

Overflow and pressure control valves



6.2

**418**

Overflow and pressure control valves  
 made of stainless steel, angle-type  
 with threaded connections  
 –externally adjustable–

→ **Series 418**

■ **SUITABLE FOR**

Liquids	neutral and non-neutral	
Air, gases and vapours	neutral and non-neutral	
Steam		

■ **EXAMPLES OF USE**

For the protection of:

- pumps against overloading in closed circuits for neutral / non-neutral, non-sticking liquids

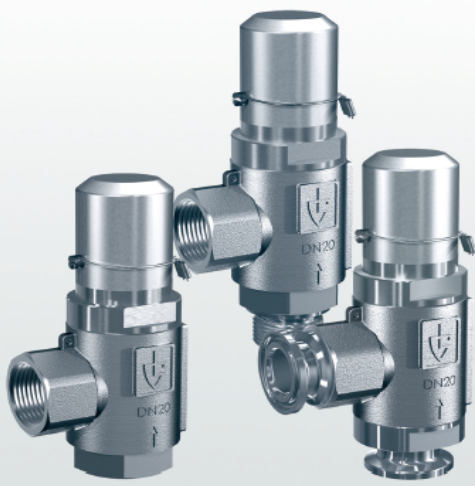
For the control of:

- systems under pressure for neutral/ non-neutral gases and vapours and – depending on the sealing material – also for steam.

- chemical plants, biogas plants
- desalination plants
- mechanical engineering and process equipment construction
- shipbuilding industry and marine equipment
- industrial applications
- secondary areas in the food-, beverage-, pharmaceutical- and cosmetics-industries

■ **APPROVALS**

European Pressure Equipment Directive	
TR ZU 032/2013 - TR ZU 010/2011	
Requirements	
PED 2014/68/EU	
Classification society	
DNVGL	DNVGL
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV
Russian Maritime Register of Shipping	RS



■ **MATERIAL**



■ **SPECIFICATION**



3/8" – 1 1/4"  
 DN 10 – DN 32

– 60°C to + 225°C  
 depending on version

0,2 – 30 bar

■ **MATERIALS**

Component	Material	DIN EN	ASME
Inlet body	Stainless steel	1.4404	316 L
Outlet body	Stainless steel	1.4408	CF8M
Internal parts	Stainless steel	1.4404	316 L
Spring	Stainless steel	1.4310	302

**Series 418 ■ VALVE VERSION**

t	gastight version of spring housing	for neutral and non-neutral media, not counter pressure compensated. The environment is protected from being affected by the medium. Only available without lifting device. Adjustable under operating conditions without medium escaping into the atmosphere.
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Complete functional cartridge available as replacement part (order code: 418 cartridge-DN..-seal) can be exchanged without removing the valve.

Valves can be delivered unset within a pressure range or set and sealed at the factory.

**■ MEDIUM**

GF	gaseous and liquid	Air, vapours, gases, liquids and - depending on seal - also for steam
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**■ TYPE OF LIFTING MECHANISM**

0	without lifting device
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**■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES**

Nominal diameter DN	10	15	20	25	32
Inlet	3/8" (10)	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)
Outlet	3/8" (10)	■			
	1/2" (15)		■		
	3/4" (20)			■	
	1" (25)				■
	1 1/4" (32)				

**■ TYPE OF CONNECTION INLET / OUTLET THREADED CONNECTIONS**

f / f	Standard	Female thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1
m / f	On request	Male thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1
KLSDIN / KLSDIN	On request	Clamp connection DIN / clamp connection DIN	DIN 32676 / DIN 32676

