

SM110

Diaphragm safety valve

for closed heating systems

APPLICATION

Diaphragm safety valves of this type are used to protect closed heating systems according to EN 12828.

In accordance with statutory requirements, the diaphragm safety valve is preset to the required fixed set pressure by the manufacturer and is sealed with an embossed security cap marked with the test badge and pressure rating to prevent unauthorised tampering with the setting. Subsequent alteration of the setting is not permitted and is impossible without destroying the security cap. The preset pressure is embossed on the security cap.

SPECIAL FEATURES

- Certified to Pressure Equipment Directive 2014/68/EU, reference no.: CE 0035
- For heating systems according to EN 12828, EN ISO 4126-1 and EN 2516-2
- Protected against subsequent resetting
- Easy venting
- Standardised discharge connection

TECHNICAL DATA

The diaphragm safety valve is only suitable to drain the following media from closed heating systems according to EN 12828 for protection against exceeding pressure.

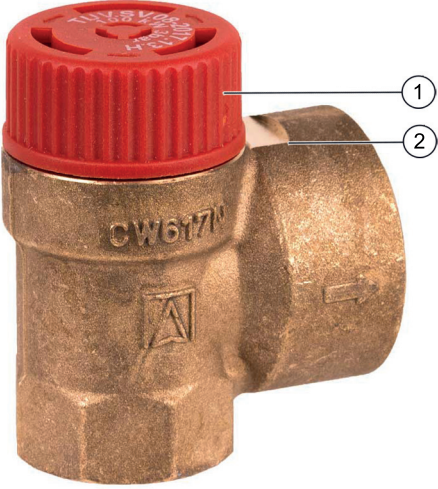
Media	
Medium:	Water
Optional medium:	Glycol-water mixture, according to VDI 2035 Liquids of the fluid group 1 and 2 (pressure device guideline, item 9) which do not affect the materials used.
Connections/Sizes	
Internal thread on inlet:	1/2", 3/4"
Internal thread on outlet:	1/2", 3/4", 1"
External thread on inlet:	1/2" with internal thread on outlet 3/4"
Pressure values	
Opening pressure:	1.5, 2.0, 2.5, 3.0, 4.0 or 6.0 bar*



Operating temperatures	
Operating temperature:	120 °C
Specifications	
Capacity:	50 - 100 kW
Installation position:	Horizontal with safety cap pointing up Valve size is defined by the size of the inlet connection Closed heating or solar systems. Not suitable for water storage heaters.

* Subsequent alteration of the setting is not permitted and is impossible without destroying the security cap

CONSTRUCTION

Overview	Components	Materials	
	1	Security cap with part label	High grade synthetic material
	2	Angled housing	Brass
	Not depicted components		
		Adjustment spring	Spring steel
	Diaphragm	Hot water resistant elastomer	

METHOD OF OPERATION

Diaphragm safety valves of this type are direct acting safety valves in which the disc is pushed up by the pressure from the system against a spring which is holding the valve closed. If the opening force exceeds the force exerted by the spring, then the valve disc is lifted off the valve seat and the valve discharges the medium. In accordance with the requirements of the standard, the full discharge capacity of the valve will be achieved when the system pressure climbs to no more than 10 % above the set pressure of the valve. Full shut-off must be achieved if the system pressure falls to below 80 % of the nominal set pressure of the valve. For valves rated up to 3.0 bar, the closing pressure can be taken as 0.6 bar minimum.

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	5 °C
Max. ambient temperature:	55 °C
Min. ambient relative humidity:	25 % *
Max. ambient relative humidity:	85 % *

*non condensing

INSTALLATION GUIDELINES

Setup requirements

- Safety valve must be installed in the cold water supply pipework before the water heater
- The installation must be carried out so that:
 - There are no shut-off valves or fittings, narrowing of the pipework or strainers between the water heater and the safety valve
 - Good access is provided for service and maintenance
 - The draining water must be visible and mustn't damage persons or electrical devices
 - The safety valve is fitted above the top of the water heater to avoid the need for draining down when exchanging the safety valve insert
 - That between the safety valve and heat exchanger a max. 1 m long straight connection line with the size of the inlet diameter is installed
- The discharge line must be performed to the size of the safety valve outlet diameter and may not have more than 2 elbows and or be longer than 2 m
- The discharge line must be installed with an incline
- If there is no drainage facility in the room where the heater is installed, then the safety valve may be fitted in an adjacent area. DIN 1988-200 is to be observed
- The installation location should be protected against frost
- The safety valve must be mounted so that in its installed condition no external forces act on it
- Nearby the safety valve must be signed
 - Drainage water can discharge
 - Not locking!
- Requires regular maintenance in accordance with EN 806-5

