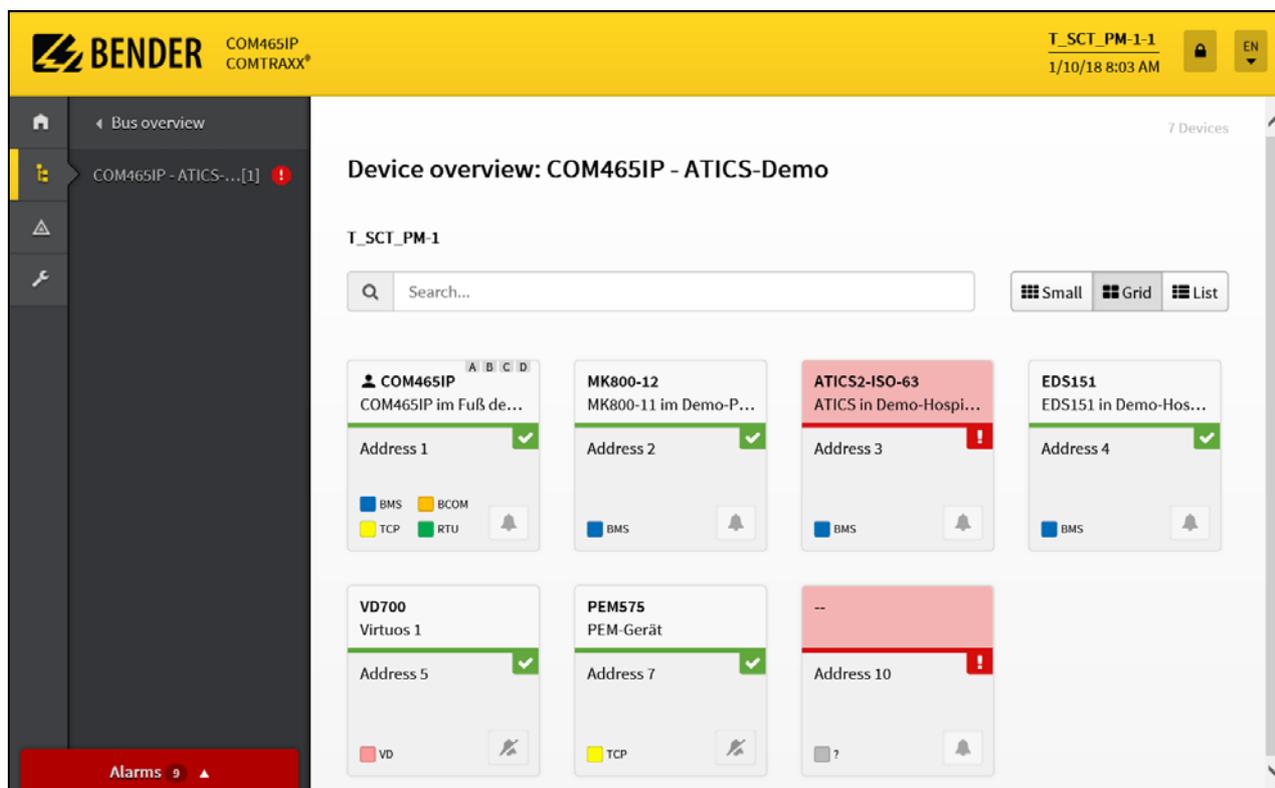




COMTRAXX®



**Web user interface for
Bender Condition Monitors COM465IP, COM465DP and CP700**

Software version: V2.30 or higher



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Photos: Bender archives.

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1. Important information

1.1 How to use this manual

This manual describes how to operate the web user interface for Bender gateways of the COMTRAXX® product family. It applies to devices with the software version specified on the title page. The functions and processes described may vary from those featured in other versions.



*This manual is intended for **qualified personnel** working in electrical engineering and electronics, and in particular for those designing, installing and operating electrical equipment in the medical and non-medical sector.*

Always keep this manual within easy reach for future reference.

To make it easier for you to understand and revisit certain sections in this manual, we have used symbols to identify important instructions and information. The meaning of these symbols is explained below:



*This signal word indicates that there is a **high** risk of danger, that **will** result in **death** or **serious injury** if not avoided.*



*This signal word indicates a **medium** risk of danger that **can** lead to **death** or **serious injury** if not avoided.*



*This signal word indicates a **low** level risk, that **can** result in **minor** or **moderate injury** or **damage to property** if not avoided.*



This symbol denotes information intended to assist the user in making optimum use of the product.

This manual has been compiled with great care. It may nevertheless contain errors and mistakes. Bender cannot accept any liability for injury to persons or damage to property resulting from errors or mistakes in this manual.

COMTRAXX® is a registered trademark of Bender GmbH & Co. KG.

This manual describes in detail Bender-specific terms and functions. General computer and network technology terms are assumed to be known. Therefore, they are only described briefly within this manual (also refer to "Terms used" on page 65). Any additional information may be found in appropriate technical literature and on the Internet.

The alternative web user interface with Microsoft Silverlight™ is described in the "CP700" manual.

1.2 Technical support: service and support

For commissioning and troubleshooting Bender offers you:

1.2.1 First level support

Technical support by phone or e-mail for all Bender products

- Questions concerning specific customer applications
- Commissioning
- Troubleshooting

Telephone: +49 6401 807-760*
Fax: +49 6401 807-259
In Germany only: 0700BenderHelp (Tel. and Fax)
E-mail: support@bender-service.de

*Available from 7.00 a.m. to 8.00 p.m. 365 days a year (CET/UTC+1)

1.3 Delivery conditions

The conditions of sale and delivery set out by Bender apply.

For software products the "Softwareklausel zur Überlassung von Standard-Software als Teil von Lieferungen, Ergänzung und Änderung der Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie" (software clause in respect of the licensing of standard software as part of deliveries, modifications and changes to general delivery conditions for products and services in the electrical industry) set out by the ZVEI (Zentralverband Elektrotechnik- und Elektronikindustrie e. V.) (German Electrical and Electronic Manufacturer's Association) also applies.

Delivery and payment conditions along with a copy of the software clause can be obtained from Bender in printed or electronic format. The conditions can also be found on the Internet at: <https://www.bender.de/en> > Service & support > Downloads > Terms of payment and delivery.

1.4 Inspection, transport and storage

Inspect the dispatch and equipment packaging for damage, and compare the contents of the package with the delivery documents. In the event of damage in transit, please contact Bender immediately.

The devices must only be stored in areas where they are protected from dust, damp, and spray and dripping water, and in which the specified storage temperatures can be ensured.

1.5 Warranty and liability

Warranty and liability claims in the event of injury to persons or damage to property are excluded if they can be attributed to one or more of the following causes:

- Improper use of the device.
- Incorrect commissioning, operation and maintenance.
- Failure to observe the instructions in the operating manual.
- Non-observance of technical data.
- Catastrophes caused by external influences and force majeure.

This operating manual, especially the safety instructions, must be observed by all personnel working with the software.

1.6 Work activities on electrical installations



Risk of fatal injury from electric shock

Any work on electrical installations which is not carried out properly can lead to death and injury!

- ▶ *Only skilled persons are permitted to carry out the work necessary to install, commission and run a device or system.*

- Compliance with applicable regulations governing work on electrical installations, and with the regulations derived from and associated with them, is mandatory. EN 50110 is of particular importance in this regard.
- If the device is being used in a location outside the Federal Republic of Germany, the applicable local standards and regulations must be complied with. European standard EN 50110 can be used as a guide.

1.7 Intended use

Gateways of the COMTRAXX® product family connect the following devices to Ethernet TCP/IP networks:

- Devices on the Bender-internal serial BMS bus (BMS = Bender measuring devices interface)
- Bender universal measuring devices PEM... with Modbus RTU or Modbus TCP
- Bender devices with BCOM interface (BCOM = protocol for the communication of Bender devices via an IP-based network).

The gateways convert alarms, measured values and statuses into Modbus TCP and HTTP protocols. This conversion permits coupling to Modbus TCP networks as well as data display and evaluation using standard web browsers.

All gateways of the COMTRAXX® product family have the same web user interface. This web user interface can be used on a PC, tablet or smartphone over different standard web browsers. The web user interface adjusts to the respective screen size.

The gateways have different characteristics and functions that are described in the corresponding manuals.

1.8 Address setting and termination

In order to ensure proper functioning of the device, correct address assignment and termination of the connected bus systems according to their specification is of utmost importance.



Assigning addresses that are already used by existing devices on the bus systems concerned may cause serious malfunctions.

- ▶ *Ensure correct address setting of the device as well as the termination of the connected bus systems.*

2. Product description

The web user interface of the gateway enables access via LAN, WLAN or the Internet. It provides a uniform presentation of Bender devices that are connected to the internal BMS bus via Modbus RTU or Modbus TCP. On the web user interface, each device receives an individual address by which it can be identified. BMS and Modbus RTU devices receive the appropriate address for their interface. Modbus TCP devices are assigned a virtual address.

2.1 Functions of the web user interface

- Bus overview of the associated devices
 - Indicating alarms and measured values
 - Indicating the interfaces of the devices in use
 - Setting, displaying and evaluating the history memory and data loggers
 - In case of universal measuring devices, also indicating the harmonics in tabular form or as a chart. Waveform recorder and graphical representation of measuring values (bar graph, phasor diagram, power triangle).
 - Parameter setting
 - Device failure monitoring
 - Saving settings as "Backup"
 - Documenting settings and measured values
 - Assigning individual texts for devices, measuring points (channels) and alarms
 - E-mail notifications to different user groups according to a time-controlled schedule in the event of alarms and system faults. The sender's e-mail address can be entered.
 - Displaying virtual devices. A virtual "measuring point" is obtained by logically or numerically evaluating measured values of "real" devices connected to the gateway.
- Management of Modbus devices.
 - Adding/deleting devices to/from the bus overview
 - Creating a template with selected measured values
- Visualisation
 - Fast and simple visualisation without any programming. Measured values or alarms can be displayed in front of a graphic (system diagram, room plan).
 - Displaying an overview page. Jumping to another view and returning to the overview page.
- From an external application (e.g. visualisation software), commands can be sent to BMS devices. The "Modbus control commands" menu provides Modbus control commands for selected BMS commands. These commands can be copied to the clipboard of the PC and then included in the programming of the external application.

- A graphical representation with the scaling of the time axis for the data loggers of the gateway and compatible Bender devices.
- System visualisation: Several gateways (COM465..., CP700) shown on one web page. Indication of common alarms of the devices. Clicking a device being displayed will open its web user interface.

2.2 Software products used

Select "Tools" > "Copyright" to display the used software products.

3. Initial operation of the web user interface



*If you are familiar with the configuration of computer networks, you can carry out the connection of the gateway yourself. **Otherwise please contact your EDP administrator!***

3.1 Preliminary considerations

1. Have all the questions regarding the installation been answered by the technician responsible for the installation?
2. Is the BMS address to be set known?
Can the gateway be operated as the master (BMS address 1)? If apart from the gateway, an alarm indicator and test combination MK800 is connected to the internal bus, the gateway **must not** have address 1 (master).
You will find more detailed information on the BMS topic, in particular about the wiring of bus devices, in the separate document "BMS bus". You can download the document from the download area of the website www.bender.de.
3. Modbus RTU: Determine and set baud rate and parity.
4. Does the computer network comprise a DHCP server?
If the connected computer network contains a DHCP server, activate the "DHCP" function. The IP address is automatically assigned and displayed.

If the computer network does not include a DHCP server, the IP address, network mask (SN) and standard gateway must be specified by the EDP administrator.
The IP address has been permanently assigned to the device. Therefore, deactivate the "DHCP" function on the gateway.

5. Ask for the IP address of the NTP server, which is required for automatic time setting.
6. Are suitable PC hardware and software available for commissioning?
Minimum system requirements: Dual-Core processor/1024 MB RAM/
all common operating systems with an up-to-date Internet browser.

For initial connection, the basic configuration of the gateway has to be undertaken outside the installation, depending on the specific situation.

3.2 Browser configuration

As browser, the latest version of Windows® Internet Explorer, Google Chrome and Mozilla Firefox are recommended.

To use the functions of the web user interface, JavaScript has to be activated. The pop-up blocker should be deactivated for the IP address of the COMTRAXX device.



For Windows® Internet Explorer, the compatibility view has to be disabled. Select "Extras" > Configuration of compatibility view". Deactivate the button "Display Intranet sites in compatibility view".

3.3 First steps

3.3.1 Opening the start page

1. Open an Internet browser.
2. Enter the IP address of the gateway in the address line (example: http://172.16.60.72/).

3.3.2 Changing the language

If a German Windows operating system is installed on the PC, the web user interface will start up in German language.

