

CMe3100 User's Manual English v 1.3



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# 1 Document notes

All information in this manual, including product data, diagrams, charts, etc. represents information on products at the time of publication, and is subject to change without prior notice due to product improvements or other reasons. It is recommended that customers contact Elvaco AB for the latest product information before purchasing a CMe Series product.

The documentation and product are provided on an "as is" basis only and may contain deficiencies or inadequacies. Elvaco AB takes no responsibility for damages, liabilities or other losses by using this product.

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# 2 Important usage and safety information

The following safety precautions must be observed during all phases of the operation, usage, service or repair of any CMe Series product. Users of the product are advised to convey the following safety information to users and operating personnel and to incorporate these guidelines into all manuals supplied with the product. Failure to comply with these precautions violates safety standards of design, manufacture and intended use of the product. Elvaco AB assumes no liability for customer's failure to comply with these precautions.

The product is developed for indoor use. If the product is intended to be used outdoors, it must be protected by an enclosure of International Protection Marking (IP code) 67.

The installation of the product should be performed by a qualified electrician or another professional with the required knowledge. It is important to follow all safety information mentioned throughout the installation chapter of this manual when installing the CMe3100.

Make sure to read this manual carefully and follow it step by step to ensure a secure usage and to get the most out of your product.

# 3 Using this manual

## 3.1 **Purpose and audience**

This manual provides all information needed to mount, install, configure and use the CMe3100 M-Bus Metering Gateway, and is intended for field engineers and developers. The information is based on software version 1.8.0. Please note that other versions may exhibit slight differences in appearance and/or functionality.

# 3.2 Online resources

To download the latest version of this user's manual, please visit the Elvaco website, <u>https://www.elvaco.se/en/page/1</u>. There, you will also find information about Elvaco's other products and services.

## 3.3 Notation

#### 3.3.1 Navigation

All navigation in the web-interface is described referencing the **Dashboards > Installation Panel** (start page when logging in). Navigation will be noted as [**Top menu item**] **>** [**Sub menu item**] **>** [**Tab item**].

					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
nt series Meters	Configur	ration -	Device -	Support links -	🕂 Svenska
	Push Rep	<u>orts</u>			
	Services				
	Date & Th	me	ist		<b></b>
Basic setup Installation overview Network settings Internet access					
		on	meter		
		Network			
	<b>V</b>				
Meters					
		Exp	ort		
		Exp	ort commissior	n report	
	nt series Meters	Push Rep Services Date & Ti Users Localizati	Push Reports       Services       Date & Time       Users       Localization       Network       Image: Service of the service	Push Reports       Services       Date & Time       Ist       Users       Localization       Metwork       or meters       Reinstall       Read all & store       Export	Push Reports       Services       Date & Time       iSt       Users       Localization       Network       or meters       Reinstall       Read all & store

**Example 1:** To display Push Reports, go to **Configuration > Push Reports**.



**Example 2:** To configure FTP Push Report default settings, go to **Configuration > Push Reports > FTP settings**.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration •	Device -	Support links -	🗕 Svenska
Push Repo	orts		Push Reports			
Push Reports E-mail settings FTP settings HTT			Services			
		_	Date & Time			
Default FTP :	server settings - repo	rt receiver	Users			
Server address Hostname or IP address		Localization	_		Port	
		Network				
Username						
Password						
Destination fold	der on server (where to say	/e reports)				
Save						

# 3.4 Symbols

The following symbols are used throughout the manual to emphasize important information and useful tips:



The Note symbol is used to mark information that is important to take into consideration for safety reasons or to assure correct operation of the Metering Gateway.



The Tip symbol is used to mark information intended to help you get the most out of your product. It can for example be used to highlight a possible customization option related to the current section.

# 4 Introduction

## 4.1 Purpose

This chapter provides an initial description of the CMe3100 Metering Gateway and how it can be applied to different types of metering systems. In the next-coming sections you will get to know the product features and how to combine the CMe3100 with other products to build versatile solutions.

# 4.2 **Application description**

#### 4.2.1 Applications

The CMe3100 is, directly out of the box, a very powerful and versatile M-Bus Metering Gateway. It can be extended in various ways using a flexible model for licence and add-on upgrades.

While there are many ways to utilize the potential in the CMe3100, its three core application areas are:

- 1. Quick and simple metering with integrated statistics
- 2. Metering and local integration with PLC/DCS
- 3. Full Gateway integration using e.g. DLMS or REST

Additionally, all features can be used in a mix to address application specific needs. It also fully supports all types of utility meters that are M-Bus or Wireless M-Bus compliant.

#### 4.2.2 Quick and simple metering with integrated statistics

For small applications with a low requirement for integration, the CMe3100 is very quickly setup using its predefined readout schedules and metering reports (Push Reports). Once the meters have been installed, the device can be configured to readout meter values at specific time intervals and compile them in a suitable report format to be sent to a receiving system. If the need of integration is low, the report can be as simple as an e-mail sent at a fixed schedule.

Thanks to the device's built-in M-Bus decoder, meter values can be delivered in a human readable format with correct precision and unit. With its user-friendly web interface, the device also serves as a complete metering web service. Among various features, measurement series and calculated series, such as mean value, can be displayed as illustrative graphs.

The built-in database, storing all meter values locally in the CMe3100, provides a solid base for its system robustness. All Push Reports have an intelligent retry mechanisms that automatically schedules retries for failed reports including all values for which previous transmissions have failed.

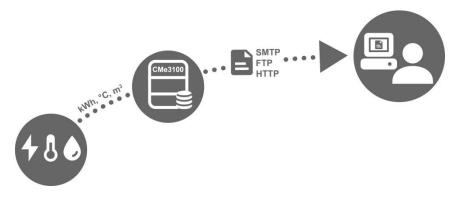


Figure 1: Quick and simple metering with integrated statistics

#### 4.2.3 Metering and local integration with PLC/DCS

For standard applications with a medium requirement for integration, the CMe3100 is very quickly setup using its predefined readout schedules and metering reports (Push Reports). Once the meters have been installed, the device can be configured to readout meter values at specific time intervals and compile them in a suitable report format to be sent to a receiving system. Reports are transmitted using standardized internet protocols, such as SMTP (e-mail), FTP or HTTP.

Thanks to the device's built-in M-Bus decoder, meter values can be delivered in a human readable form with correct precision and unit.

The built-in database, storing all meter values locally in the CMe3100, provides a solid base for its system robustness. All Push Reports have intelligent retry mechanisms that automatically schedules retries for failed reports including all values for which previous transmissions have failed.

The built-in database also enables excellent and reliable options for local integration with a Digital Control System (DCS) or a Programmable Logic Controller (PLC). These types of system components are usually found in real-estate systems to control for example heat and ventilation. Interfacing systems may choose to connect using ModBus, M-Bus or JSON (TCP/IP) to retrieve meter values directly from the CMe3100 without affecting its normal operation or having to communicate with the M-Bus meters directly.

If the CMe3100 is used in a mixed application with metering reports and high demand for real-time meter values being supplied to a PLC or a DCS, there is an additional mode available, *Continuous Readout Mode.* When activated, the CMe3100 reads all meters as frequent as possible and makes the readouts available to interfacing systems *but* without affecting the reporting mechanism. This enables metering reports to be configured independently from how the interfacing system's meter value requirements.

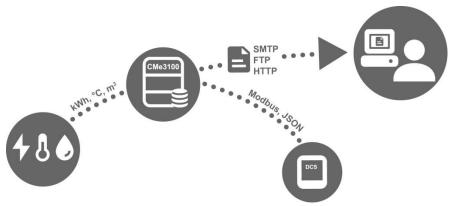


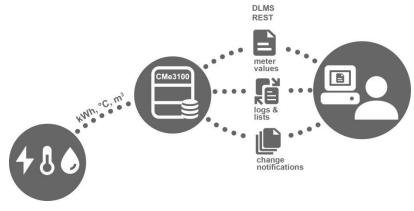
Figure 2: Metering and local integration with DCS

#### 4.2.4 Full Gateway integration using e.g. DLMS or REST

For demanding applications that requires a high level of vertical integration, the CMe3100 supports the REST or DLMS protocols. Using these protocols, meter values and configuration settings are available without having to bother about specific details of the M-Bus metering format. A head-end system may access most current readouts, historical values as well as log information, Meter Lists and change notifications.

The built-in database, storing all meter values locally in the CMe3100, provides a solid base for its system robustness as historical meter can be recovered by the head-end system at any time.







## 4.3 **Product features**

The CMe3100 M-Bus Metering Gateway has the potential to read, convert and deliver meter values from all types of M-Bus meters, regardless of manufacturer. This makes the device quick and easy to integrate into an existing M-Bus system. The key features of the product include:

- An integrated M-Bus Master which can drive up to 32 unit loads (32T). By using an Elvaco M-Bus Master it is possible to extend this number up to 256 unit loads.
- Customized meter value reports via HTTP, FTP and e-mail.
- A built-in web interface for easy configuring of settings.
- Remotely updatable software.
- Meter value integration via MODBUS, REST, JSON-RPC and DLMS.

A more extensive technical description of the Metering Gateway is provided in chapter 7 (<u>Technical</u> <u>specifications</u>).

## 4.4 Compatibility and extensions

#### 4.4.1 Licensing scheme

The CMe3100 is equipped with a flexible licensing scheme that allows its capabilities and features to be enhanced through the addition of license files. This allows for both a cost-effective customization at the purchase point as well as the possibility to later extend the product functionality without changing the hardware.

Licenses are distributed as files, bound to a specific serial number. A license file may contain several different types of licenses but an individual file is always required for each product.

There are two main categories of licenses available, performance and feature licenses.

The performance licenses determine, from a software perspective, how many meters that may be used with the device. Licenses range from 8 to 256 meters in steps of, 8, 32, 64, 128 and 256.

Feature licenses enable new services in the product, for example integration protocols such as Modbus, REST, JSON and DLMS.

To learn more about the different licenses available, please visit:

https://www.elvaco.se/en/product/infrastructure1/cme3100-m-bus-metering-gateway-for-fixed-network--CMe3100.



A software update is not necessary when changing the licenses, the functionality is already part of the software and just needs the correct license file to be unlocked.



Without a license, the product is limited to 8 meters even though the integrated M-Bus master can handle up to 32 unit loads.

#### 4.4.2 Integration with other products

The CMe3100 can be used in combination with an M-Bus Master from Elvaco to increase the number of slave devices it is able to drive (the device can by default drive up to 32 unit loads, where one load equals 1.5 mA). It can also be combined with an Elvaco Wireless M-Bus Receiver to receive meter reading from wireless meters using the Wireless M-Bus Protocol.

The CMe3100 is compatible with a wide range of meters, including:

- ABB electricity meters supporting communication via IR interface.
- All types of M-Bus meters, regardless of manufacturer.
- The following temperature and humidity sensors, manufactured by Elvaco: CMa10, CMa10W, CMa11, CMa11W, CMa12W, CMa20, CMa20W.

#### 4.4.3 Wired and Wireless M-Bus

The CMe3100 can be used together with Wired M-Bus meters, Wireless M-Bus meters or a combination of both. The integrated M-Bus master can handle up to 32 unit loads so for smaller systems, the CMe3100 may operate independently. For larger systems, the number of M-Bus devices the CMe3100 is able to drive is easily extendable through any of Elvaco's M-Bus Masters in combination with a licence upgrade.

CMe3100 has a built-in system for wireless encryption key handling, and can easily be integrated in a Wireless M-Bus metering system. In order to receive wireless meters, the CMe3100 needs to be complemented with an Elvaco Wireless M-Bus Receiver.

All extension devices, Wireless Receivers and M-Bus Masters from Elvaco are equipped with IR interface to enable communication without any cabling by simply stacking the devices together.

Elvaco offers box-build turnkey solutions, containing all necessary products preconfigured, directly from factory.

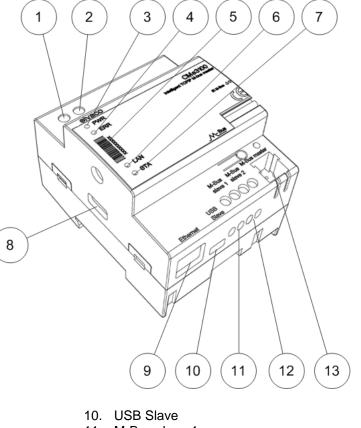


# 5 Getting started

## 5.1 Purpose

This chapter provides instructions on how to get started with the CMe3100. After reading and carefully following each step of this chapter, the Metering Gateway will have started up, and you will have logged into its integrated web interface.

# 5.2 **Product specification**



- 11. M-Bus slave 1
- 12. M-Bus slave 2
- 13. M-Bus master
- 14. IR interface
- 15. Push button

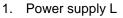
# 5.3 Mount the device

The CMe3100 is mounted on a DIN-rail. The metallic clip on the bottom is used to attach and detach the CMe3100. For safety reasons, a DIN-rail enclosure must cover the terminals.

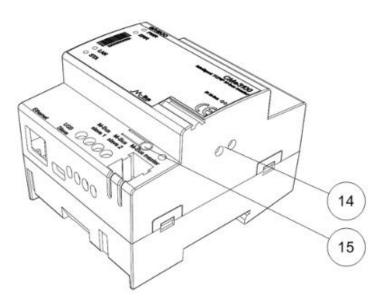
# 5.4 **Connect the device**

#### 5.4.1 Power supply

Screw terminal (1) and (2) are used to supply the device with power. The main supply voltage should be in the range of 100-240 VAC, with a frequency of 50/60Hz. The power needs to be connected by a clearly marked and easily accessible switch to make sure the device can be switched off during service work. On successful connection of power, the red LED and the green LED will begin to flash after undergoing a booting session of approximately 20 seconds.



- 2. Power supply N
- 3. Green LED
- 4. Red LED
- 5. Serial number
- 6. Yellow LED
- 7. Blue LED
- **USB** Master 8 9. Ethernet connection





The installation should be performed by a qualified electrician or another professional with the required knowledge.

The power supply must be protected with a 10 A circuit breaker of characteristics C or slow blow fuse.

#### 5.4.2 M-Bus Master

The CMe3100 is equipped with an M-Bus master port (13), which is used to connect up to 32 slave devices (32 M-Bus loads, 48mA). If more than 32 slave devices need to be connected to the CMe3100, an M-Bus Master from Elvaco can be used to extend its limit. Use a cable with a cross sectional area of 0.25-1.5 mm<sup>2</sup>, e.g. a standard telephone cable EKKX 2x2x0.5 may be used to connect the CMe3100 with its slave devices.



Do not exceed the maximum cable length of 1000 m.

#### 5.4.3 M-Bus slave ports

CMe3100 is equipped with two M-Bus slave ports, which are used to share meter values with another M-Bus device, for example a DCS. Connect a cable of cross sectional area 0.25-1.5 mm<sup>2</sup> between the M-Bus device and port (11) or (12) of the CMe3100.

#### 5.4.4 Ethernet

The CMe3100 is equipped with an Ethernet port to be able to connect to the local network. Use a cable of at least category 5e and connect it to the Ethernet port (9). On successful network connection, the yellow LED (6) will be permanently on or flashing, indicating active communication.

#### 5.4.5 IR interface

The CMe3100 supports communication with all ABB electricity meters equipped with the IR interface as well as all products from the Elvaco CMeX series. To use the IR functionality, remove the shield (14) and mount the CMe3100 right next to the device it will communicate with.



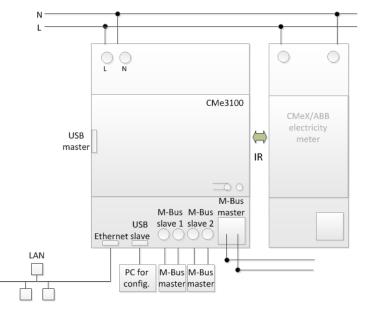
Do not remove the IR shield unless the IR interface is going to be used.

#### 5.4.6 USB Port

The CMe3100 is equipped with a USB slave port (10) to make it able to connect to a computer and install the integrated web interface. By using the web interface, device and M-Bus settings are conveniently configured.



#### 5.4.7 Wiring Diagram



## 5.5 Start up the device

#### 5.5.1 Start-up

When connected to a power supply, the CMe3100 will undergo a boot-up for approximately 20 seconds. Thereafter, the green LED (3) and the red LED (4) will begin to flash and the device is ready to use.

#### 5.5.2 Reset to factory default

In order to reset the product configurations to factory default, press and hold the push button (15) on power-up until the green and red LED lights flashes fast. Now release the button. The product configuration will be reset to factory default and the product will restart.

#### 5.5.3 LED indications

The product is equipped with four LED lights. The green LED displays current operations, the red LED indicates error and the yellow LED displays the network status. Table 1-3 below provides an explanation of each LED indication.

Green LED	Product state	Visual
Permanently off	No power or boot mode	
Short flashes	Normal operation	
50 percent on/50 percent off	Booting in progress	
Permanently on	Software error indication	

Table 1: Green LED

Red LED	Product state	Visual
Permanently off	Normal operation	
50 percent on/50 percent off	Network problems or booting in progress	
Permanently On	M-Bus master short circuit protection active	

Table 2: Red LED



Yellow LED	Product state	Visual
Permanently off	Network connection to Ethernet port is missing	
Short flashes	Ongoing communication on network	
Permanently on	Ethernet port connected to network	

Table 3: Yellow LED

# 5.6 Access the web interface

#### 5.6.1 Log in on the web interface from a browser

The CMe3100 is configured through its web interface, which is easily reached via the local USB slave port (10). Connect the included USB cable between a computer and the Metering Gateway. After approximately 30 seconds, a new removable disk will be available on the computer. Open the folder on the removable disk, run the file CMe3100-SETUP.EXE and follow the instructions.

