

TBV - Adjustable Thermal Balancing Valves for hot water recirculation systems.

Product Codes: 31000, 31001, 31002, 31003

Features and Benefits

Brymec Thermal Balancing Valves (TBV) are designed for use in DHW re-circulating systems to provide user comfort, hygiene and the best level of system efficiency. The valve regulates the flow of water depending on the temperature, and ensures a continuously balanced system over the entire building. Valves are equipped with either an automatic, or a thermal actuator controlled, bypass for disinfection purposes to protect against Legionella.

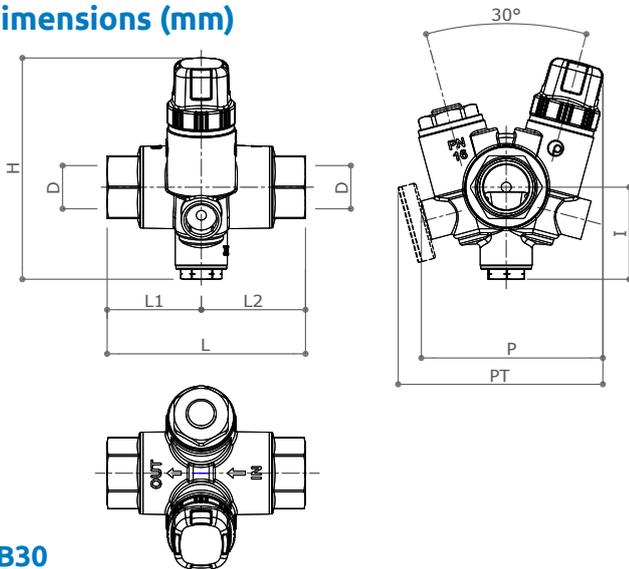
Available in 2 models:

TB30: Thermostatic Balancing and Antilegionella Disinfection thermostatic device

TB50: Thermostatic Balancing and Antilegionella Disinfection device by thermoelectrical actuator.

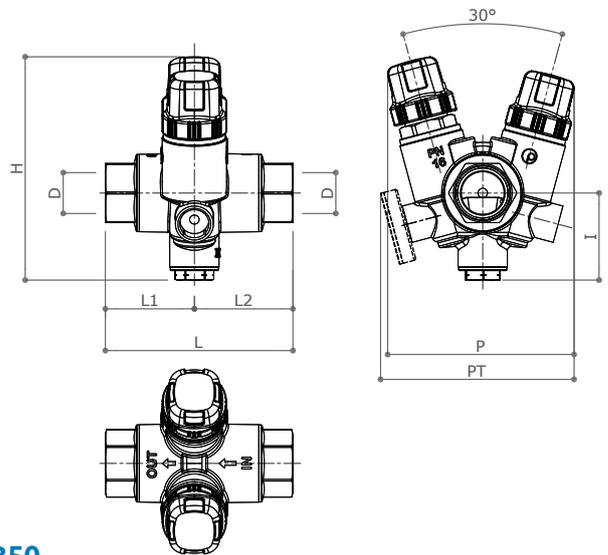


Dimensions (mm)



