

mbSPIDER[®]

OPERATING INSTRUCTIONS V2.2.0 DR 06
2016/01/15





These operating instructions describe the functions and application of the **mbSPIDER** Series 9xx from Firmware Version 2.2.0. Please read them and store them carefully.

The latest information and updates can be found on our website www.mbconnectline.com. We welcome comments, suggestions for improvement or constructive criticism at any time.

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MB Connect Line confirms that the **mbSPIDER** (MDH9xx) device complies with the basic requirements and all other relevant provisions of European Directive 2006/95EC. To see the Declaration of Conformity, visit: <http://www.mbconnectline.com>

Release Notes:		
Version	Date	Comment
V 2.2.0 DR 01	2015/07/24	More detailed description of the chapter "Scripts".
V 2.2.0 DR 02	2015/07/30	More detailed description of the chapter "Adding a new tag".
V 2.2.0 DR 03	2015/08/04	Chapter "Adding a new tag": Tag description added (Table) for Server Type S7_ISOTCP.
V 2.2.0 DR 04	2015/08/05	Chapter "Adding a new tag": More detailed description ("Address" in Table) for Server Type KNX INet IP Client / KNX INet IP Server_Client.
V 2.2.0 DR 05	2015/11/13	Additional description about Server Type KNX INet IP Client / KNX INet IP Server_Client.
V 2.2.0 DR 06	2016/01/15	Additional advice about changing the default login information.

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General explanation of symbols



Note



Important

Explanation of symbols (icons) of **mbSPIDER** web interface



Edit



Repeat



Delete



New element



Drop-down box



Input box

1. General

1.1 Brief description

mbSPIDER – Data modem with web visualization

The programmable data modem with alarm function and web visualization is used to record consumption values and to monitor systems and buildings.

The **mbSPIDER** allows continuous recording of counter levels, measured values, logical states and analog values.

The **mbSPIDER** receives and saves the current counter levels, measured values, logical states and analog values of systems and buildings.

A web browser* can be used - also via a smartphone or tablet PC - to display, evaluate and visualize all the measured values. All the relevant data of the connected devices are simply saved via script control.

1.2 Features

- Complete configuration of the **mbSPIDER** via the integrated web interface remotely or using a locally connected computer.
- Setup of secure connections through integrated Firewall via OpenVPN.
- Alarm management:
 - Message service via e-mail or text message
 - Extended actions (data download, signal preprocessing, etc.) freely programmable using script language
- Integrated memory to back up all the settings and log data

1.2.1 Scope of service/limits

Feature	Max. number of system/ display options
Server	4
Scaling	64
Tags	256
Widgets	64
Scripts	64
Users	64
User groups	64
Actions	64
Screens	64
Monitoring	64
Widgets per view	16

* Almost every HTML5 compatible web browser.

2. Safety instructions

- The data modem is built to the latest technological standards and recognized safety standards (see Declaration of Conformity). **CE FC**
- Install the data modem in a dry location. Do not allow liquid to get inside the device, as this could result in electric shocks or short circuits.
- The data modem is for indoor use only.
- The manufacture shall not accept any guarantee for modifications made by the user. Improper handling and non-observance of the description shall render all warranty claims null and void.
- Mounting/electrical installation may only be performed by a qualified electrical specialist.
- All work on the device (e.g. on interfaces, SIM card replacement, replacing the antenna, etc.) may only take place when the system is de-energized.
- Dispose of the device in line with European regulations and German legislation on electronics and electronic devices, and not in general household waste. The device should be disposed of accordingly.



3. Technical data

Voltage	10 - 30 V DC
Max. current consumption	
• MDH900/910	50 mA (at 24 V)
• MDH905/915	75 mA (at 24 V)
• MDH901/906/911/916	100 mA (at 24 V)
Protection class	IP 20
Area of application	Dry environments
Operating temperature range	-20 - 75°C
Storage temperature range	-40 - 75°C
Humidity	0 - 95 % (non-condensing)
Weight	
• MDH900	160 g
• MDH901,905,906	170 g
• MDH910	290 g
• MDH911,915, 916	300 g
Dimensions	
• MDH900	97 mm x 72 mm x 62 mm (H x W x D)
• MDH901,905,906	97 mm x 72 mm x 75 mm (H x W x D)
• MDH910	97 mm x 110 mm x 32 mm (H x W x D)
• MDH911,915,916	97 mm x 110 mm x 46 mm (H x W x D)

MDH905/915 GPRS class Supported frequency bands	10 (max. 53.6 kBit/s) 850, 900, 1800, 1900 MHz
MDH906/916 3G modem Supported networks Supported frequency bands HSxPA category	GPRS EDGE UMTS HSPA+ 800, 850, 900, AWS 1700, 1900, 2100 MHz Downlink HSDPA Category 14 (21 Mbps), Uplink HSUPA Category 6 (5.76 Mbps)
MDH901/911 WLAN	IEEE802.11b/g & 802.11n (1T1R mode) up to 150 MBit/s
WLAN specification	EU (2.412 GHz-2.472 GHz, 1-13 Channel) USA (2.412 GHz-2.462 GHz, 1-11 Channel) WPA/WP2, 64/128/152-bit WEP, WPS 802.11b: 1,2,5.5,11 Mbps 802.11g: 6,9,12,18,24,36,48,54 Mbps 802.11n: (20 Mhz) MCS0-7, up to 72 Mbps 802.11n: (40 Mhz) MCS0-7, up to 150 Mbps
Country of application	
MDH900,901,910,911 MDH905,906,915,916	Global Dependent on available GSM network or provider
USB interface	USB 2.0 Host
Ethernet port (usable via VLAN as LAN and WAN)	10/100 MBit/s full- and half-duplex mode, automatic recognition, patch cable/crossover cable
Interface (COM)	RS-232/485
Features	OpenVPN, FTP, SQLite database, web server
Digital inputs	2x (low 0-11 V, high 12–30 V)
Analog inputs	4x (2 x 1 – 10 VDC and 2 x 4 – 20 mA (12-bit))
Relay output	1x 24 VDC/AC/1 A, changeover contact
FCC ID:	R17HE910
General certificates	EN 61000-6-4:2011-09,EN 61000-6-2:2006-03

4. Included in delivery

Please check that your delivery is complete:

Your **mbSPIDER** model

<p>MDH900</p> 	<p>MDH901</p> 	<p>MDH905/906</p> 
<p>MDH910</p> 	<p>MDH911</p> 	<p>MDH915/916</p> 

<p>Network cable (1:1 assignment) <i>all models</i></p> 	<p>GSM antenna <i>for device variants with GPRS modem: MDH905/906/915/916</i></p> 	<p>WLAN antenna <i>for device variants with WLAN module: MDH901/911</i></p> 	<p>Quick Start Guide</p> 
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If any of these parts are missing or damaged, please contact:

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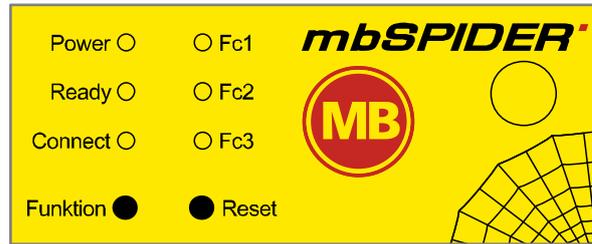
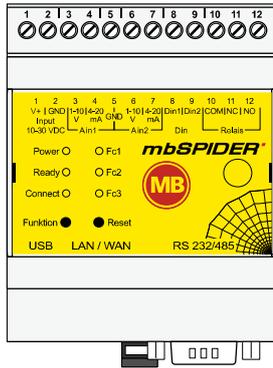
Website: www.mbconnectline.com

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Please keep the original box and the original packaging in case you need to send the device for repair at a later date.

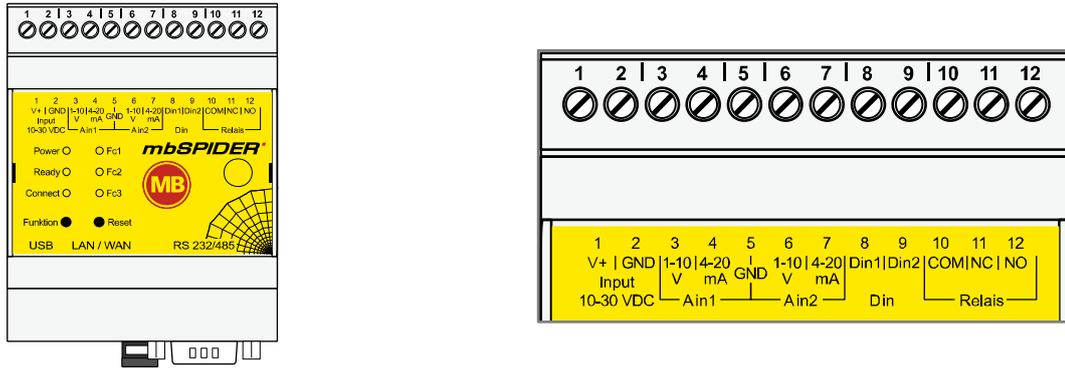
5. Displays, controls and connections

5.1 View of front of the device:



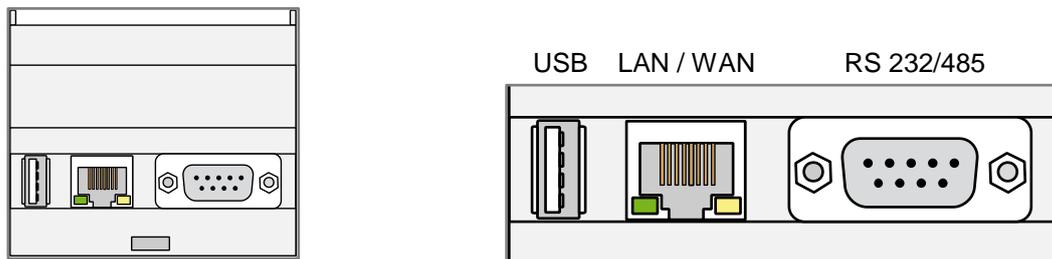
Designation	LED status		Description
Power	Off	○	Power source for the mbSPIDER is switched off or the device is not connected to the power source / power pack.
	On	●	Power source is connected to terminal block and switched on.
Ready	Flashing	★	After the device is switched on, the flashing Ready LED indicates the boot sequence.
	On	●	The mbSPIDER is ready
Connect	Off	○	No active OpenVPN connection
	On	●	Connection to Internet
	Flashing (1.5 Hz)	★	OpenVPN connection active
	Flashing (3 Hz)	☀	Internet or VPN connection being established
Fc1	Fc1 + Fc2 flashing	★	Configuration file detected on USB
	Fc1 + Fc3 flashing	★	Firmware file detected on USB
	Directly controllable	○ ● ★	Via LUA script on when server type selection is <i>System server</i>
Fc2	Fc2 + Fc1 flashing	★	Configuration file detected on USB
	Flashing	★	Downloading firmware file
	Directly controllable	○ ● ★	Via LUA script or when server type selection is <i>System server</i>
Fc3	Fc3 + Fc1 flashing	★	Firmware file detected on USB
	Flashing	★	Downloading configuration file
	Directly controllable	○ ● ★	Via LUA script or when server type selection is <i>System server</i>
Designation	Function		Description
Function	Push-button		For firmware update, loading the factory settings and downloading the configuration file from the web portal mbCONNECT24
Reset	Push-button		Pressing the button causes a reboot (so-called cold start).

5.1.1 View of device front panel - terminal block



Terminal	Designation		Description
1	V+	Input 10-30 VDC	Power supply connection 10-30 VDC
2	GND		0V DC connection
3	1-10 V	Ain1	Analog input 1 (voltage)
4	4-20 mA		Analog input 1 (current)
5	GND		0 V DC connection
6	1-10 V	Ain2	Analog input 2 (voltage)
7	4-20 mA		Analog input 2 (current)
8	Din1	Din	Digital input 1
9	Din2		Digital input 2
10	COM	Relay	Relay output 24 VDC/AC/1 A changeover contact
11	NC		
12	NO		

5.2 View of underside of device

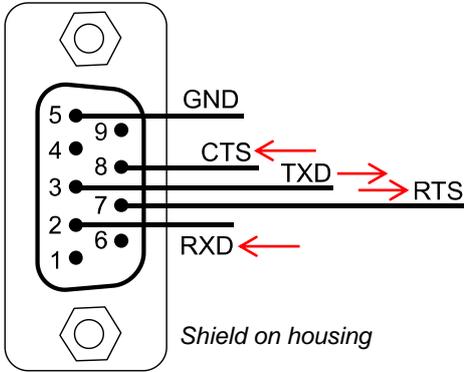


	Designation	Description
Ethernet inter-face 100 Mbit/s via VLAN, usable as LAN and / or WAN	USB	Port for USB stick
	LAN	Local network port (e.g. machine network).
	WAN	WAN connection of the device (customer network, external router, etc.)
	RS232/485	Serial port for connection of devices with RS232&RS485 interface

6. Interface assignment

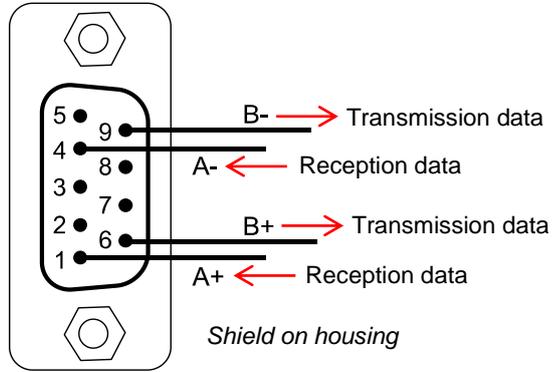
6.1 Serial interface

6.1.1 RS232 connection



RS232 connection		
Pin	Signal	Direction
2	RxD	In
3	TxD	Out
5	GND	
7	RTS	Out
8	CTS	In

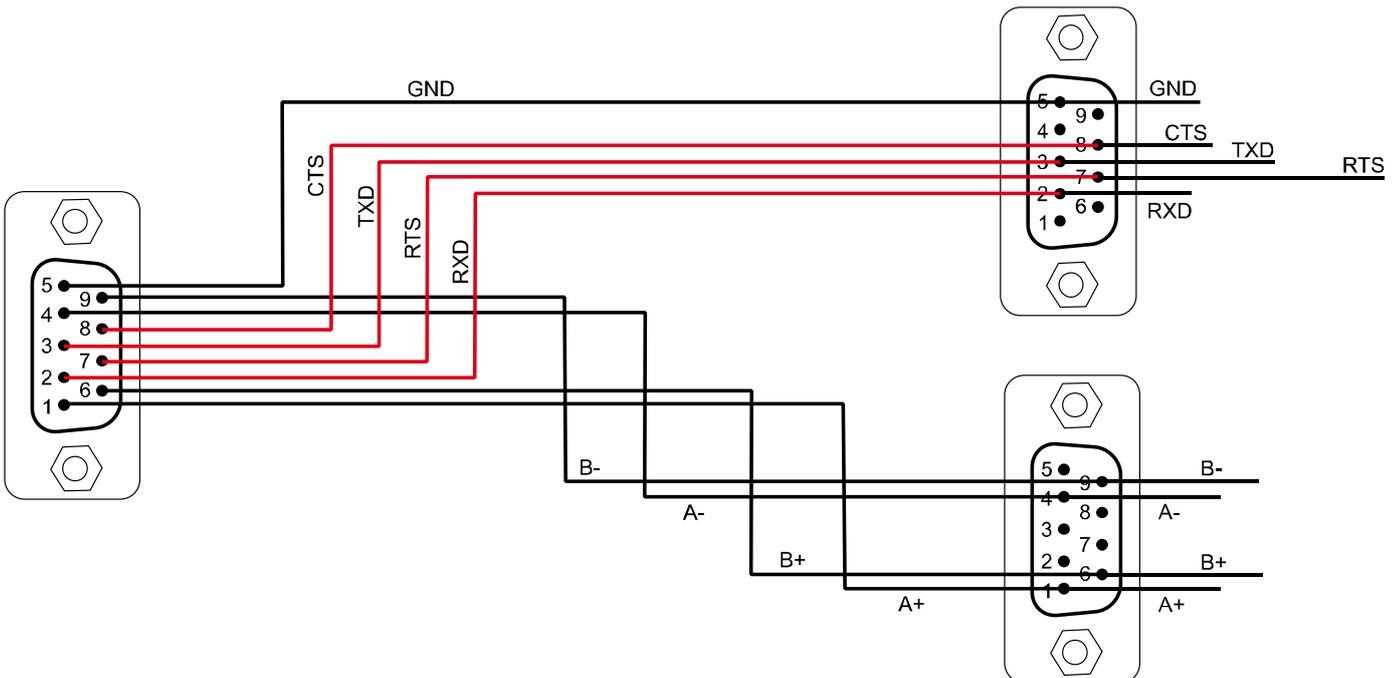
6.1.2 RS485 connection

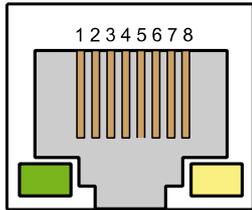


RS485 connection		
Pin	Signal	Direction
1	A+	In
4	A-	In
6	B+	Out
9	B-	Out

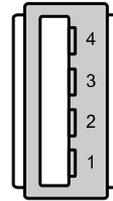
6.1.3 RS232/485 connection (Y cable)

The use of a Y cable (available as an accessory: Art no. 8274) permits parallel connection of RS232 and RS485 connections.



6.2 Ethernet (VLAN)


Connection	Signal
1	RD+
2	RD-
3	TD+
4	RCT
5	TCT
6	TD-
7	NC
8	-

6.3 USB


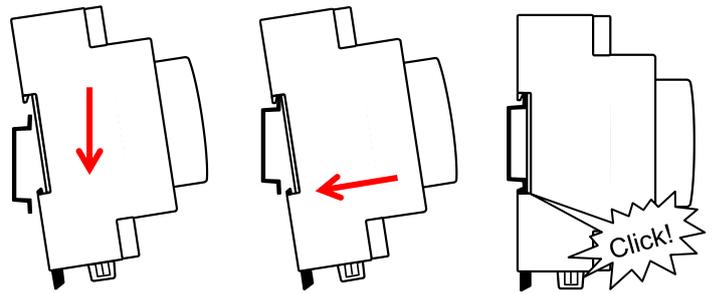
Connection	Signal
1	VCC (+5 V)
2	- Data
3	+Data
4	GND

7. Mounting

7.1 Switchgear cabinet hat rail mounting

The **mbSPIDERs** (MDH900/905/906) are intended for switchgear cabinet installation. The devices are designed for mounting on hat rails (according to DIN EN 50 022).

Snap the **mbSPIDER** in the DIN hat rail. To do this, position the upper guide on the hat rail and then press the device downwards against the rail until fully engaged.

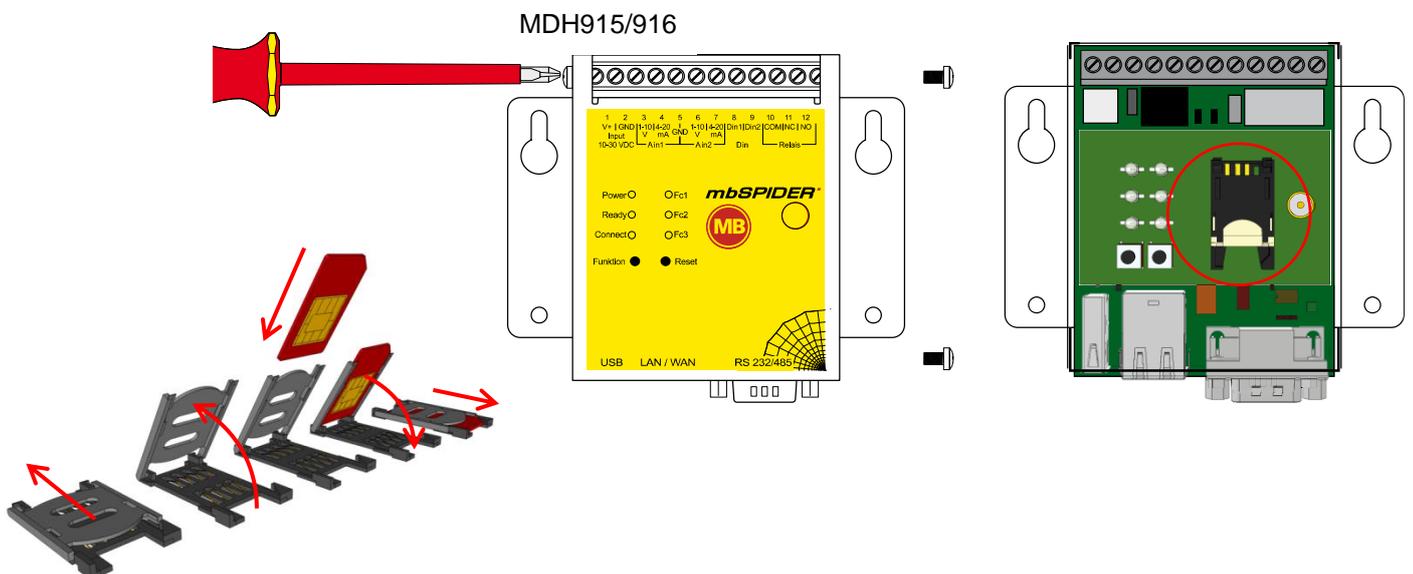
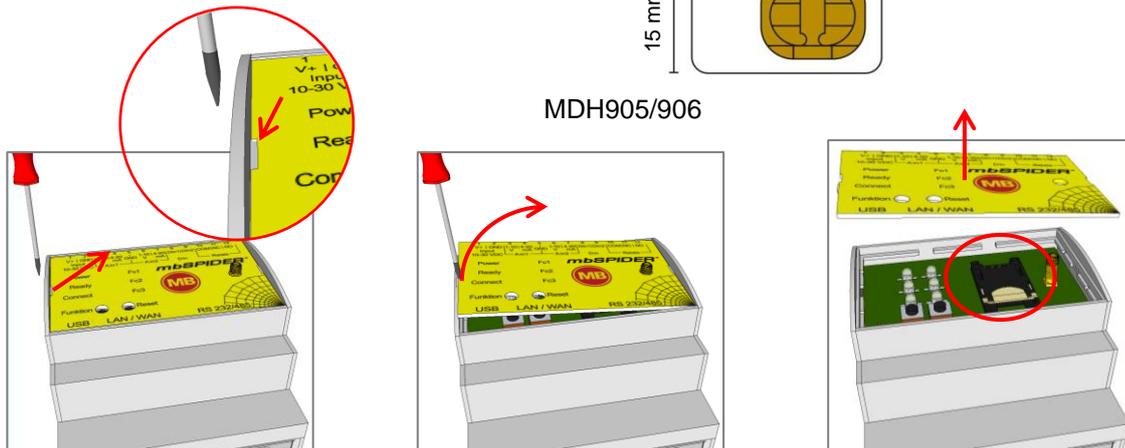
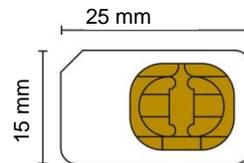


7.2 Wall mounting

The models MDF910/915/916 are intended for simple screw-on wall mounting (optional retainer for hat rail mounting).

8. Inserting the SIM card (mini SIM)

(Models MDH905/906/915/916)



9. First time operation

9.1 Connection to the power source



CAUTION

Before connecting the **mbSPIDER** to a network or PC, first ensure that it is properly connected to a power source, otherwise it may cause damage to other equipment. You should therefore follow the instructions given below!

Connect the (10-30 V DC) power source to the terminals 1(V+) and 2(GND).
Ensure correct polarity!

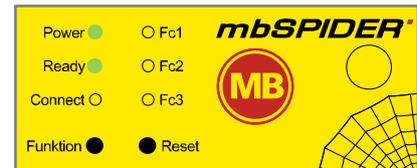
After switching on the power source:

Power LED lights up ●.

After 20-30 seconds: Ready LED flashes ✨.

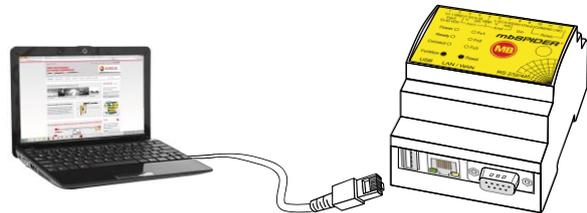
After approx. 60 seconds: Ready LED lit up continuously ●.

The **mbSPIDER** is now ready for operation.



9.2 Connecting the **mbSPIDER** with the configuration PC

To be able to access the web interface of the device, you must connect it to a configuration PC using the supplied network cable.



9.3 Configuration prerequisites

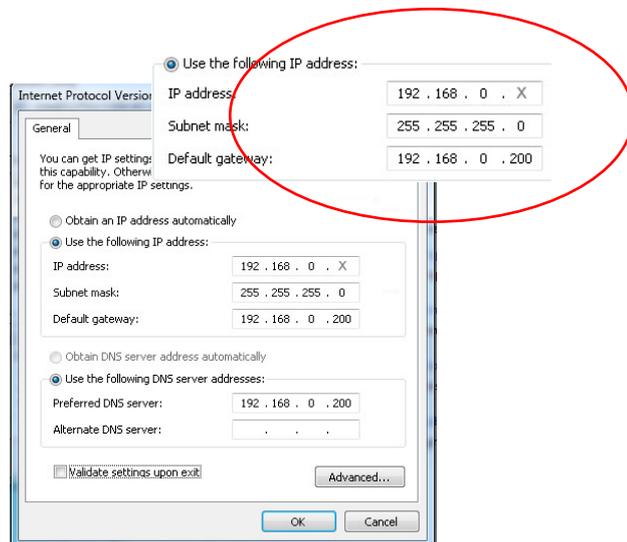
The configuration PC must possess a network card and an Internet browser (e.g. Mozilla Firefox, Google Chrome, Internet Explorer etc.) must be installed on the computer.

