



b.a.b-technologie gmbh

KNXEASY documentation

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b.a.b – technologie gmbh

im INHOUSE Dortmund
Rosemeyerstr. 14
44139 Dortmund

info@bab-tec.de

Tel.: +49 (0) 231 – 476 425 - 30
Fax.: +49 (0) 231 – 476 425 - 59
www.bab-tec.de



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1 INTRODUCTION

Product: **KNXEASY**
Application: ASCII Gateway
Type: REG (DIN Rail mounted)

KNXEASY is a device for DIN rail mounting with an electric power consumption of less than 5W. Actually **KNXEASY** serves as a gateway between Ethernet LAN and KNX Twisted Pair.

All required software and hardware settings are already stored in the **KNXEASY**. No additional software is needed for operation.

KNXEASY has its own user interface as a LCD display allowing to configure the device without a PC. It has also a configuration web interface reachable from any updated browser. As **KNXEASY** device is connected to LAN it may be operated from anywhere.

In addition **KNXEASY** can be a full substitution of an IP-Router. KNXnet/IP tunneling and routing can be activated.

1.1 FUNCTION SURVEY

You do not require any special software to configure the **KNXEASY**. For basic requirements you can simply use the LCD display and navigation buttons integrated to the device. Thus, a PC is not necessary.

For depth requirements the web interface allows you to sharpen your configuration and access to specific functions. Any up-to-date standard-internet browser allows you to connect to your **KNXEASY**'s web interface.

Following services and configuration are available from the LCD display:

- Network configuration
- General information and configuration (Name, location, Device info., Date and time, language ...)
- KNX configuration
- Reset configuration to factory default
- Update **KNXEASY** to a new version

Following services and configuration are available from the web interface:

- Network configuration
- General information and configuration (Name, location, Device info., Date and time, language ...)
- KNX configuration
- Enable or disable services (Tunneling, Routing)
- Connections configuration
- Route table configuration
- Clients simulation

1.2 GENERAL INFORMATION ABOUT THE PRESENT MANUAL

Please note that all information and images published in this manual are without liability. The software described in this manual is developed persistently for the purpose of our customers, so the content in the manual may differ from the actual status.



2 INITIAL OPERATION AND INSTALLATION

For initial operation of the device actually valid security information has to be paid attention to.

2.1 SAFETY INSTRUCTIONS

Working on low-voltage systems and on the EIB is only allowed to trained and qualified personnel. Installation and connection of the bus mains, the 12 – 30 Volt DC mains as well as the integrated units, have to be performed in accordance with current DIN VDE guidelines as well as the EIB-manual.

This component is intended to be installed for application in distribution boards resp. control panels and can be used for installation in

- Indoor applications,
- Dry rooms,
- Low-voltage distributors,
- Mini-boxes

Doing so, you have to respect the environment-requirements, compliant with the protection class and permitted operating temperature of the EIB-unit.

The line with integrated choke cannot be used as the operating voltage of 12-30 V DC.

Safety and regulatory compliance standards:

- DIN EN 55024 Einrichtungen der Informationstechnik (equipments of information technology)
- DIN EN 60950 Sicherheit von Einrichtungen der Informationstechnik. (safety of information technology)
- DIN EN 50090-2-2 Elektrische Systemtechnik für Heim und Gebäude (electrical systems for home and buildings)

CE- qualification according to:

- EMV- Richtlinie (Wohn- und Zweckbau) (EMV-guideline, residential- and functional building)
- EN 50081-1
- EN 50082-2
- EN 50090-2-2

! Note - Functional security!

In case of special requirements regarding risks to life or property (functional safety), appropriate additional measures have to be taken. These measures must have the necessary independence from the operation of the KNXEASY and always have to be available.

Measures to reduce risk you can take from the Tables "Functional safety" of the "Building Control Handbook, Fundamentals" from ZVEH / ZVEI.

2.2 DEVICE OVERVIEW

The image below shows KNXEASY.

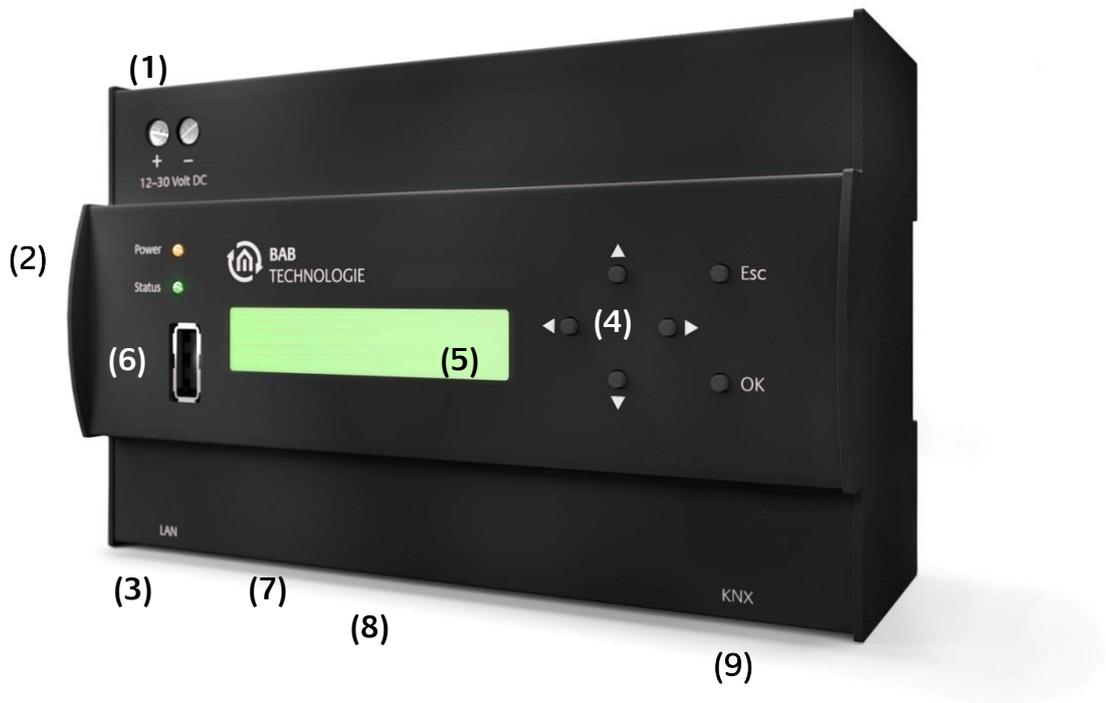


Figure 1: Device Overview

- (1) Power supply 12 - 30 Volt DC
- (2) Signal LEDs
- (3) RJ45-socket for Ethernet LAN
- (4) Navigation buttons
- (5) LCD display
- (6) Front USB socket
- (7) Bottom USB socket
- (8) RJ45-socket for serial port RS232
- (9) Connector KNX/EIB

POWER SUPPLY CONNECTOR

The power supply connector takes place in the top left corner. Please be careful of voltage and polarity.

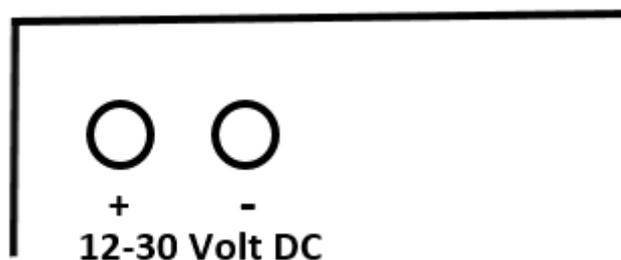


Figure 2: Power supply connector

BUS 2 (TWISTED PAIR) CONNECTOR

The BUS 2 connector takes place in the right corner on the bottom side. It is used for KNX Twisted Pair. Please be careful of the polarity.

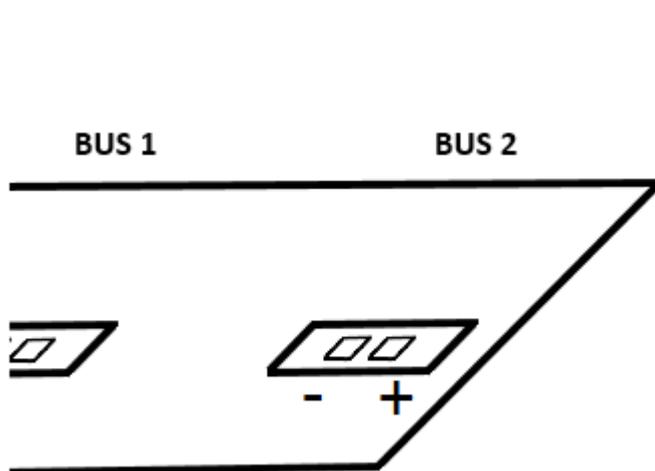


Figure 3: BUS 2 connector

NAVIGATION BUTTONS

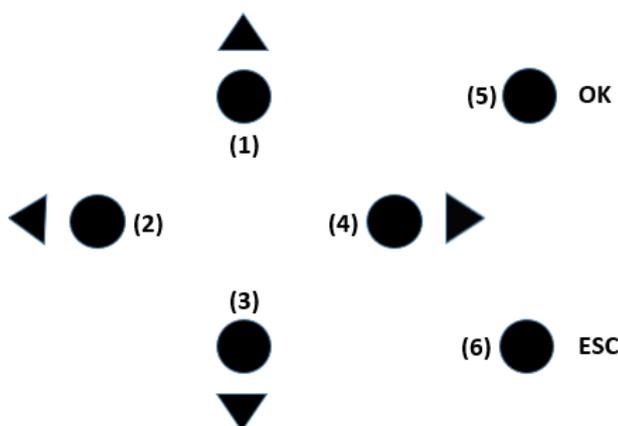


Figure 4: Navigation buttons

- (1) Up button (navigate to upper menu, decrease numbers, precedent letter of alphabet)
- (2) Left button (go left for configuration of KNX and IP addresses, hosts, names ...)
- (3) Down button (navigate to lower menu, increase numbers, next letter of alphabet)
- (4) Right button (go right for configuration of KNX and IP addresses, hosts, names ...)
- (5) OK button (navigate to next menu, confirm a configuration, get out of a pure informative field such as "Device info" or "Free memory")
- (6) ESC button (navigate to precedent menu, erase a character of the string you are configuring such as "Name" string or "Host" string, stop error/warning/info messages when they occur)

A long press on Up or Down button allows you to scroll faster.



SIGNAL LEDES

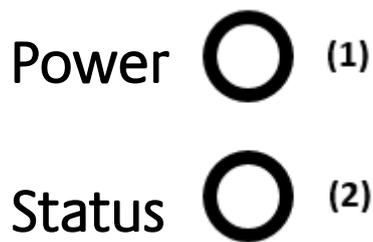


Figure 5: Signal LEDs

- (1) Power LED
- (2) Status LED

POWER LED

- The Power LED turns green when the device is totally started and usable.
- The Power LED turns red and back to green each time a telegram is received.
- During update process the power LED may blink red.

STATUS LED

- The Status LED turns green when the device is totally started and usable.
- The Status LED blinks red in case of error, warning or info messages.
- During update process the Status LED may blink red or yellow.

USB SOCKETS

Two USB sockets on the front and the bottom side are available on the KNXEASY. Both of them allow you to plug a USB flash drive in order to update the KNXEASY.



2.3 INSTALLATION

When mounting the device and during the initial operation please take care and note the following information to prevent any risk.

Attention!

Device may be destroyed in case of wrong use. Operations under voltage may cause residual voltage. Before connecting the device please disconnect the installation environment from voltage.

Please pay attention, that KNXEASY is protected against polarity reversal, but not against surge voltage. In case excessive voltage will be connected, KNXEASY can be destroyed.

GENERAL

Environment

Voltage:	12 - 30 Volt DC
Power consumption:	<= 5 W
Climate persistent:	acc to EN 50090-2-2
Ambient temperature:	0 - 45°C
Rel. humidity (not condensing):	5% - 80%

Plugging the device

Snap the device onto the top-hat rail acc to 60715

Power supply

Please care for sufficient performance when selecting the power supply. KNXEASY needs 300mA at 12 Volt DC during the boot phase!

