QUICKSTARTER
EMU M-CENTER

ENGLISH

TABLE OF CONTENTS

INSTALLATION

POWER

The EMU M-Center needs a 230VAC (100 - 240VAC) power supply with a minimal current of 1A. The connection is located on the lower left (see above, brown colored).

USB-C

The EMU M-Center has a USB-C Port. The connection is located on the lower terminal strip (see above, orange colored).

SIM CARD

The EMU M-Center has a slot for a SIM card. The slot is on the lower right (see above, red colored).

NETWORK CONNECTION

The EMU M-Center has two RJ-45 connections for LAN. The connections are on both sides of the device (see page 3, violet colored). The connection on top is meant for LAN, the lower connection for the service of the M-Centers.

M-BUS

The EMU M-Center has two parallel M-Bus connections. These connections are on the upper terminal strip (see page 3, blue colored).

RS-485

The EMU M-Center has 2 RS-485 connections. These connections are on the upper terminal strip (see page 3, black colored).

FLEX I/O

The EMU M-Center has 8 programmable inputs/outputs. The eight I/O's are divided in two blocks. This allows for two different supply voltages to be toggled over the different connections (+/G) if the Flex I/O's are programmed as output (see page 3, green colored).

SMA CONNECTOR

The EMU M-Center has a SMA connector for a LTE antenna (see page 3, teal colored).

INITIAL OPERATION

NETWORK SETTINGS EX-FACTORY

The EMU M-Center LAN connection is set to DHCP.

To setup the EMU M-Center on location, a laptop can be connected via the service network connector. The connection has the fixed IP-Address **169.254.254.1**
The EMU M-Center can be configured via the web interface reachable with this address.

Service Port = Fixed IP 169.254.254.1

For a remote setup, the EMU M-Center must be in the same network as your computer. You can now find out the IP-Address of your M-Center by opening the command line interface and entering the following:

•   ping mcenter-MACADDRESS

The serial number of your M-Center is also it's MAC-Address.

Example with the MAC-Address 12:34:56:78:9a:bc

•   ping mcenter-123456789abc

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LOGIN

All further configuration are made on the web interface. The web interface is accessed as follows:

• Start Browser

• Enter the **IP-Address** of the EMU M-Center in the address bar

• The login screen pops up

• Default login

        Name: **admin**

        Password: **123**

• Login with a click on „**Login**"
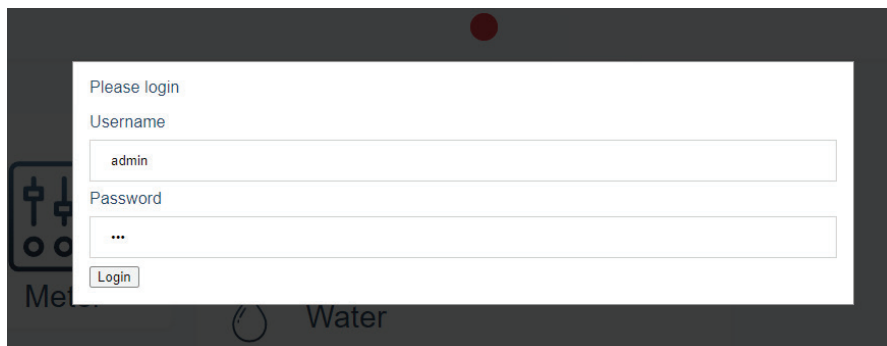
WEB-INTERFACE

After a successful login the home screen of the EMU M-Center appears.

You can return to this home screen from the submenus by **clicking on „Home"** on the top left. Be aware as this web interface is an application an not a website, the „back" of your browser does not work!

In the middle area of the home screen on the left you can click on one of the **three submenus** while on the right all connected meters can be accessed via the different categories.

You can change the **language and the password** in the drop down menu on the top left. It is advisable to change the default password as soon as possible. Next to the drop down menu you can see the name of your M-Center (once named), the MAC-Address, the current activity, the number of connected meters and the status of the M-Bus master (voltage and current).

The time and date are displayed on the top right.

REBOOT

• The M-Center can be rebooted via the web interface.

• **Attention: Reboot** is not a submenu of the settings. If you click on the „**Reboot" button** the M-Center will reboot **immediately** without confirmation.

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CONFIGURE TIME

To correctly log measurements the M-Center requires a correctly set system time. The EMU M-Center internally uses UTC-time. The time is calculated automatically from the set time and timezone.

To set the time follow these steps:
- Click **„Settings"** on the home screen
- Set an NTP-Server in the tab **„Time"**
- Click **Save (green checkmark)**
- Set your timezone in the tab „**Logger configuration"**
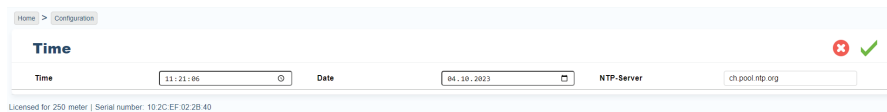
CONFIGURE NETWORK

You can configure the LAN interface in this menu. The interface is set to **DHCP** ex factory.

To set the IP-Adress **manually**, please set the option „manual configuration" to „manual". Once on manual, you can set the IP-Address, Subnet mask and Gateway.

The **Domain Name Server (DNS)** settings are set to „manual" ex factory. You can change these settings to „DHCP" with the **DNS Mode** setting.

Click **Save (green checkmark)** to finalize your settings.

CONFIGURE M-CENTER

The tab **„Logger configuration"** in the **„Settings"** lets you personalize your M-Center.