1. Click "".
2. Select the required language.

3.3.3 Creating password protection for the gateway


DANGER

Risk of damage to equipment due to unauthorised access
The password protection for the gateway protects against unauthorised access to a limited extent only. Attackers from the Internet may still be able to read data and change settings.
It is absolutely necessary that
 - the network is separated from the Internet
 - common security mechanisms are applied (firewall, VPN access)

1. Click " " in the header bar. Enter user name and password:
User "admin", password "default".
2. Go to the header bar to select the BCOM name of the device on which the COMTRAXX user interface runs (e.g. CP700).
3. Select "Menu" > "Settings" > "Password" > "Administrator".
4. Enter a new password.
5. Select "Status" > "on" to enable password protection.
6. Click "Save changes".

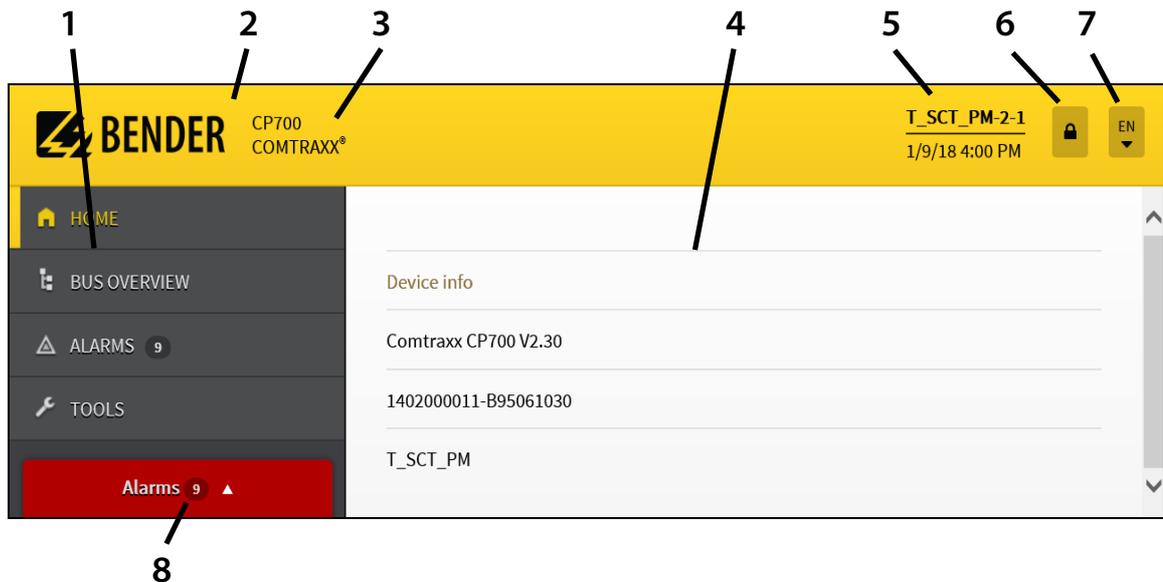
Proceed in the same way for "Password" > "User".

Password for	Protection ex factory	User/ Password ex factory	Password function Character pool for passwords
User	off	user default	Access to user interface over the device display (for CP700 only) and via the web browser
Administrator	off	admin default	Access to parameterisation functions over the device display (for CP700 only) and via the web browser

4. Getting to know the COMTRAXX user interface

4.1 Screen structure

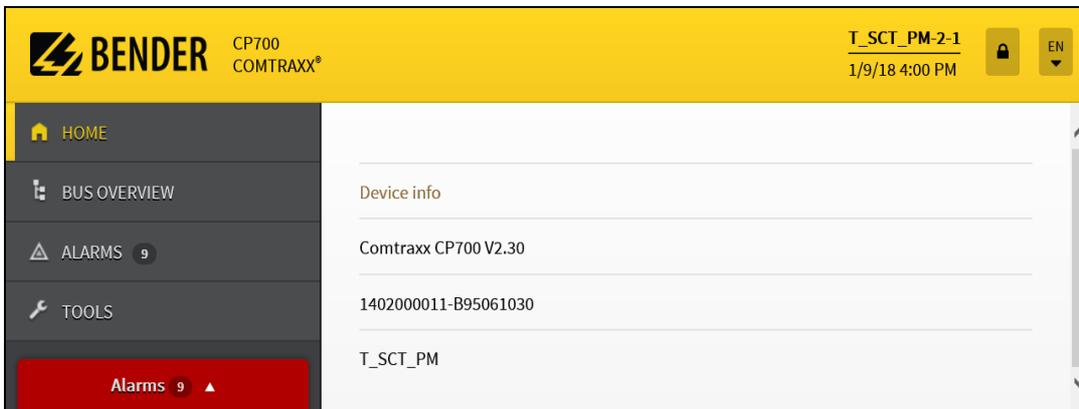
Example: Home screen



Key

- 1 Menu/Submenu
- 2 Bender logo. Click the symbol to navigate to the start page.
- 3 Name of the used COMTRAXX device
- 4 Selected information or function
- 5 BCOM name and address of the device on which the COMTRAXX user interface runs; date and time of the device.
Hint: Clicking this text activates the device, e.g. to change settings.
The BCOM name can also be changed: "Menu" > "Settings" > "Interface" > "BCOM"
- 6 The symbol indicates that the web user interface is protected by a password. Click the symbol and afterwards "Login" to enter the user name and password (refer to "Creating password protection for the gateway" on page 14).
Hint: The symbol is only available if password protection has been enabled.
- 7 Selection of the operating language
- 8 Number of pending alarms (common alarm indication)
Clicking this button shows a list of the pending alarms.

4.2 Menu structure



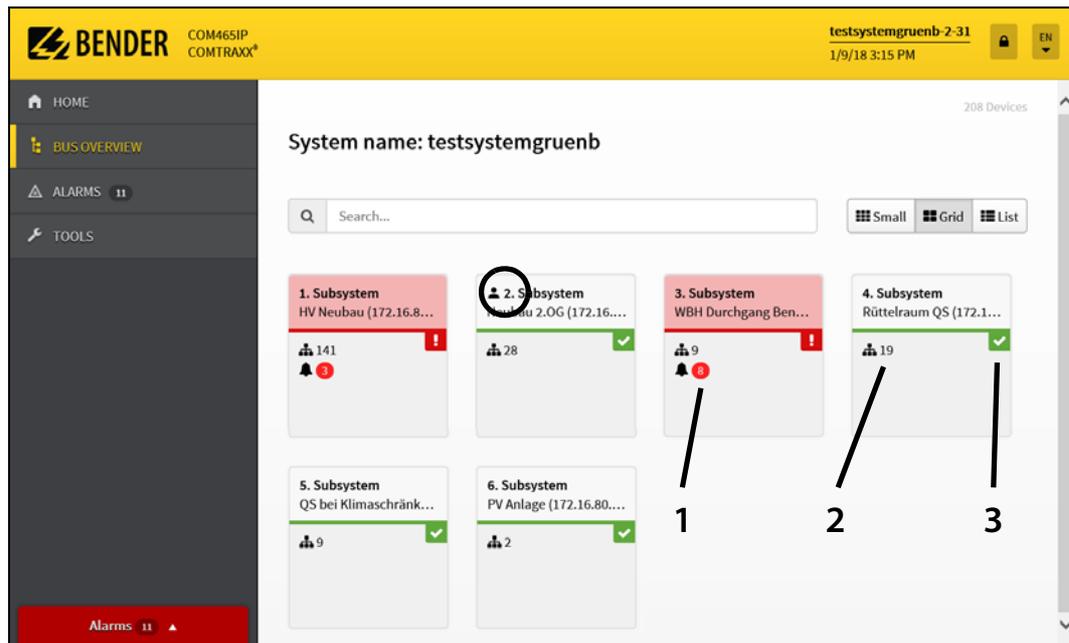
Menu	Description	Page
START	This menu displays information about the device and the software. Please have this information to hand if you need to contact us for assistance by telephone.	15
BUS OVERVIEW	All devices in the system are shown in the bus overview. If any BCOM subsystems have been configured, they can also be selected. The devices can be displayed as a list or as tiles. Colour coding of the bus devices according to their alarm or operating state	17
ALARMS	Presentation of all pending alarms and data of devices sending an alarm.	28
TOOLS	This menu provides functions that affect the entire system.	26



The symbols of the four menus are always visible at the left edge. Even if a random submenu of the web user interface is open, you can navigate to one of the four menus by clicking the respective symbol.

4.3 Bus overview

1. COMTRAXX® adjusts to the available space on the PC display. If no menu is shown, click the context menu "☰".
2. Click "Bus overview" to display all devices in the system and, if applicable, all BCOM subsystems. Select presentation as small tiles, tiles or as a list   . The "👤" symbol indicates the device on which the COMTRAXX user interface runs or the BCOM subsystem, in which this device can be found.



Key

- 1 Number of alarm messages in the BCOM subsystem
- 2 Number of devices in the BCOM subsystem
- 3 Alarm state: red = alarm, green = no alarm

3. Click a subsystem to display the device overview of the bus devices of this subsystem. If only one BCOM subsystem has been configured, click "Bus overview" to navigate directly to the device overview of this BCOM subsystem. If everything works correctly, after a few seconds all accessible devices should appear in the list. In the most unfavourable case, it can take up to 7.5 minutes to list all the accessible devices on the internal BMS bus (gateway = MASTER).

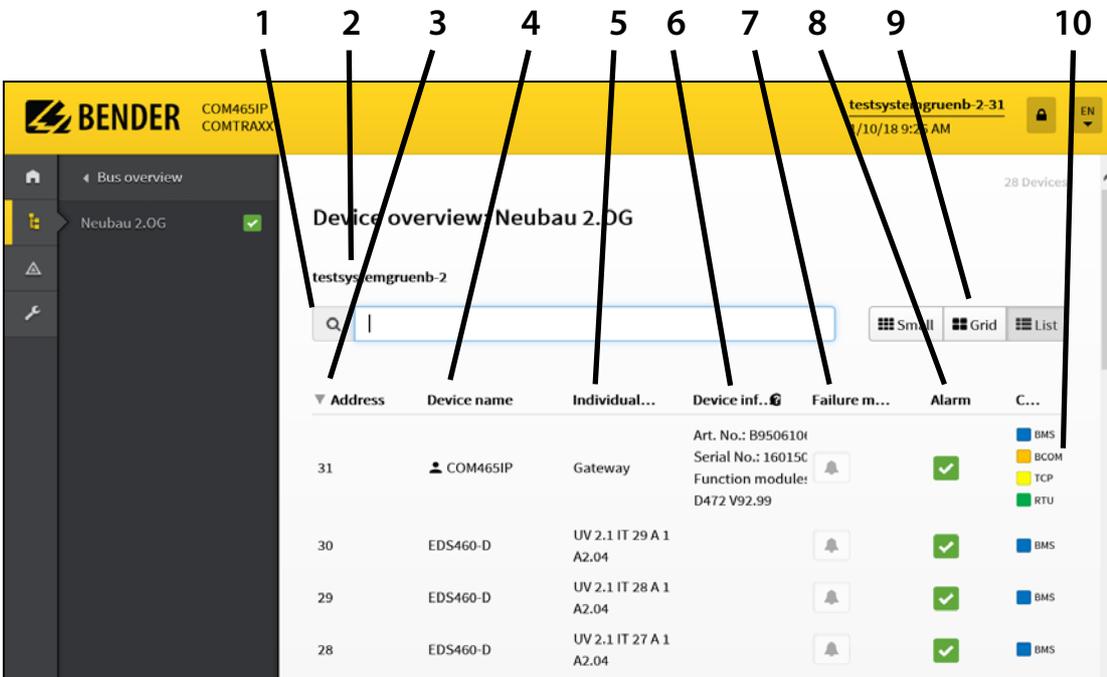
Only devices that are compatible with COMTRAXX® can be displayed. An updated list of devices on which parameters can be set is available on our homepage. Enter the term "Compatibility list" in the search field.



If, nevertheless, malfunctions occur at the bus devices, please check whether the respective device is provided with the latest software version.

4.4 Device overview

The device overview shows the devices assigned to a BCOM subsystem. If the gateway is operated on the internal BMS bus, only the internal addresses and bus devices are displayed. Select presentation as small tiles, tiles or as a list . The example shows presentation as a list. Click a line to select a device.



