

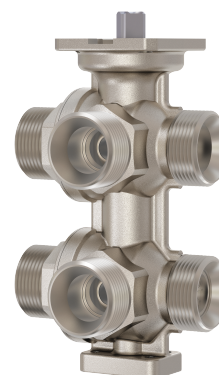
B2KL: 6-way ball valve with male thread, PN 16

How energy efficiency is improved

Efficiency means precise control and low actuating forces

Features

- 6-way ball valve for changeover or steady control of heating and cooling circuits in a 4-pipe system
- Body made of moulded brass CW602N (dezincification-resistant) or CW617N
- With male thread as per ISO 228
- K_{VS} selection with exchangeable orifice plates
- In combination with valve actuators AKM 115(S) and AKF 112, 113(S) as a control unit
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035



B2KL015F400




Technical data

Parameters		
Nominal pressure	PN 16	
Valve characteristic	Quasi-linear	
Leakage rate	Class A as per EN 12266-1	
Total angle of rotation	90° (valve closed at 45°)	

Ambient conditions		
Operating temperature	5...90 °C	

Standards and directives		
Pressure and temperature data	EN 764, EN 1333	
Flow parameters	EN 60534, page 3	
PED 2014/68/EU	Fluid group II, liquid No CE label as per article 4.3	

Overview of types					
Type	Nominal diameter	Connection	K_{VS} value without orifice plate	Material	Weight
B2KL015F401	DN 15	G $\frac{3}{4}$ "B	1.25 m ³ /h	Moulded brass CW602N	0.98 kg
B2KL015F400	DN 15	G $\frac{3}{4}$ "B	1.25 m ³ /h	Moulded brass CW617N	0.98 kg
B2KL020F411	DN 20	G $\frac{3}{4}$ "B	2.8 m ³ /h	Moulded brass CW602N	1.87 kg

 K_{VS} value without orifice plate. K_{VS} values can be adapted using orifice plates.

Orifice plates for setting the K_{VS} value

Orifice plates for B2KL015F400 and B2KL015F401	
K_{VS} value	Part number
0.25 m ³ /h	Set 0589540001
0.4 m ³ /h	Delivered with 6-way ball valve
0.63 m ³ /h	
1 m ³ /h	

Orifice plates for B2KL020F411	
K_{VS} value	Part number
0.7 m ³ /h	Set 0589540002
1 m ³ /h	Delivered with 6-way ball valve
1.6 m ³ /h	
2.1 m ³ /h	



Accessories

Type	Description
0378133015	1 threaded sleeve, R $\frac{1}{2}$ ", flat-sealing, with cap nut and flat seal, G $\frac{3}{4}$ - R $\frac{1}{2}$
0378133020	1 threaded sleeve, R $\frac{3}{4}$ ", flat-sealing, with cap nut and flat seal, G1 - R $\frac{3}{4}$
0378134015	1 solder nipple, Ø 15, flat-sealing, with cap nut and flat seal, G $\frac{3}{4}$
0361951015	1 screw fitting for male thread with flat seal, G1 - Rp $\frac{1}{2}$
0580240002	Insulation shell for 6-way ball valve DN 15
0580240003	Insulation shell for 6-way ball valve DN 20
0378133115	2 flat-sealing screw fittings G1"-G $\frac{1}{2}$ "
0378133120	2 flat-sealing screw fittings G1"-G $\frac{3}{4}$ "
0378133125	2 flat-sealing screw fittings G1"-G1"
0580090001	Pliers for changing orifice plate on 6-way ball valve DN 15 and DN 20
0580240001	Fitting bracket for 6-way ball valve DN 15 and DN 20
0560332015	Strainer in gun metal, -10...150 °C, mesh aperture 0.5 mm, G $\frac{1}{2}$
0560332020	Strainer in gun metal, -10...150 °C, mesh aperture 0.8 mm, G $\frac{3}{4}$
0560332025	Strainer in gun metal, -10...150 °C, mesh aperture 0.8 mm, G1

i *Warranty: The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.*

i *Definition of Δp_s : Maximum admissible pressure drop in the event of a malfunction (pipe break after the ball valve) at which the actuator reliably closes the ball valve using the return spring.*

i *Definition of Δp_{max} : Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.*

Actuator	AKM115F120	AKM115F122	AKM115SF122
Rotational torque	8 Nm	8 Nm	8 Nm
Control signal	2-/3-point	2-/3-point	2-/3-point, 0...10 V
Running time	120 s	120 s	35/60/120 s
Operating voltage	230 V~	24 V~	24 V~/V=

