



DS5 Actuator for CBV15..20, HW-218234, HW-218240 and HW-218241 6-way control ball valves

Application

Rotary actuator and 6-way control ball valve for heating and cooling cycles for heating and cooling ceilings or fan coil units.

The ball valve is operated with a rotating axis and a rotational angle of up to 90°.

This is controlled with one of the following signals:

- Constant signal 0..10 V DC or
- 2-point signal open/closed



HINWEIS

This document does not contain safety instructions.

You can find detailed information about handling the actuator in the operating instructions 3.10-09.060-80 "DS5 rotary actuator for CBV15..20, HW-218234, HW-218240 and HW-218241 6-way control ball valves".

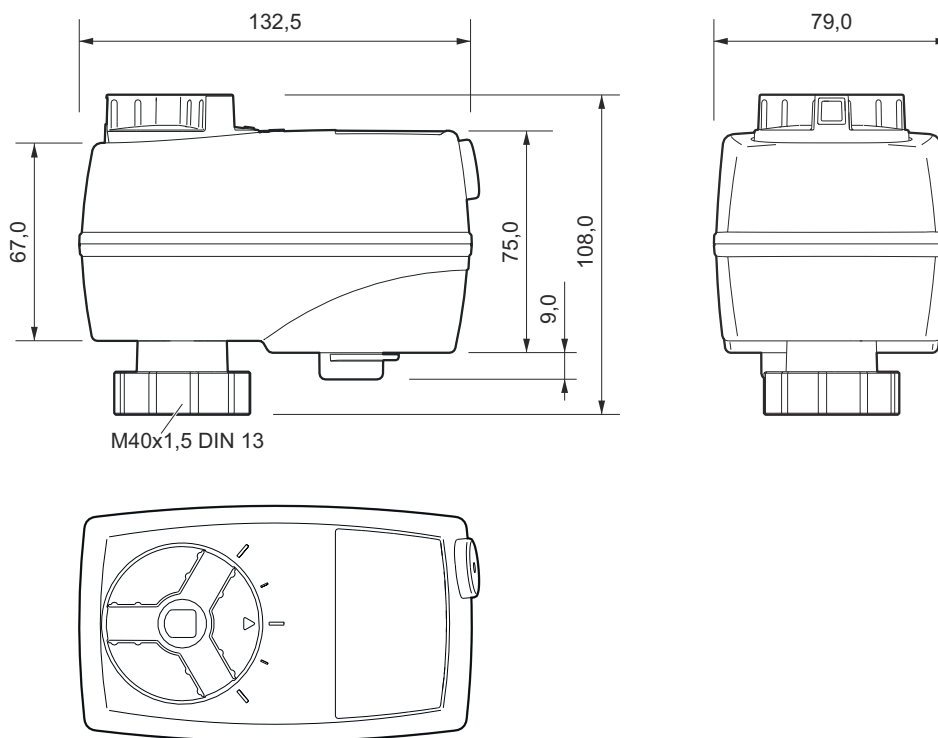
Technical Data

Nominal voltage	24 V AC $\pm 10\%$; 50/60 Hz; 24 V DC $\pm 10\%$
Dimensioning	8.5 VA (24 V AC); 4.1 W (24 V DC)
Power consumption	Nominal: 6.0 VA (24 V AC); 2.6 W (24 V DC) Sleep mode: 0.7 VA (AC); 0.3 W (DC)
Control	Continuous control 0..10 V DC; < 0.5 mA or 2-point control
Position feedback	0..10 V DC, 5 mA for 0..100 % stroke, only with continuous control
Connection	Built-in connection cable, 1.5 m long; 5 x 0.5 mm ²
Torque	5 Nm
Sound power	Typically <26 dB (A)
Stroke	0..90°
Positioning time	60 s for 90° rotational angle
Position indicator	Mechanical position indicator on the housing and position marker on the handwheel
Manual mode	Only when disconnected from the power supply, with gear unit decoupled
Initialization	Automatic end position detection by initialization after switching on the operating voltage
Housing	Plastic
Adaptation	Square, wrench size 9
Color	Housing: RAL 9010 (white), RAL 7035 (gray) Release button: RAL 2009 (orange)



