

MBS Gateways

MANUAL

pico / nano / micro / XL / XXL / compact / maxi / 19"

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1. Foreword

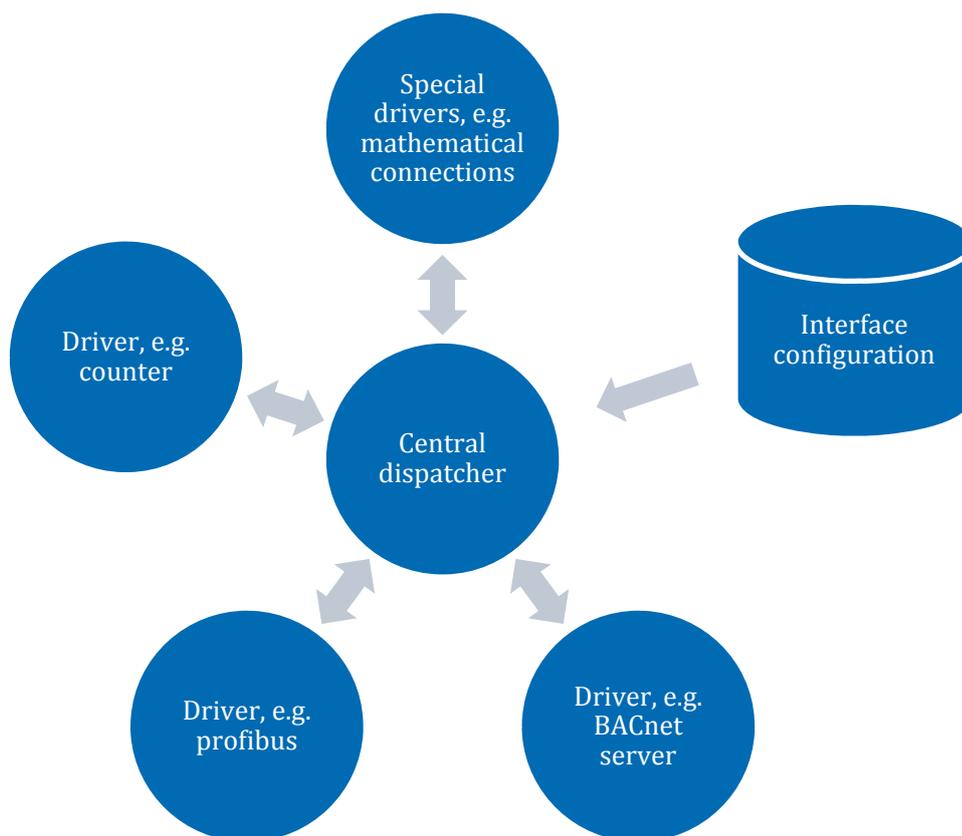
Thank you for using an MBS Gateway.

This manual describes the pico | nano | micro | XL | XXL | compact | maxi | 19" product family

GATEWAY

A gateway is used to enable communication between devices that use different communication protocols. Its typical area of application is for technical building service equipment. Communication partners are, for example, control systems, DDC systems, control systems for refrigeration and heat power stations, room controller, safety equipment such as fire or burglar alarm systems, lighting controls and others. For various reasons, these systems use different communication protocols. They differ in speed, complexity, number of connectible devices, range and the type of information transmitted.

SCHEMATIC DESIGN OF A GATEWAY (FUNCTIONS AND MODULES)



2. References

2.1 REGISTERED TRADEMARKS

Trademarks and product names of various companies will be used in this book. The following names are the registered trademarks of their respective manufacturers and will not be mentioned separately in this book:

- Microsoft and Windows are registered trademarks of the Microsoft Corporation
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- IBM-PC and IBM-AT are registered trademarks of the International Business Machines Corporation (IBM)
- LONTalk is a registered trademark of Echelon, Inc.

2.2 COPYRIGHT

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3. MBS Gateway

3.1 TYPE LABEL

The label contains the name of the gateway, the comprised protocols including the corresponding interface, project ID, MAC address, standard IP address, part number and serial number.

3.2 NUMBER OF DATA POINTS

The number of data points available is determined by the device type and licence. It counts the number of the different registered addresses in the dispatch.txt file with the keyword target =.

4. Commissioning

To install the MBS Gateway, you will need the following tools:

- These instructions (included with delivery)
- Computer
- Installed web browser (a list of tested browsers can be found at the end of this chapter)
- Installed PDF reader
- Network cable

The concept of the MBS Gateway configuration

The MBS Gateway provides a conveniently built-in web server that allows for easy configuration. This manual describes the steps required to access the web server.

All documents necessary for further settings, including the user manual, can be found in the help directory of the web server. These can be viewed using the Adobe Acrobat Reader and printed on demand.

Electrical installation

Connect the MBS Gateway to a power supply according to the technical specifications within this document. An international power supply is optionally available if required. The warranty becomes void if the MBS Gateway is connected to an inadequate power supply or the casing is opened. There are no controls inside the casing.

Ethernet network installation

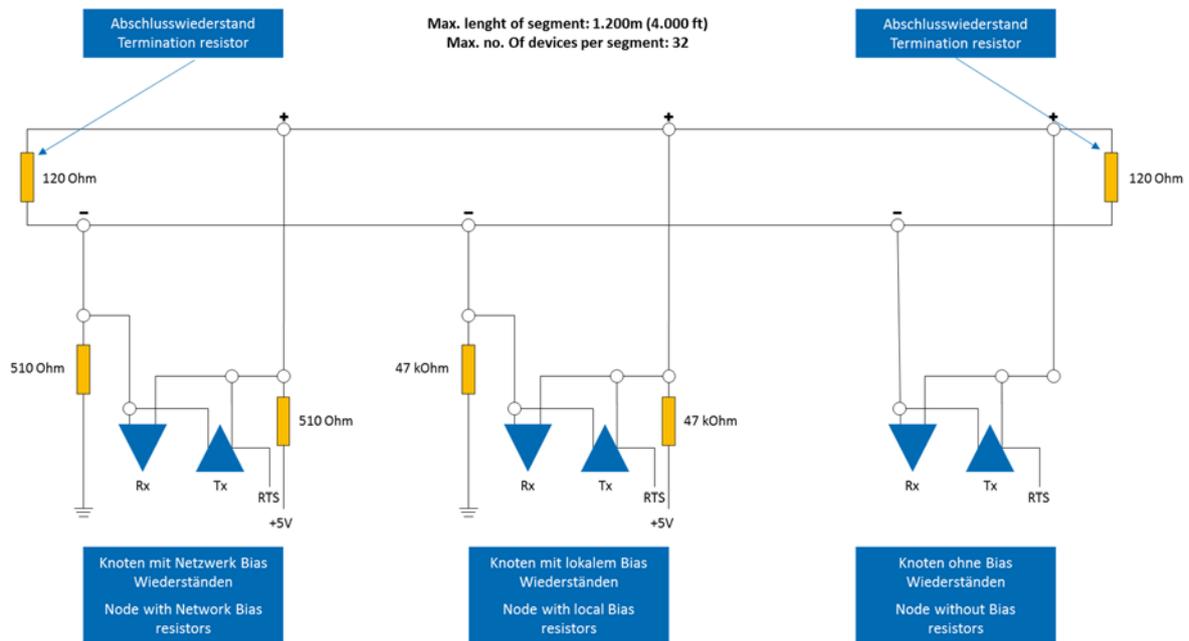
Connect the Ethernet network cable (RJ-45 connector) to the MBS Gateway. Use CAT5 UTP or STP cable (or equivalent). Avoid laying cables parallel to power lines, e.g. to motors, frequency inverters, etc.

Do not connect to a network before the MBS Gateway has been fully configured. Use the network cable for configuration.

4.1 MS/TP OR RS485 NETWORK INSTALLATION

Connect the MS/TP or RS485 network to the orange plug. Observe the instructions for connecting MS/TP or RS485 networks according to 135-2004 (BACnet standard). The MBS Gateway network will provide bias and termination resistors if necessary.

MS/TP – RS485 wiring



4.2 CONNECTION TO WEB SERVER

Overview

An IP connection between the computer and the MBS Gateway must be established in order to access the internal web server. The web server provides the configuration settings in the form of websites.

Activating the DHCP server (optional)

On request, the DHCP (Dynamic Host Configuration Protocol) automatically provides IP addresses to clients. If your computer is set as a DHCP client (the default), you can use the DHCP server of the gateway to provide an IP address. Press and hold the gateway reset switch for at least 10 but not more than 15 seconds. When the status LED flashes green/red alternately, the DHCP server is enabled. Then connect the network cable to your computer, the IP address will be assigned automatically.

Using a manual IP address

If you plan to use an IP address manually, please set your PC to the following settings:

IP address: 169.254.0.2 (or higher)

Subnet mask: 255.255.0.0

Standard gateway: Not entered

4.3 CONNECTION CHECK

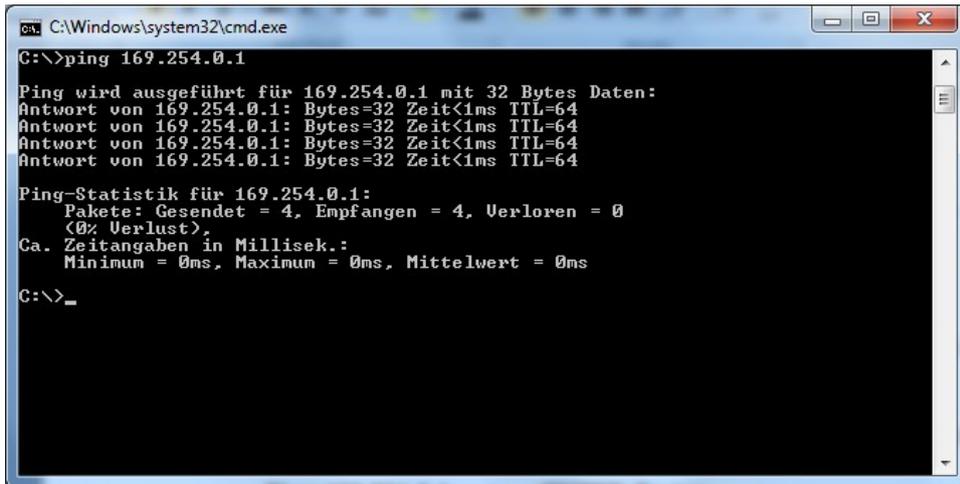
The standard IP address of the MBS Gateway is 169.254.0.1; to test the connection, use the ping command.

Open a command prompt, and type in the following command:

```
Ping 169.254.0.1 <ENTER>
```

The MBS Gateway responds with an output of the time period:

```
Reply from 169.254.0.1: Bytes=32 time<1ms TTL=64
```



```
C:\Windows\system32\cmd.exe
C:\>ping 169.254.0.1

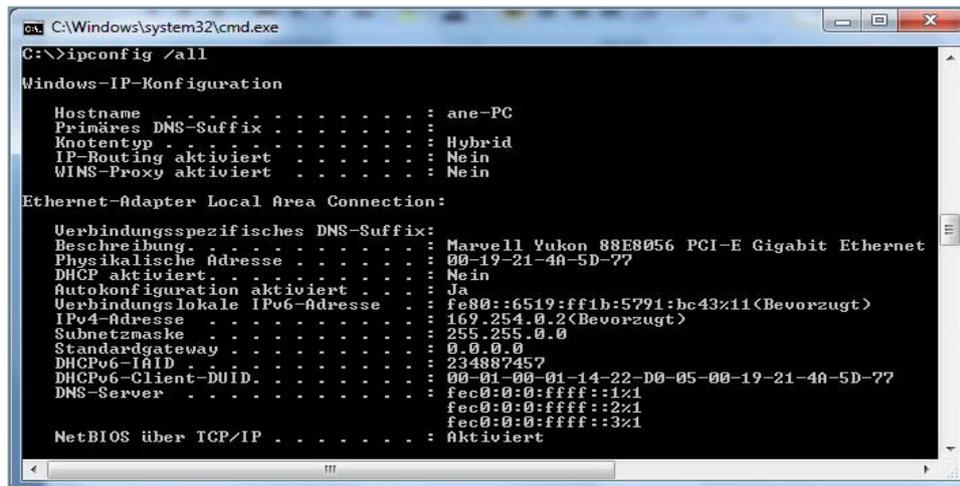
Ping wird ausgeführt für 169.254.0.1 mit 32 Bytes Daten:
Antwort von 169.254.0.1: Bytes=32 Zeit<1ms TTL=64

Ping-Statistik für 169.254.0.1:
    Pakete: Gesendet = 4, Empfangen = 4, Verloren = 0
    (0% Verlust),
    Ca. Zeitangaben in Millisek.:
    Minimum = 0ms, Maximum = 0ms, Mittelwert = 0ms

C:\>_
```

If there is no answer or an error is indicated in the connection, please check the network settings using the command: `ipconfig /ALL <ENTER>`

This command displays the list of NICs and assigned IP configuration.



```
C:\Windows\system32\cmd.exe
C:\>ipconfig /all

Windows-IP-Konfiguration

    Hostname . . . . . : ane-PC
    Primäres DNS-Suffix . . . . . :
    Knotentyp . . . . . : Hybrid
    IP-Routing aktiviert . . . . . : Nein
    WINS-Proxy aktiviert . . . . . : Nein

Ethernet-Adapter Local Area Connection:

    Verbindungsspezifisches DNS-Suffix:
    Beschreibung. . . . . : Marvell Yukon 88E8056 PCI-E Gigabit Ethernet
    Physikalische Adresse . . . . . : 00-19-21-4A-5D-77
    DHCP aktiviert. . . . . : Nein
    Autokonfiguration aktiviert . . . . : Ja
    Verbindungslokale IPv6-Adresse . . . : fe80::6519:ff1b:5791:bc43%11(Bevorzugt)
    IPv4-Adresse . . . . . : 169.254.0.2(Bevorzugt)
    Subnetzmaske . . . . . : 255.255.0.0
    Standardgateway . . . . . : 0.0.0.0
    DHCPv6-IAID . . . . . : 234887457
    DHCPv6-Client-DUID. . . . . : 00-01-00-01-14-22-D0-05-00-19-21-4A-5D-77
    DNS-Server . . . . . : fec0:0:0:ffff::1%1
    : fec0:0:0:ffff::2%1
    : fec0:0:0:ffff::3%1

NetBIOS über TCP/IP . . . . . : Aktiviert
```

4.4 Calling up the MBS Gateway web server

To access the configuration pages of the MBS Gateway web server, launch your preferred web browser and type the IP address 169.254.0.1 into the address field. Then enter your username and password.

Default setting on delivery:

Username: gw

Password: GATEWAY

The password can be changed in the menu item Setup.

4.5 Web browser support

The integrated web server has been tested with various browsers and operating systems and has been approved. If you have problems with your preferred browser, please notify MBS Support. Please indicate the exact browser version, the exact version of the operating system and a brief description of the problem for the diagnosis.

4.5 INTERFACE MAPPING FOR SERIAL INTERFACES

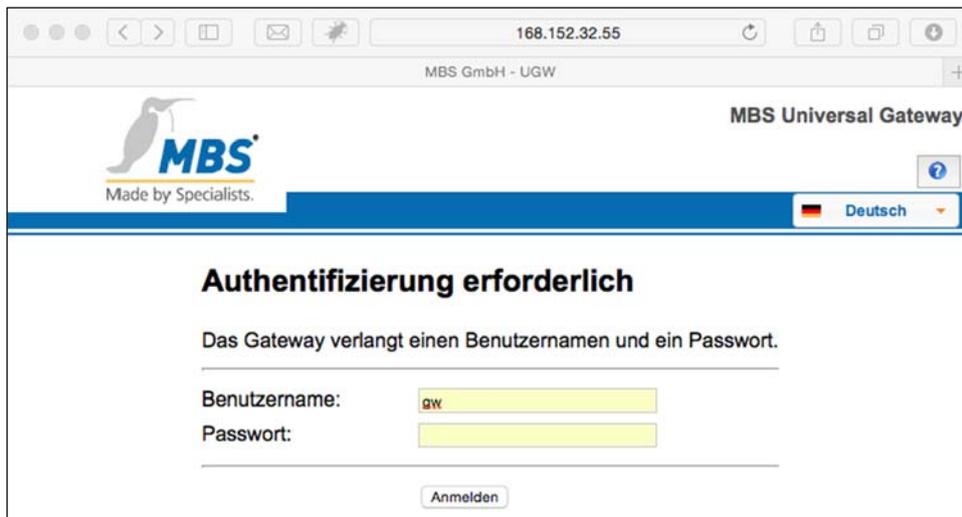
Assigning gateway serial interfaces to device drivers.

pico | nano | micro | XL | XXL S232	Terminal (1) Com1	4-pole	RS232	/dev/ttyS3
pico | nano | micro | XL | XXL RS485	Terminal (1) Com1	4-pole	RS485	/dev/ttyS3
compact	Sub-D (1)	9-pole	RS232	/dev/ttyS1
	Com1	5-pole	RS232	/dev/ttyS2
	Com2	3-pole	RS485	/dev/ttyS3
	Com3			
maxi	Sub-D (1)	9-pole	RS232	/dev/ttyS0
	Sub-D (3)	9-pole	RS232	/dev/ttyS2
	Com4	8-pole	RS485	/dev/ttyS3
	Com5	8-pole	RS485	/dev/ttyS4
19"	Sub-D (1)			
	Com1	9-pole	RS232	/dev/ttyS0
	Sub-D (2)	9-pole	RS232	/dev/ttyS1
	Com2			

5. User interface and functions

5.1 START

It is necessary to login in order to access the MBS Gateway configuration via the web server.