 Δp [bar]

	Δp_{max}	Δp_{max}	Δp_{max}
B2KL015F401 B2KL015F400 B2KL020F411	2.0	2.0	2.0

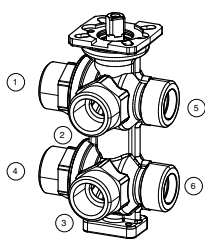
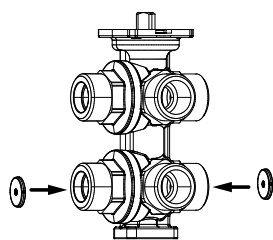
Actuator	AKF112F120	AKF112F122	AKF113F122	AKF113SF122
Rotational torque	7 Nm	7 Nm	7 Nm	7 Nm
Control signal	2-point	2-point	3-point	0...10 V
Running time	90 s	90 s	90 s	90 s
Operating voltage	230 V~	24 V~/V=	24 V~/V=	24 V~/V=

 Δp [bar]

	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s
B2KL015F401 B2KL015F400 B2KL020F411	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Description of operation

The 6-way ball valve from SAUTER is a compact and precise alternative for regulating heated/chilled ceilings and fan coils in four-pipe systems. It can be used as a regulating valve or a changeover valve. Conventional solutions with up to four 2-way valves, four actuators and two or three controller outputs now only require a 6-way ball valve and an actuator. With a rotation of 90°, the 6-way ball valve can go through both sequences for heating and cooling. The two holes arranged at right angles for the balls ensure that the heating and cooling systems can be separated without leakage. The ball valve can be fitted or selected with different orifice plates for the K_{vs} value for heating and cooling, according to the design specifications.

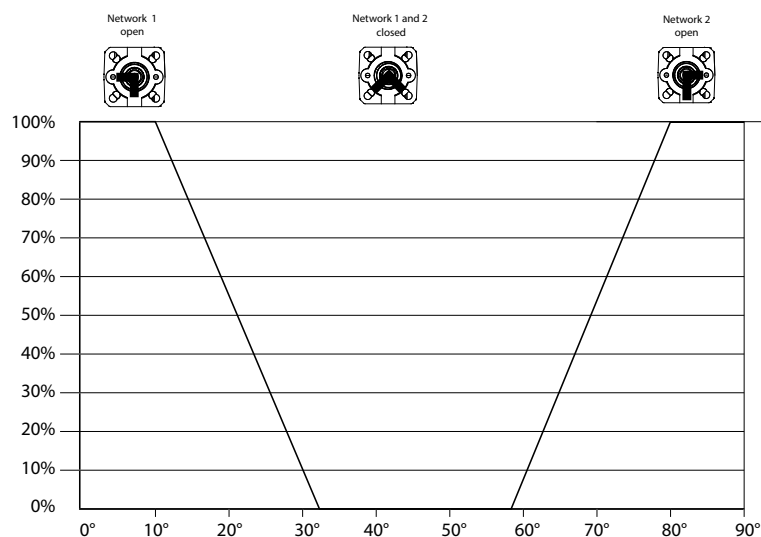


①	②	③	④	⑤	⑥
Supply for network 1	Supply for heated/chilled ceiling	Return for heated/chilled ceiling	Return for network 1	Supply for network 2	Return for network 2

Circuit of B2KL015F400

B2KL015F401

B2KL020F411



Pressure relief function on B2KL015F400, B2KL015F401 and B2KL020F411

These 6-way ball valves are equipped with an internal pressure relief function.

A change in the media temperature (closed valve position, 45°) in the heated/chilled ceiling can cause positive pressure or negative pressure. This could possibly damage the heated/chilled ceiling. The pressure relief function prevents this damage because the pressure in the heated/chilled ceiling is balanced with the pressure in the supply line.

