

Thermostatic mixer lower inlet

S107-S108-S109-S112

/ Function

The burn-proof thermostatic mixers, series S107-S108-S109-S112, are utilized in domestic hot water heating systems and function in continuous operation.

Their purpose is to maintain a constant temperature in the mixed water conveyed to users regardless of any variations in the pressure or temperature values of the hot and cold water at the mixer inlet, or in the flow meter.

They are also equipped with a burn-proof safety system: this allows the flow of hot water to be shut off automatically as soon as cold water is missing at the mixer inlet.

Article S102 is also equipped with two non-return valves placed at the hot and cold water inlets; their function is to prevent any undesired fluid returns to the system



/ Product

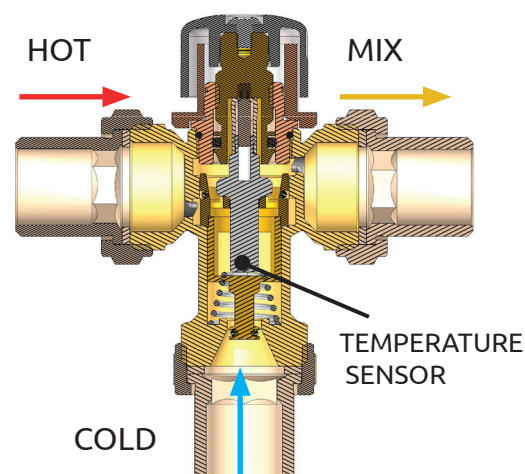
Art.	Code	Size	Connection
S107	93S107AD05	G ½" M	With pipe union
S107	93S107AE05	G ¾" M	With pipe union
S108	93S108AD05	G 1" M	Female
S108	93S108AE05	G ½" M	Female
S109	93S109AE05	G ¾" M	Pipe union + Non-return valve
S112	93S112AD05	G 1" M	Male
S112	93S112AE05	G ¾" M	Male

/ Operating principle

Mixer operation is based on the temperature sensor contained inside the mixer, in the mixed water outflow area.

Variations in the expansion of the thermostatic component cause the plunger contained inside the mixer body to slide. This generates correct mixing of the cold and hot water at the water distribution system inlet.

In this way, the mixer automatically maintains the temperature value set, even when there are variations in pressure caused by the drawing of hot and cold water by the various users, or when there are variations in the temperature of either the cold or hot water at the inlet.



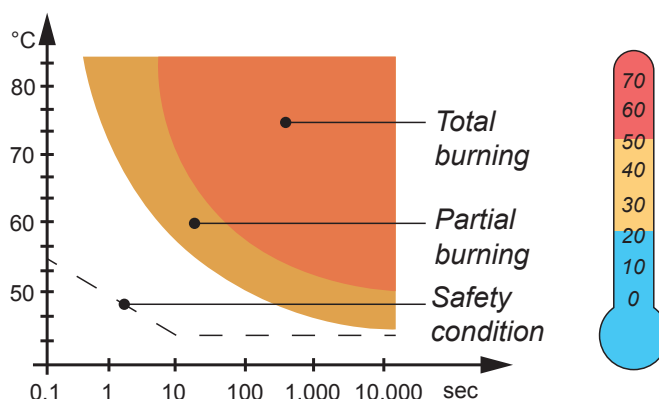
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/ Burn-proof device

In domestic hot water heating systems with accumulator, water must be kept at a minimum temperature of 60°C in order to totally prevent the growth of the bacteria that causes a very dangerous infection called Legionnaire's disease.

Water cannot be used directly at this temperature because it can cause burns. The installation of a thermostatic mixer is recommended to ensure that water is safe to use. The mixer keeps the preset value constant when there are variations in temperature and pressure at the inlet.



The graph at the side of text indicates the degree of burning that can be caused depending on water temperature and heat exposure time. The mixer solves this problem by interrupting the flow of hot water when the flow of cold water is missing at the inlet.