The required settings on your PC are as follows:

As the **mbSPIDER** is delivered from the factory with the IP address **192.168.0.254**, set the IP address of the computer in such a way that it is within the network **192.168.0.X (X: Variable)**.

The IP address must be in the network 192.168.0.X and may not be occupied by another network subscriber!

The subnet mask must be **255.255.255.0**.



For instructions on how to create the required settings on a PC, please see the next page. If you already know how to set the IP address and subnet mask, set them as described above and then skip the following chapter.

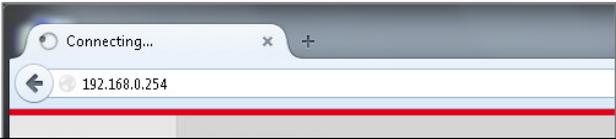
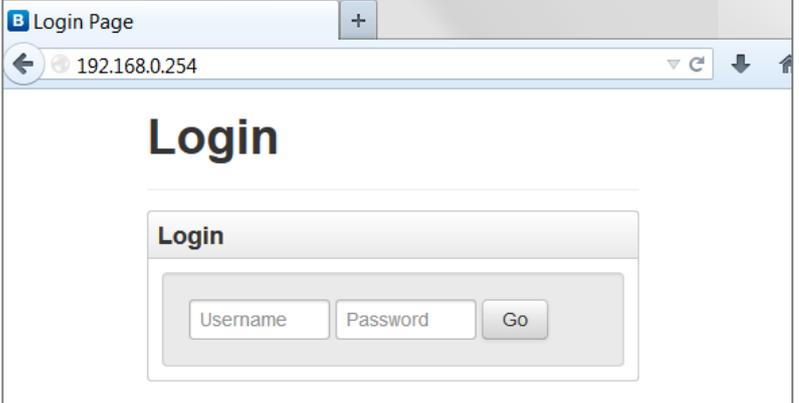
Commissioning (continued)

9.3.1 How to set the computer address (IP address) and subnet mask (Windows 7)

<p>To set the IP address, proceed as follows:</p> <ul style="list-style-type: none"> In the Windows Start menu, select Control Panel ① → Network and Sharing Center ②. 	
<ul style="list-style-type: none"> Click Local Area Connection ③ and select the option Properties ④. 	
<ul style="list-style-type: none"> In the next window, double-click the option "Internet Protocol Version 4 (TCP/IPv4)" ⑤. 	
<ul style="list-style-type: none"> In the subsequent window, enter the appropriate IP address. An appropriate IP address would be e.g. 192.168.0.2. <p>CAUTION The IP must be in the network 192.168.0.X and may not be occupied by another network subscriber!</p> <ul style="list-style-type: none"> As the subnet mask, enter 255.255.255.0. To save and close the settings, click OK or Close in the opened window ⑥. 	

Commissioning (continued)

9.4 Opening the *mbSPIDER* web interface

<p>Open your browser and enter the device's IP address in the address bar.</p> <p>The factory setting is: 192.168.0.254</p>	
<p>Log into the device as follows:</p> <p>Username: admin Password: admin</p> <div data-bbox="76 629 620 779" style="border: 1px solid red; padding: 5px;"><p style="text-align: center;">ADVICE! Change unconditionally and without delay the default login information!</p></div>	

10. First start

After successfully logging in, you will see the **First start page of the mbSPIDER**. Here, select whether the device is to be connected to the portal (cloud server) or whether you want to operate the device independently (classic data modem).

<p style="text-align: center;">Cloudserver select here if you want to use this unit with a cloudserver</p> <p style="text-align: center;"> Cloudserver</p>	<p>Device is used in conjunction with the portal (mbCONNECT24)</p>
<p style="text-align: center;">Classic datamodem select here if you want to use this unit as a classic datamodem</p> <p style="text-align: center;"> Classic datamodem</p>	<p>Device should be operated independently. Without connection to the portal.</p>

If you select a classic data modem, then you can skip this chapter and continue in Chapter 11.

10.1 Cloud server

Here, a distinction is made about whether you wish to include the device in the **mbCONNECT24 V1.x** portal or in the RSP **mbCONNECT24 V2.0**.

10.1.1 Portal mbCONNECT24 V1.x

If you are operating the device in the **mbCONNECT24 V1.x**, then the following applies:

- The visualization and system configuration takes place via the device. You can carry out part of the system configuration via the portal and then transmit it to the device automatically.
- You can reach the device desktop/visualization configuration/system configuration via mbWEB2go.
- You are operating a central user and machine administration.

10.1.2 RSP mbCONNECT24 V2.0

If you are operating the device in the RSP **mbCONNECT24 V2.0**, then the following applies:

- The complete visualization and system configuration takes place via the portal.
- You can access the device desktop via mbWEB2go. As the entire device configuration is carried out by the portal, the detour to the device is not necessary.
- Offers you the central administration of all users, systems and terminals.

10.2 Classic data modem

The complete visualization and system configuration takes place via the device. You are thus operating the device without the function of the portal.



If you select a classic data modem, then you can skip this chapter and continue in Chapter 11.

10.3 Quick start

<p>Internet Unittype: MDH901 - Serialnumber: 1315901</p> <p>Enter the settings that are necessary for the internet connection!</p> <p>Internetconnection: External Router External Router WLAN</p>	<p>In the first step, select the connection to the Internet. The selection options are dependent on the device type.</p>
<p>LAN Settings Unittype: MDH901 - Serialnumber: 1315901</p> <p>Enter your LAN Settings for the ethernet connection</p> <p>IP-address: 192.168.0.254 Netmask: 255.255.255.0</p>	<p>In the next step, you can adjust the LAN settings of the device.</p>
<p>WAN Settings Unittype: MDH901 - Serialnumber: 1315901</p> <p>Enter your WAN Settings for the ethernet->internet connection</p> <p>WAN Typ: as LAN Gateway: 192.168.0.200 DNS Server: 8.8.8.8 Use Proxy: <input type="checkbox"/></p>	<p>If, in Step 1, External Router/Firewall was selected, then you can make the WAN settings here.</p>
<p>Modem Unittype: MDH905 - Serialnumber: 4513901</p> <p>Enter your settings for a modem->internet connection</p> <p>Number: *99***1# Modem Init: Modem Init Network (Provider): Mobile APN (Provider): Entry for Mobile APN (Provider) SIM Pin: SIM Pin User: User Password: Password Password Confirmation: Password Confirmation</p>	<p>If, in Step 1, Modem was selected, then you can make the modem settings here.</p>
<p>WLAN Settings Unittype: MDH901 - Serialnumber: 1315901</p> <p>Enter your WLAN Settings for the WLAN->internet connection</p> <p>WLAN Typ: Static IP IP-address: 192.168.2.154 Netmask: 255.255.255.0 Gateway: 192.168.2.1 DNS Server: DNS Server</p>	<p>If, in Step 1, WLAN Modem was selected, then you can make the WLAN interface settings here.</p>
<p>WLAN Settings Unittype: MDH901 - Serialnumber: 1315901</p> <p>Enter your WLAN Settings for the connecting to the Accesspoint</p> <p>SSID: SSID Authentication Mode: WPA2PSK Encrypt Mode: Key: Key Use Proxy: <input type="checkbox"/></p>	<p>In this step, you set the WLAN settings, such as SSID Key, etc.</p>

<h3>Cloudserver</h3> <p>Unitytype: MDH901 · Serialnumber: 13159016</p> <p>Cloudserver settings</p> <p>Cloudserverlist: USA/Canada</p> <p>Cloudserver address/name: vpn.mbconnect24.us</p> <p>Session-Key: Session-Key</p>	<p>In the next setting screen, select the connection to the cloud server.</p>
<h3>Finish</h3> <p>Unitytype: MDH901 · Serialnumber: 13159016</p> <p>Click on Apply to Save and Enable the Settings on the Device.</p>	<p>Now, save the settings made and the device connects to the set cloud server.</p>

The status page shows all the steps required to set up a connection between the device and the portal. When all steps have been successfully completed, each step has a green check mark. The device now establishes a connection to the portal and collects its configuration from the portal.

Language: English

Welcome | Setup | Reboot »

Unitytype: MDH905 · Serialnumber: 281390500052

1. MDH905 ✓_i
2. ↓ ✓_i
3. ✓_i
4. ↓ ✓_i
5. ✓_i

If you created the device in the RSP **mbCONNECT24 V2.0**, then the status page always starts with the individual steps when you access the device desktop.

In the upper part of the page, you will find the following elements:

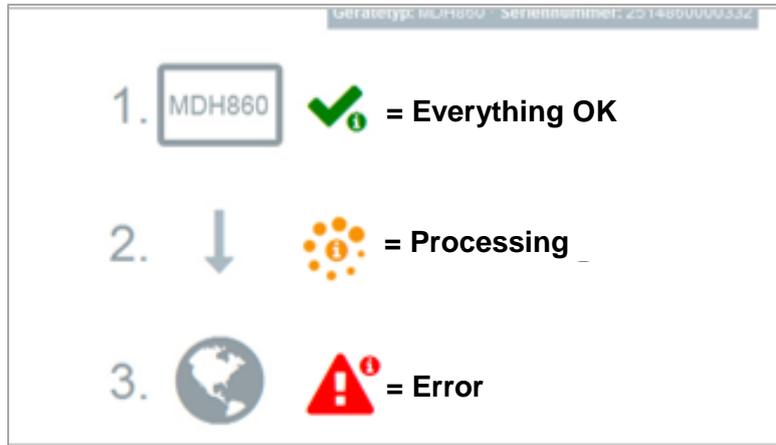


The device type and serial number are displayed here. (The display may vary, depending on the device type)



You can see detailed information about the individual steps here. You can obtain information on the individual steps by clicking the icon, shown as:

Green check mark, orange circle or red triangle



1. MDH905

Step 1 - Device

Depending on the type of device, all modem, WLAN or WAN interface data is shown first.

1. MDH905

2. ↓

3.

4. ↓

5.

● Modem : Turn on modem

● Network registration : -

● SIM :

IMEI : 354043050090432

Logging

Firmware version : 2.2.0

Locale Date Time : Wed Apr 15 09:39:36 CEST 2015

Diagnostic

Extended Logging

Network

2. ↓

Step 2 – Connecting to the Internet

Depending on the connection type, the first item displays the connection settings.

The LED shows whether the device is connected to the Internet.

The "PING" line displays the entered test server. The LED signals the connectivity (gray = not pinged yet, green = available, red = not available).

You can obtain additional information on a second website by clicking on the "Logging" link. This data helps us to provide additional support when dealing with problems and information in our FAQ.

1. MDH905 ✓

2. ↓ ✓

3. ✓

4. ↓ ✓

5. ✓

● Internet via : is established

Used DNS-Servers : 172.25.255.250
172.25.255.250

● PING : 8.8.8.8

3.

Step 3 – Availability of the cloud server

Information about the current availability of the cloud server and the NTP is shown here.

The LEDs signal the availability of the set server and the port (gray = not tested yet, green = available, red = not available).

The NTP will only be tested if it is also activated in the configuration.

You can obtain additional information on a second website by clicking on the "Logging" link. This data helps us to provide additional support when dealing with problems and information in our FAQ.

- 1. MDH905
- 2.
- 3.
- 4.
- 5.

- DNS : rsp-vpn.mbconnect24.net
- NTP : -
- Port 80 : rsp-vpn.mbconnect24.net
- Port 443 : rsp-vpn.mbconnect24.net
- Port 1194 : rsp-vpn.mbconnect24.net

Logging

4. ↓

Step 4 – Connecting to the cloud server

First, the connection settings are displayed, depending on the type of connection; e.g. whether Input 1 is being waited for.
The LED signals the state of connection to the cloud server (gray = not active, green = available, red = not available).
You can obtain additional information on a second website by clicking on the "Logging" link. This data helps us to provide additional support when dealing with problems and information in our FAQ.

- 1. MDH905 ✓_i
- 2. ↓ ✓_i
- 3. 🌐 ✓_i
- 4. ↓ ✓_i
- 5. ☁ ✓_i

● Connection to cloudserver : is established ✕

Logging

5.

Step 5 – Information on the CTM, cloud server and user

You can check information about the CTM configuration, the cloud server account data and last connected user here.

The button "Restart CTM" asks for a new configuration in the CTM again.

You can obtain additional information on a second website by clicking on the "Logging" link. This data helps us to provide additional support when dealing with problems and information in our FAQ.

- 1.
- 2.
- 3.
- 4.
- 5.

- Cloudserver : rsp-vpn.mbconnect24.net ^x
Accountname : musterfirma
Name : DatenmodemAlpha
- CTM : no config available
Last config update : -

Logging

11. Navigation and menus

After a successful login, the **start page of the configuration desktop** is displayed.

The screenshot shows the mbSPIDER configuration desktop interface. The top navigation bar includes the mbSPIDER logo, dropdown menus for Screens, Favorites, Administration, and Language, and a user profile dropdown for 'admin'. The main content area is titled 'Start Screen' and includes a 'Screen Config' link. A 'Systeminfo' widget displays system details:

Systeminfo	
Unittyp	MDH900
Devicename	TestFlorian
Devicedescription	TestFlorian
Serialnumber	421490000161

The central area features a 'Herzlich Willkommen!' (Welcome!) message and a 'Welcome!' section with 'First Steps' instructions:

Erste Schritte:

1. Im Menü Administration -> Benutzer
 - Benutzereinstellungen anpassen
2. Im Menü Administration -> Einstellungen

First Steps:

1. Menu Administration -> User
 - set User settings
2. Menu Administration -> Settings
 - set Text for Footer Line
 - set Name for Header

Red annotations in the image point to the 'Name in title bar' (mbSPIDER), 'Name of screen' (Start Screen), and 'Information widgets' (Systeminfo, Welcome!, First Steps).

12. Menu overview

The screenshot shows the mbSPIDER configuration desktop interface with the navigation menu overview. The top navigation bar includes the mbSPIDER logo, dropdown menus for Screens, Favorites, Administration, and Language, and a user profile dropdown for 'admin'. The main content area displays the navigation menu overview, which includes the following items:

- Start Screen *
- INPUT
- OUTPUT
- SYSTEM
- Edit

The 'Administration' dropdown menu is open, showing the following items:

- Server
- Scaling
- Tags
- Widgets
- Scripts
- User
- User Groups
- Actions
- Monitoring
- Translation
- Backup/Restore
- Settings

The 'Language' dropdown menu is open, showing the following items:

- Deutsch
- English

The 'Profile' dropdown menu is open, showing the following items:

- Profile
- logout

Red annotations in the image point to the 'Navigation/menu overview' (the main content area).

12.1 Screens

By screens, we mean the way that you arrange the widgets you have created, according to which ones you would like in your displayed set.



You can create a maximum of 64 screens, each with 16 widgets.

The display is in the form of a grid with 1 - 3 columns.

The **mbSPIDER** Start Screen* is, for example, such a screen, which was specified as the start screen in the screen manager.

12.2 Sample screens

Besides the start screen, the following sample screens are configured at the factory:

12.2.1 INPUT

This screen displays the current state of the device inputs. Here, six identical *Widgets* of the type "Values" were used.

The screenshot shows the mbSPIDER web interface with a navigation bar at the top containing 'Screens', 'Favorites', 'Administration', and 'Language' menus, and a user profile 'admin'. The main content area displays six widgets in a 2x3 grid:

- Analog Input 1 (V):**

Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:27:45	2015-04-14 20:11:44	●	4.11673665
2015-04-28 03:27:34	2015-04-14 20:11:44	●	4.11673665
- Analog Input 1 (mA):**

Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:27:45	2015-04-14 20:11:39	●	0.06039847
2015-04-28 03:27:34	2015-04-14 20:11:39	●	0.06039847
- Digital Input 1:**

Refresh Time	Timestamp	Valid	RAW Value	Val
2015-04-28 03:27:45	2015-04-14 21:07:23	●	1	1
2015-04-28 03:27:34	2015-04-14 21:07:23	●	1	1
- Analog Input 2 (V):**

Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:27:45	2015-04-14 20:11:45	●	0.03029037
2015-04-28 03:27:34	2015-04-14 20:11:45	●	0.03029037
- Analog Input 2 (mA):**

Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:27:45	2015-04-14 20:11:31	●	0.0549077
2015-04-28 03:27:34	2015-04-14 20:11:31	●	0.0549077
- Digital Input 2:**

Refresh Time	Timestamp	Valid	RAW Value	Val
2015-04-28 03:27:45	2015-04-14 21:07:23	●	1	1
2015-04-28 03:27:34	2015-04-14 21:07:23	●	1	1

12.2.2 OUTPUT

By inputting the value **1** or **0** in one of the *Widgets* used here of type "Input", it is possible to switch the appropriate LED (Fc1, Fc2 and/or Fc3) and the relay output.

mbSPIDER Screens Favorites Administration Language admin

OUTPUT

Screen Config

LED4 ⓘ ↻ ★

LED4 (Fc1)

no value available

no value availab

●

LED5 ⓘ ↻ ★

LED5 (Fc2)

no value available

no value availab

●

LED6 ⓘ ↻ ★

LED6 (Fc3)

no value available

no value availab

●

RELAIS ⓘ ↻ ★

RELAIS

no value available

no value availab

●

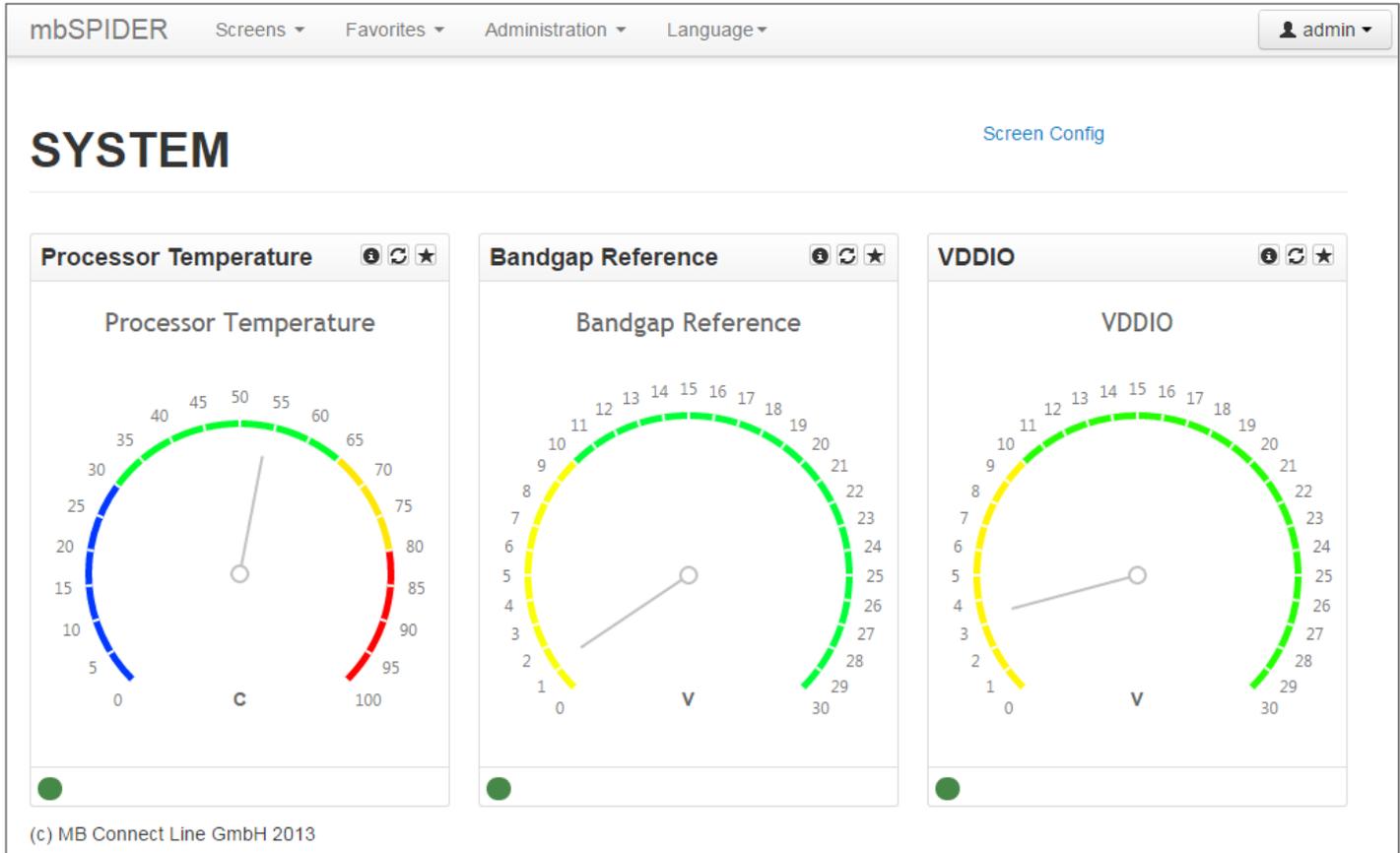
(c) MB Connect Line GmbH 2013

Example for value inputs and result for the display LED Fc1

Set value = 1	LED Fc1 = On	Set value = 0	LED Fc1 = Off

12.2.3 SYSTEM

Using the display *Widgets* of type "Gauge", device and system data is collected and displayed.



Field name	Description
Processor Temperature	Display of the processor temperature (°C)
Bandgap Reference	Display of the reference voltage to calculate the analog inputs (V).
VDDIO	Display of the reference voltage of the digital inputs (V).

12.3 Screen manager

Menu **Screens** => **Edit**

12.3.1 Overview of created screens

mbSPIDER
Screens ▾ Favorites ▾ Administration ▾ Language ▾
admin ▾

Screens

Add

Ordering

Search:

Active	Title	Description	Column Count	Created from	Main	Actions
●	Start Screen (Start Screen)	Default Screen (Default Screen)	3	admin	●	
●	INPUT (INPUT)	INPUT (INPUT)	3	admin	●	
●	OUTPUT (OUTPUT)	OUTPUT (OUTPUT)	3	admin	●	
●	SYSTEM (SYSTEM)	SYSTEM (SYSTEM)	3	admin	●	

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Field name / icon	Description
Active	In the case of Active = No , the screen is not generally available, but remains in the background until it is set to Active = Yes .
Title	Name of the screen displayed as its title.
Description	This field is used to describe the screen and store information about this screen. The entry stays hidden when the screen is displayed.
Column Count	Here, you can define the layout (1, 2 or 3 columns) for the display of the screen.
Created By	Display of the user who created the screen. If a screen has been enabled for all users, then all the affected users can see and use this screen, although only the creator of this screen can change or delete it.
Start Screen	Clicking the red icon ● in the Start Screen column specifies a screen as the start screen ●. You can only select one screen per user as a start screen.
Actions	Clicking the icon allows you to edit the screen.
Actions	Clicking the icon allows you to delete the screen. This icon is missing in the start screen, as it cannot be deleted.
	To add a new screen, click the "New" button.
	Clicking the "Screen order" button specifies the order in which the screens are displayed.

12.3.2 Creating a new screen

To add a new screen, click the "New" button.

In the case of **Active = No**, the screen is not generally displayed, but remains in the background until it is set to **Active = Yes**.

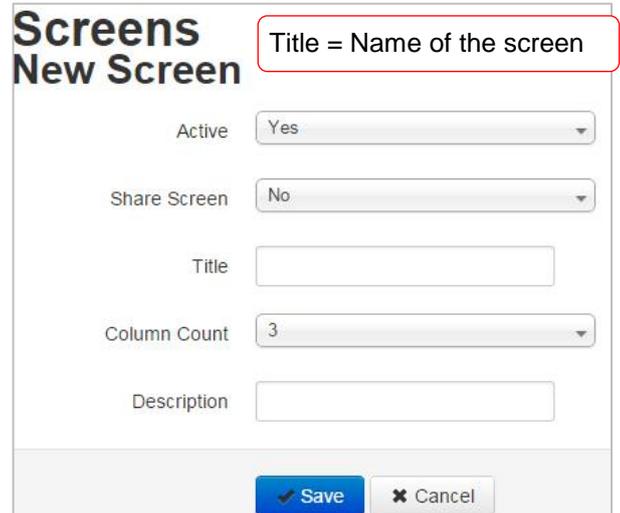
Share Screen = No means that the screen is only available and displayed to the creator (current user).

Title = Name of the screen displayed as its title.

Column Count: Here, it is possible to define the layout for the display of the screens. 1, 2 or 3 columns are available.

Description: This field is used to describe the screen and store information about this screen. The entry stays hidden when the screen is displayed.

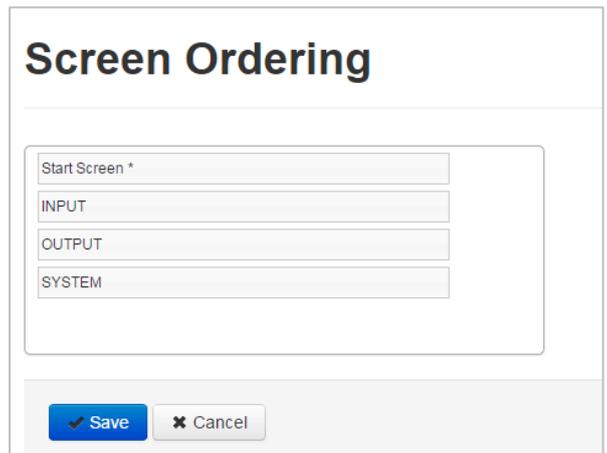
If you click "Save", the new screen appears in the overview of created screens.



12.3.3 Screen Order

Clicking the "Screen Order" button specifies the order in which the screens are displayed.

