



BAB TECHNOLOGIE GmbH

LOGIKMODULE Documentation

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EN



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1 LOGIKMODULE

Thank you for buying the **LOGIKMODULE**. With the help of the browser-based graphic editor, the possibilities for system integrators are expanded by creating logic groups and integrating third-party applications.

This documentation will help to familiarise you with the product and facilitate implementation.

BAB TECHNOLOGIE GmbH



Figure 1: LOGIKMODULE KNX

Product name:	LOGIKMODULE
Intended use:	Module to create and execute function / logic groups
Design:	Modular device (REG)
Item number:	10571 (IP), 10575 (KNX), 13571 (EnOcean)

1.1 FUNCTIONAL OVERVIEW

The **LOGIKMODULE** enables at the **LOGIKEDITOR** a graphic creation of function and logic groups and third-party applications can be integrated via the REST interface. In addition the **LOGIKEDITOR** offers a simulation mode, as well as search and documentation functions, also the opportunity of loading and exporting logic groups. The web platform www.logikeditor.de offers examples of logic groups that can be used as templates for your own logic groups, as proposed solutions for your own applications or for information exchange.

The **LOGIKMODULE** is available as an "IP" version (extension for the **CUBEVISIONMODULE**), as a KNX or EnOcean version.



1.2 LOGIKMODULE FUNCTIONAL PRINCIPLE

On delivery, the **LOGIKMODULE** does not contain any logic groups. Examples of logic groups can be imported into **LOGIKEDITOR** immediately via the web platform www.logikeditor.de. The logic groups have a short functional description, which enables you for quick orientation and getting to know each other. The elements of the **LOGIKEDITOR** have extensive tool tips and a help desk that also correspond to this documentation.

1.3 TECHNICAL DATA

Article No.: 10571 (IP) | 10575 (KNX) | 13571 (EnOcean)

- Operating voltage: 12-32V DC
- Typical power consumption 300 mA at 12V DC
- Power consumption: <= 5 W
- Connection: Power supply via screw-type terminal
- Resistant to climate: EN 50090-2-2
- Ambient temperature: -5 to +35 °C
- Rel. humidity (non-condensing): 5% to 80%

Mechanical data

- Assembly: Modular device (REG) housing 4 TP
- Dimensions (W x H x D) in mm: 70 x 90 x 63
- Housing: Plastic
- Degree of protection: IP20 (according to EN 60529)

Interfaces:

- Ethernet over RJ-45 female connector
- KNX connection
- EnOcean@: external SMA antenna

EnOcean specifications:

- Operating frequency: 868.3 MHz
- Range: 300 m in free space / 30 m in buildings (varies depending on building material)
- Input objects: unlimited
- Output objects: 128
- External antenna: 2.50 m cable, magnetic base and SMA connector

Specific features

- Logic groups can be imported and exported
- Logikeditor Network Integration.
Separate web platform www.logikeditor.de for logic groups examples
- Constantly growing range examples of logic groups

Software requirements

- Operating System independent
- Communication: Network interface
- Browser: current standard browser



1.4 SCOPE OF DELIVERY AND INTERFACES

The scope of delivery of **LOGIKMODULE** includes the following content:

- 1x **LOGIKMODULE** IP, KNX or EnOcean (currently being planned)
- 1x documentation
- 1x 2.50 m antenna with magnetic base (for EnOcean only)

A power supply unit for the device is NOT included in the scope of delivery!

In addition to the connection for the power supply (**12-32 V DC**), the **LOGIKMODULE** has the following interfaces:

- 1 x RJ 45 Ethernet 100Mbit/s Full Duplex
- KNX® / TP connection or SMA female connector for EnOcean (planned)

FACTORY SETTING ON DELIVERY:

IP address: 192.168.1.241
Username: "admin"
Password: "admin"

1.5 UPDATES

We reserve the right to offer firmware updates free of charge for the **LOGIKMODULE**. We inform you about new firmware in our newsletter or on our homepage. The update files are available in the download section on our homepage.

www.bab-tec.de

1.6 IMPORTANT INFORMATION ON THE OPERATING INSTRUCTIONS

We reserve the right to make technical and formal changes to the product in the interests of technical progress. The information in this documentation may therefore not necessarily be up to date. Information on current **LOGIKMODULE** firmware and on this description ("LOGIKMODULE documentation") can be found at www.bab-tec.de.

1.7 FUNCTIONAL SAFETY

If there are certain requirements to minimize risks for people or objects (functional safety), additional measures are obligatory, which must be considered during planning and implementation. When using the logic groups in the **LOGIKMODULE**, there are interactions with many devices/connections (e.g. Internet) in the system, which may lead to risks. Especially failure of individual devices or functions or connections can lead to malfunction of the system. There are different ways to minimise the risks. That depends on the system and customer requirements.

These measures must always have the required independence from the operation of the system (LOGIKMODULE) and must always be available.

2 ASSEMBLY

The operating voltage of the LOGIKMODULE is 12-32 V DC

The device shown here is the **LOGIKMODULE** KNX (form factor identical for all models), REG housing 4 TE. Dimensions (width x height x depth): 70 x 90 x 63 mm

- In order to ensure easy connection of the power supply, remove the screw plug-in terminals (see figure below).
- Now connect the power supply cables to the respective screw plug-in terminals (see figure below). Please consider the **polarity!**
- Now, you can plug the screw plug-in terminals into the **LOGIKMODULE**.
- In the next step, snap the device onto the mounting rail according to DIN EN 60715.

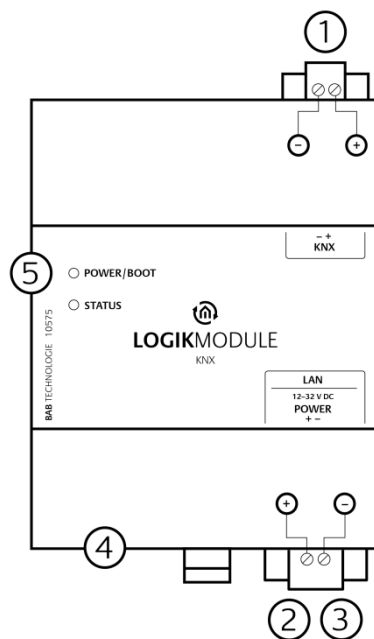


Figure 2: LOGIKMODULE connection diagram

LOGIKMODULE features

- | | |
|-----|--|
| (1) | KNX connection (type 10495) via screw plug-in terminal |
| (2) | Power supply via screw plug-in terminal 12-32V DC |
| (3) | USB connection (is not activated) |
| (4) | RJ-45 female connector for Ethernet LAN |



2.1 LED STATUS

The **LOGIKMODULE** has two DUO LEDs ("Power/Boot" and "Status"). Each DUO LED has a green and a red LED.

POWER / BOOT LED

LED display	Status
OFF	The device is not ready for operation. No operating voltage is supplied.
GREEN	The device is ready for operation.
FLASHING ORANGE	The device is booting.

STATUS LED

LED display	Status
OFF	The device is booting.
FLASHING GREEN	The device has been started; the LED simulates a "heartbeat". The flashing interval increases depending on the device utilisation.
FLASHING RED	Communication takes place via KNX.

Explanation:

The green "Power/Boot" LED lights up as soon as the **LOGIKMODULE** is supplied with power. Two to three seconds after the power supply has been switched on, this LED also starts to flash red (flashing orange) until the booting process has been completed. Then the LED is permanently illuminated green, while the "Status" LED flashes green (simulates a "heartbeat"). The flashing frequency increases depending on the device utilisation.

It takes approx. **2 minutes** to start the **LOGIKMODULE**.



2.2 INITIAL OPERATION

If the **LOGIKMODULE** has been mounted and started as described in chapter "Assembly", commissioning can now be continued as specified below.

Factory setting on delivery:

IP address	192.168.1.241
Subnet mask	255.255.255.0
Username	admin
Password	admin
Device Name	LOGIKMODULE

Note: The password must be changed immediately when logging in for the first time. If the password is lost, the device cannot be reset!

2.2.1 LANGUAGE

Web interface

The language used for the **LOGIKMODULE** Web interface is based on the language set in the browser. German and English are currently available in the **LOGIKMODULE**. If the browser is set to a language other than German or English, English is displayed in the **LOGIKMODULE** interface.

2.2.2 SYSTEM REQUIREMENTS

- Current browser (e.g. Firefox, Chrome, Safari, etc.)
Do not use Internet Explorer
- For EnOcean configuration: BAB STARTER or current JVM & JVM browser plugin

2.2.3 ESTABLISHING CONNECTIONS

In order to configure the **LOGIKMODULE**, a current browser and a network connection to the device are required. If the device is in the condition of delivery, it can be accessed at the above-mentioned IP address and the network settings must be adjusted to the address range, where necessary. Please follow the information given in the chapter "*Adjusting the network settings of your computer*" for this purpose.

CALLING UP THE LOGIKMODULE WEB INTERFACE

The LOGIKMODULE is configured via its web interface so that it can be configured via each web browser. The "EnOcean Editor" layers are Java applications and also require a Java Virtual Machine (JVM) or the BAB STARTER (see "Establishing connections").

In order to call up the web interface, please proceed as described below:

- Open a browser and enter the IP address of the LOGIKMODULE into the address line (Information about the factory settings can be found in chapter "*Initial Operation*")

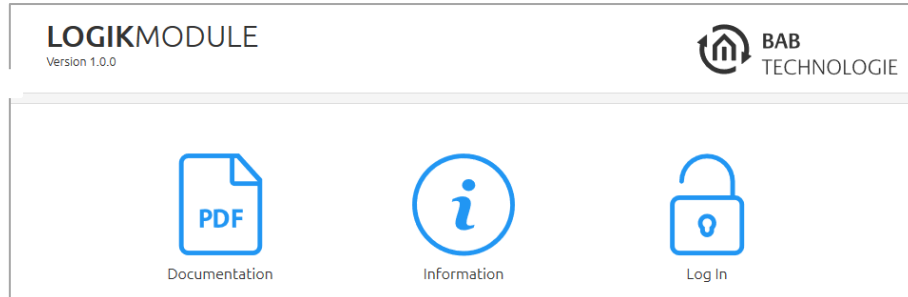


Figure 3: LOGIKMODULE start page

- You will reach the LOGIKMODULE start page. The "Login" unlocks the "Configuration" Functions whereas "Information" shows general system information.

Use the user data to log in to the web interface: "Log In". (Information on the authorisation settings can be found in chapter "*Initial Operation*")

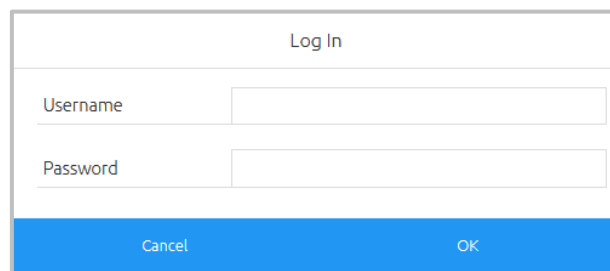


Figure 4: Logging in to the web interface

- You can then also access the "Configuration" menu item. See chapter "*Configuration*"

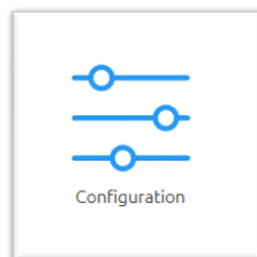


Figure 5: "Configuration" menu item

- To return to the main menu, just click on the header graphic.



Figure 6: Back to the homepage

ADJUSTING THE NETWORK SETTINGS OF YOUR COMPUTER

In order to adjust the network settings of your computer and establish a connection to the device, please proceed as described below:

- Open the IP address settings (under Windows 7):
- Click "Start Button" --> "Control Panel" --> "Network"
- Select "Network Connection", then "LAN Connection" ("Intel PRO1000 GT" in the figure below).

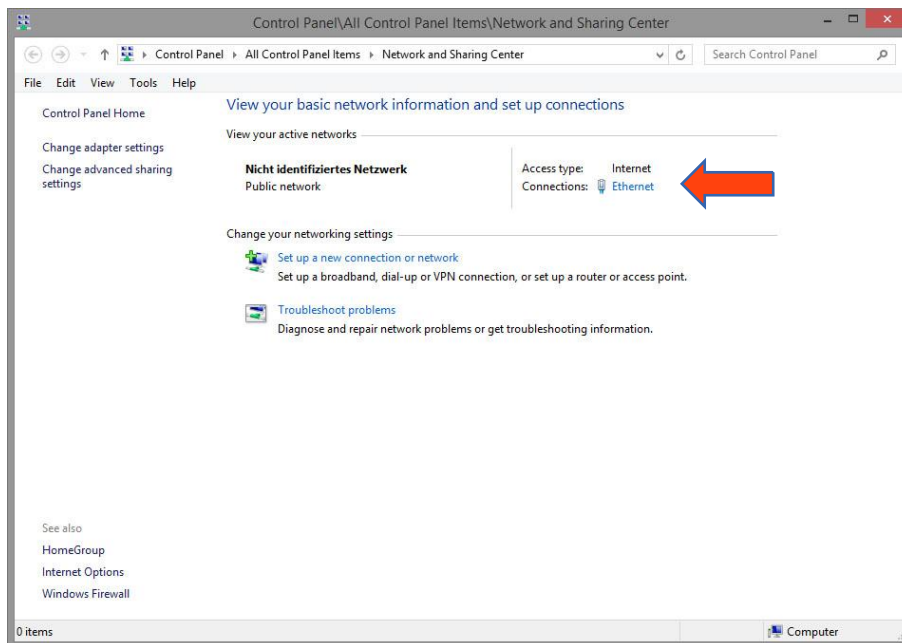


Figure 7: Windows Network and Sharing Center

- Then click "Properties":

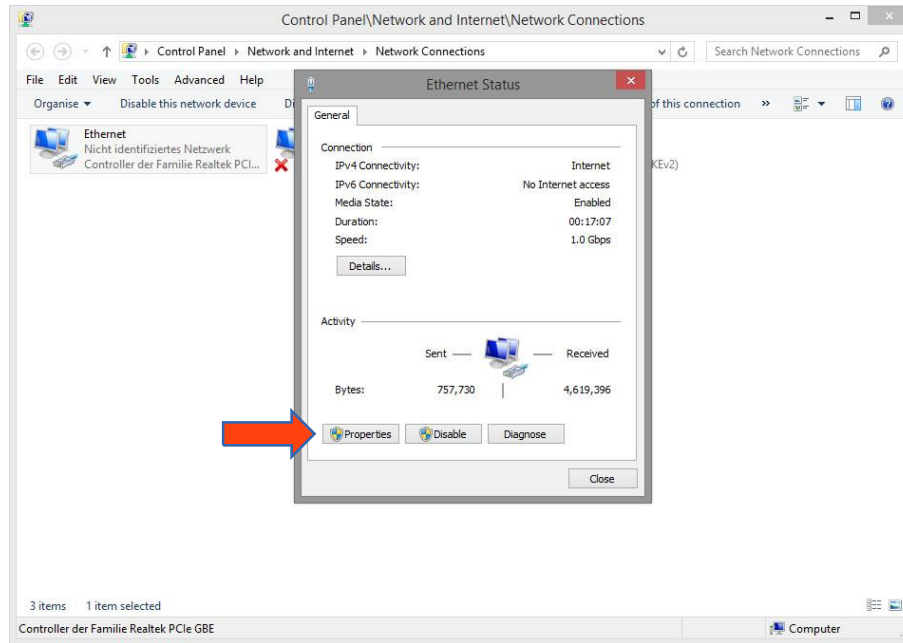


Figure 8: "Ethernet" status

- Select "Internet protocol Version 4 (TCP/IPv4)" and click "Properties" again:

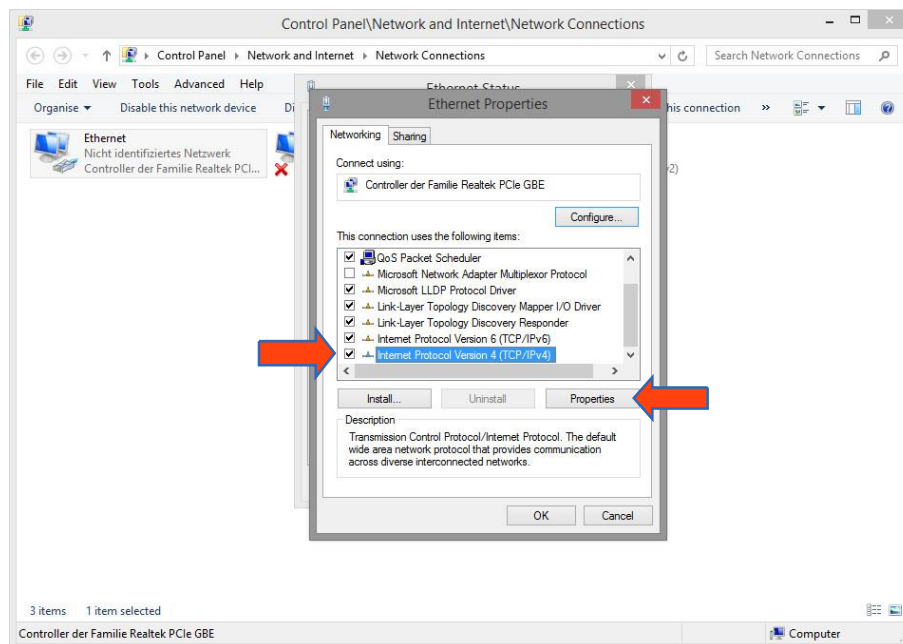


Figure 9: Properties of the LAN connection

- Now note down the current IP address settings or take a screenshot in order to ensure that you can reset the IP address setting following the configuration of the **LOGIKMODULE**.

- Now change the IP address settings (IP address and subnet mask) as required:

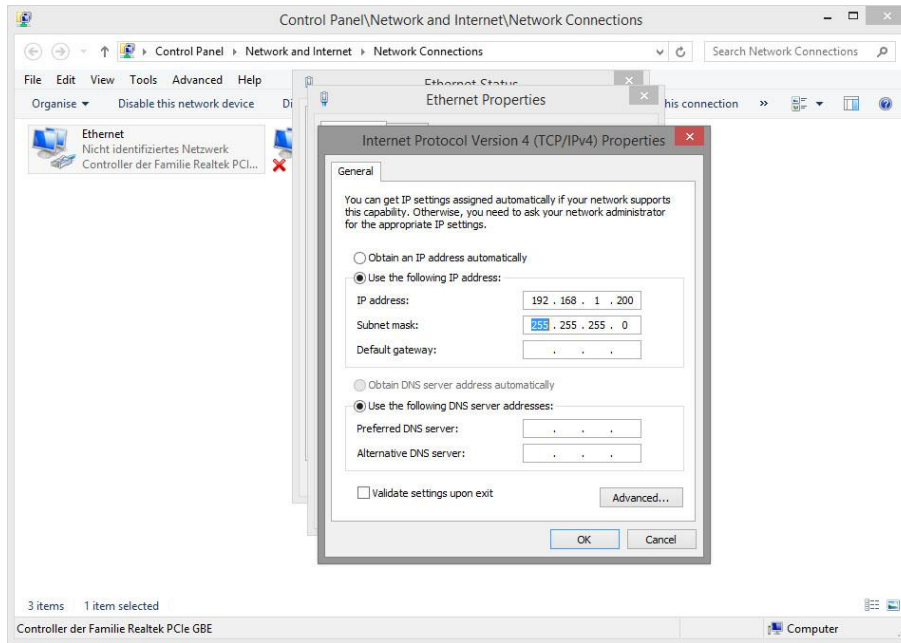


Figure 10: TCP/IPv4 properties

Example of a valid configuration for the factory settings of the **LOGIKMODULE**:

- Free IP address: 192.168.1.228
- Subnet mask: 255.255.255.0
- Now confirm your input with "OK".
- Close all windows until the "Windows Network and Sharing Center Settings" window is shown.

Thus, you have adjusted the network settings of your PC to those of the **LOGIKMODULE**. You can access the web interface of the **LOGIKMODULE** by means of the browser. Restore the original network settings of your PC by following the steps described above as soon as you have configured the **LOGIKMODULE** correspondingly.

If the IP address of your PC and your **LOGIKMODULE** are in the same network mask, you can continue with the configuration.

ADJUSTING THE NETWORK SETTINGS OF THE LOGIKMODULE

If the network prerequisites have been created, you can now access the configuration of the **LOGIKMODULE** in order to adjust the network settings to the local requirements there. To do this, please proceed as described below:

- Enter the IP address of the **LOGIKMODULE** in the address line of your browser (for factory settings: 192.168.1.241).

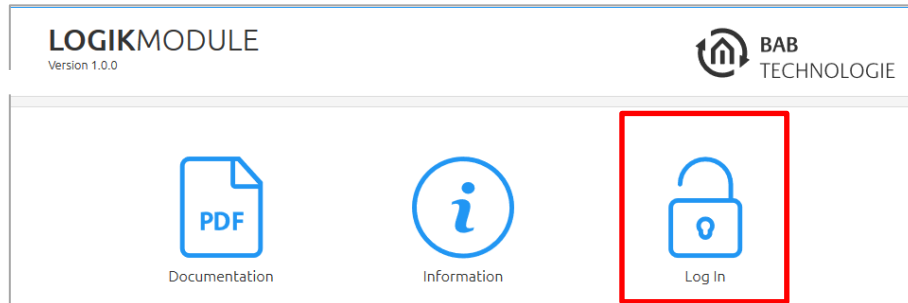


Figure 11: LOGIKMODULE Webinterface

- The start page of the **LOGIKMODULE** opens up. Click "Log In".
- A login dialog appears. For factory settings, the login data is as follows:

Username: "admin"
Password: "admin"

Figure 12: Login dialog

Note: The password must be changed immediately when logging in for the first time. If the password is lost, the device cannot be reset!

Note: Logging in only works if the browser is authorised to save cookies!

- The view on the start page changes. You can now access the following levels:
 - **LOGIKEDITOR**
 - Configuration
 - Documentation
 - Information
 - Log Out

- In order to change the IP address of the **LOGIKMODULE**, please click "Configuration"

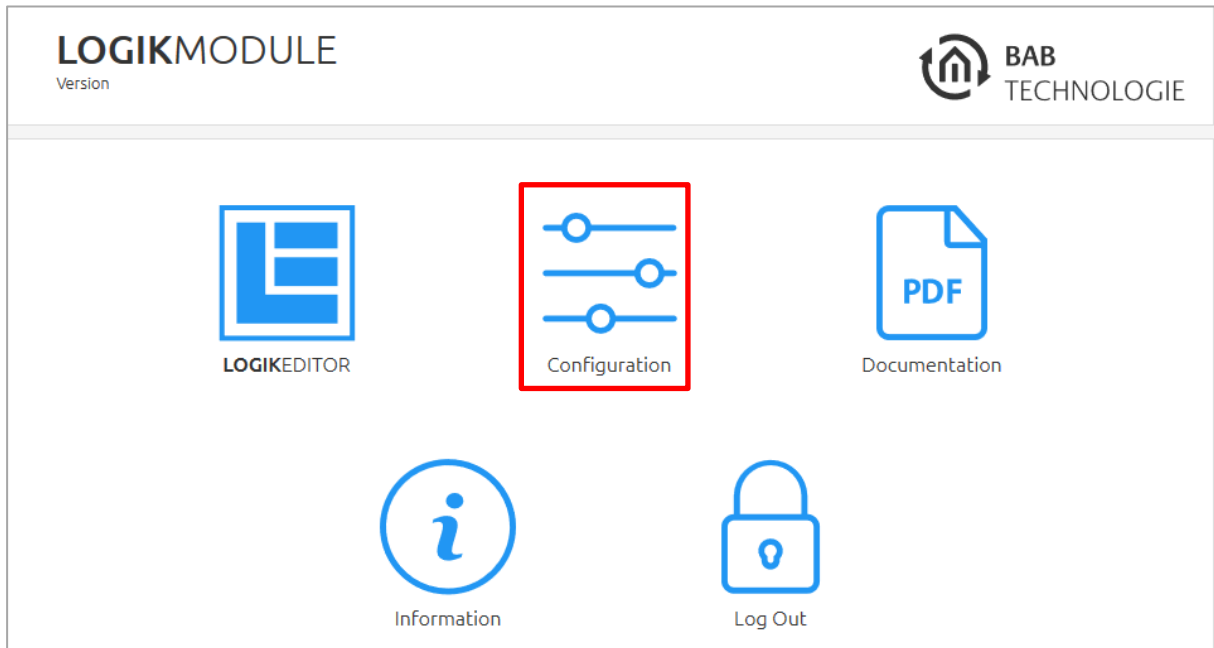


Figure 13: LOGIKMODULE – Main Menu

The configuration menu opens up. You can make the following settings in the "Network" menu item:

DHCP: If the DHCP service is enabled, the device will automatically obtain the network settings. The DHCP service assigns the IP address, the network mask and the default gateway to the **LOGIKMODULE**. Therefore, a DHCP server, in private networks mostly the router, must be available in the local network.
Note: If the DHCP service fails, the LOGIKMODULE gets that with and is then reachable under the default IP address, network mask and standard gateway.

IP address / subnet mask / gateway: Translated with www.DeepL.com/Translator
 Field for the static assignment of IP addresses. Please make also sure that the subnet mask (often 255.255.255.0) and the gateway entry are correct. (Often the IP address of the WLAN router).
Note: Without a correct gateway entry, the device will not be able to communicate with the Internet.

DNS server: DNS is the abbreviation for Domain Name System. The DNS server converts Internet addresses, for example "www.bab-tec.de" into the IP address "85.214.89.170" and vice versa. Without a valid DNS entry, NTP-, weather- or UPnP services do not work.

