



Quick-Start Instructions

PQ M-Zentrale

English

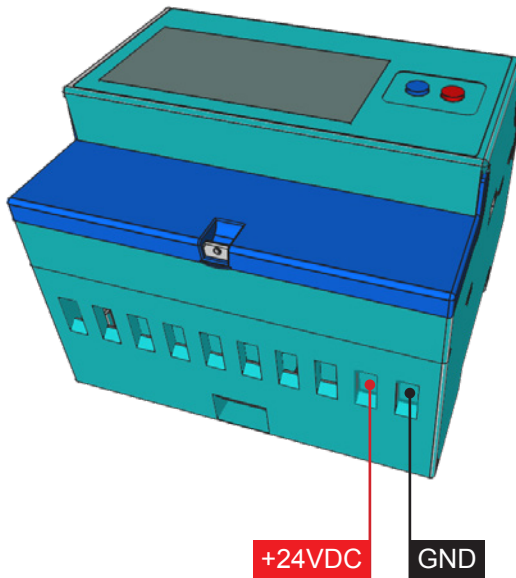
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Installation

Power supply

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

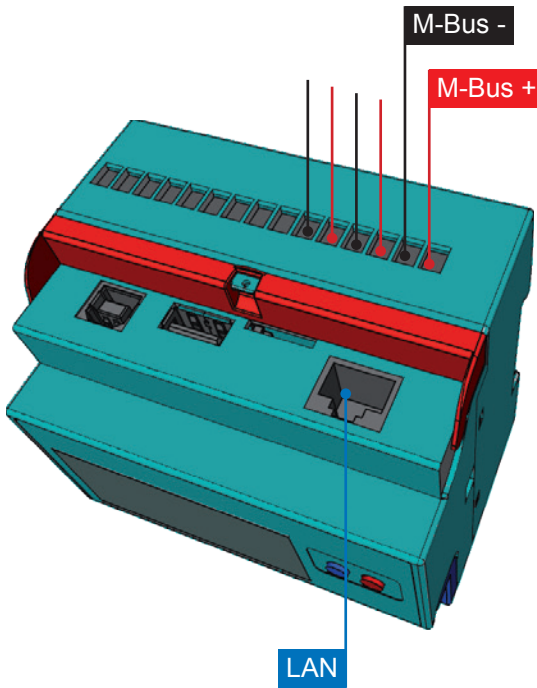


Network connection

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

Connect meter (M-BUS)

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



Start-up procedure

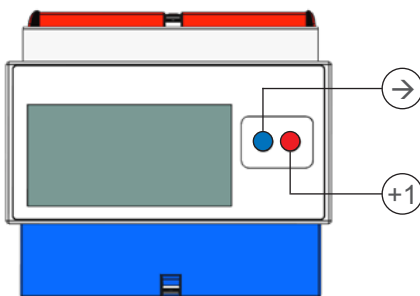
Default network configuration

The standard setting for the PQ M-Zentrale 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



```
M-Bus Slaves: 123
IP Address:   192.168.1.100
Subnet:       255.255.255.0
Gateway:      192.168.1.1
Firmware:     2.0
```

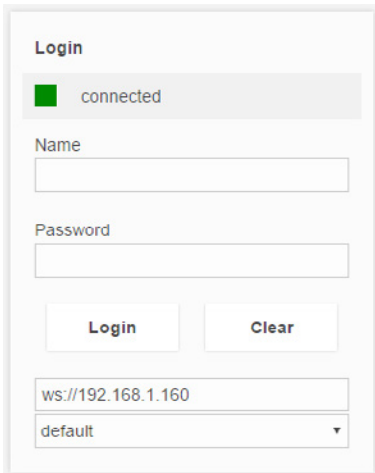
- Repeat this process until you have reached the last place
- Finally push the **blue button**

Now, the PQ M-Zentrale can be reached at the configured IP address.

Login

All additional configuration steps are made via the PQ M-Zentrale interface. The web interface is accessed as follows:

- Start your web browser
- Enter the **IP address** of the PQ M-Zentrale 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 PQ M-Zentrale will appear



The screenshot shows a web browser window displaying the login page for the PQ M-Zentrale interface. The page has a light gray background and a white border. At the top left, the word "Login" is displayed in bold black text. Below it, there is a green square icon followed by the text "connected". The main form area contains two input fields: "Name" and "Password". Below these fields are two buttons: "Login" and "Clear". At the bottom of the form, there is a text input field containing the URL "ws://192.168.1.160" and a dropdown menu with the text "default" and a downward-pointing arrow.

