

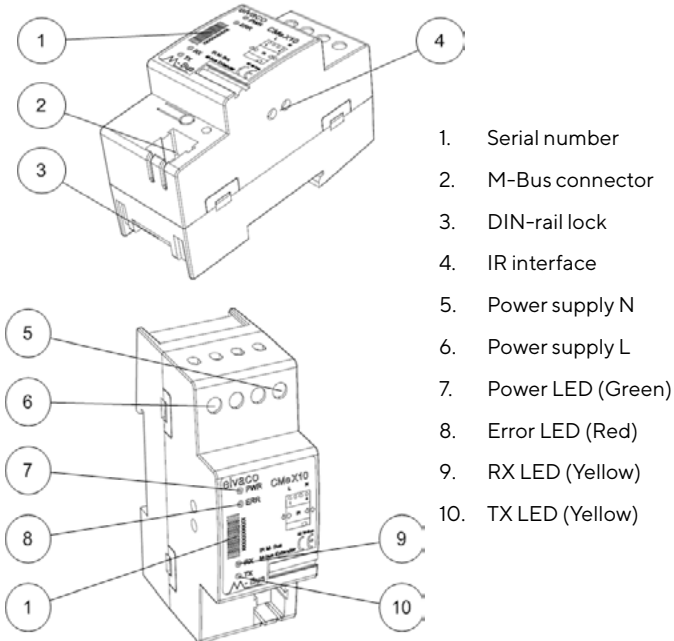
CMeX10/11

DIN-mounted M-Bus master for 32-64 M-Bus slaves

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



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 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.

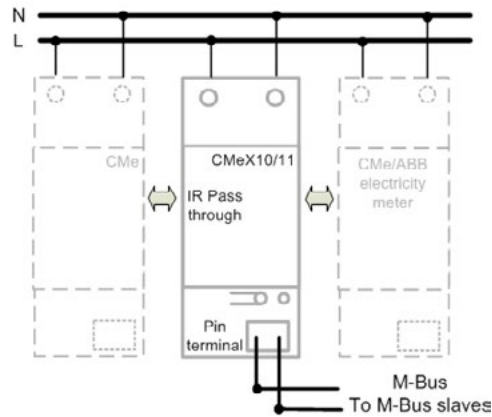
M-BUS 2-WIRE BUS

M-Bus is a multi-drop 2-wire bus with no polarity. Use a cable of area 0.25-1.5 mm², 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.

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 |

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:

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Online: www.elvaco.com

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TECHNICAL SPECIFICATIONS

Mechanics

| | |
|------------------|--|
| Protection class | IP20 |
| Dimensions | 90x65x36 mm |
| Weight | 100 g |
| Connection M-Bus | Pin terminal solid wire 0.6-0.8 Ø mm |
| Mounting | DIN mounted |
| Power supply | Screw terminal cable 0.75-2.5 mm ² , 0.5 Nm tightening torque |

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 µF |
| 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 |

EU DECLARATION OF CONFORMITY

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

| Product | Year of CE-marking |
|---------|--------------------|
| CMeX10 | 2016 |
| CMeX11 | 2016 |
| CMeX105 | 2016 |
| CMeX115 | 2016 |
| CMeX125 | 2016 |
| CMeX135 | 2016 |

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

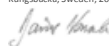
LVD Directive 2014/35/EU
EMC Directive 2014/30/EU

RoHS 2011/65/EU

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

IEC 61010-1 (ed.3)
EN55022 (Radiated emission)
EN 61000-4-6 (Immunity to HF-injection)
EN 61000-4-3 (Immunity to RF-field)
EN 61000-4-15 (Immunity to voltage variation)
EN 61000-4-4 (Immunity to bursts)
EN 61000-4-5 (Immunity to surge)
EN 61000-4-2 (Immunity to ESD)

Kungälv, Sweden, 2016-04-16


David Vonasek, CEO