NTP server: NTP is a free service for synchronising the system time of Internet-compatible devices. If it is not possible to establish the connection to an NTP-Server, the system time must always be checked and adjusted manually (see menu "[General](#)")
 NTP-Server list: e.g. <http://www.pool.ntp.org/zone/europe>

> Start > Configuration ✓ Save Configuration

General

Network >

KNX

User Administration

Remote Servicing

Backup / Restore

System

Device Settings

DHCP

IP Address

Netmask

Gateway

DNS Server

DNS Server #1

DNS Server #2

DNS Server #3

NTP Server

NTP Server #1

NTP Server #2

NTP Server #3

✓ Save Configuration

Figure 14: LOGIKMODULE Network configuration

Change the IP address settings as required. In order to save the settings made, click "Save Configuration". The server in the device is restarted, the browser automatically connects to the new IP address if possible.

Note: Please bear in mind that you might have to reset the IP address of your computer to the initial value in order to be able to access the LOGIKMODULE after the change has been made.

Specialty when activating DHCP

If you have activated DHCP for the LOGIKMODULE according to the steps mentioned above, please use the BAB STARTER like depicted in the chapter "[Network](#)" to find out the current IP-address.

3 LOGIKMODULE IP

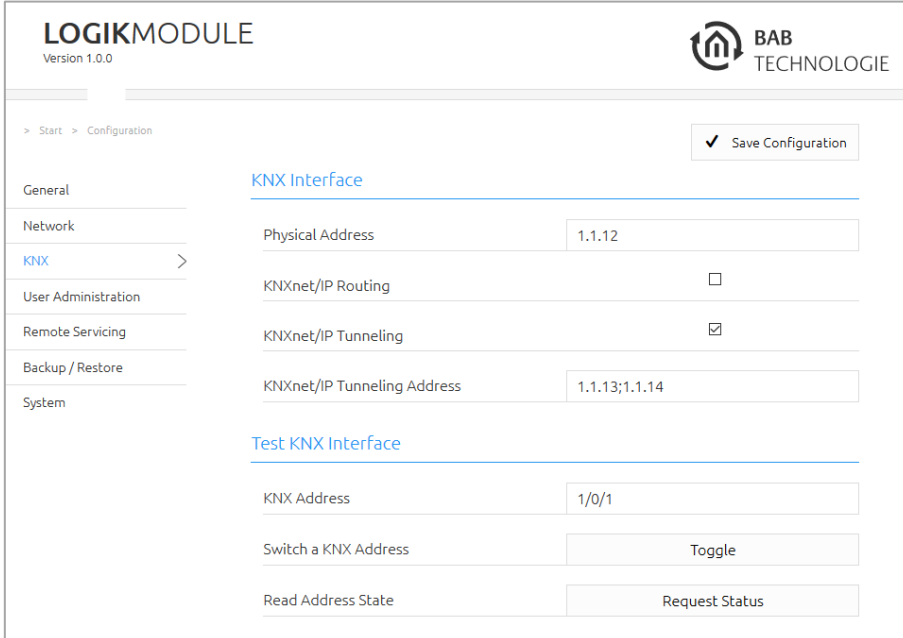
The IP **LOGIKMODULE** (10571) has implemented KNXnet/IP server for integration into the existing network.

3.1 USING KNX NET/IP IN THE LOGIKMODULE IP

The IP **LOGIKMODULE** contains a complete KNXnet/IP server. KNXnet/IP Routing can be used for a connection to KNX (must be provided by another device with a KNX interface, e. g. a KNX-IP-Router) and KNXnet/IP Tunneling as an interface for ETS.

Proceed as follows to set up the KNXnet/IP server:

- Open the “Configuration” – “Module” and select “KNXnet/IP” under “Select interface”. This enables the “KNX interface”.



The screenshot displays the configuration page for the LOGIKMODULE IP interface. The page is titled "LOGIKMODULE Version 1.0.0" and features the BAB TECHNOLOGIE logo. A navigation sidebar on the left includes options for General, Network, KNX (highlighted), User Administration, Remote Servicing, Backup / Restore, and System. The main configuration area is titled "KNX Interface" and contains a "Save Configuration" button with a checkmark. The configuration fields are as follows:

Field	Value
Physical Address	1.1.12
KNXnet/IP Routing	<input type="checkbox"/>
KNXnet/IP Tunneling	<input checked="" type="checkbox"/>
KNXnet/IP Tunneling Address	1.1.13;1.1.14

Below the main configuration, there is a "Test KNX Interface" section with the following elements:

Field	Value
KNX Address	1/0/1
Switch a KNX Address	Toggle
Read Address State	Request Status

Figure 15: LOGIKMODULE IP Interface KNXnet/IP

More information on KNXnet/IP setup can be found in [“KNX configuration”](#).

4 LOGIKMODULE KNX

4.1 LOGIKMODULE KNX COMMISSIONING

There is no ETS application for the **LOGIKMODULE** KNX (item no. 10575). All KNX-related settings are made over the Web interface of the **LOGIKMODULE**.

Note: For the ETS project, please use a dummy application to record the use of the physical address of the LOGIKMODULE.

- Access the website of the **LOGIKMODULE** and log on (see “[Calling up the APP MODULE web interface](#)”).
- Switch to the “Configuration” > “KNX” menu.

> Start > Configuration ✓ Save Configuration

General

Network

KNX >

ETS Inside Server

User Administration

Remote Servicing

Backup / Restore

System

ETS Group Address Import

Current Project BAB TECHNOLOGIE sample case

Latest Change 5/3/2019, 3:54:59 PM

Select Project File

No project selected

KNX Interface

Physical Address 4.7.12

KNXnet/IP Routing

KNXnet/IP Tunneling

Group Address Format 3 Level (xx/y/zzz)

Test KNX Interface

KNX Address 1/1

Switch a KNX Address Toggle

Read Address State Request Status

Figure 16: KNX configuration

- Change the “Physical address”. Please follow the rules for assigning physical addresses in a KNX system.

The screenshot shows the 'KNX Interface' configuration page. The 'Physical Address' field is highlighted with a red box and contains the value '1.1.12'. Below it, 'KNXnet/IP Routing' is unchecked, 'KNXnet/IP Tunneling' is checked, and 'KNXnet/IP Tunneling Address' is set to '1.1.13;1.1.14'.

Figure 17: KNX – Physical Address

- Assign at least 2 physical addresses (not used in the relevant line) for KNXnet/IP Tunneling.

The screenshot shows the 'KNX Interface' configuration page. The 'KNXnet/IP Tunneling Address' field is highlighted with a red box and contains the value '1.1.13;1.1.14'. Other fields are the same as in Figure 17.

Figure 18: KNX – assigning a KNXnet/IP tunneling address

Note: These addresses are required for establishing a connection for the commissioning software ETS for use of the LOGIKMODULE as an interface to KNX. As of ETS 5, at least 2 free addresses are required here.

- Save the configuration.

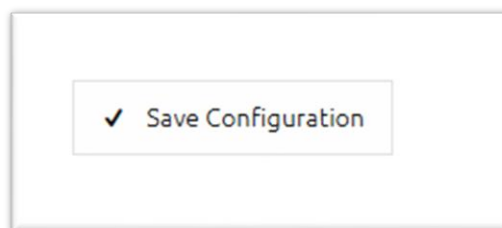


Figure 19: Saving the configuration



4.1.1 KNX CONFIGURATION

The KNX-specific settings of the **LOGIKMODULE** are made in the “KNX” menu. The KNX settings are available both for a **LOGIKMODULE** KNX (10575) and for the **LOGIKMODULE** IP (10571). For **LOGIKMODULE** IP, the settings are used to configure the KNXnet/IP server.

Physical address: Here, you can determine the physical address to be used by the **LOGIKMODULE** in the KNX network. Please make sure that the physical address corresponds to the installation site and does not occur twice.

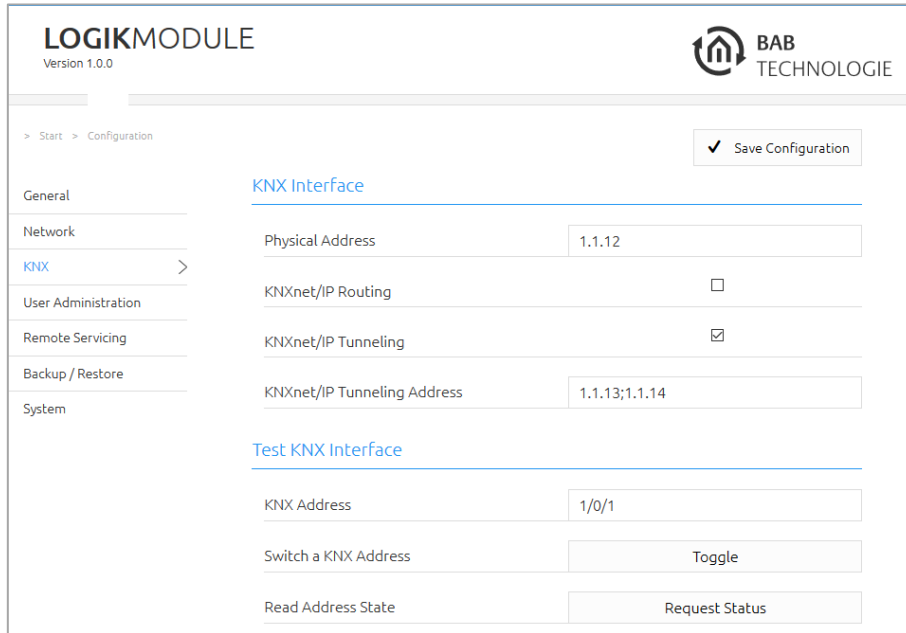
KNXnet/IP Tunneling Address: This address is used by the internal KNXnet/IP server for a KNXnet/IP Tunnelling connection established to the device (using the **LOGIKMODULE** as a programming interface). Please note that these addresses must not be the same as the physical address (see above) and that they must not be used by any other devices in the line either. Please note that for the latest ETS software are at least two addresses required here.

KNXnet/IP Routing: Activates KNXnet/IP Routing for coupling lines and areas via IP. Can only be activated if the physical address corresponds to that of a line or area coupler. KNXnet/IP Routing is based on multicast and all devices send to a multicast group 224.0.23.12. Since multicast packages are usually not transferred by routers, “routing” only works within a subnet.

KNXnet/IP Tunneling: Activates KNXnet/IP Tunnelling access to the device. This connection can be used to program KNX devices or to exchange data. The **LOGIKMODULE** is the server. The above address is used as the physical address for the connection. For each address, only one connection can be established at any one time. On the TCP/IP layer, the connection is made by means of unicast to UDP port 3671.

Note: These addresses are used to establish a connection for the ETS commissioning software to use the LOGIC MODULE as an interface to KNX. Since ETS 5, at least 2 free addresses are required here.

- Click “Save configuration” to apply the settings.



LOGIKMODULE
Version 1.0.0

BAB TECHNOLOGIE

> Start > Configuration

✓ Save Configuration

General

Network

KNX

User Administration

Remote Servicing

Backup / Restore

System

KNX Interface

Physical Address: 1.1.12

KNXnet/IP Routing:

KNXnet/IP Tunneling:

KNXnet/IP Tunneling Address: 1.1.13;1.1.14

Test KNX Interface

KNX Address: 1/0/1

Switch a KNX Address: Toggle

Read Address State: Request Status

Figure 20: KNX configuration

4.1.2 KNXNET/IP ROUTING (FILTER: KNXNET/IP ROUTING)

KNXnet/IP routing is used by so-called KNX IP routers to couple different lines or areas via the network. A multipoint connection based on multicast is used (forms of communication / routing schemes).

Please note that in more complex network structures, multicast is not automatically forwarded via switches and routers! Before activating, make sure that the devices in question can communicate via multicast.

- Activate "KNXnet/IP Routing" to be able to use this routing function.
- After activation open further configuration fields to create filter tables for the KNX communication. Up to 10 transmission rules can be defined for the send and receive direction.

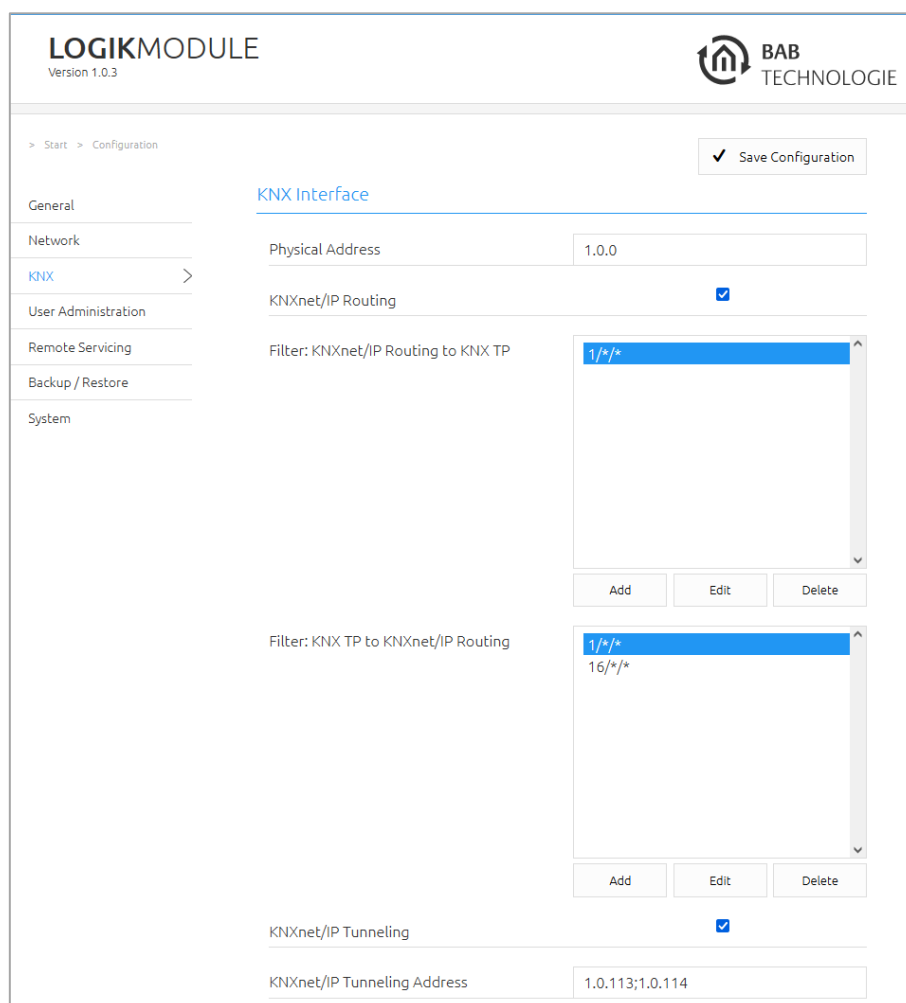


Figure 21: KNX configuration, KNXnet/IP Routing

Transmission rules:

The transmission rules can be used to filter and transform communication between KNXnet/IP and KNX TP. In this way, real group addresses from the source world can, for example, be transformed into virtual addresses (see below) in the target world to avoid unnecessary workloads or overlapping group addresses. When entering the rules, wild cards can be used. The "*" symbol is used as wild card. Depending on its position (before or after the "/"), the "*" represents the KNX main group or sub-group.

Rule	Meaning
//* -> /*/*/*	All main groups and sub-groups of KNXnet/IP are transferred 1:1 to KNX TP. Important: In the target world, all incoming telegrams (from the real address range) are sent on KNX again!
6/*/* -> 6/*/*	All group addresses of main group 6 of KNXnet/IP are transferred to main group 6 to KNX TP.
7/*/* -> 17/*/*	All group addresses of main group 7 of KNXnet/IP are transferred into the virtual main group 17 to KNX TP. <ul style="list-style-type: none"> This prevents overlapping group addresses!
//1 -> */*/1	The addresses 0/0/1; 1/1/1; 2/2/1...32/7/1 are transferred to KNX TP.

4.1.3 ADDRESS SETTINGS (VIRTUAL GROUP ADDRESSES)

This section regulates the use of the "virtual group address area". The virtual group address range can be completely deactivated. In addition, if the virtual group address range is activated, it can be determined from which group address the virtual group address range begins.

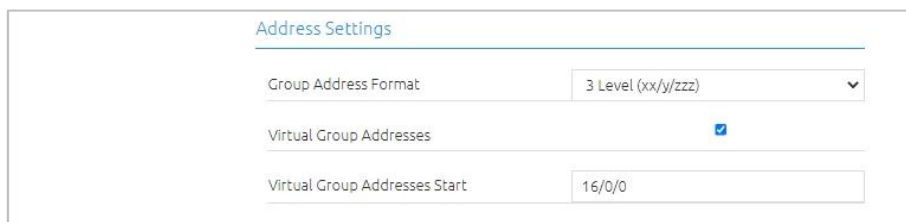


Figure 22 Address setting (virtual group addresses)

The virtual group address range is activated from the factory (factory setting). By default, the virtual group address area starts with group address 16/0/0 and ends with group address 31/7/255.

If the "virtual group addresses" are activated, this range can be set individually if required. To do this, enter the first KNX group address for the virtual group address range in the "Start of virtual group addresses" field. This makes sense if more KNX group addresses are required which can be sent on the KNX bus - but at the same time not to use without the virtual group address range in order to keep the telegram load on the KNX bus low.

For example, the start of the "virtual group addresses" can be set to 31/0/0. In this configuration, the **LOGIKMODULE** sends all group addresses up to 30/7/255 on the KNX bus and from group address 31/0/0 to 31/7/255 only internally.

If the virtual group addresses are deactivated ("Virtual group addresses" checkbox), the **LOGIKMODULE** sends all group addresses (from 0/0/0 to 31/7/255) to the KNX bus without exception.

Information: Telegrams from the virtual address range are not sent to the KNX bus, but can be used for internal communication in the **LOGIKMODULE**.

5 LOGIKEDITOR

You can create and manage the required functions / function groups in the menu item “**LOGIKEDITOR**”.

1. Please call up the web interface of your **LOGIKMODULE**:

<IP address **LOGIKMODULE** >

2. Click on the menu item „ **LOGIKEDITOR** “, here highlighted red.

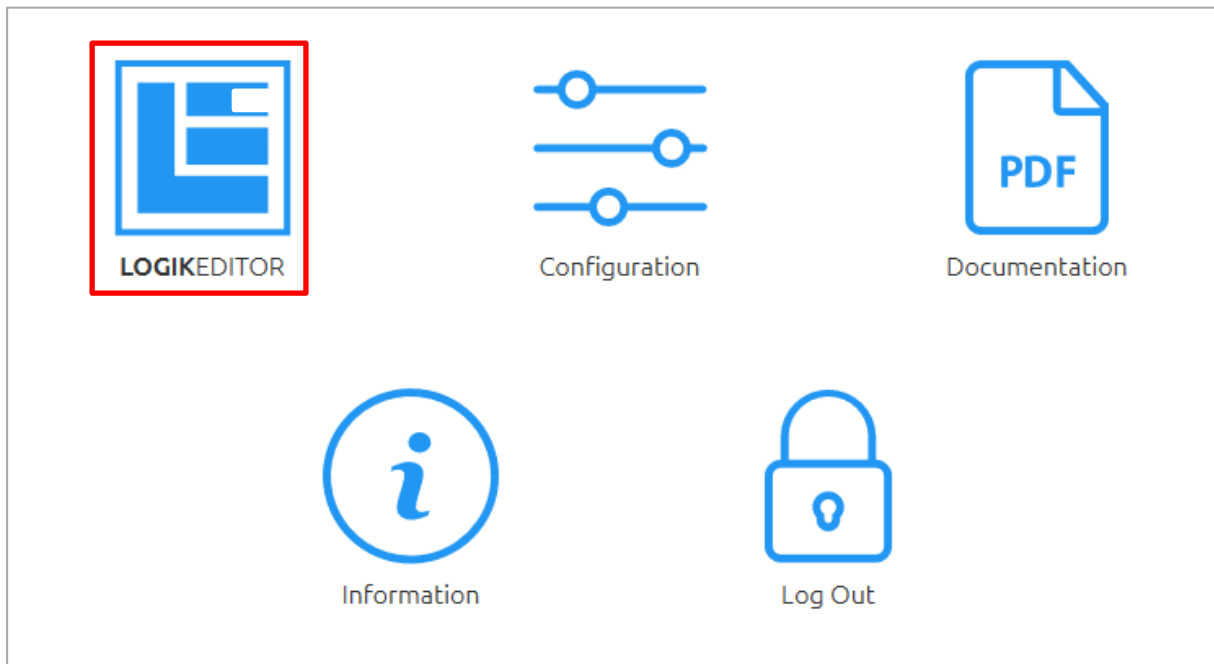
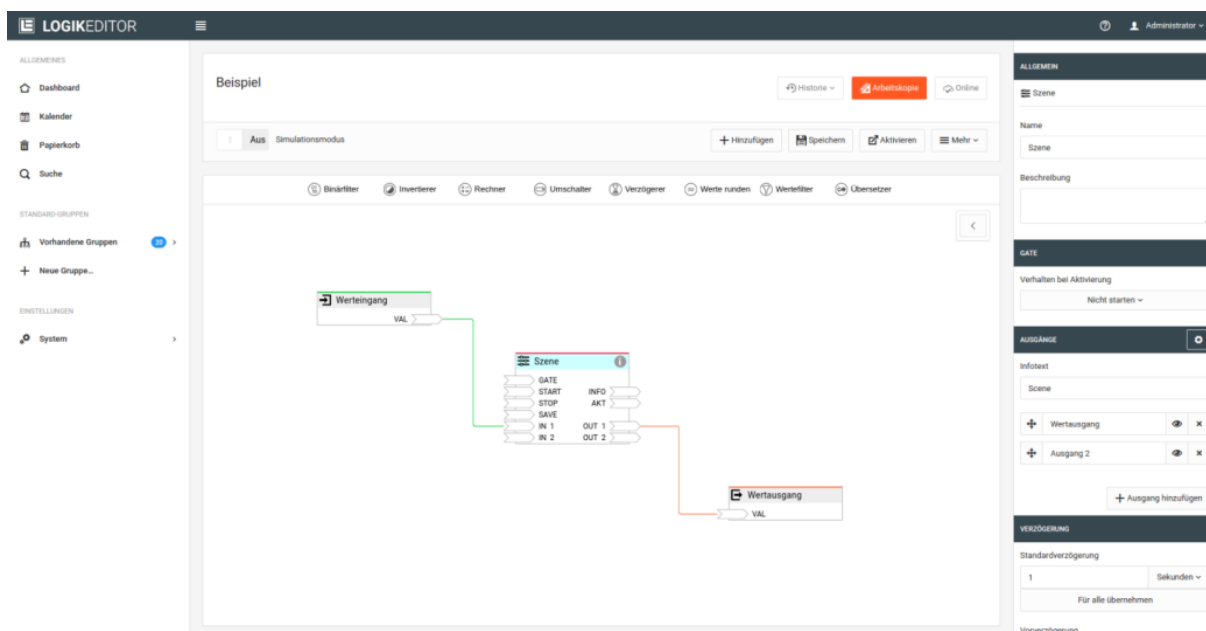


Figure 23: LOGIKMODULE Start menu

The **LOGIKEDITOR** is a web application which allows you to graphically create logics and automations within the **LOGIKMODULE**.

This graphical editor, based solely on latest web technology, offers completely new possibilities to users and system integrators. You can use the comprehensive commenting and search functions to organise your projects and you can reuse logic groups by exporting and importing them. You can simulate complex scenarios before activating them in the **LOGIKMODULE**. New logic elements such as »Calendar«, »Lua Script«, or »Statistics« enable you to comfortably realise challenging tasks. With little helpers, the so called »Tools«, you can change or filter values between two logic elements.



RANGE OF FUNCTIONS

The **LOGIKEDITOR** is a web application which allows you to graphically create logics and automations within the **LOGIKMODULE**. The **LOGIKEDITOR** offers the following features and more:

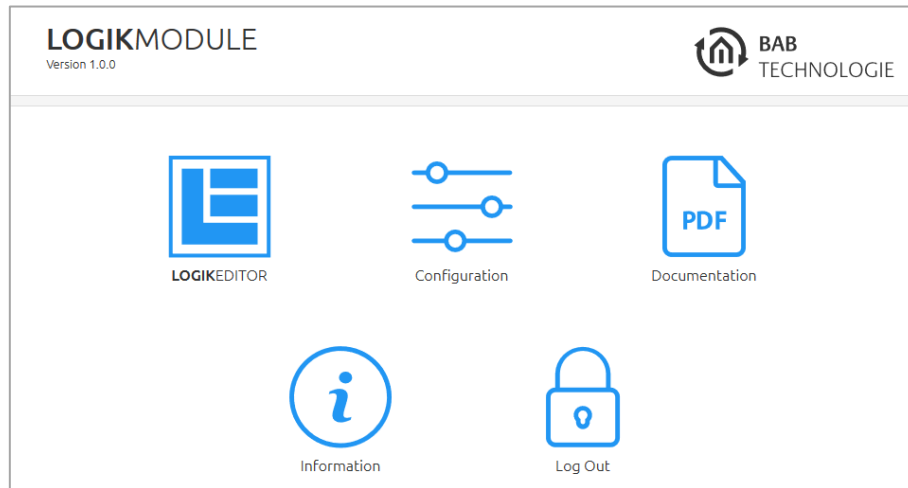
- easy, platform-independent usage in a web browser
- graphical linking of logic elements
- import of ETS project data (.knxproj files)
- simulation, including custom start times and time stretching
- plugins allowing you to configure logics in our visualisations (e.g., weekly timers)
- import and export of logic groups
- comprehensive search function
- ability to configure your logics without immediately affecting the facility
- context-sensitive help texts
- dashboard
- history function

5.1 GETTING STARTED

The **LOGIKEDITOR** is a web interface for creating logics and automation features with the help of graphic links within **LOGIKMODULE**.