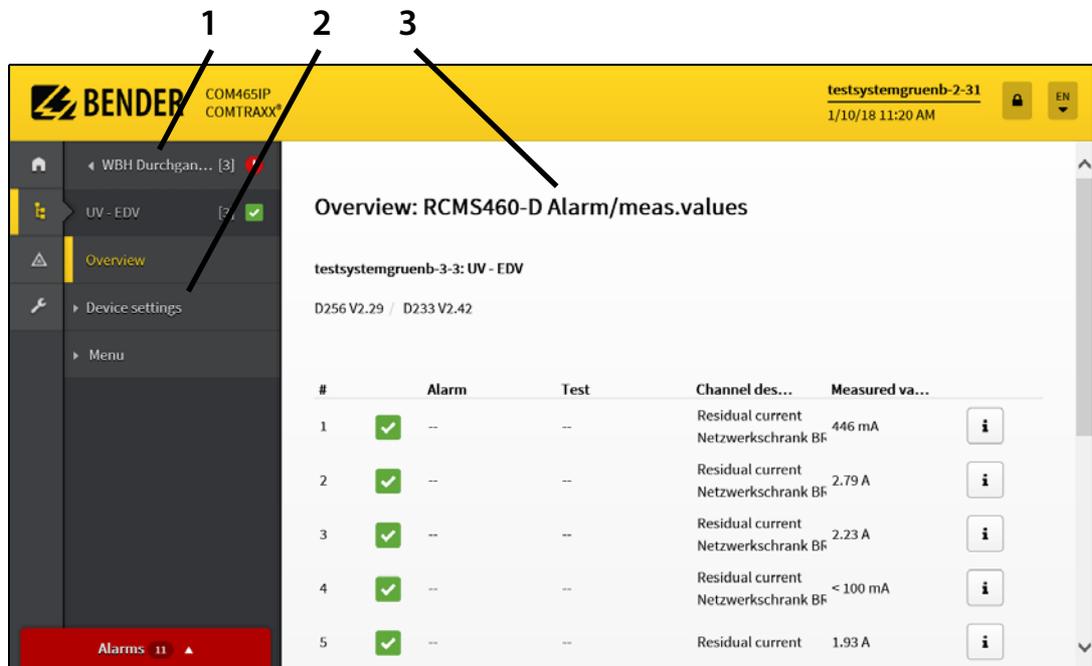
Key

- 1 Search (e.g. for device names or individual text)
- 2 Individual text to describe the BCOM subsystem
- 3 Device address: Internal BMS bus address, assigned Modbus address or virtual device address. The " ▲ " symbol indicates that the list is sorted by this column.
- 4 Device name (device type) The " 👤 " symbol indicates the device on which the COMTRAXX user interface runs. The installed function modules are displayed.
- 5 Individual text to describe the device
- 6 The indication of the device info, depends on the device type.
- 7 Activate/deactivate device failure monitoring function. For more details, refer to page 32.
- 8 Alarm status of the device
 - Green Operating message
 - Red Alarm message
 - Grey Bus device has not responded for several minutes.
The grey symbol will only appear if the device failure monitoring function has been activated before. As soon as the device failure monitoring function is deactivated, the device will disappear from the list.
- 9 Select screen presentation:
 - Small small tiles
 - Grid tiles
 - List list
- 10 Connection/Interface via which the device communicates with the gateway:

BMS	BMS bus	TCP	Modbus TCP
RTU	Modbus RTU	VD	Virtual device

4.5 Displaying and configuring device

Select a device in the bus overview or the device overview of a BCOM subsystem. The selected device can be the COMTRAXX device itself, another device that is connected to it or a programmed virtual device. Measured values and alarms of the device are loaded and displayed.



Key

- 1 Go up one level (here: subsystem 3)
- 2 Operating options for this device:
 - Enter device settings
 - Load device menu
- 3 Measured values and alarms of the device

4.5.1 Device settings

► Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Device settings"

The same menu items are available for all devices:

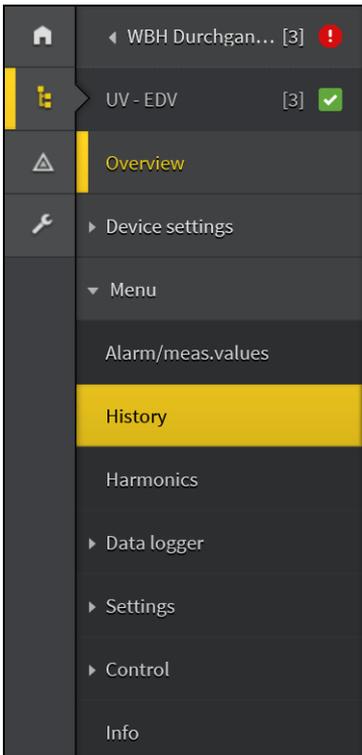
Menu	Description	Page
Document device	Documentation of the selected device with all parameters is saved as a PDF file.	35
Export backup	A backup file of the selected device is generated.	36
Import backup	An existing backup file is imported into the selected device.	36
Configure e-mail	Select devices and channels that should trigger an e-mail notification here.	35

4.5.2 Loading the menu of a device

The menu is used to display measured values as well as display and change settings of the selected device.

- ▶ Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Menu"

The device menu is loaded. Afterwards, the available menu items are displayed.



Menu	Submenu	Page
Alarm/meas.values		
History		28
Harmonics		
Data logger	Data loggers 1...12	29, 31
Settings	Edit texts	33
	General	
	Preset	
	Channel	
	Relay	
	History	28, 29
	Data logger	29, 31
	Interface	
	Alarm addresses	
	Clock	24
Control	TEST	
	RESET	
Info	Display device data: Name, software version...	

You can find the explanation of the represented menu items in the manual of the respective device (example: manual "RCMS460-490").

4.5.2.1 Parameter setting for bus devices

Gateways of the COMTRAXX® series are compatible with several Bender devices (refer to "Compatible devices" on page 63).



Incorrect parameter setting on bus devices may result in malfunctions! Therefore, the gateway is to be protected by passwords against unauthorised access! Simultaneous modification of the same parameters by several "admin" is to be avoided.

In the factory setting, password protection is deactivated. This facilitates the **first** parameter setting during commissioning.

Example:

The percentage prewarning level of an RCMS460-D is to be set to 55 % of the alarm value.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Menu" > "Settings" > "General".
3. Increase the response value from 50 to 55 % in the "Prewarning" line by pressing the "▲" button or by entering the numbers.
4. Click "Save changes".

4.5.3 Loading the menu of a gateway

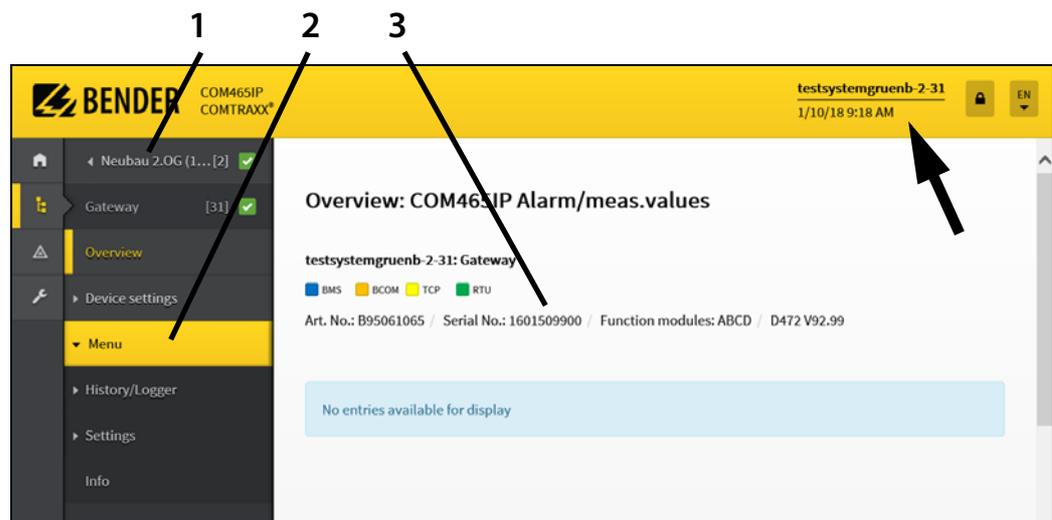
The menu is used to display and change settings of the selected gateway.

- ▶ Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu"

or

- ▶ Go to the header bar to click the BCOM name of the device on which the COMTRAXX user interface runs (e.g. testsystemgruenb-2-31).

The device menu is loaded. Afterwards, the available menu items are displayed.

**Key**

- 1 Go up one level (in this case: 2. subsystem "Neubau...")
- 2 Operating options for this device:
 - History, logger (see page 28)
 - Settings (see page 22)
 - Info: display of gateway data:
 - Name, installed function modules, Art. No., serial number, installed software, MAC address.
- 3 Display of gateway data.
 - Since the gateway does not carry out measurements itself, no measured values are indicated.

4.5.3.1 Setting the parameters of the gateway via the "Settings" menu

1. Log in to the menu bar for parameter setting. Click "🔒". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" or go to the header bar to click the BCOM name of the device on which the COMTRAXX user interface runs. Then select "Menu" > "Settings".

Menu	Submenu	Parameter	Factory setting	Description	Page
Interface	BCOM (refer also to "BCOM" manual)	System name	SYSTEM	BCOM system name	
		Subsystem	1	BCOM subsystem address	
		Device address	1	Setting has also an effect on the internal BMS bus	
	Ethernet	IP	192.168.0.254	Set IP address of the gateway	
			169.254.0.1	Connection can always be made using the pre-defined IP address (e.g. for commissioning)	
		SN	255.255.0.0	Set subnet mask of the gateway	
		Standard gateway	192.168.0.1	Set IP address of the gateway	
		DNS server	194.25.2.129	IP address of the name server DNS = Domain Name System	
		DHCP	off	Activate/deactivate automatic IP address assignment using DHCP server	
		t(off)	30 s	Timeout for DHCP address assignment	
	BMS	BMS address	2	Set BMS address of the gateway: 1...99 Setting has an effect on the internal BMS bus as well as on the BCOM device address	
		Interval	2 s	Set the cycle time 1...3 s for the sequence: - Querying alarms in the BMS bus - Querying new bus devices - Offering the BMS master function	
		Protocol	BMSi	BMSi = internal BMS bus BMSe = external BMS bus	
	Modbus	Control	off	Switch on or switch off the control via Modbus	
		Modbus TCP	on	Switch on or switch off Modbus TCP	
		Modbus RTU	on	Switch on or switch off Modbus RTU	
		Baud rate	9600	Select baud rate for Modbus RTU	
		Parity	even	Select parity for Modbus RTU	
	SNMP	SNMP	on	Switch on or switch off SNMP	
		Version	1	Select SNMP version	
		Name	Bender	Name of the network component	
	POWER-SCOUT	Activated	off	For POWERS-COUT® users: activate/deactivate	51

Menu	Submenu	Parameter	Factory setting	Description	Page
Edit texts	Device	Device name		Individual text for device name	34
		Device failure		Individual text in case of device failure	34
	Data logger	Data loggers 1...30		Individual texts for data loggers 1...30	29
E-mail	A maximum of five profiles (templates) can be created for e-mail notifications. Each profile allows the following settings:				34
	Settings	Profile	Profile 1	Profile name	34
		Active	off	Activate profile (on/off)	
		Server		IP address of the e-mail server	
		Timeout	2 s	Set timeout	
		Port	25	Port of the e-mail server	
		Encryption	off	SSL/TLS encryption on/off, (necessary when using external e-mail provider)	
		Check certificate	off	Check certificate on/off	
		User		User name for authentication	
	Password		Password for authentication		
	E-mail	Language	German	Set language for e-mail	
		Sender	noreply@bender.de	Sender address to be displayed	
		To		Enter recipient address (e-mail address or mailing list name).	
		Subject		Subject line text	
		Header	The current status of your Bender system:	Random text	
		Footer	This e-mail was generated automatically. Please do not reply to this message.	Random text	
		E-mail in the event of a pre-warning	off	on/off	
		E-mail in the event of a test	off	on/off	
	System monitoring	off	Enable e-mail monitoring for the entire system. All devices and channels of the entire system in the selected profile are automatically monitored.		
Test	Test	deactivated	Activate to send a test e-mail		

Menu	Submenu	Parameter	Factory setting	Description	Page	
History/Logger	History	Delete	deactivated	Activate to delete history memory	28	
	Data logger	Each of the data loggers 1...30 can be individually configured:				29
		Status	off	Activate or deactivate the data logger		
		Address and channel of the device to be monitored:				
		Subsystem	1	Subsystem or external BMS bus address		
		Device address	2	Device address or internal BMS bus address		
		Channel	1	Channel of the (BMS) device		
	A new entry will be saved when all three conditions (percentage change, trigger, absolute change) have been fulfilled (AND operator):					
	Percentage change	2 %	A new measured value is saved if it differs from the previous measured value by the percentage defined here.			
	Trigger	off	A new entry will be saved after xx hours or 7 days.			
	Absolute change	1	A new measured value is saved if it differs from the previous measured value by the absolute value defined here.			
		Overwrite	off	yes: If the memory is full, the oldest entry will be deleted in each case to create space for a new entry (ring memory). no: Data logger records maximum number of measured values and then stops.		
	Delete	deactivated	Delete data logger. The entry must be confirmed once again.		31	
	BMS recording	Duration	off	Set duration of the BMS bus activity recording.		
Clock	Clock	Clock		Time and date that are set on the PC.		
		Summertime	on	Select Central European Summer Time: off = Function switched off DST = Automatic switchover, USA, CDN CEST = Automatic switchover, Central Europe on = Set time zone + 1 h		
		NTP	off	Activate/deactivate NTP server query for time synchronisation.		
		NTP server	192.168.0.123	Set IP address for NTP server		
		UTC offset	+1	Time zone setting (-12...+13): UTC + 1h = CET UTC + 2h = ... UTC + 3h = ...		
	Timestamp	Timestamp h, min, s		Indication of the time that is actually transmitted via the BMS bus: hour, minute, second.		

