

LEGIOMIX®evo

Electronic Mixing Valve with thermal disinfection

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Serie 6003

LEGIOMIXevo

BACnet Protocol Implementation Conformance Statement (PICS)



Vendor Name	Caleffi S.p.A.
Vendor ID	1533
Product Name	LEGIOMIXevo
Product Model Number	Serie 6003
Application Software Version	2.0.0 or higher
Firmware Revision	2.0.0 or higher
BACnet Protocol Revision	19

1. Product description

The 6003 Series LEGIOMIX®evo electronic 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 keypad 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®.

1.1 BACnet Data Link Layer Options

BACnet protocol version can be configured by touch display interface, Only one protocol version at a time can be active.

- BACnet IP
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2. BACnet Interoperability Building Blocks Supported (Annex K)

K.1.2 BIBB	Data Sharing	ReadProperty-B (DS-RP-B)
K.1.8 BIBB	Data Sharing	WriteProperty-B (DS-WP-B)
K.5.2 BIBB	Device Management	DynamicDeviceBinding-B (DM-DDB-B)
K.5.5 BIBB	Device Management	DynamicObjectBinding-B (DB-DOB-B)
K.5.16 BIBB	Device Management	Device Management-ReinitializeDevice-B (DM-RD-B)

3. BACnet Standardized Device Profile (Annex L)

- BACnet Smart Actuator (B-SA)

4. Segmentation Capability

Segmented request supported	NO	Window Size	n/a
Segmented response supported	NO	Window Size	n/a

5. Standard object types supported

Device
Analog Input
Analog Value
Binary Value
CharacterString Value
Network Port

5.1 Device Object

BACnet property
Object Identifier
Object Name
Object Type
System Status
Vendor Name
Vendor Identifier
Model Name
Firmware Revision
Application Software Version
Protocol Version
Protocol Revision
Protocol Service Supported
Protocol Object Types Supported
Object List
Max Apdu Length Accepted
Segmentation Supported
Apdu Timeout
Number of Apdu Retries
Device Address Binding
Database Revision

5.2 Analog Input Objects

For all objects:

Dynamically creatable using BACnet CreateObject service	NO
Dynamically deletable using BACnet DeleteObject service	NO

Object Identifier	Object Name	Optional Properties Supported	Writable Properties	Proprietary Properties	Notes
14	Mixing Temperature	-	-	-	Temperature measured by Mixing NTC probe
15	Recirculation Temperature	-	-	-	Temperature measured by Recirculation NTC probe
16	Storage Temperature	-	-	-	Temperature measured by Storage NTC probe

5.3 Analog Value Objects

For all objects:

Dynamically creatable using BACnet CreateObject service	NO
Dynamically deletable using BACnet DeleteObject service	NO

Object Identifier	Object Name	Optional Properties Supported	Writable Properties	Proprietary Properties	Notes												
5	Current Day	-	-	-													
6	Current Month	-	-	-													
7	Current Year	-	-	-													
8	Current Hour	-	-	-													
9	Current Minute	-	-	-													
10	State	-	-	-	Indicate the operative function of the LEGIOMIXevo (ANNEX A)												
11	Alarm Code	-	-	-	Indicate the present alarm code of LEGIOMIXevo (ANNEX B)												
17	Mixing Temperature Set	-	Present Value	-	Measurement units as in (*) <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Min</th> <th colspan="2">Max</th> </tr> <tr> <th>°C</th> <th>°F</th> <th>°C</th> <th>°F</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>105</td> <td>85</td> <td>185</td> </tr> </tbody> </table>	Min		Max		°C	°F	°C	°F	40	105	85	185
Min		Max															
°C	°F	°C	°F														
40	105	85	185														

5.4 Binary Value Objects

For all objects:

Dynamically creatable using BACnet CreateObject service	NO
Dynamically deletable using BACnet DeleteObject service	NO

Object Identifier	Object Name	Optional Properties Supported	Writable Properties	Proprietary Properties	Notes
12	Presence of Recirculation Probe	-	-	-	Indicate if the Recirculation NTC is present or not.
13	Presence of Storage Probe	-	-	-	Indicate if the Storage NTC is present or not.
18	Disinfection Enabled	-	-	-	Indicate if the Disinfection functionality is enable or not.
19	Anticlog Enabled	-	-	-	Indicate if the Anticlog functionality is enable or not.
20	Relay 1- REC PUMP	-	-	-	Indicate if the Recirculation Pump relay is closed (1) or not (0)
21	Relay 2 - FLUSH	-	-	-	Indicate if the Flush relay is closed (1) or not (0)

22	Relay 3 - SAFETY VALVE	-	-	-	Indicate if the Safety Valve relay is closed (1) or not (0)
23	Relay 4 - AUX	-	-	-	Indicate if the Auxiliary relay is closed (1) or not (0)
24	Relay 5 - ALARM	-	-	-	Indicate if the Alarm relay is closed (1) or not (0). The relay is closed if the LEGIOMIXevo has an alarm active or is not powered on.