Connect the power supply according to the marking with the spring clips

For power supply, the non-choked output of an EIB-power supply can be used, if available. (Please consider of adequate power reserves).

To supply the KNXEASY Power Over Ethernet (POE) can be used. Plug in the network cable (LAN) into the RJ 45- connector.

Ethernet

For programming the KNXEASY it is necessary to access via LAN. This can be done both using an existing LAN network or via direct connection. Plug in the network cable (LAN) into the RJ 45- connector.

Prerequisites of the Client PC

If you need to configure KNXEASY with the web interface, a PC with network adapter and an up-to-date browser is necessary.

ETS

KNXEASY does not require ETS application. However for the best use of KNXEASY, KNX group address information are necessary. To import them into KNXEASY the ETS version 4 is needed.

The device warms up during operation. Take care about the maximum ambient temperature and for sufficient thermal discharge. An error message will be displayed on the LCD display if the maximum temperature (90°C) is reached. You can check the temperature on the LCD menu (see "General") or in the web interface (see "Info").



ADDITIONAL FOR KNX

To establish optimum operating conditions and performance the **KNXEASY** should be connected to the KNX bus system (BUS 2). It is of prior importance that the device is supplied with bus voltage; real devices on the bus system are not needed.

Plugging the device

- Connect the bus wire with the connector on the BUS 2 connector
- Switch on the bus voltage

OPERATIONAL READINESS

When all connections are made correctly the device may be supplied with power. Please wait until the device has booted completely before checking the correct installation. The boot phase takes about 3 minutes. Have a look at signal LEDs. Both of them should be green. In addition the menu should appear on the LCD screen and you should be able to navigate to the menu thanks to the navigation buttons.

2.4 INITIAL OPERATION

When the device is booted up proper it can be put into operation. For this, it may happen that some basic settings have to be adjusted. These settings have to be made via the LCD screen or the web interface.

LCD CONFIGURATION

DATE AND TIME

To configure date and time use the navigation buttons and go to “Configuration” > “General” > “Date and time” > “Set DateTime”. You have there three submenus “Date”, “Time” and “Save”. Go to “Date”, configure the right date. When it is done, press “OK” button. You should see a “OK” field on the display, press “OK” button again to confirm your configuration. You should be back to the three submenus “Date”, “Time” and “Save”.

To configure time, go to “Time”, configure the right time. When it is done, press “OK” button. You should see a “OK” field on the display, press “OK” button again to confirm your configuration. . You should be back to the three submenus “Date”, “Time” and “Save”.

To save your configuration, go to “Save” and press “OK” button. To check that date and time has been correctly set, go to “Configuration” > “General” > “Date and time” > “Get DateTime”

Date and time will be then internally saved. You should not have to configure them again.

NETWORK

In order to configure the network, go thanks to the navigation buttons to “Configuration” > “Network”. There, for a fast configuration of the network, you can use DHCP. Go to “DHCP” > “Enable”. You can then find out the IP address assigned to your device in “Configuration” > “Network” > “IP Address”. You can also manually configure the network. In “Configuration” > “Network”, set up the IP-Address / Netmask / Default Gateway / DNS Server(s) / NTP server(s). You can configure up to three DNS and NTP servers.

For IP-Address / Netmask / Default Gateway go to the corresponding menu, configure it and go to “OK”. For example to configure the IP-Address go to “Configuration” > “Network” > “IP Address”. Configure the right IP-Address and press the “ok” button. You should see now “OK” on the LCD display, press again the “OK” button to confirm.



For DNS Server(s) go to “Configuration” > “Network” > “DNS”. You have there access to the list of configured DNS server(s). If you press the “OK” button you are able to edit the current configured DNS server (“Edit”), to add a new DNS server (“Add IP”) or to remove the current DNS server (“Remove”). Go for example to “Edit“, configure a DNS server address and confirm with “OK”.

For NTP Server(s) go to “Configuration” > “Network” > “NTP”. You have here access to the list of configured NTP server(s). If you press the “OK” button you are able to edit the current configured NTP server (“Edit”), to add a new NTP server address (“Add IP”), to add a new NTP server hostname (“Add Host”) or to remove the current NTP server (“Remove”). Go for example to “Edit“, configure a NTP server and confirm with “OK”.

As soon as you have configured all your Network settings, go to “Save”. The network settings are now updated.

GENERAL

In order to configure the name of your KNXEASY, go to “Configuration” > “General” > “Name”. You see now the default name of your device and you can edit it. If you press “OK” button again you can change the case (lowercase, number, special character) and save. As soon as you save the name setting is updated. This name will be the name of the KNXnet/IP server visible on ETS and your hostname. Therefore you will be able to access to the web interface with the hostname “[Name].local” or the IP address you have configured.

For example the default name is “knxeasy”. You should be able to access to the web interface when you type “knxeasy.local” in your browser. In addition “knxeasy” should be one of the visible KNXnet/IP servers in ETS.

Only lowercase, numbers and minus (-) are allowed for the KNXEASY's name.

You have access to many information in this “General” menu. “Device info”, “Date and time”, “Temperature” (internal temperature, should never be over 90°C).

To configure the timezone of your device go to “Configuration” > “General” > “Location”. Choose the right location and save.

You are also able to change the language of your KNXEASY. English, German and French are available. Go to “Configuration” > “General” > “Language” and choose the language.

“Debug Level” is available in case of problem for debugging purpose.

KNX

In order to configure the KNX individual address of your KNXEASY, go to “Configuration” > “KNX” > “Phy Addr”. You see now the default KNX address of your device. Set the KNX address according to your KNX topology and save. As soon as you save the KNX individual address setting is updated. This address will be the KNX individual address of the KNXnet/IP server.



WEB INTERFACE

ACCESS TO THE WEB INTERFACE

The KNXEASY is delivered with factory-made settings. In order to access to the web interface, type the default IP address or the default hostname in your browser:

- Default IP address => **192.168.1.228**
- Default hostname => **knxeasy.local**

LOG IN TO THE WEB INTERFACE

Connect to KNXEASY's configuration page is protected by username and password. In delivery status the following access data is valid:

Area:	Username	Password:
Configuration:	admin	admin

Enter now the default username “admin” and password “admin”. After logging in, you reach the menu page.

At any moment you can go back at the beginning of the web interface, clicking on the “BAB TECHNOLOGIE” logo.



Figure 6: BAB TECHNOLOGIE Logo

USER ADMINISTRATION

In the Web interface, go to “Configuration” -> “User Administration” you can modify the admin user or configure new ones.

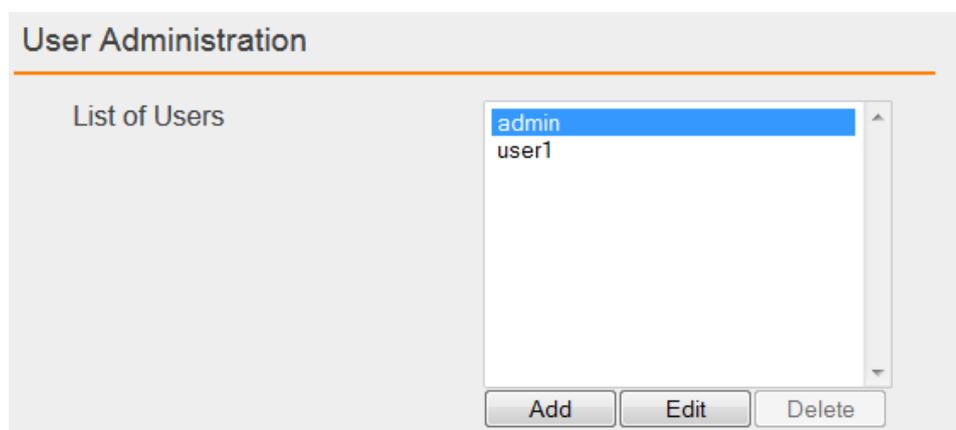


Figure 7: User Administration

Click on “Add” to add a new user. A new window appears where you have to enter the user name and the password twice.

To just modify the admin user, click on “admin”, then click on “Edit”. A new window appears where you can modify the admin user name and enter the new password twice.

RESET CONFIGURATION SETTINGS

In the web interface go to “Configuration” -> “User Administration” to configure your security question.

Reset System Configuration

Security Question

Answer (4-16 characters)

Figure 8: Reset Configuration

If you realize your configuration is totally wrong and for example you are not able to access to the web interface anymore, you can reset the configuration to factory.

In the LCD menu, navigate to “Reset Config”. The security question you have been configuring appears on the LCD display. Push “OK” button to answer. Write your answer. If you push “OK” again you can write numbers or special characters. Press “OK” again to confirm your answer. If your answer is right, the configuration will be reset to factory otherwise an error message will be displayed.

BACKUP / RESTORE CONFIGURATION

At any moment you can create a backup of your configuration and restore it in case of problem or after an update for example.

In the web interface go to “Configuration” -> “Backup / Restore”. Click on “Create a Backup” and save the file in a safe place. To restore it, click on “Browse”, search for your backup file and click on “Restore”.

Backup Settings

Modules Configuration

Comment

Create a Backup

Restore Settings

Select Backup No file selected.

Modules Configuration

Backup creation date

Comment

Restore

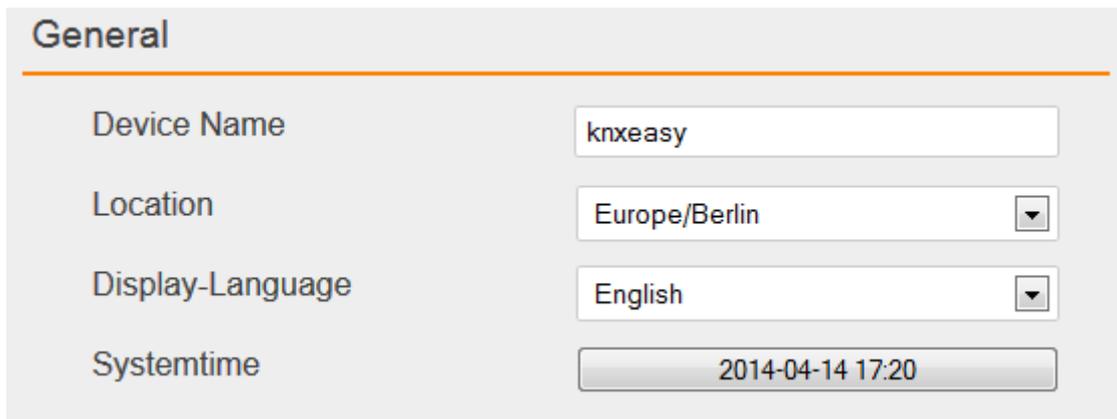
Figure 9: Backup / Restore



DATE AND TIME

At first boot time if KNXEASY is not able to connect to a NTP server in order to get the right date and time, it will display the error message “Please configure date and time”.

To configure date and time, in the web interface go to “Configuration” -> “General”. Click on the datetime button in the “Systemtime” field. A window will open and ask for “synchronize with pc time”, click on “OK”. Date and time will be then internally saved. You should not have to configure them again.

