

Climate  
Control

IMI TA

# TA-Modulator

– NPT threads/ANSI flanges



## Combined control & balancing valves

Pressure independent balancing and control valve for modulating control

# TA-Modulator

## – NPT threads/ANSI flanges

The 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 low flow,  
 DN 10-200 normal flow  
 Control LIN: DN 65-200 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 10-200

#### Pressure class:

DN 10-50: PN 16  
 DN 65-200: Class 150

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

Max. differential pressure ( $\Delta pV_{max}$ ):

DN 10-32: 600 kPa = 6 bar

DN 10-25: 400 kPa = 4 bar\*

DN 40-50: 600 kPa = 6 bar

DN 65-200: 800 kPa = 8 bar

Min. differential pressure ( $\Delta pV_{min}$ ):

DN 10-20: 15 kPa = 0.15 bar

DN 25-32: 23 kPa = 0.23 bar

DN 40-200: 30 kPa = 0.30 bar

DN 65-80 HF: 45 kPa = 0.45 bar

DN 100-125 HF: 55 kPa = 0.55 bar

DN 150-200 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 10: 17 - 120 l/h

DN 15 LF: 38 - 230 l/h

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 65 HF: 7460 - 36500 l/h

DN 80: 5850 - 37300 l/h

DN 80 HF: 9520 - 49000 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

DN 200: 35000 - 209000 l/h

DN 200 HF: 73200 - 329000 l/h

$q_{max}$  = l/h at each setting and fully open valve plug.

LF = Low flow

HF = High flow

**Temperature:**

DN 10-32:

Max. working temperature: 120°C

Min. working temperature: -20°C

DN 10-25 with  $\Delta p$  insert in PPS, DN 40-50:

Max. working temperature: 90°C

Min. working temperature: -10°C

DN 65-200:

Max. working temperature: 120°C

Min. working temperature: -10°C

**Note:** If the medium temperature is below 2 °C, then ice forming on the spindle must be prevented. Therefore valves should be insulated with vapor tight insulation (spindle extension can be used). IMI valves were tested for performance and durability with mono-ethylene as well as mono-propylene glycol up to a concentration of 57%. For valves from DN 65, stem heater can be used. See separate actuator leaflets.

**Media:**

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

**Lift:**

DN 10-20: 4 mm

DN 25-32: 6,5 mm

DN 40-50: 15 mm

DN 65-125: 20 mm

DN 150: 30 mm

DN 200: 32,5 mm

**Rangeability:**

DN 10 - 15 LF: &gt;50

DN 15 - 32: &gt;75

DN 40 - 80: &gt;125

DN 100 - 150: &gt;150

DN 100 - 150 HF: &gt;125

DN 200: &gt;125

DN 200 HF: &gt;125

**Leakage rate:**

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

**Characteristics:**

Independent shaped EQM.

DN 65-200 HF: Linear.

**Material:**

DN 10-32:

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 65-200:

Valve body: Ductile iron EN-GJS-400-15

Valve insert: Ductile iron EN-GJS-400-15 and brass

Valve plug: Stainless steel and EPDM

O-ring

Valve seat: Aluminium bronze

Spindle: Stainless steel

Spindle seal: EPDM

 $\Delta p$  insert: Ductile iron EN-GJS-400-15, stainless steel and brass.

Membrane: Reinforced EPDM,

DN 200 EPDM

Springs: Stainless steel

O-rings: EPDM

AMETAL® is the dezincification resistant alloy of IMI.

**Surface treatment:**

DN 10-50: Non treated

DN 65-200: Electrophoretic painting

**Connection:**

DN 10-50: External thread according to ISO 228. Connections (accessories) with internal and external thread NPT according to ANSI/ASME B1.20.1-1983, or for soldering according to ASME/ANSI B16.18.

DN 65-200: Flanges according to ASME 7 ANSI B16.42 Class 150.

**Connection to actuator:**

DN 10-32: M30x1.5, push

DN 40-50: M30x1.5, push/pull

DN 65-200: 2xM8, push/pull

**Actuators:**

DN 10-20:

TA-Slider 160, EMO TM, TA-TRI.

DN 25-32:

TA-Slider 160, TA-TRI, TA-MC50-C\*.

DN 40-50:

TA-Slider 500, TA-Slider 750\*.

DN 65-125:

TA-Slider 750.

