Web server manual

Elektronic pressure-independent characterised control valve with energy monitoring
Belimo Energy Valve™
Thermal Energy Meter

Edition 10.2024/C

BELIMO

Table of contents

BELIMO

General

Version information

This manual applies to the products listed below:

Belimo Energy Valve™ DN 15…50
EV0..R2+(K)BAC/EV0..R2+MID

3-way Belimo Energy Valve™ DN 15...50
EV0..R3+BAC

Thermal Energy Meter DN 15...50
22PE(M)-1U..

Earlier versions may have different representations and functions. If in doubt, please contact your Belimo representative.

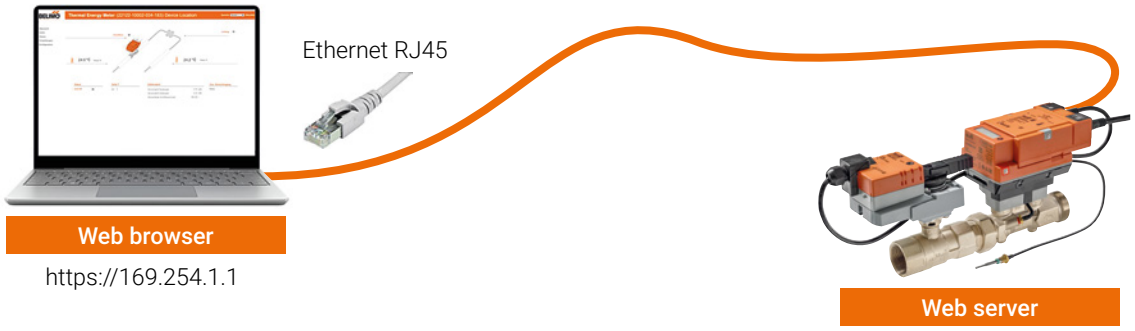
Access

Preconditions

For direct access, you will need a PC with one of the web browsers listed below as well as a network cable (RJ45).
– Microsoft Edge
– Mozilla Firefox
– Safari on iOS platform
– Google Chrome

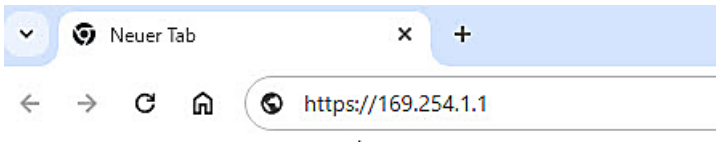
"Peer-to-peer" connection

Easy access to the device is possible via a direct link. For this, the laptop must be connected to the device as "peer-to-peer" using the ethernet interface.

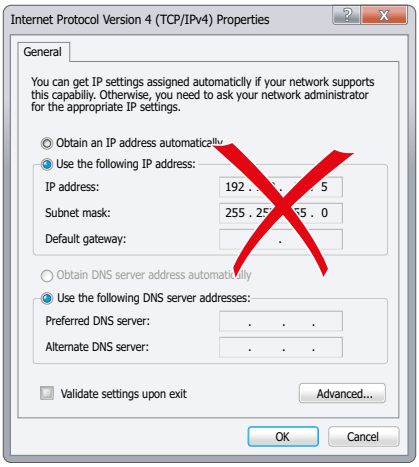


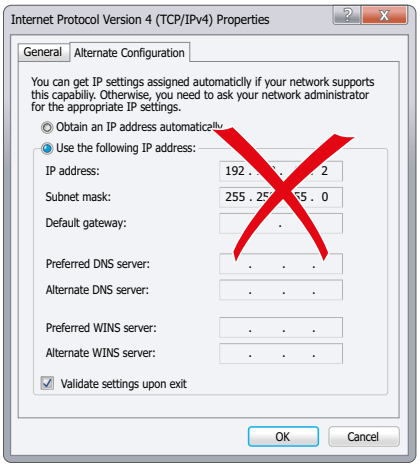
Note: The device must be supplied with voltage. If the device is powered via PoE, you can access the device only via the IP address or through the Belimo Assistant.

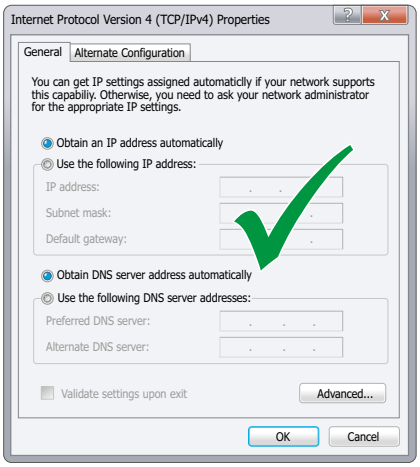
Establish a direct connection between the PC/laptop and the Belimo device via an RJ45 cable. You can then access the device via a supported web browser by calling up the address https://169.254.1.1.



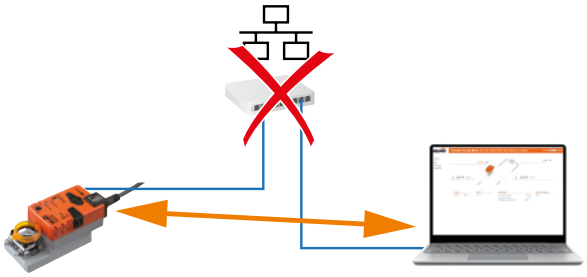
The following preconditions must be met:
– No static IP address
– No alternative IP address set
– PC/laptop must be set to "DHCP"







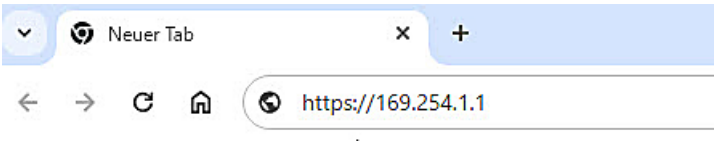
A direct connection must exist in order to access the device via peer-to-peer. This type of connection cannot be used in a network with other consumers.



IP address

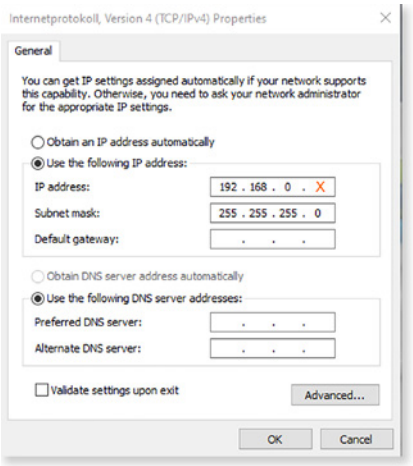
As an alternative to the link local address and "peer-to-peer" connection, you can also access the device using the IP address. This type of connection can also be used in a network with multiple consumers. If there are several devices in the network, valid IP settings have to be assigned to the consumers in advance (IP address and subnet mask).

– IP settings on delivery are as follows:
  – IP address 192.168.0.10
  – Subnet mask 255.255.255.0
– Open the web browser and enter the following address: https://192.168.0.10, or the one assigned by the network administrator



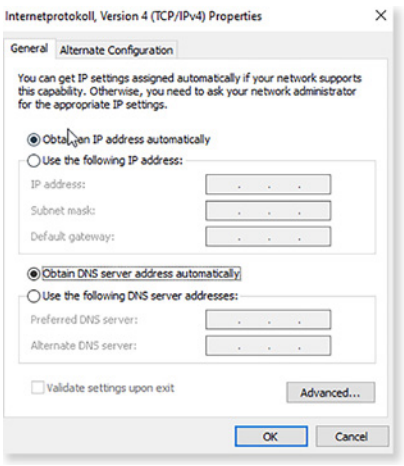
Please note that the following conditions are to be observed:

Laptop static IP address



Example: When the device is in delivery condition:
x ≠ 10
If the device is already connected to a network, matching IP settings must be assigned to the laptop.

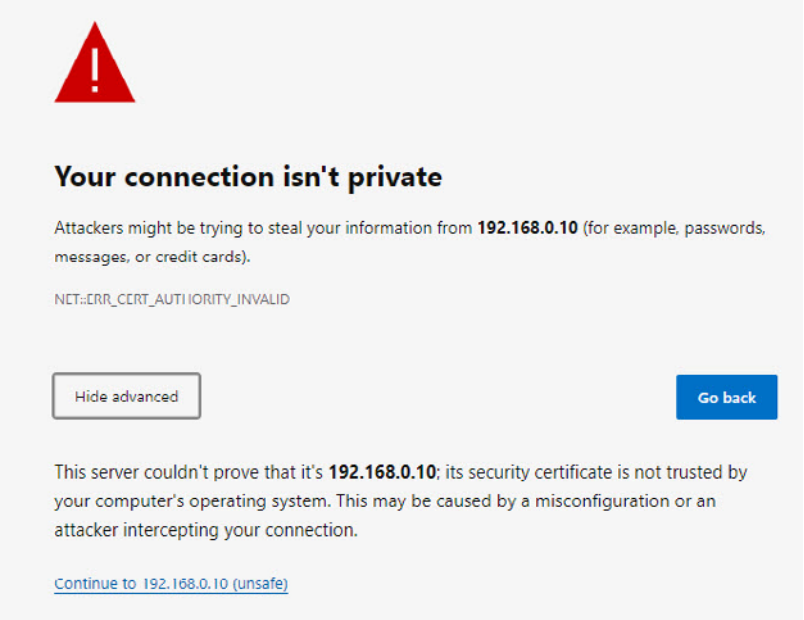
Laptop settings DHCP



If the network has a DHCP server and the network adapter settings on the laptop are set to DHCP, the IP settings will be assigned automatically.

