LEGIOMIX®evo

Digital mixing valve solution

6003 series

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Application

The 6003 Series LEGIOMIX®evo digital mixing valve is designed for centralized domestic hot water systems, ensuring consistent mixed water temperature despite fluctuations in inlet temperature, pressure, or flow rate. A 3-way mixing ball valve is controlled by an electric actuator, available in 0 - 10 V proportional or 3-point floating control with fail-safe or fail-in-place options. The controller drives the actuator based off the mixed outlet temperature set point and feedback from accessory temperature sensors. Controller relays manage alarms and external devices like high-temperature shutoff valves and recirculation pumps. Key features include precise temperature control across various flow rates, minimal pressure drop, automatic self-cleaning to prevent scale, and a user friendly digital interface with data logging and status indication. The controller has an LCD touch interface and has automatic thermal disinfection programs to control Legionella. Parameters are updated and logged periodically, and the controller can be configured via device touchscreen or remotely via computer. The LEGIOMIXevo supports standalone operation, control via Modbus or BACnet protocols for integration with Building Management Systems (BMS) or remote operation through the Caleffi Cloud®. All setting parameters can be set through the controller interface or via the Caleffi Cloud dashboard. The LEGIOMIXevo controller is backwards compatible for existing LEGIOMIX installations.

Typical Specification

Furnish and install on the plans and described herein, a Caleffi 6003 LEGIOMIXevo digital mixing valve with connectivity as provided by Caleffi. Digital mixing valve shall ensure consistent mixed water temperature for centralized domestic hot water systems despite fluctuations in inlet temperature, pressure, or flow rate. Valve shall feature 3-way mixing ball valve controlled by electric actuator with 0-10V proportional or 3-point floating control with fail-safe or fail-in-place options. Valve shall feature DZR low-lead brass body, AISI 316 stainless steel ball, peroxide-cured EPDM hydraulic O-ring seals for sizes ¾" through 2", NBR seals for sizes 2½" and 3", and PTFE ball seats. Controller shall feature full-color touch screen interface with LCD capacitive display and shall control actuator based on mixed outlet temperature set point with feedback from temperature sensors. Valve shall operate at maximum working pressure of 150 psi and maximum inlet temperature of 212°F. Temperature adjustment range shall be 70°F to 185°F with disinfection temperature range of 100°F to 185°F. Valve accuracy shall be ±3°F. Controller shall provide automatic thermal disinfection programs for Legionella control with data logging capability. Controller shall support standalone operation and integration with Building Management Systems via Modbus or BACnet protocols. Controller shall support remote operation through Caleffi Cloud via ethernet connectivity. Main connections shall be NPT male, sweat and press union for sizes ¾" through 2" and ANSI B16.5 150 CLASS RF for sizes 2½" and 3". Electric supply shall be 24V AC ±10% 50/60Hz with 115/24 VAC transformer included. Controller shall have IP54 protection rating. Digital mixing valve shall be listed and certified to ASSE 1017 and comply with CSA B125.3. Valve shall meet NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372 standards and comply with UPC, IPC, IRC, and NPC requirements. Each digital mixing valve shall be a Caleffi model 6003 LEGIOMIXevo series or approved equal. (See product instructions for specific installation information.)

Certifications

1017

LOW LEAD

NSF/ANSI/CAN 61
NSF/ANSI/CAN 372

Technical specifications

Materials

- Valve body:	DZR low-lead* brass (CW724R)
- Ball:	stainless steel (AISI 316)
- Slip-on flanges (2½" & 3"):	galvanized carbon steel
- Seals:	
- ¾" - 2":	peroxide-cured EPDM
- 2½" & 3":	NBR
- Ball seats:	PTFE

* Meets the "lead free" requirement of Section 1417 of the Safe Drinking Water Act (SDWA). This product has a weighted average lead content of less than 0.25% for its wetted surfaces contacted with consumable water.