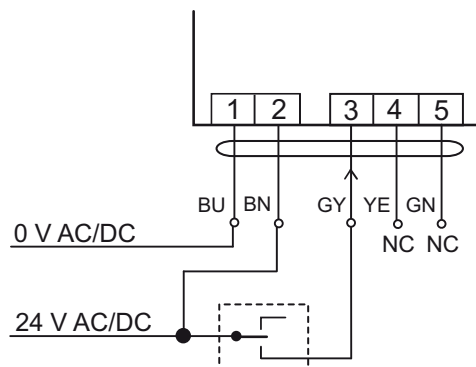
Maintenance	Maintenance-free
Ambient temperature	0..55 °C during operation
Ambient humidity	5..95 % r.h. during operation
Degree of protection	IP54
Protection class	III
Installation position	Vertically above the ball valve, up to 90° in any direction
Dimensions W x H x D	79 x 108 x 132.5 mm
Weight	Approx. 0.9 kg

Dimensions

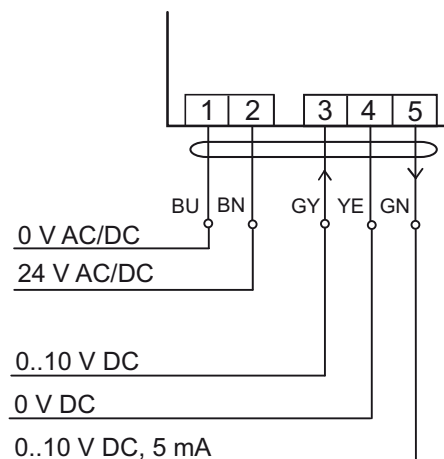


DS5 connection

2-point contro



Continuous control



CBV15 and CBV20 6-way control ball valves

6-way control ball valve for heating and cooling systems.

For switching between heating and cooling mode in four-line systems.

Type	DN	PN	Kvs	Connect
CBV15	15	16	3.2	G 3/4
CBV20	20	16	3.2	G 1

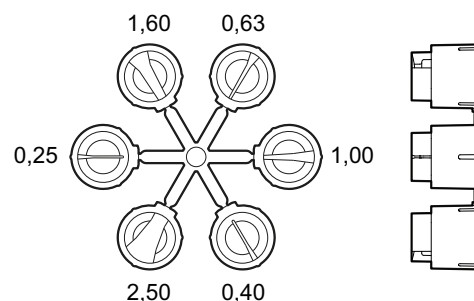


Technical data

Media temperature	0..90 °C
Operating pressure	max. 16 bar
Differential pressure	max. 2 bar
Positioning angle	90°
Housing	Dezincification-resistant brass
Dimensions W x H x D	58.5 x 115.5 x 85 mm
Connection	DN15 G3/4 male thread, male thread with inner cone in accordance with EN 16313 DN20 G1 male thread, male thread with inner cone in accordance with EN 16313
Medium	Heating and cooling water in accordance with VDI 2035 or ÖNORM 5195 Water/glycol blends with max. 50 % glycol proportion
Kvs value	Without Z208 Kvs insert set: 3.2 Selectable presets with Z208 Kvs insert set: 0.25 / 0.4 / 0.63 / 1.0 / 1.6 / 2.5

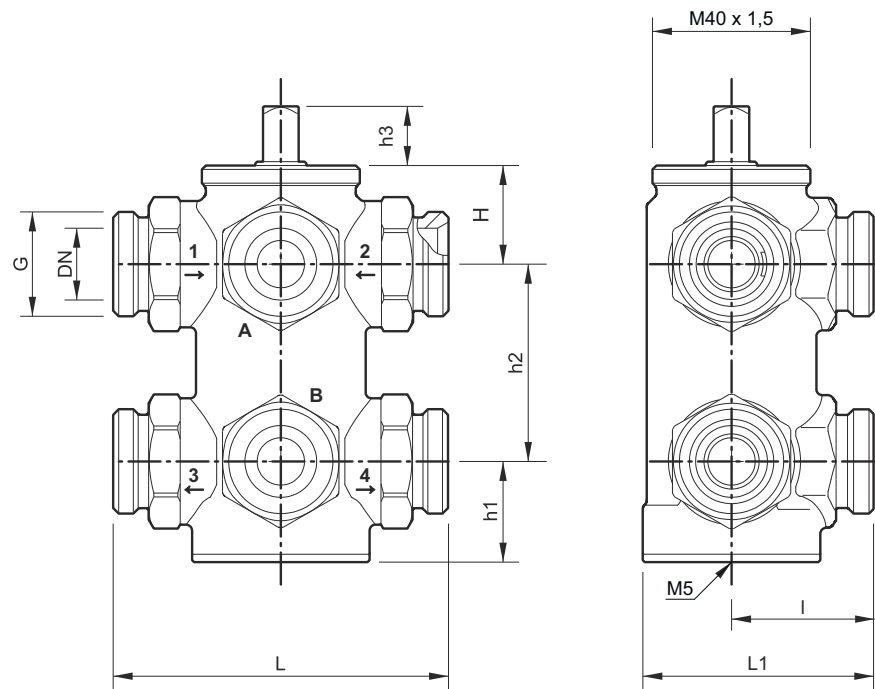
Accessories (not included in delivery)