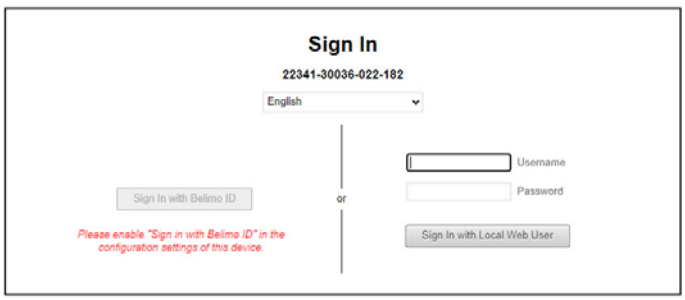
Browser access

To increase the security level, unencrypted web server access is no longer available on this device version.
Please note that your browser might show a warning indicating a security risk. This is related to the certificate on the device, which may not be trusted by your PC yet.
It is secure to visit the webpage anyway–most browsers allow you to do so by clicking on a button below the warning.
You will be redirected to the secure web server access in 60 seconds or by clicking on the link.
To remove the warning for future webpage visits, your IT department must either install a trusted certificate on the device or add a currently installed certificate to the trusted certificate base. The currently installed certificate can be downloaded from the device.



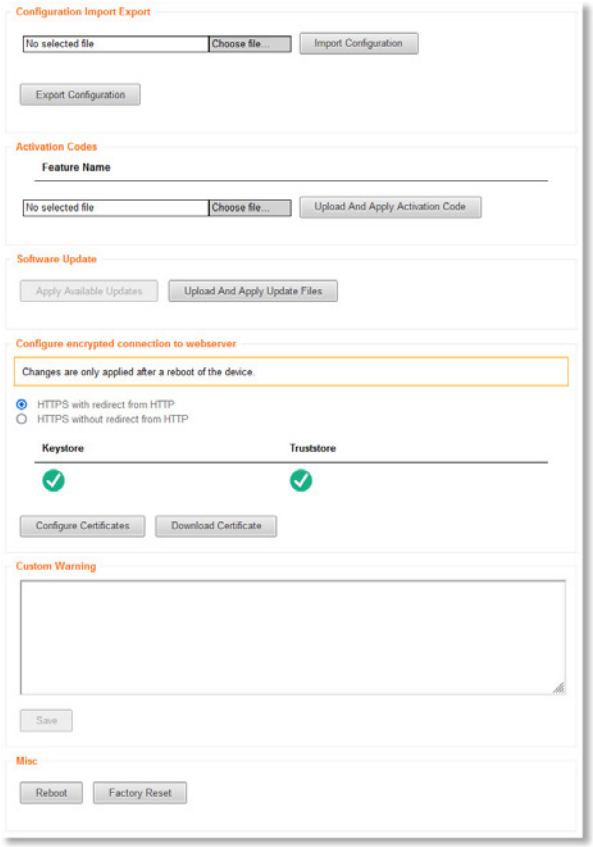
Username and password

Access to the device is password-protected.



For local web users, there are three standard users with different read and write permissions. The chapter "User administration" lists all standard users and passwords.
To log in with your Belimo ID, a Belimo Cloud account must be created beforehand, and the Energy Valve must be assigned accordingly.

Maintenance



Configuration import/export

The settings you selected during commissioning can be saved here as a file on the computer (export configuration).
If a large number of devices with the same nominal diameter and the same settings need to be installed, you can export these settings and then import and apply them on another valve (browse/import configuration).

Software update

It is possible to upload a software update and execute it directly.

Configure encrypted connection to the web server

HTTPS

This setting enables the creation of an SSL certificate to establish an HTTPS connection and allows redirection from HTTP URLs to the device's HTTPS access (factory setting). If redirection to HTTPS when accessing via HTTP is not desired, this can be deactivated by selecting "HTTPS without redirect from HTTP".

Certificates

Once you successfully log in, a certificate will be temporarily stored in your web browser. If the browser's cache is deleted or the IP address is changed, a new certificate is required.
If the certificate is to be used permanently, this can be ensured by using "Download certificate" and depositing the certificate in the dedicated browser. If a certificate is to be used for several devices, an existing certificate can be loaded onto the device via "Configure certificate". In this case, the device must be restarted.
Note: In certain cases, the local IT department must create and distribute the certificate.

Miscellaneous

Reboot: When this button is clicked, the device restarts. The previously configured settings remain unchanged.

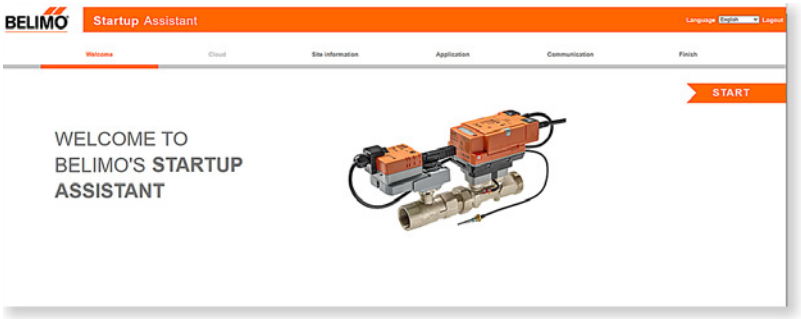
Factory reset: You can reset the device to factory settings. The steps are:
1. Press the "Factory reset" button and confirm the message by pressing "OK".
2. Connect the device to Belimo Assistant. The device will then reset all settings to the delivery condition. All stored data will be lost.

Startup assistant

General

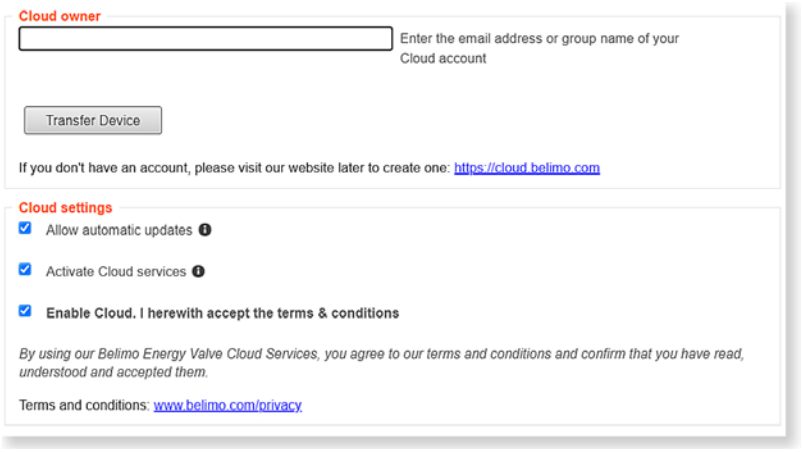
The startup assistant is started after initial entry. The assistant helps you to make the main settings for the device right at the start. After the greeting, it guides you through the following steps:
– Cloud
– Site information
– Application
– Communication

You can still change all the settings you have entered later.



Cloud

If you require a connection to the Belimo Cloud, you can enter the data here.



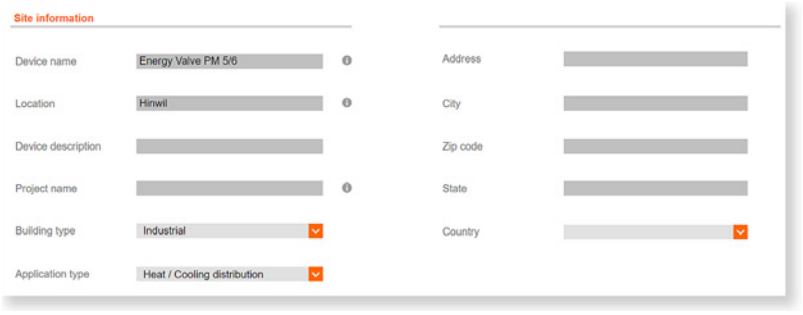
Cloud account email
If you already have a Belimo Cloud account, enter the email address here.

Allow automatic updates
This allows software updates to be automatically installed. After the update, the device will reboot automatically and all settings will remain the same.

Cloud services
You can activate the cloud services such as delta T optimisation and support via cloud here. If the cloud services are not activated, you cannot use the following functions: delta T optimisation via cloud, online support and remote parametrisation.