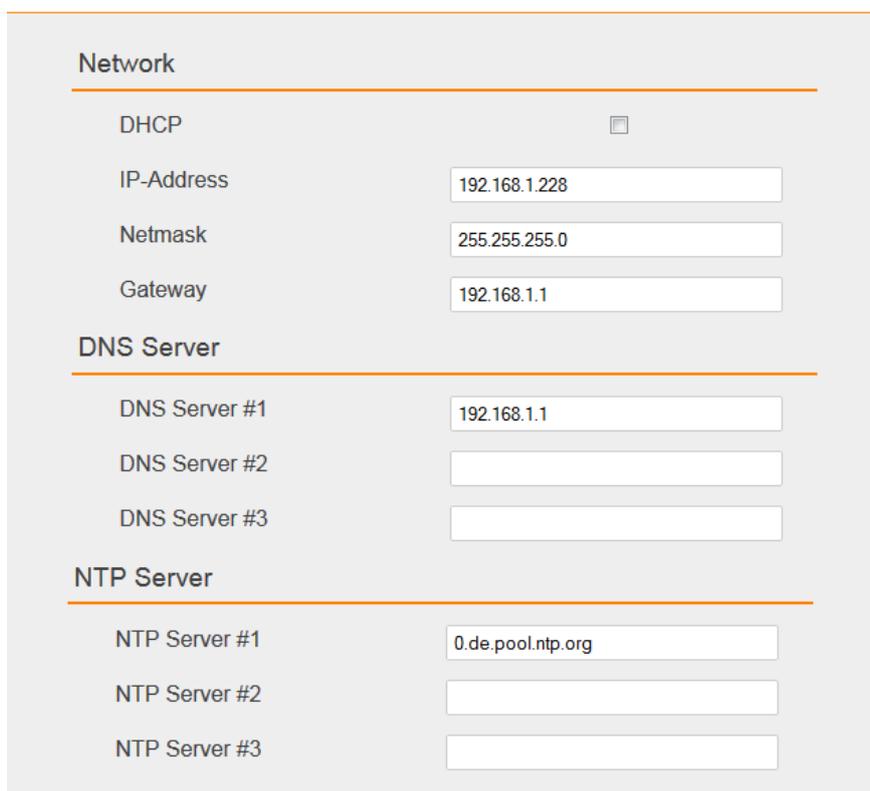


General	
Device Name	<input type="text" value="knxeasy"/>
Location	<input type="text" value="Europe/Berlin"/> ▼
Display-Language	<input type="text" value="English"/> ▼
Systemtime	<input type="button" value="2014-04-14 17:20"/>

Figure 10: Date and Time

NETWORK

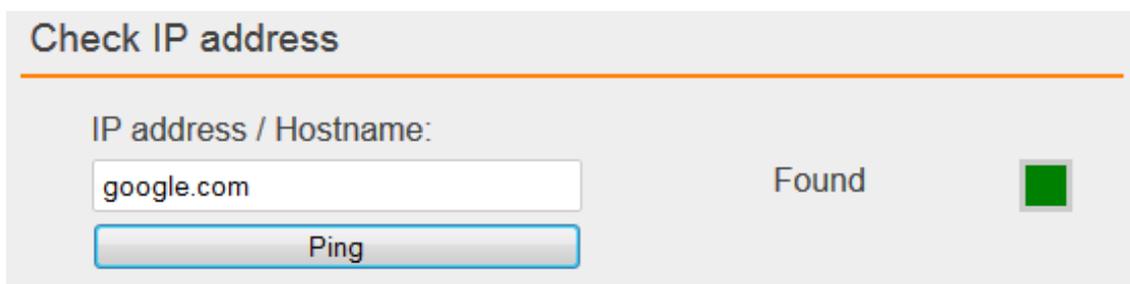
In the Web interface, go to “Configuration” -> “Network”. You can set the IP address, the netmask, the gateway, and up to three DNS and NTP servers.



The screenshot shows a network configuration interface with three sections: Network, DNS Server, and NTP Server. Each section has a title bar with an orange underline. The Network section includes a DHCP checkbox, and input fields for IP-Address (192.168.1.228), Netmask (255.255.255.0), and Gateway (192.168.1.1). The DNS Server section has three input fields for DNS Server #1 (192.168.1.1), #2, and #3. The NTP Server section has three input fields for NTP Server #1 (0.de.pool.ntp.org), #2, and #3.

Figure 11: Network Configuration

CHECK IP ADDRESS



The screenshot shows a 'Check IP address' interface. It features a title bar with an orange underline. Below the title is a label 'IP address / Hostname:' followed by an input field containing 'google.com'. To the right of the input field, the word 'Found' is displayed next to a small green square. Below the input field is a 'Ping' button.

Figure 12: Check IP address

You are also able to check whether an IP address or hostname is available by pinging it. Type the IP address or the hostname you want to check in the “IP address / Hostname” field and press on the “Ping” button. If it is found and available, “Found” will be written and the little square will turn green. Otherwise, “Not found” will be written and the little square will turn red.

GENERAL

In the Web interface, go to “Configuration” -> “General”. You can set the “Device Name”, the “Location” and the “Display-Language” of your KNXEASY.



Device Name	<input type="text" value="knxeasy"/>
Location	<input type="text" value="Europe/Berlin"/>
Display-Language	<input type="text" value="English"/>
Systemtime	<input type="button" value="2014-04-14 17:20"/>

Figure 13: General configuration

KNX

In the Web interface, go to “Configuration” -> “KNX”.

KNX DATE / TIME

In order to synchronize KNXEASY’s time to a KNX Date / Time device, enter both KNX group addresses in the “KNX Date / Time” settings.

Groupaddress Date	<input type="text" value="2/2/91"/>
Groupaddress Time	<input type="text" value="2/2/92"/>

Figure 14: KNX Date / Time

PHYSICAL AND KNXNET/IP TUNNELING ADDRESS

Physical Address	<input type="text" value="4.7.0"/>
KNXnet/IP Tunneling Address	<div style="border: 1px solid gray; height: 100px; width: 100%;"></div> <div style="display: flex; justify-content: space-around;"><input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/></div>
Groupaddress format	<input type="text" value="3 Level (xx/y/zzz)"/>

Figure 15: KNX

As soon as you save the configuration. This physical address will be the KNX individual address of the KNXnet/IP server. And each Tunneling address you configured will be assigned to a Tunneling connection.

ETS 4 PROJECT UPLOAD

ETS 4 Project Upload

Current Project: Name

Latest Change

No file selected.

Figure 16: Upload ETS 4 Project File

It is possible from ETS 4 to export an archive with the extension “.knxproj” which contains many information about your KNX installation. For example in ETS 4 you are able to configure the Data Type. A KNX switch device could be a Data Type “on/off” for instance. This information will be in the archive “.knxproj”. To export this archive, in ETS4 go to “Projects”, select your project, click on export.

You can from the web interface, import the archive so that all those useful information are available directly in the KNXEASY’s clients simulation.

Click on “Browse” and search for the archive you have exported from ETS 4. Finally click on “Upload selected project”.

CHECK KNX PHYSICAL ADDRESS

Check KNX Physical Address

Physical Address:

Found

Figure 17: Check Physical Address

You are also able to check whether a KNX Physical Address is available, exactly as you do in ETS4. Type the KNX Physical Address you want to check in the “Physical Address” field and press on the “Check” button. If a KNX device with this Physical Address is found and available, “Found” will be written and the little square will turn green. Otherwise, “Not found” will be written and the little square will turn red.

SERVICES

In the Web interface, go to “Configuration” -> “Services”. Tunneling and Routing are KNXnet/IP services. They can be enable or disable.

In addition services provide a “Restart” and “Reboot” buttons. “Restart” only restart the necessary softwares such as the webserver whereas “Reboot” executes a total reboot of the device.



Finally, in the logs area you can read any error, warning or info received from the device. One hundred logs are internally saved with a timestamp so that you know exactly when a log occurred and you are able to follow the evolution in case of problem. You can clear these logs with the button “Clear”.

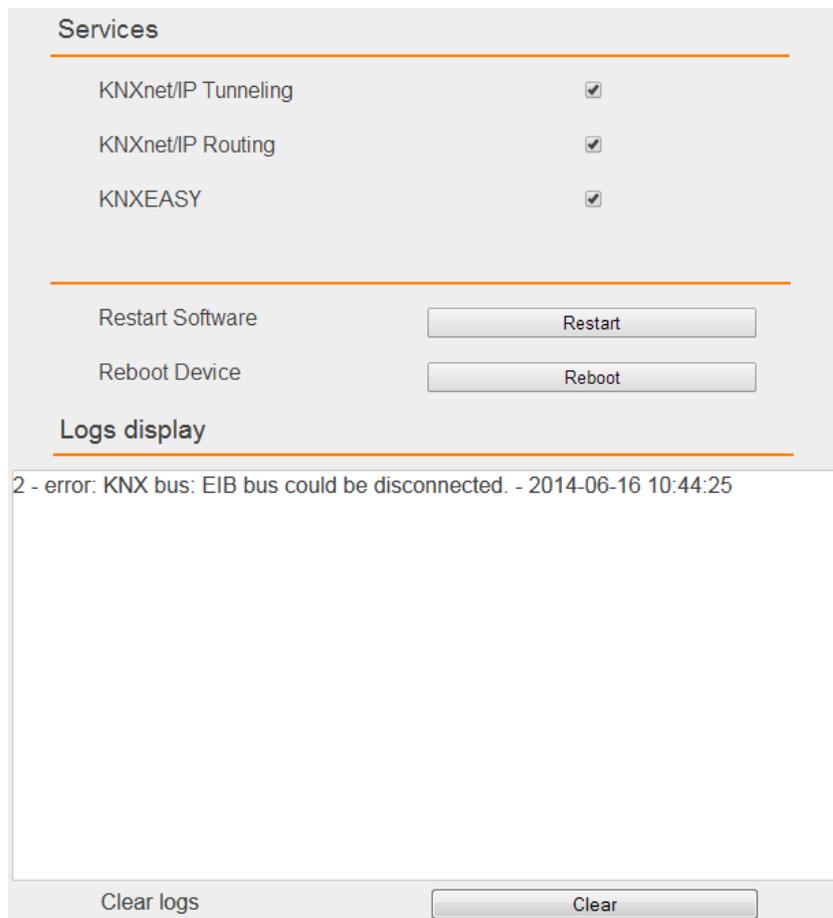


Figure 18: Services

ALARMS

In the Web interface, go to “Configuration” -> “Alarms”.

ALARMS GROUP ADDRESSES

Alarms Configuration

This field contains the list of alarms you have configured, up to 50 alarms.

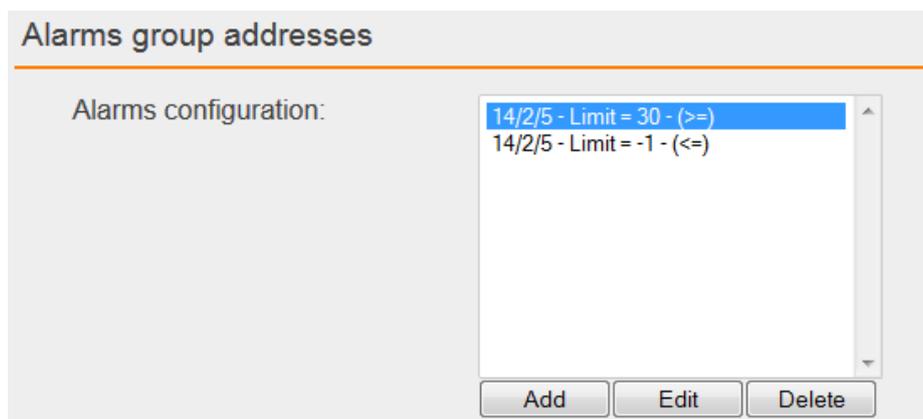


Figure 19: Alarms list

Click on “Add” to add a new alarm, on “Edit” to edit an existing alarm and on “Delete” to delete an alarm. An alarm is specified by a KNX group address, a limit value and a comparator “<=” or “>=”. For example click on “Add” in order to add a new alarm.

