

# LEGIOMIX®evo Station

## Digital mixing valve

### 6003AFS series

Submittal Data 02177-26NA — Issue Date 09/2026



#### Application

The 6003 Series LEGIOMIX®evo digital mixing valve is used in centralized domestic hot water systems. 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 LEGIOMIXevo provides precise temperature control across variable flow rates, minimal pressure drop with a 3-way ball valve control element, automatic self-cleaning to prevent scale formation, and an easy-to-use digital touchscreen interface with localized data logging, real-time status indication, and alarming. The LEGIOMIXevo digital mixing valve is furnished with a controller with an LCD touch interface that provides automated thermal disinfection programs to mitigate Legionella growth. The controller is configurable locally via the device touchscreen or remotely via computer, BMS (Modbus or BACnet), or the Caleffi Cloud® dashboard. Depending on the system requirements, temperature levels and operation times can be programmed as desired. The controller is backwards compatible for existing LEGIOMIX installations.

#### Typical Specification

Packaged electronic mixing valve station designed for domestic hot water temperature control, thermal disinfection, and continuous recirculation. System shall consist of an epoxy-painted steel strut frame, Type L copper piping, low-lead brass ball isolation valves, and stainless steel inline check valves with copper connections available in 1", 1¼", 1½", 2", 2½", or 3" sizes. The mixing valve body shall be constructed of dezincification-resistant (DZR) low-lead brass conforming to EN 12165 CW724R, featuring a 316 stainless steel ball, PTFE ball seats, and peroxide-cured EPDM hydraulic seals, meeting NSF/ANSI/CAN 372 lead-free criteria (<0.25% wetted lead content). Dynamic performance shall maintain ±3°F (±2°C) outlet temperature accuracy with up to a 2:1 inlet pressure differential, a maximum body pressure of 230 psi (16 bar), a maximum operating pressure of 150 psi (10 bar), and a maximum differential dynamic pressure of 70 psi (5 bar). Valve positioning is driven by an IP65-rated, multi-position motorized actuator delivering 11 ft-lbs (15 Nm) dynamic torque with an internal fail-safe feature that automatically closes the hot water inlet port during power loss. The station shall be managed by an IP54-rated electronic controller with a 4.3" capacitive color touchscreen interface operating on 24 VAC power (115/24 VAC transformer included; 15 VA total max system draw) with a 15-day backup battery reserve. System control includes programmable temperature settings from 70°F to 185°F (20°C to 85°C), thermal disinfection cycles from 100°F to 185°F (40°C to 85°C), and stainless steel NTC temperature sensors for mixed outlet, recirculation return, and storage tank monitoring. Integrated inline recirculation pumps shall be rated for 26 gpm at 42 ft head (1" stations) or 50 gpm at 59 ft head (1¼" through 3" stations). Complete assembly shall be certified to ASSE 1017, CSA B125.3, NSF/ANSI/CAN 61, and listed by IAPMO R&T for compliance with UPC, IPC, IRC, and NPC plumbing codes.

#### Certifications



#### Technical specifications

##### System specifications

Power supply: 24 V (AC) ± 10% 50/60 Hz  
(115/24 VAC transformer included in package)

Average power consumption: 5 VA  
Stand-by power consumption: 3.5 VA

Max. power consumption:  
• Controller: 9 VA  
• Actuator: 6 VA  
• Total: 15 VA

Ambient temperature:

- Operation: 32 - 120 °F (0 - 50 °C) EN 60721-3-3 Cl. 3K4, max. humidity 95%
- Transportation: -20 - 160 °F (-30 - 70 °C) EN 60721-3-2 Cl. 2K3, max. humidity 95%
- Storage: -5 - 160 °F (-20 - 70 °C) EN 60721-3-1 Cl. 1K2, max. humidity 95%

Adjustment temperature range: 70 - 185 °F (20 - 85 °C)

Disinfection temperature range: 100 - 185 °F (40 - 85 °C)

