

**ECO-FRIENDLY**  
**SAFETY VALVE SV 422**  
**for hot water**

## Hot water safety shut-off valve SV422

- For installation upstream of gas heat exchangers as pressure safeguard for the entire heat circuit
- Situated at the inlet and outlet nozzles of the heating medium at the gas pressure-resistant heat exchanger
- Internal medium actuated with reliable triggering in case of pressure increase in the water system

## Benefits

- The SV422 reliably blocks only the damaged heat exchanger from the system in the event of leakage
- If there is only a minimal loss of water, the one reserve heat exchanger continues to function reliably
- There is no freezing of the reserve controlled system
- The compact design enables short, simple situation in the water circuit at the heat exchanger
- The newly adapted structure allows for a simple and uncomplicated functional test
- Diameter up to DN200, pressure levels up to class 1500, operating temperature up to 120°C

## Functional description

- The WW-SSV SV422 is installed at the heating medium inlet and outlet flange of the gas pressure-resistant heat exchanger in intermediate flange design. If the pressure in the water system increases (e.g. due to a leakage at a heat exchanger pipe), the SV422 blocks the flow to and from the heat generator. This safely limits the pressure in the water system.

The SV422 remains closed while there is pressure in the heat exchanger that is higher than the trigger value of the SSV setting. Any slight increase in pressure in the water system is relieved by the pressure safety valve on the boiler.

The structure of the valve is shown below. Under normal operating conditions, the same pressure prevails in all valve chambers. Due to the spring force, the pipe slide is in the open position. The water flows freely through the valve, making sure that the **G-WT side always** faces the heat exchanger. The **direction of flow** is, therefore, **opposite** in the flow and return.

If the pressure in the water circuit rises, it also rises in the measuring chamber. If it reaches the setting value of the control device, the control device is triggered to relieve the measuring chamber. The difference in pressure between the measuring chamber and outside in the valve acts on the surfaces of the pipe slide, which moves – against the spring – to the closed position. The seal is created at the O-ring of the displacement body. While a higher pressure (above the setting value of the control device) is acting, the pipe slide remains in the closed position.

To restore normal operating conditions, the cause of the excessive pressure at the heat exchanger must be eliminated. In that case, the impermissible pressure at the heat exchanger must be safely discharged to the outside via a vent line. Only this pressure equalisation to that of the heating system will lead to the SV422 being re-opened (opens from 0.2 to 0.5 bar higher).

A small amount of water as well as a small amount of gas may escape when the control device is triggered. The vent line must be routed for both gas discharge and water discharge; in any event, it must be routed upwards for gas discharge to the outside – see the following principle arrangement of the overall system.

The trigger pressure of the control device is between 0.2 and 0.5 bar lower than the trigger value of the WW-SSV. This depends on the size, the water rate and the absolute pressure.

## Design and calculation

- Design in accordance with PED2014/68/EU, AD2000; with CE marking, DVGW approval
- Continuous application of ISO9001 with regularly audited quality system
- Preliminary examination/construction testing, material testing, non-destructive material testing in accordance with design standard
- Acceptance by experts such as TÜV, DVGW, etc.