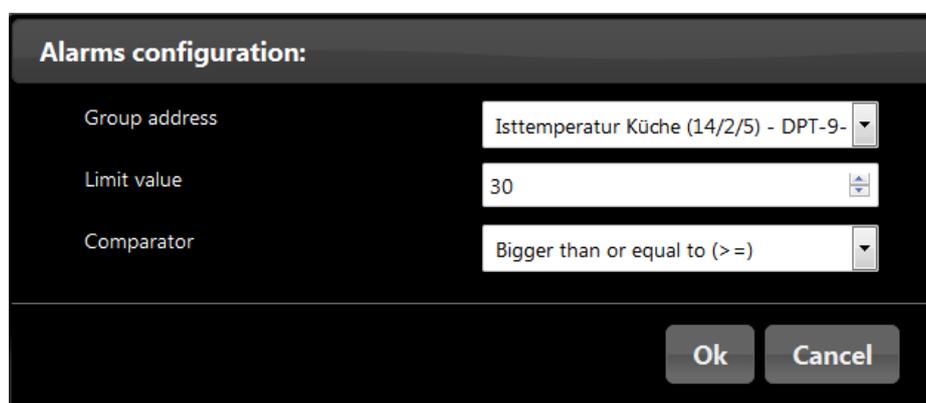


Figure 20: Alarm configuration

In the "Group address" field, you can choose a group address in the list. This list contains every group addresses in your ETS4 project having its datatype configured.

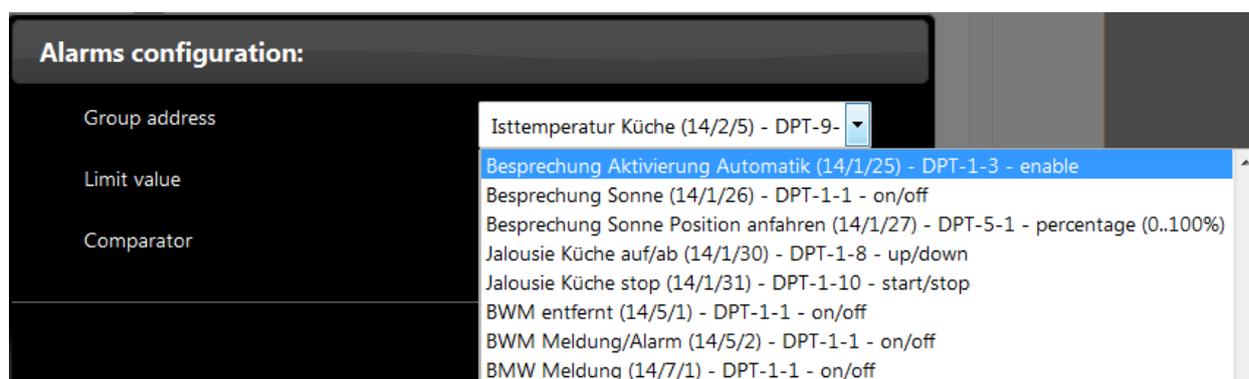


Figure 21: Group addresses list

Attention:

You must import an ETS4 project containing the group addresses used as alarms. In addition the datatype of each group address needs to be configured. Indeed without the datatype there is no way to interpret the raw data contained in the KNX telegram as a real value. Thus, no way to compare it with the limit value. In this example the group address “14/2/5” has the datatype



“temperature (°C)”. Therefore if the temperature received via this group address is bigger than or equal to 30°C, an alarm will occur.

After configuring this new alarm, click on “Ok”. From now every time a KNX telegram will be received with the group address “14/2/5”, if the value contained in this telegram is bigger than the limit value or equal to the limit value, an alarm will occur.

Another alarm is added. If the temperature received via the group address “14/2/5” is less than or equal to -1°C, an alarm will occur.

Alarm States

The “State of group address alarm” field displays the current state of configured alarms. A state contains one text field containing information about the alarm:

- Name given to the group address in the ETS4 project + group address
- The current value
- The limit value
- The datatype
- The unit

It contains also a list of date/value. Those are datetimes when an alarm occurred and with which value the limit has been reached. Finally an “Empty dates” button will simply clear the list of date/value.

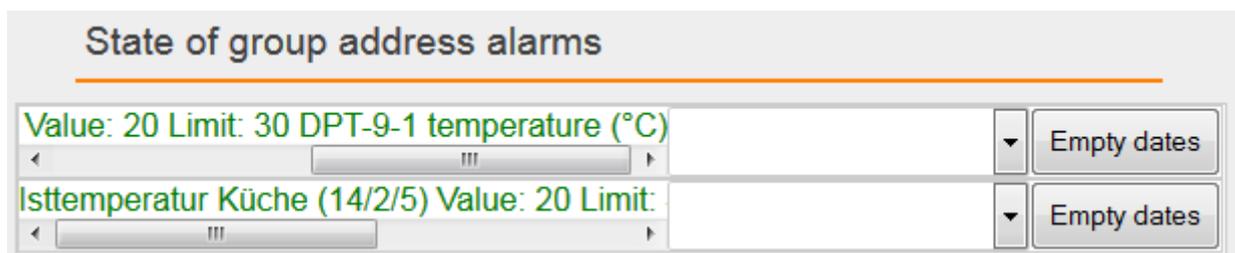


Figure 22: Alarm States Green

Every time a telegram is received with a group address configured as alarm, the alarm state is updated. If limit values are respected the text color stays or turns green. Otherwise if the limit values are reached the text color stays or turns red.

Alarm notification

If an alarm occurs, it will be notified by different processes. For example a temperature of 32.5°C is received via the group address “14/2/5”. The limit value 30°C is reached, an alarm occurs.

First of all the “Alarm States” field is updated. The first alarm turns red and a Date/Value entry is added to the list.

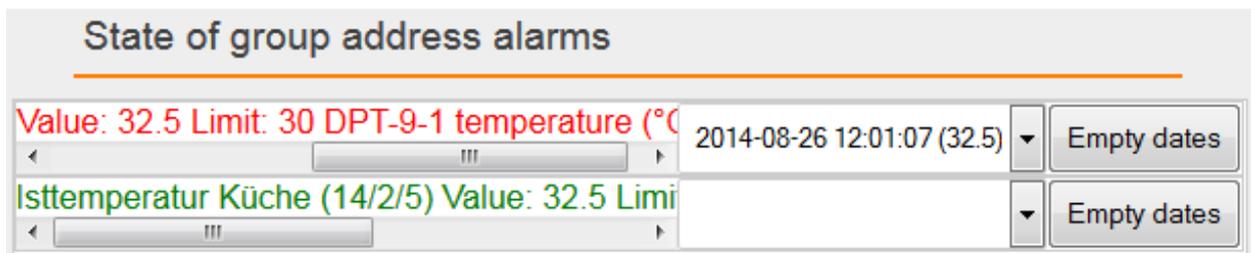


Figure 23: Alarm State Red

Then, a warning message is displayed on the LCD screen. This message specifies every information about the alarm and the current value. Finally if Connections are configured, the same warning message will be sent via those Connections.

ALARMS PHYSICAL ADDRESS

Alarms Configuration

This field contains the list of alarms you have configured, up to 50 alarms.

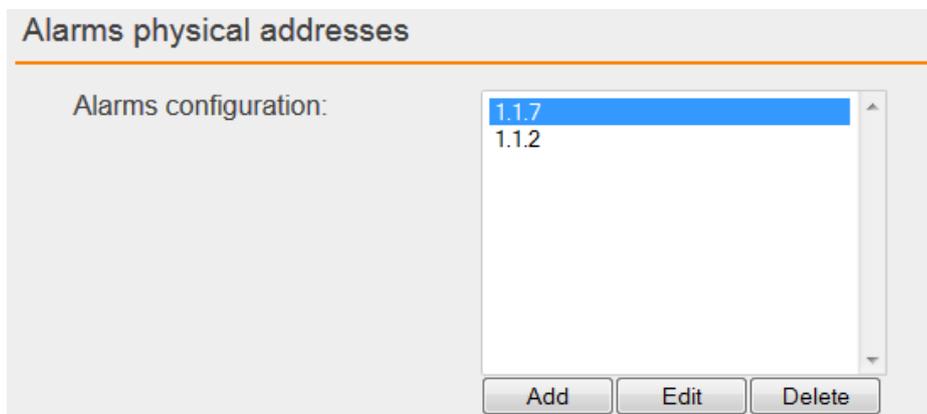


Figure 24: Alarms list

Click on “Add” to add a new alarm, on “Edit” to edit an existing alarm and on “Delete” to delete an alarm. An alarm is specified by a KNX Physical Address and a period for which this physical address will be checked. For example click on “Add” in order to add a new alarm.

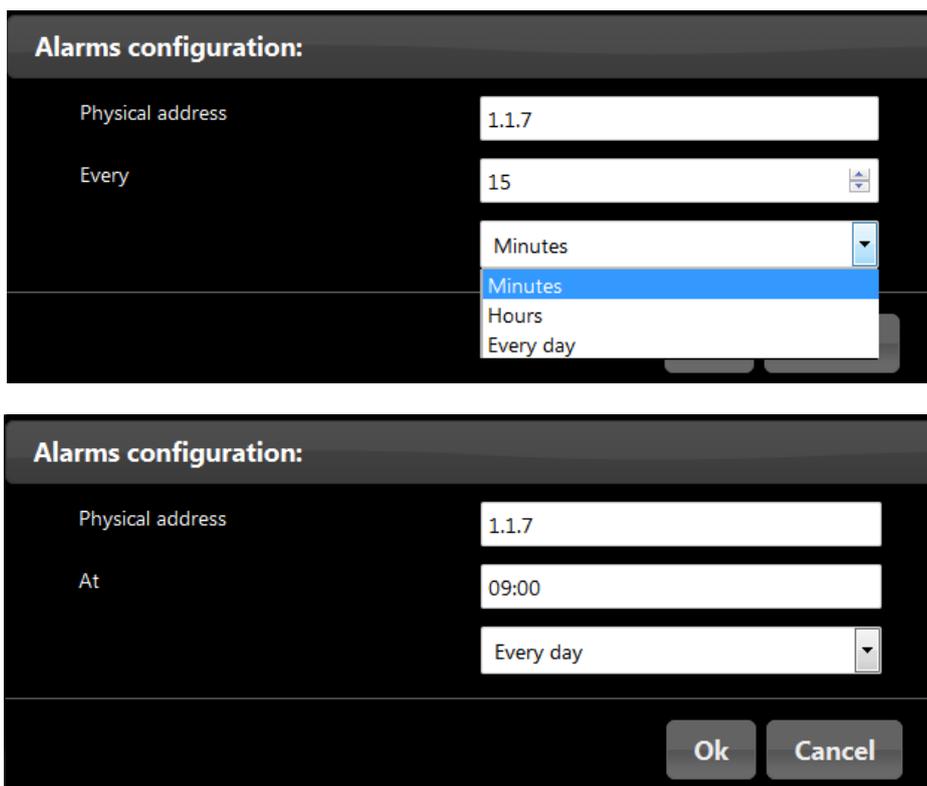


Figure 25: Alarm configuration

In the "Physical address" field, you can enter the KNX physical address you want to link an alarm to. Then, you have to configure the check period:

- Every x minutes, where x is the period in minute (from 15 to 59 minutes)
- Every x hours, where x is the period in hour (from 1 to 23 hours)
- Every day at x, where x is the time at which the physical address will be checked every day.



After configuring this new alarm, click on “Ok”. For this example we check the address 1.1.7 every day at 12:17. Another alarm is added. Physical address 1.1.2 every five hours.

Alarm States

The “State of physical address alarm” field displays the current state of configured alarms. A state contains one text field containing information about the alarm:

- The KNX physical address

It contains also a list of date. Those are datetimes when an alarm occurred. Finally an “Empty dates” button will simply clear the list of dates.

State of physical address alarms			
1.1.7		▼	Empty dates
1.1.2		▼	Empty dates

Figure 26: Alarm States Green

Each time these physical addresses are checked, the alarm state is updated. These physical addresses are checked according to the period you have chosen but also when you check directly the physical address (see "Check KNX Physical Address"). If the physical address is found and available the text color stays or turns green. Otherwise the text color stays or turns red.

Alarm notification

If an alarm occurs, it will be notified by different processes. First of all the “Alarm States” field is updated. The first alarm turns red and a Date entry is added to the list.

