



Technical description

Application:

District heating and cooling systems with variable flow.

Functions:

Differential pressure control over the built-in control valve and flow limitation.

KT: For on/off actuator

KTH: Linear characteristics

KTM: Modified equal percentage characteristics

Pressure class:

PN 25 and PN 16

Max. differential pressure:

1600 kPa = 16 bar

Pressure drop in the throttle (Fc):

12, 20 and 40 kPa.

Temperature:

Max. working temperature: 140°C

Min. working temperature: -10°C

Media:

Water or neutral fluids, water-glycol mixtures.

Material:

Valve body: Ductile iron EN-GJS-400-18LT

Diaphragms and gaskets: EPDM

Valve plug:

KT: EPDM.

KTH 512: EPDM/Stainless steel.

KTM 512: EPDM/Stainless steel.

Surface treatment:

Electrophoretic painting.

Marking:

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

Flanges:

DN 15-50: According to EN-1092-2:1997, type 16.

DN 65-100: According to EN-1092-2:1997, type 21.

Actuators:

KT, KTH and KTM 512 can be equipped with adapters for the most common actuators - see accessories page.

The max. lift of the actuator must be checked.

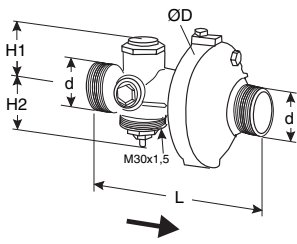
Max. lift of the control valve:

KT: 1.8 mm

KTH/KTM: DN 15-50, 10 mm.

KTM: DN 65-100, 20 mm

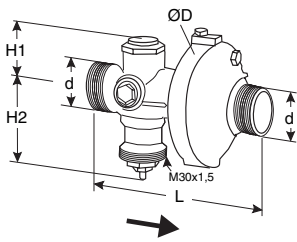
KT 512



TA No	DN	d	D	L	H1	H2	Kvs	q _{max} m ³ /h	Kg
Fc = 12 kPa									
52 754-120	15/20	R1	78	110	45	40	4,1	0,9	1,0
Fc = 20 kPa									
52 754-020	15/20	R1	78	110	45	40	4,1	1,1	1,0
Fc = 40 kPa									
52 754-220	15/20	R1	78	110	45	40	4,1	1,5	1,0

→ = Flow direction

KTH 512

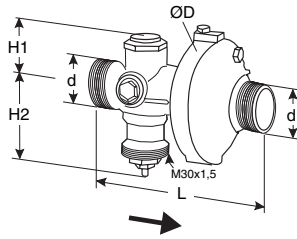


TA No	DN	d	D	L	H1	H2	Kvs	q _{max} m ³ /h	Kg
Fc = 12 kPa									
52 755-120	15/20	R1	78	110	45	98	4,1	0,9	1,5
52 755-125	25/32	R1 1/4	97	150	53	94	16	3,8	2,0
52 755-140	40/50	R2	125	190	66	94	35	7	4,5
Fc = 20 kPa									
52 755-020	15/20	R1	78	110	45	98	4,1	1,1	1,5
52 755-025	25/32	R1 1/4	97	150	53	94	16	4,4	2,0
52 755-040	40/50	R2	125	190	66	94	35	10	4,5
Fc = 40 kPa									
52 755-220	15/20	R1	78	110	45	98	4,1	1,5	1,5
52 755-225	25/32	R1 1/4	97	150	53	94	16	6,2	2,0
52 755-240	40/50	R2	125	190	66	94	35	13	4,5

→ = Flow direction

KTM 512

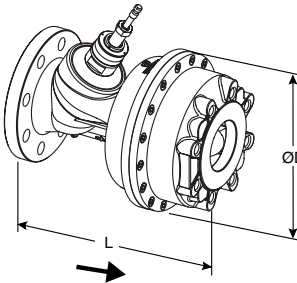
DN 15-50



TA No	DN	d	D	L	H1	H2	Kvs	q _{max} m ³ /h	Kg
Fc = 12 kPa									
52 756-220	15/20	R1	78	110	45	98	4,1	0,9	1,5
52 756-225	25/32	R1 1/4	97	150	53	94	16	3,4	2,0
52 756-240	40/50	R2	125	190	66	94	35	7	4,5
Fc = 20 kPa									
52 756-020	15/20	R1	78	110	45	98	4,1	1,1	1,5
52 756-025	25/32	R1 1/4	97	150	53	94	16	4,2	2,0
52 756-040	40/50	R2	125	190	66	94	35	10	4,5
Fc = 40 kPa									
52 756-420	15/20	R1	78	110	45	98	4,1	1,5	1,5
52 756-425	25/32	R1 1/4	97	150	53	94	16	5,3	2,0
52 756-440	40/50	R2	125	190	66	94	35	13	4,5

DN 65-80

DN 65-80 are flanged and do not need any separate connections.