Web interface

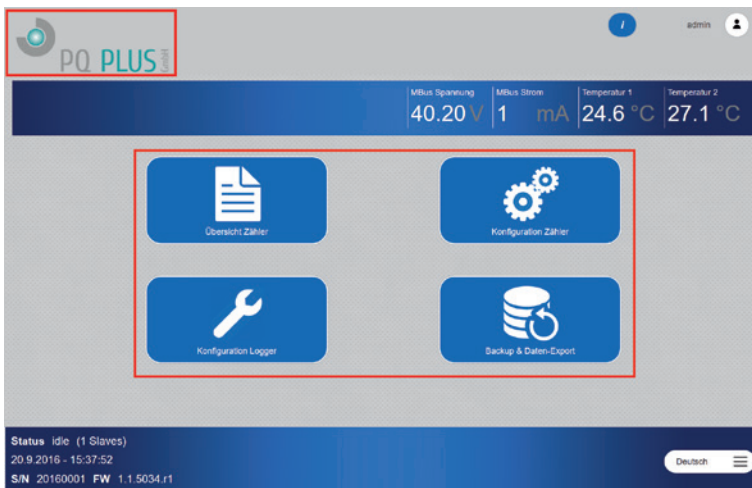
After successful login, the Home screen of the PQ M-Zentrale will appear first.

Return to the home screen from any sub-menu by **clicking the PQ Plus 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 PQ M-Zentrale **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

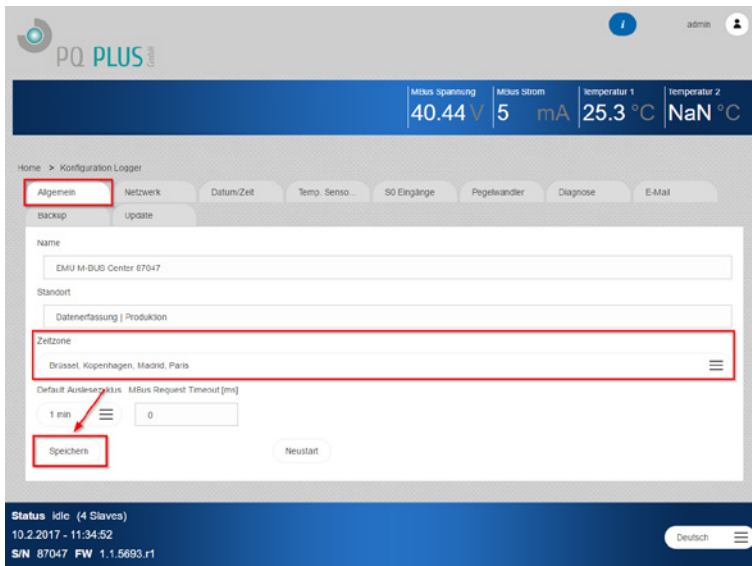
The correct system time is a prerequisite for the accurate logging of measurement values. The PQ M-Zentrale works internally with UTC time. It is calculated automatically based on the entered local time and time zone setting.

Follow these steps to set the time:

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



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



Home > Konfiguration Logger

Algemein | Netzwerk | Datum/Zeit | Temp. Senso. | SO Eingänge | Pegelwandler | Diagnose | E-Mail

Name: EMU M-DUB Centre 87047

Standort: Datenerfassung | Produktion

Zeitzone: Dänset, Kopenhagen, Madrid, Paris

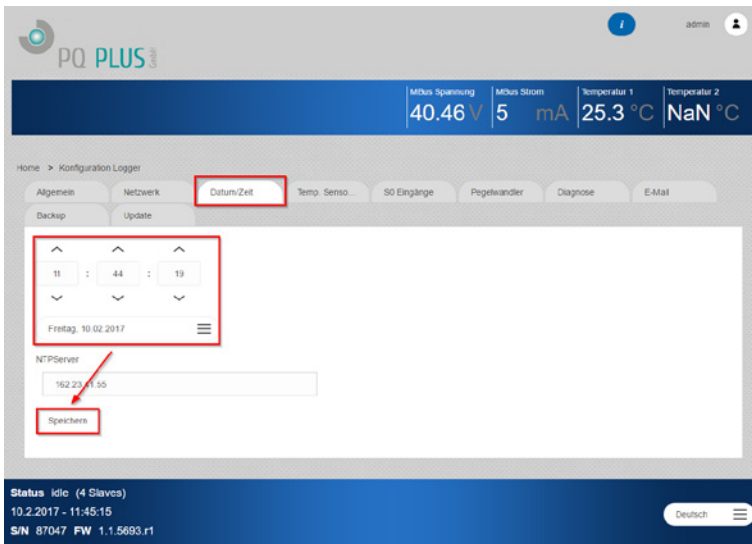
Default Ausleseintervall: 1 min | MBus Request Timeout [ms]: 0

