QUICK-START
EMU M-BUS CENTER

ENGLISH

CONTENT

INSTALLATION 3
Power supply 3
Network connection 4
Connect meter (M-BUS) 4

START-UP PROCEDURE 5
Default network configuration 5
Manual network configuration 5
Login 6
Web interface 7
Setting the time 8
Search/add meters 10
Checking the meter 12
Configure read-out cycle 13
Viewing measurements 14

CONFIGURING FTP UPLOAD 16

CONFIGURING EMS ISO 50001 UPLOAD 18

TECHNICAL DATA 19

Version 1.3 - Subject to modifications and amendments

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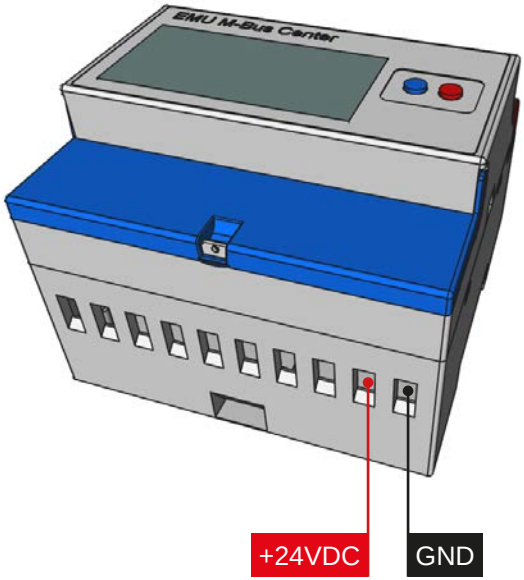
INSTALLATION

POWER SUPPLY

The EMU M-Bus Center requires a 24VDC power supply with at least 1A.
The connectors are located on the lower terminal block:



RECOMMENDATION

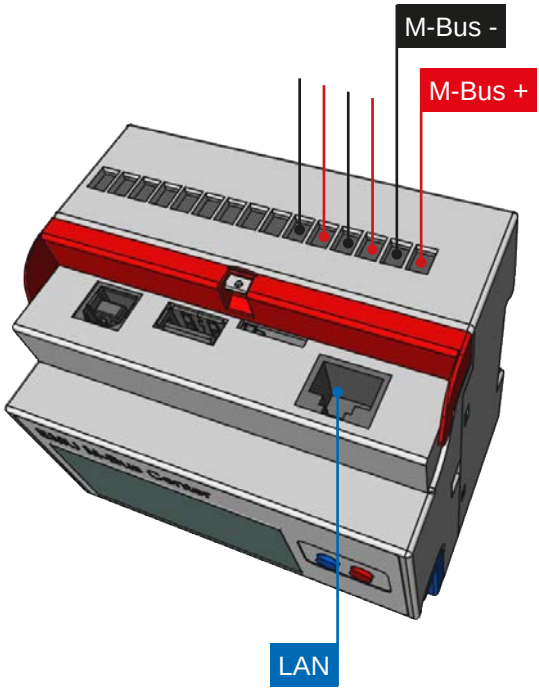
Power supply unit MDR-20-24
IN: 100-240 VAC | OUT: 24 VDC / 1A
EMU part number: **940076**

NETWORK CONNECTION

The EMU M-Bus Center has a standard RJ-45 LAN connection.
The connector is located on top of the device (see below):

CONNECT METER (M-BUS)

The EMU M-Bus Center has 3 parallel M-Bus clamps.
The connectors are located on the upper terminal block (see below):



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START-UP PROCEDURE

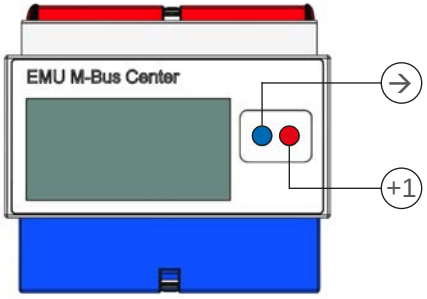
DEFAULT NETWORK CONFIGURATION

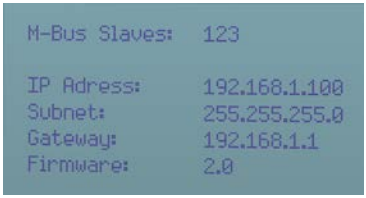
The standard setting for the EMU M-Bus Center is DHCP. The IP address appears on the display after the device is started (approx. 45 seconds). If no DHCP server is available, network settings can be configured manually on the device.