State of physical address alarms			
1.1.7	2014-08-26 12:17:06	▼	Empty dates
1.1.2		▼	Empty dates

Figure 27: Alarm State Red

Then, a warning message is displayed on the LCD screen. This message specifies every information about the alarm. Finally if Connections are configured, the same warning message will be sent via those Connections.

Attention:

Every KNX physical addresses linked to alarms are checked one first time, as soon as you save the configuration. Therefore, be aware that you will trigger alarms if these physical addresses are not available when you configure these alarms.

ALARMS IP ADDRESS

Alarms Configuration

This field contains the list of alarms you have configured, up to 50 alarms.

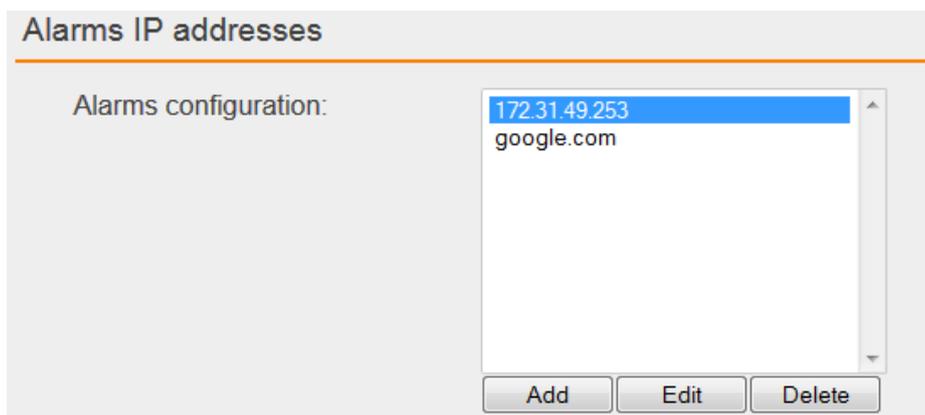


Figure 28: Alarms list

Click on “Add” to add a new alarm, on “Edit” to edit an existing alarm and on “Delete” to delete an alarm. An alarm is specified by an IP Address or hostname, and a period for which this IP Address or hostname will be checked. For example click on “Add” in order to add a new alarm.

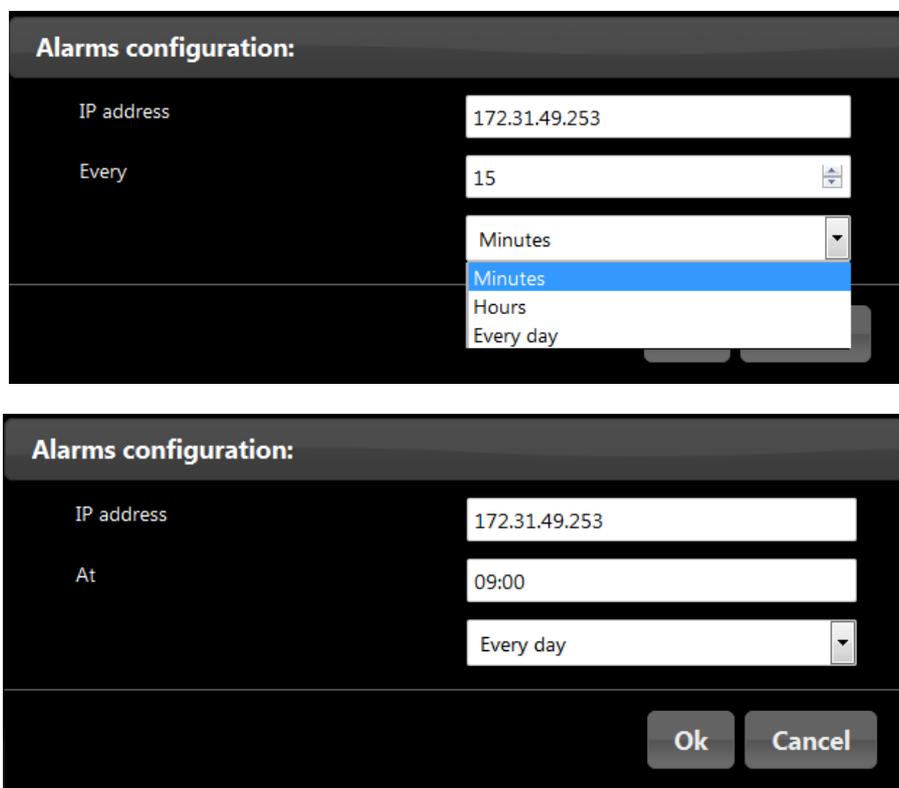


Figure 29: Alarm configuration

In the "IP address" field, you can enter the IP Address or hostname you want to link an alarm to. Then, you have to configure the check period:

- Every x minutes, where x is the period in minute (from 15 to 59 minutes)
- Every x hours, where x is the period in hour (from 1 to 23 hours)
- Every day at x, where x is the time at which the physical address will be checked every day.

After configuring this new alarm, click on “Ok”. For this example we check the address 172.31.49.253 every day at 13:02. Another alarm is added. Hostname "google.com" every hour.

Alarm States



The “State of IP address alarms” field displays the current state of configured alarms. A state contains one text field containing information about the alarm:

- The IP address or hostname

It contains also a list of dates. Those are datetimes when an alarm occurred. Finally an “Empty dates” button will simply clear the list of dates.

State of IP address alarms			
172.31.49.253		▼	Empty dates
google.com		▼	Empty dates

Figure 30: Alarm States Green

Each time these IP addresses are checked, the alarm state is updated. These IP addresses are checked according to the period you have chosen but also when you check directly the IP address (see "Check IP address"). If the IP address is found and available the text color stays or turns green. Otherwise the text color stays or turns red.

Alarm notification

If an alarm occurs, it will be notified by different processes. First of all the “Alarm States” field is updated. The first alarm turns red and a Date entry is added to the list.

State of IP address alarms			
172.31.49.253	2014-08-26 13:02:07	▼	Empty dates
google.com		▼	Empty dates

Figure 31: Alarm State Red

Then, a warning message is displayed on the LCD screen. This message specifies every information about the alarm. Finally if Connections are configured, the same warning message will be sent via those Connections.

Attention:

Every IP addresses or hostnames linked to alarms are checked one first time, as soon as you save the configuration. Therefore, be aware that you will trigger alarms if these IP addresses are not available when you configure these alarms.

INFO

In the web interface go to the main menu “Info”. You can there check many information such as “Version”, “Serial Number”, “Temperature (System)” ...

3 KNXEASY

3.1 INTRODUCTION

KNXEASY behaves as a gateway between an easy ASCII protocol and KNX protocols (KNX Twisted Pair and KNXnet/IP). KNXEASY works in both ways, it turns received ASCII strings into KNX telegrams and received KNX telegrams into ASCII strings. KNXEASY uses Client/Server communications in order to send and receive ASCII strings.

Available protocols:

- TCP
- UDP (unicast, multicast, broadcast)
- HTTP

3.2 CONNECTION

KNXEASY contains the server side. Servers are dynamically created according to clients configured by the user. A communication between an internal server and a client defined by the user is called “connection”. You can configure until 50 connections.

3.2.1.1 DEFAULT CONNECTIONS

In the first place, a UDP and a TCP default connections are pre-configured. Connections are configured in the web interface, go to “Configuration” -> “KNXEASY”. There stands the “Connections” field.

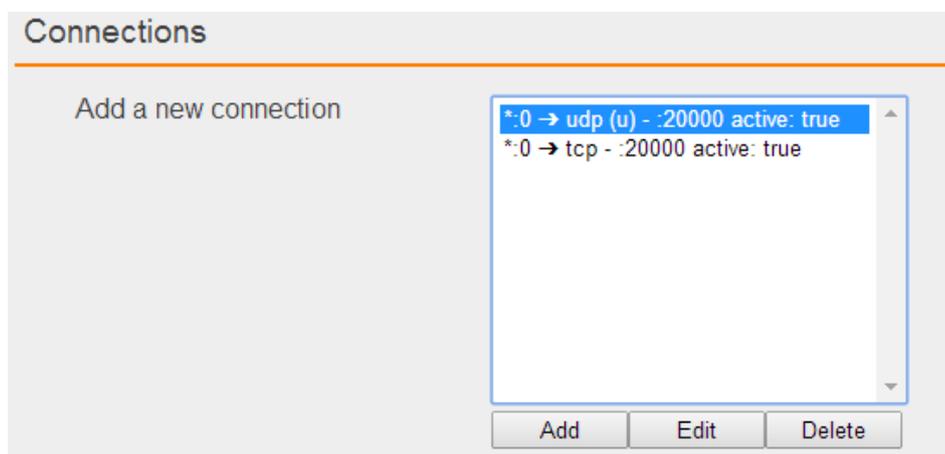


Figure 32: Connections

A connection is displayed that way:

[client's IP address/hostname]:[client's port] -> [protocol] ([cast]) - :[server's port] active = [true/false]

Character “*” (star) means “every IP addresses/hostname” and port “0” (zero) means “every ports”. “cast” is only available for UDP:

- “u” for unicast
- “m” for multicast
- “b” for broadcast

Therefore:

“*:0 -> udp (u) – 20000” means that every clients can send messages to the UDP unicast server on port 20000.

“*:0 -> tcp – 20000” means that every clients can connect to the TCP server on port 20000.

Thus, thanks to these pre-configured connections, extra configuration might be not necessary. Any clients is able to communicate with KNXEASY via TCP and/or UDP on port 20000.

Attention!



It also means that anybody having access to your network is easily able to control your KNX installation (door opening, alarms ...). Ensure your network is secured and/or configure KNXEASY connections for more security.

3.2.1.2 CONFIGURE CONNECTIONS

In the “Connections” field it is possible to add, edit or delete connections. According to this configuration, internal TCP, UDP and HTTP servers will be dynamically added, edited or deleted. To add a new connection, click on “Add” (This window contains other fields, they will be explained later, see: "Connection configuration"):

Figure 33: Edit default UDP connection

ACTIVE

It allows you to enable or disable the connection. If the connection is disabled the client linked to that connection will not be able to connect and send/receive messages from the server.

PROTOCOL

It allows you to choose the protocol for the client-server connection. UDP, TCP and HTTP are available so far.

TYPE

Type is the type of UDP connection: unicast, multicast and broadcast. Therefore this menu only appears when protocol UDP is selected.

If multicast or broadcast is selected, an additional menu called “Cast address” appears. You enter there the multicast or broadcast address. The default is 224.0.0.1 for multicast and 255.255.255.255 for broadcast.

Figure 34: Cast address

SERVER PORT

It allows you to choose on which port the server will open a socket. The default port is 20000 for UDP and TCP. For HTTP the port is 8080, but it cannot be changed. The default port might be kept so that the new

connection will be interpreted as a new permission to connect and send/receive messages to the server. Therefore it will limit the number of opened socket especially for UDP protocol.

AUTHORIZED EVERY CLIENTS

It allows you to configure the server as accepting connection and sent/received messages from every clients. This menu disappears for UDP multicast and broadcast because every clients joining the multicast address or listening to the broadcast address are authorized clients anyway. For UDP unicast and other protocols, uncheck the menu so that new configuration appears.

SPECIFY CLIENT'S HOSTNAME / IP ADDRESS AND SPECIFY CLIENT'S PORT

Active	<input checked="" type="checkbox"/>
Protocol	tcp
Server port	20000
Authorize every clients	<input type="checkbox"/>
Specify client's port	<input checked="" type="checkbox"/>
Specify client's Hostname / IP Address	192.168.1.254
Specify client's port	30000

Figure 35: Specify client

As soon as you uncheck “Authorized every clients” for TCP protocol for instance, “Specify client’s port” checkbox and “Specify client’s Hostname / IP Address” appear.

You can now specify which Hostname or IP address is allowed to connect and send/received messages to/from the server. Thus, it allows you to give permission to one special machine, to be able to communicate with KNXEASY whereas the others are not.

In addition, if you check “Specify client’s port”, client’s port setting appears. Thus you can specify which port on the client address is allowed to connect and send/received messages to/from the server.

