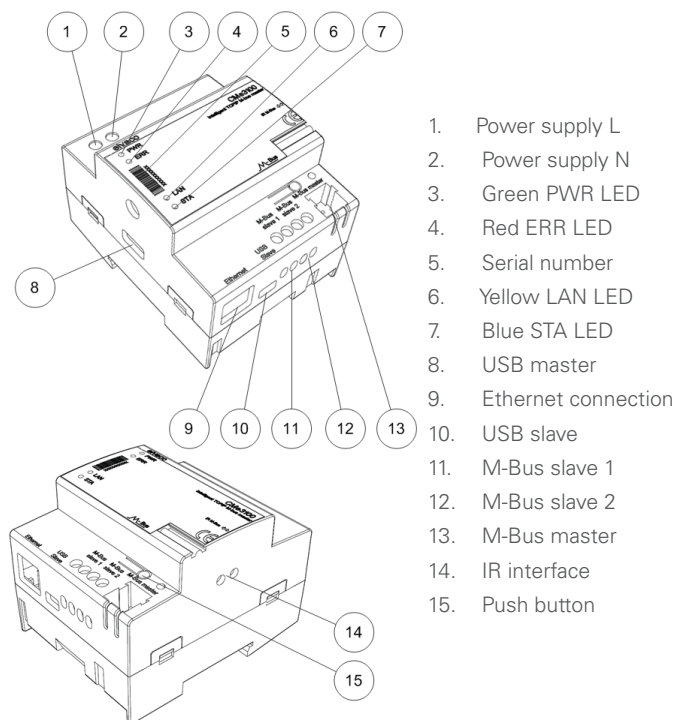# CM*e*3100

DIN-mounted intelligent TCP/IP M-Bus master

INTRODUCTION

CMe3100 is an intelligent TCP/IP M-Bus master with logging functionality that can read and interpret meter data from all M-Bus meters. CMe3100 can also read and organize networks with Elvaco's wireless M-Bus receiver via M-Bus and TCP/IP. It is ready to use with all ABB DIN-mounted electricity meters and any M-Bus meter following the M-Bus standard protocol. Meter data can be downloaded or sent through a variety of formats and protocols, such as FTP, e-mail, Modbus, M-Bus slave port, M-Bus over TCP/IP and REST-protocol. For a complete description of the product or for information in Swedish, visit the Elvaco AB website, www.elvaco.com.

OVERVIEW

1. Power supply L
2. Power supply N
3. Green PWR LED
4. Red ERR LED
5. Serial number
6. Yellow LAN LED
7. Blue STA LED
8. USB master
9. Ethernet connection
10. USB slave
11. M-Bus slave 1
12. M-Bus slave 2
13. M-Bus master
14. IR interface
15. Push button

MOUNTING

The CMe3100 should be mounted in a DIN-rail enclosure on a DIN-rail. The metallic clip on the bottom is used to mount and demount the unit from the DIN-rail. For safety reasons, a DIN-rail enclosure must cover the terminals.

POWER SUPPLY

The installation should be performed by a qualified electrician or an installer with the required knowledge. The power supply must be protected with a 10 A circuit breaker of characteristic C or slow blow fuse. The power supply should be connected via a clearly marked, easily accessible and nearby switch so the unit can be switched off during service work. Main supply should be connected to screw terminal (1) and (2). Main supply voltage should be in the range of 100-240 VAC, 50/60 Hz.

M-BUS MASTER

M-Bus is a multi-drop 2-wire bus with no polarity. CMe3100 is equipped with an M-Bus master for 32 slaves (32 M-Bus loads , 48 mA). Overloading the bus will turn the ERR LED (4) on and turn off the M-Bus bus. If you wish to connect more slaves, mount an M-Bus extender from the CMeX Series on the right side of the CMe3100 to expand the capacity. The master can communicate with 300 and 2400 baud. All connected M-Bus slaves must have unique primary or secondary M-Bus addresses depending on addressing mode. Use a

cable of area 0.25-1.5 mm2, e.g. a standard telephone cable (EKKX 2x2x0.5). Connect the wiring to the connector (13). Do not exceed the maximum cable length of 1000 m.

WIRELESS M-BUS

CMe3100 supports reading of wireless meters via Elvaco's wireless M-Bus receiver. The M-Bus receivers can be connected to the local M-Bus master on CMe3100 or via CMe3000 over TCP/IP. Elvaco's wireless M-Bus system is automatically configured and wireless meters can be read directly.

M-BUS SLAVE PORTS

CMe3100 is equipped with two M-Bus slave ports used for sharing meter data to other M-Bus systems. The ports can be configured individually in the web interface. Connect the cables from the other system's M-Bus master to the terminal marked "M-Bus slave 1" (11) or "M-Bus slave 2" (12).

ETHERNET CONNECTION

Connect the TP cable of type Cat 5e or better to the RJ45 connection (9). On successful connection to the switch/hub, the yellow LAN LED (6) will be permanently on or flashing. If CMe3100 has or will be assigned an IP address, the red ERR LED will flash 50/50.

IR INTERFACE

The IR interface can be used beside an ABB electricity meter or CMeX module. Remove the IR shield (14) and mount CMe3100 on the left side of the meter or CMeX module and leave no space between the products. Do not remove the shield unless the IR interface is used.