Material numbers as per DIN: B2KL015F401, B2KL020F411

	DIN material no.	DIN designation
Body	CW602N	Cu Zn 36 Pb2/As according to EN12167
Stem	CW614N	Cu Zn 39 Pb3 according to EN12164
Ball, polished, chrome-plated	CW614N	Cu Zn 39 Pb3 according to EN12164
Seat	PTFE	
O-ring	EPDM	

Material numbers as per DIN: B2KL015F400

	DIN material no.	DIN designation
Body	CW617N	Cu Zn 40 Pb2 according to EN12164
Stem	CW614N	Cu Zn 39 Pb3 according to EN12164
Ball, polished, chrome-plated	CW614N	Cu Zn 39 Pb3 according to EN12164
Seat	PTFE	
O-ring	EPDM	

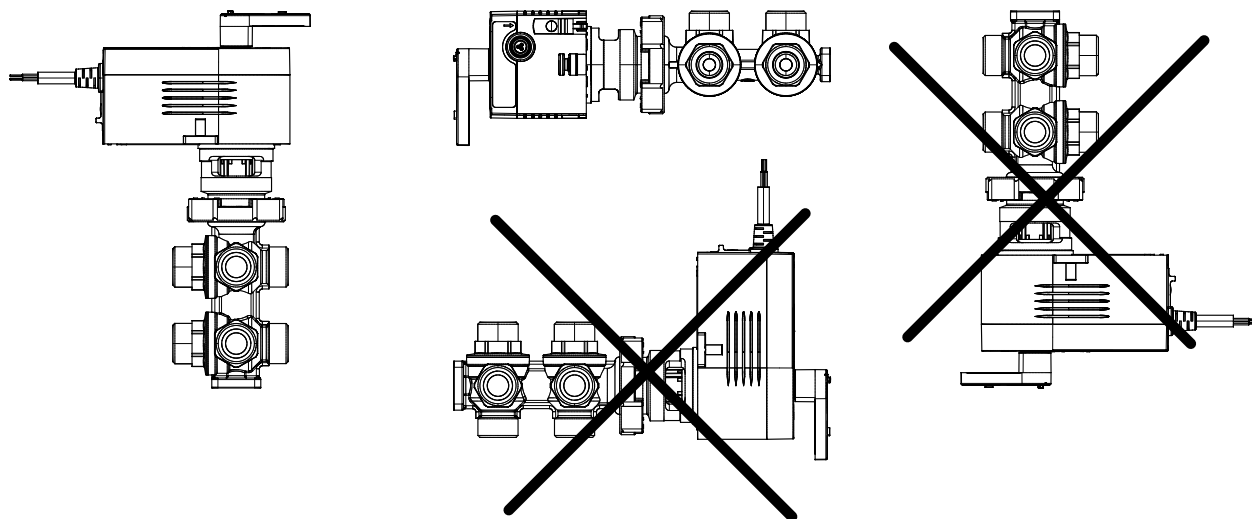
Additional technical data

SAUTER slide rule for valve sizing	P100013496
Technical manual on control units	7 000477 001
Fitting instructions	P100015803 / P100015846 / P100016291
AKM 115(S) assembly	P100001578
AKF 112/113(S) assembly	P100002659
Declaration on materials and the environment	MD 58.001

