

LEGIOMIX®

Electronic mixing valve, union connections



6000 series

Submittal Data 03601 NA — Issue Date 04/2020

Application

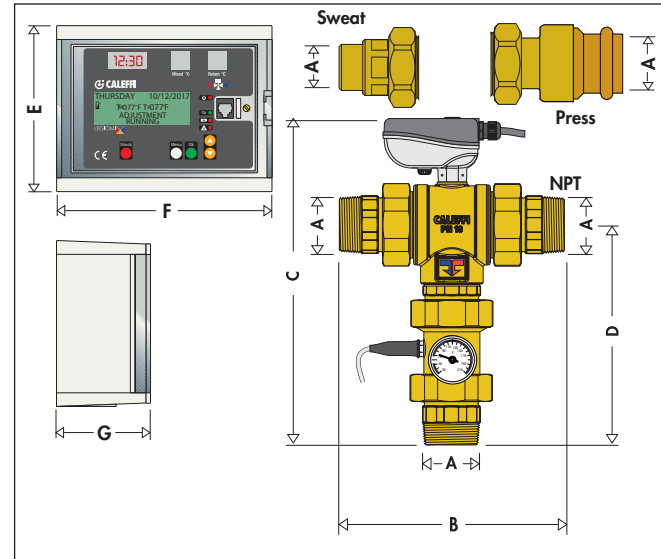
The electronic mixing valve is used in centralized systems that produce and distribute domestic hot water. It maintains the temperature of the domestic hot water delivered to the user when there are variations in the temperature and pressure of the hot and cold water at the inlet or in the draw-off flow rate. The LEGIOMIX® electronic mixing valve provides precise temperature control over very low and very high flow rate demand, minimal pressure drop with a ball valve control element, automatic self-cleaning to prevent scale formation and easy-to-use digital interface with data logging, alarming and status indication. The LEGIOMIX electronic mixing valve is furnished with a controller with LCD user interface that provides a set of programs for circuit thermal disinfection to kill Legionella. The controller is configurable via keypad, or local or remote computer. Depending on the type of system and habits of the user, temperature levels and operation times can be programmed as desired. In addition, it comes standard with monitoring and remote control connections.



Typical Specification

Furnish and install on the plans and described herein, a Caleffi 6000 series LEGIOMIX electronic mixing valve as manufactured by Caleffi. Each valve with controller must be designed with programmable thermal disinfection. The valve design must include a DZR low-lead brass body, chrome-plated ball and peroxide-cured EPDM hydraulic seals. The actuator must be 3-wire floating fail-in-place with integral position indicator, 24 VAC 50/60 Hz with self-extinguishing VO cover, protection class IP 65 (NEMA 4/4X). The controller must be 24 VAC 50/60 Hz with adjustment temperature range 70 - 185°F (20 - 85°C) and disinfection temperature range 100 - 185°F (40 - 85°C). Provided with two NTC element 10.000 ohm stainless steel temperature sensors for mixed outlet water temperature and return water temperature, strap-on style, for recirculation. Choice of 11 languages with set of programs for selectable automatic scheduling circuit thermal disinfection to kill Legionella, configurable via keypad, or local or remote controller; with additional functions of daily ball rotation cycle, flush valve relay output, data logging (40 day FIFO loop buffer), alarming, and status indication. Provide with optional stainless steel inlet port check valve assembly with a acetal plastic check valve insert and NBR o-ring, field installed, code NA10366 (1 inch and 1¼ inch), NA10367 (1½ inch and 2 inch). Provide with Modbus-to-BACnet gateway for BAS integration, code 755052. The valve must be ICC-ES certified to ASSE 1017, CSA B15.3, NSF 372, low lead laws and listed by ICC-ES; and meet codes IPC and UPC for use in accordance with the US and Canadian plumbing codes. Each valve shall be Caleffi model 6000 series or approved equal. (See product instructions for specific installation information.)