🗢 AutoPlay
Removable Disk (E:)
General options
Open folder to view files using Windows Explorer
Use this drive for backup using Windows Backup
View more AutoPlay options in Control Panel

When the installation has completed, the web browser will open along with a login page. If the browser fails to do so, please enter the IP address for the device USB port manually. For software versions older than 1.6.0, the IP address 192.168.100.1 is used. For software version 1.6.0 or later, use the IP address 169.254.254.1.

Login using the following credentials:

Username: admin Password: admin

After logging in for the first time, a new password will have to be registered.



If the SETUP.EXE utility has already been run once on the computer, it will not have to be run again. The utility has installed a driver that creates a virtual TCP/IP connection on the computer which accesses the CMe3100 using the local IP address.



#### Links -

Change default adr	nin password				
Password					
inter a new password of the u	ser.				
Confirm password					
Confirm the new password of	the user.				
-Mail					
ddress to send new generate	d password if the password is fo	gotten, if not configure	d it will be sent to Elvad	:0	
		gotten, in not conligure			

#### 5.6.2 Change the default administrator password

Use a strong password with at least 8 characters consisting of both letters and numbers. The password is case sensitive. Make sure to write your credentials down, since the only way of resetting the password is through a factory reset of the product.

# 6 Operations guide

# **Basic operations**

## 6.1 Purpose

This chapter provides instructions on how to use the web interface to configure the most basic settings of the CMe3100. After executing each step of this chapter, the Metering Gateway will perform scheduled readouts of its installed meters, and deliver customized reports with meter values. Please read through each step carefully.

# 6.2 Use the installation panel to perform basic setup

When first logging in on the web interface, the Installation panel will be presented. From this page, all parts of the basic setup process are easily accessible. To ensure correct operation of the product, time and network settings should be configured first.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters Confi	guration -	Device -	Support links -	🔶 Svenska
Installation	n panel					
Basic set	up	×	Me	eter list		
Installation	overview	Status	Ac	tions		
Network set	ttings	0	Ad	d new meter		
Internet acc	ess	0	Ins	stall		
Date & Time	2	0	Se	arch for meters		
Meters		A	Re	install		
			Re	ad all & store		
			Ex	port		
			Ex	port commissio	n report	

# 6.3 Set the time

#### Purpose

In order for the device to operate accurately, it is important to set the correct time and make sure that the clock stays synchronized. This is done by synchronizing it with a time server at a fixed time interval and selecting the maximum accepted time difference the device's clock is allowed to have.

#### 6.3.1 Configure time settings

To configure time settings:

- Go to **Date & Time** from the Basic setup window of the Installation panel. Enter the time and select the time zone.
- Set the Time synchronizing schedule and the Maximum accepted time difference.
- Select whether to use a Daytime or a Network Time Protocol (NTP) server and enter the address of the server. If using the NTP alternative, a server timeout value needs to be set. It determines for how long the Metering Gateway will wait for the NTP server to respond during

a time synchronization attempt before interrupting the action.

• Click Save.

Q	The time synchronizing schedule that should be used depends on how tightly clocks need to be synchronized. Assuming that the maximum accepted time drift is in the order of one minute per month, utilizing a schedule of every 12 <sup>th</sup> hour should assure that the product has less than one second's time difference (31 days * 24 hours = 744 hours, 60 seconds / 744 hours * 12 hours = 0,97 seconds). The default value will work well in most cases and allow for an ample timeout. If the radio link between the product and the time server is of poor quality, the value might have to be increased until reliable operation is obtained. It's important to note that a poor quality radio link will negatively affect the performance of the time synchronization as it relies on low latency communication.
---	---

You may disable the use of time synchronization and manually enter time and date in the product if the long term accuracy is not a concern. However, be aware of:
 The product has a built in super capacitor to maintain time and date during e.g. a power outage but it will only last around 24 hours. After that the clock will no longer be running and time will be offset accordingly.
 The built in clock will drift over time, theoretical worst case is around the order of one minute per month but will most likely be smaller in practice and will vary due to temperature, tolerances and age of components.

 If you are using multiple products for collecting meter values, it is very strongly advised that you configure the products to use time synchronization to assure that measurements from different sources are aligned with regards to time and date.

Schedule
Every hour *
Choose how often time will be synchronized.
Accepted time difference
60
Time will NOT be synchronized if the time difference is less then this value in seconds.
Synchronization protocols
<ul> <li>Use Daytime protocol</li> <li>Use NTP protocol</li> <li>NTP server hostname or IP address</li> </ul>
europe.pool.ntp.org
TCP port number
123
NTP server timeout
60
Timeout in seconds when attempting to synchronize time.
Save

# 6.4 **Configure network settings**

#### Purpose

Configuring the basic network settings will enable the Metering Gateway to connect to the local network. This is necessary to enable the Metering Gateway to connect to servers and deliver its collected meter data.

#### 6.4.1 Configure IP address settings

There are two types of IP address assignment options available, the static and the dynamic option. Using a static IP address enables assignment of the IP address manually. It will thereafter stay constant over time. By instead using dynamic IP addressing, an available IP address is automatically assigned to the Metering Gateway through a DHCP server, which must be available on the local network.

To configure the IP address settings:

- Go to **Network settings** from the Basic setup window in the Installation panel.
- Select whether to use static or dynamic IP address assignment. If selecting the static option, enter IP-addresses and a netmask.
- Click Save.



It is highly recommended that you use dynamic IP-address assignment to avoid mistakenly duplicated IP-addresses and make IP-address administration as easy as possible. Please refer to your IT administrator for details and/or more information about what network settings to use.

		(01100)	~	Const.
۲	Dynamic	(DHCP)	$\odot$	Static

Select now the device obtains its net	twork settings. Static settings that are manually configured or dynamic settings automatically provided by a DHC	P server
(recommended).		

#### IP address

# 10.40.1.230 Netmask 255.255.255.0 Gateway 10.40.1.1

#### 6.4.2 Change the hostname (optional)

The hostname setting determines which name the Metering Gateway will use to identify itself on the network. If not changed, a default name based on the product name and serial number will be used, e.g. "cme3100–0016002383". The hostname is ONLY used for network addressing and should not be confused with the product's name, the latter is used to identify the product in e.g. Push Reports. For more information about how to configure the device name used in Push Reports, see section 6.34 (<u>Configure identity settings</u>)

To change the hostname of the device:

- Go to **Network settings** from the Basic setup window in the Installation panel.
- Enter the name that will be assigned the Metering Gateway.
- Click Save.



Your DHCP server must have enabled support for dynamic DNS update in order to support resolution of the hostname to an IP-address. Please refer to your IT administrator for details and/or more information about what features that are supported.



elvaco	MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020						
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska	
Network							
TCP/IP settin	gs						
Hostname CMe3100-0016000020							
CM63100-00160	00020						

#### 6.4.3 Set the Domain Name Server

The Domain Name Server (DNS) is used to find and retrieve information about the IP address corresponding to a certain domain name. The DNS is added manually when using static IP assignment. If using the dynamic IP address option, DNS settings will be assigned automatically upon connection to the network.

To set a Domain Name Server (DNS):

- Go to Network settings from the Basic setup window in the Installation panel.
- Add the IP address of a DNS server and search domain manually or check the Obtain from DHCP box to automatically obtain the address when the Metering Gateway connects to the local network.
- Click Save.

Secondary DNS server	
Primary DNS server	
omain name is added as a suffix to hostnames that are specified without domain (e.g. example.com).	
Search domain	
Obtain from DHCP issing DHCP setting, uncheck to override and manually specify search domain and DNS server addresses.	

# 6.5 Install meters

#### Purpose

The Meter List contains information about all meters that the device will read, and needs to be uploaded to the web interface before meters can be installed. Figure 4 illustrates the template of such a Meter List and Table 4: Meter list fields

4 explains what information should be added to each field. The Meter List template is available for download directly from the web interface under **Meters > Install**.

If not aware of the addresses of the meters, it is possible to perform an automatic search and installation of meters without uploading a Meter List. However, this also means that you will have to verify that the "right" meters have been installed after the installation has completed.

When the installation has completed, all installed meters will be displayed in the Meter List of the web interface, under **Meters > Meter List**. A Commission Report should always be downloaded after the



installation to help assure it was successful.



Make sure that your licence matches the number of meters included in the Meter List. If you try to install more meters than your licence supports, some will be marked as "passive". By going to **Meters > Meter List** and check **Show passive meters**, passive meters will be displayed.

eivace MYACCOUNT SIGN OUT Hostname: CMe3100-001600002								
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska		
Meter list -	Install							
Update list fi	rom import file							
Select file to im		(CSV) or Excel (I	Excel 97 - 2003 Download	example file				

1	Α	В	С	D	E	F
1	Position	SecondaryAddress	BaudRate	AddressingMode	PrimaryAddress	EnhancedAddress
2						
3						
4						
5						
6						
7						
8						
9						
10						

Figure 4: Template of Meter List

Column	Explanation
Position	The position represents the name that will be used to identify the meter in the Meter List of the web interface. It may be arbitrarily chosen, but it is recommended to assign the field a name that relates to the meter's function, e.g. its position in the metering system.
SecondaryAddress	The secondary address is set by the manufacturer and is printed on the meter. This address is unique for each device and expressed as an 8-digit number.
BaudRate	The Baud rate determines the speed of communication between the Metering Gateway and the meters. Set the field to "300" or "2400" (bit/s), but make sure that all meters support the baud rate selected.
AddressingMode	The addressing mode sets the way meters are addressed by the Metering Gateway. There are three options: the primary and the secondary addressing mode used for Wired M-Bus and the enhanced secondary addressing mode used for Wireless M-Bus. Set this field to "primary", "secondary" or "esecondary".
PrimaryAddress (optional)	The primary address is assigned to the meter by the user as a number between 0 and 255. The column is optional to fill out. However, if using primary addressing mode, it will have to be included.
EnhancedAddress (optional)	The enhanced address is only used when communication with the meters are held through a Wireless M-Bus Receiver. Nothing needs to be added to this column.



Table 4: Meter list fields

#### 6.5.1 Create and install a list of Wired M-Bus meters

When using Wired M-Bus, each meter is addressed using either its primary or secondary address. It is recommended to use the secondary addressing mode, since this will assure that each meter is addressed in a unique way.

To create and install a Meter List of Wired M-Bus meters:

- Go to **Meters > Install**.
- Select a Meter List, structured as comma-separated values (CSV format) to upload. The Meter List can be created in Excel and saved as a CSV file. Figure 5 illustrates what a Meter List might look like. The template can be downloaded from the web interface.
- Click Install to upload the Meter List to the web interface, and install the included meters.

elvaco				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards • Measurement series	Meters Configuration	- Device -	Support links -	🕂 Svenska
Meter list Readout schedule Encryp	tion keys M-Bus settings	store 🗟 Export		
- Choose a function -	te 🔲 Show passive meters		Search *	Previous Next Last
Type*      Secondary address*      No data available in table	MOID* 🔶 Manufa	cturer* 🌲 Statu	s  Last readout	Options
Showing 0 to 0 of 0 entries			First	Previous Next Last

1	Α	В	С	D	E	F
1	Position	SecondaryAddress	BaudRate	AddressingMode	PrimaryAddress	EnhancedAddress
2	Cafeteria	13001651	2400	Secondary		
3	Sales office	14290591	2400	Primary	221	
4	Reception	67690871	2400	Secondary		

Figure 5: Example file of wired Meter List

#### 6.5.2 Create and install a list of Wireless M-Bus meters

When using Wireless M-Bus, the Metering Gateway communicates with meters through one or several Wireless M-Bus Receivers. Each Elvaco Wireless M-Bus Receiver will assign itself with an enhanced address and by combining it with the secondary address of the meter, the communication chain is specified. The Metering Gateway will automatically communicate with each meter through the Wireless M-Bus Receiver that has established the best connection.

To create and install a list of Wireless M-Bus meters:

- Go to **Meters > Install**.
- Select a Meter List, structured as comma-separated values (CSV format) to upload. The Meter List can be created in Excel and saved as a CSV file. Figure 6 illustrates how a Meter List for wireless meters might look. The template can be downloaded from the web interface.



• Click Install to upload the Meter List to the web interface, and install the included meters.

	А	В	С	D	E	F
1	Position	SecondaryAddress	BaudRate	AddressingMode	PrimaryAddress	EnhancedAddress
2	Cafeteria	61007338	2400	esecondary		
3	Sales office	63000040	2400	esecondary		
4	Reception	74109179	2400	esecondary		

Figure 6: Example file of wireless Meter List

If conditions have changed since the last installation, for example if a meter has been moved, another Wireless M-Bus Receiver might be able to establish a clearer connection with that meter. By performing a reinstallation, communication will then be held through that Wireless M-Bus Receiver instead. To perform a reinstallation, go to **Meters > Reinstall > Reinstall**.

#### 6.5.3 Install meters through a meter search

To perform an automatic meter search:

- Go to Meters > Meter List > Search for meters.
- Select what type of addressing mode that will be used in the meter search and installation (wireless, secondary or primary).
- The installation process will start automatically when the search has been completed and might take up to 20 minutes to complete.

elvaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska
	dout schedule Encryption	-	M-Bus settings	ন্ড Export		
- Choose a functi Showing 0 to 0 of (		Show	passive meters		Search *	Previous Next Last
□ Type* ♦ No data available		10ID*	🔶 Manufacture	er*  Status	s 🔶 Last readout	Options
Showing 0 to 0 of 0	0 entries				First	Previous Next Last

## 6.6 **Download a Commission Report of installed meters**

#### Purpose

After installing the meters, a Commission Report should always be downloaded. This report contains information about the settings of all installed meters, and will help ensure that the installation was successful.

#### 6.6.1 Download a Commission Report

To download a Commission Report:

• Click **Export commission report** in the Meter List window of the Installation panel. A download of the document will start.



- Open the downloaded document.
- There are four different tabs in the Commission Report. The first one provides an overview of the Metering Gateway settings, the second tab contains an overview of installed slave devices, the third tab displays the latest readout of each installed meter and the fourth tab provides an overview of what slave devices that have Modbus enabled.

elvaco	•				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters Config	uration - Device -	Support links -	🔶 Svenska
Installatio	n panel				
Basic set	tup	×	Meter list		
Installation	n overview	Status	Actions		
Network se	ettings	0	Add new meter		
Internet ac	cess	0	Install		
Date & Tim	e	0	Search for meters		
Meters		<b>A</b>	Reinstall		
			Read all & store		
			Export		
			Export commission	on report	

## 6.7 Schedule meter readouts

#### Purpose

When all meters have been installed, a readout schedule can be set. It will determine the time interval by which the Metering Gateway will perform readouts of the meters in its Meter List.

#### 6.7.1 Activate and set the meter readout schedule

To activate and set the meter readout schedule:

- Go to Meters > Readout schedule and activate Scheduled meter readouts.
- Set a Meter readout schedule. By for example setting "Every 15<sup>th</sup> minute", a readout of all meters in the Meter List will be performed every 15<sup>th</sup> minute.
- Click Save.



Dashboards -	Measurement	series Meters	Configuration -	Device -	Support links -	🕂 Svensk
Meter list	Readout schedule	Encryption keys	M-Bus settings			
Meter read	out schedule					
Activ	ate scheduled meter	r readouts				
Schedule Every 15th m	inuto					
	n the service shall run.					
		lout mode				
Activ	ate Continuous read					

# 6.8 **Configure Push Report Default settings**

#### Purpose

When all meters have been installed and the readout schedule has been set, Push Reports can be enabled. The Push Reports structure the data from the meter readouts by a chosen template, and are delivered by a set schedule and protocol.

The Push Reports can be delivered by e-mail (SMTP), as a downloadable file (FTP) or uploaded to a server running a HTTP web service. The first step is to set the default recipient option for the alternatives that will be used. All activated Push Reports will be sent to the default recipient if not overridden in the settings of an individual Push Report.

#### 6.8.1 Configure e-mail Push Report default settings

To configure the e-mail Push Report default settings:

- Go to Configuration > Push Reports > E-mail settings.
- Set the address to a valid e-mail server.
- Add credentials used to access the e-mail server.
- Set the e-mail addresses of the default e-mail Push Report recipients.
- Click Save.

#### CMe3100 User's Manual English

# elvaco

elvaco	)					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards -	Measurement series	Meters Co	onfiguration -	Device -	Support links -	🔶 Svenska
<sup>p</sup> ush Repo	orts					
Push Reports	E-mail settings FTP set	Ings HTTP sett	lings			
Default SMT	P server settings - rep	ort receiver				
Server address						Port
smtprelay01.el	vaco.se					2525
Hostname or IP ad	dress					
Username						
elvaco						
Password						
•••••						
Enter a new Produc	dress. Leave empty to use Elvac. ct name to change default sender					
Recipient's e-mail a	address. Use a comma to separat	e addresses.				
(C.						
Copy recipient's e-	mail address. Use a comma to se	oarate addresses.				
Hidden recipient's	e-mail address. Use comma to se	parate addresses.				]
Save Save &	Send test report					

### 6.8.2 Configure FTP Push Report default settings

To configure the FTP Push Report default settings:

- Go to Configuration > Push Reports > FTP settings.
- Set the address to a valid FTP server.
- Add credentials for the CMe3100 to access the FTP server.
- Click Save.

