

Overflow and pressure control valves
made of stainless steel, straightway
form with flange connections
-externally adjustable-

→ Series 431



■ SUITABLE FOR

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

■ 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 air, neutral / non-neutral gases and vapours

- industrial plants
- power plant technology
- pump systems
- mechanical engineering
- secondary areas in the food-, beverage-, pharmaceutical- and cosmetics-industries



■ MATERIAL



■ SPECIFICATION



DN 15 to DN 80 - 10°C to + 95°C 0,5 - 10 bar

■ APPROVALS

European Pressure Equipment Directive

TR ZU 032/2013 - TR ZU 010/2011

Requirements

PED 2014/68/EU

Classification society

Germanischer Lloyd	GL
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV
Russian Maritime Register of Shipping	RS

■ MATERIALS

Component	Material	DIN EN	ASME
Inlet body	Stainless steel	1.4408	CF8M
Outlet body	Stainless steel	1.4408	CF8M
Internal parts	Stainless steel	1.4408	CF8M
	Stainless steel	1.4404	316 L
Valve seat	Stainless steel	1.4404	316 L
Spring	Spring steel with anti-rust protection	1.1200	ASTM A228

m with diaphragm

High-quality, heat-resistant moulded elastomere, fabric-reinforced diaphragm. Valves in straightway form, closed version. Can be adjusted under operating conditions without medium escaping into the atmosphere. Adjustment can be directly read-off an optional pressure gauge (accessory). Optimal control response and large flow volumes even in cases of small pressure differences due to diaphragm operating principle.

Complete valve cartridge available as replacement part (order code: 431 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 (against surcharge).

■ MEDIUM

GF gaseous and liquid

for water and distilled water, neutral and non-sticking liquids, compressed air and neutral gases; optionally with FPM elastomere seals for non-neutral media i.e. oils, fuels, oil-laden compressed air etc.

■ TYPE OF LIFTING MECHANISM

0 without lifting device

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN	15	20	25	32	40	50	65	80
Inlet / Outlet	15/15	20/20	25/25	32/32	40/40	50/50	65/65	80/80
	■	■	■	■	■	■	■	■

■ TYPE OF CONNECTION INLET / OUTLET FLANGE CONNECTIONS

FL / FL	Standard	Flange connection / flange connection	DIN EN 1092 / DIN EN 1092
---------	----------	---------------------------------------	---------------------------

■ SEALS

EPDM	Ethylene propylene diene	Elastomere moulded diaphragm and seals approvals according to drinking water directive	-10°C to +95°C
Against surcharge			
FKM	Fluorocarbon	Elastomere moulded diaphragm and seals	-10°C to +95°C

■ OPTIONS

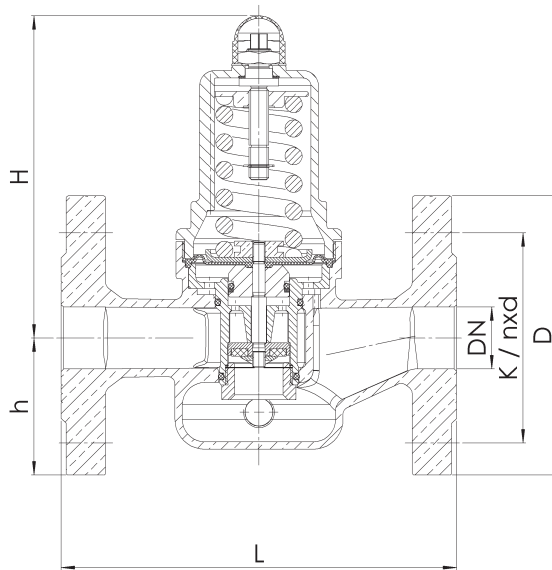
Against surcharge	
Pressure gauges 33, 36, 39 or 40	Chapter Accessories
Pressure gauge 37, 38, 41, 42 or 43 made of stainless steel	Chapter Accessories

