

MAGX²

P32 M-Bus Installation



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1. Introduction

This document provides the mechanical installation and setup procedure between the M-Bus module and MAGX2 transmitter.

All MAGX2 devices operating firmware version 21.37 and above are compatible for this upgrade if required.

1.1 *Design of M-Bus module*

The M-Bus module is a device, designed to communicate with MAGX2 devices and your local M-Bus network. There is one way to use this device: as a slave, to which the master connects.

The M-Bus module is giving out measures values of the meter. It cannot be used for meter settings.

The M-Bus module is galvanically isolated from the flowmeter.

The M-Bus module conforms EN1434-3.

1.2 *System requirements*

The hardware and software requirements of your computer must be at least equal or better than those listed below to ensure that the software works correctly:

- MAGX2 Flowmeter with M-Bus module.
- M-Bus master device (PLC or PC with M-Bus SW).

2. Installation information

Installation of the M-Bus module can be only performed by qualified staff or a person who has safety requirements.

2.1 M-Bus module installation

Install M-Bus module according to picture bellow.

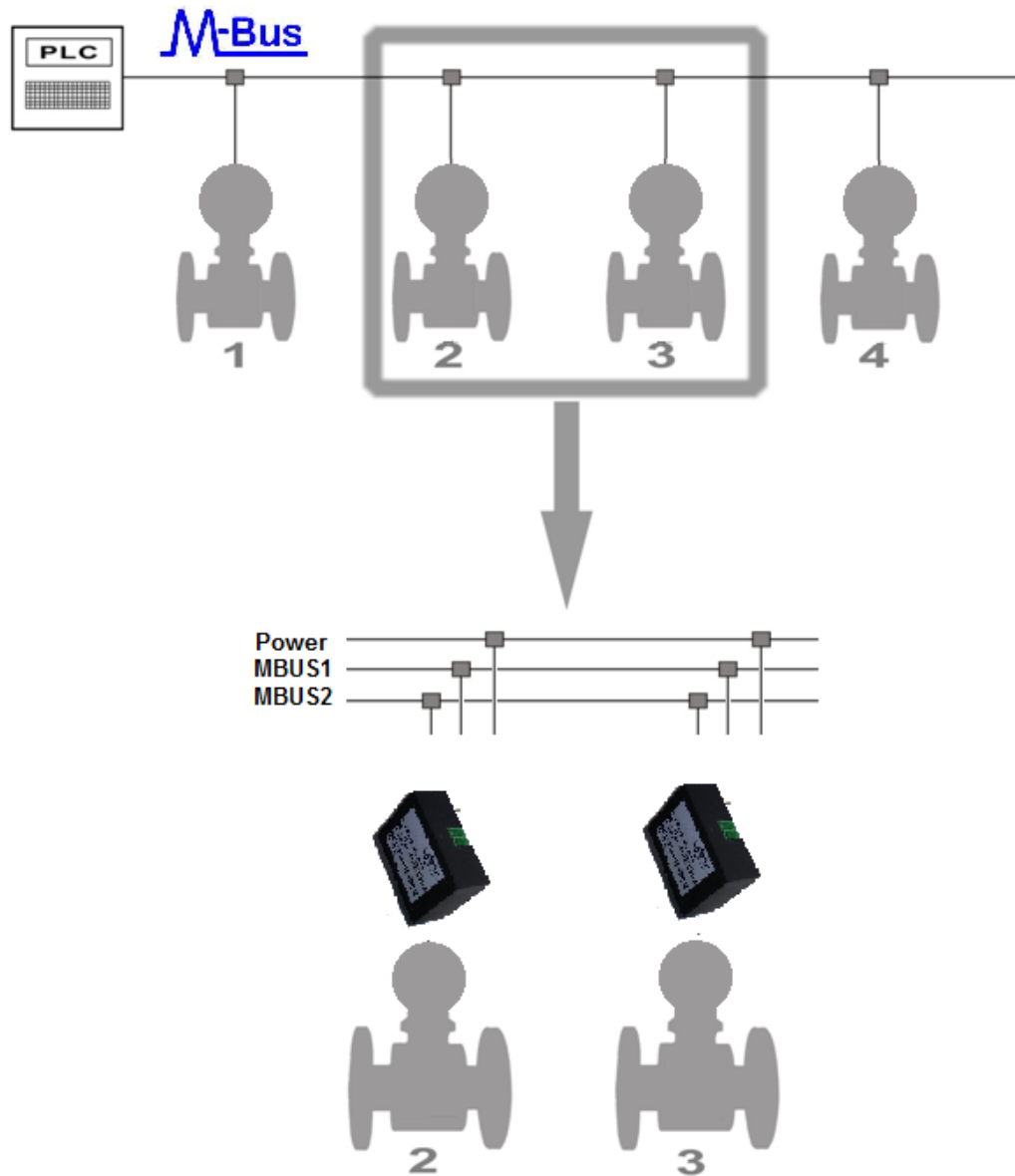


Picture 1. M-Bus module location

2.3 System connection

Each individual meter needs to be powered, and then they can be interconnected into M-Bus network. Polarity of the connection poles does not matter.

The number of simultaneously connected units is dependent on Master.



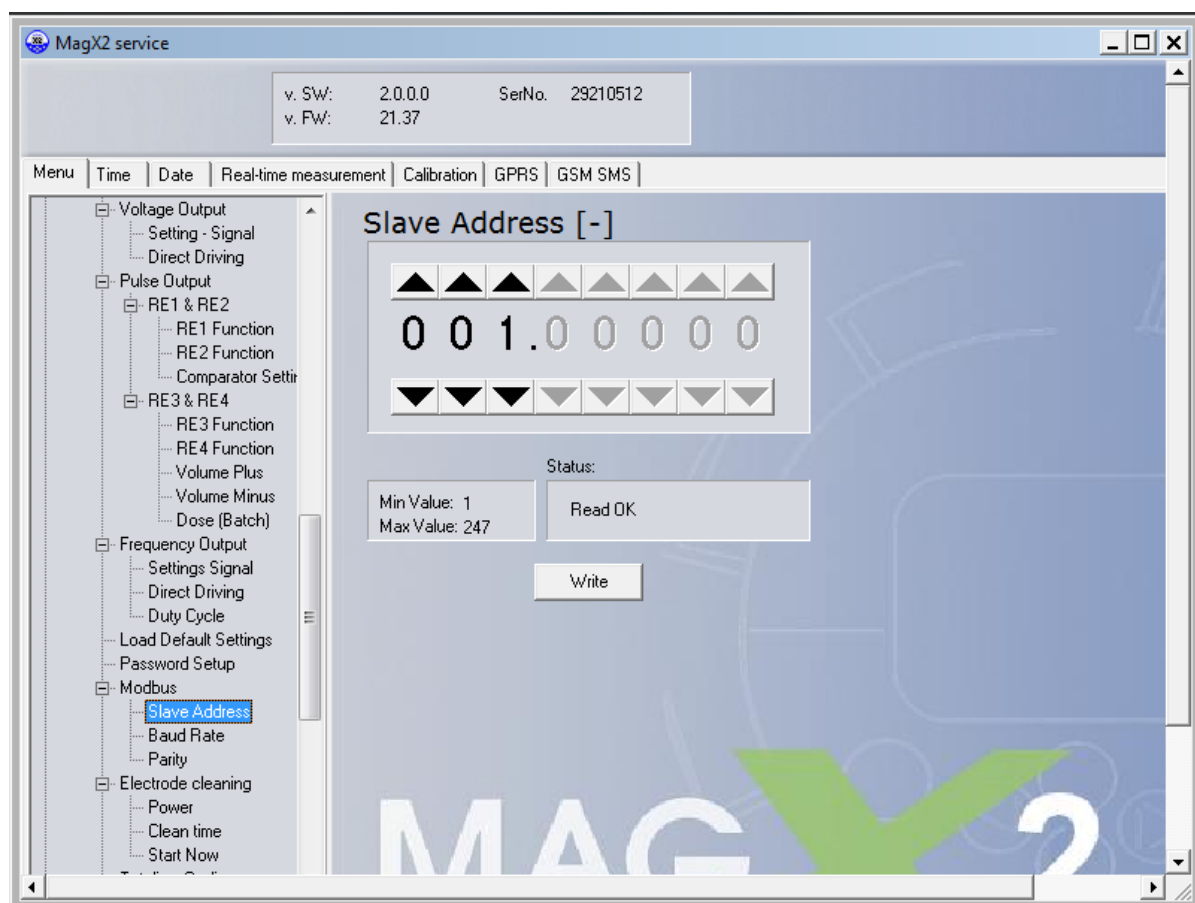
2.5 Configuration of MODBUS communication protocol

