

# Static balancing valves

All perfectly regulated





## Static balancing valves – All perfectly regulated

The creation of a comfortable room temperature for the user, optimization of the operating costs and the safe operation of the system are requirements for modern heating and cooling systems. The basis for this is a well-planned and executed installation, with all the necessary hydraulic installations and valves. During commissioning, the valves must be adjusted according to the calculations and measurements on site. This is called hydraulic balancing and ensures that every load, every heating and cooling circuit, receives exactly as much energy as needed.

HERZ offers a wide range of products for a correct and energy-saving hydraulic balancing and for control of all plant. The dimensions of the control and regulating valves range from DN 15 to DN 500, the maximum operating temperature for selected valves is up to 150 °C.

For all types of systems, classic systems with radiators, surface heating and cooling, systems with fan coils, air conditioning or district heating systems, the appropriate valves are developed and produced by HERZ. HERZ regulating valves are also supplied with the corresponding actuators, both mechanical and electronic.

### Advantages

---

- Development, design and production from HERZ
- Wide product range
- Well-thought-out design
- For control heating and cooling areas
- Manufactured in Europe



## Table of contents

---

☑ Commissioning valves with integral orifice	page 4
☑ Commissioning valves (straight body)	page 5
☑ Commissioning valves (inclined body)	page 6
☑ Commissioning valves in flanged design (straight body)	page 7
☑ Commissioning valves in flanged design (inclined body)	page 8
☑ Regulating valves	page 9
☑ Use of commissioning and regulating valves	page 9
☑ Control and regulating valves	page 10
☑ Thermostatic control valves	page 11
☑ Two-way valves	page 12
☑ Three-port valves and CALIS diverting valve	page 13
☑ Actuators for 2-point and continuous control	page 14
☑ Selection table for thermoelectric actuators	page 15
☑ Two-way ball valve and rotary drive 2117	page 17
☑ Mixing valves and rotary drive 2137, 2138	page 18
☑ Three-port mixing and diverting valve + lift drive	page 19
☑ Two- and three-way flanged valves DN 15 – DN 25, actuators and accessories	page 20
☑ Two- and three-way flanged valves DN 32 – DN 80, actuators and accessories	page 21
☑ Two- and three-way flanged valves DN 100 – DN 150, actuators and accessories	page 22
☑ Selection table for drives	page 23
☑ Metering station	page 25
☑ Hydraulic balancing, method of comparison	page 26
☑ Accessories	page 27



## Commissioning valves with integral orifice

### HERZ Fixed Orifice Commissioning valves with integral orifice, inclined body

For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

Non-rising spindle – socket x socket; of dezincification-resistant brass; pre-setting via stroke limitation; digital display of the presetting level in the hand wheel window – for regulation of flow rate via differential pressure measurement; compression adapters for the connection of calibrated soft steel, copper or plastic pipes are available (DN 15 and DN 20); spindle sealing with triple O-ring;

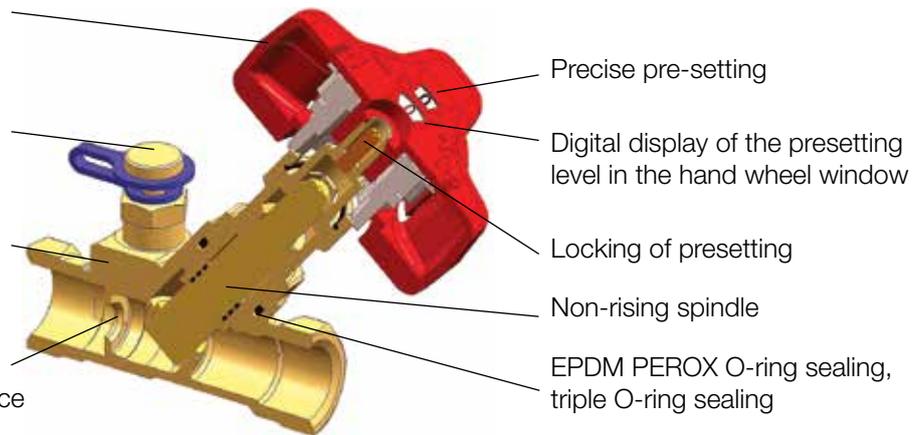
Max. operating temperature up to DN 32: 130 °C, from DN 40: 110 °C; Max. operating pressure: 20 bar

User-friendly and ergonomically designed handwheel

Easy differential pressure measurement due to test points

Body of dezincification-resistant brass

Precise results due to integral orifice



4017 M and 4017 ML: 2 test points for differential pressure measurement at the integral orifice; test points in extended version available as accessories.

4017 M



Commissioning valve with integral orifice

4017 ML



Commissioning valve with integral orifice and capillary connection

4017 R



Double regulating valve

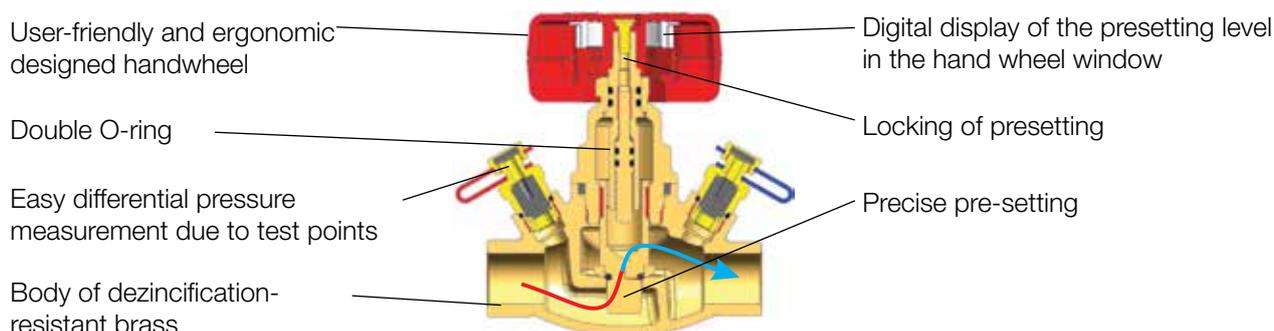
Dimension	kvs	Order number	Order number	Order number
DN 15 LF	0.46	1 <b>4017</b> 11	1 <b>4017</b> 30	
DN 15 MF	0.88	1 <b>4017</b> 21	1 <b>4017</b> 39	
DN 15	2.00	1 <b>4017</b> 01	1 <b>4017</b> 31	1 <b>4017</b> 61
DN 20	3.60	1 <b>4017</b> 02	1 <b>4017</b> 32	1 <b>4017</b> 62
DN 25	6.50	1 <b>4017</b> 03	1 <b>4017</b> 33	1 <b>4017</b> 63
DN 32	13.30	1 <b>4017</b> 04	1 <b>4017</b> 34	1 <b>4017</b> 64
DN 40	18.50	1 <b>4017</b> 05	1 <b>4017</b> 35	1 <b>4017</b> 65
DN 50	33.00	1 <b>4017</b> 06	1 <b>4017</b> 36	1 <b>4017</b> 66

## Commissioning valves

### ☑ STRÖMAX – Variable Orifice Commissioning valves, straight body

For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

Made from dezincification-resistant brass; non-rising spindle; socket x socket; spindle sealing with double O-ring; linear characteristic graph; pre-setting via stroke limitation; digital display of the pre-setting in the hand wheel window; pre-setting tampering seal 1 6517 04 and pre-setting marker 1 6517 05 are included; adapters and compression adapters must be ordered separately. Max. operating temperature up to DN 32: 130 °C, from DN 40: 110 °C; max. operating pressure: 16 bar



4217 GM and 4027 GML: 2 test points for differential pressure measurement; test points in extended version available as accessories.