MANUAL NETWORK CONFIGURATION

Follow these steps to configure the IP address, subnet mask, and standard gateway manually:

- Hold the ***blue button*** for at least 5 seconds
- A cursor will appear in the first place of the IP address
- Use the ***red button*** to increment the digits (+1)
- Use the ***blue button*** to move one place to the right





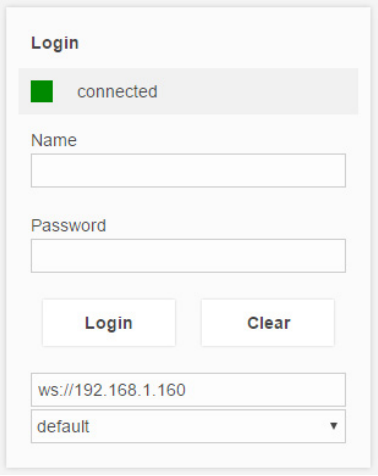
- Repeat this process until you have reached the last place
- Finally push the ***blue button***

Now, the EMU M-Bus Center can be reached at the configured IP address.

LOGIN

All additional configuration steps are made via the EMU M-Bus Center interface. The web interface is accessed as follows:

- Start your web browser
- Enter the ***IP address*** of the EMU M-Bus Center into the browser‘s address bar
- Now the login screen will appear
- Standard login
  Name: ***admin***
  Password: ***123***
- Log in by clicking ***Login*** or pressing ***Enter***
- After logging in, the Home screen of the EMU M-Bus Center will appear



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WEB INTERFACE

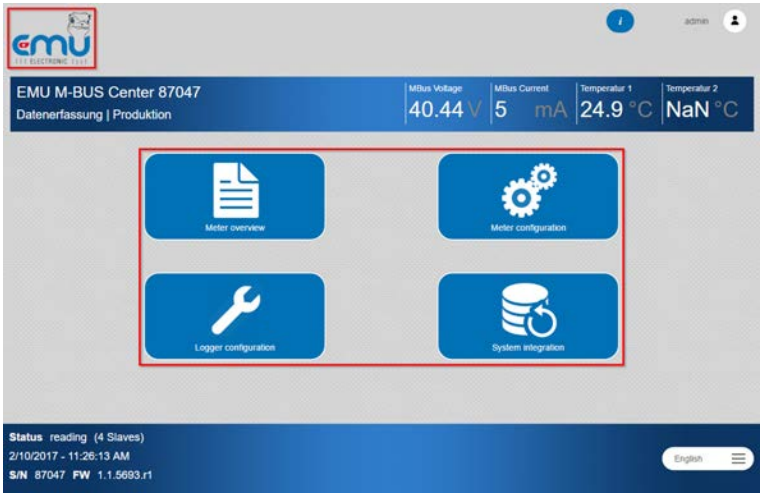
After successful login, the Home screen of the EMU M-Bus Center will appear first.

Return to the home screen from any sub-menu by ***clicking the EMU logo*** in the top left area.

Since the web interface is an application and not a website, the browser‘s „back“ button does not work!

One of the EMU M-Bus Center‘s ***four sub-menus*** can be selected in the middle of the Home screen.

Set your desired ***language*** in the dropdown menu in the bottom right.



