

# Single and double-pipe thermostatic valves

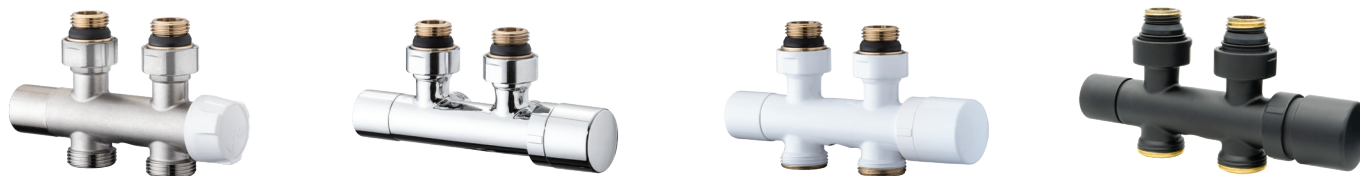
932-933-934-935-936-937-946-947-948-949-956-957-1137-1138

**ICMA**<sup>®</sup>

ST.932.06.25.EN

## / Function

ICMA thermostatic H valves are projected to be used in connection with radiators installation on single-pipe and double-pipe heating systems.



## / Technical features

### PERFORMANCES

Working fluids:	Water and glycol solutions
Max percentage of glycol:	50%
Max working pressure:	10 bar
Max differential pressure:	1 Bar (with thermostatic head)
Temperature of heat transfer fluid:	5 °C ÷ 110° C
Shutter stroke:	3,5 mm
Connection with thermostat control devices:	M30x1,5

### MATERIALS

Body:	Brass CW617N - UNI 12165
Thermostatic spindle, union nut, lock ring, cap:	Brass CW617N - UNI 12164
Spring and shutter rod:	Inox steel
Hydraulic seals:	EPDM Perox
Cap (nichel plated):	Nylon 6 – 15% fiberglass (White))
Cap (chrome plated, white and black):	ABS

## / Product range

SERIES	CODE	PIPE CONNECTION	RADIATOR CONNECTION	FINISH
STRAIGHT VERSION				
933	81933AE06	3/4"	1/2"G	NICKEL PLATED
935	81935AE07	3/4"	1/2"G	CHROMED
937	81937AE13	3/4"	1/2"G	WHITE
1137	811137AE09	3/4"	1/2"G	MATT BLACK
932	81932AE06	M24x1,5	1/2"G	NICHELATO
934	81934AE07	M24x1,5	1/2"G	CHROMED
936	81936AE13	M24x1,5	1/2"G	WHITE
ANGLED VERSION*				
947	81947AED06	3/4"	1/2"G	NICKEL PLATED
949	81949AED07	3/4"	1/2"G	CHROMED
957	81957AED13	3/4"	1/2"G	WHITE
1138	811138AED09	3/4"	1/2"G	MATT BLACK
946	81946AED06	M24x1,5	1/2"G	NICKEL PLATED
948	81948AED07	M24x1,5	1/2"G	CHROMED
956	81956AED13	M24x1,5	1/2"G	WHITE

\*On request also available in the left-side version.