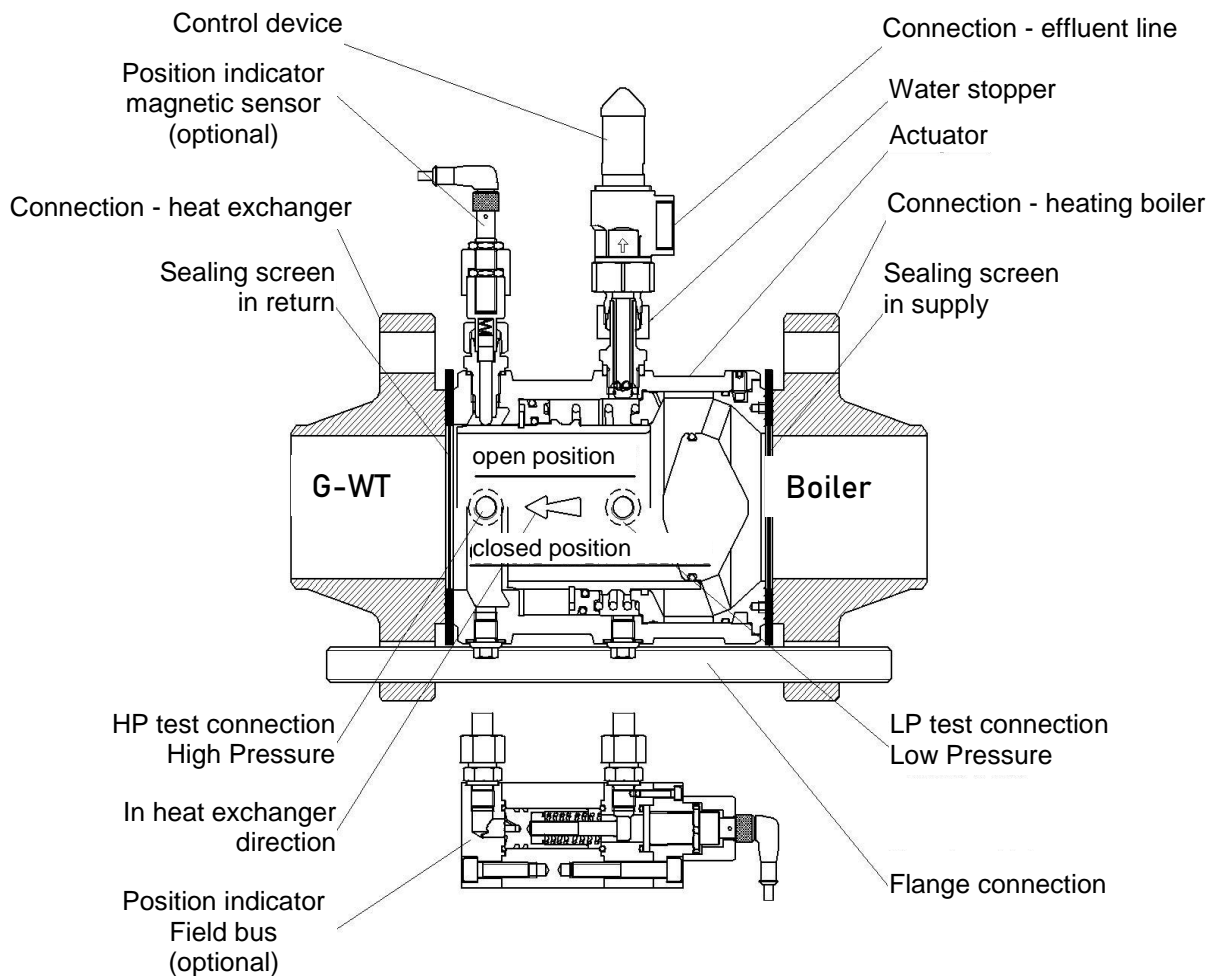
## Accessories supplied

- Control device with water stop
- Screen seal to repel water contamination
- Threaded bolts with certificate suitable for the pressure level ordered

