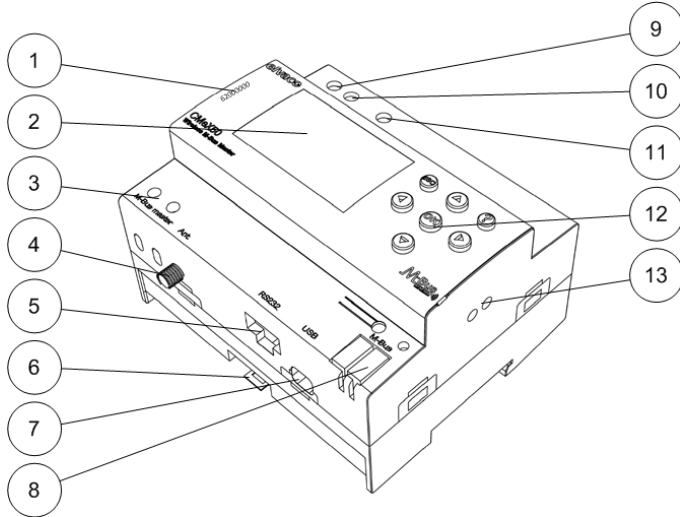# CMeX50
Wireless M–Bus Receiver

INTRODUCTION

The CMeX50 is a wireless M–Bus Receiver handling up to 800 wireless M–Bus meters and up to 32 wired M–Bus meters. The product can operate in all commonly used wireless M–Bus modes: T1, C1 and S1. For a complete description of the product or for information in other languages, visit the Elvaco AB website, www.elvaco.com.

OVERVIEW

1.	Serial number	7.	USB connector
2.	Display	8.	M–Bus slave
3.	M–Bus master	9.	Power supply L
4.	Antenna connector	10.	Power supply N
5.	RS232 connector	11.	Protective earthing
6.	DIN–rail lock	12.	Keypad
		13.	IR interface right

INCLUDED ACCESSORIES

The CMeX50 is delivered with a magnetic mount antenna, an USB cable and an RS232 cable.
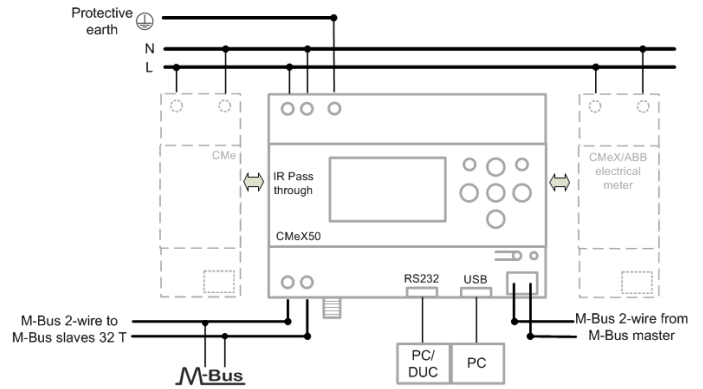
MOUNTING

The product should be mounted on a DIN–rail. The DIN–lock (6) on the bottom is used to mount and demount the unit from the DIN–rail. To fully comply with safety regulations, 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 should be connected via a clearly marked, easily accessible and close switch so the unit can be switched off during service work. The main supply should be connected to screw terminal (9) and screw terminal (10). Main supply voltage should be in the range of 100-240 VAC, 50/60 Hz. Connect protective earthing to screw terminal (11).

M–BUS MASTER

The CMeX50 will store the connected wireless M–Bus meters and they will be readable using standard M–Bus commands. Except from handling wireless M–Bus slaves, the CMeX50 has an integrated M–Bus Master which can drive up to 32 wired meters. M–Bus is a multi–drop 2–wire bus with no polarity. Use a cable of area 0.25-1.5 mm^2, e.g. a standard telephone cable (EKKX 2x2x0.5). Connect the wiring to the connector (3). Do not exceed the maximum cable length of 1000 m.

IMPORTANT

The product handles up to 32 wired M–Bus meters. Overloading the bus will show an error message on the display and turn off the M–Bus bus. All connected M–Bus slave devices must have unique primary or secondary M–Bus addresses depending on addressing mode.

ANTENNA

Mount the antenna in a suitable place. Connect the cable to the SMA connector (4). If the included antenna's range is inadequate, please contact Elvaco for more information about antenna options.

IMPORTANT

- CMeX50 should be connected to the antenna after the antenna wiring is done. Otherwise the SMA connector can be damaged!
- Do not mount the antenna close to any metallic objects.
- Do not mount the antenna close to the M–Bus 2–wire bus.
- Do not mount the antenna inside a metallic cabinet.

M–BUS SLAVE PORTS

The product is equipped with four different M–Bus slave ports (IR interface left, RS232 (5), USB (7) and M–Bus slave interface (8)) to enable wide integration. These ports can be used to:

- Read the connected wireless M–Bus slaves as normal M–Bus slaves
- Read the connected wired M–Bus slaves (transparent)

Slaves can be read using primary and/or secondary addressing. The CMeX50 itself is available as an M–Bus slave with the secondary address equal to the serial number.

