

D 512, DF 512

Differential pressure controller



Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

Compact and rust resistant, differential pressure controllers for variable flow heating and cooling systems. Especially effective in systems where high pressure drop is required, it's also suitable for secondary side usage in district heating and comfort cooling systems.

> Inline design

Inline flow allows high pressure drops without noise.



> Technical description

Application:

Heating and cooling systems with variable flow.
Air-conditioning.

Function:

Differential pressure control over the load.
Closes at increasing Δp .
D 512: Installation in return pipe.
DF 512: Installation in inlet pipe.

Dimensions:

DN 15-125

Pressure class:

PN 25
DN 100-125: PN 16 and PN 25

Max. differential pressure (Δp_V):

1600 kPa = 16 bar

Setting range:

Differential pressure fixed at 12, 15, 20, 40, 60 and 100 kPa.

Temperature:

Max. working temperature: 140°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: EPDM

Surface treatment:

Electrophoretic painting.

Marking:

TA, DN, PN, GGG 40.3, Kvs, Δp 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.

Operating function

D 512

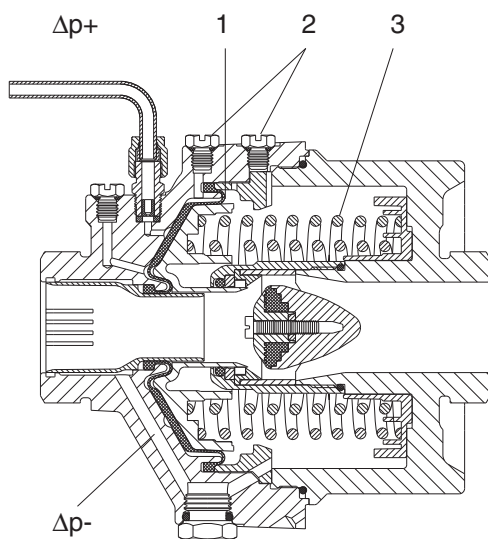
Installation in the return pipe. The pressure upstream the consumer acts through an external copper impulse pipe ($\Delta p+$) to the inlet side of the diaphragm (1) and closes the valve.

The pressure downstream the consumer (in front of the valve) acts through an internal impulse pipe ($\Delta p-$) to the outlet side of the diaphragm and together with spring (3) attempts to open the valve.

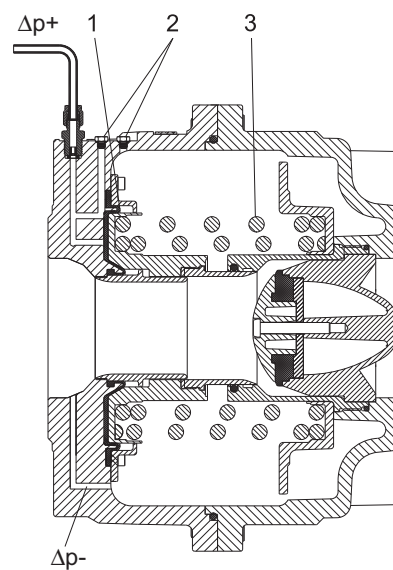
DF 512

Installation in the inlet pipe. Function is the same as D 512, except that the pressure downstream the consumer (from behind of the controller) acts through the another external copper impulse pipe ($\Delta p-$).

DN 15-50



DN 65-125



Sizing

Select the size according to maximal speed. To prevent noise, maximal speed should not exceed 2 m/s in residential buildings and 3 m/s in industrial buildings.

Control the pressure drop in the valve by formula:

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

Installation

Install the controller in the return pipe, downstream the consumer (**D 512**) or in the inlet pipe, upstream the consumer (**DF 512**). Flow direction is shown by the arrow on the valve's identification plate. The best position is horizontal with vent screws (2) on top. Installation of a strainer upstream the controller is recommended.

Connect copper impulse pipe ($\Delta p+$) to the pipeline upstream the consumer. In case of DF 512, connect another copper impulse pipe ($\Delta p-$) downstream the consumer (from behind the controller). In case of a horizontal pipeline connect the copper impulse pipe laterally to prevent air and dirt from entering.