Valve specifications

Accuracy:	± 3 °F (± 2 °C)
Adjustment temperature range:	70 - 185 °F (20 - 85 °C)
Disinfection temperature range:	100 - 185 °F (40 - 85 °C)
Max operating differential pressure (dynamic):	70 psid (5 bar)
Max. ratio between inlet pressures (H/C or C/H):	2:1
Max. pressure rating:	230 psi (16 bar)
Max. working pressure:	150 psi (10 bar)
Max. differential pressure:	70 psi (5 bar)
Max. inlet temperature:	212°F (100 °C)
Temperature gauge scale:	32 - 176 °F (0 - 80 °C)
Suitable fluids:	water
Max. water hardness:	10 grains

Controller specifications

Electrical supply:	24 V~(AC) ± 10% 50/60 Hz (115/24 VAC transformer included)
Display:	touch screen, capacitive color, 4.3"
Housing:	self-extinguishing A EN 60721-3-3 Cl.
Power consumption	
- Maximum:	9.0 VA
- Average:	5.0 VA
- Stand by:	3.5 VA
Ambient operating temperature:	32 - 120 °F (0 - 50 °C)
Ambient operating humidity:	max. 95%
Protection class:	IP 54
Directive conformance:	FCC, IC, CE, UKCA

Actuator specifications for ¾" - 2" sizes

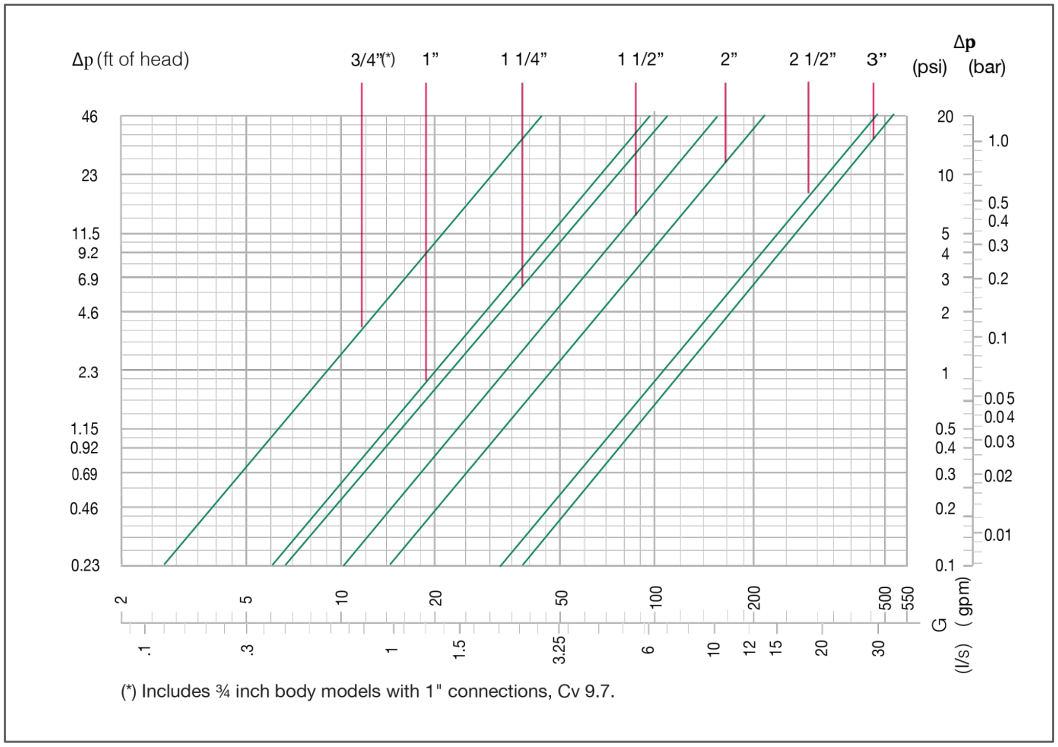
Fail-safe function	
- Electrical supply	24 V ~/= (AC/DC) ± 15 % - 50/60 Hz supply from the controller
- Control signal	0 - 10 V
- Power consumption	6.0 VA
- Cable length	32" (0.8 m)
Fail-in-place function	
- Electrical supply	24 V ~/= (AC/DC) ± 15 % - 50/60 Hz supply from the controller
- Control signal	0 - 10 V
- Power consumption	6.0 VA
- Cable length	32" (0.8 m)

