	10	6.9	9.5
2-1/2" (**)	9.0	9.0	-	8.5	10.3
3"	9.8	9.8	12.2	9.4	10.8
4"	10.4	10.4	12.9	11.4	11.8
5" (**)	13.3	13.3	15.2	17.5	15.0
6"	13.3	13.3	15.2	17.5	15.0
8"	14.6	14.6	16.5	21.4	16.9
10"	17.1	16.1	-	26.1	19.3
12"	18.6	17.6	-	30.1	21.2

(*) DIN (PN10) Flange, JIS 10K Flange, ASME 150RF Flange
 (**) NOT available with ASME 150RF Flange

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7A00 Series PRODUCT CODER

11/08/22

7A

POS
3 & 4

POS
5

B

POS
7 & 8

POS
9

POS
10 & 11

POS
12

POS
13

POS
14 & 15

POS
16

0

POS
18

POSITION 3 & 4 SIZE / EXPLOSION GROUP			
Size metric (in)	IIA CODE	IIB3 CODE	IIC CODE
DN20 (3/4")	3Y	ES	MZ
DN25 (1")	3Z	ET	N0
DN32 (1-1/4")	46	F0	N7
DN40 (1-1/2")	4E	F8	NF
DN50 (2")	4F	F9	NG
DN65 (2-1/2")	4P	FH	NR
DN80 (3")	4Y	FS	NZ
DN100 (4")	56	G0	P7
DN125 (5")	5D	G7	PE
DN150 (6")	5E	G8	PF
DN200 (8")	5N	GG	PP
DN250 (10")	5X	GR	-
DN300 (12")	64	GY	-

POSITION 5 OPERATING CONDITION				
Explosion Group	Size	p _{max} absolute in kPa (psi)	T _{max} in °C (°F)	CODE
IIA	DN20 - 100	130 (19)	≤ 60 (140)	3
	DN50	150 (21)	≤ 60 (140)	5
	DN125 - 200	120 (17)	≤ 60 (140)	2
	DN250 - 300	110 (16)	≤ 60 (140)	1
IIB3	DN20 - 32	110 (16)	≤ 60 (140)	1
	DN40 - 200	120 (17)	≤ 60 (140)	2
	DN250 - 300	110 (16)	≤ 60 (140)	1
IIC	DN20 - 100	120 (17)	≤ 60 (140)	2
	DN125 - 200	110 (16)	≤ 60 (140)	1

Consult factory for additional operating conditions.

POSITION 7 & 8 CASING / ELEMENT / RIM MATERIALS	
Material	CODE
Stainless Steel (1.4571) Sizes up to DN50 (2") **	0C
Stainless Steel (1.4571) Sizes DN40 - 300 (1-1/2" - 12") *	0D
Stainless Steel (1.4581) Sizes DN125 - 200 (5" - 8")	0P

* Not Available in Sizes DN125 - 200 (5" - 8")
** Except DN50 (2") for IIC, please use 0D instead

POSITION 9 GASKET MATERIALS	
Material	CODE
NBR	1
FKM	2
EPDM	3
FKM/FEP seamless covered	4

POSITION 12 PORTS	
Number / Location	CODE
One port G1/2" on each side Std. for all explosion groups and sizes	2
Two ports G1/2" on each side	4

POSITION 13 MOUNTING KIT MAT'L FOR HOUSING	
Material	CODE
8.8 Zinc Plated (Standard CS)	1
A2 Stainless Steel (Standard SST)	2
A4 Stainless Steel	3

POSITION 10 & 11 HOUSING MATERIALS / CONNECTION			
(Threaded) Sizes DN20 - 50 (3/4" - 2")	Rp	BSPP	NPT
	CODE		
CS (1.0619 zinc plated)	41	42	43
Stainless Steel (1.4581)	91	92	93
(Flanged) Sizes DN25 - 300 (1" - 12")	DIN (PN10)	ASME(150#RF) *	
	CODE		
CS (1.0619)	37	39	
Stainless Steel (1.4581) *	97	99	

* Not Available in Sizes 2-1/2" and 5".

POSITION 14 & 15 TEMPERATURE SENSOR (PT100)		
Quantity	Ex ia 3-wire	Ex ia 3-wire plus transmitter
	CODE	
None	00	00
One	01	02

POSITION 16 NAME PLATE	
Material / Language	CODE
Alum / German	7
Alum / English	8

POSITION 18 PAINT	
Color	CODE
No Paint (Only Stainless Steel)	0
Epoxy (Standard) Signal Blue (RAL5005)	1
Hempadur (Off-Shore) Flame Red (RAL3000)	9



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