It is important to ensure that working temperature and pressure do not exceed allowed values.

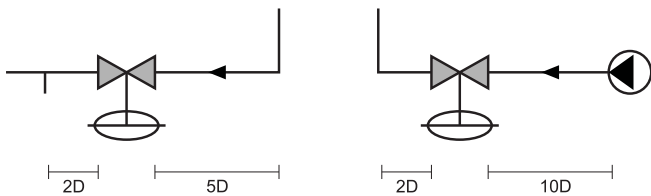
Check the fitting length of the controller and distance between connections on the pipeline before mounting. Fit the connections (welding and threaded ends) to the pipeline first, then clean the remains of welding operations if needed. Then install the controller.

If you use flanged connections, check pitch diameter and the diameter of the holes for the screws. When the pipeline and the controller are full of water and the pressure is stabilized, vent the controller by the vent screws (2).

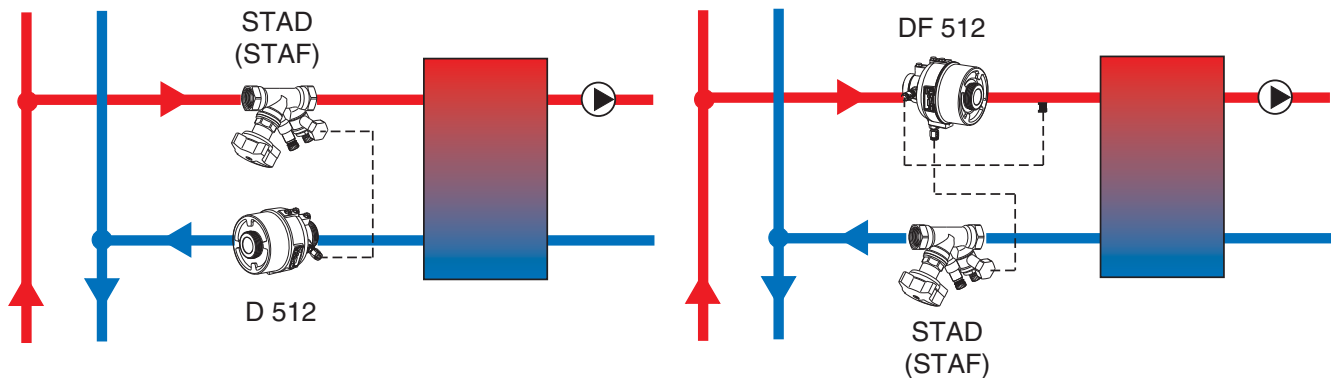
Installation of balancing valve STAD (STAF) is recommended to enable flow measurement, commissioning and troubleshooting with balancing instrument TA-SCOPE or measuring instrument TA-CMI.

Normal pipe fittings

Try to avoid mounting taps and pumps immediately before the valve.



Application example

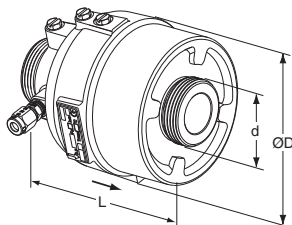


D 512

DN 15-50

Capillary pipe (Ø6) included: 1 200 mm

PN 25



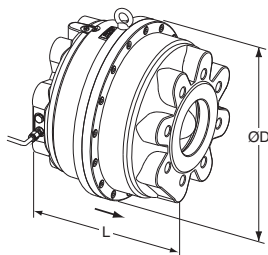
Article No	DN	d	D	L	Kvs	Kg
12 kPa						
52 764-420	15/20	G1	97	106	4	1,2
52 764-425	25/32	G1 1/4	112	125	12	2,2
52 764-440	40/50	G2	146	131	30	4,2
15 kPa						
52 764-020	15/20	G1	97	106	4	1,2
52 764-025	25/32	G1 1/4	112	125	12	2,2
52 764-040	40/50	G2	146	131	30	4,2
20 kPa						
52 764-520	15/20	G1	97	106	4	1,2
52 764-525	25/32	G1 1/4	112	125	12	2,2
52 764-540	40/50	G2	146	131	30	4,2
40 kPa						
52 764-120	15/20	G1	97	106	4	1,2
52 764-125	25/32	G1 1/4	112	125	12	2,2
52 764-140	40/50	G2	146	131	30	4,2
60 kPa						
52 764-220	15/20	G1	97	106	4	1,2
52 764-225	25/32	G1 1/4	112	125	12	2,2
52 764-240	40/50	G2	146	131	30	4,2
100 kPa						
52 764-320	15/20	G1	97	106	4	1,2
52 764-325	25/32	G1 1/4	112	125	12	2,2
52 764-340	40/50	G2	146	131	30	4,2