Menu	Submenu	Parameter	Factory setting	Description	Page
Display	Display (CP700 only)	Timeout	5 min	If no entry is made via the touchscreen for a predefined time, the touch screen will be blanked (energy-saving mode). If the touch screen of the gateway is touched, it will immediately switch on again.	
Password	User	User name	user	Access to user interface over the device display (for CP700 only) and via the web browser	14
		Password	default		
		Status	off	Activate or deactivate password protection	
	Administrator	User	admin	Access to parameterisation functions over the device display (for CP700 only) and via the web browser	
		Password	default		
		Status	off	Activate or deactivate password protection	
Info	Info			Display of gateway data: Name, installed function modules, Art. No., serial number, installed software, MAC address.	

4.5.4 "Tools" menu

This menu provides functions that affect the entire system. Wherever you are in the program, the "Tools" menu can always be reached by clicking the "" symbol.

 TOOLS
Device failure monitoring
Individual subsystem texts
▶ Modbus
▶ Service
▶ Device management
Function modules
Update
Document system
Web server with Silverlight
Manual
System visualisation
Copyright

Menu	Description	Page
Device failure monitoring	Overview of all devices for which device failure monitoring has been activated.	32
Individual subsystem texts	Individual texts for describing the subsystems	33
Modbus	Control commands: Provides Modbus control commands for selected BMS commands.	37
	Register: Modbus register presentation of the connected BMS devices and PEM... Bender universal measuring devices	38
	Parameter addresses: Shall there be displayed additional Modbus information with each parameter? - Yes/No	38
	Document Modbus: Documentation of the Modbus register addresses assigned in the subsystem can be created.	39
Service	Search devices: Initialisation of the system	64
	Log files: Download or delete BMS log files	64
	Fault report: Download file	64
Device management	Virtual devices	40
	Modbus devices: Devices, profiles, templates	43
Function modules	Indication of the range of functions of the corresponding modules and the licensing of additional function modules.	51
Update	Update of the system software of the gateway *	52
Document system	Documentation of the entire system is saved as a PDF file.	35
WEB server with Silverlight	Switch to alternative user interface.	53
Manual	Link to the download area of the Bender homepage*	53
System visualisation	Several gateways (COM465..., CP700) shown on one web page. Indication of common alarms of the devices.	54
Copyright	Displays used software products.	12

* Deactivate pop-up blocker to use these functions.

5. Using the functions of the COMTRAXX user interface

5.1 Setting the time

Saved alarms, history memory, data loggers and many more functions of the gateway require a correct date and time setting.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. COM465IP)" > "Menu" > "Settings" > "Clock".

In the line "Clock", the date and time set on the PC are displayed.

3. Set:

Parameter	Description	Example: Use in Germany
Summertime	Select Central European Summer Time: off = Function switched off DST = Automatic switchover, USA, CDN CEST = Automatic switchover, Central Europe on = Set time zone + 1 h	CEST
NTP	Activate/deactivate NTP server query for time synchronisation.	on
NTP server	Set IP address for NTP server	192.168....
UTC offset	Time zone setting (-12...+13): UTC + 1h = CET UTC + 2h = ... UTC + 3h = ...	+1

4. Check "Time stamps" for the indication of the time that is actually transmitted via the BMS bus: hour, minute, second. Your settings are correct when the right local time is displayed.



Avoiding incorrect time

In a Bender system, the following setting for use in Germany may only be made on the device set to "NTP = on": "Summertime = CEST" and "UTC offset = +1".

- BMS devices (EDS, RCMS, ATICS, IRDH) must be set to "Summertime = off" to avoid problems with loggers! The local time is transmitted via the BMS bus and taken over by all devices that require it.
- The COM46xxP must be set to "Summertime = CEST" and "UTC offset = +1" (example for Germany).
- The PEM devices do not have a summertime setting but are assigned the current local time (including summertime) by the gateway. The time zone must be set correctly in the PEM device.

5.2 Alarms

1. Click the "ALARMS" menu to view a table with all pending alarms.
2. Click a column heading to sort in ascending or descending order.
3. Terms can be searched. Type the term you are searching for in the search field "  ". The search starts immediately.

The meaning of the table entries is described below.

Subsystem	Subsystem number
Device	Device address or internal BMS address
Channel	(BMS) channel number
red symbol yellow symbol	Red symbol = alarm, warning, device error Yellow symbol = prewarning
Alarm	Alarm, warning, prewarning, device error
Test	Alarm caused by "Internal test"
Device name	Name of the BMS device
Description	Description of the alarm or the operating message
Measured value	Measured values transmitted from the bus
Timestamp	Time and date the first alarm occurred
i, 	Provides additional information

5.3 History memory

The history memory stores entries (prewarnings, alarms, tests) that have occurred on one of the associated devices. Several open alarm messages can be pending at the same time. The history memory is stored failsafe in the device. If the history memory is full, in the event of an alarm the oldest entry will be deleted in each case to create space for the new entry.

5.3.1 Displaying the history memory

- ▶ Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "History/Logger" > "History".

The history memory will be displayed. Entries can be sorted and/or filtered (refer to "History/Logger: Sorting and filtering entries" on page 31).

5.3.2 Deleting the history memory of a gateway

1. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "History/Logger" > "History".
2. Activate "Delete" and afterwards, click "Save changes".

The history memory will be deleted. Also refer to the table "Settings" > "History/Logger" on page 24.

5.3.3 Displaying and erasing the history memory of BMS devices

If a BMS device has its own history memory, its entries can also be displayed, edited and deleted. Example: RCMS490-D:

Displaying the history memory

- ▶ Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Menu" > "History".

Erasing the history memory

1. Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Menu" > "Settings" > "History".
2. Activate the button "Delete" and then click "Save changes".

5.4 Data logger

Gateways of the COMTRAXX® product family have several data loggers, which record measured values. Example COM465..., CP700: Up to 10,000 entries can be recorded for each of the 30 data loggers.

5.4.1 Setting data logger

A new measured value will be saved when the conditions set at "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "History/logger" > "Data loggers" are fulfilled (refer to the description of settings in the table "Data logger" on page 24). Here you can also make settings for overwriting and deleting measured values.



An existing data logger will be deleted when one of the settings "Subsystem", "Device address" or "Channel" is changed.

5.4.2 Entering individual text for data loggers

Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "Edit texts" > "Data logger" to enter individual texts for data loggers (refer also to "Individual texts for devices or gateways" on page 34).

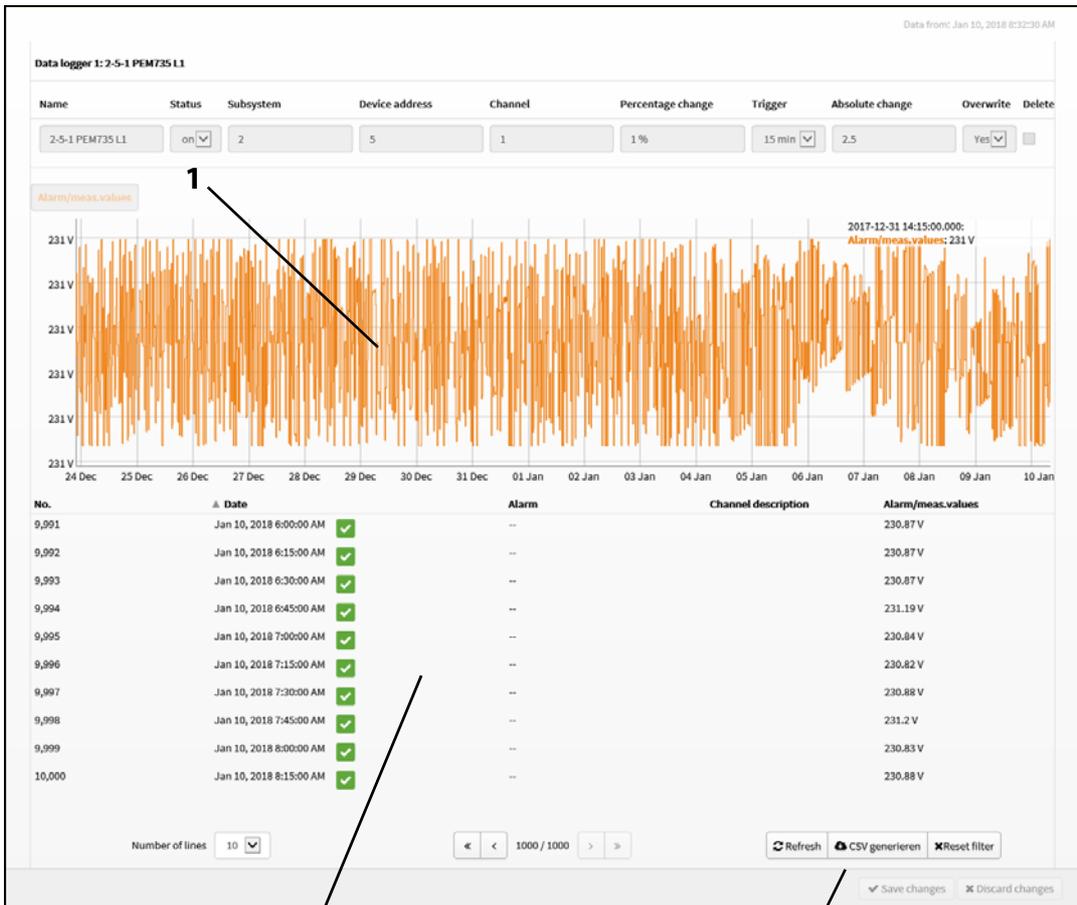
5.4.3 Displaying data loggers

Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Data logger" > "Data logger..".



If the measured values of a recent change are not displayed, select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Data logger" > "Data logger.." again.

The selected data logger will be displayed:



2

3

Key:

1	Use the left mouse button on the time axis to click and hold, drag, and then release an area that you want to zoom in on.
2	Table view. Entries can be sorted and/or filtered (refer to "History/Logger: Sorting and filtering entries" on page 31).
3	Export as CSV: Saves data as an Excel spreadsheet.

5.4.4 Deleting data loggers

1. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "History/Logger" > "Data logger".
2. Activate the button "Delete" for one or more data loggers.
3. Afterwards, click "Save changes".

Also refer to the description in the table "Data logger" on page 24.

5.4.5 Displaying data logger of BMS devices

If a BMS device features a data logger, its entries can be sorted and/or filtered as well as exported (Example: RCMS490-D).

5.4.6 History/Logger: Sorting and filtering entries

- ▶ Click a column heading one or more times to sort in ascending or descending order. Example: "▼ Adresse".
- ▶ To filter by entries of one column, click "≡". There are different filters for the entries (numerical values, text, date/time).
 - Select the filter type (e.g. "Equals")
 - Enter a term or a number by which the column should be filtered.
 - To delete the filter, delete this term or this number.
- ▶ Click "⏏" to change the respective column width.



Filtering numerical values reliably

Numerical values are treated as floating point values by the gateway and are reduced to a meaningful representation. The filtering criteria "Equals" might therefore not provide the appropriate numerical value. For example, use the filtering criteria "Starts with" and "Ends with" to narrow down the numerical value.



All settings made for sorting or filtering the table view and settings for the graphical representation will be deleted as soon as the "Data logger..." menu is exited.

5.5 Using the device failure monitoring function

Devices associated to the gateway can be monitored for failure.

