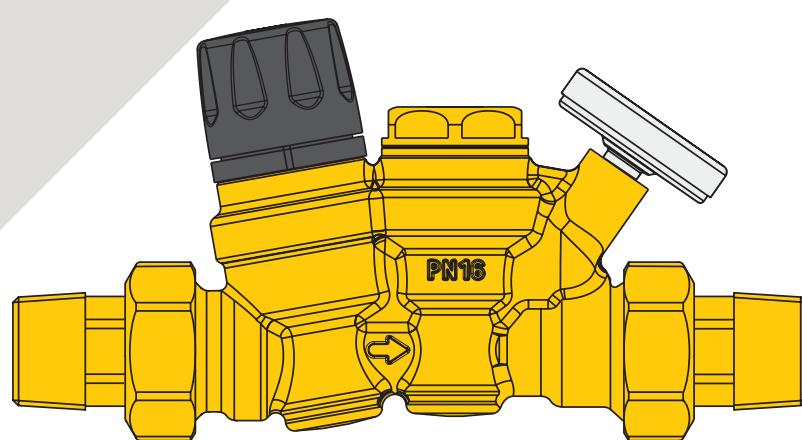


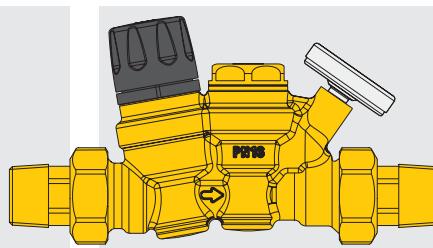
116

thermostatic regulator with  
built-in check valve



altecnic  
CALEFFI group

# 116 thermostatic regulator with built-in check valve



## Introduction

The Altecnic thermostatic regulator for domestic hot water re-circulation systems automatically maintains the specified water temperature.

## Function

The thermostatic regulator is intended to be installed in the return pipe of each re-circulation circuit, automatically maintaining the specified water temperature.

The regulator controls the flow rate in accordance with the inlet water temperature by means of a dedicated internal thermostatic cartridge. When the water temperature approaches the set value, the obturator progressively close and reduces the flow passage reducing the amount of water re-circulating.

The water supplied by the re-circulation pump is available to be distributed to other branches in the system, resulting in effective automatic thermal balancing.

## Product Range

### Ref No Description

116144	½" regulator with probe pocket for temperature gauge
116154	¾" regulator with probe pocket for temperature gauge
116244	½" regulator with temp. gauge and disinfection cartridge
116254	¾" regulator with temp. gauge and disinfection cartridge

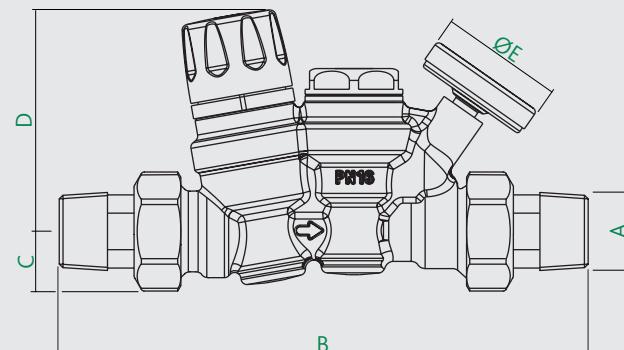
## Construction Details

Component	Material	Grade
Body:	DZR	BS EN 12165 CW724R
Adjustable cartridge:	Polymer	PSU
Seals:	Elastomer	EPDM
Adjustment knob:	Polymer	ABS
Springs:	Stainless St	BS EN 10270-3 (AISI 302)
Check valve:	Polymer	PPO/GF
Check valve spring:	Stainless St	BS EN 10270-3 (AISI 302)
Check valve seal:	Elastomer	EPDM

