116

thermostatic regulator for hot water recirculation

WRAS APPROVED PRODUCT

altecnic
CALEFFI group

116 thermostatic regulator for hot water recirculation

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 distrubuted to other branches in the system, resulting in effective automatic thermal balancing.

The regulator is equipped with a thermal disinfection function, which is useful if the water temperature exceeds 55 to 60˚C

Product Range

116240	½" regulator with temp. gauge and disinfection cartridge
116250	¾" regulator with temp. gauge and disinfection cartridge
116260	1" regulator with temp. gauge and disinfection cartridge
116270	1¼" regulator with temp. gauge and disinfection cartridge
116140	½" regulator with probe pocket for temperature gauge
116150	¾" regulator with probe pocket for temperature gauge
116160	1" regulator with probe pocket for temperature gauge
116170	1¼" regulator with probe pocket for temperature gauge

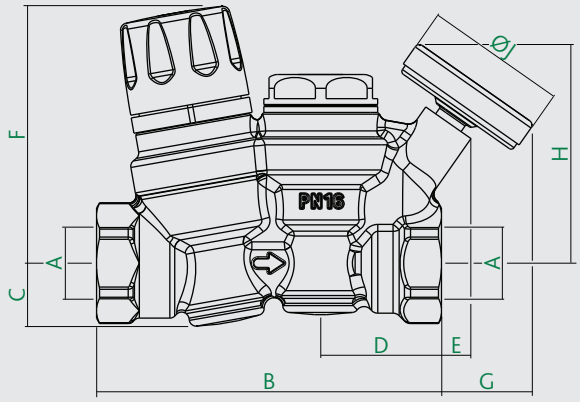
Materials

Component	Material	Grade
Body	DZR	BS EN 12165 CW724R
Adjustable cartridge	PSU polymer	
Seals	Elastomer	EPDM
Adjustment knob	ABS polymer	
Springs	Stainless steel	BS EN 10270-3 AISI 302

Technical Specification

Medium:	Potable water
Kv maximum:	1.8 m^3/h
Kv disinfection:	1.0 m^3/h
Kv min at 58°C (DN 15):	0.10 ± 20% m^3/h
Kv min at 58°C (DN 20):	0.12 ± 20% m^3/h
Kv (Dt = 5K):	0.45 m^3/h
Max. working pressure:	16 bar
Max. differential pressure:	1 bar
Temperature adjustment range:	35 to 60˚C
Factory setting:	52˚C
Disinfection temperature:	70˚C
Closing temperature:	75˚C
Connections - female:	BS EN 10226-1

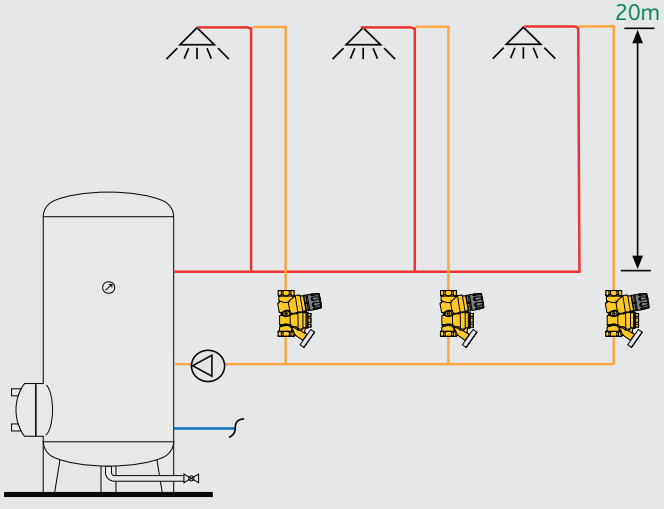
Dimensions



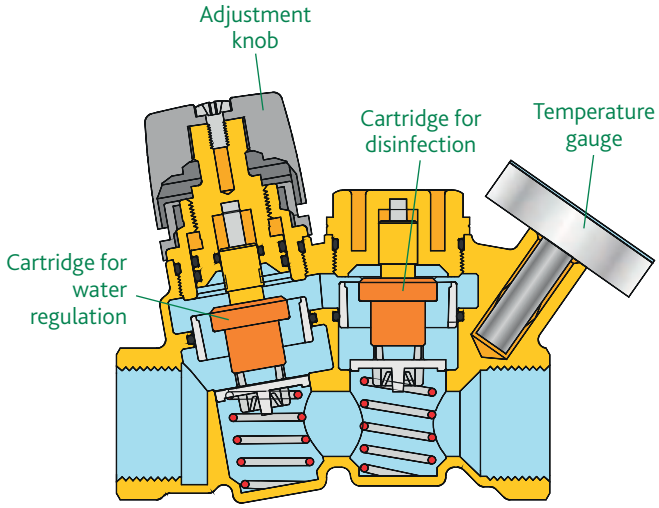
Code	A	B	C	D	E
116140	Rp½	100	18.5	35	9
116150	Rp¾	100	18.5	35	9
116160	Rp1	115	26.5	38	11
116170	Rp1¼	115	26.5	38	11
116240 with gauge	Rp½	100	18.5	35	9
116250 with gauge	Rp¾	100	18.5	35	9
116260 with gauge	Rp1	100	18.5	35	9
116270 with gauge	Rp1¼	100	18.5	35	9