Dimensions



Code	A	B	C	D	E	F	G	Wt (lb)
600054A	¾" MNPT	5"	9 ³⁄₈"	5 ³⁄₈"	5 ½"	7"	4"	5.1
600059A	¾" sweat	4 ¾"	9 ¼"	5 ¼"				5.1
600056A	¾" press	5 ³⁄₈"	9 ⁹⁄₁₆"	5 ⁹⁄₁₆"				5.1
600064A	1" MNPT	6 ¼"	11"	6"				7.3
600069A	1" sweat	4 ¾"	10 ¼"	5 ¼"				7.3
600066A	1" press	7"	11 ³⁄₈"	6 ³⁄₈"				7.3
600074A	1 ¼" MNPT	7 ¼"	11 ⁷⁄₈"	6 ¼"				8.2
600079A	1 ¼" sweat	5 ¾"	11 ¹⁄₈"	5 ½"				8.2
600076A	1 ¼" press	9 ¾"	13 ¹⁄₈"	7 ½"				8.2
600084A	1 ½" MNPT	9 ¹⁄₈"	14 ³⁄₈"	9 ½"				21.0
600089A	1 ½" sweat	7 ⁷⁄₈"	13 ¹⁄₈"	8 ¼"				21.0
600086A	1 ½" press	10 ¹⁄₈"	14 ⁷⁄₈"	10"				21.0
600094A	2" MNPT	9 ½"	14 ½"	7 ⁵⁄₁₆"				22.0
600099A	2" sweat	8"	13 ¹¹⁄₁₆"	6 ½"				22.0
600096A	2" press	13 ¾"	16 ⁵⁄₈"	9 ⁷⁄₁₆"				22.0

For press models,

Lay lengths: size ¾" - 5 ⁹⁄₁₆"; 1"-5 ½"; size 1 ¼" - 7 ¾"; size 1 ½" - 7 ³⁄₈"; size 2"-10 ¾".

Provide with optional stainless steel inlet port check valve assembly with a acetal plastic check valve insert and NBR o-ring, field installed. Caleffi codes NA10366 (1", 1¼"), NA10367 (1½, 2").

Provide with Modbus-to-BACnet gateway for BAS integration, code 755052.

Recommended Flow Rates (gpm/lpm)					
Size	¾"	1"	1¼"	1½"	2"
Minimum (1)	2.2 / 8.3	3.1 / 11.7	4.4 / 16.6	6.6 / 25	8.8 / 33.3
Design Flow (2)	27 / 102	58 / 220	66 / 250	93 / 352	131 / 495
Maximum (3)	43 / 172	94 / 356	107 / 405	152 / 575	215 / 814
Cv	9.7	21	24	34	47

- (1) To ensure stable operation and a $\pm 3^\circ\text{F}$ accurate temperature control Minimum flow rate is 0 gpm when recirculation flow rate is greater than or equal to the valve size minimum flow rating.
- (2) Suggested maximum flow rate for optimum modulating control (at 7.5 psid pressure drop).
- (3) Maximum recommended differential pressure is 20 psid to ensure stable operation and accurate temperature control.

CONSULT TECHNICAL BROCHURE 1086 FOR COMPLETE GUIDANCE ON SIZING AND SELECTION.

Technical specifications

Valve body

Materials:	- Body: DZR low-lead brass	Protection class:	IP 54 (wall mounting) (Class II appliance)
	- Ball: low-lead brass, chrome-plated		
	- Hydraulic seals: peroxide-cured EPDM	Mounting bracket:	DIN rail
	- Ball seats: PTFE		
Max. body pressure rating (static):	230 psi (16 bar)	Contact rating (R1, R3, R4):	5 A resistance, 2 A inductance / 24 V
Max. operating pressure:	150 psi (10 bar)	Mixing valve control:	5 A resistance, 2 A inductance / 24 V
Max. inlet temperature:	212°F (100°C)	Alarm relay (R2):	5 A resistance, 2 A inductance / 24 V
Temperature gauge scale:	30 - 210°F	Fuses:	1 (main): 80 mA
Suitable fluids:	water	Fuses:	2 (mixing valve): 1 A
Max. water hardness:	10 grains	Charge reserve:	15 days in the event of electric supply failure, with a 3 cell rechargeable 3.6 V 140 mAh buffer battery

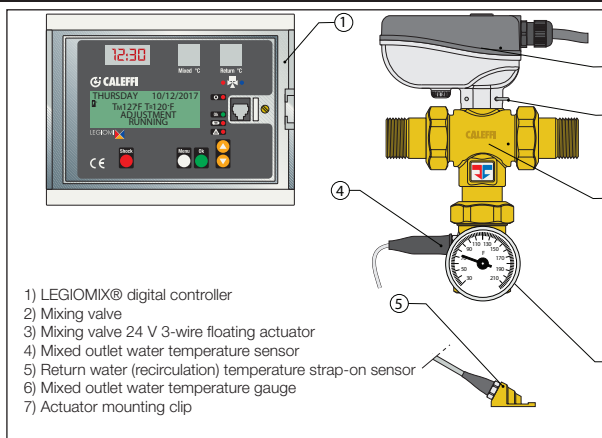
Main connections: -NPT male, sweat & press union: ¾", 1", 1¼", 1½" & 2"

