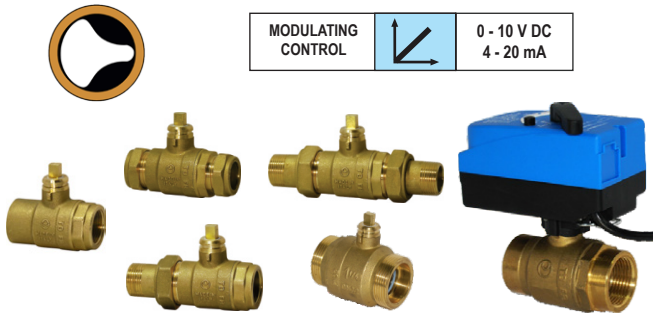


S9000 200C-M

FIRŠT ZONE UNITS

2-way control brass ball valves with electric actuator series S9000 and Clip system.



MODULATING CONTROL  0 - 10 V DC
4 - 20 mA

Control valves are available in DN 15 – DN 32, with internal or external thread, union fittings and compression fittings.

- FIRŠT control valves with electric actuators are used as control elements for HVAC applications (for use in heating systems, solar systems, zone heating etc.). Equal percentage flow characteristics produces excellent control characteristics and linear thermal output according to the valve opening angle.
- Five types of connections are available: internal threads (FBV 220C-M), external threads and union fitting (FBV 221C-M), union fit. (FBV 222C-M), compression fittings (FBV 223C-M), external threads (FBV 224C-M).

OPERATION

The FIRŠT FBV 220C-M control valves are compact 2-ways motorised brass ball valves with characterizing inserts. Insert assures excellent control characteristics with equal percentage flow characteristics which perfectly matches the heat output characteristics of heating units.

Valves are equipped with series 9000 MOD actuators which allow high regulating accuracy and easy installation with one-click CLIP system. Actuators are controlled with modulating signal (0...10 V, 4...20 mA).

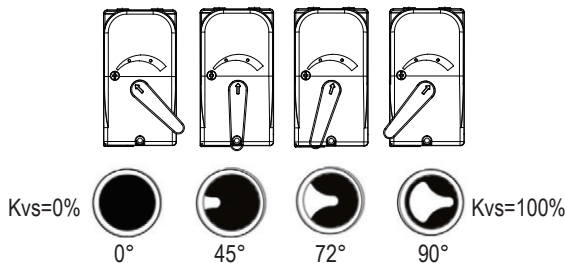
Actuator can be manually operated with handle and button on the cover.

MAINTENANCE

Valve and actuator require no maintenance. The installation of suitable strainer is recommended.

INSTALLATION POSITIONS

Actuator can be installed only in one position.



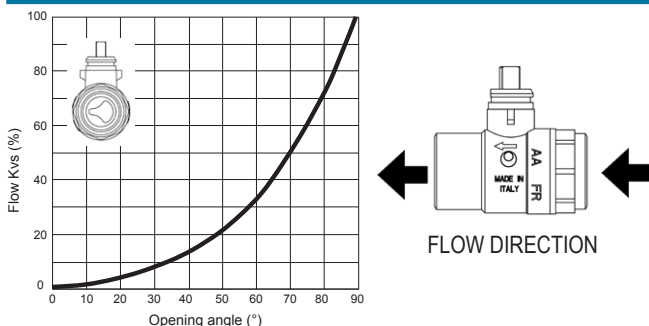
TECHNICAL DATA: VALVES

Nominal pressure:	PN 32 for general applications
Medium:	drinking water, water, glycol < 50% water quality as per VDI 2035
Media temperature:	min. +2°C max. +110°C
Max. diff. pressure:	3 bar (recommended max. diff. pressure for low noise operation: 2 bar)
Connections:	Rp internal thread (EN 10226-1) R external thread (EN 10226-1) G external thread (ISO 228-1) compression fittings (EN 1254-2)
Material	
Valve body:	Brass, CW617N
Ball:	Brass, CW617N, PPS
Seals:	PTFE, EPDM Perox, FPM