Charge reserve: 15 days in the event of electric supply failure with a rechargeable backup button battery

Battery recharging time: 12 h

Cable for connection to the power supply:  
Insulated cable equivalent or greater than SJOOOW, 16 - 18 AWG

##### Station components

Frame: epoxy painted steel uni-strut  
Pipes: copper type L  
Ball valves: low-lead brass  
Check valves: stainless steel  
Main connections: copper 1", 1¼", 1½", 2", 2½" and 3"

##### Mixing valve body

Materials\*:

- Body: DZR low-lead brass, EN 12165 CW724R
- Ball: AISI 316 stainless steel
- Hydraulic seals: peroxide-cured EPDM
- 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 by consumable water.

Max. body pressure rating: 230 psi (16 bar)

Max. operating pressure: 150 psi (10 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

##### Mixing valve performance

Accuracy: ± 3° F (± 2° C)

Max. operating differential pressure (dynamic): 70 psi (5 bar)

Max. ratio between inlet pressures (H/C or C/H): 2:1

##### Mixing valve certifications

- ASSE 1017, certified and listed by ASSE.
- NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372, US and Canadian Low-Lead and Lead-Free materials contents laws for drinking water system components. Certified by ICC-ES.
- CSA B125.3, UPC, IPC, IRC and NPC compliance for use in accordance with U.S. and Canadian plumbing codes. Certified and listed by IAPMO R&T.

##### Mixed outlet and recirculation return temperature sensors\*

Body material: stainless steel

Sensor type: NTC

Working temperature range: 14 - 255 °F (-10 - 125 °C)

Resistance: 10kΩ at 75 °F (25 °C)

Cable length: 39" (1 m)

### Water storage temperature sensor\*

Body material: stainless steel  
Sensor type: NTC  
Size: 6 mm  
Working temperature range: -13 - 230 °F (-25 - 110 °C)  
Resistance: 100kΩ at 75 °F (25 °C)  
Cable length: 75"

### Actuator with fail-safe\*\* function

Power supply: 24V (AC/DC) ± 15% 50/60 Hz from controller  
Control signal: 0 - 10 V  
Power consumption: 6 VA  
Ambient temperature:

- Operation: 32 - 130 °F (0 - 55 °C) EN 60721-3-3 Cl. 3K4, max. humidity 95%
- Transportation: -22 - 160 °F (-30 - 70 °C) EN 60721-3-2 Cl. 2K3, max. humidity 95%
- Storage: -4 - 160 °F (-20 - 70 °C) EN 60721-3-1 Cl. 1K2, max. humidity 95%

Supply cable length: 32" (0.8m)

\*\*The fail-safe function allows the automatic closure of the hot inlet port in case of power failure.

### Additional actuator specifications (EN 60730-1/-2-14)

Protection cover: self-extinguishing V0  
Protection class: IP 65  
Compliant with directives: FCC, IC, CE, UKCA  
Control type: Type 1  
Environmental pollution grade: grade 2  
Activation type: multi-position  
Nominal pulse voltage: 500 V peak for overvoltage category II  
Dynamic torque: 11 ft-lbs (15 Nm)

### Controller

Display: Touch screen, capacitive color, 4.3"  
Housing: self-extinguishing A EN 60721-3-3 Cl. 3K4 BS VO, color black

Power Supply: 24 VAC ± 10% 50/60 Hz  
(115/24 VAC transformer included in package)

Max. power consumption: 9 VA  
Average power consumption: 5 VA  
Stand-by power consumption: 3.5 VA  
Adjustment temperature range: 70 - 185 °F (20 - 85 °C)  
Disinfection temperature range: 100 - 185 °F (40 - 85 °C)  
Ambient temperature:

- Operation: 32 - 120 °F (0 - 50°C), EN 60721-3-3 Cl. 3K4, max. humidity 95%
- Transportation: -20 - 160 °F (-30 - 70 °C), EN 60721-3-2 Cl. 2K3, max. humidity 95%
- Storage: -5 - 160 °F (-20 - 70 °C), EN 60721-3-1 Cl. 1K2, max. humidity 95%