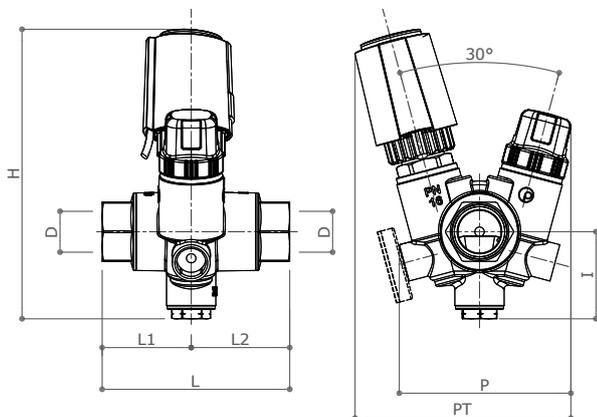
TB30

D	L	L1	L2	H	I	P	PT	W (gr)
½" EN10226-1	93	44	49	112	46	91	102	925
¾" EN10226-1	99	47	52	112	46	91	102	930



TB50

D	L	L1	L2	H	I	P	PT	W (gr)
½" EN10226-1	93	44	49	119	46	97	102	1025
¾" EN10226-1	99	47	52	119	46	97	102	1030



TB50 - Assembled with Actuator

D	L	L1	L2	H	I	P	PT	W (gr)
½" EN10226-1	93	44	49	154	46	91	114	1125
¾" EN10226-1	99	47	52	154	46	91	114	1130

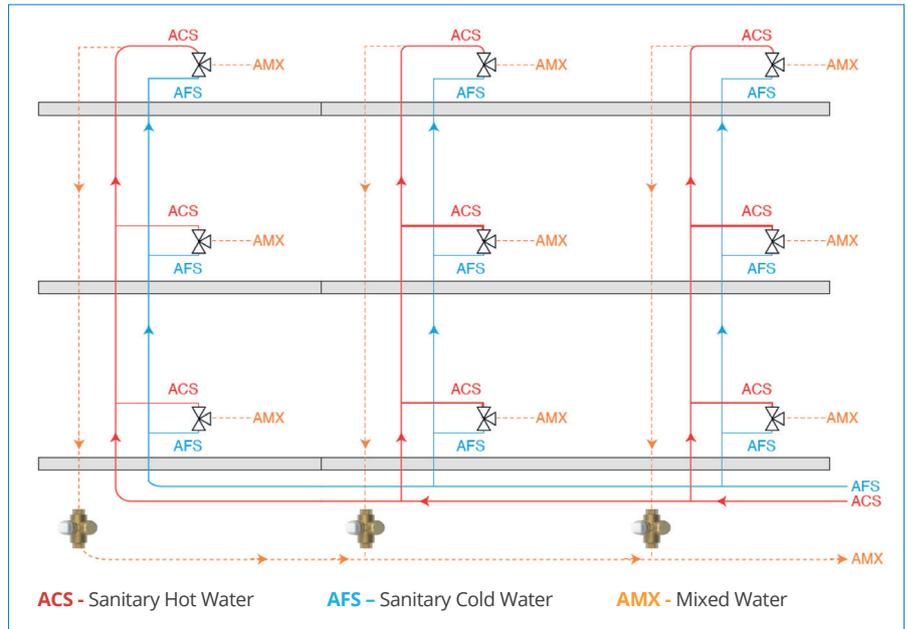


Materials

Body: CW511L (EN 12165)
O-ring: EPDM-X
Protection Cap: PA66
Shutter: PSU
Presetting Knob: ABS
Spring: AISI302

Features

Nominal Pressure: PN16
Max Temperature: 90°C
Setting Range: 35°- 60°C (pos.1-6)
Factory-Preset: 52°C (pos.)
Disinfection Temp (TB30): 70°C
Flow Reduction Temp: 65°C
Kvmax: 1.8
Kdisinf (bypass): 1
Kvmin: 0.2
Threads to EN10266-1



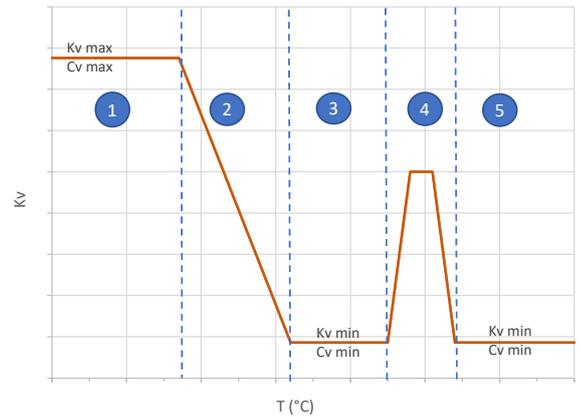
Operating Principle

The TB Series thermostatic balancing valves are intended for centralized production and distribution systems for domestic hot water (DHW) equipped with recirculation.

1. Automatic Anti-Legionella Treatment (Series TB30)

As required by health safety standards, anti-Legionella treatments can be required to avoid proliferation of bacteria in hot potable water systems. A common safety procedure is flushing the system with water at more than 70°C, the temperature required to kill the bacteria. The TB30 valve is equipped with a second temperature sensor that allows circulation of water when the temperature exceeds 70°C. This temperature is pre-set and cannot be adjusted.

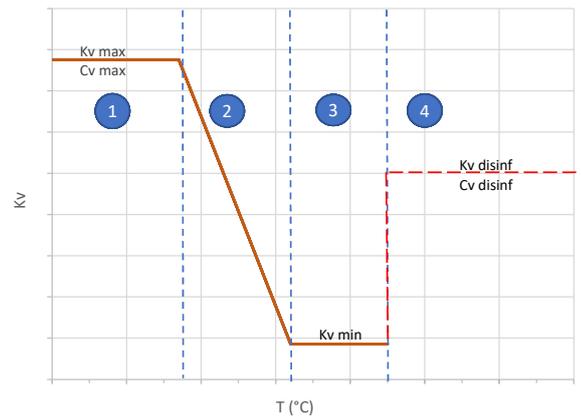
- Area 1** - $K_v = K_{vmax}$, $T \ll T\text{-presetting}$
- Area 2** - $K_{vmin} < K_v < K_{vmax}$, $T\text{-water} \approx T\text{-presetting}$.
- Area 3** - $K_v = K_{vmin}$, $T\text{-water} > T\text{-presetting}$
- Area 4** - $K_v = K_{disinf}$, $65^\circ\text{C} < T\text{-water} < 75^\circ\text{C}$
- Area 5** - $K_v = K_{vmin}$, $T\text{-water} > 75^\circ\text{C}$