Dashboards -     Measurement series     Meters     Configuration -     Device -       Push Reports     E-mail settings     FTP settings     HTTP settings       Default FTP server settings - report receiver       Server address	Support links -	🕂 Svenska
Push Reports     E-mail settings     FTP settings     HTTP settings       Default FTP server settings - report receiver		
Default FTP server settings - report receiver		
Hostname or IP address Username		Port
Password		
Destination folder on server (where to save reports)		
Save		

#### 6.8.3 Configure HTTP Push Report default settings

To configure the HTTP Push Report default settings:

- Go to Configuration > Push Reports > HTTP settings.
- Add a URL to a valid HTTP server where the Push Reports will be received.
- Set the Authentication mode (basic or none). If using the basic mode, add credentials for the CMe3100 to access the HTTP server.
- Click Save.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration •	Device -	Support links -	🔶 Svenska
oush Repo	orts					
Push Reports	E-mail settings FTP sett	ings HTTP	e settings			
URL http://services. Authentication Basic Username	elvaco.se/Services/Post.asp mode	x				
username						
Password						
Save						

# 6.9 Schedule Push Reports and Event Reports

#### Purpose

After the Push Report default settings have been made, individual reports can be configured. By going to **Configuration > Push Report**, an overview of all available reports and their current status is provided. There are two different types of reports available, Push Reports and Event Reports. The difference between the two is explained in Table 5.

By default, the Metering Gateway supports three different types of report delivery protocols: HTTP, FTP and e-mail. Each delivery protocol has a number of predefined report templates available. Report template numbers always start with "1" for e-mail, a "2" for FTP and a "3" for HTTP. For example, selecting the e-mail report template 1101 (2101 for FTP, 3101 for HTTP) will structure all meter values in one single post while template 1112 (2112 for FTP, 3112 for HTTP) will deliver the meter values in an Excel file.

To learn more about the different templates available, please visit our support site, <u>https://support.elvaco.com/hc/en-us</u> .							
Type of report	Explanation						
Push Report	Push Reports are used to deliver meter values by a set time interval, structured according to a selected template.						
Event Report	The Event Report is triggered by a certain event taking place in the Metering Gateway. A schedule does therefore not have to be set for this type of report.						

Table 5: Type of reports

lvac					UNT SIGN OUT e: CMe3100-0016000148-DE
Dashboards -	Measurement series	Meters Configuration -	Device -	Support links -	🔶 Svenska
ush Repo	orts				
Push Reports	E-mail settings FTP se	ttings HTTP settings			
Scheduled repo	orts			Enabled	
Report 1 sending email report 1	107 to cv@elvaco.se				
Report 2 sending email report 1	111 to unknown				
Report 3 Report is disabled				() NO	
Report 4 Report is disabled					
Report 5 Report is disabled					
Event reports				Enabled	
Boot-up report					
Report is disabled					
Installation repo	ort				
Report is disabled	ort				
On demand rep Sending email report 1				and the second sec	
schangeman report 1	ava to regrettere.se				

#### 6.9.1 Enable and configure Push Reports

To configure Push Reports:

- Go to **Configuration > Push Report** and click on an arbitrary Push Report.
- Set what type of report to use (e-mail, FTP or HTTP) and the desired template.
- Set the Report schedule, <u>preferably by using one of the preset options available</u>. It will determine the time interval by which the Push Report will be sent
- Set the Value Period to "Auto" to ensure that all new meter values that have failed to be transmitted will be included in the next successful Push Report, thus also providing an automatic recovery mechanism.
- Set the Value Interval to "All Values" to include all available meter readouts in the Push Reports (as defined by the readout schedule).
- Add recipients of the report. If no recipient is added, the default option will be used.
- Click Save. By clicking Save & Send test report or Save & Download test report you will receive a copy of the Push Report, structured according to the template you have selected. In this way, you may test different templates to find the one you wish to use.



For the advanced user it is possible to customize the Push Report schedule using cron patterns. However, this will also remove the automatic synchronization between readout cycles and report sending, and might result in Push Reports being sent before a readout cycle has finished.

elvaco					MYACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards - Measurement s	eries Meters	Configuration -	Device -	Support links -	🔶 Svenska
Push Reports - Repo	rt 5				
Report type Email * Report template 1112 Email value report * Report schedule	Meter readout sch	edule			
Every hour   Choose how often the service shall run.	Every hour Current setting in Mete schedule.	ers > Readout			
Report content					
Choose which values to include in the rep include all values stored within 1 day from Value interval All values Choose "All values" to include all available reported values.	n when each report is sent	t.			
Report receiver  Send report to default e-mail add Uncheck to override settings for default re To:					
anton.larsson@elvaco.se					
Recipient's e-mail address. Use a comma CC:	to separate addresses.				
Copy recipient's e-mail address. Use a con BCC:	nma to separate addresse	25.			
Hidden recipient's e-mail address. Use co	mma to separate address	es.			
Save Save & Send test report	Save & Download t	test report Cance	el		

#### 6.9.2 Enable and configure Event Reports

To enable and configure Event Reports:

- Go to **Configuration > Push Reports** and select one of the Event Reports by clicking on it.
- Set what type of report to use (e-mail, FTP or HTTP) and the desired template.
- Add receivers of the report. If no receiver is added, the default receiver option will be used.
- Click Save.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Push Repo	orts - Boot-up r	eport				
Report template 1005 (Email eve Send report to	eport when system has come ent repor • o default e-mail address e settings for default recipients.	pleted a boot	t-up.			
E-mall sender						
E-mall to use as from	m address. Leave empty to use C	Me3100-001600	0020@elvaco.se.			
Recipient's e-mail a	address. Use a comma to separat	e addresses.				
Copy recipient's e-r	nall address. Use a comma to se	parate addresse	S.			
Hidden recipient's e	e-mall address. Use comma to se	parate addresse	25.			
Send FTP rep	ort when system has compl	eted a boot-u	p.			
Send HTTP re	port when system has comp	pleted a boot-	up.			
Save Cancel						

# **Common operations**

# 6.10 Purpose

At this point you should have gotten started with your CMe3100, and are receiving recurrent Push Reports with meter values. This chapter will present some common features, which will help you enhance the operation of your Metering Gateway even further.

## 6.11 Create a configuration file

#### Purpose

A configuration file contains all *none device specific* settings such as readout schedule and Push Report configurations (but excludes IP address, etc.). By using a configuration file, settings may be restored on an individual device or duplicated to a group of devices without having to go through all steps manually. Therefore, a configuration file should always be saved before performing an update to be able to restore the settings of the Metering Gateway if something should go wrong.

#### 6.11.1 Save device specific settings in a configuration file

To save device specific settings in a configuration file:

- Go to Device > Manage configurations.
- Select "Configuration" as File type and click Execute.
- When the configuration file has been created, it will be displayed in, and can be downloaded from, the File repository.

elvaco	)					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards -	Measurement series	Meters	Configuration -	Device •	Support links -	🔶 Svenska
Manage co	nfigurations					
Create config	uration or backup	file				
Configuration	create. Created file will be a	dded to the File rep	ository			
Execute						
Add configura	ation or backup fil	e				
Välj fil Ingen fi	l har valts added to File repository.					
File repositor	у					
Choose an action Showing 1 to 1 of	to restore, remove, or o 1 entries	download a file.			First Previo	pus 1 Next Last Ç
Date/Time	Туре	Version	Size	Name		Action
2016-07-13 10:25:24	Configuration	1.4.3	7.56 Kb	cme3100 backup_	0_1.4.3_146840552416 .tar.bz2	i3_config- & 🍵 ±
Showing 1 to 1 of	1 entries				First	revious) 1 Next Last

# 6.12 Create a backup file

#### Purpose

A backup file contains all meter values stored by the Metering Gateway and all settings including *device specific settings*. By using a backup file, the settings and stored data of a device may be completely restored and is suitable for restoring a device if the hardware is replaced. However, it should not be used to duplicate settings into different devices as it contains device specific settings such as IP address.



Back-up files can take a long time to create and restore settings and data from. They also consume a lot of storage space. It is therefore not recommended to keep more than one backup file in the device's repository at a given time. You may however of course choose to download backup files and keep them safe using another media.

#### 6.12.1 Save meter values and device specific settings in a backup file

To save meter values and device specific settings in a backup file:

- Go to **Device > Manage configurations**.
- Change File type to "Backup" and click Execute.
- When the backup file has been created, it will be displayed in, and can be downloaded from, the File repository.

elvaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
lanage con	figurations					
File type Backup	ration or backup fil		ository			
Add configurat						
File repository Choose an action to Showing 1 to 1 of 1	o restore, remove, or dov	vnload a file.			First Previou	1 Next Last 🖯
Date/Time	Туре	Version	Size	Name		Action
2016-07-13 10:29:2	27 Backup	1.4.3	2272.82	kh	.00_1.4.3_146840576770 ptar.bz2	)5_full- ♂ 實 ±
Showing 1 to 1 of 1	entries				First Pre	vious 1 Next Last

# 6.13 Check device and meter settings

#### Purpose

There are several different ways to use the web interface to check the current settings of the Metering Gateway and its installed meters. As three main sources you may use:

- The System Panel, which contain information about the Metering Gateway, active/passive meters and scheduled reports and services.
- The device overview, which displays device specific settings and scheduled tasks.
- The meter settings document, which contain addressing modes, baud rates and addresses.

#### 6.13.1 Check status through the System Panel

To check status through the System Panel:

- Go to **Dashboards > System Panel**.
- The System Panel will display device information, scheduled reports, enabled services and information about installed meters.

vaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-001600
shboards - Me	easurement series	Meters	Configuration -	Device -	Support links -	📥 Svensk
stem panel						
Device inform	nation		Me	eters		
System	Value		Me	ter	Value	
Serial number	0016000020		То	tal meters	1	
Product type	CMe3100		Ac	tive meters	1	
Hardware version	R1C		Pa	ssive meters	0	
Software version	1.6.1-RC10		Re	adout schedule	Every hour	r (0 * * * *)
MAC address	00:D0:93:2B:91:0E					
IP address	10.40.1.230	·				
Hostname	CMe3100-0016000	020				
Device time	2016-12-01 15:23		Se	rvices		
Device started	2016-11-30 16:28:	24	Se	rvice		Enabled
			W	eb server (Admini	stration GUI)	
			We	b server is enabled on TC	P/IP port 80	
			Co	nsole (Command	l line user interface)	
Scheduled Re	eports		Co	nsole is enabled on TCP/II	port 9999	
	1		Tra	ansparent M-Bus	over TCP/IP 1	
Scheduled report	ts	Enabled		vice is disabled		
Report 1		122 (		ansparent M-Bus	over TCP/IP 2	
sending ftp report 2101 to	)			vice is disabled		
Report 2				tual M-Bus over	ICP/IP	
Report is disabled						
Report 3				Bus slave port 1		
Report is disabled				Bus slave port 2		
Report 4		MO		vice is disabled		
Report is disabled						
Report 5		()NO				
Report is disabled						

#### 6.13.2 Check the device overview

To check the device overview:

- Go to **Device > About.**
- The device overview will display Metering Gateway information and scheduled tasks.

vace						MY ACCOUNT SIGN OUT Hostname: CMe3100-001600238	
ishboards - Me	asurement series	Meters	Configuration -	Device •	Support links -	🔶 Svenska	
out							
ervlew End-user	license agreement						
boot now 🏼 🌩 Factory	reset						
Dovico							
Device							
Serial number	0016002383						
Product type	CMe3100						
Hardware version	R1D						
Software version	1.4.3						
MAC address	00:D0:93:38:5D:23						
IP address	10.40.1.106						
Hostname	CMe3100-00160023	83					
Domain	elvaco.local						
Primary DNS server	10.40.1.11						
Secondary DNS server	10.40.1.12						
Device time	2016-07-11 13 46 11	L					
Device started	2016-07-11 08:53:51						
Free disk space	2463 MB						
Device temperature	56.50°C						
Scheduled	l tasks						
Task ID	Name		Scheduling	pattern		Active now	
1	storevalue		*/5 * * * *			No	
2	timesync		*/5 * * * *			No	
3	maintenar	ice	35 * * * *			No	
13	report2		0			No	
			*/10 * * * *				

### 6.13.3 Download a meter settings report

To download a meter settings report:

- Go to the Meter List window in the Installation panel.
- Click Export.
- Open the document. It contains information about the addressing mode, baud rate and address of all installed meters.

elvaco	>				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters Configur	ation - Device -	Support links -	🔶 Svenska
Installatio	n panel				
Basic set	tup	×	Meter list		
Installatio	n overview	Status	Actions		
Network se	ettings	0	Add new meter		
Internet ac	cess	0	Install		
Date & Tim	e	<b>O</b>	Search for meters		
Meters		<b>A</b>	Reinstall		
			Read all & store		
			Export		
			Export commission	1 report	

## 6.14 Check operational status of the system

## Purpose

All information about different system events is logged and stored in the System Log. For each log entry, a severity type icon (error, warning or information), timestamp and plain text explanation is shown. This makes it a good tool for investigating operational status of the system and pin-pointing errors in the metering process.

#### 6.14.1 Filter the System Log

To facilitate inspection, the System Log can be filtered with respect to severity level and date interval of the logs.

To filter the System Log:

- Go to **Device > System Log**. All saved log entries are displayed here.
- To filter the log entries by a specific severity level, click on the Severity tab and select a desired level. By using the **From** and **To** buttons, logs stored over a certain time period can be displayed.
- To export the System Log table as a CSV file, click on the Choose a function tab and set "Export table as CSV". Click **Execute** to start the download.



To learn more about the different log entries of the System Log and how they are interpreted, go to our support site, <u>https://support.elvaco.com/hc/en-us</u>, and download the document named "CMe3100 Guide to System Log".

elvaco					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards - Measureme	ent series Meters	Configuration -	Device -	Support links -	🔶 Svenska
System log					
Log entries Fliter settings					
- Choose a function -	Execute 0 (Info)		Search *	From	To O
Showing 1 to 50 of 259 entries	Severity		Firs	st Previous 1 2 3	4 5 Next Last
Type 🕴 Created	Source	Message*			▼
2016-12-01 15:10:00	ReportCommandHelper	Failed to comport 21.	lete Push Repo	rt operation due to: Error	connecting to server:

## 6.14.2 Set the minimum severity level of logged events

The minimum severity level for an event that gets stored in the System log is also configurable but should generally not be adjusted without good reasons as it may cause important information to be lost or the log to become very extensive.

To set the minimum severity level of logged events:

- Go to Device > System Log > Filter settings.
- Select a minimum severity level of the logs that should be saved. By choosing "0", all events except the debug events are logged. By choosing "-1", all events including the debug events are logged.
- Click Save.

It is highly recommended that the debug log entries are only logged in case of troubleshooting. If not, the System Log will fill up very fast, and it might be hard to navigate. Activating debug log entries might also affect the performance of the Metering Gateway in a negative way.

System log	
Log entries Fil	ter settings
Filter	
Severity level 0 (Info)	×
Choose minimum sev	verity level to store in the system log. A lower value will increase number of log entries.

## 6.14.3 Check the readout status of an individual meter

To check the readout status of an individual meter:

- Go to Meters and click on the secondary address of a meter.
- Click **Readings.** Here, the status and time of recent readouts of that specific meter are displayed.
- By setting a start and an end date, readings conducted over that specific time period will be displayed.

lvace	)					MY ACCOUNT SIGN OUT Hostname: CMe3100-001600238
Dashboards -	Measurement serie	es Meters	Configuration -	Device -	Support links -	🕂 Svenska
Meter list Re	eadout schedule End	cryption keys	M-Bus settings			
Add new meter - Choose a fund Showing 1 to 9 o	ction - • Exe		stall BRead all & store	● Export	Search * First Pre	P C
🗆 Type* (	Secondary address*	MOID*	Manufacturer	r* 🔶 Status	s 🔶 Last readout	Options
	13360079		1714	-		
A 10 10 10 10 10 10 10 10 10 10 10 10 10	13360079		ITW	<b>I</b>	2016-07-11 14:45:02	2 🛛 🗑 🖍 🗖
	14732133		GWF		2016-07-11 14:45:02	
						2 🔋 🖍 🖬
· •	14732133		GWF	4	2016-07-11 14:45:02	2 <b>a a b</b>
	14732133 54006815		GWF	<b>A</b>	2016-07-11 14:45:02 2016-07-11 14:45:02	
	14732133 54006815 61000360		GWF ELV ELV	A 0 0	2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02	
	14732133 54006815 61000360 61001098		GWF ELV ELV ELV	4 0 0	2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02	
	14732133 54006815 61000360 61001098 63000028		GWF ELV ELV ELV ELV	4 0 0 0	2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02 2016-07-11 14:45:02	

elvaco				MY ACCOUNT SIGN OUT Hostname: CMe3100-001600238
Dashboards · Measu	urement series Met	ers Configuration -	Device - Suppor	rt links - 🗕 🕂 Svenska
Meters - Edit: 61	1001098			
Overview Settings	Readings Log	Measurement series		
Store value 🥒 Link encryp	otion key End date			
2016-07-11	2016-07-11	Refr	esh	
				The Desidence 1 0 North Land
Showing 1 to 50 of 72 entr		≜ Messa	70	First Previous 1 2 Next Last
Created	▼ Status	♦ Messa	5	First Previous 1 2 Next Last
Created		ssfully M-Bus	ge status power-low status power-low	🛊 Telegram count
Created 2016-07-11 14:50:02	Status     Readout succes	ssfully M-Bus	status power-low	Telegram count
Created 2016-07-11 14:50:02 2016-07-11 14:45:02	Status     Readout succes     Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> <li>1</li> </ul>
Created 2016-07-11 14:50:02 2016-07-11 14:45:02 2016-07-11 14:40:02	Status           Readout succes           Readout succes           Readout succes           Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low	Telegram count <ol> <li>1</li> <li>1</li> <li>1</li> <li>1</li> </ol>
Created 2016-07-11 14:50:02 2016-07-11 14:45:02 2016-07-11 14:40:02 2016-07-11 14:35:04	Status       Readout succes       Readout succes       Readout succes       Readout succes       Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> </ul>
Created 2016-07-11 14:50:02 2016-07-11 14:45:02 2016-07-11 14:40:02 2016-07-11 14:35:04 2016-07-11 14:30:01	Status Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> <li>1</li> </ul>
Created 2016-07-11 14:50:02 2016-07-11 14:45:02 2016-07-11 14:40:02 2016-07-11 14:35:04 2016-07-11 14:30:01 2016-07-11 14:25:02	Status       Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> </ul>
Created 2016-07-11 14:50:02 2016-07-11 14:45:02 2016-07-11 14:40:02 2016-07-11 14:35:04 2016-07-11 14:30:01 2016-07-11 14:25:02 2016-07-11 14:20:02	Status       Readout success	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low status power-low status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> </ul>
Created           2016-07-11 14:50:02           2016-07-11 14:45:02           2016-07-11 14:40:02           2016-07-11 14:35:04           2016-07-11 14:30:01           2016-07-11 14:25:02           2016-07-11 14:25:02           2016-07-11 14:20:02           2016-07-11 14:20:02	Status       Readout succes	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low status power-low status power-low status power-low status power-low	<ul> <li>Telegram count</li> <li>1</li> </ul>
Created           2016-07-11 14:50:02           2016-07-11 14:45:02           2016-07-11 14:45:02           2016-07-11 14:35:04           2016-07-11 14:30:01           2016-07-11 14:20:02           2016-07-11 14:20:02           2016-07-11 14:15:02           2016-07-11 14:10:07	Status       Readout success       Readout success	ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus ssfully M-Bus	status power-low status power-low status power-low status power-low status power-low status power-low status power-low status power-low status power-low	Telegram count       1

# 6.15 Install encryption keys for wireless meters

## Purpose

The CMe3100 has a built-in management system for wireless encryption keys. The meter encryption key is registered in the web interface and will be used by the Metering Gateway to enable <u>decryption of incoming messages</u>.