Please enter your username and password here and confirm by pressing Enter or clicking on the login button. Please pay attention to upper- and lower-case letters.

The default username is: gw

The default password is: GATEWAY

When you have successfully logged in, you will see the MBS Gateway configuration software overview page. The upper menu bar is for the main navigation of the MBS Gateway configuration area.



The menu items “General” and “Help” are always available. The remaining menu items are determined by the universal gateway drivers installed. The name of the MBS Gateway is also displayed. This can be changed. All MBS Gateway settings and functions can be found in the “General” menu. These are independent of the drivers installed. Documents and diagnosis functions can be accessed via the “Help” menu.

The current username is displayed on the right. The meanings of the symbols are as follows:



To logout please press this key.



To display this manual in an individual browser window. You can switch to the manual and the MBS Gateway configuration at any time within your web browser.



Changing language

5.2 GENERAL MENU – OVERVIEW

The first page displayed is the “Overview” page.

The screenshot shows a web browser window displaying the MBS Universal Gateway interface. The browser address bar shows the URL 192.168.178.55. The page title is 'UGW-Projekt' and the logo 'MBS Made by Specialists.' is visible. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'M-Bus', and 'Hilfe'. The user is logged in as 'gw' and the language is set to 'Deutsch'. The main content area is titled 'UGW Übersicht' and shows the following information:

UGW	
Typ:	Compact
Name:	UGW-Projekt
Einbauort:	Schaltschrank
Beschreibung:	Gateway zur Umsetzung von LON nach BACnet.

System	
Status LED:	Warning
Systemstart:	Montag, 27.04.2015 16:51:28
Datenpunkte:	2 / 1600
CPU-Load:	1 %
Freier Arbeitsspeicher:	17 / 32 MByte

Treiberzustand	
UGW-C	Online
BACnet	Online
M-Bus	Online

Type: The universal gateway type is displayed here.

Name, installation location, description: This information is displayed to identify the universal gateway. They can be set for the individual MBS Gateway or a particular project. The name also appears in the upper menu area and is displayed for you to check when backing-up data.

Status LED: This describes the current state of the status LED on the front of the universal gateway.

System start: Displays the last time the universal gateway was started.

Data points: Displays the number of data points used in relation to the licensed number of data points.

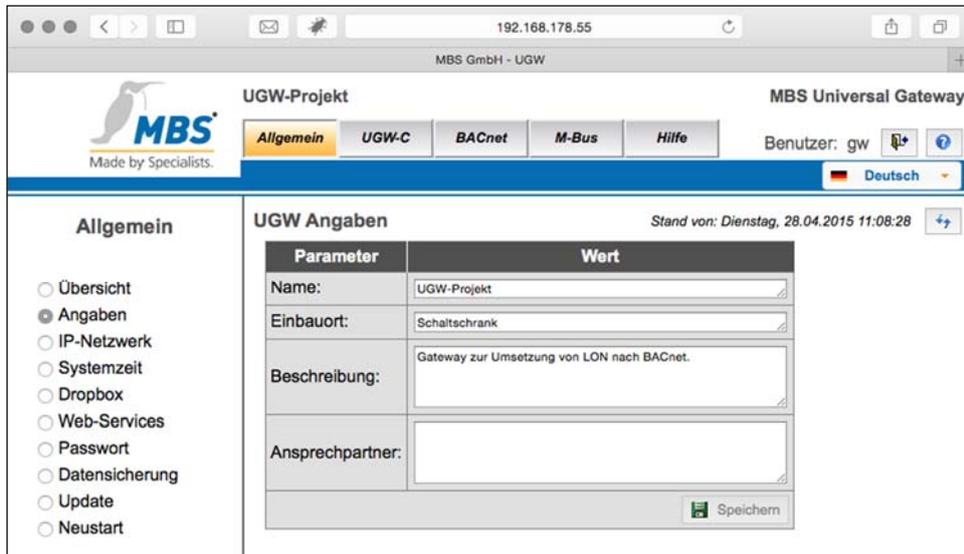
CPU load: Displays CPU load in %. This should not be greater than 50% in the long-term.

RAM: Displays the size of the used and total RAM in Mbytes. Too little free space can lead to operational problems.

Driver status: The current status of a driver is listed depending on the installed drivers. If a driver is not online, this suggests a problem starting or with the configuration of a driver. Other information can be found using the diagnosis tools in the Help menu.

5.3 GENERAL MENU – INFORMATION

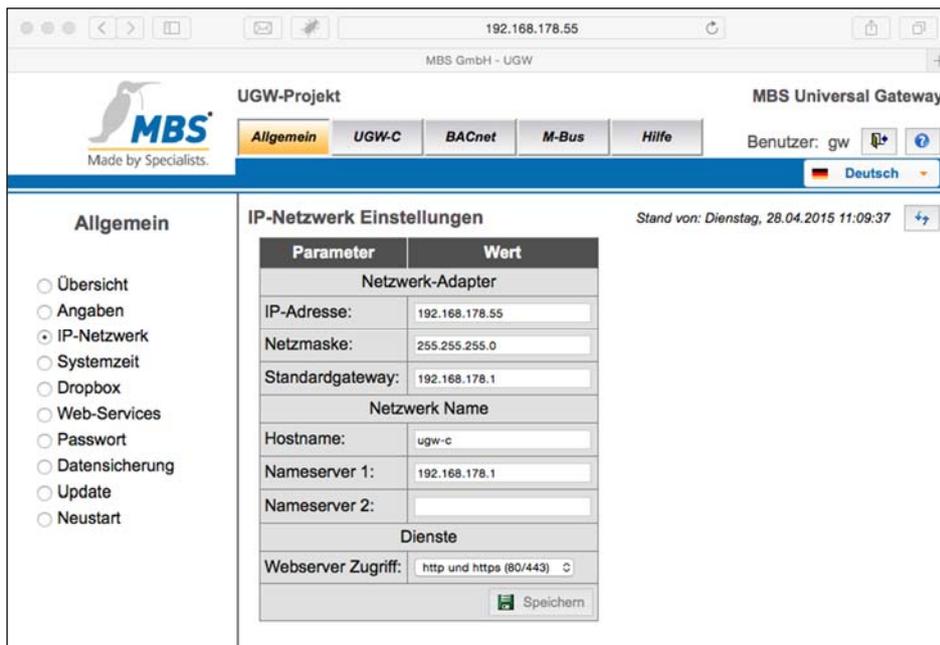
Information for identifying the universal gateway is entered here. This can be set as chosen and created for a particular project. The information is saved on the universal gateway.



This information is not required for operating the gateway, but serves solely for improved identification, particularly when using several universal gateways in a project.

5.4 GENERAL MENU – IP NETWORK

The current setting of the IP address appears. To alter this setting, change the relevant fields and save the settings.



The new IP addresses are activated upon saving. It is necessary to login again after the IP address has been changed. If IP network services with an IP name resolution are required, it is necessary to enter at least one IP name server. The secured HTTPS protocol can also be used to access the web server. To do this, enter "https://" before the IP address to activate the universal gateway configuration.

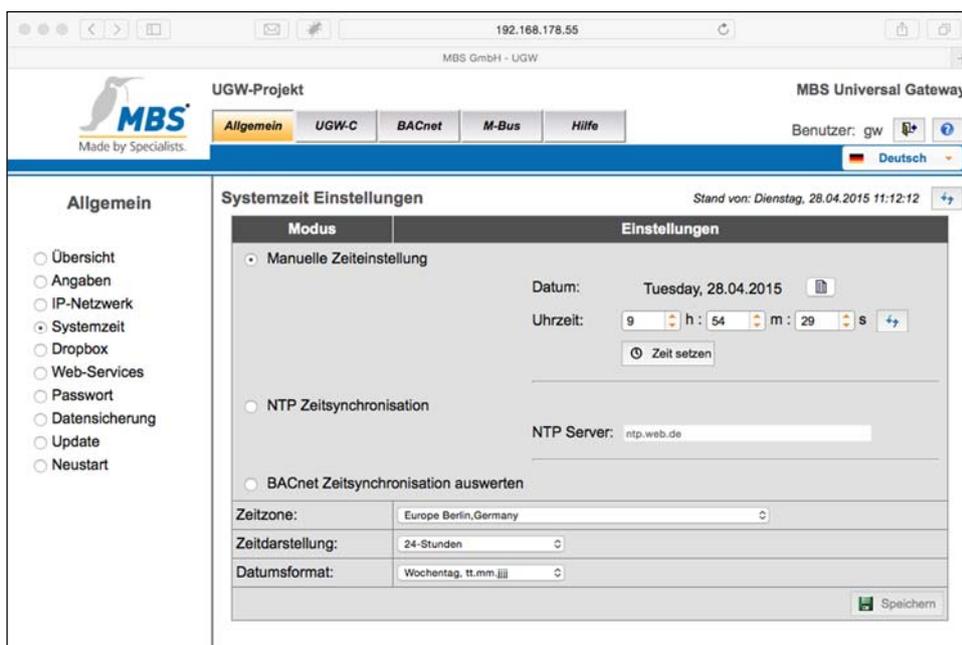
If there are communication protocols installed on this gateway that operate via the network, please restart the system afterwards. This is necessary because the drivers only assume the settings of such protocols when starting the system.

For the precise IP settings, please ask the network administrator. If the IP network is not required for gateway operation, leave the standard settings. This makes it easier to access the gateway later.

5.5 GENERAL MENU – SYSTEM TIME

The universal gateway has a battery-powered real-time clock. Several protocols require the current time. The system time must therefore be synchronised. Automatic time synchronisation is advisable. However, this is not possible for every system.

The **network time protocol (NTP)** is a standard for synchronising clocks in internet protocol communication networks.



The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '192.168.178.55'. The page title is 'MBS GmbH - UGW'. The main navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'M-Bus', and 'Hilfe'. The user is logged in as 'gw'. The language is set to 'Deutsch'. The left sidebar shows the 'Allgemein' menu with options: Übersicht, Angaben, IP-Netzwerk, Systemzeit (selected), Dropbox, Web-Services, Passwort, Datensicherung, Update, and Neustart. The main content area is titled 'Systemzeit Einstellungen' and shows the current status: 'Stand von: Dienstag, 28.04.2015 11:12:12'. The 'Modus' section has three radio buttons: 'Manuelle Zeiteinstellung' (selected), 'NTP Zeitsynchronisation', and 'BACnet Zeitsynchronisation auswerten'. The 'Einstellungen' section for manual time setting includes: 'Datum: Tuesday, 28.04.2015', 'Uhrzeit: 9 h : 54 m : 29 s', and a 'Zeit setzen' button. The 'NTP Server' field contains 'ntp.web.de'. The 'Zeitzone' dropdown is set to 'Europe Berlin, Germany'. The 'Zeitdarstellung' dropdown is set to '24-Stunden'. The 'Datumsformat' dropdown is set to 'Wochentag, tt.mm.jjj'. A 'Speichern' button is at the bottom right.

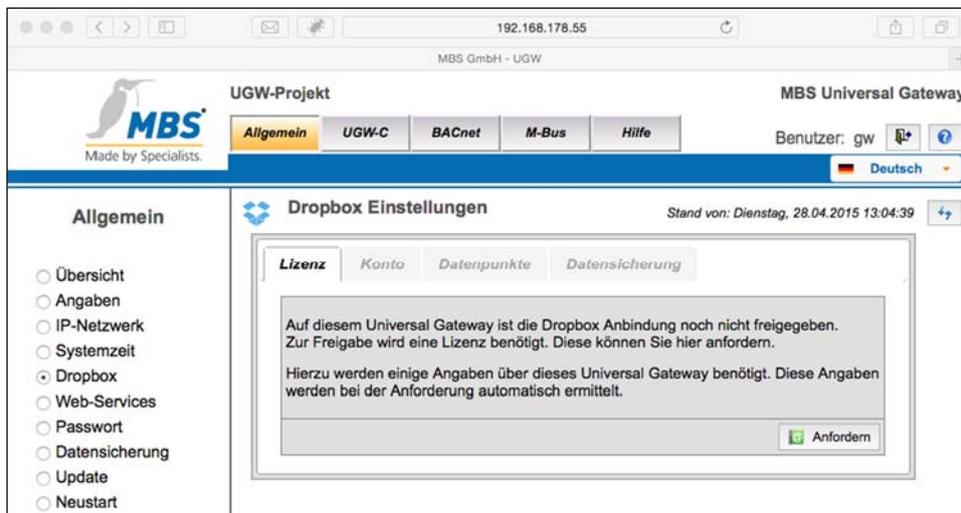
The time zone can be set in order to localise the system. Adjustments are made automatically for daylight saving hours based on this time zone. The time display can be adjusted using the configuration software. A complete system restart is required to activate the settings.

Time synchronisation via BACnet can only be used if the BACnet driver is installed and if there is a time synchronisation master in the BACnet network. Please clarify this with the BACnet network coordinator.

For time synchronisation via the NTP, it must be possible to access an NTP server from the IP network. Please ask the system administrator.

5.6 GENERAL MENU – DROPBOX

The dropbox function can be activated optionally – please contact us or use the MBS web server to order this option.



5.7 GENERAL MENU – WEB SERVICES

The MBS Gateway offers web services, e.g. to read data point lists or change data points. These services can be activated or deactivated here. The configuration files for the data point lists can also be edited directly.

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '192.168.178.55'. The page title is 'UGW-Projekt' and 'MBS Universal Gateway'. The user is logged in as 'gw'. The language is set to 'Deutsch'. The left sidebar shows the 'Allgemein' menu with 'Web-Services' selected. The main content area is titled 'Web-Service Einstellungen' and shows 'Web-Services aktiv'. Below this, there is a section for 'Inhalt der Konfigurationsdatei' containing the following configuration text:

```
# UGW-WEB - settings
# file: /ugw/config/plants.cfg
# changed: 28.04.2015 13:04:32
#
[plant_1]
id = 1
name = Anlage 1

[plant_2]
id = 2
name = Anlage 2

[plant_3]
id = 3
name = Anlage 3
```

A 'Speichern' button is located at the bottom right of the configuration area.

5.8 GENERAL MENU – PASSWORD

The password for the user "gw" can be changed here. For security purposes, it is necessary to enter the previous password and re-enter the new password.