Actuator specifications for 2½" & 3" sizes

Fail-safe and fail-in-place function	
- Electrical supply	24 V ~/= (AC/DC) ± 15 % - 50/60 Hz supply from the controller
- Control signal	0 - 10 V
- Power consumption	6.0 VA
- Cable length	75" (1.9 m)

***Consult Caleffi instruction manual H0013290 for the complete comprehensive list of technical specifications.**

Hydraulic Characteristics



Flow Capacity

	Recommended Flow Rates (gpm/lpm)						
Size	¾"	1"	1¼"	1½"	2"	2½"	3"
Minimum (1)	2.2 / 8.3	3.1 / 11.7	4.4 / 16.6	6.6 / 25	8.8 / 33.3	17.0 / 64	22.0 / 83.3
Design Flow (2)	27 / 102	58 / 220	66 / 250	93 / 352	131 / 495	288 / 1,090	329 / 1,245
Maximum (3)	43 / 172	94 / 356	107 / 405	152 / 575	215 / 814	470 / 1,780	537 / 2,033
Cv	9.7	21	24	34	47	105	120

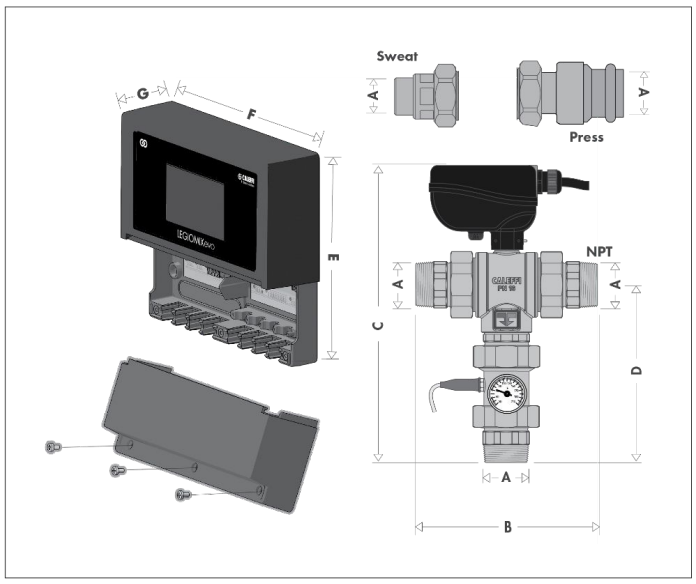
CONSULT TECHNICAL BROCHURE 1424 FOR COMPLETE GUIDANCE ON SIZING AND SELECTION.

(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).

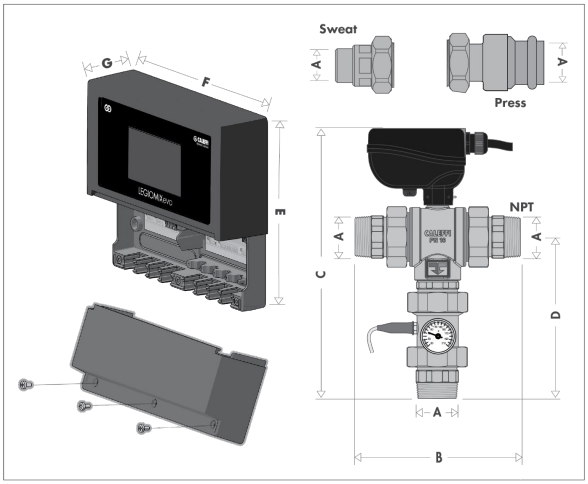
(3) Maximum recommended differential pressure is 20 psid to ensure stable operation and accurate temperature control.