2. Controlled Anti-Legionella Treatment (TB50)

The TB50 thermostatic balancing valve allows you to control the anti-Legionella disinfection process (temperature and duration) due to the by-pass valve which is operated by the thermal actuator. Connection of the valves to a system control, such as a BMS, allows constant monitoring of the system temperature which in turn can also control the operation of the thermal actuators to start the disinfection cycle.

- Area 1** - $K_v = K_{vmax}$, $T \ll T\text{-presetting}$
- Area 2** - $K_{vmin} < K_v < K_{vmax}$, $T\text{-water} \approx T\text{-presetting}$.
- Area 3** - $K_v = K_{vmin}$, $T\text{-water} > T\text{-presetting}$
- Area 4** - $K_v = K_{disinf}$, Disinfection

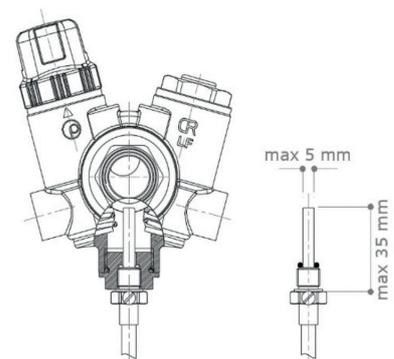


To Enable this Function:

- $T\text{-water} > 70^\circ$ - in this condition the thermostatic element limits the flow to the K_{vmin}
- The actuator needs to be open

Thermowell for temperature sensor

TBV Series has a drywell (1/2") that can be used to install a probe for remote monitoring of the water temperature especially during disinfection cycles - requires adapter/ reducer 31009 1/2" M x M10F. Please observe the recommended dimensions for the thermostat probe.

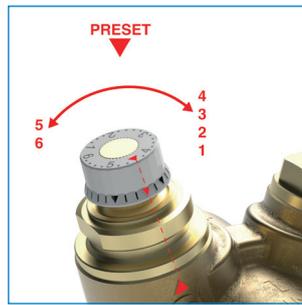


Temperature adjustment- Commissioning

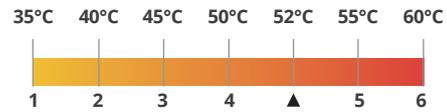
TBVs are factory preset at 52°C (equal to position ▼ on the selector).
The user can change the setting by following the instructions below:



1. Remove the handwheel protection cap



2. Turn the selector to the target position



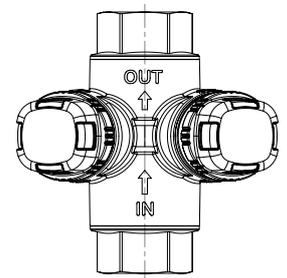
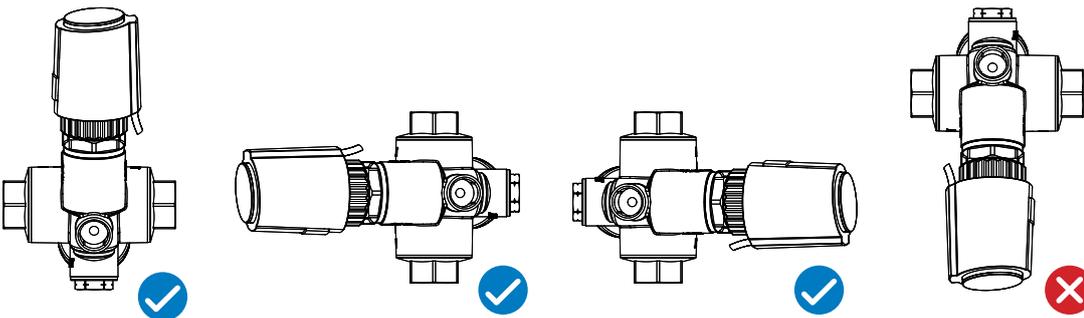
It is recommended to set the adjustment head at a temperature approximately 3-5°C higher than the desired set temperature. This will help balance pressure drops within the system and will also help with pump efficiencies.

Installation

The TB Series can be installed either at the top or bottom of the riser, with the following considerations:

- Accessible
- At least 0.5 meters from the headers
- Observe the correct direction of flow

As the TB50 valve is equipped with a thermal actuator, it is important that the valve is installed in the correct orientation:



In order to avoid potential damage to the valve, it is always recommended to install a suitable filtering device upstream of the valve, such as the 51F Filterball - ball valve with incorporated filter.