Behaviour when device failure monitoring is activated

If the device fails, the "Alarm status" field in the bus overview is greyed out.

Although the device is currently not available, it is treated as if it were available:

- An alarm will be signalled in the event of a device failure
- It will be displayed in the bus overview
- Individual texts can be entered
- E-mail notifications can be configured
- It can be visualised

Behaviour when device failure monitoring is deactivated

- The device (e.g. RCMS490-D) will not be monitored for failure.
- If the device fails, it will disappear from the bus overview. **No** alarm will be signalled.

5.5.1 Displaying overview device failure monitoring and adding devices

An overview of the devices monitored for failure will be displayed. Devices not yet connected to the BMS bus can be added by entering the planned BMS address. For these devices, individual texts can be entered and e-mails can be configured. They can be visualised.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Tools" > "Device failure monitoring". An overview of the devices monitored for failure will be displayed. Devices to be monitored can be removed from the overview or added to the overview.

5.5.1.1 Monitoring all BMS devices

1. Select "Tools" > "Device failure monitoring".
2. Click "Import current state" to monitor all **active** devices for failure that are currently connected to the BMS bus.

In the device overview, all active devices are now marked with the "" symbol. Devices that have been monitored but that are no longer active (failure) disappear from the bus overview.

5.5.1.2 Assigning a device to the gateway that has not yet been connected

1. Select "Tools" > "Device failure monitoring".
2. Click "+ Add entry" to add a device that is not connected or has failed.
3. Select the subsystem and the address of the device and then click "OK".
4. Repeat these steps for all planned devices.

Although the devices are currently not available, they are treated as if they were available:

- An alarm will be signalled in the event of failure of these devices
- They will be displayed in the bus overview
- Individual texts can be entered
- E-mail notifications can be configured
- They can be visualised

5.5.1.3 Activating/deactivating device failure monitoring function in the device overview

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" and click the desired subsystem. Click symbol " " or " " in the device overview of the device the device failure monitoring of which should be changed.

5.5.1.4 Activating device failure monitoring function

Example: The RCMS460-D is to be monitored for failure.

1. Click the " " field of the bus device "RCMS490-D".
2. A message will confirm the activation of device failure monitoring.
In the device overview, the symbol " " shows that this device is monitored for failure.

5.5.1.5 Deactivating the device failure monitoring function

Example: The device failure monitoring of the RCM460-D should be deactivated.

1. Click the " " field of the bus device "RCMS460-D".
2. A message will confirm the deactivation of device failure monitoring. In the device overview, the symbol " " shows that this device is **not** monitored for failure.

5.6 Individual texts

Individual texts allow unique identification of subsystems, devices and measuring points (channels). The texts appear on the web user interface, in exported files (backups) or in the visualisation. For using individual texts for all devices and channels as well as documentation the gateway must contain function module A.

5.6.1 Displaying, editing and deleting individual subsystem texts

Individual subsystem texts allow unique identification of subsystems. The texts appear on the web user interface, in exported files (backups) or in the visualisation.

5.6.1.1 Displaying individual subsystem texts

1. Select "Tools" > "Individual subsystem texts".
2. Up to 255 subsystems can receive a name (subsystem text). Activate "Display existing systems only" if only these texts should be displayed.

5.6.1.2 Editing or deleting individual subsystem texts

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Click the entry field of a text.
3. The entry can now be edited or deleted.
4. Click "Save changes".
5. Click "Distribute changes in the system".

5.6.2 Individual texts for devices or gateways

Example: Individual texts are to be assigned to an RCMS460-D and to its channels.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Device (e.g. RCMS460-D)" > "Menu" > "Settings" > "Edit texts".
3. Select "Device" to fill in the text fields that apply to the entire device. Confirm the entries with "Save changes".
4. Select "Channel 1-12" to fill in text fields that should apply to the individual channels. It is possible to leave fields unused. Confirm the entries with "Save changes".

The entry of individual texts for a gateway is carried out in a similar way. Individual texts can be assigned to the device and the data loggers here.

5.7 E-mail notification in the event of an alarm

The gateway allows sending e-mail notifications to various users in the event of alarms and system faults. Up to five different profiles (templates) can be created. To use e-mail notifications, the gateway must include function module A.

Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".

In just two steps e-mail notifications can be set up:

1. Create profile: Who should receive an e-mail and when should it be sent
2. Select devices and channels which are to trigger an e-mail notification

5.7.1 Creating profiles: Who should receive an e-mail and when should it be sent

A maximum of five profiles (templates) can be created.

Example: A profile for the weekend shift has to be created.

1. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "E-mail" > "Profile 1".
2. Enter the profile name and the server settings in the submenu "Settings".
 - The gateway uses the e-mail server of the network to which it is connected. Enter the IP address and the port **of the e-mail server**.
 - When using external e-mail providers (e.g. GMX, etc.), the encryption (SSL/TLS) has to be activated.
 - Enter the name of the user and the password for SMTP authentication.
 - Click "Save changes".
3. Enter e-mail addresses and subject line in the submenu "E-mail".
 - Select a language for the e-mail.
 - Enter the sender address to be displayed.
 - Enter the address the e-mail is to be sent to (e-mail address and mailing list name).
 - Enter subject, header and footer.
 - Select if an e-mail should be sent in the event of a prewarning and/or a test.

- Enable "System monitoring" for e-mail monitoring of the entire system. By doing this, all devices and channels of the entire system in the selected profile are automatically monitored.
 - Click "Save changes".
4. Check the e-mail function in the submenu "TEST".
 - Activate the "TEST" button and then click "Save changes".
 - Open your e-mail inbox to display the "Test e-mail".

5.7.2 Selecting devices and channels which are to trigger an e-mail notification

The set e-mail profiles are available for all devices connected to the gateway (e.g. RCMS460-D).

1. Select "Bus overview" > "Subsystem..." > "RCMS460-D" > "Device settings" > "Configure e-mail".
2. Select the respective template for device failure as well as device channels that are to trigger an e-mail notification.
3. Click "Save changes".
4. Repeat these steps for all devices that are associated to the gateway.



You can also set up e-mail notifications for devices currently not available on the bus if a device failure monitoring function has been configured for these devices.

5.8 Documenting the device and system

5.8.1 Documenting the device

Documentation of the selected device or gateway is saved on the PC as a PDF file.

1. Select "Bus overview" > "Subsystem..." > "Device" > "Device settings" > "Document device".
2. Enter a description (max. 70 characters).
3. Select the information to be exported:
 - All available device information (serial no., article no., software version)
 - All device parameters and measured values that are represented in the device menu
4. Click "Generate PDF".
5. Select "Save file" to save the file in the "Downloads" folder of your PC.

5.8.2 Documenting the system

Device information of the entire system is saved as a PDF file on the PC (serial no., article no., software version). This is used to document the associated parameters and measured values as well as device information, such as serial number and software version, of all devices in the system.

1. Select "Tools" > "Document system".
2. Select the devices to be exported:
 - Use the scroll bar on the right side to scroll to the devices and select them.
 - Or click "Select all".
3. Enter a description (max. 70 characters).
4. Click "Generate PDF".
5. Select "Save file" to save the file in the "Downloads" folder of your PC.

5.9 Backup for device and gateway

The backup file can be used as a backup file. In the event of data loss (e.g. due to accidentally deleting settings) this file can be uploaded from the PC to the device again.

In addition, this file can be imported to another device. This may be necessary when a device is to be replaced or when several devices with similar tasks are to be configured.

Backup files can be saved for a gateway as well as for the BMS and BCOM devices connected to the gateway. To create a backup for the entire system, a backup file from each gateway, device or virtual device must be saved.

5.9.1 Exporting backup

A backup file of the selected device is generated. A backup contains all parameters that are also displayed in the device menu. In case of devices of the COMTRAXX series, this file also contains all configuration data in order to generate an entire device copy of the gateway.

1. Click "Export backup". - The number of contained parameters and the number of contained configuration files are indicated.
2. Click "Save file" to save the file in the "Downloads" folder of your PC.

5.9.2 Importing backup



Risk of incorrect data.

Before starting to import, make sure that the backup file is intended for the device.

All information saved in the backup file is synchronised with the information stored in the device. Data that differ from each other are displayed. Select what data should be imported.

1. Log in to the menu bar for parameter setting. Click "🔒". Enter user name and password for "admin".
2. Click "Browse" to select the correct backup file.
3. After the file has been uploaded, click "Next". The import is carried out in several steps.
4. After the last step, click "Complete".

5.10 Modbus

Please also note the detailed information regarding Modbus TCP in the manual of the gateway (e.g. CP700). The "Modbus" > "Manage devices" function can be found in the chapter "5.11.2 Modbus devices". This function is used to make settings for Bender universal measuring devices of the LINE-TRAXX® PEM... series connected via Modbus RTU or Modbus TCP.

5.10.1 Modbus control commands

From an external application (e.g. visualisation software) commands can be sent to BMS and BCOM devices. This menu item provides the Modbus control commands for selected commands.

- ▶ Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
- ▶ The control via Modbus can be switched on and off at "Bus overview" > "Subsystem..." > "Gateway (e.g. CP700)" > "Menu" > "Settings" > "Interface" > "Modbus" (refer to chapter "4.5.3.1").

Control commands for the internal BMS bus

- Isometer test
- Test change over unit (PRC487)
- Test change over unit (ATICS)
- Start test generator without changeover (ATICS)
- Change over to line 1 (ATICS)
- Change over to line 2 (ATICS)
- Reset alarm (all devices)
- Clear EDS insulation alarm (EDS)
- Mute buzzer (MK, TM, LIM)
- Switch channel on (SM0481; PRC487: channel 1(2): Change over to line 1(2))
- Switch channel off (SM0481)
- Get device/channel parameter (RCMS, EDS)*
- Set device/channel parameter (RCMS, EDS)
- Test (EDS, RCMS)

These control commands can be copied to the clipboard of the PC and then included in the programming for external application. The menu item "Modbus control commands" therefore serves as a programming aid.

1. Select "Tools" > "Modbus" > "Control commands".
2. Select the device that should receive the command by entering "Subsystem", "Address" and "Channel". By clicking the symbol  next to the address, you will receive:
 - a list of the available devices
 - as well as of the devices that are not available at the moment but for which the device failure monitoring function has been set up.
3. Select the command you intend to send to the device from the list "BMS command".
4. In the table in the lower part of the window, the respective Modbus control commands appear. These commands can be marked, copied and included in the programming of an external application (e.g. visualisation software).

5.10.2 Modbus register

Display Modbus functions and their register addresses

Sections of the memory image of a BMS device can be represented graphically using the "Modbus register" menu. 12 BMS channels or details about the device can be displayed individually. Up to 30 channels can be displayed on universal measuring devices PEM....

Modbus presentation of device information

In the example below details about an RCMS460-D with BMS address 18 is shown.

1. Select "Tools" > "Modbus" > "Modbus register".
2. Select "Subsystem", "Address" and "Channel" of the device. By clicking the symbol  next to the address, you will receive a selection of the available settings.
3. For channel, select "Device info". The Modbus presentation of the device information and the corresponding start addresses will appear.

In the "Hex" column, the hexadecimal start addresses of the respective information blocks are listed:

- Start address 0x1200 = BMS address 18, device type
- Start address 0x120A = BMS address 18, timestamp
- Start address 0x120E = BMS address 18, common alarm and device error



*A real BMS device cannot have BMS address 0!
The address 000/TEST only serves to simulate data access.*

Modbus presentation of a BMS channel

In the following example, the BMS channel 1 of an RCMS460-D is shown with BMS address 18.

1. Select "Tools" > "Modbus" > "Modbus register".
2. Select "Subsystem", "Address" and "Channel" of the device. By clicking the symbol  next to the address, you will receive a selection of the available settings.
3. For channel, select "1". The Modbus presentation of BMS channel 1 with the respective start addresses will appear.

In the "Hex" column, the hexadecimal start addresses of the selected BMS channel are shown. These addresses represent the beginning of the related information blocks in each case:

- Start address 0x1210 = BMS address 18, channel 1, floating point value (Value (Float))
- Start address 0x1212 = BMS address 18, channel 1, alarm type and type of test as well as range & unit
- Start address 0x1213 = BMS address 18, channel 1, description

5.10.3 Modbus parameter addresses

This function offers you support when programming an external application (e.g. a visualisation software). If this function is activated, the Modbus information is added to each parameter. This applies to the gateway and all associated devices.

1. Select "Tools" > "Modbus" > "Parameter addresses".
2. Activate the button "yes/no".

5.10.4 Documenting Modbus

Documentation is created for the BCOM subsystem in which the used COMTRAXX device is. It contains all the information (Modbus register addresses) of the BCOM subsystem that is accessible via Modbus.