RS232 interface

The RS232 interface is used as a standard transparent M–Bus interface over RS232. Use the included RS232 cable (RJ45 to D–SUB9) and connect to any standard RS232 D–SUB9 connector.

USB interface

The USB interface is used as a standard transparent M–Bus interface over USB. Use the included USB cable and connect to any standard USB master port. When using Microsoft Windows® operating systems, a virtual comport will automatically be generated when connecting the product to the computer. Additional USB drivers can be downloaded from the Elvaco web site: www.elvaco.com.

M–Bus 2–wire interface

The M–Bus 2–wire interface acts like any other M–Bus slave device on the 2–wire bus. The nominal current is 1T (1.5 mA). This interface can be directly used with any standard M–Bus master.

IR interface

The IR interface is used as a standard transparent M–Bus interface over IR. This port can be used together with M–Bus master products from Elvaco, i.e. CMe2100 and CMe3000. In this way it is possible to extend the product with TCP/IP and GPRS communication.

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GETTING STARTED

1. Power up the module and press OK to enter password.
2. Press OK for default password 0000.
3. Press OK for 1. Installation.
4. Move down with cursors to 2. Installation, clear and press OK. Press OK for confirmation.
5. The CMeX50 will listen for transmitting wireless M-Bus slaves and add them to meter list.
6. The installation will automatically stop after 60 minutes. It can also be stopped manually by pressing ESC and OK when the expected number of meters are found.
7. Press ESC and press OK for saving the meter list in CMeX50 and quit installation. Press OK to enter main menu. All wireless meters are now available as wired meters on any of the interfaces described above.

TROUBLESHOOTING

When running installation, no wireless meters are found
Please verify:
- CMeX50 antenna installation and position.
- Wireless M-Bus slave mode must be the same as configured CMeX50 wireless M-Bus mode.

CMeX50 does not respond to M-Bus master commands
Please verify M-Bus status:
- Voltage over M-Bus slave device should be between 21-42 VDC.
- All M-Bus slave devices must have unique secondary or primary M-Bus addresses depending on addressing mode.
- Verify M-Bus slave baud rate used by M-Bus master. M-Bus master baud rate must be identical to the CMeX50 baud rate.
- Encrypted wireless M-Bus slaves without uploaded keys will send meter data in container mode. Add keys to corresponding meter using the LCD display or M-Bus commands.

Change from T1/C1a/C1b mode to S1 mode or vice versa does not work:
- The CMeX50 needs to be switched off and on again to make the change take effect.

ORDERING INFORMATION

Product	Article number
CMeX50 Wireless M-Bus Receiver (868 MHz)	1050062
CMeX50 Wireless M-Bus Receiver (434 MHz)	1050128

SIMPLIFIED DECLARATION OF CONFORMITY

Hereby, Elvaco declares that the products are in compliance with the following directives:
EU:
- 2014/53/EU (RED)
- 2014/30/EU (EMC)
- 2014/35/EU (LVD)
- 2011/65/EU + 2015/863 (RoHS)

UK:
- 2017 No. 1206
- 2016 No. 1091
- 2016 No. 1101
- 2012 No. 3032

The complete Declaration of Conformity can be found at www.elvaco.se/en > Search on product or article number.

TECHNICAL SPECIFICATIONS

Mechanics

Casing material	Polyamide
Protection class	IP20
Dimensions	90x65x107 mm
Weight	220 g
Mounting	Mounted on DIN rail (DIN 50022) 35 mm

Electrical connections

Power supply	Screw terminal, wire 0.75-2.5 mm²
M-Bus master port	Screw terminal, wire 0.5-2.5 mm²
M-Bus slave port	Pin terminal. Solid wire 0.6-0.8 Ø mm, e.g. EKKX 2x2x0.5
Antenna	SMA-f
RS232	RJ45 8/8
USB-port	Mini USB type B
Environmental specifications	
Operating temperature range	–25 °C to +55 °C
Storage temperature range	–40 °C to +85 °C
Pollution	Degree 2
Operating altitude	0-2000 m

Electrical characteristics

Nominal voltage	100-240 VAC (+/- 10%)
Frequency	50/60 Hz
Power consumption	<6 W
Installation category	CAT 2

Integrated M-Bus Master

M-Bus standard	EN 13757
M-Bus baud rate	300 and 2400 bit/s
Maximum unit loads	32T/48 mA (can be extended with the CMeX10-13S Series)
Maximum cable length	1000 m (100 nF/km, maximum 90 Ω)

Wireless M-Bus receiver

M-Bus standard	EN 13757-4
Wireless M-Bus modes	S1, T1, C1
Maximum numbers of wireless M-Bus devices	800
Radio frequency band	434 or 868 MHz

M-Bus slave interface

M-Bus baud rate	300 and 2400 bit/s
Power consumption	1T/1.5 mA

Approvals

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

SAFETY

The warranty does not cover damage to the product caused by usage in any other way than described in this manual. Elvaco AB can not be liable for personal injury or property damage caused by usage in any other way than described in this manual.

CONTACT INFORMATION

Elvaco AB Technical support:

E-mail: support@elvaco.com
Online: www.elvaco.com