## Technical Specification

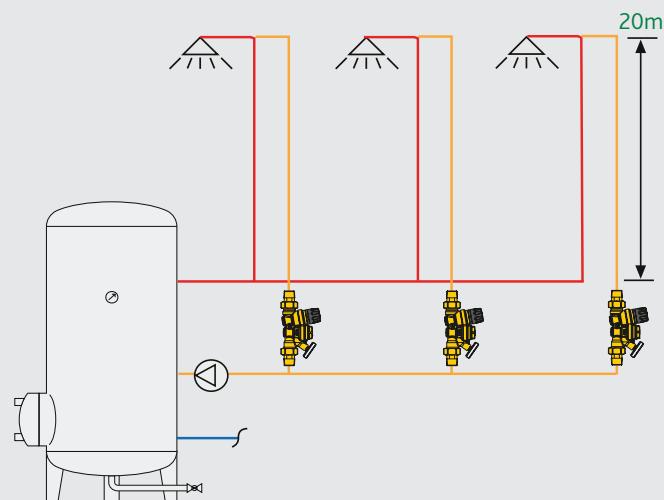
Kv max.:	1.8 m <sup>3</sup> /hr
Kv dis.:	1.0 m <sup>3</sup> /hr
Kv Min.:	¾" (58°C) 0.2±20%
Kv ( $\Delta t=5K$ ):	0.45 m <sup>3</sup> /hr
Max. working pressure:	16 bar
Max. differential pressure:	1 bar
Adjustable temperature range:	35 to 60°C
Factory setting:	52°C
Min. inlet temperature:	90°C
Disinfection temperature:	70°C
Closing temperature:	75°C

## Dimensions

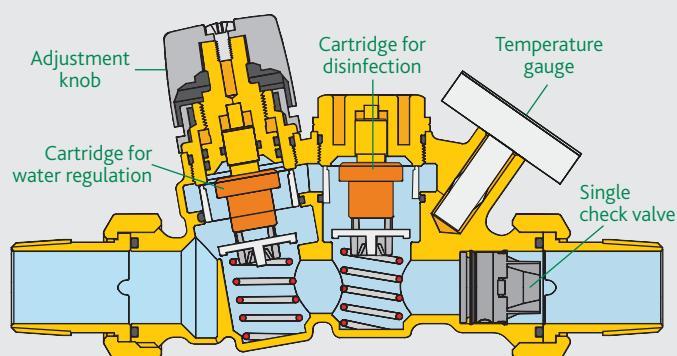


Ref No	A	B	C	D	ØE
116144	R ½	185	18.5	74.5	41
116154	R ¾	181	18.5	74.5	41
116244	R ½	185	18.5	74.5	41
116254	R ¾	181	18.5	74.5	41

## Typical Installation

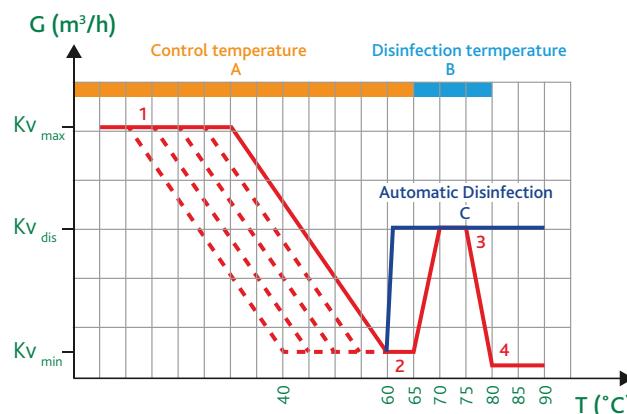


Construction - 116244 and 116254  
with cartridge for disinfection and temperature gauge



# 116 thermostatic regulator with built-in check valve

## Regulating Characteristics



A = control temperature range

B = control temperature range for automatic disinfection

C = control temperature range for manual disinfection using the electric actuator and manual cartridge

## Operation

### 1 Control Temperature Range

On reaching the set temperature, the obturator (1), governed by the thermostatic sensor (2), modulates the closure of the hot water outlet (3), thereby aiding circulation towards the other connected circuits.

As the temperature approaches 65°C the obturator enters fully into the seat bore and this is the minimum open position.

In this position the valve does not isolate the flow but allows a small flow through the seat to maintain hot water re-circulation.