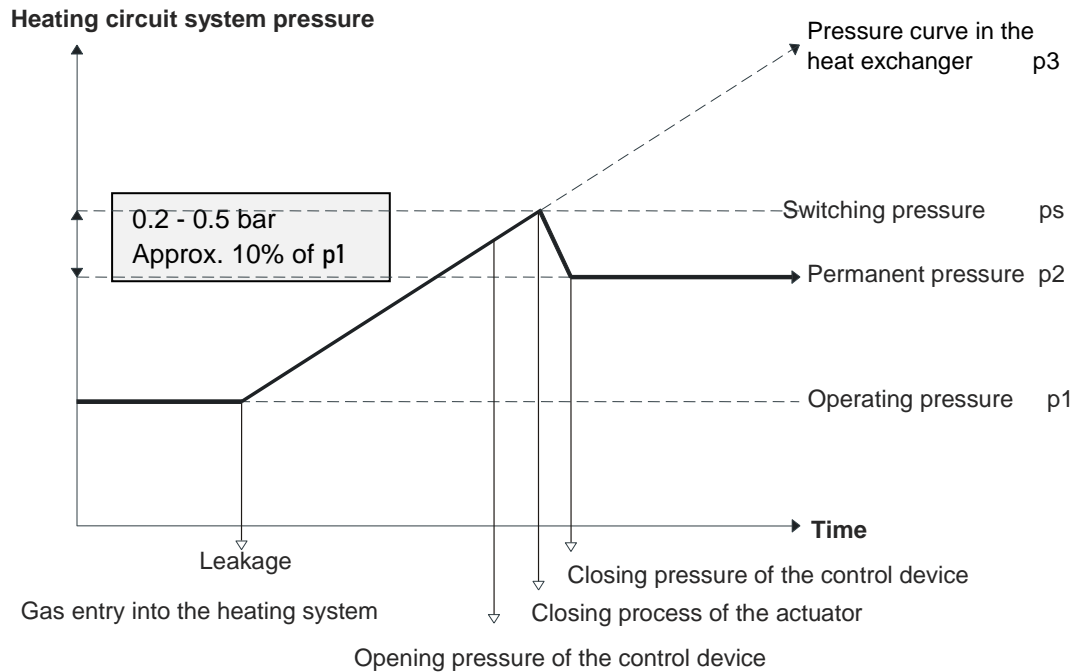
## Optional accessories

- Remote transmission sensor in EEx(i) design
- Test and control device with connection ball valves, pressure gauges, etc.
- Flanges for fastening the threaded bolts with comb profile seal