4217 GM  
STRÖMAX

☑ Commissioning valve with test points for differential pressure measurement



4217 GML  
STRÖMAX

☑ Commissioning valve with test points for differential pressure measurement, with capillary connection



4217 GR  
STRÖMAX

☑ Double regulating valve

Dimension	kvs	Order number	Order number	Order number
DN 15 LF	0.93	1 <b>4217 30</b>	1 <b>4217 10</b>	
DN 15 MF	3.49	1 <b>4217 31</b>	1 <b>4217 19</b>	
DN 15	6.05	1 <b>4217 01</b>	1 <b>4217 11</b>	1 <b>4217 61</b>
DN 20	6.11	1 <b>4217 32</b>	1 <b>4217 12</b>	1 <b>4217 62</b>
DN 25	9.22	1 <b>4217 33</b>	1 <b>4217 13</b>	1 <b>4217 63</b>
DN 32	18.83	1 <b>4217 34</b>	1 <b>4217 14</b>	1 <b>4217 64</b>
DN 40	23.29	1 <b>4217 35</b>	1 <b>4217 15</b>	1 <b>4217 65</b>
DN 50	35.26	1 <b>4217 36</b>	1 <b>4217 16</b>	1 <b>4217 66</b>
DN 65	52.11	1 <b>4217 07</b>	1 <b>4217 17</b>	1 <b>4217 67</b>
DN 80	76.10	1 <b>4217 08</b>	1 <b>4217 18</b>	1 <b>4217 68</b>

## Commissioning valves

### Variable Orifice Commissioning valves, inclined body

For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

Made from dezincification-resistant brass; socket x socket; spindle sealing with O-ring; external pre-setting via stroke limitation; compression adapter connection: DN 15 – Universal model with special sockets for threaded pipe and compression adapter connection, DN 20 – Adapter 1 **6266** 20 and compression adapter G 3/4; Adapters and compression adapters must be ordered separately. Max. operating temperature up to DN 32: 130 °C, from DN 40: 110 °C; max. operating pressure: 16 bar



4117 M  
STRÖMAX-M

Commissioning valve with inclined body, with test points



4117 R  
STRÖMAX-R

Double regulating valve with inclined body



4117 MR  
STRÖMAX-MR

Double regulating valve with inclined body

Dimension	kvs	Order number	Order number	Order number
DN 15 LF	4.75*	1 <b>4117</b> 39		
DN 15	4.75	1 <b>4117</b> 51	1 <b>4117</b> 61	1 <b>4117</b> 21
DN 20	6.12	1 <b>4117</b> 52	1 <b>4117</b> 62	1 <b>4117</b> 22
DN 25	10.40	1 <b>4117</b> 53	1 <b>4117</b> 63	1 <b>4117</b> 23
DN 32	15.97	1 <b>4117</b> 54	1 <b>4117</b> 64	1 <b>4117</b> 24
DN 40	23.50	1 <b>4117</b> 55	1 <b>4117</b> 65	1 <b>4117</b> 25
DN 50	47.89	1 <b>4117</b> 56	1 <b>4117</b> 66	1 <b>4117</b> 26
DN 65	84.20	1 <b>4117</b> 57	1 <b>4117</b> 67	
DN 80	133.20	1 <b>4117</b> 58	1 <b>4117</b> 68	

<b>DN 15 - DN 20:</b>	2 holes 1/4 with test points, 1 hole 1/4 with sealing screw 2 <b>0273</b> 09 closed		3 holes 1/4 with sealing screws 2 <b>0273</b> 09 closed
<b>DN 25 - DN 50:</b>	2 holes 1/4 with test points, 2 holes 1/4 with sealing screws 2 <b>0273</b> 09 closed		4 holes 1/4 with sealing screws 2 <b>0273</b> 09 closed
<b>DN 65 - DN 80:</b>	2 holes 1/4 with test points, 2 holes 3/8 with sealing screws 2 <b>0273</b> 00 closed		

\* LF minimum kv 0.12

All information, diagrams and drawings contained in this document are in accordance with the information available at the time of printing and are for information purposes only. Changes in the sense of technical progress are reserved. All schemes have symbolic character and make no claim to completeness. The illustrations are symbolic representations and therefore may differ optically from the actual products. Possible colour deviations are due to printing technology. Country-specific product deviations are possible. Subject to change of technical specifications and function. If you have any questions, please contact the nearest HERZ office.

## Commissioning valves in flanged design

For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

### STRÖMAX commissioning valve for differential pressure measurement in flanged design, straight body with test points

Body of grey cast iron GJL 250 according to EN 1561; flange according to EN 1092; PN 16; length according to ÖNORM EN-558-1, basic series 1; painted blue; thermostatic upper part of brass grey cast iron GJL 250 (4218 GMF up to DN 100: brass); screwed; non-rising spindle; 4218 GMF: spindle sealing with double O-ring, 4218 GF: triple O-ring; pre-setting via stroke limitation by inside spindle; digital display of the presetting level in the hand wheel window; two test points are mounted beside the hand wheel; four holes for draining valves closed with sealing screws 3/8 (DN 10). Max. operating temperature up to DN 32: 130 °C, from DN 40: 110 °C; max. operating pressure: 16 bar

4218 GMF 	Dimension	kvs	Order number
	<input checked="" type="checkbox"/> STRÖMAX-GMF commissioning valve in flanged design, straight body with test points	DN 25	1.53
	DN 32	16.60	1 <b>4218</b> 44
	DN 40	28.60	1 <b>4218</b> 45
	DN 50	37.84	1 <b>4218</b> 46
	DN 65	60.30	1 <b>4218</b> 47
	DN 80	67.80	1 <b>4218</b> 48
	DN 100	99.55	1 <b>4218</b> 49
	DN 125	186.58	1 <b>4218</b> 50
	DN 150	279.05	1 <b>4218</b> 51

4218 GF 	Dimension	kvs	Order number
	<input checked="" type="checkbox"/> STRÖMAX-GF with linear characteristic graph, commissioning valve in flanged design, straight body with test points	DN 50	34.96
	DN 65	66.94	1 <b>4218</b> 81
	DN 80	106.78	1 <b>4218</b> 82
	DN 100	169.45	1 <b>4218</b> 83
	DN 125	255.79	1 <b>4218</b> 84
	DN 150	389.54	1 <b>4218</b> 85
	DN 200	67.33	1 <b>4218</b> 86
	DN 250	1082.72	1 <b>4218</b> 87
	DN 300	1784.91	1 <b>4218</b> 88



## Commissioning valves in flanged design

For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

### STRÖMAX-GF with linear characteristic graph, commissioning valve in flanged design, inclined body with extended test points

Body of spheroidal graphite iron EN-GJS-400-15; flanged according to EN 1092-2; length according to EN-558-1; painted blue; thermostatic upper part of spheroidal graphite iron EN-GJS-400-15; digital display of the presetting level; non-rising spindle with tripel O-ring seal; two test points and pre-setting marker are included; max. operating temperature: 110 °C; max. operating pressure: 16 bar (4218) or 25 bar (4220).



STRÖMAX-GF,  
PN 16



STRÖMAX-GF,  
PN 25

Dimension	kvs	Order number	Order number
DN 350	2917.60	1 <b>4218</b> 89	1 <b>4220</b> 89
DN 400	3854.80	1 <b>4218</b> 90	1 <b>4220</b> 90
DN 500	5250.60	1 <b>4218</b> 92	1 <b>4220</b> 92

### Transport and storage

Please note that the valve must not be lifted by hand wheel.

The valve is delivered ex factory ready to install. The hand wheel and two test points are not mounted - in order to avoid potential damage, we recommend installing hand wheel and test points only after installation. To prevent potential impurities on the seat during storage and transport, the valve is closed. To avoid contamination during storage and transport, the flange cover must remain fitted.

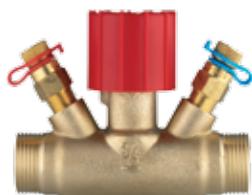


## Regulating valves

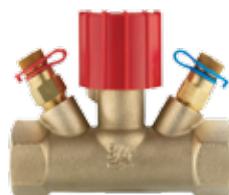
### ☑ Regulating valves with straight body

Used in building service plants with cold and hot water as well as zone control. For hydraulic balancing of heating and cooling systems, adjustment of supply lines, risers, heat exchangers and terminal units.

