PM 512

COMPLEMENTARY PRODUCTS

ABSOLUTE PRESSURE CONTROLLERS

PRESSURE RELIEF VALVE

A pressure relief valve for use in variable flow heating and cooling systems, the PM 512 features a soft NBR diaphragm that delivers a long lifetime and is also equipped with an auxiliary spring that operates as a fail-safe open function. Designed for easy handling in tight spaces. Electrophoretically painted ductile iron body for optimum rust protection.

INLINE DESIGN
Allows high pressure drops without noise.

PNEUMATIC SPRING
Allows adjustable set-point from 0 to 16 bar.

we knowhow

PM 512

TECHNICAL DESCRIPTION

Application:
Heating and cooling systems with variable flow.

Function:
Inline pressure relief valve with pneumatic spring.
Opens at increasing inlet pressure.

Dimensions:
DN 15-125

Pressure class:
PN 25 or PN 16 (DN 100-125)

Max. differential pressure (ΔpV):
1 600 kPa = 16 bar

Setting range:
0-16 bar

Temperature:
Max. working temperature: 100°C
Min. working temperature: -10°C

Media:
Water and neutral fluids, water-glycol mixtures.

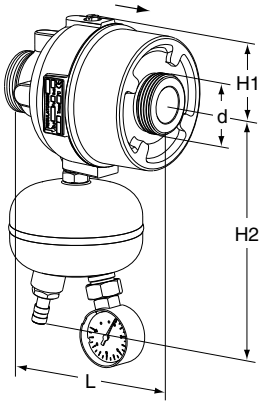
Material:
Valve body: Ductile iron EN-GJS-400-18LT
Diaphragms and gaskets: NBR, EPDM

Surface treatment:
Electrophoretic painting.

Marking:
TA, DN, PN, Kvs, GGG-40.3 and flow direction arrow.

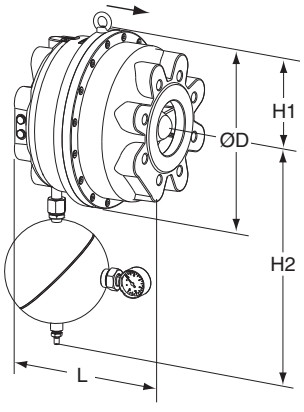
Flanges:
DN 15-50 (optional): According to EN-1092-2:1997, type 16.
DN 65-125: According to EN-1092-2:1997, type 21.

DN 15-50



TA No	DN	d	L	H1	H2	Kvs	Kg
PN 25							
52 766-120	15/20	G1	106	45	143	4	1,0
52 766-125	25/32	G1 1/4	125	55	161	12	1,7
52 766-140	40/50	G2	131	75	198	30	4,4

DN 65-125

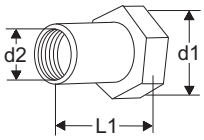


TA No	DN	D	L	H1	H2	Kvs	Kg
PN 25 (DN 65 and 80 also fit PN 16 flanges)							
52 766-165	65	200	160	100	390	60	14
52 766-180	80	200	160	100	390	60	14
52 766-190	100	320	254	160	430	150	60
52 766-191	125	320	254	160	430	150	60
PN 16							
52 766-390	100	320	254	160	430	150	60
52 766-391	125	320	254	160	430	150	60

→ = Flow direction

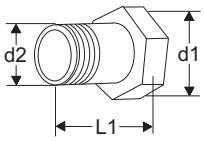
CONNECTIONS FOR DN 15-50

With female thread
Threads according to ISO 228



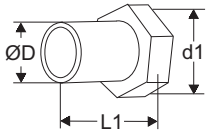
TA No	EAN	d1	d2	L1*
52 759-015	7318793546609	G1	G1/2	26
52 759-020	7318793546708	G1	G3/4	32
52 759-025	7318793546807	G1 1/4	G1	47
52 759-032	7318793546906	G1 1/4	G1 1/4	52
52 759-040	7318793547002	G2	G1 1/2	52
52 759-050	7318793547101	G2	G2	64,5

With male thread
Threads according to ISO 7



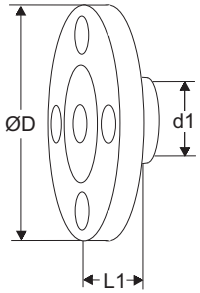
TA No	EAN	d1	d2	L1*
52 759-115		G1	R1/2	34
52 759-120		G1	R3/4	40
52 759-125		G1 1/4	R1	40
52 759-132		G1 1/4	R1 1/4	45
52 759-140		G2	R1 1/2	45
52 759-150		G2	R2	50

For welding



TA No	EAN	d1	D	L1*
52 759-315	7318793547200	G1	20,8	37
52 759-320	7318793547309	G1	26,3	42
52 759-325	7318793547408	G1 1/4	33,2	47
52 759-332	7318793547507	G1 1/4	40,9	47
52 759-340	7318793547606	G2	48,0	47
52 759-350	7318793547705	G2	60,0	52

With flange
Flange according to EN-1092-2:1997, type 16.