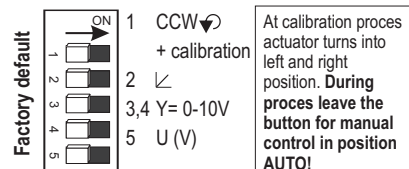
TECHNICAL DATA: ACTUATOR

Control:	0...10 VDC, 4...20 mA
Output signal:	0... 10 VDC, max < 0,5 mA/ 10V
Supply voltage:	24 VAC 50Hz
Rotation time:	110s/90°
Power consumption:	3,5 VA (operation), 1,5 VA (stand by)
Max. Torque:	5 Nm
Protection class:	II
Enclosure rating:	IP44
Connection:	cabl 1 m, 4 x 0,5 mm ²
Direction of rotation:	defined CW/CCW
Manual control:	with handle and button on the cover
Position indicator:	handle with reversible scale
Ambient temperature:	0°C...+55°C
Storage temperature:	-10°C...+70°C
Humidity:	0%...80% R.H. (non condensed)

EQUAL PERCENTAGE FLOW CHARACTERISTIC



Actuators have DIP switches for setting different functions of actuators.




ELECTRICAL CONNECTION

SP brown	24 V~	Input impedance U(V) - R = 26 kΩ I(A) - R = 500 kΩ
SN black-GND	+10% / -15% / 50 Hz	
Y blue - Y (+)	Control signal	0 V~ - 10 V~; 2 V~ - 10 V~; 0 V~ - 5 V~; 5 V~ - 10 V~; 0 mA - 20 mA; 4 mA - 20 mA
X red - X (+)	Output signal	voltage 0 V~ - 10 V~ max. < 0,5 mA / 10 V~

CLIP SYSTEM

Compact design of the valve allows easy assembling and disassembling. Clip system allows easy installation of the actuator on the valve body with single click without any tools.

 In accordance with PED, LVD, RoHS2, EMC



FBV 220C-M / FIRŠT d.o.o. / Copyright 2015



FIRŠT d.o.o.
Koroška cesta 56
SI-3320 Velenje
SLOVENIA

phone: +386 3 898 35 00
fax: +386 3 898 35 35
email: info@first.si
web: www.first.si

www.first.si
Let First be your first choice.



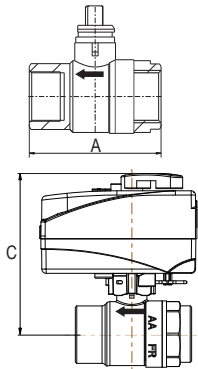
S9000 220C-M

FIRST ZONE UNITS

2-way control brass ball valves with electric actuator series S9000 and Clip system.

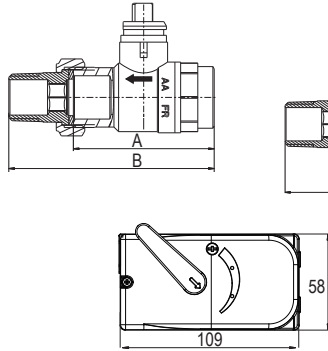
FBV 220C-M

internal threads



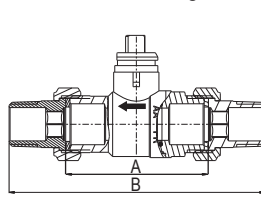
FBV 221C-M

external thread, union fitting



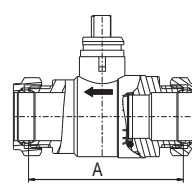
FBV 222C-M

union fittings



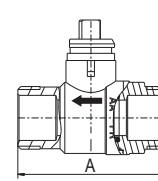
FBV 223C-M

compression fittings



FBV 224C-M

external threads



FBV 220C-M, internal threads

Code	Type	DN	Kvs	Voltage	Rotation	Control	Connection	A	B	C	Weight [kg]	Price (€)
14375	S9FR7-K 220C-M DN15 Rp 1/2" FF	15	4	24V~50Hz	110s/90°	0...10V	Rp 1/2"	62		104	0,24	
14376	S9FR7-K 220C-M DN20 Rp 3/4" FF	20	7,5	24V~50Hz	110s/90°	0...10V	Rp 3/4"	68		107	0,35	
14377	S9FR7-K 220C-M DN25 Rp 1" FF	25	13	24V~50Hz	110s/90°	0...10V	Rp 1"	81		112	0,55	
14378	S9FR7-K 220C-M DN32 Rp 1 1/4" FF	32	22,5	24V~50Hz	110s/90°	0...10V	Rp 1 1/4"	86		117	0,72	