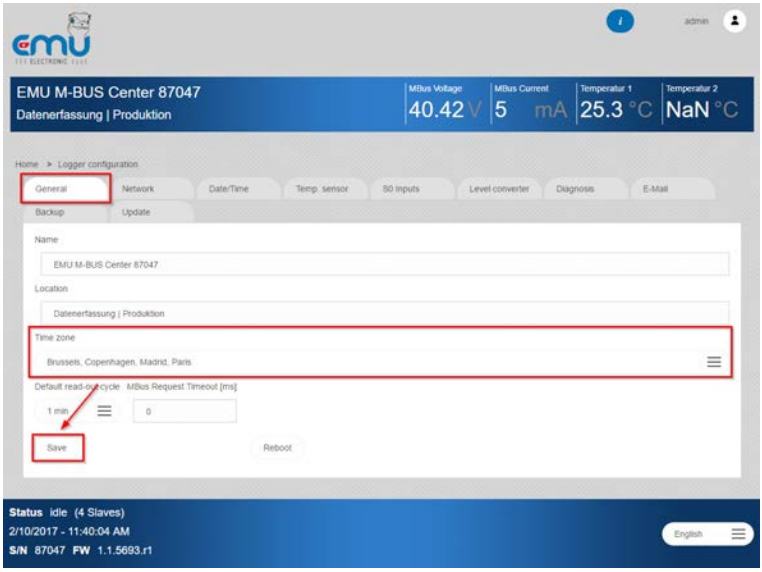
SETTING THE TIME

The correct system time is a prerequisite for the accurate logging of measurement values. The EMU M-Bus Center works internally with UTC time. It is calculated automatically based on the entered local time and time zone setting.

Follow these steps to set the time:

- Select **Logger configuration** on the Home screen

- Set the correct time zone using the ***General*** tab



- To apply the changes, confirm the settings with ***Save.***

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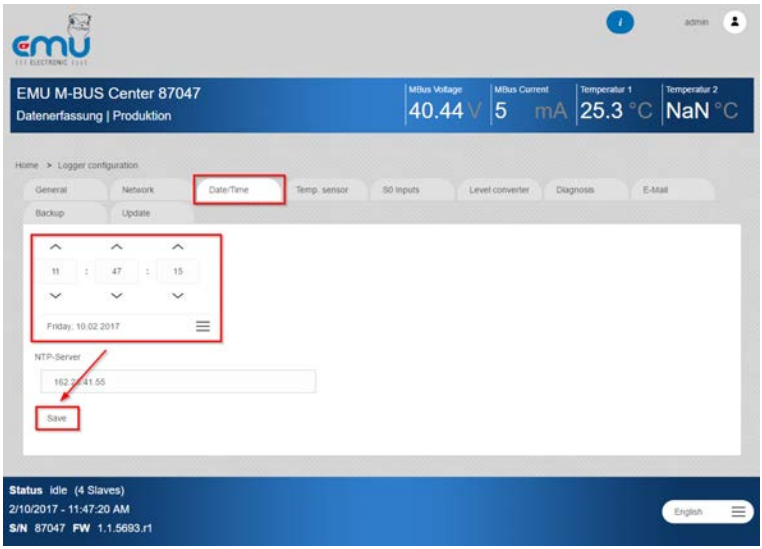
- The current local time and date can be set in the ***Date/Time*** tab



- To apply the changes, confirm the settings with ***Save***.
- Now, your system time is set

HINT!

A valid ***NTP time server*** can be configured in the ***Date/Time*** tab. If an internet connection (including configured Gateway) is available, the EMU M-Bus Center synchronizes the system time with the configured NTP server.