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 431: Connection, installation dimensions, ranges of adjustment										
Nominal diameter	DN / PN	15 / 40	20 / 40	25 / 40	32 / 40	40 / 40	50 / 40	65 / 16	65 / 40	80 / 40
Inlet DIN EN 1092	DN	15	20	25	32	40	50	65	65	80
Outlet DIN EN 1092	DN	15	20	25	32	40	50	65	65	80
Installation dimensions in mm	L	130	150	160	180	200	230	290	290	310
	D	95	105	115	140	150	165	185	185	200
	H	102	130	130	130	166	166	245	245	245
	h	46	50	55	68	73	80	89	89	97
	K / nxd	65 / 4xM12	75 / 4xM12	85 / 4xM12	100 / 4xM16	110 / 4xM16	125 / 4xM16	145 / 4xM16	145 / 8xM16	160 / 8xM16
Weight	kg	2,8	3,9	4,3	5,5	8,4	10,2	18,7	19	20,5
Set pressure	bar	0,5-10	0,5-10	0,5-10	0,5-10	0,5-10	0,5-10	1-6	1-6	1-6
Range of adjustment	bar	0,5-2	0,5-2	0,5-2	0,5-2	0,5-2	0,5-2	1-6	1-6	1-6
		1,5-6	1,5-6	1,5-6	1,5-6	1,5-6	1,5-6			
		5,5-10	5,5-10	5,5-10	5,5-10	5,5-10	5,5-10			
Coefficient of flow K_{vs}	m ³ /h	2,1	4,7	5,1	5,5	10,5	11,5	20,5	20,5	21,5

The K_{vs} value was determined according to DIN EN 60534-2-3. Instructions on how to determine size and capacity are to be found under section 2.

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



■ 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				
431	m	GF	0	25	FL	FL	25	25	EPDM		1,5 - 6	8
431	m	GF	0	80	FL	FL	80	80	FKM	Manometer 37	5,0	3
431	m	GF	0		FL	FL						
431	m	GF	0		FL	FL						

In this table you can configure a valve according to your individual requirements (similar to the *example* shown, which should be deleted before you enter your own data). Please complete the table by hand using the abbreviations in this datasheet and then fax it to our sales team can contact you.

Name _____

First Name _____

Company _____

Telephone _____

E-Mail _____

■ CAPACITY TABLE

Series 431: Kv values at 1 bar overpressure																		
Nominal diameter DN	15		20		25		32		40		50		65		80			
Pressure range bar	Air [Nm³/h]																	
	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1-6	1-6		
Set pressure bar	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1-6		
0,5	73			175			189				417			445				
1	89			208			231				498			537		945 1010		
1,5	102	103		247	175		264	185		273	196		587	370	624	408	1020 1115	
2	117	119		285	214		303	226		314	238		636	429	683	472	1255 1315	
3		146			245			282			291			506		557	1480 1620	
4		170			292			330			338			543		615	1810 1890	
5		187			329			367			379			625		684	1895 2060	
5,5		195	139		354	173		386	183		394	186		653	375	719	417	1930 2150
6		203	147		375	186		405	194		418	202		708	395	760	443	1965 2230
7			162			210						229						502
8			179			249						264						517
9			218			273						289						564
10			255			294						314						601

Kv values at 1 bar overpressure																		
Nominal diameter DN	15		20		25		32		40		50		65		80			
Pressure range bar	Water [m³/h]																	
	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1-6	1-6		
Set pressure bar	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1,5-6	0,5-2	5,5-10	1-6		
0,5	2,7			5,1			5,5				12,4			12,9				
1	2,9			5,4			6,1				12,9			13,8		23,0 26,0		
1,5	3,4	3,1		5,9	5,2		6,6	5,6		7,5	6,4		13,2	9,0	14,4	9,4	24,0 26,0	
2	3,6	3,2		6,3	5,2		6,9	5,7		7,8	6,4		13,5	9,1	14,9	9,4	25,0 27,0	
3		3,3			5,3			5,9			6,5			9,3		9,5	26,0 29,0	
4		3,4			5,3			6,1			7,2			9,5		9,9	28,0 30,0	
5		3,3			5,4			6,2			7,5			9,7		10,2	28,0 31,0	
5,5		3,0	2,3		5,2	2,9		5,8	3,2		6,9	4,1		10,1	7,2	10,5	7,7	28,0 32,0
6		2,9	2,4		5,1	3,0		5,4	3,3		6,7	4,2		10,4	7,3	10,9	8,0	29,0 32,0
7			2,4			3,3						4,5						8,1
8			2,4			3,2						4,4						7,8
9			2,3			3,1						4,2						7,4
10			2,2			3,1						4,0						7,1