Accessories

31004
Double scale Thermometer
0-80°C / 32°-176°F



31009
Adapter/Reduction
½" M x M 10F



31012
Check valve to use after the TB30/TB50
½" F x ½" M or ¾" F x ¾" M



31013
Check valve to use after the TB30/TB50
¾" F x ¾" M



31007
230v Thermal Actuator
On/Off-PWM - N.C.
Complete with adapter VA64



31008
24v Thermal Actuator
On/Off-PWM - N.C.
Complete with adapter VA64



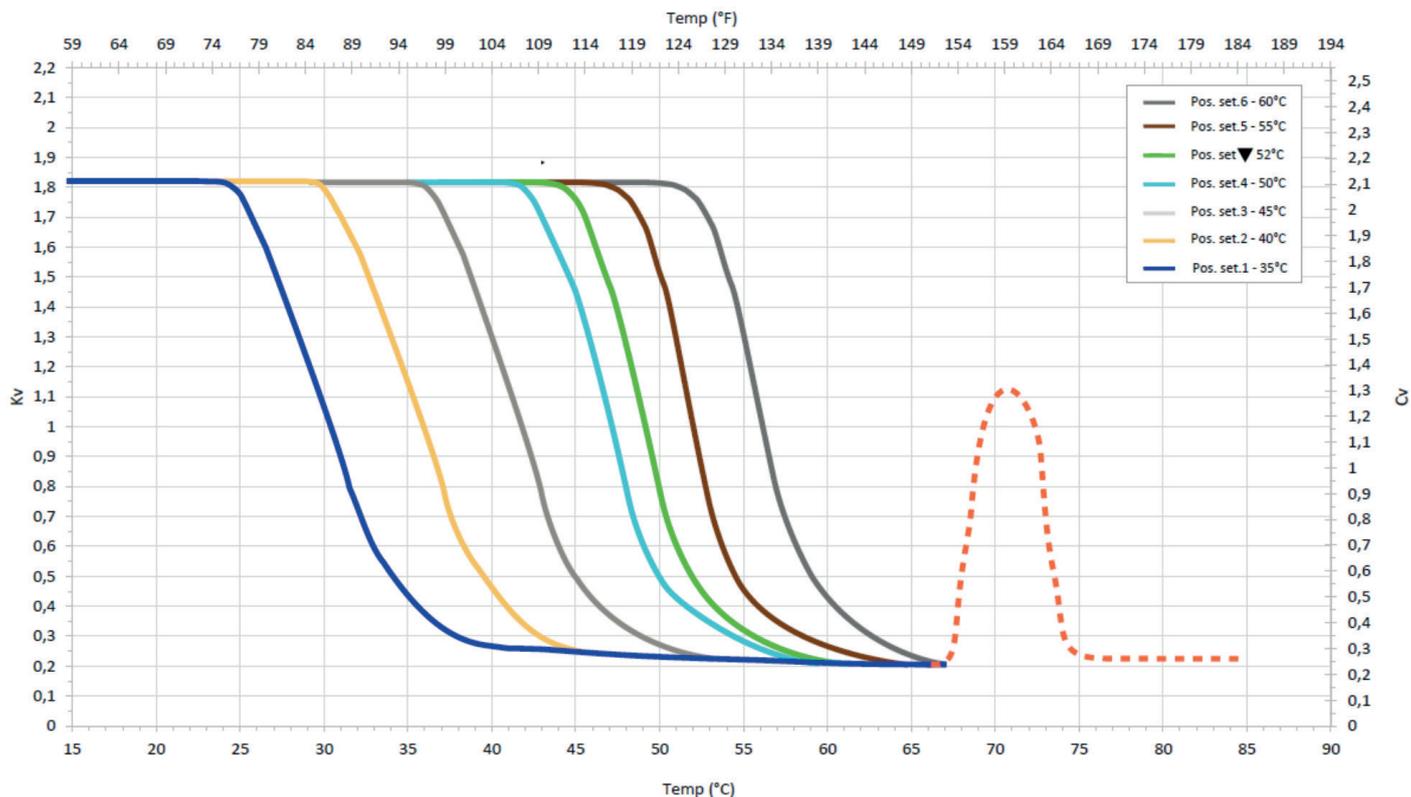
31010
230v Thermal Actuator
On/Off-PWM - N.C.
With integrated micro-switch
Complete with adapter VA64



31011
24v Thermal Actuator
On/Off-PWM - N.C.
With integrated micro-switch
Complete with adapter VA64



KV vs. Temperature – TB30



KV vs. Temperature – TB50