/ Technical characteristics

MATERIALS

Body:	Brass CW 617 N - UNI EN 12165
Large screw:	Brass CW 617 N - UNI EN 12165
Springs:	Stainlass Steel
Lock nut:	Grivory
Hand wheel:	Grivory
O-Ring:	EPDM PEROX - (high resistance)

NON-RETURN VALVE MATERIALS

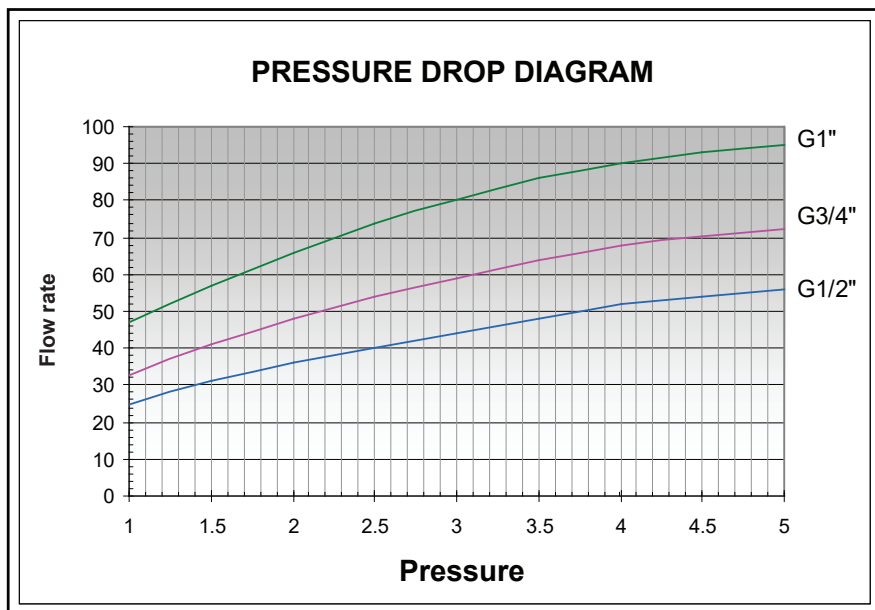
Body:	Brass CW617N - UNI EN12165
O-Ring:	EPDM PEROX - (high resistance)
Spring:	Stainlass Steel

PERFORMANCE

Fluid used:	water
Max percentage of glycol:	50%
Temperature range:	30-60°C
Factory calibration:	38 ±2°C
Max operating pressure (static):	10 bar
Max operating pressure (velocity):	5 bar
Max temperature at inlet:	100°C
Max ratio between HOT/COLD or COLD/HOT pressures:	2:1

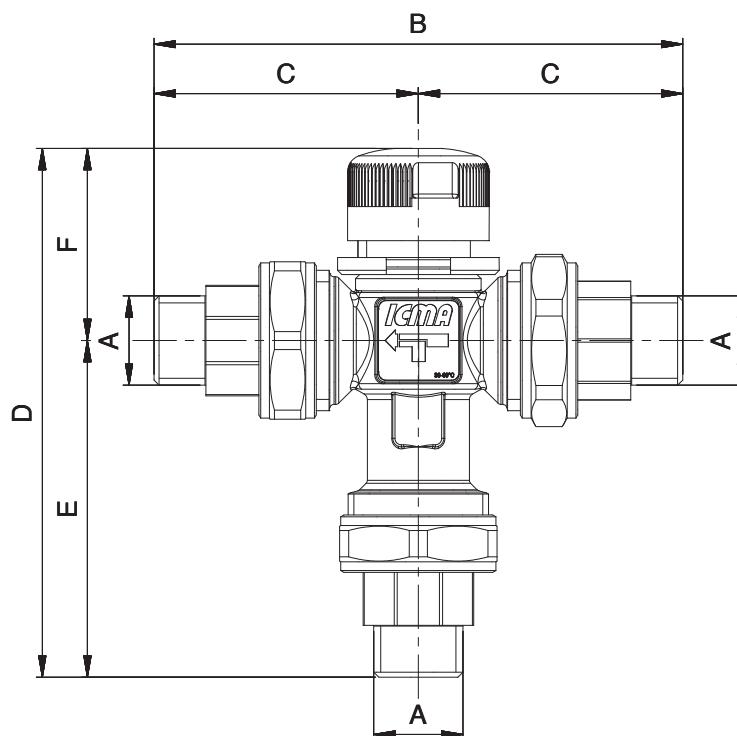
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Hydraulic characteristics