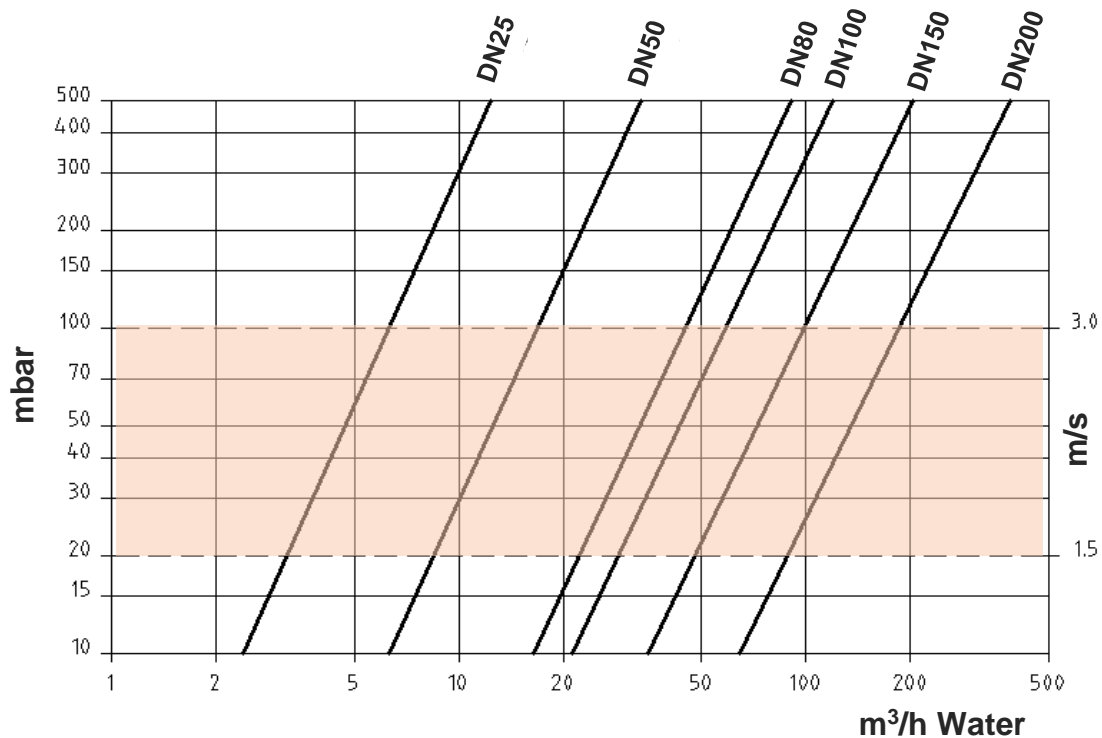
## Structure of the SV422



## Triggering behaviour SV422



## Pressure loss depending on the flow rate of the SV422



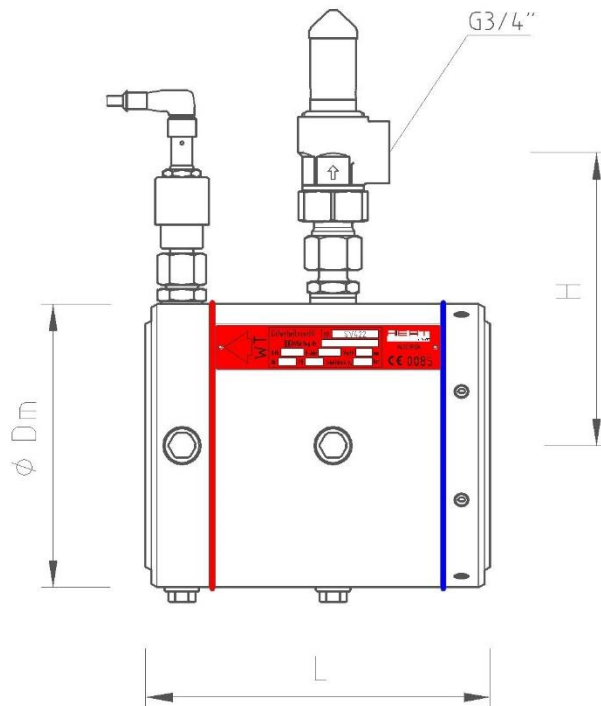
## Technical data

Design pressure Ps	100 bar, 160 bar, 250 bar
Design pressure Ts	120°C, 140°C
Intermediate flange connection	EN1092-1 DN25, DN50, DN80 > PN16, PN25, PN40, ANSI B16.5 Standard version RF, optional RTJ for class 600/900/1500 1", 2", 3" 4", 6", 8" > class 600RF, class 900RF, class 1500RF
Materials *	Housing: C-steel tenifer treated Interior parts: Stainless steel Seals: EPDM Control unit: stainless steel
Design/acceptance **	PED2014/68/EU, AD2000, DVGW/CE marking, EN10204 3.1, DVGW Design only similar to EN 14382
Explosion protection	The SV422 device has no potential sources of ignition of its own when used as intended. Consequently, the WW-SSV does not fall within the scope of the ATEX Directive 2014/34/EU. The prerequisite is a connection to the system's overall equipotential bonding. If required, installed electrical equipment may have its own approval. Modifications by third parties may require approval in accordance with ATEX, thus rendering the respective manufacturer's declaration invalid.
* Other materials	Optional on request
** Other acceptances	Optional on request

## Setting ranges of the CV34.652 V15 control device

CV34.652 V15 control valve				
05	12-16			AG10
04	5.0-11.9			AG10
03	2.7-4.9			AG10
02	1.9-2.6			AG10
01	1.0-1.8			AG10
Variant	Pressure range wh in bar (0)	Pressure spring, drawing no.	Item no.	Response pressure group

**Dimensions in accordance with DN and PN** – accessories such as sensors and test equipment are not included



## Dimensions in mm

DN	D				L	H	Weight [kg]
	PN 10/16	PN 25/40	ANSI 300	ANSI 600			
25	73	73	73	73	140	115 mm	4
50	107	107	107	107	160	135 mm	12
80	--	--	148	148	180	150 mm	18
100	--	--	--	190	200	220 mm	34
150	--	--	--	263	240	255 mm	60
200	--	--	--	320	280	285 mm	90