Z208 Set of Kvs inserts for CBV15..20
6 selectable presets for the flow range
Kvs 0.25 / 0.4 / 0.63 / 1.0 / 1.6 and 2.5
For further mounting descriptions, see the
mounting instructions doc. no. 3.10-09.070-99
(included with the Z208 accessory part) and
chapter 4.4; see page .





Dimensions



DN	L	L1	I	h1	h2	h3	H	G
15	85.0	58.5	36.0	25.5	50.0	15.0	25.0	3/4"
20	85.0	58.5	36.0	25.5	50.0	15.0	25.0	1"
Measurements L to H in mm, connection thread in inches								



Characteristic curves

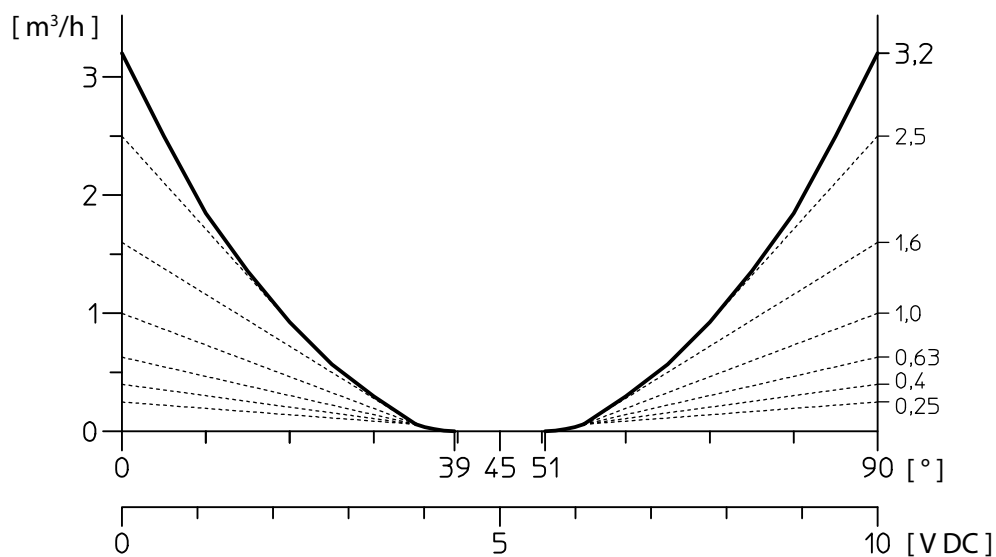


Abb. 1: Characteristic curves of the ball valve without and with Kvs inserts

Characteristic curve 3.2 m³/h at 0° (cooling),
without Kvs inserts 3.2 m³/h at 90° (heating)

Characteristic curve 0.25..2.5 m³/h at 0° (cooling),
with Kvs inserts 0.25..2.5 m³/h at 90° (heating)

Split-range control ranges

Sequence	Actuating signal	Actuating range
0..100 % cooling	0..4 V DC	0..36°
100 % cooling	0..0.3 V DC	0..3°
Throttling cooling sequence	0.3..4 V DC	3..36°
Shut-off	4..6 V DC	36..54°
Throttling heating sequence	6..9.7 V DC	54..87°
100 % heating	9.7..10 V DC	87..90°
0..100 % heating	6..10 V DC	54..90°



Layout of the 6-way control ball valve

The ball valve is made from dezincification resistant brass and consists of two 3-way ball valves that are connected to each other through a shared rotating axis.