DN 65-125

Capillary pipe (Ø6) included: 1 500 mm

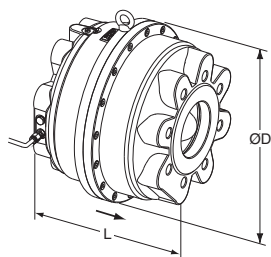
DN 65-125 are flanged and do not need any separate connections.

PN 16



Article No	DN	D	L	Kvs	Kg
12 kPa					
52 766-490	100	320	254	150	53
52 766-491	125	320	254	150	53
15 kPa					
52 766-690	100	320	254	150	53
52 766-691	125	320	254	150	53
20 kPa					
52 766-590	100	320	254	150	53
52 766-591	125	320	254	150	53
40 kPa					
52 766-790	100	320	254	150	53
52 766-791	125	320	254	150	53
60 kPa					
52 766-890	100	320	254	150	53
52 766-891	125	320	254	150	53
100 kPa					
52 766-990	100	320	254	150	53
52 766-991	125	320	254	150	53

→ = Flow direction



PN 25 (DN 65-80 also fit PN 16 flanges)

Article No	DN	D	L	Kvs	Kg
12 kPa					
52 764-465	65	200	160	60	14
52 764-480	80	200	160	60	14
52 764-490	100	320	254	150	53
52 764-491	125	320	254	150	53
15 kPa					
52 764-065	65	200	160	60	14
52 764-080	80	200	160	60	14
52 764-090	100	320	254	150	53
52 764-091	125	320	254	150	53
20 kPa					
52 764-565	65	200	160	60	14
52 764-580	80	200	160	60	14
52 764-590	100	320	254	150	53
52 764-591	125	320	254	150	53
40 kPa					
52 764-165	65	200	160	60	14
52 764-180	80	200	160	60	14
52 764-190	100	320	254	150	53
52 764-191	125	320	254	150	53
60 kPa					
52 764-265	65	200	160	60	14
52 764-280	80	200	160	60	14
52 764-290	100	320	254	150	53
52 764-291	125	320	254	150	53
100 kPa					
52 764-365	65	200	160	60	14
52 764-380	80	200	160	60	14
52 764-390	100	320	254	150	53
52 764-391	125	320	254	150	53