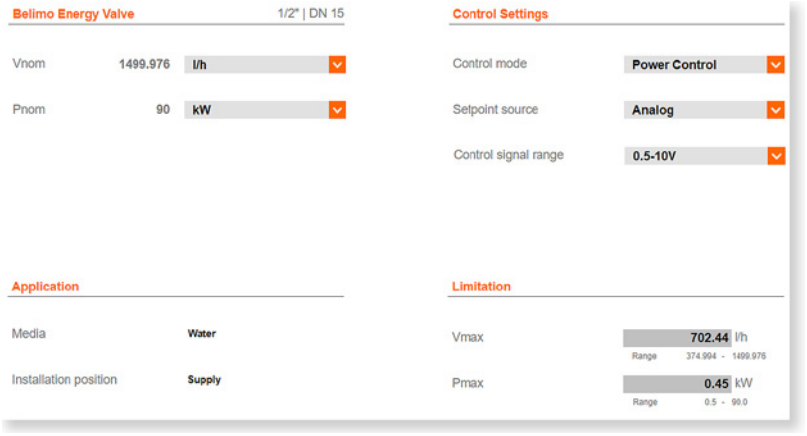
Site information

You can add details about the device here, e.g. mounting location, application details or the building address. This information is especially important when managing multiple devices. This allows you to identify a device when it is accessed.



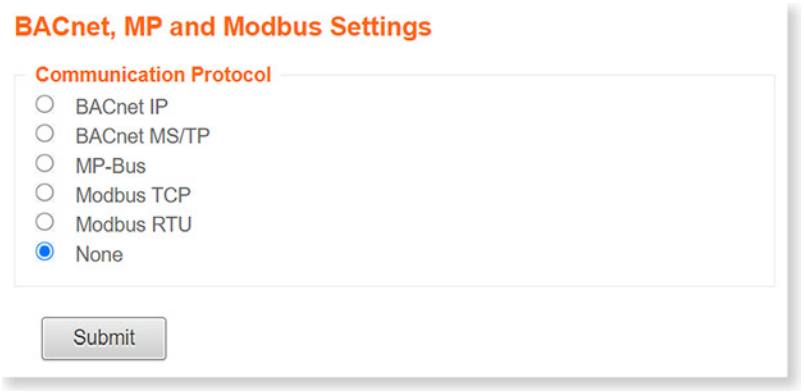
Application

This is where you enter the settings for installation, control settings (only for Energy Valve) and flow values (only for Energy Valve).



Communication

This is where you adjust all bus-related settings.



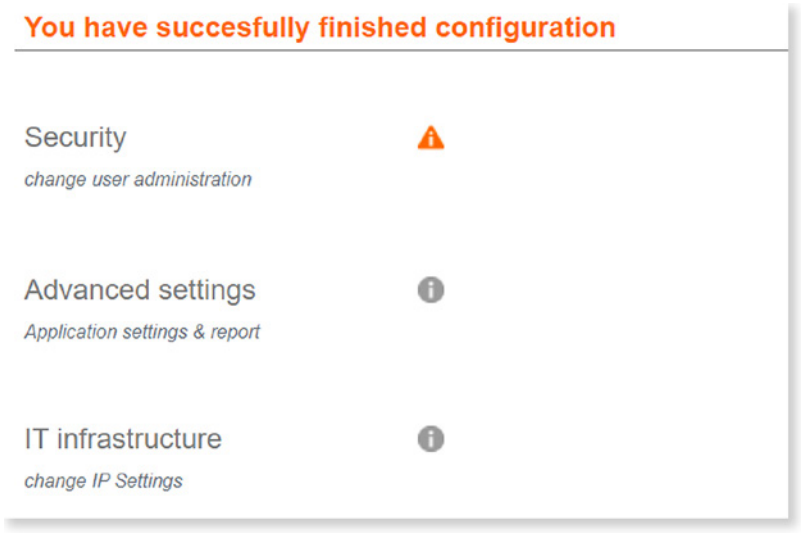
Finish

Parametrisation by the startup assistant is now complete. Three notes are displayed:

Security
Direct access to user administration. To ensure secure operation, you need to change the password for the standard users, and in particular for the admin user.

Advanced settings
Direct access to the application settings. You can also download a commissioning report here.

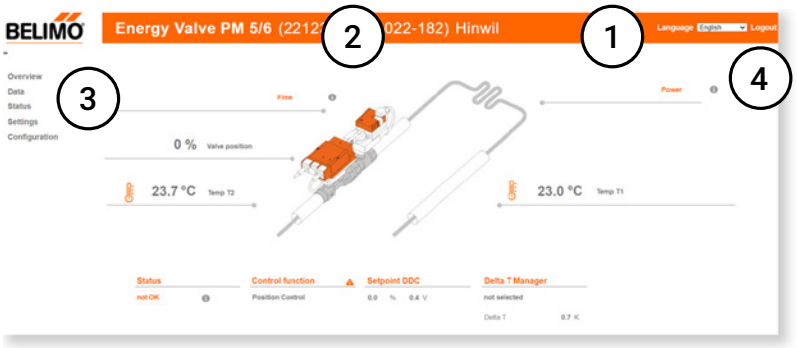
IT infrastructure
Direct access to the IP settings. You can configure the IP settings here according to the existing IT infrastructure.



User interface

General

After completing the commissioning, you will be redirected to the web server overview page. This is where you can view all of the data points and access all of the settings.



1 Language setting
This is where you can set the language of the user interface.
2 Device name
The device name entered in the settings is displayed here.
3 Navigation menu
Allows you to navigate through the different areas to access information and configure settings.
4 Logout
Logs the current user out of the web server.

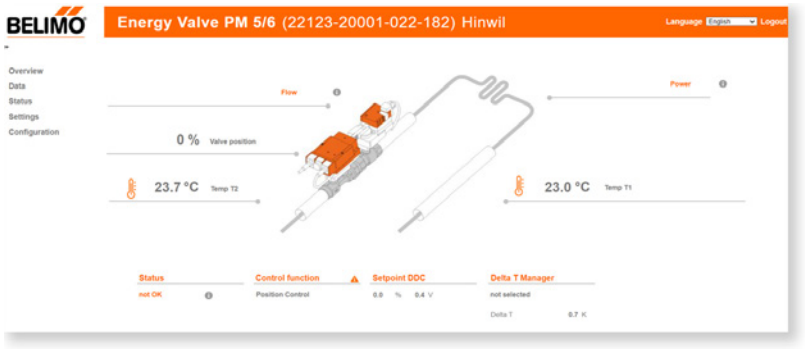
Language setting

The language used is automatically selected in accordance with the PC settings. If the computer is set to a language that is not available, English will be selected automatically.
You can also select the display language via the drop-down menu.
Available languages:

German
English
French
Finnish
Croatian
Italian
Japanese
Korean
Macedonian
Norwegian
Dutch
Polish
Portuguese
Hungarian
Russian
Swedish
Serbian
Slovak
Slovenian
Spanish
Chinese (Mandarin)

Overview

This page shows the most important actual values of the device. You get an overview of the actual values here and can see the status of the device.
Error messages can be viewed directly here.