1. Select "Tools" > "Modbus" > "Document Modbus".
2. Click "Generate CSV".

5.11 Device management

5.11.1 Virtual devices

A virtual "measuring point" is obtained by logically or numerically evaluating measured values of "real" devices connected to the CP700. Up to 16 channels (measuring points) can be configured for a virtual device.

Key

Numerical operators		Logical operators	
+	Addition	&&	And
-	Subtraction		Or
*	Multiplication	=	Equals
/	Division	!=	Not equal
		<, <=	Less
		>, >=	Greater
		!	Invert

Examples

Numeric examples	Logical examples
$(a + b) / 2$	$(a + b) / 2 < 200$
$\text{sqrt}(a)$	$a b c$
$-10 * \text{sqrt}((a * 250) + b) + 10$	$(a \&\& b) c$
$-(a * 3)$	$a != b$
	$a !b$

Virtual devices are treated like real devices:

- They will be displayed in the bus overview
- Individual texts can be entered
- E-mail notifications can be configured
- They can be visualised

Call up the "Virtual devices" function as follows:

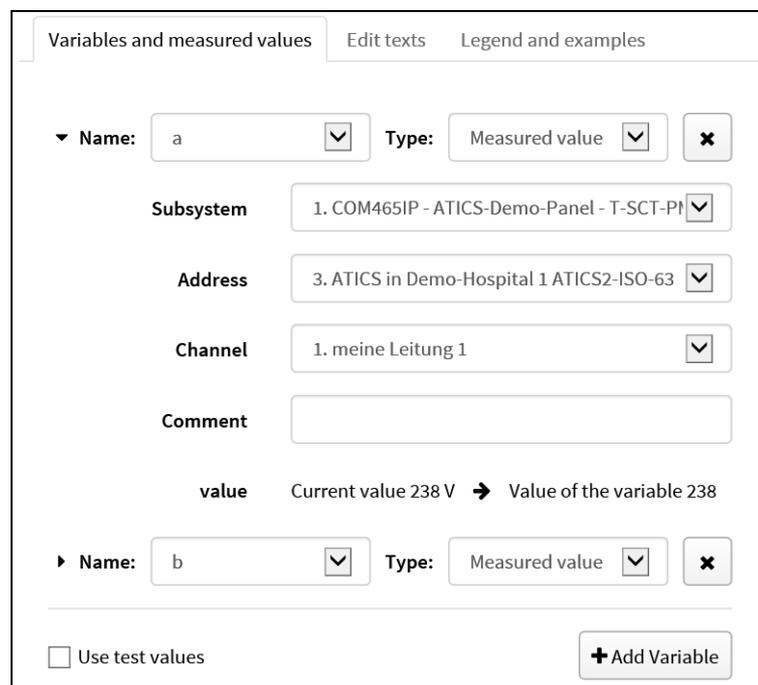
1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Tools" > "Service" > "Search devices".

5.11.1.1 Adding a new virtual device

1. Click "Add device" in the "Manage virtual devices" window.
2. Enter address for new virtual device directly or scroll upwards and downwards using the arrow buttons. This virtual BMS bus address allows a common representation with real devices. Addresses that have already been assigned to another device cannot be selected. In this case, choose a different address.
3. Enter device name
4. Enable or disable "Mirror to BMS". If the virtual device is mirrored to BMS, it can trigger reactions of other BMS devices like a real BMS device.
5. Click "Ok" to save the changes.

5.11.1.2 Adding or changing channels of a virtual device

1. Click the "⚙️" symbol in the line of the desired virtual device in the "Manage virtual devices" window.
2. Click the "⚙️" symbol in the line of the desired channel in the "Channel overview" window.
3. Set the following in the "Channel settings" window:
 - Calculation type: numerical or logical
 - Formula: refer to "Legend and Examples"
 - Unit of the measured value
 - Measured value condition:
 - a) Evaluation for all measured values: status message, prewarning, warning or
 - b) Evaluation according to measured value level. Click "+" and enter one or more If-Then conditions.
4. Define the variables used in the formula. Select the tab "Variables and measured values". Click "+ Add Variable".
5. Click "▶ Name:". Set the following for the first variable:
 - Name of the variable
 - Type of variable: measured value, constant, alarm, device error. The "device error" setting allows monitoring virtual devices for failure and/or common alarm.
 - Subsystem, address and channel of the device that provides the measured value for the variable.
 - Comment



Variables and measured values | Edit texts | Legend and examples

▼ Name: a | Type: Measured value | ✕

Subsystem: 1. COM465IP - ATICS-Demo-Panel - T-SCT-PI

Address: 3. ATICS in Demo-Hospital 1 ATICS2-ISO-63

Channel: 1. meine Leitung 1

Comment:

value: Current value 238 V → Value of the variable 238

▶ Name: b | Type: Measured value | ✕

Use test values | + Add Variable

6. The present value of the variable is indicated. Alternatively, a test value can be entered after activating "Use test value" and the result determines if the formula is correct.
7. Click "+ Add Variable" to configure further variables.
8. After completing the settings, click "Save changes".

5.11.1.3 Editing a virtual device

1. Click the "✎" symbol in the line of the virtual device to be edited in the "Manage virtual devices" window.
2. Set the following in the "Edit device" window:
 - Device address of the virtual device
 - Device name
 - Enable or disable "Mirror to BMS".
3. Click "Ok" to save the changes.

5.11.1.4 Deleting a virtual device

Click the "🗑" symbol in the line of the virtual device to be deleted in the "Manage virtual devices" window.

5.11.2 Modbus devices

This function is used to make settings for Bender universal measuring devices of the LINETRAXX® PEM... series connected via Modbus RTU or Modbus TCP. These settings are used to identify the connected device by its address, interface type, device name and, if applicable, device IP. By selecting a template you can specify which of the various measurements of a Modbus device are to be displayed on the CP700 touch screen or via the web user interface. This function can also be used to integrate third-party devices in the Bender system if they feature a Modbus RTU or Modbus TCP interface.

5.11.2.1 Adding, changing or deleting Modbus devices

Call up the "Modbus devices" function as follows:

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Tools" > "Device management" > "Modbus devices" > "Manage devices". If no device has been entered yet, the message "No entries available for display" will appear.

Adding or changing a new Modbus device

Adding Click "Add device" in the "Manage Modbus devices" window.

Changing Click the "" symbol in the line of the Modbus device to be edited in the "Manage Modbus devices" window.

1. Set the following in the first window:

Parameter	Description	Example
Type	Select the Modbus device type	PEM575
Device address	This virtual BMS bus address allows a common representation of BMS and Modbus devices. Addresses that have already been assigned to another device cannot be selected. In this case, choose a different address. Note: Set this address also on the Modbus RTU device.	7
Modbus	Select the appropriate type of Modbus "TCP" or "RTU"	192.168...
Device name	Individual text to describe the Modbus device	Monitoring room A
Unit ID	Modbus TCP only: always 1.	1
IP address	Modbus TCP only: Enter IP address. Note: Set this IP address also on the Modbus TCP device.	162.xx.xx.xx
Template name	Select template. One "Default template" is available for each device type. Individual templates can be created (refer to chapter "5.11.2.3 Creating, editing or deleting templates").	PEM575 default template

2. Click "Next".
3. Enter an individual text for each channel in the second window.
4. Click "Save" to save the changes.

Deleting a Modbus device

Click the "" symbol in the line of the virtual device to be deleted in the "Manage Modbus devices" window.

5.11.2.2 Creating, editing or deleting profiles

Profiles can be set up for connected devices for which no templates are available. In a profile you can describe the Modbus devices and their channels by means of the registers. Profiles can be exported and later imported again.

Select "Tools" > "Device management" > "Modbus devices" > "Manage profiles".

Creating a new profile

1. Click "Add entry" in the "Manage profiles" window.
2. A new profile will be opened.
 - Change the name of the profile.
 - Add new registers.
3. Click "Ok" to save the changes.

Creating a new profile using an existing profile

1. Click the " " symbol in the line of the profile to be copied in the "Manage profiles" window.
2. A copy of the profile will be opened (Name_CLONE).
 - Change the name of the profile.
 - Change the settings.
3. Click "Ok" to save the changes.

Changing a profile

1. Click the " " symbol in the line of the profile to be changed in the "Manage profiles" window.
2. Change the settings.
3. Click "Ok" to save the changes.

Exporting a profile

1. Click the " " symbol in the line of the profile to be exported in the "Manage profiles" window.
2. Select "Save as" to save the profile to the desired location.

Importing a profile

1. Click "Import profile" in the "Manage profile" window.
2. Select the storage location. Mark the required file and click "Open".
3. The imported profile will be opened. Click "Ok" to save the profile.

Deleting a profile

Click the " " symbol in the line of the template to be deleted in the "Manage profiles" window.

5.11.2.3 Creating, editing or deleting templates

Templates can be created for the connected devices. In a template you can specify which of the various measurements of a Modbus device are to be displayed on the CP700 touch screen or via the web user interface. Each template is identified by a template name. Depending on the particular need, a template can be selected. One "Default template" is available for each device type.

1. Select "Tools" > "Device management" > "Modbus devices" > "Manage templates".
2. Select the appropriate Modbus device at "Device".
If you have not entered an individual template yet, only the "Default template" will appear.

Creating a new template

1. Click "Add entry" in the "Manage templates" window.
2. A new template will be opened.
 - Change the name of the template.
 - Add new channel numbers by selecting or searching for the value.
3. Click "Next".
4. In the second window, select for each channel whether an alarm should be generated. If "Generate alarm" is enabled, specify the alarm conditions (If-Then conditions).
5. Click "Ok" to save the changes.

Creating a new template using the default template

1. Click the  symbol in the line of the template to be copied (default template) in the "Manage templates" window.
2. A copy of the template will be opened (Name_CLONE).
 - Change the name of the template.
 - Delete unnecessary channel numbers " ".
 - Add new channel numbers by selecting or searching for the value.
3. Click "Next".
4. In the second window, select for each channel whether an alarm should be generated. If "Generate alarm" is enabled, specify the alarm conditions (If-Then conditions).
5. Click "Ok" to save the changes.

Changing a template

1. Click the "  " symbol in the line of the template to be changed in the "Manage templates" window.
2. Change the settings.
3. Click "Ok" to save the changes.

Deleting a template

Click the "  " symbol in the line of the template to be deleted in the "Manage templates" window.

5.11.2.4 Example for the integration of a third-party Modbus device

You will require data from the third-party device operating manual for the integration.

- Baud rate
- Function code
- Byte order
- Modbus address
- Data type
- Unit ID
- IP address

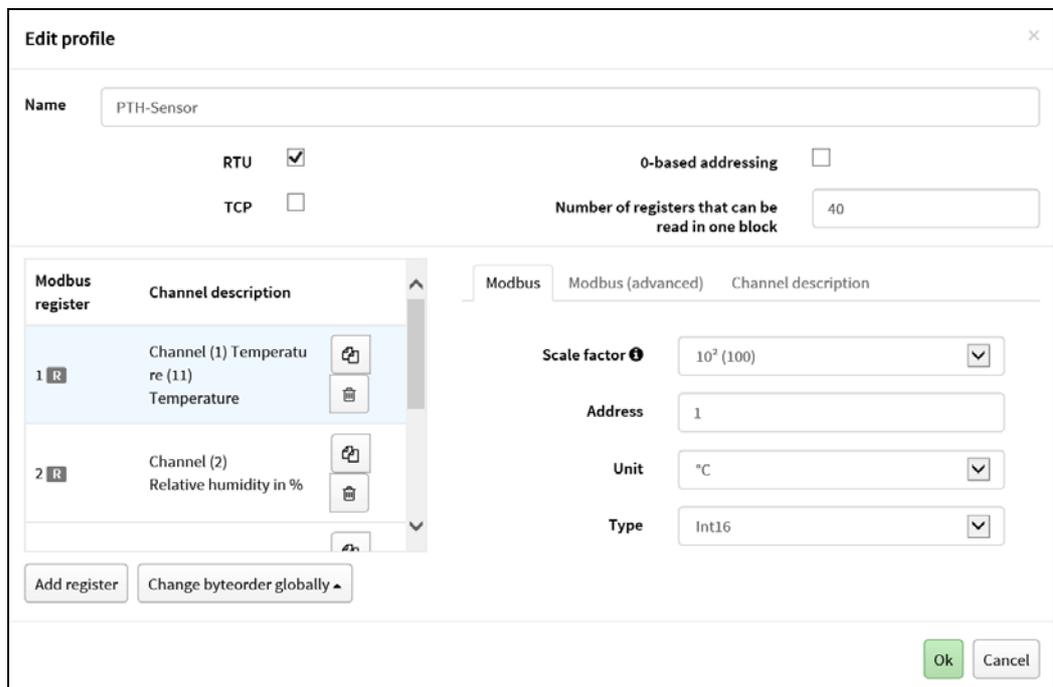
Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".