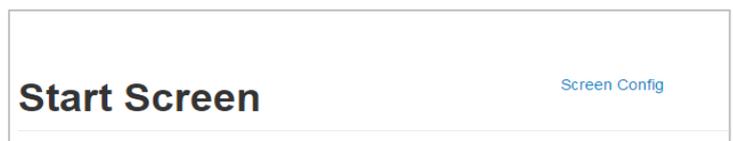
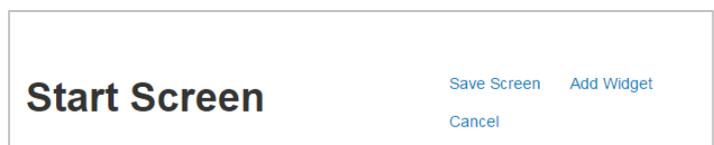
Change the order of the screens through simple "Drag & Drop" with the mouse.



12.3.4 Screen Config

When you have created a new screen, open this via the screens menu - it does not yet have any content (widgets).

Clicking "Screen Config" offers you the option "Add Widget".

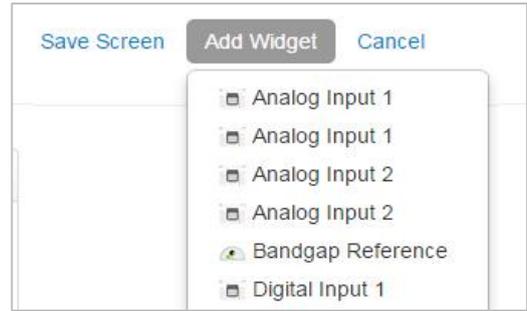



If you click "Add Widget", you will see a list of all the created widgets.

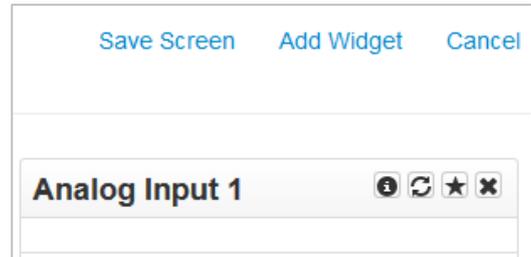
A single click of the mouse places the required widget in the screen.

You can only place each widget in a screen once and then, for this screen, it no longer appears in the choice of created widgets.

Of course, the selected widget is available again for another screen.



i You can place 16 widgets in a screen.



In Edit mode, each widget is shown in a frame. The frame contains the following screens/functions:

Analog Input 1 ⓘ ↻ ★ ✕

Analog Input 1 (mA)

Refresh Time	Timestamp	Valid	RAW Value
2015-04-10 01:44:26	2015-03-19 15:56:55	●	0.0549077

ⓘ Information box	When the mouse pointer is moved over this information box ("mouseover"), it shows the name and description of the widget.
↻ Update	Each click on this button causes the widget to get the current value from the database.
★ Add to Favorites	This button allows you to add the appropriate widget to your Favorites. You can find more information on this under the menu item " Favorites ".
✕ Close	"Close" removes the placed widget from the screen.

After you have placed your widgets in the screen, click "Save Screen".

If you click "Screen Config" again, you can

- reorder,
- add,
- or remove the displayed widgets.

Start Screen Save Screen Add Widget Cancel

LED4 ⓘ ↻ ★ ✕

LED4 (Fc1)

no value available

no value available

Processor Temperature

Processor Temperature

c

13. Favorites

In "Favorites", you can display an individual widget from a screen as your Favorite. In so doing, the favored widget fills the complete screen width. This can be very useful, for example when displaying diagrams. You can only display each of the created widgets (max. 64) once as a Favorite.

Processor Temperature

Processor Temperature

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

C

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13.1 Adding a widget to the Favorites

In one of the displayed widgets, click the icon, which means "Add to Favorites".

Analog Input 1

Analog Input 1 (mA)

Refresh Time	Timestamp	Valid	RAW Value	Value
2015-04-10 01:48:58	2015-03-19 15:56:55		0.0549077	0,05 mA
2015-04-10 01:48:03	2015-03-19 15:56:55		0.0549077	0,05 mA

Should a widget be favored but was created without a "box", then click "Screen Config".
 In Config mode, all the widgets appear in a box.

Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:58:43	2015-04-14 20:11:44	●	4.11673665
2015-04-28 03:58:32	2015-04-14 20:11:44	●	4.11673665
2015-04-28 03:58:20	2015-04-14 20:11:44	●	4.11673665

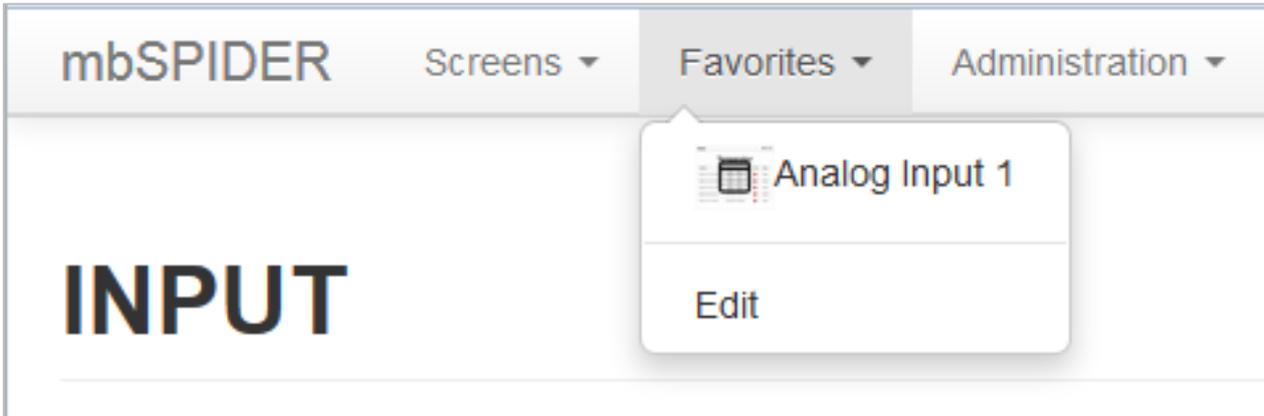
Refresh Time	Timestamp	Valid	RAW Value
2015-04-28 03:58:43	2015-04-14 20:11:39	●	0.06039847
2015-04-28 03:58:32	2015-04-14 20:11:39	●	0.06039847
2015-04-28 03:58:20	2015-04-14 20:11:39	●	0.06039847

When you have selected your favored widget, acknowledge the security query with OK.

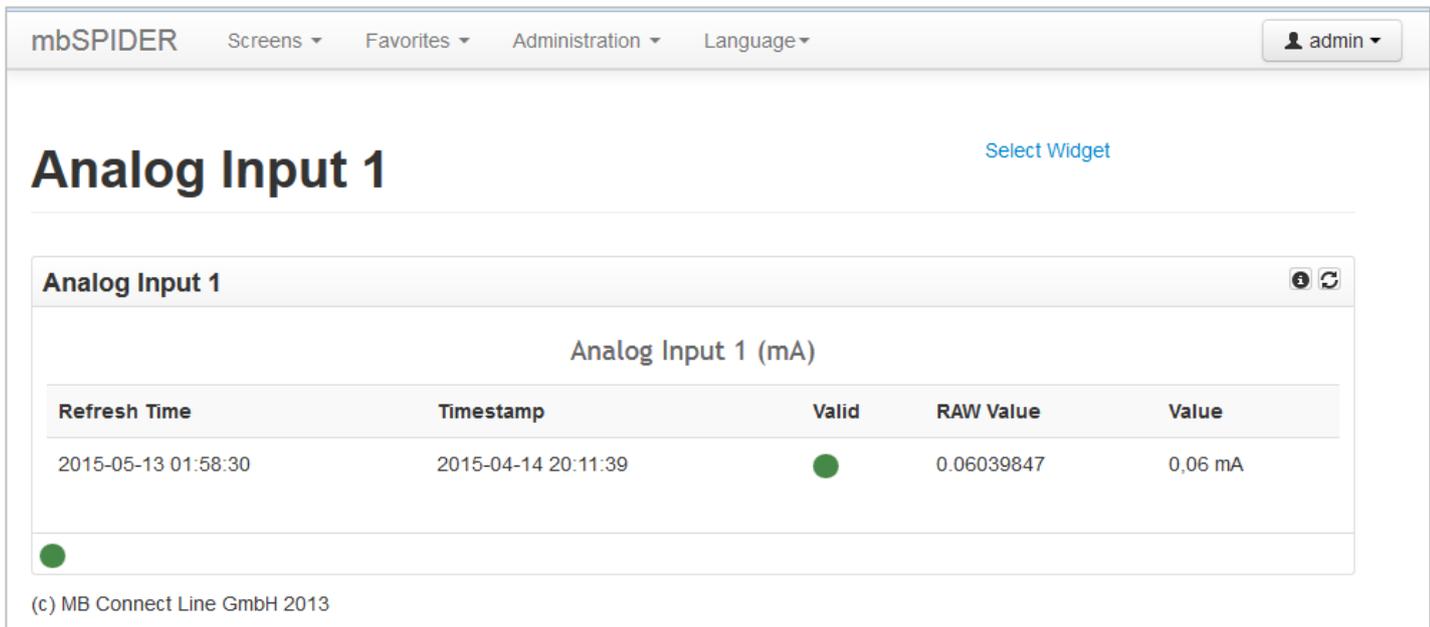
Die Seite auf 172.25.8.29 meldet: ×

Add To Favorites: Analog Input 1

After this, you can select your favored screen from the "Favorites" menu.



The favored widget "Analog Input 1" is now displayed on its own across the entire available screen width.



Clicking "Select Widget" allows a temporary display of the created widgets across the entire screen width. When this display is left and reopened, the original widget defined as a "Favorite" is again displayed.

14. User groups

Menu: **Administration** => **User Groups**

The actual assignment of rights ("No Access" - "Read Access" - "Write Access") takes place via the user groups. A user, who is assigned to a specific user group, possesses the rights defined in this group.

14.1 Adding a new user group

In the overview of user groups, click "New".

Active	Name	Administrator	Actions
<input checked="" type="checkbox"/>	Administratoren	<input checked="" type="checkbox"/>	

Active (Yes / No): "No" means that the user group (and the corresponding users) is/are blocked, although it can be activated again at any time.

Name of the new user group.

Administrator = Yes – The user group has, by default, full read/write access to all created widgets.

Administrator = No – The user group has, by default, only read access to all created widgets.

Widget Rights: Here, rights are issued for each individual widget.

Rights are issued by simply moving (drag & drop) the individual widgets into the appropriate rights' level.

i Should a user group have an interactive role in a screen, then ensure that it receives "Write Access" for widgets with the input/value function.

Clicking the "Save" button returns you to the overview of user groups.

User Groups



Search:

Active	Name
●	Administratoren
●	Test

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Field name / icon	Description
	To add a new user group, click the "New" button.
Active ●	The user group is active.
Active ●	The user group is blocked but can be reactivated at any time.
Name	Name of the user group.
Administrator ● / ●	Shows whether the user group has Administrator rights (● = Yes / ● = No).
Actions 	Clicking the icon allows you to edit the user group.
Actions 	Clicking the icon creates a copy of this user group. You can then modify the copy and save it for a further/new user group.
Actions 	Clicking the icon allows you to delete the user group. You cannot delete the default Administrator group, although you can delete all the "self-created" groups.

15. Users

Menu **Administration** => **User**

mbSPIDER
Screens ▾ Favorites ▾ Administration ▾ Language ▾
admin ▾

User

Add

Search:

Active	Username	Email	Realname	Usergroup	Actions
●	admin	admin@email.com	admin	Administratoren	

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Field name / icon	Description
	To add a new user, click the "New" button.
Active ●	The user is active.
Active ●	The user is blocked but can be reactivated at any time.
Username	Username for logging in.
E-mail	This field currently has no function.
Real name	For example, the name of the contact.
Actions	Clicking the icon allows you to edit the user.
Actions	Clicking the icon creates a copy of this user. You can then modify the copy and save it for a further/new user.
Actions	Clicking the icon allows you to delete the user. The original user "admin" cannot be deleted.

15.1 Adding new users

User

Active	Username	Email	Realname
<input checked="" type="checkbox"/>	admin	admin@email.com	admin

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New User

Active:

Usergroup:

Operator

 Administratoren
 Operator

Username:

Password:

Repeat Password:

Realname:

Email:

Mandatory input – Free text*

* Please note that this is case sensitive and cannot contain special characters or accents (e.g. ü).

Optional input – Free text

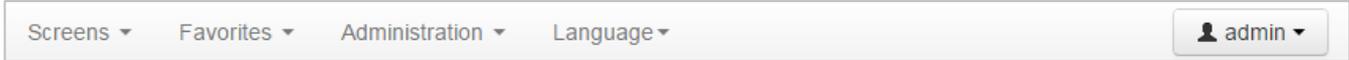
Search:

Active	Username	Email	Realname	Usergroup	Actions
<input checked="" type="checkbox"/>	admin	admin@email.com	admin	Administratoren	
<input checked="" type="checkbox"/>	johndoe			Administratoren	

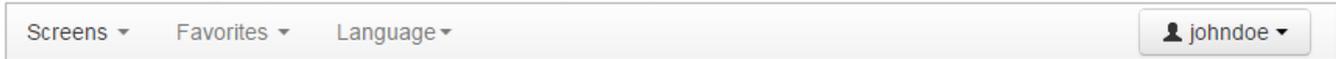
16. Rights management/user rights

The management of rights pertaining to which user can see which widget and which settings or interactions can be performed by each individual user is specified in the user groups.

A user group with Administrator rights has write access to all the widgets. Within this/these group(s), no redistribution of rights can be performed. In addition, a user group with Administrator rights has access to the complete menu:



By contrast, a user group without Administrator rights only has access to the limited user menu:



A user can only ever be assigned to one user group.

A user group can contain multiple users.

Rights distribution within the individual user groups is carried out by assigning the widgets to the appropriate access type (No Access, Read Access or Write Access).

User-1			User-2			User-4		
User-3			User-5			User-5		
User Group-1			User Group-2			User Group-3		
No Access	Read Access	Write Access (RW)	No Access	Read Access	Write Access (RW)	No Access	Read Access	Write Access (RW)
Widget-1					Widget-1		Widget-1	
Widget-2					Widget-2			Widget-2
	Widget-3		Widget-3			Widget-3		
		Widget-4			Widget-4	Widget-4		

16.1 Example of rights' assignment

Active	Username	Email	Realname	Usergroup	Actions
<input checked="" type="checkbox"/>	admin	admin@email.com	admin	Administratoren	
<input checked="" type="checkbox"/>	johndoe			Test	

Name:

Administrator:

Widget Rights:

No Access	Read Access	Write Access
<input type="text" value="Erste Schritte"/> <input type="text" value="Digital Input 1"/> <input type="text" value="Analog Input 2"/>	<input type="text" value="Analog Input 1"/> <input type="text" value="Analog Input 1"/> <input type="text" value="Analog Input 2"/> <input type="text" value="VDDIO"/> <input type="text" value="Bandgap Reference"/> <input type="text" value="Processor Temperature"/>	<input type="text" value="Systeminfo"/> <input type="text" value="First Steps"/> <input type="text" value="Digital Input 2"/>

The user "johndoe" is a member of the user group "Test". The access rights of this user group to the widgets is distributed as shown above.

17. Device settings/System configuration

Menu Administration => Settings

17.1 System

Settings

System
NTP
Modem
WLAN
Network
Connect
Cloudserver
Firmware
CTM

Value in Title Bar Mandatory input – free text

Text in Footer Bar Optional input – Free text

Devicename * Mandatory input – free text

Devicedescription * Mandatory input – free text

Timezone

Email Sender for Systemmails Mandatory input – Valid

Webserverport Mandatory

Syslog Server Optional input – IP address format

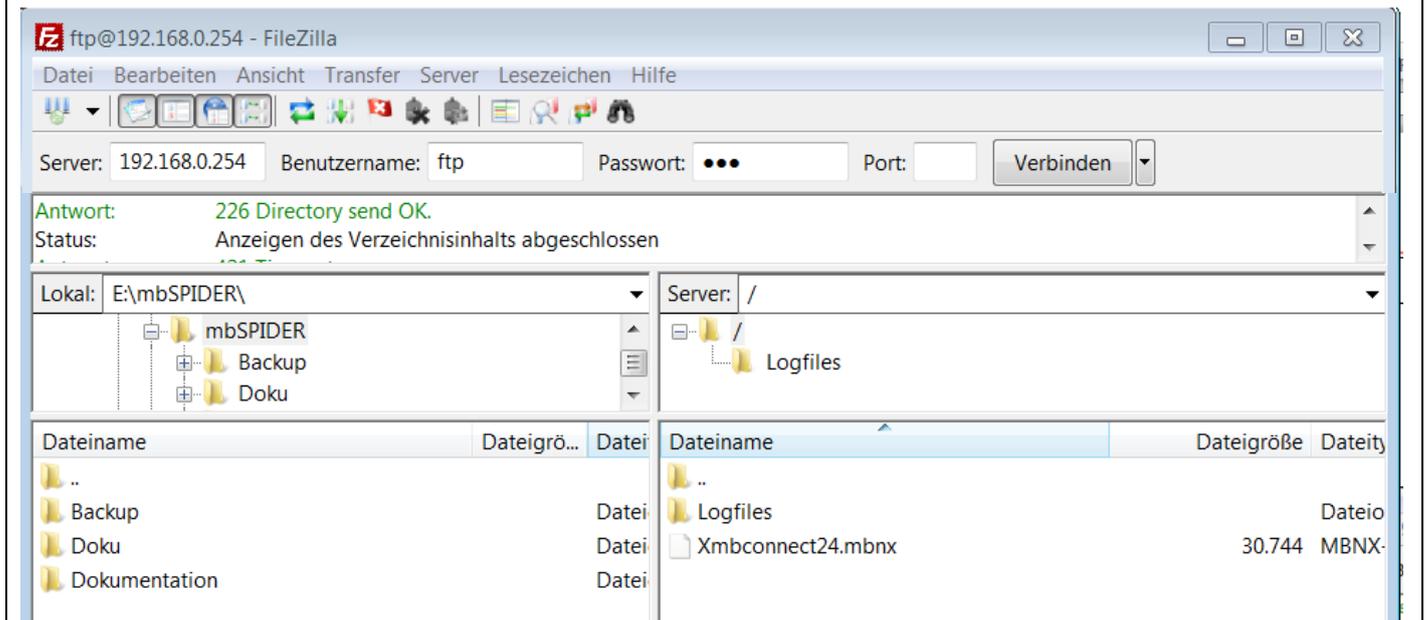
Syslog Serverport Mandatory

FTP Password

FTP Password repeat

Field name	Description
Name in Title Bar	Mandatory input – free text
Text in Footer Bar	Optional input – Free text
Device Name	Mandatory input – free text
Device Description	Mandatory input – free text
Timezone	Drop-down box
E-mail Sender for System Mails	Valid e-mail address, displayed as the sender for system e-mails (messages/warnings, etc.)
Web server port	The standard port for HTTP requests is TCP 80. You can however select another port if you need this port for your OpenVPN connection or if it is already being used for another purpose. If you do this , please note that you will need to enter the selected port in the browser along with the address in the browser window.

Syslog Server	Using an external logging server, the mbSPIDER system logging can be can be outsourced. Enter the IP address of the external logging server here.
Syslog Server Port	Port 514 is preset here. We recommend that you do not change this port, unless you are using a certain application that reacts to a different port.
FTP Password	It is possible to access the USB port of the mbSPIDER via an FTP client. Default settings: "FTP server" 192.168.0.254 (LAN IP) "FTP user" ftp "FTP password" ftp



* These entries can be overwritten by the entries made when loading the **mbconnect24 configuration file**.
You can find more information on the OpenVPN connection to the **mbCONNECT24** web portal in our description "First steps with mbCONNECT24" at www.mbconnect24.net.

17.2 NTP

System **NTP** Network Modem WLAN Connect Cloudserver Firmware CTM

NTP Servername

Interval (s)

Time, if NTP fails (UTC Format)

Field name	Description
NTP Server Name (Time Calibration)	Automatic time calibration via the input NTP server (preset address: 0.de.pool.ntp.org). <i>You can enter a time server IP address instead of a name. If you enter a name, there must be a DNS server entered in the network settings, or an existing Internet connection. The NTP server simply needs to be available.</i>
Interval of the Time Calibration (s)	Input: Natural numbers, unit: [s] seconds. If you leave this blank or enter "0", there will be no time calibration.
Time if NTP Fails (yyyy-mm-dd HH:MM:SS)	Enter a time which the system should use if an automatic time calibration is not possible or should not take place.

17.3 Network Settings

17.3.1 WAN interface type: As LAN

System
NTP
Network
Modem
WLAN
Connect
Cloudserver
Firmware
CTM

LAN: IP-Address *

LAN: Subnetmask *

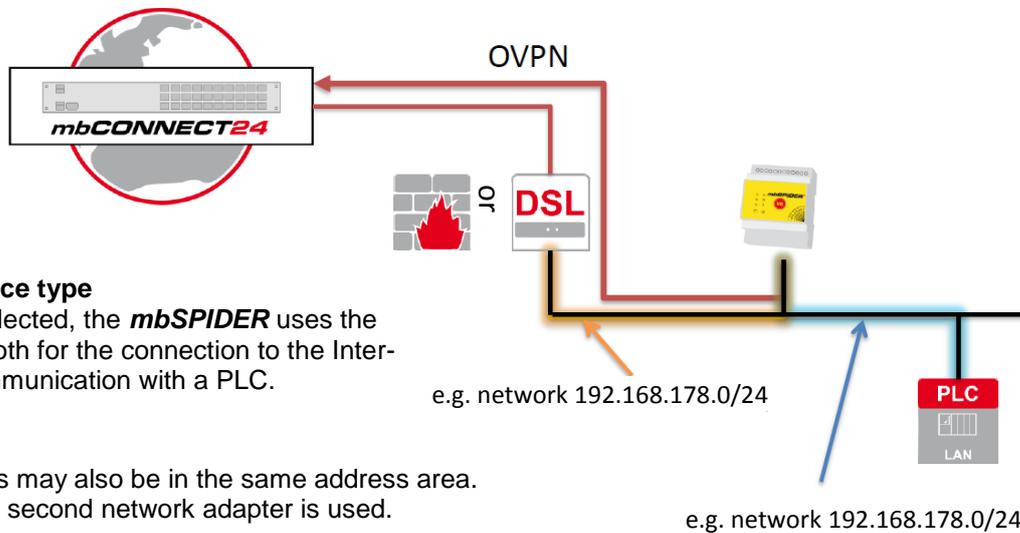
1)* WAN: Interfacetype

Gateway *

1. DNS Server *
1)

2. DNS Server *

Submit Settings



1) WAN interface type

If **As LAN** is selected, the **mbSPIDER** uses the Ethernet port both for the connection to the Internet and for communication with a PLC.

These networks may also be in the same address area. In this case, no second network adapter is used.

* These entries can be overwritten by the entries made when loading the **mbconnect24 configuration file**. You can find more information on the OpenVPN connection to the **mbCONNECT24** web portal in our description "First steps with mbCONNECT24" at www.mbconnect24.net.

17.3.2 WAN interface type: Static IP

Select this setting if connection to the Internet is via an existing router which is not acting as a DHCP sever, or if no server is set up to assign addresses.

Enter a free LAN IP address and the subnet mask from your system or machine network.

WAN: IP Address

IP address of the router connected to the WAN port.

WAN: Subnet Mask

Enter the subnet mask.



Make sure that the LAN IP and WAN IP are in different address ranges.

Gateway

Enter details of the gateway that connects you to the Internet, i.e. the IP address of the existing router.

1st DNS Server

Enter a local DNS here.

2nd DNS Server

You can enter a second DNS (e.g. 8.8.8.8) here as an option.

LAN: IP-Address

LAN: Subnetmask

WAN: Interfacetype

WAN: IP-Address

WAN: Subnetmask

Gateway

1. DNS Server

2. DNS Server

17.3.3 WAN interface type: DHCP

Select this setting if there is a DHCP server on the network and thus the data modem is automatically assigned a new IP address.

Please also contact your network administrator to confirm this.

Enter a free LAN IP address and the subnet mask from your system or machine network.

1st DNS Server

Enter a local DNS here.

2nd DNS Server

A second DNS (e.g. 8.8.8.8) can be entered here as an option.

LAN: IP-Address

LAN: Subnetmask

WAN: Interfacetype

1. DNS Server

2. DNS Server

17.4 WLAN (MDH901, MDH911)

mbSPIDER Screens Favorites Administration Language admin

Settings

System NTP Network Modem **WLAN** Connect Cloudserver Firmware CTM

Interface Type: DHCP (Dropdown: DHCP, DHCP, Static IP)

SSID: MB Connect Line Guest WLAN **1)**

Authentication Mode: WPA2PSK (Dropdown: WPA2PSK, OPEN, SHARED, WEPAUTO, WPAPSK, WPA2PSK, WPAZONE)

Encrypt Mode: AES (Dropdown: AES, NONE, WEP, TKIP, AES)

Key: ••••••••

Operating Frequency: Kannal 1-13 (Dropdown: Channel 1-13, Channel 1-11, Channel 1-13, Channel 10,11, Channel 10-13, Channel 3-9, Channel 5-13)

Advanced Settings: Nein (Dropdown: No, Yes, No)

[Submit Settings](#)

- 1) Clicking the magnifying glass opens a new window, in which all the found WLAN networks are listed along with the corresponding SSID.

SSID

Show 10 entries Search:

Name	Signal Strength	Action
MB Connect Line Guest WLAN	██████ (18%)	Add
MB Connect Line Intern WLAN	██████ (13%)	Add

Showing 1 to 2 of 2 entries [Previous](#) [Next](#)

If you click "Add", the SSID is applied to the setting box directly.