Fitting position**NOTICE!**

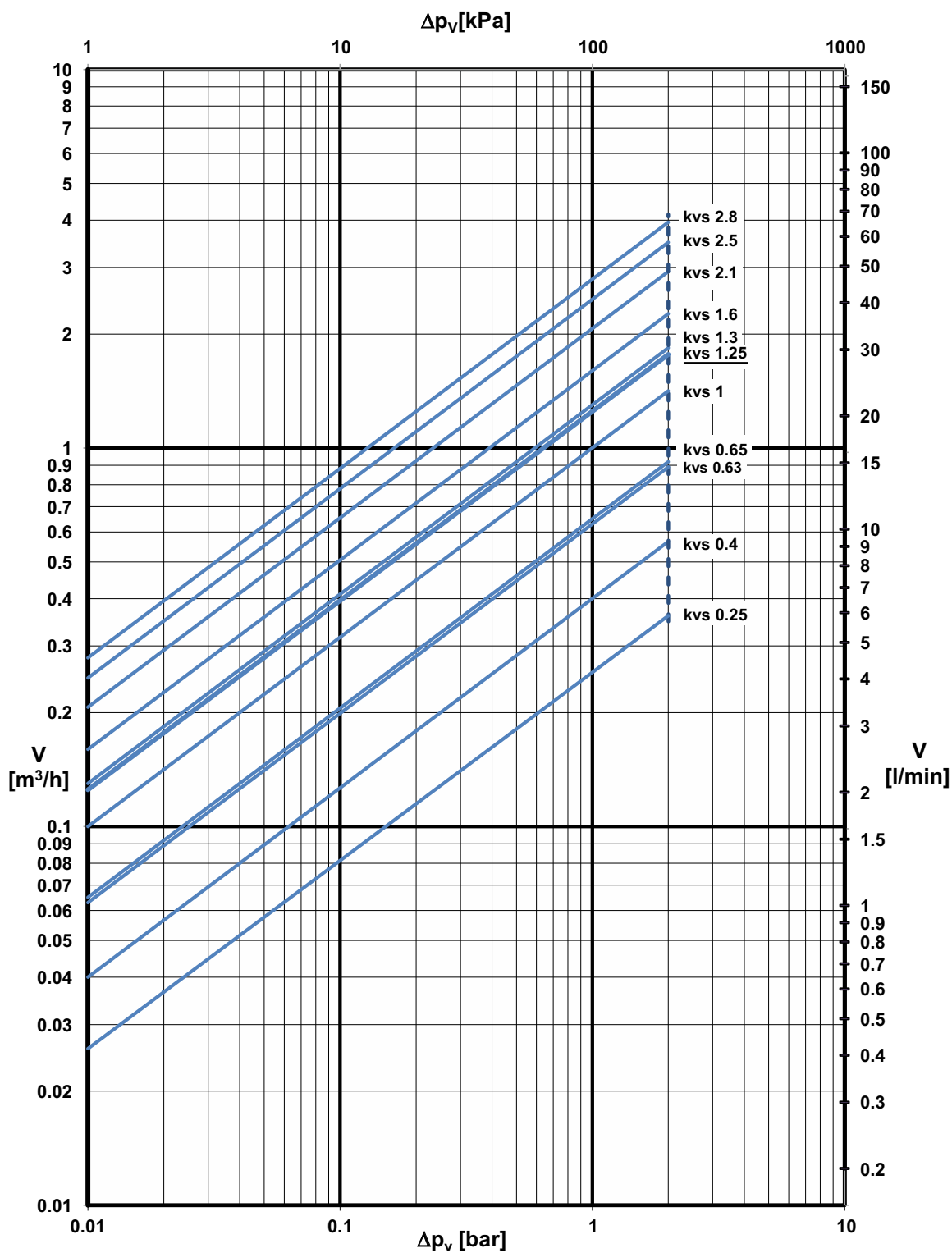
Damage to property

- Do not install the 6-way ball valve in a suspended position, because condensate, dripping water etc. may penetrate and damage the actuator!

**Using with water**

When using water mixed with glycol or an inhibitor, the compatibility of the materials and seals used in the 6-way ball valve should be clarified with the manufacturer. The material list shown below may be used here. When using glycol we recommend a concentration of 20% to 50%.

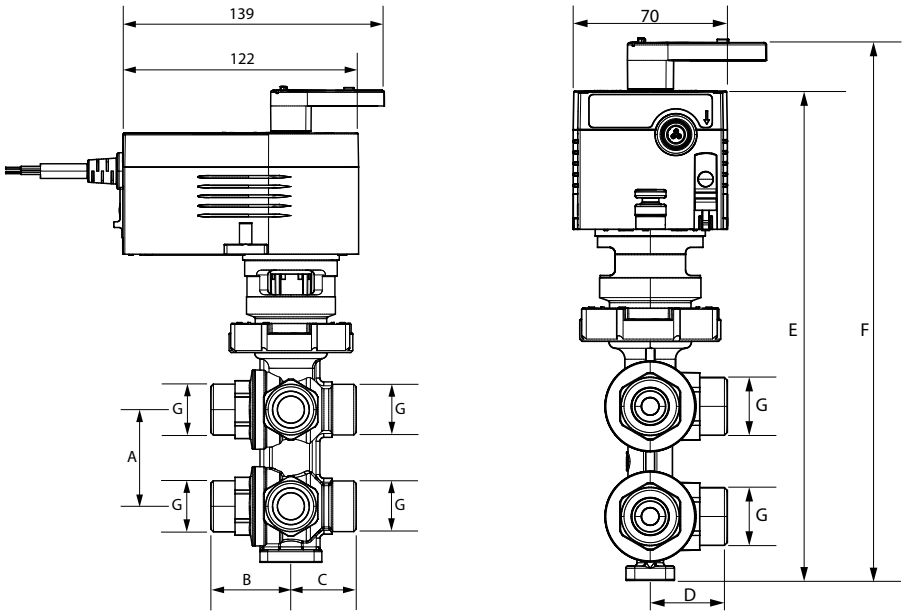
Flow-rate chart



Dimension drawing

Combination with AKM 115(S)

