

# TA-Modulator



## **Combined control & balancing valves**

Pressure independent balancing and control valve for modulating control

# TA-Modulator

The new uniquely shaped EQM characteristics provide highly precise temperature control. The valve is compatible with linear, proportional or 3-point actuators. A built-in differential pressure controller provides high control authority, control stability and automatic limitation of design flow. Measurement of flow and available pressure enables system optimisation and diagnostics.

## Key features

- > **Precise temperature control**  
Provide uniquely shaped EQM characteristic for best modulating control.
- > **Precise control**  
Uniquely shaped EQM characteristic provides an up to 6 times larger operating stroke than linear valves.
- > **Quick hydronic balancing**  
Automatic flow limitation when actuator is fully open protects entire system against overflows.
- > **Easy troubleshooting**  
Flow and differential pressure measuring helps to reduce pump consumption and provides all necessary data for system diagnostics.



## Technical description

### Application:

Heating and cooling systems.

### Functions:

Control EQM: DN 15-150 normal flow  
Control LIN: DN 100-150 high flow  
Pre-setting (max. flow)  
Differential pressure control  
Measuring ( $\Delta H$ ,  $t$ ,  $q$ )  
Isolation (for use during system maintenance – see “Leakage rate”)

### Dimensions:

DN 15-150

### Pressure class:

DN 15-50: PN 16  
DN 65-150: PN 16, PN 25

### Differential pressure ( $\Delta pV$ ):

Max. differential pressure ( $\Delta pV_{max}$ ):  
DN 15-32: 600 kPa = 6 bar  
DN 15-25: 400 kPa = 4 bar\*  
DN 40-50: 400 kPa = 4 bar  
DN 65-150: 800 kPa = 8 bar  
Min. differential pressure ( $\Delta pV_{min}$ ):  
DN 15-20: 15 kPa = 0.15 bar  
DN 25-32: 23 kPa = 0.23 bar  
DN 40-150: 30 kPa = 0.30 bar  
DN 100-125 HF: 55 kPa = 0.55 bar  
DN 150 HF: 60 kPa = 0.60 bar  
(Valid for maximum setting, fully open.  
Other settings will require lower differential pressure, check with the software HySelect.)  
 $\Delta pV_{max}$  = The maximum allowed pressure drop over the valve to fulfill all stated performances.  
 $\Delta pV_{min}$  = The minimum recommended pressure drop over the valve, for proper differential pressure control.  
\*) With  $\Delta p$  insert in PPS.  
HF = High flow

### Flow range:

The flow ( $q_{max}$ ) can be set within the range:  
DN 15: 92 - 480 l/h  
DN 20: 200 - 975 l/h  
DN 25: 340 - 1750 l/h  
DN 32: 720 - 3600 l/h  
DN 40: 1000 - 6500 l/h  
DN 50: 2150 - 11200 l/h  
DN 65: 4150 - 24100 l/h  
DN 80: 5850 - 37300 l/h  
DN 100: 11700 - 51700 l/h  
DN 100 HF: 18000 - 75900 l/h  
DN 125: 15000 - 77300 l/h  
DN 125 HF: 23300 - 127000 l/h  
DN 150: 26100 - 126000 l/h  
DN 150 HF: 38800 - 190000 l/h  
 $q_{max}$  = l/h at each setting and fully open valve plug.  
HF = High flow

### Temperature:

DN 15-32:  
Max. working temperature: 120°C  
Min. working temperature: -20°C  
DN 15-25 with  $\Delta p$  insert in PPS,  
DN 40-50:  
Max. working temperature: 90°C  
Min. working temperature: -10°C  
DN 65-150:  
Max. working temperature: 120°C  
Min. working temperature: -10°C

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**Media:**

Water or neutral fluids, water-glycol mixtures (0-57%).

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**Lift:**

DN 15-20: 4 mm  
 DN 25-32: 6,5 mm  
 DN 40-50: 15 mm  
 DN 65-125: 20 mm  
 DN 150: 30 mm

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**Rangeability:**

DN 15-32: >75  
 DN 40-80: >125  
 DN 100-150: >150  
 DN 100-150 HF: >125

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**Leakage rate:**

Leakage flow  $\leq 0.01\%$  of max.  $q_{max}$  (max. setting) and correct flow direction. (Class IV according to EN 60534-4).

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**Characteristics:**

Independent shaped EQM.  
 DN 100-150 HF: Linear.

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**Material:**

*DN 15-32:*

Valve body: AMETAL®  
 Valve insert: AMETAL® and PPS  
 Valve plug: Brass CW724R (CuZn21Si3P)  
 Spindle: Stainless steel  
 Spindle seal: EPDM O-ring  
 $\Delta p$  insert: PPS and AMETAL® or PPS  
 Membrane: EPDM  
 Springs: Stainless steel  
 O-rings: EPDM

*DN 40-50:*

Valve body: AMETAL®  
 Valve insert: AMETAL®  
 Valve plug: AMETAL® and PTFE  
 Spindle: Stainless steel  
 Spindle seal: EPDM O-ring  
 $\Delta p$  insert: PPS  
 Membrane: EPDM  
 Springs: Stainless steel  
 O-rings: EPDM

*DN 65-150:*

Valve body: Ductile iron EN-GJS-400  
 Valve insert: Ductile iron EN-GJS-400 and brass  
 Valve plug: Stainless steel and EPDM O-ring  
 Valve seat: Stainless steel  
 Spindle: Stainless steel  
 Spindle seal: EPDM  
 $\Delta p$  insert: Ductile iron EN-GJS-400, stainless steel and brass.  
 Membrane: Reinforced EPDM  
 Springs: Stainless steel  
 O-rings: EPDM

AMETAL® is the dezincification resistant alloy of IMI Hydronic Engineering.