Field name	Description
Interface Type	DHCP or Static IP can be selected here.
Interface Type: DHCP	Select DHCP to receive an IP address of a DHCP server in the WLAN network.
Interface Type: Static IP	Select Static IP to assign a fixed IP address and subnet mask in the WLAN network. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px;"> <p>Interface Type <input type="text" value="Static IP"/></p> <p>IP-Adresse <input type="text" value="192.168.2.154"/></p> <p>Netmask <input type="text" value="255.255.255.0"/></p> <p>Default Gateway <input type="text" value="192.168.2.1"/></p> </div>
SSID	Here, you must enter the SSID name of the WLAN network.
Authentication Mode	Set the authentication mode of the WLAN network here.
Encrypt Mode	Select the encryption mode here.
Key	Enter the WLAN key here.
Operating Frequency	Set the operating frequency here.
Advanced Settings	You can show the advanced settings here. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px;"> <p>Advanced Settings <input type="text" value="Yes"/></p> <p>Operating Band <input type="text" value="Band 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165 ch"/></p> <p>Operating Band <input type="text" value="11BGN mixed"/></p> <p>Channel <input type="text" value="1"/></p> <p>B/G Protection <input type="text" value="Auto"/></p> <p>RTS Threshold <input type="text" value="2347"/></p> <p>Frag Threshold <input type="text" value="2346"/></p> <p>WMM Capable <input type="text" value="Aktiv WMM"/></p> </div>

17.5 Modem (MDH905, MDH906, MDH915, MDH916)

mbSPIDER Screens ▾ Favorites ▾ Administration ▾ Language ▾ admin ▾

Settings

System NTP Network **Modem** WLAN Connect Cloudserver Firmware CTM

Modem Initialization AT command for manual modem configuration

SIM Pin Input of the SIM card PIN - if required

APN Setting

Number *99***1#

Username dummy

Password

Password Confirmation

(c) MB Connect Line GmbH 2013

Note: A red bracket groups the APN Setting, Number, Username, Password, and Password Confirmation fields, with a callout box stating: "The input of this data is dependent on the telephone service provider."

Sample data for provider T-Mobile:

Modem Initialization

SIM Pin

APN Setting internet.t-d1.de

Number *99***1#

Username t-mobile

Password ..

Password Confirmation ..|

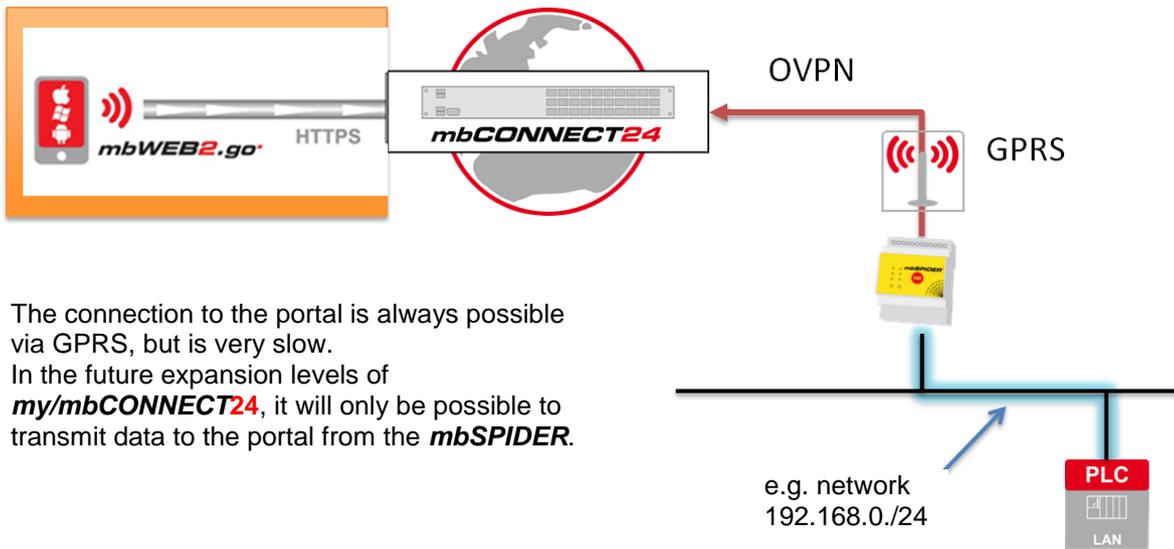
Note: A red callout box points to the Password and Password Confirmation fields, containing the text: "Mandatory input for this provider - Contents are freely selectable"

Sample data for provider **Vodafone**:

Modem Initialization	<input \"web.vodafone.de\""="" ip\",="" type="text" value="+cdgcont=1, \"/>
SIM Pin	<input type="text" value="12346"/>
APN Setting	<input type="text" value="web.vodafone.de"/>
Number	<input type="text" value="*99***1#"/>
Username	<input type="text"/>
Password	<input type="password"/>
Password Confirmation	<input type="password"/>

No entry

i Low bandwidth!! (Models MDH 905/MDH 915)



The connection to the portal is always possible via GPRS, but is very slow. In the future expansion levels of **my/mbCONNECT24**, it will only be possible to transmit data to the portal from the **mbSPIDER**.

17.6 Connection Settings

17.6.1 (MDH900, MDH910)

Field name	Description
Test Address	Test address for checking the Internet connection. The address can be selected freely, but must always be available continuously.
Test Interval (s)	Test interval in seconds for checking the Internet connection. If "0" is entered, then there is no monitoring of the Internet connection.

17.6.1 (MDH901, MDH911)

- 1) The Internet connection takes place solely via the WAN Ethernet.
- 2) The Internet connection takes place solely via the WAN.

17.6.2 (MDH905, MDH906, MDH915, MDH916)

Settings

System NTP Network Modem **Connect** Cloudserver Firmware CTM

Internetconnection: Modem
 WAN-Ethernet 1)
 Modem 2)
 Failover WAN/Modem 3)

Connect On: Modem 2)
 Failover WAN/Modem 3)

Test-Address: 8.8.8.8 Mandatory input – IP address for-

Test-Interval (s): 60 Mandatory input – Integers 0 – 65535

- 1) The Internet connection takes place solely via the WAN Ethernet.
- 2) The Internet connection takes place solely via the modem (GPRS).
- 3) Should a connection via the WAN Ethernet not work or terminate, then a connection via the modem is setup automatically. If a connection via the WAN Ethernet becomes possible again, then the system will automatically switch to the faster connection.

mbSPIDER Screens Favorites Administration Language admin

Settings

System NTP Network Modem **Connect** Cloudserver Firmware CTM

Internetconnection: WAN-Ethernet 4)
 WAN-Ethernet 5)
 WLAN 6)
 o.o.o.o

Test-Address: o.o.o.o

Test-Interval (s): 60

If **Modem** or **Failover WAN/Modem** is selected, then the following options are available under "Connect On":

4) Always

The Internet connection is set up and maintained as soon as the device is switched on and/or connected to the power source.

Connect On	Always
Test-Address	8.8.8.8
Test-Interval (s)	60

5) On Demand

The Internet connection is set up and maintained as soon as data transmission occurs or an e-mail must be sent due to an event.

Using the "Idle Time (s)", you can define after which idle time the connection should be disconnected again.

If "0" is entered, the device stays connected permanently.

Connect On	<input type="text" value="On Demand"/>
Idle Time (s)	<input type="text" value="0 *"/>
Test-Address	<input type="text" value="8.8.8.8"/>
Test-Interval (s)	<input type="text" value="60"/>

* Mandatory input – Integers incl. 0

6) Never

An Internet connection is not set up under any circumstances.

Internetconnection	<input type="text" value="Modem"/>
Connect On	<input type="text" value="Never"/>
<input type="button" value="Submit Settings"/>	

17.7 Cloud server (OpenVPN connection)

Settings

System NTP Network Modem WLAN Connect **Cloudserver** Firmware CTM

1) Portalserver Connect Yes *

Portalserveraddress dev20.mbconnect24.net Preset address

Portalserverport 1194 *

Username Florian@lo *

Password

Password Confirmation

Portalserverconfiguration ;----- *

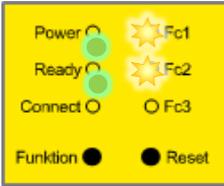
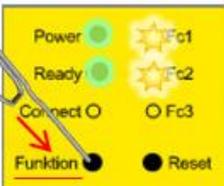
Use PROXY-Server No

¹⁾ If the device is to connect to a portal server, then the drop-down box **Portal Server Connect** must be set to **Yes**. When you have saved the selection, the device will try to set up a connection. If the setting remains **Yes**, the **mbSPIDER** will automatically set up the OpenVPN connection after each interruption (reboot).

* These entries can be overwritten by the entries made when loading the **mbconnect24 configuration file**. You can find more information on the OpenVPN connection to the **mbCONNECT24** web portal in our description "First steps with mbCONNECT24" at www.mbconnect24.net.

17.7.1 Loading a configuration file from **mbCONNECT24**

If you are using **mbWEB2go** and wish to access the web interface of the **mbSPIDER**, then you must create the device in the **mbCONNECT24** portal.
 After successful creation and configuration of the device in the portal, transfer the portal configuration to the **mbSPIDER** as shown.
 When you have backed up the configuration file *mbconnect24.mbn* from the portal to a USB stick, proceed as follows:

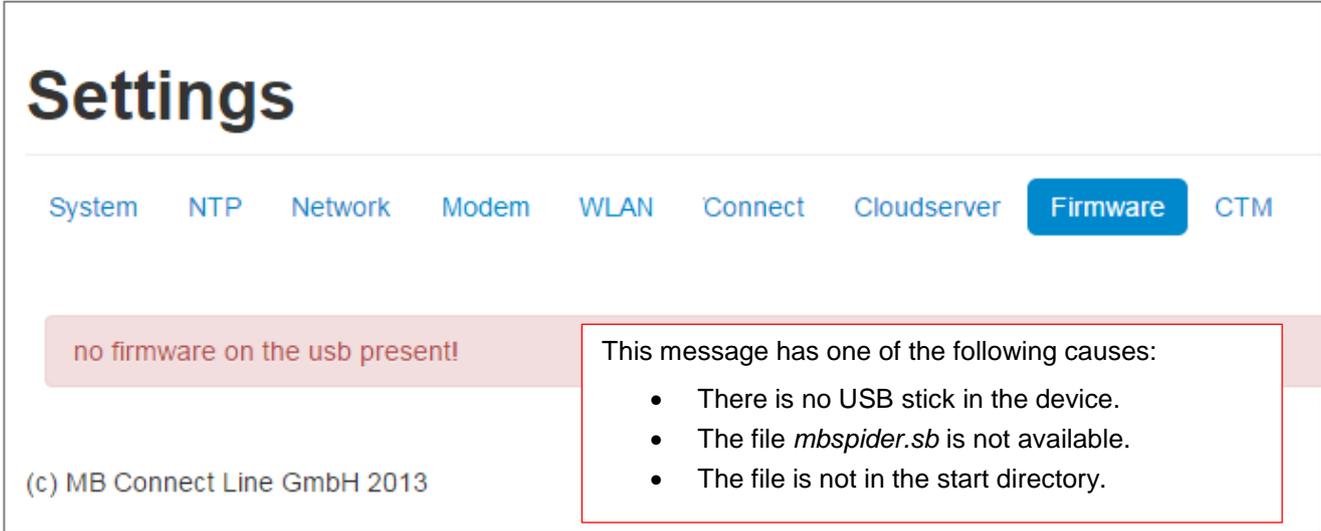
<p>The mbSPIDER is switched on and ready for operation.</p>	
<p>Insert the USB stick into the USB port of the mbSPIDER. As soon as the device has recognized the configuration file, the LEDs Fc1 + Fc2 start flashing.</p>	
<p>Within 10 seconds, press Function and hold it down.</p>	
<p>When the LEDs Fc1 + Fc2 go out and the LED Fc3 flashes, release the Function button.</p>	
<p>After approx. 30 seconds, the LED Fc3 → goes out, meaning that the configuration file <i>mbconnect24.mbn</i> has been loaded successfully.</p>	

You can find more information on the OpenVPN connection to the **mbCONNECT24** web portal in our description "First steps with mbCONNECT24" at www.mbconnect24.net.

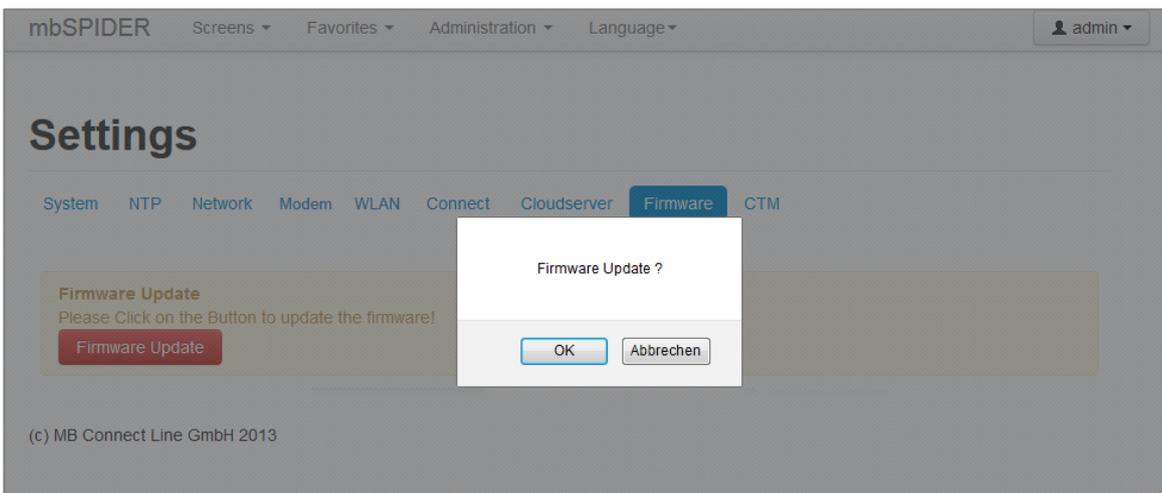
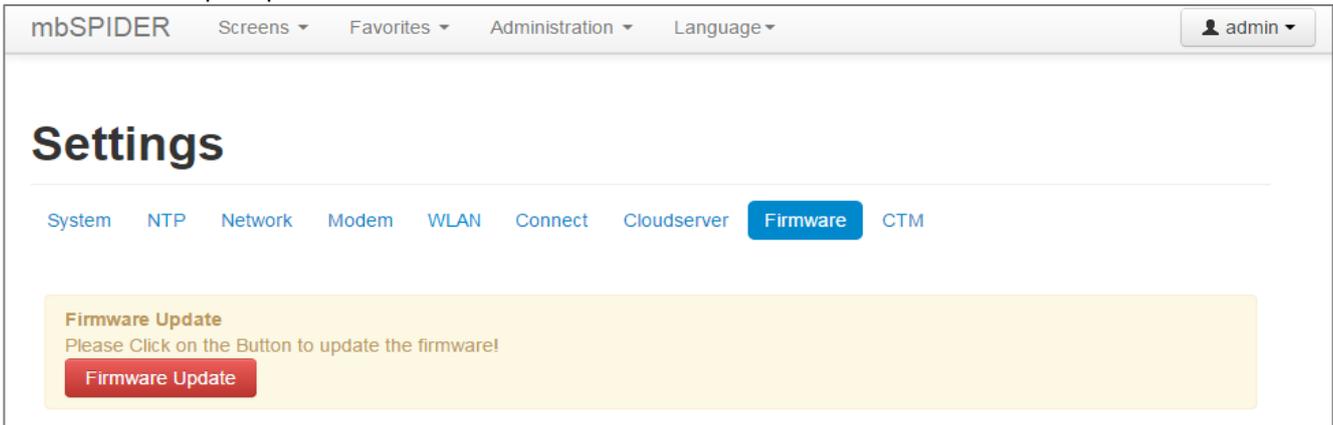
17.8 Firmware

Firmware updates generally take place via the USB interface. The firmware (*mbspider.sb*) must be located in the start directory of the USB stick. You can obtain the most up-to-date firmware from the download area at www.mbconnectline.com

17.8.1 Firmware update via web interface



If the firmware (*mbspider.sb*) has been detected, the following screen appears. Follow the menu prompts.



Firmware Update in process

This will take a few minutes
You will be automatically redirected

17.8.2 Firmware update directly via the *mbSPIDER*

Ensure that there is valid, up-to-date firmware in the start directory of the USB stick.

- Insert a USB stick into the powered up device.
- If the firmware (*mbspider.sb*) is detected on the USB stick, then the LEDs **Fc1 + Fc3** start to flash simultaneously.
- Now, within the next 10 sec, press the **Function** button and keep it held down until the LEDs **Fc1 + Fc3** have gone out and the LED **Fc2** starts flashing.
- The current firmware is now being installed on the *mbSPIDER*.

If, after the firmware has been detected (LEDs Fc1 + Fc3 flash), you do not react, then the device will switch to normal mode after approx. 10 seconds and the new firmware can be installed via the web interface.

17.9 CTM

Settings

System
NTP
Network
Modem
WLAN
Connect
Cloudserver
Firmware
CTM

CTM Enable

CTM Host

CTM Key

Submit Settings

Field name	Description
CTM Enable	<p>No selected: A portal configuration can only be transmitted from the USB stick to the device in the form of a configuration file (mbconnect24.mbn/-mbnx). The following fields can remain unused in this selection.</p> <p>Yes selected: Each time the mbSPIDER connects to the portal, it will ask if a new configuration is available. If this is the case, the device will automatically load this configuration.</p>
CTM Host	Here, the host address for the mbCONNECT24 server EUROPE is preset.. If you use the mbCONNECT24 server USA/CANADA , then enter the address vpn.mbconnect24.us here.
CTM Key	The session key is generated in the CTM settings in the mbCONNECT24 portal. This key is only valid once. If the session key has been entered here, then the mbSPIDER compares it with the key stored in the CTM. If both keys are identical, then the device can collect the configuration from the CTM. After this, the entered session key is deleted automatically.

You can find more information on the OpenVPN connection to the **mbCONNECT24** web portal in our description "First steps with mbCONNECT24" at www.mbconnect24.net.

18. Backing up & restoring

Menu **Administration** => **Backup / Restore**

18.1 Backup

If, for "**Complete Backup**", **Yes** has been chosen, then a backup of both configurations (**Visualization Configuration** and **System Configuration**) is created. In the case of **Complete Backup = No**, it is possible to choose between the two configurations.

Clicking "**Backup**" prepares the selection for downloading.

Backup/Restore

Backup

Complete Backup

Select Objects for Backup Visualization System Configuration

Restore

Restore File Keine ausgewählt

(c) MB Connect Line GmbH 2013

When the preparation has been completed and the data is "packaged" (**backup.tar.gz**), the data can be backed up by clicking "**Download**".

Export Done

Click on the button to download the file!

 During the backup, only the **Visualization Configuration** and the **System Configuration** are backed up.

The log data remains unaffected. You must create a script to back up the log data.

You can find useful tips and templates in our API documentation at

<http://repository.mbconnectline.com>

Öffnen von backup.tar.gz

Sie möchten folgende Datei öffnen:

backup.tar.gz
Vom Typ: gzip (7,7 KB)
Von: http://172.25.9.26

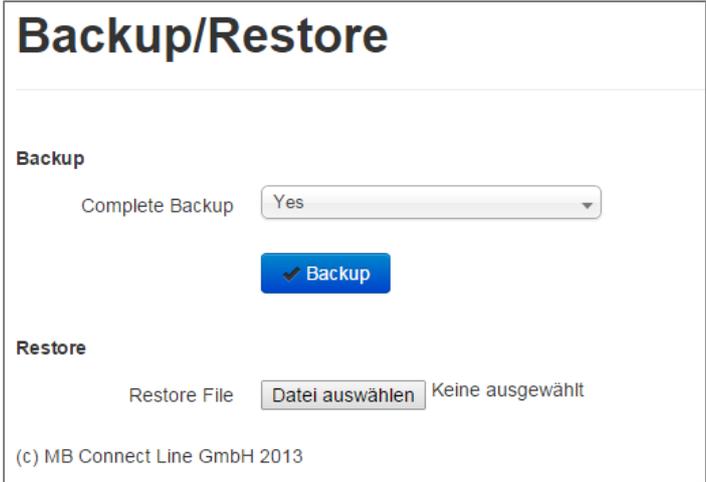
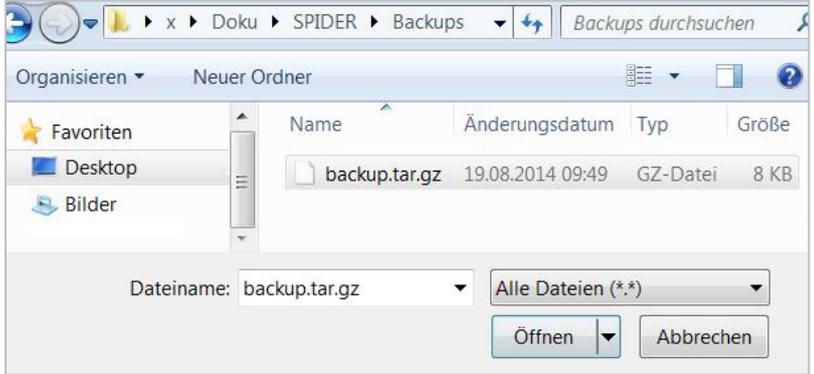
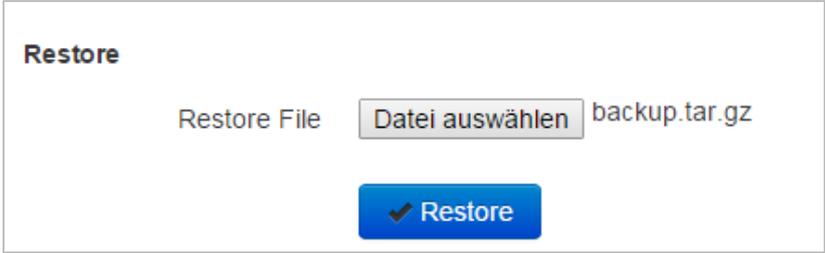
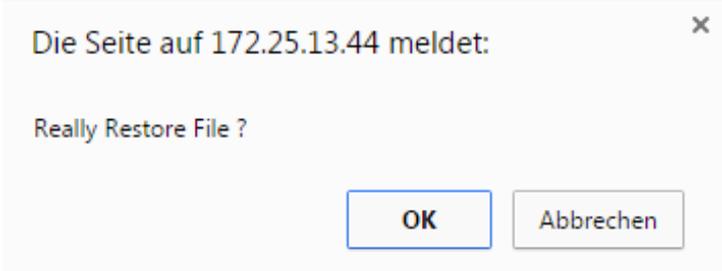
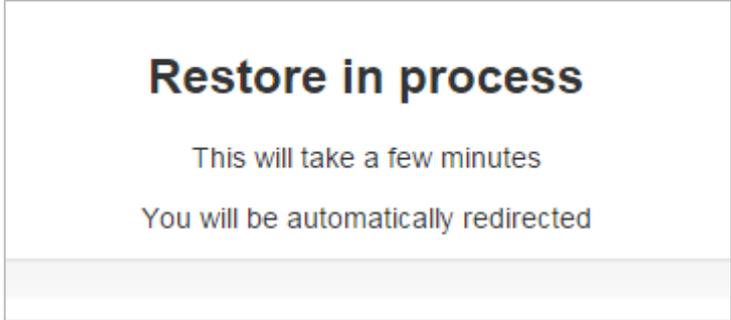
Wie soll Firefox mit dieser Datei verfahren?

Öffnen mit

Datei speichern

Für Dateien dieses Typs immer diese Aktion ausführen

18.2 Restore

<p>Under Restore, click the "Search..." button.</p>	
<p>Select your backup file (backup.tar.gz) from the storage location in which you previously saved the data backup.</p>	
<p>Click "Restore".</p>	
<p>Confirm the security query.</p>	
<p>After restoration, the start page of the mbSPIDER web interface appears.</p>	

19. Translation (using translation table)

Menu **Administration** => **Translation**

The translation function allows you to manage all the texts entered in the web interface and which can be modified (e.g. name, title and description of widgets, tags, scaling, etc.) in a translation table.

Translation Manager

Q
Collect

✓
Save

Copy ▾

Search:

Key	German	English
Screens	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Favorites	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Start Screen	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Default Screen	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
INPUT	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
OUTPUT	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
SYSTEM	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Systeminfo	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Erste Schritte	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>
Erste Schritte Deutsch	→ <input style="width: 150px;" type="text"/>	→ <input style="width: 150px;" type="text"/>

Field name	Description
<div style="border: 1px solid #ccc; padding: 5px; display: flex; align-items: center; gap: 5px;"> Q Collect </div>	If you click the "Collect" button, an empty translation table is generated or an existing one updated. Only the key column is filled or updated automatically.
<div style="border: 1px solid #ccc; padding: 5px; display: flex; align-items: center; gap: 5px;"> ✓ Save </div>	Saves any changes made.
Copy ▾	Drop-down box for how the texts should be transferred to the appropriate language column.
Key to German (All)	All the key texts are copied to the German column.
Key to English (All)	All the key texts are copied to the English column.
German to English (All)	All the texts from the German column are copied to the English column.
English to German (All)	All the texts from the English column are copied to the German column.