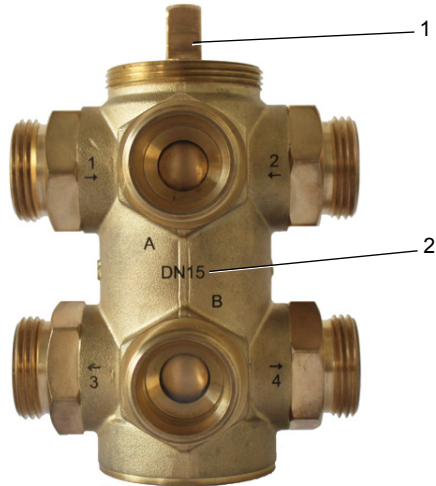


Abb. 1: Ball valve connection diagram

- | | | | |
|---|--------------------------------------|---|------------------|
| 1 | Square stem | 1 | "Cooling" supply |
| 2 | Type/nominal width of the ball valve | 2 | "Heating" supply |
| A | "Consumer" supply | 3 | "Cooling" return |
| B | "Consumer" return | 4 | "Heating" return |

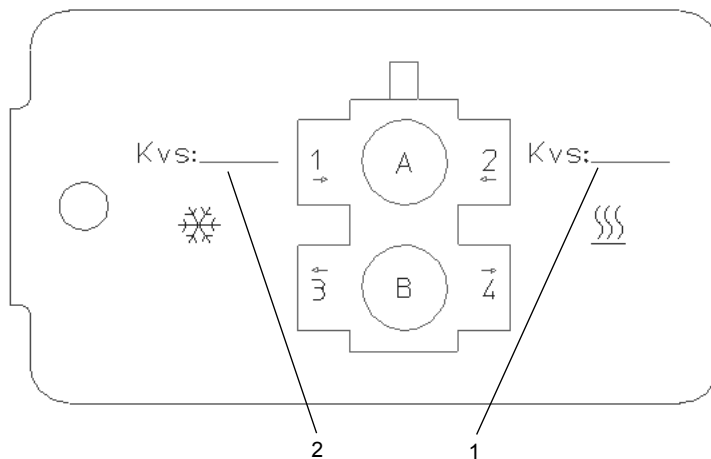


Abb. 2: Tag for Kvs inserts

- 1 Kvs value on the "Heating" supply
- 2 Kvs value on the "Cooling" supply

HW-218234, HW-218240 and HW-218241 6-way control ball valves

6-way control ball valve for heating and cooling systems.
For switching between heating and cooling mode in four-line systems.

Type	DN	PN	Volume flow rate [l/h]	Weight [kg]
HW-218234	15	25	30..830	1.9
HW-218240	15	25	210..1200	1.9
HW-218241	20	25	460..4250	3.4



NOTE

Z216 mounting kit required.

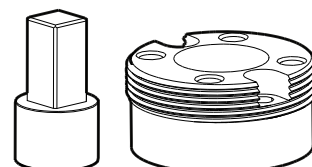
Technical data

Media temperature	0..90 °C
Max. differential pressure	4 bar
Ball valve housing	DZR brass, CW602N
Ball	DZR brass, nickel-plated
Seal	PTFE, glass and carbon fiber reinforced
DP controller	PPS 40 % glass
Spring	Stainless steel
Diaphragm	HNBR
Spring	Stainless steel
O-rings	EPDM
Pressure rating	PN25

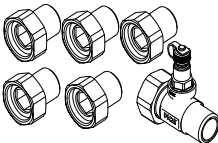
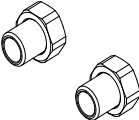
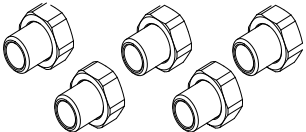
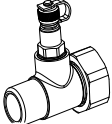
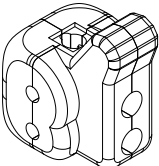
Accessories (not included in delivery)

Accessories (not included in delivery)

Z216 Mounting kit for DS5 actuator on HW-218234, HW-218240 or HW-218241 6-way control ball valve
For further mounting descriptions, see the mounting instructions doc. no. 3.10-20.040-99 (included with the Z216 accessory part).

