

THERMAL SOLAR SYSTEMS



valve
cimberio[®]
technological solutions

Differential thermostats for solar installations

cim DTC 100/2



USE:

CIM DTC 100/2 differential thermostat enables the control of hot water circuit generated by an heating source "solar panels, boilers, heating pumps". It controls either a pump or a motor actuated ball valve according to the differential fixed between the sensor of the heating point and the sensor of the tank.

The thermostat enables regulation of two parameters, i.e.:

1 - Regulation of the maximum temperature in water tank between 10°C to 90°C. This temperature is registered by the sensor T2.

2 - Regulation of the difference between the tank and the heating source temperatures. It can be fixed between 5 and 15K.

This regulation enables to fix how many degrees the temperature of the heating source should exceed the water tank temperature, to allow the pump or electro-motor actuated ball valve operating. The setting of this difference depends on the heat losses of the installation.

KIT COMPOSITION:

- 1 - DIFFERENTIAL THERMOSTAT DTC 100/2
- 2 - SENSOR T1 FOR CONNECTION TO HEATING SOURCE
- 3 - SENSOR T2 FOR CONNECTION TO TANK
- 4 - CLIP FOR T1 SENSOR FASTENING WITH FIXING SPRINGS
- 5 - INSTRUCTIONS FOR USE
- 6 - WARRANTY CERTIFICATE

USE:

CIM DTC 100/2 single differential thermostat measures the temperature in the heating source and in the water tank. In order to achieve the thermic transfer, the temperature of the heating element in the water tank must exceed the temperature of the water tank by 5K at least. For this reason, this difference is fixed starting from 5K.

When the heating source temperature exceeds the water tank temperature, the thermostat opens the "EMV" valve or activates the pump. When the difference in temperature is lower than 5K, the thermostat closes the valve and turn the pump off.

The thermostat also switches the pump off when the water tank temperature is the same as the pre-set temperature, which is adjustable between 10°C and 90°C.

The kit includes 2 sensors T1 - T2, connected to the heating source and to the upper part of the water tank respectively.



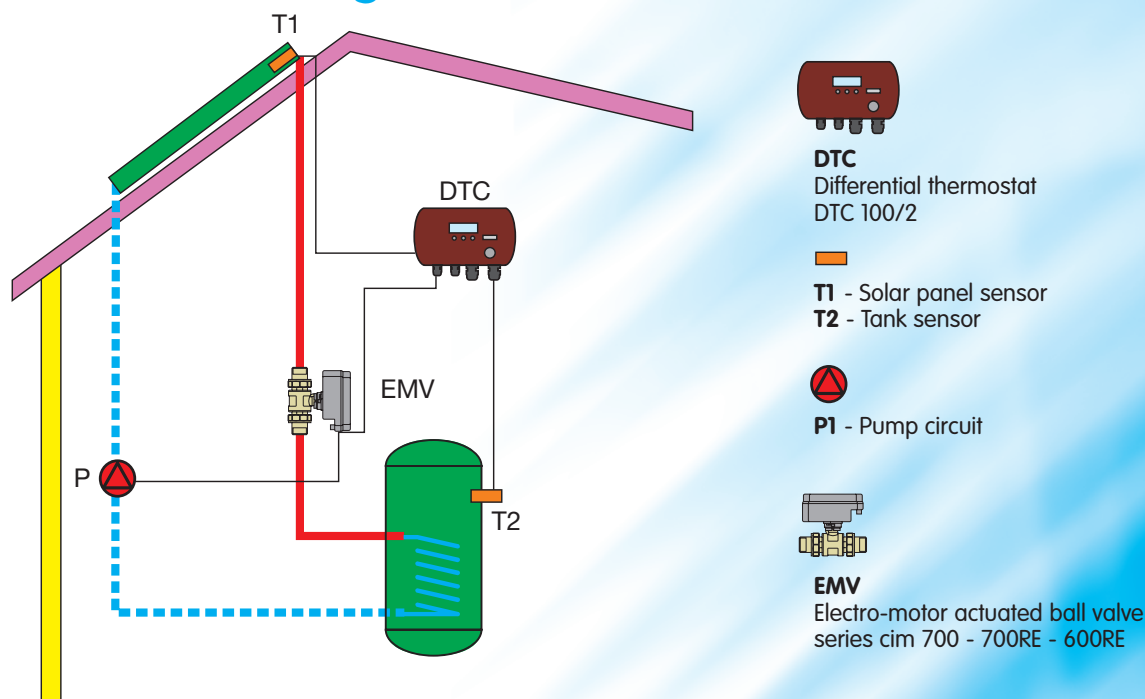
- ① - Switch for manual control
- ② - Regulating knob for the water tank temperature, it works only when the switch 1 is in "AUTO" position.
- ③ - Potentiometer for the regulation of the difference temperature drop between tank and heating source.
- ④ - Operation LED.

Differential thermostats for solar installations

cim DTC 100/2

Pairing of a pump controlled by an electro-motor actuated ball valve EMV - Series CIM 700 - CIM 700RE - CIM 600RE. When the tank is ready for heating, the electro-motor actuated ball valve opens. The pump activates only when ball valve is opened.