Actuator, 3-wire floating fail-in-place

Electric supply:	24 VAC - 50/60 Hz	Temperature sensors	
Power consumption:	6 VA	Body material:	stainless steel
Protection cover:	self-extinguishing VO	Type of sensitive element:	NTC
Protection class:	IP 65 (NEMA 4/4X)	Working temperature range:	14 - 260°F (-10 - 125°C)
Ambient temperature range:	14 - 130°F (-10 - 55°C)	Resistance:	1000 Ohms at 77° F (25° C)
Electric supply cable length:	31½" (0.8 m)	Time constant:	2.5
Max. distance for control signal wire:		Max. distance for mixed outlet or return (recirculation) sensor:	
	500 ft (150 m) cable 2 conductor x AWG 18		500 ft (150 m) cable 2 conductor x AWG 18
	800 ft (250 m) cable 2 conductor x AWG 16		800 ft (250 m) cable 2 conductor x AWG 16

Controller, LCD user interface/display

Materials:	- Housing: self-extinguishing ABS, color white RAL 1467	Mixing valve performance	
	- Cover: self-extinguishing SAN, smoked transparent	Accuracy:	$\pm 3^\circ\text{F}$ ($\pm 2^\circ\text{C}$)
Electric supply:	24 VAC (min 21.6, max 26.0 VAC)- 50/60 Hz	Max. operating differential pressure (dynamic):	20 psi (1.4 bar)
	(50 VA Class 2 24 VAC transformer is included)	Max. ratio between inlet pressures (H/C or C/H):	2.1
Power consumption:	6.5 VA	Certifications	
Adjustment temperature range:	70 - 185°F (20 - 85°C)	1. ASSE 1017/CSA B125.3, certified by ICC-ES, file PMG-1357.	
Disinfection temperature range:	100 - 185°F (40 - 85°C)	2. NSF/ANSI 372, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction of Lead in Drinking Water Act, certified by ICC-ES, file PMG-1360.	
Ambient temperature range:	32 - 120°F (0 - 50°C)		



Package contents

- Digital controller, consisting of housing and base for electric connection
- DIN bar and mounting wall anchors
- Mixing valve with temperature gauge
- 24 VAC 3-wire floating Actuator
- Mixed outlet water temperature sensor
- Return water temperature strap-on sensor
- Spare fuses
- Installation and commissioning manual
- 24 VAC transformer

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Job name _____
 Job location _____
 Engineer _____
 Mechanical contractor _____
 Contractor's P.O. No. _____
 Representative _____

Size _____
 Quantity _____
 Approval _____
 Service _____
 Tag No. _____
 Notes _____

LEGIOMIX® Electronic mixing valve, ANSI 150 Flanged



6000 series

Submittal Data 03603 NA — Issue Date 04/2020

Application

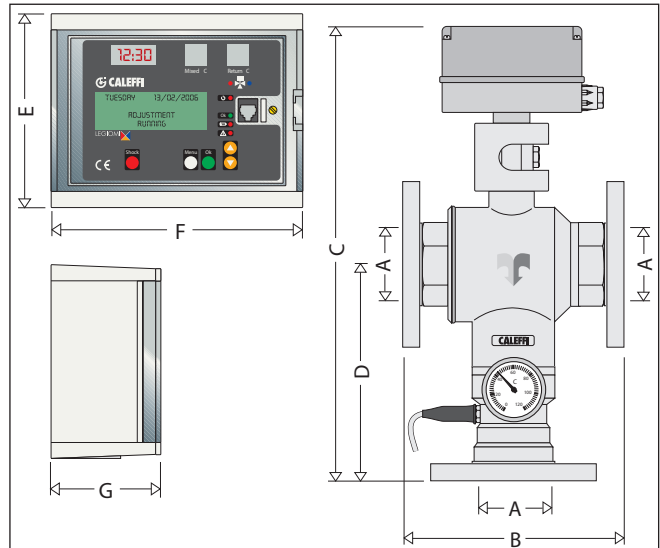
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Typical Specification

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Dimensions



Code	A	B	C	D	E	F	G	Wt (lb)
600060A	2½" FLG	9 ¼"	23 11/16"	10 13/16"	5½"	7"	4"	30
600080A	3" FLG	9 ¼"	23 11/16"	10 13/16"	5½"	7"	4"	42

Recommended Flow rates (gpm/lpm)

Size	2½"	3"
Minimum (1)	17.0 / 64	22.0 / 83.3
Design Flow (2)	288 / 1,090	329 / 1,245
Maximum (3)	470 / 1,780	537 / 2,033
Cv	105	120

- (1) To ensure stable operation and a ± 3° F accurate temperature control Minimum flow rate is 0 gpm when recirculation flow rate is greater than or equal to the valve size minimum flow rating.
- (2) Suggested maximum flow rate for optimum modulating control (at 7.5 psid pressure drop).
- (3) Maximum recommended differential pressure is 20 psid to ensure stable operation and accurate temperature control.