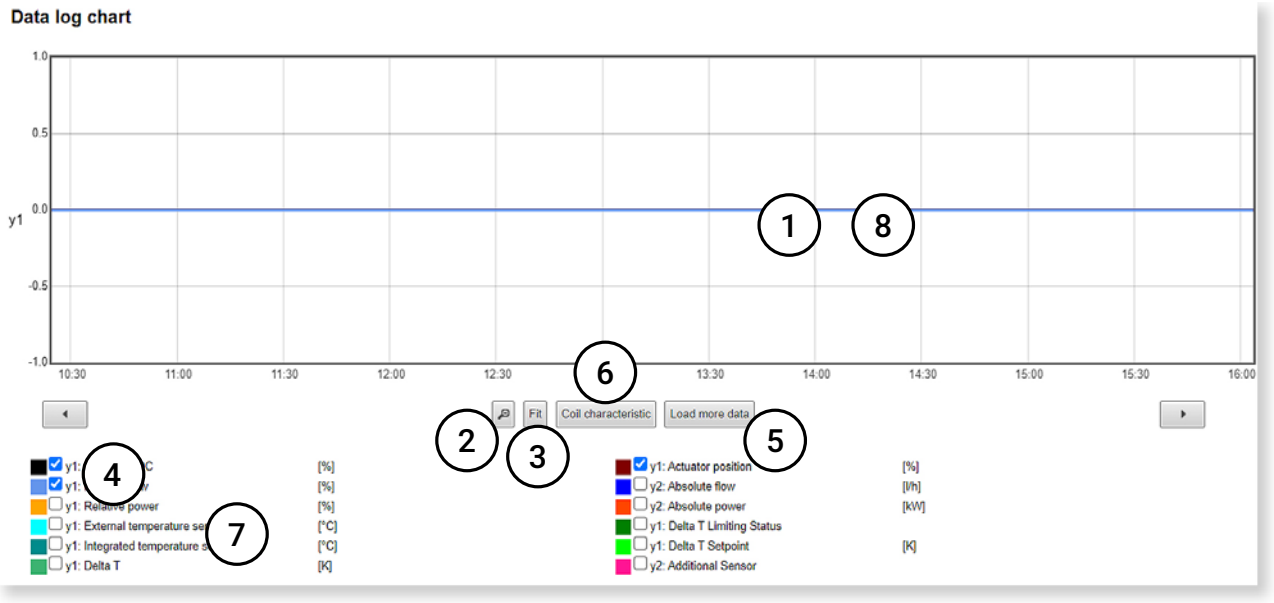


Data

Live trend and KPI

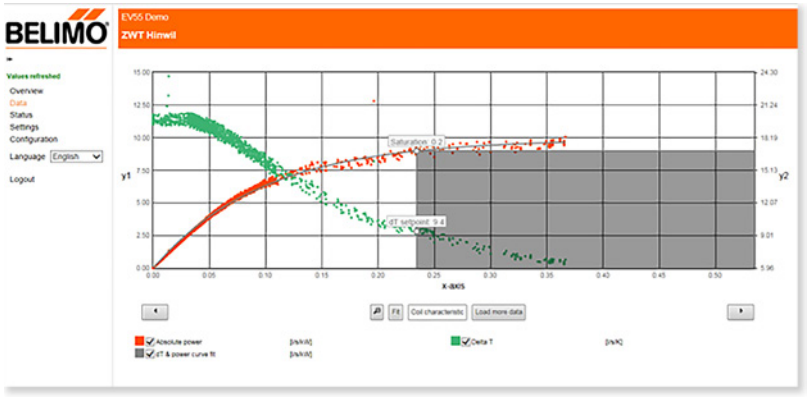
The visualisation of the system data provides a simple and quick overview of the system. The values displayed can be specifically selected.

On this page you can view and evaluate the recorded data. Selected data can be visualised in the live trend view.



1 Visualisation of the system data
The saved data from the last 8 days is automatically loaded in this view.
2 Zoom out
This function makes it possible to expand the period being viewed.
3 Adaptation
Clicking this button resets the visualisation.
4 Arrow navigation
These arrows allow you to navigate along the timeline.
5 Load more data
This function loads all data stored in the product.
6 Heat exchanger characteristic curve
Displays the determined characteristic curve of the heat exchanger. This allows delta T values to be determined (only for Energy Valve).
7 Displayed data
By selecting or deselecting the check boxes, you can selectively show or hide values.
8 Zoom function
The zoom function can be used to limit the period being viewed. Click and drag to zoom in on the selected area.

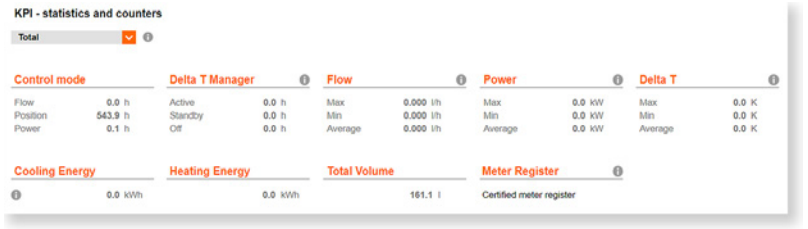
The figure below shows an example of a determined heat exchanger characteristic curve for the Energy Valve. The orange data points represent the performance curve of the heat exchanger. The green data points represent the corresponding differential temperature curve. The ideal values for the delta T manager are determined.



The KPI statistics show the performance of the device since commissioning or during a specific month. You can select the month via the drop-down menu.

The following KPIs are displayed

– Control mode
– Delta T manager
– Flow
– Power
– Delta T
– Cooling energy
– Heating energy
– Total volume
– Meter register



Control mode (only Energy Valve)
Shows how many hours the Energy Valve has been operated in total in the different control modes of flow control, position control, and power control.

Delta T manager (only for Energy Valve)
Shows how many hours the delta T manager was active, switched off or in standby mode. The time during which there is no flow requirement is not included in the statistics.

Flow
Shows the maximum, minimum and average flow rate values. The time during which there is no flow requirement is not included in the statistics.

Power
Shows the maximum, minimum and average power. The time during which there is no flow requirement is not included in the statistics.

Delta T
Shows the maximum, minimum and average differential temperature. The time during which there is no flow requirement is not included in the statistics.

Cooling energy
The total measured cooling energy is displayed here. If you selected a month via the drop-down menu, two values will be displayed. The top value represents the cumulative energy flow between the time of commissioning and the end of the selected month. The bottom value represents the energy flow during the selected month.

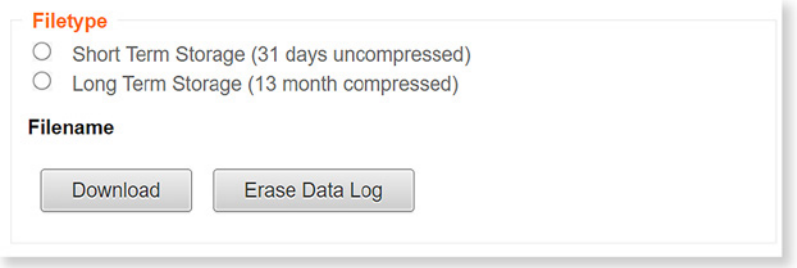
Heating energy
The total measured heating energy is displayed here. If you selected a month via the drop-down menu, two values will be displayed. The top value represents the cumulative energy flow between the time of commissioning and the end of the selected month. The bottom value represents the energy flow during the selected month.

Total volume
The total measured flow volume is displayed here. If you selected a month via the drop-down menu, two values will be displayed. The top value represents the cumulative flow between the time of commissioning and the end of the selected month. The bottom value represents the flow during the selected month.

Meter register
Displays the certified meter reading and the service life meter reading. The certified meter reading is the same value that is shown on the display of the device. This value is used for accounting purposes. The service life meter reading starts at the time the device is commissioned and will never be reset.

Data logging

On this page you can choose to download the data into the short-term memory (31 days uncompressed) or long-term memory (13 months compressed).
You can also delete all of the data.



The data recording memory is a ring buffer. When it is full, the oldest element is replaced by a new one. The time stamp for the data recording is always in UTC.

Short-term storage:
– Contains the last 31 days (one file per day)
– The data of the oldest day is replaced by the data of the following day at the beginning of each day
– Storage interval: 30 s

Long-term storage:
– Contains the last 13 months (one file per month)
– The data of the oldest month is replaced by the data of the following month at the beginning of each month
– Storage interval: 2 h

Status

Health state

The current status of the device is displayed here. The medium, flow, power, sensor and actuator parameters are checked.

All error messages since commissioning are displayed in the "History" section. In addition, the time elapsed since the last occurrence of the respective error can be seen.

Click on "Show details" to display additional information.

Error messages

Category	Error message	Proposed solution and detailed description
Medium	Glycol detected	– Check glycol concentration
	Freeze warning	– Water temperature is low – Check glycol concentration
Flow	Reverse flow	– Check whether the valve is installed in-line with the direction of flow
	Flow not reached	– Check whether the pump pressure is adequate – Check pump fittings – Check flushing bypass – Check V'_{max} setting
	Flow with closed valve	– Check whether the actuator is mounted correctly according to the valve position
	The current flow rate exceeds the nominal flow rate	– Set control mode to flow control and V'_{max} to the designed flow rate
Power	Power not reached	– Check supply temperature – Check whether the secondary side is in operation – Check P'_{max} setting
Differential pressure	No differential pressure detected	– Check whether the differential pressure sensor is connected correctly (electrical and hydronics) – Check whether open/close valves to the differential pressure sensor are fully open – Check whether there is flow in the hydronic system
	Setpoint not reached	– Check whether there is sufficient differential pressure at the connection point – Check whether the pump head is set to the design value
	Minimum position applied	Minimum position (27%) is applied if: – The valve is restarted – After a power failure – The manual override was previously operated – Switching from another control mode (e.g. flow control) to control mode differential pressure control – No differential pressure is present at a flow rate <0.7% V'_{nom}

Sensor	External temperature sensor (T1) error	– Check wire connection
	Integrated temperature sensor (T2) error	– Check wire connection
	Flow measurement error	– Check whether the system is filled with water and that there is no air present
	No communication to the sensor	– Check whether the logic module and sensor module are mounted correctly – Restart the device (power off/power on)
Actuator	Actuator cannot move	– Check whether the rotation is 90°.
	Gear train disengaged	– Manual override button on the actuator has been pressed
	No communication to the actuator	– Check the cabling to the actuator – If PoE is used, check whether PoE is activated

Version information

You can view the version information for your device here.