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**Surface treatment:**

DN 15-50: Non treated  
 DN 65-150: Electrophoretic painting

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**Marking:**

Black identification ring on measuring point: TA-Modulator and DN.  
 DN 15-32: TA, IMI, PN, DN and flow direction arrow. Grey setting wheel.  
 DN 40-50: IMI TA, PN, DN, inch size, country of origin and flow direction arrow. Orange setting wheel.  
 DN 65-150: IMI TA, DN, inch size, material and flow direction arrow. Label with technical specification, country of origin and CE. Orange setting wheel.

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**Connection:**

DN 15-50: Male thread according to ISO 228.  
 DN 65-150: Flanges according to EN-1092-2, type 21. Face to face length according to EN 558, series 1.

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**Connection to actuator:**

DN 15-32: M30x1.5, push  
 DN 40-50: M30x1.5, push/pull  
 DN 65-150: 2xM8, push/pull

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**Actuators:**

DN 15-20:  
 TA-Slider 160, EMO TM, EMO 3.  
 DN 25-32:  
 TA-Slider 160, TA-MC50-C\*.  
 DN 40-50:  
 TA-Slider 500, TA-Slider 750\*.  
 DN 65-125:  
 TA-Slider 750, TA-MC100 FSE/FSR (fail-safe).  
 DN 100-125 HF:  
 TA-Slider 750  $\Delta pV \leq 4$  bar, TA-Slider 1250  $\Delta pV \leq 8$  bar, TA-MC100 FSE/FSR (fail-safe).  
 DN 150/DN 150 HF:  
 TA-MC160\*\*, TA-MC253 SE\* (fail-safe).

\*) Adapter to be ordered separately, see "Adapters for actuators".

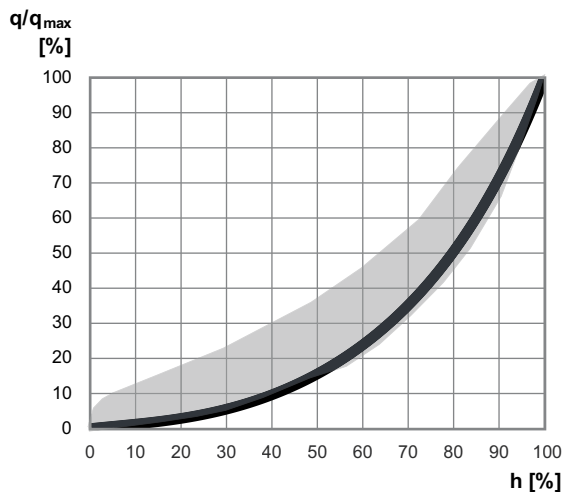
\*\*\*) Adapter delivered with the valve.

For more details on actuators, see separate technical leaflets.

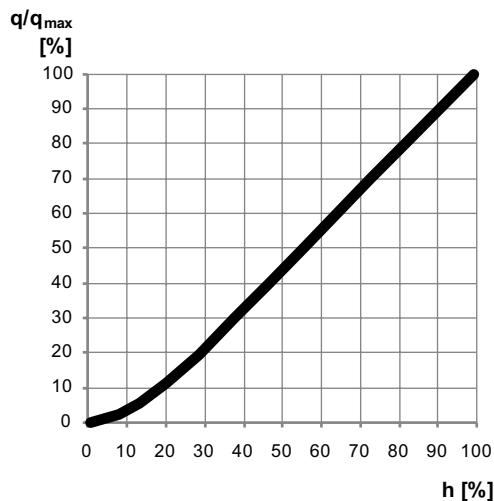
## Valve characteristics

### Nominal valve characteristic for all settings

EQM



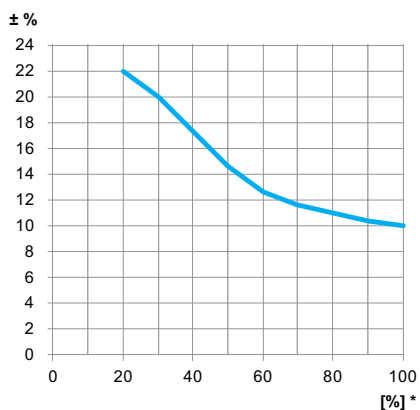
LIN



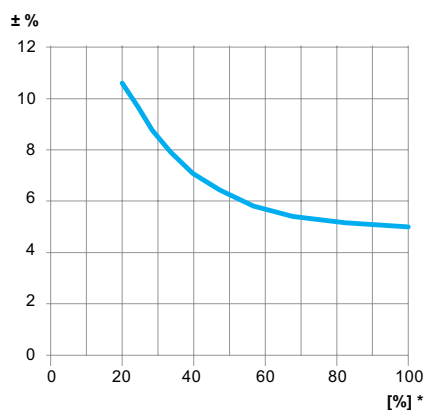
## Measuring accuracy

### Maximum flow deviation at different settings

DN 15-32 (1/2"-1 1/4")



DN 40-150 (1 1/2"-6")



\*) Setting (%) of fully open valve.