Code	F	G	H	J
116140	74.5			
116150	74.5			
116160	110.5			
116170	110.5			
116240 with gauge	74.5	27	63.5	41
116250 with gauge	74.5	27	63.5	41
116260 with gauge	110.5	21.5	71	41
116270 with gauge	110.5	21.5	71	41

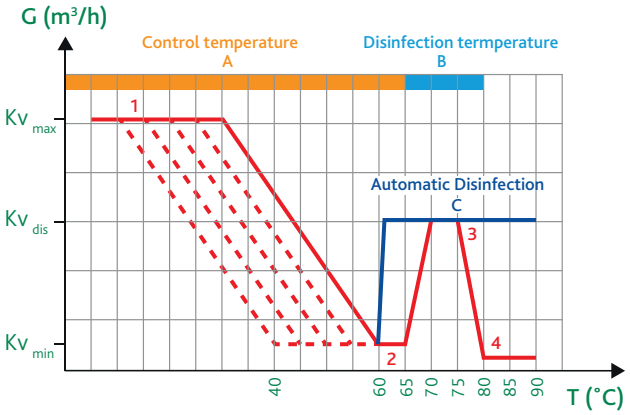
Typical Installation



Construction - 116240, 116250, 116260 and 116270 with cartridge for disinfection and temperature gauge



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

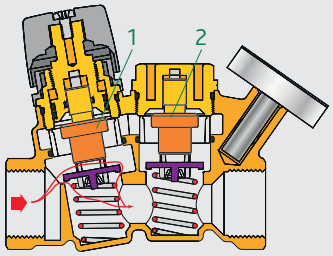
On reaching the set temperature, the obturator governed by the thermostatic sensor (1), modulates and reduces the flow path and flow through the valve. If the temperature decreases, there is the opposite action and the passage reopens, so as to ensure that all the branches of the system reach the required temperature.

2 Minimum Open Position

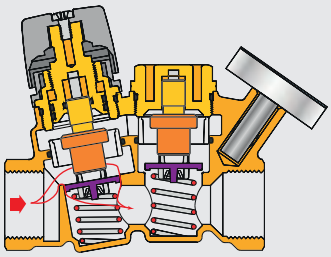
As the temperature approaches 65°C the obtruator enters fully into the seat bore and this is the minimum open position.

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

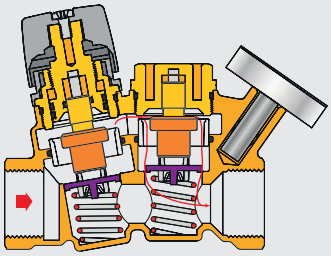
Operation



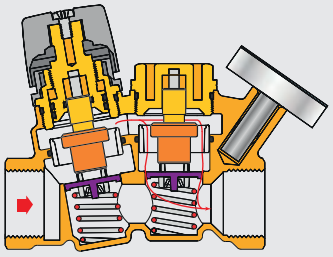
1 Control temperature position open



2 Minimum position open



3 Disinfection flow path



4 Closed position during disinfection

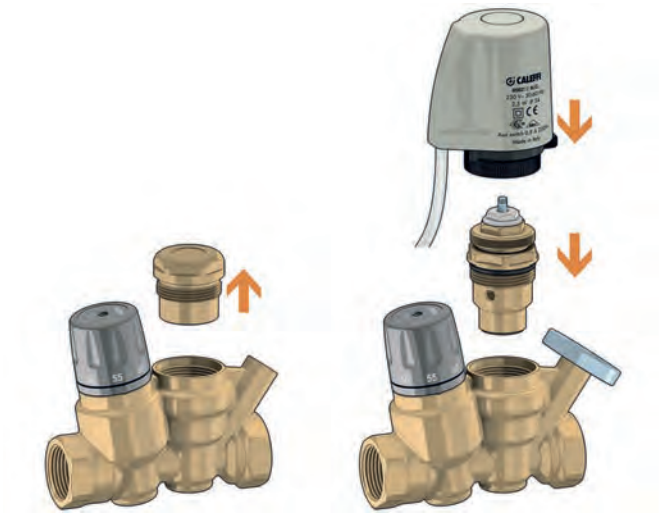
3 Disinfection Flow Path

Once a temperature higher than 65 ° C is reached the second thermostatic sensor (2) intervenes with the aim of controlling the disinfection process, allowing circulation independent of the action of the first thermostat (1). This allows a flow of hot water through a special by-pass as the temperature increases to 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.

4 Closed Position During Disinfection

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

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:	230 V 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 second
Length of cable:	1 metre

Product code - insulation shell

CBN116140

Technical Specification

Material:		closed cell expanded PE-X
Thickness:		min 13mm - max 23mm
Density:		inner part 30 kg/m^3
		outer part 80 kg/m^3
Thermal conductivity (EN 12667):	- at 0°C:	0.0345 W/(m-K)
	- at 40°C:	0.0398 W/(m-K)
Coefficient of resistance to water vapour diffusion:		> 1.300
Working temperature range:		0 to 100°C
Fire behaviour (UNI 9177):		class 1

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AL 252 17-12-20
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