DN 100-125 HF:

TA-Slider 750  $\Delta pV \leq 4$  bar,TA-Slider 1600  $\Delta pV \leq 8$  bar.

DN 150-200, DN 150-200 HF:

TA-Slider 1600.

TA-Slider 160, 500, 750 and 1600 also available with fail-safe function.

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

For more details on actuators, see separate technical leaflets.

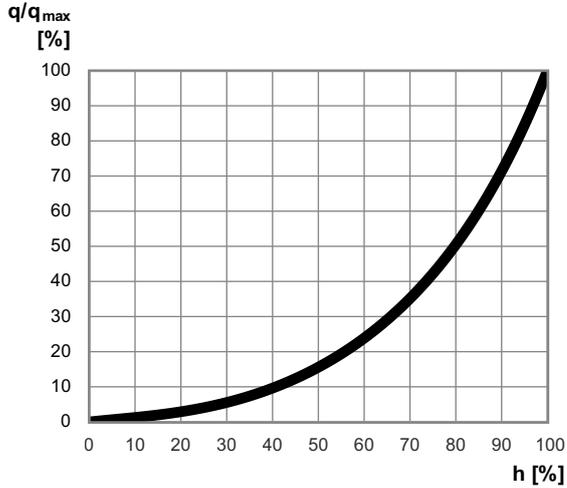
**Certification and directives:**

DN 65-200: CE, EAC, UKCA

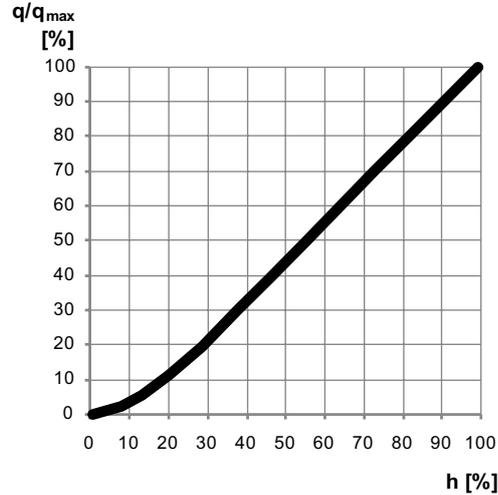
## Valve characteristics

### Nominal valve characteristic for all settings

EQM - DN 15 LF, DN 10-200 NF



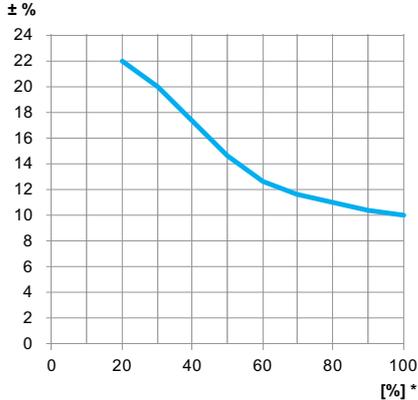
LIN - DN 65-200 HF



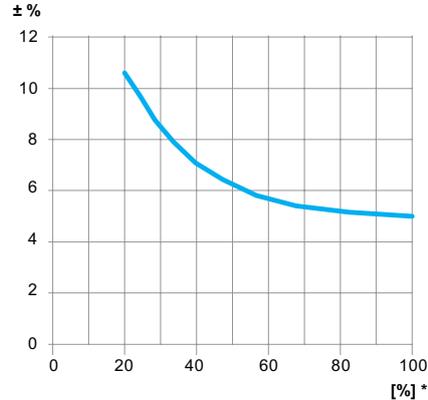
## Measuring accuracy

### Maximum flow deviation at different settings

DN 10 - 32 (3/8" - 1 1/4")



DN 40 - 200 (1 1/2" - 8")



\*) 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 =  $3^\circ\text{E} = 100\text{S.U.}$ ), 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

The valve 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 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

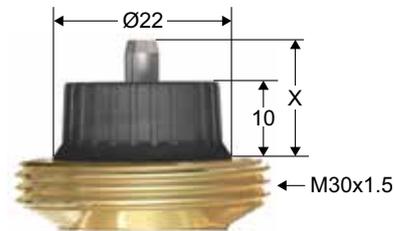
DN 10-20: X (closed - fully open) = 11.6 - 15.8