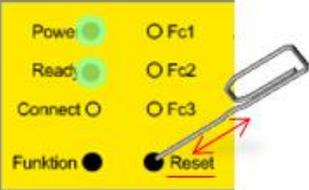
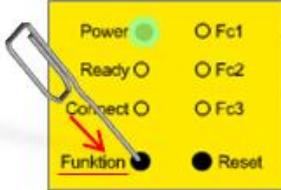
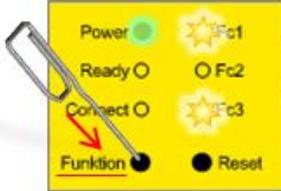
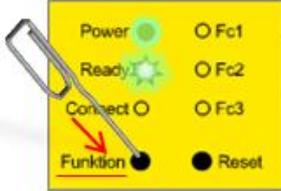
Key to German (Only empty)	Key texts are only copied into empty fields of the German column. This means that individually adapted texts remain untouched.
Key to English (Only empty)	Key texts are only copied into empty fields of the English column. This means that individually adapted texts remain untouched.
German to English (Only empty)	All the texts from the German column are only copied to empty cells in the English column. This means that individually adapted texts remain untouched.
English to German (Only empty)	All the texts from the German column are only copied to empty cells in the German column. This means that individually adapted texts remain untouched.
Keys	All the texts entered in the web interface which can be modified (e.g. name, title and description of widgets, tags, scaling, etc.)
German	Text column for the German text. You can fill each cell automatically using the Copy drop-down box or edited/adapted individually.
	Clicking the arrow button only copies the text from the key column of the appropriate line into the German cell.
English	Text column for the English text You can fill each cell automatically using the Copy drop-down box or edited/adapted individually.
	Clicking the arrow button only copies the text from the key column of the appropriate line into the English cell.

20. Loading the factory settings

IMPORTANT

When the **mbSPIDER** is reset to the factory settings, all the data (log files, visualization configuration and system configuration) is lost.

Ensure that no USB stick is connected to the device.

<p>Press the Reset button 1x.</p>	
<p>Switch to the Function button immediately and keep it pressed.</p>	
<p>Now, the LEDs Fc1 + Fc3 start flashing.</p>	
<p>After 20 - 30 sec.: Ready LED flashes.</p>	
<p>Approx. 10 sec later: Fc1 + Fc2 + Fc3 LEDs flash.</p>	
<p>Release the Function button</p>	
<p>20 - 30 sec. later: LED Power + Ready light up → Your mbSPIDER is now ready for operation.</p>	



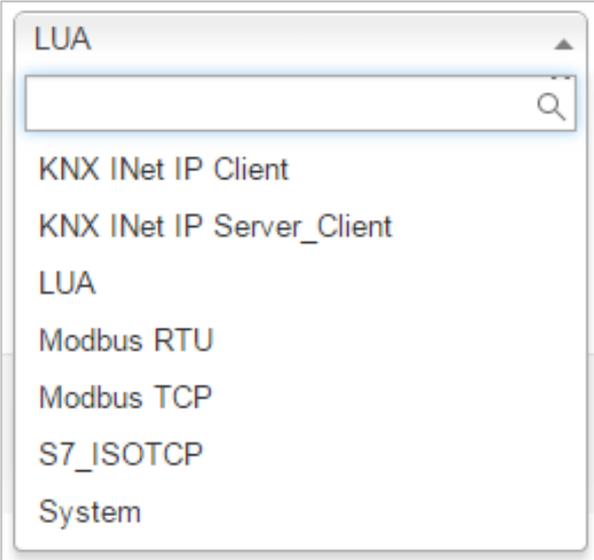
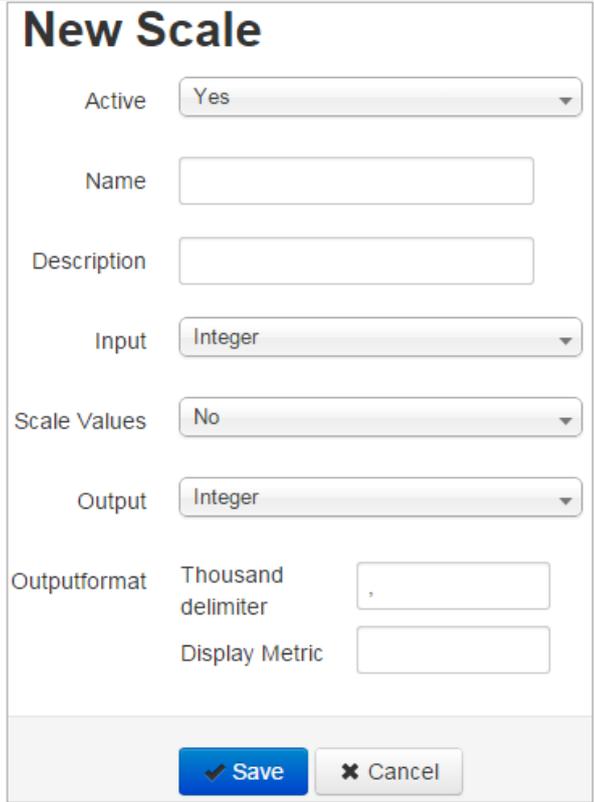
You can find more information on the visualization configuration and script programming of your **mbSPIDER** in the description at www.mbconnectline.com

21. Configuration / Visualization

The **Configuration** allows flexible design of sequences and routines, such as the monitoring of specific sequences or actions, to be performed by the **mbSPIDER**.

21.1 Configuration

The basic structure of a configuration is always the same:

Configuration	
Select Server	
Create Scale	

Define Tags

New Tag

Active Server Address Mask Address Description Scaling Intervall (sec.) Logging **Configure Widget**

New Widget Gauge

Active Display Title Widget Name Sector Colors

End	Color
<input type="text"/>	<input type="text" value="#"/>

Description Tag Scaling Request Interval

21.2 Visualization

The **Visualization** takes place by creating screens (see [Chapter 11.1 Screens](#)).



You can create a maximum of 64 screens, each with 16 widgets.

Visualization	
Create a new screen	<div data-bbox="544 479 1362 1236"><h3>Screens</h3><hr/><h4>New Screen</h4><p>Active <input type="text" value="Yes"/></p><p>Share Screen <input type="text" value="No"/></p><p>Title <input type="text"/></p><p>Column Count <input type="text" value="3"/></p><p>Description <input type="text"/></p><p><input type="button" value="Save"/> <input type="button" value="Cancel"/></p></div>
Configure a screen	<div data-bbox="427 1245 1485 1464"><h3>Start Screen</h3><p style="text-align: right;">Screen Config</p></div> <div data-bbox="427 1532 1485 1742"><h3>Start Screen</h3><p style="text-align: right;">Save Screen Add Widget Cancel</p></div>

22. Server

Menu **Administration** => **Server**

Currently, 7 permanently-implemented server drivers are available for the **mbSPIDER** (KNX INet IP Client, KNX INet IP Server_Client, LUA, Modbus RTU, Modbus TCP, S7_ISOTCP and System). Of these, you can select a maximum of 4 servers.

You can only use/create the "System" server driver once. You can combine all the other server drivers as desired within the limit (maximum of 4 servers).

22.1 Server Manager

Server

● Server Manager is not running
 Start Server Manager

Add

Active	Driver	Name
●	System	Systemtreiber

(c) MB Connect Line GmbH 2013

Field name / icon	Description
	To add a new server, click the "New" button.
Active ●	The server is active.
Active ●	The server is inactive but can be reactivated at any time.
Driver	Selected server driver.
Name	Mandatory field - Select a "meaningful" name for the selected server driver.
Description	For example, the name of the peripheral.
Actions	Clicking the icon allows you to edit the server.
Actions	Clicking the icon creates a copy of this server. You can then modify the copy and save it for a further/new server. After copying, you must replace the "System" server driver with a different type, as the "System" server can only be used once.
Actions	Clicking the icon allows you to delete the server.

22.2 Server types

Built-in server driver

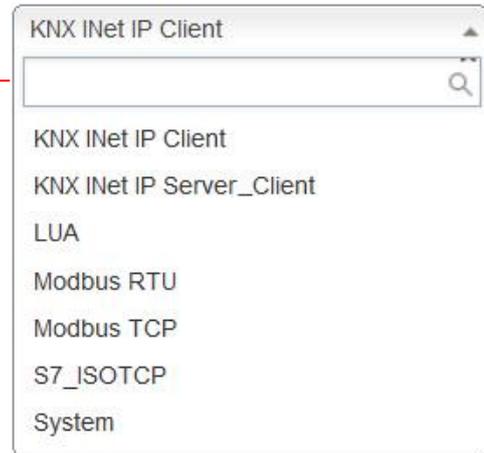
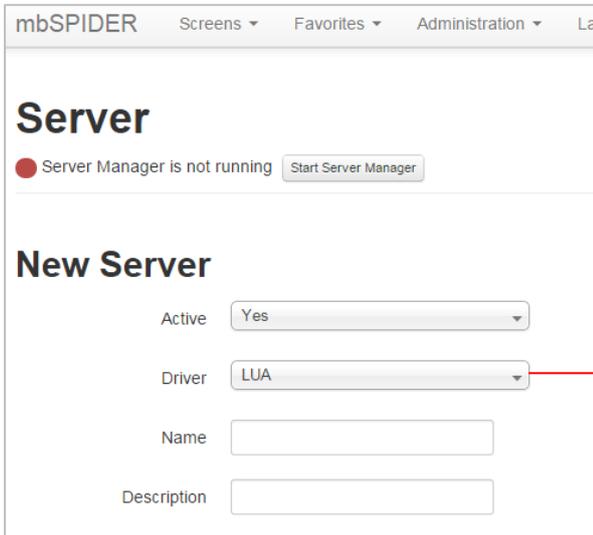
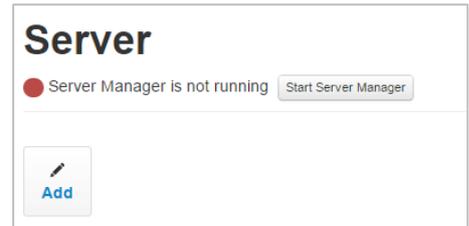
Server type	Description
<p>KNX INet IP Client</p>	<p>This server driver is used to create a sole connection to a KNX INet IP Interface. This driver is used when the existing KNX INet IP Interface is only to be used by the mbSPIDER. Each KNX INet IP Interface can only set up one connection to a communication partner.</p>
	<p>Visualization Monitoring</p>
<p>KNX INet IP Server_Client</p>	<p>The server "KNX INet IP Server_Client" is used if the KNX INet IP Interface is already occupied by another KNX INet IP Client. This driver in the mbSPIDER then offers both the interface to the KNX INet IP Interface and to the existing KNX INet IP Client (e.g. ETS4).</p>
	<p>Visualization Monitoring</p>
<p>LUA</p>	<p>The "LUA" server is used when you require, for example, storage space in the database for a script. This server sets up the connection to the database. This means that, whenever the LUA server creates a tag, a field is automatically created in the database. This field can be accessed, for example, using a script. Widgets can also access this tag.</p>
	<p>Visualization Monitoring</p>

Modbus RTU	The server "Modbus RTU" is used when a connection to a serial modbus device is to be set up.
Modbus TCP	Use the server "Modbus TCP" when a connection to a TCP Modbus device is to be set up.
S7_ISOTCP	Use the server "S7_ISOTCP" when a connection to an Ethernet PLC (e.g. S7-1200) is to be set up.
System	Use the server "System" when a connection to the Onboard I/Os is to be set up. This server can only be created once!

22.4 Add new server

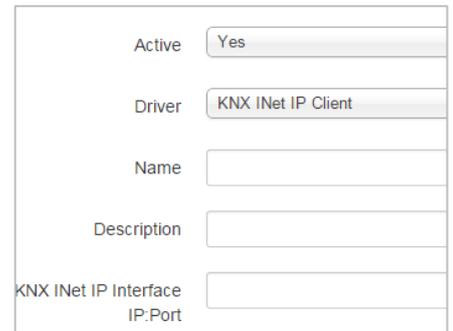
Menu **Administration** => **Server**

Clicking the **NEW** button takes you to the configuration menu, in which you can select and configure a server driver.



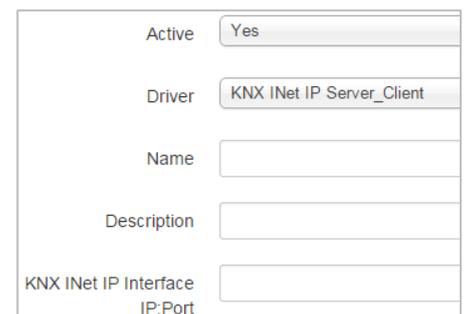
22.4.1 KNX INet IP Client

Field name	Mandatory field	Description	Example
Name	X	Name of the server	MB_bau2
Description		Free text box for a more accurate description of the server	Server for connection to the ENMX server
KNX IP Interface IP:Port	X	Here, the IP and the port with the syntax IP:PORT must be entered.	192.168.0.253:3623



22.4.2 KNX INet IP Server_Client

Field name	Mandatory field	Description	Example
Name	X	Name of the server	MB_bau2
Description		Free text box for a more accurate description of the server	MB_bau2 IP Interface
KNX IP Interface IP:Port	X	Here, the IP and the port with the syntax IP:PORT must be entered.	192.168.0.253:3623



22.4.3 LUA

Field name	Mandatory field	Description	Example
Name	X	Name of the server	Variable memory
Description		Free text box for a more accurate description of the server	LUA variables for script 1

Active	<input type="text" value="Yes"/>
Driver	<input type="text" value="LUA"/>
Name	<input type="text"/>
Description	<input type="text"/>

22.4.4 Modbus RTU

Field name	Mandatory field	Description	Example
Name	X	Name of the server	Modbus Device 1
Description		Free text box for a more accurate description of the server	Communication to Modbus device 1
Slave	X	Number of the slave	1
RTU baud rate	X	Drop-down box for the baud rate of the connection	115200
RTU Frame	X	Drop-down box for the RTU frame	8N1
RS Mode	X	Drop-down box for the connection type (0=RS232, 1=RS485)	RS232

Active	<input type="text" value="Yes"/>
Driver	<input type="text" value="Modbus RTU"/>
Name	<input type="text"/>
Description	<input type="text"/>
Slave	<input type="text" value="255"/>
RTU Baudrate	<input type="text" value="115200"/>
RTU Frame	<input type="text" value="8n1"/>
RS Mode	<input type="text" value="RS232"/>

22.4.5 Modbus TCP

Field name	Mandatory field	Description	Example
Name	X	Name of the server	Modbus Device 1
Description		Free text box for a more accurate description of the server	Communication to Modbus device 1
IP address	X	IP address of the Modbus TCP device	192.168.0.10
Port	X	Port of the Modbus TCP device	502
UID	X	UID of the mbSPIDER TCP device	0

Active	<input type="text" value="Yes"/>
Driver	<input type="text" value="Modbus TCP"/>
Name	<input type="text"/>
Description	<input type="text"/>
IP Address	<input type="text"/>
Port	<input type="text" value="502"/>
UID	<input type="text" value="0"/>

22.4.6 S7_ISOTCP

Field name	Mandatory field	Description	Example
Name	X	Name of the server	S7-1200 Controller 1
Description		Free text box for a more accurate description of the server	Communication to the PLC Controller 1
PLC IP address	X	IP address of the PLC	192.168.0.150
PLC slot address	X	Slot of the IP address	2

Active

Driver

Name

Description

SPS IP Address

SPS Slot Address

22.4.7 System

Field name	Mandatory field	Description	Example
Name	X	Name of the server	mbSPIDER System
Description		Free text box for a more accurate description of the server	Communication to the I/Os of the mbSPIDER

Active

Driver

Name

Description

23. Scaling

Scaling dynamically scales the raw value read from a variable of a controller / I/Os, before visualizing it for display in a widget.

Menu **Administration** => **Scaling**

Scaling

Add

Search:

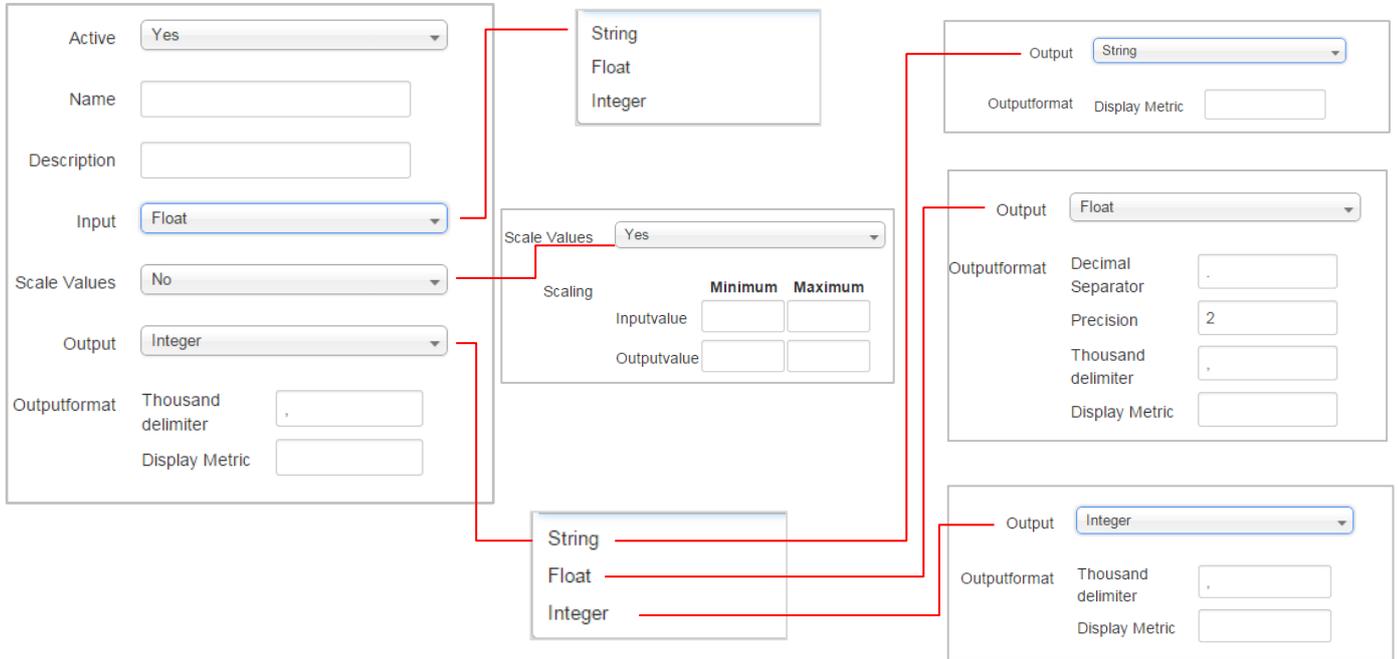
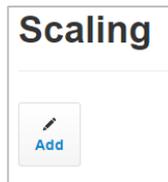
Active	Name	Description	Scaling Settings	Actions
●	AINVx	Analog Input (V)	Float (0-10) -> Float (0-10)	✎ ↺ 🗑
●	VDDIO	Power VDDIO	Float (0-30) -> Float (0-30)	✎ ↺ 🗑
●	AINAx	Analog Input (A)	Float (4-20) -> Float (4-20)	✎ ↺ 🗑
●	TEMP	Temperature	Float (0-100) -> Float (0-100)	✎ ↺ 🗑
●	VBG	Bandgap Reference	Float (0-30) -> Float (0-30)	✎ ↺ 🗑

Field name / icon	Description
	To add new scaling, click the "New" button. i You can create a total of 64 scalings.
Active ●	The scaling is active.
Active ●	The scaling is inactive but you can reactivate it at any time.
Name	Name of the scaling.
Description	Explanatory description for the new scaling.
Scaling Settings	Overview of the scaling settings made when a new scaling was created.
Actions	Clicking the icon allows you to edit the appropriate scaling.
Actions	Clicking the icon creates a copy of this scaling. You can then modify the copy and save it for a further/new scaling.
Actions	Clicking the icon allows you to delete the appropriate scaling.

23.1 Adding a new scaling

Menu **Administration** => **Scaling**

To create a new scaling, click the **NEW** button.



Field/name	Description	
Active	Drop-down field: Yes = The scaling is active. No = The scaling is inactive but you can reactivate it at any time.	
Name	Mandatory field: Name of the scaling.	
Description	More detailed description of the scaling. e.g.: Scaling for processor temperature.	
Input	Drop-down box: Input format for the raw value from a controller / I/O.	
Scale Values	Drop-down box: No = The raw value from a control / I/O is output without scaling. Yes = The raw value from a control / I/O is output converted according to the scaling settings.	
Input Value	Min/max value of the input value (raw value from a controller / I/O)	e.g. 0 / 10
Output Value	Min/max value of the scaled value.	e.g. -20 / +50
Output	Drop-down box: Output format of the value from a controller / I/O, scaled or unscaled.	
Thousand Delimiter	Simple for separating thousands	
Unit	A unit of measurement (°C, V, mA, etc.) can be entered here.	
Decimal Separator	Simple for separating decimals.	
Precision	Number of decimal places.	

24. Tags

Tags are used for targeted request of values from a controller / I/O.

Menu **Administration** => **Tags**

Tags

Add

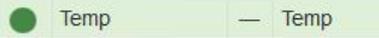
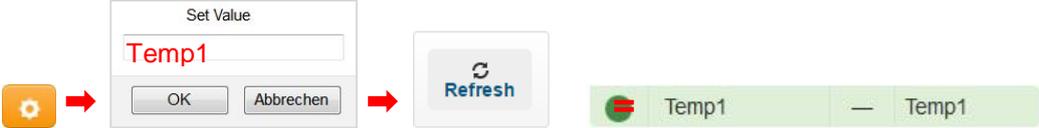
Refresh

CSV-Import

Search:

Active	Server	Address	Description
●	Systemtreiber (System)	Input(1)	DIN1
●	Systemtreiber (System)	Input(2)	DIN2
●	Systemtreiber (System)	Input(3)	AINV1
●	Systemtreiber (System)	Input(4)	AINV2

Field name / icon	Description						
	To add a new tag, click the "New" button. i You can create a total of 256 tags.						
	Clicking this button updates the polled values in the "Status" box.						
	Tag import from a CSV file.						
Active ●	The tag is active.						
Active ●	The tag is inactive but you can reactivate it at any time.						
Server	Server driver used to access the controller.						
Address	Tag address, e.g. the name of the variables for the "LUA" server type.						
Description	Explanatory description for the new tag.						
Logging	Display the logging setting.						
Status	Display of the polled values from a controller / I/O.						
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">● 0.0275367 — 0,03 V</td> <td>Raw value - Scaled value</td> </tr> <tr> <td style="text-align: center;">● no value avai... — no value avai...</td> <td>With the "System" server type, no values are displayed for the addresses "Output (1) - Output (6)".</td> </tr> <tr> <td style="text-align: center;">● Connection error — Connection error</td> <td>The connection to the controller / I/O could not be set up (possible causes for this can include incorrect addressing, a defective connection or a hardware defect).</td> </tr> </table>	● 0.0275367 — 0,03 V	Raw value - Scaled value	● no value avai... — no value avai...	With the "System" server type, no values are displayed for the addresses "Output (1) - Output (6)".	● Connection error — Connection error	The connection to the controller / I/O could not be set up (possible causes for this can include incorrect addressing, a defective connection or a hardware defect).
● 0.0275367 — 0,03 V	Raw value - Scaled value						
● no value avai... — no value avai...	With the "System" server type, no values are displayed for the addresses "Output (1) - Output (6)".						
● Connection error — Connection error	The connection to the controller / I/O could not be set up (possible causes for this can include incorrect addressing, a defective connection or a hardware defect).						

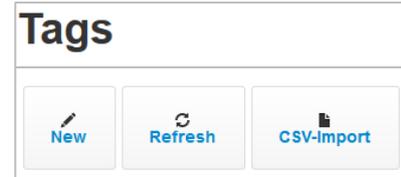
	 	LUA variable after input and after display update
Actions 	Clicking the icon allows you to edit the appropriate tag.	
Actions 	Clicking the icon creates a copy of this tag. You can then modify the copy and save it for a further/new tag.	
Actions 	Clicking the icon allows you to edit the appropriate tag.	
Actions 	You can then use this button to set the value for a LUA variable. 	

24.1 Adding a new tag

Menu **Administration** => **Tags**

To create a new tag, click the **New** button in the tag manager.

The tag settings required depend on the selected server type.



24.1.1 Server type: KNX INet IP Client / KNX INet IP Server_Client

Tags of KNX INet IP Client and the KNX IP INet Server_Client are cyclically polled by the device.

i With KNX / EIB an address can be used either to write or read!

Writeable tag

New Tag

Active:

Server:

Address Mask:

Address: / / /

Description:

Scaling:

Intervall (sec.):

Logging:

Readable tag

New Tag

Active:

Server:

Address Mask:

Address: / / /

Description:

Scaling:

Intervall (sec.):

Logging:

Field/name	Description
Active	Drop-down box: Yes = The tag is active. No = The tag is inactive but you can reactivate it at any time.
Server	Drop-down box of the created server types.
Address Mask	Drop-down box of the stored address formats, related to the selected server type.
Address	Input of the Group Address and EIS Type. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px 0;"> Address <input type="text" value="9"/> / <input type="text" value="0"/> / <input type="text" value="103"/> / <input type="text" value="1"/> </div> <p style="text-align: center;"> Group address EIS-type (see EIS Type table in Chapter 24.1.1.1) </p>
Description	Explanatory description for the new tag.

Scaling	Drop-down box of all created scales.
Interval	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Logging	Drop-down box for whether and when the polled value is to be logged.
Tolerance +/-	<p>This input box appears if you selected the "On value change" option in the "Logging" drop-down box along with a scaling.</p> <p>The input is made in numerals and is aligned to the scaling settings of the selected scaling.</p> <p>Example: Selected scaling</p> <div style="border: 1px solid gray; padding: 10px; width: fit-content; margin: 10px auto;"> <p>Scaling <input type="text" value="TEMP"/></p> <p>Intervall (sec.) <input type="text" value="1"/></p> <p>Logging <input type="text" value="On Value Change"/></p> <p>Tolerance +/- <input type="text" value="2.5"/></p> </div> <p>Inputting the tolerance (e.g. 2.5) specifies the range logged as a value change in the case of an over or undershoot.</p> <p>The value and format are aligned to the settings of the selected scaling. If you enter a decimal number (float), then a period (.) must be used as the decimal separator.</p> <p>Example: Setpoint= 50 °C; Tolerance = +/- 2.5 → A temperature value ≥ 52.5 or ≤ 47.5 °C is logged as a value change.</p>

24.1.1.1 EIS Types

KNX/EIB Function	Information length	EIS
Switch	1 Bit	Eis 1
Dimming (Position / Control / Value)	1 Bit / 4 Bit / 8 Bit	Eis 2
Time	3 Byte	Eis 3
Date	3 Byte	Eis 4
Floating Point	2 Byte	Eis 5
Relative value	1 Byte	Eis 6
Blinds / Roller shutter	1 Bit	Eis 7

KNX/EIB Function	Information length	EIS
Priority	1 Bit / 2 Bit	Eis 8
IEEE Floating point	4 Byte	Eis 9
16 Bit counter values	2 Byte	Eis 10
32 Bit counter values	4 Byte	Eis 11
Access control	1 Byte	Eis 13
8 Bit counter values	1 Byte	Eis 14

24.1.2 Server type: LUA

The tags of the LUA Server can be used as database memory space for the scripts.