Therefore you can have for example two clients on the same machine (on two different ports). One is authorized to communicate with KNXEASY whereas the other one is not.

3.3 SERIAL CONNECTION

In the “Serial connection” field it is possible to configure a serial connection in order to send commands and receive messages from KNXEASY (This field contains other parameters, they will be explained later, see: "Connection configuration"). To use the serial, plug a serial adaptor in the RJ45 port on the bottom side of the device, named "RS232":



Serial connection

Active	<input checked="" type="checkbox"/>
Parity	none
Char size	8
Stop bits	one
Baud rate	115200
Flow control	none

Figure 36: Serial connection

ACTIVE

It allows you to enable or disable the connection. If the connection is disabled the client linked to that connection will not be able to send/receive messages from the server.

PARITY

Parity is a method of detecting errors in transmission. It can be:

- none (no parity)
- odd
- even

CHAR SIZE

The number of data bits in each character. It can be:

- 5 (for Baudot code)
- 6 (rarely used)
- 7 (for true ASCII)
- 8 (for most kinds of data)

STOP BITS

Stop bits sent at the end of every characters allow the receiving signal hardware to detect the end of a character. It can be:

- one
- onepointfive (one-and-one half)
- two

BAUD RATE

The port speed. Goes from 110 to 115200 bauds.

FLOW CONTROL

A serial port may use signals in the interface to pause and resume the transmission of data. It can be:

- none (no flow control)
- software
- hardware

Attention!

To communicate together, KNXEASY's serial server configuration and your serial client configuration need to match.



3.4 PROTOCOL

KNXEASY uses an easy ASCII protocol based on an ASCII string made of words separated by spaces and finished by a Line Feed character (character **LF** in the ASCII table). The ASCII string is not case sensitive and it is extra spaces safe.

See below the main structure of an ASCII string:

SERVICE **SYSTEM_ID** **COMMAND** **DEVICE** **DATATYPE** **VALUE**

SERVICE

Services represent KNX services, ROUTING and TWISTED_PAIR services are implemented so far.

TWISTED PAIR

TWISTED_PAIR service allows to send KNX telegrams on the local KNX bus. Below are every ways to defined TWISTED_PAIR as the service used to send KNX telegrams:

- Not specify **service** in the ASCII string will set TWISTED_PAIR as the service used (If the default service is TWISTED_PAIR, see: "Service").
- "twisted_pair"
- "tp"
- "knx"
- Any string (without space) containing "twisted" and "pair". For example: "knx-twisted-pair"

ROUTING

ROUTING service allows to send KNX telegrams over the IP network. Below are every ways to defined ROUTING as the service used to send KNX telegrams:

- Not specify **service** in the ASCII string will set ROUTING as the service used (If the default service is ROUTING, see: "Service").
- "routing"
- "knxnet/ip"
- Any string (without space) containing "routing". For example: "knx-routing"

SYSTEM ID

System ID is one special ID assigned to one KNXEASY. Indeed, a big KNX installation may have more than one KNXEASY. KNXEASY devices are able to communicate eachother in order to route received ASCII string messages if those do not belong to them. Each KNXEASY are aware of other KNXEASY thanks to a shared route table containing the list of available system IDs.

For example if your installation contains two KNXEASY:

1. 192.168.1.228 – System Id = 0
2. 192.168.1.229 – System Id = 1

An ASCII string containing the system ID "1" is sent to the KNXEASY with address 192.168.1.228 (its system ID is "0"). KNXEASY with address 192.168.1.228 knows that this ASCII string does not belong to him and will search in the route table to which KNXEASY this ASCII string belongs to. It will then try to re-send the ASCII string to the right KNXEASY.

The route table is defined in the web interface. Go to to "Configuration" -> "KNXEASY". In the "Route Table" field, you can see the list of available System ID.

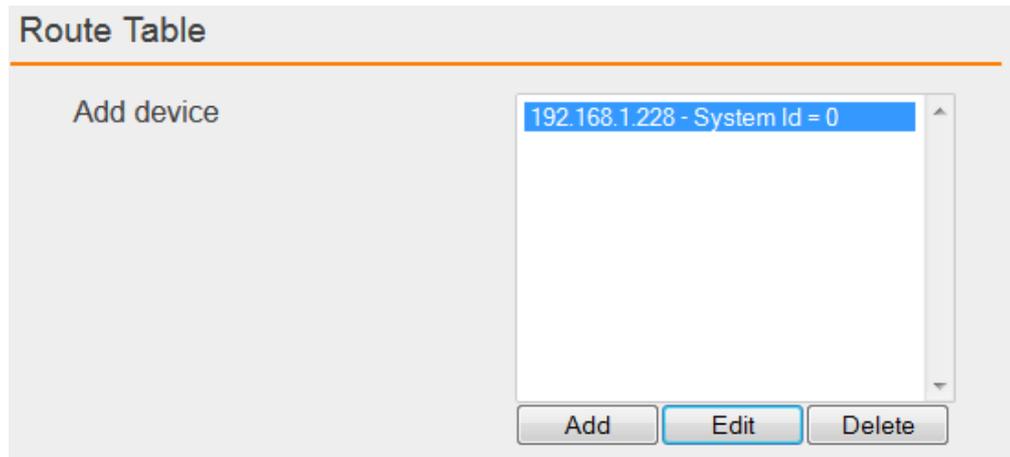


Figure 37: Route Table

An entry is automatically created with the address of the KNXEASY and the System ID “0”. Click on “Add” to add a new device.

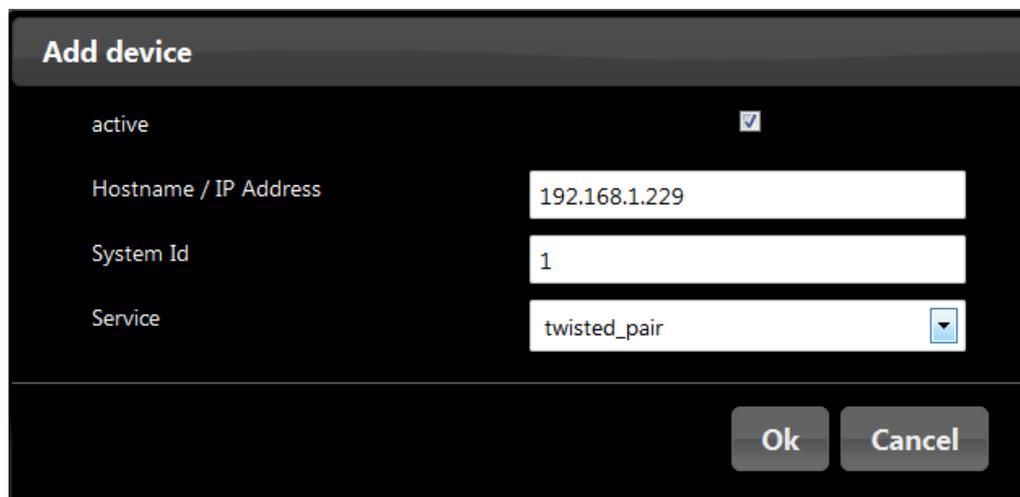


Figure 38: Add new Device

ACTIVE

It allows you to enable or disable the device. If one KNXEASY is disconnected, disable the entry in the route table or delete it.

HOSTNAME / IP ADDRESS

Enter the hostname or IP address of the KNXEASY.

SYSTEM ID

Enter the System ID of the KNXEASY.

SERVICE

Enter the default service of the KNXEASY. If there is no **service** in the ASCII string, the KNX telegram will be send via the default service.

Once this configuration saved on one KNXEASY, the route table will be send to every KNXEASY via a multicast message. Therefore, the route table needs to be configure only once.

If the **system id** is not specified in the ASCII string, the default one will be “0”.



COMMAND

Command allows you to specify if you want to send a “write” or “read” KNX telegram. For example if you want to switch a lamp on or off, you will send a “write” telegram. If you want to read the value of a temperature sensor, you will send a “read” telegram. You will then receive a telegram from this temperature sensor containing the value of the temperature.

Possible command:

- “write”
- “read”

DEVICE

Device allows you to specify to which KNX Group Address or KNX Physical Address (destination) you want to send the KNX telegram.

Example of device addresses:

- 1/1/1
- 5.2.3

If an ETS 4 project has been imported, you can directly use names linked to the group address that you have configured in ETS 4.

For example, the name of group address 1/1/1 is defined as “lamp1” in ETS 4 project. You can write “lamp1” instead of 1/1/1.

If this name contains spaces, you have to replace them with underscore character “_”. Remember that the protocol is not case sensitive therefore “lamp1” and “LAMP1” are the same.

DATATYPE

Datatype represents the KNX Datapoint Type. For example type “1” and subtype “10” represents a one bit value with unit “start/stop”. It helps to interpret KNX data as a real value or the other way around.

These are every ways to define a datatype:

- dpt-[type]-[subtype] for example “dpt-1-10”
- [type]-[subtype] for example “1-10”

If an ETS 4 project has been imported, KNXEASY will automatically get the datatype that you have configured in ETS 4. Therefore, you do not have to define it in the ASCII string.

Define the datatype directly in the ASCII string might be dangerous if the datatype is totally wrong. This behaviour is enabled by default but for each connection you are able to disable it (see: "Force send telegrams").

VALUE

Value is of course necessary only if the **command** is “write”. This value will be interpreted according to the datatype.

For few of one bit datatypes, default values are defined for “1” and “0”:

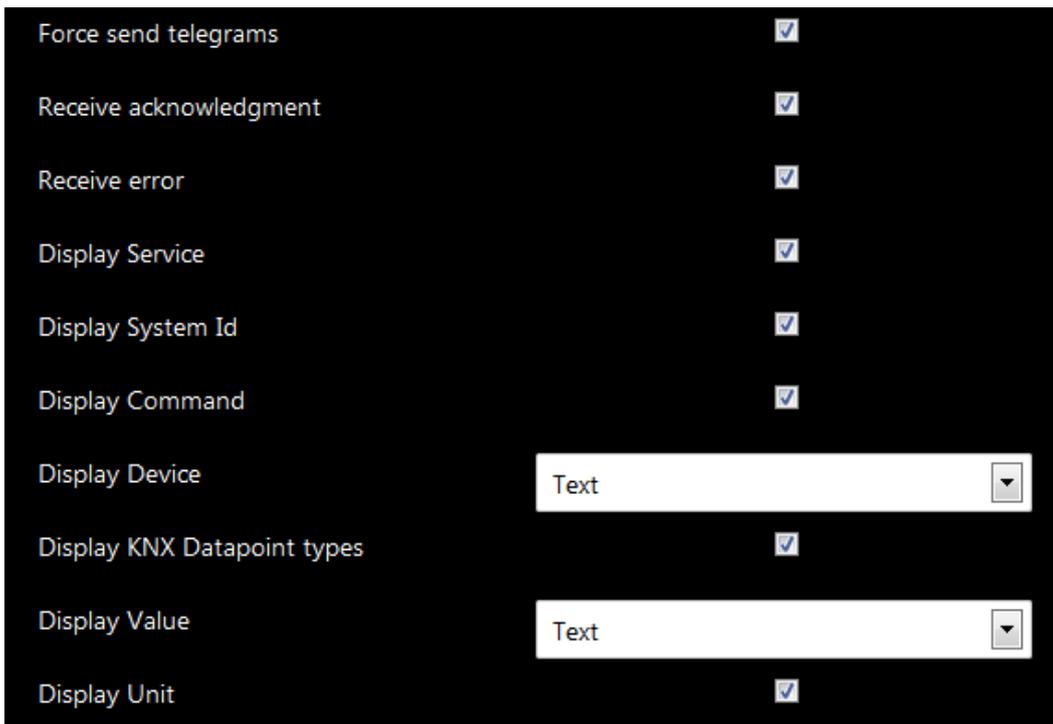
- dpt-1-8: “up” and “down”
- dpt-1-9: “open” and “close”
- dpt-1-10: “start” and “stop”
- dpt-1-100: “heating” and “cooling”
- “on” and “off”

3.5 STATE TABLE

Each time KNXEASY receives a “write” KNX telegram or ASCII string, it writes the value sent in a state table. When it receives a “read” ASCII string, it checks first if the group/physical address is present in the state table. If it is, it returns the value present in the state table. Otherwise, it sends a “read” KNX telegram on the KNX bus. This process allows the user to ask for the state of any group/physical address at any moment.