Diagram of use cim DTC 100/2



TECHNICAL DATA:

Voltage: 230V -50 HZ = 10%

Electric input consumption: 4 VA

Maximum water temperature: 100°C

Regulating temperature range: 10 – 90 °C

Pre-settable temperature difference: 5 - 15°C

Hysteresis of the thermostat: 1 – 2°C

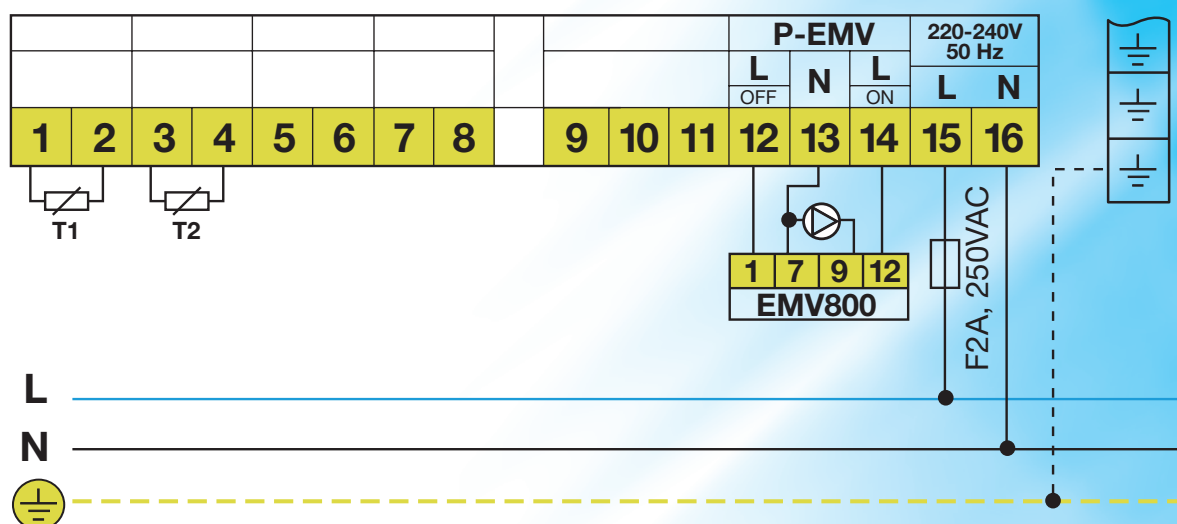
Permanent thermostat type

Number of sensors: 2

Number of outlet: 1 (230 Vac)

Electric pump consumption: 3A/230 VAC cos. 0,6

Electric diagram



Differential thermostats for solar installations

cim DTC 100/4 TD



USE:

CIM DTC 100/4 TD double differential thermostat equipped with a microprocessor enables the control of two hot water circuits generated by different energy sources (solar panels, boiler or heating pump), using the logic for integrating an additional energy source to solar panel one, such as boiler or electric water heater. The double differential thermostat enables regulation of four parameters, i.e.:

- 1 - Regulation of the maximum temperature in water tank between 10°C and 90°C.
- 2 - Regulation of the temperature difference in the tank from 2°C up to 15°C of the water coming from the boiler.
- 3 - Regulation of the temperature difference in the tank from 2°C up to 15°C of the water coming from the solar panel.
- 4 - Setting of two operating systems: boiler heating and alternative source integrated heating; boiler plus solar panel.

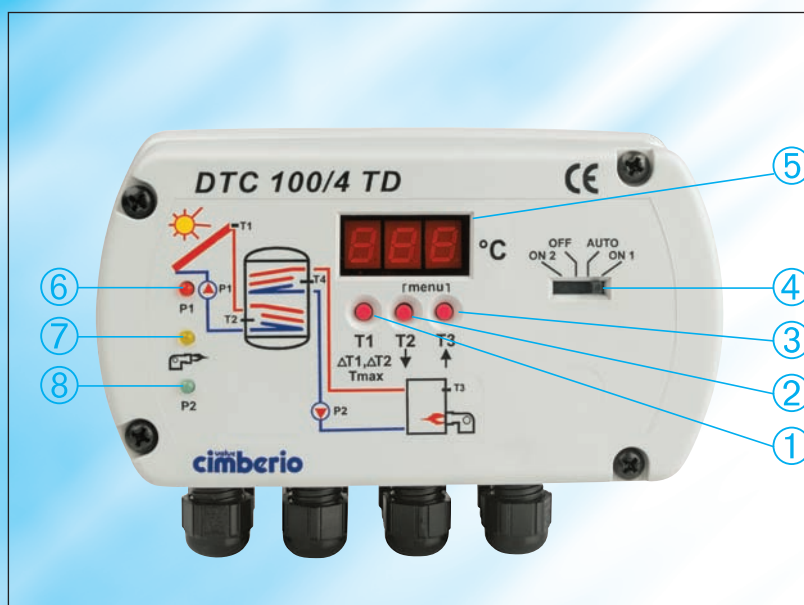
With the first regulation, it is possible to fix how many degrees the heating source temperature should exceed the tank temperature, so that the differential thermostat operates the pump and opens the EMV ball valve. The regulation of this difference depends on the heat losses of the installation. The digital display shows prompt temperature reading of the different sensors and the relevant pre-set values.

KIT COMPOSITION:

- 1 - DIFFERENTIAL THERMOSTAT DTC 100/4 TD
- 2 - SENSOR T1 FOR CONNECTION TO HEATING SOURCE
- 3 - SENSOR T2 FOR CONNECTION TO TANK
- 4 - SENSOR T3 FOR UPSTREAM INSTALLATION OF THE MAIN CIRCUIT BEFORE THE MIXING VALVE
- 5 - SENSOR T4 FOR CONNECTION TO TANK
- 6 - FIXING SCREWS WITH WALL INSERTS
- 7 - CLIP FOR SENSORS FASTENING WITH FIXING SPRINGS
- 8 - INSTRUCTIONS FOR USE
- 9 - WARRANTY CERTIFICATE

USE:

CIM DTC 100/4 TD double differential thermostat measures the temperature of two heating sources (solar panels, boilers) and of two points in the tank. The water heating in the tank happens when the heating source temperature is higher by 5°C. In this situation, the thermostat opens the (EMV) ball valve or operates the pump. The thermostat stops the pump when the pre-set tank water temperature is achieved.