CONSULT TECHNICAL BROCHURE 1086 FOR COMPLETE GUIDANCE ON SIZING AND SELECTION.

Technical specifications

Valve body

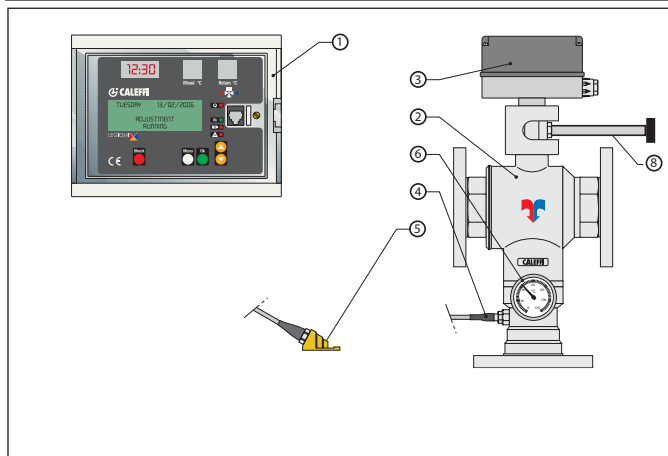
Materials:	- Body: DZR low-lead brass	Protection class:	IP 54 (wall mounting) (Class II appliance)
	- Ball: 316 stainless steel		
	- Slip-on flanges for sizes 2½" & 3": galvanized carbon steel	Mounting bracket:	DIN rail
	- Hydraulic seals: peroxide-cured EPDM	Contact rating (R1, R3, R4):	5 A resistance, 2 A inductance / 24 V
	- Ball seats: PTFE	Mixing valve control:	5 A resistance, 2 A inductance / 24 V
Max. body pressure rating (static):	230 psi (16 bar)	Alarm relay (R2):	5 A resistance, 2 A inductance / 24 V
Max. operating pressure:	150 psi (10 bar)	Fuses:	1 (main): 80 mA
Max. inlet temperature:	212°F (100°C)	Fuses:	2 (mixing valve): 1 A
Temperature gauge scale:	30 - 210°F	Charge reserve:	15 days in the event of electric supply failure, with a 3 cell rechargeable 3.6 V 140 mAh buffer battery
Suitable fluids:	water	Battery recharging time:	72 hours
Max. water hardness:	10 grains	Approvals:	CE, FCC part 15
Main connections:	-ANSI B16.5 150 CLASS RF 2½" & 3"		

Actuator, 3-wire floating fail-in-place

Electric supply:	24 VAC - 50/60 Hz	Temperature sensors	
Power consumption:	6 VA	Body material:	stainless steel
Protection cover:	self-extinguishing VO	Type of sensitive element:	NTC
Protection class:	IP 65 (NEMA 4/4X)	Working temperature range:	14 - 260°F (-10 - 125°C)
Ambient temperature range:	14 - 130°F (-10 - 55°C)	Resistance:	1000 Ohms at 77° F (25° C)
Electric supply cable length:	31½" (0.8 m)	Time constant:	2.5
Max. distance for control signal wire:		Max. distance for mixed outlet or return (recirculation) sensor:	
	500 ft (150 m) cable 2 conductor x AWG 18		500 ft (150 m) cable 2 conductor x AWG 18
	800 ft (250 m) cable 2 conductor x AWG 16		800 ft (250 m) cable 2 conductor x AWG 16

Controller, LCD user interface/display

Materials:	- Housing: self-extinguishing ABS, color white RAL 1467	Mixing valve performance	
	- Cover: self-extinguishing SAN, smoked transparent	Accuracy:	± 3° F (± 2° C)
Electric supply:	24 VAC (min 21.6, max 26.0 VAC)- 50/60 Hz	Max. operating differential pressure (dynamic):	20 psi (1.4 bar)
	(50 VA Class 2 24 VAC transformer is included)	Max. ratio between inlet pressures (H/C or C/H):	2.1
Power consumption:	6.5 VA		
Adjustment temperature range:	70 - 185°F (20 - 85°C)	Certifications	
Disinfection temperature range:	100 - 185°F (40 - 85°C)	1. ASSE 1017/CSA B125.3, certified by ICC-ES, file PMG-1357.	
Ambient temperature range:	32 - 120°F (0 - 50°C)	2. NSF/ANSI 372, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction of Lead in Drinking Water Act, certified by ICC-ES, file PMG-1360.	