Body of dezincification-resistant brass; pipe connection on both sides with male thread G 3/4 or rather G1, female thread Rp 1/2 and 3/4 or with solder connection; Two test points – except for 1 **4216 11** and 1 **4216 12** – are mounted next to handwheel; compression adapters must be ordered separately; max. operating temperature: 120 °C; max. operating temperature solar: 200 °C; max. operating pressure: 10 bar



☑ Regulating valve, straight body with test points, G (male thread)



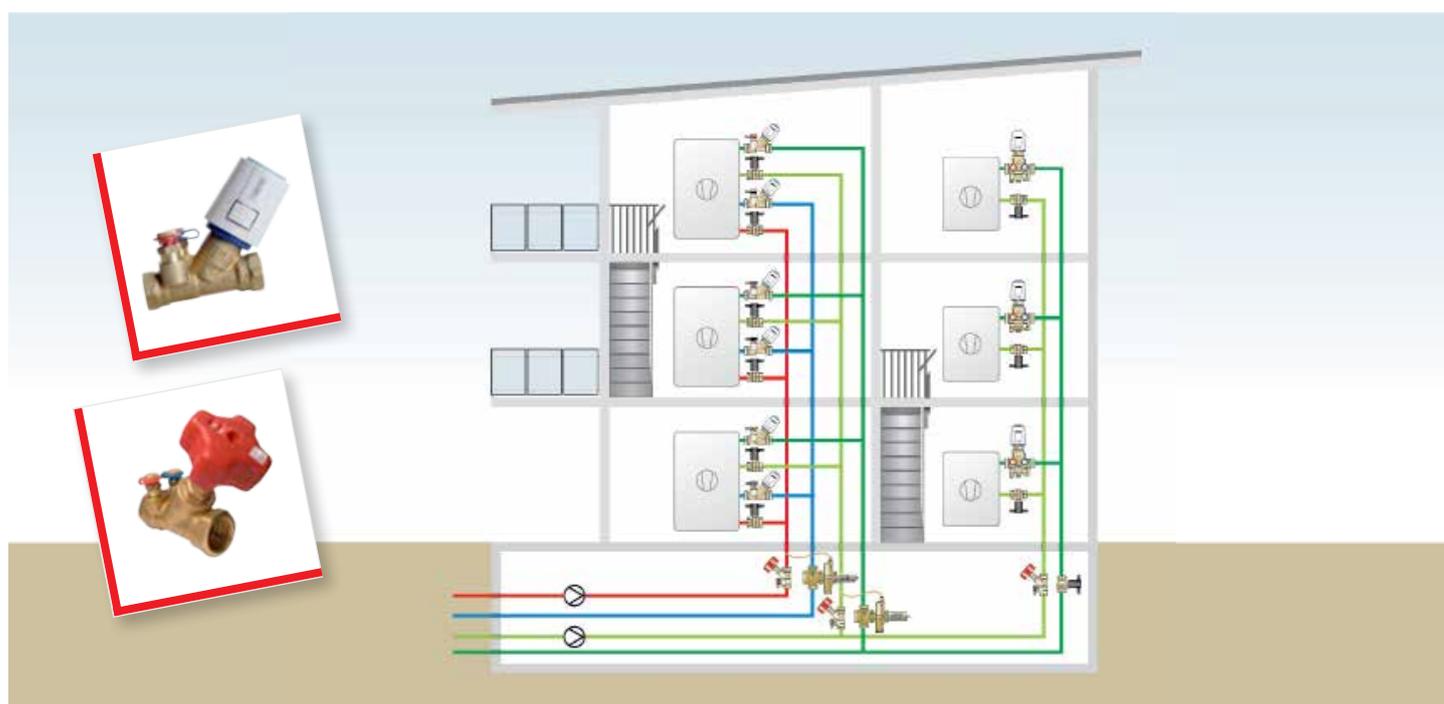
☑ Regulating valve, straight body with test points, Rp (female thread)



☑ Regulating valve for solar systems with solder connection

Dimension	kvs	Order number	Order number	Order number
DN 15	3.40	1 <b>4216 21</b>	1 <b>4216 31</b>	1 <b>4216 11</b>
DN 20	3.40	1 <b>4216 22</b>	1 <b>4216 32</b>	1 <b>4216 12</b>

## Use of commissing and regulating valves



## Control and regulating valves

For hydraulic balancing of heating and cooling systems as well as zone control and adjustment of terminal units.

### HERZ control and regulating valves, inclined body, for increased differential pressures

With fixed integral orifice; body of dezincification-resistant brass; drive threaded connection M 28 x 1.5; 4.0 mm stroke; pre-settable kvs 0.4-3.9; for increased differential pressures in heating and cooling systems; actuator, compression adapters and pre-setting key 1 **6819 72** must be ordered separately.

Max. operating temperature: 130 °C; max. operating pressure: 16 bar; max. differential pressure across the seat: 10 bar

<p>7217 V</p>  <p><input checked="" type="checkbox"/> HERZ control and regulating valve, inclined body</p>	Dimension	kvs	Order number
	DN 15 LF	0.40	1 <b>7217 50</b>
	DN 15 MF	0.90	1 <b>7217 59</b>
	DN 15	2.00	1 <b>7217 51</b>
	DN 20	3.40	1 <b>7217 52</b>

### HERZ control and regulating valve GV

For the regulation of high flow rates; body from dezincification-resistant brass; with pressure-independent, pre-settable upper part; regulator drive M 28 x 1.5; for constant or 2-point drive; stroke 4.0 mm; Pipe connection on both sides with female thread; Actuator and pre-setting key 1 **4006 02** must be ordered separately.

Max. operating temperature: 130 °C; max. operating pressure: 16 bar; max. differential pressure: 4 bar

<p>7217 GV</p>  <p><input checked="" type="checkbox"/> HERZ control and regulating valve GV</p>	Dimension	kvs	Order number
	DN 15	5.00	1 <b>7217 71</b>
	DN 20	5.60	1 <b>7217 72</b>
	DN 25	7.78	1 <b>7217 73</b>



## Thermostatic control valves

For hydraulic balancing of heating and cooling systems as well as zone control and adjustment of terminal units and radiant panels.

### ☑ Thermostatic control valves TS-98-V, straight body

Body from dezincification-resistant brass; with continuously pre-settable upper thermostatic insert TS-98 for hydraulic compensation in chilled ceiling systems and for fan coils and radiant panels. Two test points are mounted next to the thermostat insert; the valve pre-setting is continuous and external; the pre-setting key 1 **6819** 98 must be ordered separately; pipe connection on both sides with female thread Rp 1/2 or male thread G 3/4 for compression adapters (must be ordered separately). Max. operating temperature: 120 °C; max. operating pressure: 10 bar; max. differential pressure: 0.2 bar

7217-98-V



☑ Thermostatic control valve, straight body with test points, Rp (female thread)

7217-98-V



☑ Thermostatic control valve, straight body with test points, G (male thread)

Dimension	kvs	Order number	Order number
DN 15	1.10	1 <b>7217</b> 37	1 <b>7217</b> 67

### ☑ Thermostatic control valves TS-99-V, straight body

Body from dezincification-resistant brass; with continuously pre-settable upper thermostatic insert TS-99 for hydraulic compensation in chilled ceiling systems and for fan coils and radiant panels. Two test points are mounted next to the thermostat insert; the valve pre-setting takes place via a stepwise pre-setting external; the pre-setting key 1 **6819** 98 must be ordered separately; pipe connection on both sides with female thread Rp 1/2 or male thread G 3/4 for compression adapters (must be ordered separately). Max. operating temperature: 120 °C; max. operating pressure: 10 bar; max. differential pressure: 0.2 bar

7217-99-FV



☑ Thermostatic control valve, straight body with test points, Rp (female thread)

7217-99-FV



☑ Thermostatic control valve, straight body with test points, G (male thread)

Dimension	kvs	Order number	Order number
DN 15	0.40	1 <b>7217</b> 38	1 <b>7217</b> 68

## Two-port valves

For the regulation of heating or cooling systems.

### Small valve, straight model

Control valve with reduced kvs value for room climate control systems. Flat-sealing; 2 x male thread. Threaded connection for drive M 30 x 1.5.

 <p>7760</p> <p><input checked="" type="checkbox"/> HERZ straight model thermostatic valve</p>	Dimension	kvs	Order number
	DN 10	0.16	1 <b>7760</b> 21
	DN 10	0.40	1 <b>7760</b> 01
	DN 10	0.63	1 <b>7760</b> 02
	DN 10	1.00	1 <b>7760</b> 03
	DN 10	1.60	1 <b>7760</b> 04
	DN 15	2.50	1 <b>7760</b> 05
	DN 15	3.50	1 <b>7760</b> 07
	DN 20	4.50	1 <b>7760</b> 08

### Control valve, normally closed

Models with male thread connection and inner cone for compression adapter connection. Threaded connection for drive M 28 x 1.5, conical sealing, 2 x male thread.