DN 25-32: X (closed - fully open) = 10.1 - 16.8

### Closing force

DN 10-20: 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 [kPa]	TA-TRI [kPa]	TA-Slider 160 [kPa]	TA-MC50-C [kPa]	TA-Slider 500 [kPa]	TA-Slider 750 [kPa]	TA-Slider 1600 [kPa]
10	400/600	400/600	400/600	-	-	-	-
15 LF	400/600	400/600	400/600	-	-	-	-
15	400/600	400/600	400/600	-	-	-	-
20	400/600	400/600	400/600	-	-	-	-
25	-	400/600	400/600	400/600	-	-	-
32	-	600	600	600	-	-	-
40	-	-	-	-	600	600	-
50	-	-	-	-	600	600	-
65	-	-	-	-	-	800	-
65 HF	-	-	-	-	-	800	-
80	-	-	-	-	-	800	-
80 HF	-	-	-	-	-	800	-
100	-	-	-	-	-	800	-
100 HF	-	-	-	-	-	400	800
125	-	-	-	-	-	800	-
125 HF	-	-	-	-	-	400	800
150	-	-	-	-	-	-	800
150 HF	-	-	-	-	-	-	800
200	-	-	-	-	-	-	800
200 HF	-	-	-	-	-	-	800
<b>Closing force</b>	125 N	200 N	190 N	500 N	500 N	750 N	1600 N

TA-Slider 160, 500, 750 and 1600 also available with fail-safe function.

$\Delta pV_{close}$  = 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.

LF = Low flow

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  $\Delta p$  is within the working range according to the valve size and variant.

### $q_{max}$ values

DN	Position									
	1	2	3	4	5	6	7	8	9	10
10	17	27	39	51	62	76	89	101	111	120
15 LF	38	53	68	85	104	125	146	168	197	230
15	92	114	140	170	210	265	325	390	445	480
20	200	260	360	460	565	670	770	850	920	975
25	340	440	600	810	1010	1200	1350	1520	1640	1750
32	720	960	1350	1750	2150	2530	2850	3130	3380	3600

**Important!** Do not adjust the setting wheel above position 10. This is to ensure proper calibration of the actuator.

DN	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
40	1000	1240	1530	1840	2200	2570	3020	3450	3960	4550	5200	5800	6500
50	2150	2640	3220	3790	4430	5150	5990	6870	7800	8790	9740	10600	11200

DN	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
65	-	-	4150	5100	6230	7700	9450	11500	13500	16100	19000	21800	24100
80	-	-	5850	7300	9180	12200	15500	19100	22800	26300	30000	33600	37300
100	11700	14100	16800	19700	22900	26400	30200	34200	38300	42400	46300	49500	51700
125	15000	18800	22800	27400	32100	37100	42400	47700	53400	59100	64700	71000	77300

DN	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
65 HF	7460	9580	11590	13550	15490	17540	19620	21760	23860	25610	27950	29840	31250	33300	34750	36500
80 HF	9520	12080	14600	17050	19520	21970	24390	26860	29420	32280	34700	37260	40260	42860	44970	49000
100 HF	18000	22600	27000	31200	35300	39300	43400	47500	51600	55700	59700	63600	67300	70700	73600	75900
125 HF	23300	30000	36500	43200	49600	55800	62700	69700	76500	83500	90900	98900	105000	112000	119000	127000

DN	Position																
	5,0	5,5	6,0	6,5	7,0	7,5	8,0	8,5	9,0	9,5	10,0	10,5	11,0	11,5	12,0	12,5	13,0
150	26100	30900	36100	41500	48400	54300	61700	69300	76500	86000	95000	103000	112000	120000	126000	-	-
200	35000	43800	54000	64900	77700	90700	106000	119000	132000	145000	158000	170000	183000	191000	200000	204000	209000

DN	Position										
	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5
150 HF	38800	47400	54500	62500	70700	78700	86400	94000	102000	109000	117000
200 HF	-	-	73200	89000	105000	120000	136000	152000	168000	184000	201000

DN	Position										
	8,0	8,5	9,0	9,5	10,0	10,5	11,0	11,5	12,0	12,5	13,0
150 HF	123000	131000	139000	146000	154000	162000	171000	179000	190000	-	-
200 HF	217000	233000	250000	265000	276000	286000	295000	301000	310000	318000	329000

$q_{max}$  = l/h at each setting and fully open valve plug.

