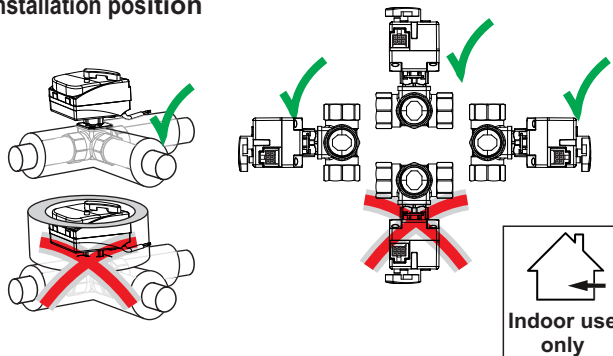


Installation position

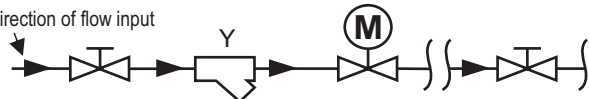


Indoor use only

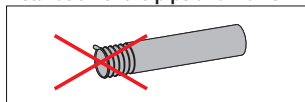
Do not mount actuator under pipes fittings and other valves due to possible leakage of water. The installation site has to be frost-proof and the protection of the device from chemicals, paints, detergents, solvents and their vapours and environmental influences must be guaranteed.

Installation recommendation for valves

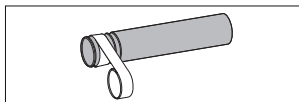
Direction of flow input



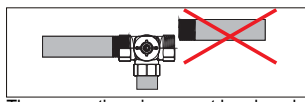
Installation of the pipe and valve



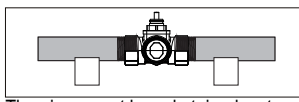
Ensure that the ends of the pipes are well defined and without scraps.



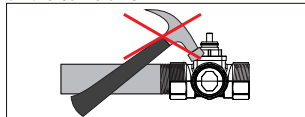
Do not use more than necessary hemp or other sealant on the pipe threads.



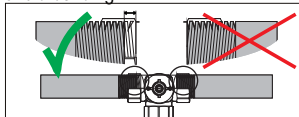
The connection pipes must be placed on the same axis.



The pipes must be substained as to avoid bending.



Avoid mechanical damage to the valve because problems with sealing can occur.



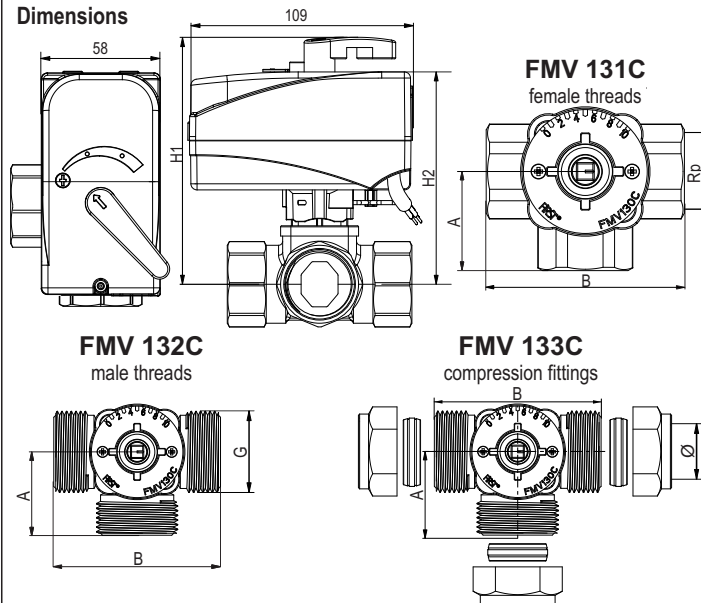
Ensure that the pipes are not screwed past the thread and contact with the body of the valve.

Maximum screwing torque of the connecting pipes into valves

	DN15	DN 20	DN 25	DN 32
	50 Nm	60 Nm	80 Nm	90 Nm
Internal threads	Maximum thread/length for the pipe			
	max 14 Nm	max 15 Nm	max 18 Nm	max 18 Nm
External threads	25 Nm	40 Nm	55 Nm	80 Nm
Compression fittings	40/60 Nm		60/80 Nm	
	Number of turns to tight with tool after tightening by hand			
	1/2-3/4		1/2-3/4	

We reserve the right to modify the technical instructions and product data without prior notice.