Speichern | Neustart

Status Idle (4 Slaves)
10.2.2017 - 11:34:52
S/N 87047 FW 1.1.5693.r1

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

- 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 PQ M-Zentrale 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

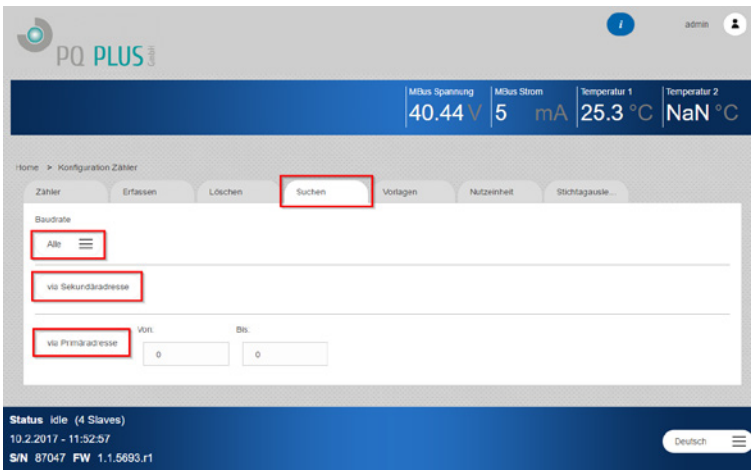
Meters connected via M-Bus can either be added via **automatic search**, or **added manually** to the PQ M-Zentrale using a known primary or secondary address. The automatic search can be applied to one or all **Baud-rates**.

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**



- 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.

The screenshot shows the 'Erfassen' (Add) tab in the PQ PLUS web interface. The interface includes a top navigation bar with the PQ PLUS logo and a user profile 'admin'. Below the navigation bar, there is a status bar displaying real-time data: Mikus Spannung (40.44 V), Mikus Strom (5 mA), Temperatur 1 (25.3 °C), and Temperatur 2 (NaN °C). The main content area is titled 'Zähler' and contains several buttons: 'Erfassen', 'Löschen', 'Suchen', 'Vorlagen', 'Nutzzeit', and 'Stichtagausw...'. The 'Erfassen' button is highlighted with a red box. Below the buttons, there is a form with the following fields: 'Baudrate' (set to 'default'), 'Adresse' (set to '0'), and a 'Speichern' (Save) button, all highlighted with red boxes. The bottom of the interface shows system status: 'Status Idle (4 Slaves)', '10.2.2017 - 11:55:18', 'S/N 87047 FW 1.1.5693.r1', and a language selector set to 'Deutsch'.

- 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



- Tab **Zähler** wählen

Home > Konfiguration Zähler

ID	Name	Sekundäradresse	Hersteller	Medium	Auslesszyklus	Letzte Lesung	Status	
1	SO-Input-1	900		Other	default	10.2.2017 - 13:51:20		Details
5	Temperatur Sensor-1	1000		Other	default	30.11.2016 - 08:53:31		Details
7	EMU Electricity Meter	1007	EMU	Electricity	default	10.2.2017 - 12:10:10		Details
8	CAL/EIC ST	320569	AHT	Heat (outlet)	default	10.2.2017 - 13:51:25		Details
9	Temperatur Sensor-2	1001		Other	default			Details

- Meter found - successfully read
- Meter indicates error
- Meter is current - can no longer be read
- Meter- not yet read

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

The screenshot displays the 'Konfiguration Logger' interface. At the top, there are status indicators for 'Mibus Spannung' (40.44 V), 'Mibus Strom' (5 mA), 'temperatur 1' (25.3 °C), and 'temperatur 2' (NaN °C). Below this, the 'Allgemein' tab is selected. The configuration form includes fields for 'Name' (EMU M-BUS Center 67047), 'Standort' (Datenerfassung | Produktion), and 'Zeitzone' (Dråssel, Kopenhagen, Madrid, Paris). The 'Default Ausleserzyklus' is set to '1 min' and is highlighted with a red box. A 'Speichern' button is visible at the bottom of the form. The bottom status bar indicates 'Status reading (4 Slaves)', the date '10.2.2017 - 12:25:19', and the device ID 'S/N 87047 FW 1.1.5693_r1'.