Encryption keys are uploaded in an encryption key file (CSV or Excel 97-2003), structured by the template of Figure 7, or registered directly in the web interface. The encryption key file contains the matching criteria for each key which defines a filter for what meters the encryption key will be applied to.

See Table 6 for a full explanation of all fields in the key file, which together make up the matching criteria.



1	Α	В	С	D	E
1	Address	Кеу	Manufacturer	DeviceType	Version
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Figure 7: Template of encryption key file

Encryption key field	Explanation
Address	This field contains the secondary address of the meter that the encryption key will be applied to. Set "-1" to exclude this field from the matching criteria.
Кеу	This field contains the actual encryption key that will be used, consisting of 32 character in hex format.
Manufacturer	This field contains the manufacturer of the meter that the encryption key will be applied to. To find a list of the different manufacturers, and their initials, go to <b>Meters &gt; Encryption keys &gt; Add new key.</b> Uncheck the Manufacturer box and use the list. Use "*" character to exclude this field from the matching criteria.
DeviceType	This field contains the type of meters which the encryption key will be applied to. To find a list of the different device types, go to <b>Meters &gt; Encryption keys &gt; Add new key</b> . Uncheck the Type box and use the list. Use "-1" to exclude this field from the matching criteria.
Version	This field contains the version of the meter that the encryption key will be applied to. Use "-1" to exclude this field from the matching criteria.

Table 6: Encryption key file fields

## 6.15.1 Add an encryption key through a file upload

To add an encryption key through a file upload:

- Go to Meters > Encryption keys. Here, a list of all registered encryption keys is displayed.
- An encryption key is uploaded as an CSV or Excel (97-2003) file. Click **Import list** and select the file, structured according to Figure 7. An example file is provided in Figure 8. The template can be downloaded directly from the web interface by clicking **Download example file**.
- Click Save.

elva	CO						MY ACCOUNT SIGN OUT Hostname: CMe3100-00160000
Dashboard	s- Measuremen	it series	Meters	Configuration	n• Device•	Support links -	🕂 Svenska
Meter list	Readout schedule	Encryptic	on keys	M-Bus settings			
	y Import list	Execute				Search *	20
- Choose		Execute				Search *	Previous Next Last
- Choose	a function - 🔹	Execute	y		Manufacturer*	Firs	
- Choose of Showing 0	a function - v		y		Anufacturer*	Firs	t Previous Next Last

	Α	В	С	D	E
1	address	key	manufacturer	deviceType	version
2	-1	AAAABBBBCCCCDDDDEEEEFFFF11112222	*	-1	-1
З	13360079	A1B2C3D4E5F6A1B2C3D4E5F678910111	ELV	-1	-1
4	-1	FFEEDDCCBBAA99887766554433221100	*	-1	-1
5	-1	AAAA1111BBBB2222CCCC3333DDDD4444	ACA	-1	-1
6	-1	9999AAAA8888BBBB7777CCCC6666DDDD	ELV	-1	2

Figure 8: Encryption key example file

## 6.15.2 Add an encryption key directly in the web interface

To enter an encryption key directly in the web interface:

- Go to Meters > Encryption keys.
- Click Add new key.
- Set the matching criteria to determine the meters the encryption key will be applied to. By checking the All box, the encryption key will be used for decryption of messages from all meters of that specific matching criteria field.
- Click Save.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Encryptior	n keys - Add ne	ew key				
Encryption k	ey matching criteria	ì				
Encryption key w	ill be applied to all meter	s that matches	s the criteria.			
Manufacturer			Тур	•		
Select an Optio	n 🔹 🖉 All		- S	elect meter type		
Version			Add	ress		
-1	III		-00	000001	🗷 All	
Кеу			The a	ddress of the encry	ption key.	
Enter the 16 bytes e	ncryption key in hex-format (3	2 characters).				
Save						

## 6.15.3 Link an encryption key to an individual meter

The Metering Gateway supports linking encryption keys to individual meters. Using this option will make the device apply the key to decrypt information from the linked meters only.

To link an encryption key to an individual meter:

- Go to **Meters** and select a desired meter from the list.
- Click the edit (pen) symbol in the **Options** column.
- Click Link encryption key on the top of the page.
- The meter information in the resulting menu should by default be correct. Now add the encryption key that will be used for decryption of meter values sent from that meter.
- Click Save.

lvace						
						IY ACCOUNT SIGN OUT Iostname: CMe3100-0016
ashboards -	Measurement se	ries Meters	Configuration -	Device -	Support links -	🗕 Sven
atau liat Da	a davit schadula	Ensuration laws	M Due settings			
eter list Re	adout schedule	Encryption keys	M-Bus settings			
dd new meter	Install P Search	for meters 🛛 🔊 Rein	stall 🛛 🕫 Read all & stor	e 🔊 Export		
- Choose a fund	ction -	Execute 🔲 Show	v passive meters		Search *	2
howing 1 to 9 o	f 9 entries				First Previ	ous 1 Next La
🗆 Type* (	Secondary addres	s* 🔺 MOID*	Manufactu	rer*  Status	Last readout	Options
•	13360079		ITW	0	2016-07-12 14:10:04	<b>∎∕</b> ∎
□ <b>△</b> ∔	14732133		GWF	4	2016-07-12 14:10:04	ā / B
?	54006815		ELV	0	2016-07-12 14:10:04	<b>ē</b> ∕ 8
	61000360		ELV	×	2016-07-12 14:10:11	â 🖍 🖯
	61001098		ELV	0	2016-07-12 14:10:04	ê / B
	63000028		ELV	4	2016-07-12 14:10:04	<u> </u>
🗆 🍐	63315452		KAM	4	2016-07-12 14:10:04	ê / B
	67017041		KAM	4	2016-07-12 14:10:04	<u> </u>
	68000105		ELV	0	2016-07-12 14:10:04	ê / B
Vaco					MY ACCO	JNT SIGN OUT
vaco	•					
Vaco	Measurement ser	ies Meters	Configuration -	Device -		UNT SIGN OUT e: CMe3100-0016000148-0 
shboards -	Measurement ser		Configuration -	Device -	Hostnam	e: CMe3100-0016000148-0
shboards -			Configuration -	Device -	Hostnam	e: CMe3100-0016000148-0
shboards∙ ter list -	Measurement ser	086	Configuration - urement series	Device -	Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set	Measurement ser Edit: 68000	086		Device •	Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set	Measurement ser Edit: 68000 ttings Readings	086			Hostnam	e: CMe3100-0016000148-D
shboards - ter list - erview Set re value 💽 Lir	Measurement ser Edit: 68000 ttings Readings	086			Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Ser re value 💽 Lir eter inform	Measurement ser Edit: 68000 ttings Readings tk encryption key ation	086			Hostnam	e: CMe3100-0016000148-D
shboards - ter list - erview Set re value Lir eter inform easure Object	Measurement ser Edit: 68000 ttings Readings ak encryption key ation	DO86			Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set re value ELin eter inform easure Object econdary addi	Measurement ser         Edit: 68000         ttings       Readings         ik encryption key         ation         ID (MOID)       Drift         ress       680000	0086 Log Measu	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set re value Lir eter inform easure Object econdary addi	Measurement ser Edit: 68000 tings Readings tk encryption key ation ID (MOID) Drift ress 680000 Integra	D086 Log Measu D86 ated M-Bus Master:	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Ser re value Lir eter inform easure Object econdary addr aterface ddressing mod	Measurement ser         Edit: 68000         ttings       Readings         itk encryption key         ation         ID (MOID)       Drift         ress       680000         Integra         de       Elvaco	D086 Log Measu D86 ated M-Bus Master:	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Ser re value Lir eter inform easure Object econdary addr sterface ddressing mod anufacturer	Measurement ser Edit: 68000 tings Readings tk encryption key ation ID (MOID) Drift ress 680000 Integra de Elvaco ELV	0086 Log Measu 086 ated M-Bus Master: Wireless M-Bus - 68	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set re value Lir eter inform easure Object econdary addu aterface ddressing mod anufacturer ype	Measurement ser Edit: 68000 tings Readings tk encryption key ation ID (MOID) Drift ress 680000 Integra te Elvaco ELV Room	D086 Log Measu D86 ated M-Bus Master:	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set re value Lir eter inform eter inform deasure Object econdary addu sterface ddressing mod anufacturer ype ersion	Measurement ser Edit: 68000 ttings Readings ak encryption key ation ID (MOID) Drift ress 680000 Integra de Elvaco ELV Room 30	0086 Log Measu 086 Ated M-Bus Master: Wireless M-Bus - 68 sensor	urement series		Hostnam	e: CMe3100-0016000148-0
shboards - ter list - erview Set re value Lir eter inform easure Object econdary addu aterface ddressing mod anufacturer ype	Measurement ser Edit: 68000 ttings Readings ak encryption key ation ID (MOID) Drift ress 680000 Integra de Elvaco ELV Room 30	0086 Log Measu 086 Ated M-Bus Master: Wireless M-Bus - 68 sensor	urement series		Hostnam	e: CMe3100-0016000148-0

# 6.16 Configure settings for an individual meter

### Purpose

In some cases, it might be desired to configure individual settings of a specific meter. This might for example include changing the Measurement Object Identification (MOID), switching the state of the meter from active to passive (which will exclude it from the meter readout cycle) or changing the interface used by the Metering Gateway when communicating with the meter.

## 6.16.1 Edit Measurement Object Identification of a meter

The MOID is used to identify the meter in the Meter List, and is preferably set to display the function or the location of the meter.

To edit the MOID:

- Go to **Meters** and click the secondary address of a desired meter.
- Click on Settings.
- Enter a MOID and click **Save**.
- The MOID will now be displayed for the meter in the Meter List.

elva	0					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboard	s - Measureme	nt series Meter	s Configuration -	Device -	Support links -	🗕 Svenska
Meter list	Readout schedule	Encryption keys	M-Bus settings			
• Add new m	eter 🏶 Install 🔎 Sea	arch for meters 🛛 🔿 Re	einstall 🛛 🖻 Read all & stor	e 🛯 🖻 Export		
- Choose a	a function -	Execute 🗆 Sh	ow passive meters		Search *	20
Showing 10	1 to 150 of 726 entrie	25		Firs	t Previous 1 2 3	4 5 Next Last
🗆 Ту	pe* 🔶 Secondary ac	Idress* MOID*	Manufactu	rer* 🔶 Statu	s 🔶 Last readout	Options
	61002196	Basement,	House 1 ELV	0	2016-11-04 15:00:02	<b>a</b> 🗸 🖬
	61002242	Apartment	: 2, House 1 ELV	<b>v</b>	2016-11-04 15:00:02	<b>a</b> 🗸 🖶

elvaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020				
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska				
Meter list -	Meter list - Edit meter: 61002196									
Overview Se	Overview Settings Readings Log Measurement series									
🖩 Store value 🏼 🖉 Li	nk encryption key									
Meter inform	nation				i Last readout	2016-11-04 15:00:02				
Measure Object	ID (MOID)									
Basement, Hou	ise 1									
Enter a user define	d name or number that relates th	e meter with a	physical position, installat	ion or other type	of measured entity.					

#### 6.16.2 Configure communication settings of an individual meter

Switching a meter's status from active to passive means that it will no longer be included in the meter readout process. If more meters are installed than the software license supports, the latest installed meters will automatically be set to passive.

The meter access settings determine which interface will be used by the M-Bus Metering Gateway to access a specific meter. Normally, all meters are connected directly or indirectly to the integrated M-Bus master (by 2-wire M-Bus or the IR interface) but it is also possible to use the Ethernet network to connect a remote meter (M-Bus over TCP/IP).

To configure communication settings of an individual meter:

- Go to **Meters** and click the secondary address of a meter
- Click on **Settings**.
- Set the desired state of the meter and the interface that will be used by the Metering Gateway to access the meter.
- Click Save.

Measurement series					
	Meters	Configuration -	Device -	Support links -	🔶 Svenska
adout schedule Encryp	otion kevs M	-Bus settings			
Install 🔑 Search for me	eters 🔉 Reinsta	all 🛛 🛢 Read all & store	🖲 Export		
				(a	
tion - • Execu	te 🗉 Show p	assive meters		Search *	20
3 entries				First Prev	ious 1 Next Last
Secondary address* 🔺	MOID*	Manufacturer	* 🕴 Status 🕯	Last readout	Options
00233239	ABB electricity	ABB	0	2016-10-03 08:45:04	意义 問
25000130		ELV	0	2016-10-03 08:45:04	音之 田
			-	2016-10-03 08:45:04	金之田
1	Install P Search for me tion -      Execut 3 entries Secondary address*	Install      P Search for meters      Reinsta     Execute     Show p     Gamma Secondary address*     MOID*     MO233239     ABB electricity	Install      P Search for meters     Neinstall     Read all & store     Execute     Show passive meters     Secondary address*     MOID*     Manufacturer     MO233239     ABB electricity     ABB	Install P Search for meters Reinstall Read all & store Export tion - Execute Show passive meters 3 entries Secondary address* MOID* Manufacturer* Status 00233239 ABB electricity ABB	Install      Search for meters     Reinstall     Read all & store     Execute     Show passive meters     Search *     First     Prev Secondary address*     MOID*     Manufacturer*     Status     Last readout     ABB electricity     ABB     O233239

elvaco		MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards • Measurement series Meters Configuration • De	evice - Support links -	📥 Svenska
Meter list - Edit meter: 61002196		
Overview Settings Readings Log Measurement series		
🛢 Store value 🎤 Link encryption key		
Meter information	🕕 Last readout	2016-11-04 15:00:02
Measure Object ID (MOID)		
Basement, House 1		
Enter a user defined name or number that relates the meter with a physical position, installation or	other type of measured entity.	
Secondary address		
61002196		
Enter the meter's secondary address. This is usually the same as the meter number or serial numbe	r	
Primary address		
211		
Enter the meter's primary address. Leave set to 0 if secondary addressing is used, 0-250 are valid pri	mary addresses.	
State		
Active		elvaco
Manufacturer		
ELV - Elvaco AB, Kungsbacka, Sweden		
Туре		
Room sensor		
Version		
1		
Meter access		
Interface		
Integrated M-Bus Master 🔹		
Choose which interface the meter is accessed through.		

# **Special operations**

# 6.17 Purpose

This chapter is targeting advanced users and contains instructions on how to perform operations that are less frequently used. Typically, these operations are needed to configure more complex metering setups of the Metering Gateway and the M-Bus system.

## 6.18 Update software

## Purpose

Elvaco regularly launches new software updates for products to enable continuous improvement and new functionality. New software can easily be installed using the web interface, simply by uploading the software file.



Please visit our support site <u>https://support.elvaco.com/hc/en-us</u> to find the latest software releases. Make sure to read through the release notes carefully before installing new software.

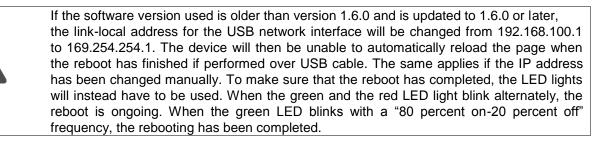
## 6.18.1 Perform a software update

To perform a software update:

- Go to **Device > Firmware update**.
- Click Upload new firmware file, select a software file (.tar) and click Upload.
- Click Continue.
- Click **Reboot now.** The reboot might take up to an hour to complete.



It is very important that the power is not cut during the update. Do not attempt to update the browser, the page will automatically reload once the reboot has completed.



Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska			
		File u	ploaded successfully	eboot now					
Firmware									
Firmware up	date								
Current firmwa	Current firmware version: 1.4.3								
Upload new firm	ware file <sup>®</sup>								

## 6.19 Administrate user accounts

## Purpose

Through the web interface, user accounts to log in on the web interface can be added, edited or deleted.