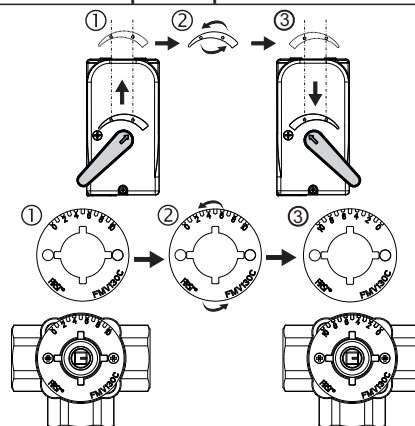
Dimensions



Dimensions (mm)	DN15	DN20	DN25	DN32				
A	36	36	41	47				
B	72	72	82	94				
H1	115	115	115	118				
H2	102	102	102	105				
Rp	1/2"	3/4"	1"	1 1/4"				
G	3/4"	1"	1 1/4"	1 1/2"				
Ø	-	22mm	28mm	-				
Kvs (m³/h)	4	6,3	10	15				
Weight (kg)	M	K	M	K	M	K	M	K
Weight F/F/F FMV 131C	0,79	0,83	0,85	0,89	0,79	0,81	1,22	1,26
Weight M/M/M FMV 132C	0,77	0,81	0,81	0,85	0,96	1,00	1,18	1,22
Weight C/C/C FMV 133C	-	-	0,86	0,90	0,99	1,03	-	-

Legend: M - Molex connection, K - cable

Turning of the indicator and position plate



FIRST®

EMV 110..9xx7-M/K MOD X MIX

Actuators S9000 MOD X MIX with
FMV 130C valves

MOD X - modulating control signal

MIX- for mixing valves with different actuator position possibilities

Modulating control		0-10 V DC 4-20 mA
EMV 110..9Fxx7-M MOD X MIX With handle, Molex connection		EMV 110..91xx7-M MOD X MIX Without handle, Molex connection
EMV 110..9Fxx7-K MOD X MIX With handle, cable connection		EMV 110..91xx7-K MOD X MIX Without handle, cable connection

Product designation: EMV 110 .. 9 X X 7 - X MOD X MIX

Series	9000
Actuator type	1=without manual control F=with manual control
Rotation time	V=20s/90°, T=40s/90°, S=55s/90°, E=80s/90°, R=110s/90°
Voltage	7=24 V AC, 50Hz with (0)2...10V modulating
Connection type	M=Molex connection K=cable

English

Information



FIRST d.o.o

Koroška cesta 56, SI-3320 Velenje,
Slovenia

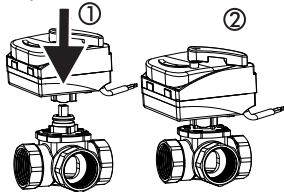
tel: ++386 (0)3 898 35 00

fax: ++386 (0)3 898 35 35

info@first.si, http://www.first.si

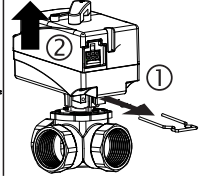
Assembly of the actuator on the valve

Easy and fast installation of actuator on the valve with single push - CLIP system.



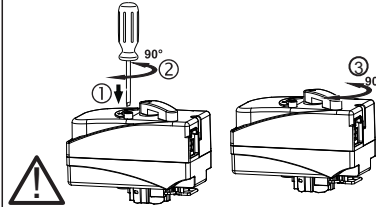
Disassembly of the actuator from the valve

First pull out the spring, then lift the actuator from the valve.



Manual operation: Only for EMV110.. 9Fx7

1. With screwdriver push the button down.
2. Turn the screwdriver for 90°.
3. Turn the handle of actuator for 90°.

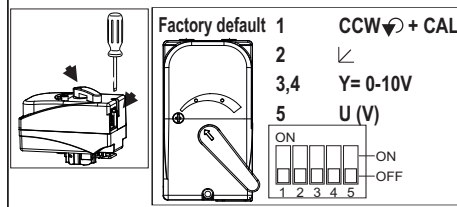


Note:

When the operation button for manual operating is in MAN position, actuator stays in permanent position irrespective of control signal.

Parameter setting using DIP switches

DIP switches are located inside actuator. To open the actuator it is necessary to loosen the screws on the cover (1x), and remove handle.



1. Direction of rotation:

- CCW ↺ / CW ↻ + calibration:
- CCW ↺ - opening to the right
- CW ↻ - opening to the left

During changing position of DIP1 is performed calibration proces. The actuator turns into left and right position. **During proces leave the button for manual control in position AUTO!**

2. Control signal: direct/inverse

DIP	↙	↘
2	OFF	ON

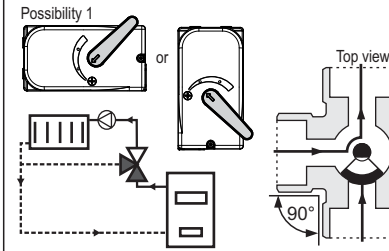
3.4. Range settings

DIP	0,16-9,84V 0-20mA	2-9,84V 4-20mA	0,16-4,88V	5,12-9,84V
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	ON