Perform the following operating steps one after another:

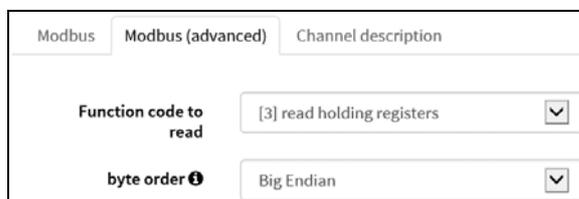
1. Create profile: Select Modbus type, assign Modbus registers to the channels.
2. Create template: Select the channels that will be displayed. Specify alarm conditions.
3. Add device: Select device, select available device address, select Modbus type, enter device name, assign template, edit channel texts.
4. Set interface to "on" in the gateway and read parameter (baud rate).
5. Set selected device address (bus address and baud rate or IP address) in the third-party device.
6. Test function.

Step 1: Creating a profile for a third-party device

1. Select "Tools" > "Device management" > "Modbus devices" > "Manage profiles".
2. Click "Add entry" in the "Manage profiles" window.
3. A new profile will be opened. Change the name of the profile.
4. Click "Add register".
5. Go to the "Modbus" tab to set the following:
 - Scaling factor for the representation of the measured value
 - Modbus register address
 - Unit that is to be displayed
 - Modbus data type



6. Go to the "Modbus advanced" tab to set the following:
 - Function code to read for the representation of the measured value
 - Byte order



7. Go to the "Description" tab to set the following:
 - Comment on measured value
 - Text and index

Field	Value	Show
Comment	Temperature	<input type="checkbox"/>
Text	Channel	<input checked="" type="checkbox"/>
index	1	<input checked="" type="checkbox"/>
Channel description	Temperature	<input checked="" type="checkbox"/>
index	11	<input checked="" type="checkbox"/>

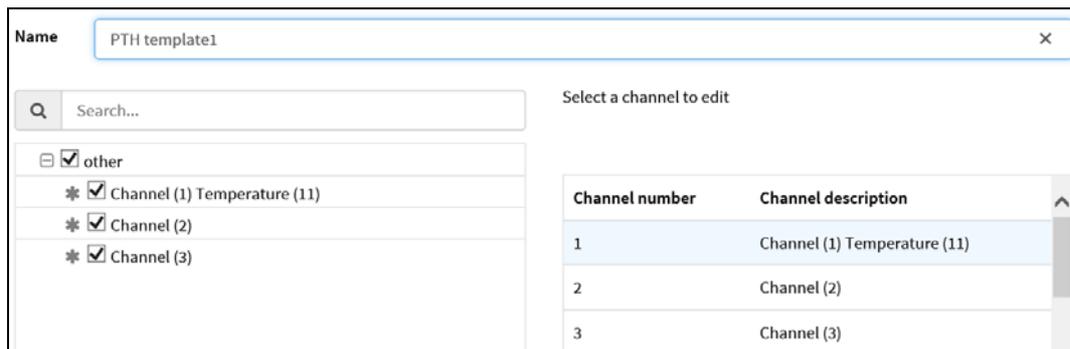
8. The same procedure can be used to add further registers.

Modbus register	Channel description
1 R	Channel (1) Temperature (11) Temperature
2 R	Channel (2) Relative humidity in %
4 R	Channel (3) Druck in Pa

9. Click "Ok" to save the changes.

Step 2: Setting up a template for a third-party device

1. Select "Tools" > "Device management" > "Modbus devices" > "Manage templates".
2. Click "Device" in the "Manage templates" window and select the profile set for the third-party device.
3. Click "Add entry".
4. A new template will be opened.
 - Change the name of the template.
 - Add new channel numbers by selecting or searching for the value.



The screenshot shows a software window titled 'Name' with the value 'PTH template1'. Below the title bar is a search bar with the text 'Search...'. To the right of the search bar is the text 'Select a channel to edit'. Below the search bar is a list of channels with checkboxes: 'other' (checked), 'Channel (1) Temperature (11)' (checked), 'Channel (2)' (checked), and 'Channel (3)' (checked). To the right of this list is a table with two columns: 'Channel number' and 'Channel description'. The table contains three rows: (1, Channel (1) Temperature (11)), (2, Channel (2)), and (3, Channel (3)).

5. Click "Next".
6. In the second window, select for each channel whether an alarm should be generated. If "Generate alarm" is enabled, specify the alarm conditions (If-Then conditions).
7. Click "Ok" to save the changes.

Step 3: Adding a third-party device

1. Select "Tools" > "Device management" > "Modbus devices" > "Manage devices".
2. Click "Add device" in the "Manage devices" window.
3. Set the following in the first window:

Parameter	Description	Example
Type	Select the Modbus device type	Select the profile, e.g. "PTH sensor"
Device address	This virtual BMS bus address allows a common representation of BMS and Modbus devices. Addresses that have already been assigned to another device cannot be selected. In this case, select a different address. Note: Set this address also on the Modbus RTU device.	Select the next available address, e.g. address 7.
Modbus	Select the appropriate type of Modbus "TCP" or "RTU"	Enable the setting "RTU"
Device name	Individual text to describe the Modbus device	Enter a device name, e.g. "Temperature sensor".
Unit ID	Modbus TCP only: always 1.	No function, because Modbus RTU
IP address	Modbus TCP only: Enter IP address.	No function, because Modbus RTU
Template name	Select template.	Select the set template "PTH-Template1".

4. Click "Next".
5. Enter an individual text for each channel in the second window.
6. Click "Save" to save the changes.

Step 4: Checking the settings of the gateway interface

1. Log in to the menu bar for parameter setting. Click "🔒". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. COM465IP)" > "Menu" > "Settings" > "Interface" > "Modbus".
3. Set the interface to "on" in the "Modbus RTU" line. Write down the interface data.

Modbus/RTU		
Modbus/RTU	on	on
Baud rate	19,200	19,200
Parity	even	even

Step 5: Configuring the third-party device interface

Carry out the following settings according to the operating manual of the third-party device.

1. Set the device address to the same value, as in step 3, e.g. address 7.
2. Set baud rate and parity to the same value, as in step 4, e.g. 19200 baud, even parity.

Step 5: Testing communication

Is the device displayed correctly in the bus overview? Is the measured value and its scaling correct?
 Are the alarm conditions applied correctly?
 If not, change the parameters concerned.

5.12 POWERSCOUT®

POWERSCOUT® is a web-based software solution for monitoring, analysis and predictive maintenance of installations (optionally available). If the "POWERSCOUT" setting is enabled, the gateway sends the selected data at regular intervals to the POWERSCOUT® software.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. COM465IP)" > "Menu" > "Settings" > "Interface" > "Powerscout".
3. Select "Activated" > "On".
4. Enter your POWERSCOUT login details and the POWERSCOUT server address.
5. Select the following for the POWERSCOUT® access: "Own subsystem" or "All subsystems".
6. Set the "Upload interval" (1...60 minutes).
7. Click "Save changes".

5.13 Function modules and licensing

5.13.1 Identifying activated function modules



The COM465... gateways are available as basic devices and can be adjusted to the existing task using function modules. In the standard version of the CP700, all function modules are already activated.

1. Select "Tools" > "Function modules".
2. The line "Activated" shows the activated function modules.
3. If not all function modules are activated, additional modules can be acquired and imported using a licence file.

5.13.2 Acquiring a licence for additional function modules and loading licence file

After acquiring a licence from our sales department for one or several function modules, the corresponding licence file *.BLF will be available on our web server at

<http://www.bender.de/en> > Service & support > Download > Licences

. As soon as the login procedure has been passed successfully, the website "Licences" appears. Follow the user guidance there.

1. Enter the "Article no." and the "Serial no.". You can find them on the sticker of the packaging, printed on the enclosure or in the info menu of the gateway.
2. Then click "Get licence file". A text field with the name of your new licence file will appear in the same window.
3. Right-click to open the context menu and click "Target save as". There, you select the location and confirm with "OK".

5.13.3 Activating purchased function modules

In order to activate additional function modules, you have to import the licence file *.BLF downloaded from the Bender server to the gateway.

1. Select "Tools" > "Function modules".
2. Use "Browse" on the lower part of the page to select the location of the licence file.
3. Select the desired file and confirm with "Import".

All available "function modules" will then be confirmed by a green check mark in the line "Activated".

5.14 Update

The firmware and the software of your device will have all functions of the gateway. They will continuously be further developed by Bender. New versions contain function enhancements and optimisations, and will be made available as updates.



Generating backup files

Before starting an update, save all settings of your gateway and devices on your PC using the backup function. Like this you can restore your device settings if necessary.

The update consists of two steps:

1. Upload the update file from your PC to the memory of the gateway
2. Start the operating software update

5.14.1 Preparing the update

Adjusting the browser settings

- ▶ Deactivate the pop-up blocker for the duration of the update process.

Determining current software version

1. Select "Tools" > "Updates".
2. The installed software version will be displayed (e.g. 2.xx).

Downloading new update file from Bender.de

1. Open an Internet browser and go to:
`https://www.bender.de/en > Service & support > Downloads.`
2. Select the correct update file for your gateway from the "Software" category.
As soon as the login procedure has been passed successfully, the file can be downloaded to your PC.
3. Click the respective symbol in the software list and specify a place on your PC to save the update when you are prompted to do so.

5.14.2 Uploading the update file to the gateway

1. Click "Browse" in the "Update" window to select the loaded update file. In the window "Browse", the respective path will appear.
2. Click "Upload" to transfer the update file "Gateway Vx.xx.BUF" to the gateway. A progress bar will appear.

5.14.3 Starting the software update

1. Click "UPDATE" to start the update of the system files. A progress bar will appear.
2. Once the update is completed, after approximately 10 minutes, the device can be operated
3. again.

5.15 WEB server with Silverlight

Bender gateways of the COMTRAXX® product family with the software version indicated on the front page feature two web user interfaces:

- the HTML-based web user interface described in this manual
- as well as the alternative web user interface with Microsoft Silverlight™. This interface is described in the manual of the "CP700". Select "Tools" > "WEB server with Silverlight".

At the time of creation of this manual, some of the gateway functions are only available on the web user interface with Microsoft Silverlight™.

5.16 Manual

This menu is linked to the download area of the Bender homepage:

<https://www.bender.de/en> > Service & support > Downloads.

Here you can download quick-start guides and manuals for Bender devices.

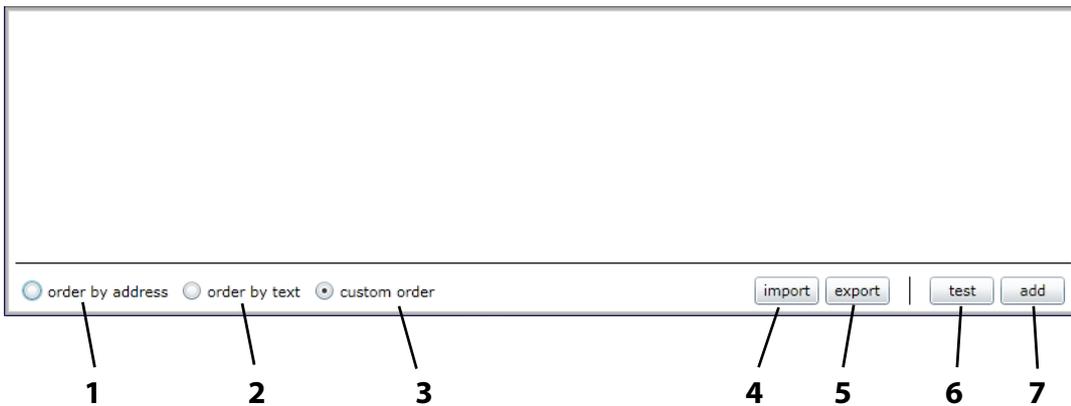
5.17 System visualisation

System visualisation is used when there are several gateways in one network. The devices are represented as tiles on a view page. The current alarm state of the devices is shown (red frame = alarm). The web user interface can be opened by clicking one tile.

The visualisation of the system is saved on the current PC whilst being created, provided that the application memory is activated, (refer to "Checking the activation of the application memory"). A copy can be exported and imported to another computer.

5.17.1 Starting system visualisation

Select "Tools" > "System visualisation". A new tab will be opened in the Internet browser.