1. LEGIOMIX digital controller
2. Mixing valve
3. Mixing valve 24V 3-wire actuator
4. Mixed outlet water temperature sensor
5. Return water (recirculation) temperature strap-on sensor
6. Mixed outlet water temperature gauge
8. Removable operating lever

Package contents

- Digital controller, consisting of housing and base for electric connection
- DIN bar and mounting wall anchors
- Mixing valve with temperature gauge
- 24 VAC 3-wire floating Actuator
- Mixed outlet water temperature sensor
- Return water temperature strap-on sensor
- Spare fuses
- Installation and commissioning manual
- 24 VAC transformer

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Job name	_____	Size	_____
Job location	_____	Quantity	_____
Engineer	_____	Approval	_____
Mechanical contractor	_____	Service	_____
Contractor's P.O. No.	_____	Tag No.	_____
Representative	_____	Notes	_____

LEGIOMIX[®]

Electronic mixing valve, sizing/selection



Submittal Data 03604 NA — Issue Date 05/2020

LEGIOMIX Valve Sizing & Selection

1) Obtain the maximum GPM (demand) of domestic hot water from project documentation.

2) Select valve size which has GPM "design" (at 7.5 PSID pressure drop) that is = or > than the project maximum GPM. 7.5 PSID is the suggested maximum pressure drop across the valve for optimum modulating control. Occasional flow rate greater than the "design" value, even flow rates at pressure drops up to 20 PSID, are acceptable for intermittent flow but should not be used as the basis for valve sizing and selection.

3) The "FPS in xx" pipe" velocity values are shown for reference only. Different types of pipe can handle different velocities. For example, the Uniform Plumbing Code velocity guideline for 140 °F water in copper pipe is 5 FPS which equates to 28.6 GPM in a 1-1/2" pipe. A 1" LEGIOMIX valve would be the best choice for that flow rate and pipe type.

Valve Specifications		Valve Size	GPM @ PSID across valve velocity (FPS) by pipe size								Pipe size	GPM by pipe size to comply with UPC	GPM per UPC A 6.1 ⁴
			PSID across valve	1	3	5	7.5	10	15	20		GPM @ 5 FPS (hot water up to 140°F)	GPM @ 10 FPS
Cv	9.7	3/4"	GPM @ above PSID	10	17	22	27	31	38	43	3/4"	8.1	16
GPM min 1	2.2		FPS in 3/4" pipe	6	10	13	16	19	23	27	1"	14	27
GPM design 2	27		FPS in 1" pipe	4	6	8	10	11	14	16	1 1/4"	20	41
GPM max 3	43		FPS in 1-1/4" pipe	2	4	5	7	8	9	11	1 1/2"	29	57
Cv	21	1"	GPM @ above PSID	21	36	47	58	66	81	94	2"	49	99
GPM min 1	3.1		FPS in 1" pipe	8	13	17	21	24	30	34	2-1/2"	76	153
GPM design 2	58		FPS in 1-1/4" pipe	5	9	11	14	16	20	23	3"	109	218
GPM max 3	94		FPS in 1-1/2" pipe	4	6	8	10	12	14	16	4"	190	380
Cv	24	1 1/4"	GPM @ above PSID	24	42	54	66	76	93	107	5"	295	590
GPM min 1	4.4		FPS 1-1/4" pipe	6	10	13	16	19	23	26	6"	424	848
GPM design 2	66		FPS 1-1/2" pipe	4	7	9	12	13	16	19			
GPM max 3	107		FPS 2" pipe	2	4	5	7	8	9	11			
Cv	34	1 1/2"	GPM @ above PSID	34	59	76	93	108	132	152			
GPM min 1	6.6		FPS in 1-1/2" pipe	6	10	13	16	19	23	27			
GPM design 2	93		FPS in 2" pipe	3	6	8	9	11	13	15			
GPM max 3	152		FPS in 2-1/2" pipe	2	4	5	6	7	9	10			
Cv	48	2"	GPM @ above PSID	48	83	107	131	152	186	215			
GPM min 1	8.8		FPS in 2" pipe	5	8	11	13	15	19	22			
GPM design 2	131		FPS in 2-1/2" pipe	3	5	7	9	10	12	14			
GPM max 3	215		FPS in 3" pipe	2	4	5	6	7	9	10			
Cv	105	2-1/2"	GPM @ above PSID	105	182	235	288	332	407	470			
GPM min 1	17		FPS in 2-1/2" pipe	7	12	15	19	22	27	31			
GPM design 2	288		FPS in 3" pipe	5	8	11	13	15	19	22			
GPM max 3	470		FPS in 4" pipe	3	5	6	8	9	11	12			
Cv	120	3"	GPM @ above PSID	120	208	268	329	379	465	537			
GPM min 1	22		FPS in 3" pipe	6	10	12	15	17	21	25			
GPM design 2	329		FPS in 4" pipe	3	5	7	9	10	12	14			
GPM max 3	537		FPS in 5" pipe	2	4	5	6	6	8	9			