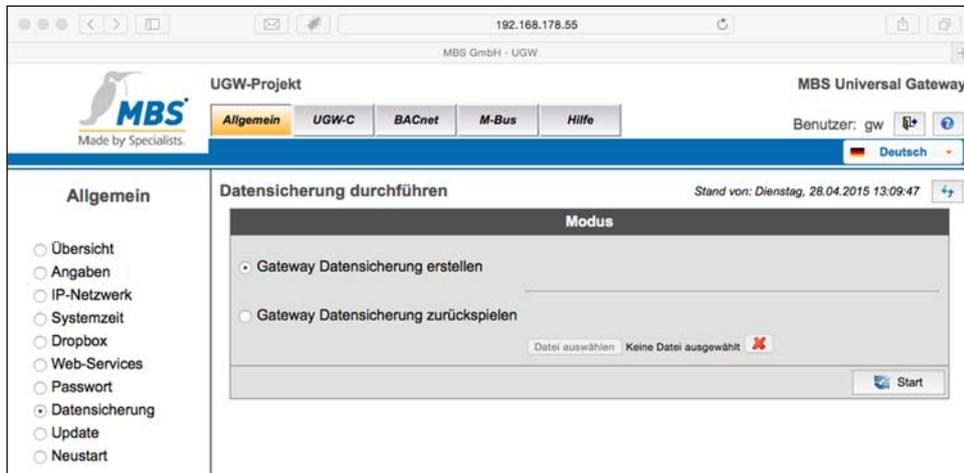
The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '192.168.178.55'. The page title is 'UGW-Projekt' and 'MBS Universal Gateway'. The user is logged in as 'gw'. The language is set to 'Deutsch'. The left sidebar shows the 'Allgemein' menu with 'Passwort' selected. The main content area is titled 'Passwort ändern' and shows 'Stand von: Dienstag, 28.04.2015 13:08:31'. Below this, there is a form with the following fields:

Parameter	Wert
Benutzername:	gw
Aktuelles Passwort:	<input type="password"/>
Neues Passwort:	<input type="password"/>
Passwort Wiederholung:	<input type="password"/>

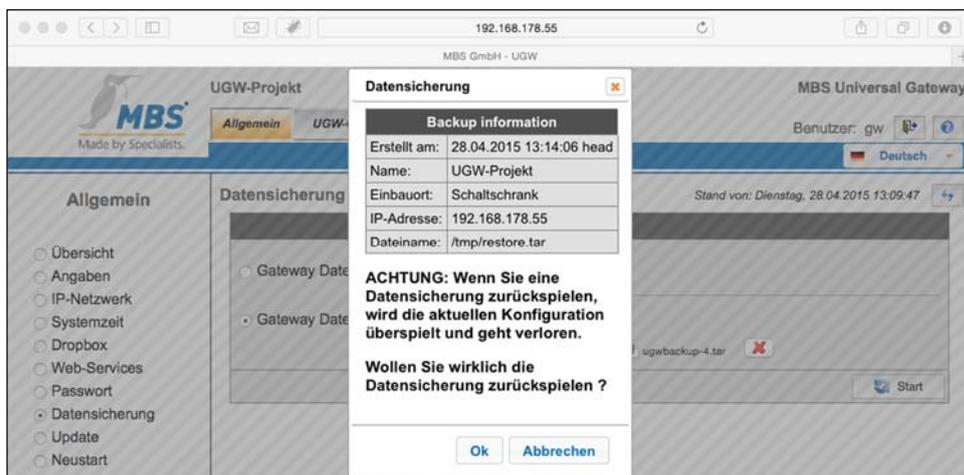
A 'Speichern' button is located at the bottom right of the form.

5.9 GENERAL MENU – DATA BACK-UP

The entire universal gateway configuration can be backed up. The back-up consists of a zip file archive and is transmitted to your system's web browser.



This archive can then be exported at a later point in time. To do this, first select the archive on your computer. For purposes of monitoring, the archive is transmitted to the gateway and the content displayed. After confirmation, the data back-up is unzipped and activated after restarting.



It is only possible to export data back-ups that are intended for the universal gateway. It may only be possible to export parts of faulty or defective data back-ups.

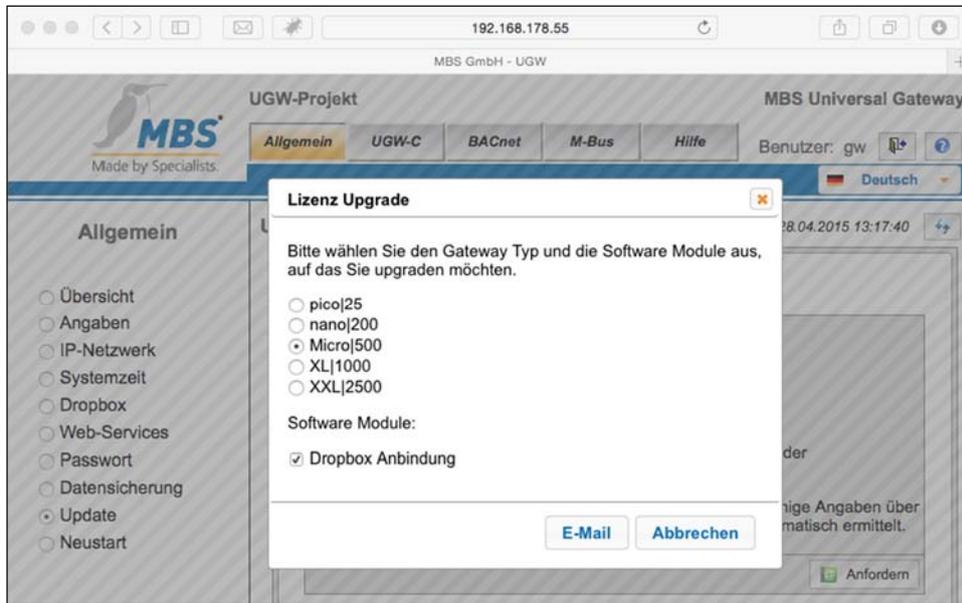
5.10 GENERAL MENU – UPDATE

Here you can:

- Request a licence upgrade
- Conduct a licence upgrade
- Update the universal gateway system software

5.10.1 REQUESTING NEW LICENCES

The current licence is displayed. When requesting a new universal gateway licence, the following options are offered:

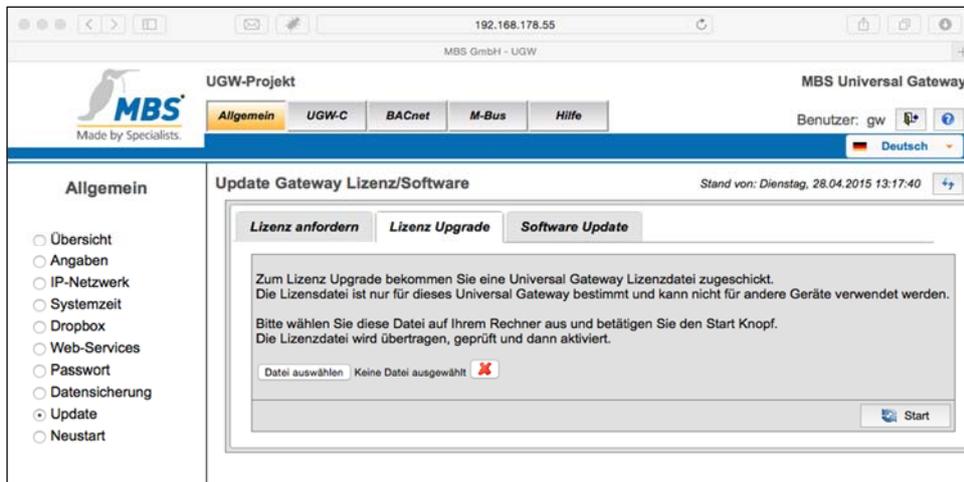


Press the email key to open your email program. The email will be automatically generated with the required information from your selection and the universal gateway, and the address "support@mbs-software.de" entered as recipient. The email should not be altered and will only be sent when you click the send button in your email program.

```
Dear support team,  
  
we want to order an Universal Gateway upgrade license.  
  
New gateway type: micro  
Software module dropbox: yes  
  
Please don't change anything between the following lines!  
.....  
1F8B08006CFD345502034590416BC3300C85EFFD154277A772ECC60EC42D232B  
63BB6C8C959D5DD72981C4098DD3AEFF7E6E18EC22D0D3D3D387AADD4FDFC1D5  
5FA67608067946083EB8E1D486B3C139364CE36EBBAA0E2FDFFF2ECA4A4C5AD7  
3A1F260F61EE8FFE926484781FBDC1C378B2D1235C6DD79E0C223C5A83396524  
B39CF806619DF6DD3CC5A1F71708B64FE38FCFF7B77DFD05AFCF5073CD59AE79  
9D4A4924183D312A367B0437F4A30D77838C31846E70362E484BFB083DA75337  
7BFF23A91F761717023B0E6D8853E248F7E7F3CDA020A184CCA5B2BCE49A24E5  
D428A954210BBBD1D448B5640254E9217E2B0A12B6B48A9AA3B4E4BD903AB7A5  
24AF9D9369A15A2FB655B54EDFDAFE02EFC08D9D5A010000  
.....
```

5.10.2 UPGRADING NEW LICENCES

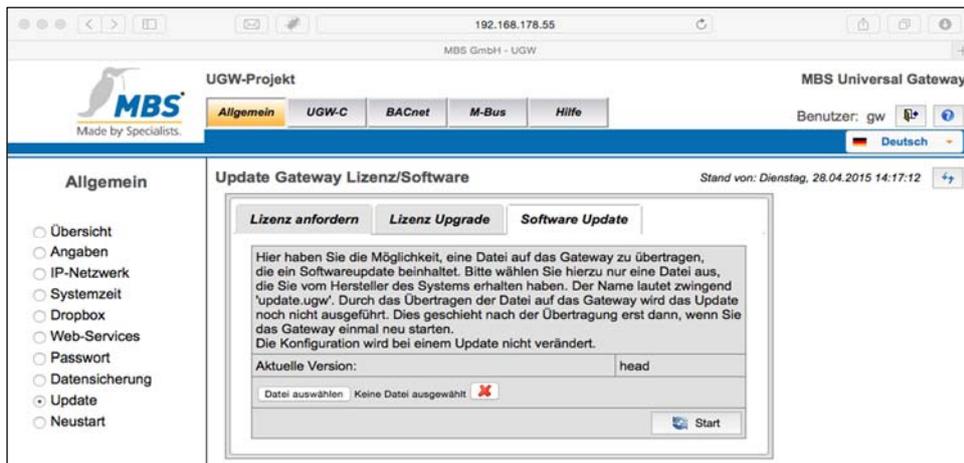
You will receive a licence file from the manufacturer of the universal gateway. This licence file must be stored on your computer and must be selected to upgrade. The licence file is only valid for the device the request was sent from. The licence file cannot be transferred to other devices.



The licence file is transmitted to the universal gateway and checked. The new licence is then updated.

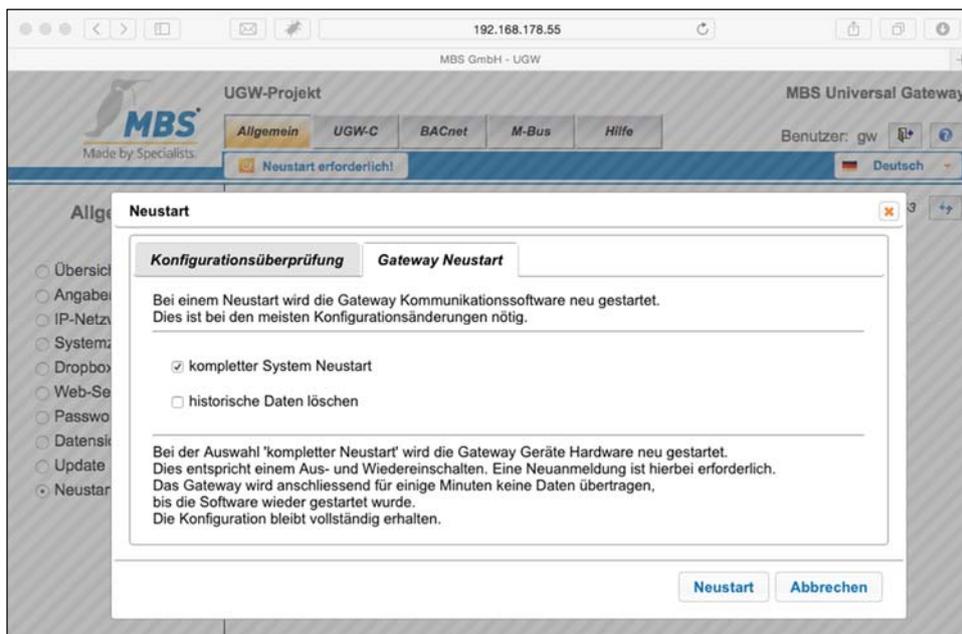
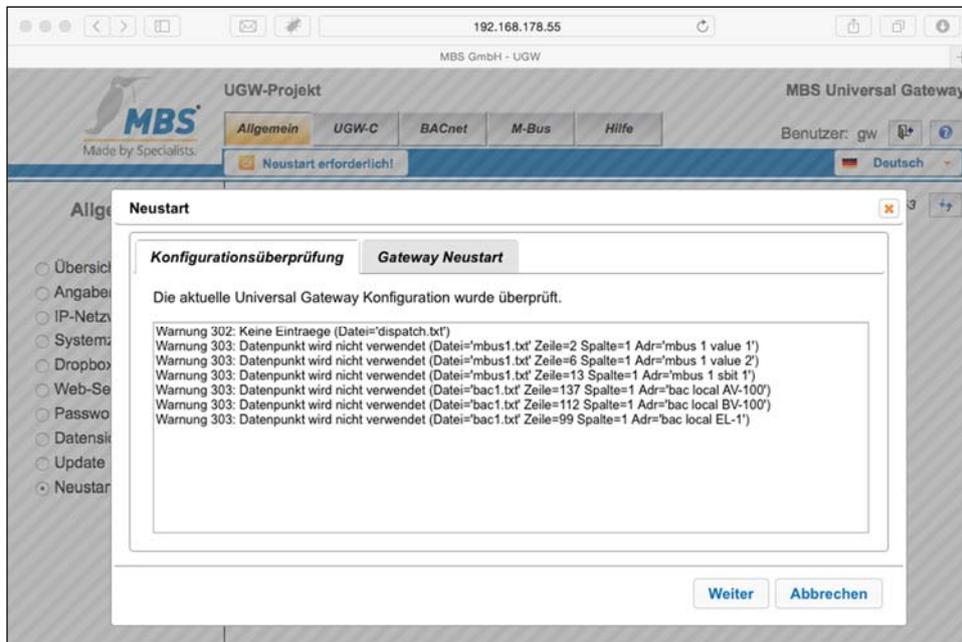
5.10.2 UNIVERSAL GATEWAY SOFTWARE UPDATE

Software additions and fixes mean that it is sometimes necessary to update the universal gateway. You will receive an update file from the manufacturer. This must be stored on your computer and must be selected to update. Please only select files that you have received from the manufacturer for the update.



5.11 GENERAL MENU – RESTARTING

After configuration changes, it is often necessary to restart the MBS Gateway communication software. This is displayed in the upper menu bar. You can restart by clicking the Restart button in the menu bar or clicking “General – Restart” in the menu selection. The current universal gateway configuration is checked and the result displayed. You can view the restart page by clicking “Continue”.



In the case of some system settings, a complete system restart is necessary. This is automatically selected when the dialogue box is opened. A simple restart of the communication software takes approx. 10 seconds; a complete restart takes approx. 1 minute. A restart for a software update may take up to 4 minutes.

“Delete historical data” deletes all data collected, e.g. “historical BACnet Trendlog data”. This is necessary to conduct a smooth restart without collected test data during commissioning.

A complete system restart and deleting the historical data is advisable after the gateway has been completely configured. You should then check if everything has started properly. This ensures that the gateway restarts properly even in the event of a power failure.

5.12 DRIVER MENU ITEMS

Every installed communication driver is listed as a separate menu item in the upper menu bar. The first submenu item always displays the current data point status for a driver. Some selected drivers also have their own submenu, using which special settings can be made for the communication driver. Each data point has a unique address and name, as well as a current time, flags and value.

The meanings of the data point flags are as follows:

- Valid value V
- Sensor fault F
- Incorrect data point E
- Local operator value L
- Set value/actual value automatic mode -
- Locked, cannot be changed at the moment O
- Upper limit warning W
- Upper limit alarm A
- Upper range of values S
- Lower limit warning w
- Lower limit alarm a
- Lower value range s
- Historical value H
- Value has changed c
- Definition of new data point N
- Definition of deleted data point D
- Definition of changed data point C

Time stamps and values speak for themselves.