Key

- 1 Sort tiles: by address
- 2 Sort tiles: by text
- 3 Sort tiles: by your own order
- 4 Load saved system visualisation from PC (import)
- 5 Save system visualisation on PC (export)
- 6 Open the web user interface of all linked devices.
- 7 Add new device to system visualisation

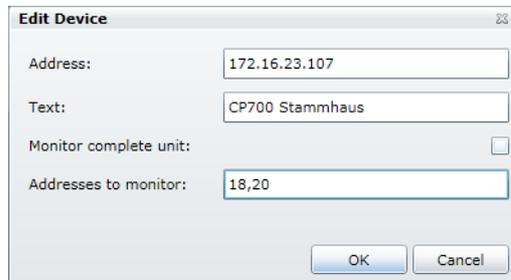
5.17.2 Checking the activation of the application memory

The application memory in the "Microsoft Silverlight configuration" must be activated in order to use the system visualisation function.

1. Start system visualisation.
2. Click anywhere in the browser window using the right mouse button.
3. Click the "Silverlight" button.
4. Open the "Application memory" tab.
5. "Activate application memory" must be selected (check mark).

5.17.3 Adding new device to system visualisation

1. Click "add".
2. Enter the IP address and the respective text. Select whether the complete unit (monitor complete unit) or individual addresses (addresses to monitor, addresses separated by a comma, no blank) are to be monitored. Then click "OK".



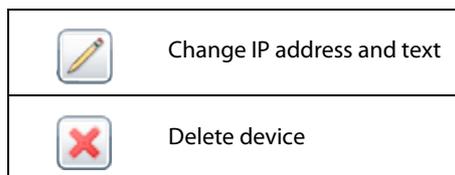
A new tile appears on the system visualisation surface. The colour of the frame shows the alarm status of the linked device:

green	no alarm
red	alarm
yellow	device not found
grey	device status (currently) unknown

3. Repeat the steps 1 and 2 to add more devices to the system visualisation.

5.17.4 Changing or deleting the device

1. Move the cursor to the respective tile without clicking.
2. Click the respective icon:



5.17.5 Exporting system visualisation

You can save the visualisation as a file on the PC by clicking "Export". In this way, you can avoid data loss (such as accidentally deleting a system visualisation).

In addition, the system visualisation can be imported to another gateway. This may be necessary when a gateway is to be replaced or when several gateways with similar tasks are to be configured.

1. Select "Export".
2. Select the location on your PC and then click "Save".

5.17.6 Importing system visualisation

Imports the system visualisation saved in a file on the PC.

1. Select "Import".
2. Select the location on your PC.
Click the file to be imported (file extension ".acf") and then click "Open".

5.17.7 Sorting system visualisation

Determine the order in which the tiles are arranged on a view page as follows:

order by address	Sort tiles: by address
order by text	Sort tiles: by text
order by customer	Sort tiles: by your own order

Selecting your own order

1. Click the element to be moved.
2. Use the "Up" or "Down" button to move it to the desired position.
3. Click "ok" to save the new order or click "cancel" to keep the original order.

5.17.8 Using the system visualisation

Click one of the tiles. The web user interface of the device will appear.

You can optionally display the system visualisation or the web user interface using the tabs of the Internet browser.

6. Power quality monitor

The gateway can also be used for displaying measured values of Bender universal measuring devices PEM..3 and PEM..5. The measuring values can also be displayed in tabular form or in diagrams. This chapter describes the operation via web user interface considering the universal measuring device PEM575 as example. The operating manual of the universal measuring device PEM575 provides detailed information on the functions described here.

6.1 Displaying alarms/measured values

Which measured values are displayed can be defined via the web user interface with Microsoft Silverlight™ in the menu "Tools" > "Modbus" > "Manage devices" using templates.

Displaying the alarms and measured values defined in the template

- ▶ Select "Bus overview" > "Subsystem..." > "Device (e.g. PEM575)" > "Overview".

Displaying all measured values

- ▶ Select "Bus overview" > "Subsystem..." > "Device (e.g. PEM575)" > "Menu" > "Alarm/Measured values".

6.2 Triggering alarm messages in the case of events

Possible events:

- Failure supply voltage
- Setpoint status change
- Relay actions
- Digital input status changes
- Setup changes

In the case of an event, an alarm message or e-mail notification is to be triggered.

6.2.1 Making settings for events

The settings can be made in the web user interface with Microsoft Silverlight™ in the menu "Tools" > "Modbus" > "Manage devices" using templates (select template and activate for events).

6.2.2 Acknowledging alarm messages for events

An alarm is being displayed on the web user interface.

1. Click "Alarms" to find out which device has triggered the alarm.
2. The type of event is stored in the event memory of this device. Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Events" > "Event protocol".

6.3 Displaying the phasor diagram of a PEM...

The phasor diagram shows:

- the phase voltages UL1, UL2, UL3, the currents I1, I2, I3
 - the angle between the phases, the angle between the currents,
 - the phase displacement between voltages and currents
 - voltage and current unbalance
- ▶ Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Measured values" > "Phasor diagram".

6.4 Displaying harmonics by means of a PEM...

Harmonics are caused, among other things, by fluorescent lamps, power supply units in PCs and consumer electronics. Harmonics can cause many problems in electrical systems.

The analysis of the harmonics of the measured currents is displayed as a bar and a current value. Harmonics are whole-number multiples of the rated frequency. Example: Rated frequency = 50 Hz, 2nd harmonic = 100 Hz.

The bar graph allows unusual measured values to be identified.

Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Measured values" > "Harmonics"

Selecting the voltages and currents to be displayed

First, all harmonics are shown. In order to achieve a more transparent and clear presentation, the harmonics should not be displayed on the screen simultaneously. The representation of a voltage or current curve can be activated or deactivated by clicking the associated button.

6.5 Displaying the power diagram of a PEM...

- ▶ Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Measured values" > "Power".

6.5.1 Setting calculation method and demand

The power factor rule and the method for the calculation of the apparent power can be set.

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Settings on the device"
3. Select "Calculation method"

	Description
Power factor	Power factor rule: Select IEC, IEEE or -IEEE.
Apparent power	Method for the calculation of the apparent power: Select vector or scalar.
Calculation distortion factor	Select percentage of the r.m.s. value or percentage of the fundamental component.

4. Select the required setting at "Demand" (refer to "PEM575" manual)
5. Click "Save changes" to save the entries.

6.6 Waveform recorder of a PEM575 universal measuring device

The PEM575 provides two waveform recorders (WFR) capable of storing a total of 32 recordings. Each waveform recorder can simultaneously record 3-phase voltage and current signals at a maximum resolution of 256 samples per cycle.

Recordings can be started manually or triggered by specified events (e.g. transient events, logic modules, undervoltage/overvoltage (SAG/SWELL) or setpoints). The measured values are processed by the gateway so that they can be graphically displayed.

6.6.1 Using the waveform recorder

Select "Bus overview" > "Subsystem..." > "PEM575" > "Menu" > "Recorder" > "Waveform recorder".

Selecting values to be represented in the curve

A legend of the values can be found above the curve. Click on the required values to activate or deactivate curve representation for these values.

Enlarging a specific part of the curve

1. Click the beginning of the section to be zoomed in and hold the mouse button.
2. Drag the cursor to the end of the section to be viewed (grey shaded) and release.
A close-up view of the selected section will appear immediately.
 - To enlarge the section even more, proceed as described in step 2 and 3.
 - Click "Refresh" to return to the original size.

6.6.2 Setting the waveform recorder

1. Log in to the menu bar for parameter setting. Click "". Enter user name and password for "admin".
2. Select "Bus overview" > "Subsystem..." > "PEM575" > "Settings recorder" > "Waveform recorder".
3. Select:
 - How precisely the recordings are to be depicted (number of samples per cycle).
 - Recording time.
 - The time before and after the event.
 - how many recordings are to be saved.
4. Click "Save changes" to save the entries.



If impermissible values have been selected, an error message will appear.

- Set the lowest possible values and save them.

- Repeat the entry with corrected values.

For information about the determination of permissible values, refer to the manual "PEM575" under the keyword "Waveform recorder".



Data loss by changing the settings

The waveform recordings will be deleted if its settings are changed.



If many cycles or samples are to be displayed, the indication via the web user interface may become very slow.

7. Troubleshooting and data

7.1 Compatible devices

An updated list of devices on which parameters can be set is available on our homepage. Enter the term "Compatibility list" in the search field.

7.2 Frequently asked questions

The time of the gateway and the PEM... are not identical.

The time of the PEM... is set by each gateway once an hour. If a PEM... is coupled to several gateways via Modbus TCP, all the gateways should be set to the same time.

The device name is displayed incorrectly or incomplete in the device overview.

This may occur if the device has failed before. Select "Overview" > "Refresh" in the browser or press "F5".

The web user interface does not start in Internet Explorer.

Remedy:

1. Start Internet Explorer.
2. Select "Extras" > "Configuration of compatibility view".
3. Disable "Display intranet sites in compatibility view".

The address of the gateway has changed. Unknown devices are displayed.

Apparently, there are more Bender devices in the company network. Change the settings of your gateway as follows:

1. Start web user interface
2. Log into the web user interface (For the login, refer to "Creating password protection for the gateway" on page 14).
3. Click "Device overview".
4. If there is more than one gateway, "your" gateway (the IP of which has been used to start the web interface) will be indicated with bold letters. Click this gateway.
5. Select: "Menu" > "Settings" > "Interface" > "BCOM"
6. Enter: "System name", "Subsystem address" and device address.
Example: "Headquarters, 1, 1"
Details regarding the BCOM addressing can be found in the manual "BCOM".

7.3 Searching devices

If after restarting the gateway not all devices have been found within 5 minutes, a new initialisation of the system can be carried out.

1. Select "Tools" > "Service" > "Search devices".
2. Select the interface on which should be searched.

7.4 Generating BMS log files

The current BMS bus traffic can be recorded for control and analysis purposes.

Establishing time period

3. Select "Bus overview" > "Subsystem..." > "Gateway (e.g. COM465IP)" > "Menu" > "Settings" > "History/Logger" > "BMS recording".
4. Select the duration of the recording: 1...7 days.
5. Click "Save changes" to save the entries.

During the selected time period, the gateway now continuously saves BMS log files with a size of 1 MB.

Viewing, saving or deleting BMS log files

1. Select "Tools" > "Service" > "Log files".
2. Click the desired file in the "Download" column. - The file can now be downloaded to the PC or viewed with an editor.
3. Files that are no longer required can be deleted:
 - Select individual files or click "Select all".
 - Afterwards, click "Delete selected entries".

7.5 Generating a fault report

If your COMTRAXX device does not function properly, a fault report can be generated here.

1. Select "Tools" > "Service" > "Fault report".
2. Click "Download report". - The file can now be downloaded to the PC or viewed with an editor.
3. Send this file to BENDER to analyse the fault.

7.6 Where do you get help?

If, after thorough reading of the technical manual and intensive fault location in your installation, you cannot clear the fault related to the COMTRAXX device, please contact our Technical Service department:

Tel.: +49 6401 807-760 or 0700BENDERHELP
Fax: +49 6401 807-259
E-mail: info@bender-service.com

7.7 Terms used

BMS	Bender measuring devices interface (RS-485 interface with BMS protocol)
BCOM	Protocol for communication of Bender devices via an IP-based network
DHCP	Dynamic Host Configuration Protocol. It is used to assign the network configuration to Clients via a server.
Domain	Domain name of the network
DNS server	Server for name resolution, component of the Domain Name Systems (DNS).
Gateways	Connects devices and networks that work with different interfaces and protocols.
HTTP	Hypertext Transfer Protocol. File Transfer Protocol: Is especially used for loading web sites in a browser
IP	Internet Protocol. A unique IP address must be assigned to each device.
ISONet	Function of Bender insulation monitoring devices (e.g. ISOMETER® iso685-D). Only one ISOMETER® may exist in an isolated system. If several networks monitored by an ISOMETER® are coupled, this function ensures that only one ISOMETER® is actively measuring.
LAN	Local Area Network. Local network, e.g. in companies.
LAN segment	Segment of a LAN
mDNS	Multicast DNS. It is a part of Zeroconf.
Modbus	A communication protocol
Multicast	Data transfer to a closed device group.
NTP	Network Time Protocol. Synchronisation standard for watches in PC networks.
Ping	Sending of a data packet to test if the connection is working
Proxy	Substitute for one or more different devices.
SNMP	Simple Network Management Protocol
UTC	Coordinated Universal Time.
Webinterface	Configuration interface of a device.
Zeroconf	Zero Configuration Networking. Zeroconf is a process for the configuration of PC networks (e.g. automatic assignment of IP addresses).

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