 <p>7760 RD</p> <p><input checked="" type="checkbox"/> HERZ thermostatic valve with reverse acting principle (normally closed), straight model</p>	Dimension	kvs	Order number
	DN 15	2.81	1 <b>7760</b> 51
	DN 20	3.21	1 <b>7760</b> 52

Please note: suitable matching actuators see page 16



## Three-port valves and CALIS diverting valve

For the regulation of heating systems as well as zone control

### Thermostatic three-port valves for mixing and distribution

For use as mixing or diverting valve for regulation of heating zones, air terminal units, fan coils and dual-line systems with heat exchanger. Flat-sealing, threaded connection for drive M 30 x 1.5



Thermostatic three-port control valve for mixing and distribution, three connections



Thermostatic four-port valve for mixing and diverting, four connections with bypass

Dimension	kvs	Order number	Order number
DN 10	0.40	1 <b>7762</b> 50	1 <b>7763</b> 50
DN 10	0.63	1 <b>7762</b> 60	1 <b>7763</b> 60
DN 10	1.00	1 <b>7762</b> 70	1 <b>7763</b> 70
DN 10	1.60	1 <b>7762</b> 80	1 <b>7763</b> 80
DN 15	2.50	1 <b>7762</b> 51	1 <b>7763</b> 51
DN 15	4.00	1 <b>7762</b> 61	1 <b>7763</b> 61
DN 20	5.00	1 <b>7762</b> 62	1 <b>7763</b> 62

### CALIS-TS-RD three-port valve for thermostatic operation

Distribution 100 %, flat-sealing, threaded connection for drive M 28 x 1.5, pipe connections must be ordered separately.

7761 RD



CALIS-TS-RD three-port valve

Dimension	kvs	Order number
DN 15	3.00	1 <b>7761</b> 38
DN 20	3.00	1 <b>7761</b> 39
DN 25	6.27	1 <b>7761</b> 40
DN 32	6.44	1 <b>7761</b> 41

Please note: suitable matching actuators see page 16

## Actuators for 2-point control

### ☑ HERZ actuating drive for 2-point control for floor heating circuit distributors and valves – without limit switch

Thermo-electric actuator for opening and closing small valves and valves on heating circuit distributors of surface heating and cooling systems. Main application area is energy-efficient individual room control in the field of building services and building automation. The control of the HERZ drive 230 V / 24 V is provided by a 230 V / 24 V room thermostat with 2-point output or pulse width modulation.

Connection:	M 28 x 1.5 *	M 28 x 1.5 **
Stroke:	5 mm	4,5 mm
Closing force:	100 N	110 N <sup>1</sup> , 115 N <sup>2</sup>
Dimensions in mm (W x H x D):	48.4 x 44.3 x 52.2	66 x 44 x 61
Order number:	1 <b>7708</b> 52 (NC, 24 V / AC) 1 <b>7708</b> 53 (NC, 230 V / AC) 1 <b>7708</b> 24 (NO, 230 V / AC)	1 <b>7711</b> 12 (NC, 24 V / AC) <sup>2</sup> 1 <b>7711</b> 10 (NC, 230 V / AC) <sup>2</sup> 1 <b>7711</b> 11 (NO, 230 V / AC) <sup>1</sup> 1 <b>7711</b> 13 (NO, 24 V / AC / DC) <sup>1</sup>



### ☑ HERZ actuating drive for 2-point control for floor heating circuit distributors and valves – with limit switch

Thermoelectric actuator for opening and closing small valves and valves which are used in heating, ventilation and air conditioning. The integrated micro switch with potential-free contact allows to switch a pump or fan control directly. The HERZ drive 230 V with limit switch is controlled by a 230 V room thermostat with 2-point output or pulse width modulation.

Connection:	M 28 x 1.5 *	M 28 x 1.5 **
Stroke:	5 mm	4,5 mm
Closing force:	100 N	115 N
Dimensions in mm (W x H x D):	56 x 44.3 x 52.2	66 x 44 x 61
Order number:	1 <b>7708</b> 87 (NC, 230 V / AC)	1 <b>7711</b> 10 (NC, 230 V / AC) + 1 <b>7711</b> 24 (auxiliary contact)



## Actuators for continuous control

### ☑ HERZ actuating drive for 2-point control for floor heating circuit distributors and valves – with limit switch

Thermo-electric actuator for continuous control of heating and cooling systems in direct proportion to the applied control voltage. The actuators are controlled by a 0-10 V DC signal via a central DDC system or a room temperature controller. In variant 1 **7990** 32 with valve path recognition, the valve path is also automatically detected for optimum use of the active control voltage range.

Connection:	M 28 x 1.5
Operating voltage:	24 V / AC
Dimensions in mm (W x H x D):	63.5 x 44.1 x 61.8 <sup>A</sup>   66 x 44 x 61 <sup>B</sup>
Order number:	1 <b>7990</b> 31 (NC, 5 mm Hub, 100 N closing force) <sup>/A</sup> 1 <b>7990</b> 32 (NC, 6,5 mm Hub, 125 N closing force, incl. valve path recognition) <sup>/A</sup> 1 <b>7711</b> 12 (NC, 4,5 mm Hub, 115 N closing force) + 1 <b>7711</b> 25 (connector) <sup>**/B</sup>



### Selection table for thermoelectric actuators

Valve types											
	TS-90-DE LUXE	TS-98-V DE LUXE	DE LUXE TS-3000	DE LUXE VUJA	TS-98-V (M28 x 1.5)	TS-90-V (M28 x 1.5)	TS-99-FV (M28 x 1.5)	TS-90-KV (M28 x 1.5)	TS-90 (M28 x 1.5)	TS-90-E (M28 x 1.5)	TS-E (M28 x 1.5)
Adapters and actuators	2-Point-Regulation 1 <b>7708</b> 24 1 <b>7708</b> 52 1 <b>7708</b> 53 1 <b>7708</b> 87	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	continuous Regulation 1 <b>7990</b> 31 1 <b>7990</b> 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	*	Adapter 1 <b>7708</b> 90 has to be ordered separately									
	**	Adapter 1 <b>7708</b> 80 has to be ordered separately									
	***	Adapter 1 <b>7708</b> 98 has to be ordered separately									

Valve types											
	TS-90 DIN (M28 x 1.5)	TS-90-V DIN (M28 x 1.5)	TS-98-V DIN (M28 x 1.5)	TS-99-FV DIN (M28 x 1.5)	TS-98-VH (M30 x 1.5)	TS-90-H (M30 x 1.5)	TS-98-VH (M30 x 1.5)	TS-3000 (M28 x 1.5)	TS-3000 (M30 x 1.5)	TS-90 (M28 x 1.5)	Callis-TS (M28 x 1.5)
Adapters and actuators	2-Point-Regulation 1 <b>7708</b> 24 1 <b>7708</b> 52 1 <b>7708</b> 53 1 <b>7708</b> 87	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	continuous Regulation 1 <b>7990</b> 31 1 <b>7990</b> 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	*	Adapter 1 <b>7708</b> 90 has to be ordered separately									
	**	Adapter 1 <b>7708</b> 80 has to be ordered separately									
	***	Adapter 1 <b>7708</b> 98 has to be ordered separately									



## Selection table for thermoelectric actuators

Valve types											
	Calis-TS-E (M28 x 1.5)	VTA-40 (M28 x 1.5)	VTA-50 (M30 x 1.5)	VUA-AHA (M28 x 1.5)	VUA-40 (M28 x 1.5)	VUA-50 (M30 x 1.5)	4002 (M28 x 1.5)	4006 (M28 x 1.5)	7217 V (M28 x 1.5)	7217 GV (M28 x 1.5)	7217-98-V (M28 x 1.5)
Adapters and actuators	2-Point-Regulation 1 <b>7708</b> 24 1 <b>7708</b> 52 1 <b>7708</b> 53 1 <b>7708</b> 87	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	continuous Regulation 1 <b>7990</b> 31 1 <b>7990</b> 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	*	Adapter 1 <b>7708</b> 90 has to be ordered separately									
	**	Adapter 1 <b>7708</b> 80 has to be ordered separately									
	***	Adapter 1 <b>7708</b> 98 has to be ordered separately									



Valve types										
	7217-99-FV (M28 x 1.5)	7723 Zonenventil (M28 x 1.5)	7760 RD (M28 x 1.5)	7761 RD (M28 x 1.5)	7760 (M30 x 1.5)	7762	7763			
Adapters and actuators	2-Point-Regulation 1 <b>7708</b> 24 1 <b>7708</b> 52 1 <b>7708</b> 53 1 <b>7708</b> 87	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	continuous Regulation 1 <b>7990</b> 31 1 <b>7990</b> 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	*	Adapter 1 <b>7708</b> 90 has to be ordered separately								
	**	Adapter 1 <b>7708</b> 80 has to be ordered separately								
	***	Adapter 1 <b>7708</b> 98 has to be ordered separately								

## Two-port ball valve and rotary drive

### ☑ Two-port ball valve with female thread

For precise regulation, no leakage losses. Regulating ball valve for continuous control of heating and cooling water in closed circuits. Pressure level PN 40 (DN 15 – DN 25) or PN 25 (DN 32 – DN 50). Ball with equal percentage characteristic graph; spindle sealing with double O-ring; actuator **7712 33/35** must be ordered separately.