Dimensions



Code (*)	A	B	C	D	Lay length	E	F	G	Wt (lb)
600354A, AF	¾" MNPT	5"	9 3/8"	5 3/8"	--				5.1
600359A, AF	¾" sweat	4 ¾"	9 ¼"	5 ¼"	--				5.1
600356A, AF	¾" press	5 3/8"	9 9/16"	5 9/16"	4 1/16"				5.1
600364A 001** **6003**64AF 001**	1" MNPT	5 5/16"	9 13/16"	5 13/16"	--				5.3
600369A 001** **6003**69AF 001**	1" sweat	4 7/8"	9 9/32"	5 9/32"	--				5.3
600366A 001** **6003**66A 001**	1" press	6 7/8"	10 ¼"	6 ¼"	4 13/16"				5.2
600364A, AF	1" MNPT	6 ¼"	11"	6"	--				7.3
600369A, AF	1" sweat	4 ¾"	10 ¼"	5 ¼"	--	8 3/16"	9 11/16"	2 11/32"	7.3
600366A, AF	1" press	7"	11 3/8"	6 3/8"	5 ½"				7.3
600374A, AF	1¼" MNPT	7 ¼"	11 7/8"	6 ¼"	--				8.2
600379A, AF	1¼" sweat		11 1/8"	5 ½"	--				8.2
600376A, AF	1¼" press	9 ¾"	13 1/8"	7 ½"	7 ¾"				8.2
600384A, AF	1½" MNPT	9 1/8"	14 3/8"	9 ½"	--				21.0
600389A, AF	1½" sweat	7 7/8"	13 1/8"	8 ¼"	--				21.0
600386A, AF	1½" press	10 1/8"	14 7/8"	10"	7 3/8"				21.0
600394A, AF	2" MNPT	9 ½"	14 ½"	7 5/16"	--				22.0
600399A, AF	2" sweat	8"	13 11/16"	6 ½"	--				22.0
600396A, AF	2" press	13 ¾"	16 5/8"	9 7/16"	10 ¾"				22.0

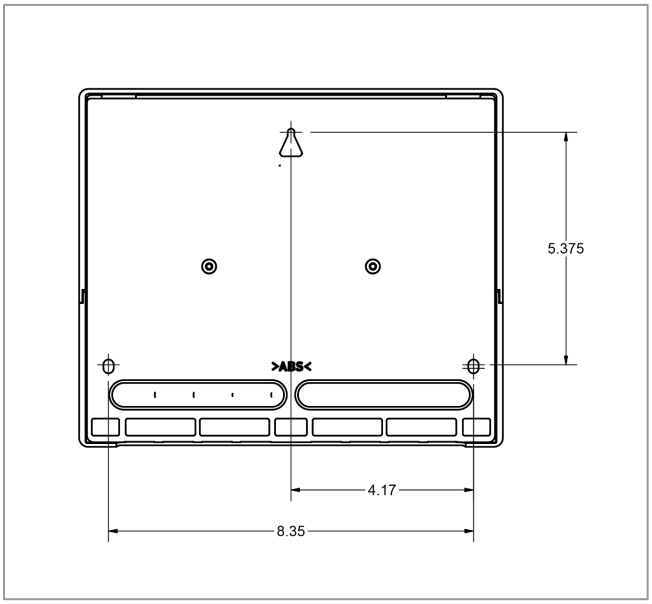
*A corresponds to 3 point floating control fail-in-place actuator; AF corresponds to 0-10 V fail-safe actuator.
**These codes are ¾" bodies (Cv=9.7) with 1" end connections as listed.



Code (*)	A	B	C	D	E	F	G	Wt (lb)
600360A, AF	2½" FLG	9¼"	22 5/16"	9 7/16"	5 ½"	7"	2 11/32"	30
600380A, AF	3" FLG	9¼"	22 5/16"	9 7/16"	5 ½"			42

*A is 0-10V fail-in-place actuator; AF is 0-10V fail-safe actuator.

Controller mounting locations



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

Caleffi North America, Inc. 3883 W. Milwaukee Road / Milwaukee, WI 53208
Tel: 414-238-2360 / Fax: 414-238-2366 / www.caleffi.com