#### 6.19.1 Add a new user account

To add a new user account:

- Go to **Configuration > Users**.
- Click Add new user.
- Type a desired username and password. Use a strong password, consisting of at least 8 characters. Click **Save**.

elva	ICO					IY ACCOUNT SIGN OUT lostname: CMe3100-00160000
Dashboar	ds - Measurement series	Meters	Configuration <del>-</del>	Device -	Support links -	🔶 Svenska
lsers						
Add new u	ser					
- Choose	e a function - Execute				Search *	20
	e a function -				Search * First Previo	
			Language		First Previo	
Showing 1	1 to 2 of 2 entries		Language en		First Previo	bus 1 Next Last

## 6.19.2 Edit an existing user account

To edit an existing user account:

- Go to **Configuration > Users**.
- Click the edit (pen) symbol in the "Options" column of the account to be edited.
- Make desired changes to the username and password of the account. Click Save.

elva	eivacount sign out Hostname: CMe3100-0016000020									
Dashboard	ds - Measurement series	Meters Co	onfiguration <del>-</del>	Device -	Support links -	🔶 Svenska				
	a function - Execute to 2 of 2 entries				Search * First Pre	vious 1 Next Last				
	Username		Language		÷ C	ptions				
	admin		en							
	Test		en		ĩ	ī 🖌				
Showing 1	to 2 of 2 entries				First Pre	vious 1 Next Last				

## 6.19.3 Delete an existing user account

To delete an existing user account:

- Go to **Configuration > Users**.
- Click the delete (trashcan) symbol in the "Options" column of the account to be deleted.
- Click Yes.

elva	eivacount sign out Hostname: CMe3100-0016000020									
Dashboard	ls - Measurement series	Meters Co	onfiguration <del>-</del>	Device -	Support links -	🔶 Svenska				
Users	Users									
• Add new use	er									
	• Choose a function •     • Execute     Search *     > O       Showing 1 to 2 of 2 entries     • First     Previous     1     Next     Last									
	Username		Language		÷ C	Options				
	admin		en			·				
	Test		en		l					
Showing 1	to 2 of 2 entries				First Pre	vious 1 Next Last				

## 6.20 Add a new license

### Purpose

The CMe3100 is equipped with a flexible licensing scheme that allows its capabilities and feature set to be altered through the addition of license files. See section 4.4.1 for more information about the licensing scheme. A license file needs to be uploaded to the web interface before the new capabilities are implemented on the Metering Gateway.

## 6.20.1 Upload and install a license

To upload and install a license:

- Go to **Device > Licences & Add-ons.**
- Click Upload new licence file, select the licence file and click Upload.
- Go to Device > License & Add-ons > Add-ons.
- Find the Add-on that should be installed, and click **Install now**. You can uninstall previously installed add-ons by clicking **Uninstall now**.

evace MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383								
easurement seri	es Meters	Config	guration -	Device -	Support links -		🕂 Svensk	
ld-ons								
Licenses Add-ons								
tries					First	Previous 1	Next Last	
Version	Date	Туре	Installed	St	arted/Settings	Licensed	Delete	
1.6.0	2016-09-08	war	Yes Uninstall no		)	Yes	Û	
1.6.0	2016-09-08	service	Yes Uninstall no			Yes	Û	
1.6.0	2016-09-08	war	No Install now	No	)	Yes	Û	
	d-ons ile tries <u>Version</u> 1.6.0 1.6.0	Id-ons ile• tries Version Date 1.6.0 2016-09-08 1.6.0 2016-09-08	Id-ons       Id-ons         ileo       Id-ons         tries       Version       Date       Type         1.6.0       2016-09-08       war         1.6.0       2016-09-08       service	Id-ons ile• tries Version Date Type Installed 1.6.0 2016-09-08 war Yes Uninstall no 1.6.0 2016-09-08 service Yes Uninstall no	Id-ons ile <sup>®</sup> tries Version Date Type Installed St 1.6.0 2016-09-08 war Yes No Uninstall now Electronic Constant Nor 1.6.0 2016-09-08 Service Yes Yes Line Constant Nor Uninstall now Electronic Constant Nor Uninstall now Electronic Constant Nor	Id-ons ile <sup>®</sup> tries First Version Date Type Installed Started/Settings 1.6.0 2016-09-08 war Yes No Uninstall now Yes Elvaco-Modbus	easurement series Meters Configuration Device Support links- debedded on S tite® tries Version Date Type Installed Started/Settings Licensed 1.6.0 2016-09-08 war Yes No Yes 1.6.0 2016-09-08 service Yes Yes Yes Yes Yes	

## 6.21 Perform an advanced meter search

## Purpose

The M-Bus Metering Gateway has the capability of performing advanced meter searches using certain predefined criteria defining what meters should be searched for.

## 6.21.1 Customize the meter search

To customize the meter search:

- Go to Meters > Search for meters. Check the Change to advanced search mode box.
- Select the number of meters that will be installed and the baud rate that will be used by the Metering Gateway to communicate with the meters.
- Set the addressing mode of the meters the Metering Gateway will search for. A priority order may

also be set to determine what addressing mode will be used if the first choice should not work.

- Set the Interfaces to use to search for meters. Possible options include "integrated M-Bus master" (2-wire M-Bus), "TCP/IP" (Ethernet) or a combination of both. Click **Add new** to select an additional interface. Click **Save**.
- Click Start Search.

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-001600238:
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Meter list -	Search					
Search for m	eters					
-	vanced search mode search settings manually.					
Clear current Check to remove all	meter list I current meters before starting t	he search.				
Number of mete	ers					
Leave empty to add	all meters found.					
Baud rate						
2400	Ŧ					
Choose baud rate a	ccording to what is supported by	y the meters.				
Addressing mod	le					
Elvaco Wireless	M-Bus, S •					
Choose which addr	essing modes and in what order	they will be use	ed when searching for met	ers.		
Interfaces	to search					
Showing 1 to	1 of 1 entries				First Previo	us 1 Next Last
🗆 Interfac	ie in the second s				Port	Options
Integrat	ed M-Bus Master					N/A
Showing 1 to	1 of 1 entries				First Previo	us 1 Next Last
Add New						
Start Search						

## 6.22 Perform manual meter readouts

#### Purpose

The manual meter readout is most often used in troubleshooting purpose, to ensure that the readout process works the way it is supposed to. It will trigger a readout of one or all meters without having to wait for the scheduled readout cycle. When the settings of an individual meter have been edited, for example through a change of MOID, a manual readout of the meter has to be performed before the change is fully implemented. Manual meter readouts can be performed for all installed meters or for one individual meter.

### 6.22.1 Perform a manual readout of all installed meters

To perform a manual readout of all installed meters:

- Go to the Installation Panel
- Click Read all & store.
- Go to the Meter List, just below. Make sure that the readout succeeded by clicking the update symbol and check the last readout time along with the status of the readout.

elvaco	·					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🗕 Svenska
Installation	n panel					
Basic set	up		* •	leter list		
Installation	overview	S	itatus /	ctions		
Network set	ttings		0	dd new meter		
Internet acc	tess		<b>O</b>	nstall		
Date & Time	e			earch for meters		
Meters				Reinstall		
				Read all & store		
				xport commission	n report	
Show passive	meters					
Showing 1 to 1 of	f 1 entries				First Previo	us 1 Next Last 😥
🔲 Type* 🛊	Secondary address* 🔺 M	10ID*	Manufact	urer* 🍦 Statu	Last readout	Options

## 6.22.2 Perform a manual readout of an individual meter

To perform a manual readout of an individual meter:

• Go to Meters > Meter List.

- Select the desired meter and click the readout (floppy) symbol.
- Click the update symbol and make sure that the latest readout was successful by checking the "Last readout" and the "Status" column.

	ace	-					Hostname: CMe3100-0016000
ashb	oards -	Measurement series	Meters Co	nfiguration - D	evice -	Support links -	🕂 Svensk
leter li	ist Rea	adout schedule Encry	ption keys M-Bus s	ettings			
dd ne	ew meter	🛚 Install 🔎 Search for m	eters 🔊 Reinstall 🛢	Read all & store 🏾 🕤	Export		
- Cho	oose a func	tion - • Execu	te 🗆 Show passiv	e meters		Search *	ନ୍ତ
howi	ng 1 to 15 o	of 15 entries				First Pre	vious 1 Next Last
	Type* 👙	Secondary address* 🔺	MOID*	Manufacturer*	Status	Last readout	Options
	4	00233239	ABB-elektricitet	ABB	0	2016-09-23 09:00:0	) 🝵 🖍 🖬
	L	23000180		ELV	0	2016-09-23 09:00:0	) 🝵 🖍 🖬
	?	62000682		unknown	8	2016-09-23 09:00:00	6 🝵 🖍 🖬
	<b>.</b>	62001112		ELV	0	2016-09-23 09:00:0	) 🝵 🖍 🖬
	Į	63000012	Serverrummets	ELV	0	2016-09-23 09:00:0	D 🔋 🖍 🖬
	Į	68000084	Lager	ELV		2016-09-23 09:00:0	) 🕯 🖉
	Į	68000085	Utveckling Mjukvara	ELV	0	2016-09-23 09:00:0	D 🔋 🖉 🖻
	L	68000086	Drift	ELV	0	2016-09-23 09:00:0	D 🔋 🖉 🖻
	Į	68000087	Teknisk Support	ELV	0	2016-09-23 09:00:0	D 🔋 🖉 🖻
	L	68000091	Fikarum	ELV	0	2016-09-23 09:00:0	D 💼 🖍 🖽
	L	68000093	Säljare	ELV	0	2016-09-23 09:00:0	D 💼 🖍 🖽
	Į	68000102	VD	ELV	<b></b>	2016-09-23 09:00:0	D 💼 🖍 🖽
	Į	68000103	Information	ELV	0	2016-09-23 09:00:0	D 🔋 🖍 🖬
	Į	68000105	Konferensrum	ELV	0	2016-09-23 09:00:0	D 🝵 🖍 🖻
	Į	68002556	Utveckling Hårdvara	ELV	0	2016-09-23 09:00:0	D 🝵 🖍 🖻

## 6.23 Activate the Continuous Readout Mode

## Purpose

The Metering Gateway offers the possibility of performing meter readouts continuously. The device will then constantly collect meter values, which can for example be used by a control system to regulate a heating system. Note that meter values collected through the Continuous Readout Mode will only be held in the internal memory of the M-Bus Metering Gateway (not stored in the database) and can *only* be accessed using integration protocols such as REST, Modbus, JSON or DLMS. They will therefore not be included in Push reports. To use Continuous Readout Mode in combination with Push Reports, the meter readout schedule still needs to be set.

## 6.23.1 Enable continuous meter readouts

To enable the Continuous Readout mode:



- Go to Meters > Readout schedule.
- Click on Activate Continuous readout mode.
- Click Save.

elvaco				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016002383					
Dashboards - Measurement series	Meters Configuration	Device -	Support links -	🗕 Svenska					
Meter list Readout schedule Encrypt	tion keys M-Bus settings								
Meter readout schedule	Meter readout schedule								
Activate scheduled meter readout	its								
Every 5th minute									
Choose how often the service shall run.									
Activate Continuous readout mode Activate to continuously read the meter bus, readouts are still stored according to the readout schedule.									
Save									

## 6.24 Enable security features

## Purpose

The Metering Gateway supports HTTPS and FTPS, where a Secure Socket Layer (SSL) is used to encrypt data between the device and the HTTP/FTP server. To enable HTTPS and FTPS, at least one SSL certificate must be uploaded to the web interface.



It is important that your server certificate works with your web browser. Otherwise, you might not be able to log in on the device and must perform a factory reset.

## 6.24.1 Upload a certificate for device authentication

When enabling HTTPS/FTPS, an SSL certificate, either self-signed (default option) or executed by a certificate authority (CA), is uploaded in the device KeyStore. The KeyStore SSL certificate will be used by the Metering Gateway in two cases:

- To authenticate itself as a trusted server when a user accesses the web interface via HTTPS or FTPS.
- To authenticate itself as a trusted client to a server before delivering a HTTPS/FTPS Push Report.

If the SSL certificate has been executed by a CA, the Metering Gateway will automatically be trusted by the server/client. However, when a self-signed certificate is used, it always needs to be added to the server's/client's list of trusted certificates before a connection can be established.

To upload an SSL certificate in the KeyStore:

- Go to Configuration > Services > Web server.
- Click **Install a new KeyStore (.jks)**. Attach the CA or the self-signed certificate (as a ".jks" file) as well as the private key password and the KeyStore password, which were both issued along



with the certificate.

- Click Install.
- Click Save.

Device KeyStore		Custom SLL server certificate		
Installed certificates are used for device authent as an approved client to a server receiving HTTP.		Välj fil Ingen fil har valts	PS/FTPS or to authenticate this device ntains a self-signed certificate.	
Install a new KeyStore (.jks	s)	SLL server certificate (.jks file).		
Certificate details		Private key password		
Alias	selfsigned			
Owner	CN=cme3100,0	Enter the password that was used to encrypt the private key.	,C=Unknown	
Issuer	CN=cme3100,0	KeyStore password	,C=Unknown	
Serial number number	1489750166			
Valid from	2017-03-17	Enter the password that was used to create the KeyStore.		
Valid until	2027-01-24	Install Cancel		
Checksum	b19250a187460			

## 6.24.2 Enable HTTPS to access web interface

When enabling HTTPS for accessing the web interface, connecting clients will be authenticated by the Metering Gateway by using certificates uploaded in the device TrustStore.

To add a certificate of a trusted client:

- Go to **Configuration > Services > Web server**.
- Change the Connection type from "HTTP" to "HTTPS".
- Check the "Enable client authentication" box.
- Click Add client certificate. Attach the client certificate (".cer" file) and a certificate alias as well as the TrustStore password, which were both issued along with the certificate.
- Click Install.
- Click Save.



Settings to configure how the user interface is a (control) which clients that can access the device	AUGERINGALE	client certificates to authenticate
Connection type	Select file to import	
HTTPS •	Välj fil Ingen fil har valts	
Choose unencrypted or encrypted connection type. Plea https://192.168.0.1:443.	Certificate file (.cer).	djusted accordingly, for example
	Certificate alias	
TCP port number for secure connection		
443	Enter the alias which will be used to identify the	
Connection port for client.	certificate.	
Enable client authentication	TrustStore password	
Add client certificate (.cer)	Enter TrustStore password to unlock the certificate archive (minimum 6 characters). The password is set the	
Certificate alias	first time a certificate is added.	Options
No data available in table	Install Cancel	

## 6.24.3 Authenticate receiving servers of HTTPS/FTPS Push Reports

CMe3100 supports transmission of Push Reports over HTTPS/FTPS. Server certificates uploaded in the TrustStore will then be used to authenticate a receiving server before sending a Push Report. By uploading a complete TrustStore, a list of trusted server certificates (for example Java standard TrustStore) can be uploaded and used by the device.

This section applies to the general Push Report settings. That means that settings configured for an individual Push Report will override changes made in this section.

To add a server certificate or a complete TrustStore:

- To Go to **Configuration > Services > Web server**.
- Click on Add a new server TrustStore to upload a list of trusted server certificates or click on Add server certificate to upload an individual certificate.
- Add current and new TrustStore password if uploading a new TrustStore. Add certificate alias and TrustStore password if uploading a separate certificate. Click **Install**.
- Click Save.



TrustStore for outgoing connections Installed certificates are used to authenticative key to a specific server. Use "Install a new se default TrustStore), which contains a list of The default TrustStore for outgoing connect or certificate. Add server certificate (.cer) Install a new server TrustStore (.jks)	ate reo erver f selec	Add certificate Select file to import Välj fil Ingen fil har valts Certificate file (.cer). Certificate alias	to a CA (Certificate Authority) or a public xample with "cacerts.jks" (the Java not work without adding a TrustStore
Certificate alias	Check	Enter the alias which will be used to identify the certificate. TrustStore password	Options
vice needs to be restarted to apply changes.		Enter TrustStore password to unlock the certificate archive (minimum 6 characters). The password is set the first time a certificate is added.	

## 6.24.4 Enable HTTPS/FTPS for individual Push Reports

HTTPS/FTPS can be enabled for all Push Reports, without changing the default Push Report HTTP/FTP server of the device.

To enable HTTPS/FTPS for an individual Push Report:

- Go to Configuration > Push Reports. Select the Push Report you want to configure.
- Set **Report type** to "FTP" or "HTTP".
  - For HTTP Push Reports: Uncheck "Send report to default HTTP server" and type in the URI of the HTTPS server. If applicable, set Authentication mode to "Basic", and type the credentials to log onto the server.
  - For FTP Push Reports: Uncheck "Send report to default FTP server" and type the FTP server information you want to use. Select whether to use Implicit FTPS or Explicit FTPS. If applicable, type the credentials to log onto the server.

## 6.25 Configure M-Bus settings

#### Purpose

The web interface enables configuring of M-Bus settings which will be applied to all meters connected to the Metering Gateway over M-Bus. This includes baud rate, addressing mode and the interface used to search for meters.

The Metering Gateway also supports configuring of more advanced M-Bus settings, including timeout and retry settings for various M-Bus events as well as multi telegram settings.

#### 6.25.1 Set the way meters are searched for

To set the way meters are searched for:

- Go to Meters > M-Bus settings.
- Set the Baud rate that will be used in the meter search. Make sure that the baud rate set for the M-Bus is supported by all the meters that the Metering Gateway is going to communicate with.