GETTING STARTED VIA USB SLAVE PORT

The CMe3100 is configured via the integrated web interface. This is easily reached via the local USB slave port (10) that is connected to a PC. Connect the included USB cable between the computer and USB slave port. After approximately 30 seconds, a removable disk will be available on the computer. **Open the folder on the removable disk and run the file CMe3100-SETUP.EXE and follow the instructions. When the installation is finished a browser with address 192.168.100.1 will be opened.**
It is also possible to log in via the network that the product is connected to. In this case, a DHCP server is needed in the network or that CMe3100 has a static IP address configured. Find out which IP address CMe3100 uses and enter it in a browser.

LOGIN

Username: admin, Password: admin
At the first login, the user should change the username and password. Write down the new password.

WIRING DIAGRAM
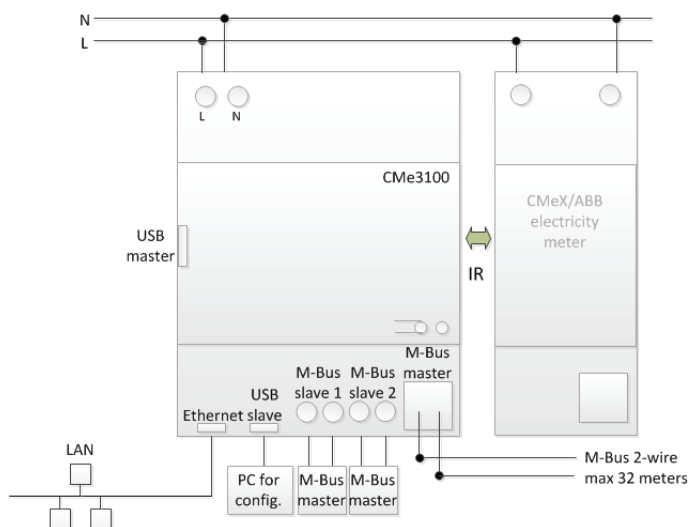
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FACTORY RESET

Factory reset of the product can be done in the web interface or by holding the button (15) pressed down at power-up. Hold for about 20 seconds. When green and red LEDs are flashing alternately, release the button to execute the factory reset.

LED INDICATIONS

Green LED

State	Description
Off	Lacks power or is in boot mode
50/50	Booting in progress
Short flash	Normal operation
On	Indicates error in software

Red LED

State	Description
On	Short circuit M-Bus master
50/50	Network problems or booting in progress
Off	Normal operation

Yellow LED

State	Description
On	Network connected to ethernet port
Off	Lacks network connection to ethernet port
Flashing	Communication on network

Blue LED

State	Description
On	Upcoming features
50/50	
Short flash	
On	

TROUBLESHOOTING

All LEDs are permanently off

Verify:

- That the product is powered up.
- If the product is in the first stage of the start-up process, approximately 20 s.

Red LED is permanently on

- Verify no short-circuit of the M-Bus bus.
- Measure the voltage over the M-Bus master, voltage should be between 24-30 VDC.

Red LED is flashing, the unit can not be accessed via LAN

- Is the CMe3100 configured with static IP or dynamic IP (dynamic IP is the default).
- For static IP, check that there are no conflicts with the set IP address.
- For dynamic IP, check that the CMe3100 is connected to a network with a correctly working DHCP server.

ORDERING INFORMATION

Product	Part number	Description
CMe3100	1050016	DIN-mounted intelligent M-Bus master

CONTACT INFORMATION

Elvaco AB Technical support:

Phone: +46 300 434300
E-mail: support @elvaco.com
Online: www.elvaco.com

TECHNICAL SPECIFICATIONS

Mechanics	
Dimensions	65x72x90 mm
Weight	180 g
Mounting	Mounted on DIN rail (DIN 50022) 35 mm
Electrical connections	
Mains supply	Screw terminal cable 0.25-2.5 mm²
USB slave port	Type mini B
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 mm²
M-Bus slave port 2	Screw terminal cable 0.25-1.5 mm²
Ethernet	RJ45
USB master port	Type A
Electrical characteristics	
Nominal voltage	100-240 VAC
Voltage range	-10 % to +10 % of nominal voltage
Frequency	50/60 Hz
Power consumption (max)	<15 W
Power consumption (nom)	<5 W
Overvoltage category	CAT 3
Ethernet	
Speed and duplex	Auto 10/100 MBit half/full duplex
Environmental	
Operating temperature range	-20 °C to +50 °C
Storage temperature range	-40 °C to +85 °C
Pollution	Degree 2
Altitude	0-2000 m
Usage	Indoor use only, can be extended with IP67 enclosure for outdoor use
M-Bus	
M-Bus standard	EN 13757 Full M-Bus decoder implemented
M-Bus baud rate	300, 2400, 9600* Bit/s (* not compatible with CMeX Series)
Transparent M-Bus	Listening server on TCP data
Internal M-Bus master	32 (can be extended using CMeX10 Series)
Maximum connected M-Bus devices	Configured by software
Maximum cable length	1000 m
IR Interface	Yes
Pass Through	No
Compatibility	All standard M-Bus meters, all ABB meters with IR interface, CMeX Series products
General	
Data storage	2 GB
Real time clock backup	7 days
Real time clock accuracy	<2 s/day
Script engine	Intelligent script engine for active content generation
Software update	Via web interface or SSH
Integration	
Transparent M-Bus	TCP
Value reports	HTTP, FTP, e-mail
E-mail	SMTP
FTP	Standard FTP client
HTTP	Standard HTTP and HTTPS client, POST & GET
Configuration	HTTP, FTP, Telnet, JSON
Approvals	
EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 61010-1, CAT 3