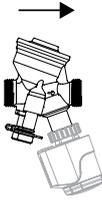
LF = Low flow

HF = High flow

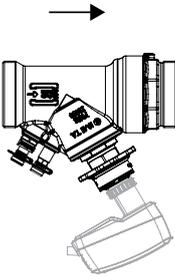
## Installation

### Flow direction

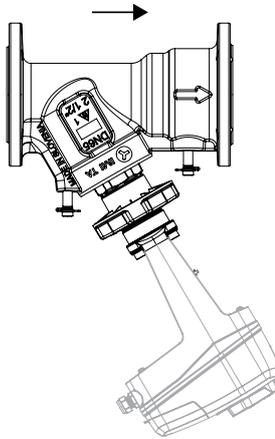
DN 10-32



DN 40-50



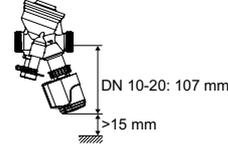
DN 65-200



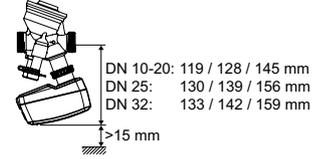
### Installation of actuator

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

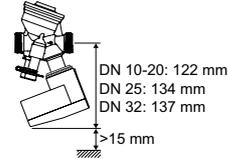
#### EMO TM



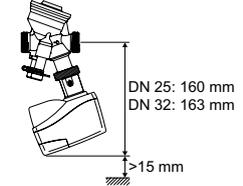
#### TA-Slider 160 \*



#### TA-TRI

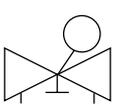


#### TA-MC50-C



### Ingress protection

EMO TM / TA-TRI / TA-Slider 160 / TA-Slider 500 / TA-Slider 750 / TA-Slider 1600



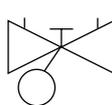
IP54



IP54

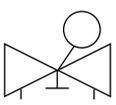


IP54



IP54

#### TA-MC50-C



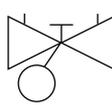
IP40



IP40

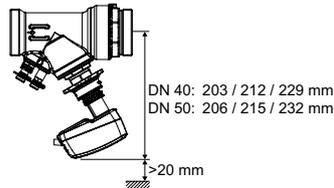


IP40

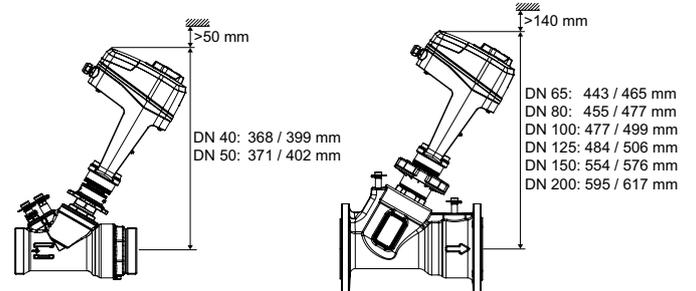


IP40

#### TA-Slider 500 \*

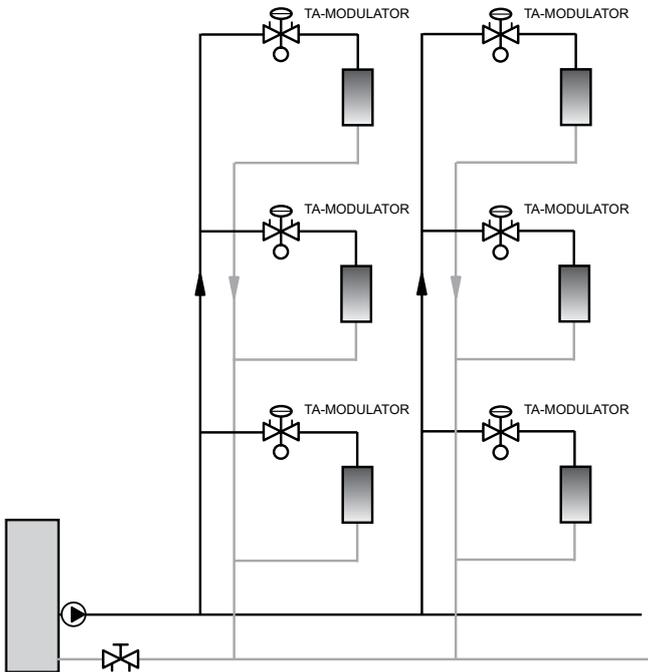


#### TA-Slider 750/1600 / TA-Slider 750/1600 Plus, Fail-Safe Plus



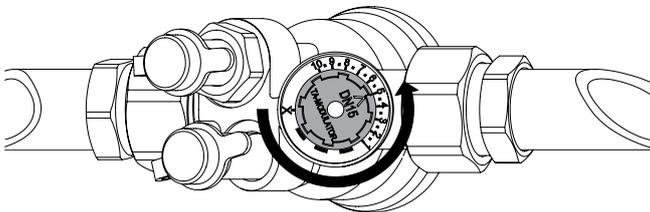
\*) Height depending on actuator version.