Protection class: IP 54 (Class II appliance) surface mounted, includes hardware

Contact rating:

- Mixing valve control: 0 - 10 VDC signal / 500 mA
- Relay: 10(2) A / 24 VAC
- PTC self-recovery fuse: 30 V / 3.5 A
- Conforms to directives: FCC, IC, CE, UKCA

### Additional controller specification (EN 60730-1)

Control type: Type 1  
Environmental pollution grade: grade 2  
Nominal pulse voltage: 500 V peak for overvoltage category II

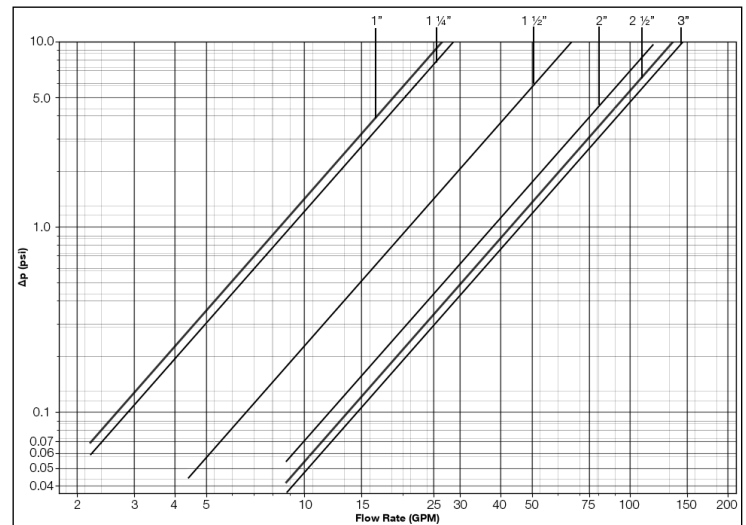
### Recirculation pump 1" Station

Max. flow rate: 26 gpm (98 lpm)  
Max. head height: 42' (12.8 m)  
Max. working pressure: 232 psi (16 bar)  
Temperature range: 14 - 230 °F (-10 - 110 °C)  
Max. power consumption: 125 W

### Recirculation pump 1½" - 3" Station

Max. flow rate: 50 gpm (189 lpm)  
Max head height: 59' (18m)  
Max. working pressure: 232 psi (16 bar)  
Temperature range: 14 - 230 °F (-10 - 110 °C)  
Max. power consumption: 171 W

### Hydraulic Characteristics



### LEGIOMIXevo Station sizing and selection procedure

| Station Size | <sup>1</sup> Max. GPM<br>(@ 5 fps pipe velocity) | Station Cv | Min. GPM for<br>stable operation |
|--------------|--------------------------------------------------|------------|----------------------------------|
| 1"           | 14                                               | 8.4        | 2.2                              |
| 1¼"          | 20                                               | 9.1        |                                  |
| 1½"          | 29                                               | 21         | 4.4                              |
| 2"           | 50                                               | 38         | 8.8                              |
| 2½"          | 76                                               | 43         |                                  |
| 3"           | 106                                              | 46         |                                  |

| Station size                                        | Pressure drop across station (PSID) |      |      |      |       |       |
|-----------------------------------------------------|-------------------------------------|------|------|------|-------|-------|
|                                                     | 1                                   | 1.5  | 2    | 3    | 5     | 7.5   |
| <sup>2</sup> Flow rates (GPM) @ above pressure drop |                                     |      |      |      |       |       |
| 1"                                                  | 8.4                                 | 10.3 | 11.9 | 14.5 | 18.8  | 23    |
| 1¼"                                                 | 9.1                                 | 11.1 | 12.9 | 15.8 | 20.3  | 24.9  |
| 1½"                                                 | 21                                  | 25.7 | 29.7 | 36.4 | 47    | 57.5  |
| 2"                                                  | 38                                  | 46.5 | 53.7 | 65.8 | 85    | 104.1 |
| 2½"                                                 | 43                                  | 52.7 | 60.8 | 74.5 | 96.2  | 117.8 |
| 3"                                                  | 46                                  | 56.3 | 65.1 | 79.7 | 102.9 | 126   |