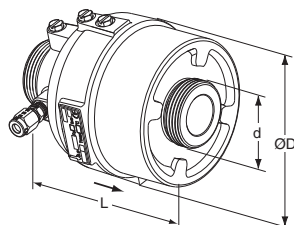
→ = Flow direction

DF 512

DN 15-50

Capillary pipe (Ø6) included: 1 200 mm

PN 25



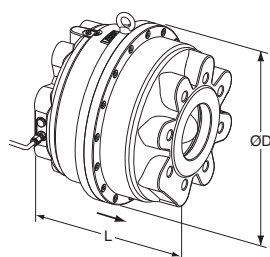
Article No	DN	d	D	L	Kvs	Kg
12 kPa						
52 765-420	15/20	G1	97	106	4	1,2
52 765-425	25/32	G1 1/4	112	125	12	2,2
52 765-440	40/50	G2	146	131	30	4,2
15 kPa						
52 765-020	15/20	G1	97	106	4	1,2
52 765-025	25/32	G1 1/4	112	125	12	2,2
52 765-040	40/50	G2	146	131	30	4,2
20 kPa						
52 765-520	15/20	G1	97	106	4	1,2
52 765-525	25/32	G1 1/4	112	125	12	2,2
52 765-540	40/50	G2	146	131	30	4,2
40 kPa						
52 765-120	15/20	G1	97	106	4	1,2
52 765-125	25/32	G1 1/4	112	125	12	2,2
52 765-140	40/50	G2	146	131	30	4,2
60 kPa						
52 765-220	15/20	G1	97	106	4	1,2
52 765-225	25/32	G1 1/4	112	125	12	2,2
52 765-240	40/50	G2	146	131	30	4,2
100 kPa						
52 765-320	15/20	G1	97	106	4	1,2
52 765-325	25/32	G1 1/4	112	125	12	2,2
52 765-340	40/50	G2	146	131	30	4,2

DN 65-125

Capillary pipe (Ø6) included: 1 500 mm

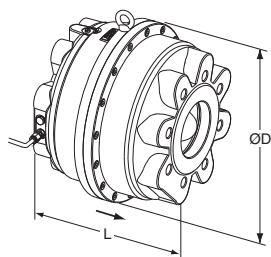
DN 65-125 are flanged and do not need any separate connections.

PN 16



Article No	DN	D	L	Kvs	Kg
12 kPa					
52 767-490	100	320	254	150	53
52 767-491	125	320	254	150	53
15 kPa					
52 767-690	100	320	254	150	53
52 767-691	125	320	254	150	53
20 kPa					
52 767-590	100	320	254	150	53
52 767-591	125	320	254	150	53
40 kPa					
52 767-790	100	320	254	150	53
52 767-791	125	320	254	150	53
60 kPa					
52 767-890	100	320	254	150	53
52 767-891	125	320	254	150	53
100 kPa					
52 767-990	100	320	254	150	53
52 767-991	125	320	254	150	53

→ = Flow direction

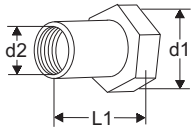


PN 25 (DN 65-80 also fit PN 16 flanges)

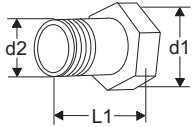
Article No	DN	D	L	Kvs	Kg
12 kPa					
52 765-465	65	200	160	60	14
52 765-480	80	200	160	60	14
52 765-490	100	320	254	150	53
52 765-491	125	320	254	150	53
15 kPa					
52 765-065	65	200	160	60	14
52 765-080	80	200	160	60	14
52 765-090	100	320	254	150	53
52 765-091	125	320	254	150	53
20 kPa					
52 765-565	65	200	160	60	14
52 765-580	80	200	160	60	14
52 765-590	100	320	254	150	53
52 765-591	125	320	254	150	53
40 kPa					
52 765-165	65	200	160	60	14
52 765-180	80	200	160	60	14
52 765-190	100	320	254	150	53
52 765-191	125	320	254	150	53
60 kPa					
52 765-265	65	200	160	60	14
52 765-280	80	200	160	60	14
52 765-290	100	320	254	150	53
52 765-291	125	320	254	150	53
100 kPa					
52 765-365	65	200	160	60	14
52 765-380	80	200	160	60	14
52 765-390	100	320	254	150	53
52 765-391	125	320	254	150	53

→ = Flow direction

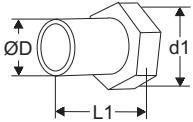
Connections for DN 15-50



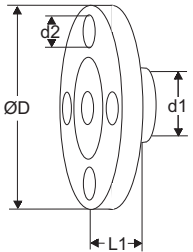
With female thread
Threads according to ISO 228



With male thread
Threads according to ISO 7



For welding



With flange

Article 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

Article 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

Article 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

Article No	EAN	d1	d2	D	L1*
52 759-515	7318793547804	G1	M12	95	10
52 759-520	7318793547903	G1	M12	105	20
52 759-525	7318793548009	G1 1/4	M12	115	5
52 759-532	7318793548108	G1 1/4	M16	140	15
52 759-540	7318793548207	G2	M16	150	5
52 759-550	7318793548306	G2	M16	165	20

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

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