## Application example



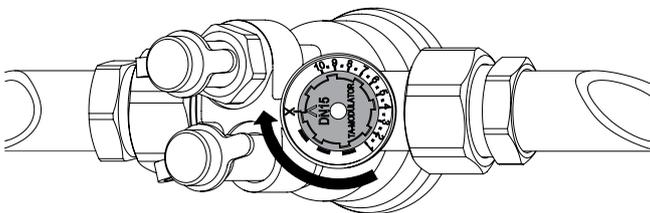
## Operating function DN 10-32

### Setting



1. Remove the installed actuator.
  2. Turn the setting wheel to desired value, e.g. 5.0.
- Important!** Do not adjust the setting wheel above position 10. This is to ensure proper calibration of the actuator.

### Isolation

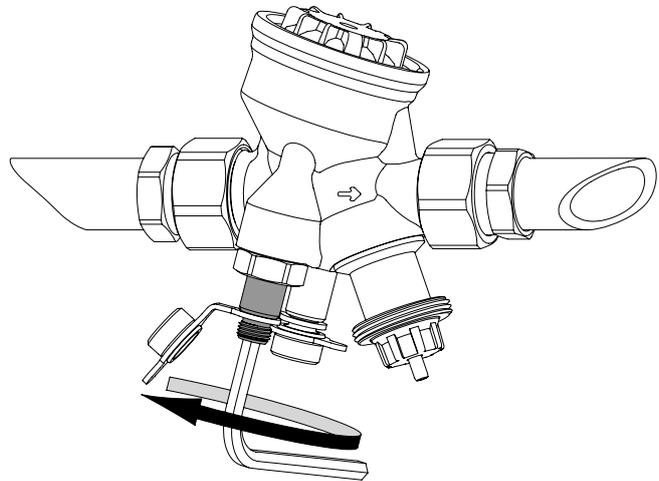


1. Remove the installed actuator.
2. Turn the setting wheel clockwise to X.

### Measuring q

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

### Measuring $\Delta H$



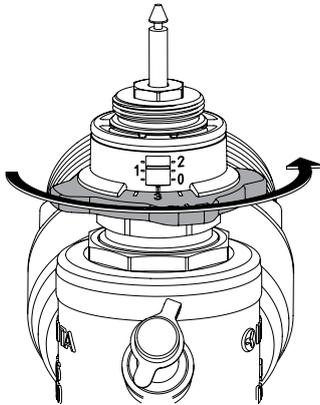
1. Remove the installed actuator.
2. Close the valve according to "Isolation".
3. Bypass the  $\Delta p$ -part by opening the  $\Delta H$  spindle (red measuring point) ~1 turn **anticlockwise**, with a 5 mm Allen key.
4. Connect the IMI TA balancing instrument to the measuring points and measure.
5.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