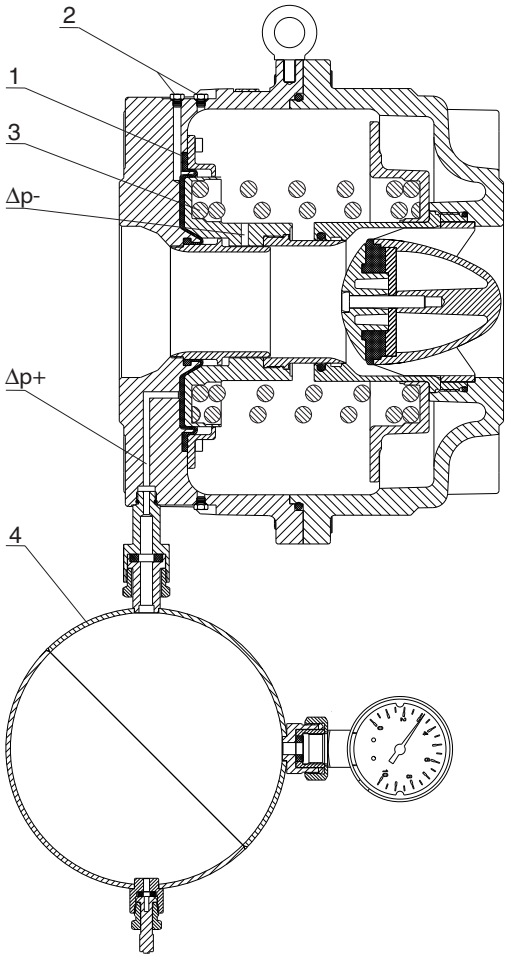
TA No	EAN	d1	D	L1*
52 759-515	7318793547804	G1	95	10
52 759-520	7318793547903	G1	105	20
52 759-525	7318793548009	G1 1/4	115	5
52 759-532	7318793548108	G1 1/4	140	15
52 759-540	7318793548207	G2	150	5
52 759-550	7318793548306	G2	165	20

*) Fitting length (from the gasket surface to the end of the connection).

OPERATING FUNCTION

The pressure from the inlet acts through an internal impulse pipe (Δp-) on the outlet side of the diaphragm (1) and together with the spring force (3) opens the valve.
Compressed gas pressure from the pressure vessel (4) acts through another impulse pipe (Δp+) on the inlet side of the diaphragm and closes the valve.
As long as the forces that act on the diaphragm are in equilibrium, the valve seat stands still. If the inlet pressure rises, the valve opens until it reaches equilibrium.
In the unlikely event of a diaphragm rupture the pressures on both sides of the diaphragm are the same and the fail-safe spring fully opens the valve.
The force of the spring corresponds to 20 kPa differential pressure on the diaphragm

(DN 65-125)



SIZING

Select the size according to the maximum speed. To prevent noise, the maximum speed should not exceed 2 m/s in residential buildings and 3 m/s in industrial buildings.
Control the pressure drop in the valve using the equation:

$$\Delta p = \left(\frac{q}{100 \times Kvs} \right)^2 \qquad [kPa, l/h]$$

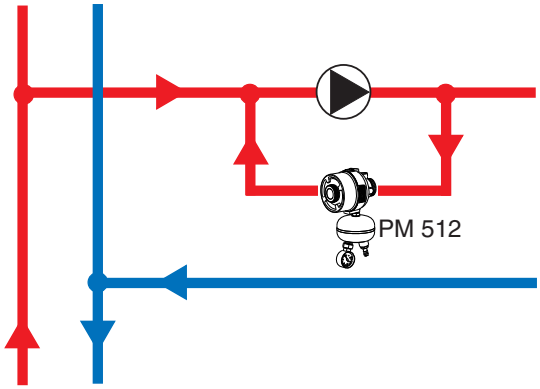
INSTALLATION

The flow direction is shown by arrow on the valve's identification plate (5). The recommended position is horizontal with vent screws (2) on top.
Installation of a strainer upstream of the pressure relief valve is not recommended, as it can reduce or prevent the flow.
It is important to ensure that the working temperature and pressure do not exceed the recommended values.

Before you mount the controller, check the fitting length of the controller and distance between connections on the pipeline.
Fit the connections (welding and threaded ends) to the pipeline first, then clean the welding remains if needed. The controller can then be installed. If flanged connections are used, check the pitch diameter and the diameter of the screw holes.

Once the pipeline and the controller are filled with water and the pressure is stabilised, vent the controller using the vent screws.

Application example:



SETTING

Fill the pressure vessel with compressed air or nitrogen.
The pressure in the pressure vessel should be 20 kPa higher than the desired pressure in the system.

On PM 512 the pressure can be controlled using a pressure gauge on the pipeline or through a pressure gauge on the pressure vessel.

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