Hardware
– Type code
– Serial number
– Sensor module serial number
– Actuator serial number
– OC module material number
– Platform

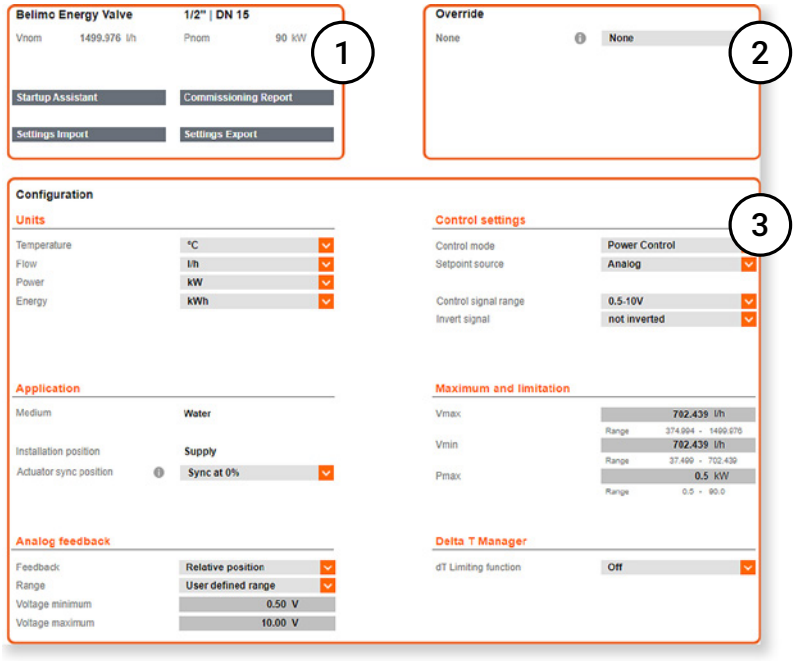
Software
– Operating system version
– Basic software version
– Communication module firmware version
– Active boot slot
– Flow sensor firmware version

Application module
– Model name
– Model file name
– Model version

Settings

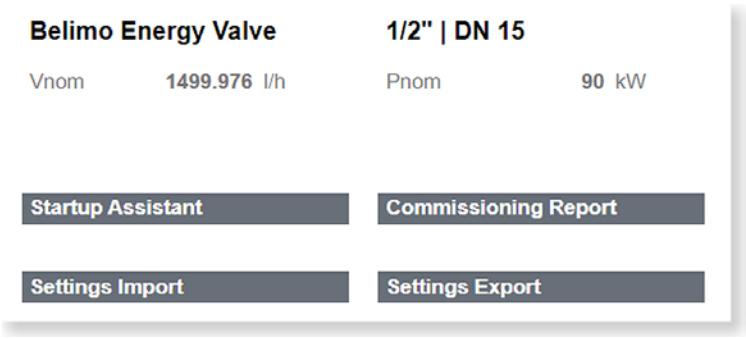
Application

This is where you can configure all the settings for the application. The settings are divided into three sections:



1. General settings
2. Override
3. Configuration

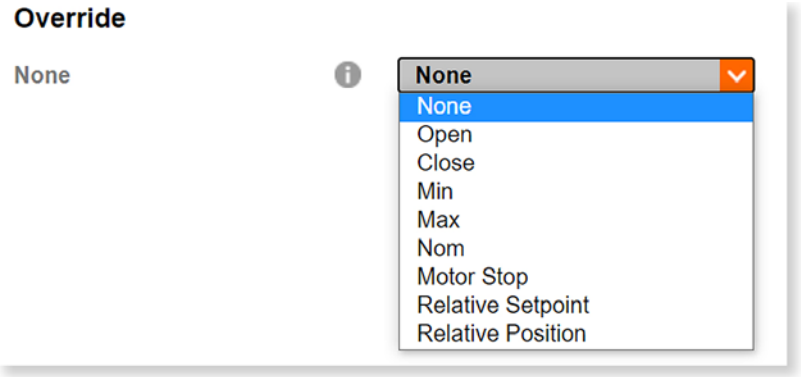
General settings



Startup assistant
You can restart the startup assistant here once again to receive assistance for parametrising the device.
Commissioning report
Allows for the commissioning report to be viewed and downloaded in PDF format. The commissioning report presents all of the settings and basic data for the device in a clear and structured way.
Settings import
Clicking on this button takes you to the maintenance menu where you can import a pre-parametrisation in XML format.
Settings export
Clicking on this button takes you to the maintenance menu where you can export a pre-parametrisation in XML format.

Application – Override

Override
The override function allows you to override all control signals and force one of the following functions:



Open: Valve is opened.
Close: Valve is closed.
Min: The set minimum flow/position/power (depending on the set control mode) is controlled.
Max: The set maximum flow/position/power (depending on the set control mode) is controlled [1].
Nom: The set nominal flow/position/power (depending on the set control mode) is controlled.
Motor stop: The actuator remains at its current position.
Relative setpoint: The set relative setpoint for flow/position/power (depending on the set control mode) is controlled.
Relative position: The set relative position, independent of the set control mode, is approached.

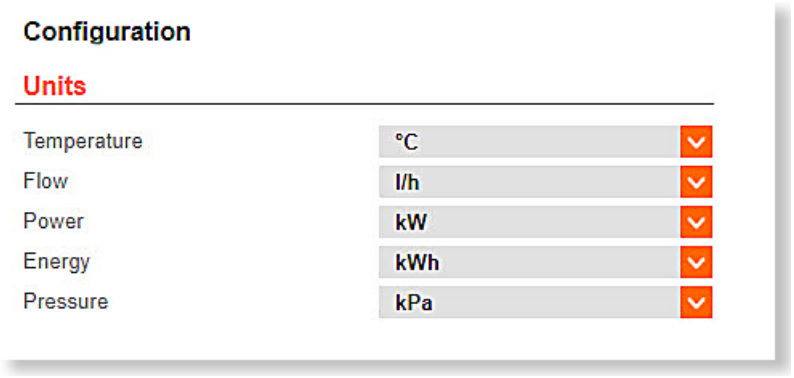
Note:
The override is reset automatically after 2 hours.

[1] Since V'_{nom}/P'_{nom} can be higher than the maximum required (set) V'_{max}/P'_{max} of the installation, achieving the nominal values is dependent on the output of the pump.

Application – Configuration

Units

This is where you can define the displayed units for temperature, flow, power, energy, and pressure.

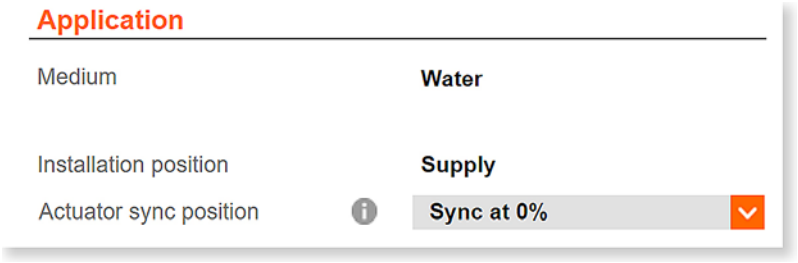


Temperature	Flow	Power	Energy	Pressure
°C (*)	m^3/h	W	J	Pa
°F	m^3/s	kW (*)	kWh (*)	bar (*)
K	l/min (*)	BTU/hr	MWh	psi
	l/h	kBTU/h	kBTU	mbar
	gpm	Ton	TonH	kPa
	cfm		MJ	
			GJ	

(*) = Factory preset

Application

This is where you can set the medium and the installation position. For MID-certified devices, it is no longer possible to make changes after activation.



Medium

Selection of the medium used:
– Water
– Propylene glycol
– Ethylene glycol
– Antifrogen L
– Antifrogen N
– DowCal 200
– DowCal 100

Glycol override

This selection is displayed only if you have selected glycol as the medium. You can enter the percentage concentration of the glycol here. The glycol display function is overridden by the input value. Glycol compensation is carried out with the input value.

Installation position

For MID devices, the installation position is set during the activation process and cannot be changed afterwards. The correct settings are important for allocating the consumed energy as cooling or heating energy:
– Valve in supply pipe
– Valve in return pipe

Actuator sync position

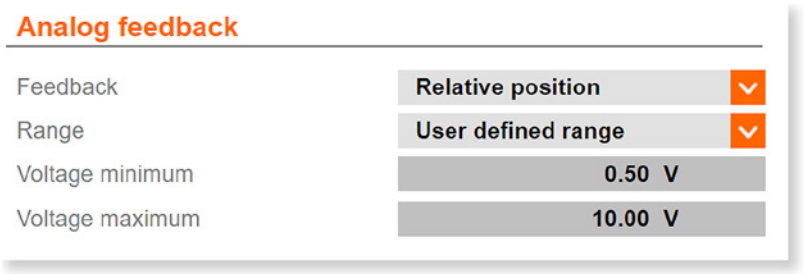
The actuator synchronises its position after the manual override button has been pressed. Select "Sync at 0%" to enable synchronisation when the valve is closed. Select "Sync at 100%" so that the actuator synchronises when the valve is open.