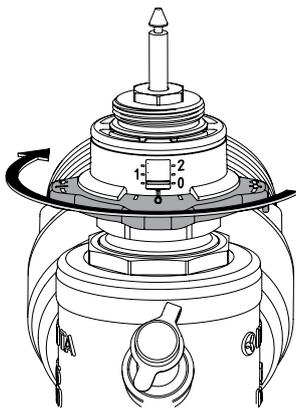
## Operating function DN 40-50

### Setting



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

### Isolation

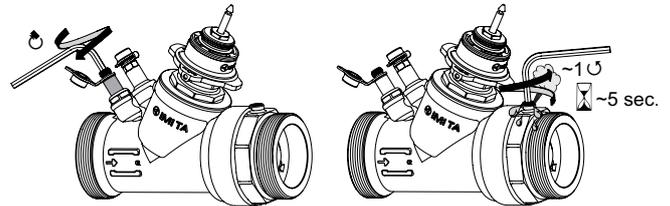


1. Remove the installed actuator.
2. Turn the setting wheel clockwise to stop (position  $0 \pm 0.3$ ).

### Measuring q

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

### Measuring $\Delta H$



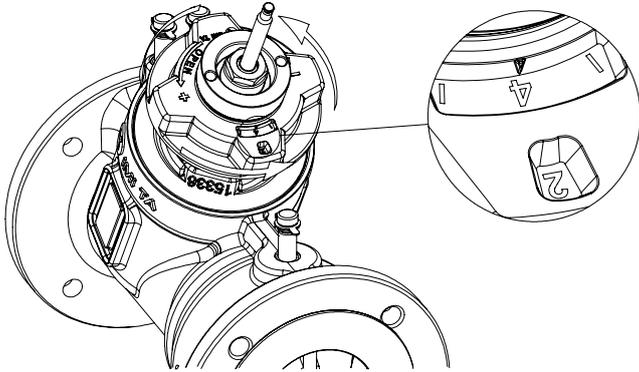
1. Remove the installed actuator.
  2. Close the valve according to "Isolation".
  3. Deactivate the  $\Delta p$ -part by closing the  $\Delta H$  spindle (red measuring point) **clockwise** to stop, with a 5 mm Allen key.
  4. Open the venting screw  $\sim 1$  turn for 5 seconds and then close it (some water leakage can occur).
  5. Connect the IMI 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.

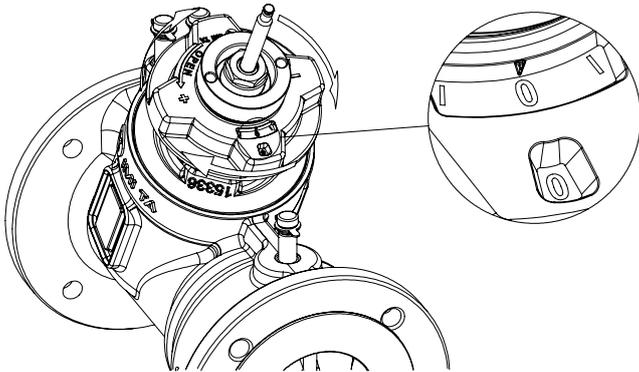
## Operating function DN 65-200

### Setting



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

### Isolation

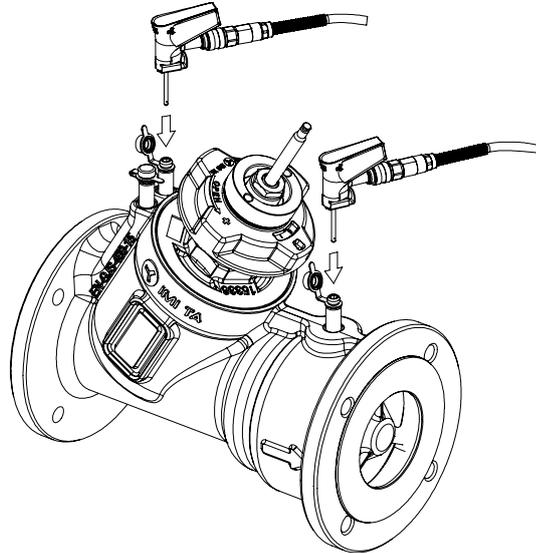


1. Disengage the actuator from the valve spindle.
2. Turn the setting wheel clockwise to stop (position  $0 \pm 0.5$ ).

### Measuring q

1. Disengage the actuator from the valve spindle.
2. Connect the IMI 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 $\Delta H$

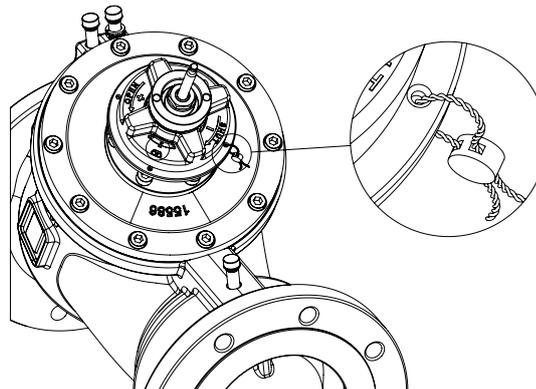


1. Disengage the actuator from the valve spindle.
2. Close the valve according to "Isolation".
3. Connect the IMI TA balancing instrument to the **red** and **black** measuring points and measure.
- Important!** After the measurement is completed; Reopen the valve to previous setting