- Set the Addressing mode that will be used in the meter search. A priority order can also be set, determining what addressing mode to use if the first choice should not work.
- Set the Interfaces to search for meters. If using "Integrated M-Bus", meters will be accessed over the M-Bus interface. By instead selecting "TCP/IP", meters will be accessed over the Ethernet network. Click **Add New**, select TCP/IP or M-Bus and click **Save** to add an additional interface.
- Click Save.

elva	0					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards	- Measurement	series Meters	Configuration -	Device -	Support links -	🔶 Svenska
Meter list	Readout schedule	Encryption keys	M-Bus settings			
	arch settings					
Baud rate	•					
	rate according to what is s	unnorted by the meters				
Addressing		upported by the meters.				
Secondary						
		what order they will be u	ised when searching for met	ers.		
	s to search		0			
	o 1 of 1 entries				First Prev	rious 1 Next Last
Interface				Port		Options
Integrated	M-Bus Master					N/A
Showing 1 t	o 1 of 1 entries				First Prev	rious 1 Next Last
Add New						
Show ad	vanced settings					
Interface	es to search					
	to 2 of 2 entries				First Pre	vious 1 Next Last
Interface				Port		Options
Integrated	l M-Bus Master					N/A
10.40.1.11	.8			10001		Û
Showing 1	to 2 of 2 entries				First Pre	vious 1 Next Last
Interface						
Integrate	d M-Bus Master					
Save Ca	ncel					

## 6.25.2 Configure M-Bus time and retry settings

The timeout and retry settings for various M-Bus events are configurable through the web interface of the

Metering Gateway. Table 7 provides a full description of possible customization options.

To configure the M-Bus time and retry settings:

- Go to Meters > M-Bus settings and check the Show advanced settings box.
- Set the Response timeout, Readout retries, Selection retries, Initialization idle time, Collision idle time and Request idle time.
- Click Save.

Field	Explanation
Response timeout	The Response timeout sets the number of milliseconds the Metering Gateway will wait for a response after making a request over the M-Bus.
Readout retries	The Readout retries set how many times a meter readout will be attempted before marked as a failed attempt.
Selection retries	The Selection retries set how many times the addressing of a meter will be attempted before marked as a failed attempt.
Initialization idle time	The Initialization time sets the number of milliseconds the Metering Gateway will wait after sending an initialization request over the M-Bus.
Collision idle time	The Collision idle time sets the number of milliseconds before a new request over the M-Bus is attempted after a collision has been detected.
Request idle time	The Request idle time sets the number of milliseconds of waiting time between making two requests over the M-Bus.

Table 7: M-Bus time and retry settings

Response timeout   1000   Number of milliseconds to wait for response.   Readout retries   1   1   Number of retries when performing a meter readout.   Selection retries   1   1   Number of retries when selecting a meter using secondary addressing.   nitialization idle time   10000   Number of milliseconds to wait after sending initialize.   Collision idle time   5000   Number of milliseconds to wait after a collision is detected.   Request idle time   2000	1000 Number of milliseconds to wait for response. Readout retries 1 Number of retries when performing a meter readout. Selection retries
Aumber of milliseconds to wait for response. Readout retries  1  1  Aumber of retries when performing a meter readout. Selection retries  1  Aumber of retries when selecting a meter using secondary addressing. nitialization idle time  10000 Aumber of milliseconds to wait after sending initialize. Collision idle time  5000 Aumber of milliseconds to wait after a collision is detected. Request idle time 2000	Aumber of milliseconds to wait for response. Readout retries 1 Aumber of retries when performing a meter readout. Selection retries
Readout retries   1   1   tumber of retries when performing a meter readout.   Selection retries   1   1   tumber of retries when selecting a meter using secondary addressing.   nitialization idle time   10000   tumber of milliseconds to wait after sending initialize.   Collision idle time   5000   tumber of milliseconds to wait after a collision is detected.   Request idle time   2000	Readout retries
1         Aumber of retries when performing a meter readout.         Selection retries         1         Aumber of retries when selecting a meter using secondary addressing.         nitialization idle time         10000         Aumber of milliseconds to wait after sending initialize.         Collision idle time         5000         Aumber of milliseconds to wait after a collision is detected.         Request idle time         2000	1 Number of retries when performing a meter readout. Selection retries
Aumber of retries when performing a meter readout. Selection retries 1 1 Unuber of retries when selecting a meter using secondary addressing. nitialization idle time 10000 Unuber of milliseconds to wait after sending initialize. Collision idle time 5000 Unuber of milliseconds to wait after a collision is detected. Request idle time 2000	Number of retries when performing a meter readout. Selection retries
Selection retries          1         1         1         1         nitialization idle time         10000         1umber of milliseconds to wait after sending initialize.         Collision idle time         5000         Pumber of milliseconds to wait after a collision is detected.         Request idle time         2000	Selection retries
1         Number of retries when selecting a meter using secondary addressing.         nitialization idle time         10000         Number of milliseconds to wait after sending initialize.         Collision idle time         5000         Number of milliseconds to wait after a collision is detected.         Request idle time         2000	
Aumber of retries when selecting a meter using secondary addressing.  nitialization idle time 10000 Aumber of milliseconds to wait after sending initialize. Collision idle time 5000 Aumber of milliseconds to wait after a collision is detected. Request idle time 2000	1
nitialization idle time 10000 Aumber of milliseconds to wait after sending initialize. Collision idle time 5000 Aumber of milliseconds to wait after a collision is detected. Request idle time 2000	
10000 Aumber of milliseconds to wait after sending initialize. Collision idle time 5000 Aumber of milliseconds to wait after a collision is detected. Request idle time 2000	Number of retries when selecting a meter using secondary addressing.
Aumber of milliseconds to wait after sending initialize. Collision idle time 5000 Aumber of milliseconds to wait after a collision is detected. Request idle time 2000	nitialization idle time
Collision idle time 5000 Number of milliseconds to wait after a collision is detected. Request idle time 2000	10000
5000 Number of milliseconds to wait after a collision is detected. Request idle time 2000	Number of milliseconds to wait after sending initialize.
Number of milliseconds to wait after a collision is detected. Request idle time 2000	Collision idle time
Request idle time 2000	5000
2000	Number of milliseconds to wait after a collision is detected.
	Request idle time
Jumber of milliseconds to wait between two requests	2000
	Number of milliseconds to wait between two requests.

## 6.25.3 Configure M-Bus multi telegram settings

The M-Bus multi telegram settings determine the maximum amount of telegrams received by the Metering Gateway for each meter readout. Disabling Multi telegrams means that only the first telegram

will be read for each meter readout, regardless of if the meter is trying to send additional ones. The maximum amount of telegrams per readout is configured by setting the multi telegram read limit.

To configure M-Bus multi telegram settings:

- Go to Meters > M-Bus settings.
- To enable multi telegrams, select "Auto" in the Multi telegram tab.
- Set the Multi telegram read limit to configure the maximum amount of telegrams sent per readout.
- Check the Show advanced settings box to configure time and retry settings for the multi telegrams. In Table 7 of section 6.25.2 (<u>Configure M-Bus time and retry settings</u>) an explanation of each field is presented.

Multi telegram	
Off	Y
Choose auto to enable suppor	t for multi telegram readouts.
Multi telegram read limi	
0	
Enter the maximum number o	i telegrams to read, set to 0 for automatic detection.
<ul> <li>Show advanced setting</li> </ul>	
Response timeout	
1500	
Number of milliseconds to wai	t for response.
Readout retries	
3	
3 Number of retries when perfor	ming a meter readout.
Number of retries when perfor	ming a meter readout.
Number of retries when perfor	ming a meter readout.
Number of retries when perfor Selection retries	ming a meter readout. ng a meter using secondary addressing.
Number of retries when perfor Selection retries 2 Number of retries when select	
Number of retries when perfor Selection retries 2 Number of retries when select	
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000	ng a meter using secondary addressing.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai	ng a meter using secondary addressing.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai	ng a meter using secondary addressing.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai Collision idle time 3500	ng a meter using secondary addressing. t after sending initialize.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai 3500 Number of milliseconds to wai	ng a meter using secondary addressing. t after sending initialize.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai 3500 Number of milliseconds to wai	ng a meter using secondary addressing. t after sending initialize.
Number of retries when perfor Selection retries 2 Number of retries when select Initialization idle time 10000 Number of milliseconds to wai 3500 Number of milliseconds to wai	ng a meter using secondary addressing. t after sending initialize. t after a collision is detected.

#### 6.25.4 Configure M-Bus settings of an individual meter

. To configure M-Bus settings of an individual meter:

• Go to **Meters** and click the secondary address of a meter.



- Go to **Settings**.
- Set the Baud rate that will be used by the Metering Gateway to communicate with the meter.
- Set the Addressing mode that will be used by the Metering Gateway to access the meter. If using the wireless addressing mode, you may select through which Wireless M-Bus Receiver the meter should be accessed. However, the meter will by default automatically be assigned to the Wireless Receiver which has managed to establish the best connection.
- Set the state of the multi telegram. If enabled, set the Multi telegram read limit. It will determine the maximum amount of telegrams read by the Metering Gateway per readout.
- Click Save.

Addressing mode	
Elvaco Wireless M-Bus	×
Choose which addressing mode to	o use when communicating with the meter.
Wireless receiver address	
62000997	
Enter secondary address to wirele	ss receiver.
Optional receivers	
62000997, -96dBm (2016	T
Baud rate	
2400	Y
Choose baud rate according to wh	at is supported by the meters.
Multi telegram	
Off	<b>v</b>
Choose auto to enable support for	multi telegram readouts.
Multi telegram read limit	
0	
Enter the maximum number of tel	egrams to read, set to 0 for automatic detection.

## 6.26 Access the M-Bus from a master device

## Purpose

The Transparent M-Bus service enables a master device, other than the Metering Gateway, to communicate directly with the meters on the M-Bus. The Transparent M-Bus service might for example be used if direct communication with a meter is necessary for debug or meter software update purposes. In such cases, the service allows for example a Head-end system to communicate directly with the meter,



completely bypassing the Metering Gateway. A maximum of two different Transparent M-Bus TCP/IP services with different baud rates can be enabled at the same time



It is not recommended to enable the Transparent M-Bus service if other services that access the M-Bus, e.g. Push Reports, are active in the Metering Gateway. This might otherwise lead to that M-Bus activity due to one service interrupts the other service.

#### 6.26.1 Enable a master device to communicate directly on the M-Bus

To enable a master device to communicate directly on the M-Bus:

- Go to **Configuration > Services**. In the list, the Transparent M-Bus services are easily enabled or disabled. Select one of the Transparent M-Bus services by clicking on it.
- Set the Baud rate and make sure it is supported by the M-Bus meters.
- Select a Packing mode. By using "M-Bus", all data transmitted over Transparent M-Bus is controlled by the Metering Gateway to assure it follows the M-Bus standard. By setting the packing interval to "Transparent", the data will be transmitted without performing any such control.
- Set the Packing interval to determine number of milliseconds that need to pass before data received from the master device is transmitted on the M-Bus.
- Set the Idle timeout to determine the number of seconds of inactivity that needs to pass before a connection with a master device is closed. Make sure that the time is set to reflect the connection scheme of the master device.
- Click Save.

nterfaces	Auto Configuration	Push Reports	Job settings		
Service				Enabled	
Webserver	(User interface & HTTPS/	(FTPS settings)		(755)	
Web server is en	abled on TCP/IP port 80				
Console (Co	ommand line user interfa	ace)			
Console is enabl	ed on TCP/IP port 9999				
Transparen	t M-Bus over TCP/IP 1			NO	
Service is disable	ed				
Transparen	t M-Bus over TCP/IP 2			NO	
Service is disable	ed				
Virtual M-Bi	us over TCP/IP			NO	
Service is disable	ed				
M-Bus slave	e port 1			NO	
Service is disable	ed				
M-Bus slave	e port 2				
Service is disable	ed				
SNMP					
Service is disable	d				



elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO		
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska		
ervices - T	Fransparent M	-Bus ov	ver TCP/IP 1					
Service inform	mation							
This service enables M-Bus communication to be tunneled over TCP/IP in a transparent way. A connecting client may communicate in the same way as if it would have been connected directly to the M-Bus network. Two services can be enabled simultaneously with different configuration. However, only one client can use one of the services at a particular time.								
TCP port numbe	r							
Baud rate 2400 Choose baud rate ac Packing mode	ccording to what is supported by	the meters.						
Transparent	•							
Choose M-Bus for M	-Bus communication, transpare	nt mode will dis	able M-Bus packing.					
Packing interval	L							
0								
Number of milliseco	nds of inactivity on the M-Bus tl	nat the service v	vaits before sending data	eceived by the ir	ntegrated M-Bus master.			
60								
Number of seconds	to wait before closing an inactiv	e connection.						
Save Cancel								

## 6.27 Access meter readings from a master device

#### Purpose

The Metering Gateway supports Virtual M-Bus communication over TCP/IP, which means that another master device can retrieve data directly from the database of the CMe3100. When using the Virtual M-Bus mode, the master device will never communicate directly on the M-Bus, but only with the Metering Gateway and its meter value database.

#### 6.27.1 Allow a master device to collect meter values from the database

To allow a master device to collect meter values from the database of the Metering Gateway:

- Go to Configuration > Services.
- Enable the Virtual M-Bus service. Click on it to configure the Virtual M-Bus settings.
- Set the Value expiration date to determine how long a stored meter value will be valid if requested over Virtual M-Bus. If a meter value has been stored in the database for a longer time than the value expiration time, a requesting master device will receive a "not valid" notification if the meter value should be requested.
- Set the Idle timeout to determine how many seconds a communication link with a master device may be inactive before it is closed. The default setting allows for ample time between operations



without the need of reconnecting and also assures that a connection that is lost, automatically closes after the timeout period. It will work well in a majority of cases. However, the Idle timeout needs to be set to reflect the connection scheme of the master device.

• Click Save.

nterfaces	Auto Configuration	Push Reports	Job settings		
Service				Enabled	
Webserver (	(User interface & HTTPS/	FTPS settings)		0755 C	
Web server is en	abled on TCP/IP port 80				
Console (Co	ommand line user interfa	ice)			
Console is enable	ed on TCP/IP port 9999				
Transparen	t M-Bus over TCP/IP 1			NO	
Service is disable	ed				
Transparen	t M-Bus over TCP/IP 2			NO	
Service is disable	ed				
Virtual M-Bu	us over TCP/IP			MO	
Service is disable	ed				
M-Bus slave	e port 1			NO	
Service is disable	ed				
M-Bus slave	e port 2			MO	
Service is disable	ed				
SNMP				NO	
Service is disable					

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Services - '	Virtual M-Bus c	ver TCI	P/IP			
Service infor	mation					
	ws a client to communicate rate any communication on		-			
🗷 Enable virtua	l M-Bus over TCP/IP					
TCP port numb	er					
2401						
Connection port fo	r client.					
Value expiration	n time					
3600						
Number of seconds	a meter value is valid. A read rec	uest for a mete	r that has a stored value o	lder than the exp	iration time will not return	a response.
Idle timeout						
60						
Number of seconds	to wait before closing an inactiv	e connection.				
Save Cancel						

# 6.28 Use M-Bus slave ports for Virtual or Transparent M-Bus

#### Purpose

The Metering Gateway has two slave ports available, which can be used by a master device to access the Virtual or Transparent M-Bus services. Each port can be individually configured by setting the baud rate, packing interval and idle timeout settings.