New Tag

Active

Server

Variable

Description

Scaling

Intervall (sec.)

Logging

Field/name	Description
Active	Drop-down box: Yes = The tag is active. No = The tag is inactive but you can reactivate it at any time.
Server	Drop-down box of the created server types.
Variable	Mandatory field: Input of the variable's name Input format: "0 to 9"; "a to z"; "A to Z" (NO special characters)
Description	Explanatory description for the new tag.
Scaling	Drop-down box of all created scales.
Interval	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Logging	Drop-down box for whether and when the polled value is to be logged.

Tolerance +/-

This input box appears if you selected the "On value change" option in the "Logging" drop-down box along with a scaling.
The input is made in numerals and is aligned to the scaling settings of the selected scaling.

Example: Selected scaling

Scaling

Intervall (sec.)

Logging

Tolerance +/-

Inputting the tolerance (e.g. 2.5) specifies the range logged as a value change in the case of an over or undershoot.
The value and format are aligned to the settings of the selected scaling. If you enter a decimal number (float), then a period (.) must be used as the decimal separator.
Example:
Setpoint= 50 °C; Tolerance = +/- 2.5 → A temperature value ≥ 52.5 or ≤ 47.5 °C is logged as a value change.

24.1.3 Server type: Modbus RTU / Modbus TCP

New Tag

Active

Server

Address Mask

Address IR :

Description

Scaling

Intervall (sec.)

Logging

Input register Startaddress, Size

Digital Input Startaddress, Size **(DI)**

Coils Startaddress, Size **(CS)**

Input register Startaddress, Size **(IR)**

Holding register Startaddress, Size **(HR)**

The syntax of the tag consists of: [Start Address]: [LENGTH]

	Length	Description
DI	8	Byte
	16	int16
	32	int32
CS	8	Byte
	16	int16
	32	int32
IR	1	int16
	2	int32 (can be displayed from then on as float)
HR	1	int16
	2	int32 (can be displayed from then on as float)

Field/name	Description
Active	Drop-down box: Yes = The tag is active. No = The tag is inactive but you can reactivate it at any time.
Server	Drop-down box of the created server types.
Address Mask	Drop-down box of the stored address formats, related to the selected server type: Digital Input (DI), Coils (CS), Input register (IR) and Holding register (HR)
Address	Input of the Start address : Length of the tag.
Description	Explanatory description for the new tag.
Scaling	Drop-down box of all created scales.
Interval	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Logging	Drop-down box for whether and when the polled value is to be logged.
Tolerance +/-	<p>This input box appears if you selected the "On value change" option in the "Logging" drop-down box along with a scaling. The input is made in numerals and is aligned to the scaling settings of the selected scaling.</p> <p>Example: Selected scaling</p> <div data-bbox="384 1066 1070 1402" style="border: 1px solid gray; padding: 10px; margin: 10px 0;"> <p>Scaling <input type="text" value="TEMP"/></p> <p>Intervall (sec.) <input type="text" value="1"/></p> <p>Logging <input type="text" value="On Value Change"/></p> <p>Tolerance +/- <input type="text" value="2.5"/></p> </div> <p>Inputting the tolerance (e.g. 2.5) specifies the range logged as a value change in the case of an over or undershoot. The value and format are aligned to the settings of the selected scaling. If you enter a decimal number (float), then a period (.) must be used as the decimal separator. Example: Setpoint= 50 °C; Tolerance = +/- 2.5 → A temperature value ≥ 52.5 or ≤ 47.5 °C is logged as a value change.</p>

24.1.4 Server type: S7_ISOTCP

New Tag

Active: Yes

Server: s7 (S7_ISOTCP)

Address Mask: Datablock x, Bit 9.z, BOOL

Address: DB 10 .DBX 0 . 1

Description: Toggle Bit

Scaling: No Scaling

Intervall (sec.): 5

Logging: Intervalsetting

Datablock x, Bit 9.z, BOOL

Datablock x, Bit 9.z, BOOL

Datablock x, Byte y, BYTE

Datablock x, Word y, WORD

Datenpunktbeschreibung		
Address	Length	Description
DB[x].DBX[y].[z]	Bit	Data block bit
DB[x].DBB[y]	Byte	Data block byte
DB[x].DBW[y]	Word	Data block word
DB[x].DBD[y]	Double Word	Data block double word
M[x].[y]	Bit	Flag bit
MB[x]	Byte	Flag byte
MW[x]	Word	Flag word
MD[x]	Double Word	Flag double word
E[x]	Bit	Input data bit
EB[x]	Byte	Input data byte
EW[x]	Word	Input data word
ED[x]	Double Word	Input data double word
A[x].[y]	Bit	Output bit
AB[x]	Byte	Output byte
AW[x]	Word	Output word
AD[x]	Double Word	Output double word
PE[x].[y]	Bit	Periphery bit
PEB[x]	Byte	Periphery byte
PEW[x]	Word	Periphery word
PED[x]	Double Word	Periphery double word
T[x]	Timer (4 Byte)	Timer
Z[x]	Counter (4 Byte)	Counter

Depending on the address mask you have to complete the tag address. This tag address is readout cyclically from the S7 periphery.

Field/name	Description
Active	Drop-down box: Yes = The tag is active. No = The tag is inactive but you can reactivate it at any time.
Server	Drop-down box of the created server types.
Address Mask	Drop-down box of the stored address formats, related to the selected server type.
Address	Input of the tag address.
Description	Explanatory description for the new tag.
Scaling	Drop-down box of all created scales.
Interval	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Logging	Drop-down box for whether and when the polled value is to be logged.

Tolerance +/-

This input box appears if you selected the "On value change" option in the "Logging" drop-down box along with a scaling.
The input is made in numerals and is aligned to the scaling settings of the selected scaling.

Example: Selected scaling



Inputting the tolerance (e.g. 2.5) specifies the range logged as a value change in the case of an over or undershoot.
The value and format are aligned to the settings of the selected scaling. If you enter a decimal number (float), then a period (.) must be used as the decimal separator.
Example:
Setpoint= 50 °C; Tolerance = +/- 2.5 → A temperature value ≥ 52.5 or ≤ 47.5 °C is logged as a value change.

24.1.5 Server type: Systemtreiber (System)

Data points for this server type are connected to the hardware (Inputs / Outputs / LEDs) of the **mbSPIDER**.

Tags

New Tag

Active: Yes

Server: Systemtreiber (System)

Address Mask: Input(Number)

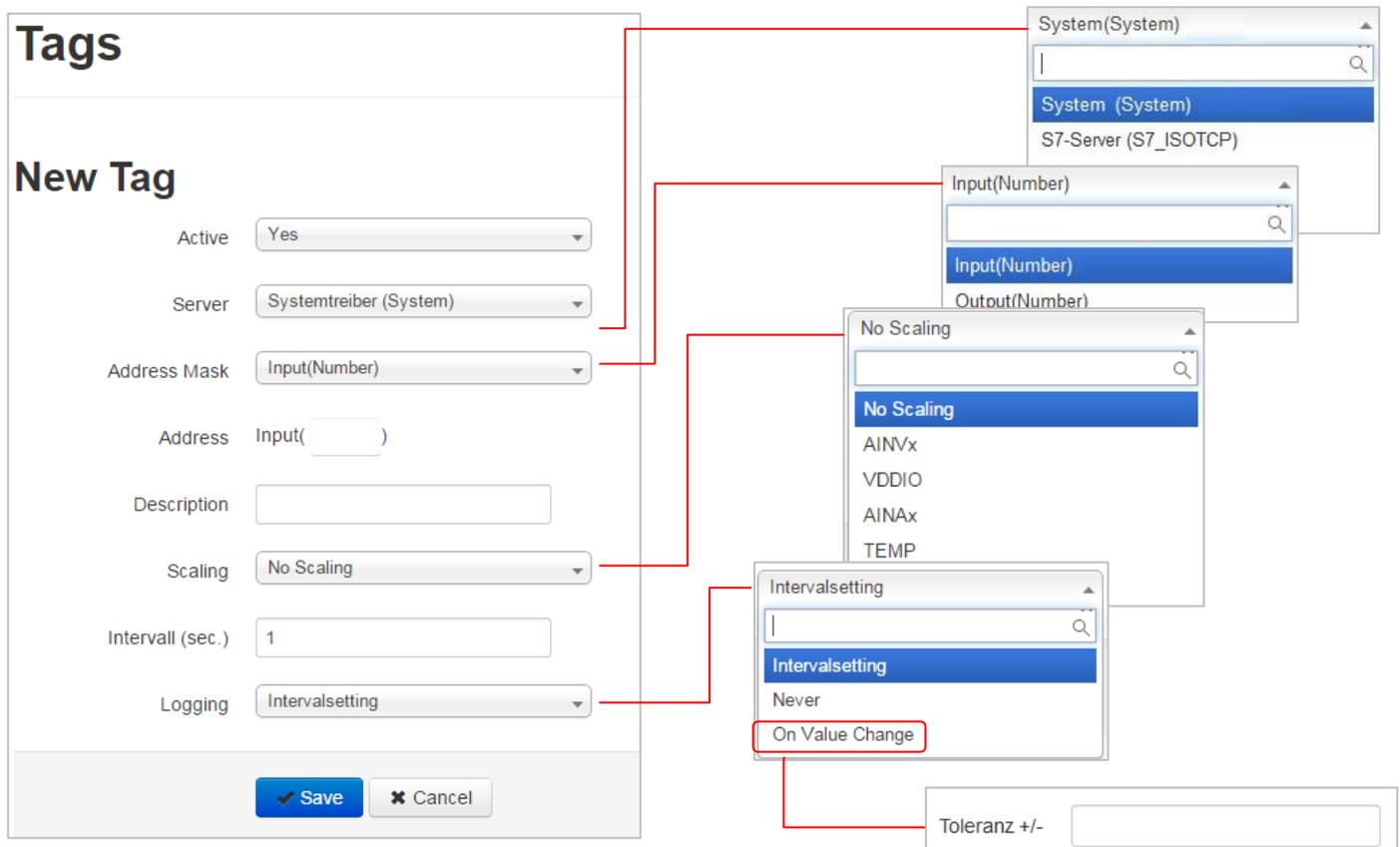
Address: Input()

Description:

Scaling: No Scaling

Intervall (sec.): 1

Logging: Intervallsetting



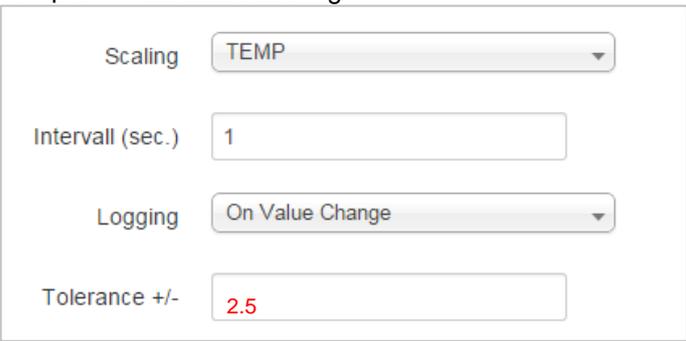
System(System)
System (System)
S7-Server (S7_ISOTCP)

Input(Number)
Input(Number)
Output(Number)

No Scaling
No Scaling
AINVx
VDDIO
AINAx
TEMP

Intervallsetting
Intervallsetting
Never
On Value Change

Toleranz +/-

Field/name	Description
Active	Drop-down box: Yes = The tag is active. No = The tag is inactive but you can reactivate it at any time.
Server	Drop-down box of the created server types.
Address Mask	Drop-down box of the stored address formats, related to the selected server type.
Address	Input of the tag address, related to the selected address formatting (see Chapter 24.1.5.1, Tag description).
Description	Explanatory description for the new tag.
Scaling	Drop-down box of all created scales.
Interval	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Logging	Drop-down box for whether and when the polled value is to be logged.
Tolerance +/-	<p>This input box appears if you selected the "On value change" option in the "Logging" drop-down box along with a scaling. The input is made in numerals and is aligned to the scaling settings of the selected scaling.</p> <p>Example: Selected scaling</p>  <p>Inputting the tolerance (e.g. 2.5) specifies the range logged as a value change in the case of an over or undershoot. The value and format are aligned to the settings of the selected scaling. If you enter a decimal number (float), then a period (.) must be used as the decimal separator.</p> <p>Example: Setpoint= 50 °C; Tolerance = +/- 2.5 → A temperature value ≥ 52.5 or ≤ 47.5 °C is logged as a value change.</p>

24.1.5.1 Tag description

These Tags are connected to the hardware (Inputs/Outputs/LEDs) of the **mbSPIDER**.

Address	INPUT/OUTPUT	Connection
Input(1)	Digital Input 1	Low 0-11 V, high 12–30 V; Spot 8
Input(2)	Digital Input 2	Low 0-11 V, high 12–30 V; Spot 9
Input(3)	Analog Input 1 Voltage	1 – 10 VDC; Spot 3
Input(4)	Analog Input 1 Current	4 – 20 mA (12-bit); Spot 4
Input(5)	Analog Input 2 Voltage	1 – 10 VDC; Spot 6
Input(6)	Analog Input 2 Current	4 – 20 mA (12-bit); Spot 7;
Input(7)	VDDIO	
Input(8)	VBG	
Input(9)	Processor Temperature	
Output(4)	LED 4 (Fc1)	
Output(5)	LED 5 (Fc2)	
Output(6)	LED 6 (Fc3)	
Output(7)	Relay	24 VDC/AC/1 A, changeover contact; Spot 10/11/12

25. Widgets

Menu **Administration** => **Widgets**

25.1 Overview

Widgets are display/control elements (I/O elements), which, when arranged in a screen, permit the actual visualization (see the screen "Start Screen" for example).

You can create a total of 64 widgets.

The following, freely changeable widget types are available.



25.1.1 Monitoring (I/O element)



Displays archived or active messages and, depending on the **configuration**, prompts

you to acknowledge the read message (acknowledgment does not affect the server).

To display messages in a monitoring widget, you must have set up "Monitoring" (menu: Administration => Monitoring) in advance.

MonitoringDemo

1

Tag: Input(1)@ (DIN1)

Timestamp: 1970-01-01 04:27:38

Value: 0

Message: hello

Came: 1970-01-01 04:27:38

Receipt:

Gone:

RAW Value: 0

25.1.2 Function (input element)



Manually triggers integrated scripts (Reboot, Text message, E-mail) or an executable script

that you have created.

rebootdemo

Reboot

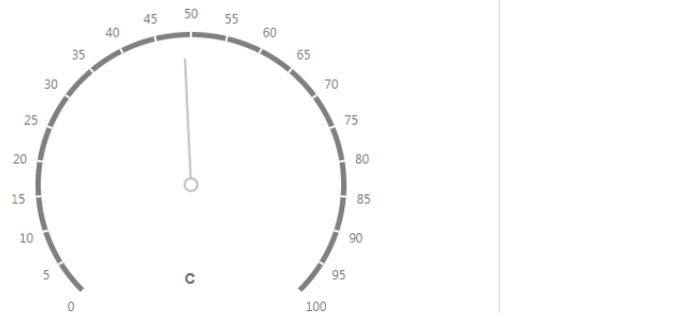
25.1.3 Gauge (display element)



Graphical display of tag values from a controller / I/O via the set server driver.

You can choose any color, scaling and unit of measurement.

GaugeDemo



25.1.4 Value(s) (display element)



Display, in list form, of tag values from a controller / I/O via the set server

driver.

You can choose any scaling and unit of measurement.

view value demo

Refresh Time	Timestamp	Valid	RAW Value	Value
2015-04-15 02:45:27	1970-01-01 04:16:37	●	0	0



25.1.5 Graph (display element)

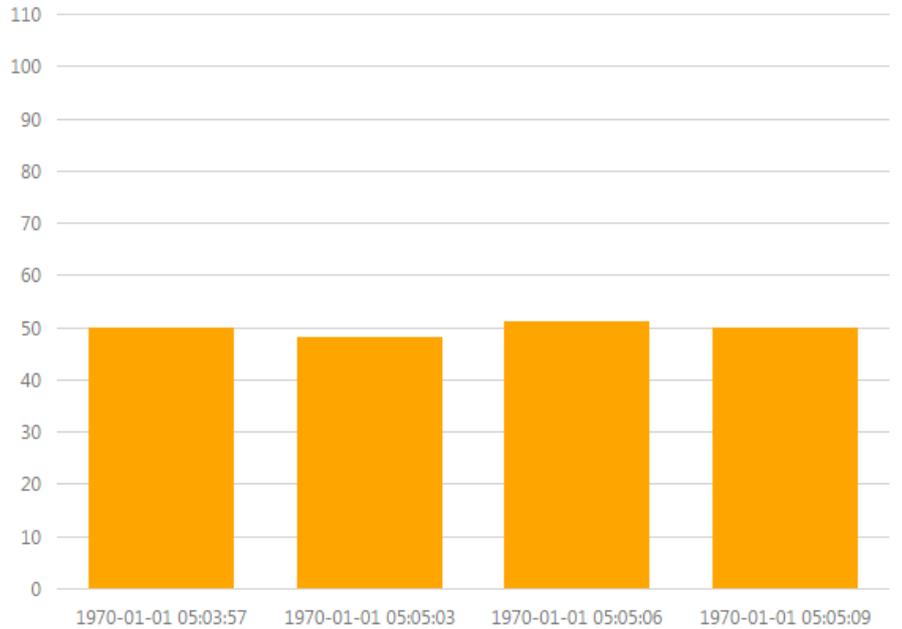


Graphical display of tag values from a controller / I/O via the set server driver.

You can label and scale the X / Y axes as you choose, and select either a

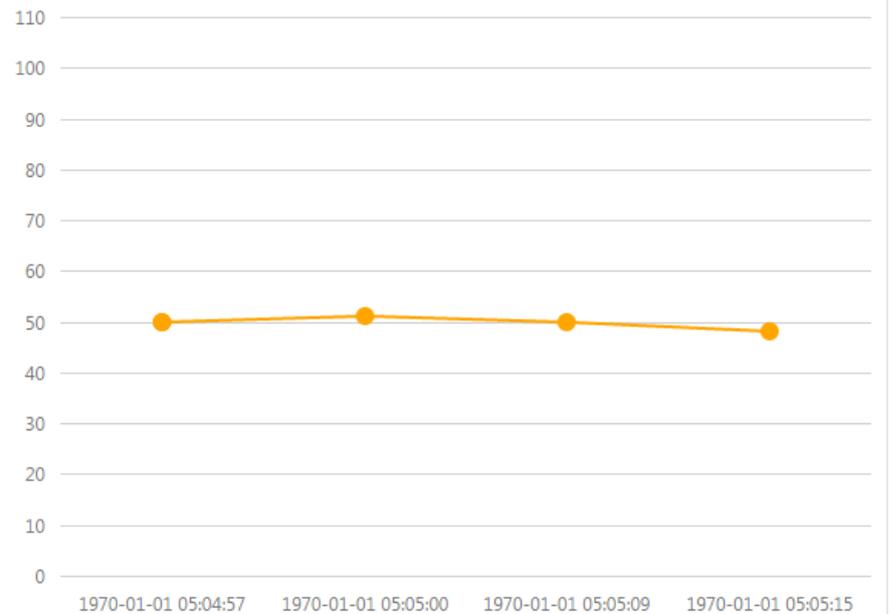
Bar chart

Bargraph Demo

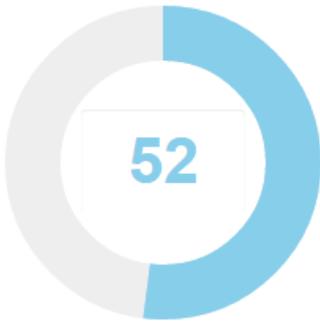


Line chart

Linegraph Demo



<p>Spline surface chart</p>	
<p>25.1.6 Input (I/O element)</p>  <p>Input box for transfer of a tag value to a describable tag in the set server.</p>	
<p>Switch</p> <p>Transfer takes place using a switch. In this way, you can only enter two previously defined values.</p>	
<p>DropDown</p> <p>Within a value range, transfer takes place using a drop-down menu. In this way, you can only use previously defined values.</p>	
<p>Slider</p> <p>Within a value range, transfer takes place in an infinitely adjustable manner using a slider.</p>	

<p>Dial</p> <p>Within a value range, transfer takes place in an infinitely adjustable manner using a dial.</p>	<div data-bbox="587 174 1481 212" style="border: 1px solid #ccc; padding: 2px;">dial demo ↻ ★</div> <div style="text-align: center; margin-top: 10px;"> <p>51,00 C</p>  <p style="font-size: 2em; font-weight: bold; color: #0070C0;">52</p> </div> <div style="margin-top: 10px;">  </div>																		
<p>25.1.7 Info (display element)</p> <div data-bbox="135 784 252 878" style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;">  <small>Info</small> </div> <p>Display of your own info texts and images (*.jpg, *.png, *.gif - max. 1 MB per graphic) and/or device and system information.</p>	<div data-bbox="587 687 1481 725" style="border: 1px solid #ccc; padding: 2px;">Demo Widget Info ⓘ ↻ ★</div> <p>You can add your own information like instructions or graphics in this widget. (*.jpg, *.png, *.gif - max. 1 MB)</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 20px;">  <div style="text-align: center;"> <h2 style="color: red; margin: 0;">MB CONNECT LINE</h2> <p style="margin: 0;">remote maintenance solutions</p> </div> </div>																		
<p>System</p>	<div data-bbox="587 1106 1481 1144" style="border: 1px solid #ccc; padding: 2px;">info all demo ↻ ★</div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr><td>Unitype</td><td>MDH901</td></tr> <tr><td>Devicename</td><td>mbSPIDER</td></tr> <tr><td>Devicedescription</td><td>datamodem</td></tr> <tr><td>Serialnumber</td><td>1615901010101</td></tr> <tr><td>Firmwareversion</td><td>2.2.3 -- 15-04-10 13:59:23</td></tr> <tr><td>Date/Time</td><td>Thu Jan 1 05:29:56 CET 1970</td></tr> </table>	Unitype	MDH901	Devicename	mbSPIDER	Devicedescription	datamodem	Serialnumber	1615901010101	Firmwareversion	2.2.3 -- 15-04-10 13:59:23	Date/Time	Thu Jan 1 05:29:56 CET 1970						
Unitype	MDH901																		
Devicename	mbSPIDER																		
Devicedescription	datamodem																		
Serialnumber	1615901010101																		
Firmwareversion	2.2.3 -- 15-04-10 13:59:23																		
Date/Time	Thu Jan 1 05:29:56 CET 1970																		
<p>Network Settings</p>	<table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="text-align: center;">● WLAN</td> <td>192.168.2.154 / 255.255.255.0 /</td> </tr> <tr><td colspan="2">Gateway 192.168.2.1</td></tr> <tr><td colspan="2">DNS 8.8.8.8</td></tr> <tr><td colspan="2">Link Quality <div style="width: 20px; height: 5px; background-color: #ccc; margin: 0;"></div></td></tr> <tr><td colspan="2">Signal Level dBm</td></tr> <tr> <td style="text-align: center;">● LAN</td> <td>172.25.13.44 / 255.255.0.0 / 00:50:C2:71:7A:90</td> </tr> <tr><td colspan="2">Gateway 172.25.255.253</td></tr> <tr><td colspan="2">1. DNS Server 8.8.8.8</td></tr> <tr><td colspan="2">2. DNS Server</td></tr> </table>	● WLAN	192.168.2.154 / 255.255.255.0 /	Gateway 192.168.2.1		DNS 8.8.8.8		Link Quality <div style="width: 20px; height: 5px; background-color: #ccc; margin: 0;"></div>		Signal Level dBm		● LAN	172.25.13.44 / 255.255.0.0 / 00:50:C2:71:7A:90	Gateway 172.25.255.253		1. DNS Server 8.8.8.8		2. DNS Server	
● WLAN	192.168.2.154 / 255.255.255.0 /																		
Gateway 192.168.2.1																			
DNS 8.8.8.8																			
Link Quality <div style="width: 20px; height: 5px; background-color: #ccc; margin: 0;"></div>																			
Signal Level dBm																			
● LAN	172.25.13.44 / 255.255.0.0 / 00:50:C2:71:7A:90																		
Gateway 172.25.255.253																			
1. DNS Server 8.8.8.8																			
2. DNS Server																			