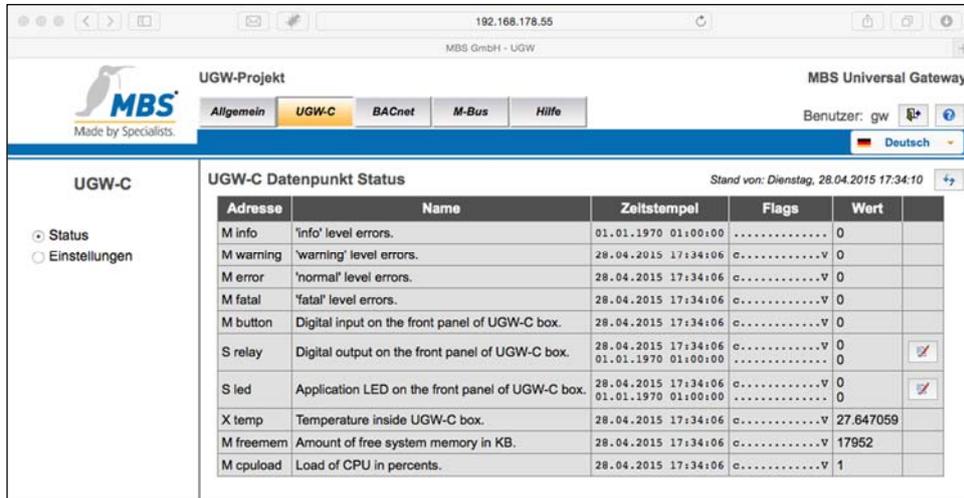
Some data points can be changed. These data points therefore have two values. The first value is the actual value. The second value is the set (nominal) value, i.e. the last value assigned to the driver. Use the key to open a dialogue box to adjust the new set value and send it to the driver as a command.

5.13 UGW-C DRIVER MENU

This communication driver is found on every MBS Gateway. This driver’s data points provide information on the gateway’s internal system status. Like all other data points, these data points can be edited via data point mappings and mapped onto BACnet and/or LON objects, for example.

5.13.1 STATUS

The current status of MBS Gateway data points are displayed and can be edited here.

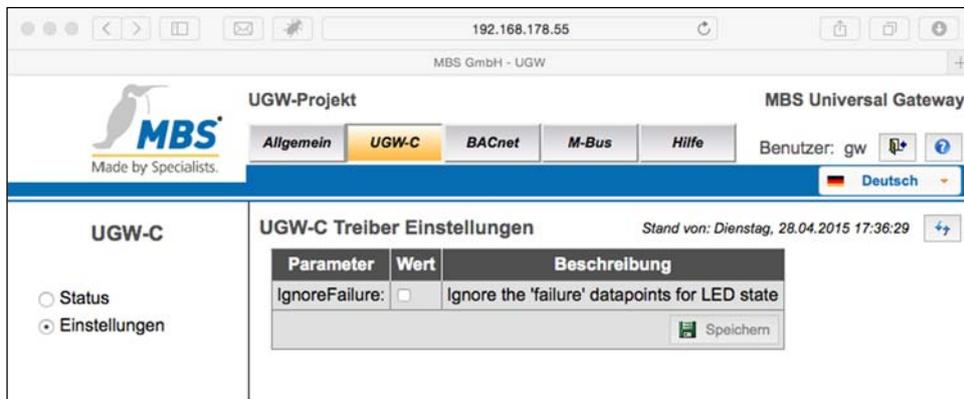


The screenshot shows the 'UGW-C Datenpunkt Status' page. The table contains the following data:

Adresse	Name	Zeitstempel	Flags	Wert
M info	'info' level errors.	01.01.1970 01:00:00	.....	0
M warning	'warning' level errors.	28.04.2015 17:34:06	c.....v	0
M error	'normal' level errors.	28.04.2015 17:34:06	c.....v	0
M fatal	'fatal' level errors.	28.04.2015 17:34:06	c.....v	0
M button	Digital input on the front panel of UGW-C box.	28.04.2015 17:34:06	c.....v	0
S relay	Digital output on the front panel of UGW-C box.	28.04.2015 17:34:06 01.01.1970 01:00:00	c.....v	0
S led	Application LED on the front panel of UGW-C box.	28.04.2015 17:34:06 01.01.1970 01:00:00	c.....v	0
X temp	Temperature inside UGW-C box.	28.04.2015 17:34:06	c.....v	27.647059
M freemem	Amount of free system memory in KB.	28.04.2015 17:34:06	c.....v	17952
M cpload	Load of CPU in percents.	28.04.2015 17:34:06	c.....v	1

5.13.2 SETTINGS

The following settings can be made for this driver:



The screenshot shows the 'UGW-C Treiber Einstellungen' page. The table contains the following data:

Parameter	Wert	Beschreibung
IgnoreFailure:	<input type="checkbox"/>	Ignore the 'failure' datapoints for LED state

Speichern

IgnoreFailure:

There are "failure" data points in communication with communication devices. These show whether communication with a device is working (value 0) or if communication with the device is faulty (value 1). These data points are considered in the gateway status LED display. This can be switched off with this setting.

5.14 LONTALK DRIVER MENU

If the LONTalk driver is installed on the universal gateway, the LON menu is active.

5.14.1 STATUS

This page displays the current status of all LON data points. LON values can also be edited. These data points can be used for data point mapping.

The screenshot shows the 'LONTalk Datenpunkt Status' page. The table contains the following data:

Adresse	Name	Zeitstempel	Flags	Wert
M failure	LON failure	09.02.2015 20:13:07	0.....V	0
S object 1	nvoBZSchalten	09.02.2015 20:13:07 09.02.2015 15:44:10	0.....V.....V	0 0
S object 2	nvoBZausserBet	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 3	nvoBZinBetrieb	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 4	nvoBZSonderBet	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 5	nvoBZSonderBetNa	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 6	nvoBZSonderBetB	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 7	nvoBZInstandh	09.02.2015 20:13:12 09.02.2015 15:44:10	0.....V.....V	0 0
S object 8	nvoBZStoerung	09.02.2015 20:13:13 09.02.2015 15:44:10	0.....V.....V	0 0
S object 9	nvoBZNotruf	09.02.2015 20:13:13 09.02.2015 15:44:10	0.....V.....V	0 0

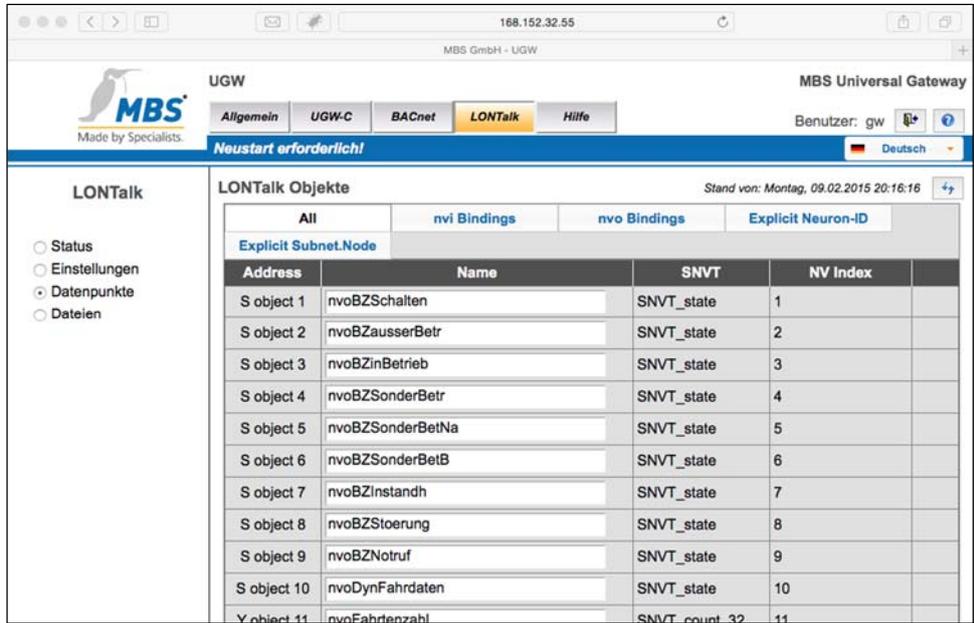
5.14.2 SETTINGS

The following settings can be made for this driver:

The screenshot shows the 'LONTalk Treiber Einstellungen' page. The table contains the following data:

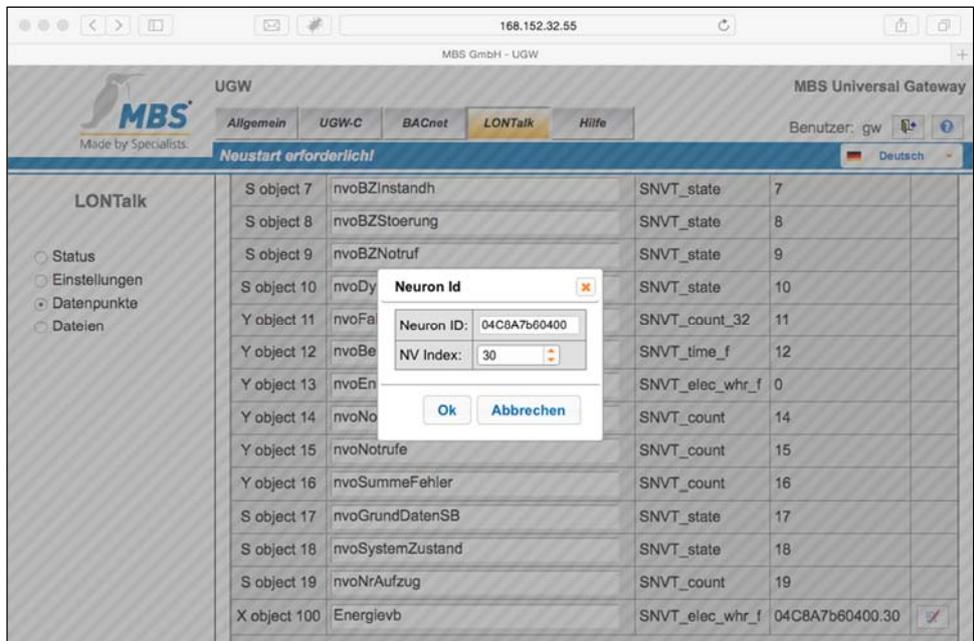
Parameter	Wert	Beschreibung
ApplicationID:		Sets the host application ID (max. 8 Chars)
DomainID:	00	Network Interface Domain ID (1,3,6 Byte in hex Notation)
SubnetID:	127	Network Interface Subnet ID (1..255)
NodeID:	127	Network Interface Node ID (1..127)
HeartBeat:	0	Global Heartbeat for output NV's in minutes (0..500)
Calming:	0	Calming in seconds (0..63)
Selfdoc:		Selfdoc Identification of this node (Max 50 Chars)
PollIntervall:	10	Poll intervall in 10ms steps (1..10000)
RetryBadNodesIntervall:	1	Intervall in minutes for polling bad nodes again (1..65535)
BootIndicator:	0	Set to 1 for n seconds after reboot n=(0,10000)

5.14.3 DATA POINTS



The LON data point configuration is displayed here. Data points for more categories can be displayed via the upper menu bar. “nivBindings” and “nvoBindigs” are the LON data points that can be used via the LON binding mechanism. This can be edited by clicking on the name.

“Explicit Neuron-ID” are the data points that can be polled regularly via the LON Neuron-ID. The poll interval can be adjusted under “Settings”.



“Explicit Subnet.Node” are the data points that can be polled regularly via the LON subnet and node entries. The poll interval can be adjusted under “Settings”.

5.14.4 CONFIGURATION FILES

The screenshot shows the MBS Universal Gateway web interface. The top navigation bar includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk' (selected), and 'Hilfe'. The user is logged in as 'gw' and the language is set to 'Deutsch'. The main content area is titled 'LONTalk Konfigurationsdateien' and shows a table of configuration files:

Konfiguration	Datei	Gateway → PC	PC → Gateway	Edit
Driver:	/ugw/config/lon1.cfg	Start Download	Start Upload	
Datapoint:	/ugw/config/lon1.txt	Start Download	Start Upload	
Global dispatch:	/ugw/config/dispatch.txt	Start Download	Start Upload	

The entire LON configuration is saved in files. These can be transmitted here from and to the universal gateway. You can edit the file directly without transmitting the file using the “Edit” button.

5.15 BACNET DRIVER MENU

If the BACnet driver is installed on the universal gateway, the BACnet menu is active.

5.15.1 STATUS

This page displays the current status of all BACnet data points. BACnet values can also be edited. These data points can be used for data point mapping.

The screenshot shows the MBS Universal Gateway web interface with the 'BACnet' menu selected. The main content area is titled 'BACnet Datenpunkt Status' and displays a table of data points:

Adresse	Name	Zeitstempel	Flags	Wert	
M failure	BACnet failure	01.01.1970 01:00:00	.....	0	
A local.NC 201	NC10	01.01.1970 01:00:00	.....	
A local.NC 202	NC20	01.01.1970 01:00:00	.....	
A local.NC 203	NC30	01.01.1970 01:00:00	.....	
A local.NC 204	NC40	01.01.1970 01:00:00	.....	
A local.NC 205	NC50	01.01.1970 01:00:00	.....	
A local.NC 206	NC60	01.01.1970 01:00:00	.....	
A local.NC 207	NC70	01.01.1970 01:00:00	.....	
A local.NC 208	NC80	01.01.1970 01:00:00	.....	
S local.BV 1000	9999_46101001_AN002_S00_X2X2X2X2	01.01.1970 01:00:00	.....	0	
S local.BV 1010	9999_46101001_AN003_S00_X2X2X2X2	01.01.1970 01:00:00	.....	0	

5.15.2 SETTINGS

General settings for the BACnet driver and settings for the BACnet datalinks can be made here.

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS Universal Gateway'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The user is logged in as 'gw'. The language is set to 'Deutsch'. The main content area is titled 'BACnet Treiber Einstellungen' and contains the following settings:

- Startverzögerung: 0 Sekunden
- Passwort DCC/RD: ugw
- Datalinks: BACnet IP
- BACnet PTP:

Below these settings is a table for BACnet parameters:

Parameter	Wert
Netzwerknummer:	9998
UDP-Port:	47808
IP-Mode:	Normal

A 'Speichern' button is located at the bottom right of the settings area. The status bar at the bottom indicates 'Stand von: Montag, 09.02.2015 18:57:25'.

Start delay: A start delay for BACnet failure detection can be set here. When restarting the universal gateway, BACnet communication will only be switched on after this time has elapsed. This allows a remote station to recognise if the universal gateway has been restarted by the absence of BACnet requests. The setting “0” initiates a “BACnet-Restart-Notification” report as a “Global Broadcast” and to the registered recipient.

DCC/RD password: The BACnet services “Device-Communication-Control” and “Reinitialize Device” can be password protected.

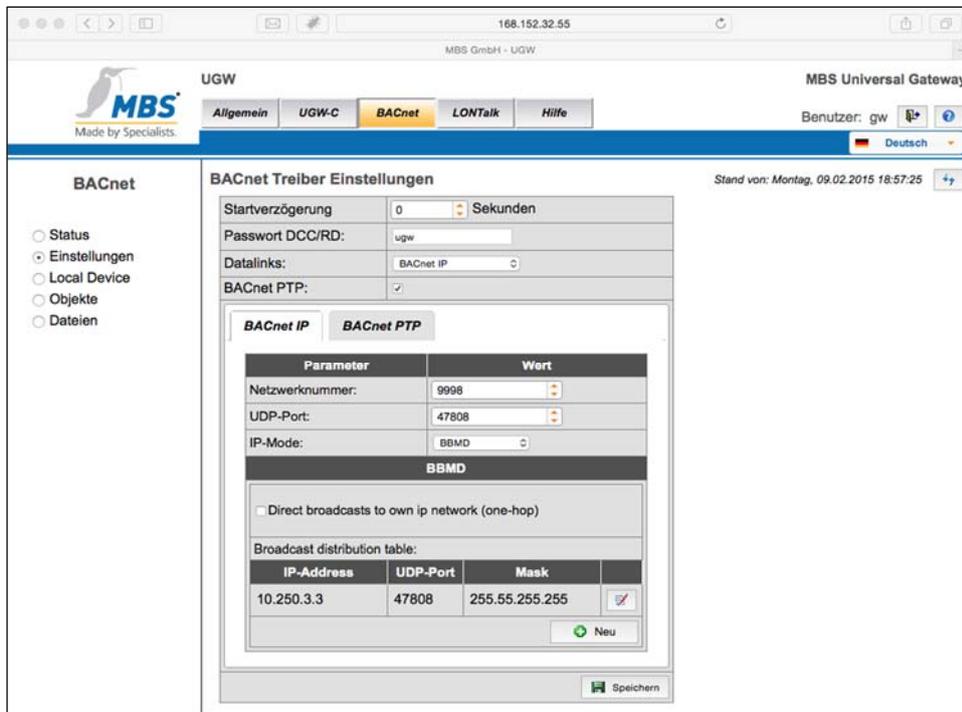
Datalinks The BACnet datalinks to be used can be set here. The following are supported: BACnet IP and BACnet MS/TP. They can be activated simultaneously.