Footnotes:

- 1) GPM minimum for guaranteed stable control; size the recirculation pump to deliver at least this flow rate.
- 2) GPM at 7.5 PSID, suggested maximum flow for optimum modulating control
- 3) GPM maximum @ 20 PSID; max short term pressure drop and flow for the valve
- 4) GPM per UPC section A 6.1 is 10 fps. Applicable using stainless steel or non-metallic pipe (i.e. Uponor recommends 12 ft/sec. maximum velocity for hot and cold domestic water systems using Uponor AquaPEX pipe and ProPEX fittings).

Notes:

Because of the high flow capacity of the LEGIOMIX ball valve, it is not uncommon for the valve to be installed in piping that is one or two sizes larger than the valve body.

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Job name	_____	Size	_____
Job location	_____	Quantity	_____
Engineer	_____	Approval	_____
Mechanical contractor	_____	Service	_____
Contractor's P.O. No.	_____	Tag No.	_____
Representative	_____	Notes	_____

ThermoSetter™ Recirculation thermal balancing valve for disinfection



1162, 1163 Series 1/2" - 3/4"

Submittal Data 03301.01 NA — Issue Date 4/2019

Application

The ThermoSetter™ adjustable thermal balancing valve is used for automatic balancing of recirculation loops in domestic hot water systems, to speed hot water delivery, reduce water waste and save energy. The internal thermostatic balancing cartridge automatically modulates flow to ensure a constant temperature in the recirculation piping system. The 116 Series has an adjustment knob with 95°F to 140°F (35°C to 60°C) temperature scale indication. An integral dry-well holds a slide-in temperature gauge for local indication, or a sensor for remote temperature sensing. The optional check valve protects against circuit thermo-syphoning.

The 1162xx Series is available with a "disinfection" by-pass cartridge, for use in systems which are designed to perform thermal disinfection for prevention of Legionella. When the disinfection cartridge senses 160°F (70°C) water, indicating disinfection control mode, it automatically opens a by-pass flow path to allow sufficient flow for disinfection to occur. When the temperature drops back to normal range, the disinfection by-pass cartridge closes to return flow control to the balancing cartridge.

The 1163xx Series is also available with a "disinfection" valve that is controlled by a 24V spring return thermo-electric actuator, rather than thermostatically, thus allowing thermal disinfection mode to be controlled remotely by an automation system.

Typical Specification

Furnish and install on the plans and describing herein, a Caleffi recirculation thermal balancing valve, as manufactured by Caleffi. Each balancing valve must be designed with a DZR low-lead brass body certified to NSF/ANSI 372 by ICC-ES, file PMG-1360. Certified to NSF/ANSI 61 (180°F/82°C Commercial Hot) by ICC-ES, file PMG-1512. Stainless steel & copper adjustable cartridge; peroxide-cured EPDM seals, ABS adjustment knob. The balancing valve must include 1/2" or 3/4" NPT female connections. Each valve has 230 psi (16 bar) maximum working pressure and 95-140°F (35-60°C) adjustable temperature range. Equipped with outlet temperature gauge with 30-180°F (0-80°C) temperature scale, optional check valve, and optional pre-formed insulation shell. Each valve shall be Caleffi model 1161 or approved equal. (See product instructions for specific installation information.)