Kv [m ³ /h]	
G 1/2"	3.8
G 3/4"	4.6
G 1"	6.8

Dimensions (Art. S107 - S109)

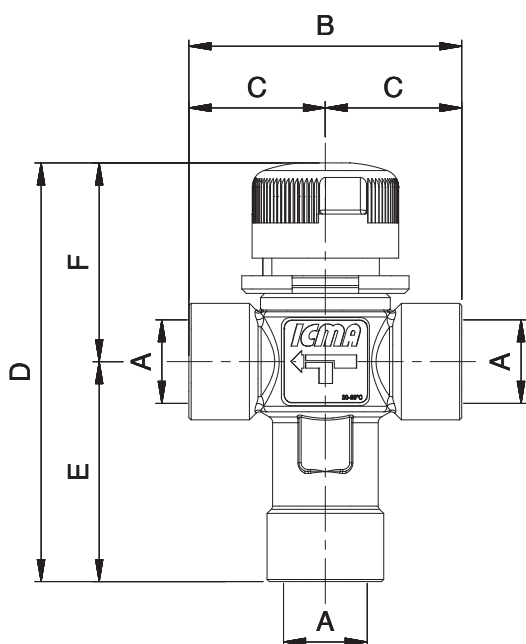


Code	93S107AD05	93S107AE05
A	1/2" M	3/4" M
B	124	120
C	62	60
D	125	125
E	80	80
F	45	45

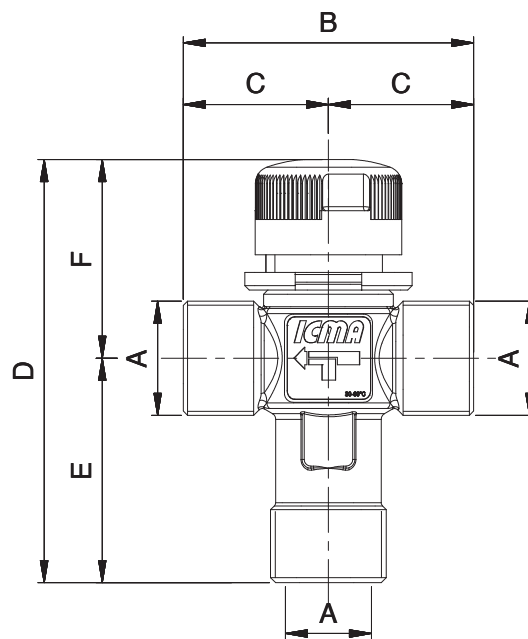
Code	93S109AE05
A	3/4" M
B	125
C	62,5
D	125
E	80
F	45

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/ Dimensions (Art. S108-S112)



Code	93S108AD05	93S108AE05
A	1/2" F	3/4" F
B	62	66
C	31	33
D	95	98
E	50	53
F	45	45



Code	93S112AD05	93S112AE05
A	3/4" M	1" M
B	66	60
C	33	30
D	96	92
E	51	47
F	45	45

/ Installation

Make sure that pipes are free of impurities before activating the mixer to avoid equipment malfunction. Filters should be installed at the inlet of the water distribution system.