If the temperature decreases, there is the opposite action and the passage reopens, so as to ensure that all the branches of the system reach the required temperature. The characteristic curve of the valve is shown above curve A.

### 2 Disinfection Flow Path

The characteristic curve of operation B is the same as curve A until a temperature higher than 68 °C is reached.

At this value the second thermostatic sensor (5) intervenes with the aim of controlling the disinfection process, allowing circulation independently of the action of the first thermostat. This allows a passage of medium through a special by-pass (4), opening a passage up to the temperature of 70°C. If the temperature rises beyond this value, the flow through the by-pass circuit is reduced so as to allow thermal balancing to be performed even during the disinfection process.

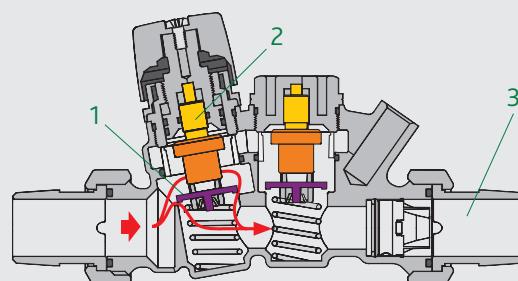
The characteristic curve of the valve is shown above curve A+B.

### 3 Closed Position During Disinfection

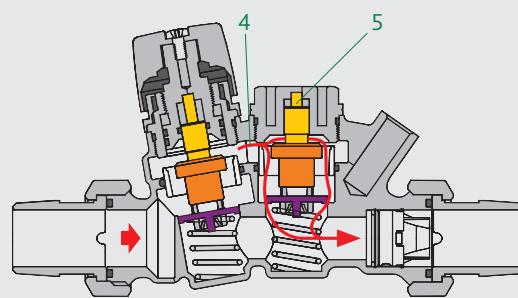
When the temperature reaches approximately 75°C, the regulator reduces the obturator to its minimum position open (6) and minimum flow rate so as not to circulate water at too high a temperature.

The characteristic curve of the valve is shown in fig. F, curve A+C.

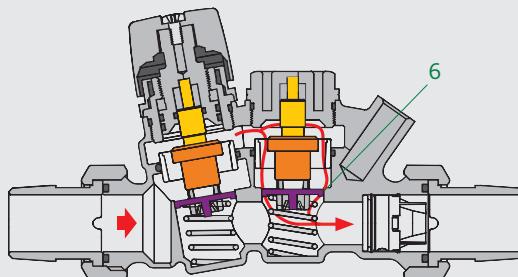
## Operation



1 Control temperature position open



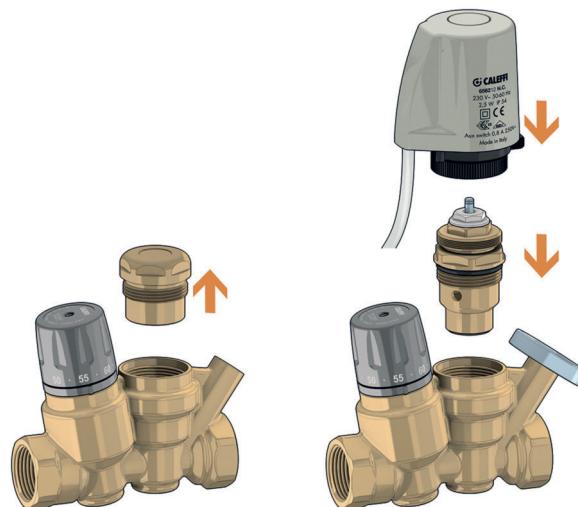
2 Disinfection flow path



3 Closed position during disinfection

# 116 thermostatic regulator with built-in check valve

## Fitting the Electric Actuator



## Accessories



Cartridge for use with electric actuator

## Accessories



## Product code - thermo-electric actuator

116002	240V electric actuator
116004	24V electric actuator

## Technical Specification

Normally closed ON/OFF:

Electric supply:	230V ac - 24 V ac
Power consumption:	1.8 W
Insulation:	class II
Protection class:	IP 54
Ambient temperature range:	0 to 60°C
Operating time:	150 to 200 seconds
Length of cable:	1 metre

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