As internal communication protocol of MAGX2 is MODBUS RTU, the M-Bus module is translating M-Bus messages into MODBUS and vice-versa, therefore before normal use of the M-Bus module you must set up the MODBUS communication protocol in MAGX2 transmitter. MODBUS communication protocol is in the User menu. You can use MAGX2 software or another one with MODBUS RTU communication protocol for set up. You can also set it up manually via the touch buttons.

Necessary settings of MODBUS communication protocol on MAGX2 side:

Slave Address: 1

Baudrate, Databits, Stopbit, Parity does not matter. Those settings can be done in Arkon SW or via keyboard in User settings - Modbus section.



Picture 4. MODBUS communication protocol settings

Initial settings of M-Bus communication protocol on Master side:

ID: 1

Baudrate: 2400

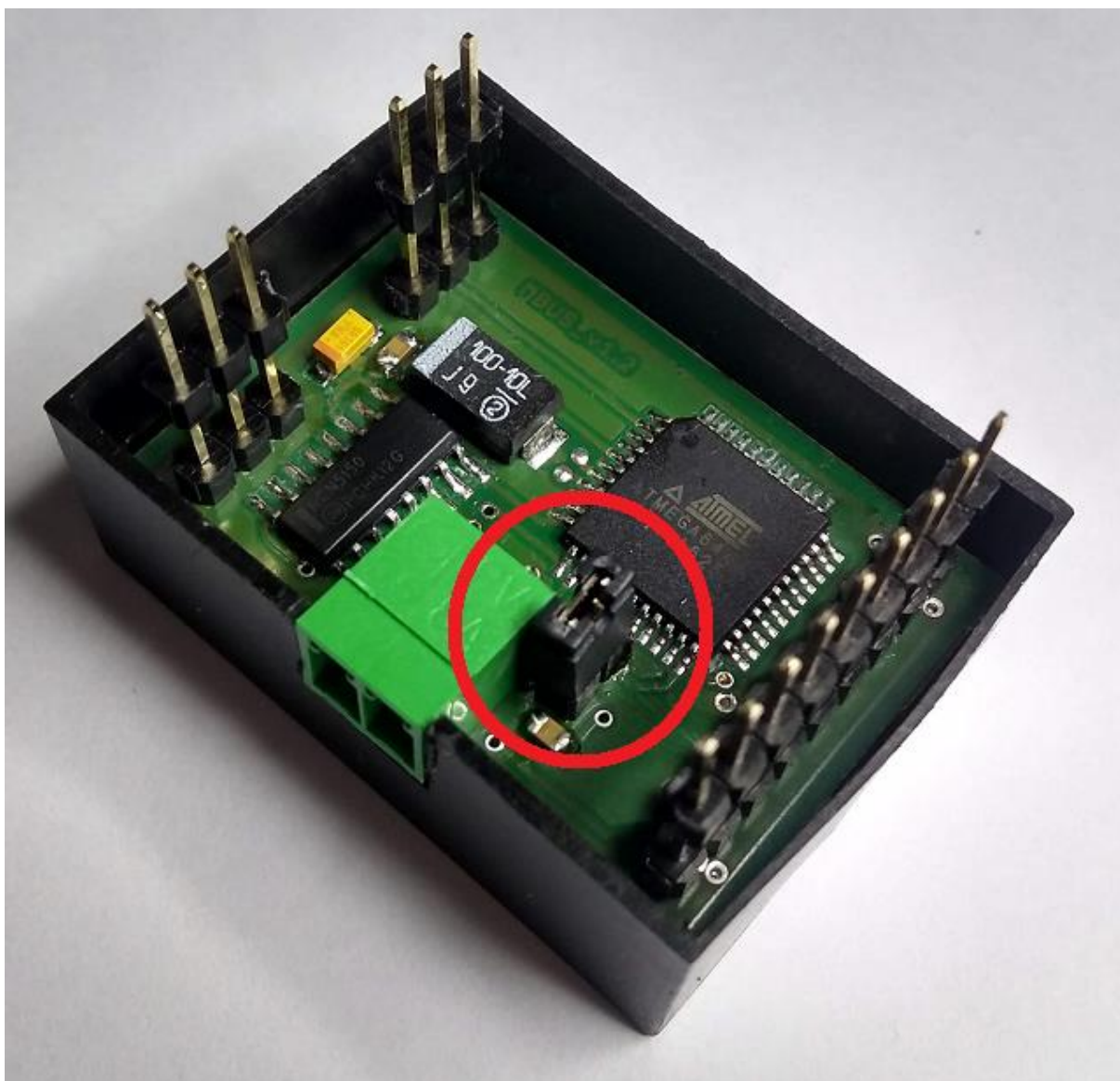
Databits: 8

Stopbit: 1

Parity: Even

The ID and Baudrate can be changed by standard M-Bus messages.

To reset the Baudrate and ID to its initial settings (2400, 1) user needs to connect jumper to (or simply interconnect conductively) the two pins below the module (Picture 5) and power module up by connecting it to M-Bus network.



Picture 5. Reset communication parameters

The module is powered from M-BUS network, changes in communication settings can be done also without having the module connected to the flowmeter.

The module is galvanically isolated from the rest of the meter (2500V).

After connecting MAGX2 to the power supply, it's necessary to wait 20 seconds for the M-Bus communication function.

3 Using M-Bus module

Manufacturer code = "ARK"

Implemented functions and their responses:

SND_NKE - Initialization of Slave

- Returns E5 as acknowledge

SND_UD - Send User Data to Slave