Installation Example

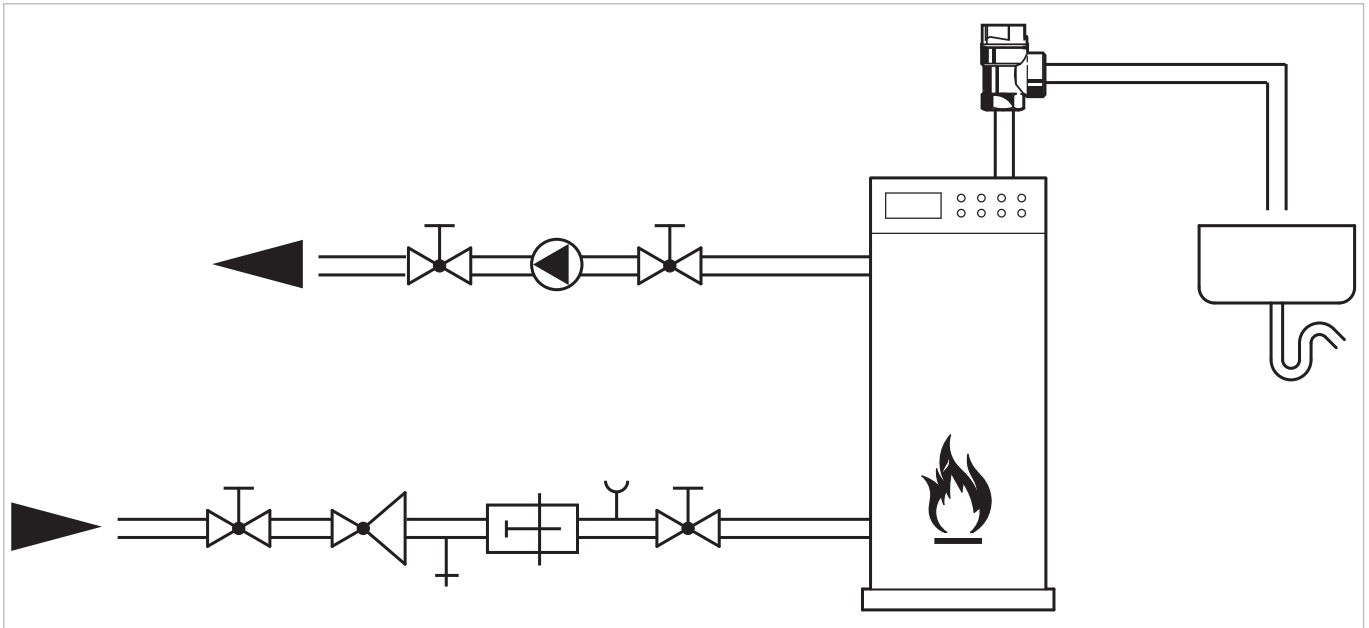
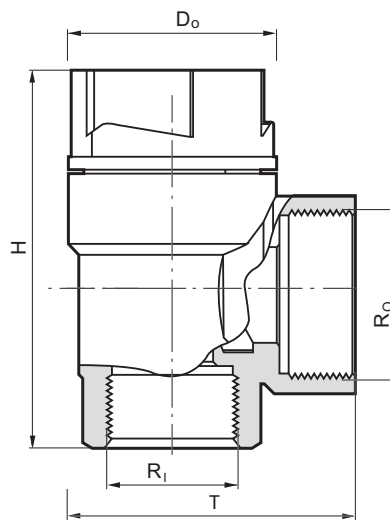


Fig. 1 Standard installation example for the safety valve

DIMENSIONS

Overview



Parameter		Values				
Connection size Inlet:	R _i	1/2" IG	3/4" IG	1/2" IG	3/4" IG	1/2" AG
Connection size Outlet:	R _o	1/2" IG	3/4" IG	3/4" IG	1" IG	3/4" IG
Dimensions:	mm					
	H	60	62	60	62	60
	∅ D _o	33	33	33	36	33
	T	32	46	46	46	46
Weight:	g	135	145	140	150	140
Maximum permissible heat input:	kW	50	100	50	100	50
TÜV Approval Nos.		-	-	TÜV · SV · ..* - 2017 · 13 · H · 2,5bar TÜV · SV · ..* - 2017 · 13 · H · 3bar		

..* valid Approval No.

Only the products with an outlet diameter larger than the inlet diameter are TÜV-certified.

ORDERING INFORMATION

OS.-No.:	Set pressure:	Connection size Inlet:	Connection size Outlet:
SM110- 1/2ZA2.5	2.5 bar	Rp 1/2" IG	Rp 1/2" IG
SM110- 1/2ZA3.0	3.0 bar	Rp 1/2" IG	Rp 1/2" IG
SM110- 1/2A1.5	1.5 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 1/2A2.0	2.0 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 1/2A2.5	2.5 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 1/2A3.0	3.0 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 1/2A4.0	4.0 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 1/2A6.0	6.0 bar	Rp 1/2" IG	Rp 3/4" IG
SM110- 3/4ZA2.5	2.5 bar	Rp 3/4" IG	Rp 3/4" IG
SM110- 3/4ZA3.0	3.0 bar	Rp 3/4" IG	Rp 3/4" IG
SM110- 3/4A1.5	1.5 bar	Rp 3/4" IG	Rp 1" IG
SM110- 3/4A2.5	2.5 bar	Rp 3/4" IG	Rp 1" IG
SM110- 3/4A3.0	3.0 bar	Rp 3/4" IG	Rp 1" IG
SM110- 3/4A4.0	4.0 bar	Rp 3/4" IG	Rp 1" IG
SM110- 1/2AA1.5	1.5 bar	Rp 1/2" AG	Rp 3/4" IG
SM110- 1/2AA2.0	2.0 bar	Rp 1/2" AG	Rp 3/4" IG
SM110- 1/2AA3.0	3.0 bar	Rp 1/2" AG	Rp 3/4" IG

Environmental & Energy Solutions

Honeywell GmbH
 Hardhofweg
 74821 MOSBACH
 GERMANY
 Phone: (49) 6261 810
 Fax: (49) 6261 81309
<http://ecc.emea.honeywell.com>

Manufactured for and on behalf of the
 Environmental and Combustion Controls
 Division of Honeywell Technologies Sàrl, Z.A.
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