E.g. time server of the Swiss Federal Institute for Metrology (METAS):

metasntp11.admin.ch

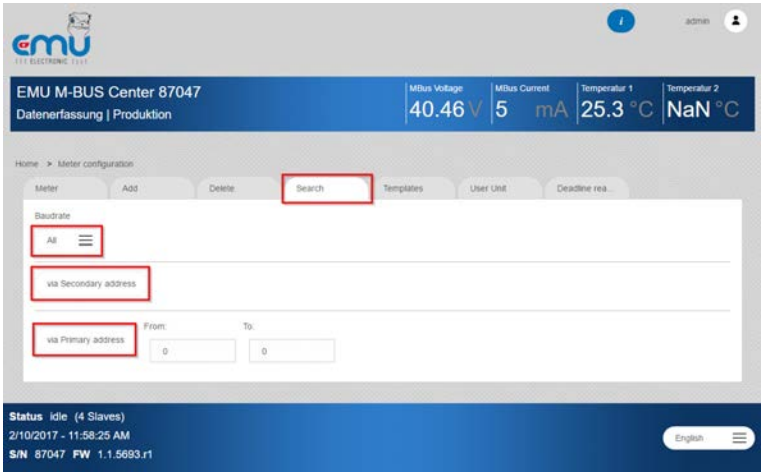
SEARCH/ADD METERS

Meters connected via M-Bus can either be added via ***automatic search***, or ***added manually*** to the EMU M-Bus Center using a known primary or secondary address. The automatic search can be applied to one or all ***Baudrates***.

Follow these steps to add meters to the M-Bus Center:

- Select ***Meter configuration*** in the Home screen

- For an automatic search, select the desired ***Baudrate*** in the ***Search*** tab to start the scan
- Start the search via ***Secondary address*** or ***Primary address***



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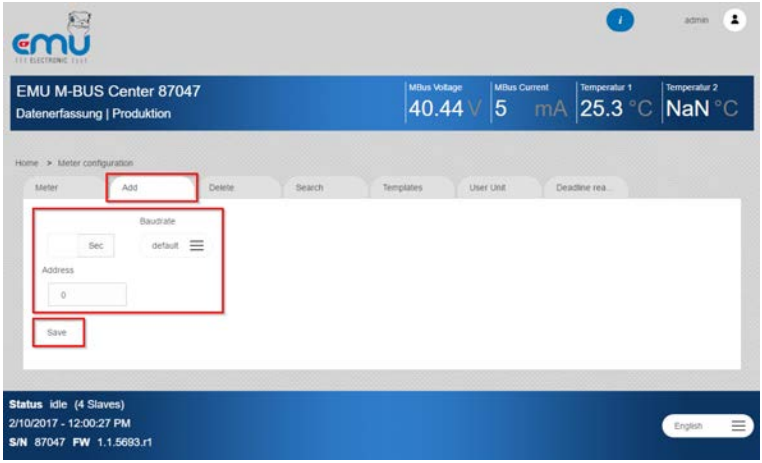
- For manual recording, select the ***Type*** of address (prim = primary, Sec = secondary), the meter's ***Baudrate***, as well as the ***Address*** in the ***Add*** tab.



- Click ***Save*** to add the meter

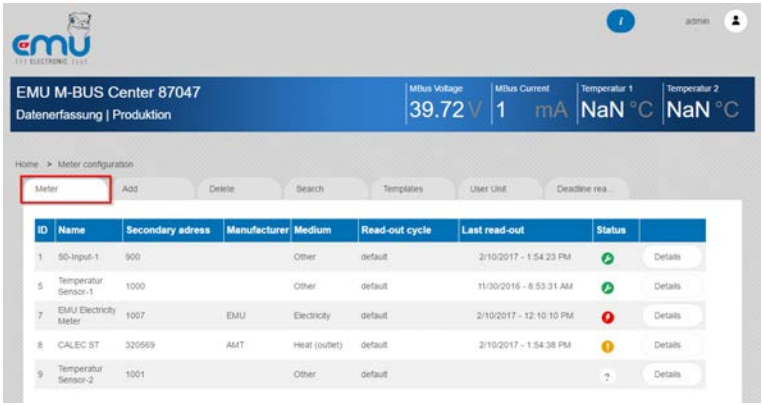
CHECKING THE METER

After an automatic search, or manual recording, the detected meters are shown in the meter list.

