



# algodue ELETTRONICA M-Bus Communication Module User Manual

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## algodue<sup>®</sup> ELETTRONICA *Innovative Electronic Systems* **M-Bus**

### M-Bus Communication Module User Manual



Subject to change without prior notice

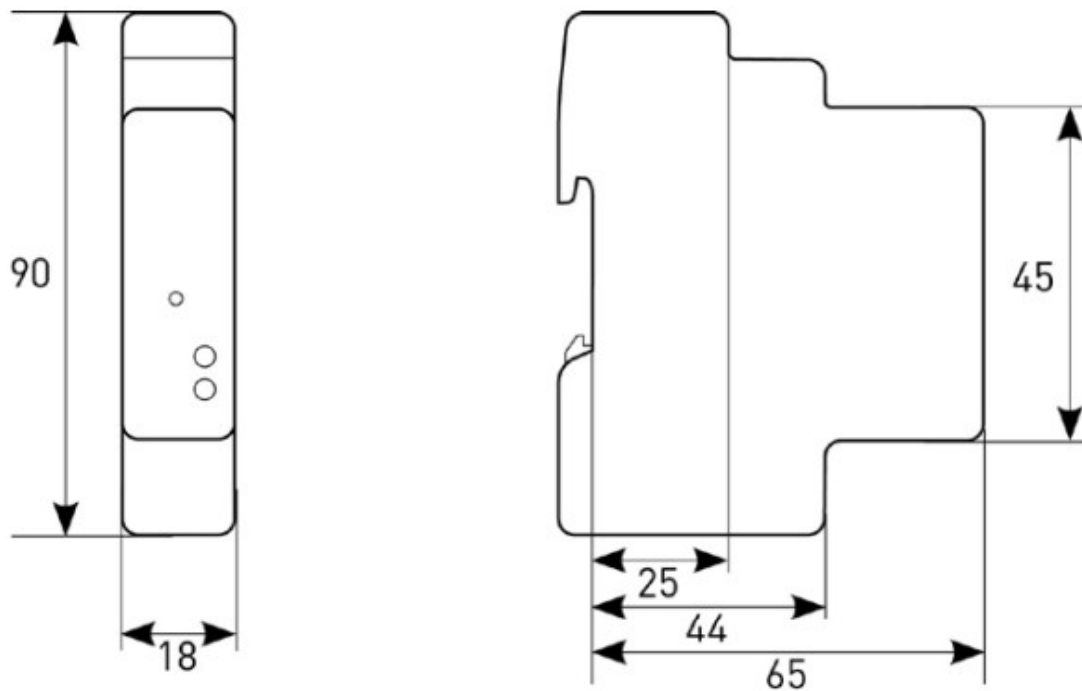
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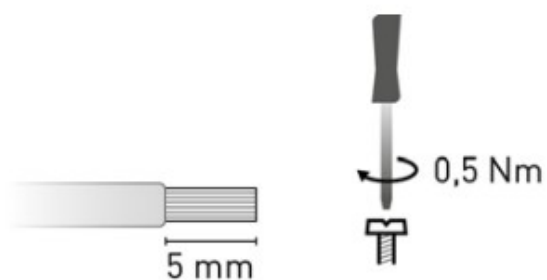
## M-Bus Communication Module