☑ Two-port ball valve with female thread, with handle



☑ Two-port ball valve with female thread, without handle

Dimension	kvs	Order number	Order number
DN 15	5.00	1 <b>2117 01</b>	1 <b>2117 11</b>
DN 20	8.00	1 <b>2117 02</b>	1 <b>2117 12</b>
DN 25	12.50	1 <b>2117 03</b>	1 <b>2117 13</b>
DN 32	20.00	1 <b>2117 04</b>	1 <b>2117 14</b>
DN 40	32.00	1 <b>2117 05</b>	1 <b>2117 15</b>
DN 50	50.00	1 <b>2117 06</b>	1 <b>2117 16</b>

### ☑ Two-port ball valve 2117 rotary drive

Disengageable gearbox for positioning of the ball valve and for manual adjustment. The synchronous motor is equipped with control and shutoff electronic. Can be installed vertical to horizontal but non-suspended.

Operating voltage:	230 V / AC	24 V AC/DC
Control:	2-/3-point	2-point, 3-point and continuous range 0-10 V)
Torque:	8 Nm	8 Nm
Operating time:	120 s	35/60/120 s
Characteristic graph type:	-	Configurable on the drive
Protection class:	IP 54	IP 54
Order number:	1 <b>7712 33</b>	1 <b>7712 35</b>



## Mixing valves and rotary drive

HERZ mixing valves are used as a control element for precise regulation of medium temperature in heating and cooling systems. In combination with a suitable matching actuator the mixing valve is used as a control valve with a linear, proportional or quadratic characteristic. 3-port mixing valves can also be used as mixing or diverting valves, 4-port mixing valves have a dual mixing function – the proportion of hot water from the boiler is mixed with the return water. This leads to a higher temperature of return water, reduces the risk of corrosion and ensures a longer lifetime for the boiler.

### ☑ Mixing valves

Body and cone of brass, female thread, EPDM seal, medium temperature -10 °C to 120 , PN 10. Actuator of choice 1 **7712** 25/27 must be ordered separately.



☑ Three-way mixing valve



☑ Four-way mixing valve

Dimension	kvs	Order number	Order number
DN 15	4.00	1 <b>2137</b> 01	1 <b>2138</b> 01
DN 20	6.30	1 <b>2137</b> 02	1 <b>2138</b> 02
DN 25	10.00	1 <b>2137</b> 03	1 <b>2138</b> 03
DN 32	16.00	1 <b>2137</b> 04	1 <b>2138</b> 04
DN 40	25.00	1 <b>2137</b> 05	
DN 50	40.00	1 <b>2137</b> 06	

### ☑ Rotary drive for HERZ mixing valves 2137 and 2138

Disengageable gearbox for positioning of the mixing valve and for manual adjustment. The synchronous motor is equipped with control and shutoff electronic. Suitable for all installation orientations.



Operating voltage:	230 V / AC	24 V AC/DC
Control:	2-/3-point	2-point, 3-point and continuous range 0-10 V)
Torque:	10 Nm	10 Nm
Operating time:	120 s	35/60/120 s
Characteristic graph type:	-	Configurable on the drive
Protection class:	IP 54	IP 54
Order number:	1 <b>7712</b> 25	1 <b>7712</b> 27

## Three-port mixing and diverting valve + lift drive

Used in building service plants as well as zone control. For balancing of heating systems, installation before or after heat exchangers as well as in heating terminals and risers.

### Three-port mixing and diverting valve

For continuous control of cold and warm water. Usable with valve drive 1 **7712** 12 as actuator with adjustable characteristic graph. Body of cast brass with three male threads, flat-sealing, screw connections and actuator must be ordered separately.

 <input checked="" type="checkbox"/> 3-port mixing and diverting valve	Dimension	kvs	Order number
	DN 15	4.00	1 <b>4037</b> 15
	DN 20	6.30	1 <b>4037</b> 20
	DN 25	10.00	1 <b>4037</b> 25
	DN 32	16.00	1 <b>4037</b> 32
	DN 40	25.00	1 <b>4037</b> 40
	DN 50	40.00	1 <b>4037</b> 50

### Rotary drive for three-port valves 4037

Two-part body of self-extinguishing plastic. Bracket of plastic and union nut of brass for valve attached. Disengageable gearbox for positioning of the valve and manual adjustment. Can be installed vertical to horizontal but non-suspended.



Operating voltage:	24 V AC	230 V AC	24 V AC
Control:	2-point, 3-point or continuous	3-point	3-point
Closing force:	500 N	500 N	500 N
Characteristic graph type:	Linear or equal percentage	-	-
Effective direction:	Operating direction switchable directly on the cable, automatic adaption to the valve stroke.	-	-
Further details:	Coding switch for selection of the characteristic graph and operating time.	-	-
Order number:	1 <b>7712</b> 11	1 <b>7712</b> 50	1 <b>7712</b> 51



## Two- and three-port flanged valves DN 15 – DN 25, actuators and accessories

Straight and three-way flanged valves are mainly used to control the volume flow in district heating, heating, ventilation and air conditioning systems (HVA) as well as for remote closing of heating or cooling lines.

### ☑ Two- and three-port flanged valves DN 15 – DN 25

Body of grey cast iron GJL 250 according to EN 1561 (PN 16) or spheroidal graphite iron GJS 400-18-LT according to EN 1563 (PN 25); flange according to EN 1092-2; length according to EN 558-1, basic series 1; equal percentage characteristic graph; max. operating temperature: 140 °C; max. operating pressure: 16 bar (PN 16) and 25 bar (PN 25)



☑ Straight control valve  
PN 16



☑ Straight control valve  
PN 25



☑ Three-port control valve  
PN 16

Dimension	kvs	Order number	Order number	Order number
DN 15	1.00	F 4035 01	F 4035 40	F 4037 01
DN 15	1.60	F 4035 11	F 4035 51	F 4037 11
DN 15	2.50	F 4035 21	F 4035 61	F 4037 21
DN 15	4.00	F 4035 31	F 4035 71	F 4037 31
DN 25	6.30	F 4035 03	F 4035 43	F 4037 03
DN 25	10.00	F 4035 13	F 4035 53	F 4037 13

### ☑ Rotary drive for control valves

Gearbox maintenance free. Connection with the valve spindle takes place semi-automatically after apply control voltage. Actuating force: 500 N; stroke: 8-20 mm; type of protection: IP 54; actuation time: 7.5 s/mm; Can be mounted vertical to horizontal but non-suspended.

Operating voltage:	230 V / AC	24 V AC/DC
Control:	2-/3-point	2-point, 3-point and continuous (operating range 0-10 V with actual feedback signal)
Further details:	-	<ul style="list-style-type: none"> <li>Operating direction switchable directly on the cable</li> <li>sautomatic adaption to the stroke of the valve</li> </ul>
Order number:	1 7712 28	1 7712 29



### ☑ Adapter set for HERZ actuator

For installation of HERZ actuators 1 7712 28/29 on HERZ control vales F 4006 xx, F 4035 xx and F 4037 xx.