Follow these steps to open the meter list:

- Select ***Meter configuration*** in the Home screen

- Select the ***Meter*** tab



Meter found - successfully read

Meter indicates error

Meter is current - can no longer be read

? Meter- not yet read

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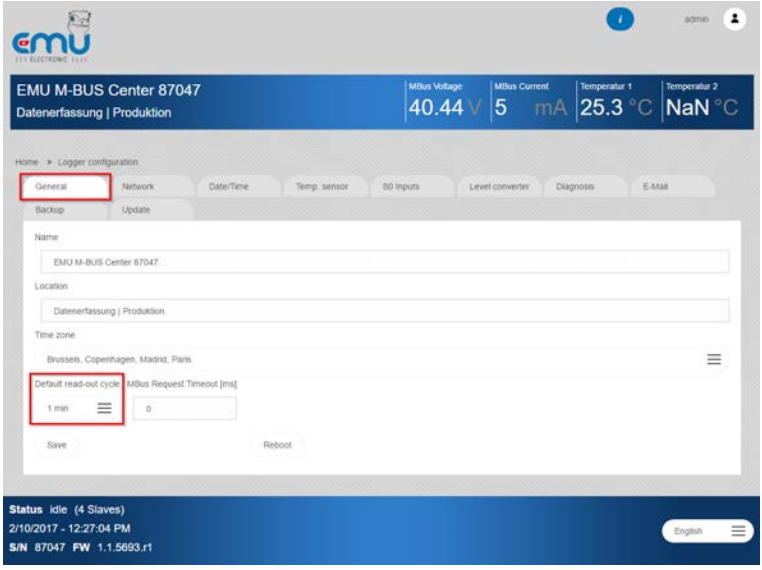
CONFIGURE READ-OUT CYCLE

Follow these steps to configure the **read-out cycle** of the connected meters:

- Select ***Logger configuration*** on the Home screen

- Select the desired cycle in the ***General*** tab



- Click ***Save*** to activate the selected cycle.

ATTENTION!

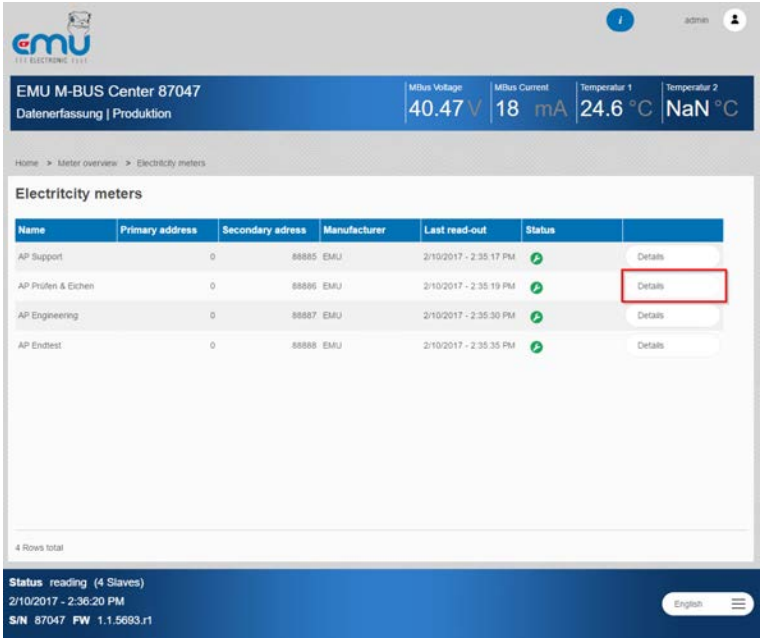
M-Bus has its limits: Reading 10 devices with a read-out cycle of 10 seconds is impossible from a technical perspective. Recommended: 15 Min.

VIEWING MEASUREMENTS

Follow these steps to view the ***measuring values*** of the connected meters:

- Select ***Meter overview*** in your Home screen.