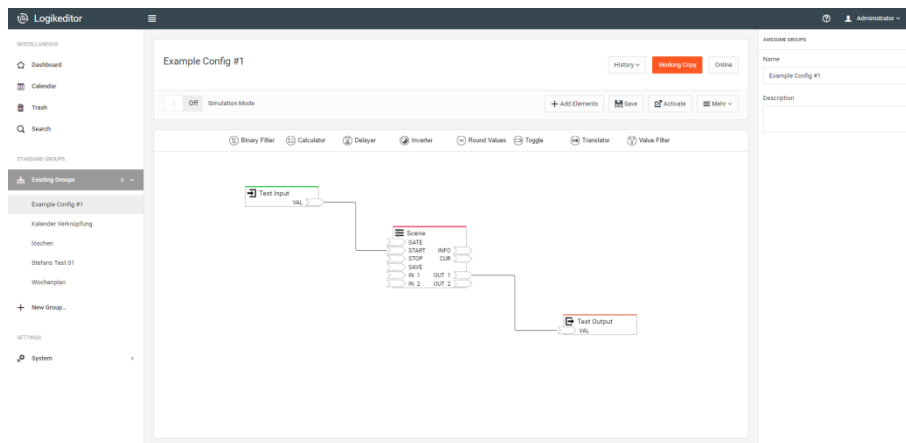
START

LOGIKEDITOR is started via the home page.



LOGIC GROUPS

In order to obtain a canvas allowing for creating the graphic links with inputs and outputs, a new logic group must be created.



FUNCTIONAL MODULES

Within logic groups, there are three possible types of functional modules:

1. Inputs / outputs
2. Logic Elements
3. Tools (simple operators)

Connection to the system / data points

Connection to the system and other functional areas of **LOGIKMODULE** is established by configuring the inputs and outputs. Depending on the data point selected, the input and output objects provide the corresponding tie points in so doing. Information on data point linking can be found in chapter [Data Points](#).



Currently, **LOGIKMODULE** supports KNX. Further bus systems will be added in the following expansion stages (e.g. EnOcean, etc.). Information on how to load a KNX project can be found in chapter [KNX project data \(ETS\) import EN.](#)

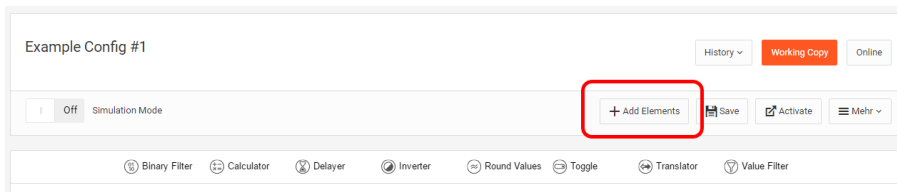
Internal Links

In order to link the functional modules (value input, value output, logic elements, tools) to one another, it is sufficient to draw lines between the tie points. See chapter [Internal Link](#) for additional information.

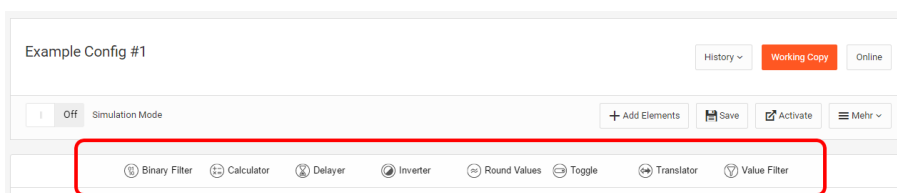
Logic Elements & Tools

Along with logic elements, providing a very comprehensive scope of functions, there additionally are so-called "tools", with the help of which simple actions can be implemented within the links between two functional modules. A description of the existing logic elements can be found in the chapter [Logic Elements](#), and a description of the tools can be found in chapter [Tools EN.](#)

- Add Logic Elements:



- Add Tools:





WORKING COPIES

LOGIKEDITOR works with "working copies". During configuration, a working copy is automatically opened in the browser, which can then be edited there but does not have any influence on current operations. The settings can be simulated in the working copy. In order to activate the modified configuration for the system, the working copy must be transferred to the device using "Activate". See chapter [Logic Groups - The LOGIK EDITOR Canvas](#).

SIMULATION MODE

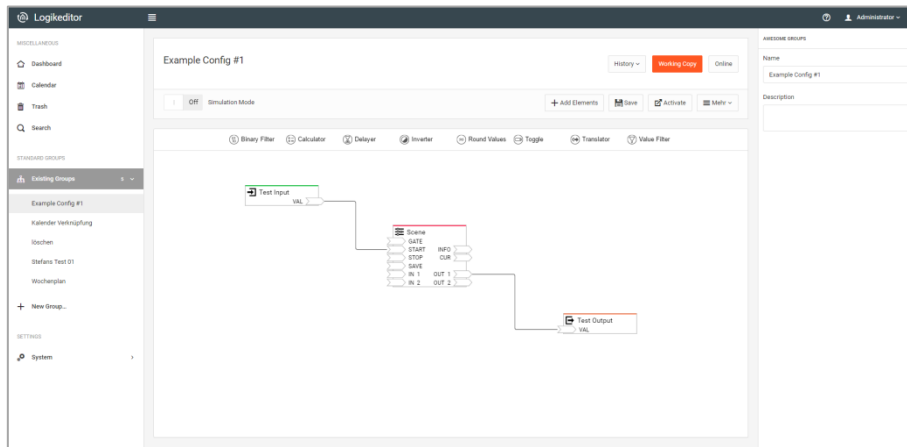
LOGIKEDITOR has a simulation mode that can be used to set any start time and time scaling. See chapter [Logic Groups - The LOGIK EDITOR Canvas](#).

KEYBOARD COMMANDS

In addition to mouse and touch control, the **LOGIKEDITOR** also supports keyboard commands. Besides a number of generally available shortcuts, there are some that only work on certain pages. You can get an overview of the supported commands on any page by pressing the '?' key, or clicking on the question mark symbol in the right area of the top bar.

5.2 LOGIC GROUPS - THE LOGIKEDITOR CANVAS

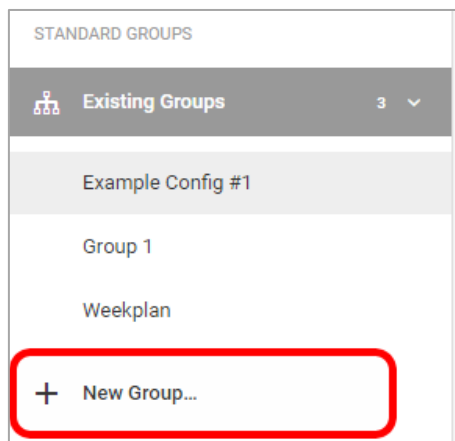
The configuration of logic elements, as well as linking the logic elements to inputs and outputs is performed within so-called logic groups. Therefore, the logic group configuration represents the canvas.



There are the following functions for working within the logic group configuration:

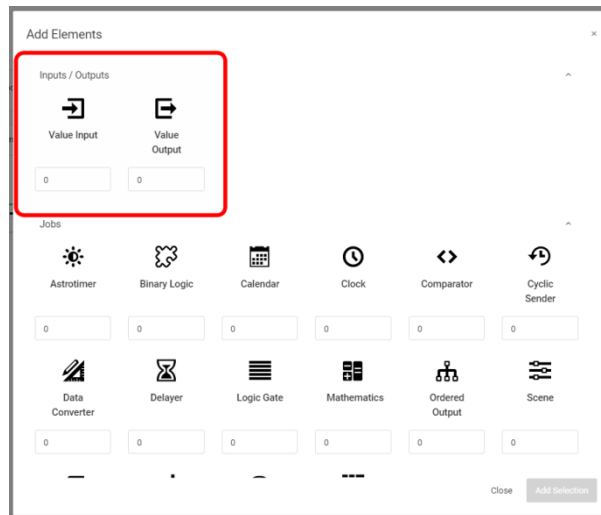
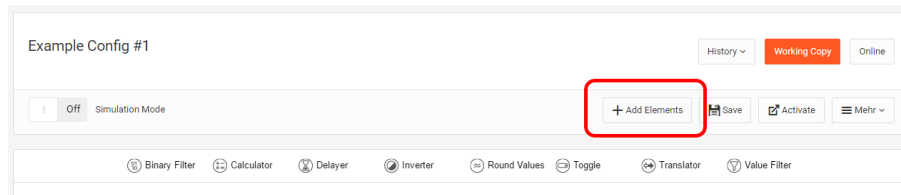
- Create a new Logic Group
- Add Value Inputs / Value Outputs
- Add Logic Elements
- Add Tools
- Draw a Connection
- Simulate a Logic Group
- Activate a Logic Group

Create a new Logic Group



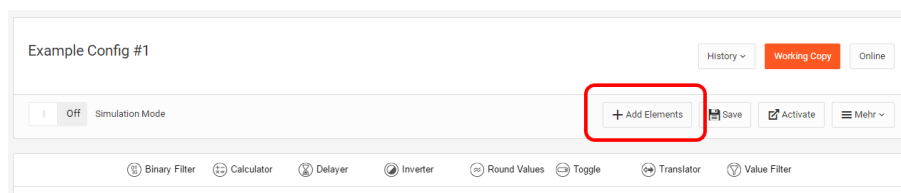
To create a logic group, please click on "+ New logic group" in the opened logic group menu (left side).

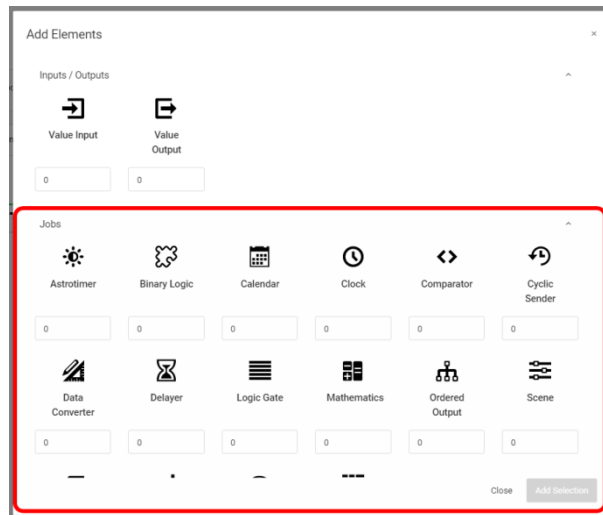
Add Value Inputs / Value Outputs



If you only want to add one element of one type, you may simply double-click on the symbol. Otherwise, enter the desired amount in each input. You can cycle quickly through inputs using the tab key. You can type in a number, or you can alter the default zero using the arrows next to the input. Finally, if you click into an input field you can also increase or decrease the amount using your mouse wheel or the arrow keys of your keyboard. The fastest way is cycling through all fields using the tab key and the selecting the amount using the arrow keys. As soon as at least one element has a quantity larger than 0, the button "Add Selection" will be enabled. Additional information on the configuration of data points and inputs & outputs can be found in chapter [Data Points](#).

Add Logic Elements

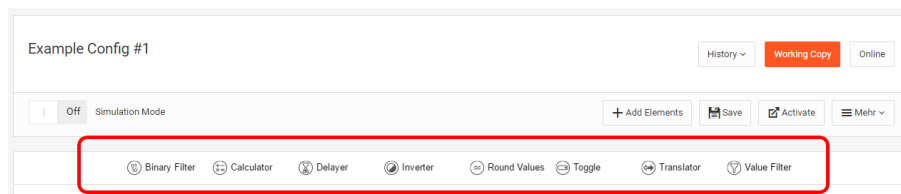




If you only want to add one element of one type, you may simply double-click on the symbol. Otherwise, enter the desired amount in each input. You can cycle quickly through inputs using the tab key. You can type in a number, or you can alter the default zero using the arrows next to the input. Finally, if you click into an input field you can also increase or decrease the amount using your mouse wheel or the arrow keys of your keyboard. The fastest way is cycling through all fields using the tab key and the selecting the amount using the arrow keys.

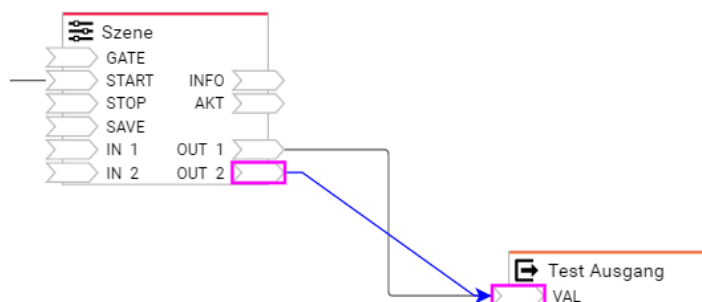
As soon as at least one element has a quantity larger than 0, the button "Add Selection" will be enabled. The individual logic element types are described in more detail in chapter [Logic Elements](#).

Add Tools

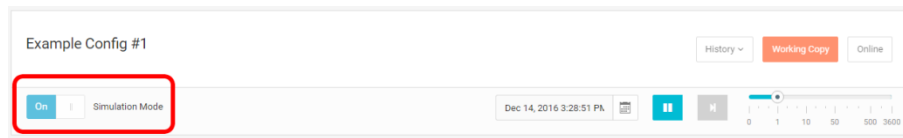


Click the desired tool and drag it to your logic group. You may also drag a tool directly to a connection. The individual tools are described in more detail in chapter [Tools EN](#).

Draw a Connection



Simulate a Logic Group

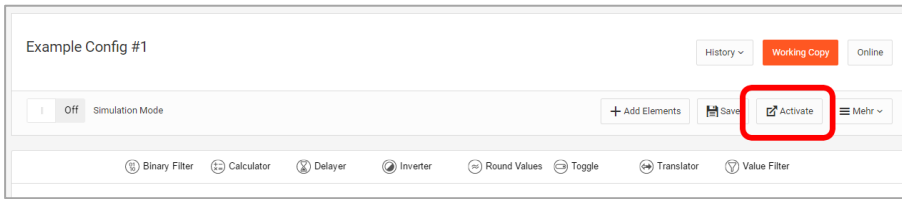


Simulation includes the following functions

- Defined start date
- Start/stop
- Time lapse

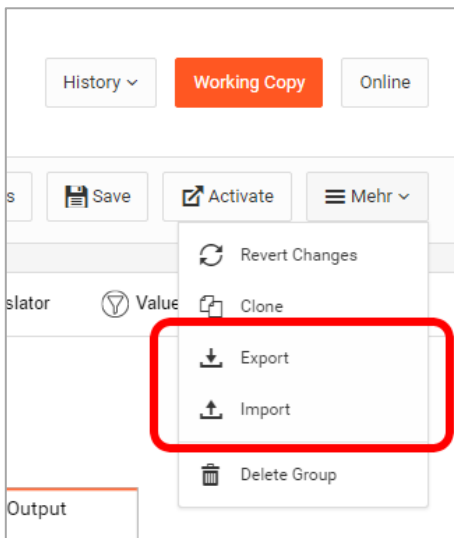
In order to send values to your logic group while simulating, simply double-click value inputs contained in the logic group.

ACTIVATE A LOGIC GROUP



Only after a logic group is activated it is active in the system. Previously, the respective logic group only works within the working copy.

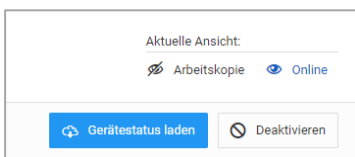
Import / Export



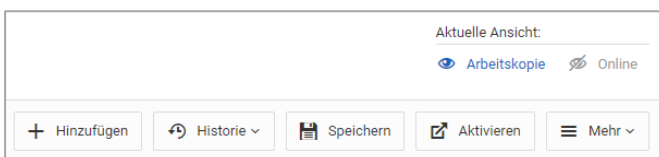
With the help of the Import / Export function, individual logic groups can be saved and restored. This way, logic groups can be reused in other devices as well.

DEACTIVATE LOGIC GROUP

By using release objects, you can control the operation of the logic groups in a very targeted manner. In addition, there is the possibility to deactivate the logic groups completely. To do this, go to the online mode of the respective logic groups.



In active online mode, the "Deactivate" button becomes visible. After disabling, the display changes accordingly.



5.3 DATA POINTS

The data points are currently defined using manually created addresses or using addresses from an imported KNX project file. The data points then serve as input and output to the system with the help of the values inputs and outputs within the group for the defined operations.

- Creating Data Points
- KNX project data (ETS) import EN
- Value Input / Value Output
- Data point types in the LOGIK EDITOR

5.3.1 CREATING DATA POINTS

- Set up / create
- Extend
- Configuration
- Available data point types
- Individual value range
- Initialisation

To be able to provide the value inputs and value outputs within the logic groups with data points, they have to be configured first. In this respect, the data points create the connection with the system (KNX system, other functional areas within the visualisation). The administration of the data points is located at "System > Data Points". ETS project data or simply individually created data points can be used for the purpose of creation.

The screenshot shows the LOGIKEDITOR interface for configuring data points. The main window is titled "Data Points - Inputs from and Outputs to KNX". It features a sidebar on the left with navigation options: Dashboard, Calendar, Trash, Search, Logic Groups, and System. The main area is divided into two sections: "ESF Project Data" and "All Data Points". The "All Data Points" section shows a list of data points, including "Aktuelle Lichtszene - 1.001 | switch | 1 Bit" and "Fenster (Anzahl) Status - 7.001 | pulses | 2 Bytes". The right sidebar shows the configuration for a selected data point, including fields for Name, Description, Data Point Type, and Communication Object.

Set up / create

There are three ways to create a data point:

- By double clicking on a group address of the KNX project tree on the left-hand side.
- By dragging and dropping (dragging with the mouse) a group address from the KNX project tree to the right
 - a. To the grey area (+) above the right-hand tree
 - b. Between two data points in the right-hand tree
- By clicking on the grey area above the right-hand tree. In this way it is possible to create a data point without data from a KNX project file. This is necessary, for example, if the logic group is to be connected directly with a function within the visualisation.

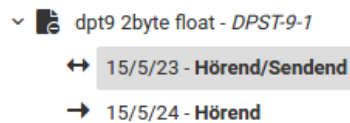
The first two options create data points that are related to the KNX project.

Extend

Every data point can contain one sending / listening object and up to 19 listening objects: There are two ways to extend a data point:

1. Drag and drop from the left-hand tree to an existing data point.
(In this case the data point type has to match which is ensured by an automatic filter.)
2. In the data point configuration (right-hand column) via the “Add Group Address” button

Configuration



In the tree view of the data points, the top group address is always listening and sending, and the subsequent ones are only listening. The total number of group addresses per data point is limited to 20. The order can be changed via drag and drop.

DATA POINT

Name
Schwimmbad Beleuchtung

Description
Schwimmbad Beleuchtung

Data Point Type
6.010 | counter pulses (-128..127) | 1 Byte

Divergent Data Point Initialisation

COMMUNICATION OBJECT

17/2/11	x
Schwimmbad Beleuchtung	
17/2/111	x
Schwimmbad Beleuchtung Status	

+ Add Group Address

In addition to the name and description of the data point, you can also configure the data point type and group addresses together with the individual description. These changes may then differ from the information status in the KNX set-up software ETS.

With data points which have not been created in a KNX project (i.e. manually by clicking on the grey surface), the data point type can also be changed at a later moment in time. If you change the type of a data point, it will also have an effect on the inputs and outputs of the logic groups in which it is used.

Important

If you change the type of a data point, this will also affect the inputs and outputs of the logic groups in which it is used.

Available data point types

A listing of the data types available in the **LOGIKEDITOR** is [available here](#). If the data types have not yet been connected in the KNX set-up software ETS, or if a requested data point type is not implemented in the **LOGIKEDITOR**, with certain data types, via the “individual value range” function, you are given the option to configure the value range as required (see the following section).

Individual value range

To be able to depict the individual value ranges, you are able to change the factor, offset, minimum and maximum value of the data point. This selection is available to you with the numerical DPT main types (e.g. DPT 9.*). It is not possible, for example, to occupy DPT 3.* (Dimming), DPT 232.* (RGB) or

DPT 16.* (Text) with an individual value range.

One example of use would be the use of DPT 9.* (two bytes floating point value) as DPT 9.004 (Lux 0 - 670.760). In such cases you can simply set the minimum value to 0.

Calculation

From the bus in the direction of **LOGIKEDITOR**, the input value

1. is multiplied with the factor.
2. is added with the offset.
3. is checked for falling short of the minimum value.
4. is checked for exceeding the maximum value.

The value determined in this way is transferred to the logic groups via the value input.

From the **LOGIKEDITOR** in the direction of the bus, the output value

1. is checked for exceeding the maximum value
2. is checked for falling short of the minimum value
3. is subtracted with the offset
4. is divided by the factor.

The value determined in this way is converted into a bus telegram. The corresponding limits of the main type apply here.

Initialisation

In addition to the settings for all data points, you are also able to equip a data point with individual initialisation settings. The configuration is described here under data point initialisation.

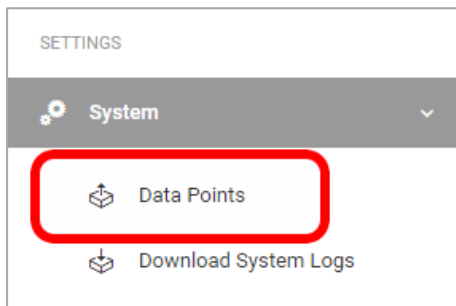
5.3.2 KNX PROJECT DATA (ETS) IMPORT EN

In order to be able to access the group addresses used in the system for data point configuration for the values inputs and outputs, it is possible to import a project file from the ETS start-up software. The file has the extension "*.knxproj" and is available in ETS 4 and higher.

Password-protected ETS projects cannot be imported into the LOGIKEDITOR.

Please proceed as follows in order to import the data:

- In the LOGIKEDITOR, open "Settings" - "System" - "Data points" in the menu on the left



- You will see the ETS project data export. On the top, open the file browser at "Projektdatei auswählen" (select project file) in order to select a *.knxproj.
- Once you opened a file here, the corresponding project data is shown in the left half of the window.

For use within the LOGIKEDITOR, data points must be created from the communication objects of the ETS project. The data points can then be used for inputs and outputs within a group. Additional information on data point configuration can be found in chapter [Creating Data Points](#).

5.3.3 VALUE INPUT / VALUE OUTPUT

Value input and Value Output serve as link to the system within the group (KNX system & other LOGIKMODULE functions). You can use your existing [data points](#) in "Value Input" and "Value Output", or you can manually create new ones.



- Inputs and outputs
 - Value Output: The TRIGGER Input
- Configuration

INPUTS AND OUTPUTS

Value Input and Value Output are the interfaces of a group to the outside. Each of these logic elements is linked to a data point. The type of data point determines the number of inputs and/or outputs of the logic element.

You can find an overview of the input and output configuration for each specific data type on the page [Data point types in the LOGIKEDITOR](#).

Value Output: The TRIGGER Input

As previously mentioned, the number of inputs of a Value Output depends on the data type of its data point. Complex data types, those that consist of more than one value, automatically receive an additional TRIGGER input. It can be connected optionally. The reason for this input is the fact that there are no simultaneous events. If you set the value of n inputs, there will be n new total values for this data point, in quick succession.

If the TRIGGER input is not connected, then the Value Output will send the new compound value of a complex data type on every change of one of its inputs. If it is connected, then the Value Output will only send the compound value when the TRIGGER input receives an event. This allows you, in combination with an Ordered Output, to prevent that undesired "intermediate values" reach the outside.

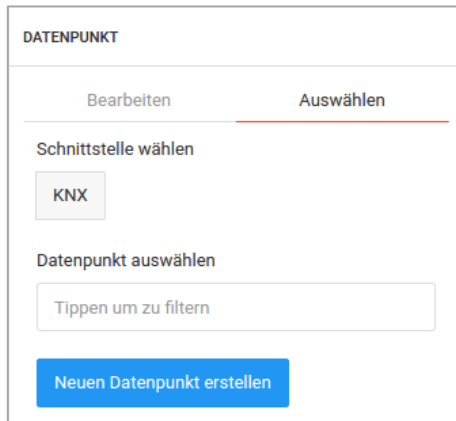
An example: The values 33, 66, 99 are currently set at the RED, GREEN, BLUE inputs of a Value Output with data type 232.600. The logic group does now set the new colour 66, 99, 33. Without TRIGGER input, the Value Output will send three colours consecutively:

66, 66, 99
66, 99, 99
66, 99, 33

But with the correct usage of an Ordered Output and a connected TRIGGER input, you can ensure that first the three inputs RED, GREEN, BLUE will be updated with the new values, before finally the TRIGGER input receives a signal. Then the Value Output will only send once, sending the new value 66, 99, 33.

In case of an RGB colour data type, you could also circumvent this issue by using the combined [data type Colour](#) and the COLOR input, as is recommended. But this might not be desired in every logic, and other data types cannot offer a comparable workaround.

CONFIGURATION



The configuration of value input and value output is largely identical. Value inputs have one additional option: "Send on Initialization". If this is enabled, the value input will send the current value of the data point into the logic group. If the data point is not yet initialized at that moment, the value will be sent immediately after the data point initialization.

Here, you can select an existing data point, create a new data point or edit a data point already selected. The rules for configuring and creating the data points are described in chapter [Data Points](#).

Please note that the changes to an already existing data point will also affect other inputs and outputs relying on this data point. This particularly holds true for changes affecting the number of inputs and outputs. In such a case, possible links will be lost irretrievably.

