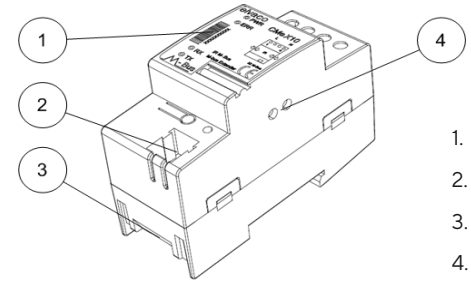
CMeX10/11

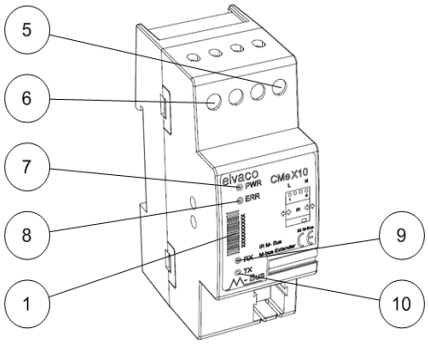
DIN-mounted M-Bus master for 32-64 unit loads

INTRODUCTION

The CMeX10/CMeX11 is an M-Bus Master which can drive up to 64 M-Bus slaves. For a complete description of the product or for information in Swedish, visit the Elvaco AB website, www.elvaco.com.

OVERVIEW





1. Serial number
2. M-Bus connector
3. DIN-rail lock
4. IR interface
5. Power supply N
6. Power supply L
7. Power LED (Green)
8. Error LED (Red)
9. RX LED (Yellow)
10. TX LED (Yellow)

MOUNTING

The product is mounted on a DIN-rail. The DIN-lock (3) 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 must be protected with a maximum 10 A circuit breaker of characteristic C or slow blow fuse. 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. The switch must comply with IEC 60947-1 and 60947-3. The main supply is connected to screw terminal (5) and (6). Main supply voltage should be in the range of 100-240 VAC, 50/60 Hz.

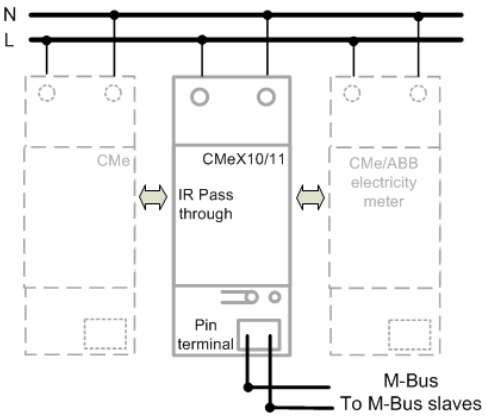
M-BUS 2-WIRE BUS

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) to connect the wiring to the M-Bus connector (2). If a stranded cable is used, a solid wire connection cable might be needed. Do not exceed the maximum cable length of 1000 m.

All equipment connected to the M-Bus must have double or reinforced insulation from mains to prevent the risk of electric shock.

IMPORTANT

- CMeX10/CMeX11 handles up to 32/64 slaves. Overloading the bus will turn on the ERR LED and turn off the M-Bus.
- All connected M-Bus slave devices must use a unique primary or secondary M-Bus addresses depending on addressing mode.



IR INTERFACE

The IR interface can be used with an ABB electricity meter or another CMeX module. Remove the IR shield (4) and mount the CMeX10/CMeX11 on the left side of the other unit. Leave no space between the products. Do not remove the shield unless the IR interface is used.

TROUBLESHOOTING

All LEDs are permanently off

There is a problem with the supply voltage. Please verify 100-240 VAC. If the problem persists, the product may be malfunctioning.

Red LED is permanently on

This indicates an error on the M-Bus 2-wire bus. Please verify no short-circuit of the bus. The voltage of the bus should be between 21 VDC and 42 VDC.

Cannot read connected M-Bus slaves

Please verify M-Bus status:

- Voltage over M-Bus slave device should be between 21 VDC and 42 VDC.
- All M-Bus slave devices must have unique secondary or primary M-Bus addresses depending on addressing mode.
- M-Bus slave device baud rates.

TX LED is permanently on

When CMeX10/CMeX11 is stacked with other CMeX10 Series modules and there is a short circuit on a product which is mounted on the left side of the issued product, the TX LED may be permanently on. Verify left side mounted products for no short circuit.

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.

LED INDICATIONS

Green PWR LED

PWR LED indicates mains supply.

Mode	Description	Visual
Permanently on	Mains power connected	
Permanently off	No mains power connected	

Red ERR LED

ERR LED indicates M-Bus 2-wire bus status.

Mode	Description	Visual
Permanently on	Short circuit of the M-Bus 2-wire bus	
Permanently off	Normal mode, Idle	
Short flash every second	No M-Bus slaves connected	
Flashing for 1 second	M-Bus slave collision	

Yellow RX LED

RX LED indicates communication from M-Bus slave to DTE.

Mode	Description	Visual
On/Flashing	M-Bus slave is transmitting data	
Off	M-Bus slave is not transmitting data	

Yellow TX LED

TX LED indicates communication from DTE to M-Bus slaves.

Mode	Description	Visual
On/Flashing	DTE is transmitting data	
Off	DTE is not transmitting data	

ORDERING INFORMATION

Product	Part number	Description
CMeX10	1050009	M-Bus Master with IR-interface for up to 32 M-Bus slaves
CMeX11	1050050	M-Bus Master with IR-interface for up to 64 M-Bus slaves

SIMPLIFIED DECLARATION OF CONFORMITY

Hereby, Elvaco declares that the products are in compliance with the following directives:

EU:

- 2014/30/EU (EMC)
- 2014/35/EU (LVD)
- 2011/65/EU + 2015/863 (RoHS)

UK:

- 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 part number.

TECHNICAL SPECIFICATIONS

Mechanics	
Protection class	IP20
Dimensions	90x65x36 mm
Weight	100 g
Connection M-Bus	Pin terminal
Cable M-Bus	Solid wire 0.6-0.8 Ø mm, e.g. EKKX 2x2x0.5
Mounting	DIN mounted
Power supply	Screw terminal, use 0.5 Nm tightening torque. Wire 0.75-2.5 mm²
Electrical	
Nominal voltage	100-240 VAC
Voltage range	-10 % to +10 % of nominal voltage
Frequency	50/60 Hz
Power consumption (max)	6 W
Power consumption (nom)	CMeX10 3.5 W, CMeX11 6 W
Power consumption M-Bus (max)	CMeX10: 50 mA CMeX11: 100 mA
Overvoltage category	CAT III
Environmental	
Operating temperature range	-30 °C to +55 °C
Storage temperature range	-40 °C to +85 °C
Pollution	Degree 2
Operating altitude	0-2000 m
M-Bus	
M-Bus standard	EN 13757
M-Bus baud rate	300, 2400 Bit/s
Maximum connected M-Bus slaves	CMeX10: 32 CMeX11: 64
Maximum cable length	1000 m
Maximum load capacitance	1.5 uF
Nominal voltage	28 VDC
IR interface	Yes
Pass through	Yes. Maximum of 4 CMeX Series products side by side
Compatibility	All M-Bus meters, all ABB meters with IR interface, CMeX Series products
Approvals	
EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 61010-1, CAT 3

CONTACT INFORMATION

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