**■ SEALS**

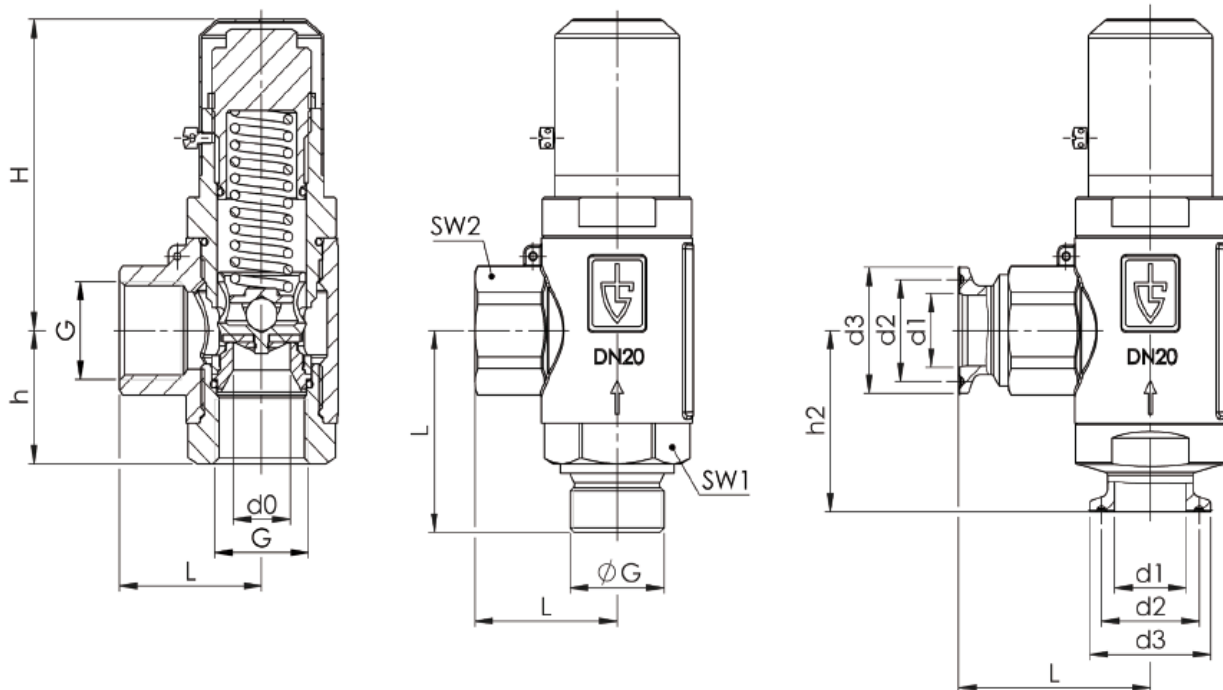
NBR	Nitrile rubber (standard)	Elastomere flat seal 0,2 – 30 bar	-30°C to +130°C
EPDM	Ethylene propylene diene	Elastomere flat seal 0,2 – 30 bar	-50°C to +150°C
FKM	Fluorocarbon	Elastomere flat seal 0,2 – 30 bar	-20°C to +200°C
PTFE	Polytetrafluoroethylene	Flat seal 0,5 – 30 bar	-60°C to +225°C

If the seal is made of PTFE the O-rings of the cartridge are as standard made of FPM. FPM possible on request against surcharge.

■ **NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS**

Series 418: Connection, installation dimensions, ranges of adjustment						
Nominal diameter	DN	10	15	20	25	32
Connection DIN EN ISO 228	G	3/8" (10)	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)
Outlet DIN EN ISO 228	G	3/8" (10)	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)
Installation dimensions in mm	L	34	34	40	50	50
	L1	45	43,5	54	61	61
	H	73	73	84	98	98
	h	33	33	36	48	48
	h1	47,5	50	54,5	69	75
	h2	42,5	42,5	49	63	66
	d1	10	16	20	26	32
	d2	27,5	27,5	27,5	43,5	43,5
	d3	34	34	34	50,5	50,5
	SW1	30	30	36	50	50
	SW2	28	28	32	41	50
	do	10	14	16	25	25
Weight	kg	0,5	0,5	0,8	1,8	1,9
Set pressure	bar	0,2 - 30	0,2 - 30	0,2 - 30	0,2 - 30	0,2 - 30
Range of adjustment	bar	0,2-1,2	0,2-1,2	0,2-1,2	0,2-1,2	0,2-1,2
		1,2-3	1,2-3	1,2-3	1,2-3	1,2-3
		2-12	2-12	2-12	2-12	2-12
		12-30	12-30	12-30	12-30	12-30