BACnet PTP In addition to “BACnet Datalinks”, communication can be activated via the BACnet half router “Point-To-Point”. This is necessary for BACnet operation with a modem.

BACnet IP:

The following operating types are possible for BACnet IP connection: Normal, BACnet BBMD (BACnet Broadcast Management Device) and BACnet Foreign Device

BACnet BBMD and FD configuration is necessary for operation of the entire IP network. Ask the BACnet coordinator about the settings for your project.



The screenshot shows the 'BACnet Treiber Einstellungen' (BACnet Driver Settings) page for BACnet IP. The interface includes a navigation menu on the left with options: Status, Einstellungen (selected), Local Device, Objekte, and Dateien. The main content area is titled 'BACnet Treiber Einstellungen' and includes the following fields and sections:

- Startverzögerung: 0 Sekunden
- Passwort DCC/RD: ugw
- Datalinks: BACnet IP
- BACnet PTP:

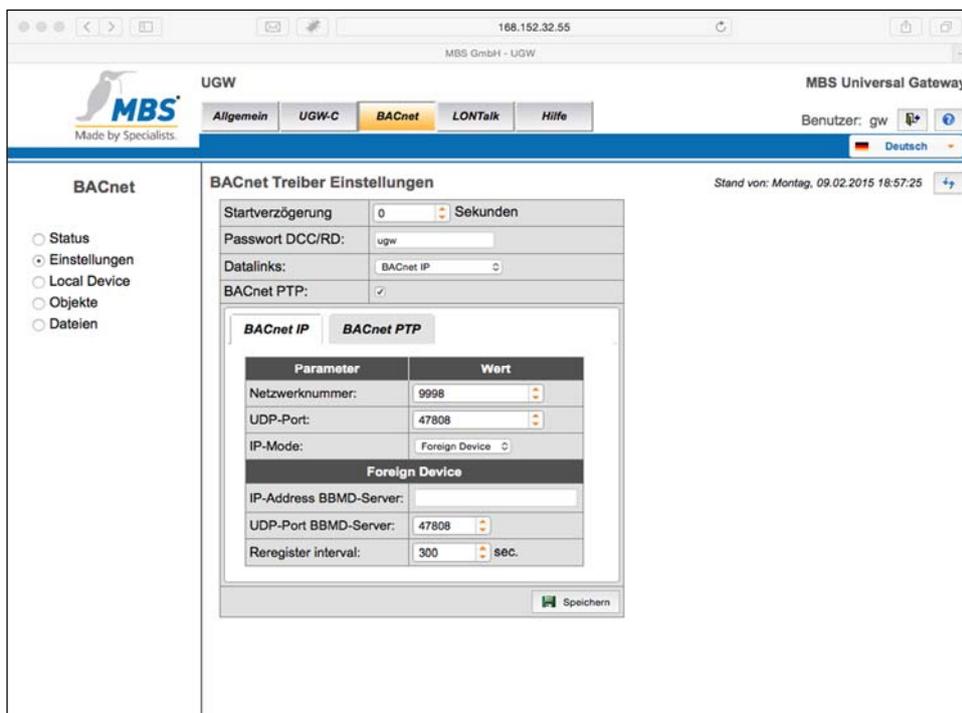
Below these are two tabs: 'BACnet IP' (selected) and 'BACnet PTP'. The 'BACnet IP' section contains a table with the following parameters:

Parameter	Wert
Netzwerknummer:	9998
UDP-Port:	47808
IP-Mode:	BBMD

Underneath is a section for 'BBMD' with a checkbox for 'Direct broadcasts to own ip network (one-hop)' which is unchecked. Below that is a 'Broadcast distribution table' with the following data:

IP-Address	UDP-Port	Mask
10.250.3.3	47808	255.55.255.255

Buttons for 'Neu' and 'Speichern' are located at the bottom of the configuration area.



The screenshot shows the 'BACnet Treiber Einstellungen' (BACnet Driver Settings) page for BACnet Foreign Device. The interface is identical to the previous screenshot, but the 'IP-Mode' is set to 'Foreign Device'.

The 'Foreign Device' section contains the following parameters:

Parameter	Wert
Netzwerknummer:	9998
UDP-Port:	47808
IP-Mode:	Foreign Device
IP-Address BBMD-Server:	
UDP-Port BBMD-Server:	47808
Reregister interval:	300 sec.

The 'Speichern' button is visible at the bottom of the configuration area.

BACnet MS/TP:

BACnet MS/TP is a connection for BACnet devices via the RS485 (dual cable) interface. The necessary settings can be made here. Ask the BACnet coordinator about the settings for your project.

The screenshot shows the MBS Universal Gateway (UGW) web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The user is logged in as 'Benutzer: gw'. The language is set to 'Deutsch'. The main content area is titled 'BACnet Treiber Einstellungen' and contains the following settings:

- Startverzögerung: 0 Sekunden
- Passwort DCC/RD: ugw
- Datalinks: BACnet MS/TP
- BACnet PTP:

Below these settings is a table for BACnet MS/TP parameters:

Parameter	Wert
MS/TP Adresse:	1
Max. Master:	127
Max. info frames:	1
Baudrate:	76800

A 'Speichern' button is located at the bottom right of the settings area. The status bar at the bottom right indicates 'Stand von: Montag, 09.02.2015 18:57:25'.

BACnet PTP:

BACnet Point-To-Point is designed for communication via modem. BACnet PTP is a half-router. Together with the other part (dial-up part), it comprises a BACnet router for a complete BACnet network. The BACnet networks must be correspondingly configured. The network number serves to identify a BACnet network. This must be unique throughout the BACnet network.

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The user is logged in as 'gw'. The language is set to 'Deutsch'. The main content area is titled 'BACnet Treiber Einstellungen' and shows the following settings:

- Startverzögerung: 0 Sekunden
- Passwort DCC/RD: ugw
- Datalinks: BACnet MS/TP
- BACnet PTP:

Below these settings, there are two tabs: 'BACnet MS/TP' and 'BACnet PTP'. The 'BACnet PTP' tab is active, showing a table of parameters:

Parameter	Wert
Connect timeout:	90 Sekunden
Idle timeout:	60 Sekunden
Automatic dialup:	C2,U3,C15,C16 C=confirmed,U=unconfirmed
Incoming password:	HauptTDS

Below the parameter table, there is a section for 'External networks' with a table:

Networknumber	Telephonnr. 1	Telephonnr. 2	Telephonnr. 3	Passwort
2514	40!			UGW_9998_01

Buttons for 'Neu' and 'Speichern' are visible at the bottom of the settings area.

Connect timeout: Timeout for the establishment of a modem connection. If no connection is established within this time, it counts as a connection attempt. There are maximum "APDU-Retries" (connection attempts).

IDLE timeout: If no "relevant" data is transmitted within this time during a connection, the connection is terminated.

Automatic dial-up: Determines which BACnet services are the subject of a connection attempt. This is a list of "confirmed" and "unconfirmed" items with the BACnet enumeration of services.

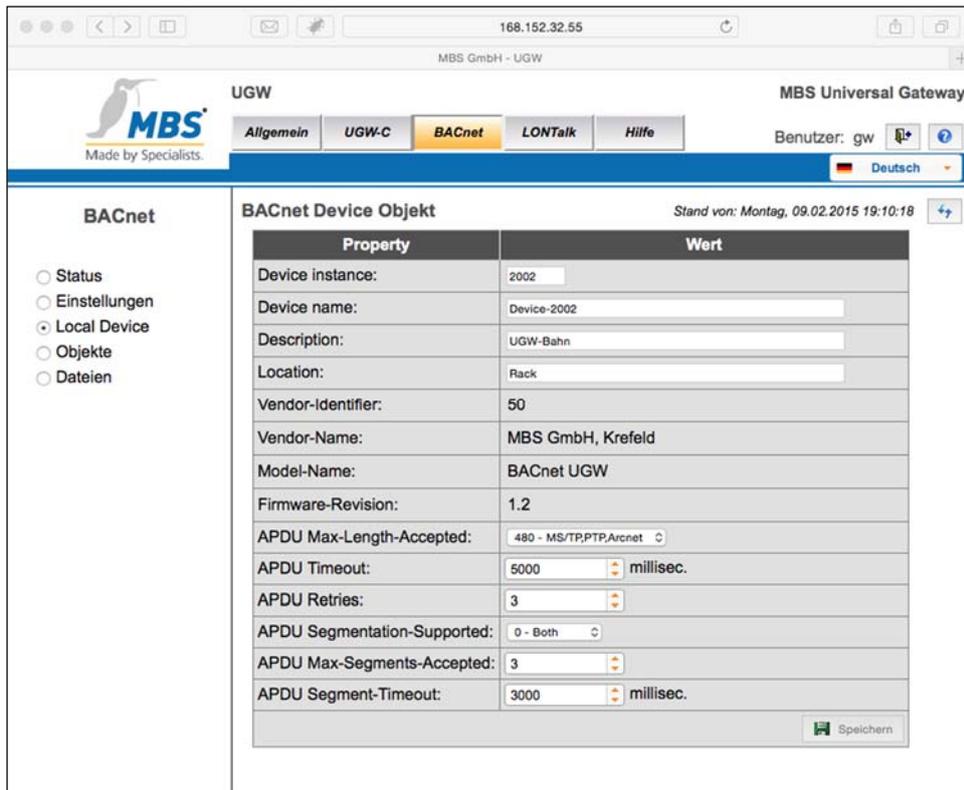
C2 – Confirmed Event Notification
U3 – Unconfirmed Event Notification
C15 – Confirmed Write Property (triggered via MBS Gateway)
C16 – Confirmed Write Property Multiple (via MBS Gateway)

Incoming password: BACnet PTP password for dialling-up the universal gateway.

External networks: The networks that can be accessed externally via BACnet PTP are configured here. The network number specifies the accessible BACnet network. Up to three telephone numbers under which the BACnet counterpart station can be reached can be specified. These are dialled consecutively as part of the "Connect timeout". The password is used to login to the counterpart station.

5.15.3 BACNET DEVICE OBJECT

The BACnet universal gateway device object has a specific role as regards the other BACnet objects. APDU parameters for BACnet transmission are set here. The device instance and device name can also be set. These properties are for BACnet device identification and must be unique throughout the entire BACnet network. For more detailed settings, ask the BACnet coordinator.



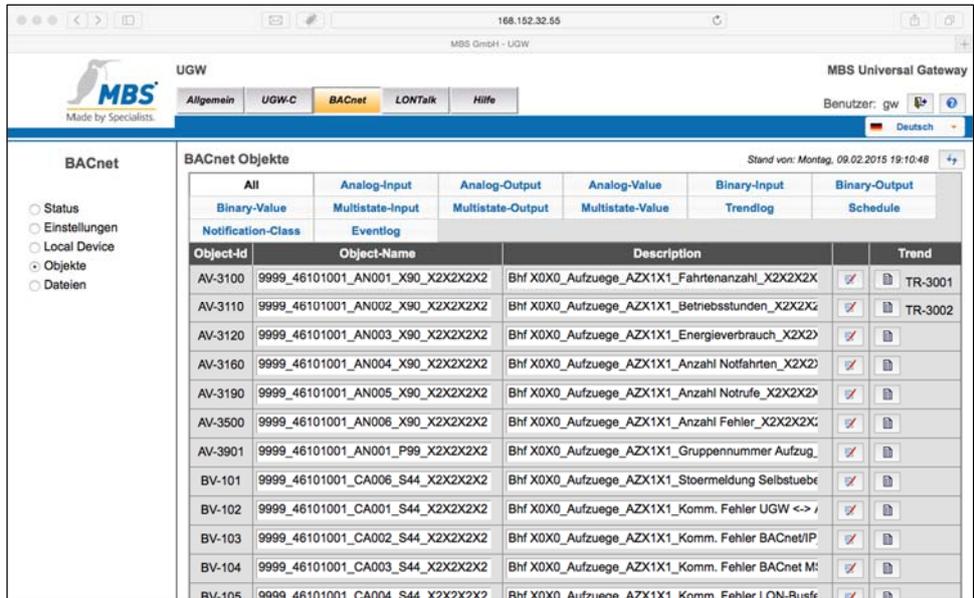
The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet' (selected), 'LONTalk', and 'Hilfe'. The user is logged in as 'Benutzer: gw' and the language is set to 'Deutsch'. The main content area is titled 'BACnet Device Objekt' and shows the current status as 'Stand von: Montag, 09.02.2015 19:10:18'. A sidebar on the left lists navigation options: 'Status', 'Einstellungen', 'Local Device' (selected), 'Objekte', and 'Dateien'. The main configuration area is a table with two columns: 'Property' and 'Wert'. The table contains the following entries:

Property	Wert
Device instance:	2002
Device name:	Device-2002
Description:	UGW-Bahn
Location:	Rack
Vendor-Identifier:	50
Vendor-Name:	MBS GmbH, Krefeld
Model-Name:	BACnet UGW
Firmware-Revision:	1.2
APDU Max-Length-Accepted:	480 - MS/TP,PTP,Arcnet
APDU Timeout:	5000 millise.
APDU Retries:	3
APDU Segmentation-Supported:	0 - Both
APDU Max-Segments-Accepted:	3
APDU Segment-Timeout:	3000 millise.

A 'Speichern' button is located at the bottom right of the configuration area.

5.15.4 BACNET OBJECTS

The BACnet object configuration is displayed here. Data points can be filtered according to object type via the upper menu bar.

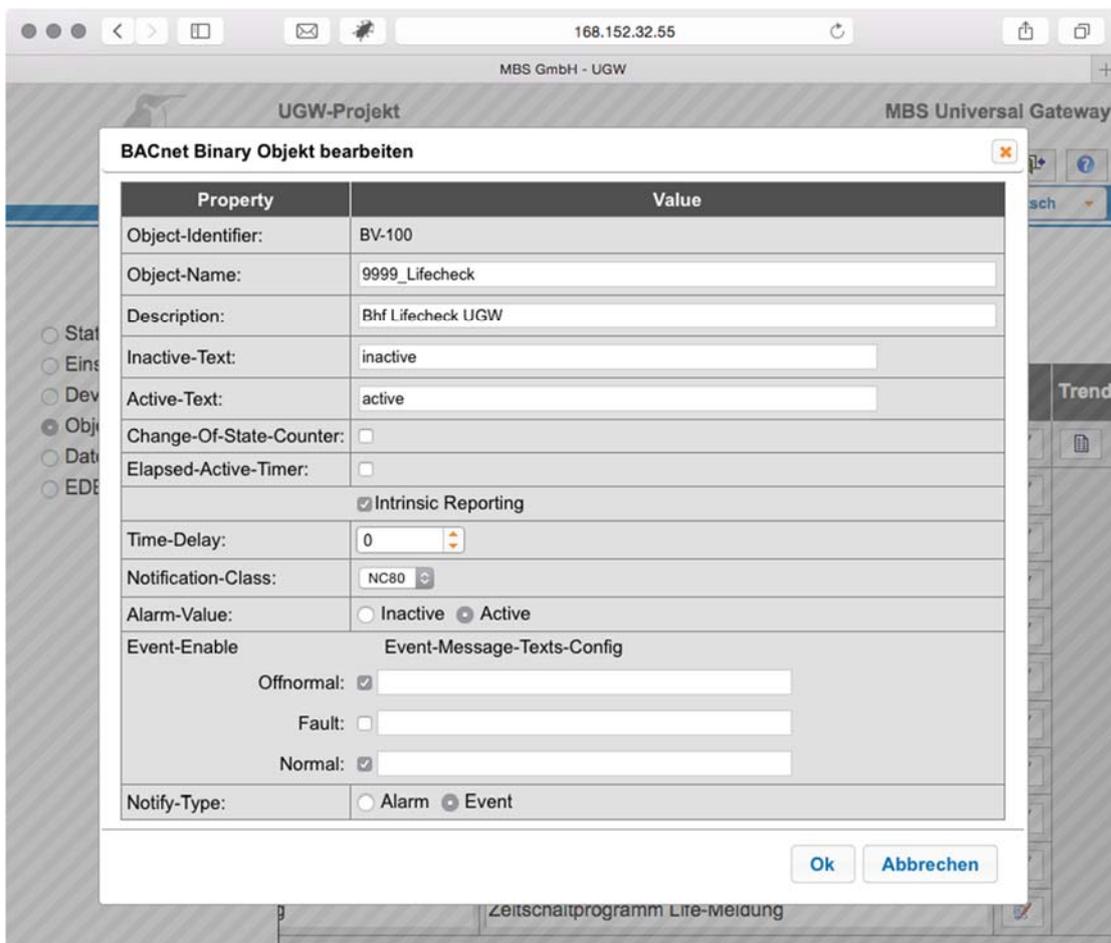


The BACnet “Object name” and “Description” can be directly edited by clicking on them. The object-specific properties can be called up and edited by clicking on the Properties button. By clicking on the Trend button, you can directly create a new trendlog object with this object as an input reference.