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

B. Select station size which has a Max GPM value equal to or greater than the project maximum GPM demand.

1. The maximum GPM rating for the LEGIOMIX station is based on 5 feet per second pipe velocity in the station's copper tubing. This velocity recommendation is for water temperatures up to 140°F and is from the UPC (Uniform Plumbing Code) and the CDA (Copper Development Association) "Copper Tube Handbook". To minimize the potential of erosion-corrosion in the station piping, do not exceed 5 fps velocity.

2. The PSI/GPM table is for reference only, showing various GPM values at various pressure drops across the station.

Dimensions

Figure 1: 6003 LEGIOMIXevo Station without Pump

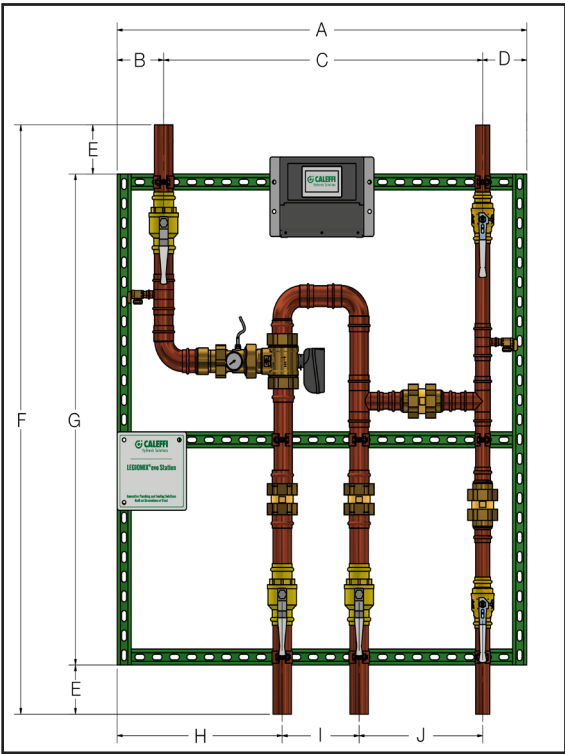
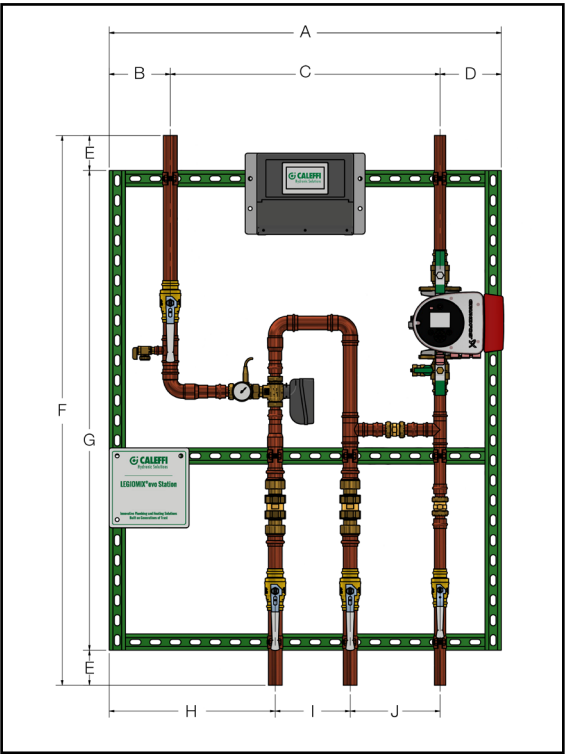