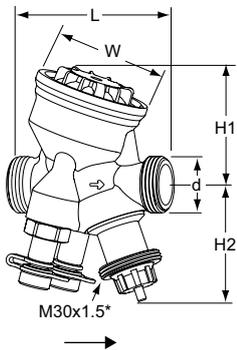
### Measuring temperature

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

### Secure the setting position (optionally)



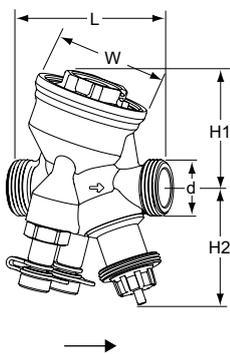
## Articles



### DN 10-25 – Temperature -10 – +90°C, $\Delta pV$ max. 400 kPa

External threads according to ISO 228. NPT threads - see "Connections".

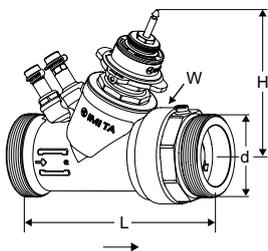
DN	d	L	H1	H2	W	$q_{max}$ [l/h]	Kg	EAN	Article No
10	G1/2	74	55	55	54	120	0,53	7318794040304	52 164-310
15 LF	G3/4	74	55	55	54	230	0,54	5902276821424	52 164-314
15	G3/4	74	55	55	54	480	0,54	7318794027008	52 164-315
20	G1	85	64	55	64	975	0,69	7318794027107	52 164-320
25	G1 1/4	93	64	67	64	1750	0,79	7318794027206	52 164-325



### DN 10-32 HP – Temperature -20 – +120°C, $\Delta pV$ max. 600 kPa

External threads according to ISO 228. NPT threads - see "Connections".

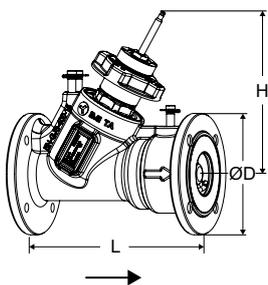
DN	d	L	H1	H2	W	$q_{max}$ [l/h]	Kg	EAN	Article No
10	G1/2	74	55	55	54	120	0,59	5902276821431	52 164-410
15 LF	G3/4	74	55	55	54	230	0,60	5902276821448	52 164-414
15	G3/4	74	55	55	54	480	0,60	7318794033405	52 164-415
20	G1	85	64	55	64	975	0,75	7318794033504	52 164-420
25	G1 1/4	93	64	67	64	1750	0,90	7318794033603	52 164-425
32	G1 1/2	117	78	70	78	3600	1,5	7318794027305	52 164-332



### DN 40-50 HP – Temperature -10 – +90°C, $\Delta pV$ max. 600 kPa

External threads according to ISO 228. NPT threads - see "Connections".

DN	d	L	H	W	$q_{max}$ [l/h]	Kg	EAN	Article No
40	G2	187	132	88	6500	3,5	5902276821769	52 164-440
50	G2 1/2	196	135	88	11200	3,9	5902276821776	52 164-450



### DN 65-200 – Temperature -10 – +120°C, $\Delta pV$ max. 800 kPa

Flanges according to ASME 7 ANSI B16.42 Class 150.

#### Class 150

DN	Number of bolt holes	ØD	L	H	$q_{max}$ [m³/h]	Kg	EAN	Article No
65	4	180	290	249	24,1	18	3831112533295	322021-11003
65 HF	4	180	290	249	36,5	18	5902276810237	322021-11010
80	4	190	310	260	37,3	22	3831112533332	322021-11103
80 HF	4	190	310	260	49,0	22	5902276810275	322021-11111
100	8	230	350	280	51,7	33	3831112535541	322021-11202
100 HF	8	230	350	280	75,9	33	3831112535589	322021-11205
125	8	255	400	287	77,3	45	3831112535626	322021-11302
125 HF	8	255	400	287	127	45	3831112535664	322021-11305
150	8	280	480	357	126	75	3831112535725	322021-11402
150 HF	8	280	480	357	190	75	3831112535763	322021-11405
200	8	343	600	391	209	136	5902276819858	322021-11502
200 HF	8	343	600	391	329	136	5902276819865	322021-11505

LF = Low flow

HF = High flow

→ = Flow direction

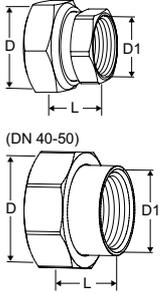
\*) Connection to actuator.