## Correction factors

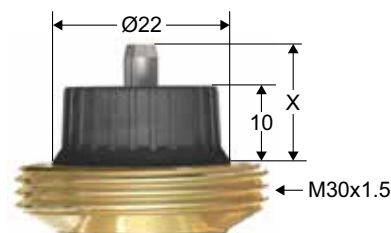
The flow calculations are valid for water (+20°C). For other liquids with approximately the same viscosity as water ( $\leq 20$  cSt =  $3^\circ E=100S.U.$ ), it is only necessary to compensate for the specific density. However, at low temperatures, the viscosity increases and laminar flow may occur in the valves. This causes a flow deviation that increases with small valves, low settings and low differential pressures. Correction for this deviation can be made with the software HySelect or directly in our balancing instruments.

## Noise

Performance of the valves is subject to water quality being of an appropriate regional standard (including particulate and free, entrained and dissolved gases compliant with VDI 2035), failure to do so can result in shortened life span, reduced controllability and noise.

## Actuators

TA-Modulator is developed to work together with recommended actuators according to table. Care should be taken by the user to ensure that actuators not manufactured by IMI Hydronic Engineering are fully compatible to provide optimal control from the valve. Failure to do so may provide unsatisfactory results. See separate catalogue leaflets for more details about the actuators.



Push actuators of other brands require;

### Working range

DN 15-20: X (closed - fully open) = 11.6 - 15.85

DN 25-32: X (closed - fully open) = 10.1 - 16.85

### Closing force

DN 15-20: Min. 125 N (max. 500 N)

DN 25-32: Min. 190 N (max. 500 N)

### Maximum recommended pressure drop ( $\Delta pV$ ) for valve and actuator combination

The maximum recommended pressure drop over a valve and actuator combination for close off ( $\Delta pV_{close}$ ) and to fulfill all stated performances ( $\Delta pV_{max}$ ).

DN	EMO TM	EMO 3	TA-Slider 160	TA-MC50-C	TA-Slider 500	TA-Slider 750	TA-Slider 1250	TA-MC160	TA-MC100 FSE/FSR	TA-MC253 SE
	[kPa]									
15	400/600	400/600	400/600	-	-	-	-	-	-	-
20	400/600	400/600	400/600	-	-	-	-	-	-	-
25	-	-	400/600	400/600	-	-	-	-	-	-
32	-	-	600	600	-	-	-	-	-	-
40	-	-	-	-	400	400	-	-	-	-
50	-	-	-	-	400	400	-	-	-	-
65	-	-	-	-	-	800	-	-	800	-
80	-	-	-	-	-	800	-	-	800	-
100 NF	-	-	-	-	-	800	-	-	800	-
100 HF	-	-	-	-	-	400	800	-	800	-
125 NF	-	-	-	-	-	800	-	-	800	-
125 HF	-	-	-	-	-	400	800	-	800	-
150 NF/HF	-	-	-	-	-	-	-	800	-	800
<b>Closing force</b>	125 N	150 N	190 N	500 N	500 N	750 N	1250 N	1600 N	1000 N	2500 N

$\Delta pV_{close}$  = The maximum pressure drop that the valve can close against from an opened position, with a specified force (actuator) without exceeding stated leakage rate.

$\Delta pV_{max}$  = The maximum allowed pressure drop over the valve to fulfill all stated performances.

HF = High flow

## Sizing

1. Choose the smallest valve size that can obtain the design flow with some safety margin, see " $q_{max}$  values". The setting should be as open as possible.
2. Check that the available  $\Delta pV$  is within the working range according to the valve size and variant.

**q<sub>max</sub> values**

	Position									
	1	2	3	4	5	6	7	8	9	10
<b>DN 15</b>	92	114	140	170	210	265	325	390	445	480
<b>DN 20</b>	200	260	360	460	565	670	770	850	920	975
<b>DN 25</b>	340	440	600	810	1010	1200	1350	1520	1640	1750
<b>DN 32</b>	720	960	1350	1750	2150	2530	2850	3130	3380	3600

	Position												
	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
<b>DN 40</b>	1000	1240	1530	1840	2200	2570	3020	3450	3960	4550	5200	5800	6500
<b>DN 50</b>	2150	2640	3220	3790	4430	5150	5990	6870	7800	8790	9740	10600	11200

	Position												
	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
<b>DN 65</b>	-	-	4150	5100	6230	7700	9450	11500	13500	16100	19000	21800	24100
<b>DN 80</b>	-	-	5850	7300	9180	12200	15500	19100	22800	26300	30000	33600	37300
<b>DN 100</b>	11700	14100	16800	19700	22900	26400	30200	34200	38300	42400	46300	49500	51700
<b>DN 125</b>	15000	18800	22800	27400	32100	37100	42400	47700	53400	59100	64700	71000	77300

	Position															
	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
<b>DN 100 HF</b>	18000	22600	27000	31200	35300	39300	43400	47500	51600	55700	59700	63600	67300	70700	73600	75900
<b>DN 125 HF</b>	23300	30000	36500	43200	49600	55800	62700	69700	76500	83500	90900	98900	105000	112000	119000	127000

	Position									
	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
<b>DN 150</b>	-	-	-	-	-	26100	30900	36100	41500	48400
<b>DN 150 HF</b>	38800	47400	54500	62500	70700	78700	86400	94000	102000	109000
	Position									
	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0
<b>DN 150</b>	54300	61700	69300	76500	86000	95000	103000	112000	120000	126000
<b>DN 150 HF</b>	117000	123000	131000	139000	146000	154000	162000	171000	179000	190000

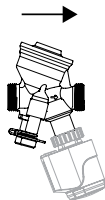
q<sub>max</sub> = l/h at each setting and fully open valve plug.