■ **MAIN DIMENSIONS, INSTALLATION DIMENSIONS**



■ CAPACITY TABLE

Series 418: Kv values at 1 bar overpressure

Nominal diameter DN	10				10				10			
	Air [Nm <sup>3</sup> /h]				Water [m <sup>3</sup> /h]				Steam [kg/h]			
Pressure range bar	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30
<b>Set pressure bar</b>												
0,2	87				2,9				62,0			
0,7	106				3,0				74,7			
1,2	113	81			3,2	2,3			79,3	56,9		
2,0		96	47			2,6				67,0		
3,0		99	51			2,6	1,2			68,7	35,4	
4,0			56				1,2				38,8	
5,0			62				1,1				42,7	
6,0			65				1,1				44,7	
7,0			70				1,0				48,0	
8,0			77				1,0				52,6	
9,0			86				0,8				58,6	
10,0			94				0,7				63,9	
11,0			105				0,5				71,3	
12,0			108	81			0,4	0,7			73,1	54,9
13,0				78				0,6				52,9
14,0				74				0,6				50,1
15,0				72				0,6				48,6
16,0				62				0,6				41,8
17,0				55				0,6				37,1
18,0				48				0,5				32,3
19,0				40				0,4				26,9
20,0				29				0,4				19,5
21,0				22				0,4				14,8
22,0				16				0,3				10,8
23,0				12				0,3				8,1
24,0				6				0,2				4,0
25,0				3				0,2				2,0
26,0				<1				0,2				<1
27,0				<1				0,1				<1
28,0				<1				0,1				<1
29,0				<1				0,1				<1
30,0				<1				0,1				<1

Series 418: Kv values at 1 bar overpressure

Nominal diameter DN	15				15				15			
	Air [Nm <sup>3</sup> /h]				Water [m <sup>3</sup> /h]				Steam [kg/h]			
Pressure range bar	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30
<b>Set pressure bar</b>												
0,2	107				3,4				76,3			
0,7	119				3,7				83,9			
1,2	126	92			3,8	2,8			88,5	64,6		
2,0		107	47			2,4				74,7		
3,0		115	54			2,1	1,4			79,8	37,5	
4,0			63				1,4				43,6	
5,0			70				1,5				48,2	
6,0			81				1,5				55,7	
7,0			98				1,4				67,3	
8,0			103				1,3				70,4	
9,0			107				1,2				72,9	
10,0			112				1,1				76,2	
11,0			118				0,9				80,1	
12,0			122	61			0,8	0,7			82,6	41,3
13,0				70				0,6				47,5
14,0				78				0,6				52,8
15,0				85				0,5				57,4
16,0				97				0,5				65,4
17,0				105				0,5				70,7
18,0				114				0,5				76,8
19,0				78				0,5				52,5
20,0				34				0,4				22,9
21,0				12				0,4				8,1
22,0				<1				0,4				<1
23,0				<1				0,3				<1
24,0				<1				0,3				<1
25,0				<1				0,2				<1
26,0				<1				0,2				<1
27,0				<1				0,2				<1
28,0				<1				0,1				<1
29,0				<1				0,1				<1
30,0				<1				0,1				<1

