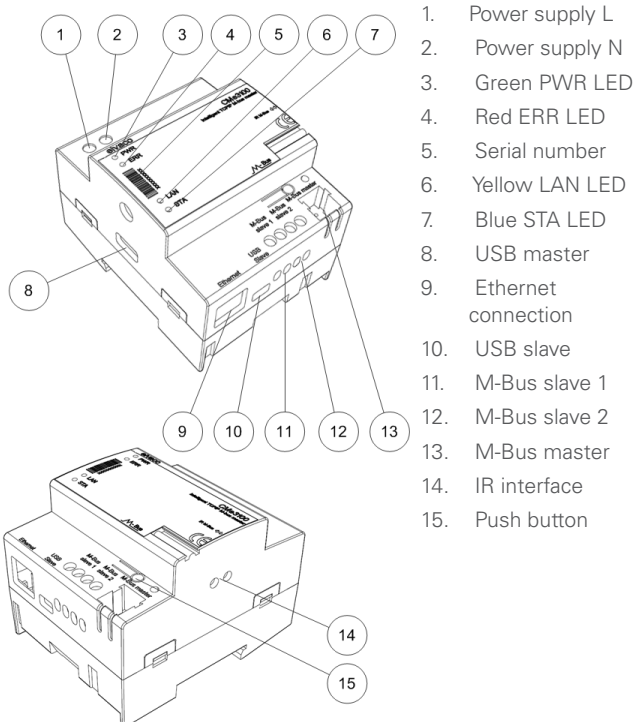# CM*e*3100

M-Bus Metering Gateway for Fixed Network

INTRODUCTION

CMe3100 is an M-Bus Metering Gateway for Fixed Network with logging functionality. It can read and interpret meter data from all ABB DIN-mounted electricity meters with IR interface 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 the 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 is mounted on a DIN-rail. The metallic clip on the bottom is used to attach and deattach the unit. 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 and connected via a clearly marked, easily accessible 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 than 32 slave devices, mount an M-Bus Master from the CMeX Series on the right side of the CMe3100 to expand the capacity. 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 M-Bus meters via an Elvaco's wireless M-Bus Receivers. The M-Bus Receiver is connected to the M-Bus master port (13) or placed right next to the CMe3100 to communuicate by IR. 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 to share meter data with other M-Bus systems. The ports can be configured individually in the web interface. Connect the master device to M-Bus slave port 1 (11) or M-Bus slave port 2 (12).

ETHERNET CONNECTION

Connect a 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 for communication with an ABB electricity meter or a CMeX module. Remove the IR shield (14), mount CMe3100 on the left side of the other device 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 has completed, a browser with the IP address 169.254.254.1 will open. (For software versions older than 1.6.0, the IP address 192.168.100.1 will be used.)** 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.
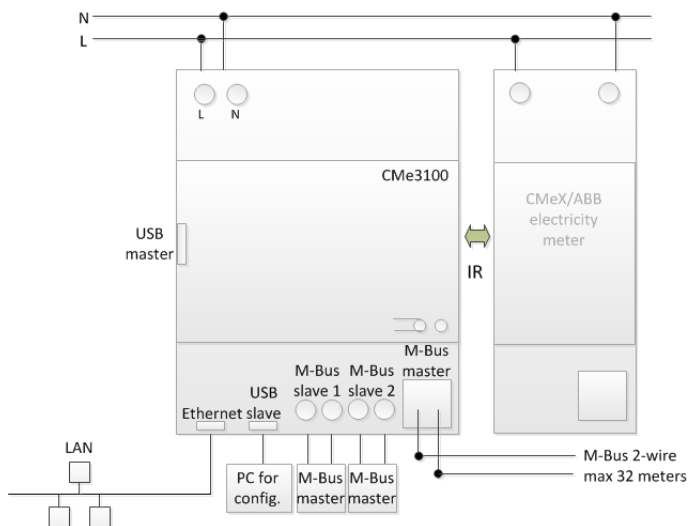
LOGIN

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

WIRING DIAGRAM

elvaco

FACTORY RESET

CMe3100 can be reset to factory default settings by using the web interface or by holding the push button (15) pressed down for 20 seconds at power-up. If no Ethernet cable is connected, the button will have to be pressed down for 90 seconds. When the green and the red LEDs are flashing alternately, release the button to perform a 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	Upcoming features
Short flash	Upcoming features
On	Upcoming features

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, wait approximately 20 s.

Red LED is permanently on

- Verify no short-circuit of the M-Bus bus by measuring the voltage over the M-Bus master. The 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 set as default). If static IP assignment is used, make sure that there are no IP conflicts.
- 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	1100232	M-Bus Metering Gateway for Fixed Network, 8 slaves
CMe3100	1100129	M-Bus Metering Gateway for Fixed Network, 32 slaves
CMe3100	1100130	M-Bus Metering Gateway for Fixed Network, 64 slaves
CMe3100	1100131	M-Bus Meterings Gateway for Fixed Network, 128 slaves
CMe3100	1100132	M-Bus Metering Gateway for Fixed Network, 256 slaves

CONTACT INFORMATION

Elvaco AB Technical support:

Phone: +46 300 434300

E-mail: support @elvaco.com

Online: www.elvaco.com

TECHNICAL SPECIFICATIONS

Mechanics

Protection class	IP20
Mounting	Mounted on DIN rail (DIN 50022) 35 mm

Electrical connections

Supply voltage	Screw terminal. Cable 0-2.5 mm², 0.5 Nm 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 mm²
M-Bus slave port 2	Screw terminal. Cable 0.25-1.5 mm²

Electrical characteristics

Nominal voltage	100-240 VAC (+/- 10%)
Frequency	50/60 Hz
Power consumption (max)	<15 W
Power consumption (nom)	<5 W
Installation category	CAT 3

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

Integrated M-Bus Master

M-Bus baud rate	300 and 2400 bit/s
Nominal voltage	28 VDC
Maximum unit loads	32T/48 mA (can be extended with CMeX10-13S Series)
Maximum cable length	1000 m (100 nF/m, maximum 90 Ω)

M-Bus slave interface

M-Bus baud rate	300 and 2400 bit/s
Nominal voltage	21-42 VDC

Approvals

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

EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of the manufacturer:
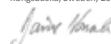
Elvaco AB, Kabelgatan 2T, S-43437 Kungsbacka, Sweden

Product	Year of CE-marking
CMe3100	2016

The object(s) of the declaration listed above is in conformity with the relevant Community harmonization legislation:

LVD Directive 2014/35/EU
EMC Directive 2014/30/EU
RoHS 2011/65/EU

And are in conformity with the following harmonization standards or other normative documents:

IEC 60950-1
EN55022 (Radiated emission)
EN 61000-4-6 (Immunity to HF-injection)
EN 61000-4-3 (Immunity to RF-field)
EN 61000-4-11 (Immunity to voltage variation)
EN 61000-4-4 (Immunity to burst)
EN 61000-4-5 (Immunity to surge)
EN 61000-4-2 (Immunity to ESD)

Kungsbacka, Sweden, 2016-04-16

David Vonasek, CEO