5.3.4 DATA POINT TYPES IN THE LOGIKEDITOR

- KNX
 -
 - DPT 2 - Priority Switch
 - DPT 3 - Dimming
 - DPT 10 - time
 - DPT 11 - date
 - DPT 18.001 - scene control
 - DPT 232 and DPT 12.600 - Colour
 - DPT 242 - xyY Colour
 - DPT 243 - xyY Colour Fade
 - DPT 249 - Colour Temperature Fade
 - DPT 251 - RGBW Colour



KNX

DPT	Sub type	EIS	Descriptor	Length	Value range	Output / Input
1.*		EIS 1		1 Bit	1/0 resp. true/false	1/1 - Boolean
	1.001 - 1.100					
2.*		EIS 8	1-bit controlled	2 bit	see below	3/4
	2.001		switch control			
3.*		EIS 2	3-bit controlled	4 bit	see below	3/4
	3.007		dimming control			
	3.008		blind control			
5.*		EIS 14u	8-bit unsigned value	1 Byte	0 - 255	1/1 - Integer
	5.001	EIS 6	percentage (0..100%)		0 - 100 %	1/1 - Float
	5.010		counter pulses (0..255)		0 - 255	1/1 - Integer
6.*		EIS 14s	8-bit signed value	1 Byte	-128 - 127	1/1 - Integer
	6.010		counter pulses (-128..127)			
7.*		EIS 10u	2-byte unsigned value	2 Bytes	0 - 65535	1/1 - Integer
	7.001		pulses			
8.*		EIS 10s	2-byte signed value	2 Bytes	-32768 - 32767	1/1 - Integer
	8.001		pulses difference			
9.*		EIS 5	2-byte float value	2 Bytes	-671088.64 - 670760.96	1/1 - Float
	9.001		temperature (°C)			
10.*		EIS 3	time	3 Bytes	see below	4/6 - Integer
	10.001					
11.*		EIS 4	date	3 Bytes	see below	3/5 - Integer
	11.001					
12.*		EIS 11u	4-byte unsigned value	4 Bytes	0 - 4294967295	1/1 - Integer
	12.001		counter pulses (unsigned)			
	12.600		RGBW value 4x(0..255)DUODMX	4 Bytes	see below	5/6 - Integer



13.*		EIS 11s	4-byte signed value	4 Bytes	-2147483648 - 2147483647	1/1 - Integer
	13.001		counter pulses (signed)			
14.*		EIS 9	4-byte float value	4 Bytes	IEEE 754	1/1 - Float
	14.000		acceleration (m/s ²)			
16.*		EIS 15	character string	14 Bytes		1/1 - String
	16.000		character (ASCII)		ASCII character	
	16.001		character (ISO 8859-1)		ISO 8859-1 / win- 1252	
17.001	17.001		scene number	1 Byte	1 - 64 (0 - 63 on bus)	1/1 - Integer
18.001	18.001		scene control	1 Byte	see below	2/3 - Integer / Boolean
232.*			3-byte colour RGB	3 Bytes	see below	4/5 - Integer
	232.600		RGB value 3x(0..255)			
242.*			xyY colour	6 Bytes	see below	4/5 - Integer
	242.600		xyY colour			
243.*			xyY colour fade	8 Bytes	see below	5/6 - Integer
	243.600		xyY colour fade			
249.*			colour temperature fade	6 Bytes	see below	3/4 - Integer
	249.600		colour temperature fade			
251.*			RGBW colour	6 Bytes	see below	5/6 - Integer
	251.600		RGBW colour			

DPT 2 - PRIORITY SWITCH

DPT 2 has three outputs in Value Inputs and four inputs in Value Outputs. To set a value on a Value Output, you can either send one integer on `IN` (recommended), or two booleans to `SWITCH` and `PRIORITY` (in this case, additionally using the `TRIGGER` input is recommended).

Name	Output / Input	Description															
TRIGGER	No / Yes	See Value Input / Value Output															
IN	Yes / Yes	Combined value 0-3 Integer <table border="1"><thead><tr><th>S</th><th>P</th><th></th></tr></thead><tbody><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>2</td></tr><tr><td>1</td><td>1</td><td>3</td></tr></tbody></table>	S	P		0	0	0	0	1	1	1	0	2	1	1	3
S	P																
0	0	0															
0	1	1															
1	0	2															
1	1	3															
SWITCH	Yes / Yes	Switch command - boolean															
PRIORITY	Yes / Yes	Priority data - boolean															

DPT 3 - DIMMING

DPT 3 has three outputs in Value Inputs and four inputs in Value Outputs.

- Direction as [boolean](#). True for upwards and false for downwards.
- Step width as [Integer](#). For the sending, the exact values for the step width are expected.
 - Possible values: 1
 - 2
 - 4
 - 8
 - 16
 - 32
 - 64
- Stop as [boolean](#). A `true` is sent / received for stop. For the start, a `false` is also issued.



DPT 10 - TIME

DPT 10 has four outputs in Value Inputs but six input values in Value Outputs. For the conversion into a KNX telegram, the transfer of a timestamp is possible.

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
TS	No / Yes	Timestamp - the timestamp is used in order to send the timestamp in compressed form in one go. The timestamp can be taken from the Clock , for example. This is a so-called UNIX timestamp which corresponds to the seconds since 01.01.1970.
DOW	Yes / Yes	Day of week. 1 for Monday to 7 for Sunday
HOUR	Yes / Yes	Hour 0 – 23
MINUTE	Yes / Yes	Minute 0 – 60
SECOND	Yes / Yes	Second 0 – 60

DPT 11 - DATE

DPT 11 has three outputs in Value Inputs but five input values in Value Outputs. For the conversion into a KNX telegram, the transfer of a timestamp is possible.

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
TS	No / Yes	Timestamp - the timestamp is used in order to send the timestamp in compressed form in one go. The timestamp can be taken from the Clock , for example. This is a so-called UNIX timestamp which corresponds to the seconds since 01.01.1970.
YEAR	Yes / Yes	The period between 1990 and 2089 can be processed via KNX
MONTH	Yes / Yes	Month of the year 1 for January until 12 for December
DAY	Yes / Yes	Day of the month 1 - 31

DPT 18.001 - SCENE CONTROL

DPT 18.001 has two outputs in Value Inputs but three input values in Value Outputs.

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
SAVE	Yes / Yes	Indicated whether this is an Activate or Save command as boolean (false: activate, true: save)
SCENE	Yes / Yes	The number of the scene. Note: in accordance with the recommendation from the KNX specifications, LOGIKEDITOR uses the 1..64 range, while supporting 0..63 on the KNX side. Thus, if you send or receive value 1, the actual telegram will contain value 0.



To send a scene control command, the use of the `TRIGGER` input is recommended. Otherwise, a telegram is issued with every incoming value, which can lead to the activation or saving of the wrong scene number.

DPT 232 AND DPT 12.600 - COLOUR

Three- and four-byte colour.

The DPT12.600 types is not part of the KNX specification. It is required for the `DUODMX` GATEWAY in order to be able to control the corresponding RGBW light there.

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
COLOUR	Yes / Yes	Coded RGB(W) colour value
RED	Yes / Yes	Red channel (0 - 255)
GREEN	Yes / Yes	Green channel (0 - 255)
BLUE	Yes / Yes	Blue channel (0 - 255)
WHITE	Yes / Yes	White channel (0 - 255) - only with 12.600

To send a colour value, the use of either the `COLOUR` input or the `TRIGGER` input is recommended. Otherwise, a telegram is issued with every incoming value.

DPT 242 - XYX COLOUR

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
COLOUR	Yes / Yes	Coded colour value
X	Yes / Yes	x value of the xyY color spectrum (0 - 65535)
Y	Yes / Yes	y value of the xyY color spectrum (0 - 65535)
BRIGHTNESS	Yes / Yes	Percentage (0 - 100)

To send a xyY colour value, the use of the `TRIGGER` input is recommended. Otherwise, a telegram is issued with every incoming value.



DPT 243 - XY Y COLOUR FADE

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
COLOUR	Yes / Yes	Coded colour value
X	Yes / Yes	x value of the xyY color spectrum (0 - 65535)
Y	Yes / Yes	y value of the xyY color spectrum (0 - 65535)
BRIGHTNESS	Yes / Yes	Percentage (0 - 100)
DURATION	Yes / Yes	Fade Duration in seconds (0 - 6553.5)

To send a xyY colour fade value, the use of the TRIGGER input is recommended. Otherwise, a telegram is issued with every incoming value.

DPT 249 - COLOUR TEMPERATURE FADE

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
COLOUR TEMP.	Yes / Yes	Kelvin (0 - 65535)
BRIGHTNESS	Yes / Yes	Percentage (0 - 100)
DURATION	Yes / Yes	Fade Duration in seconds (0 - 6553.5)

To send a colour temperature fade value, the use of the TRIGGER input is recommended. Otherwise, a telegram is issued with every incoming value.

DPT 251 - RGBW COLOUR

Name	Output / Input	Description
TRIGGER	No / Yes	See Value Input / Value Output
COLOUR	Yes / Yes	Coded RGBW colour value
RED	Yes / Yes	Red channel (0 - 255)
GREEN	Yes / Yes	Green channel (0 - 255)
BLUE	Yes / Yes	Blue channel (0 - 255)
WHITE	Yes / Yes	White channel (0 - 255)

To send a colour value, the use of either the COLOUR input or the TRIGGER input is recommended. Otherwise a telegram is issued with every incoming value.

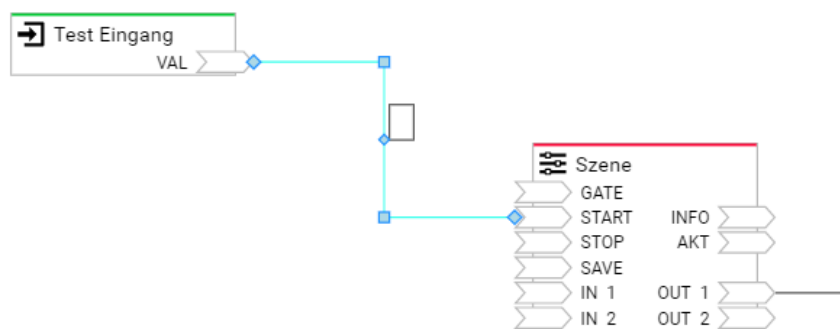
5.4 INTERNAL LINK

The option of graphically linking functional modules within a group simply by drawing lines ensures that no separate internal link must be taken into account additionally.

- Creation of Links
- Data types in LOGIKEDITOR

5.4.1 CREATION OF LINKS

The individual functional elements of **LOGIKEDITOR** are linked to one another by drawing lines between the individual tie points.



No separate addressing must be taken into account for linking, since it results from the drawn lines. The data types used for linking result from the functional modules involved in each case. See also chapter [Creating Data Points](#).

5.4.2 DATA TYPES IN LOGIKEDITOR

Within the logic groups, four file types are differentiated.

Data type	Value range	Comment
Boolean	true / false	Boolean is a logic value that may only be logic true and logic false.
Integer	64 bit integer	Signed integer. 64 bits result in a possible numerical range of -9223372036854775808 to 9223372036854775807
Float	64 bit float	Float meets the IEEE-754 standard. The value range is from about 5×10^{-324} to $1,798 \times 10^{308}$
String	Text	Text in UTF-8 format. There is no limitation regarding length. Please note that very long texts may cause delays for some operations in logic groups.
Colour	RGBW (32 bit)	A special type for transporting colour settings. The light scene is the application example. In other logic elements, the colour value is interpreted as integer.

The logic elements try to convert the data types of the incoming data for their own use case, if possible. If this is not possible, the logic element will normally not execute any action.

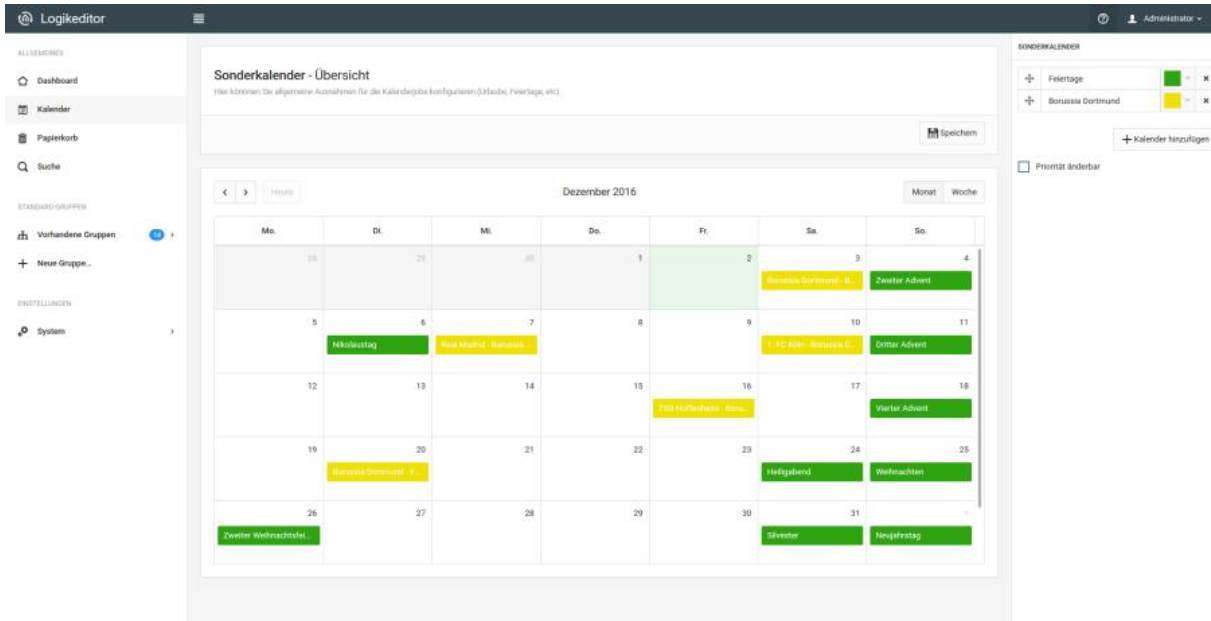
Examples for converting between the data types:

Start data type	Value	Target data type	Value
Boolean	true	Integer	1
Boolean	false	Integer	0
Float	33.5	Integer	33
String	"55"	Integer	55
String	"BAB"	Integer	-
Integer	10	Boolean	True
Integer	0	Boolean	False

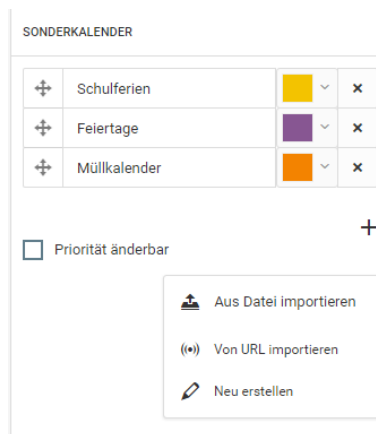
If possible, data types are converted as necessary.

5.5 (SPECIAL) CALENDAR

The **LOGIKEDITOR** includes a calendar for configuring special days. Special, globally applicable events such as holidays, bank holidays or the waste collection calendar can be configured here. The special days configured here are then available for the corresponding logic elements within the group configuration (currently Astrotimer, Calendar, and Weekly Timer).



In order to create the calendars, the data can be imported from a file (iCal format) or from a URL (this function is deactivated in the current version for the time being), as well as entered manually. In addition to their name, the calendars also have a definable trigger value. This is used to set a logic element with calendar reference to a specific calendar via the SDAY input (e.g. week clock). The colour selection is intended to colour the calendar entries on the left side accordingly.



If the trigger value 0 is entered in the calendar, it cannot be selected in the individual logic elements.

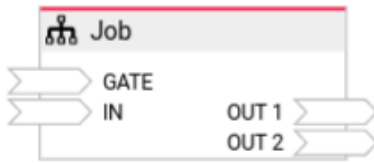
PRIORITIES

If a plurality of calendars has been created and special days overlap, the priority of the special days will be defined using the order of the special days.



If several special days overlap, only the one with the highest priority becomes active. All other events are discarded.

5.6 LOGIC ELEMENTS



»**Logic Elements**« are individual components a logic group consists of, along with the »**Tools**«. They can be linked to additional elements or directly to value inputs and outputs.

GATE

In addition to its specific inputs and outputs, every logic element has a `Gate` input. It controls whether or not the logic element is to react to input signals.

Thus, the `Gate` input serves for activating or deactivating a logic element.

In general, three statuses are possible for the `Gate` input:

1. Undefined - no value is set (a sole link is not sufficient).
2. There is a value and it can be interpreted as Boolean `true`
3. There is a value and it is interpreted Boolean `false` and/or cannot be converted at all.

In cases 1 and 2, the logic element works as designed. In case 3, the logic element will cease to work and no longer reacts to any input signals until there is a `true` value at the `Gate`.

Activation Behaviour

If the state of the gate changes to what is defined under 2. above, i.e. there is a value and it can be interpreted as Boolean `true`, then this is considered as an activation of the logic element.

What should happen in that case, can be set up individually in the configuration of each logic element. The default behaviour is that the logic element is then activated, but will not send anything until new events on its inputs trigger the processing.

However, the logic element can alternatively also use the known state of its inputs to send the corresponding expected result once when activated. E.g. a `Mathematics` element or a `Binary Logic` would thus be computed immediately upon activation.

Some logic elements have individual action behaviours. A `scene` element for instance can trigger the outputs upon activation, or not. `Astrotimer` and `Calendar` can, if desired, send the last event which they "missed" while being deactivated. If there was no scheduled event between their last deactivation and their activation, they will not send anything. If they were never activated before, they will not send anything either.

5.6.1 ASTROTIMER



The Astrotimer uses the position of the sun in order to calculate tripping times in relation to a specified time.

For example, shutters can always open at dawn and close at dusk over the course of the entire year.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Coordinates
 - Outputs
- Configuration and overview of the switching times
 - Value to Send
 - Time
 - Random time range
 - Earliest time
 - Latest time
 - Active on selected weekdays
 - Active on selected special days

INPUTS AND OUTPUTS

Inputs

- GATE
Deviating from the described default behaviour of a gate, the Astrotimer will only send on activation if one or more events occurred since the GATE was locked. In this case, the last such event will be sent. If the GATE had never been locked before, i.e. upon first activation, the Astrotimer will not send anything.
- SDAY
This input starts the execution of an event with special day function ([\(\(Special\) calendar EN\)](#)) manually. By specifying a value of 1-10 depending on the order of the calendars in the special day calendar configuration, the respective special day configuration is actuated. The Astrotimer then executes all outputs with a defined event on the corresponding special day. The execution will overwrite the normal mode of operation until the respective value is present in the input. A value of <> 1-10 terminates manual special day execution.

Outputs

- OUT (1-...)
These are configured outputs of the astrotimer.



CONFIGURATION

Astrouhr

Name

Astrouhr

Beschreibung

GATE

Verhalten bei Aktivierung

Nicht senden ▾

ORT

Zentrale Einstellungen verwenden

Breitengrad

51.496671

Längengrad

7.439241

Standort der Anlage festlegen

AUSGÄNGE / TERMINE

Ausgang 1



Ausgang 2



Coordinates

The coordinates are decisive for proper functionality of the Astrotimer. They determine the angle at which the sunlight hits the earth and hence are relevant for proper calculation of sunrise and sundown. By default, the coordinates that you set up for your device at "[System > Settings](#)" will be used. However, if this logic group for instance controls a remote facility via facility coupling, you can enter the coordinates of that remote location here.


Outputs

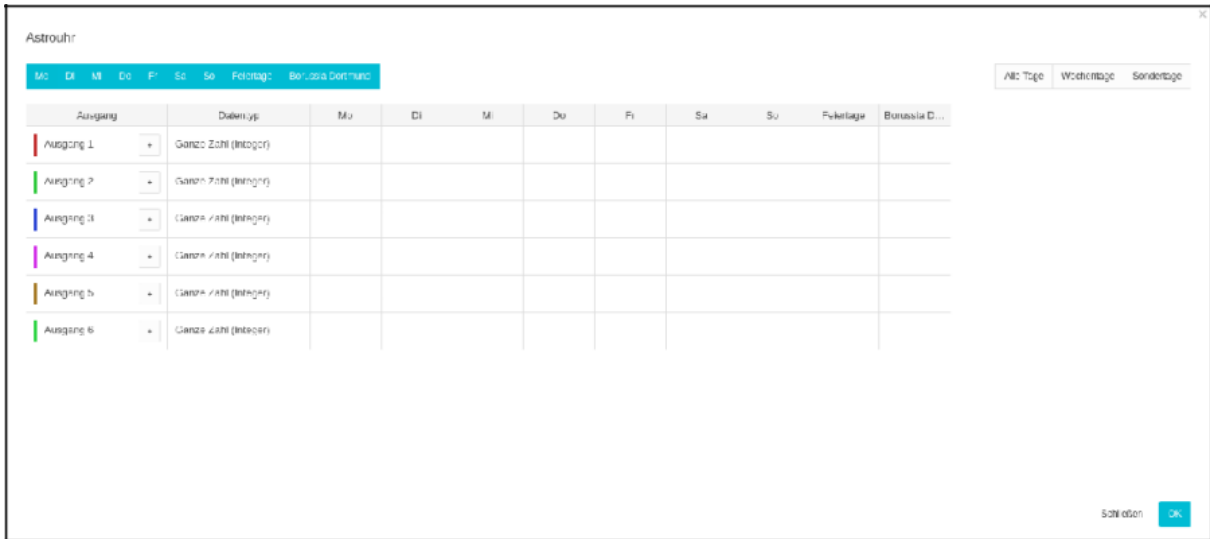
The maximum number of possible outputs is 20.

Using you can disable individual outputs without having to delete them.

Note: The configuration view can be structured by assigning different colours to the individual outputs.

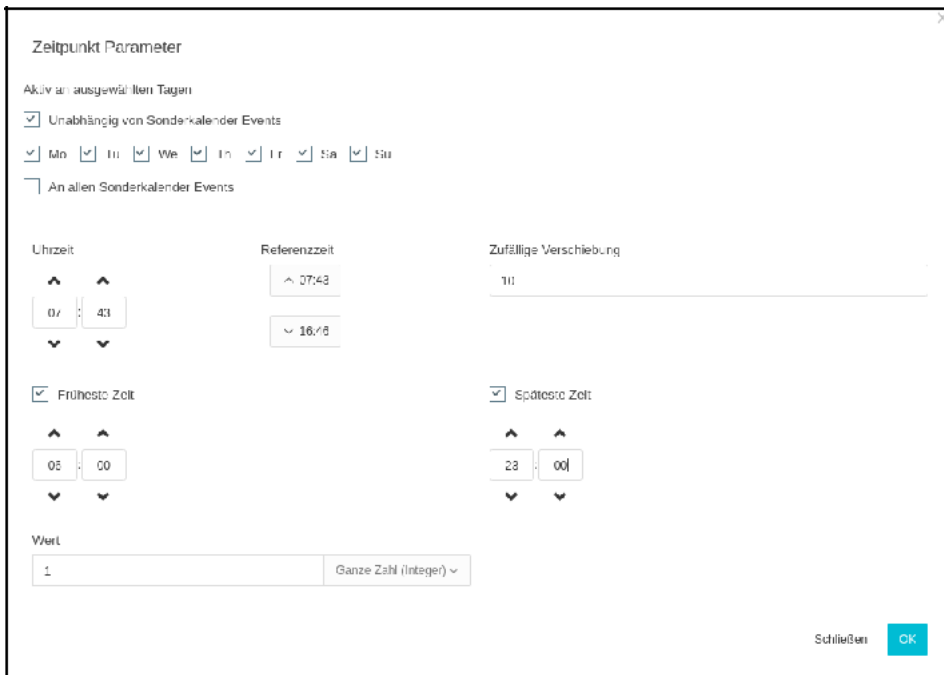
CONFIGURATION AND OVERVIEW OF THE SWITCHING TIMES

You can access the switching times configuration via .



The screenshot shows a window titled "Astrouhr" with a calendar header (Mo, Di, Mi, Do, Fr, Sa, So, Feiertage, Bonus-D...). Below the calendar is a table with columns for days of the week and a "Bonus-D..." column. The table has six rows labeled "Ausgang 1" through "Ausgang 6". Each row has a dropdown menu with a plus sign and a "Ganze Zahl (Integer)" input field. The "Ausgang 1" row is highlighted in red. At the bottom right, there is a "Schließen" button with an "OK" label.

Using  you can create a new switching configuration for an output.



The screenshot shows a window titled "Zeitpunkt Parameter". It has a section "Aktiv an ausgewählten Tagen" with a checked checkbox "Unabhängig von Sonderkalender Events" and a row of checkboxes for days of the week (Mo, Di, Mi, We, Do, Fr, Sa, So). Below this is a section "An allen Sonderkalender Events" with an unchecked checkbox. There are three sections for time settings: "Uhrzeit" (07:43), "Referenzzeit" (16:00), and "Zufällige Verschiebung" (1h). There are also sections for "Früheste Zeit" (05:00) and "Späteste Zeit" (23:00). At the bottom, there is a "Wert" field with the value "1" and a dropdown menu "Ganze Zahl (Integer)". At the bottom right, there is a "Schließen" button with an "OK" label.

Value to Send

The value to be sent at the time of switching. It is not possible to change the data type. The type is defined globally for every output.



Time

The adjustable time is the reference point for the current day. The indicated time is used to determine a reference point that can then be used to determine a specific switching time for any date. The reference times on the right-hand side indicate sunrise and sundown of the current day. They are intended to aid orientation and can be applied by clicking them.

Random time range

If you enter a value in minutes, the calculated switching time is shifted randomly within this range. The time displacement may be in both directions. If, for instance, you set this value to five minutes and the switching time to 07:54, the actual switch event will occur at some random moment between 07:49 and 07:59 on that day.

Earliest time

The earliest possible time switching may take place. This time bears no proportion to the position of the sun. The earliest time is checked after possible random time displacement.

Latest time

The latest possible time switching may take place. This time bears no proportion to the position of the sun. The latest time is checked after possible random time displacement.

Active on selected weekdays

- Select the weekdays on which the Astrotimer should be switching. The checkboxes `Working Days` and `Weekend` are there for you convince.
- The "***Send also if a special calendar event falls on a selected weekday***" option controls whether switching is also to be performed if a special event is defined in the central calendar or if a calendar event is defined on the `SDAY` input as well.

Active on selected special days

- The "***On all Special Calendar Events***" option controls whether switching is to be performed in addition to all special days of the central calendar and/or using the `SDAY` input.
- If you select individual Special Calendars, the Astrotimer will only switch if either an event exists in one of these selected special calendars on that day, or if you force a special day using the `SDAY` input.