Example of BACnet binary value object:

The dialogue box for editing a BACnet binary value object is shown here. The status of the values “0” and “1” can be changed.

For this object type, BACnet allows a “change-of-state counter” to be activated. The object is automatically extended to all object properties necessary for this purpose. This includes the elapsed active timer. BACnet alarming is activated for this object with “intrinsic reporting”. The “time delay” property determines the report delay in seconds. All further information can be taken from the BACnet standard.



The screenshot shows a web browser window with the URL 168.152.32.55. The page title is 'MBS GmbH - UGW' and the main content area is titled 'UGW-Projekt' and 'MBS Universal Gateway'. A dialog box titled 'BACnet Binary Objekt bearbeiten' is open, displaying the following properties and values:

Property	Value
Object-Identifier:	BV-100
Object-Name:	9999_Lifecheck
Description:	Bhf Lifecheck UGW
Inactive-Text:	inactive
Active-Text:	active
Change-Of-State-Counter:	<input type="checkbox"/>
Elapsed-Active-Timer:	<input type="checkbox"/>
<input checked="" type="checkbox"/> Intrinsic Reporting	
Time-Delay:	0
Notification-Class:	NC80
Alarm-Value:	<input type="radio"/> Inactive <input checked="" type="radio"/> Active
Event-Enable	
Event-Message-Texts-Config	
Offnormal:	<input checked="" type="checkbox"/>
Fault:	<input type="checkbox"/>
Normal:	<input checked="" type="checkbox"/>
Notify-Type:	<input type="radio"/> Alarm <input checked="" type="radio"/> Event

At the bottom of the dialog box, there are two buttons: 'Ok' and 'Abbrechen'.

5.15.5 CONFIGURATION FILES

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The main navigation bar includes 'Allgemein', 'UGW-C', 'BACnet' (selected), 'LONTalk', and 'Hilfe'. The user is logged in as 'Benutzer: gw'. The language is set to 'Deutsch'. The left sidebar shows the 'BACnet' menu with options: Status, Einstellungen, Device Objekt, Objekte, Dateien (selected), and EDE Datei. The main content area is titled 'BACnet Konfigurationsdateien' and shows a table of configuration files. The status is 'Stand von: Freitag, 20.02.2015 12:00:06'.

Konfiguration	Datel	Gateway -> PC	PC -> Gateway	Edit
Driver:	/ugw/config/bac1.cfg	Start Download	Start Upload	
Datapoint:	/ugw/config/bac1.txt	Start Download	Start Upload	
Global dispatch:	/ugw/config/dispatch.txt	Start Download	Start Upload	

The entire BACnet configuration is saved in files. These can be transmitted from and to the universal gateway. You can edit the file directly without transmitting the file using the “Edit” button.

5.15.6 EDE FILE

The BACnet objects and functions projected in the gateway can be shared with other partner companies in projects in the form of a specified Excel table. These EDE (engineering data exchange) files are automatically generated and can be accessed on the universal gateway.

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The main navigation bar includes 'Allgemein', 'UGW-C', 'BACnet' (selected), 'LONTalk', and 'Hilfe'. The user is logged in as 'Benutzer: gw'. The language is set to 'Deutsch'. The left sidebar shows the 'BACnet' menu with options: Status, Einstellungen, Device Objekt, Objekte, Dateien, and EDE Datei (selected). The main content area is titled 'BACnet EDE Datei' and contains text explaining the EDE file generation process. The status is 'Stand von:'.

BACnet EDE Datei Stand von:

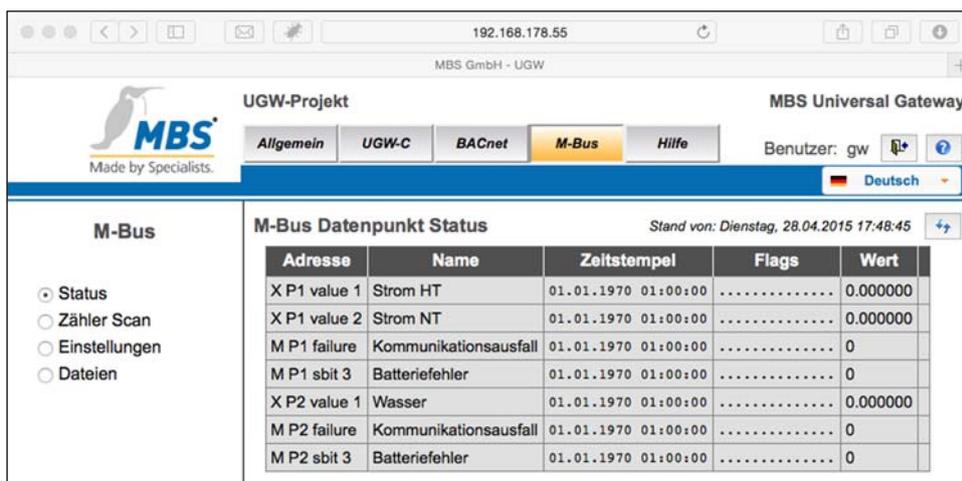
Die im Gateway projektierten BACnet Objekte und Funktionen können in Form einer spezifizierten Excel-Tabelle mit anderen Partnerfirmen in einem Projekt ausgetauscht werden. Diese EDE-Dateien (EDE = Engineering Data Exchange) werden automatisch generiert. Drücken Sie hier um die Generierung und dem anschließenden Download als komprimierte Archiv-Datei auf Ihrem Rechner zu Starten.

5.16 M-BUS DRIVER MENU

If the M-Bus driver is installed on the universal gateway, the M-Bus menu is active.

5.16.1 STATUS

This page displays the current status of all M-Bus counters and the corresponding data points. These data points can be used for data point mapping and for mapping BACnet objects.



The screenshot shows the MBS Universal Gateway interface. The top navigation bar includes the MBS logo, the project name 'UGW-Projekt', and the gateway name 'MBS Universal Gateway'. The 'M-Bus' menu item is highlighted. The main content area displays the 'M-Bus Datenpunkt Status' table, which lists various data points and their current values.

Adresse	Name	Zeitstempel	Flags	Wert
X P1 value 1	Strom HT	01.01.1970 01:00:00	.....	0.000000
X P1 value 2	Strom NT	01.01.1970 01:00:00	.....	0.000000
M P1 failure	Kommunikationsausfall	01.01.1970 01:00:00	.....	0
M P1 sbit 3	Batteriefehler	01.01.1970 01:00:00	.....	0
X P2 value 1	Wasser	01.01.1970 01:00:00	.....	0.000000
M P2 failure	Kommunikationsausfall	01.01.1970 01:00:00	.....	0
M P2 sbit 3	Batteriefehler	01.01.1970 01:00:00	.....	0

5.16.2 M-BUS | COUNTER SCAN

The MBS Gateway offers the option of an M-Bus scan. This searches for M-Bus counters on the bus. Using the identified counters, configuration files for the M-Bus and BACnet objects are then automatically generated.

There are two M-Bus search options available. The identified counters are then polled in a later process as they were identified, i.e. a counter found in a primary address scan is also polled with the primary address. A counter in a secondary address scan is then polled via the secondary address.

5.16.2.1 SEARCHING USING A PRIMARY ADDRESS

In the M-Bus, every counter can be given a unique primary address between 0 and 252. This must be set for every counter during commissioning. During scanning, the addresses in the specified area are polled individually. The identified counters are then listed. Counters that answer are identified.

Advantage of counter polling via primary address:

- Counter polling is faster.
- Changing counters simply involves resetting the same primary address for the counter (this is only true as long as the same counter is installed).

5.16.2.2 SEARCHING USING A SECONDARY ADDRESS

Each M-Bus counter has a unique identification, comparable to the Ethernet MAC address. To communicate with a counter via this address, this identification must be selected using a special M-Bus command. Only then is it possible to communicate with the counter. This must take place before any attempt to communicate with

the counter. *Advantage of counter polling via secondary address: No configuration of addresses in the counters necessary.*

5.16.2.3 SCAN PROCEDURE

There are four steps to the M-Bus scan.

1. Make scan settings and start scan
2. Selection and designation of identified counters
3. Selection of necessary data points for each counter
4. Creation of M-Bus configuration and BACnet objects for the MBS Gateway. Only in this step is the gateway configuration changed.

You can switch between the various steps by clicking on the tabs.

Step 1 – Scan settings

You can set the scan mode and several other parameters for conducting the M-Bus scan here. You can then start the scan.

The screenshot shows a web browser window with the URL 192.168.178.55. The page title is 'MBS GmbH - UGW'. The main header includes the MBS logo and the text 'UGW-Projekt' and 'MBS Universal Gateway'. There are navigation tabs for 'Allgemein', 'UGW-C', 'BACnet', 'M-Bus', and 'Hilfe'. The 'M-Bus' tab is selected. The user is logged in as 'gw' and the language is set to 'Deutsch'. The main content area is titled 'M-Bus Zähler Scan' and shows the following configuration options:

- Scan-Einstellungen**
 - Bitte stellen Sie das notwendige Timing und die Baudraten für den Scan des an diesem Gateway angeschlossenen M-Buses ein.
 - Primär-Adress Modus
 - Sekundär-Adress Modus
 - Wiederholungen: 0 (dropdown) Gibt an, wie oft die Zähler-Selektion wiederholt wird, bevor der nächste Zähler angesprochen wird.
 - Scan mit den Baudraten: 300 600 1200 2400 4800 9600 Für den Scan muß mindestens eine Baudrate ausgewählt werden.
 - Scan-Timeout: 500 (dropdown) Gibt die Zeit in Millisekunden an, in der auf eine Antwort eines Zähler gewartet wird bevor der nächste angesprochen Zähler wird.
 -
- Scan-Ergebnis - Zähler auswählen**
- Datenpunkte auswählen**
- Konfiguration erstellen**

Contrary to many other communication buses, the M-Bus is permitted to operate counters with different baud rates (transmission speeds). There is hence a selection of different Baud rates. The progress with the actual scan status is displayed in a dialogue box.

Step 2 – Selection and designation of identified counters

When the scan ends, the scan results are displayed. The counter list is combined with a previous scan result. Counters that have been re-identified are given the status “OK”, new counters “new” and non-identified counters “-”.

The “Use” checkbox allows you to determine whether the counter is to be used on the universal gateway or no longer considered. You can remove a counter from the list or call up all the information on a particular counter.

For the counter to be used further, it must be given a unique name.

The screenshot shows the MBS Universal Gateway web interface. The top header includes the MBS logo, 'UGW-Projekt', and 'MBS Universal Gateway'. The main content area is titled 'M-Bus Zähler Scan' and displays the following table:

Status	Use	Adresse	Name	Zähler-Information
---	<input checked="" type="checkbox"/>	P-3	Strom	Manufacturer: Relay GmbH, Germany Medium: Compressed Air Version: 41h
---	<input checked="" type="checkbox"/>	P-4	Wasser	Manufacturer: Relay GmbH, Germany Medium: Gas Version: 41h

Below the table is a 'Speichern' button. The interface also includes a left sidebar with navigation options: Status, Zähler Scan, Einstellungen, and Dateien. The top right shows the user 'Benutzer: gw' and the language 'Deutsch'.

Step 3 – Data point selection

Finally, the data points to be used for every ticked counter are polled. To improve recognition, the data point values and units from the previous scan are displayed.

The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '192.168.178.55'. The page title is 'MBS GmbH - UGW'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'M-Bus', and 'Hilfe'. The user is logged in as 'utzer: gw'. The language is set to 'Deutsch'. The main content area is titled 'M-Bus Zähler Scan' and shows the status 'Stand von: Mittwoch, 29.04.2015 08:46:14'. The 'Datenpunkte auswählen' section contains a table of data points:

Use	Wert	Einheit	Beschreibung
<input checked="" type="checkbox"/>	36665.000000	KJ	Energy
<input checked="" type="checkbox"/>	1420329780.000000	Date&Time	Time Point
<input type="checkbox"/>	1155333600.000000	Date	Time Point
<input type="checkbox"/>	21089.000000	KJ	Energy
<input type="checkbox"/>	818982000.000000		Any VIF
<input type="checkbox"/>	-1073544948.000000	Wh	Energy

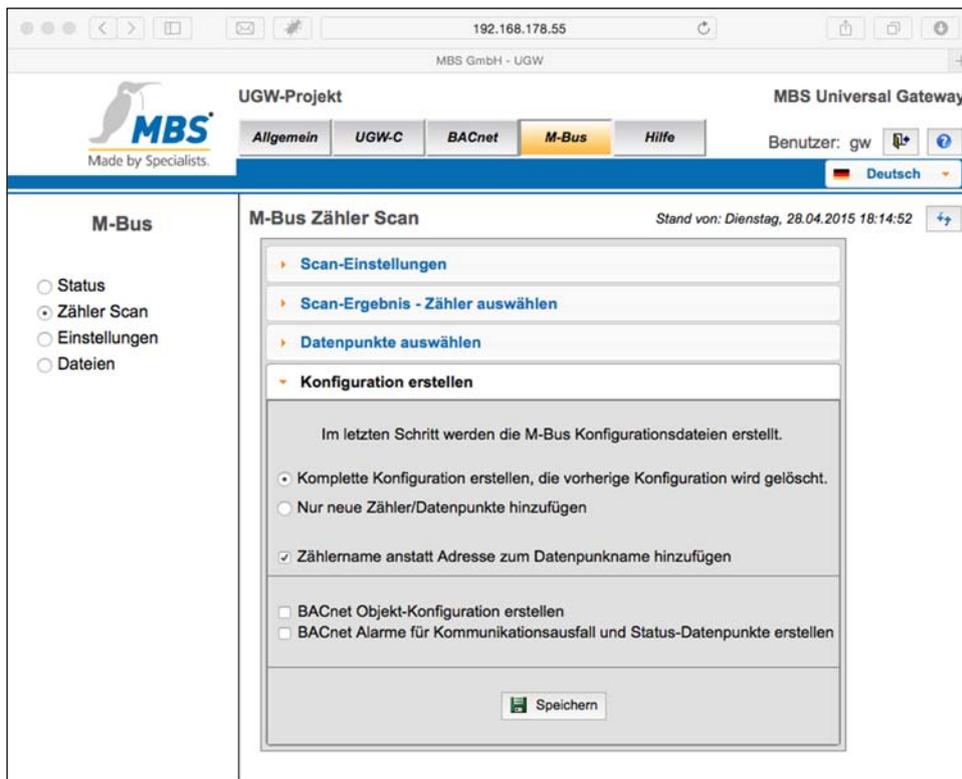
Below the table is a 'Speichern und Weiter' button. The sidebar on the left has radio buttons for 'Status', 'Zähler Scan', 'Einstellungen', and 'Dateien'.

Under the “Data point status” tab there is a “Failure” data point. This indicates whether communication with the counter is successful or if there is an error.

Step 4 – Configuration

The last step is to create the configuration files and add new counters.

There is also the opportunity to map the M-Bus data points as BACnet objects. This also creates and adds the BACnet object configuration.



The screenshot shows the MBS Universal Gateway web interface. The browser address bar displays '192.168.178.55'. The page title is 'MBS GmbH - UGW'. The navigation menu includes 'Allgemein', 'UGW-C', 'BACnet', 'M-Bus' (selected), and 'Hilfe'. The user is logged in as 'Benutzer: gw'. The language is set to 'Deutsch'. The main content area is titled 'M-Bus Zähler Scan' and shows the following steps:

- Scan-Einstellungen
- Scan-Ergebnis - Zähler auswählen
- Datenpunkte auswählen
- Konfiguration erstellen

Under 'Konfiguration erstellen', there is a message: 'Im letzten Schritt werden die M-Bus Konfigurationsdateien erstellt.' Below this are three radio button options:

- Komplette Konfiguration erstellen, die vorherige Konfiguration wird gelöscht.
- Nur neue Zähler/Datenpunkte hinzufügen
- Zählername anstatt Adresse zum Datenpunkname hinzufügen

At the bottom of the configuration section, there are two checkboxes:

- BACnet Objekt-Konfiguration erstellen
- BACnet Alarme für Kommunikationsausfall und Status-Datenpunkte erstellen

A 'Speichern' button is located at the bottom of the configuration area. The status bar at the top right indicates 'Stand von: Dienstag, 28.04.2015 18:14:52'.