Figure 2: 6003 LEGIOMIXevo Station with Pump



| Without Pump (See Figure 1) |                        |               |         |         |         |        |        |         |     |         |        |         |             |               |
|-----------------------------|------------------------|---------------|---------|---------|---------|--------|--------|---------|-----|---------|--------|---------|-------------|---------------|
| Code                        | Mixed out, hot/cold in | Recirculation | A       | B       | C       | D      | E      | F       | G   | H       | I      | J       | Net Wt (lb) | Gross Wt (lb) |
| 600366AFS                   | 1"                     | 3/4"          | 35 1/4" | 5 1/4"  | 24 3/4" | 5 1/4" | 3 1/2" | 39"     | 32" | 14 1/4" | 7 1/2" | 8 1/4"  | 67          | 192           |
| 600376AFS                   | 1 1/4"                 | 1"            | 39 1/4" | 6 1/8"  | 27"     | 6"     | 3 1/2" | 55"     | 48" | 16 5/8" | 7 1/2" | 9"      | 88          | 213           |
| 600386AFS                   | 1 1/2"                 | 1 1/4"        | 47 1/4" | 5 1/2"  | 35 3/4" | 6 1/4" | 4"     | 58"     | 50" | 19 1/4" | 8 1/2" | 13 1/4" | 105         | 281           |
| 600396AFS                   | 2"                     | 1 1/2"        | 47 1/4" | 10 1/2" | 31 3/4" | 5 1/8" | 5"     | 60"     | 50" | 17"     | 8 7/8" | 14 1/4" | 143         | 319           |
| 600360AFS                   | 2 1/2"                 | 1 1/2"        | 55 1/4" | 7"      | 43 1/4" | 5"     | 5"     | 70"     | 60" | 27 1/2" | 9 1/4" | 13 1/2" | 160         | 336           |
| 600380AFS                   | 3"                     | 2"            | 55 1/2" | 8"      | 42 1/2" | 4 3/4" | 5"     | 70 1/4" | 60" | 29"     | 8 1/2" | 12 1/2" | 163         | 339           |

| With Pump (See Figure 2) |                        |               |         |         |         |        |        |     |     |         |        |         |             |               |
|--------------------------|------------------------|---------------|---------|---------|---------|--------|--------|-----|-----|---------|--------|---------|-------------|---------------|
| Code                     | Mixed out, hot/cold in | Recirculation | A       | B       | C       | D      | E      | F   | G   | H       | I      | J       | Net Wt (lb) | Gross Wt (lb) |
| 600366AFS 001            | 1"                     | 1"            | 39 1/4" | 6"      | 27"     | 6 1/4" | 3 1/2" | 55" | 48" | 17"     | 7 1/2" | 8 1/2"  | 74          | 199           |
| 600376AFS 001            | 1 1/4"                 | 1"            | 39 1/4" | 6 1/8"  | 27"     | 6 1/8" | 3 1/2" | 55" | 48" | 16 5/8" | 7 1/2" | 9"      | 102         | 227           |
| 600386AFS 001            | 1 1/2"                 | 1 1/4"        | 47 1/4" | 5 1/4"  | 35 3/4" | 6 1/4" | 4"     | 58" | 50" | 19 1/4" | 8 1/2" | 13 1/4" | 119         | 295           |
| 600396AFS 001            | 2"                     | 1 1/2"        | 47 1/4" | 10 1/2" | 34 1/4" | 2 1/2" | 5"     | 60" | 50" | 17"     | 8 7/8" | 14 1/4" | 157         | 333           |
| 600360AFS 001            | 2 1/2"                 | 1 1/2"        | 55 1/4" | 7"      | 43 1/8" | 5"     | 5"     | 70" | 60" | 27 1/2" | 9 1/4" | 13 1/2" | 174         | 350           |
| 600380AFS 001            | 3"                     | 2"            | 55 1/4" | 8"      | 42 1/2" | 4 5/8" | 5"     | 70" | 60" | 29 1/4" | 8 1/2" | 13 1/2" | 179         | 355           |

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