

M-Bus reading device MBM-□□

M-Bus Series

Instruction Manual

MBM-10/40 is a reading device for tax meters, connected directly or through m-bus counters to an m-bus network. It is both m-bus converter and local display for reading data. Device can read and store data for up to 40 tax meters. Data is shown on device display, but can also be read with a personal computer/notebook through RS-232 interface and free Gineers software. Furthermore, transmitting devices like Ethernet or GPRS converters can be connected and data is read remotely. Normally it is mounted on a flat vertical or horizontal surface. Since display is 2x16 – tariff data and historical values can only be read through serial interface and are not visualized, only main value is shown.

1. Main Technical Parameters

- max. number of devices to read – 10/40
- power supply voltage – 55-250 Vac/ 80-350 VDC
- m-bus nominal output voltage – 36 VDC ± 1V
- max. m-bus output current – 85mA/25mA for 40/10 devices
- max. power consumption – < 4 W (for 40 devices)
- display – LCD, 2 x 16 symbols, backlight
- keyboard – 4 tactile switches
- interface – 1xM-bus, 1xRS232C
- storage temperature – -20÷+50 °C
- air humidity – 40÷90 %
- dimension (H/W/D) – 90/105/76 mm
- protection class – IP 33
- serial port RS-232C baud rate – 300/1200/**2400**/4800 bps, 8, E, 1
- m-bus speed – 300/1200/**2400**/4800 bps, 8, E, 1
- weight – 0.410 kg

2. MBM operation

MBM must be set by qualified personnel, familiar with safety instructions and regarding this instruction. In normal working mode MBM displays sequentially the values of tax meters to be read. The display changes every 4-12s (this parameter can be set with our software). The display for every tax meter includes user number (0 to 999), medium (cold/heat water, electr., gas, etc.), free text up to 10 symbols, value and type of measured value (like 465.8 m³ or 44556.3 kWh) as shown here:

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H e a t - M r . S m i t h
5 - 1 5 . 7 m 3
    
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The data is shown with accuracy 0.1 of measured value.

Pressing «up arrow» or «down arrow» keys display data of the next or previous tax meter in the list.

MBM starts reading the whole m-bus network four times a day (at 0:00h, 6:00h, 12:00h and 18:00h) and the data is stored in non-volatile memory. Last measured data is displayed. It also can be force to do m-bus poll with a command through RS-232C interface.

Pressing the «OK» key MBM displays the start (measured when the network and MBM is set up) and the current pulse count for the selected tax meter. After predefined time without key press MBM shows the basic data for the next meter in the list.

When power is interrupted, MBM continues to work in sleep mode (only clock enabled) until the internal battery is discharged (about 30 days). The display is not lit. When the power is restored, the display starts showing the data again and if the internal battery is discharged, the clock data is lost. Tax meter data is always kept and cannot be lost.

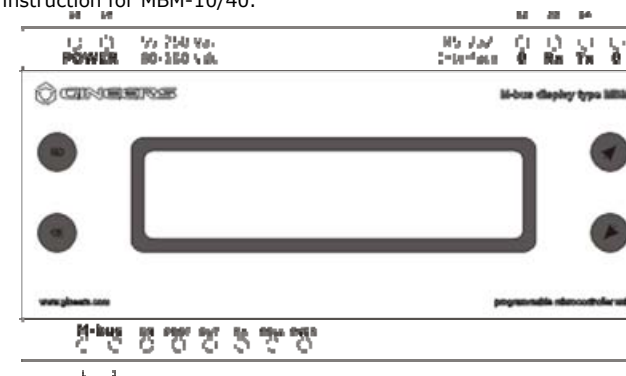
The devices powers all m-bus devices connected. It tracks continuously the m-bus network and if maximum output current is reached a LED called "over" is lit. If the current reaches certain levels above maximum or there is a short circuit – LED called "prot" is lit and m-bus network is shut down. When the problem is solved around 20 seconds later devices start to operate normally. M-bus current

levels are different for MBM-10 and MBM-40 and are related to max number of devices that can be connected. 1 standard m-bus device is assumed to be 1.5mA load for the m-bus converter in the device.

All data is programmed through serial interface RS-232C and our dedicated software. Since the commands are pure ASCII – this can be done also with any terminal program, if user knows the commands. Some details for every device – like tariff information and historical values, can only be read through the interface since display is small and have no capability of showing them.

3. Mounting, electrical connection and setup

The mounting of MBM-10/40 must be done by qualified personnel, familiar with safety instructions and setup instruction for MBM-10/40.



All MBM-10/40 connections are external, described below:

No. of pin	Description
18, 19	Power 55-250 Vac/ 80-350 VDC (cable included)
1, 2	M-bus – polarity does not matter
32 and 35 GND, 33 (Rx/D), 34 (Tx/D)	RS-232C DB9 null modem – for programming or readout (cable included)

4. Warranty

The warranty of the device is limited to 2 years from the date of sale. If the device shows any defect or malfunctions during that period, the manufacturer is obligated to repair the device in its own service for manufacturer's expense, or, if the repair is impossible, to replace the device with the new one. The transportation costs to the manufacturer's service are due to the client. The warranty voids if this manual's instructions are not met, warranty seals are removed or the device was opened by unauthorized by the manufacturer personnel.

Serial No:.....

Sale Date:.....

Signature:.....

5. The Package Contains

- MBM – 1 pcs.
- 1xRS-232C programming cable
- Instruction Manual – 1 pcs.

6. Manufacturer

Gineers Ltd.,
Building 4, "Iskarssko chausse" 7 blvd.
1528 Sofia, Bulgaria
Tel/fax (+359-2) 9758105
URL: <http://www.gineers.com>
e-mail: info@gineers.com