### PICTURE

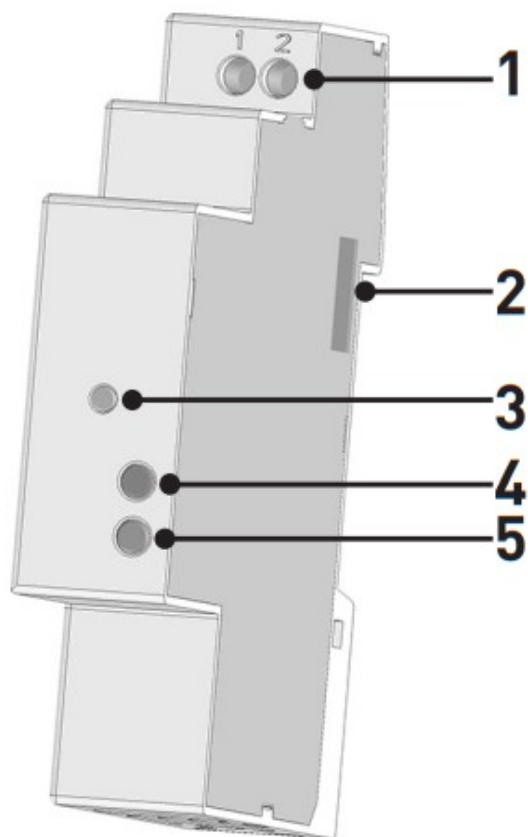
**A**



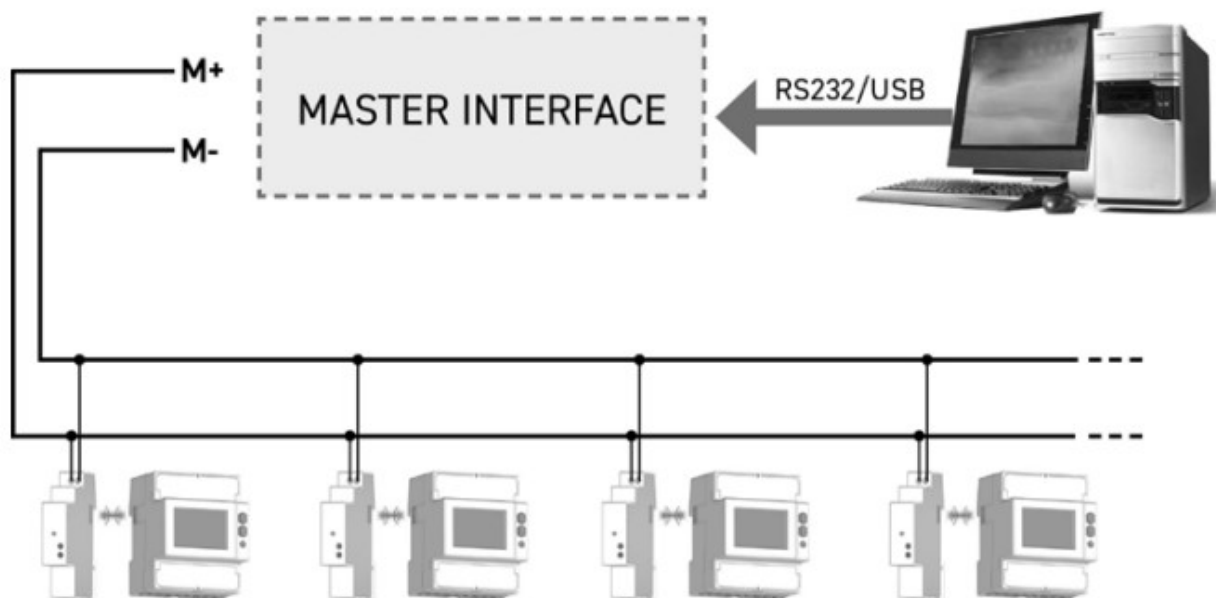
**B**



**C**



**D**



**M-BUS PORT HAS NO POLARITY**

#### COMMUNICATION MODULE

The communication protocol and the relevant software are available at [www.algodue.com](http://www.algodue.com)

**⚠ WARNING!** Device installation and use must be carried out only by qualified professional staff. Switch off the voltage before device installation.

#### CABLE STRIPPING LENGTH

For the module terminal connection, cable stripping length must be 5 mm. Use a blade screwdriver with 0.8×3.5 mm size, fastening torque 0.5 Nm. Refer to picture B.

## OVERVIEW

Refer to picture C:

1. M-Bus connection terminals
2. Optical COM port
3. SET DEFAULT key
4. Power supply LED
5. Communication LED

## CONNECTIONS

A master interface is required between PC and the M-Bus network to adapt RS232/USB port to network. The maximum number of modules to be connected can change according to the used master interface. For the connection among the different modules, use a cable with a twisted pair and a third wire. After making M-Bus connections, combine each M-Bus module with a single meter: place them side by side, perfectly lined up, with module optical port facing the meter optical port. Refer to picture D.