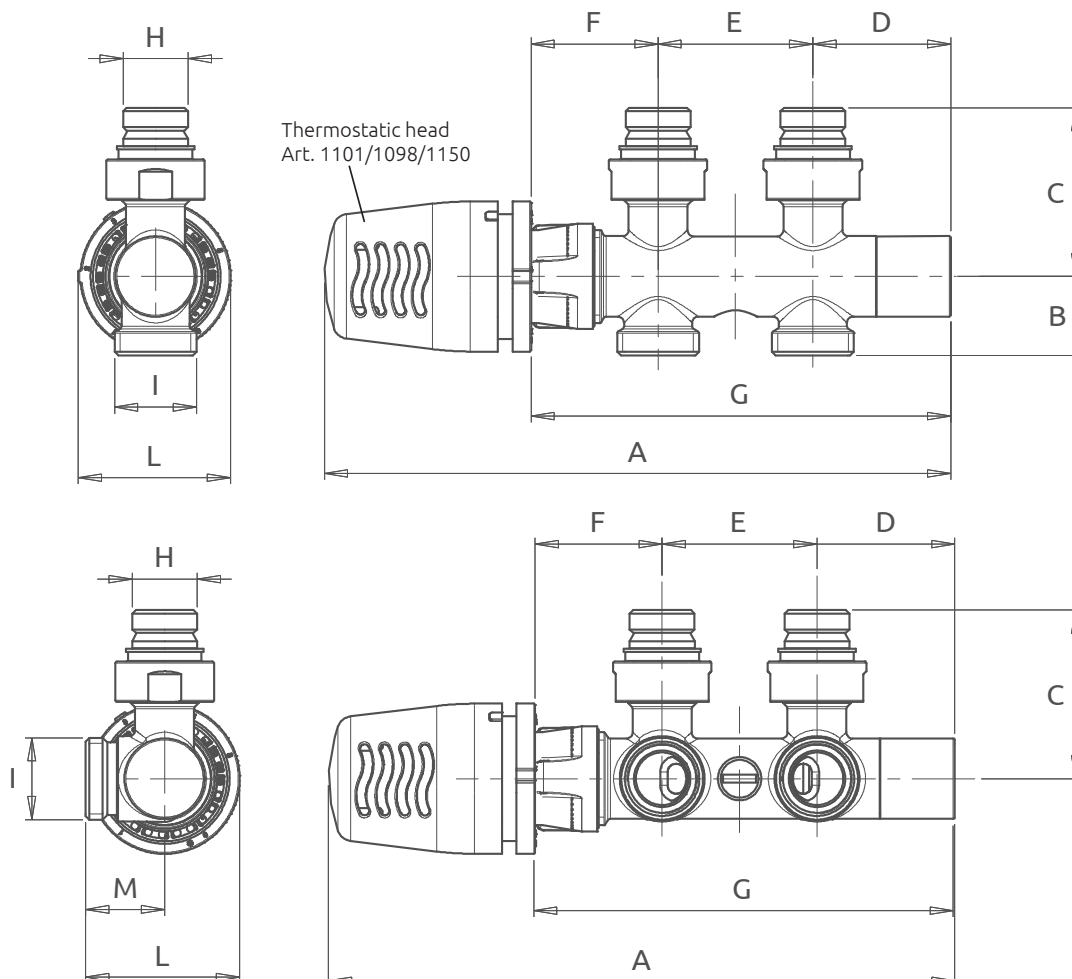
# Single and double-pipe thermostatic valves

932-933-934-935-936-937-946-947-948-949-956-957-1137-1138



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## Dimensions



FINISH	Dimensions (mm)										
	A	B	C	D	E	F	G	H	I	L	M
Nichel plated	203	26	55	45	50	41	134	1/2"G	3/4"G - M24X1,5	50	26
Chromed, White, Black	203	26	55	45	50	64	157	1/2"G	3/4"G - M24X1,5	50	26

## / Principle of operation

In single-pipe heating systems radiators are connected in series with respect to each branch of the distribution manifolds. The 933-956 H valves series, projected for this type of installation, allow only a partial flow to the radiator, while the remaining fluid is by-passed and directed to the next radiator.

The radiators can be regulated and intercepted individually (for ex. in case of maintenance) allowing normal operation of the following radiators installed in the system.

In the double-pipe system the radiators are installed in parallel with all the branches of the manifolds. In this type of system with double-pipe mode, H valves series 933-956 deliver to the radiator up to 100% of the inlet flow.

The valves in this series incorporate in a single device the dual function of the manual valve and lock shield typically used in high-temperature heating systems.

On the valve body a screw used for the by-pass regulation allows to adapt the valve for single-pipe and double-pipe systems.

