

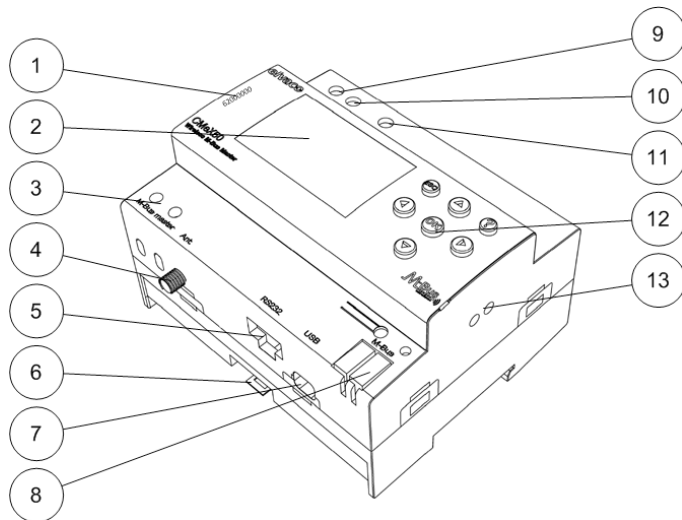
# CMex50

## 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 Swedish, visit the Elvaco AB website, [www.elvaco.com](http://www.elvaco.com).

### OVERVIEW



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

### INCLUDED ACCESSORIES

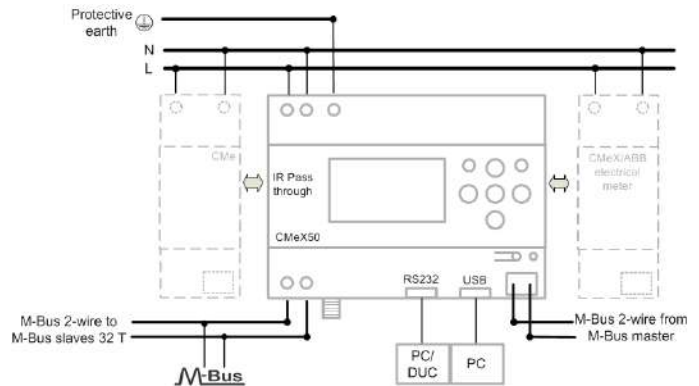
The CMex50 is delivered with a magnetic base antenna, an USB cable and a RS232 cable.

### 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<sup>2</sup>, 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 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 when 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.



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## 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](http://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.

## 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.

## 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.

## ORDERING INFORMATION

Product	Part number	Description
CMeX50	1050062	Wireless M-Bus master
Antenna	9950472	Omni 868 MHz 6 dB
Antenna cable	9950453	SMA-f N-m 5 m
Antenna cable	9950454	SMA-f N-m 10 m

## TECHNICAL SPECIFICATIONS

### Mechanics

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

### Electrical connections

Power supply	Screw terminal 0.5-2.5 mm <sup>2</sup>
M-Bus master port	Screw terminal 0.5-2.5 mm <sup>2</sup>
M-Bus slave port	Pin terminal solid wire 0.6-0.8 Ø mm
Antenna	SMA-f
RS232	RJ45 8/8
USB-port	Mini USB type B

### 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 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)

### 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

## CONTACT TECHNICAL SUPPORT

Phone: +46 300 434300

E-mail: [support@elvaco.com](mailto:support@elvaco.com)

Online: [www.elvaco.com](http://www.elvaco.com)

EU DECLARATION OF CONFORMITY	
This declaration of conformity is issued under the sole responsibility of the manufacturer: Elvaco AB, Kabelgatan 27, S-43437 Kungälv, Sweden	
Product CMeX50	Year of CE-marking 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 Radio Equipment Directive 2014/53/EU RoHS 2011/65/EU	
And are in conformity with the following harmonization standards or other normative documents: IEC 61010-1 (ed.3) EN55022 (Radiated emission) EN 61000-4-6 (Immunity to RF-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)	
Kungälv, Sweden, 2016-04-16	
 David Vonasek, CEO	