HF = High flow

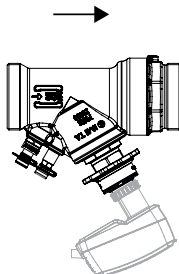
## Installation

### Flow direction

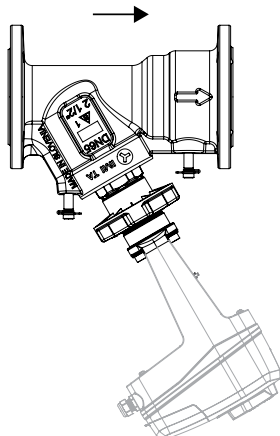
DN 15-32



DN 40-50

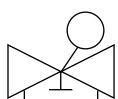


DN 65-150



### Ingress protection

EMO TM / TA-Slider 160 / TA-Slider 500 / TA-Slider 750 /  
TA-Slider 1250 / TA-MC160 / TA-MC253 SE



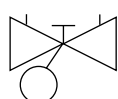
IP54



IP54

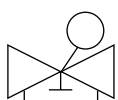


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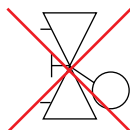


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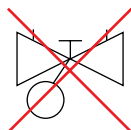
EMO 3



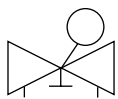
IP42



IP42



TA-MC50-C



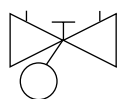
IP40



IP40

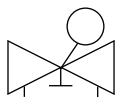


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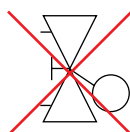


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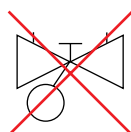
TA-MC100 FSE/FSR



IP54



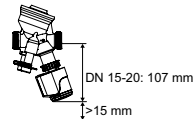
IP54



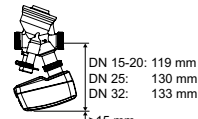
### Installation of actuator

**Note:** Free space is required above the actuator for easy mounting/dismounting.

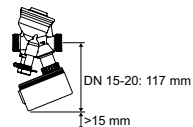
EMO TM



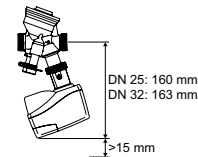
TA-Slider 160



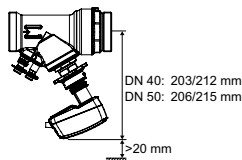
EMO 3



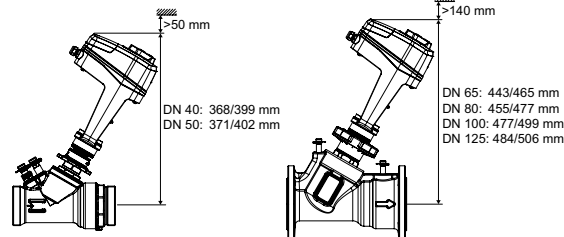
TA-MC50-C



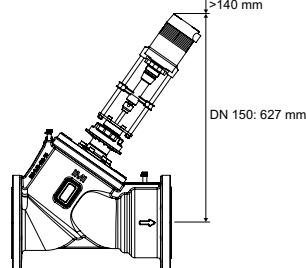
TA-Slider 500/TA-Slider 500 Plus



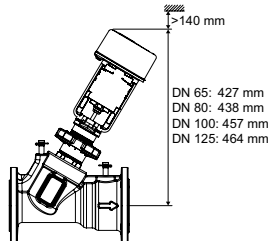
TA-Slider 750/1250 / TA-Slider 750/1250 Plus