5. Y-Control signal U(V)/I(mA)

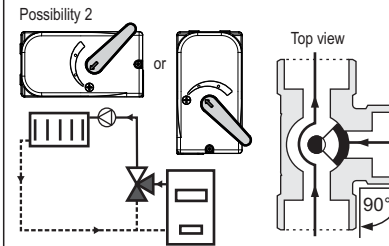
DIP	U(V)	I(mA)
5	OFF	ON

Position indication and flow direction

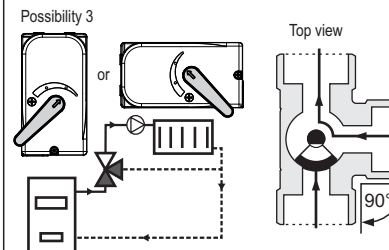


FACTORY DEFAULT:
Possibility 1
Actuator: Y=0V

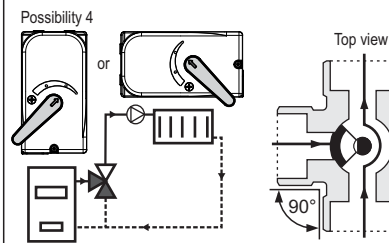
Position of the mark on valve's axis.



Position of the mark on valve's axis.



Position of the mark on valve's axis.



Position of the mark on valve's axis.

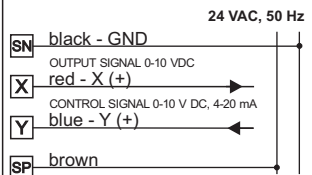


Safety information:

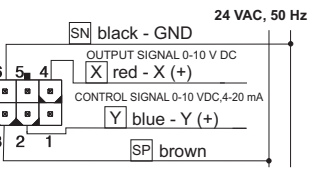
- Before installation wash pipes, sealing material must not go inside the valve
- During installation, avoid soldering or welding near the valve
- Any deterioration or destruction of any part of the valves shall result in the need to replace the complete valve: alterations to any part of the complete valve shall result in the valve no longer being in compliance with the performance requirements of this document. Place of assembly must be protected against frost, the device must be protected from chemicals, paints, detergents, solvents and their vapors and other environmental influences (vibration). All installations should be performed in accordance with existing local installation regulations and codes of practice where they exist. It's imperative to follow the installation instructions of the valve manufacturer. If the valve is installed in the heating installation the water quality in the system has to comply with the VDI 2035 requirements.

Electrical connection

EMV 110..9xx7-K, Cable connection



EMV 110..9xx7-M, Molex connection



WARNING

The actuator must be protected by a fuse 1A.

- It is not allowed to open the actuator housing! - The actuator must be electrically connected in accordance with technical norms. - Observe the correct connection voltage! - Installers, and users are responsible for the safe and proper installation / operation of the actuator.



Switch off power supply before making electrical connections or servicing to prevent electrical shock and equipment damage!

Technical data

Supply voltage	24V AC, 50Hz
Running time	EMV 110 9xX7 (9xVx, 9xTx, 9xSx, 9xEx, 9xRx.) V=20s/90°, T=40s/90°, S=55s/90°, E=80s/90°, R=110s/90°
Power consumption	3,5 VA at 24 VAC
Torque	Max. 5 Nm
Protection class	II □
Degree of protection	Cable connection: IP44 Molex connection: IP40 (IP44 only with special connector-by special request)
Connection	EMV 110 9xx7-K: Cable l=1 m (4 x 0,5 mm ²) EMV 110 9xx7-M: Molex connection
Rotation direction	defined CW/CCW 90° (selectable by controller (DIP))
Manual control	with handle - EMV 110..9Fx7 only
Position indicator	mechanical indicator/handle on the cover
Ambient temperature	0°C...+55°C
Relative Humidity	0..80% r.H Non-condensing
Storage temperature	-10°...+70°
Maintaining	maintenance free

We reserve the right to modify the technical instructions and product data without prior notice.

Valve characteristics	FMV 131C	FMV 132C	FMV 133C
Nominal diameter	DN15,20,25,32	DN15,20,25,32	DN20, 25
Connections	Rp1/2", 3/4", 1", 1 1/4", female thread	G3/4", 1", 1 1/4", 1 1/2", male thread	Ø 22mm, 28 mm, compression fittings
Fluid	water, glycol <50%, not aggressive fluids The use is not allowed for flammable liquids, combustible gases or explosive liquids! Water quality as per VDI 2035.		
Fluid temperature	+2°C...+110°C		
Nominal pressure	PN10		
Max. differential pressure	1 bar		
Materials			
Valve body	Brass, CW617N		
Shaft and rotor	Brass, CW617N		
Bushing	PTFE		
O-rings	EPDM, FKM		