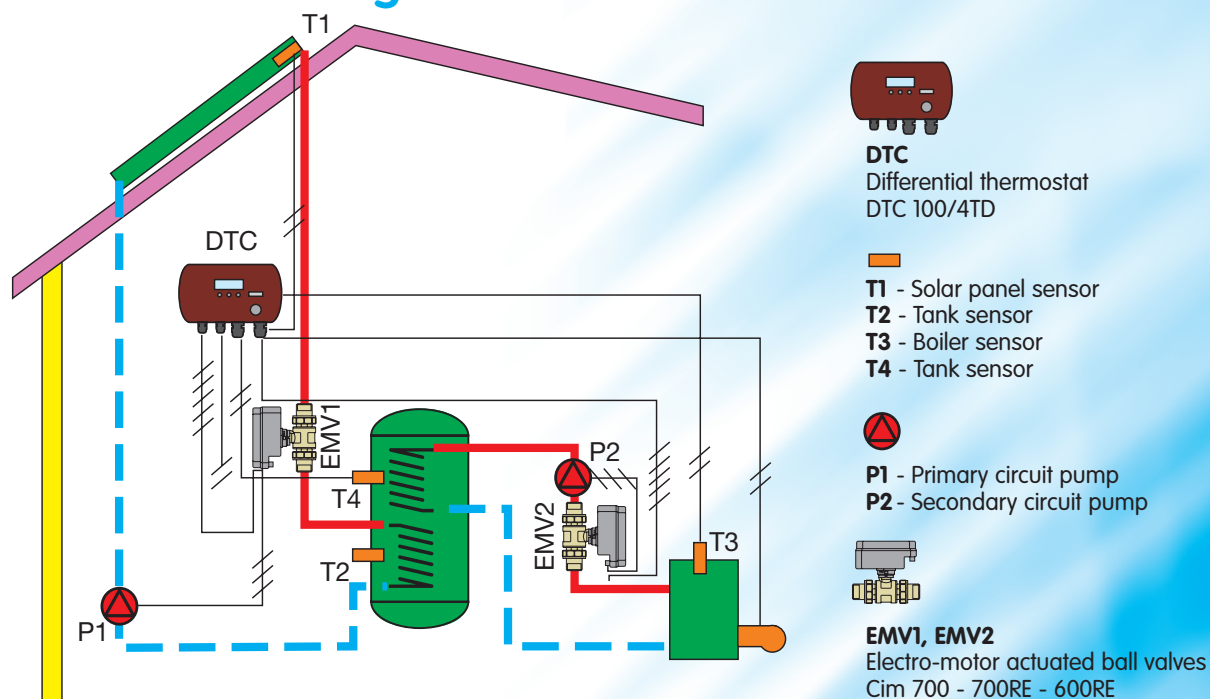
- ① - Regulating solar panel temperature display switch.
- ② - Regulating tank temperature display switch.
- ③ - Regulating boiler temperature display switch.
- ④ - Switch for manual control.
- ⑤ - Display.
- ⑥ - Control LED of pump operation.
- ⑦ - Control LED of burner operation.
- ⑧ - Control LED of boiler pump operation.

Differential thermostats for solar installations

cim DTC 100/4 TD

Pairing of two pumps controlled by two electro-motor actuated ball valves EMV series CIM 700 - CIM 700RE - CIM 600RE. When the tank is ready for heating, also one of the two electro-motor actuated ball valves opens. The pump starts only when ball valves are opened.

Diagram of use cim DTC 100/4TD

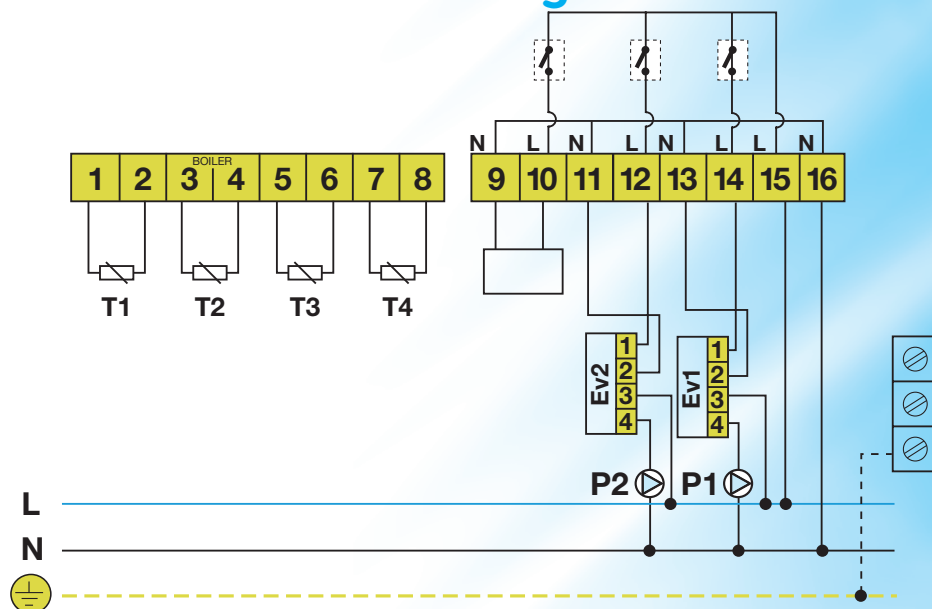


TECHNICAL DATA:

Voltage : 230V 50 Hz \pm 10%
 Electric input consumption: 4VA
 Maximum measurable temperature: 180°C
 Minimum measurable temperature: -20°C
 Regulating temperature range: 10 - 90°C
 Pre-settable temperature difference: 2 - 15°C