Note:
The settings determine the analogue feedback signal U5.

Analogue feedback

You can select which parameter is output as a feedback signal U5 here.
The units correspond to the settings in the "Units" area. The following parameters can be output:
– Relative position: Opening angle [°] valve
– Relative flow: Current quantity of water
– Relative power: Current consumer power output
– Supply temperature in the set unit
– Return temperature in the set unit
– Delta T: Differential temperature, supply and return

Depending on which parameter you select as the output signal, you must define the maximum and/or minimum value of the output parameter.

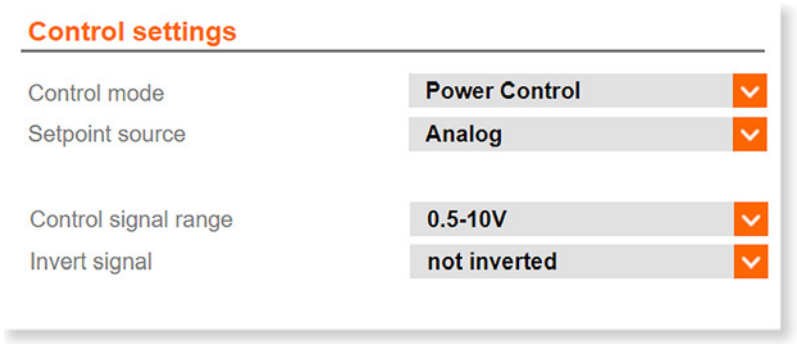


You can select one of the following signals as the output range:
– 0...10 V
– 0.5...10 V
– 2...10 V
– User defined range: You can manually enter the minimum and maximum voltage of the output signal here

Note:
The analogue feedback is not functional if MP-Bus is enabled or MP-Bus is selected as the communication protocol in the communication settings. The reason for this is the signal line U5, which can be used either for analogue feedback or for the MP-Bus. Simultaneous use is not possible.

Control settings

Parametrisation of the control signal Y.



Control mode

You can select the desired control mode here.

- Position control: In this setting, the valve operates as a pressure-dependent valve such as a conventional characterised control valve
- Flow control: Operation as a pressure-independent valve similar to an electronic pressure-independent characterised control valve
- Power control: The control signal directly requests a particular power output at the heat exchanger. The valve operates independently of temperature and differential pressure
- Differential pressure control: The valve controls a constant differential pressure in a hydronic circuit. A differential pressure sensor supplies an analogue signal directly to the valve. The valve operates independently of temperature and flow rate. More information about differential pressure control is described in the following document: "Differential pressure control with the Belimo Energy Valve™".

Setpoint source

You can select either a bus or an analogue signal as the signal source here.

Control signal range

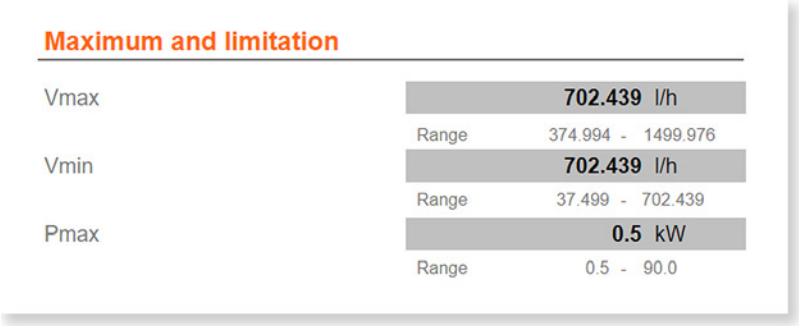
You can select the operating range of the control signal here. The ranges 5...10 V, 2...10 V or a user-defined range are available.

Invert signal

The signal can be inverted if desired.

Maximum and limitation

When the control mode is set to flow control or power control, you can configure the maximum and limit settings.



V'_{max}
Maximum flow rate as absolute value in the selected unit.

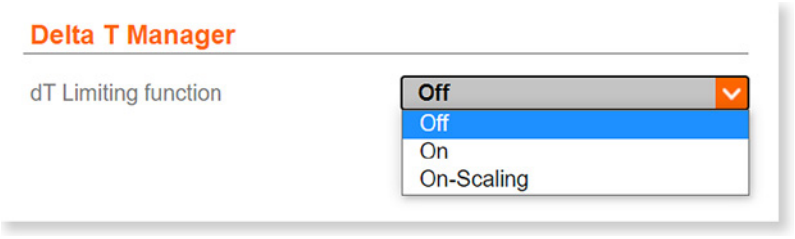
V'_{min}
Minimum flow rate as absolute value in the selected unit. You can enter a V'_{min} here to ensure a minimum flow rate with a requirement of 0%. This minimum flow becomes effective at a minimum requirement of the control signal. Depending on the analogue setting, this is 0 V, 0.5 V, 2 V or via bus 0%.

P'_{max}
Maximum power as absolute value in the selected unit. Set this value based on the design data of the consumer. The value can only be defined if power control is set as control mode.

Note:
The definitions of the values V'_{nom} and V'_{max} are provided in the annex to this document.

Delta-T manager

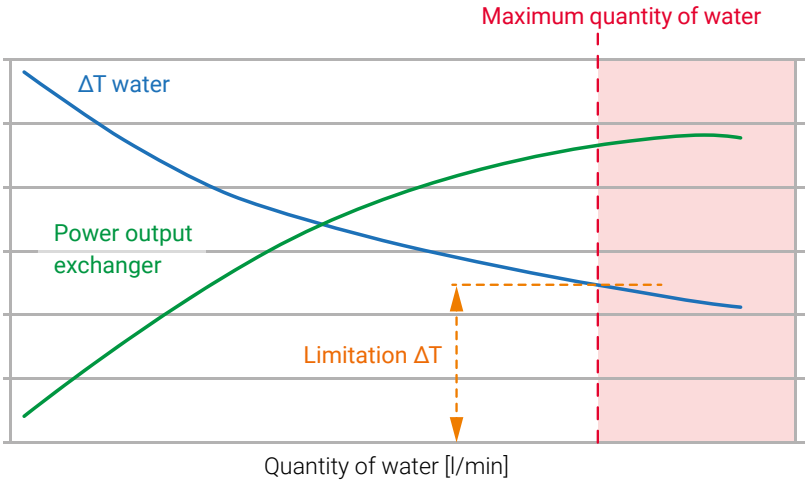
Activation or deactivation of the delta T manager. This function can be used to prevent the flow from increasing when the supply/return temperature falls below a set differential temperature. In this case, the valve will not be opened further, even if the control signal increases.



dT limiting function:
– Off: Deactivates the delta T manager
– On: Activates the delta T manager
– On with scaling: Extended delta T limiting is switched on

Delta T limit value
No increase in flow if this setting value is not reached. In the "On with scaling" mode, this value is dynamic. This value can be read from the heat exchanger characteristic curve determined. (Register KPI and trends –> heat exchanger characteristic curve).

ΔT flow rate saturation value: Corresponding flow rate when delta T is reached.



In operation, the limitation only monitors the differential temperature at a flow value ≥30% of V'_{max}.
– In the range below 30% V'_{max}, the valve does not correct excessively low differential temperatures
– This operational behaviour ensures that the system restarts properly after a standstill period

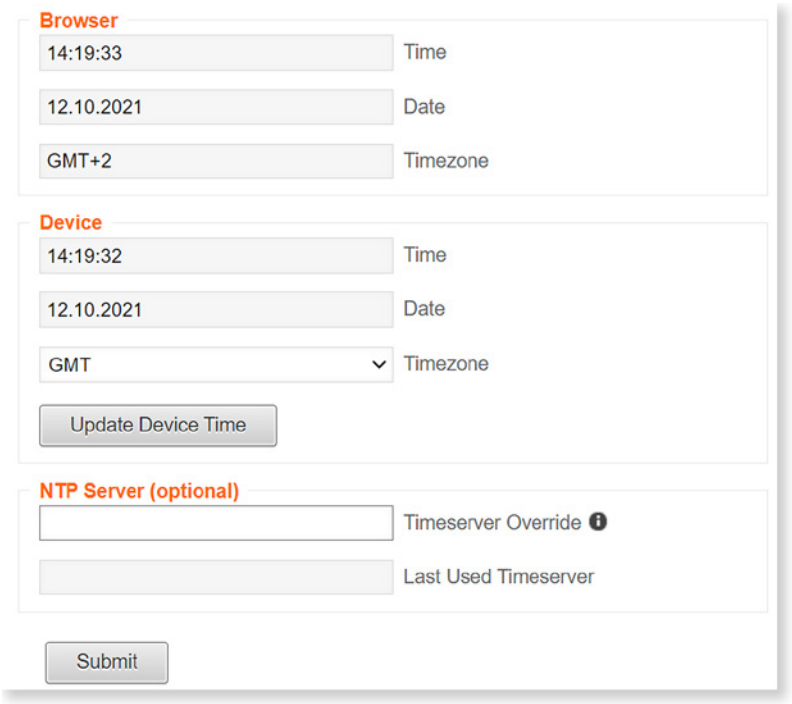
CAUTION:
This does not apply in the "On with scaling" mode.