A lock-shield for the radiator interception and a manual handwheel for the opening and closing of the valve are placed on the two sides of the valve.

If necessary, the handwheel can be removed to install the thermostatic head Art.1101. (white) o 1098 (chromed) o 1150 (black).

## / Setting of Single-pipe / Double-pipe mode

The thermostatic H valves of this series can be set to the single-pipe or double-pipe mode. To switch from one function to the other, simply rotate the valve's central screw using a flat screwdriver.

With the 90° screw position the bypass is completely closed (double-pipe configuration), whereas at 0° it is completely open (single-pipe configuration).

**STRAIGHT**

$\alpha^\circ$	Kv bypass $m^3/h$
90	0,00
60	0,25
45	0,48
30	0,90
0	1,58

**ANGLED**

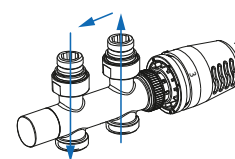
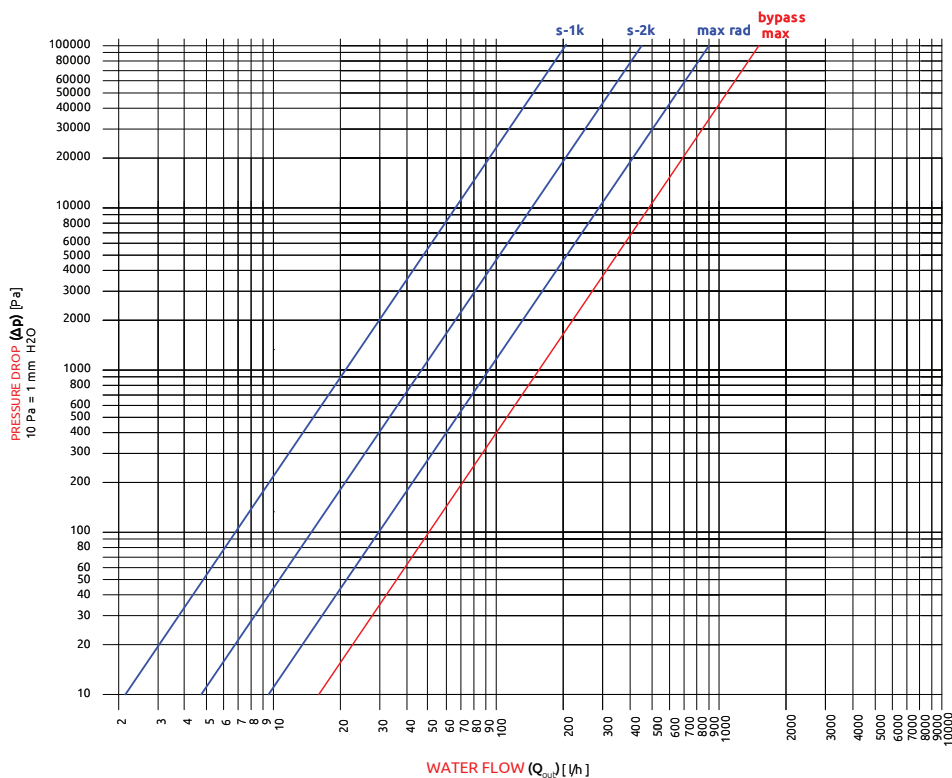
$\alpha^\circ$	Kv bypass $m^3/h$
90	0,00
60	0,25
45	0,48
30	0,90
0	1,58

The valve is supplied in single-pipe configuration with the by-pass screw fully open. On single-pipe systems the valve is reversible, so it is irrelevant to connect the flow delivery on the right or left side.

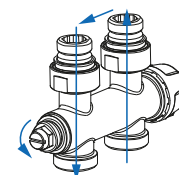
It is however recommended to use the inlet near the thermostatic head as a hot water delivery side, to minimize the risk of noise.

