# Installation and Operating Instructions

## M-Bus Interface - 1 DIN module

IIST090-01 Stand 10-07-2012

| Code | Description |
|---|---|
| DRM-M | Module for M-Bus connection for energy, power V, I, cosφ, freq. |

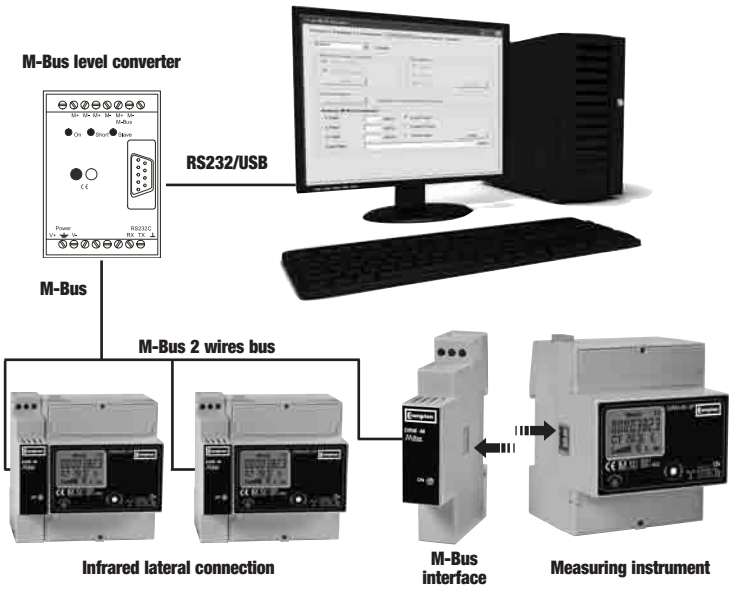
**⚠ WARNING**

**Installation must be carried out and inspected by a specialist or under his supervision.**

## M-Bus Interface - Shorthand Guide

### 1) System Architecture

- A typical system is described below. In the picture, the M-Bus interface communicates with a remote master application on a PC.




### 2) Physical Connection

- M-Bus. Simply connect the M terminals to the two wires bus.
- IR lateral port: put the counter beside the M-Bus interface in a way that the interface IR port face-up the counter IR port.
- Suitable cable: YCYM or standard telephone cable J.Y(St)Y 2 x 2 x 0.8 mm.

### 3) Supply

- The power supply is obtained directly from the bus. The connection is polarity independent.
- Current consumption of the M-Bus module < 2.6 mA (this is equivalent to two standard loads).

### 4) Default Setting

- Baud rate: 2400 bit/s
- M-Bus Primary address: 00
- M-Bus secondary address: see the label stuck on the interface case

### 5) Available Support

**5.1 Software**

- M-Bus master application
- Data analyzer tool

**5.2 Documentation**

- M-Bus Module - User manual
- M-Bus Master - Manual
- M-Bus Protoco - Technical description
- Description of Data Analyzer

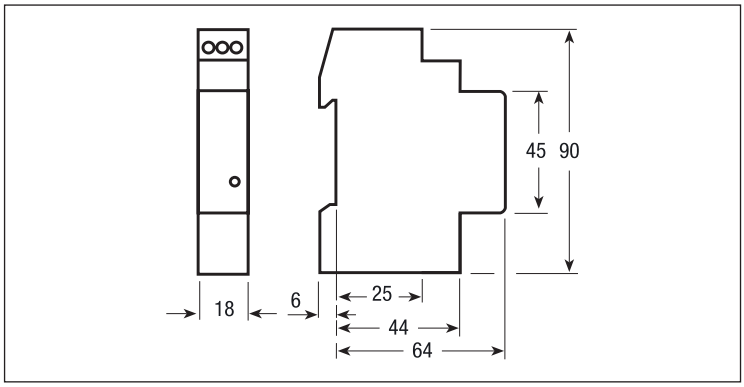
### 6) Quick Start

- Connect the interface to the M-Bus line.
- Place the counter beside the interface in a way that the interface IR port face-up the counter IR port.
- Install the M-Bus master application on a Windows PC.
- Run the M-Bus master application and follow the user guide indications.