<p>System Log</p>	<pre> 370: Jan 1 05:31:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 369: Jan 1 05:30:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 368: Jan 1 05:29:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 367: Jan 1 05:28:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 366: Jan 1 05:27:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 365: Jan 1 05:26:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 364: Jan 1 05:25:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 363: Jan 1 05:24:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 362: Jan 1 05:23:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use 361: Jan 1 05:22:36 mbSPIDER daemon.err inetd[3573]: ssh/tcp: bind: Address already in use </pre>
<p>Log Data Count</p>	<p>Logdata Count 10000</p>
<p>USB</p>	<p> USB</p>
<p>Internet</p>	<p> Internet Connection Connection OK (WAN-Ethernet)</p>
<p>Cloud Server</p>	<p> Cloudserver</p>
<p>WLAN</p>	<div data-bbox="590 862 1476 918"> <p>Demo Widget Info WLAN  </p> </div> <div data-bbox="598 963 1460 1075"> <p> WLAN MB Connect Line Guest WLAN 192.168.2.154 / 255.255.255.0 / 16:FE:ED:E7:CC:51</p> </div> <div data-bbox="598 1086 1460 1142"> <p>Gateway 192.168.2.1</p> </div> <div data-bbox="598 1153 1460 1209"> <p>DNS 8.8.8.8</p> </div> <div data-bbox="598 1220 1460 1276"> <p>Link Quality </p> </div> <div data-bbox="598 1288 1460 1355"> <p>Signal Level -68 dBm</p> </div>
<p>Modem</p>	<div data-bbox="590 1433 1476 1489"> <p>Demo Widget Info Modem   </p> </div> <div data-bbox="598 1512 1468 1601"> <p>Last Modemerror There is no SIM Card inserted. Please insert a SIM Card</p> </div> <div data-bbox="598 1612 1468 1668"> <p> Modem</p> </div>

<p>CTM</p>	<div data-bbox="587 174 1484 649"><h3>Demo Widget Info CTM</h3><p>CTM vpn2.mbconnect24.net</p><p>Control <input type="button" value="Connect CTM"/></p><p>CTM Log CTM is disabled, no configuration download. getting config from local vpn configuration starting complete cycle... CTM is disabled, no configuration download. getting config from local vpn configuration</p></div>
<p>25.1.8 System (I/O element)</p> <div data-bbox="135 772 255 862"></div> <p>Here, you can perform system settings just like in the actual system/device settings (menu Administration => Settings).</p> <p>This allows a user, who does not possess Administrator rights, to make specific settings via this widget type.</p>	<div data-bbox="587 667 1484 1713"><h3>System Demo</h3><p>Value in Title Bar <input type="text" value="mbSPIDER"/></p><p>Text in Footer Bar <input type="text" value="(c) MB Connect Line GmbH 2013"/></p><p>Devicename <input type="text" value="mbSPIDER"/></p><p>Devicedescription <input type="text" value="datamodem"/></p><p>Timezone <input type="text" value="Europe/Berlin"/></p><p>Email Sender for Systemmails <input type="text" value="admin@admin.de"/></p><p>Webserverport <input type="text" value="80"/></p><p>Syslog Server <input type="text"/></p><p>Syslog Serverport <input type="text" value="514"/></p><p>FTP Password <input type="password" value="..."/></p><p>FTP Password repeat <input type="password" value="..."/></p><p><input type="button" value="Submit Settings"/></p></div>

<p>NTP</p>	<div data-bbox="598 181 1460 629"><h3>NTP demo</h3><p>NTP Servername <input type="text" value="0.de.pool.ntp.org"/></p><p>Interval (s) <input type="text" value="0"/></p><p>Time, if NTP fails (yyyy-mm-dd HH:MM:SS) <input type="text" value="2014-10-15 16:06:00"/></p><p><input type="button" value="Submit Settings"/></p></div>
<p>Network Settings</p>	<div data-bbox="598 660 1460 1319"><h3>Network Demo</h3><p>LAN: IP-Address <input type="text" value="172.25.13.44"/></p><p>LAN: Subnetmask <input type="text" value="255.255.0.0"/></p><p>WAN: Interfacetype <input type="text" value="as LAN"/></p><p>Gateway <input type="text" value="172.25.255.253"/></p><p>1. DNS Server <input type="text" value="8.8.8.8"/></p><p>2. DNS Server <input type="text"/></p><p><input type="button" value="Submit Settings"/></p></div>
<p>Connection Settings</p>	<div data-bbox="598 1368 1460 1803"><h3>Connect Demo</h3><p>Internetconnection <input type="text" value="WAN-Ethernet"/></p><p>Test-Address <input type="text" value="8.8.8.8"/></p><p>Test-Interval (s) <input type="text" value="60"/></p><p><input type="button" value="Submit Settings"/></p></div>

Cloud Server

Cloudserver DemoPortalserver Connect Portalserveraddress Portalserverport Username Password Password Confirmation Portalserverconfiguration Use PROXY-Server

WLAN

WLAN DemoInterface Type SSID Authentication Mode Encrypt Mode Key Operating Frequency Advanced Settings

<p>Modem</p>	<div data-bbox="587 174 1487 922"> <h3>Demo Widget System Modem</h3> <p>Modem Initialisierung <input type="text"/></p> <p>SIM Pin <input type="text"/></p> <p>APN Einstellung <input type="text" value="internet.t-d1.de"/></p> <p>Telefonnummer <input type="text" value="*99***1#"/></p> <p>Benutzername <input type="text" value="t-mobile"/></p> <p>Passwort <input type="password" value="••"/></p> <p>Passwort Wiederholen <input type="password" value="••"/></p> <p><input type="button" value="Speichern"/></p> </div>
<p>25.1.9 iFrame (display element)</p> <div data-bbox="124 1048 236 1137"> <p>iFrame</p> </div> <p>Display of web content available via HTTP, such as films, animations, webcam images, etc.</p>	<div data-bbox="587 945 1487 1742"> <h3>Demo Widget iFrame II</h3> </div>

25.2 Widget Manager

Menu **Administration** => **Widgets**

Widgets



Active		Title	Description
		Systeminfo	Systeminfo
		Erste Schritte	Erste Schritte Deutsch
		First Steps	First Steps English
		Digital Input 1	Digital Input 1
		Digital Input 2	Digital Input 2
		Analog Input 1	Analog Input 1 (V)
		Analog Input 2	Analog Input 2 (V)
		Analog Input 1	Analog Input 1 (mA)
		Analog Input 2	Analog Input 2 (mA)

Field name / icon	Description
e.g.	Selection button for a new widget to be created.
Active	The widget is active.
Active	The widget is inactive but you can reactivate it at any time.
e.g.	Icon for the created widget.
Title	Name of the widget shown in the widget frame.
Description	Description of the widget.
Tag	The referenced tag is displayed here, according to the widget type.
Actions	Clicking the icon allows you to edit the appropriate widget.
Actions	Clicking the icon creates a copy of this widget. You can then modify the copy and save it for a further/new widget.
Actions	Clicking the icon allows you to delete the appropriate widget.

25.3 Add new widget

Administration => **Widgets**



Clicking the appropriate widget icon opens the corresponding configuration menu for the creation of a new widget.

i You can create a total of 64 widgets.

25.3.1 Monitoring (I/O element)

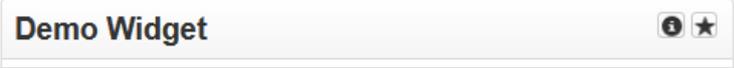
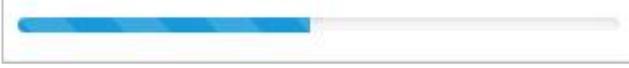
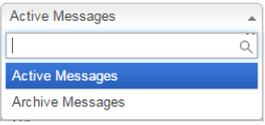


Displays active or archived messages from a monitor and, depending on configuration, prompts you to acknowledge read messages (acknowledgment of the message does not affect the server). To display messages in a monitoring widget, you must have set up "Monitoring" (menu: Administration => Monitoring) in advance.

New Widget Monitoring

<p>Active: <input type="text" value="Yes"/></p> <p>Widget Name: <input type="text"/></p> <p>Description: <input type="text"/></p> <p>Show All Tags: <input type="text" value="Yes"/></p> <p>Scaling: <input type="text" value="Use Tag Setting"/></p> <p>Request Interval: <input type="text" value="10"/></p> <p>Show As Box: <input type="text" value="Yes"/></p> <p>Statusbar Elements: <input type="text" value="Valid x"/> <input type="text" value="Next Refresh x"/></p>	<p>Display Title: <input type="text"/></p> <p>Which Messages: <input type="text" value="Active Messages"/></p> <p>The Last x Messages: <input type="text" value="5"/></p> <p>Rolling Messages: <input type="text" value="Yes"/></p> <p>Show:Header: <input type="text" value="Yes"/></p> <p>Show:Tag: <input type="text" value="Yes"/></p> <p>Show:Timestamp: <input type="text" value="Yes"/></p> <p>Show:Value: <input type="text" value="Yes"/></p> <p>Show:Message: <input type="text" value="Yes"/></p> <p>Show:Come: <input type="text" value="Yes"/></p> <p>Show:Receipt: <input type="text" value="Yes"/></p> <p>Show:Gone: <input type="text" value="Yes"/></p> <p>Show:RAW Value: <input type="text" value="Yes"/></p>
---	--

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Show All Tags	Drop-down box: Yes = All the tags created up to now are shown. No = You can select a tag from the "Tag" list for monitoring.

Tag	Drop-down box with all the tags created up to that time.
Scaling	Drop-down box: a) No scaling b) Use tag setting c) All scalings created up to that time
Request Interval (sec)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen.  No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Status Bar Elements	Here, you can display each update interval in the status bar of the widget. 
Title	Title displayed within the widget, even if this was created without a frame ("Show As Box = No"). 
Display Which Messages?	Drop-down box:  If, during the creating of a monitor, you selected "Logging = Yes", all the messages from this monitoring are archived. You can display these archived messages here. Depending on the set request interval, messages are shown immediately they occur.
The Last x Messages	Input box for the displayed number of messages.
Rolling Messages	Drop-down box: Yes = Only one message is ever displayed. No = The last x messages are displayed in a table. The following generally applies: Within the displayed number of the "last x messages", the oldest message is pushed out by the latest one.
Show: Header	Drop-down box: Yes = The headings/field names of the displayed values are shown. No = The headings/field names of the displayed values are not shown.
Show: Tag	Drop-down box: Yes = The used tag is shown. No = The used tag is not shown.
Show: Timestamp	Drop-down box: Yes = The timestamp of when the event for the message occurred is shown. No = The timestamp of when the event for the message occurred is not shown.
Show: Value	Drop-down box: Yes = The scaled value (e.g. 65 °C) is displayed. No = The scaled value is not shown.

Show: Message	Drop-down box: Yes = A defined message text is displayed. No = No message texts are displayed.
Show: Occurred	Drop-down box: Yes = The timestamp of when the event for the message occurred is shown. No = The timestamp of when the event for the message occurred is not shown.
Show: Acknowledged	Drop-down box: Yes = A button for acknowledging the message is shown. No = The message cannot be acknowledged.
Show: Gone	Drop-down box: Yes = The timestamp of when the event for the message went again is shown. No = The timestamp of when the event for the message went again is not shown.
Show: Raw Value	Drop-down box: Yes = The raw value from a controller / I/O is shown. No = The raw value from a controller / I/O is not shown.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).

25.3.2 Button (input element)



Use this widget to launch supplied scripts (Reboot, Text message, E-mail) or your own executable scripts manually.

New Widget Button

Active

Widget Name

Description

Show As Box

Type: "Reboot"

Function Type

Button Caption

Button Type

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px 0;"> <p>Demo Widget Funktion ⓘ ★</p> <div style="text-align: center; margin: 10px 0;"> <div style="background-color: #e74c3c; color: white; padding: 5px 15px; border-radius: 3px;">System Restart</div> </div> </div> No = The widget is shown without a frame or name. <div style="text-align: center; margin: 5px 0;"> <div style="background-color: #e74c3c; color: white; padding: 5px 15px; border-radius: 3px;">System Restart</div> </div>
Type	Drop-down box: Reboot = The device is rebooted. Execute Script = Launch an executable script using a button or on updating.
Button Caption	Labeling of the button (e.g.: System reboot).
Color	Drop-down box: Color of the button.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).

Type: "Execute script" Execute on "Button Click"

New Widget Button

Active <input type="text" value="Yes"/>	Function Type <input type="text" value="Execute Skript"/>
Widget Name <input type="text"/>	Script <input type="text" value="E-Mail send (demo)"/>
Description <input type="text"/>	Execute On <input type="text" value="Button Click"/>
Show As Box <input type="text" value="Yes"/>	Button Caption <input type="text"/>
	Button Type <input type="text" value="Default"/>

Field name / icon	Description
Type	Drop-down box: Execute Script = Launch an executable script using a button or on updating.
Script	Drop-down box with all the tags created up to that time.
Execute On	Drop-down box: Button Click = The selected script is launched using the generated button. Update = The selected script is launched after every update.

Type: "Execute script"; Execute on "Update"

New Widget Button

Active <input type="text" value="Yes"/>	Function Type <input type="text" value="Execute Skript"/>
Widget Name <input type="text"/>	Script <input type="text" value="E-Mail send (demo)"/>
Description <input type="text"/>	Execute On <input type="text" value="Refresh Timer"/>
Request Interval <input type="text" value="10"/>	
Show As Box <input type="text" value="Yes"/>	
Statusbar Elements <input type="text" value="Valid x Next Refresh x"/>	

Field name / icon	Description
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Execute On	Drop-down box: Update = The selected script is launched after every update. Button Click = The selected script is launched using the generated button.

25.3.3 Gauge (display element)

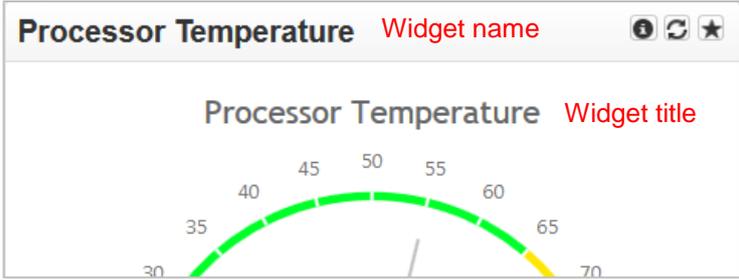
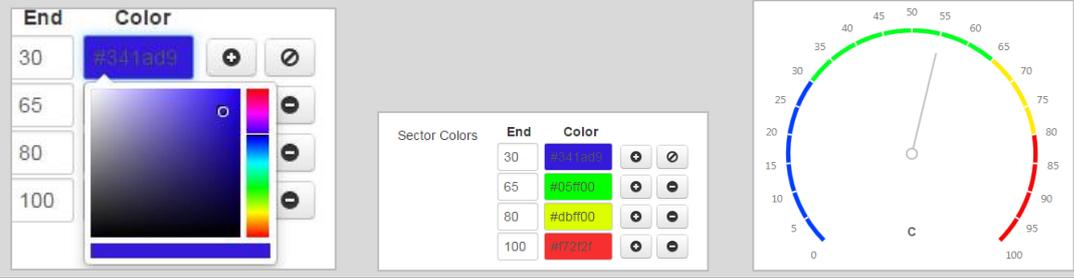


Graphical display of tag values from a controller / I/O via the set server driver.
You can choose any color, scaling and unit of measurement.

New Widget Gauge

Active <input type="text" value="Yes"/>	Display Title <input type="text"/>
Widget Name <input type="text"/>	Sector Colors <input type="text" value="End"/> <input type="text" value="Color"/> <input type="button" value="#"/> <input type="button" value="↕"/> <input type="button" value="⊗"/>
Description <input type="text"/>	
Tag <input type="text" value="Input(1)@ (DIN1)"/>	
Scaling <input type="text" value="Use Tag Setting"/>	
Request Interval <input type="text" value="10"/>	
Show As Box <input type="text" value="Yes"/>	
Statusbar Elements <input type="text" value="Valid x"/> <input type="text" value="Next Refresh x"/>	

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Tag	Drop-down box with all the tags created up to that time.
Scaling	Drop-down box for: <ul style="list-style-type: none"> a) No scaling b) Use tag settings c) A scaling from the scalings created up to that point <div style="float: right; border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> </div>
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen. <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0; display: inline-block;"> Demo Widget </div> No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Status Bar Elements	Drop-down box for selective display of: <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0; display: inline-block;"> 55,00 C 2014-11-06 08:51:21 </div> Valid Value Last update Next update

<p>Title</p>	<p>Title displayed within the widget, even if this was created without a frame ("Show As Box = No").</p> 
<p>Sector Colors</p>	<p>To aid clarity, you can divide the widget up into color-coded sectors. If no division into sectors is defined, then the widget is shown in monochrome.</p> 
<p>End</p>	<p>Specification of a value range for the appropriate sector.</p>
<p>Color</p>	<p>If you click this field, a color picker opens to choose the color of the appropriate sector.</p>
	<p>Clicking the button creates an additional sector.</p>
	<p>Clicking the button deletes the contents of this sector.</p>
	<p>Clicking the button deletes the appropriate sector.</p>
<p>Widget Rights</p>	<p>Here, rights are assigned to the user groups created up to that point (see chapter User Groups).</p>

25.3.4 Value(s) (display element)

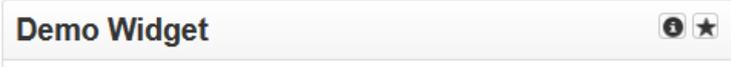
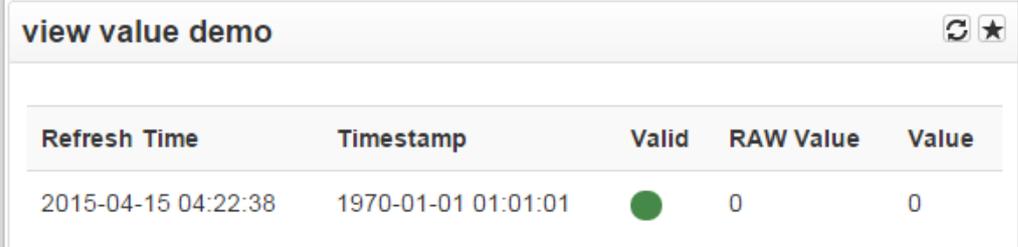
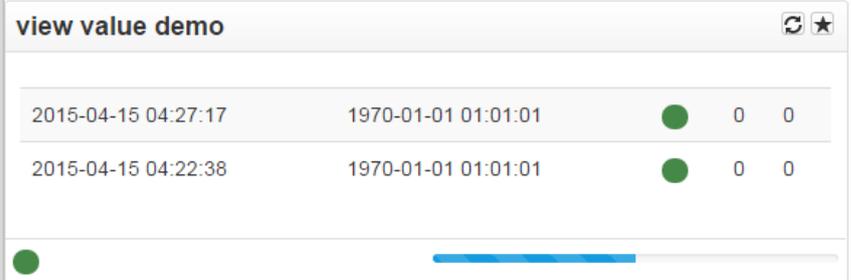


Display of tag values (scaled and/or unscaled) from a controller / I/O via the set server driver, in list form. You can choose any scaling and unit of measurement.

New Widget View Value

<p>Active <input type="button" value="Yes"/></p> <p>Widget Name <input type="text"/></p> <p>Description <input type="text"/></p> <p>Tag <input type="button" value="Input(1)@ (DIN1)"/></p> <p>Scaling <input type="button" value="Use Tag Setting"/></p> <p>Request Interval <input type="text" value="10"/></p> <p>Show As Box <input type="button" value="Yes"/></p> <p>Statusbar Elements <input type="button" value="Valid x"/> <input type="button" value="Next Refresh x"/></p>	<p>Display Title <input type="text"/></p> <p>Shown Values (count) <input type="text" value="5"/></p> <p>Refresh View <input type="button" value="Every Interval"/></p> <p>Show:Header <input type="button" value="Yes"/></p> <p>Show:Refresh Time <input type="button" value="Yes"/></p> <p>Show:Timestamp <input type="button" value="Yes"/></p> <p>Show:Valid <input type="button" value="Yes"/></p> <p>Show:RAW Value <input type="button" value="Yes"/></p> <p>Show:Value <input type="button" value="Yes"/></p> <p>Display Value as <input type="button" value="Value"/></p> <p>Font Size <input type="button" value="100%"/></p>
--	--

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Tag	Drop-down box with all the tags created up to that time.
Scaling	Drop-down box for: <ul style="list-style-type: none"> a) No scaling b) Use tag settings c) A scaling from the scalings created up to that point <div style="float: right; border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p style="margin: 0;">Use Tag Setting</p> <div style="border: 1px solid gray; padding: 2px; margin: 2px;"> <input style="width: 100%; border: none;" type="text"/> </div> <ul style="list-style-type: none"> <li style="padding: 2px;">No Scaling <li style="padding: 2px; background-color: #0070c0; color: white;">Use Tag Setting <li style="padding: 2px;">AINVx <li style="padding: 2px;">VDDIO <li style="padding: 2px;">AINAx <li style="padding: 2px;">TEMP <li style="padding: 2px;">VBG </div>
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.

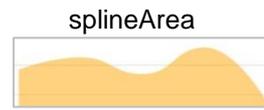
<p>Show As Box</p>	<p>Drop-down box: Yes = The widget is shown as a framed element in a screen.</p>  <p>No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.</p>										
<p>Status Bar Elements</p>	<p>Drop-down box for selective display of:</p>  <p>Valid Value Last update Next update</p>										
<p>Title</p>	<p>Title displayed within the widget, even if this was created without a frame ("Show As Box = No").</p>  <table border="1" data-bbox="456 712 1434 848"> <thead> <tr> <th>Refresh Time</th> <th>Timestamp</th> <th>Valid</th> <th>RAW Value</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>2015-04-15 04:22:38</td> <td>1970-01-01 01:01:01</td> <td></td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Refresh Time	Timestamp	Valid	RAW Value	Value	2015-04-15 04:22:38	1970-01-01 01:01:01		0	0
Refresh Time	Timestamp	Valid	RAW Value	Value							
2015-04-15 04:22:38	1970-01-01 01:01:01		0	0							
<p>Shown Values (count)</p>	<p>Here, define how many values (line) are to be displayed in a widget.</p>										
<p>Refresh View</p>	<p>Drop-down box: Every Interval = The display is updated after each request interval and the last x set values (lines) are always shown. On Value Change = The display is only updated when the requested value from the control / I/O changes.</p>										
<p>Show: Header</p>	<p>Drop-down box: Yes = The headings/field names of the displayed values are shown.</p>  <p>No = The headings/field names of the displayed values are not shown.</p> 										
<p>Show: Refresh Time</p>	<p>Drop-down box: Yes = The refresh time is displayed. No = The refresh time is hidden.</p>										

Show: Timestamp	Drop-down box: Yes = The timestamp is displayed. No = The timestamp is hidden.
Show: Valid	Drop-down box: Yes = LED for Valid is shown. No = LED for Valid is hidden.
Show: Raw Value	Drop-down box: Yes = The raw value is displayed. No = The raw value is hidden.
Show: Value	Drop-down box: Yes = Values are displayed. No = Values are hidden.
Display Value As	Drop-down box: Value(s) = Scaled values are shown as a decimal value, as defined. LED = Scaled values are shown as LED icons. LED, Value(s) = Scales values are shown as a decimal value and LED icon. A value display as an LED icon is only wise when individual value ranges are defined by sector colors.
Sector Colors	<p>The LED symbol colors for individual value ranges are displayed here. You can choose the ranges and colors freely.</p> 
End	Specification of a value range for the appropriate sector.
Color	If you click this field, a color picker opens to choose the color of the appropriate sector.
	Clicking the button creates an additional sector.
	Clicking the button deletes the contents of this sector.
	Clicking the button deletes the appropriate sector.
Font Size	Drop-down box for the font scaling (in 10% steps up to max. 200%) within the widget.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).



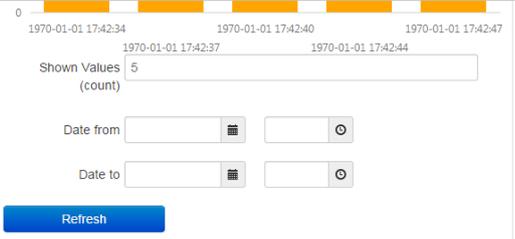
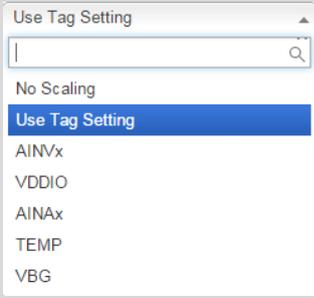
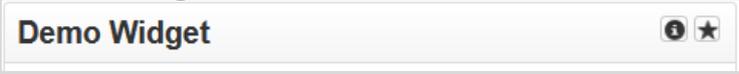
25.3.5 Graph (display element)

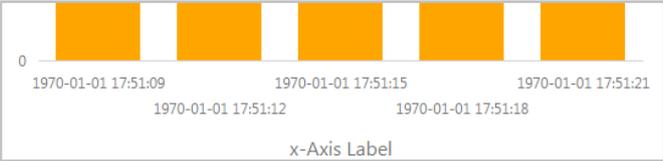
Graphical display of tag values from a controller / I/O via the set server driver.
 You can choose the X / Y axis description and scaling freely.
 The following diagram types are available:



New Widget Graph

<p>Active <input type="button" value="Yes"/></p> <p>Widget Name <input type="text"/></p> <p>Description <input type="text"/></p> <p>Datatype <input type="button" value="Livedata"/></p> <p>Tag <input type="button" value="Input(1)@ (DIN1)"/></p> <p>Scaling <input type="button" value="Use Tag Setting"/></p> <p>Show As Box <input type="button" value="Yes"/></p> <p>Statusbar Elements <input type="button" value="Valid x"/> <input type="button" value="Next Refresh x"/></p>	<p>Display Title <input type="text"/></p> <p>Shown Values (count) <input type="text" value="5"/></p> <p>Chart Type <input type="button" value="Bargraph"/></p> <p>x-Axis Label <input type="text"/></p> <p>x-Axis Field <input type="button" value="Timestamp"/></p> <p>y-Axis Label <input type="text"/></p> <p>y-Axis Field <input type="button" value="Value"/></p>
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Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Data Type	Drop-down box: Live data = The last x values (see "Shown Values") are displayed. Log data = The last x logged values (see "Shown Values") from the database are displayed. This data type also offers the option <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 1; padding-left: 20px;"> <p>a) Of changing the number of display values directly in the display b) Defining the time period of the logged values.</p> </div> </div>
Tag	Drop-down box with all the tags created up to that time.
Scaling	Drop-down box for: <ul style="list-style-type: none"> a) No scaling b) Use tag settings c) A scaling from the scalings created up to that point 
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen.  No = The widget is shown without a frame or name. Should a name still be required, the "Title" input box must be filled out.
Status Bar Elements	Drop-down box for selective display of:  Valid Value Last update Next update When log data is displayed, the settings have no effect.