After the configuration, the overview looks something like this

Ausgang	Datentyp	Mo 13.02.	Di 14.02.	Mi 15.02.	Do 16.02.	Fr 17.02.	Sa 18.02.	So 19.02.	Feiertage	Müllabfuhr	Borussia Dortmund
Ausgang 1 +	Ganze Zahl (Integer) v	07:54 (1)	07:52 (1)	07:50 (1)	07:48 (1)	07:46 (1)					

5.6.2 BINARY LOGIC



The »Binary Logic« logic element executes Boolean comparisons of the input values (IN 1–...). The number of inputs can be set.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration

INPUTS AND OUTPUTS

Inputs

- GATE (cf. [Logic Elements](#))
- IN1 ...
Only inputs with an incoming connection will be included in the comparison.

Outputs

- OUT

CONFIGURATION

Every incoming value triggers a new comparison. One valid input value is enough to start a comparison. All inputs with an incoming connection will be used. If a connected input should have no value, it will be assumed to be Boolean `false`. This is also the case if the input has a value that cannot directly be interpreted as a Boolean value (e.g. the string "**LOGIKEDITOR**" would cause that input to be seen as set to `false`).

The following comparison options are possible:

- AND
All inputs must be `true`.
- NAND
The opposite of AND.
If AND results in a `false`, this condition is met.
- OR
At least one input must be `true`.
- NOR
The opposite of OR.
If OR results in a `false`, this condition is met.
- XOR
For exclusive OR, the first two input signals in each case will be compared to one another; if both have the same value, this is a `false`; otherwise, this is a `true`. The result of the first two is then compared to the next input signal etc. The result of the entire chain is applicable.
- NXOR
The opposite of XOR. If XOR results in a `false`, this condition is met.

The result of the comparison is sent on the output (`true/ false`).

5.6.3 CALENDAR



- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Schedule management
 - Event
 - Name
 - Output
 - Event type
 - Random time range
 - Value
 - Occurrences

INPUTS AND OUTPUTS



Inputs

- GATE
- SDAY
This input can force the calendar into special day mode, if such a day has been configured in the [\(Special\) Calendar](#). Which input value sets a certain special day state depends on your individual special calendar configuration.

Outputs

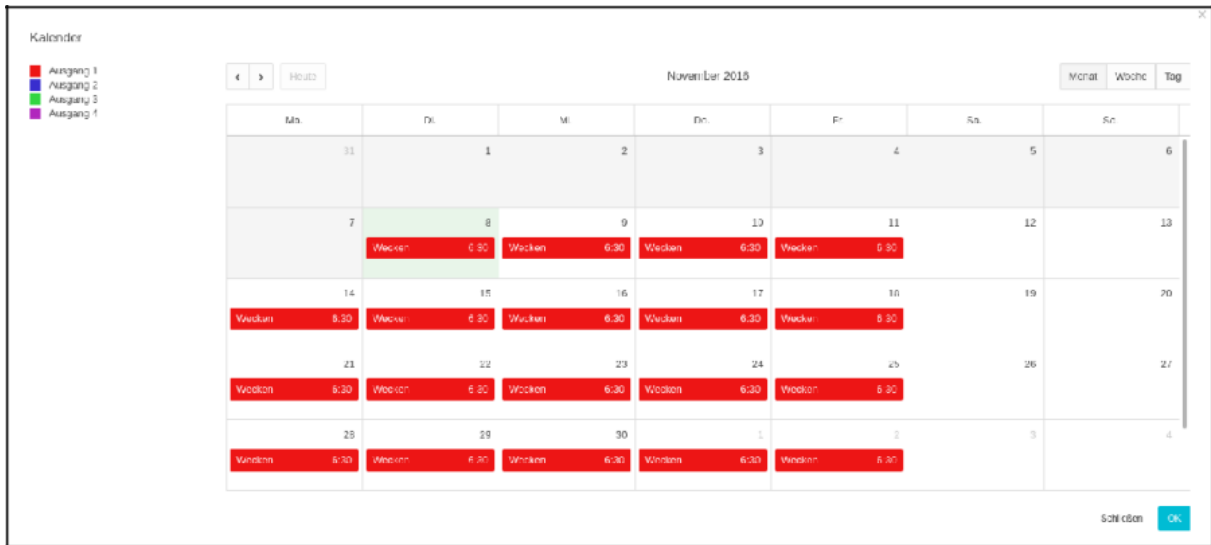
- OUT (1–...)
Up to 20 outputs can be configured.

CONFIGURATION

- Using the + symbol, new outputs can be added.
- Using  you can disable individual outputs
- Using  you can delete an output. (This may damage the assignment of the calendar entries.)
- The colour selection facilitates the overview of schedule management

Schedule management

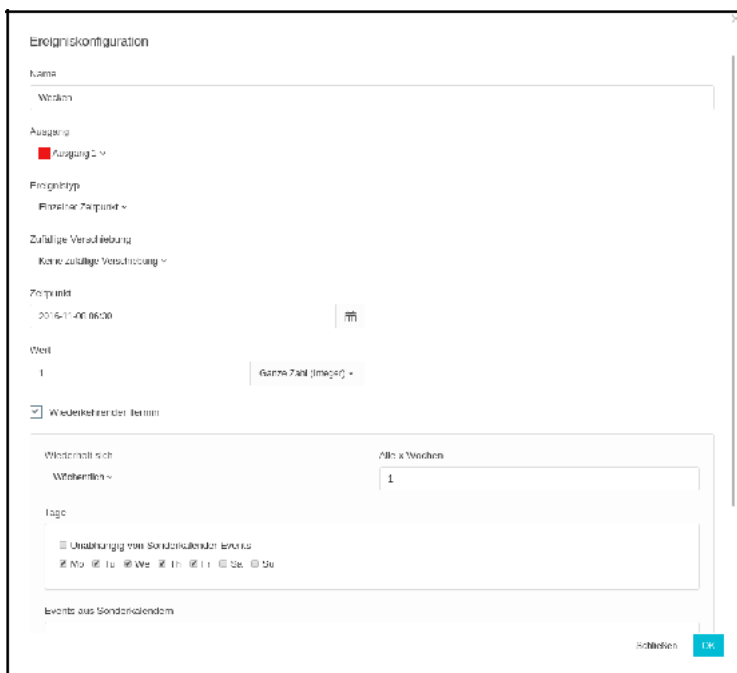
Use the "**Configure**" button to enter schedule management.



On the left-hand side, you will see a list of all outputs and their assigned colours. The events for each output are indicated with the corresponding colour.

In order to create a new event, use the mouse to click an empty area of the calendar sheet. In order to edit an event, click the event.

Event



Name

Name of the event

Output

Assignment to an output

Event type

Each event may be

- an individual point in time
- have a beginning and an end
- cover an entire day

According to the event type you can edit one or two time points.

Random time range

The random time range can be configured in minutes.

Zufällige Verschiebung	
Start & Ende ▾	
Zeitpunkt	
<input type="text" value="2016-11-08 06:30"/>	
Zufällige Verschiebung	Zufällige Verschiebung
<input type="text" value="0"/>	<input type="text" value="0"/>

There are four options for random time range

- Start
Only the start of the event is delayed.
- End
Only the end of the event is delayed.
- Start & end
Start and end are delayed independently.
- Start & end parallel
Start and end are delayed parallel.

The random time range may be in both directions in general. Regarding a value of 5 minutes, the event may take place in a range of 5 minutes prior to and 5 minutes after the defined time. It is ensured that the start of the event may never be after the end of the event, despite random time range. Of course, this is only applicable to events sending values at the beginning and in the end.

Value

The value to be sent. Depending on the event type, you can specify a second value here. The data type can be chosen for each value individually.

Ereignistyp	Wert senden
Termin mit individueller Dauer ▾	Je einen Wert zu Beginn und am Ende des Termins ▾
Zufällige Verschiebung	
Keine zufällige Verschiebung ▾	
Beginn	Ende
<input type="text" value="2016-11-08 06:30"/>	<input type="text" value="2016-11-08 08:25"/>
Wert zu Beginn	Wert am Ende
<input type="text" value="1"/>	<input type="text" value="0"/>
Ganze Zahl (Integer) ▾	Ganze Zahl (Integer) ▾

Occurrences

An event can be configured such that it is repeated at fix intervals. The configuration of repetitions is adapted to common calendar applications.

Wiederkehrender Termin

Wiederholt sich

Wöchentlich ▾

Alle x Wochen

Tage

Unabhängig von Sonderkalender Events

Mo
 Tu
 We
 Th
 Fr
 Sa
 Su

Events aus Sonderkalendern

An allen Sonderkalender Events

Feiertage Borussia Dortmund

Wiederholung endet

Here, the particularity is to take into account special events of the central calendar. See chapter [\(Special\) calendar](#).

The "***Send also if a special calendar event falls on a selected weekday***" option ensures that the occurrences are executed as configured. If the option is disabled, a scheduled occurrence is not performed if a special event takes place.

Regarding the options for "Special calendar events", the situation is that this event is repeated even on days including the corresponding or all special events.

Important: It must be noted that there may always only be one active special event per day. Only the active special event having the highest priority is taken into account. The priorities are defined in the (special) calendar by the order of the calendars.

5.6.4 CLOCK



The clock sends the current system time on its outputs.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration

INPUTS AND OUTPUTS

Inputs

- GATE
- SEND - Send the current value to all connected outputs

Outputs

- TS
The so-called UNIX time stamp is output. These are the seconds elapsed since 01.01.1970 00:00 (UTC/universal time).
- WEEKDAY
The weekday. With Monday being 1 and Sunday being 7.
- WEEKEND
Sends true if the weekday is Saturday or Sunday, otherwise false.
- YEAR
The current year - e.g. 2016
- MONTH
The current month 1-12
- WEEK
The current calendar week 1-53
- DAY
The day of the month 1-31
- HOUR
The hour of the day 0-23
- MIN
The minute of the hour 0-59
- SEC
The second of the minute 0-59
- STRING
A formatted text representing the current time.

The outputs are only updated if the value changes or when they are written initially. For simulation, it is additionally important that only linked outputs are updated.



CONFIGURATION

The following options are available for the time format

- %B- month written out completely (probably only English)
- %b- month short form "Jan"
- %m- month, two-digit "01"
- %A- weekday written out completely (probably only English)
- %a- weekday short form "Mon"
- %d- day of the month, two-digit "02"
- %H- hour of the day in 24h format, two-digit
- %I- hour of the day in 12h format, two-digit
- %M- minute of the hour, two-digit
- %S- second of the minute, two-digit
- %Y- year, four-digit
- %y- year, two-digit
- %p- AM (ante meridian) / PM (post meridian)
- %Z- time zone (CET / CEST / UTC)
- %z- time zone offset (-0700)
- %L- milliseconds of the second

Example: "%Y-%m-%d %H:%M:%S" is "2016-08-31 14:41:00"

5.6.5 COLLECTIVE SIGNAL



The »Collective Signal« logic element detects (fault) signals (IN 1-...) and uses them to generate collective signals based on DIN 19235. The number of inputs can be set. Collective signals can either be acknowledged by a dedicated visualisation element or by datapoint inputs (ACK 1-...).

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Resetting a Collective Signal
 - Configure Acknowledgements via Visualisation Element
 - Visualisation User Administration Settings
 - Placeholder Title
 - Acknowledgement Inputs

INPUTS AND OUTPUTS

Inputs

- GATE
- IN (1-...)
Collective Signals are triggered by up to 25 signal inputs. The logic element will perceive a Boolean `true` as a signal.
- ACK (1-...)

Up to five inputs can be added in order to trigger acknowledgements via datapoint inputs.

Outputs

- STATIC
Integer value for the static collective signal output:
 - 0: no collective signal
 - 1: collective signal present
 - 2: collective signal is acknowledged but not reset yet
- DYNAMIC
Dynamic collective signal output. Fires `true` on each incoming signal.
- COUNT
Sends the number of existing signals as an integer value.
- ACKSRC
Sends the origin of the most recent valid acknowledgement as a string value.

CONFIGURATION

Value changes at each signal input affect the status of the Collective Signals. All signal inputs with an incoming connection will be used. If a connected signal input should have no value, it will be assumed to be a Boolean `false`. This is also the case if the signal input has a value that cannot directly be interpreted as a Boolean value (e.g. the string "LOGIKEDITOR" would cause that input to be seen as set to `false`).



Resetting a Collective Signal

The static Collective Signal will switch from 0 to 1 when the first incoming signal arrives. If conditions for its reset are fulfilled, it will be reset to 0.

Select one of the following conditions under »Reset Collective Signal by...«:

- **Acknowledgement only**
Will only be reset by acknowledgement.
- **Acknowledgement AND no standing signal**
Will only be reset if both an acknowledgement was received and the last standing signal went away (i.e. the moment when all signal inputs are set to `false` again) (in no particular order). If an acknowledgement is received before the last standing signal goes away, the static collective signal will switch to 2 first.
- **Acknowledgement OR no standing signal**
Will either be reset by acknowledgement or when the last standing signal goes away (i.e. all signal inputs are set to `false` again).

Configure Acknowledgements via Visualisation Element

This logic element offers the option to submit acknowledgements for the static Collective Signal via a visualisation element, for which you can make use of the user settings in your visualisation. Decide which users are permitted to use the visualisation element in order to submit acknowledgements to the logic element. The title of the user who is currently logged into the visualisation page will be sent out on »ACKSRC«.

The configuration regarding acknowledgements via visualisation element can be accessed via the gears icon next to »Acknowledgement and Reset« in the logic element parameters. A modal dialog opens.

Visualisation User Administration Settings

First, you can »Activate acknowledgements via visualisation element« by checking the checkbox. Below, the user administration preferences of your device are displayed. If acknowledgements via visualisation elements are enabled, a table with all users from your visualisation user administration settings will appear. Here, you can grant users permission to submit acknowledgements to the logic element via visualisation element by putting a checkmark into the checkbox in the furthest right column below »May acknowledge«.

Please note that if no user administration is active, any person with access to your visualization can acknowledge collective signals if acknowledgements via visualisation elements is enabled.

Placeholder Title

If you want to be able to submit acknowledgements from your visualisation page with no user administration configured, it is recommended to define a placeholder title which will be sent out on »ACKSRC«. This way you can differentiate if an acknowledgement was either submitted via visualisation element or by datapoint input.

Acknowledgement Inputs

Here you can add up to five acknowledgement inputs and assign a name to each one. This name will be sent on »ACKSRC«, if an acknowledgement was successfully submitted via the corresponding input.

5.6.6 COMPARATOR



The comparator checks whether both input values match the set comparison. If comparison is possible, the result is sent in the form of a Boolean on the output.

A default value can be specified for input `IN2`. In this case, it is sufficient to send input values on `IN1`.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Comparisons

INPUTS AND OUTPUTS

Inputs

- GATE
- IN 1
- IN 2
 - Can have a default value.

Outputs

- OUT
 - Sends `true` or `false`, depending on the result of the comparison. The comparison will be triggered with each input event.

CONFIGURATION

Comparisons

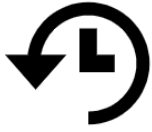
- Greater than (`>`)
 - The value from `IN1` is greater than the value from `IN2`.
- Smaller than (`<`)
 - The value from `IN1` is smaller than the value from `IN2`.
- Greater or equal (`>=`)
 - The value from `IN1` is greater than or equal to the value from `IN2`.
- Smaller or equal (`<=`)
 - The value from `IN1` is smaller than or equal to the value from `IN2`.
- Equal (`=`)
 - The value from `IN1` is equal to the value from `IN2`.
- Unequal (`<>`)
 - The value from `IN1` is unequal to the value from `IN2`.

Default Value for Input 2

Provide a static value for when either the second input is not connected or has no value yet.

For the logic element to work properly, it is a minimum requirement that the input `IN1` is linked and a default value is specified for `IN2`.

5.6.7 CYCLIC SENDER



The cyclic sender sends a specified value on the output at fixed intervals. Interval and output value may be set using the input data points INT and OUTVAL.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Reference time

INPUTS AND OUTPUTS

Inputs

- GATE
- INT
Interval setting (overrides the interval set in configuration)
- OUTVAL
Value to be sent cyclically (overrides the value set in configuration)

Outputs

- OUT
The value that is being sent cyclically

CONFIGURATION

The interval may be changed via INT with a value that may be interpreted as integer. The input value is multiplied with the set unit.

If the interval is being changed via INT the cyclic sender will immediately start a new cycle (and not to finish the old interval cycle first).

If OUTVAL is linked and a value is present, this value will be sent instead of the set value.

You may set that the first value is sent directly at the beginning (default setting) or only upon completion of the first interval.

Reference time

The reference time allows for synchronising the cyclic sender at its start with the specified time. This synchronisation is only performed when starting the logic element. This occurs when activating the logic group or when restarting the device.

- The start time is always calculated relating to the reference time of the same day
 - If the reference time is in the future, it will be calculated down until the desired start time was passed in order to then add an interval period.
 - If the reference time is in the past, the interval is added until the desired start time is passed.
- Regarding the "*Send at the beginning*" option, the calculated starting point is used for initial sending. If this option is disabled, an interval is added to the calculated start, for initial sending after (re)start.

5.6.8 DATA CONVERTER



The »Data converter« logic element converts between different formats and representations of a type.

INPUTS AND OUTPUTS

The number of inputs and outputs depends on the selected data type.

Inputs

- GATE (cf. [Logic Elements](#))
- others, based on the selected data type

Outputs

- based on the selected data type

CONFIGURATION

Choose the desired type of conversion, you can find the options below.

Colours

The following representations of colour values (colour spaces) are supported

- Colour (combined RGBW value in one number)
This type is intended for simple passthrough and processing within logics.
- RGB (red, green, blue)
All three values are between 0 and 255 each
- RGBW (red, green, blue, white)
All four values are between 0 and 255 each
In addition to the three basic colours, there also is a white channel.
- HSB (»Hue«, »Saturation«, »Brightness«)
All three values are of type Float.
The HSB colour range is used by the Philips® hue lights, for instance.

In general, conversion in any direction is possible. The conversion may entail differences, e.g. when converting from HSB to RGBW and back to HSB.

The methods available for converting between HSB and RGB(W) are not lossless. When converting RGBW in RGB, only the white value will be discarded.

When converting RGB to RGBW/colour, a white value is determined. The three basic colours remain unaffected.

5.6.9 DELAYER



Signals received via IN are output with a delay.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Behaviour when triggered multiple times

INPUTS AND OUTPUTS

Inputs

- GATE
- IN
Input value to be delayed
- DELAY
Overrides the delay set in configuration

Outputs

- OUT
Output with the delayed value

CONFIGURATION

The delay time may be specified in the following units: milliseconds, seconds, minutes, hours, and days. The DELAY input may be used to overwrite the set delay. Only values that may be interpreted as integers are processed.

The delay is changed with the set unit. If you specify hours, the delay will be overwritten with the number of hours present at the input.

A new delay duration set via the DELAY input will only be applied to subsequent incoming values. Should a received input signal be currently within a delay period, it will still be delayed for the delay amount that was set when the input signal had been received.

Behaviour when triggered multiple times

- Parallel delay
All input values are output with a delay.
There may a maximum of 10 parallel delays. Any further delays will be blocked.
- Block Input
As long as an input value is delayed, all events at the input will be discarded
- Block + Reschedule
As long as an input value is delayed, all events at the input will be discarded. However, the delay time starts anew.
- Restart
Once an input value is received, a possibly active delay will be discarded and a new delay will be started with the current input value.



Regarding delays in the lower milliseconds range, it may be the case that these cannot always be adhered to exactly to the millisecond.

5.6.10 EMAIL SENDER



The Email Sender allows you to send customized messages to a list of given Email addresses.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Subject
 - Message
 - Email Account
 - Recipients
 - Send Limiter
 - Send Rate
 - Limiter Behaviour

INPUTS AND OUTPUTS

Inputs

- GATE (see [Logic Elements](#))
- TRIG
Trigger for sending an Email
- IN 1 ...
Up to 20 inputs for variable (dynamic) values, which can be inserted into an Email message

Outputs

- STATUS (-1, 0, 1)

Status integer value for Email transmission:

- -1: This Logic Element has not sent an Email yet
- 0: Email transmission failed
- 1: Email transmission successful

CONFIGURATION

The configuration of the customizable message can be accessed via the gears icon in the logic element parameters. A modal dialog opens.

Configure email message

Subject

Message

Variables

- in1
- in2
- in3

```
1 Current list of temperatures
2
3 Living room: [[in1]] °C
4 Bedroom: [[in2]] °C
5 Kitchen: [[in3]] °C
```

Close OK

Subject

Please provide the subject of the message. The subject can, similar to the payload message, be customized with input values.

Message

Please provide an arbitrary message and insert placeholders where desired to customize your message with the input values. To insert a placeholder click on the corresponding variable in the top right.

Email Account

EMAIL ACCOUNT

Email Account

User Account 1 ▾

RECIPIENTS

Use central account settings

Choose an Email account, which shall be used by the Logic Element for Email transmission. "From" and "Reply-To" addresses will be used from account settings. Email accounts can be configured in LOGIKEDITOR at "System > Settings > Email Accounts".

Recipients

RECIPIENTS
⚙️

Use central account settings

Name	John Doe	✕
Adresse	jd@mailbox.com	
To ▾		

Name	Bridget Burrell	✕
Adresse	bb@home.com	
Cc ▾		

Name	Eduardo Esteban	✕
Adresse	ee@office.uk	
▾		

+ Add recipient

↺ Restore from account settings

Here you can configure recipients for this Email Sender. Initially, recipients from the central settings of the selected Email account will be suggested. Though if you wish to customize recipients for this Logic Element, you can edit, delete or add recipients by removing the check mark next to "Use central account settings". Click the "Restore from account settings" button, if you want to restore the recipients from the account settings.

Send Limiter

The send limiter allows you to manage email dispatching. This can be done, on the one hand, to declutter your inbox, but also as a protective measure against getting blocked as an alleged source of spam. High volumes of automatically generated emails with little text and repeating structures may fit certain spam recognition patterns. Unless you operate your own mail server, it is advised to always exercise caution. Use the send limiter to define how many emails should be sent at most in a certain period. You can also determine what should happen once that limit has been reached.

Send Rate

The logic element constantly analyses the current time and number of sent mails. Once the desired rate has been reached, the limiter will prevent the sending of further emails until the configure period is over. For example, if you configure "At most 1 email per 1 minute", and a second trigger event occurs within the current minute, the limiter kicks in. Once that minute has passed, emails will be sent again.



Limiters Behaviour

You can specify, how the limiter mechanism should behave if additional trigger events occur during a period for which the send limit has been reached:

- **Ignore:** triggers will be ignored; no further email will be sent for events in that period
- **Record latest value:** the logic element generates an email with a message structure as configured, e.g. including the current values of all connected inputs. This will, however, not be sent immediately, and will be overwritten with any new trigger event. Once the limit period is over, you will receive one email containing the latest version generated during the limit period, i.e. the latest values on the inputs.
- **Record all values:** the logic element generates an email with a body that includes multiple messages. Every trigger during the limit period will add a message to that body. Once the limit period is over, you will receive one email containing a body with all the messages generated during the limit period, i.e. all occurred value changes.

Record all values can e.g. be used to generate hourly reports, or similar. We must, however, advise you that your **LOGIKMODULE** will have to keep and append such messages in memory as long as they have not been sent. Extreme combinations such as "At most 1 email per 30 days" while having trigger events multiple times per second are technically possible, but not recommended due to the increase in memory consumption they will cause over the duration of a period.

5.6.11 HTTP REQUEST



With HTTP requests you can request the status information of web-capable devices or forward it for further processing. In this way you are able to use a variety of different services in your own network or on the internet. From network-capable actors and sensors in your home network, to weather services, to news websites, you can use this logic element for the purposes of responding and processing.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Protocol and basic URL
 - Authentication
 - Outputs
 - Advanced output / request configuration
 - Method and URL
 - URL parameters
 - Header
 - HTTP response content
 - Test

INPUTS AND OUTPUTS

Inputs

- GATE (see [Logic Elements](#))
- TRIG
Trigger for the configured HTTP requests
- IN 1 ...
Up to 20 inputs for variable (dynamic) values in the requests

Outputs

- OUT 1 ...
Every output corresponds one of the up to 20 configurable HTTP requests

CONFIGURATION

The configuration of the outputs/requests takes place via the gear's icon in the logic element parameters. A modal dialog opens.

HTTP Request

Protocol and fixed URL part: Authentication:

Only accept signed SSL certificates

Output	Output Data	Trigger Always	Trigger Value	Complete URL	Method	Details	Test
out1	<input type="text" value="Body"/>	<input type="checkbox"/>	<input type="text" value="1"/>	https://httpbin.org/post	POST	<input type="button" value="Configuration"/>	<input type="button" value="Test"/>
out2	<input type="text" value="Status Code"/>	<input checked="" type="checkbox"/>	<input type="text" value="2"/>	https://httpbin.org/status/418	GET	<input type="button" value="Configuration"/>	<input type="button" value="Test"/>
out3	<input type="text" value="Header"/>	<input type="checkbox"/>	<input type="text" value="3"/>	https://httpbin.org	GET	<input type="button" value="Configuration"/>	<input type="button" value="Test"/>

Close

Protocol and basic URL

Set the web protocol to be used (http or https) and the basic URL. The strict certificate check for https connections can be deactivated via the checkbox below so that self-signed or expired certificates will be accepted as well.

Authentication

You can provide a user and password to authenticate requests. **"Basic authentication"** and **"Digest Access Authentication"** are supported. A corresponding `Authorization` HTTP header will be added to the requests.