## Pressure drop diagrams

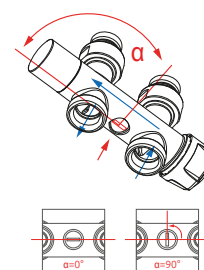
PRESSURE DROP DIAGRAM (straight)



*Art. 1101	Kv rad m <sup>3</sup> /h
max	0,87
s-2k	0,45
s-1k	0,29

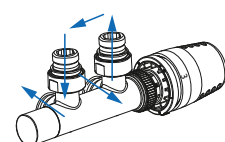
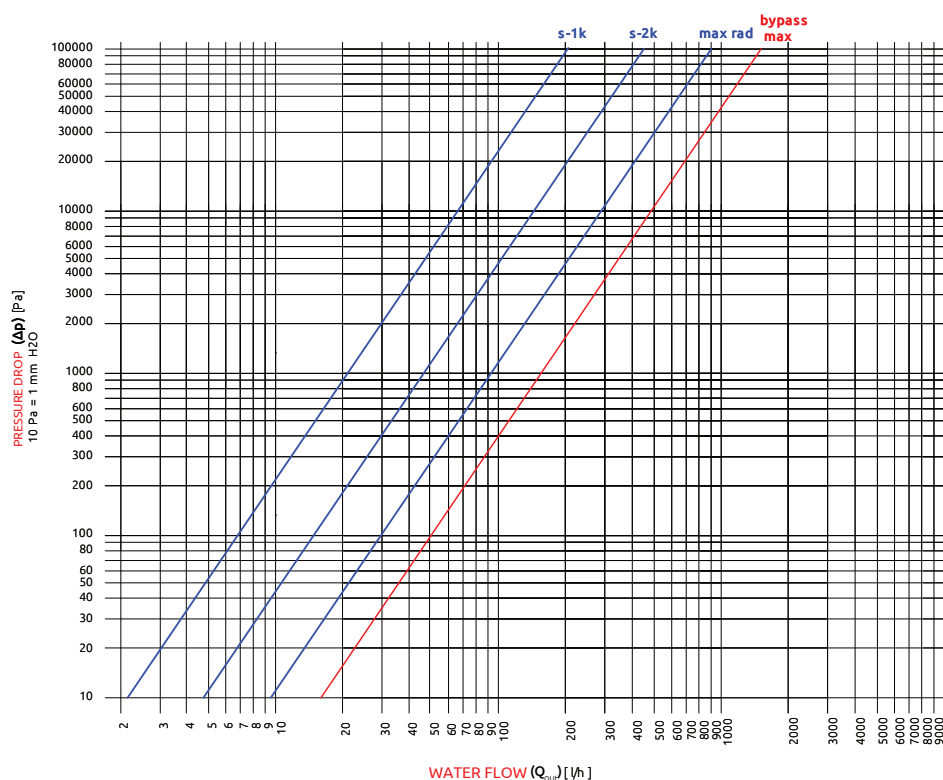


N° opening turns	Kv rad m <sup>3</sup> /h
1	0,10
2	0,45
3	0,58
4	0,80
max	0,87

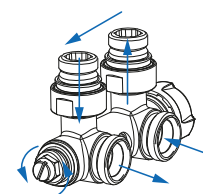


α°	Kv bypass m <sup>3</sup> /h
90	0,00
60	0,25
45	0,48
30	0,90
0	1,58

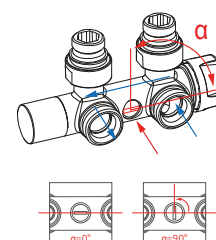
PRESSURE DROP DIAGRAM (angled)



*Art. 1101	Kv rad m <sup>3</sup> /h
max	0,92
s-2k	0,45
s-1k	0,20



N° opening turns	Kv rad m <sup>3</sup> /h
1	0,10
2	0,45
3	0,58
4	0,88
max	0,92



α°	Kv bypass m <sup>3</sup> /h
90	0,00
60	0,25
45	0,48
30	0,90
0	1,58