




→ **Series 418**

418

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



■ **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



■ **MATERIAL**



■ **SPECIFICATION**



3/8" – 1 1/4"
 DN 10 – DN 32



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



0,2 – 30 bar

■ **APPROVALS**

European Pressure Equipment Directive

TR ZU 032/2013 - TR ZU 010/2011

Requirements

PED 2014/68/EU

Classification society

DNV	DNV
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV
Russian Maritime Register of Shipping	RS
Registro Italiano Navale	RINA

■ **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 / KLSIDIN	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

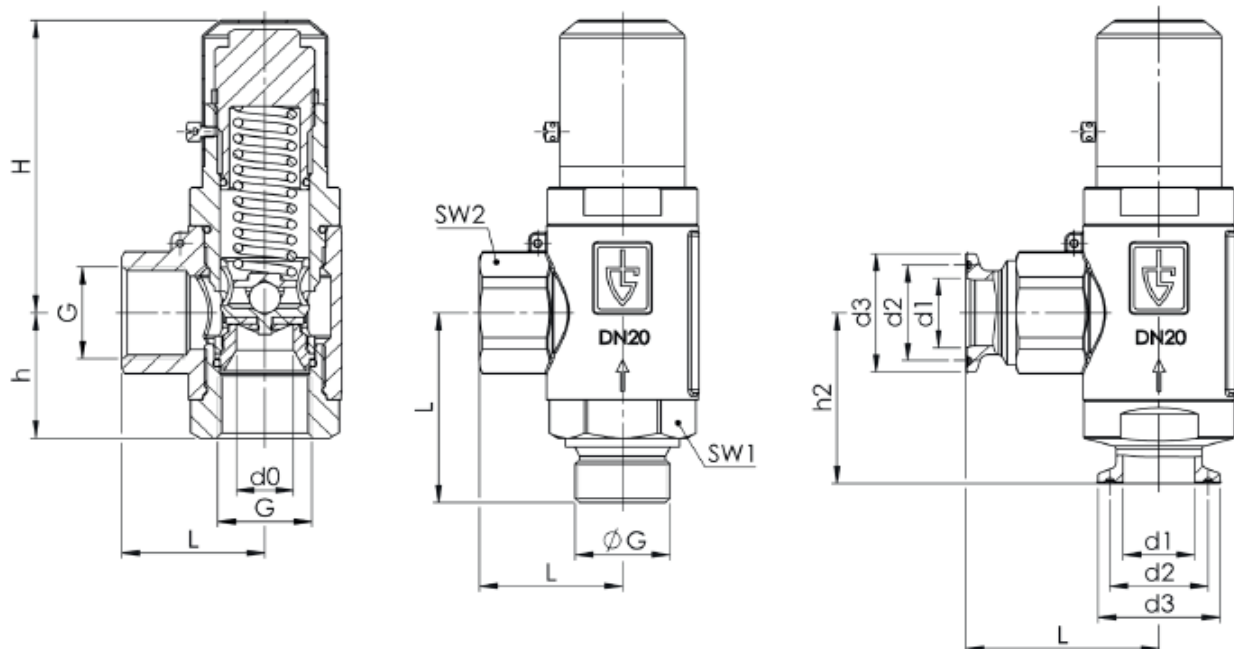
If the seal is made of PTFE the O-rings of the cartridge are as standard made of FPM. FFPM possible on request against surcharge.

■ **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
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**



Series 418 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve version	Medium	Lifting device	Nominal diameter DN	Connection type		Connection size		Seal	Options	Pressure range / set pressure	Quantity
					Inlet	Outlet	Inlet	Outlet				
418	t	GF	0	15	f	f	15	15	NBR		2 - 12	5
418	t	GF	0	25	KLSDIN	f	25	25	PTFE	FFKM	8	2
418	t	GF	0									
418	t	GF	0									

■ TECHNICAL FINISHES, VARIANTS, ACCESSORIES

S3	Auxiliary seals made of FFKM	<input type="checkbox"/>	<input type="checkbox"/>
S24	Auxiliary seals made of EPDM	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

■ PROPERTIES

G0X	Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process	<input type="checkbox"/>	<input type="checkbox"/>
P01	Oil- and grease-free production	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	<input type="checkbox"/>	C06	ATEX evaluation acc. to 2014/34/EU	<input type="checkbox"/>
C02-1	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1) for non TÜV-CE valves marking of individual serial number is required	<input type="checkbox"/>	C10	Certificate of oil- and grease free production	<input type="checkbox"/>
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	<input type="checkbox"/>	C11	Certification of the production process especially for gaseous oxygen applications by employment of specific materials	<input type="checkbox"/>
C05	Sealing material Manufacturer certification (FDA, USP 3, 3-A,...), Please indicate description of certificate:	<input type="checkbox"/>			<input type="checkbox"/>

■ ADMISSIONS / ACCREDITATIONS

AA1	EC Type examination acc. to Directive 2014/68/EU	<input type="checkbox"/>	AK1	Det Norske Veritas (DNV) type approval	<input type="checkbox"/>
AA4	EAC - certificate/declaration with passport for the valve and laser marking of the valve	<input type="checkbox"/>	AK2	Lloyd's Register (LR) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK3	American Bureau of Shipping (ABS) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK4	Bureau Veritas (BV) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK5	Russian Maritime Register of Shipping (RMRS) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK6	Registro Italiano Navale (RINA) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AL	Individual inspection by notified body inspector – (body to be indicated):	<input type="checkbox"/>

■ CAPACITY TABLE

Series 418: Kv values at 1 bar overpressure												
Nominal diameter DN	10 Air [Nm ³ /h]				10 Water [m ³ /h]				10 Steam [kg/h]			
	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	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 Air [Nm ³ /h]				15 Water [m ³ /h]				15 Steam [kg/h]			
	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	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 Air [Nm ³ /h]				20 Water [m ³ /h]				20 Steam [kg/h]			
	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 Air [Nm ³ /h]				25 Water [m ³ /h]				25 Steam [kg/h]			
	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 Air [Nm ³ /h]				32 Water [m ³ /h]				32 Steam [kg/h]			
	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				2,6				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