3.6 CONNECTION CONFIGURATION

Connections have extra configuration directly linked to the KNXEASY protocol. Go back to “Configuration” - > “KNXEASY”. In the “Connections” field edit the default UDP connection for instance.



Force send telegrams	<input checked="" type="checkbox"/>
Receive acknowledgment	<input checked="" type="checkbox"/>
Receive error	<input checked="" type="checkbox"/>
Display Service	<input checked="" type="checkbox"/>
Display System Id	<input checked="" type="checkbox"/>
Display Command	<input checked="" type="checkbox"/>
Display Device	Text
Display KNX Datapoint types	<input checked="" type="checkbox"/>
Display Value	Text
Display Unit	<input checked="" type="checkbox"/>

Figure 39: Connection configuration

FORCE SEND TELEGRAMS

If this field is checked, it will cause extra behaviours:

- KNXEASY can be use without importing an ETS 4 project. It will try to get the datatype from the ASCII string.
- KNXEASY can use an ETS 4 project where datatypes are not configured. It will try to get the datatype from the ASCII string.
- If **device** is the name linked to a group address and the same name is used for more than one group address, a telegram will be sent to every group addresses having the same name.

For example if group address 1/1/1 has the name “lamp1” and 1/1/2 has the name “LAMP1”. According to the protocol (not case sensitive), they have the same name. Therefore the same telegram will be sent to group addresses 1/1/1 and 1/1/2.

RECEIVE ACKNOWLEDGMENT

If this field is checked, after each successful ASCII string sent, you will receive an acknowledgment JSON string.

Structure of the acknowledgment string:

```
{"type": "ack", "command": "[ASCII string sent]"}
```



The “ASCII string sent” might be not the exact string you have sent. Indeed the acknowledgment contains the interpreted ASCII string.

For example:

ASCII string sent: “write lamp1 stop”

Ack received: {"type": "ack", "command": "twisted_pair 0 write lamp1 dpt-1-10 stop"}

RECEIVE ERROR

If this field is checked, you will receive an error JSON string in case of error. You will receive an error if the command sent is wrong. You might also receive KNX errors, such as disconnected KNX cable error. Structure of the error string:

```
{"type": "error", "command": "[ASCII string sent]", "message": "[error message]"}
```

For example:

```
{"type": "error", "message": "KNX bus: EIB bus could be disconnected."}
```

```
{"type": "error", "command": "twisted_pair 0 write scene dpt-1-10 start", "message": "Bad KnxEasy command. Cannot find a correct destination address."}
```

RECEIVE TELEGRAM

If a KNX telegram is received, you will receive a “receive” JSON string. Structure of the “receive” string:

```
{"type": "receive", "command": "[command]"}
```

For example:

```
{"type": "receive", "command": "twisted_pair 0 write shutter1 dpt-1-9 close open/close"}
```

DISPLAY SERVICE

If this field is checked, when a KNX telegram is received, translated into an ASCII string and sent to the client, the **service** will be present in the ASCII string.

DISPLAY SYSTEM ID

If this field is checked, when a KNX telegram is received, translated into an ASCII string and sent to the client, the **system id** will be present in the ASCII string.

DISPLAY COMMAND

If this field is checked, when a KNX telegram is received, translated into an ASCII string and sent to the client, the **command** will be present in the ASCII string.

DISPLAY DEVICE

When a KNX telegram is received, translated into an ASCII string and sent to the client, the **device** will be present in the ASCII string as a group address or a text (name linked to the group address). If “none”, **device** will not appear.

DISPLAY KNX DATAPOINT TYPES

If this field is checked, when a KNX telegram is received, translated into an ASCII string and sent to the client, the **datatype** will be present in the ASCII string.

DISPLAY VALUE



When a KNX telegram is received, translated into an ASCII string and sent to the client, the **value** will be present in the ASCII string as a decimal or a text (“start”, “stop” ...). If “none”, **value** will not appear.

DISPLAY UNIT

If this field is checked, when a KNX telegram is received, translated into an ASCII string and sent to the client, the **unit** will be present in the ASCII string.

This unit is found in the datatype details. For example datatype dpt-5-3 has the unit “angle (degrees)”.

4 CLIENT SIMULATION

In the web interface, go to “KNXEASY”. Client simulation is made to help you building ASCII strings you will use in your own UDP, TCP or HTTP client.

CONNECTION

The screenshot shows a web interface section titled "Connection". Below the title is a horizontal line. Underneath, there is a label "Allowed clients" followed by a dropdown menu. The dropdown menu currently displays "tcp - ALL" and has a small downward arrow icon on the right. Below the dropdown menu is a button labeled "Connect".

Figure 40: Allowed clients

In the “Connection” part, you have the list of connections (“Allowed clients”) you have configured. When you click on open/connect, a real Java client is actually created according to your configuration to communicate with servers. The only difference with your own client is that ours are opened/connected on “localhost”.

SEND ASCII STRING

Connection

Allowed clients: tcp - ALL

Disconnect

Send ASCII string

Service: twisted_pair

System Id: 0 - 172.31.49.117

Command: write

Device adresse: lamp1 - 1/1/1 (1.1.3)

Datapoint Types: DPST-1-8 - up/down

Value: up

Add new saved commands:

twisted_pair 0 write lamp1 dpt-1-8 up

Send ASCII string: Send

Clear logs: Clear

0 - The connection with server localhost:20000 has been established. - 2014-05-27 1

Figure 41: Send ASCII string

Each field of the Client simulation give you the possibility to build a correct ASCII string.

SERVICE

You can choose between “twisted_pair” and “routing”.

SYSTEM ID

It gives you the list of available System ID present in the route table.

COMMAND

You can choose between “read” and “write”.

DEVICE ADDRESSES

If an ETS 4 project has been imported, you can choose a device in the the list of devices. Each device shows its name, group address, and the physical address of the device it belongs to. Otherwise you can type a KNX group address.

DATAPPOINT TYPES

If an ETS 4 project has been imported and datatypes has been configured, you can choose a datatype in the list of datatypes. Otherwise you can choose a datatype according to data size.

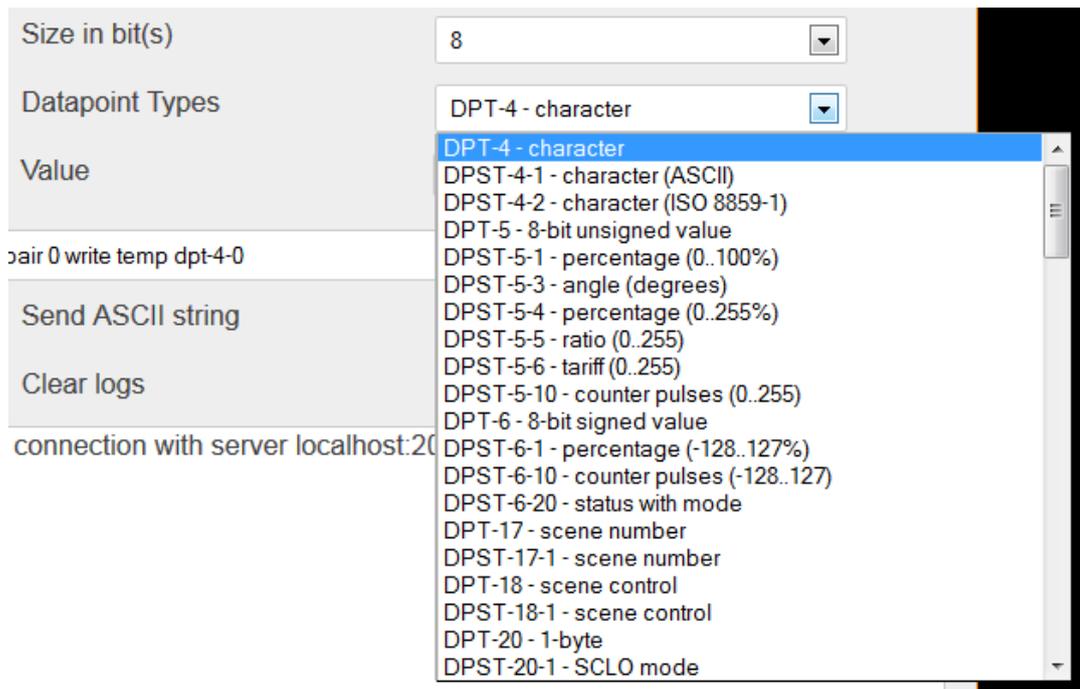


Figure 42: Datatypes

VALUE

You can choose a value if there are pre-defined values. Otherwise you can enter a value.

ASCII STRING FIELD

This field displays the generated ASCII string. It is also editable, therefore do not hesitate to test all different possibilities.

SEND ASCII STRING

Send the ASCII string displayed in the ASCII string field.

LOGS

All logs are displayed in the bottom field. You can clear logs with the clear button.

EXAMPLE

Connection

Allowed clients

Send ASCII string

Service

System Id

Command

Device adresse

Datapoint Types

Value

Add new saved commands

Send ASCII string

Clear logs

```
0 - The connection with server localhost:20000 has been established. - 2014-05-27 1
1 - {"type": "receive","command": "twisted_pair 0 write lamp1 dpt-1-8 up up/down"} - 2
2 - {"type": "receive","command": "twisted_pair 0 write shutter1 dpt-1-9 open open/clo
3 - {"type": "ack","command": "twisted_pair 0 write lamp1 dpt-1-8 down"} - 2014-05-27
4 - {"type": "ack","command": "twisted_pair 0 write lamp1 dpt-1-8 up"} - 2014-05-27 1
5 - {"type": "error","message": "KNX bus: EIB bus could be disconnected."} - 2014-05
```

Figure 43: Client simulation example

HTTP

SEND ASCII STRINGS

You are also able to send ASCII strings via HTTP POST and GET.

POST

POST is used to send a “write” command to KNXEASY. The address for this POST is:

[http://\[IP address\]/knxeasy/rest/knxeasy/write](http://[IP address]/knxeasy/rest/knxeasy/write)

The command is sent as request data in a JSON format:

```
{"command": "[command]"}
```



For example:

```
{"command": "twisted_pair 0 write scene1 dpt-1-10 start"}
```

The response of the command is sent in the response of the HTTP request:

```
{"type": "ack", "command": "twisted_pair 0 write scene1 dpt-1-10 start"}
```

The application POSTMAN from Google Chrome gives you the possibility to send HTTP requests:

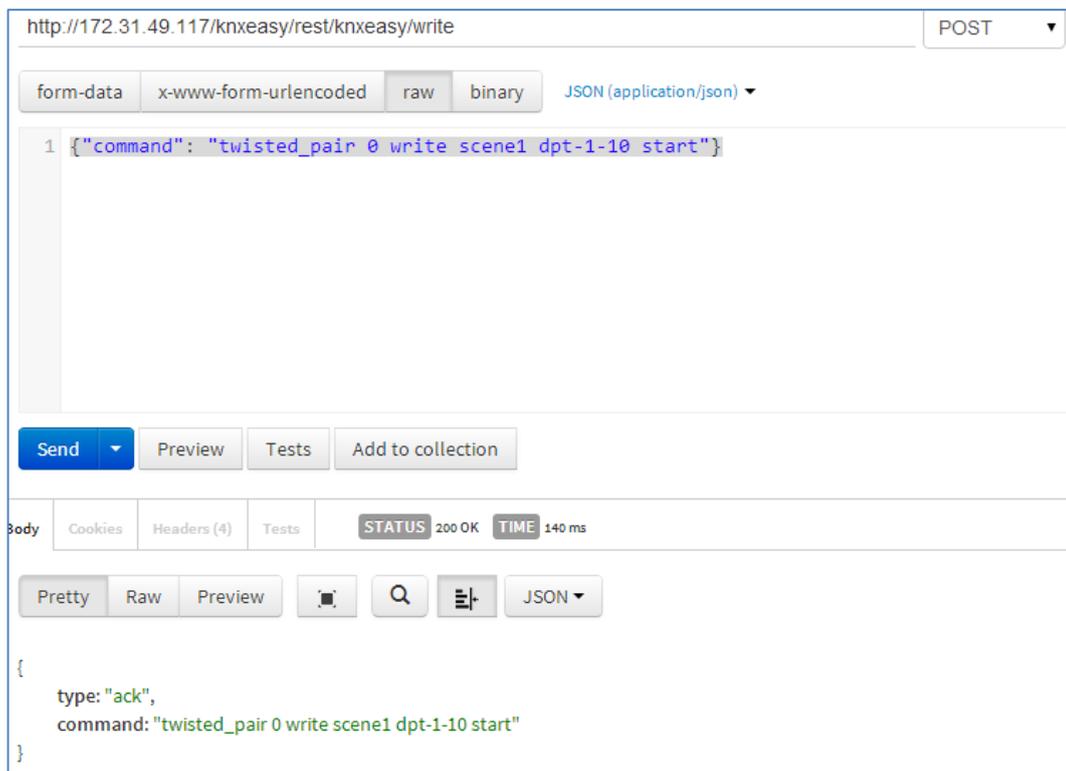


Figure 44: POSTMAN POST

You can also send requests directly from the Client simulation just like you do with the other protocols, with the send button.