5.5 CharacterString Value Objects

For all objects:

Dynamically creatable using BACnet CreateObject service	NO
Dynamically deletable using BACnet DeleteObject service	NO

Object Identifier	Object Name	Optional Properties Supported	Writable Properties	Proprietary Properties	Notes
0	Serie	-	-	-	
1	Firmware Version	-	-	-	
2	Hardware Version	-	-	-	
3	Product Code	-	-	-	
4	Serial Number	-	-	-	

5.6 Network Port-Object

For all objects:

Dynamically creatable using BACnet CreateObject service	NO
Dynamically deletable using BACnet DeleteObject service	NO

Object Identifier	Object Name	Optional Properties Supported	Writable Properties	Proprietary Properties	Notes
	Network Port	-	-	-	

(*)Units

Possible values of the Units property includes the following BACnet Engineering Units defined in the BACnet standard (Clause 21).

Value	Units
62	Celsius Degree
64	Fahrenheit Degree
95	No Units

6. Data Link Layer Options

- BACnet IP (Annex J)

Data Link layer options can be chosen by selecting proper configuration on touch display.

7. Device Address Binding

Static Device Binding Supported	NO
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8. Networking Option

- Non-secure Device – is capable of operating without BACnet Network Security

9. Character Sets Supporter

- ISO 10646 (UTF-8)

ANNEX A - Functions codes of the LEGIOMIXevo

Code	Function	Description
0	UNDEFINED	Undefined function
1	PROGRAM 1	Disinfection program 1
2	PROGRAM 2	Disinfection program 2
3	PROGRAM 3	Disinfection program 3
4	FLUSH	Flush function
5	SHOCK	Shock funcion
6	ANTICLOG	Anticlog function
7	STOP_PROGRAM	Temporary function to sto current program
8	MIXING	Standard mixing function
9	SAFETY VALVE	Safety Valve activation function
88	INIT_ALL	Initialization or zeroing actuator
99	NO_PROGRAM	No running function

ANNEX B – Alarm codes

Code	Short description	Explanation
0	No error	
1	Disinfection error	Generic error during disinfection procedure
4	Flush run error	Impossible to run flush function
5	Shock run error	Impossible to run shock function
10	Mixing probe fault	Mixing probe fault detection: not connected or non working properly
11	Mixing probe protection	Mixing probe measures a value larger than maximum system temperature
20	Recirculation probe fault	Recirculation probe fault detection: not connected or non working properly
21	Recirculation probe protection	Recirculation probe measures a value larger than maximum system temperature
30	Boiler probe fault	Boiler probe fault detection: not connected or non working properly
31	Boiler probe protection	Boiler probe measures a value larger than maximum system temperature
66	Safety Valve	Safety valve relay is active (relay open)
77	Wrong Settings	Generic error when settings are wrong or incoherent
101	Initialization error	Generic error during initialization/loading procedure
102	OS error	Generic error during Operative Systems execution
103	Memory Error	Memory Error: impossible to manage memory for parameters and historical data
104	Loading Error	Error during loading working parameters
105	Zeroing error	Error during zeroing of actuator (both 3 point and 0-10 V)
106	Anticlog error	Generic during anticlog function
110	Download error	Error during data download
201	Disinfection fault	Disinfection run properly but fault according to settings of temperature and time
204	Flush error	Generic error during flush function
205	Shock error	Generic error during shock function
301	Date and time lost	Date and time lost
55	Shock on	The shock function is ongoing or finished properly
401	OTA fault	Firmware update over the air fault

Revisions

Revision	Date	Author	Note
0	27/05/2025	S. Bertoldo	First release
1	05/12/2025	M. Porzio	Update according to request from TUV SUD
2	18/03/2026	M. Porzio	Remove MS/TP configuration Update firmware revision