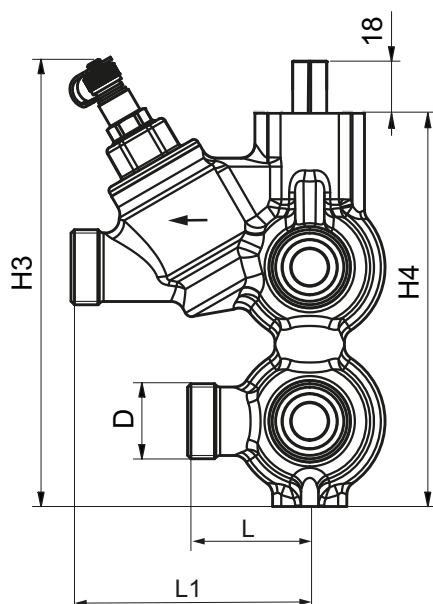




BNR	Designation	Nominal width	Coupling connection for piping system	View
HW-218262	Complete coupling set, 5 couplings and 1 PT coupling with seals	DN15	DN15 male	
HW-218263			DN20 male	
HW-218264		DN20	DN20 male	
HW-218265			DN25 male	
HW-218266	Couplings, DZR brass, CW602N (2 pieces with seals)	DN15	DN15 male	
HW-218267			DN20 male	
HW-218268		DN20	DN20 male	
HW-218269			DN25 male	
HW-218270	Couplings, DZR brass, CW602N (5 pieces with seals)	DN15	DN15 male	
HW-218271	PT coupling	DN15	DN15 male	
HW-218272			DN20 male	
HW-218273		DN20	DN20 male	
HW-218274			DN25 male	
HW-218275	Insulating covers	DN15	-	
HW-218276		DN20	-	



Dimensions

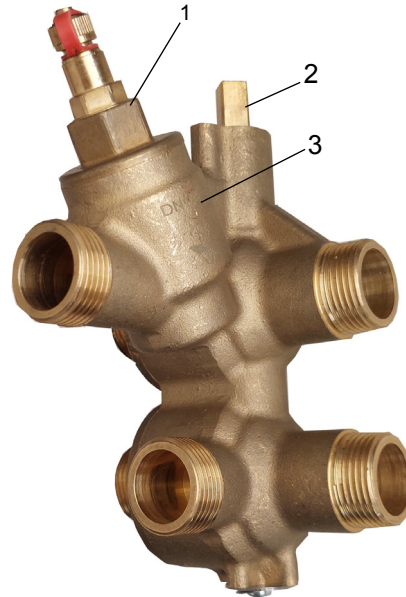
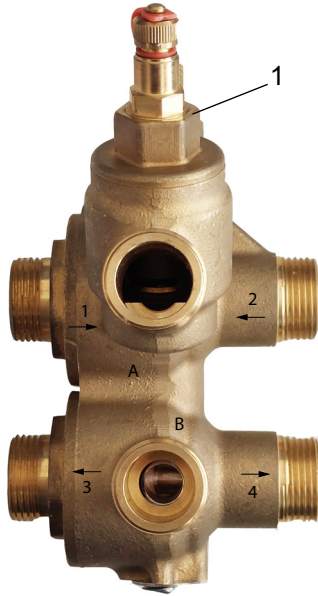


DN	H3	H4	L	L1	D
15	157.0	147.0	43.0	84.0	G 3/4
20	193.0	177.0	50.0	120.0	G 1
Measurements L to H3 in mm, connection thread D in inches					



Layout of the 6-way control ball valve

The ball valve is made from dezincification resistant brass and consists of two 3-way ball valves that are connected to each other through a shared rotating axis.



- 1 Differential pressure insert
- 2 Square stem
- 3 Nominal width and pressure rating
- A "Consumer" supply
- B "Consumer" return

- 1 "Cooling" supply
- 2 "Heating" supply
- 3 "Cooling" return
- 4 "Heating" return

The removable differential pressure insert (1) enables efficient flushing at the full volume flow rate and simple emptying without having to open and reseal the pipe connections.



Characteristic curves