On the thermostatic mixer body there is a label indicating:

- hot water inlet
- cold water inlet
- mixed water outlet



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/ Temperature adjustment

The temperature is set by turning the knob with graduated scale located on the mixer.



Reference conditions:

Hot T: 68°C

Cold T: 13°C

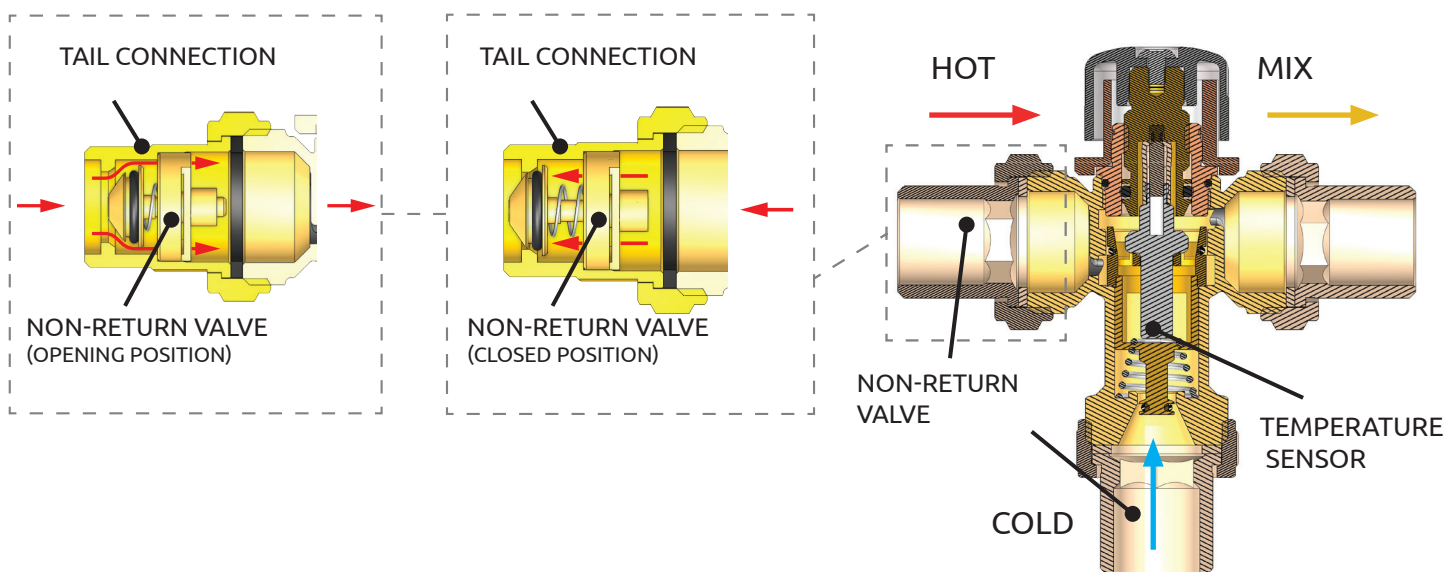
Inlet pressure: 3+3 balanced Bar

ADJUSTMENT RANGE

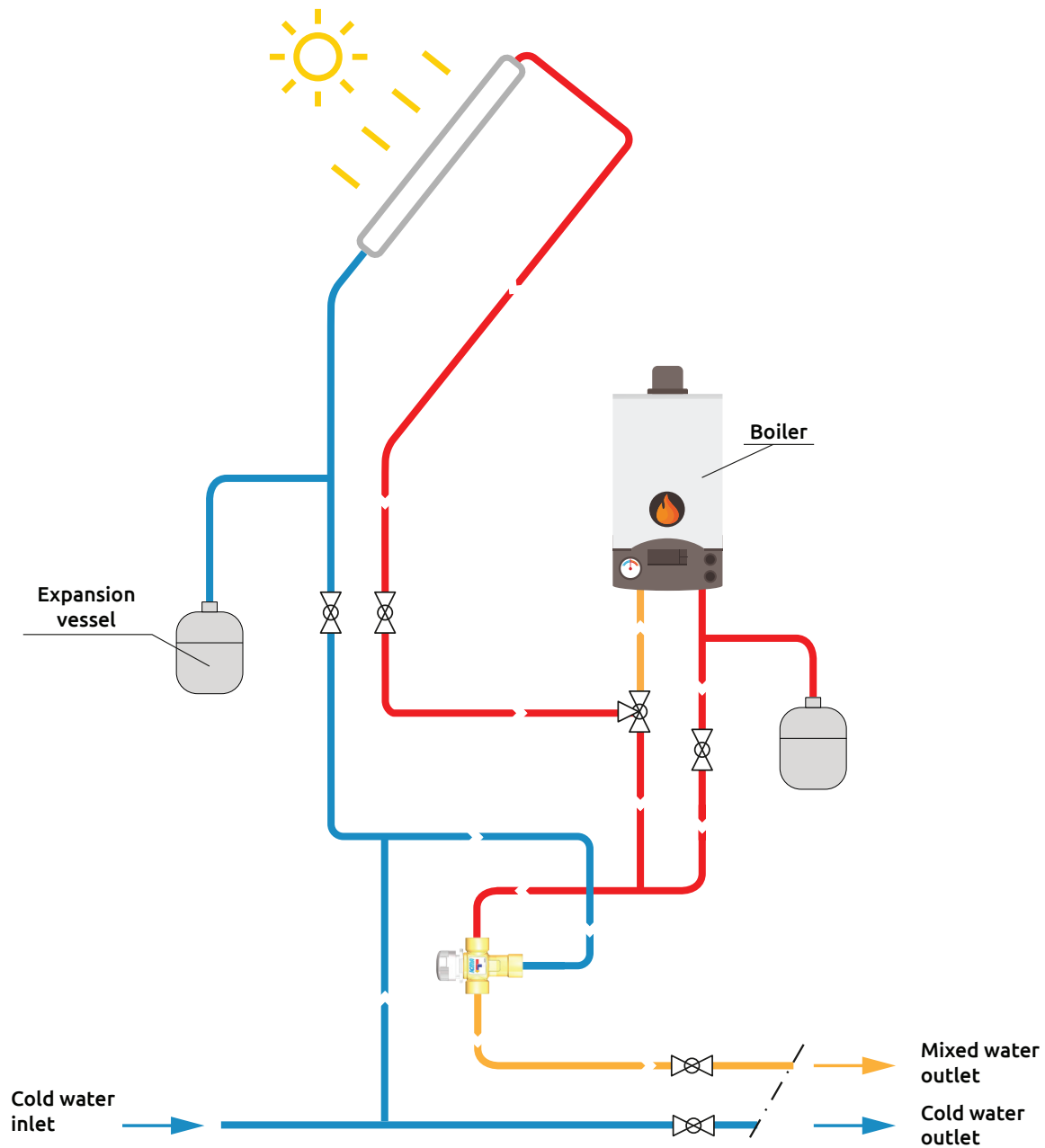
Setting	1	2	3	4	5	6
°C	30	35	40	45	50	60

/ Non-return valves

Non-return valves should be installed on systems equipped with mixers in order to avoid undesired fluid returns. Item S109 is fitted on a non-return valve, one at the hot water inlet and another at the cold water inlet.



Application diagram



Safety



 To keep in good condition the internal parts during cleaning, do not use any detergents containing solvents. Read the assembly and start-up instructions and comply with them scrupulously before starting the system to prevent accidents and damage to the system caused by improper use. Remember that the guarantee will be forfeited in the event of any unauthorised changes or tampering with the device during assembly and construction. Comply with all safety warnings, and if you have any doubts about use or changes to parameters or functions, request the assistance of qualified service personnel.