- Select the ***Medium***
  (Electricity, Water, Heat, Gas, Solar, Other)
- Click the ***Details*** button of the desired meter in the ***meter list***



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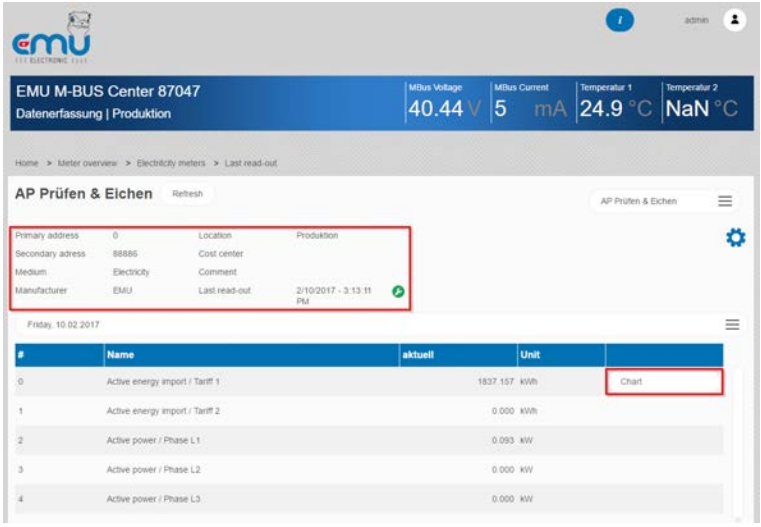
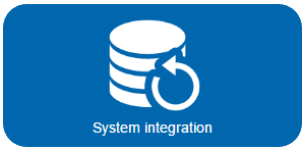
- Now, the current values of the measurements transmitted via M-Bus are displayed in the ***measurement table.***
- ***Additional information***, such as ***Manufacturer***, ***Medium***, etc. is also shown.
- It is also possible to view a ***Chart*** with a selectable time period for energy consumption.



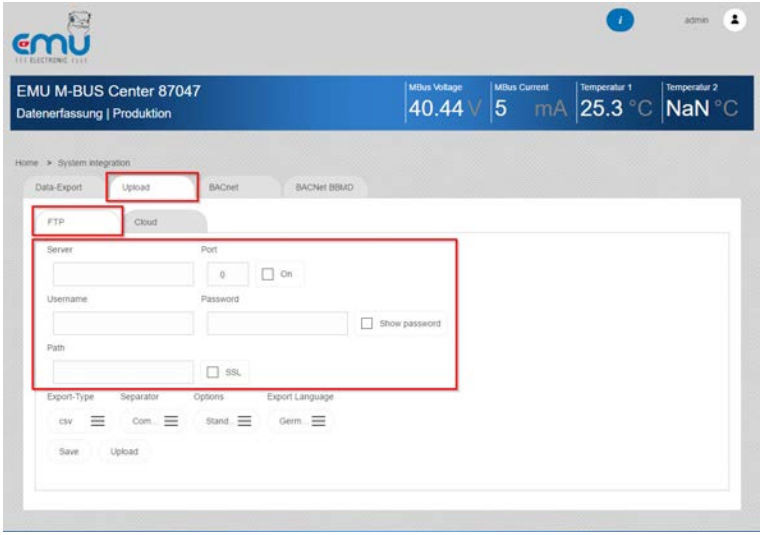
CONFIGURING FTP UPLOAD

The EMU M-Bus Center can upload the data automatically to an FTP server after each reading. Follow these steps to configure the ***FTP upload***:

- Select ***System integration*** in your Home screen



- Select the ***FTP*** sub-tab in the ***Upload*** tab
- Execute minimal server settings
  - Server address, Port (if it differs from 21)
  - Username, Password, File Path
  - Encryption (FTPS or SSL connection)