#### 6.28.1 Activate and configure the settings of the M-Bus slave ports

To activate and configure the settings of the M-Bus slave port:

- Go to **Configuration > Services**.
- Enable the desired slave port. Click on it to configure its settings. Select whether the master device should use the Transparent M-Bus or Virtual M-Bus service when connecting to the slave ports.
- Set the Baud rate to determine the rate of communication between the Metering Gateway and its master device.
- Set the Packing interval to determine how many milliseconds that will have to pass before data received by the Metering Gateway will be sent to the master device.
- Set the Idle timeout to determine the number of seconds of inactivity that needs to pass before a connection with the master device is closed. Make sure that the time is set to reflect the connection scheme of the master device.
- Click Save.



terfaces A	uto Configuration	Push Reports	Job settings		
Service				Enabled	
	interface & UTTDC	(ETDS softings)		Enabled	
Web server is enabled o	r interface & HTTPS	(FIFS Setungs)			
Console (Comm	and line user interfa	ace)		1125	
Console is enabled on T	CP/IP port 9999				
	Bus over TCP/IP 1			NO	
Service is disabled	Bus over TCP/IP 2			710	
Service is disabled					
Virtual M-Bus ov	er TCP/IP			NO	
Service is disabled M-Bus slave port	t 1				
Service is disabled					
M-Bus slave port	t 2			NO	
Somice is disabled					
Service is disabled					
elvac	0				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEM
	<b>O</b> Measuremen	it series Mete	ers Configuration -	Device - Support lin	Hostname: CMe3100-0016000148-DEM
Dashboards ·	Measuremen			Device - Support lin	Hostname: CMe3100-0016000148-DEM
Dashboards -			-	Device - Support lin	Hostname: CMe3100-0016000148-DEM
Dashboards - ervices -	Measuremen • M-Bus sla		-	Device - Support lin	Hostname: CMe3100-0016000148-DEM
Dashboards -	Measuremen • M-Bus sla		-	Device - Support lin	Hostname: CMe3100-0016000148-DEM
Dashboards - ervices - Service info	Measuremen • M-Bus sla prmation ables either a Virtu	ave port 1 Jal M-Bus or a Tran			Hostname: CMe3100-0016000148-DEM
Dashboards - ervices - Service info	Measuremen • M-Bus sta	ave port 1 Jal M-Bus or a Tran			Hostname: CMe3100-0016000148-DEM
Dashboards - ervices - Service info	Measuremen - M-BUS Sla cormation ables either a Virtu eir counterparts of	ave port 1 Jal M-Bus or a Tran			Hostname: CMe3100-0016000148-DEM
Dashboards - CrVICCS - Service info This service en are equal to th	Measuremen - M-BUS Sla cormation ables either a Virtueir counterparts of us slave port 1	ave port 1 Jal M-Bus or a Tran			Hostname: CMe3100-0016000148-DEM
Service info This service en are equal to th Enable M-B	Measuremen M-BUS SIC ormation tables either a Virtu eir counterparts or us slave port 1	ave port 1 Jal M-Bus or a Tran			Hostname: CMe3100-0016000148-DEM
Dashboards - CrVICCS - Service info This service en are equal to th Enable M-B Service mode Transparent I	Measuremen M-BUS SLO cormation ables either a Virtueir counterparts of us slave port 1 M-Bus	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - Cervice info This service en are equal to th Enable M-B Service mode Transparent I Choose what service	Measuremen M-BUS SIC ormation tables either a Virtu eir counterparts or us slave port 1	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - CrVICCS - Service info This service en are equal to th Enable M-B Service mode Transparent I	Measuremen M-BUS SLO cormation ables either a Virtueir counterparts of us slave port 1 M-Bus	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - CrViCCS - Service info This service en are equal to th Enable M-B Service mode Transparent I Choose what serv Baud rate 2400	Measuremen M-BUS SIA Ormation Hables either a Virtu eir counterparts of us slave port 1 M-Bus vice mode to run on th	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - CrViCCS - Service info This service en are equal to th Choose what service Transparent I Choose what service Baud rate 2400 Local baud rate o	Measuremen M-BUS SIG cormation ables either a Virtueir counterparts of us slave port 1 M-Bus vice mode to run on the vice mode to run on the vice mode to run on the	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - CrVICES - Service info This service en are equal to th Image: Enable M-B Service mode Transparent I Choose what service Baud rate 2400 Local baud rate of Packing intervi	Measuremen M-BUS SIG cormation ables either a Virtueir counterparts of us slave port 1 M-Bus vice mode to run on the vice mode to run on the vice mode to run on the	ave port 1 ual M-Bus or a Tran ver TCP/IP.			Hostname: CMe3100-0016000148-DEM
Dashboards - CrViCCS - Service info This service en are equal to th Choose what service Transparent I Choose what service Baud rate 2400 Local baud rate o Packing intervice	Measuremen Measuremen M-BUS SIG mation Mables either a Virtu eir counterparts of us slave port 1 M-Bus vice mode to run on th f the port. val	ave port 1 Jual M-Bus or a Tran ver TCP/IP.	isparent M-Bus service to	be accessed over the physical M	Hostname: CMe3100-0016000148-DEM
Dashboards - CrVICES - Service info This service en are equal to th Enable M-B Service mode Transparent I Choose what service Baud rate 2400 Local baud rate of Packing intervice Number of millise	Measuremen Measuremen M-BUS SIG mation Mables either a Virtu eir counterparts of us slave port 1 M-Bus vice mode to run on th f the port. val	ave port 1 Jual M-Bus or a Tran ver TCP/IP.		be accessed over the physical M	Hostname: CMe3100-0016000148-DEM
Dashboards - CrViCCS - Service info This service en are equal to th Choose what service Transparent I Choose what service Baud rate 2400 Local baud rate o Packing intervice	Measuremen Measuremen M-BUS SIG mation Mables either a Virtu eir counterparts of us slave port 1 M-Bus vice mode to run on th f the port. val	ave port 1 Jual M-Bus or a Tran ver TCP/IP.	isparent M-Bus service to	be accessed over the physical M	Hostname: CMe3100-0016000148-DEM

## 6.29 Allow a master device to perform readouts over Modbus

#### Purpose

The Metering Gateway supports meter readouts by master devices over the Modbus protocol, which might for example be desired in a Digital Control System. The Modbus readout is performed by TCP/IP (Ethernet network).

#### 6.29.1 Enable meter readouts over Modbus

To enable meter readouts over Modbus:

- Go to **Configuration > Services**.
- Enable the Modbus service in the list. Click on it to enter the settings.
- Go to **Settings**. Set the Number of simultaneous connections that should be allowed (i.e. the number of requesting clients in the system).
- Set the Default data type and the Default constant to handle decimal values. Make sure they correspond with the ones used by the master device.
- Select if the Metering Gateway should respond to invalid Modbus addresses.
- Click Save.

elvaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016003182
Dashboards - M	leasurement series	Meters	Configuration -	Device -	Support links -	井 Svenska
Services						
Interfaces Auto Co	onfiguration Push R	eports Jo	ob settings			
Service				E	nabled	
	face & HTTPS settings)					
Web server is enabled on TCP/IF Console (Command li Console is enabled on TCP/IP p	ine user interface)			(		
Transparent M-Bus ov					NO	
Service is disabled Transparent M-Bus ov	ver TCP/IP 2				NO	
Service is disabled	P/IP			(		
Virtual M-Bus is enabled over TO	CP/IP port 2401			6	NO	
Service is disabled					_	
M-Bus slave port 2 Service is disabled					NO	
SNMP				(	NO	
Service is disabled						
DLMS						
Service is running on port 4059						
Modbus						
Service is running on port 502						



Overview Settings	End-user license agreement
Modbus settings	
Activate Modbus	
502	
connection port for client.	
Simultaneous connect	lane
2	
noose how many simuitan	eous connections that should be allowed.
1	
Respond on invalid a	iddress ven if a Modbus address is incorrect.
Default data type	ien ir a Modous address is incorrect.
Two byte unsigned int	egei +
hoose what data type that	should be default.
Default constant	
100,0	
actor that all returned valu	es gets multiplied with to allow handling of decimal values using integers.

## 6.30 Monitor metering status using SNMP

CMe3100 supports SNMP v2c, a standardized protocol used for monitoring of devices on a TCP/IP network. By activating the SNMP service, the Metering Gateway will aggregate the result of the last meter readout and the last round of Push Reports, and make it available for an SNMP manager to poll. There are three available status codes used to describe the status of meter readouts and Push Reports. Table 8 describes each one.

Status	Mode	Description
1	OK	The last meter readout and the last round of Push Reports were both successful.
2	WARNING	The last meter readout completed with errors for one or several (but not all) meters <u>or</u> the last round of Push Reports completed with errors for one or several (but not all) reports.
3	ERROR	The last meter readout was unsuccessful for all meters <u>or</u> the last round of Push Reports was unsuccessful for all reports.

Table 8: Aggregated status of meter readouts and Push Reports

CMe3100 uses a MIB-file, which can be downloaded from the web interface, to structure lists that will present the SNMP manager with the status of the last meter readout and the last round of Push Reports. The following lists are available for the SNMP manager software to access:

• A Status Report, which presents the aggregated status of the last meter readout and the last round of Push Reports. Table 8 describes the meaning of each status code.



- A Meter Status List, which presents the last readout status for each individual meter. If the last meter readout succeeded, the status code will be "1". If it failed, the status code will be "3". Status code "2" indicates that CMe3100 was unable to decrypt the last message from that specific meter or that the meter has never been read.
- A Report Status List, which presents the last status of each individual Push Report. If the last Push Report succeeded, the status code will be "1". If it failed, the status code will be "3".

CMe3100 also supports SNMP traps, which are asynchronous notifications sent to all configured recipients each time the aggregated status of the meter readout <u>or</u> the Push Reports changes. For example, if one of the activated Push Report suddenly fails (and the aggregated status changes from "1" to "2"), an SNMP trap will be triggered, and all recipients will be notified.



The SNMP trap message only informs that the aggregated status has changed. Information about the meters or Push Reports that have caused the change of status can be accessed by using the Meter Status List and the Report Status List.

## 6.30.1 Enable and configure the SNMP service

To enable and configure the SNMP service:

- Go to **Configuration > Services > Settings** and activate SNMP in the list. Click on the service to enter its settings.
- Set the TCP port number for the SNMP manager to connect to.
- Set the Community string. The SNMP manager and the device needs to use the same community string in order to communicate with each other.

nterfaces	Auto Configuration	Push Reports	Job settings		
Service				Enabled	
Webserver	(User interface & HTTPS/	/FTPS settings)		VES C	
Web server is en	abled on TCP/IP port 80				
Console (Co	ommand line user interfa	ace)		TES CON	
Console is enabl	led on TCP/IP port 9999				
Transparen	t M-Bus over TCP/IP 1			MO	
Service is disabl	ed				
Transparen	t M-Bus over TCP/IP 2			MO	
Service is disabl	ed				
Virtual M-B	us over TCP/IP			() MO	
Service is disabl	ed				
M-Bus slave	e port 1			MO	
Service is disabl	ed				
M-Bus slave	e port 2			MO	
Service is disabl	ed				
SNMP					

elvace	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016001585
Dashboards -	Measurement series	Meters	Configuration <del>-</del>	Device -	Support links -	🕂 Svenska
Services - S	SNMP					
Overview Se	ttings Help					
Service infor	mation					
✓ Enable SNMP						
TCP port numbe	er					
161						
Connection port for	client.					
Community stri	ng					
public						
Enter SNMP read-or	nly community string.					

## 6.30.2 Set recipients of SNMP traps (optional)

To set recipient of SNMP traps:

- Go to **Configuration > Services** and activate the SNMP service. Click on the service and go to **Settings**.
- Click Add new trap and type in the hostname and the port of the desired recipient.
- Set Trap notification retries to determine the maximum number of retries the CMe3100 will perform when trying to notify a trap receiver.
- Set "Trap timeout" to determine the maximum number of seconds the CMe3100 will wait for a response from the SNMP manager when sending a trap notification.
- Click Save.



	notifications to the SNMP manager. Trap messages will be sent to all trap receivers if the aggregated status of the device changes.
hostname:port	
Enter hostname and port to a	dd a trap receiver. Clear the information to remove the recipient from the list.
Add new trap	
Trap notification retries	
3	
Number of retries when tryin	to notify a trap receiver
Trap timeout	
Trap timeout	
1000	it for a trap receiver to acknowledge the notification.

## 6.31 Enable automatic updates of configuration settings

#### Purpose

By activating the Auto Configuration service, the Metering Gateway will periodically check a URL for a settings command file (.cad file) which will be downloaded and parsed. The settings command file can include settings updates similar to what is possible using the command line interface.

## 6.31.1 Enable and configure the Auto Configuration service

To enable and configure the Auto Configuration service:

- Go to Configuration > Services > Auto Configuration.
- Check the Activate Auto Configuration box.
- Select the schedule of the Auto Configuration service out of the preset alternatives or by using cron patterns. To learn more about cron patterns, see section 6.39.1 (<u>Set schedules with cron</u> <u>patterns</u>).
- Type in the URL of the command file.
- Select whether to enable Basic authentication mode, which will then be used every time an Auto Configuration is run.
- Click Save.

elvace					NY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO
Dashboards · Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska
Services					
Interfaces Auto Configuration Push	Reports Job	settings			
Service information					
This service schedules a periodical downlo the Console service. Please see product m through a central file.					
✓ Activate Auto Configuration					
Schedule					
- Custom - 🔹					
Choose how often the service shall run.					
30 0 * * *					
Enter schedule in Cron table (crontab) format; mi Example: */15 * * * * will schedule service to run e Settings command file URL		23), day of month (1-31)	, month (1-12), da	y of week (0-7 Sunday-S	Saturday).
Authentication mode					
Basic					
Username					
Password					
Passworu					
Save					

### 6.32 Configure advanced Push Report settings

#### Purpose

There is a group of more advanced Push Reports settings, configurable through the web interface of the Metering Gateway. These include:

- The Adaptive Retries functionality, which adjust retry attempts for failed Push Reports to the schedule in use.
- The Value Period, which determines how far back in time the Metering Gateway will include values for when compiling a Push Report.
- The Value Interval, which determines the time between the readouts included in the Push Reports.
- The timeout value, which for each protocol determines how long a Push Report transmit attempt may linger before timing out

#### 6.32.1 Disable Adaptive Retries

The Adaptive Retries ensure that all Push Report retry attempts are performed before the next scheduled Push Report is going to be sent. For example, if the Push Report schedule is set to every 16<sup>th</sup>-60<sup>th</sup> minute, up to two retries will be attempted with 300 seconds between each one. If all retry attempts fail, the meter values will instead be included in the next Push Report. Table 9 provides a description of the concept.

Push Report schedule	Max amount of retry attempts	Seconds between each attempt
1-15 min	1	0
16-60 min	2	300
61 min-23 h	3	500
>23 h	6	3600

Table 9: Adaptive retry schedule

If choosing to disable the Adaptive Retries, the Metering Gateway will use its individual report settings to determine how to handle failed Push Report attempts. These settings are not displayed in the web interface, but can be accessed through the console interface. If no such report settings have been configured for the Metering Gateway, general job settings will determine how the device handles failed Push Report retry attempts.

To disable Adaptive Retries:

- Go to **Configuration > Services > Push Reports**.
- Disable Adaptive Retries.
- Click Save.

elvaco						Y ACCOUNT SIGN OUT ostname: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
ervices						
Interfaces Au	uto Configuration Push F	Reports J	ob settings			
Service infor	mation					
	edules periodic reports to b /pe, schedule and contents Reports.					
Switch on to use an	e Adaptive Retries adaptive retry scheme when se e product manual for more deta				· · · · · · · · · · · · · · · · · · ·	e adjusted depending on report general job settings.
60						
Timeout in seconds	s when attempting to send a rep	ort, set to -1 to o	disable timeout.			
FTP server time	out					
60						
Timeout in seconds	when attempting to send a rep	ort, set to -1 to o	disable timeout.			
HTTP server tim	reout					
-1						
Timeout in seconds	when attempting to send a rep	ort, set to -1 to o	disable timeout.			

#### 6.32.2 Configure the Value Period

The Value Period of the Metering Gateway can be set to "Auto" or to a fixed number. Using the "Auto" settings will deliver all previously unsent meter values up to a max limit of 180 meter readouts. For example, if the Metering Gateway has been unable to send Push Reports, scheduled every 15<sup>th</sup> minute for a certain amount of time, it will be able to go back and deliver a maximum of 45 hours of undelivered meter values with the next successful Push Report (180 \* 15 minutes = 2700 minutes = 45 hours). If instead setting the Value Period to a fixed number, the Metering Gateway will look exactly that far back in time for undelivered meter values.

To configure the Value Period of the Metering Gateway:

- Go to Configuration > Push Reports. Select a Push Report by clicking on it.
- By setting the Value Period to "Auto", the Metering Gateway will calculate the Value Period based on how far back in time it is able to find unsent meter values. By instead setting the Value Period to a specific value, meter values exactly that long back in time will be included in the Push Report, regardless of if there are older unsent meter values.
- Click Save.

elvaco						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards - M	leasurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
oush Reports	s - Report 1					
Report type						
Email	*					
Report template						
1101 Email value rep	port *					
Report schedule	Meter	readout sche	edule			
Every hour	* Every	hour				
Choose how often the set	rvice shall run. Current schedu	setting in Meter le.	rs > Readout			
Report content						
Value period						
1	Mont	:h(s)	•			
Choose which values to it include all values stored	<del>nclude in the report based</del> within 1 day from when eac	<del>on how long age</del> :h report is sent.		red to when the r	eport is sent. For example,	using settings "1 Day(s)"
Value interval						
12 hours	*					
Choose "All values" to inc reported values.	clude all available values (d	efined by reado	ut schedule) or choose a l	higher setting to (	create a sparse value repor	t with a longer time between

#### 6.32.3 Configure the Value Interval

To configure the Value Interval:

- Go to **Configuration > Push Reports**. Select a Push Report by clicking on it.
- Set the Value Interval to determine the time between each meter readout included in the Push Report. Setting the Value Interval to "All values" will automatically ensure that all meter values read by the Metering Gateway are included in the Push Reports.
- Click Save.

elvaco	;					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Push Repo	orts - Report 1					
Report type						
Email	•					
Report template	2					
1101 Email valu	e report 🔻					
Report schedule	e Mete	r readout sch	edule			
Every hour	* Ever	y hour				
Choose how often th	ne service shall run. Curren sched	it setting in Meter ule.	rs > Readout			
Report conte	nt					
Value period						
1	Mor	th(s)	*			
	s to include in the report based ored within 1 day from when e			red to when the r	eport is sent. For example,	using settings "1 Day(s)"
Value interval	to include all available values	defined by reado	urt schedule) or choose a	higher setting to	reate a sparse value reporte	t with a longer time between
reported values.	to include an available values	actived by reduc	accounter or choose a	ingher setting to t	create a sparse value repor	e man a zonger time betreeff

#### 6.32.4 Configure the Push Report timeout settings

To configure the Push Report timeout settings:

- Go to Configuration > Services > Push Reports.
- Set the desired Timeout for each protocol. Setting it to "-1" will disable the timeout functionality of the Metering Gateway, and instead let the server determine when a connection should be closed. The default settings will work well in a majority of cases. However, if the connection between the Metering Gateway and the server is very slow, the timeout value might have to be increased accordingly.
- Click Save.

elvaco	•					NY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Services			_			
Interfaces A	uto Configuration Push R	eports J	ob settings			
Service infor	mation					
	edules periodic reports to be /pe, schedule and contents: Reports.		-			
Advanced se	ttings					
Switch on to use an	e Adaptive Retries adaptive retry scheme when ser e product manual for more deta					be adjusted depending on report general job settings.
E-mail server ti	meout					
60						
Timeout in seconds	s when attempting to send a repo	ort, set to -1 to o	lisable timeout.			
FTP server time	out					
60						
Timeout in seconds	s when attempting to send a repo	ort, set to -1 to o	lisable timeout.			
HTTP server tin	neout					
-1						
Timeout in seconds	s when attempting to send a repo	ort, set to -1 to o	disable timeout.			
$\sim$						
Save						

### 6.33 Configure Job retry settings

#### Purpose

The job retry settings determine how the Metering Gateway will perform retry attempts for scheduled and manual jobs, for example meter readouts, if failing the first time. If Adaptive Retries have been disabled for Push Reports, and no other retry settings have been configured for the Metering Gateway, these job retry settings will also affect the Push Report retry settings.