Hysteresis of the difference: 2°C
 Hysteresis of the thermostat: 3°C
 Permanent thermostat type
 Number of sensors: 4
 Number of outlet: 3 (230VAC)
 Electric pump consumption: 3A/230VAC cos 0,6

Electric diagram



Thermal solar systems

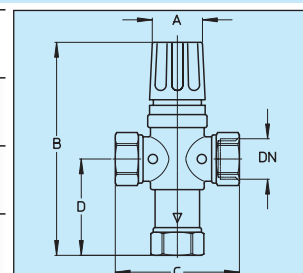
Thermostatic mixing valves for solar panels - working pressure 5 bar
Temperature 100°C - Temperature range: 30÷65°C

cim 130 S

THERMOSTATIC MIXING VALVE FOR SOLAR PANELS FEMALE ENDS



DN	1/2	3/4	1"	DN	A	B	C	D
				1/2	34	116	60	54
Box	1	1	1	3/4	34	118	70	54
Cart.	10	10	10	1"	34	132	78	60

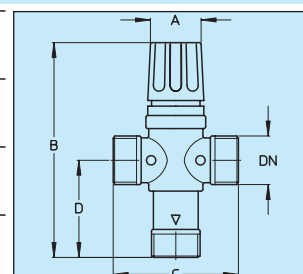


cim 131 S

THERMOSTATIC MIXING VALVE FOR SOLAR PANELS MALE ENDS



DN	1/2	3/4	1"	DN	A	B	C	D
				1/2	-	-	-	-
Box		1	1	3/4	34	116	60	54
Cart.		10	10	1"	34	119	70	50

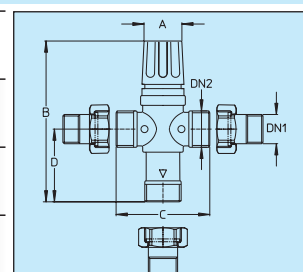


cim 132 S

THERMOSTATIC MIXING VALVE FOR SOLAR PANELS UNION ENDS

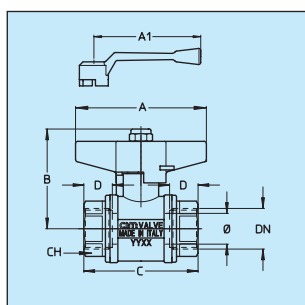
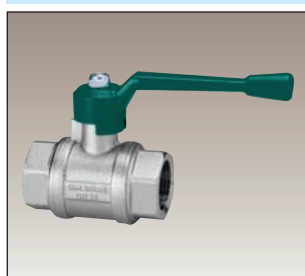


DN	1/2	3/4	1"	DN1	DN2	A	B	C	D
				-	-	-	-	-	-
Box	1	1		1/2	3/4	34	116	60	54
Cart.	10	10		3/4	1"	34	119	70	50

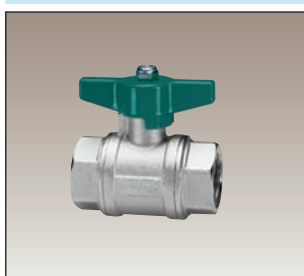


Ball valves for solar installations - T10 S series - Temperature 200°C

cim 10 S

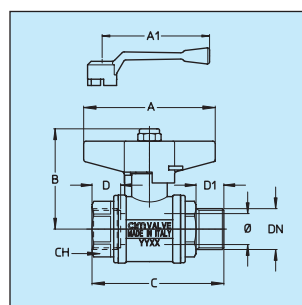
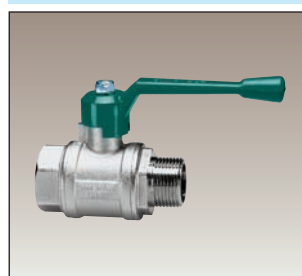


cim 310 S

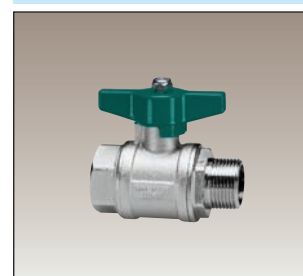


DN	1/2
Grms.	340
A	70
A1	100
B	53
C	64
CH	27

cim 201 S



cim 301 S

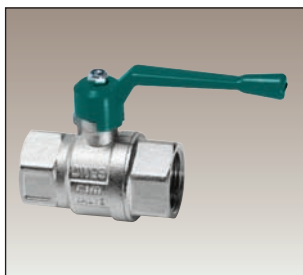


DN	1/2
Grms.	345
A	70
A1	100
B	53
C	72
D	17
D1	15,5
CH	27

cim 12 S

FULLWAY BALL VALVE - T12 SERIES - PN 32 - TEMP.150°C

cim 312 S



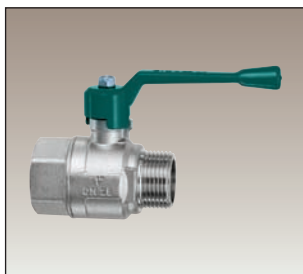
DN	1/2	3/4	1"	1 1/4"	1 1/2"	2"
Box Cim 12S	40	25	16	10	6	4
Cart. Cim 12S	160	100	64	40	24	16
Box Cim 312S	50	30	20	12	7	4
Cart. Cim 312S	200	120	80	48	28	16



cim 201/12 S

FULLWAY BALL VALVE - T12 SERIES - PN 32 - TEMP.150°C

cim 301/12 S



DN	1/2	3/4	1"	1 1/4"	1 1/2"	2"
Box Cim 201/12 S	40	25	18	10	6	4
Cart. Cim 201/12 S	160	100	72	40	24	16
Box Cim 301/12 S	40	30	20	12	7	4
Cart. Cim 301/12 S	160	120	80	48	28	16



cim 30 VA

"SPRINT" NON RETURN VALVE - TEMPERATURE 150°C

cim 30 VAPRS



DN	1/2	-	3/4	1"	1 1/4"	1 1/2"	2"
Box	50	-	25	20	12	8	5
Cart.	200	-	100	80	48	32	20
DN	15 x 15	18 x 18	22 x 22	28 x 28	35 x 35	42 x 42	54 x 54