- 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**

PQ PLUS

Mikrus Spannung: 40.42 V | Mikrus Strom: 5 mA | Temperatur 1: 24.3 °C | Temperatur 2: NaN °C

Home > Übersicht Zähler > Elektrizitätszähler

Elektrizitätszähler

Name	Primäradresse	Sekundäradresse	Hersteller	Letzte Lesung	Status	
AP Support	0	88885	EMU	10.2.2017 - 14:37:19	🟢	Details
AP Profen & Eichen	0	88886	EMU	10.2.2017 - 14:37:21	🟢	Details
AP Engineering	0	88887	EMU	10.2.2017 - 14:37:33	🟢	Details
AP Endtest	0	88888	EMU	10.2.2017 - 14:37:38	🟢	Details

4 Zeilen insgesamt

Status: idle (4 Slaves)
10.2.2017 - 14:38:15
S/N 87047 FW 1.1.5693.r1

Deutsch

- 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.

The screenshot displays the PQ PLUS web interface. At the top, there is a navigation bar with the logo and user information. Below this, a status bar shows four key measurements: Mikus Spannung (40.42 V), Mikus Strom (5 mA), Temperatur 1 (24.9 °C), and Temperatur 2 (NaN °C). The main content area is titled 'AP Prüfen & Eichen' and includes a table of device details. A red box highlights the 'Hersteller' row, which contains the text 'CHU Letzte Lesung 10.2.2017 - 10.11.09'. Below this, there is a table of energy consumption data for Friday, 10.02.2017. A red box highlights the 'Chart' link in the 'Einheit' column of the first row.

#	Name	aktuell	Einheit	
0	Wirkenergie Bezug / Tarif 1	1837.154	kWh	Chart
1	Wirkenergie Bezug / Tarif 2	0.000	kWh	
2	Wirkleistung / Phase L1	0.091	kW	
3	Wirkleistung / Phase L2	0.000	kW	
4	Wirkleistung / Phase L3	0.000	kW	

Configuring FTP Upload

The PQ M-Zentrale 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)

The screenshot shows the PQ PLUS web interface. At the top, there are status indicators for Mikus Spannung (40.42 V), Mikus Strom (5 mA), Temperatur 1 (24.9 °C), and Temperatur 2 (NaN °C). The main navigation bar includes 'Datelexport', 'Upload', 'BACNet', and 'BACNet BSKID'. The 'Upload' tab is selected, and the 'FTP' sub-tab is active. A red box highlights the configuration fields: 'Server' (text input), 'Port' (input with '0' and 'Ein' checkbox), 'Benutzername' (text input), 'Passwort' (text input with 'Passwort anzeigen' checkbox), 'Pfad' (text input), and an 'SSL' checkbox. Below the form are tabs for 'Export-Typ', 'Trennzeichen', 'Optionen', and 'Export Sprache', with 'Speichern' and 'Upload' buttons at the bottom.

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

Home > System-Integration

Datelexport Upload BACNet BACNet BSKID

FTP Cloud

Server: Port: 0 En

Benutzername: Passwort: Passwort anzeigen

Pfad: SSL

Export-Typ: csr Trennzeichen: Kom Optionen: Stand Export Sprache: Deutsch

Speichern Upload

Status Idle (4 Slaves)
10.2.2017 - 15:27:55
S/N 87047 FW 1.1.5693.r1

Deutsch

- 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

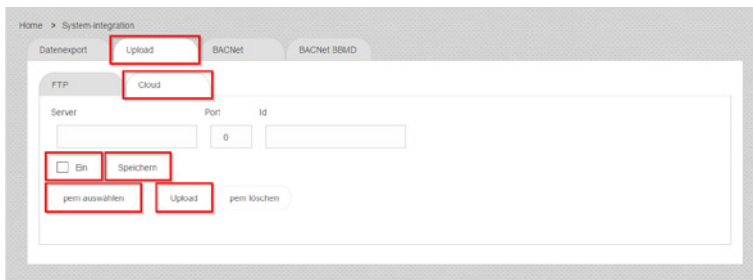
The PQ M-Zentrale can be used together with the ISO 50001 energy management and billing software PQ Plus ENVIS-Web.

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



Technical Data

Voltage Supply U_{Nominal}	24V DC (20 – 28V DC)
Max. Current consumption I_{Max}	900mA
Ambient Temperature $T_{\text{Amb.}}$	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
Enclosure-Width	5 module, 90mm
Weight	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 ($T_{\text{Amb.}}$ -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 $I_{\text{M-BUS max}}$	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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Weitere Informationen und den aktuellen
Katalog finden Sie bei uns im Internet:

<http://www.pq-plus.de>