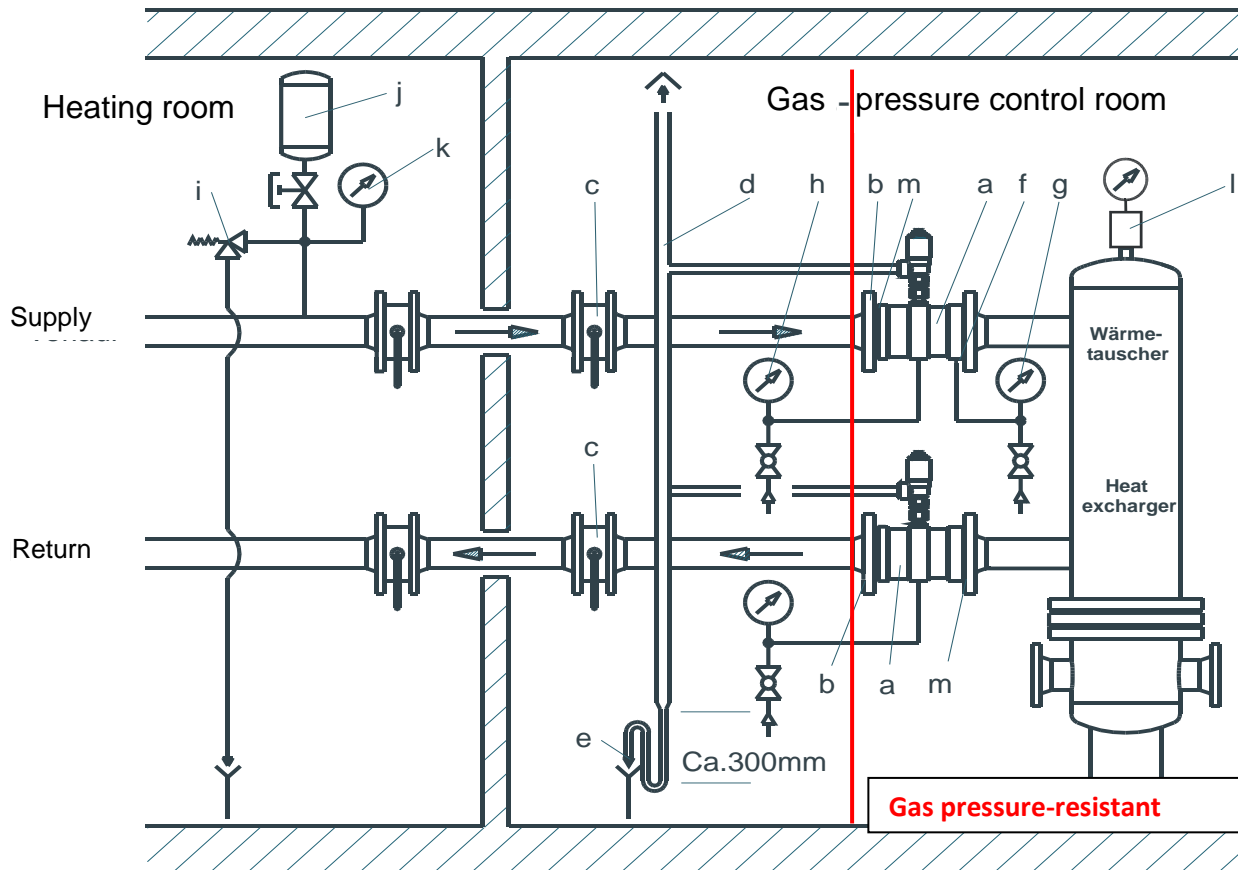
Subject to change!

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## Arrangement of the WW-SSV SV422 in the overall system

Familiarisation with and consideration of HEAT energy's SV422 operating and maintenance instructions are required for precise installation instructions. In addition, all appropriate national/customer regulations, as well as DVGW regulations G495 and G499, must be observed.

The valves can usually be insulated, the position sensors must not be insulated.



a*	Hot water safety shut-off valve SV422 with control device
b	Mating flanges according to ordered pressure level of SV422 and diameter
c	Shut-off of the flow/return in the pressure level of the heating system
d	Vent line with gas outlet and water drainage
e	Syphon
f*	Test connections
g	Pressure gauge, heat exchanger, N2 connection (optional) – part of the optional PKE422
h	Pressure gauge, set value, control system, N2 connection (optional) – part of the optional PKE422
i	Pressure safety valve, heating medium side
j	Expansion tank, heating system
k	Pressure gauge, heating system
l	Collector with possible indication of leaks (optional)
m*	Sealing screen as protection against impurities
*	Equipment

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