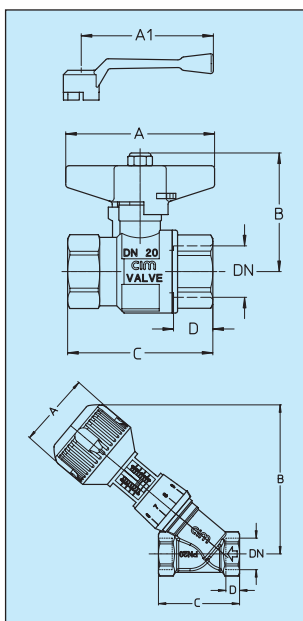
cim 727 OTS

BALANCING AND FLOW MEASUREMENT VALVE
TEMP. 150°C

cim 747 OTS



DN	1/2	-	3/4	1"	1 1/4"	1 1/2"	2"
Box	1	-	1	1	1	1	1
Cart.	12	-	12	12	12	6	6



DN	Cim 12 S Cim 312 S					Cim 201/12 S Cim 301/12 S					Cim 30VA Cim 30VAPRS					Cim 727 OTS Cim 747 OTS						
	A	A1	B	C	D	A	A1	B	C	D	B 30 VA	B 30 VAPRS	C 30 VA	C 30 VAPRS	D 30 VA	D 30 VAPRS	A	B	C	C	D	D
1/2	15x15	50	80	52	61	17	50	80	52	60	15,5	55	140	35	12	31,8	52	120	59	85	10	15
	18x18	-	-	-	-	-	-	-	-	-	-	-	150	42	-	41,3	-	-	-	-	-	-
3/4	22x22	70	100	56	68	18,5	70	100	56	69	18	62	155	42	13	44	52	140	68	97	11,5	16,3
1"	28x28	70	100	60	82	21	70	100	60	80	18,5	72	170	50	14	44	52	155	76	113	11,5	19,1
1 1/4"	35x35	85	120	73	92	22,5	85	120	73	92	22	82	175	60	16	43	52	170,5	92	144	13	21,4
1 1/2"	42x42	100	150	89	106,5	22,5	100	150	89	106	23	96	200	70	18	48	58	212	100	163	13	21,4
2"	54x54	100	150	96	124,5	23	100	150	96	124	26	109	230	83	20	54	58	230	125	193	17	25,7

Mixing valves with electric actuator

cim 680

AUTOMIX MV120

cim 681



GENERAL INFORMATION:

Cim **AUTOMIX** MV 120 is an electric motor actuated mixing ball valve 3 ways (**cim 680**) or 4 ways (**cim 681**). It is designed for floor heating installations, with radiators or remote heating systems. The valve can be manually controlled and has an indicator of the actuator position on its cover.

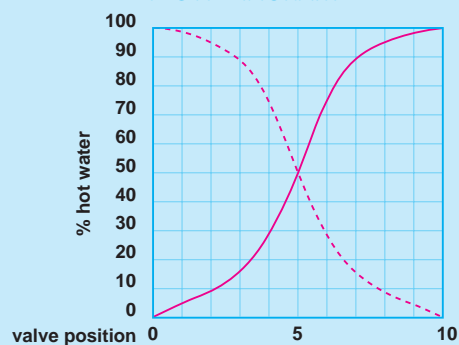
DN	1/2	3/4	1"	1 1/4"
Ø mm	15	20	25	32

TECHNICAL FEATURES:

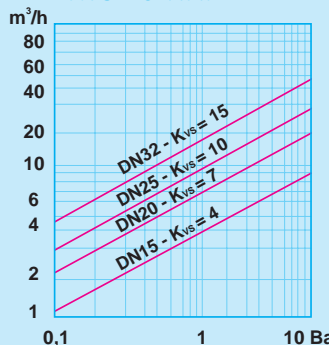
Voltage: 230V, 50Hz
 Electric input consumption: 3,5VA
 Rotation angle: 90°
 Opening/closing time at 90°: 210s
 Maximum starting torque: 8Nm

Protection degree of the actuator: IP44
 Electric protection: II class
 Operating temperature: 10 - 60°C
 Output contacts: 5(1)A, 250 VAC
 Connection cable: 4x 0.5 mm², L=2000 mm