Site information

You can enter all of the information about the location of the device here. This can be especially helpful if you are managing multiple devices.

Date and time

Date and Time can be set here.



Browser
Date and time of the PC browser connected to the device.

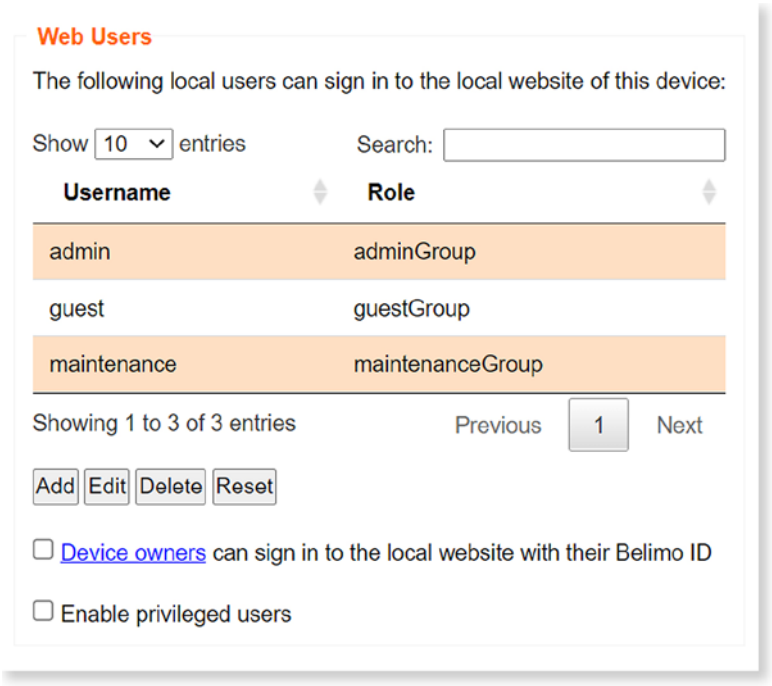
Device
Date and time set on the device.

Update device time
Clicking on "Update device time" transfers the date and time setting of the connected PC to the device.

NTP server
If desired, the date and time can be taken from a time server. If multiple devices are used, it is also possible to define one device as the time master. To do this, enter the IP address of the time master for all other devices.

User administration

You can create new users via this control panel.



Add: Adds a new user.
Edit: Edits the user currently selected.
Delete: Deletes the user currently selected.
Reset: Resets all user settings to the factory settings.

There are three standard users included in the factory settings: admin, guest, and maintenance.
These three users have different read and write permissions. The table below gives an overview of all permissions.

User name: Password:	guest guest	maintenance belimo	admin tlnsg [1]
Overview	L	L	L
Live trend and KPI	L/S	L/S	L/S
Data recording	L	L	L/S
System status	L	L/S	L/S
Version information	L	L	L
Application	L [2]	L [2]	L
User	L	L/S	L/S
IP setting	–	L	L/S
BACnet/MP/Modbus	L	L	L/S
Cloud setting	–	–	L/S
Date and time	–	L	L/S
Maintenance	–	–	L/S

Legend

L	=	Read access
S	=	Write access
–	=	Page is not displayed.
[1]	=	Please change the admin password during the first start-up.
[2]	=	Units can be written.

BACnet/MP/Modbus

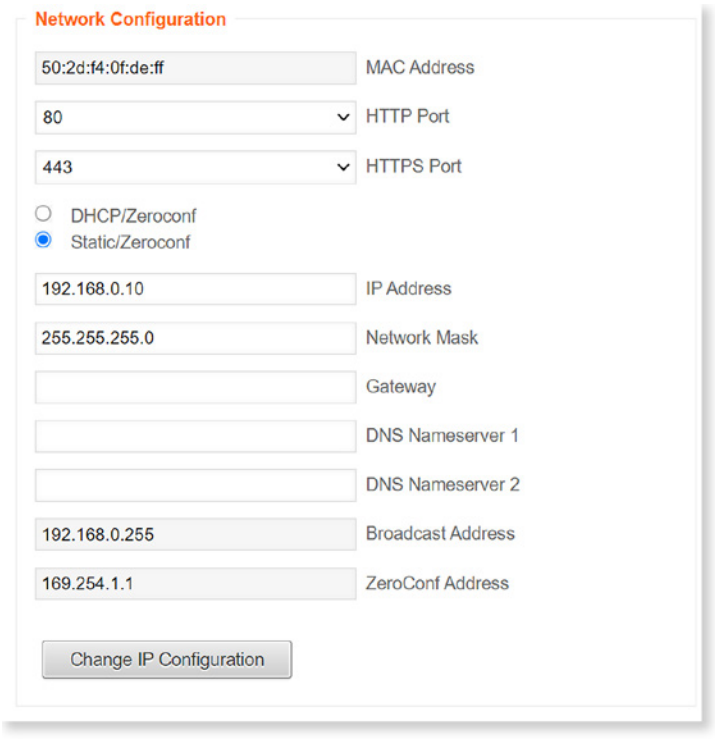
You can select the desired communication protocol here. Once a protocol is selected, you can configure all the relevant settings according to the specifications of the on-site devices.
– BACnet/IP
– BACnet MS/TP
– MP-Bus
– Modbus TCP
– Modbus RTU
– None (only conventional control)

Note:
Setting for analogue feedback not functional when using MP-Bus. See **page 25**.

IP

This is where you can configure all of the IP settings according to the specifications of the person responsible for the network.

Note:
The settings do not change for direct access with the laptop.

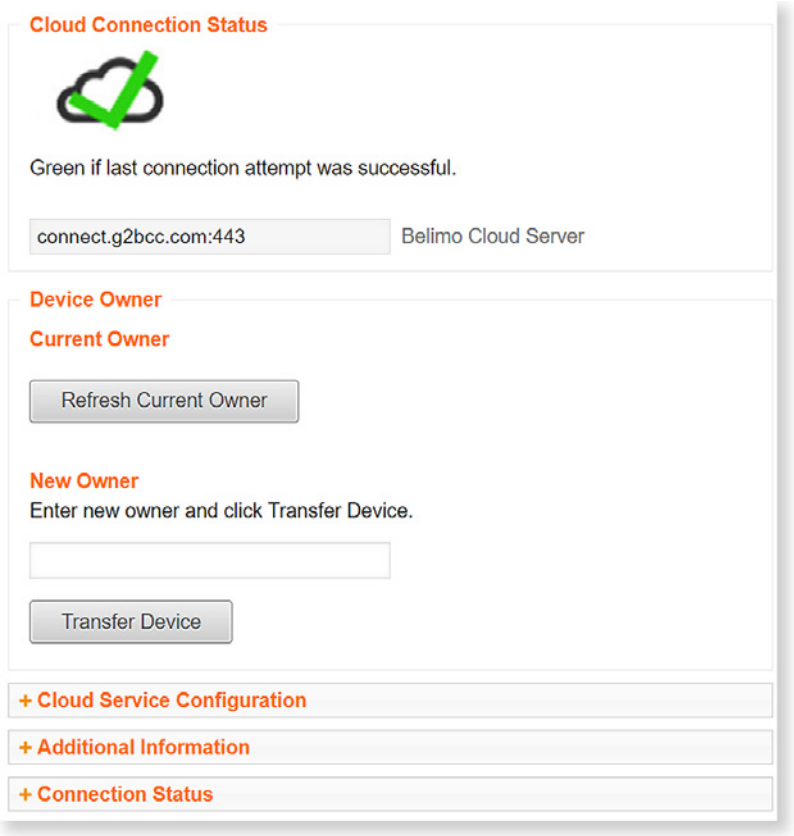


DHCP/Zeroconf
With this setting, the IP address is either automatically assigned to the device or determined by the device.
– If a DHCP server is present, the device is automatically assigned the IP address by the server
– If there is no DHCP server, the device is able to calculate the IP address based on the Zeroconf specification in the "Zeroconf" setting

Static/Zeroconf
This setting allows the device to be assigned an IP address determined by the network administrator. It is normally used in networks without a DHCP server.

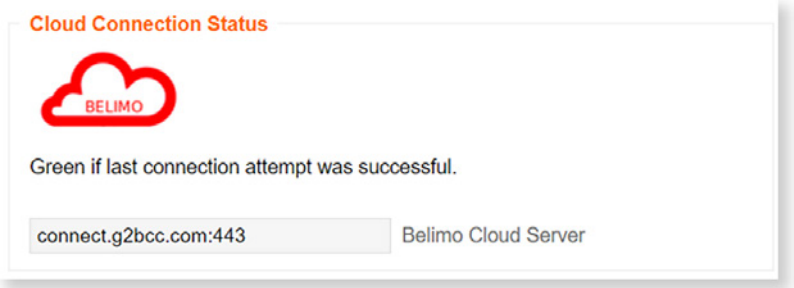
Cloud

This is where you can configure all the settings for the Belimo Cloud.