FBV 221C-M, external threads and union fitting

Code	Type	DN	Kvs	Voltage	Rotation	Control	Connection	A	B	C	Weight [kg]	Price (€)
14379	S9FR7-K 221C-M DN15 Rp/R 1/2" FU	15	4	24V~50Hz	110s/90°	0...10V	Rp/R 1/2"	62	90	104	0,30	
14380	S9FR7-K 221C-M DN20 Rp/R 3/4" FU	20	7,5	24V~50Hz	110s/90°	0...10V	Rp/R 3/4"	68	102	107	0,44	
14381	S9FR7-K 221C-M DN25 Rp/R 1" FU	25	13	24V~50Hz	110s/90°	0...10V	Rp/R 1"	81	114	112	0,70	
14382	S9FR7-K 221C-M DN32 Rp/R 1 1/4" FU	32	22,5	24V~50Hz	110s/90°	0...10V	Rp/R 1 1/4"	79	117	117	0,92	

FBV 222C-M, union fittings

Code	Type	DN	Kvs	Voltage	Rotation	Control	Connection	A	B	C	Weight [kg]	Price (€)
14383	S9FR7-K 222C-M DN15 R 1/2" UU	15	4	24V~50Hz	110s/90°	0...10V	R 1/2"	62	119	104	0,37	
14384	S9FR7-K 222C-M DN20 R 3/4" UU	20	7,5	24V~50Hz	110s/90°	0...10V	R 3/4"	74	136	107	0,55	
14385	S9FR7-K 222C-M DN25 R 1" UU	25	13	24V~50Hz	110s/90°	0...10V	R 1"	82	149	112	0,86	
14386	S9FR7-K 222C-M DN32 R 1 1/4" UU	32	22,5	24V~50Hz	110s/90°	0...10V	R 1 1/4"	83	158	117	1,17	

FBV 223C-M, compression fittings

Code	Type	DN	Kvs	Voltage	Rotation	Control	Connection	A	B	C	Weight [kg]	Price (€)
14387	S9FR7-K 223C-M DN15 D15 CC	15	4	24V~50Hz	110s/90°	0...10V	CPF 15mm	62		104	0,27	
14388	S9FR7-K 223C-M DN20 D22 CC	20	7,5	24V~50Hz	110s/90°	0...10V	CPF 22mm	72		107	0,41	
14389	S9FR7-K 223C-M DN25 D28 CC	25	13	24V~50Hz	110s/90°	0...10V	CPF 28mm	82		112	0,62	

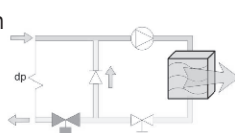
FBV 224C-M, external threads

Code	Type	DN	Kvs	Voltage	Rotation	Control	Connection	A	B	C	Weight [kg]	Price (€)
14390	S9FR7-K 224C-M DN15 G 3/4" MM	15	4	24V~50Hz	110s/90°	0...10V	G 3/4"	62		104	0,25	
14391	S9FR7-K 224C-M DN20 G 1" MM	20	7,5	24V~50Hz	110s/90°	0...10V	G 1"	74		107	0,38	
14392	S9FR7-K 224C-M DN25 G 1 1/4" MM	25	13	24V~50Hz	110s/90°	0...10V	G 1 1/4"	82		112	0,60	
14393	S9FR7-K 224C-M DN32 G 1 1/2" MM	32	22,5	24V~50Hz	110s/90°	0...10V	G 1 1/2"	83		117	0,78	

Installation example



Flow control with control valve with available pressure difference of system pump.



Temperature control with control valve with an extra circulation pump.

Features and options

- **Auxiliary switch:** one potential free auxiliary switch in the end position of the actuator is available as an option.
- **Manual control:** with or without manual control handle.
- **Solar/cooling adapter:** Heat barrier for protection of the actuator in solar or cooling systems.
- **Molex connector:** optional Molex connector (IP40 and optional specially sealed Molex cable (IP44)).
- **Different rotating times:** 20s/90°, 40s/90°, 80s/90°, 110s/90°

FIRST®

FIRST d.o.o.
Koroška cesta 56
SI-3320 Velenje
SLOVENIA

phone: +386 3 898 35 00
fax: +386 3 898 35 35
email: info@first.si
web: www.first.si

www.first.si
Let First be your first choice.