## ■ CAPACITY TABLE

Series 418: Kv values at 1 bar overpressure												
Nominal diameter DN	20				20				20			
	Air [Nm <sup>3</sup> /h]				Water [m <sup>3</sup> /h]				Steam [kg/h]			
Pressure range bar	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30
Set pressure bar												
0,2	151				4,7				107,7			
0,7	166				5,4				117,0			
1,2	182	123			5,8	3,5			127,8	86,4		
2,0		139	88			3,4				97,0		
3,0		150	97			2,8	1,7			104,1	67,3	
4,0			102				1,6				70,6	
5,0			111				1,6				76,4	
6,0			124				1,4				85,2	
7,0			132				1,3				90,6	
8,0			136				1,0				93,0	
9,0			143				0,8				97,5	
10,0			148				0,7				100,6	
11,0			153				0,6				103,9	
12,0			159	114			0,6	0,4			107,7	77,2
13,0				118				0,5				80,0
14,0				121				0,7				81,9
15,0				124				0,8				83,7
16,0				129				0,9				87,0
17,0				125				0,9				84,2
18,0				136				1,1				91,6
19,0				141				1,0				94,9
20,0				144				0,7				96,9
21,0				130				0,6				87,5
22,0				115				0,5				77,4
23,0				100				0,4				67,3
24,0				87				0,3				58,5
25,0				55				0,3				37,0
26,0				36				0,2				24,2
27,0				29				0,2				19,5
28,0				20				0,1				13,4
29,0				12				0,1				8,1
30,0				4				0,1				2,7

Series 418: Kv values at 1 bar overpressure												
Nominal diameter DN	25				25				25			
	Air [Nm <sup>3</sup> /h]				Water [m <sup>3</sup> /h]				Steam [kg/h]			
Pressure range bar	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30
Set pressure bar												
0,2	348				10,3				248,1			
0,7	402				11,6				283,3			
1,2	431	381			11,2	9,4			302,6	267,5		
2,0		398	179			9,8				277,8		
3,0		372	212			8,5	4,3			258,3	147,2	
4,0			244				4,3				169,0	
5,0			288				4,4				198,3	
6,0			308				4,5				211,6	
7,0			314				4,7				215,5	
8,0			319				4,9				218,0	
9,0			331				5,2				225,7	
10,0			346				5,6				235,3	
11,0			351				5,3				238,3	
12,0			363	142			4,8	1,9			245,8	96,2
13,0				160				1,9				108,5
14,0				187				1,9				126,5
15,0				208				2,0				140,4
16,0				223				2,0				150,3
17,0				229				2,2				154,3
18,0				234				2,4				157,6
19,0				240				2,0				161,6
20,0				247				1,3				166,3
21,0				252				1,0				169,6
22,0				258				0,9				173,6
23,0				265				0,8				178,2
24,0				270				0,7				181,6
25,0				276				0,6				185,5
26,0				287				0,5				192,9
27,0				300				0,4				201,6
28,0				310				0,3				208,2
29,0				328				0,2				220,3
30,0				336				0,1				225,6

■ CAPACITY TABLE

Series 418: Kv values at 1 bar overpressure												
Nominal diameter DN	32				32				32			
	Air [Nm <sup>3</sup> /h]				Water [m <sup>3</sup> /h]				Steam [kg/h]			
Pressure range bar	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30	0,2 - 1,2	1,2 - 3	2 - 12	12 - 30
Set pressure bar												
0,2	426				12,1				303,7			
0,7	457				14,2				322,0			
1,2	460	386			14,5	10,3			322,9	271,0		
2,0		441	187			10,9				307,8		
3,0		477	229			12,0	4,3			331,2	159,0	
4,0			278				4,4				192,5	
5,0			303				4,5				208,6	
6,0			326				4,6				224,0	
7,0			345				4,7				236,8	
8,0			369				4,8				252,2	
9,0			397				5,0				270,7	
10,0			413				5,2				280,8	
11,0			431				5,7				292,6	
12,0			448	167			6,5	2,1			303,4	113,1
13,0				192				2,5				130,2
14,0				220				2,7				148,8
15,0				245				3,1				165,3
16,0				252				3,2				169,9
17,0				261				2,8				175,9
18,0				267				2,2				179,8
19,0				275				1,9				185,1
20,0				283				1,7				190,5
21,0				307				1,5				206,6
22,0				328				1,3				220,7
23,0				347				1,2				233,4
24,0				359				1,0				241,4
25,0				373				0,8				250,7
26,0				381				0,6				256,1
27,0				394				0,5				264,7
28,0				401				0,4				269,4
29,0				406				0,3				272,7
30,0				412				0,2				276,6