#### 6.33.1 Configure retry settings for scheduled and manual jobs

To configure retry settings for scheduled and manual jobs:

- Go to Configuration > Services > Job settings.
- Set the desired number of job retries to determine the maximum amount of times the Metering Gateway will attempt to perform a job.
- Set the Retry offset to determine the time between the Metering Gateway will wait between each attempt for these jobs.
- Click Save.

elvaco						UNT SIGN OUT e: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska
Services						
Interfaces A	uto Configuration Push R	eports Jo	ob settings			
Settings info	ormation					
-	ir own overridden paramete				ase note that many services	, such as Push
3						
Number of retries for Scheduled job r	2					
60	_					
	s between retries for scheduled j	obs.				
Manual job retr	les					
	of manually started jobs.					
Manual job retr						
0	•					
Number of seconds	between retries for manually st	arted jobs.				
Save						

### 6.34 Access the device through a console application

#### Purpose

The Metering Gateway can be accessed through a console application, i.e. by using a command-line interface. This is most often used for troubleshooting and advanced operations. To increase the security of the console application, the Metering Gateway supports the usage of passwords to access different levels of device functions. It is also possible to create a list of specific IP addresses which are allowed to access the Metering Gateway through the console application.

#### 6.34.1 Enable and configure the console application

To enable and configure the console application:

- Go to **Configuration > Services**.
- The console application is easily enabled or disabled in this menu. Click on it to enter the settings.
- Set the TCP port where the console application will connect
- Set the Idle timeout to determine the number of seconds of inactivity that needs to pass before a connection with a console application is closed.
- Go to **Security**. Add a password for accessing different levels of device functions and a list of authorized IP addresses which will be able to use the console application.
- Click Save.



elvaco	•					ACCOUNT SIGN OUT stname: CMe3100-0016000148-DEMO
Dashboards ·	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Services - (	Console					
Console TCP/IP	Security					
Service infor	mation					
9999						
Connection port for	r client.					
Idle timeout						
60 Number of seconds	to wait before closing an inactiv	e connection.				
Save Cancel						

elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska
Services - (	Console					
Console TCP/IP	Security					
Security sett	ings					
Password 1						
Password 2	sing level 1 functions.					
Password 3						
Password for access Authorized IP ac	sing level 3 functions. ddress					
Comma separated l	ist of client IP addresses which w	vill be accepted	by the console service. Le	ave empty to allo	ow all.	
Save						

### 6.35 Use On Demand Reports

#### Purpose

The On Demand Report is a way of triggering a report manually, without having to set a schedule. It differs from other types of reports in the sense that an actual meter readout is performed each time an On Demand Report is requested. In contrast, all other types of Push Reports include meter values that has already been stored in the database of the Metering Gateway.

#### 6.35.1 Enable and configure the On Demand Report

To enable and configure the On Demand Report:

- Go to **Configuration > Push Reports > On demand report**. Enable the On Demand Report and click on it to enter the settings.
- Set the protocol to receive the report by and a report template. To learn more about the report templates available, please visit our support site <a href="https://support.elvaco.com/hc/en-us">https://support.elvaco.com/hc/en-us</a>.
- Add recipients of the On Demand Report.
- Click Save (or Save & Send test report to test the settings).

lvace	•					DUNT SIGN OUT ne: CMe3100-0016000148-DEMC
Dashboards ·	Measurement series	Meters	Configuration •	Device -	Support links •	🕂 Svenska
ush Repo	orts					
Push Reports	E-mail settings FTP	settings HTTF	9 settings			
Scheduled repo	rts				Enabled	
Report 1					YES C	
sending email report 11	07 to cv@elvaco.se					
Report 2						
sending email report 11	11 to unknown					
Report 3					NO	
Report Is disabled						
Report 4					() xo	
Report is disabled						
Report 5						
Report is disabled						
Event reports					Enabled	
Boot-up report						
Report is disabled						
Installation repo	ort				70	
Report is disabled						
On demand repo	ort					
Sending email report 1						



elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000148-DEMO
Dashboards -	Measurement series	Meters	Configuration •	Device -	Support links -	🕂 Svenska
ush Repo	orts - On dema	nd repo	ort			
Report type	-					
E-mail						
Report template						
1104 (Email val	ue report 🔻					
	o default e-mail address					
	e settings for default recipients.					
To:						
cv@elvaco.se						
Recipient's e-mail a	ddress. Use a comma to separat	e addresses.				
cc:						
Copy recipient's e-n	nail address. Use a comma to se	parate addresse	5.			
BCC:						
Hidden recipient's e	e-mail address. Use comma to se	parate addresse	es.			
Save Save &	Send test report Cance	el				

### 6.36 Configure identity settings

#### Purpose

Configuring device identity settings includes assigning an identity for the Metering Gateway, which will be displayed as the sender of Push Reports, as well as contact information to be included in the Push Reports.

#### 6.36.1 Customize the Push Report identity settings

To customize the Push Report identity settings:

- Go to Configuration > Localization > Identity.
- Assign a product identity for the Metering Gateway by assigning it a name. Also add contact information to be included in the Push Reports, if desired.
- Click Save.

						MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
ocalizatio	on					
Conventions	identity Branding					
Product ider	ntity					
Product name						
	name to identify the product in fo product name will default to: CM			also used as send	ding e-mail address for e-ma	ill reports. If no product
Contact info	rmation					
contactimo	mation					
This information	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it ea:	ier for a receiving party	to get in contact with
This information	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person Company name Name or depar	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person <b>Company name</b>	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person Company name Name or depar	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person Company name Name or depart Address line 1	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person Company name Name or depar Address line 1 Address line 2 Address line 3	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with
This information the right person Company name Name or depar Address line 1	n will be visible in for examp regarding question or supp		ts. Please fill in detail	s to make it eas	ier for a receiving party	to get in contact with

#### 6.36.2 Configure localization settings for Push Reports

To configure localization settings for Push Reports:

- Go to Configuration > Localization > Conventions.
- Set Desired language, Decimal separator and First day of the week. The Character encoding should be set with respect to the operational system used to make sure that all characters of the Push Reports will be encoded correctly.
- Click Save.

Dashboards Measurement series Meters Configuration Device Support links     Ocalization     Conventions     Language   English   •   Choose language for translatable objects created by the system.   Decimal separator   •   Choose character used as decimal separator.   Character encoding for Push Reports.   First day of the week.     Minday   •	elvaco	•					MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020
Conventions     Conventions     Language   English   Choose language for translatable objects created by the system.   Decimal separator   ,   Choose character used as decimal separator.   Character encoding   Windows (CP1252)   *   Choose character encoding for Push Reports.   First day of the week   Monday	Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🕂 Svenska
Conventions Language English Choose language for translatable objects created by the system. Decimal separator , Choose character used as decimal separator. Character encoding Windows (CP1252) Choose character encoding for Push Reports. First day of the week Monday	ocalizatic	n					
Language English Choose language for translatable objects created by the system. Decimal separator	Conventions	Identity Branding					
English  Choose language for translatable objects created by the system.  Decimal separator  ,  Choose character used as decimal separator.  Character encoding  Windows (CP1252)  Choose character encoding for Push Reports.  First day of the week  Monday	Conventions						
Choose language for translatable objects created by the system.  Decimal separator  ,  Choose character used as decimal separator.  Character encoding  Windows (CP1252)  Choose character encoding for Push Reports.  First day of the week  Monday	Language						
Decimal separator , Choose character used as decimal separator. Character encoding Windows (CP1252) Choose character encoding for Push Reports. First day of the week Monday	English	*					
Decimal separator , Choose character used as decimal separator. Character encoding Windows (CP1252) Choose character encoding for Push Reports. First day of the week Monday	Choose language fo	r translatable objects created by	the system.				
Character encoding Windows (CP1252) * Choose character encoding for Push Reports. First day of the week Monday *							
Character encoding Windows (CP1252) * Choose character encoding for Push Reports. First day of the week Monday *	,						
Windows (CP1252)  Choose character encoding for Push Reports.  First day of the week Monday	Choose character us	sed as decimal separator.					
Choose character encoding for Push Reports. First day of the week Monday	Character encod	ling					
First day of the week Monday	Windows (CP12	.52) *					
Monday	Choose character er	ncoding for Push Reports.					
	First day of the	week					
Choose which is the first day of week.	Monday	*					
	Choose which is the	first day of week.					

### 6.37 Perform a reboot of the device

#### Purpose

In rare cases, e.g. in case of troubleshooting, it might be desired to perform a reboot of the Metering Gateway. This can be done directly through the web interface.

#### 6.37.1 Reboot the device

To perform a reboot of the device:

- Go to **Device > About**.
- Click Reboot now.

elvaco				MY ACCOUNT SIGN OUT Hostname: CMe3100-0016000020		
Dashboards -	Measurement series	Meters	Configuration -	Device •	Support links -	🗕 Svenska
About						
Overview	End-user license agreement					
€ Reboot now	Factory reset					

### 6.38 Reset the device to factory default settings

#### Purpose

By performing a factory reset of the Metering Gateway, all settings will be reset to default and the meter value database and logs will be cleared.

#### 6.38.1 Perform a factory reset

To perform a factory reset:

- Go to **Device > About**.
- Click Factory reset.

						Hostname: CMe3100-0016000020
Dashboards -	Measurement series	Meters	Configuration -	Device -	Support links -	🔶 Svenska
About						
Overview End	I-user license agreement					

### 6.39 Customize service and job schedules

#### 6.39.1 Specify schedules using cron patterns

For scheduled jobs, e.g. meter readouts and Push Reports, cron patterns can be used to customize the time interval by which the jobs will be performed. It is done by setting up to five different time variables, each one represented by a star. Replace each star with a number to set a specific job execution schedule.

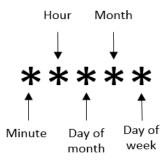


Figure 9: Illustration of cron pattern

The "/" character is used to set periodic values, i.e. schedule a job with a recurrent time interval. The "?" character is used to generate a random value. Lastly, using the "|" character allows to combine several cron patterns. An example table including a list of chosen cron patterns is presented in Table 10.



Cron pattern	Description
15 * * * *	Schedule a job 15 minutes past every hour, i.e. 00:15, 01:15, 02:15 etc.
*/15 * * * *	Schedule a job every 15 <sup>th</sup> minute, i.e. 00:00, 00:15, 00:30, etc.
* * * * *	Schedule a job every minute, i.e. 00:01, 00:02, 00:03, etc.
* 12 * * mon	Schedule a job every minute during the 12 <sup>th</sup> hour of every Monday.
* 12 16 * mon	Schedule a job every minute during the 12 <sup>th</sup> hour of every Monday, if the day is the 16 <sup>th</sup> of the month.
59 11 * * 1,2,3,4,5	Schedule a job 11:59 on Monday, Tuesday, Wednesday, Thursday and Friday.
59 11 * * 1-5	Schedule a job 11:59 on Monday, Tuesday, Wednesday, Thursday and Friday.
*/15 9-17 * * *	Schedule a job every 15 <sup>th</sup> minute between the 9 <sup>th</sup> and the 17 <sup>th</sup> hour of the day, i.e. 09:00, 09:15, 09:30, etc.
* 12 10-16/2 * *	Schedule a job every minute during the 12 <sup>th</sup> hour of the day, if the day is the 10 <sup>th</sup> , the 12 <sup>th</sup> , the 14 <sup>th</sup> or the 16 <sup>th</sup> of the month.
* 12 1-15,17,20-25 * *	Schedule a job every minute during the 12 <sup>th</sup> hour of the day, if the day is between the 1 <sup>st</sup> and the 15 <sup>th</sup> , the 17 <sup>th</sup> or between the 20 <sup>th</sup> and 25 <sup>th</sup> day of the month.
0 5 * * * 8 10 * * * 22 17 * * *	Schedule a job every day at 05:00, 10:08 and 17:22.
?1-30 0 * * *	Schedule a job at a random chosen minute during the first 30 minutes of every hour.

Table 10: Examples of different cron patterns



# 7 Technical specifications

## 7.1 Characteristics

Туре	Value	Unit	Comments
	Mechanics		
Casing material	Polyamide	-	
Protection class	IP20	-	
Dimensions (w x h x d)	70 x 90 x 64	mm	4 DIN modules
Weight	190	g	
Mounting	DIN rail	-	Mounted on DIN rail (DIN 50022) 35 mm
	<b>Electrical connect</b>	ions	
Supply voltage	Screw terminal	-	Cable 0.25-1.5 mm <sup>2</sup> , 0.5Nm tightening torque
M-Bus master port	Pin terminal	-	Solid Wire 0.6-0.8 Ø mm
M-Bus slave port 1	Screw terminal	-	Cable 0.25-1.5 mm <sup>2</sup>
M-bus slave port 2	Screw terminal	-	Cable 0.25-1.5 mm <sup>2</sup>
USB master port	Type A	-	
USB slave port	Type mini B	-	
Network	RJ45	-	Ethernet
	Electrical character	ristics	
Nominal voltage	100-240	VAC	+/- 10%
Frequency	50/60	Hz	
Power consumption (Max)	<15	W	
Power consumption (Nom)	<5	W	
Installation/overvoltage	CAT 3	-	
	vironmental specif	ications	,
Operating temperature	-25 to +55	°C	
Operating humidity max.	5 to 90	%	Non-condensing
Operating altitude	0-2000	m	
Pollution degree	Degree 2	-	
Usage environment	Indoors	-	Can be extended with IP67 enclosure for outdoor use
Storage temperature	-40 to +85	°C	
	User interface	}	
Green LED	Power	-	
Red LED	Error	-	
Yellow LED	Status Ethernet	-	
Blue LED	USB active	-	
Push button	Factory reset	-	
Configuration	Web interface (HTTP), Auto configuration (URL), Telnet, REST/JSON	-	
	M-Bus		
Interfaces	IR, integrated M-Bus Master, M-Bus slave	-	
Maximum number of M-Bus devices	Software	-	
(software limit)	licences for 8, 32, 64, 128 and 256 devices		
Transparent M-Bus	TCP/IP and M- Bus 2-wire slave	-	Software limit does not apply to Transparent M-Bus mode



	interface		
Virtual M-Bus	TCP/IP and M-	-	
	Bus 2-wire slave		
	interface		
Decryption	Yes	-	
•••	Integrated M-Bus M	aster	
M-Bus standard	EN 13757	-	Full M-Bus decoder implemented
M-Bus baud rate	300 and 2400	bit/s	•
Nominal voltage	28	VDC	
Maximum unit loads	32/48	T/mA	Can be extended with CMeX10- 13S Series
M-Bus search modes	Primary,	-	
	secondary,		
	enhanced		
	secondary		
Maximum cable length	1000	m	100 nF/km, maximum 90 Ω
0	M-Bus slave interf	ace	
M-Bus standard	EN 13757	-	
M-Bus baud rate	300 and 2400	bit/s	
Nominal voltage	21-42	VDC	
Addressing mode	Primary,	-	
	secondary		
	General	1	
Real time clock backup	24	h	
Real time clock accuracy	<2	s/day	
Script engine	Intelligent	-	
Script engine	engine for active		
	content		
	generation		
Software/firmware update	Web interface	-	
Measurement reports	HTTP, FTP,	-	
medodrement reports	SMTP (e-mail)		
Additions	Modbus, REST,	-	
	JSON-RPC,		
	DLMS		
Continuous Readout Mode	Modbus, REST	-	
	Data storage (exam	ples)	
15 minute values	Meters Years	-	
	1 15		
	32 4		
	128 1		
	256 0.5		
Hourly values	Meters Years	-	
,	1 >15		
	32 >15		
	128 4		
	256 2		
	Fixed network (Ethe	ernet)	
Speed and duplex	10/100	MBit	Half/Full duplex

Table 11: Technical specification



# 8 Type approvals CMe3100 is designed to comply with the directives and standards listed below.

Approval	Description
EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 61010-1, CAT 3

Table 12: Type approvals



# 9 Document History

### 9.1 Versions

Version	Date	Description	Author
1.0	2016-11	Initial version	Anton Larsson
1.1	2017-03	Added information about new feature "SNMP"	Anton Larsson
1.2	2017-12	Added information about new security feature "FTPS"	Anton Larsson
1.3	2018-02	Added links to new website	Anton Larsson

Table 13: Document version

### 9.2 **Document software and hardware appliance**

Туре	Version	Date	Comments
Hardware	Rev-1E	2017-02	
Software	1.8.1	2018-02	

Table 14: Document software and hardware appliance



# 10 References

### 10.1 Terms and abbreviations

Abbreviation	Description	
CA	Certificate Authority	
CSV	Comma-Separated Values	
DCS	Digital Control System	
DHCP	Dynamic Host Configuration Protocol	
DNS	Domain Name Server	
MAC	Media Access Control	
MOID	Measurement Object Identification	
NTP	Network Time Protocol	
PLC	Programmable Logic Controller	
SSL	Secure Sockets Layer	
URL	Uniform Resource Locator	
URI	Uniform Resource Identifier	

Table 15: Terms and abbreviations