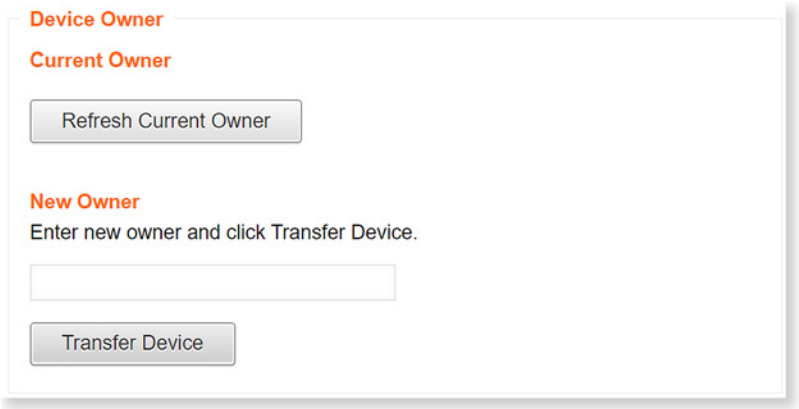
Cloud connection status

Uses colour to show the connection status of the cloud. If the symbol is green, the connection to the cloud has been established. Red means that no connection could be established.



Device owner

This is where you can configure the settings for the device owner.



Current owner

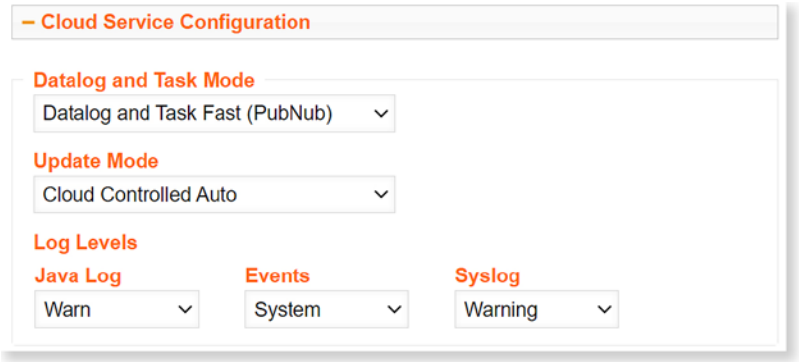
This is typically the name of the user who configured the Belimo Cloud settings and matches the email address provided during the initial installation. Clicking on "Refresh current owner" retrieves this information again from the Cloud.

New owner

Used when transferring from a current owner (or no owner) to a new owner. To do this, click on the "Transfer device" button after entering a new owner.

Cloud service configuration

This is where you can configure the settings for Updates, Datalog and Task Mode.



Datalog and Task Mode

Enables data transfer between the device and the Belimo Cloud.

– Deactivated: No data transfer
– Only Datalog: Only data is stored in the cloud. Settings from the cloud are not adopted by the device
– Datalog and Task Mode (Polling): The device checks at intervals whether settings are to be transferred from the cloud
– Datalog and Task Fast (PubNub): If settings are changed in the cloud, the device is informed that new settings are to be adopted from the cloud. These are then automatically adopted

Update mode

Enables updating of the software through the Belimo Cloud.

– Deactivated: No updates
– Device-controlled: Updates are displayed on the web server, no installation
– Cloud-controlled, manual: Updates are displayed on the Belimo Cloud, no installation
– Cloud-controlled, automatic: Updates are installed automatically

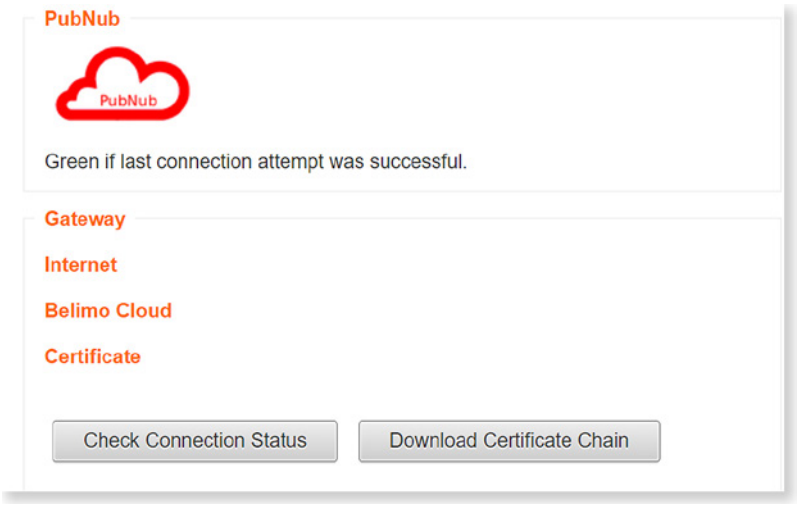
Additional information

This is where you can access a variety of information about the device and sub-devices.

Connection status

Performs a routine that helps troubleshoot the connection to the Belimo Cloud. Clicking on "Check connection status" performs the following three steps:

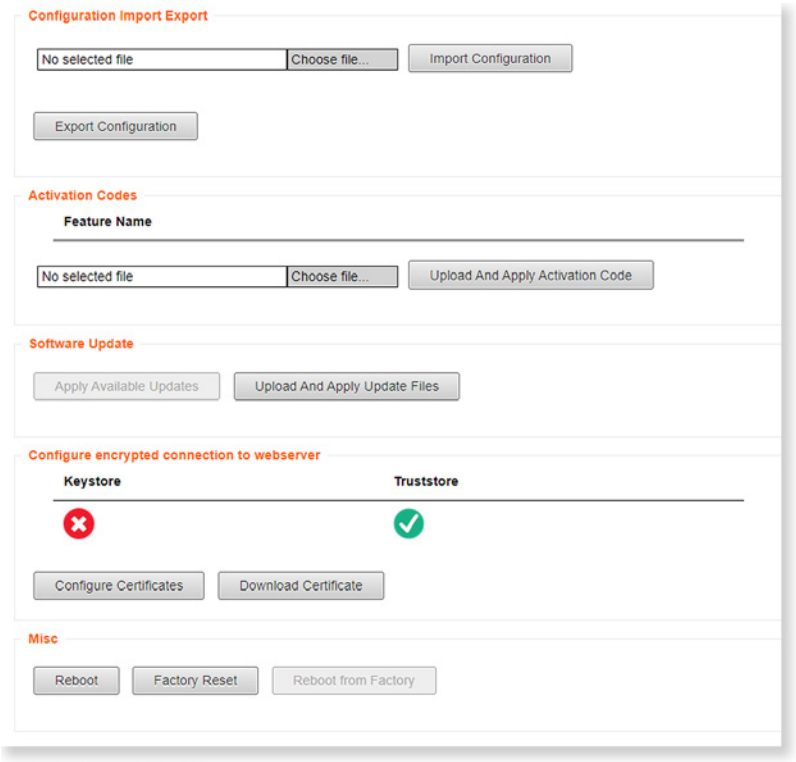
– Checking the connection to the next gateway
– Checking the connection to the Internet
– Checking the connection to the Belimo Cloud



PubNub

Shows the connection status to the PubNub service. Green means that the last connection attempt was successful. Red means that there is no connection.

Maintenance



Configuration import/export

The settings you selected during the commissioning can be saved here as a file on the computer (export configuration).
If a large number of devices with the same nominal diameter and the same settings need to be installed, you can export these settings once and then import and apply them on another valve (browse/import configuration).

Software update

It is possible to upload a software update and to execute it directly.

Configure encrypted connection to the web server

Enables the SSL certificate to be created in order to establish an HTTPS connection.

Miscellaneous

Reboot: When this button is clicked, the device restarts. The previously configured settings remain unchanged.

Factory reset: You can reset the device to factory settings. The steps are as follows:

1. Press the "Factory reset" button and confirm the message by pressing "OK".
2. Connect the device to Belimo Assistant. The device will then start to reset all settings to the delivery condition. All stored data will be lost.

Belimo Energy Valve™ annex

Definitions

V'_{max}

Set maximum flow rate of a pressure-independent valve with the greatest control signal, e.g. 10 V

V'_{nom}

Maximum possible flow rate of a pressure-independent valve, catalogue value, delivery condition.

P'_{max}

P'_{max} is the set maximum power output Q'_{max} at the heat exchanger (with power control operating mode) with the largest control signal, e.g. 10 V / 100%.

P'_{nom}

P'_{nom} is the maximum controllable power output Q'_{nom} at the heat exchanger.

All inclusive.

Belimo is the global market leader in the development, production, and sales of field devices for the energy-efficient control of heating, ventilation and air-conditioning systems. The focus of our core business is on damper actuators, control valves, sensors and meters.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.

- 5-year warranty
- On site around the globe
- Complete product range
- Tested quality
- Short delivery times
- Comprehensive support

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