## LEDS FUNCTIONALITY

Two LEDs are available on the module front panel to provide power supply and communication status:

| LED COLOUR               | SIGNALLING                  | MEANING                                                     |
|--------------------------|-----------------------------|-------------------------------------------------------------|
| <b>POWER SUPPLY LED</b>  |                             |                                                             |
| –                        | Power OFF                   | The module is OFF                                           |
| GREEN                    | Always ON                   | The module is ON                                            |
| <b>COMMUNICATION LED</b> |                             |                                                             |
| –                        | Power OFF                   | The module is OFF                                           |
| GREEN                    | Slow blink (2 s OFF time)   | M-Bus communication=OK<br>Meter communication=OK            |
| RED                      | Fast blink (1 s OFF time)   | M-Bus communication=fault/missing<br>Meter communication=OK |
| RED                      | Always ON                   | Meter communication=fault/missing                           |
| GREEN/RED                | Alternating colours for 5 s | SET DEFAULT procedure in progress                           |

## M-BUS MASTER APPLICATION

M-Bus Master is an application software which allows to manage M-Bus module communication. With this application software it is possible to:

- detect and communicate with M-Bus modules
- change M-Bus module settings
- display the detected measurements of the energy meter connected to the M-Bus module
- set the measurement rate and type to be detected

### **To use M-Bus Master, follow the instructions:**

1. Connect one or more modules on M-Bus network as previously described.
2. Place one counter for each M-Bus module: module optical port must face up to meter optical port.
3. Install M-Bus Master on PC.
4. At the end of installation, run M-Bus Master.
5. Carry out a search for the available M-Bus modules on the network.

### **SET DEFAULT FUNCTION**

SET DEFAULT function allows to restore on the module default settings (e.g. in case of M-Bus primary address forgotten). To restore default settings, keep SET DEFAULT key pressed for at least 5 s, communication LED will blink green/red for 5 s. At the end of SET DEFAULT procedure, communication LED will be red continuously indicating to release the key.

Default settings:

M-Bus primary address = 000

M-Bus secondary address (ID number) = Progressive value on 8 digits

M-Bus communication speed = 2400 bps

Mask of data detected on the meter by the module = Default

### **TECHNICAL FEATURES**

Data in compliance with EN 13757-1-2-3 standard.

|                                                        |                                                                                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>POWER SUPPLY</b>                                    |                                                                                                                              |
| Through bus connection                                 | ✓                                                                                                                            |
| <b>M-BUS COMMUNICATION</b>                             |                                                                                                                              |
| Protocol                                               | M-Bus                                                                                                                        |
| Port                                                   | 2 screw terminals                                                                                                            |
| Communication speed                                    | 300 ... 9600 bps                                                                                                             |
| <b>SERIAL COMMUNICATION</b>                            |                                                                                                                              |
| Type                                                   | Optical port                                                                                                                 |
| Communication speed                                    | 38400 bps                                                                                                                    |
| <b>STANDARDS COMPLIANCE</b>                            |                                                                                                                              |
| M-BUS                                                  | EN 13757-1-2-3                                                                                                               |
| EMC                                                    | EN 61000-6-2, EN 61000-4-2,<br>EN 61000-4-3, EN 61000-4-4,<br>EN 61000-4-5, EN 61000-4-6,<br>EN 61000-4-11, EN 55011 Class A |
| Safety                                                 | EN 60950                                                                                                                     |
| <b>WIRE SECTION FOR TERMINALS AND FASTENING TORQUE</b> |                                                                                                                              |
| Terminals                                              | 0.14 ... 2.5 mm <sup>2</sup> / 0.5 Nm                                                                                        |
| <b>ENVIRONMENTAL CONDITIONS</b>                        |                                                                                                                              |
| Operating temperature                                  | -15°C ... +60°C                                                                                                              |
| Storage temperature                                    | -25°C ... +75°C                                                                                                              |
| Humidity                                               | 80% max without condensation                                                                                                 |
| Protection degree                                      | IP20                                                                                                                         |



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**Documents / Resources**



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Ed2212, M-Bus Communication Module, M-Bus, Communication Module, Module

## References

- [🌐 Algodue Elettronica: sistemi di monitoraggio energia](#)