Order number:	1 7712 20
---------------	-----------



## Two- and three-way flanged valves DN 32 – DN 80, actuators and accessories

### ☑ Two- and three-way flanged valves

Body of grey cast iron GJL 250 according to EN 1561 (PN 16) or spheroidal graphite iron GJS 400-18-LT according to EN 1563 (PN 25); flange according to EN 1092-2; length according to EN 558-1, basic series 1; equal percentage characteristic graph; max. operating temperature: 140 °C; max. operating pressure: 16 bar (PN 16) and 25 bar (PN 25)



☑ Straight control valve  
PN 16



☑ Straight control valve  
PN 25



☑ Three-port control valve  
PN 16

Dimension	kvs	Order number	Order number	Order number
DN 32	16.00	F <b>4035</b> 04	F <b>4035</b> 44	F <b>4037</b> 04
DN 40	25.00	F <b>4035</b> 05	F <b>4035</b> 45	F <b>4037</b> 05
DN 50	40.00	F <b>4035</b> 16	F <b>4035</b> 56	F <b>4037</b> 16
DN 65	63.00	F <b>4035</b> 07	F <b>4035</b> 47	F <b>4037</b> 07
DN 80	100.00	F <b>4035</b> 08	F <b>4035</b> 48	F <b>4037</b> 08

### ☑ Rotary drive for control valves

Gearbox maintenance free. Connection with the valve spindle takes place semi-automatically after apply control voltage. Actuating force: 1000 N; stroke: 20 mm; type of protection: IP 66; two-colour LED display; Can be mounted vertical to horizontal but non-suspended.



Operating voltage:	230 V / AC	24 V AC/DC
Control:	2-/3-point	2-point, 3-point and continuous (operating range 0-10 V / 4-20 mA with actual feedback signal)
Actuation time:	6 (12) s/mm	6 (4) s/mm
Further details:	-	<ul style="list-style-type: none"> <li>• Coding switch for operating direction, characteristic graph and control signal</li> <li>• automatic adaption to the stroke of the valve</li> </ul>
Order number:	1 <b>7712</b> 30	1 <b>7712</b> 31

### ☑ Adapter set for HERZ actuator

For installation of HERZ actuators 1 **7712** 30/31 on HERZ control valves F **4006** xx, F **4035** xx and F **4037** xx.

Order number:	1 <b>7712</b> 17
---------------	------------------



## Two- and three-port flanged valves DN 100 – DN 150, actuators and accessories

### ☑ Two- and three-port flanged valves

Body of grey cast iron GJL 250 according to EN 1561 (PN 16) or spheroidal graphite iron GJS 400-18-LT according to EN 1563 (PN 25); flange according to EN 1092-2; length according to EN 558-1, basic series 1; equal percentage characteristic graph; max. operating temperature: 140 °C; max. operating pressure: 16 bar (PN 16) and 25 bar (PN 25)



☑ Straight control valve  
PN 16



☑ Straight control valve  
PN 25



☑ Straight control valve  
PN 16

Dimension	kvs	Order number	Order number	Order number
DN 100	16.00	F 4035 09	F 4035 49	F 4037 09
DN 125	250.00	F 4035 10	F 4035 50	F 4037 10
DN 150	330.00	F 4035 41	F 4035 52	F 4037 41

### ☑ Rotary drive for control valves

Gearbox maintenance free. Connection with the valve spindle takes place semi-automatically after apply control voltage. Actuating force: 2500 N; stroke: 49 mm; type of protection: IP 66; two-colour LED display; automatic adaption to the stroke of the valve; Operating voltage 230 V with 230 V module 1 **7712 22** possible. Can be mounted vertical to horizontal but non-suspended.

Operating voltage:	24 V AC/DC
Control:	2-point, 3-point and continuous (operating range 0-10 V / 4-20 mA with actual feedback signal)
Actuation time:	2/4/6 s/mm
Order number:	1 <b>7712 32</b>



### ☑ HERZ 230 V module

Pluggable; for HERZ actuators 1 **7712 21/32**. Operating voltage: 230 V / AC.

Order number:	1 <b>7712 22</b>
---------------	------------------



## Selection table for drives and adapters

			1 7712 29 24 V continuous, 2-3-point 500 N, 20 mm	1 7712 31 24 V continuous, 2-3-point 1000 N, 20 mm	1 7712 32 24 V continuous, 2-3-point 2500 N, 40 mm	1 7712 21 24 V continuous, 2-3-point 2500 N, 40 mm	1 7712 28 230 V 2, 3-point 500 N, 20 mm
<b>Combi valve</b>	DN	max. m³/h					
F 4006 71	15	2,5	1 7712 20 *				1 7712 20 *
F 4006 90			1 7712 20 *				1 7712 20 *
F 4006 72	15	4	1 7712 20 *				1 7712 20 *
F 4006 91			1 7712 20 *				1 7712 20 *
F 4006 73	25	6,3	1 7712 20 *				1 7712 20 *
F 4006 92			1 7712 20 *				1 7712 20 *
F 4006 93	25	8	1 7712 20 *				1 7712 20 *
F 4006 53			1 7712 20 *				1 7712 20 *
F 4006 74	32	12	1 7712 20 *				1 7712 20 *
F 4006 94			1 7712 20 *				1 7712 20 *
F 4006 75	40	20	1 7712 20 *				1 7712 20 *
F 4006 95			1 7712 20 *				1 7712 20 *
F 4006 61			1 7712 20 *				1 7712 20 *
F 4006 80	50	32	1 7712 20 *				1 7712 20 *
F 4006 96			1 7712 20 *				1 7712 20 *
F 4006 62			1 7712 20 *				1 7712 20 *
F 4006 81	65	50		1 7712 18 *			
F 4006 97				1 7712 18 *			
F 4006 63	80	80	1 7712 20 *				1 7712 20 *
F 4006 82				1 7712 18 *			
F 4006 98				1 7712 18 *			
F 4006 64				1 7712 17 *			
F 4006 83	100	125				direkte Montage	
F 4006 99						direkte Montage	
F 4006 65	125	180		1 7712 17 *			
F 4006 84						direkte Montage	
F 4006 10						direkte Montage	
F 4006 66	125					direkte Montage	
F 4006 56	150					direkte Montage	
F 4006 67	150					direkte Montage	
F 4006 57	200					direkte Montage	
F 4006 68	250					direkte Montage	
F 4006 69	150					direkte Montage	
F 4006 85	150					direkte Montage	
F 4006 11	150					direkte Montage	
F 4006 39	15	1,6	1 7712 20 *				1 7712 20 *
F 4006 40	15	2,5	1 7712 20 *				1 7712 20 *
F 4006 41	15	4	1 7712 20 *				1 7712 20 *
F 4006 42	20	6,3	1 7712 20 *				1 7712 20 *
<b>2-port valves</b>	DN	kvs					
F 4035 01	15	1	1 7712 20 *				1 7712 20 *
F 4035 40			1 7712 20 *				1 7712 20 *
F 4035 11	15	1,6	1 7712 20 *				1 7712 20 *
F 4035 51			1 7712 20 *				1 7712 20 *
F 4035 21	15	2,5	1 7712 20 *				1 7712 20 *
F 4035 61			1 7712 20 *				1 7712 20 *
F 4035 31	15	4	1 7712 20 *				1 7712 20 *
F 4035 71			1 7712 20 *				1 7712 20 *
F 4035 03	25	6,3	1 7712 20 *				1 7712 20 *
F 4035 43			1 7712 20 *				1 7712 20 *
F 4035 13	25	10	1 7712 20 *				1 7712 20 *
F 4035 53			1 7712 20 *				1 7712 20 *
F 4035 04	32	16		1 7712 17			
F 4035 44				1 7712 17			
F 4035 05	40	25		1 7712 17			
F 4035 45				1 7712 17			
F 4035 16	50	40		1 7712 17			
F 4035 56				1 7712 17			
F 4035 07	65	63		1 7712 17			
F 4035 47				1 7712 17			
F 4035 08	80	100		1 7712 17			
F 4035 48				1 7712 17			
F 4035 09	100	160			Direct installation		
F 4035 49					Direct installation		
F 4035 10	125	250			Direct installation		
F 4035 50					Direct installation		
F 4035 41	150	330			Direct installation		
F 4035 52					Direct installation		
<b>3-port valves</b>	DN	kvs					
F 4037 01	15	1	1 7712 20				1 7712 20 *
F 4037 11	15	1,6	1 7712 20				1 7712 20 *
F 4037 21	15	2,5	1 7712 20				1 7712 20 *
F 4037 31	15	4	1 7712 20				1 7712 20 *
F 4037 03	25	6,3	1 7712 20				1 7712 20 *
F 4037 13	25	10	1 7712 20				1 7712 20 *
F 4037 04	32	16		1 7712 17			
F 4037 05	40	25		1 7712 17			
F 4037 16	50	40		1 7712 17			
F 4037 07	65	63		1 7712 17			
F 4037 08	80	100		1 7712 17			
F 4037 09	100	160			Direct installation		
F 4037 10	125	250			Direct installation		
F 4037 41	150	330			Direct installation		
<b>Mixers</b>	DN						
1 2137 11	15						
1 2137 12	20						
1 2137 13	25						
1 2137 14	32						
1 2137 15	40						
1 2137 16	50						
<b>Ball valves</b>	DN						
1 2117 11	15						
1 2117 12	20						
1 2117 13	25						
1 2117 14	32						
1 2117 15	40						
1 2117 16	50						

\* The adapter specified in the cell is required for installation.