### 7) Frontal Panel

- A green LED reports the state of the communication with the measuring instrument:
  - LED blinking: communication not active
  - LED ON: communication active

## Dimension




## Cable length M-Bus according to EN13757-2 Annex E

**Cable type:**

- Shielded telephone cable 0,5 mm² (0,8 mm) (typ. 4x0,8 mm)
- NYM-cable (1,5 mm²)

⚠

**Using telefone cables with an diameter of 0,6 mm either the max. length or the number of slaves must be reduced by factor 2!**

**Cable length:**

| Type | Installation | Distance (resistive cable length) | Total Length of segment wiring | Cable Type (Diameter) | Number of Slaves (Unit Loads) | max. Baudrate |
|---|---|---|---|---|---|---|
| A | small in house installation | 350 m | 1.000 m (<30 Ohm) | 0,5 mm² (0,8 mm) | 250 | 9.600 Baud |
| | | | | | 64 | 38.400 Baud |
| B | large in house installation | 350 m | 4.000 m (<30 Ohm) | 0,5 mm² (0,8 mm) | 250 | 2.400 Baud |
| | | | | | 64 | 9.600 Baud |
| C | small wide area net | 1.000 m | 4.000 m (<90 Ohm) | 0,5 mm² (0,8 mm) | 64 | 2.400 Baud |
| D* | large wide area net | 3.000 m | 5.000 m | 1,5 mm² (1,4 mm) | 64 | 2.400 Baud |
| | Point to Point | 10.000 m | 10.000 m | 1,5 mm² (1,4 mm) | 1 | 300 Baud |

*** A special shielded calbe can be necessary!**

## Technical data

| Data in compliance with IEC 60950-1, EN 61000-6-2, EN 61000-6-3 and EN 61000-4-2 | | | **DRM-M** |
|---|---|---|---|
| **General characteristics** | | | |
| • Housing | DIN 43880 | DIN | 1 module |
| • Mounting | EN 60715 | 35 mm | DIN rail |
| • Depth | | mm | 70 |
| **Power supply** | | | |
| • Power supply | | - | through bus connection |
| **Operating features** | | | |
| • Interface for energy, power, voltage, current, cosφ and frequency, ect. | | | |
| • Suitable for both single-phase and three-phase Energy-meter, Network analyzer and Power-meters | | - | yes |
| **M-bus interface** | | | |
| • HW interface | | - | 2 screw clamps |
| • SW protocol | | - | M-Bus according to EN1434 |
| • Baudrate | | Baud | 300-9600 |
| **Interface to measuring instrument** | | | |
| • HW interface | optical IR | n° | 2 (Tx, Rx) |
| • SW protocol | | - | proprietary |
| **Safety acc. to IEC 60950-1** | | | |
| • Degree pollution | | - | 2 |
| • Overvoltage category | | - | II |
| • Working voltage range | | VAC | 24 ... 36 |
| • Clearance | | mm | ⩾1.5 |
| • Creepage distance | in equipment | mm | ⩾2.1 |
| | on PCB (not coated) | mm | ⩾1.5 |
| • Test voltage | impulse (1,2/50 µs) peak value | kV | 2.5 |
| | 50 Hz 1 min | kV | 1.35 |
| • Housing material flame resistance | UL 94 | class | V0 |
| **Connection terminals** | | | |
| • Type cage | screw head Z +/- | POZIDRIV | PZ0 |
| • Terminal capacity | solid wire min. (max) | $mm^2$ | 0.15 (2.5) |
| | stranded wire with sleeve min. (max) | $mm^2$ | 0.15 (4) |
| **Environmental conditions** | | | |
| • Operating temperature | | °C | -10 ... +55 |
| • Limit temperature of storage | | °C | -25 ... +70 |
| • Relative humidity | | % | ⩽80 |
| • Vibrations | sinusoidal vibration amplitude at 50 Hz | mm | ±0.25 |
| • Protection class | acc.to IEC 60950-1 | - | II |
| • Degree of protection | housing when mounted in front | - | IP20 |



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