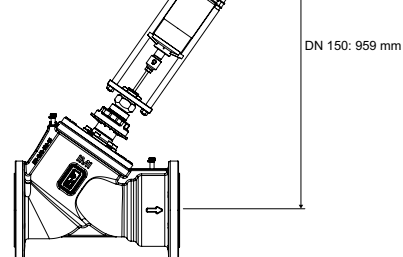
TA-MC160



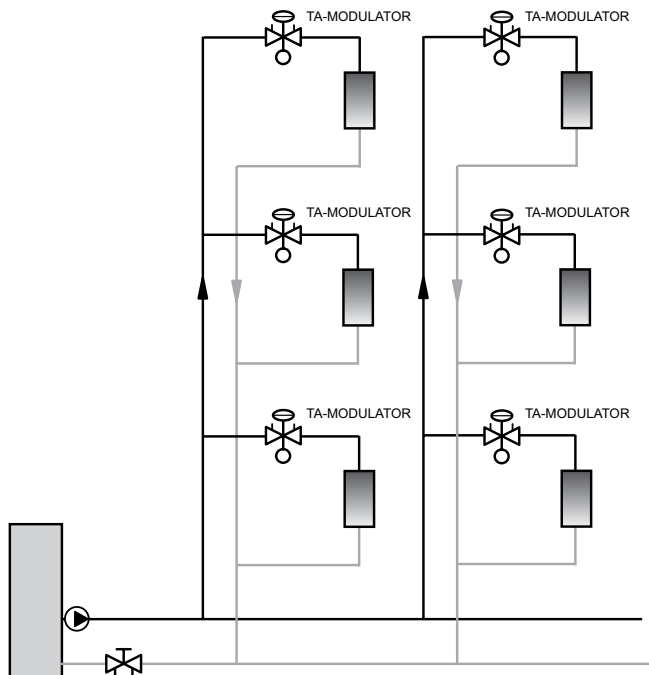
TA-MC100 FSE/FSR



TA-MC253 SE

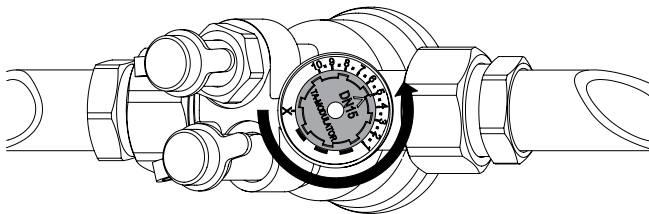


## Application example



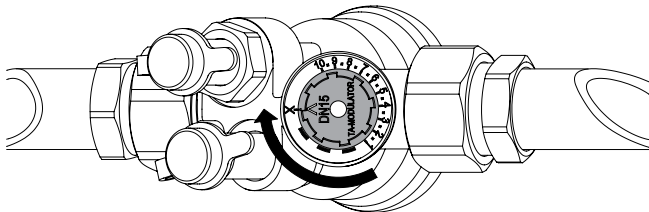
## Operating function DN 15-32

### Setting



1. Remove the installed actuator.
2. Turn the setting wheel to desired value, e.g. 5.0.

### Isolation

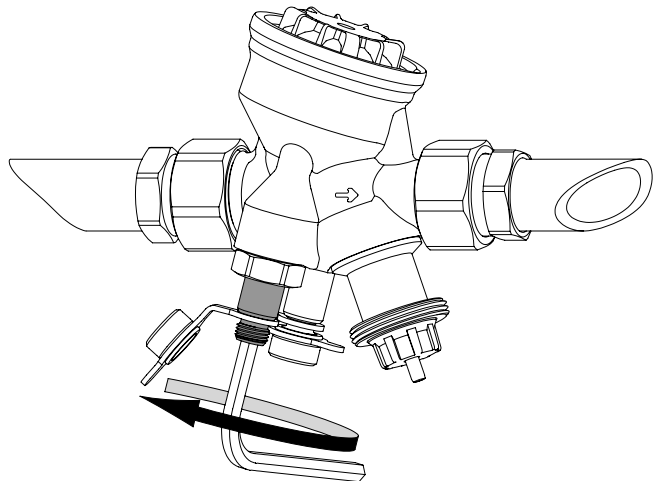


1. Remove the installed actuator.
2. Turn the setting wheel clockwise to X.

### Measuring q

1. Remove the installed actuator.
2. Connect the TA balancing instrument to the measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.

### Measuring $\Delta H$



1. Remove the installed actuator.
2. Close the valve according to "Isolation".
3. Bypass the  $\Delta p$ -part by opening the  $\Delta H$  spindle (red measuring point) ~1 turn **anticlockwise**, with a 5 mm Allen key.
4. Connect the TA balancing instrument to the measuring points and measure.

- Important!** After the measurement is completed;
5. Close the  $\Delta H$  spindle (red measuring point) **clockwise** to stop.
  6. Reopen the valve to previous setting.

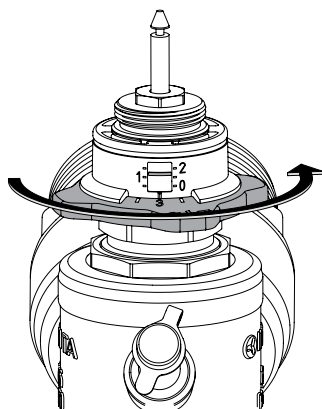
### Measuring temperature

For temperature measurement the **red** measuring point is recommended.



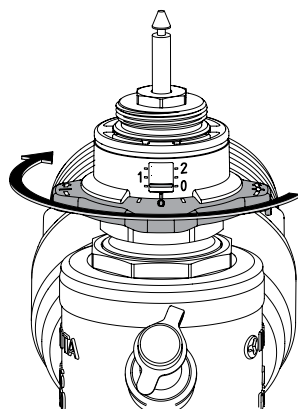
## Operating function DN 40-50

### Setting



1. Remove the installed actuator.
2. Turn the setting wheel to desired value, e.g. 1.3.

### Isolation

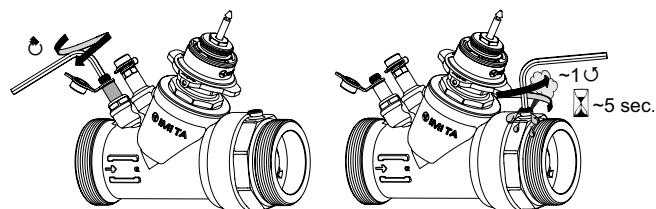


1. Remove the installed actuator.
2. Turn the setting wheel clockwise to stop (position  $0 \pm 0.3$ ).

### Measuring q

1. Remove the installed actuator.
2. Connect the TA balancing instrument to the measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.