Outputs

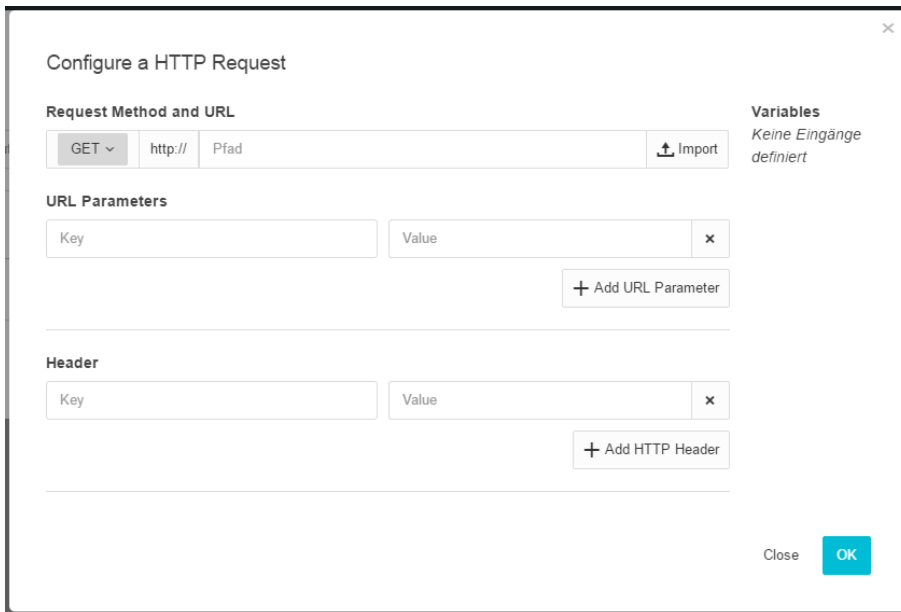
For every output, you must set a numerical trigger value (integer whole number) with which the corresponding request is completed. If a request is to be carried out independently of the trigger value at all times, please select the appropriate option.

At this point, please also set the form in which the result of the request is to be stated on the corresponding output. The following are possible:

- Body
The result of the request without any header data
- Status code
An overview of the possible HTTP status codes is available on the internet.
- Header
The HTTP header of the response.
- Complete
The complete response as it is returned by the remote station. This contains the status, the headers and the body.

Advanced output / request configuration

In the straightforward configuration you set the number of inputs and outputs to be used and the maximum request duration (timeout). Further settings are available via the "Configuration" menu in the "Details" column. An additional dialog opens.



You can use the aforementioned dynamic (variable) input values (IN 1, IN 2 etc.) in the configuration for the appropriate request. To do so, position the cursor at the required place in the appropriate field and then use the mouse to click on the appropriate variable with the coloured background. A placeholder will be inserted at the corresponding location. The format is "[[nameofinput]]". Depending on your use case, we recommend using the logic element Ordered Output before HTTP Request elements. This way you can ensure that the inputs IN will be updated before the trigger input sets the request in motion.

Method and URL

Please set the request method before the further configuration. The screen contents change according to the method. The following are possible:

- GET
- PUT
- POST
- DELETE

With the GET method, for example, it is not possible to enter any HTTP response content as well. The extension of the basic URL also takes place here. At the same time, please ensure that the required delimiter is provided (e.g. "/") between the basic URL and the extension. This is not provided automatically!

URL parameters

You must set the value pairs for URL parameters here. You can use dynamic input values for the key and the value.

With the actual requests, the URL parameters are attached to the URL shown above.

`https://httpbin.org/query?key1=value1&key2=value2`

Please note that with a URL which is greater than 2,000 characters there is the risk that the corresponding web server will make an error.

Header

Please also provide random HTTP headers for the request. You can use dynamic input values for the key and the value. Examples:

Key	Value
Accept	application/json



Accept-Language	de-DE
Authorization	Bearer 0b79bab50daca910b000d4f1a2b675d604257e42
Authorization	Basic QWxhZGRpbjPcGVuU2VzYW1l

HTTP response content

This option is not available for the GET method

Select the type before setting the HTTP response content. The editor which is situated below changes accordingly and provides some support during the input. If you select the “Key-Value Pairs” type, the text editor will be hidden and the input for the key and value are shown. This option is required if the counterpart is expecting form data.

According to the selected type, a corresponding “HTTP Header” is used.

Test

Since the logic element cannot be simulated, a test function is available in the “Test” column in the first dialog box (“Configuration”). If you have configured inputs for dynamic values, these will be retrieved before the actual test is run.

The actual request can take a little time. At the maximum, however, the configured timeout (plus a few seconds for the preparation and completion). An extra dialog box is displayed in order to show the results. Depending on the settings, these are the body, the header, the status code or the entire response

5.6.12 LOGIC GATE



Depending on the status of the Gate data point, the logic gate allows 1:1 passage of the input values to the corresponding output.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration

INPUTS AND OUTPUTS

Inputs

- GATE
- IN A ...

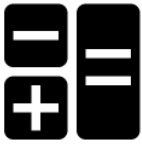
Outputs

- OUT A ...

CONFIGURATION

You can set the number of input/output pairs. The maximum is limited to 20.
Changes to this number will only take effect after you remove the focus of the input element.

5.6.13 MATHEMATICS



Mathematics provides you with the option of performing mathematical operations with as much as 20 variables. The variables are determined by input values.

- Inputs and outputs
 - Inputs:
 - Outputs:
- Configuration
 - Inputs
 - Denomination
 - Default value
 - Execution
 - Add and delete
 - Formula
 - Variables
 - Operators
 - Functions
 - Examples

INPUTS AND OUTPUTS

Inputs:

- GATE
- IN 1–...
Each variable is represented by an input.

Outputs:

- OUT
The result of the calculation.

CONFIGURATION

MATHEMATIK

Name

Beschreibung

EINGÄNGE / VARIABLEN

in1

Standardwert

Eingang löst Berechnung aus

+

FORMEL

OK

var +,*,/ fn()

Inputs

20 inputs are possible in total.

Denomination

You may adapt the variable denominations corresponding with the inputs. By default, the variables are referred to as *in1*, *in2*, ..., *in20*.

Note: Space characters in the denomination result in errors when executing the formula.

Default value

If there is not a value at the related input yet or if the present value cannot be used as a float ([Float](#)), the stored default value will be used for calculation.

Execution

Here, you can define whether a calculation is to be triggered when a new value is received at the corresponding input. At this point, it does not yet matter whether this value can be used as a float ([Float](#)) later.

The options include:

- ***Always Calculate on Input***
A calculation is triggered for every input
- ***Never Calculate on Input***
No calculation is triggered, ever. However, this value will be used for calculation.
- ***Calculate on value change***
Calculation is only triggered if the value for the input changes. E.g. if a value of 1.0 is sent 100-times in a row, calculation will only be triggered after the first time.



Add and delete

Using the + symbol, new inputs are added, and using



the symbol, individual inputs are deleted.

Formula

Within the formula, you can use all defined variables. Multiplication and division precede addition and subtraction. The order of calculation can be influenced by using brackets. In addition to the values defined by you, you may use the following supporting variables and functions:

Variables

Name	Description
pi	The circle constant – accuracy roughly 3,141592653589793
e	The Euler's number – accuracy roughly 2,718281828459045

Operators

Name	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
**	Exponentiation
%	Modulo (Remainder)

Functions

Name	Parameter	Description
sin(x)	1	Sine
cos(x)	1	Cosine
tan(x)	1	Tangent
asin(x)	1	Arcsines
acos(x)	1	Arccosine
atan(x)	1	Arctangent
abs(x)	1	The absolute value of transfer - -10.0 becomes 10.0
ceil(x)	1	Rounding up
floor(x)	1	Rounding down
log(x)	1	Logarithm
sqrt(x)	1	Square root
rand()	0	Random number between 0.0 and 1.0
max(x,y)	2	Maximum value
min(x,y)	2	Minimum value

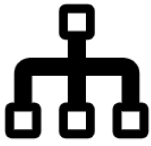


The decimal separator is the point ".". When analysing the variables and functions, upper and lower case are taken into account. Thus, `pi` is not `Pi` or `PI` or `pI`.

Examples

- `rand() * 100.0` - creates a random number between 0.0 and 100.0
- `min(in1, in2)` - wherein `in1 = 10.0` and `in2 = 8.0` - the result would be 8.0
- `2**2 - sqrt(4)` - results in 0 - 2^2 results in 4 and the root of 16 also is four. Subtraction is performed last.
- `ceil(2.333)` - results in 3
- `floor(2.6)` - results in 2
- `floor(in1 + 0.5)` - wherein `in1 = 2.6` - results in 3. This way, asymmetric rounding is possible.

5.6.14 ORDERED OUTPUT



The ordered output is responsible for the input value being forwarded in a specified order. The motivation for this logic element is the comprehensible processing of events. In the event of an input signal, the signal is initially sent on the first output OUT1. There, it will be processed sequentially until the chain of logic elements is completed. Then, OUT2, 3, etc. are used.

INPUTS AND OUTPUTS

Inputs

- GATE
- IN
The value to distribute

Outputs

- OUT 1 ..

CONFIGURATION

Outputs

2 - 20 outputs are possible.

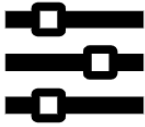
There is one exception to the order of processing.

If the chain of logic elements includes a logic element with a temporally sovereign behaviour ([Delayer](#), [Delayer tool](#), [Scene](#), etc.), the chain will be interrupted at this point and the next output will be used.

The same holds true for when the signal was forwarded to the outside using an output.

Temporally sovereign logic elements each work in a separate processing process only communicating directly with the group at inputs and outputs.

5.6.15 SCENE



The scene sends pre-defined values in individual intervals on the outputs (OUTx).

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Information Text
 - Outputs
 - Pre-Delay
 - Options
 - Behaviour on Stop
 - Behaviour on multiple Start
- Advanced Configuration
 - Default Value
 - Default Delay
 - Row Entry
 - Select
 - Active
 - Title
 - Data Type and Value
 - Delay after
 - Burger Menu

INPUTS AND OUTPUTS

Inputs

- [GATE](#)
- START
Starts the scene. Any values are accepted.
- STOP
Immediately stops the scene. Depending on the setting, the logic element is reset or starts from the point it was stopped during the next start.
- SAVE
Saves the values present at INx in order to send these when executed at the corresponding output OUTx.
Important: Only values will be accepted that can be processed by the set data type of the output.
- INx
see above

Outputs

- INFO
A configurable information text is sent when the scene is started.
- AKT
Sends the name of the current output as soon as it was triggered.
- OUTx
Sends the default values.

CONFIGURATION




Information Text

The information text is sent to `INFO` when the scene is triggered.

Outputs

The scene supports as much as 20 outputs.



-  You may relocate each output using Drag & Drop and your mouse.
- Each output may have an individual name. If you do not specify a name, the system tries to find the name of the linked output and this name will be sent.
-  Each output may be disabled individually and will be ignored when the scene is triggered.
-  You may remove each output individually.

Pre-Delay

The pre-delay is the period of time waited prior to triggering the sending of the first output.

Options

Behaviour on Stop

- Pause
If a stop signal is sent, the scene is paused. During the next start, the process is continued from this point.
- Reset
The scene will start from the beginning during the next start.

Behaviour on multiple Start

- Ignore
Start signals are ignored as long as the scene is running.
- Restart
The scene is restarted immediately and starts from the beginning.

ADVANCED CONFIGURATION

Here, you define the individual output value and delay for each output.

Default Value

Use this option to apply an identical value to all or selected outputs. All rows that have their checkbox (1. column) checked count as selected.



Default Delay

Use this option to apply an identical delay to all or selected outputs. All rows that have their checkbox (1. column) checked count as selected.

Row Entry

Select

Select for bulk apply of default value and default delay.

Active

If the output is not set as active, it will be skipped when the scene is running.

Title

The title is configured in the basic configuration. It will be sent to the `AKT` output when the scene reaches this output.

Data Type and Value

Define the data type and value to be sent by the scene on this output.

Delay after

The delay is always applied after this value has been sent. Should you desire a delay before the first output value is sent, please use the pre-delay option in the basic configuration.

Burger Menu

Click the button with the three horizontal lines to insert or delete outputs

5.6.16 STAIRCASE TIMER



The staircase timer sends a `false` or `0` after a configured time when triggered with a `true` or `1`.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Pass through trigger signal
 - Behaviour on value input during active delay
 - Behaviour on stop value (`false` / `0`) during delay
 - Inversion of the values

INPUTS AND OUTPUTS

Inputs

- GATE
- IN
The value input (see below)
- DELAY
Variable delay time in the unit set in the logic element. If a delay time of 2 minutes is set, the delay would comprise the corresponding number of minutes for an input value of 5. If 120 seconds are set, an input value of 5 would result in only 5 seconds remaining until the counter signal.

Outputs

- OUT
The output for start signal and negated and delayed start signal

CONFIGURATION

In contrast to other logic elements, this logic element only accepts input values of the types `Boolean` and `Integer`. There is no conversion, so that it must be these specific data types. Regarding integer values, only `1` or `0` are accepted as a valid value. Any other input value will be discarded.

In order to start the staircase timer, send `true` or `1` to IN.

Along with the actual default delay that may be overwritten by the DELAY data point, the following options are possible

Pass through trigger signal

The logic element passes the trigger signal which starts or re-triggers the logic element through to the output.

Behaviour on value input during active delay

- Ignore
- Restart delay



Behaviour on stop value (`false` / `0`) during delay

- Ignore
- Cancel delay without sending an end signal
- Cancel delay and send the end signal (`false` / `0`)

Inversion of the values

In this case, the logic is inverted. In order to start the timer, a `false` or `0` would have to be sent, and in order to stop the timer, a `true` or `1` would have to be sent.

5.6.17 STATIC VALUE / INITIAL VALUE



The Static Value logic element allows you to send a predefined value into a logic group when the trigger input is invoked.

A very practical function is "*Send on Initialization*". The initialization occurs when you activate a logic group or when the device reboots. In this case, the static value is sent as soon as all logic elements of the logic group have been loaded and initialized. In this way, you can set your logic group to a defined state after startup, independent of any value inputs and their specific initialization behavior. This is useful, for example, if no value has ever been sent on a group address of a value input.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration
 - Initialization Behavior
 - Output Value

INPUTS AND OUTPUTS

Inputs

- GATE
- TRIGGER
Triggers the send action

Outputs

- OUT
Sends the predefined value

CONFIGURATION

Initialization Behavior

As described in the introduction, the static value is sent when the logic group initializes. A logic group will be initialized whenever you activate the working copy or restart the device.

Output Value

The value which is sent when a trigger occurs.

5.6.18 STATISTICS



Statistics stores the last X input values and uses them to calculate sum, average, maximum and minimum values. The number of memory cells can be adjusted and is limited to 31.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration

INPUTS AND OUTPUTS

Inputs

- GATE
- IN (input)
Input for the statistics function. It must be possible to convert values to floating decimal values (Float). Otherwise, the input value will be ignored completely.
- RST (Reset)
Reset statistics. The logic element is reset completely.

Outputs

- END
This data point is used to send a 1.0 value when the last index is reached and statistics was run through once. For the next input value, index 1 would be written to again.
- SUM
The sum of all values currently set in statistics.
- AVG
The average of all values currently set in statistics.
- MAX
The maximum value currently set in statistics.
- MIN
The minimum value currently set in statistics.
- 1 - n
The individual memory cells of statistics

CONFIGURATION

Along with the number of memory cells, they can also indicate whether all memory cells are to be emptied when starting new statistics or whether the values are to be left until they are overwritten.

5.6.19 TEXT PROCESSOR



With the text processor, details are extracted from the random texts which are made available via the input and are then forwarded. In this respect, regular expressions and JSON path definitions are available. In this way, outputs of the HTTP Request logic element are processed, for example.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Text type
 - Output configuration
 - Setting of a JSON path
 - Setting of a regular expression

INPUTS AND OUTPUTS

Inputs

- GATE
- IN
Input for the text for processing

Outputs

- OUT 1 ...
Up to 20 outputs which provide the result of either a JSON path or a regular expression.

CONFIGURATION

The evaluation of the text elements occurs via the configuration dialog, which is available in the parameters via the gears icon in the “outputs” field. Here, the different filtered elements can be forwarded on the corresponding outputs.

In the upper part of the configuration you have the option of selecting the text type and saving an example text in order to test the evaluations provided below.



Text type

A selection of several text types is available:

- Plain Text (text/plain)
- JSON (application/json)
- XML (text/xml)
- HTML (text/html)

The selection of the text type influences the possible selection with “selector” in the table for the output configuration below and is also a source of help. In this context, with the “JSON” text type selection, it may be possible to enter JSON paths there. The selection of the text type has no effect on the actual function.

Output configuration

There is one line per output with which the requested elements can be filtered from the text via the corresponding samples/paths. It is possible to see the appropriate results on the stated text in the right-hand column. The example illustrates an output of [Openweathermap](#) which is available in the JSON format. Every output is assigned a data type which is transformed into the found value. If the output in the selected data type is not possible, then no data is issued. If no result is determined for an output, then no data is issued either.

Setting of a JSON path

JSON only recognises objects and arrays for the structuring. Objects address their characteristics through keys and are defined by curly brackets (" { } "). Arrays are a juxtaposition of values and are determined by square brackets (" [] "). Possible values:

- Boolean values (true / false)
- Numbers
- Character strings (text in double quotes)
- Arrays (can contain values of any type)
- Objects (can contain values of any type)

**Example:**

```
{
  "coord": {
    "lon": -0.13,
    "lat": 51.51
  },
  "weather": [
    {
      "id": 300,
      "main": "Drizzle",
      "description": "light intensity drizzle",
      "icon": "09d"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 280.32,
    "pressure": 1012,
    "humidity": 81,
    "temp_min": 279.15,
    "temp_max": 281.15
  },
  "visibility": 10000,
  "wind": {
    "speed": 4.1,
    "deg": 80
  },
  "clouds": {
    "all": 90
  },
  "dt": 1485789600,
  "sys": {
    "type": 1,
    "id": 5091,
    "message": 0.0103,
    "country": "GB",
    "sunrise": 1485762037,
    "sunset": 1485794875
  },
  "id": 2643743,
  "name": "London",
  "cod": 200
}
```

Possible paths:

- "weather[0].id" results in "300"
- "clouds.all" results in "90"
- "name" results in "London"

It is also possible, for example, to start a JSON path with an Array index ("[2]") if the JSON which is provided is structured accordingly.

If you enter the text for the output data type, JSON structures can also be issued as a result. In the aforementioned example, the path "clouds" results in {"all": 90}



Setting of a regular expression

With regular expressions it is possible to search for and extract almost any text in requested areas. Not all web services provide their results in the form of easy-to-process JSON.

Example:

```
LightNo=1
LightState=1
RED=255
GREEN=255
BLUE=255
LightNo=2
LightState=0
RED=255
GREEN=0
BLUE=0
```

If, for example, you would like to know the status of the lamp with the ID 2, the following expressions would be required:

- General switch status `LightNo=2 [\s\S]*?LightState= ([01])` with the result 0
- Red channel `LightNo=2 [\s\S]*?RED= (\d+)` with the result 255
- Green channel `LightNo=2 [\s\S]*?Green= (\d+)` with the result 0
- Blue channel `LightNo=2 [\s\S]*?BLUE= (\d+)` with the result 0

Via `LightNo=2` you define the start of the search. Part `[\s\S]*?` states that more-or-less any character ("white space" and "non-white space" values) can be used in any quantity. The last part defines the specific value to be searched for. In the case of the general status `LightState= ([01])`. The part which is described in the curly brackets is that which is to be issued at the end. The part described in square brackets `[01]` provides the possible values which can be interpreted as valid. With the coloured values, it is only the `\d+`, which shows that it is one number or more.

A good source of help for the testing of regular expressions is the following page <https://regex101.com/>. The reference there is a good source of support, and it is possible to test and improve the regular expressions here.

If several expressions are connected via `"|"` or several search groups are defined, only the first value to be found is issued. Please only use one individual regular expression per searched value.

5.6.20 THRESHOLD VALUE



The logic element provides you the option to implement actions in the case of the exceeding or the falling short of certain threshold values.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Output values
 - Threshold values
 - Delays
 - Cyclic value sender

INPUTS AND OUTPUTS

Inputs

- GATE (see [Logic Elements](#))
- IN
The value to be monitored
- OS (upper threshold)
Specification of the upper threshold value (is only taken into account with a new value input on IN). A manual specification of threshold values can take place in the parameters.
- US (lower threshold)
Specification of the lower threshold value (is only taken into account with a new value input on IN). A manual specification of threshold values can take place in the parameters.

Outputs

- OUT
Sends a defined value in the case of the exceeding or falling short of the defined threshold values.

CONFIGURATION

GENERAL

Threshold

Name

Threshold

Description

GATE

Verhalten bei Aktivierung

Do not send

OUTPUT VALUES

Datatype

Yes/No (Boolean)

Lower Threshold

Upper Threshold

THRESHOLDS

Lower Threshold	0
Upper Threshold	1

DELAYS

Pre Switch Delay

0 Seconds

Post Switch Delay

0 Seconds

CYCLIC VALUE SENDER

No repetition

Output values

Please set the values which are to be sent in the case of the exceeding or falling short of the defined threshold values.

Threshold values

Manual specification of threshold values. These threshold values are applied as long as no value has yet been input on the OS and US input. The threshold values are set as floating point numbers. The lower threshold must never be greater than the upper threshold. In this case, the logic element would not work and the entire logic group would be deactivated.

Delays

There are two possible ways of delaying the sending: Following a signal input which exceeds the threshold value, the **Pre switch delay** waits for whether the input value remains in the area exceeding threshold in the specified time before then sending the corresponding output value.

The **Post switch delay** is a block, which following the sending of a value, prevents a renewed trigger, irrespective of how the input value changes in the specific period of time.

The greater delay is always used with the value input.

Example:

The lighting is to be activated if the brightness falls below a certain value for more than five minutes. Following their activation, the lights should remain on for at least one hour in order to prevent damage to the lighting due to overly frequent switching on or off. If the brightness exceeds the threshold again one minute before the end of the hour, the light will only be switched off after five minutes, and not immediately after the elapsed minute of the post switch delay.

The greatest calculated delay is always applied.

```
// vsv = Pre switch delay
// nsv = Post switch delay (as point in time)
```

```
IF (now() + vsv) > nsv THEN (now() + vsv) ELSE nsv
```



Cyclic value sender

CYCLIC VALUE SENDER

Send in cyclic intervals ▾

Send every

10 Seconds ▾

If desired, the cyclic repeating of an output value is possible. The repeated sending is cancelled as soon as the input value exceeds the opposite threshold.

5.6.21 TRANSFORMATOR EN



With the transformator, you can depict input values for a specific value range on another value range. A frequent case of use is the transformation between two value ranges. One straightforward example is the conversion of DPT 5.001 (0-100%) into DPT 5.010 (0-255). A straightforward linear transformation can be carried out without an appropriate graphic interface, but it can also be easily achieved with the [mathematics](#). The transformator is therefore to be used with not absolutely linear transformations. By way of example, a rudimentary constant light regulation on the basis of the data of a LUX sensor.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Output value range
 - Curve editing mode
 - Moving points
 - Adding/deleting points
 - Precision
 - Transformator as steps
 - With input values that exceed the limits
 - OK

INPUTS AND OUTPUTS

Inputs

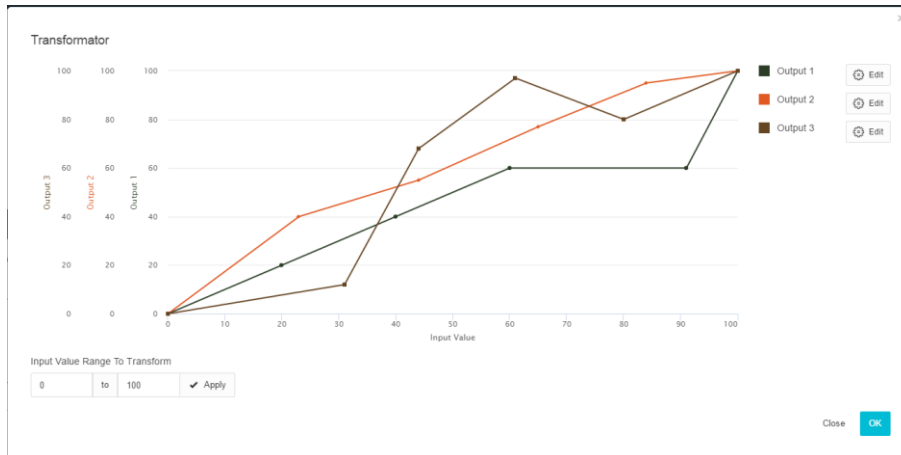
- GATE (see [logic elements](#))
- IN
The input value for evaluation. The only values to be processed are those which can be interpreted as a floating point number.

Outputs

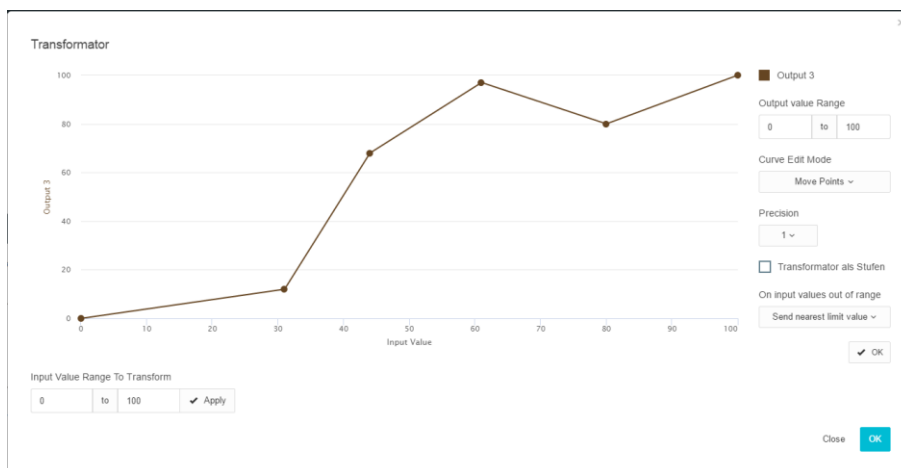
- OUT 1 ...
Up to five outputs, each of which are represented by an individual transformation graph.

CONFIGURATION

The number of outputs is created directly in the parameter window. The gears icon in the initial configuration provides access to the advanced configuration. You then enter a diagram view, with which you are able to define the output values on a required input value range in the form of curves.



The input value range (x-axis) is defined via the input field situated below. An individual output value range (y-axis) can be created for every output, and therefore an individual graph.



Output value range

Enter a random value range.

Please remove or move the previously set points to the required area if you want to decrease them in size. This is not possible a later stage.



Curve editing mode

Two modes are distinguished between.