## Connections

### With internal thread NPT

Threads according to ANSI/ASME B1.20.1-1983.

Swivelling nut  
Brass/AMETAL®

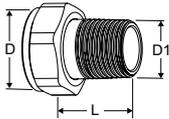


For DN	D	D1	L*	EAN	Article No
10	G1/2	3/8 NPT	21	7318794017801	52 163-210
15	G3/4	1/2 NPT	25	7318794017900	52 163-215
20	G1	1/2 NPT	18	7318794018303	52 163-320
20	G1	3/4 NPT	23	7318794018006	52 163-220
25	G1 1/4	3/4 NPT	27	7318794018402	52 163-325
25	G1 1/4	1 NPT	27	7318794018105	52 163-225
32	G1 1/2	1 NPT	27	7318794018501	52 163-332
32	G1 1/2	1 1/4 NPT	31	7318794018204	52 163-232
40	G2	1 1/2 NPT	32	7318794032903	52 163-240
50	G2 1/2	1 1/2 NPT	32	7318794033207	52 163-350
50	G2 1/2	2 NPT	32	7318794033009	52 163-250

### With external thread NPT

Threads according to ANSI/ASME B1.20.1-1983.

Swivelling nut  
Brass

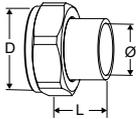


For DN	D	D1	L*	EAN	Article No
10	-	-	-	-	-
15	G3/4	1/2 NPT	29	4024052928415	2400-02.350
20	G1	3/4 NPT	32,5	4024052928514	2400-03.350
25	G1 1/4	1 NPT	35	4024052928613	2400-04.350
32	-	-	-	-	-

### Soldering connection

According to ASME/ANSI B16.18

Swivelling nut  
Brass/gunmetal CC491K (EN 1982)



For DN	D	Pipe Ø [in]	~ [mm]	L*	EAN	Article No
10	G1/2	0.504	12.8	13	7318794022805	52 009-710
15	G3/4	0.629	16	16	7318794022904	52 009-715
20	G1	0.879	22	22	7318794023000	52 009-720
25	G1 1/4	1.130	29	26	7318794023109	52 009-725
32	G1 1/2	1.380	35	28	7318794023208	52 009-732
40	G2	1.630	41	31	7318794033900	52 009-740
50	G2 1/2	2.130	54	38	7318794034006	52 009-750

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

Other type of connections (ISO), see international version of TA-Modulator.

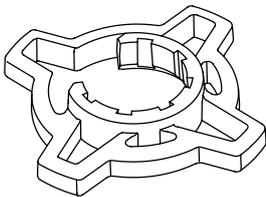
## Adapters for actuators

### Adapters

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

For actuator	For DN	EAN	Article No
TA-MC50-C	25-32	3831112533851	322042-10700
TA-Slider 750	40-50	5902276819308	322042-80800

## Accessories



### Grip for setting wheel, optional

For better grip when presetting.

For TA-COMPACT-P/-DP and TA-Modulator (DN 10-32).

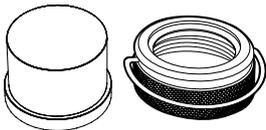
Colour	EAN	Article No
Orange	7318794040502	52 164-950



### Protection cap

For TA-COMPACT-P/-DP, TA-Modulator (DN 10-20), 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 10-32.

EAN	Article No
7318794030206	52 164-100



### Insulation

For heating/comfort cooling.

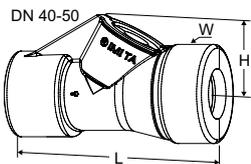
Material: EPP.

Fire class:

DN 10-32: E (EN 13501-1), B2 (DIN 4102).

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

For DN	L	H	H1	H2	W	EAN	Article No
10-15	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

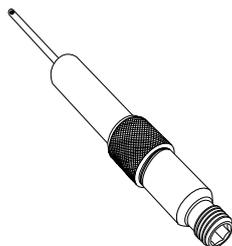


**Spindle extension for DN 10-20**

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

M30x1,5.

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

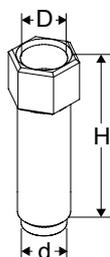
**Measuring point, extension 60 mm**

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®

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

**Venting plug**

Spare part.

AMETAL®

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