### Measuring $\Delta H$



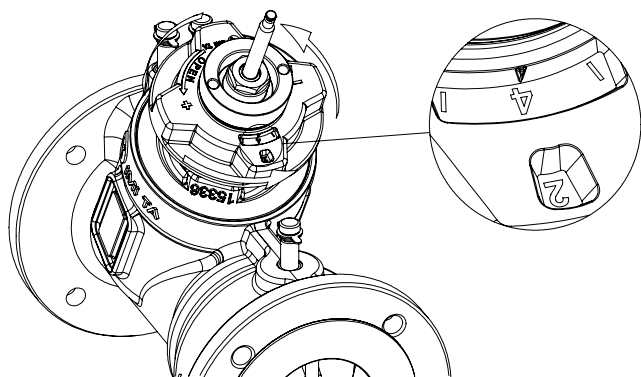
1. Remove the installed actuator.
  2. Close the valve according to "Isolation".
  3. Deactivate the  $\Delta p$ -part by closing the  $\Delta H$  spindle (red measuring point) **clockwise** to stop, with a 5 mm Allen key.
  4. Open the venting screw ~1 turn for 5 seconds and then close it (some water leakage can occur).
  5. Connect the TA balancing instrument to the measuring points and measure.
- Important!** After the measurement is completed;
6. Activate the  $\Delta p$ -part by opening the  $\Delta H$  spindle (red measuring point) **anticlockwise** to stop.
  7. Reopen the valve to previous setting.

### Measuring temperature

For temperature measurement the **red** measuring point is recommended.

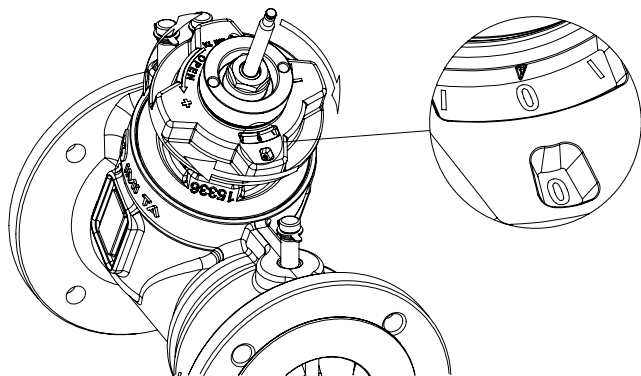
## Operating function DN 65-150

### Setting



1. Disengage the actuator from the valve spindle.
2. Turn the setting wheel to desired value, e.g. 2.4.

### Isolation

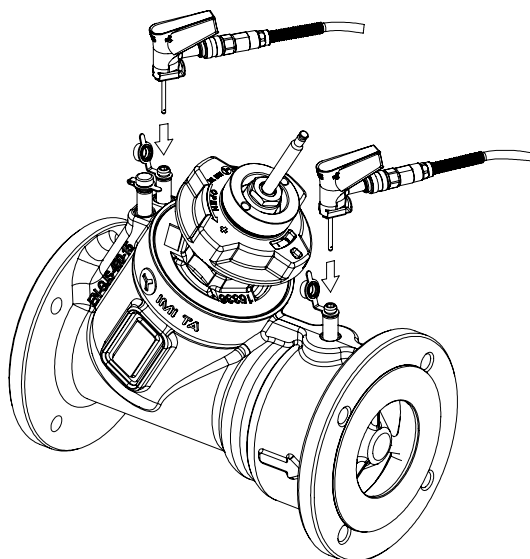


1. Disengage the actuator from the valve spindle.
2. Turn the setting wheel clockwise to stop (position  $0 \pm 0.5$ ).

### Measuring q

1. Disengage the actuator from the valve spindle.
2. Connect the TA balancing instrument to the **red** and **blue** measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.

### Measuring $\Delta H$

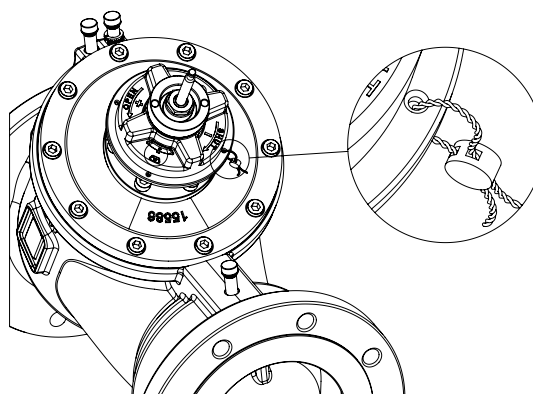


1. Disengage the actuator from the valve spindle.
  2. Close the valve according to "Isolation".
  3. Connect the TA balancing instrument to the **red** and **black** measuring points and measure.
- Important!** After the measurement is completed;
4. Reopen the valve to previous setting

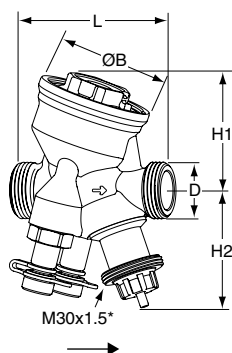
### Measuring temperature

For temperature measurement the **black** measuring point is recommended.

### Secure the setting position (optionally)



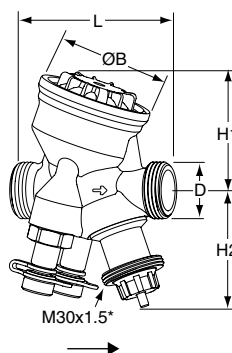
## Articles



### DN 15-32 – Temperature -20 – +120°C, ΔpV max. 600 kPa

Male threads according to ISO 228.