Technical specifications



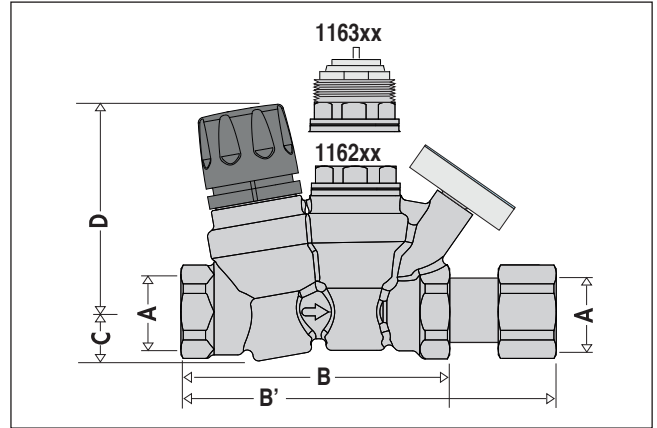
Materials

Body: DZR low-lead brass
 Adjustable cartridge: stainless steel & copper
 Springs: stainless steel AISI 302 (EN 10270-3)
 Hydraulic seals: peroxide-cured EPDM
 Adjustment knob: ABS

Performance:

Suitable fluid: water
 Max. working pressure: 230 psi (16 bar)
 Max. differential pressure: 15 psi (1 bar)
 Max. inlet temperature: 195°F (90°C)
 Adjustment temperature range: 95-140°F (35-60°C)
 Flow Cv (Kv) max: 2.1 (1.8)
 Flow Cv (Kv) min: 0.23 (0.2)
 Flow Cv (Kv) design: 0.52 (0.45)

Dimensions



Code	A	B	B**	C	D	Wt (lb/kg)
116240A(C)	1/2" NPT F	4"	5 7/16"	3/4"	3"	1.7 / 0.75
116250A(C)	3/4" NPT F	4"	5 5/8"	3/4"	3"	1.5 / 0.70
116340A(C)	1/2" NPT F	4"	5 7/16"	3/4"	3"	1.7 / 0.75
116350A(C)	3/4" NPT F	4"	5 5/8"	3/4"	3"	1.5 / 0.70

*Models with check valve tail-piece (C) end-to-end dimension is B'.
 **with integral outlet temperature gauge.

Disinfection performance:

Disinfection temperature: 160°F (70°C)
 Closing temperature: 170°F (75°C)
 Flow Cv (Kv) disinfection: 1.2 (1.0)

Connections:

Main connections: 1/2" NPT female
 3/4" NPT female
 Temperature gauge/sensor dry-well: Ø 10 mm metric

Temperature gauge code 116010

Scale: 30 - 180°F (0-80°C)
 Diameter: 1 1/2" (40 mm)
 Stem diameter: 0.35" (9 mm)

Technical specifications of insulation

Materials: closed cell expanded PE-X
 Thickness: 1/2 inch (13 mm)
 Density: -internal part: 1.9 lb/ft³ (30 kg/m³)
 -external part: 5.0 lb/ft³ (80 kg/m³)
 Thermal conductivity (DIN52612):
 - at 32°F (0°C): 0.82 BTU · in/hr · ft² · °F (0.0345 W/(m · K))
 - at 105°F (40°C): 0.94 BTU · in/hr · ft² · °F (0.0398 W/(m · K))
 Coefficient of resistance to the diffusion of vapor: > 1,300
 Working temperature range: 32-212°F (0-100°C)
 Flammability (ASTM D 635): Class VO

Certifications:

- Complies with codes IPC, IRC, UPC and NPC. ICC-ES certified to NSF/ANSI 61 (180°F/82°C Commercial Hot), file PMG-1512.
- NSF/ANSI 372, low lead certified by ICC-ES, file PMG-1360.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system

Job name _____
 Job location _____
 Engineer _____
 Mechanical contractor _____
 Contractor's P.O. No. _____
 Representative _____

Size _____
 Quantity _____
 Approval _____
 Service _____
 Tag No. _____
 Notes _____

SinkMixer™ Scald Protection

Thermostatic mixing valve



Submittal Data 03706 NA — Issue Date 03/2020

Application

The Caleffi SinkMixer™ provides water at a safe and usable temperature in situations where the control of the temperature of the water discharging from a terminal fixture is of the utmost importance, i.e. within hospitals, schools, nursing homes, etc. The SinkMixer is used in under sink and under counter applications where the user must be protected from the danger of scalding caused by hot water. The valve is designed to prevent the flow of water discharging from the mixed water outlet in the event of the failure of hot or cold supply. The compact design provided with mounting bracket allows for easy installation. The cold water outlet to the fixture eliminates the need for additional piping and tee used with three-port mixing valves. For single-pipe fixtures (tempered water only), code 521201AP includes a plug for the valve cold outlet port. The valve is complete with check valves on the hot and cold inlets and meets certification requirements for the Low Lead Plumbing Laws by ICC-ES, ASSE 1070 listed (temperature cannot exceed 120°F).