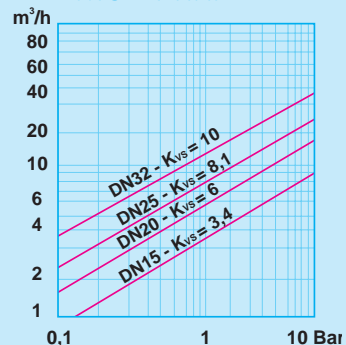
FLOW DIAGRAM



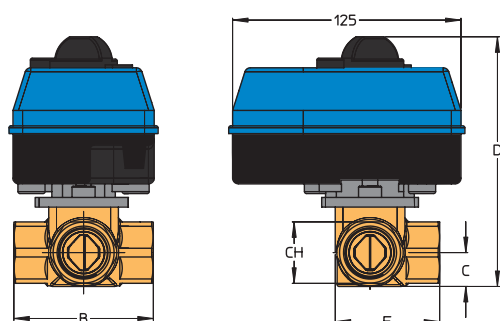
KVS - 3 WAY



KVS - 4 WAY

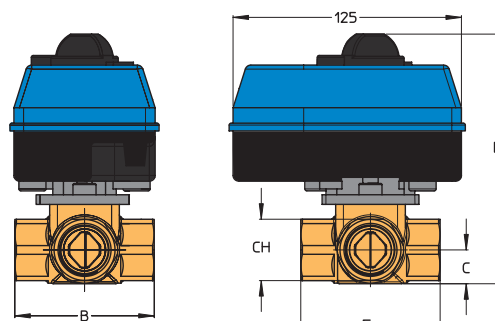


cim 680 - 3 WAY



DN	Grms.	B	C	D	E	CH	KVS
1/2	810	72	17,5	139	54	25	4
3/4	860	72	17,5	139	54	32	7
1"	967	90	21	146	69	39	10
1 1/4"	1105	90	25,5	146	70,5	48	15

cim 681 - 4 WAY



DN	Grms.	B	C	D	E	CH	KVS
1/2	835	72	17,5	139	72	25	3,4
3/4	910	72	17,5	139	72	32	6
1"	1055	90	21	146	90	39	8,1
1 1/4"	1225	90	25,5	146	90	48	10

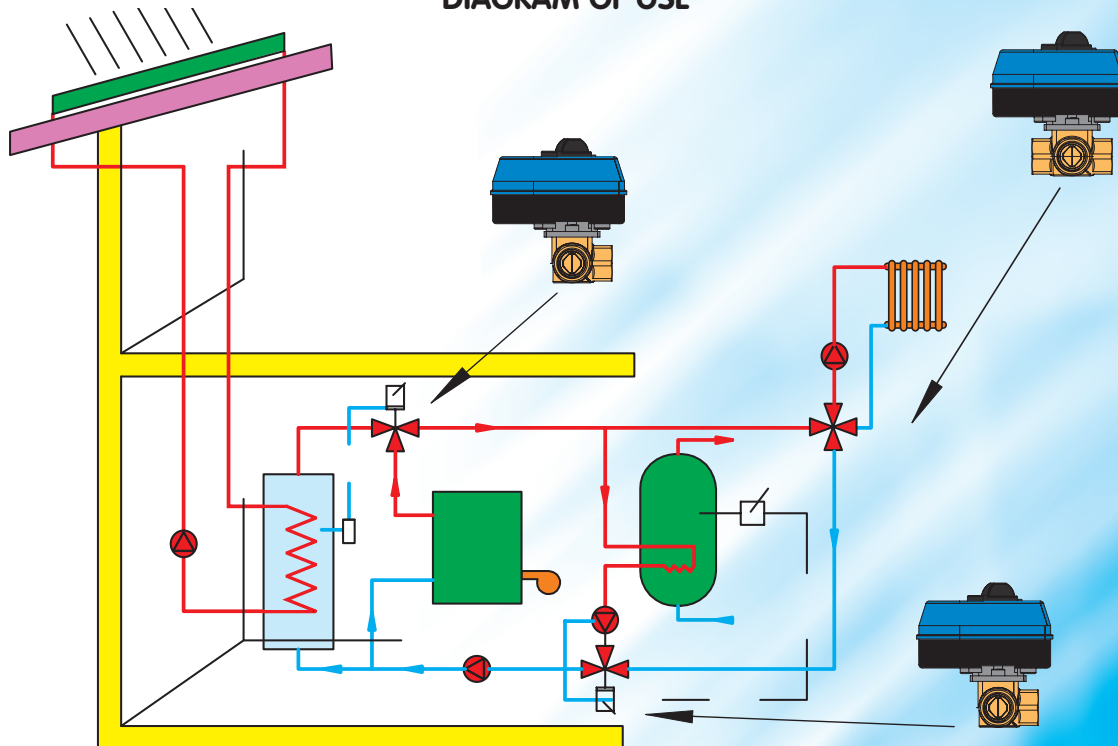
Mixing valves with electric actuator

cim 680

AUTOMIX MV120

cim 681

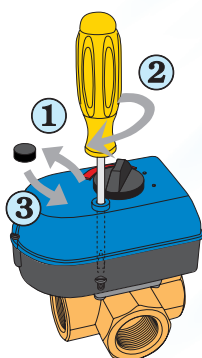
DIAGRAM OF USE



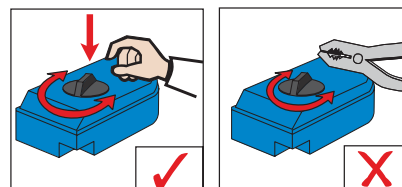
The mixing valves are used in the heating installations to guarantee a hot return to the boiler and allow a high thermal working so that to avoid condensation in the pipes.
The mixing valves guarantee a high accurate regulation and a more efficient working.

OPTION FOR ACTUATOR SCREWING ON VALVE:

To fix the actuator on the valve YOU DO NOT NEED TO OPEN IT!
The screw for the actuator screwing on the valve is inserted in the drive bottom.
1 - Remove protective tap.
2 - Use the flat screwdriver to screw the drive on the valve.
3 - Replace the protective tap on the opening.