5.16.3 SETTINGS

The following settings can be made for the M-Bus driver:

M-Bus Treiber Einstellungen Stand von: Dienstag, 28.04.2015 17:52:01

Parameter	Wert	Beschreibung
Baudrate:	300	First baudrate for M-Bus counter
FixBaud:	<input type="checkbox"/>	Fix baudrate, no automatic baudrate detection
EnableRS485:	<input type="checkbox"/>	RS485 level converter
DisableDTR:	<input type="checkbox"/>	Disable RS232-DTR line to provide the power for the level converter
Interval:	1 Sekunden	Delay (pause) between requests
ReceiveTimeout:	5 Sekunden	Request timeout on query m-bus participant
CacheTimeout:	10 Sekunden	Interval to query m-bus participant
SetInvalid:	<input checked="" type="checkbox"/>	On failure set all datapoints of the m-bus participant to invalid

[Speichern](#)

5.16.4 CONFIGURATION FILES

M-Bus Konfigurationsdateien Stand von: Dienstag, 28.04.2015 17:50:36

Konfiguration	Datei	Gateway -> PC	PC -> Gateway	Editieren
Treiber:	/ugw/config/mbus1.cfg	Start Download	Start Upload	Editieren
Datenpunkte:	/ugw/config/mbus1.txt	Start Download	Start Upload	Editieren
Globale dispatch:	/ugw/config/dispatch.txt	Start Download	Start Upload	Editieren

The entire M-Bus configuration is saved in files. These can be transmitted from and to the universal gateway. You can edit the file directly without transmitting the file using the “Edit” button.

5.17 HELP MENU

Information on the universal gateway is displayed here.

Information on: Displays information on the manufacturer of the universal gateway.

Online help: You can view the Universal Gateway Manual as a PDF document here. You can search and even print the manual via the PDF viewer on your web browser.

BACnet PICS: The BACnet PICS (protocol implementation conformance statement) document lists all supported BIBBs, object types, character sets and BACnet communication options.

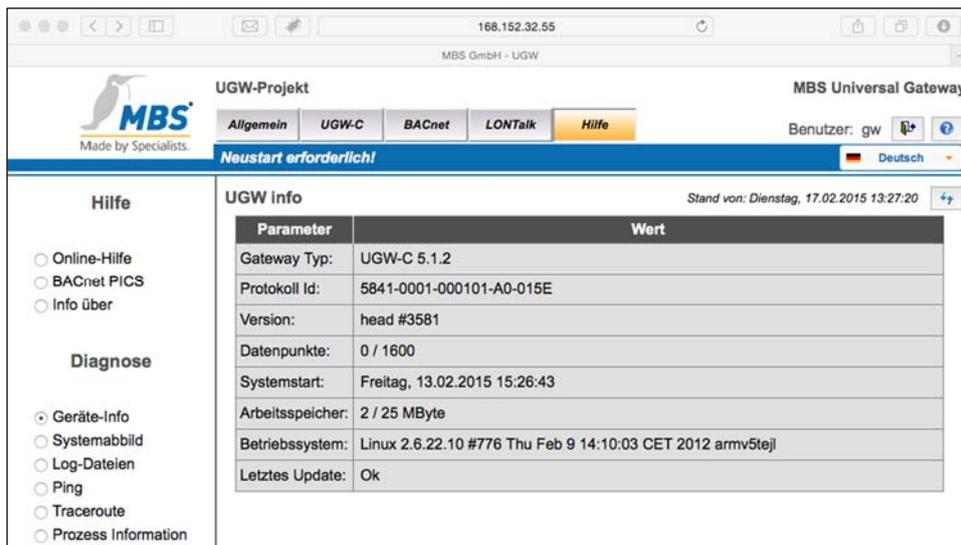
To display the file, your web browser must have a PDF viewer. This is usually standard. If you have any questions, please contact your system administrator.

5.18 HELP MENU – DIAGNOSIS

Communication with connected systems often does not function immediately. The problem can be diagnosed using these tools.

5.19 HELP MENU – DIAGNOSIS – DEVICE INFO

Displays general information on the Gateway.



The screenshot shows the MBS Universal Gateway web interface. The top navigation bar includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The 'Hilfe' menu is expanded, showing options like 'Online-Hilfe', 'BACnet PICS', and 'Info über'. The 'Diagnose' section is also visible, with 'Geräte-Info' selected. The 'UGW info' table displays the following data:

Parameter	Wert
Gateway Typ:	UGW-C 5.1.2
Protokoll Id:	5841-0001-000101-A0-015E
Version:	head #3581
Datenpunkte:	0 / 1600
Systemstart:	Freitag, 13.02.2015 15:26:43
Arbeitsspeicher:	2 / 25 MByte
Betriebssystem:	Linux 2.6.22.10 #776 Thu Feb 9 14:10:03 CET 2012 armv5tej
Letztes Update:	Ok

Gateway type: Manufacturer's internal hardware designation.

Protocol ID: Manufacturer's internal protocol ID.

Version: Universal gateway software version.

System start: Displays the last time the universal gateway was started.

Data points: Displays the number of data points used in relation to the licensed number of data points.

RAM: Displays the size of the used and total RAM in Mbytes. Too little free space can lead to operational problems.

Operating system: Operating system version.

5.20 HELP MENU – DIAGNOSIS – SYSTEM IMAGE

The screenshot shows the MBS Universal Gateway (UGW) web interface. The browser address bar displays '168.152.32.55'. The page title is 'MBS GmbH - UGW'. The navigation bar includes tabs for 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The 'Hilfe' menu is expanded, showing options like 'Online-Hilfe', 'BACnet PICS', 'Info über', 'Geräte-Info', 'Systemabbild', 'Log-Dateien', 'Ping', 'Traceroute', and 'Prozess Information'. The 'Systemabbild' content displays system information such as version, compilation date, and driver details for UGW-C, LONTalk, and BACnet.

```
Name: DPMngr
Version: head
Compiled: Feb 9 2015 13:12:26
Created: 09.02.2015 18:42:04

-----
Dispatching of datapoints: licensed:1500 defined:1 active:1
Driver list:
driver route 1 ugwc
  name: UGW-C
  state: ONLINE sync: NO
  requests: pending: 0 max: 50
  dpfile: </ugw/config/ugwc1.txt>
  cmd: </ugw/bin/Drv.ugwc -u -a $ADR>
  pid: <362>
-----
driver route 10 lon
  name: LONTalk
  state: ONLINE sync: NO
  requests: pending: 0 max: 50
  dpfile: </ugw/config/lon1.txt>
  cmd: </ugw/bin/Drv.lon -u -a $ADR>
  pid: <1480>
-----
driver route 940 bac
  name: BACnet
  state: ONLINE sync: NO
  requests: pending: 0 max: 50
  dpfile: </ugw/config/bac1.txt>
  cmd: </ugw/bin/Drv.bac -u -a $ADR>
  pid: <364>
-----
Datapoint list route 1 - UGW-C (ugwc), number of datapoints: 14:
error <Driver error> setable:NO watched:NO got-value:YES
act: 09.02.15 15:44:19 c.....V I32 0
-----
status <Driver state> setable:NO watched:NO got-value:YES
act: 09.02.15 15:44:19 c.....V I32 4
-----
```

All important information concerning the MBS Gateway is displayed under the System Image menu item. This gives you a compact overview of the system's status and all installed and configured properties. This output is a snapshot at the time you activated the link. The output is not automatically updated.

5.21 HELP MENU – DIAGNOSIS – LOG FILES

The log output can be activated for every communication driver. These are outputs that can provide information on how the program is running and any communication problems. The historical log outputs can be viewed under “Display mapping”. “Start for 60 sec” provides the current log outputs within 60 seconds of pressing the button. This process can be ended by pressing “Stop” at any time.

The screenshot shows the MBS Universal Gateway (UGW) web interface. The top navigation bar includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The 'Hilfe' menu is expanded, showing options like 'Online-Hilfe', 'BACnet PICS', and 'Info über'. The 'Diagnose' section is also visible, with 'Log-Dateien' selected. The 'Log-Dateien' section displays a table of routing configurations:

Routing	Type	Name	Status	Verbose
940	bac	BACnet	Online	ON OFF
10	lon	LONTalk	Online	ON OFF

Below the table, there is a log output window with a 'Start für 60 sec.' button. The log output shows real-time communication data, including timestamps and status messages like 'MDttySl: -->ATI2' and 'MDttySl: No answer from modem!'.

5.22 HELP MENU – DIAGNOSIS – PING

The universal gateway IP connection can be checked via this menu item. The output presented after pressing the start button provides information on the accessibility of other network nodes. You must enter the IP address of the node you want to check in the field.

The screenshot shows the MBS Universal Gateway (UGW) web interface. The top navigation bar includes 'Allgemein', 'UGW-C', 'BACnet', 'LONTalk', and 'Hilfe'. The 'Hilfe' menu is expanded, showing options like 'Online-Hilfe', 'BACnet PICS', and 'Info über'. The 'Diagnose' section is also visible, with 'Ping' selected. The 'Ping' section displays a form for entering an IP address to test connectivity:

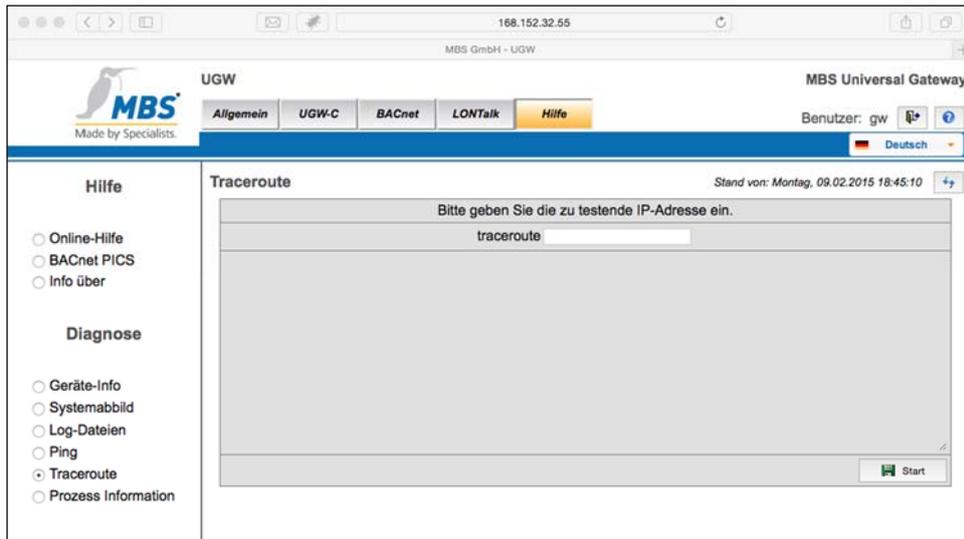
Bitte geben Sie die zu testende IP-Adresse ein.

ping -c3

Start

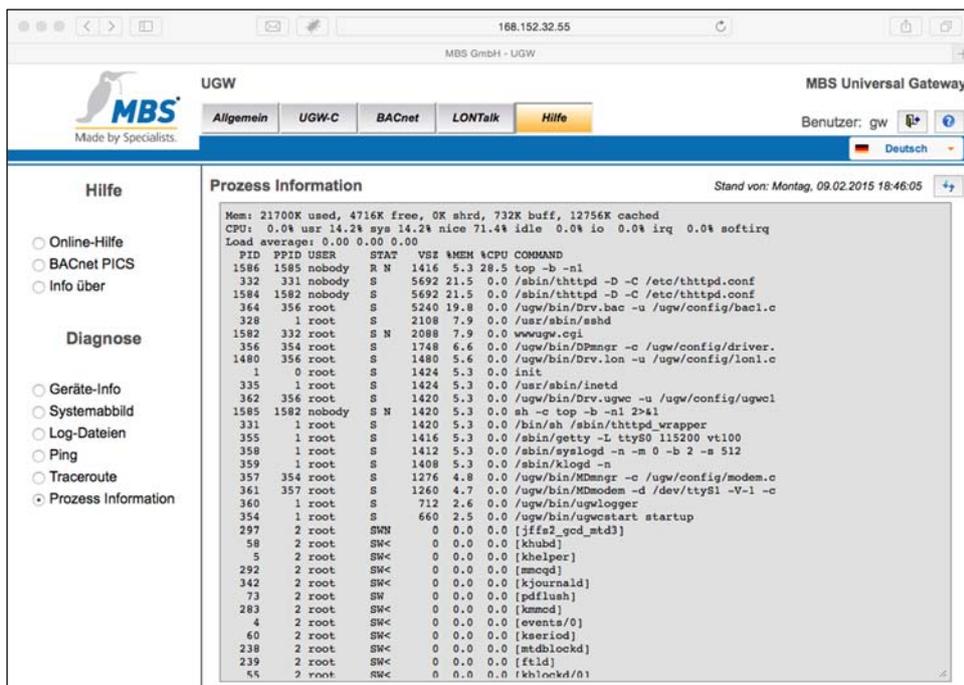
5.23 HELP MENU – DIAGNOSIS – TRACE ROUTE

The universal gateway IP connection can be checked via this menu item. The output presented after pressing the start button provides information on the network path to other network nodes. You must enter the IP address of the node you want to check in the field.



5.24 HELP MENU – DIAGNOSIS – PROCESS INFORMATION

The status of all operating system processes are provided here. The “Mem” (memory usage) and “CPU” (processor utilization) columns provide important information on the process status.



6. Protocol properties and data points

This is a general description only and independent of the existing gateway. With a gateway, different systems (e.g. Ethernet, RS485, ...) are connected to the building automation system for data exchange. Since each bus system works with its own data formats (protocols) (e.g. BACnet, EIB, MS/TP ...), data conversion is performed within the gateway. In order to convert the input format to the output format, an internal intermediate format is used. This makes it possible to convert between any two or more formats. The internal intermediate format consists of individual data points that are to be regarded as the smallest amount of information. A data point classically consists of an address and a value.

Example: Analogue actual value (measured value) and an address which makes measured value selectable.

940.Y bac 34.AV 55 Routing address 940
Data point type Y
Analogue value
Address type bac
BACnet address 34.AV 55

In addition, there may be other properties, such as plain text or special identifiers, which can for example report that the measuring sensor is out of order. To facilitate data exchanges between different protocols, various data point types are provided in the gateway. These data point types meet the specific requirements of each protocol.

6.1 CONTROL VIA CONFIGURATION DATA

The configuration of the gateway occurs via text files. There is one file per driver with protocol information (e.g. baud rate) with the extension .cfg and a file containing the definition of data points with the extension .txt. The file named dispatch.txt contains the mappings of the data points of the protocols to each other.

Examples of configuration files

Name	Erw.	Größe	Datum	Attr.
[..]		<DIR>	12.10.2010 08:35	—
ugwc1	txt	719	15.12.2009 15:22	-a-
ugwc1	cfg	273	03.12.2009 11:09	-a-
mbus1	txt	2.672	08.01.2010 21:01	-a-
mbus1	cfg	1.386	08.01.2010 19:39	-a-
driver	cfg	426	08.01.2010 19:55	-a-
dispatch	txt	4.079	08.01.2010 21:01	-a-
bac1	txt	10.293	08.01.2010 21:01	-a-
bac1	cfg	11.279	08.01.2010 20:05	-a-

The files all have the same basic structure: there are so-called sections (areas) that begin with a line containing a name in square brackets. The lines following belong to such a section up to the next section or to the end of the file. The lines following the section name have the structure Keyword = value.

The files can also include blank and comment lines at any point – introduced by the # character. Upper and lower case are distinguished.