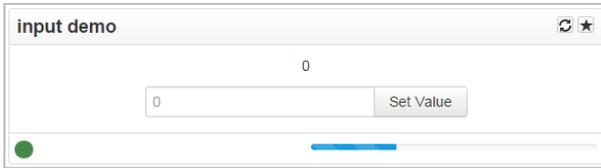
<p>Title</p>	<p>Title displayed within the widget, even if this was created without a frame ("Show As Box = No").</p> 
<p>Shown Values (count)</p>	<p>Here, define how many values (line) are to be displayed in a widget.</p> <p>When you select the "log data" data type, you can change the preset number of shown values in the display directly using the widget. This change is reset to the present value the next time the screen is opened.</p>
<p>Refresh View</p>	<p>Drop-down box:</p> <p>Every Interval = The display is updated after each request interval and the last x set values (lines) are always shown.</p> <p>On Value Change = The display is only updated when the requested value from the control / I/O changes.</p>
<p>Chart Type</p>	<p>Drop-down box for the following chart types:</p> <p>Bar chart Line chart splineArea</p> 
<p>x-axis Label</p>	<p>Optional field – Free text</p> 
<p>x-axis Field</p>	<p>Drop-down box for the display of the Timestamp or the Refresh time.</p>
<p>y-axis Label</p>	<p>Optional field – Free text</p>
<p>y-axis Field</p>	<p>Drop-down box for the display of Value(s), Raw Value or Valid.</p>
<p>Widget Rights</p>	<p>Here, you assign rights to the user groups created up to that point (see chapter User Groups).</p>

25.3.6 Input (I/O element)



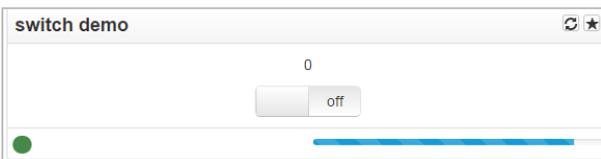
Input field for tag value handover to a tag in the relevant configured server.
The following input field types are available:

Input field



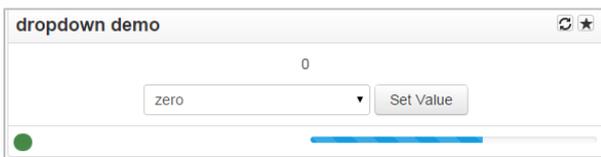
The value transfer occurs within a value range via a direct input.

Switch



The value transfer takes place using a switch. In this way, you can only enter two previously defined values.

DropDown



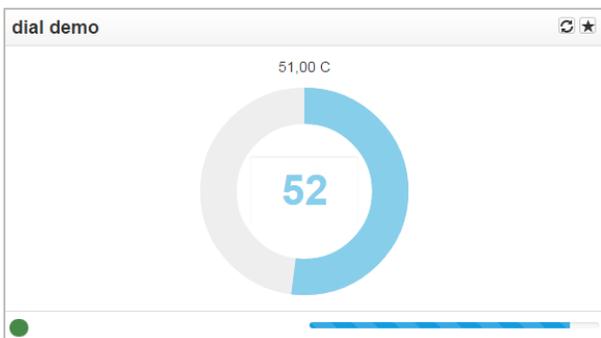
Within a value range, the value transfer takes place using a drop-down menu. In this way, you can only use previously defined values.

Slider



Within a value range, the value transfer takes place in an infinitely adjustable manner using a slider.

Dial



Within a value range, the value transfer takes place in an infinitely adjustable manner using a dial.

New Widget

Active

Widget Name

Description

Tag

Scaling

Request Interval

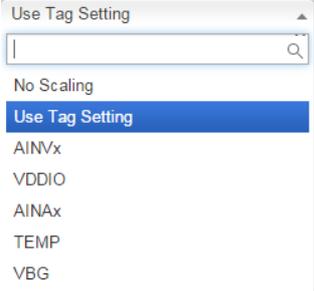
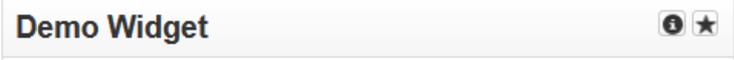
Show As Box

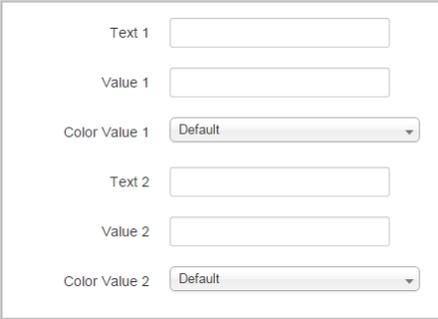
Statusbar Elements

Display Title

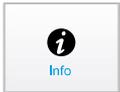
Show Value

Display as

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Tag	Drop-down box with all the tags created up to that time.
Scaling	Drop-down box for: <ul style="list-style-type: none"> a) No scaling b) Use tag settings c) A scaling from the scalings created up to that point 
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen.  No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Status Bar Elements	Drop-down box for selective display of:  Valid Value Last update Next update
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).

Title	<p>Title displayed within the widget, even if this was created without a frame ("Show As Box = No").</p> 
Display Value	<p>Drop-down box: Yes = The entered value/value to be transferred is displayed in the widget. No = The entered value/value to be transferred is not displayed.</p>
Display As	<p>Drop-down box</p> <ul style="list-style-type: none"> • Input
	<ul style="list-style-type: none"> • Switch  <p>Mandatory field - Max. 16 characters: Labeling, switch position 1</p> <p>Mandatory field: Transfer value for switch position 1</p> <p>Color selection box for switch position 1</p> <p>Mandatory field - Max. 16 characters: Labeling, switch position 2</p> <p>Mandatory field: Transfer value for switch position 2</p> <p>Color selection box for switch position 2</p>
	<ul style="list-style-type: none"> • DropDown  <p>Mandatory field - Max. 16 characters: Labeling of the elements (labels) for selection from the drop-down list.</p> <p>Mandatory field: Transfer values for the individual labels.</p>
	<ul style="list-style-type: none"> • Slider
	<ul style="list-style-type: none"> • Dial

25.3.7 Info (display element)



Display of

- your own info texts
- your own images (*.jpg, *.png, *.gif - max. 1 MB per graphic)
- device and system information

New Widget Info ⓘ

Active	<input type="text" value="Yes"/>	Info Text	<input style="width: 100%;" type="text"/>
Widget Name	<input style="width: 100%;" type="text"/>	File	<input type="button" value="Datei auswählen"/> Keine ausgewählt
Description	<input style="width: 100%;" type="text"/>	Information	<input type="text" value="System x"/>
Request Interval	<input type="text" value="10"/>		
Show As Box	<input type="text" value="Yes"/>		
Statusbar Elements	<input type="text" value="Valid x"/> <input type="text" value="Next Refresh x"/>		
Widget Rights	<input type="text" value="No Access"/> <input type="button" value="All"/>	<input type="text" value="Read Access"/> <input type="button" value="All"/>	<input type="text" value="Write Access"/> <input type="button" value="All"/>
			<input type="text" value="Test"/>

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", then there is no value request.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px 0;"> Demo Widget ⓘ ★ </div> No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Status Bar Elements	Drop-down box for the display of the next update of the widget.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).
Info Text	Optional field – Free text Simple input box with HTML interpreter for pure text (see info Widget "Welcome!" in the Start view).

File	<p>You can include an image file by using the "Search" button. Possible graphic formats: *.jpg, *.png, *.gif Maximum image size: 1 MB The size format of the graphic is adapted to the widget. Scaling only takes place in a downward direction, small graphics retain their original size.</p>
Search	<p>Button for uploading a graphic file. An existing image is overwritten automatically by reloading a graphic file.</p>
Delete File	<p>Drop-down box: Yes = A linked graphic file is deleted again. This change takes effect and becomes visible on saving. No = The graphic file remains integrated in the widget.</p>
Information	<p>Multiple drop-down box to display system settings and/or device information (see chapter Widget Overview).</p>

25.3.8 System (I/O element)



Using this widget, you can perform system settings just like in the actual system/device settings (menu **Administration => Settings**). This allows a user, who does not possess Administrator rights, to make specific settings via this widget type.

New Widget System x

Active

Widget Name

Description

Show As Box

Statusbar Elements

System Type

Widget Rights

No Access

Read Access

Write Access

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen. <div style="border: 1px solid #ccc; padding: 5px; margin: 5px 0;"> <p>Demo Widget ⓘ ★</p> </div> No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).
Configuration Type	Drop-down box for one of the system settings (see chapter Widgets Overview).

25.3.9 iFrame (display element)



Display of web content available via HTTP, such as films, animations, webcam images, etc.

New Widget iFrame

Active:

Widget Name:

Description:

Request Interval:

Show As Box:

Widget Rights:

No Access All

Read Access All

Write Access All

URL:

Field name / icon	Description
Active	Drop-down box: Yes = The widget is active. No = The widget is inactive but you can reactivate it at any time.
Widget Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Description	Optional field – Free text
Request Interval (sec.)	Mandatory field: Input of the request interval (in seconds). Input format: Natural numbers (0 - 65535). If you enter "0", no values are requested, nor is the overall web content updated.
Show As Box	Drop-down box: Yes = The widget is shown as a framed element in a screen.  No = The widget is shown without a frame or name. Should a name still be required, you must fill out the "Title" input box.
Widget Rights	Here, you assign rights to the user groups created up to that point (see chapter User Groups).
URL	Mandatory field for the entry of a URL for the display of external web content (e.g. http://mbconnectline.com).  Should content be shown via an https connection, then the certificate for this page must be available on the device (PC, smartphone or tablet) used for display.

26. Scripts

Scripts must be created in the programming language LUA. This makes it possible to access directly to the e.g. serial port, Modbus TCP, S7 ISO TCP or perform directly on TCP / UDP.

Additionally the scripting language provides the access to e-mail, SMS and the services of the device. You can control For example the Internet connection or the VPN connection.

Menu **Administration** => **Scripts**

Basically, there are three types of scripts:

- Callable Scripts: Are called within the surface via function keys or via the monitoring functions.
- Loop Scripts: Called at startup. If here's a loop programmed, then the script will always stay on.
- Plugin Scripts: Modules which can be integrated into an existing script.

A total of 64 scripts can be created.

Edit "call"

Name:

Type:

Script File: Keine ausgewählt

or Script

```

1 package.path = package.path .. ";usr/luas/?.lua";
2 mbc1      = require "lua_modules/mbc";
3 mbc.write_output("4","1");
    
```

Edit "loop"

Name:

Type:

Script File: Keine ausgewählt

or Script

```

1 package.path = package.path .. ";usr/luas/?.lua";
2 mbc1      = require "lua_modules/mbc";
3 while 1 do
4     mbc.write_output ("4","1");
5     usleep (1000000);
6     mbc.write_output ("4","0");
7     usleep (1000000);
8
9 end;
    
```

Label	Description
Name	Name of the Script.
Type	Select script type, here you can choose between three variants (Callable, Cyclic and Plugin).
Script File	You can upload a prepared script.
or Script	Here you can create your own script.

Edit "plugin"

Name

Type

Plugin Name

Script File Keine ausgewählt

or Script

```
1 package.path = package.path .. ";usr/luar/?lua";
2 mbc         = require "lua_modules/mbc";
3 mbc.write:output("5", "1");
```

Label	Description
Name	Name of the Script.
Type	Select script type, here you can choose between three variants (Callable, Cyclic and Plugin).
Plugin Name	Name of the Plugin
Script File	You can upload a prepared script.
or Script	Here you can create your own script.

27. Actions

If monitoring flags up a predefined condition or state (control logic compares a read value with a monitoring/threshold value), an action can be carried out.

There are three possible types of action for this: Send text message, send e-mail, and execute script.

Menu **Administration** => **Actions**

Actions



Active	Name

Field name / icon	Description
	To add a new action, click the "New" button.  You can create a total of 64 scalings.
Active 	The action is active.
Active 	The action is inactive but you can reactivate it at any time.
Name	Name of the action.
Type	Display the selected type (Execute script, send text message, or send e-mail).
Actions 	Clicking the icon allows you to edit the appropriate action.
Actions 	Clicking the icon creates a copy of this action. You can then modify the copy and save it for a further/new action.
Actions 	Clicking the icon allows you to edit the appropriate action.

27.1 Creating a New Action

In the Action Manager, click the **NEW** button to create an action.

New Action

Active

Name

Type

Send 2nd SMS on more than 160 Characters

to

Field name / icon	Description
Active	Drop-down box: Yes = The created action is active. No = The created action is inactive but you can reactivate it at any time.
Name	Mandatory input – free text The widget name is displayed as a heading in the widget box.
Type	Drop-down box for the action type to be executed when an event from monitoring occurs: <ul style="list-style-type: none"> • Send text message to • Send e-mail to • Execute script

27.1.1 Type: Send text message to

When the action is executed, a text message is sent to the stored telephone number with the following content, which is stored in the monitor:

Priority (error, warning or message)	-----	Priority: Warning
Tag to be monitored	-----	Tag:'Input(3)'
Currently scaled value (if scaling was selected) // Raw value	-----	Tag value: 22.7 // (5.2)
Unique reference - Each generated message receives its own ID	-----	Monitoring ID: 19
Description of the tag	-----	Description: Temperature
Message text	-----	Message: Caution! The maximum temperature has been reached!

Type

Send 2nd SMS on more than 160 Characters

to

Field name / icon	Description
Send 2nd Text Message if More Than 160 Characters	Drop-down box: No = If the text message to be sent is longer than 160 characters, then the excess characters are not sent. Yes = If the text message to be sent is longer than 160 characters, then the excess characters are sent in a second text message. A maximum of 2 text messages per action can be sent as standard.
To	Mandatory field for the numerical input of the recipient's telephone number.

27.1.2 Type: Send e-mail to

When the action is executed, an e-mail is sent to the stored e-mail address with the following content.

Reference:

Priority (error, warning or message)
 Tag to be monitored
 Currently scaled value (if scaling was selected) //
 Current raw value

Message section:

Unique reference - Each generated message receives its own ID
 Description of the tag
 Message text

name@domain.tld
 an mich ▾

Priority: Warning
 Tag:'Input(3)'
 Tag value: 23.9994687 // (5.39994687)
 ...

Monitoring ID: 20
 Description: Temperatur
 Message:
 Vorsicht! Die Maximaltemperatur ist erreicht!

Type

to

Field name / icon	Description
To	Mandatory field for entering a valid e-mail address.

27.1.3 Type: Execute script

When the action is executed, a previously created script (of type "Executable script" ☉) is executed.

Field name	Description
Type <input type="text" value="Execute Skript"/>	Drop-down box with all the scripts created up to that time.
Script <input type="text" value="E-Mail send (demo)"/>	

28. Monitoring

Monitoring uses control logic to compare a specific tag, at intervals, with a specified reference value.

All monitoring is added and managed using the **Administration** => **Monitoring** menu.

Monitoring

Add

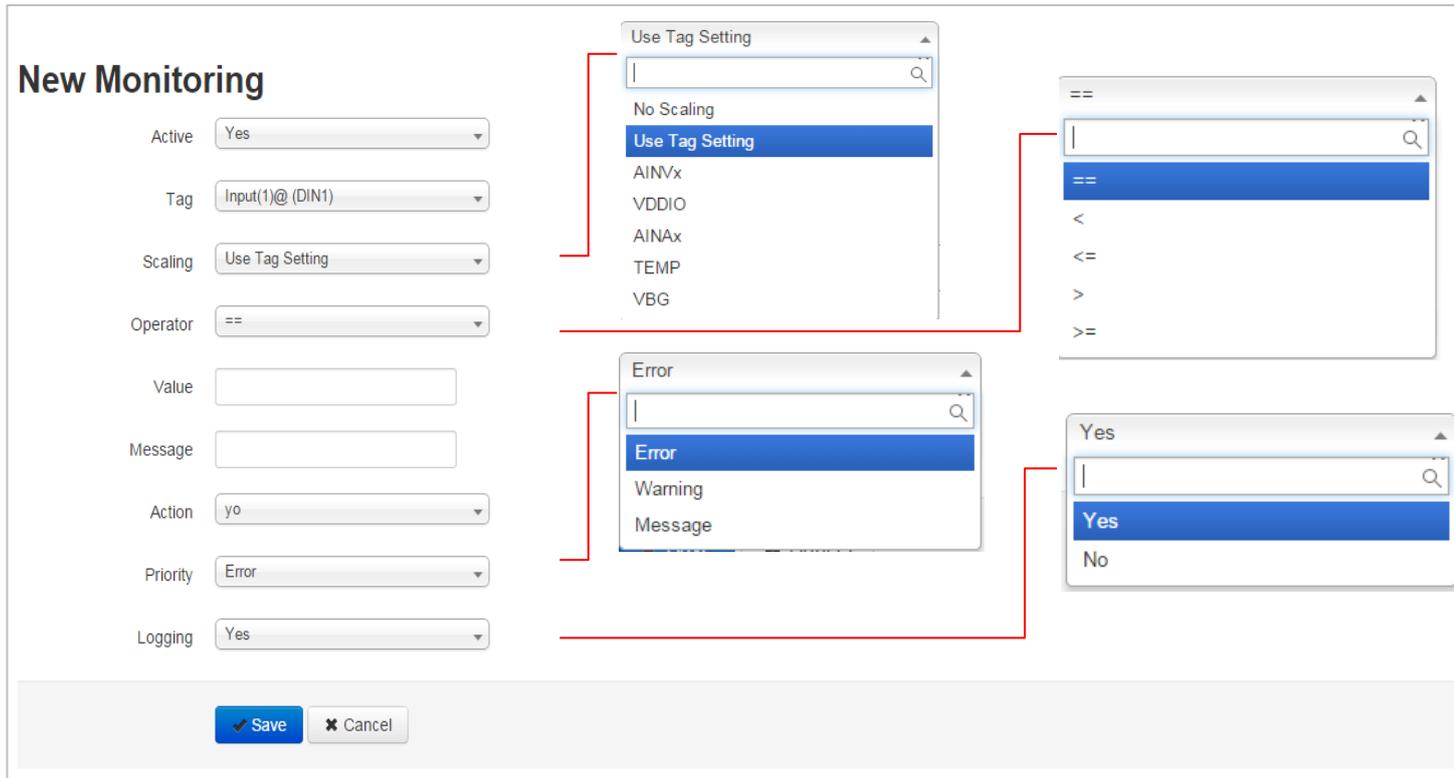
Active	Tag	Value	Message	Action	Logging	Actions
●	Input(1)@ (DIN1)	== 0	hello	yo	●	

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Field name / icon	Description
	To add new monitoring, click the "New" button. You can create a total of 64 monitors.
Active ●	The monitor is active.
Active ●	The monitor is inactive but you can reactivate it at any time.
Tag	Selected tag to be monitored.
Value(s)	Display of the logical operator (==; <; <=; >; >=) with the corresponding reference value.
Message	Message text to be output, depending on the setting.
Action	Name of the action to be executed
Logging ●	Each executed action is logged in the database.
Logging ●	The monitor is inactive but you can reactivate it at any time.
Actions	Clicking the icon allows you to edit the appropriate monitor.
Actions	Clicking the icon creates a copy of this monitor. You can then modify the copy and save it for a further/new monitor.
Actions	Clicking the icon allows you to delete the appropriate monitor.

28.1 Creating New Monitoring

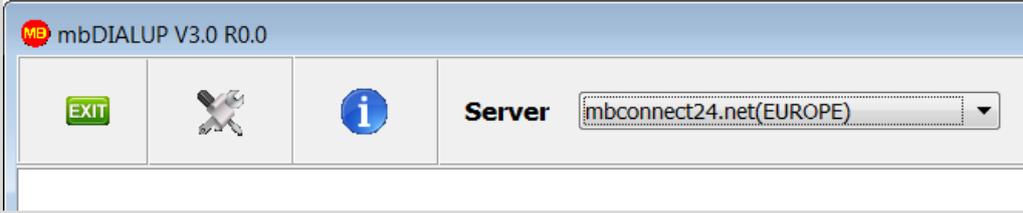
In the Action Manager, click the **NEW** button to create an action.



Field name / icon	Description
Active	Drop-down box: Yes = The monitor is active. No = The monitor is inactive but you can reactivate it at any time.
Tag	Drop-down box with all the tags created up to that time. The tag to be monitored is selected here.
Scaling	Drop-down box for: <ul style="list-style-type: none"> No scaling Use tag settings A scaling from the scalings created up to that point
Operator	Drop-down box for a logical operator == The tag value is equal to the reference value. < The tag value is less than the reference value. <= The tag value is less than/equal to the reference value. > The tag value is greater than the reference value. >= The tag value is greater than/equal to the reference value.

Value(s)	<p>Mandatory input – Valid input format</p> <p>Specification of the reference value in relation to the selection from the "Scaling" box. I.e.:</p> <p>If you selected "No scaling", the reference value is compared with the raw value from the controller.</p> <p>If, for example, you selected scaling (-30°C - 70°C), the reference value is compared with the scaled value.</p> <ul style="list-style-type: none"> a) The specification of the reference value must be located in the value range of the scaling or the raw value. b) The input form must correspond to the format (String, Float or Integer) selected in the scaling.
Message	<p>Mandatory input – free text</p> <p>Input of the message text to be output on executing an action.</p>
Action	<p>Drop-down box for</p> <ul style="list-style-type: none"> a) No action: Here, if a reference value deviation occurs, the value is only displayed via a monitoring widget. b) Selection of a previously created action. If you created a monitoring widget, then the message is output in parallel via this widget. <p>The following generally applies: You can only acknowledge an event from a reference value deviation via a monitoring widget on the web interface of the device.</p> <div data-bbox="376 1003 992 1473" style="border: 1px solid gray; padding: 5px;"> <div style="display: flex; gap: 5px;"> 1 2 3 </div> <p>Tag: Input(1)@ (DIN1)</p> <p>Timestamp: 1970-01-01 18:27:33</p> <p>Value: 0</p> <p>Message: hello</p> <p>Came: 1970-01-01 18:27:33</p> <p>Receipt: Set Receipt</p> <p>Gone:</p> <p>RAW Value: 0</p> </div>
Priority	<p>Drop-down box for the classification of the reference value deviation in</p> <ul style="list-style-type: none"> a) Error b) Warning c) Message <p>The selected priority is only used for information purposes. It has no effect on the system or a function.</p>
Logging	<p>Drop-down box</p> <p>Yes = All the messages from this monitor are archived. The archived messages can then be displayed using a monitoring widget.</p> <p>No = Depending on the set request interval, messages are shown immediately they occur using a monitoring widget.</p>

29. Troubleshooting

Problem:	mbCHECK cannot find a free VPN port
Solution:	Make sure that at least one of the three ports (80TCP, 443TCP or 1194TCP) is not blocked in the network firewall.
Problem:	No connection to the portal, login failed 
Solution:	<p>The access data was not entered correctly or is invalid</p> <ul style="list-style-type: none"> When selecting the server, a server different to that chosen when you requested your mbCONNECT24 access was selected.  <ul style="list-style-type: none"> The network adapter for mbDIALUP is missing or deactivated. (Check the network adapter in your system settings (<i>Control Panel \ Network and Internet \ Network and Sharing Center \ Network Connections</i>). If the adapter is deactivated, reactivate it. If the adapter is missing, reinstall the mbDIALUP.) <p>To create a more detailed error diagnosis, you can activate extended logging in the mbDIALUP in the "Settings / Options" menu. <input checked="" type="checkbox"/> activate extended logging for the connection</p> <p>In the event of a support case, we require these log files to deal with your problem. You will find the log files on your computer under:</p> <ul style="list-style-type: none"> OpenVPN Log Windows XP: C:\Documents and Settings\All Users\User Data\MB Connect Line GmbH\mbDIALUP\ovpn\log System Log Windows XP: C:\Program Files (x86)\MB Connect Line GmbH\mbDIALUP\vpnservicelog.txt OpenVPN Log Windows 7: C:\ProgramData\MB Connect Line GmbH\mbDIALUP\ovpn\log System Log Windows 7: C:\Program Files (x86)\MB Connect Line GmbH\mbDIALUP\vpnservicelog.txt
Problem:	No connection from the device to the portal
Solution:	<p>Check the required peripheral components, depending on the device type.</p> <ul style="list-style-type: none"> Are the network cable and network connections correct? Has a SIM card been inserted? Is the card used for data transfer enabled? Is it necessary to input a PIN? Is an antenna installed? Is the signal strength sufficient? (The signal strength can be requested via the mbSPIDER web interface)

30. FAQ

Question:	Is the connection to the portal possible via GPRS?
Answer:	Yes, but it is very slow.
Question:	How many widgets can be created?
Answer:	You can create a total of 64 widgets.
Question:	Can I rename the configuration file?
Answer:	NO , you may not rename the firmware file, as this will result in it not being recognized by the device.
Question:	How do I create an encrypted configuration file?
Answer:	Provided that the serial number of the device is entered in the device configuration in the portal and the device has already connected to the portal at least once, an encrypted configuration file is automatically created.
Question:	Which information do I have to provide in event of support?
Answer:	In order to be able to provide the best possible support, we need the following information: Serial number of the device Firmware version of the device System logs () Accurate description of the fault - What caused the fault? - Does the fault recur perceivably? - Did the fault occur after changing the settings or performing a firmware update?
Question:	Which browser should I use for administration purposes?
Answer:	Please only use Chrome or Firefox. Due to the large number of differences in the versions, problems have always been reported when using Internet Explorer.