- User settings are done using CI field:

To change baudrate:

CI=B8h Baudrate set to 300 Bd

CI=B9h Baudrate set to 600 Bd

CI=BAh Baudrate set to 1200 Bd

CI=BBh Baudrate set to 2400 Bd

CI=BCh Baudrate set to 4800 Bd

CI=BDh Baudrate set to 9600 Bd

To change ID:

CI=B2s and User data defines new address

The address can be from range 1-250

Address 0 is not used

Address 254 is a broadcast address together with reply

Address 255 is a broadcast address without reply

REQ_UD1 - Request for Class1 Data

REQ_UD2 - Request for Class 2 Data

- both requests returns the same data, namely in order in telegram:

Unit No. [-]	UINT32
Volume flow [m3/hr]	REAL32
Total Volume [m3]	REAL32
Aux Volume [m3]	REAL32
Total+ Volume [m3]	REAL32
Total- Volume [m3]	REAL32
Sensor temperature [°C]	REAL32
External temperature [°C]	REAL32
External pressure [bar]	REAL32

Any other field combination is possible upon request.

4 Appendix

4.1 Warranty

The warranty conditions are covered by Arkon Flow Systems, s.r.o. Terms & Conditions of Sale and by Arkon Flow Systems, s.r.o Return Regulations and Warranty Conditions. The Arkon Flow Systems, s.r.o Terms & Conditions of Sale and the Arkon Flow Systems, s.r.o Return Regulations and Warranty Conditions are an integral part of the Resellers contract and of any Order Confirmation. Please see your Resellers contract or www.arkon.co.uk; Support section. The Warranty sheet is part of the Packing note of any new goods sent. For the claim or return procedure, please consult our web site www.arkon.co.uk or call the Arkon Flow Systems, s.r.o sales office.

4.2 Contact



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Skype: support.arkon

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8:30 – 18:00 (GMT+1)

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