## Selection table for drives and adapters

			1 7712 29 24 V continuous, 2-3-point 500 N, 20 mm	1 7712 31 24 V continuous, 2-3-point 1000 N, 20 mm	1 7712 32 24 V continuous, 2-3-point 2500 N, 40 mm	1 7712 21 24 V continuous, 2-3-point 2500 N, 40 mm	1 7712 28 230 V 2, 3-point 500 N, 20 mm
<b>Combi valve</b>							
F 4006 71	15	2,5					
F 4006 90							
F 4006 72	15	4					
F 4006 91							
F 4006 73	25	6,3					
F 4006 92							
F 4006 93	25	8					
F 4006 53							
F 4006 74	32	12					
F 4006 94							
F 4006 75	40	20					
F 4006 95							
F 4006 61	50	32					
F 4006 80							
F 4006 96	65	50	1 7712 18 *				
F 4006 62			1 7712 18 *				
F 4006 81	80	80	1 7712 18 *				
F 4006 97			1 7712 18 *				
F 4006 63	80	80	1 7712 17 *				
F 4006 82							
F 4006 98	100	125	1 7712 17 *				
F 4006 64							
F 4006 83	125	180					
F 4006 99							
F 4006 65	125	180					
F 4006 84							
F 4006 10	125	180					
F 4006 66	125						
F 4006 56	150						
F 4006 67	150						
F 4006 57	150						
F 4006 68	200						
F 4006 69	250						
F 4006 85	150						
F 4006 11	150						
F 4006 39	15	1,6					
F 4006 40	15	2,5					
F 4006 41	15	4					
F 4006 42	20	6,3					
<b>2-port valves</b>							
	DN	kvs					
F 4035 01	15	1					
F 4035 40							
F 4035 11	15	1,6					
F 4035 51							
F 4035 21	15	2,5					
F 4035 61							
F 4035 31	15	4					
F 4035 71							
F 4035 03	25	6,3					
F 4035 43							
F 4035 13	25	10					
F 4035 53							
F 4035 04	32	16	1 7712 17 *				
F 4035 44			1 7712 17 *				
F 4035 05	40	25	1 7712 17 *				
F 4035 45			1 7712 17 *				
F 4035 16	50	40	1 7712 17 *				
F 4035 56			1 7712 17 *				
F 4035 07	65	63	1 7712 17 *				
F 4035 47			1 7712 17 *				
F 4035 08	80	100	1 7712 17 *				
F 4035 48			1 7712 17 *				
F 4035 09	100	160					
F 4035 49							
F 4035 10	125	250					
F 4035 50							
F 4035 41	150	330					
F 4035 52							
<b>3-port valves</b>							
	DN	kvs					
F 4037 01	15	1					
F 4037 11	15	1,6					
F 4037 21	15	2,5					
F 4037 31	15	4					
F 4037 03	25	6,3					
F 4037 13	25	10					
F 4037 04	32	16	1 7712 17 *				
F 4037 05	40	25	1 7712 17 *				
F 4037 16	50	40	1 7712 17 *				
F 4037 07	65	63	1 7712 17 *				
F 4037 08	80	100	1 7712 17 *				
F 4037 09	100	160					
F 4037 10	125	250					
F 4037 41	150	330					
<b>Mixers</b>							
	DN						
1 2137 11	15			Direct installation	Direct installation		
1 2137 12	20			Direct installation	Direct installation		
1 2137 13	25			Direct installation	Direct installation		
1 2137 14	32			Direct installation	Direct installation		
1 2137 15	40			Direct installation	Direct installation		
1 2137 16	50			Direct installation	Direct installation		
<b>Ball valves</b>							
	DN						
1 2117 11	15					Direct installation	Direct installation
1 2117 12	20					Direct installation	Direct installation
1 2117 13	25					Direct installation	Direct installation
1 2117 14	32					Direct installation	Direct installation
1 2117 15	40					Direct installation	Direct installation
1 2117 16	50					Direct installation	Direct installation

\* The adapter specified in the cell is required for installation.

## Metering station

The metering station has two test points. The body is made of stainless steel according to BS 1042, flow characteristic confirmed to BS 7350. HERZ metering stations are used in the supply line of central heating and cooling systems and enable a precise measurement of differential pressure.

The usage of metering stations is possible in the supply as well as in the return – either partnered with HERZ commissioning valves to make up a set or in combination with a HERZ isolation valve. The adjustment of the flow is done by the setting of the commissioning valve during the measurement of the pressure loss at the metering station. Advantages are easy handling by usage only one operating direction of the metering station and the opportunity for separate installation, e.g. as a fixed orifice.

### Metering station for differential pressure measurement

Metering station with threaded connection

Model	DN	kvs	EAN 91 20068	Order number	Sale Unit
 <p><b>HERZ metering station LF</b> With reduced kv, for differential pressure measurement at low flow rates, other design features as listed below</p> <p><b>HERZ metering station MF</b> For differential pressure measurement at moderate flow rates, other design features as listed below</p> <p><b>HERZ metering station with two test points</b> Inlet with female thread, outlet with male thread, PN 20 from -20 °C to 130 °C (to DN 32), 110 °C (from DN 40). Body of dezincification-resistant brass, For differential pressure measurement. Two test points (0284)</p>	<b>15 LF</b>	<b>0.55</b>	43510 2	1 4000 11	<b>10</b>
	<b>15 MF</b>	<b>1.1</b>	43310 8	1 4000 21	<b>10</b>
	<b>15</b>	<b>2.2</b>	43500 3	1 4000 01	<b>10</b>
	<b>20</b>	<b>1.25</b>	43520 1	1 4000 02	<b>10</b>
	<b>25</b>	<b>8.6</b>	43530 9	1 4000 03	<b>10</b>
	<b>32</b>	<b>15.9</b>	43540 9	1 4000 04	<b>5</b>
	<b>40</b>	<b>23.7</b>	43550 8	1 4000 05	<b>5</b>
<b>50</b>	<b>48.0</b>	43560 7	1 4000 06	<b>5</b>	

### Metering station for differential pressure measurement

Metering station for installation between flanges

Model	DN	kvs	EAN 91 20068	Order number	Sale Unit
 <p><b>HERZ metering station</b> Stainless steel, max. temperature: 120 °C, max. operating pressure: 16 bar. Operating date and kv values according to BS 7350.</p>	<b>65</b>	<b>100.7</b>	46330 3	1 4000 31	<b>1</b>
	<b>80</b>	<b>133.8</b>	46331 0	1 4000 32	<b>1</b>
	<b>100</b>	<b>237.7</b>	46332 7	1 4000 33	<b>1</b>
	<b>125</b>	<b>339</b>	46333 4	1 4000 34	<b>1</b>
	<b>150</b>	<b>511</b>	46334 1	1 4000 35	<b>1</b>
	<b>200</b>	<b>858</b>	46335 8	1 4000 36	<b>1</b>
	<b>250</b>	<b>1235</b>	46336 5	1 4000 37	<b>1</b>
	<b>300</b>	<b>1793</b>	46337 2	1 4000 38	<b>1</b>