Typical Specification

Furnish and install on the plans described herein, a SinkMixer™ scald protection point of use four port thermostatic mixing valve as manufactured by Caleffi. Each mixing valve must be designed with a forged low-lead brass body, AISI 302 stainless steel spring, AISI 304 stainless steel hot inlet strainers, seals in peroxide-cured EPDM, and polysulphone shutter. Each valve must also be designed for ±3°F (±2°C) temperature stability with a tamper proof setting lock to lock the temperature at the set value. Provided with inlet port check valves and strainers. The valve shall be ASSE 1070 approved for point of use installation. Forged low-lead brass body (<0.25% Lead content) shall be certified by ICC-ES, file 1360. Meets requirements of ANSI/NSF 372. Each valve shall be Caleffi model 521201A or approved equal. Model 521202AP includes plug/nut for cold water outlet port. (See product instructions for specific installation information.)

Use

ASSE 1070



The Caleffi SinkMixer anti-scald thermostatic mixing valve is intended for use in under sink and under counter applications in accordance with installation rules and indications specified in ASSE 1070 standards. The SinkMixer is used to prevent accidental scalding with the outlet water temperature properly adjusted using a thermometer at the faucet to measure the desired temperature.

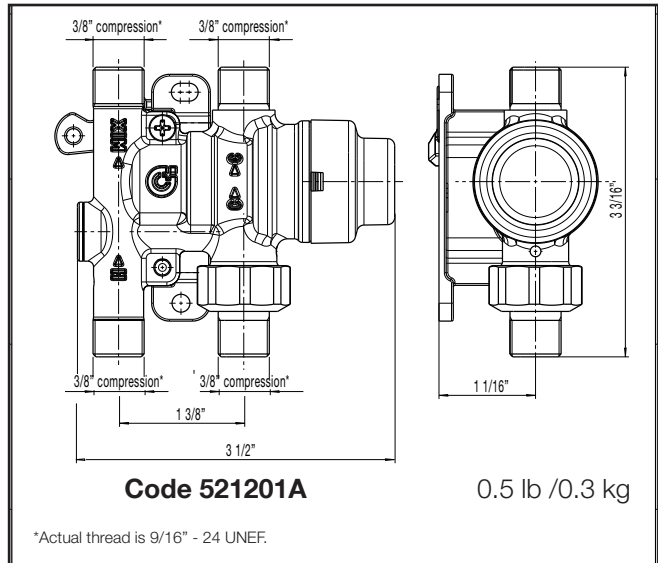
Technical specifications

Materials:

Valve body, regulating spindle, spring holder, cold inlet union nut: forged low-lead brass (< 0.25% lead content)
 Internal shutter: polysulfone
 Hot inlet strainer: AISI 304 stainless steel
 Spring: AISI 302 stainless steel
 Seals: Peroxide-cured EPDM
 Cover: ABS white
 Mounting bracket and adjustment key: Polyamide Nylon

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Dimensions



Performance

Temperature adjustment range: 95–120°F (35–50°C)
 Temperature set: must be commissioned on site to achieve desired temperature
 Temperature stability: ±3°F (±2°C)
 Cold inlet temperature: Minimum 39°F (4°C); Maximum 85°F (29°C)
 Factory Setting: 113°F (45°C)
 Hot inlet temperature: Minimum 120°F (49°C); Maximum 195°F (90°C)
 Maximum operating differential pressure:
 Static: 150 psi (10 bar); Dynamic: 70 psi (5 bar)
 Minimum operating differential pressure (dynamic): 1.5 psi (0.1 bar)
 Maximum unbalanced dynamic supply (hot/cold or cold/hot): 2:1
 Minimum temperature differential between hot water inlet and mixed water outlet to ensure thermal shutoff function: 18°F (10°C)
 Minimum temperature differential between mixed water outlet and cold water inlet to ensure stable operation: 9°F (5°C)
 Flow coefficient: Cv =0.52 (Kv=0.45)
 Minimum flow rate for optimum operation: 0.35 gpm (1.3 l/min)
 Maximum flow rate for optimum operation: 2.3 gpm (8.5 l/min)

Connections

Main connections: 3/8" compression

Certifications

- ASSE 1070/CSA B125.3-2012, certified by ICC-ES, file PMG-1358.
- NSF/ANSI 372, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction in Drinking Water Act, Vermont Act 193 - The Lead in Plumbing Supplies Law and Maryland's Lead Free Law HB.372, certified by ICC-ES, file PMG-1360.
- Complies with codes IPC, IRC, UPC and NPC.

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