- **Name** lets you change the displayed name on the top left next to the drop down menu.
- **Default read-out cycle** sets the interval in which the M-Center reads out the connected M-Bus meters.
- The **MBus Request Timeout [ms]** allows you to set a timeout for M-Bus requests.
- The option **interpret time and date values during MBus readout** must be set or the M-Center will ignore the date and time information from telegrams.
- Click **Save (green checkmark)** to finalize your settings.
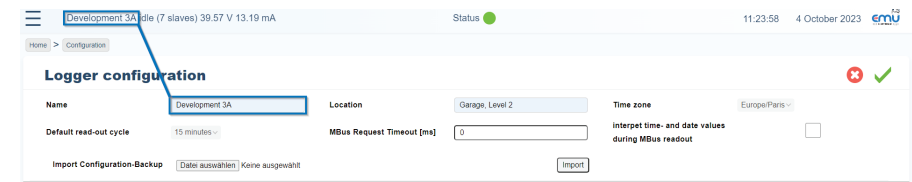
USER MANAGEMENT

Go to „**User Management"** in the **"Settings"** to create and edit users.
- The list shows all users. Click on the gearwheel on the top right to open the edit mode.
- Click on the Plus sign to add a new user.
- Click **Save (green checkmark)** to finalize your settings.

ADD/ SCAN FOR METERS

Meters connected via M-Bus can be added to the M-Center via an automated scan or through manual addition with the primary or secondary address. The **automatic scan** can be used on one or all **Baud rates**.

To add meters to the M-Center follow these steps:

• Click **„Scan"** in the settings

• Choose **Baudrate**

• If you choose data logger read out the M-Center will only read out the data logger on the meter

• Choose type of addressing

• Start scan via **„Scan"**

Manual meter addition

• To manually add a meter go to **„Add Meter"** in the settings. Choose the Baud rate, address type and enter the address of the meter you want to add.

• **Click on „Add Meter"** to add the meter.

VIEW MEASUREMENTS

To view the **measurements** of the connected meters follow these steps:

• To get a list of all connected meters go to **„Meters"** on the home screen

• To get a list of all meters in a **specific category** choose the category on the right on the home screen.

• Once in the **list** you can click on any meter to get its measurements. You can manually update the measurements with the reload on the top right.

CLOUD

The settings tab **„Cloud configuration"** lets you set the server address, port and Id of your cloud server.

• Activate the automatic upload with **Active**

• Add your certificate with **New Pem File**

• Click **Save (green checkmark)** to finalize your settings.

BACNET BBMD

Add a **„BACnet BBMD"** via it's IP-Address, subnet mask and UDP Port.

• Save the device with **„Add BBDM"**

• Selecting a device in the list and clicking on **Delete Selected** deletes the device.

BACNET

The settings tab **„Bacnet"** lets you save your Bacnet settings. Choose any of the following options to activate them.

• BBMD active: allows for added BBMD devices to read out the M-Center

• BACnet active: allows for communication with your BACnet

• Continuous reading: The M-Center will continuously read out all connected meters to keep the data as up to date as possible

METER CHECKUP

After a successful scan or manual addition all meters can be viewed in the general **Meter list** and in the respective **Category list**.
Every meter has one of the following symbols on the right under **Status**:

🔧 Meter found and read out successfully

⚠️ Meter reports errors

⚡ Meter read out failed

? Meter found but not yet read out

CONFIGURE FTP-UPLOAD

The EMU M-Center can automatically upload the meter data after every read out interval to a FTP-Server.

To configure the **FTP-Upload** follow these steps:
- **„Settings"** on the home screen
- Set the minimal **Serversettings** in the tab **Ftp configuration**
  - Server-Address, Port (if differing from 21)
  - User, password, path
  - Encryption (FTPS or SSL)
- Choose prefered **Export-Type** (CSV or JSON)
- Choose **Separator** and **Export Language**
- Click **Save (green checkmark)** to finalize your settings.

The M-Center now uploads the data after every read out of the meters

TECHNICAL DATA

Power Supply U$_{Nominal}$	230VAC
Max. Current I$_{Max}$	1000 mA
Ambient Temperature T$_{Amb.}$	0..55 °C
Safety Class	IP20
Tested according to	IEC / EN 61000-6-2; IEC / EN 61000-6-3
Energy Management	ISO 50001
Mechanical Data	
Installation	35mm DIN Rack
Device dimensions	9 TE, 162mm
Weight	Ca. 350 g
Material	Polycarbonat, recycable, not flammable
Interfaces	
Ethernet	2x RJ45
USB	USB-C
RS-485	2 Strings
Flex I/O	8 x, 0-36V @ max. 500mA
M-BUS	2 x Master, 1x Slave (parallel)
M-BUS	
Compatibility	Electric-, Heat-, Water-, Gasmeter with M-Bus specified according to EN 13757-2, -3 (was EN1434-3)
Max. Current I$_{M-BUS\ max}$	375mA (250 x 1.5mA)
Baud rates	300, 600, 1200, 2400, 4800, 9600
Addressing	Primary- or Secondary
Application Reset Subcode send	Yes (can be deactivated)
SND_NKE send	Yes (can be deactivated)
BACnet IP	
Device Profile	B-ASC
Function	M-BUS to BACnet Gateway
Supplementary function	BBMD

YOUR PROJECT NOTES

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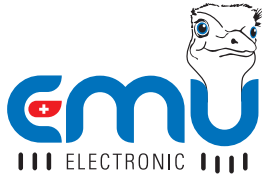
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