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

TA No	DN	D	L	H1	H2	Kvs	q _{max} m ³ /h	Kg
Fc = 12 kPa								
52 756-265	65	220	290	110	145	70	15	22
52 756-280	80	220	310	110	145	70	18	24
52 756-290	100	320	350	160	185	150	32	54
Fc = 20 kPa								
52 756-065	65	220	290	110	145	70	20	22
52 756-080	80	220	310	110	145	70	24	24
52 756-090	100	320	350	160	185	150	40	54
Fc = 40 kPa								
52 756-465	65	220	290	110	145	70	30	22
52 756-480	80	220	310	110	145	70	34	24
52 756-490	100	320	350	160	185	150	55	54

PN 16

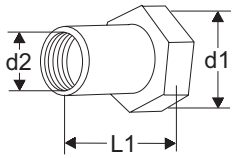
TA No	DN	D	L	H1	H2	Kvs	q _{max} m ³ /h	Kg
Fc = 12 kPa								
52 786-290	100	320	350	160	185	150	32	54
Fc = 20 kPa								
52 786-090	100	320	350	160	185	150	40	54
Fc = 40 kPa								
52 786-490	100	320	350	160	185	150	55	54

→ = Flow direction

Connections

Connection with female thread

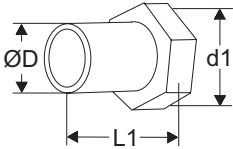
For DN 15-50



TA No	d1	d2	L1
52 759-015	G1	G1/2	26
52 759-020	G1	G3/4	32
52 759-025	G1 1/4	G1	47
52 759-032	G1 1/4	G1 1/4	52
52 759-040	G2	G1 1/2	52
52 759-050	G2	G2	64,5

Connection for welding

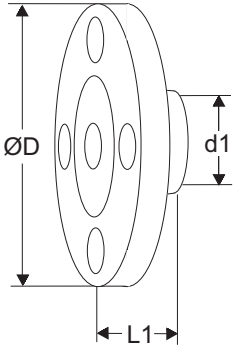
For DN 15-50



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

Connection with flange

For DN 15-50

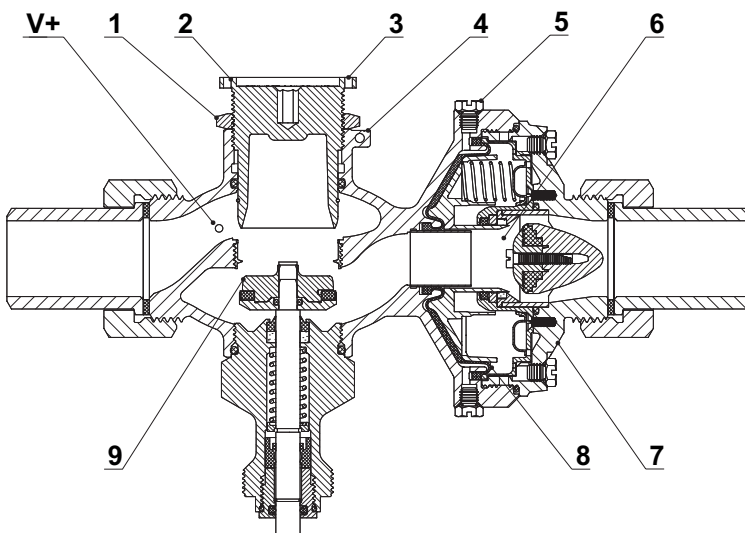


TA No	d1	D	L1
52 759-515	G1	95	10
52 759-520	G1	105	20
52 759-525	G1 1/4	115	5
52 759-532	G1 1/4	140	15
52 759-540	G2	150	5
52 759-550	G2	165	20

Operating function

The throttle (2) for flow adjustment, valve for temperature regulation (9) and flow controller (6) are built in series in one valve body (7). Pressure upstream of the throttle acts through an internal capillary pipe (V+) to one side of the diaphragm (8) in the flow regulator.

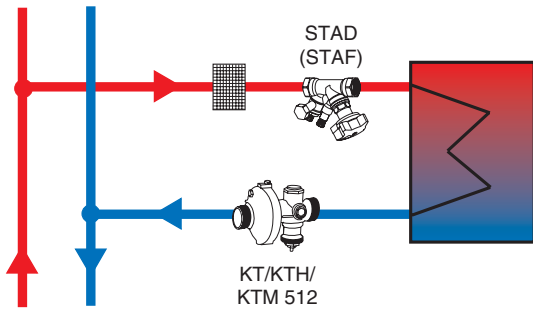
Pressure downstream of the temperature control valve (9) acts to the other side of the diaphragm together with a spring force. Pressure drop in the temperature control valve does not exceed 12, 20 or 40 kPa. The accuracy of flow regulation is practically independent on the pressures upstream and downstream of the controller. As the temperature control valve is pressure relieved, no additional differential pressure controller is needed and it is possible to use actuators with low force.