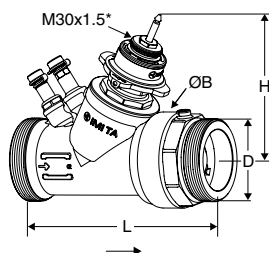
DN	D	L	H1	H2	B	q <sub>max</sub> [l/h]	Kg	EAN	Article No
15	G3/4	74	55	55	54	480	0,60	7318794033405	52 164-415
20	G1	85	64	55	64	975	0,75	7318794033504	52 164-420
25	G1 1/4	93	64	67	64	1750	0,90	7318794033603	52 164-425
32	G1 1/2	117	78	70	78	3600	1,5	7318794027305	52 164-332



### DN 15-25 – Temperature -10 – +90°C, ΔpV max. 400 kPa

Male threads according to ISO 228.

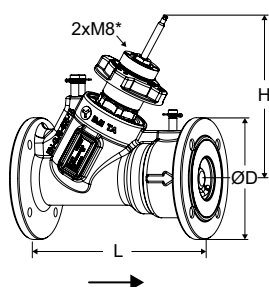
DN	D	L	H1	H2	B	q <sub>max</sub> [l/h]	Kg	EAN	Article No
15	G3/4	74	55	55	54	480	0,54	7318794027008	52 164-315
20	G1	85	64	55	64	975	0,69	7318794027107	52 164-320
25	G1 1/4	93	64	67	64	1750	0,79	7318794027206	52 164-325



### DN 40-50 – Temperature -10 – +90°C, ΔpV max. 400 kPa

Male threads according to ISO 228.

DN	D	L	H	B	q <sub>max</sub> [l/h]	Kg	EAN	Article No
40	G2	187	132	88	6500	3,5	7318794030602	52 164-340
50	G2 1/2	196	135	88	11200	3,9	7318794030701	52 164-350



### DN 65-150 – Temperature -20 – +120°C, ΔpV max. 800 kPa

Flanges according to EN-1092-2, type 21.

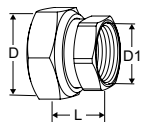
DN	Number of bolt holes	D	L	H	q <sub>max</sub> [m <sup>3</sup> /h]	Kg	EAN	Article No
<b>PN 16</b>								
65	4	185	290	249	24,1	18	3831112533271	322021-11001
80	8	200	310	260	37,3	22	3831112533318	322021-11101
100	8	220	350	280	51,7	33	3831112535527	322021-11200
100 HF	8	220	350	280	75,9	33	3831112535565	322021-11203
125	8	250	400	287	77,3	45	3831112535602	322021-11300
125 HF	8	250	400	287	127	45	3831112535640	322021-11303
150	8	285	480	357	126	75	3831112535701	322021-11400
150 HF	8	285	480	357	190	75	3831112535749	322021-11403
<b>PN 25</b>								
65	8	185	290	249	24,1	18	3831112533288	322021-11002
80	8	200	310	260	37,3	22	3831112533325	322021-11102
100	8	235	350	280	51,7	34	3831112535534	322021-11201
100 HF	8	235	350	280	75,9	34	3831112535572	322021-11204
125	8	270	400	287	77,3	47	3831112535619	322021-11301
125 HF	8	270	400	287	127	47	3831112535657	322021-11304
150	8	300	480	357	126	77	3831112535718	322021-11401
150 HF	8	300	480	357	190	77	3831112535756	322021-11404

HF = High flow

\*) Connection to actuator.

→ = Flow direction

## Connections

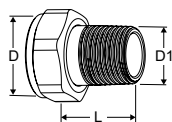


### With female thread

Threads according to ISO 228. Thread length according to ISO 7-1.

Swivelling nut  
Brass/AMETAL®

Valve DN	D	D1	L*	EAN	Article No
15	G3/4	G1/2	21	7318794016903	52 163-015
20	G1	G3/4	23	7318794017009	52 163-020
25	G1 1/4	G1	23	7318794017108	52 163-025
32	G1 1/2	G1 1/4	31	7318794017207	52 163-032
40	G2	G1 1/2	30	7318794032705	52 163-040
50	G2 1/2	G2	32	7318794032804	52 163-050

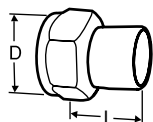


### With male thread

Threads according to ISO 7-1.

Swivelling nut  
Brass

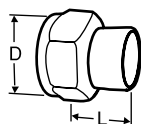
Valve DN	D	D1	L*	EAN	Article No
15	G3/4	R1/2	29	4024052516612	0601-02.350
20	G1	R3/4	32,5	4024052516810	0601-03.350
25	G1 1/4	R1	35	4024052517015	0601-04.350
32	G1 1/2	R1 1/4	38,5	4024052517213	0601-05.350



### Welding connection

Swivelling nut  
Brass/Steel 1.0045 (EN 10025-2)

Valve DN	D	Pipe DN	L*	EAN	Article No
15	G3/4	15	36	7318792748509	52 009-015
20	G1	20	40	7318792748608	52 009-020
25	G1 1/4	25	40	7318792748707	52 009-025
32	G1 1/2	32	40	7318792748806	52 009-032
40	G2	40	45	7318792748905	52 009-040
50	G2 1/2	50	50	7318792749001	52 009-050