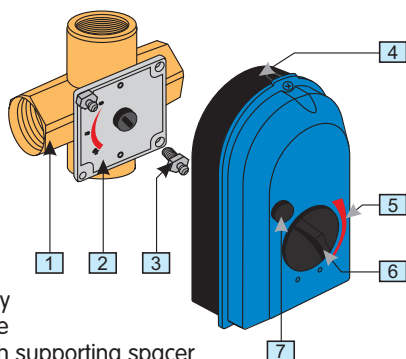


MANUAL CONTROL

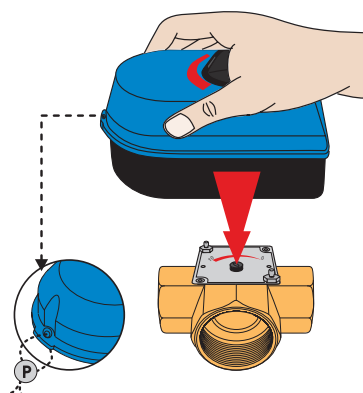


The actuator is equipped with a knob for manual control (in case of power failure). Press the knob towards the valve and turn it to the left or to the right (whether you wish to open or close the valve).

ASSEMBLING OF ACTUATOR ON MIXING VALVE



- 1 Valve Body
- 2 Base-plate
- 3 Screw with supporting spacer
- 4 Electric actuator
- 5 Valve position pointer
- 6 Knob for manual control
- 7 Protective tap



Push the actuator on the mixing valve base-plate engaging the valve stem on the actuator housing to complete the assembling. Should you wish to remove the drive for any reason, just pull it off the valve. It is possible to seal the housing of the actuator.



CIMFIRST

Two and three way electro-motor actuated ball valves

cim 702

ELECTRO-MOTOR ACTUATED BALL VALVE FEMALE/FEMALE TYPE - T10

cim 702 RE



DN	1/2	3/4	1"	1 1/4"	1 1/2"	2"
Box	1	1	1	2	1	1
Cart.	8	8	8	8	4	4



cim 703

ELECTRO-MOTOR ACTUATED BALL VALVE FEMALE/EXTENSION TYPE - T10

cim 703 RE

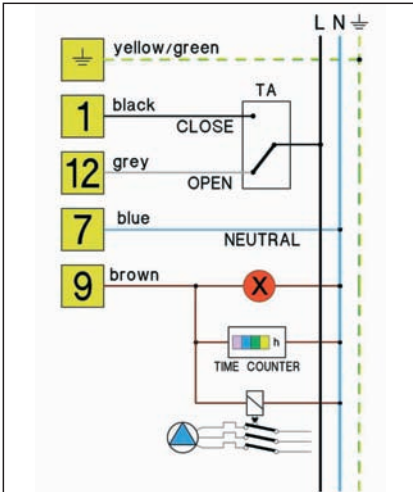


DN	3/4	1"	1 1/4"
Box	1	1	1
Cart.	8	8	8



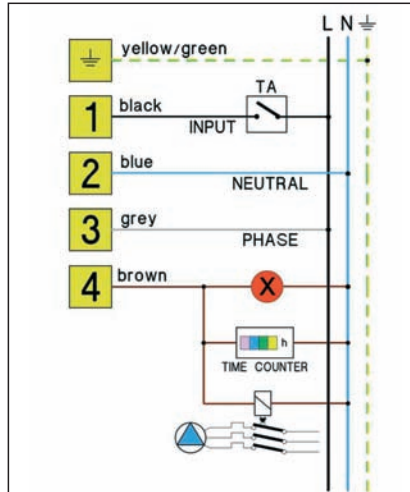
ELECTRIC DIAGRAM EMV 110/130
two way valve: OPEN - CLOSE

cim 702 - 703



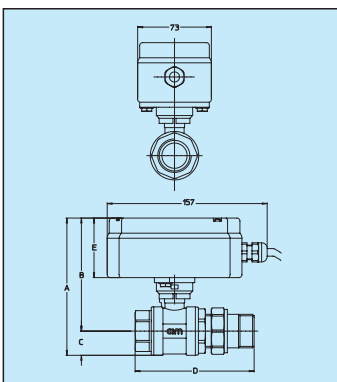
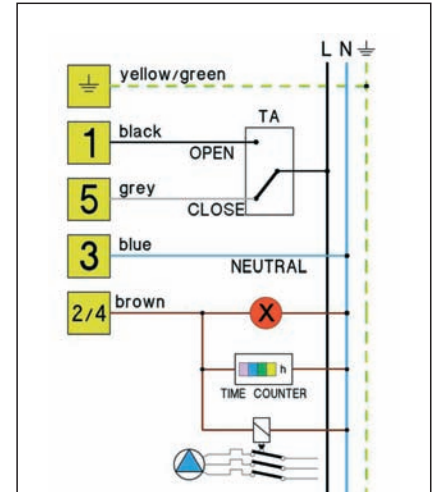
ELECTRIC DIAGRAM EMV 110/630
two way valve: OPEN - CLOSE

cim 702RE - 703RE



ELECTRIC DIAGRAM EMV 110/820
two way valve: OPEN - CLOSE

cim 702: 1 1/4" - 1 1/2" - 2"



DN	Cim 702							Cim 702RE							Cim 703 / Cim 703RE							
	Grms.	A	B	C	D	E	ΔP bar	Grms.	A	B	C	D	E	ΔP bar	Grms.	A	B	C	D	E	ΔP bar	
1/2	840	120,5	103	17,5	64	59,5	16	840	120,5	103	17,5	64	59,5	16	-	-	-	-	-	-	-	-
3/4	1060	134	112	22	74	59,5	16	1060	134	112	22	74	59,5	16	1130	134	112	22	110	59,5	16	-
1"	1300	141	115,5	25,5	88	59,5	16	1300	141	115,5	25,5	88	59,5	16	1495	141	115,5	25,5	126,5	59,5	16	-
1 1/4"	2650	204	173	31	101	95	10	-	-	-	-	-	-	-	1905	204	173	31	145	95	10	-
1 1/2"	3000	215,5	179	36,5	105	95	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2"	4195	230	185,5	44,5	130	95	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CIMSTAR

