

**452bHL**

Safety valves made of stainless steel, with bellows, angle-type with flange connections

→ **Series 452bHL**



■ SUITABLE FOR

Hot water 

■ EXAMPLES OF USE

For the protection of:  
 - thermostatically protected closed-circuit water heating systems with flow temperatures of up to 120°C for all static heights or rated output above 350 kW according to TRD 721, DIN 4751 and DIN EN 12828.

Should the thermostatic limiting and control unit fail, the safety valve has to blow-off the total heating output of the boiler as hot water and steam.

As these valves are completely made of metal, they can also be installed at high environmental or radiation temperatures.

- heating systems for building technology and industrial applications
- co-generation plants (CHP)
- biogas plants
- district heating transfer stations, building sub-stations

**Safety valves are set and sealed at the factory.**

■ APPROVALS

TÜV Type test approval 2007	D/G/H
EC type examination	D/G/H
TR ZU 032/2013 - TR ZU 010/2011	D/G/H

Requirements	
TRD 721	DIN EN 12828
TRD 421	DIN EN ISO 4126-1
DIN 4751 Part 2	PED 2014/68/EU
DIN 4757 Part 1 and Part 2	

Classification society	
Germanischer Lloyd	GL
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Det Norske Veritas	DNV
Bureau Veritas	BV
Russian Maritime Register of Shipping	RS



■ MATERIAL



■ SPECIFICATION



DN 40 and DN 50 – 10°C to + 120°C 0,5 – 25 bar

■ MATERIALS

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

#### ■ VALVE VERSION

<b>b</b>	with bellows	for neutral and non-neutral media. Spring, moving parts and the environment are protected from being affected by the medium.
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#### ■ MEDIUM

<b>H</b>	Hot water	Flow temperature ≤ 120°C in water heating systems
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#### ■ TYPE OF LIFTING MECHANISM

<b>L</b>	Standard with lifting lever
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#### ■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN		40	50
Inlet		40	50
Outlet	65	■	
	80		■

#### ■ TYPE OF CONNECTION INLET / OUTLET FLANGE CONNECTIONS

<b>FL / FL</b>	Standard	Flange connection / flange connection	DIN EN 1092 / DIN EN 1092
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#### ■ SEALS

<b>EPDM</b>	Ethylene propylene diene	Elastomere moulded seal with metallic support	-10°C to +120°C
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#### ■ OPTIONS

Special versions on request.

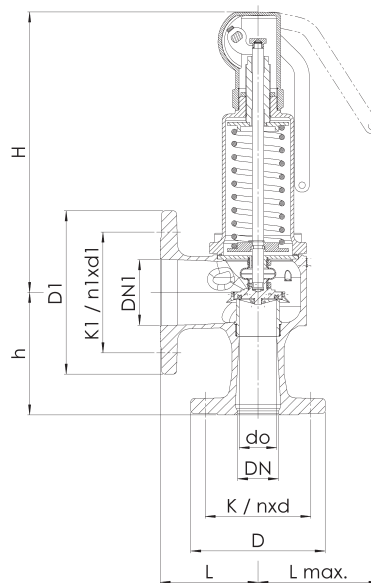
##### Against surcharge

Connection for condensate pipe G 1/4" with sealing plug	Order description: <b>AKL</b>
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■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 452bHL: Connection, installation dimensions, ranges of adjustment			
Nominal diameter	DN	40	50
Connection DIN EN 1092	DN / PN	40 / 40	50 / 40
Outlet DIN EN 1092	DN / PN	65 / 16	80 / 16
Installation dimensions in mm	L	115	120
	Lmax.	150	150
	H	345	345
	h	140	150
	D	150	165
	D1	185	200
	K / nxd	110 / 4x18	125 / 4x18
Weight	K1 / n1xd1	145 / 4x18	160 / 8x18
	do	37	46
	kg	17	19
Range of adjustment	bar	0,5-25	0,5-25

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve version	Medium	Lifting device	Nominal diameter DN	Connection type		Connection size		Seal	Options	Set pressure	Quantity
					Inlet	Outlet	Inlet	Outlet				
452	b	H	L	40	FL	FL	40	65	EPDM	AKL	4,5	3
452	b	H	L	50	FL	FL	50	80	EPDM		4,0	1
452	b	H	L		FL	FL			EPDM			
452	b	H	L		FL	FL			EPDM			

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: +49(0)7141.4889488  
Please do not forget to add your personal data so that our sales team can contact you.

Name

First Name

Company

Telephone

E-Mail

■ CAPACITY TABLE

Series 452bHL: Blowing-off rates at 10% above set pressure						
Nominal diameter DN		40		50		
Set pressure bar		I	II	I	II	
Heating I	0,5	320	503	480	750	
	1	490	785	740	1176	
kW	1,5	640	1032	960	1547	
	2	780	1273	1190	1939	
Steam II	2,5	920	1510	1400	2294	
	3	1040	1726	1600	2661	
kg/h	3,5	1160	1937	1790	2985	
	4	1280	2151	1980	3315	
	4,5	1400	2364	2160	3643	
	5	1510	2575	2330	3970	
	5,5	1630	2789	2520	4299	
	6	1750	3003	2690	4629	
	6,5	1860	3212	2860	4951	
	7	1970	3420	3040	5272	
	7,5	2080	3632	3210	5598	
	8	2190	3843	3380	5923	
	8,5	2300	4053	3540	6247	
	9	2410	4263	3710	6570	
	9,5	2520	4472	3880	6893	
	10	2620	4681	4040	7215	
	11	2840	5097	4380	7856	
	12	3050	5511	4700	8494	
	13	3260	5928	5030	9138	
	14	3470	6348	5340	9784	
	15	3670	6763	5660	10425	
	16	3880	7181	5980	11069	
	17	4080	7586	6280	11693	
	18	4280	8002	6590	12334	
	19	4470	8416	6880	12973	
	20	4660	8835	7190	13617	
	21	4860	9253	7490	14261	
	22	5040	9670	7770	14905	
	23	5240	10087	8070	15547	
	24	5430	10503	8370	16190	
	25	5620	10920	8660	16831	

In order to achieve the highest possible heating output, up to three valves per system can be installed.

To protect indirectly heated heat generators in accordance with DIN 4751 Part 2 the safety valves have to be rated for the flow rate of the expansion water.  
For the valid blow-off capacities in m<sup>3</sup>/h water see capacity chart **452 on datasheet 3.8**