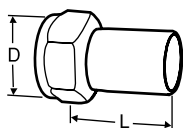


### Soldering connection

Swivelling nut  
Brass/gunmetal CC491K (EN 1982)

Valve DN	D	Pipe Ø	L*	EAN	Article No
15	G3/4	15	13	7318792749308	52 009-515
15	G3/4	16	13	7318792749407	52 009-516
20	G1	18	15	7318792749506	52 009-518
20	G1	22	18	7318792749605	52 009-522
25	G1 1/4	28	21	7318792749704	52 009-528
32	G1 1/2	35	26	7318792749803	52 009-535
40	G2	42	30	7318792749902	52 009-542
50	G2 1/2	54	35	7318792750007	52 009-554

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



### Connection with smooth end

For connection with press coupling

Swivelling nut  
Brass/AMETAL®

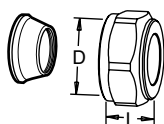
Valve DN	D	Pipe Ø	L*	EAN	Article No
15	G3/4	15	39	7318793810601	52 009-315
20	G1	18	44	7318793810700	52 009-318
20	G1	22	48	7318793810809	52 009-322
25	G1 1/4	28	53	7318793810908	52 009-328
32	G1 1/2	35	59	7318793811004	52 009-335
40	G2	42	70	7318793811103	52 009-342
50	G2 1/2	54	80	7318793811202	52 009-354

### Compression connection

Support bushes shall be used, for more information see catalogue leaflet FPL.

Should not be used with PEX pipes.

Brass/AMETAL®  
Chrome plated



Valve DN	D	Pipe Ø	L**	EAN	Article No
15	G3/4	15	27	7318793705006	53 319-615
15	G3/4	18	27	7318793705105	53 319-618
15	G3/4	22	27	7318793705204	53 319-622

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

\*\*) Over all length L refers to unassembled coupling.

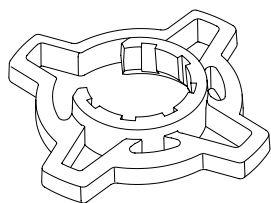
## Adapters for actuators

### Adapters

Adapters to other combinations of valve and recommended actuator are NOT needed.

Actuator	Valve DN	EAN	Article No
TA-MC50-C	25-32	3831112533851	322042-10700
TA-Slider 750	40-50	3831112533844	322042-80902
TA-MC253 SE	150	3831112535787	322042-01400

## Accessories

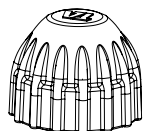


### Grip for setting wheel, optional

For better grip when presetting.

For TA-COMPACT-P/-DP and TA-Modulator (DN 15-32).

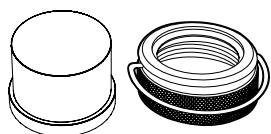
Colour	EAN	Article No
Orange	7318794040502	52 164-950



### Protection cap

For TA-COMPACT-P/-DP, TA-Modulator (DN 15-20), TBV-C/-CM.

Colour	EAN	Article No
Red	7318793961105	52 143-100



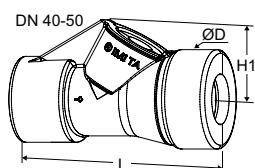
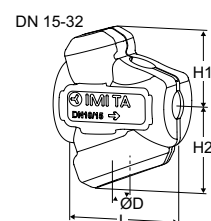
### Tamper proof cover

Set containing plastic cover and locking ring for valves with connection M30x1.5 to thermostatic head/actuator.

Prevents manipulation of setting.

Suitable for DN 15-32.

Colour	EAN	Article No
Black	7318794030206	52 164-100



### Insulation

For heating/comfort cooling.

Material: EPP.

Fire class:

DN 15-32: E (EN 13501-1), B2 (DIN 4102).

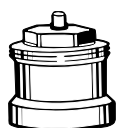
DN 40-50: F (EN 13501-1), B3 (DIN 4102).

Valve DN	L	H1	H2	D	EAN	Article No
15	100	61	71	84	7318794027404	52 164-901
20	118	67	79	90	7318794027503	52 164-902
25	127	71	84	104	7318794027602	52 164-903
32	154	85	99	124	7318794027701	52 164-904
40	277	105	-	131	7318794030800	52 164-905
50	277	105	-	131	7318794030909	52 164-906

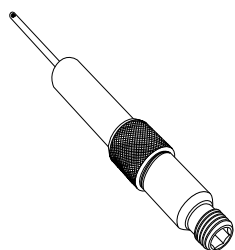
### Spindle extension for DN 15-20

Recommended together with the insulation to minimize the risk of condensation at the valve-actuator interface.

M30x1,5.



L	EAN	Article No
Plastic, black		
30	4024052165018	2002-30.700



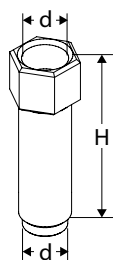
### Measuring point, extension 60 mm

Can be installed without draining of the system.

AMETAL®/Stainless steel/EPDM

For all dimensions.

L	EAN	Article No
60	7318792812804	52 179-006



### Venting extension

Suitable when insulation is used.

AMETAL®

Valve DN	d	H	EAN	Article No
40-50	M10x1	32	7318794033702	52 164-301



### Venting plug

Spare part.

AMETAL®

Valve DN	EAN	Article No
40-50	7318794033801	52 164-302