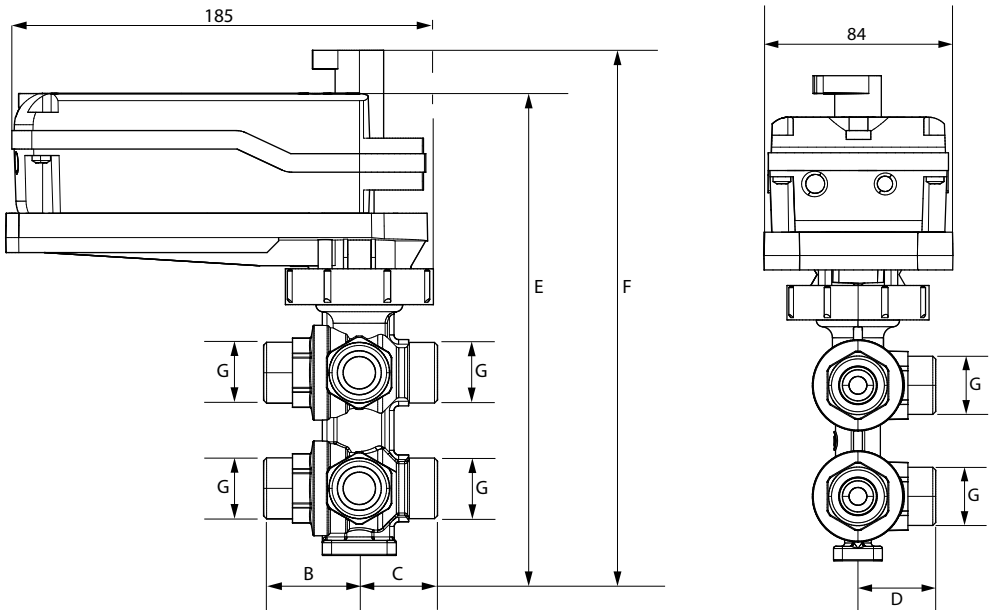
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Type	A mm	B mm	C mm	D mm	E mm	F mm	G inch
B2KL015F400	50	41	32.5	35	223	247	G ¾
B2KL015F401	50	41	32.5	35	223	247	G ¾
B2KL020F411	60	47	42.5	41	247	271	G ¾

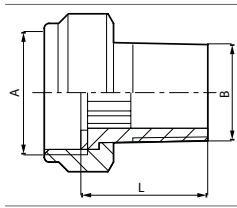
Combination with AKF 112, 113(S)

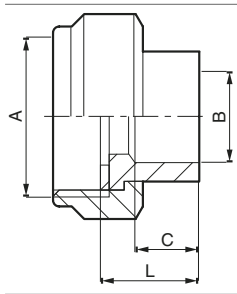
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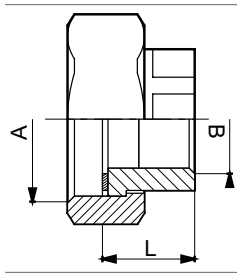


Type	A mm	B mm	C mm	D mm	E mm	F mm	G inch
B2KL015F400	50	41	32.5	35	200.5	221	G ¾
B2KL015F401	50	41	32.5	35	200.5	221	G ¾
B2KL020F411	60	47	42.5	41	224.5	245	G ¾

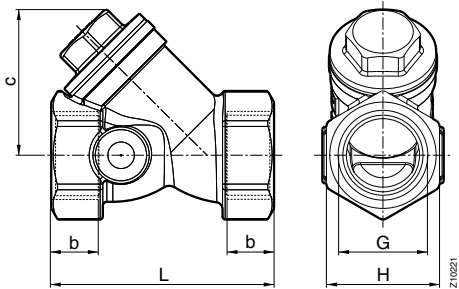
Accessories

	Part number	A	B	L
	0378133015	G 3/4"	R 1/2"	27.5 mm
	0378133115	G 1"	G 1/2"	30 mm
	0378133120	G 1"	G 3/4"	29 mm
	0378133125	G 1"	G 1"	37.5 mm

	Part number	A	B	C	L
	0378134015	G 3/4"	Ø 15 mm	10.6 mm	17 mm

	Part number	A	B	L
	0361951015	G 1"	Rp 1/2"	19 mm

05603320**



DN	b mm	c mm		G inch	L mm	H mm
15	12	38	ISO 228-1	G ½	54	27
20	15	43		G ¾	67	34
25	16	53		G 1	79	41

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[mm]