Moving points

Move the existing points on the area at random

Adding/deleting points

To delete a point, go to the line near the point which is to be removed using the mouse and wait until it is highlighted as selected. Now remove the point with a mouse click.

To add a point, please click on the buttons and make sure that no point has a selection and then click.

At this point a new point is created and the graph is redrawn accordingly.

Precision

If you release or move points, it is almost impossible to achieve an exact coordinate. By way of help, you can position the points on the grid precisely, on the whole number, 0.5 or 0.25.

Transformator as steps

The graph can be interpreted in steps, like "Output 2" in the example. In this case, the value of one point until the next successive point applies.

With input values that exceed the limits

If a value arrives which is not covered by the defined value range, three possible responses are available to select:

- Do not send
No output value will be generated
- Send next limit value
- Send input value
The input value will be guided to the accompanying output in unfiltered form.

OK

You can access the outputs selection again via the buttons.

5.6.22 VALUE READ



The logic element Value Read performs an active value read request and sends the result in case of success. It is meant for additional reads during regular operation. You do not need this element if you only want to ensure that the **LOGIKEDITOR** fetches the value from a device at start up. In this case, you can use individual data point initialisation in a Value Input instead.

- Inputs and Outputs
 - Inputs
 - Outputs
- Configuration

INPUTS AND OUTPUTS

Inputs

- GATE (see [Logic Elements](#))
- TRIGGER
Any input signal triggers the read request

Outputs

- STATUS (0-5)
The status is sent only when it changes
 - 0: Initial status - No event occurred yet
 - 1: OK - Request was successful
 - 2: Request timed out - No answer received within 10 seconds
 - 3: Read request was dismissed. the request queue is full (see below)
 - 4: Request Error
 - 5: The data point could not (yet) be loaded
- Additional outputs depending on the data point type (see Value Input / Value Output)

The answer to a value read request is also received by all Value Inputs that use the same datapoint. You should therefore only evaluate the value at the outputs of this element if you want to execute certain additional functionalities exclusively for responses to triggered value read requests.

CONFIGURATION

Choose or create a data point. For further information see Value Input / Value Output or [Data Points](#)

Please note that the **LOGIKEDITOR** only processes one value read request per second. Additional requests will be queued. If the queue exceeds 100 requests, all further requests will be dismissed.

5.6.23 VALUE STORE EN



The value store always stores the value received most recently via IN and outputs this value using OUT if the TRIG trigger receives a value (regardless of the type). If no value was received beforehand, nothing will happen upon triggering. Of course, the actions are only possible if [Gate](#) permits them. There is no specific configuration for this logic element.

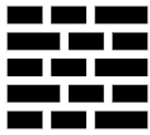
WERTESPEICHER

Name

Wertespeicher

Beschreibung

5.6.24 WEEKLY TIMER



With a weekly timer you configure a week plan for the switch events on an output. Up to 128 different values of a data type can be configured and equipped with individual colours for their presentation.

- Inputs and outputs
 - Inputs
 - Outputs
- Configuration
 - Week plan
 - Special calendars
 - Values
 - Detailed view

INPUTS AND OUTPUTS

Inputs

- GATE (see [Logic Elements](#))
- SDAY
This input puts the weekly timer into the special day mode. The logic element then operates according to the way in which the defined [\(Special\) calendar](#) is configured. The implementation will then overwrite the normal functional method as long as the appropriate value is available on the input. The values for the triggering are defined in the [\(Special\) calendar](#). As soon as the input value is switched to “0”, the normal configuration applies once again.
- IN
Serves the purpose of checking the current status of a data point.
If the weekly timer is to ensure that the configured value is always available on the value output which is connected with OUT, this input should always be connected with the same data point via a value input. If an external switch event now occurs with a value which deviates from the plan, the weekly timer recreates the required status by switching immediately to OUT.

Outputs

- OUT
The output on which the switch events are sent.
Note: The weekly timer only works if OUT is connected with at least one additional logic element.

CONFIGURATION

GENERAL

Weekly Timer

Name

Description

GATE

Verhalten bei Aktivierung

Do not send ▾

WEEKLY PLAN

Weekdays Special Calendars

Mo	
Tu	
We	
Th	
Fr	
Sa	
Su	

OUTPUT VALUES

ℤ Integer ▾

▾ x

▾ x

+ Add Value

Week plan

The week plan shows an overview of the planned switch events per weekday. In the initial status, all of the days are grey because no switch events are planned. The week is a continuous, closed strip. This means that if you only save one switch event in your week plan, e.g. send value 1 on Thursday at 18 hrs. and value 1 is connected with the colour of red, then the entire week will then appear in red. By clicking on the weekday, you open the detailed view in which the switch events can be configured. The initial time period which is visible in the detailed view depends on the position of the day on which you click, in terms of which all the way to the left means 0:00 and all the way to the right means 23:59.

Special calendars

Special calendars do not initially have any effect on the weekly timer, which means that if a day is available on the special calendar, the weekly timer will still switch to the normal switch plan for the weekday. To change this behaviour, you can create profiles and assign them with one or several special calendars. In this respect, it is only possible to assign each calendar just one profile. In addition to this, it is only possible for one switch profile to be valid per day. Therefore, if one day appears as a special day in two or more special calendars (e.g. it is the third Sunday before Christmas, a public holiday, and the football team Borussia Dortmund are playing) and the special calendars are assigned to different profiles, then the profile of the calendar with the higher profile is selected. In this configuration, the calendars are arranged from left to right so that the calendar with the highest priority is stated first and the one with the lowest, last of all. The number of profiles which can be created depends on the number of special calendars. Once the maximum has been achieved, the button for the adding of additional profiles disappears. The absolute maximum is 10.

WEEKLY PLAN

Weekdays **Special Calendars**

USE WEEKDAY PROFILE

Müllabfuhr
 Borussia Dortmund Feiertage

USE SPECIAL PROFILE

S1

Müllabfuhr
 Borussia Dortmund
 Feiertage

S2

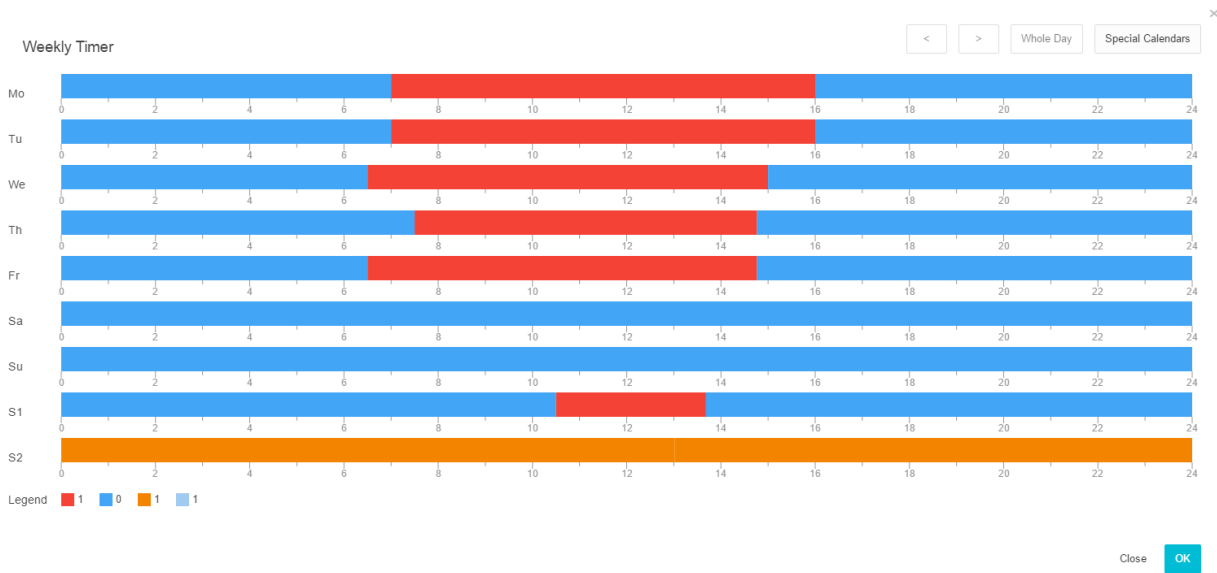
Müllabfuhr
 Borussia Dortmund
 Feiertage

Values

The values (up to a total of 128), which can be switched at any chosen minute, all have to be of the same data type and can be defined by you individually.

Detailed view

The detailed view provides a small square for each minute of the day in the colour of the value which is available for this point in time, and a listing of all the days and special profiles on a successive basis. The number of minutes shown simultaneously depends on the resolution of your screen; you can navigate through with the day using the arrows in the top left. In this context, the display is configured so that you are always able to see the same time period for all days. Black dots within the squares indicate the minutes on which the weekly timer sends to the output.

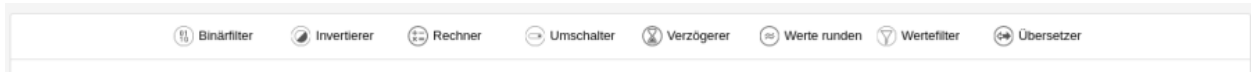


Click on a random minute in order to edit the switch status of this minute.



5.7 TOOLS

Tools are small aids with the power of manipulating, delaying, or transforming values between two logic elements.



If you use the mouse to drag a tool from the top list to a link between two logic elements, it engages in this link. In order to fulfil this purpose, a tool always has exactly one input and one output, as opposed to [»Logic Elements«](#).

5.7.1 BINARY FILTER TOOL



The binary filter tool offers a simple filter for boolean values. Only integer and boolean input values are taken into account. Regarding integer values, only 0 or 1 are accepted as input values. See chapter [Data types in Logik Editor](#) for information on data types.

CONFIGURATION

Filter Options

Setting	Description
Changing value	If an incoming value deviates from the prior value, this value may pass. The Boolean value <code>true</code> would correspond an integer value 1 and vice versa.
Unchanged value	If an incoming value is equal to the prior value, this value may pass. The Boolean value <code>true</code> would correspond an integer value 1 and vice versa.
True/Yes (<code>true</code>)	Only values that are either <code>true</code> or 1 are admitted.
False/No (<code>false</code>)	Only values that are either <code>false</code> or 0 are admitted.
Rising edge	An input value is only admitted if the previous input value was 0 or <code>false</code> and if the current value is 1 or <code>true</code> .
Falling edge	An input value is only admitted if the previous input value was 1 or <code>true</code> and if the current value is 0 or <code>false</code> .

Only the filter options `True/Yes (true)` and `False/No (false)` operate already on the first value. All other options let the first value pass and filter starting with the second incoming value, based on a comparison with the previous value.



5.7.2 CALCULATOR TOOL



The calculator tool provides the four fundamental arithmetic operations in order to use an input value and a fixedly specified value to calculate a result output at the output. The configuration provides the following options

CONFIGURATION

Operation

- Addition
- Subtraction
- Multiplication
- Division

Fixed Value

The fixed value to be used in an operation with the input value.

Order of operands

- Input value, fixed value
- Fixed value, input value

If it is not possible to convert the input value into a number, no calculation will be performed.
If the values are not valid, no calculation will be performed either. Division by 0 would be such a case.

5.7.3 DELAYER TOOL



The delayer tool delays all incoming values by a fixed or variable time before the value is sent at the output.

CONFIGURATION

Delay

In the configuration, enter the delay time.
Possible time units include:

- Milliseconds (it is recommendable to not to use too small values here. The smaller the value, the more inaccurate the actual delay)
- Seconds
- Minutes
- Hours
- Days

Delay Type

- Fixed Delay
Equals the delay time
- Random Delay
On every incoming value, a random delay between 0 and the delay time will be calculated.

In order to avoid queues including too many events, the number of parallel delayed values is limited to five.

Thus, the tool does not accept any incoming values as long as five values are already delayed.

5.7.4 INVERTER TOOL



The inverter tool inverts all values sent to the input. There are no configuration options.

Examples

Data type	Input	Output
Integer	10	-10
Float	3.3	-3.3
Float	-5.8	5.8
Boolean	true	False
Boolean	false	True
Text	Logik Editor	rotidekigoL

5.7.5 ROUND VALUES TOOL



The round values tool processes all input values that can be converted to a numerical value (floating decimal value, float).

CONFIGURATION

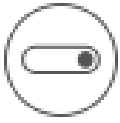
Operations

- Round half away from zero
- Round down (floor)
- Round up (ceil)

Decimal Places

Along with the type of rounding, you may also specify the number of desired decimal places.

5.7.6 TOGGLE TOOL



The toggle sends two pre-defined values in an alternating manner. It is triggered by any input value.

CONFIGURATION

Data Type

Data type of the values between which will be toggled

Value to Send

First of the two values

Value to Send alternately

Second value

5.7.7 TRANSLATOR TOOL



The translator transforms incoming values based on a fixedly defined table.

A fix data type is a prerequisite for input and output. However, the input values are converted, if possible.

CONFIGURATION

In the configuration, you define the data type for input and output. In the table, you enter the respective assignment of input value and output value.

If no assignment was found in the translation table, you can specify a default value sent to the output instead. If you do not enable this option, nothing will be output at the output if no assignment was found in the table.

5.7.8 VALUE FILTER TOOL



The value filter tool checks input values according to previously defined criteria and triggers an action depending on the filter result.

The triggered action may either be the passthrough of the input value or sending a fix value.

CONFIGURATION

Filter Options

- **Value increases** - the current input value is compared to the previous value. The success action is executed if the current value is greater.
The following is applicable:
 - $2 > 1 \rightarrow \text{Send}$
 - $\text{true} > \text{false} \rightarrow \text{Send}$
 - Texts: $B > A \rightarrow \text{Send}$
- **Value decreases** - the current input value is compared to the previous value. The success action is executed if the current value is smaller. (Comparison examples from above inverted)
- **Changing Value** - the current input value is compared to the previous value. The success action is executed if the current value is different from the previous value.
- **Unchanged Value** - the current input value is compared to the previous value. The success action is executed if the current value is equal to the previous value.
- **Value is equal to target** - the current input value corresponds to a specified target value.
Comparison is also performed between different data types. Thus, a Boolean true, compared to a 1 or 1.0, will lead to a positive filter result.
- **Value is not equal to target** - the current input value differs from a specified target value.
Comparison is also performed between different data types. Thus, a Boolean true, compared to a 1 or 1.0, will lead to a negative filter result.
- **Value changes to target** - the current input value changes from any other value to the target (see above). In order to achieve a positive filter result again, the input value must deviate from the target in the meantime.
- **Value changes away from target** - the previous input value corresponded to the target, but the current value does not.
- **Value changes from or to target** - a combination of the last two options.

Send Value

In case of a positive filter result the input value can be sent, or a fixed value.



5.8 SETTINGS

Under “System > Settings” it is possible to make general settings to the device.

- Camera Archives
- Data point initialisation
- Email Accounts
- KNX Group Address Format
- Location
- Telegram Rate Limit
- Volatile logic group data
- Documentation

5.8.1 DATA POINT INITIALISATION

The initialisation of the data points takes place when the **LOGIKMODULE** is (re)started, one of the data points is changed and/or a new data point is created and saved. Through the initialisation, the input statuses of the logic groups can be changed and therefore triggered. In the "System" > "Settings" menu, global initialisation settings are made, an individual setting can be made in the data points themselves.

Information

The info-box shows the order in which the initialisation conditions can be carried out. The initialisation completes the options from the top to the bottom.

Use status table

The data point accesses the status table. A value is sought for the sending group address (the first in the list if several are assigned). If a value is found it can optionally be checked for its age.

Use only if newer than

Determines a time-frame in which the status has to be located in the status table (depending on the timestamp used there), so that the value from the table is brought into consideration.

Possible setting with the individual data point configuration

Read Value (if possible)

If this option is active, during the initialisation of the data point, a so-called “Value Read” telegram is sent to the sending group address of the data point. If the object is appropriately configured, a regular telegram with the current status should arrive within a short period of time.

For this option, a timeout (maximum waiting time for a response) of up to five seconds is provided.

Please note that this type of initialisation triggers a normal event, so that the corresponding logic groups could be triggered by the event!

Fixed value - only for specific data points

Set a fixed value in the form of one of the existing [data types in the LOGIKEDITOR](#).

This option does not check the actual data point type. At this point you can input any data which is applied during the initialisation. A fixed value for the initialisation is not possible if it relates to a data point with several outputs (time, date, RGB, dimming values).

5.8.2 EMAIL ACCOUNTS

Using email Sender Logic Elements requires adding email accounts to be used for email transmissions. All email accounts are listed in a table at **System > Settings > Email Accounts**. The columns on the right-hand side contain buttons for testing, editing and deleting email accounts. New email accounts can be configured via the "Add email account" button.

ACCOUNT SETTINGS

Clicking either the "Add email account" or "Edit" button opens a modal dialog where account settings can be accessed.

Server Settings

Just like in an email client program, an email account needs certain parameters to establish a connection to an SMTP server. They are as follows:

- **Account Name:** Name for an email account shown in LOGIKEDITOR. This name will be used in the Email Sender Logic Element when choosing an email account.
- **SMTP Server Address:** Address of the SMTP server.
- **SMTP-Port:** SMTP server port for email transmission.
- **Username and Password:** Authentication parameters. If your SMTP server requires authentication, the checkmark next to "Use Authentication" as well as username and password must be present.
- **Encryption Type:** You can choose either StartTLS or SSL for email encryption. Check the checkmark next to "Ignore non-verifiable SSL-Certificates" if no certificate check is desired.

Header Settings

Header fields for email addresses can be configured here. Fields with types "From" and "To", as well as "Cc", "Bcc" and "Reply-To" can be amended by clicking on their respective "Add" buttons.

Important: At least one "From"-Field must be set in order to send emails.

TESTING AN EMAIL ACCOUNT

To verify its configuration, an email account may be tested by sending a test email. Existing email accounts can each be tested by clicking on the "Test" button in the column on the right hand side. Furthermore, tests can be executed via the "Test" button at the upper right corner of the account configuration dialog. This may come useful if you want to test email account settings while editing. The test email has the following content:

***Diese E-Mail wurde vom LOGIK EDITOR gesendet.
This mail was sent from the LOGIK EDITOR.***

Sending a test email may take some time. A modal dialog appears which displays the transmission status where in the end the test result is shown.

Important: Testing is available only when every parameter required for email transmissions via SMTP server is present. As long as this is not case, the "Test" button cannot be used.



5.8.3 VOLATILE LOGIC GROUP DATA

This option is to be found under "System > Settings".

When they are active in the **LOGIKMODULE**, all of the logic groups save their status every 15 minutes (see the "Working Copies" section in [Getting Started](#)). These include the appropriate values for the inputs and outputs, and partially, the internal data of the logic elements. If, for example, you have deactivated a logic group for a long time or the device itself was switched off, it may be the case that the saved data are no longer valid and could lead to unforeseen responses.

At this point you are able to set a maximum age for these data. When loading a logic group it is then checked as to whether the age has been exceeded or if the volatile data are reloaded in the logic group.

Please note

Please note that these data will be used again in the event of changes to the logic group.

5.8.4 KNX GROUP ADDRESS FORMAT

You can select the format in which KNX group addresses in data points will be displayed.

On the page " System > Settings > Data Points", the left tree with the ETS project will be displayed according to the setting embedded in the ETS project itself. As soon as you import a group address into the **LOGIKEDITOR** data points to the right, it will be displayed as configured here.

5.8.5 LOCATION

At present, the location that has been set here is only used within the logics of the **LOGIKEDITOR** as a standard setting for astrotimers. The "installation location" of the device is also to be set separately under **LOGIKMODULE** Start page > System > Configuration > General, so that this setting determines the time zone of the device.

You can input the coordinates of the location of the device here or click on the "Find Location" button. There, you can either find the location automatically or allow the coordinates to be found for a postal address (the end device requires internet access).

Set the Location of the facility

SELECTED LOCATION

FIND LOCATION AUTOMATICALLY

Latitude

51.163375

Longitude

10.447683

Show in Google Maps

This option is only available via HTTPS. [\(Link\)](#)

Resolve Location Now

FIND LOCATION USING OPENSTREETMAP

The location will be resolved using OpenStreetMap. Please enter the address, city, or post code of the location of the facility here.

Resolve Location Now

Close OK

Please note

The automatic location finding is based on the location of the device with which you use the Editor. Use the manual input, or find location via address input if your actual location is a long way from the system.

The automatic location finding also requires you to have initialised the **LOGIKEDITOR** by https (to do this, simply enter "https://" before the URL). The first time you use it, your browser will ask you whether you would like the **LOGIKEDITOR** to find your location. Click on "Allow" to find the location. The accuracy of the location finding depends on several factors, including the hardware attributes of your end device (e.g. if it has a GPS module or SIM card) and the type of internet connection. Via the "Show in Google Maps" link, you can check exactly where you have been located (the end device requires internet access).

5.8.6 TELEGRAM RATE LIMIT

If the limit is active, outgoing telegrams from the **LOGIKEDITOR** will be processed by a queue and sent on the bus with a rate of at most 10 telegrams per second. If telegrams are generated at a faster rate, the queue will fill up accordingly. The queue is limited to 1000 telegrams.

Should the queue reach 1000 entries, e.g. through an infinite loop in a logic group, further outgoing telegrams will be discarded until the queue contains less than 1000 entries. Such cases will produce messages in the Dashboard and the underlying cause should be fixed.

5.8.7 DOCUMENTATION

With the menu item Documentation, a project overview is created that contains a comprehensive listing of the project with the points

1. ETS-PROJECT
2. SETTINGS
3. LOGIC GROUPS
4. DATA PINTS

For the purpose of project documentation, the output is in PDF format. The menu item Documentation itself does not have a selection menu.

Note: The project overview includes active elements in the list, so that e.g., sample logic groups that have not been activated and are therefore not online are not included in the list.

ETS-PROJECT

In the first section of the documentation there is displayed the information about the project loaded into the **LOGIKEDITOR**.

Documentation - Project Overview Print

Comprehensive project details for documentation purposes.

1. ETS PROJECT

Hörder Vorburg

Last Modified Thursday, January 6, 2022 9:29 AM

SETTINGS

Under settings are printed out your stored location coordinates, to which the time functions (astro times) in the logic groups refer.

In addition are displayed your settings for the data point initialization (see section [Data point initialisation](#)) and for volatile data of the logic groups (see section [Volatile logic group data](#)).

2. SETTINGS

Location Preset

Latitude: 51.514227
Longitude: 7.465279

Data Point Initialisation

Use status table .

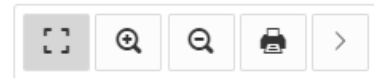
Volatile Logic Group Data

Dismiss saved runtime data older than 1 Days.

LOGIC GROUPS

In the section logic groups the activated and therefore online logic groups are displayed. For this purpose, the information is printed out how many logic groups are active or online and the total number of logic elements they contain. This means that test or sample logic groups that are not activated therefore are not displayed in the listing. Here are some hints to optimize the output in this section:

- Logic groups that are to be recorded in the list may have to be temporarily activated for the documentation.
- The logic groups are listed alphabetically.
- To ensure that the graphical representation of the logic groups fits into the output window of the documentation, they must be structured in the editing window using the icon.



3. LOGIC GROUPS

2 active logic groups with 6 logic elements

Alexa blind

B1.25 HooC - Query Concierge status

Your descriptions, comments and hints will not be included in the documentation.

DATA POINTS

The total number of data points in the active logic groups is specified under data points.

4. DATA POINTS

8 data points in active logic groups

There is no automatic saving, so you can either forward the documentation to a printer or save it as a PDF via the Print icon.

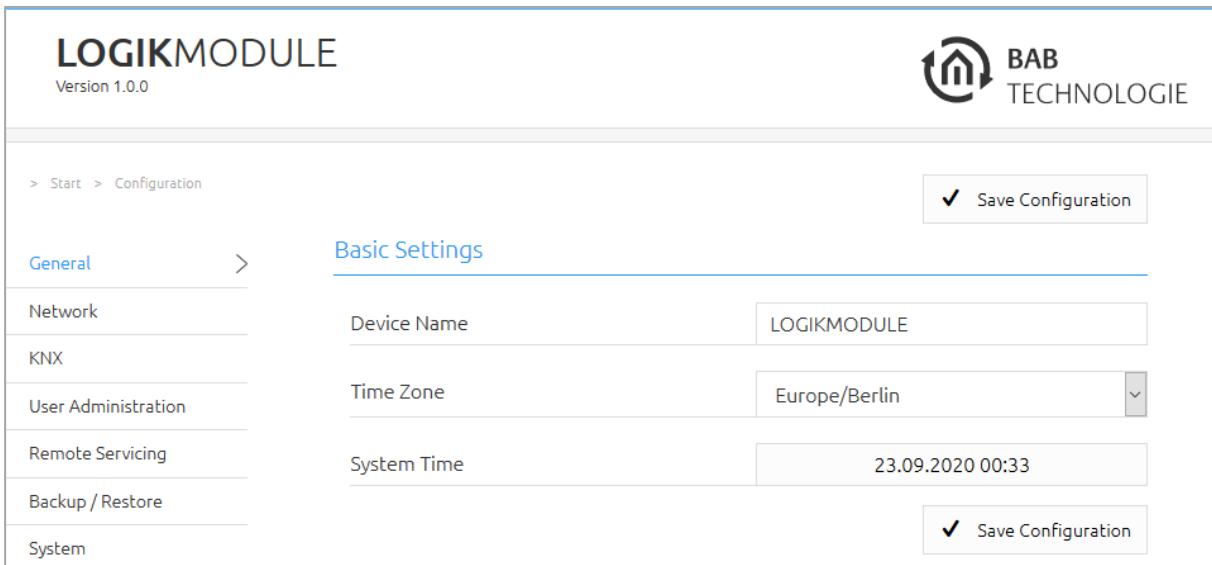
6 CONFIGURATION

6.1 SAVING THE CONFIGURATION

As soon as you have applied changes, such as on the name and the IP address of the **LOGIKMODULE** and want to save them, click on the button "**Save configuration**".

6.2 GENERAL

Click on "Configuration" to make changes to the general settings.