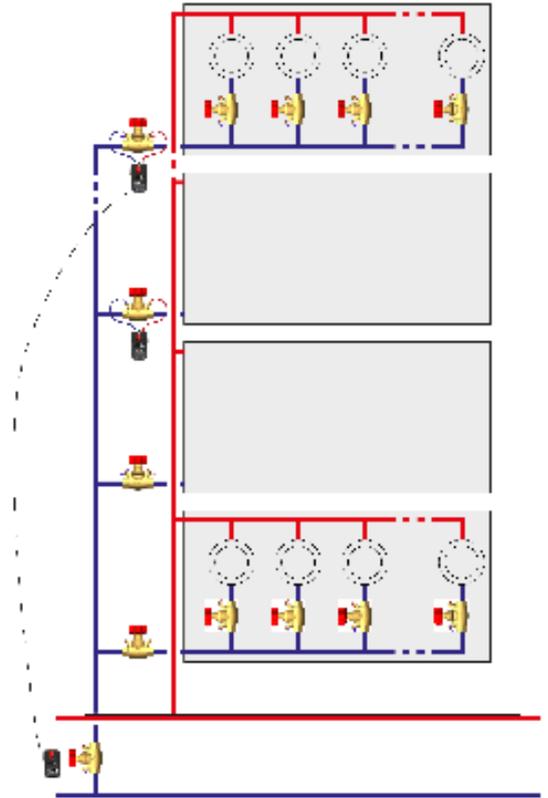
## Hydraulic proportional balancing

### The following points must be considered before commissioning:

1. The adjustment of a valve in a sub-circuit alters the flow not only in the sub-circuit, but also in other circuits in the system. If such an adjustment reduces the flow in the sub-circuit then the flow elsewhere must increase, as the total mass flow rate is constant.
2. If water flows through a pipe which has a number of branches then the percentage of the total flow in each branch remains constant irrespective of how the total mass flow alters.
3. The initial objective is to obtain the same percentage of the total flow rate in each part of the system (%DFR).
4. Flow is induced into less favoured circuits from favoured circuits.
5. Start with the most favoured branch to induce flow to less favoured branches (greatest %DFR).
6. The index circuit is that circuit displaying the lowest %DFR of the group of circuits on any one branch.
7. Each circuit is balanced against the index circuit starting with the circuit next to the pump and working back to the index.
8. Once all the groups of circuits within branches have been adjusted, the branch valves can be balanced as for the terminals working back towards the index.

### Proportional Balancing with 4017 Fixed Orifice Valves:

1. With all terminal commissioning valves fully open with the main branch valve fully open and the control valves disabled and fully open, an initial differential pressure reading (signal) is taken at all commissioning valves.
2. The Percentage of Design Flow Rate is then calculated for all (%DFR)  $\%DFR = 100 \times \text{Start with the most favoured branch to induce flow to less favoured branches (greatest \%DFR)}$ . The index circuit is that circuit displaying the lowest %DFR of the group of circuits on any one branch
3. Each circuit is balanced against the index circuit starting with the circuit next to the pump and working back to the index.
4. Once all the groups of circuits within branches have been adjusted, the branch valves can be balanced as for the terminals working back towards the index.
5. When using Fixed Orifice the Pressure drop (signal) is used as the measuring unit.
6. The formula for establishing the signal to be achieved is
7.  $\text{Target } \Delta P = (\text{Index } \%DFR / 100)^2 \times \text{Design Signal}$
8. As each valve is regulated, the index %DFR will tend to increase. It is the current value which is used in the reiteration.
9. Identify the index unit of the branch being balanced, this is usually the last measuring point on the branch and will have the lowest %DFR.
10. Calculate the target DP signal for the valve with the next lowest %DFR.
11. Adjust the regulating valve so that the target signal is achieved within  $\pm 5\%$  of the index %DFR. A further iteration may be required if the circuit being balanced is not within  $\pm 5\%$ .
12. Continue by adjusting the regulating valve for the next terminal nearer the pump until the DFR for this terminal is within  $\pm 5\%$  of the index terminal.
13. Complete the branch, then proceed to the next most favoured branch on the riser and carry out terminal balancing as before.
14. The process is repeated until all branches have been adjusted and balanced proportionally to one another.

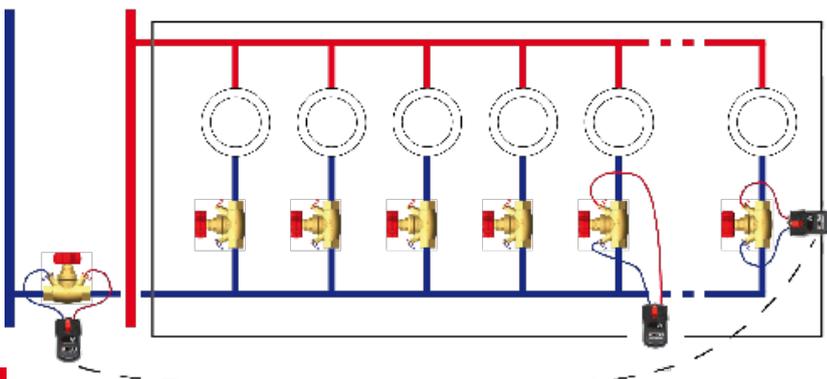


### HerzCOMP 650 measuring computer

1 8900 05  
Order number



- For the balancing of cooling, heating and drinking water circuits
- Storage capacity for 2.000 measurements
- Antifreeze correction
- Ergonomische Bauform
- Protection class IP 65 (dust-tight and waterproof)
- Connection for smartphone via bluetooth
- Easy valve selection by user-friendly, image guided app
- App for Android (version 7.0 +) / iOS
- Measuring range 0-10 bar



## Accessories

### General accessories

Model		DN	EAN 91 20068	Order number	Sales Unit
	<b>Sealing screw</b> Brass version, dezincification-resistant brass with O-ring seal and external hex.	1/4	02181 7	2 0273 09	10
		3/8	02182 4	2 0273 00	10
	<b>Draining valve with handle and swivelling hose connection</b> Brass version, hose connection 1 6206 01 must be ordered separately.	1/4	02220 3	1 0276 09	1
		3/8	02230 2	1 0276 00	1
	<b>Hose connection</b> Brass version, nut and spigot	3/8	60010 4	1 6206 00	1
		1/2	60020 3	1 6206 01	1
		3/4	60030 2	1 6206 02	1

### Keys and tools

	<b>Universal key</b> For opening theft protection clips 9552 4 square key SW 5 for STRÖMAX-M		63140 5	1 6640 00	1
	<b>Pre-setting key</b> For 7217 V	M 28 x 1.5	66545 0	1 6819 72	1
	<b>Pre-setting key</b> For HERZ pressure-independent control valve 4001 (from year manufacture 2009) For HERZ pressure-independent control valve 4002 (from year manufacture 2009) For HERZ combi valve pressure-independent control valve 4006-HERZ control and regulating valve 7217 GV		02670 6	1 4600 02	1

### Accessories for measuring computer

	<b>Pressure transducer set for quick test points</b>		02380 4	1 0284 00	1
	<b>HERZ test point adapter set for HERZ-STRÖMAX Valves with test points 0280, 0282 and 0283</b> for differential pressure measurement with HERZ measuring computers „up to year of manufacture 2004“.		81610 9	1 8903 11	1
	<b>Quick test point</b> 1 set = 2 units		02610 2	1 0284 10	Set
	<b>Pre-setting tampering seal for STRÖMAX-GM/GR</b> zur Abdeckung der Handradbefestigungsschraube, wird bei Abnahme zerstört		62910 5	1 6517 04	20
	<b>Pre-setting marker</b> Plastic hanger for labelling the pre-setting level. For installation on valve or pipeline.		62920 4	1 6517 05	20

### Test points

	<b>Quick test point with capillary connection</b> Brass version, blue cap (return) for pressure transducer.	1/4	02700 0	1 0284 03	20
	<b>Quick test point with capillary connection</b> Brass version, red cap (supply) for pressure transducer.	1/4	02701 7	1 0284 04	20



 HERZ Armaturen GesmbH - Wien  herz.armaturen

**HERZ Armaturen Ges.m.b.H.**

Richard-Strauss-Straße 22, 1230 Wien

Telefon: +43 (0)1 616 26 31-0, Fax: +43 (0)1 616 26 31-27

E-mail: [office@herz.eu](mailto:office@herz.eu)

[www.herz.eu](http://www.herz.eu)