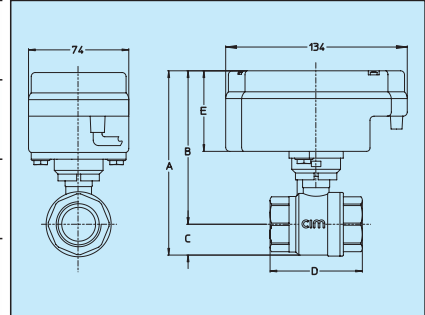
Two way electro-motor actuated ball valves

cim 602 RE

ELECTRO-MOTOR ACTUATED BALL VALVE FEMALE/FEMALE TYPE T14



DN	3/4	1"	1 1/4"
Box	1	1	1
Cart.	10	10	10

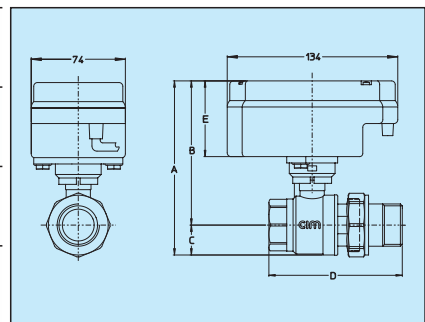


cim 603 RE

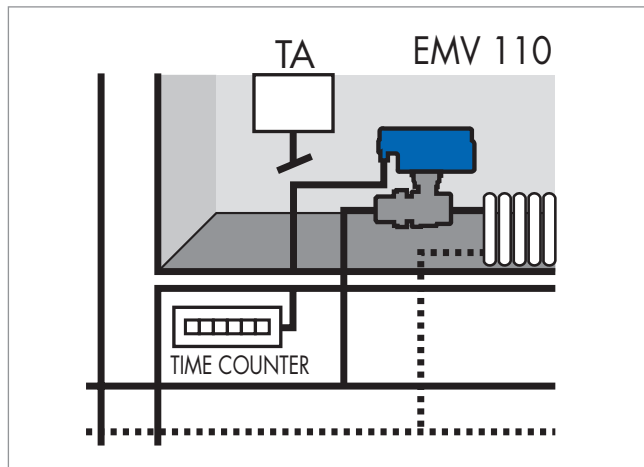
ELECTRO-MOTOR ACTUATED BALL VALVE FEMALE/EXTENSION TYPE T14



DN	3/4	1"	1 1/4"
Box	1	1	1
Cart.	10	10	10

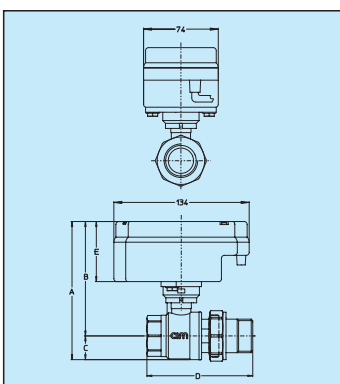
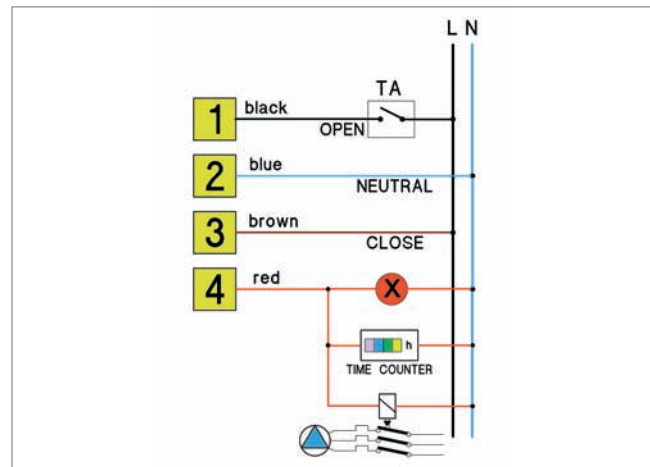


STANDARD INSTALLATION



ELECTRIC DIAGRAM EMV 110/3830

two way valve: OPEN/CLOSE



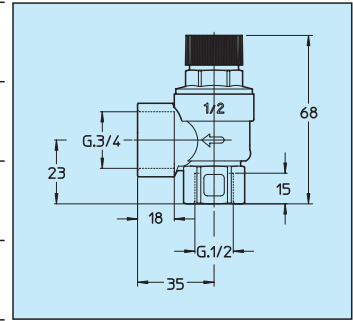
DN	Cim 602 RE							DN	Cim 603 RE						
	Grms.	A	B	C	D	E	ΔP bar		Grms.	A	B	C	D	E	ΔP bar
1/2	-	-	-	-	-	-	-	1/2	-	-	-	-	-	-	-
3/4	760	127	107,5	19,5	107,5	59,5	16	3/4	865	128,5	107,5	21	90	59,5	16
1"	910	135	111,5	23,5	111,5	59,5	16	1"	1105	136,5	111,5	25	103	59,5	16
1 1/4"	1170	148	119,5	23,5	119,5	59,5	16	1 1/4"	1435	145	119,5	28,5	121	59,5	16
1 1/2"	-	-	-	-	-	-	-	1 1/2"	-	-	-	-	-	-	-
2"	-	-	-	-	-	-	-	2"	-	-	-	-	-	-	-

cim 140 S

SAFETY VALVE 6 bar - 150 °C



DN	1/2
Box	50
Cart.	200



cim 150 S

AIR RELEASE VALVE - 150 °C



DN	1/2
Box	50
Cart.	200