The screenshot shows the LOGIKMODULE configuration interface. At the top left, it says "LOGIKMODULE Version 1.0.0". At the top right, there is the BAB TECHNOLOGIE logo. Below the header, there is a breadcrumb trail: "> Start > Configuration". On the right side, there is a "Save Configuration" button with a checkmark. On the left side, there is a sidebar menu with the following items: General (selected), Network, KNX, User Administration, Remote Servicing, Backup / Restore, and System. The main content area is titled "Basic Settings" and contains three rows of configuration fields: "Device Name" with the value "LOGIKMODULE", "Time Zone" with a dropdown menu showing "Europe/Berlin", and "System Time" with the value "23.09.2020 00:33". At the bottom right of the main content area, there is another "Save Configuration" button with a checkmark.

Figure 24: General configurations

Device name: Here, you can assign an individual device name for your **LOGIKMODULE**. This name is then displayed in the "Discovery Tool" and BAB STARTER.

Location: Edit the installation site so that the correct time zone can be set.

System time: The current system time of the device is shown. Clicking the button synchronises the system time of the device with that of the local PC. To synchronise the system time automatically, please use the NTP service. See "[Network](#)".

Note: The system time must be correct for the software to run properly. Please make sure that the system time is always correct. If synchronisation with NTP is not possible, correct the system time manually.

6.3 NETWORK

- DHCP:** If DHCP is active, the device automatically obtains the network settings. A DHCP server must be available in the local network.
- IP address / network mask / gateway:** If DHCP is not active, the network settings must be carried out statically. In case of doubt, contact your network administrator as to which settings are to be carried out. Please note that an IP address may never be assigned twice!
- DNS server:** DNS is the abbreviation for Domain Name System. The DNS server converts Internet addresses, for example "www.bab-tec.de" into the IP address "85.214.89.170" and vice versa. Without a valid DNS entry, NTP-, weather- and UPnP-service do not work.
- NTP server:** NTP is a free service for synchronising the system time of Internet-compatible devices. If time synchronisation is not possible, please correct the system time manually. See "[General](#)".
NTP server list: e.g. <http://www.pool.ntp.org/zone/europe>

The screenshot displays the LOGIKMODULE web interface for network configuration. The page title is "LOGIKMODULE Version 1.0.0" and the logo for "BAB TECHNOLOGIE" is in the top right. The navigation menu on the left includes "General", "Network", "KNX", "User Administration", "Remote Servicing", "Backup / Restore", and "System". The "Network" section is active, showing "Device Settings" with a "Save Configuration" button. The settings are as follows:

Setting	Value
DHCP	<input type="checkbox"/>
IP Address	192.168.179.241
Netmask	255.255.255.0
Gateway	192.168.179.1
DNS Server	
DNS Server #1	192.168.179.1
DNS Server #2	
DNS Server #3	
NTP Server	
NTP Server #1	0.de.pool.ntp.org
NTP Server #2	2.2.2.2
NTP Server #3	

A "Save Configuration" button is located at the bottom right of the form.

Figure 25: LOGIKMODULE – Network settings

6.4 KNX

The “Module” configuration menu is used for configuring the KNX parameters. The parameters are relevant for all **LOGIKMODULE** versions, IP (10571) and KNX (10575). With IP (10571), the configuration regulates KNXnet/IP communication. For more information, please see “[KNX configuration](#)”.

6.5 USER ADMINISTRATION

The user data required to access the **LOGIKMODULE** Web interface is managed here. This user data is also requested when you access the EnOcean Editor from BAB STARTER. To change or add users, click “User administration” in the “Configuration” menu item.

Note: Make sure that you always assign secure passwords and follow standard password guidelines.

DISABLE PASSWORD RECOVERY

If this option is selected, the password cannot be reset and the device must be sent in if you lose the password.

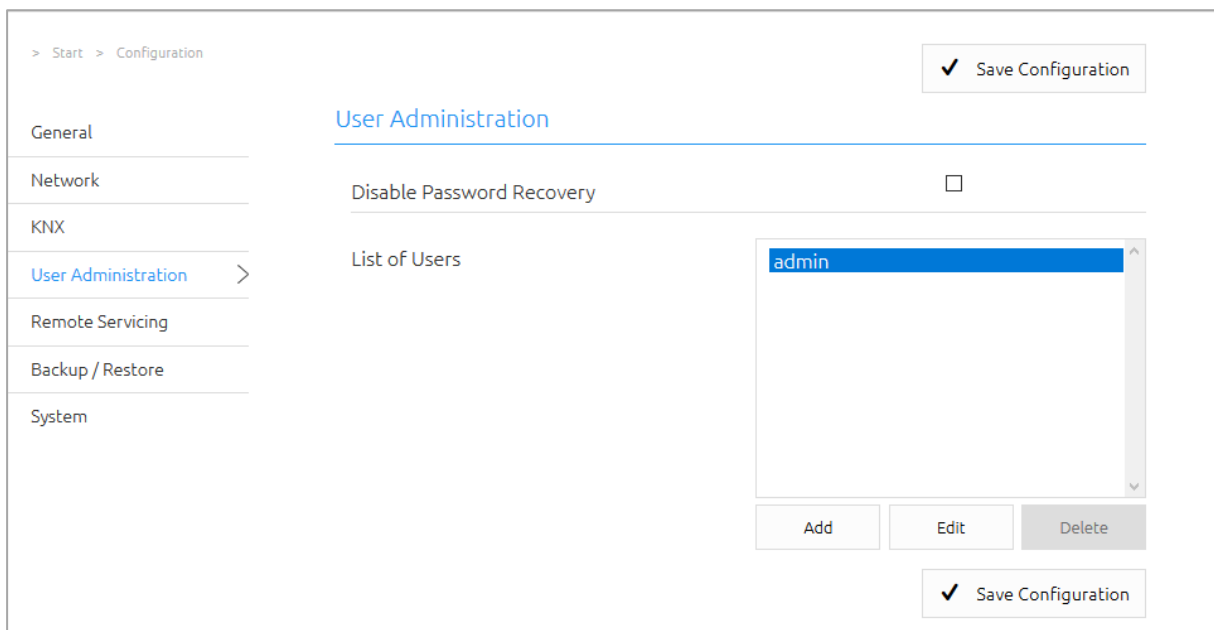


Figure 26: User administration

6.6 REMOTE SERVICING

Activate the Remote Servicing Access of the **LOGIKMODULE**. Select a time between 2-12 hours after which the Remote Servicing Access is automatically closed. Remote Servicing Access is also deactivated again if the **LOGIKMODULE** is restarted, this is independent of the set time. Remote Servicing Access can be deactivated at any time by clicking on "Deactivate Remote Servicing Access".

Activate the Remote Servicing Access by clicking on "Activate Remote Servicing Access".

Remote Servicing access is started. This process takes a few seconds and the Remote Servicing Access ID is displayed. Copy the ID and send it to info@bab-tec.de.

The screenshot shows the configuration page for LOGIKMODULE. The page title is "LOGIKMODULE" with "Version" below it. The logo for "BAB TECHNOLOGIE" is in the top right. The breadcrumb is "> Start > Configuration". A "Save Configuration" button with a checkmark is in the top right. The left sidebar has a menu with "Remote Servicing" selected. The main content area is titled "Remote Servicing" and contains the following settings:

Remote Servicing Access activated	22.09.2020 20:58:00
Remote Servicing Access ends	23.09.2020 04:58:00
Remote Servicing Access ID	U2FsdGVkX1+TAcKeh1zuUDnmZamh4zEc

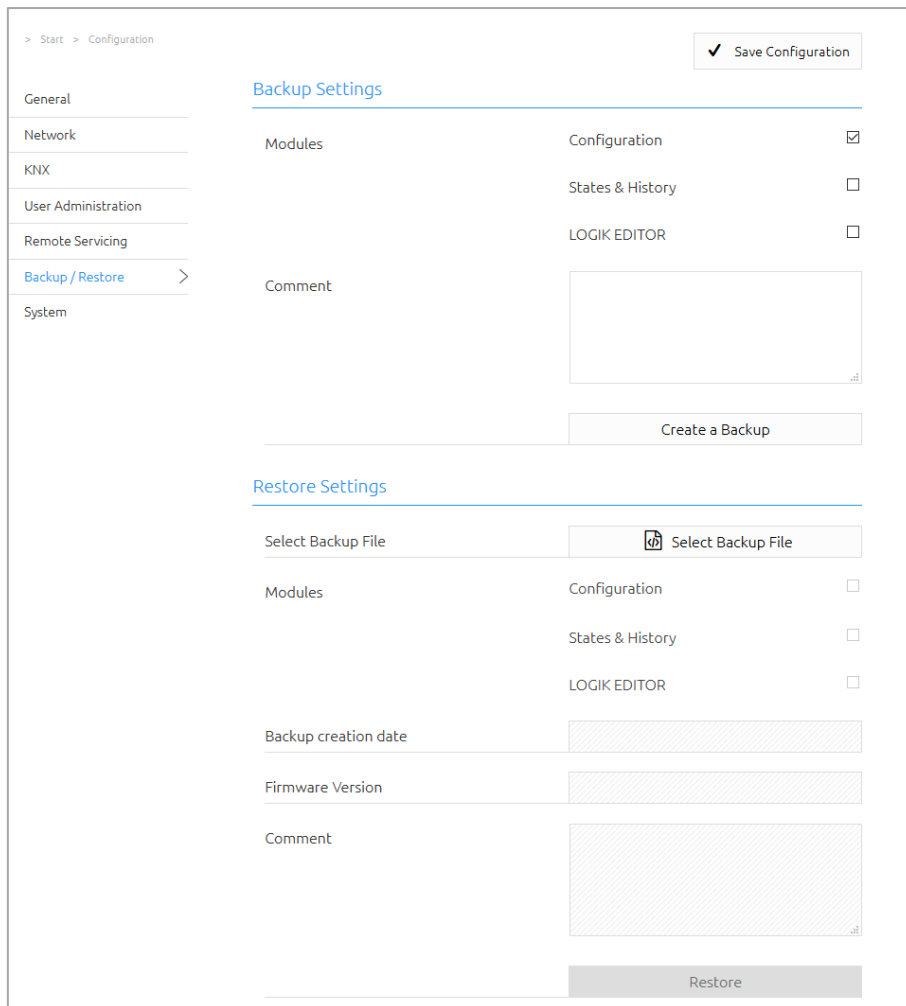
Below the ID field are two buttons: "Copy Remote Servicing Access ID" and "Deactivate Remote Servicing Access".

Figure 27: Remote servicing

Before you activate Remote Servicing Access, contact Support.

6.7 BACKUP THE SETTINGS

The configuration data of the **LOGIKMODULE** should be backed up at regular intervals in order to ensure that the current configuration status can be restored at any time.



The screenshot shows the 'Backup / Restore' settings page. On the left is a navigation menu with categories: General, Network, KNX, User Administration, Remote Servicing, Backup / Restore (selected), and System. The main content area is divided into two sections: 'Backup Settings' and 'Restore Settings'. In the 'Backup Settings' section, there is a 'Save Configuration' button with a checkmark. Below it, a table lists modules to be backed up: Configuration (checked), States & History (unchecked), and LOGIK EDITOR (unchecked). A 'Comment' text area is also present. A 'Create a Backup' button is at the bottom of this section. The 'Restore Settings' section starts with a 'Select Backup File' button. Below it, the same module list is shown, but all checkboxes are unchecked. There are also fields for 'Backup creation date', 'Firmware Version', and a 'Comment' text area. A 'Restore' button is at the bottom of this section.

Figure 28: Backup / Restore

CREATING A BACKUP

Select the checkboxes under “Modules” to set which configuration data is to be backed up.

- *Configuration:* All configuration data except for app configuration data.

Note: The network settings are not backed up; these are separate from the backup data.

- *Statuses & logging:* The address status table and logging table are backed up. This is important, as it ensures that the status information can also be restored. Otherwise, status information will be established on the basis of the current telegram communication.



Comments regarding the backup can be added in the “Comments” field.

- Click on “Create backup” to launch the backup process.
- The backup file is generated by the system and provided automatically for download using the browser download dialogue.

RESTORING A BACKUP

- Select an **LOGIKMODULE** backup file using the “Select backup file” button. The files have the extensions “*.lom.bkp”.
- Information for the selected file is displayed in the “Backup created on”, “Firmware version” and “Comments” fields.
- The “Modules” field shows which modules are available in the selected backup file. You can also use the checkboxes to select which modules are to be restored.
- *Configuration:* All configuration data.

Note: The network settings are not part of the backup file.

- *Statuses & logging:* The address status table and logging table are restored.

6.8 SYSTEM / FIRMWARE UPDATE

SERVICE

Here, you can restart the device (“Initial reboot”).

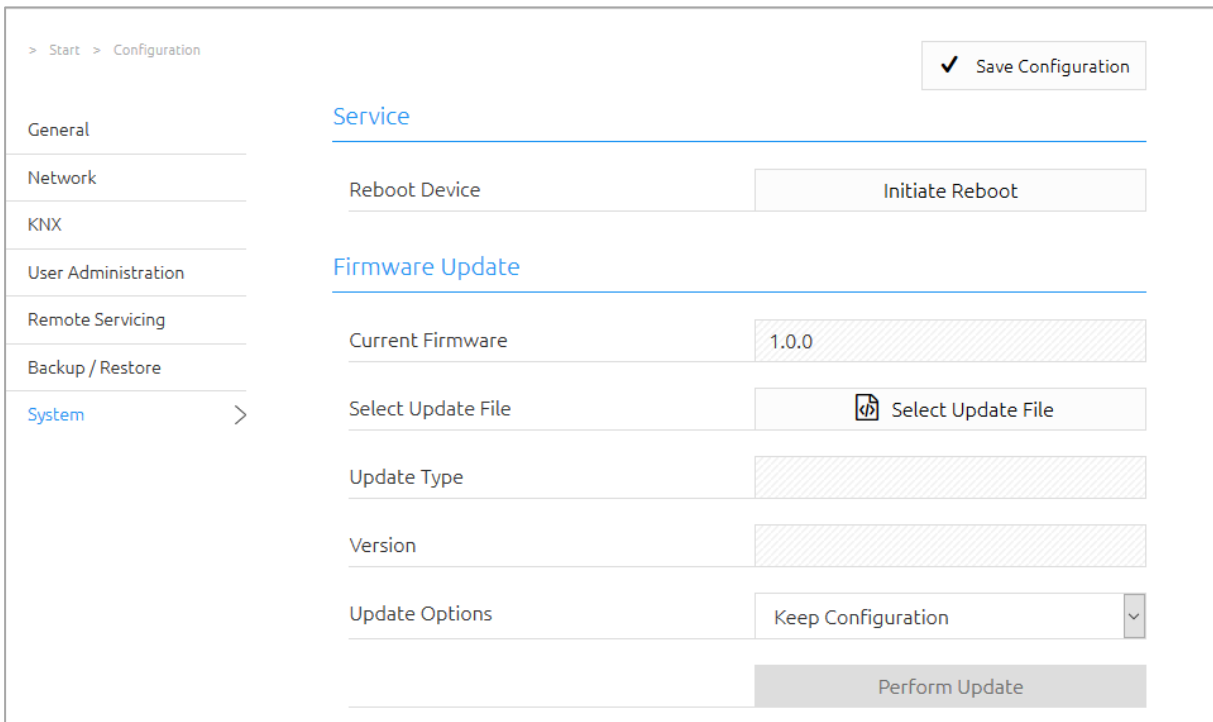
FIRMWARE UPDATE

Each **LOGIKMODULE** can be updated. The firmware update is free of charge. The current firmware files can be found on the BAB homepage. Proceed as follows to update the device:

- Download the current firmware image from the download area www.bab-tec.de.
- Unpack the file to any folder.

Note: Generate a new backup before you launch the update (see “*Backup the settings*”). The update process restores the factory settings.

- Open “Configuration” – “System”.



The screenshot shows the configuration interface for the System section. The left sidebar contains a menu with options: General, Network, KNX, User Administration, Remote Servicing, Backup / Restore, and System (selected). The main content area is titled 'Service' and includes a 'Reboot Device' section with an 'Initiate Reboot' button. Below this is the 'Firmware Update' section, which displays the current firmware version as 1.0.0. It includes a 'Select Update File' button with a file icon, an 'Update Type' field, a 'Version' field, and an 'Update Options' dropdown menu currently set to 'Keep Configuration'. A 'Perform Update' button is located at the bottom of the section. A 'Save Configuration' button with a checkmark is visible in the top right corner of the interface.

Figure 29: Configuration – System

- Select the firmware image file (*.bin extension) using the “Select update file” dialogue. Update type and version are displayed.
- Please choose one of the update options
 1. *Keep Configuration*: All settings will be preserved
 2. *Keep Network Settings*: Only the network settings will be preserved.
Caution: all other settings will be deleted
 3. *Reset Configuration*: The device will be reset to factory defaults during the update.

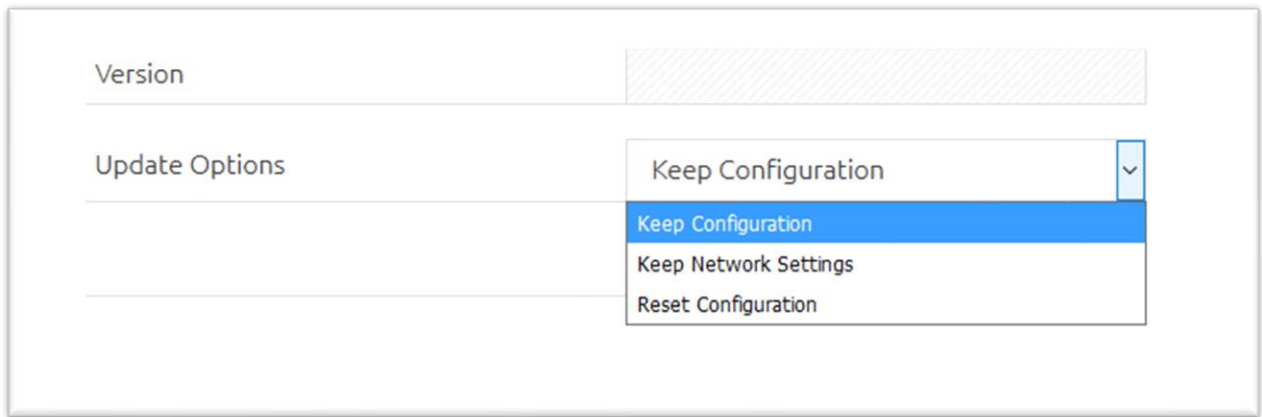


Figure 30: Keep network settings

Note: If the “Keep network settings” checkbox is not selected, the LOGIKMODULE can be accessed at the default IP address after the update.

(For factory settings, see “[Initial Operation](#)”)

- Launch the update by clicking on “Perform Update”.

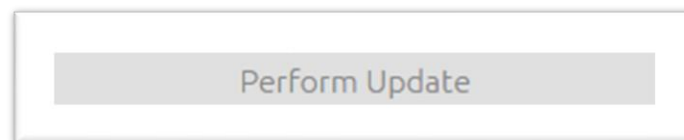


Figure 31: Perform update

- Wait until the update is complete. The Web interface is updated automatically once the process has been successfully completed.
- The update restores the device factory settings (except for the network settings; see above). Individual settings are only loaded again when you restore a backup (see “[Backup the settings](#)”).

7 INFORMATION

Important information on the **LOGIKMODULE** can be found here. Please have this information ready if support is required.

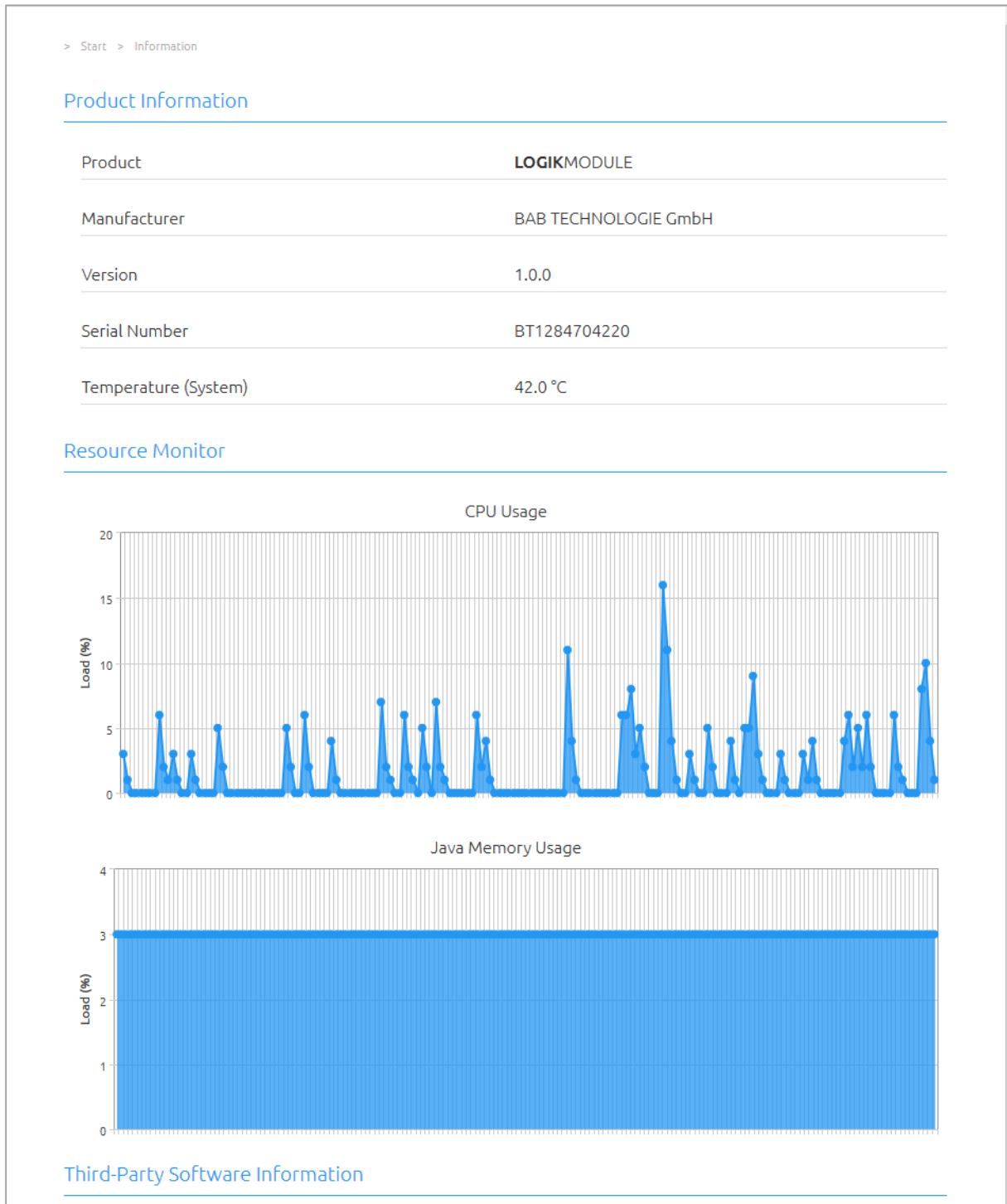


Figure 32: System Information



8 ATTACHMENT

function	EIS type	DPT	typical function	typical values	data	identifier
PriorityPosition	EIS1	DPT1	Wind alarm	1=high and inhibit	1 Bit	1-bit
Switch	EIS1	DPT1	Light switching	0=Off; 1=On	1 Bit	1-bit
DimControl	EIS2	DPT3	Dimming	0=Off; 1=On xxx=relative dimming 0-255=absolute dimming	1Bit 4Bit 8Bit	3-bit controlled
Time	EIS3	DPT1 0	Time	Hhh:mm:ss	3 Byte	Time
Date	EIS4	DPT1 1	Date	dd:mm:yyyy	3 Byte	Date
Value	EIS5	DPT9	Value	0-255	1Byte	2-byte float value
DimValue	EIS6	DPT5	Percent	0-100%	1Byte	8-bit unsigned value
DriveBlade Value	EIS6	DPT5	Position value	0-100%; 0-255	1Byte	8-bit unsigned value
DriveShutter Value	EIS6	DPT5	Position value	0-100%; 0-255	1Byte	8-bit unsigned value
Position	EIS6	DPT5	Control value Heating	0-100%; 0-255	1Byte	8-bit unsigned value
DriveMove	EIS7	DPT1	Move shutter	0=up 1=down	1Bit	1-bit
DriveStep	EIS7	DPT1	Adjusting the slat blind	0=up; 1= down; 0 or 1 during movement=stop	1Bit	1-bit
PriorityControl	EIS8	DPT2	Priority	0,1 switch; 3=forced off; 4=forced on	2Bit	1-bit controlled
FloatValue	EIS9	DPT1 4	IEEE	Floating-point value	4 Byte	4-byt float value
Counter 16bit	EIS10	DPT7	Counter 16 bit	0 - 65.535	2Byte	2-byte unsigned value
Counter 16bit	EIS10	DPT8	Counter 16 bit with sign	-32.768 - 32.767	2Byte	2-byte signed value
Counter 32bit	EIS11	DPT1 2	Counter 32 bit	0 - 4.294.967.295	4Byte	4-byte unsigned value
Counter 32bit	EIS11	DPT1 3	Counter 32 bit with sign	0 - 4.294.967.295	4Byte	4-byte signed value
Access Control	EIS12	DPT1 5	Access control	Card number	4Byte	Entrance access
Char	EIS13	DPT4	ASCII characters	Character	1Byte	Character
Counter 8bit	EIS14	DPT5	Value	0 - 255	1Byte	8-bit unsigned value
Counter 8bit	EIS14	DPT6	Value with sign	-128 - 127	1Byte	8-bit signed value
String	EIS15	DPT1 6	String	max. 14 characters	14 Byte	Character string

EIB/KNX devices exchange fixed prescribed data formats with each other. These are defined in types. The old designations of the types are EIS (EIB Interworking Standard) The new designations are DPT (Data Point Type)