Example 4.1.1 Example of file format 1

```
# Comment first line of file
# First data point
[address1]
name = first sample data point
further_properties = 7
[address2]
# Another comment
name = second sample data point
# Comment last line
```

Comment line
Begin Section with the address address1
Key name with value of first sample data point
Key further_properties with value 7
Begin section with the address address2

Example 4.1.2 Example of file format 2

```
# Data point list
[S 2000.BI 1]
name = Failure Slave 1
query = pe
writecache = yes
bac_polarity = 0
bac_time_delay = 0
bac_alarm_value = 1
bac_notify_type = event
bac_event_enable = (1,1,1)
bac_inactive_text = available
bac_active_text = error

[Y 2000.AI 1001]
name = Slave 1 Value 1
query = pe
writecache = yes
bac_units = 95
bac_cov_increment = 0
bac_resolution = 0.1
```

Comment line
Begin section 1
Key name with value of first sample data point

Begin section with 2

Key name with value of second sample data point

6.2 CLASSIFICATION OF PROTOCOLS

Protocols can be classified according to several criteria. These properties must be considered part of using the gateway.

Protocol properties table

Topology	Point-to-point connection	A point-to-point connection is the connection between two communication partners. Compared to a connection with several participants, the protocol can be simple, since addressing different participants is not necessary.
	Bus	With bus systems, multiple participants can access a transmission medium jointly. The opportunity to connect several devices is laborious: the devices must be uniquely defined, and access to the common transmission medium must be coordinated.
Communication control	MasterSlave	
	PeerToPeer	
Transmission control	Event-controlled	
	Polled	
Transmission medium		

6.3 TERM DEFINITION AND PROPERTIES OF DATA POINTS

Data points are differentiated according to different categories. The data points behave differently depending on their classification and must be treated differently according to the gateway configuration.

6.4 CLIENT-SERVER RELATIONSHIP, DATA POINTS

In a client-server relationship, a server is available to connected clients. The server accepts requests from clients, and then sends the requested data to the client. This is similar with regards to the relation of data points to each other.

Example: A field device controls an actuator with feedback. An automation station is intended to set the control variable and evaluate the feedback. The data points control values and feedback are within the field device, which is then the server. Through reading and writing, the automation station accesses these data points and is thus the client in this communication. Normally, all data points of a device are client as well as server data points. For some protocols, it can also happen that both client and server data points are in one device.

6.5 ACTUAL VALUES – SET VALUES, DATA POINTS

Actual values are values that are measured or calculated by the server, and the results are transferred to the client. Set values are values that are meant to affect the behaviour of the server through the client. In set values, another important distinction is whether the value is transferred only by the client to the server, or whether the actual value of the set value must also be reported back to the client. Example: A typical example

of an actual value is the mapping of a temperature sensor. A typical set value would be a nominal room temperature set value in a room controller.

6.6 ANALOGUE – BINARY – MULTI-LEVEL – MORE COMPLEX TYPES, DATA POINTS

Data points also differ as to which values are allowed.

We distinguish:

- Analogue values (e.g. temperature reading sensor)
- Binary values (e.g. relay output)
- Multi-level values (e.g. status data point with the operating conditions: **Normal operation, Off, Economy mode, Failure**).

In some protocols there are more, sometimes complex data points.

Example: An example of this is utilization times. At times, such values can not or only indirectly be shown in the gateway. These include attributes that can detect whether data points contain a valid value. With set values, there is an automatic value, which causes the server to take over control of the data point itself.

6.7 ABSTRACT DATA POINT IN DATA POINT SYSTEM

For the processing and forwarding of data points within the gateway, information that is exchanged by a protocol is shown in a generalized internal data point within the gateway. The properties of these internal data points allow the mapping of the most commonly used data points in building automation. The linkage between different data points occurs via these internal data points. Due to the decoupled internal data points, it is possible to simply add more protocols to the gateway without needing to change the complete configuration. Thus, the extension of the gateway system by adding another communication protocol in combination with all previously available protocols becomes possible.

6.7 STRUCTURING TECHNICAL ADDRESSES

Within the gateway, data points are identified on the basis of a unique technical address. A complete data point address consists of a routing address, a data point type character, an address type character and a protocol-specific address.

Example:

940.Y bac 34.AV 55 Routing address 940
 Data point type Y analogue value
 Address type bac
 BACnet address 34.AV 55

6.9 ROUTING ADDRESS

With the routing address, called unit, the communication port of the gateway is selected. The routing address is defined for each communication port in the fabrication of the gateway. If a gateway has multiple connections of the same type, the unit typically increases by one. **Example:** If a gateway has FMS Profibus twice, the routing addresses are **250** and **251**.

6.10 DATA POINT TYPE AS PART OF ADDRESS

In order to be able to use the address to derive specified information concerning possible uses, the address may contain a code letter. With this, the direction of data flow and the type of values are determined. The four main types are briefly presented here. For special purposes, other types come into consideration, which will be explained when used.

6.11 DATA POINT TYPES

X analogue value that is transmitted from the communication partner to the gateway.

Y analogue value that can be transmitted in both directions.

M binary or multi-level value that is transmitted from the communication partner to the gateway.

S binary or multi-level value that can be transmitted in both directions.

Attention: There may be several meaningful ways to assign a data point type to a data point. The selected data point type must be used consistently. A frequent source of error in the configuration is to use the same data point for different data point types.

6.12 ADDRESS IDENTIFICATION AS PART OF ADDRESS

In order to be able to correctly interpret the protocol-specific part of the address, an abbreviation of the communication protocol is used.

Examples:

- *mod* for MODBUS addresses
- *pbfms* for Profibus FMS addresses
- *bac* for BACnet addresses

6.13 PROTOCOL-SPECIFIC ADDRESSES

The last part of the address is determined by the communication protocol.

Example for data point addresses in the gateway system

70.M eib 4/5 Routing address 70
Data point type M
Address type eib
EIB group address 4/5

940.Y bac 34.AV 55 Routing address 940
Data point type Y analogue value
Address type bac
BACnet address 34.AV 55

6.14 MAPPING POSSIBILITIES

A mapping basically consists of a source data point and a target data point. Changes in the value of the source data point are transmitted to the target data point. This transfer can additionally be modified by configuration entries. The address of the source data point is entered as a section in the dispatch file. The address of the target data point is registered on another line under the keyword target =.

Example of a dispatch.txt

Mapping of 1 bit value from Profibus FMS on MODbus

[250.M fms 22.2.4]

target = 60.S mod 3 coil 4

Mapping of an analogue value from Profibus FMS on MODbus

[250.X fms 23.4]

target = 60.Y mod 7 holding 30

7. Configuration

7.1 DATA POINT FILES

Which data points are to be used and which properties these data points should have is determined in the data point file of each protocol. The file name is derived from a protocol-specific part of the name, a serial number, which is numbered in the event of multiple connections for the same protocol, and the extension **.txt**.

Example of a gateway with two EIB connections: **eib1.txt** and **eib2.txt**.

The name of the protocol-specific part is mentioned in the description of the designated protocol. The address of the data point serves as the section's name. An abbreviation of the address is used. Since the routing address and the data point type have already been determined by the file, they are not indicated again. This means that the full address **60.X eib 2/3/5** is written in the data point list as **X 2/3/5**.

The use of the following key words is standard:

name	Optionally, you can specify a plain text for the data point here. The text is usually only used for commentary purposes within the gateway. In some protocols, e.g. BACnet, the text is used in the protocol. This is especially mentioned separately each time in the protocol description.
format	Optionally, protocol-related properties of the data point are described here which cannot be derived solely from the address. For example, it is common to transfer analogue values of many protocols using a scaling factor. This scaling factor must then be specified in the configuration, so the gateway can interpret this value correctly. The available data are protocol-dependent and are described in the respective chapters.
writecache	Optional, possible values YES or NO (default). This parameter only has meaning for those parameters whose value is described by the gateway. If the option has the value YES , the gateway remembers a value during a failed entry and repeats its entry attempt when, for example, the connection to the device has been restored. If this option is missing or your value is NO , the value is discarded after a failed entry. A scenario for a meaningful application of this option would be to make a binary fault visual via EIB. If the EIB bus is not connected to the gateway at the time of occurrence of the failure, the gateway naturally cannot report the failure. When the connection has been restored, the fault condition should generally at least be transmitted afterwards. A scenario where this behaviour is not desired would be the switching of room lighting. If at the time of the switching the EIB does not work, it is generally not desired that the switching takes place after the event (e.g. after several days).
query	Specifies how the data point should be picked up via the corresponding protocol. Except for a few exceptions, which are described separately, the value permanent , abbreviated as pe , is used here. This value is standard.
Other options	For some protocols, there are other options that need to be projected at this point. The description can be found in each of the protocol chapters.

7.2 CONFIGURATION FILES

The file name is derived from a protocol-specific part of the name, a serial number, which is numbered in the event of multiple connections for the same protocol, and the extension **.cfg**.

Example of a gateway with two EIB connections:

eib1.cfg and *eib2.cfg*.

The name of the protocol-specific part is mentioned in the description of the designated protocol.

General parameters for each connection are established in the configuration file for each connection. Typically, information such as baud rate, individual addresses or poll rates should be indicated. The content consists of a section with a protocol-specific description and configuration entries.

Example 5.1. Modbus sample configuration file modslave1.cfg

```
# Modbusconfiguration
[MOD]
baudrate = 9600
mode = RS485
# Individual slave address
address = 12
```

7.3 SCHEMATIC FILE

In this file, the allocations between the data points are defined. With the keyword value, a value can be specified to represent the source data point value which is to be transmitted to the target data point. The keyword threshold, depending on the data point type of the source data point, has two different meanings. If the source data point is an analogue value (data point type X or Y), then the specified value has the effect of a threshold, which means that only changes in value where the change is greater than the specified threshold are transferred. If the source data point is an integer value (M or S), the target data point is changed only when the value of the source data point is equal to the specified value.

7.4 STATUS LED

The gateway provides quick orientation of the current operational state via a three-colour status LED. The LED has the colours green and red and as a mixed colour orange. During system initialization, the LED lights up orange. After the initialization, the status LED flashes green.

Table: status LED during normal operation

Colour code	Definition	Data point
Green flashing	Normal state	
Alternately orange/green flashing	Projected indicator	S LED info
Alternately red/green flashing	Usually a failure parameter on defect	S LED warning
Red flashing	All failure parameters on defect	S LED error
Permanent red light	At least one driver does not start properly	

The data points determine the LED colour code with ascending priority. The warning and error parameters are set automatically by the gateway in accordance with the projected failure parameters. The info parameter is available for the normal dispatch mechanism and may be used for optical signalling of a collective defect, for example.

7.5 TYPICAL DATA POINT SCHEMATA

This section shows schematically, how typical data point mappings are constructed. In the examples, pseudo addresses are used.

Example of actual analogue value

Entry in file protA.txt

```
[X address1]
name = outside temperature of
protocol A
query = pe
```

Entry in file protB.txt

```
[Y parameter 16]
name = outside temperature to
protocol B
query = pe
```

Entry in file dispatch.txt

```
# Mapping of the outside
temperature
[110.X protA address1]
target = 140.Y protB parameter 16
```

Example of actual binary value

Entry in file protA.txt

```
[M address7]
name = pump failure of protocol
A
query = pe
```

Entry in file protB.txt

```
[S parameter 23]
name = pump failure in protocol B
query = pe
```

Entry in file dispatch.txt

```
# Mapping of pump failure
[110.M protA address1]
target = 140.S protB parameter 23
```

Example of multi-level set value without feedback

Entry in file protA.txt

```
[M address8]
name = operating status of
protocol A
query = pe
```

Entry in file protB.txt

```
[S parameter 29]
name = operating status in
protocol B
query = pe
```

Entry in file dispatch.txt

```
# Mapping of pump failure
[110.M protA address8]
target = 140.S protB parameter 29
```

Example of multi-level set value with feedback

Entry in file protA.txt

```
[S address8]
name = operating status of
protocol A
query = pe
```

Entry in file protB.txt

```
[S parameter 29]
name = operating status in
protocol B
query = pe
```

Entry in file dispatch.txt

```
# Mapping of the operational status
[110.S protA address8]
target = 140.S protB parameter 29
[140.S protB parameter 29]
target = 110.S protA address8
```

Sample mapping of a two-stage actual value (1 = day, 2 = night on two binary values.)

Entry in file protA.txt

```
[M address83]
name = operating status of
protocol A
query = pe
```

Entry in file protB.txt

```
[S parameter 129]
name = day mode in protocol B
query = pe
[S parameter 130]
name = night mode in protocol B
query = pe
```

Entry in file dispatch.txt

```
# Mapping of the operational status
[110.S protA address83]
threshold = 1
value = 1
target = 140.S protB parameter 129
[110.S protA address83]
threshold = 1
value = 0
target = 140.S protB parameter 130
[110.S protA address83]
threshold = 2
value = 0
target = 140.S protB parameter 129
[110.S protA address83]
threshold = 2
value = 1
target = 140.S protB parameter 130
```

Example of projecting MBus to BACnet

File: bac1.txt

```
[Y 2000.AI 1001]
name = Slave 1 Value 1
query = pe
writecache = yes
bac_units = 95
bac_cov_increment = 0
bac_resolution = 0.1
```

File: dispatch.txt

```
# Slave 1 Value 1
[60.X mbus P26 value 1]
target = 940.Y bac 2000.AI 1001
```

File: mbus1.txt

```
[X P26 value 1]
name = Slave 1 Value 1
query = pe
```

8. FAQs

Problem: You want to access MBS Gateway and do not know the IP address.

Solution 1:

If your computer is set as a DHCP client (the default), you can use the DHCP server of the MBS Gateway to provide an IP address. Press and hold the compact reset switch for at least 10 but not more than 15 seconds. When the status LED flashes green/red alternately, the DHCP server is enabled. Then connect the network cable to your computer, the IP address will be assigned automatically. To access the configuration pages of the MBS Gateway web server, launch your preferred web browser and type the IP address 169.254.0.1 into the address field. Then enter your username and password. Default setting on delivery:

Username: gw

Password: GATEWAY

The password can be changed in the menu item Setup. The MBS Gateway home page is polled and displayed.

Solution 2: (computer skills and an installed BACnet protocol required)

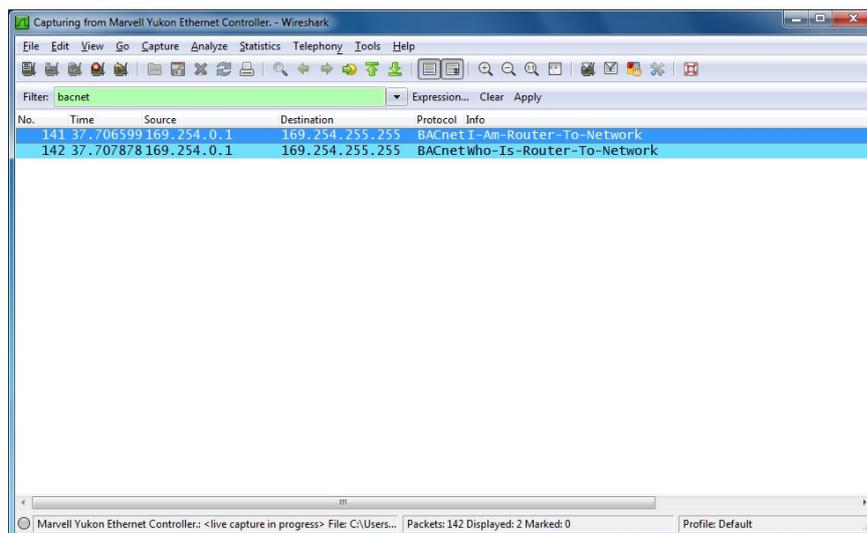
When BACnet is installed on the gateway (see sticker on the casing of the device), it can be combined with the Wireshark program (freeware, available at: <http://www.wireshark.org>) to sniff the network traffic and to read out on the basis of the reports. Start by selecting the Wireshark program and choose Capture Options. Check the settings in the next window and press the Start button. The Capture window will appear. Set the filter to bacnet. Then start the MBS Gateway, and wait for the output shown in the picture.

The IP is shown below:

Source: 169.254.0.1 (in this example)

Network protocol: BACnet

Info: I-Am-Router-To-Network



Problem: You do not know the password to log on to the web console.

Solution: In this case, you can only revert the MBS Gateway back to the factory settings.

Attention: In this case, you will lose all settings and parametrizations of the compact

To set the MBS Gateway back to the default setting, press and hold the reset button for longer than 15 seconds. The status LED flashes orange, and after copying the factory configuration a restart will be made.

Then the gateway should be reset to the default settings:

IP address: 169.254.0.1

Username: gw

Password: GATEWAY

Problem: RS485 connection problems

Solution: For RS485 connections, if possible, do not connect the GND, especially not between switching cabinets with different GND potentials.

Problem: RS485 A B wires reversed.

Solution: With swapped A B data lines, a connection does not take place. The yellow LED lights up constantly.