GET

GET is used to send a “read” command to KNXEASY. The address for this GET is:

`http://[IP address]/knxeasy/rest/knxeasy/read`

The command is sent as request parameter in text format:

`?command=[command]`

For example:

`http://172.31.49.117/knxeasy/rest/knxeasy/read?command=twisted_pair 0 read scene1 dpt-1-10`

The response of the command is sent in the response of the HTTP request. It might contain more than one response. For example one ack and the read response. Therefore responses are displayed as JSON “responses” array:

```
{"responses":[{"type": "ack","command": "twisted_pair 0 read scene1 dpt-1-10"},{"type": "read","command": "knxeasy 0 read scene1 dpt-1-10 start start/stop"}]}
```

The application POSTMAN from Google Chrome gives you the possibility to send HTTP requests:

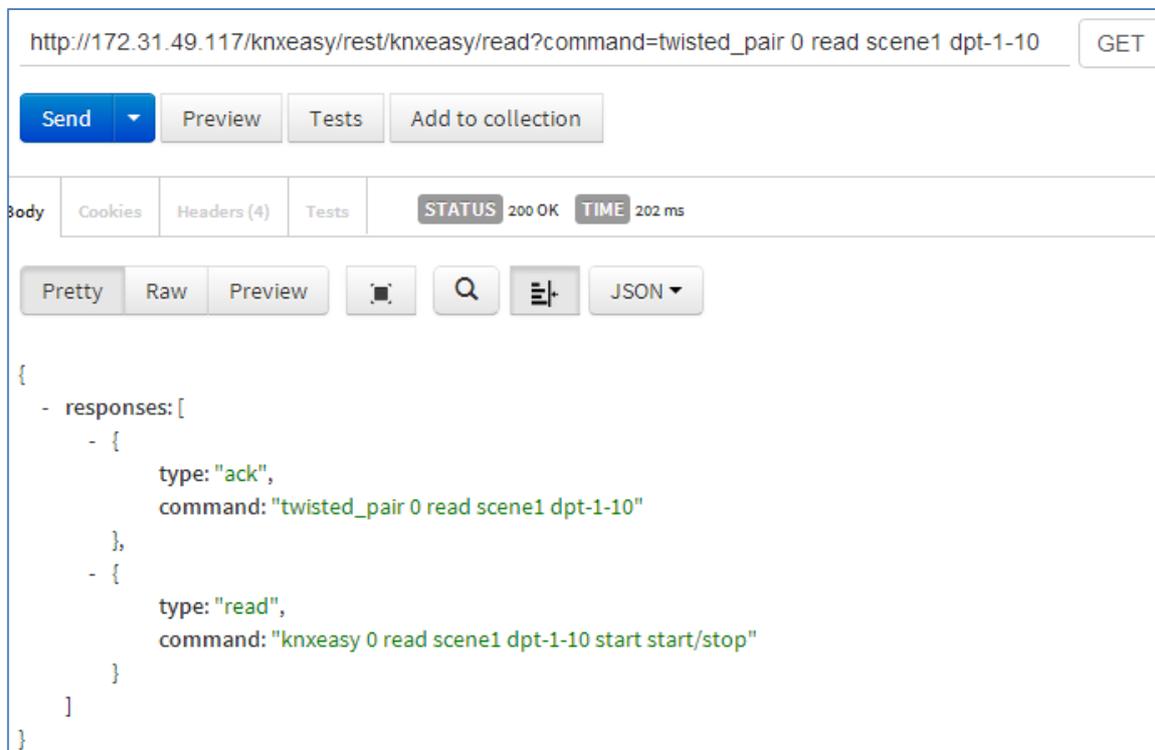


Figure 45: POSTMAN GET

You can also send requests directly from the Client simulation just like you do with the other protocols, with the send button.

GET FILES

If you need it in your own application, you can get via a HTTP GET request different files containing many information in a JSON format, especially information from the ETS 4 project. Addresses are:

http://[IP address]/knxeasy/rest/knxeasy/[path]

- **Group Addresses:** path is "groupaddresses". Contains every information about group addresses you configured in your ETS 4 project.
- **Topology:** path is "topology". Contains every information of your KNX topology configured in your ETS 4 project.
- **Datatypes:** path is "datatypes". Contains the entire list of Datapoint types available in the KNX protocol, and many information about each of them.
Saved command: path is "commands". Contains the list of every saved command (see next chapter: "Saved command").

You can also send these HTTP GET requests from the Client simulation. As soon as you choose HTTP protocol, an extra menu appears. Choose the file you want to get from the GET select menu and press on the GET button. The file content appears in the log area.



GET	Group Addresses
	GET
Send ASCII string	Send
Clear logs	Clear

```

2014-05-27 13:10:27:
{
  "groupAddresses": [
    {
      "id": "GA-1",
      "parentId": "GR-2",
      "deviceId": "P-059A-0_DI-4",
      "name": "lamp1",
      "ga": "1/1/1",
      "datatypes": [
        {
          "dpt": 200010008,
          "id": "DPST-1-8",

```

Figure 46: GET file example

SAVED COMMAND

In order to simplify even more the commands send to or receive from KNXEASY, you are able to save string commands corresponding to a normal KNXEASY ASCII command. For example for normal KNXEASY ASCII command "twisted_pair 0 write shutter1 dpt-1-9 open" you can enter your own string for example "open shutter". From now KNXEASY will interpret both strings as the same. Therefore to open your shutter, you can simply send the command "open shutter". New commands are saved from the client simulation.

MANUAL COMMAND LEARNING

Send ASCII string	
Service	twisted_pair
System Id	0 - 172.31.49.117
Command	write
Device adresse	shutter1 - 1/1/2 (1.1.3)
Datapoint Types	DPST-1-9 - open/close
Value	open
Add new saved commands	<input checked="" type="checkbox"/>
Automatic learning	Start
twisted_pair 0 write shutter1 dpt-1-9 open	
Associated command:	open shutter
	Save
Send ASCII string	Send

Figure 47: Manual learning

In the Client simulation, click on the checkbox “Add new saved command”. An “Associated command” text input and a “Save” button appears. Simply build a KNXEASY ASCII string as you normally do. When you finished to configure your string, write your own associated command in the “Associated command” text input and finally click on the save button. As soon as you save, saved commands are now available and the list of these saved commands appears.

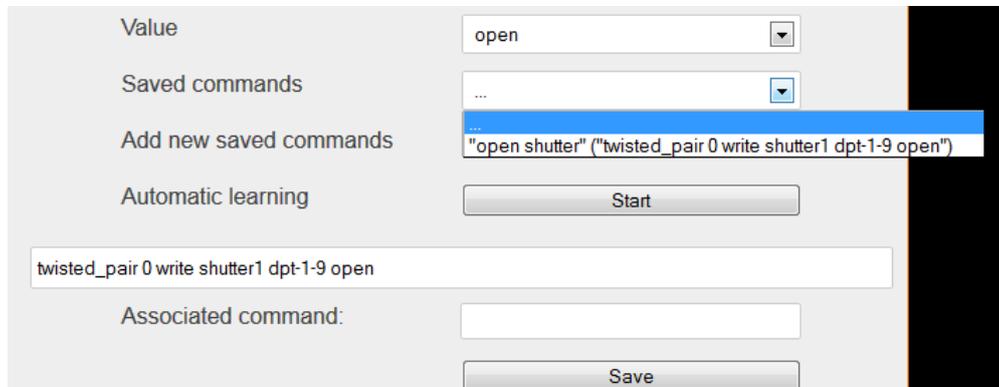


Figure 48: Saved commands list

You can now send this saved command via TCP for example. Note that an “Erase” button appears when you select a saved command in order to erase this command from the list of saved commands. Note also the ack contains always the normal KNXEASY ASCII string.



Connection

Allowed clients tcp - ALL

Send ASCII string

Service twisted_pair

System Id 0 - 172.31.49.117

Command write

Device adresse shutter1 - 1/1/2 (1.1.3)

Datapoint Types DPST-1-9 - open/close

Value close

Saved commands "open shutter" ("twisted_pair 0 write

Erase current command

Add new saved commands

open shutter

Send ASCII string

Clear logs

```
0 - The connection with server localhost:20000 has been established. - 2014-05-27 1
1 - {"type": "receive","command": "open shutter"} - 2014-05-27 13:55:52
2 - {"type": "ack","command": "twisted_pair 0 write shutter1 dpt-1-9 open"} - 2014-05-
```

Figure 49: Send/receive saved command

AUTOMATIC COMMAND LEARNING

In the Client simulation, click on the checkbox “Add new saved command”. An “Automatic learning” button, an “Associated command” text input and a “Save” button appears. Connect via TCP for example, click “Start” on the “Automatic learning” button. Every telegrams received will be saved in a list, you can then navigate in this list with these appeared buttons:



- “<<”: Display the first command in the list.
- “<”: Display the precedent command in the list.
- “>”: Display the next command in the list.
- “>>”: Display the last command in the list.

When you have chosen the received command in the list, enter your associated command in the “Associated command” text input and click on the save button. A new saved saved command is added.

Connection

Allowed clients

Send ASCII string

Service

System Id

Command

Device address

Datapoint Types

Value

Add new saved commands

Automatic learning

Associated command:

Send ASCII string

Clear logs

```
0 - The connection with server localhost:20000 has been established. - 2014-05-27 1
1 - {"type": "receive","command": "twisted_pair 0 write lamp1 dpt-1-8 down up/down"}
2 - {"type": "receive","command": "twisted_pair 0 write shutter1 dpt-1-9 close open/cl
3 - {"type": "receive","command": "twisted_pair 0 write shutter1 dpt-1-9 open open/cl
```

Figure 50: Automatic learning

5 UPDATE

The software update is for free but can be executed within one hardware variant.

If the software update of a newer hardware should be used the hardware has to be updated too. This is not a simple update but an upgrade; this will be charged and the device has to be sent in to b.a.b-technologie gmbh.

Before updating, do not forget to create a backup of your configuration so that you will just need to restore it with the new version of KNXEASY (see "Backup / restore configuration").

When a new version of KNXEASY is available on our website, you can update it. Copy the update archive on a USB stick (be sure the usb stick has been properly unmount before plugging it out), and plug it on the KNXEASY In the LCD menu go to "Update" and press twice "OK" to confirm.

A complete update takes about 45 min, an error message will be displayed in case of problem.