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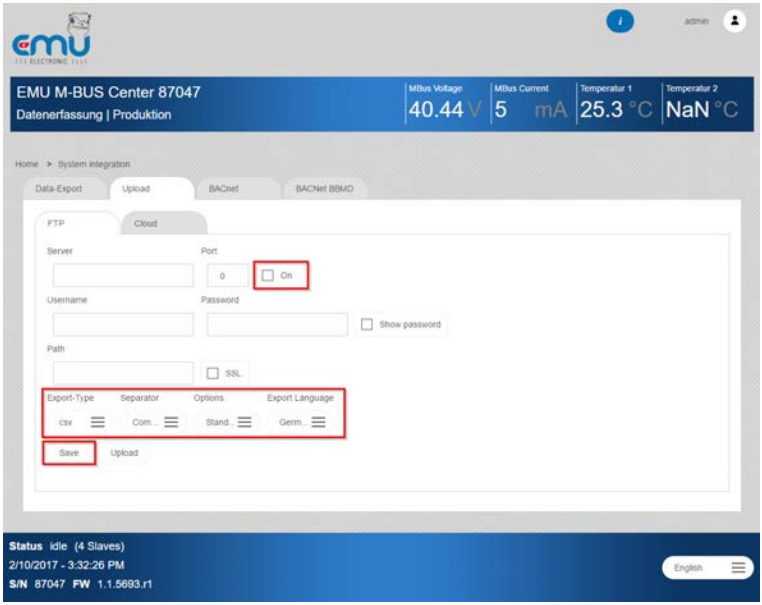
- Activate ***FTP Upload***
- Determine ***Export-Type***



- Click ***Save*** to apply settings

Now, uploads will occur after each meter reading (in the defined ***read-out cycle***).

HINT!

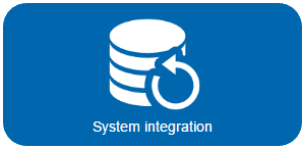
The FTP upload is logged under the ***Logger configuration*** in the ***Diagnosis*** tab. Use this to determine why the connection may not have worked.

CONFIGURING EMS ISO 50001 UPLOAD

The EMU M-Bus Center can be used together with the ISO 50001 energy management and billing software EMU / Helvatron Joulio-Web.

Follow these steps to configure the upload to the EMS and billing software:

- Select ***System integration*** in your Home screen.



- Select the **Cloud** sub-tab in the **Upload** tab
  - Use **select pem** to select the certificate generated by Joulio Web
  - **Upload** the certificate
  - Select **On** to activate the cloud upload
  - Click **Save** to apply settings

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TECHNICAL DATA

Voltage Supply $U_{Nominal}$	24V DC (20 – 28V DC)
Max. Current consumption I_{Max}	900mA
Ambient Temperature $T_{Amb.}$	0..55 °C
IP Code	IP20
Approval	IEC / EN 61000-6-2; IEC / EN 61000-6-3
Energy management	ISO 50001
Mechanical Data	
Installation	35mm DIN Rail
Encloseure-Width	5 module, 90mm
Weigth	approx. 400 g
Enclosure material	Polycarbonat, recyclable, incombustible
Interfaces	
Ethernet	10BASE-T / 100BASE-TX
USB	Typ A (Master); Typ B (Slave) for M-Bus level converter
Memory-Card	microSD
Temperature sensor	2 x PT1000 Input Deviation max. +/- 2 °C ($T_{Amb.}$ -10..+60 °C)
Relay contact	2 x Form A Max. switch capacity: 5A / 277V AC Indication error-state M-BUS
S0 pulse inputs	4 x isolated S0 inputs Terminal 2, 4, 6, 8: Output 13V DC / 15mA Terminal 1, 3, 5, 7: Input optocoupler
M-BUS	3 x ports (parallel)
M-BUS	
Compatibility	Electricity-, heat-, water-, gas-meter with M-Bus specified in EN 13757-2, -3 (former EN1434-3)
Max. current load $I_{M\text{-}BUS\ max}$	375mA (250 x 1.5mA)
Baudrates	300, 600, 1200, 2400, 4800, 9600
Addressing	Primary- or secondary addressing
Send Application Reset Subcode	Yes (can be disabled)
Send SND_NKE	Yes (can be disabled)
BACnet IP	
Profile	B-ASC
Function	M-BUS to BACnet Gateway
Additional function	BBMD

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