1. Fixing nut
2. Throttle
3. Holes for plumbing (throttle)
4. Holes for plumbing (valve body)
5. Venting screws
6. Flow controller
7. Valve body
8. Diaphragm
9. Control valve

Installation

Flow direction is shown by the arrow on the valve body. Install the valve so that venting is possible and the flow adjustment scale is visible. Check allowed positions of the actuator. Installation of a strainer upstream of the valve is recommended. When filling, vent the body by using the venting screws. Instead of the plug R1/4 you can install drain valve or measurement nipple for pressure or temperature measurement.



Setting

Presetting of the maximum flow

Release the fixing nut (1). Turn the throttle (2) clockwise down to the start position of 0,0 turns. Adjust the corresponding number of scale turns according to flow chart and the pointer (4) on the valve body. Tighten the fixing nut. You can plumb the flow setting using holes (3a and 3b) on the throttle and the valve body.

- a Measure the flow on the balancing valve STAD using the balancing instrument TA-CBI or measuring instrument TA-CMI.
- b Adjust the throttle until you measure the required flow on the TA-CBI or TA-CMI.
- c Lock the fixing nut. When you lock the nut please hold the throttle in place with an allen key.

Alternative:

- a Take the presetting value from the table which is packed with the valve.
- b Open the throttle anti-clockwise. The preset value (e.g. 3,4) means that you open the valve three complete turns. After that turn until the figure 4 fits the red mark on the valve body.
- c Lock the fixing nut. When you lock the nut hold the throttle in place with an allen key.

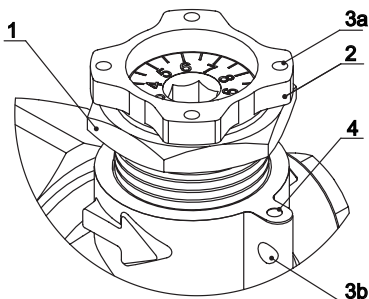


Table - Example

	Position - Presetting				
	0,0	1,0	2,0	3,0	4,0
,0	57	198	435	656	804
,1	71	222	457	671	815
,2	85	245	479	686	825
,3	99	269	501	700	836
,4	113	293	523	715	846
,5	128	317	546	730	857
,6	142	340	568	745	867
,7	156	364	590	760	878
,8	170	388	612	774	888
,9	184	411	634	789	899

Flow (l/h)

Sizing

1. Select the smallest size for the flow you need according to q_{max} in the product tables.
2. Check that the available Δp is bigger than the sum of the pressure drops calculated with the formula:

$$\Delta H_{min} = \left(\frac{q}{100 \times Kvs} \right)^2 + FC \quad (\text{kPa, l/h})$$

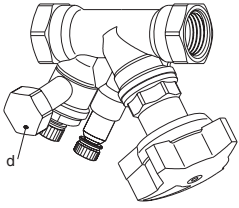
Accessories

Balancing valve STAD (PN 20)

For flow measuring

Max 120°C

See catalogue leaflet STAD, STADA,... for complete details.



TA No	TA No
d = G1/2	d = G3/4
52 151-209*	52 151-609*
52 151-214*	52 151-614*
52 151-220*	52 151-620*
52 151-225	52 151-625
52 151-232	52 151-632
52 151-240	52 151-640
52 151-250	52 151-650

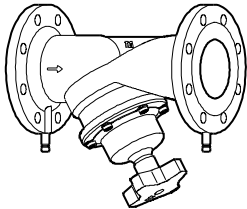
*) Can be connected to smooth pipes by KOMBI compression coupling. See catalogue leaflet KOMBI under section Couplings.

Balancing valve STAF, STAF-SG

For flow measuring

Max 120°C

See catalogue leaflet STAF, STAF-SG,... for complete details.

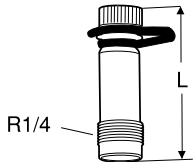


TA No	TA No	DN
PN 16	PN 25	
-	52 182-040**	40
-	52 182-050**	50
52 181-065	52 182-065	65
52 181-080	52 182-080	80

**) Fit PN 16 flanges.

Measuring point

Max 120°C (Intermittent 150°C)



TA No	L
52 179-009	39
52 179-609	103

Products for higher temperatures - contact TA.

Other products, see TA Product catalogue section "Balancing valves".

Adapters for actuators

TA No	For actuator
52 757-001	Siemens SQS
52 757-002	Johnson Control V7420
52 757-003	Sauter AVM, AVF, SR25, L4
52 757-004	TAC Forta
52 757-005	Hora Mc55
52 757-006	Heimeier EMO-3
52 757-007	Lineg
52 757-008	Danfoss AMV
52 757-009	Belimo NRDVX
52 757-010	Honeywell ML
52 757-011	Samson 5825

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