



MBUS QUESTIONS & ANSWERS



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RESI-MBUSx-MODBUS, RESI-MBUSx-ETH

Questions & Answers

All MBUS products

QUESTION

- What is the maximum cable length ?
 - The maximum cable length is defined by three parameters:
 - The amount of meters connected to the line
 - The used cable diameter (0.8mm², 1mm² or 1.5mm²)
 - The MBUS communication speed (2400bd, 300bd, ...)
 - Use the internet to search for MBUS wiring descriptions, there are plenty of documents available, how to do a correct wiring on the MBUS
 - We specify our converters for approx. 3000m with 300bd to 2400bd, less than 1000m with 9600bd. The real distance can be shorter due to cabling and topology.

- Which communication speed should I use on the MBUS side ?
 - Almost every MBUS meter is designed for using 2400 baud as a communication standard speed. Some of the meters support different baud rates like 300 or 9600 baud.
 - But in the real world we have seen that 2400 baud is the best choice. So whenever it is possible change the baud rate of your meters to 2400 bauds.

- FIRMWARE: 4.1.08: What is changed ?
 - AFFECTED PRODUCTS: RESI-MBUSx-MODBUS, RESI-MBUSx-ETH
 - CHANGE 1: We had some issues in converting FLOAT values from the incoming MBUS frame to the MODBUS register. This issue affects only meter who use internally FLOAT 32 as a MBUS datatype in the MBUS REQ_UD2 frames. In combination with very large or very small FLOAT numbers e.g. 0.1234e-40 or 1.23456e+100 the converter cannot convert this FLOATS correctly and reboots. So the reading of such a meter fails always. → SOLVED
 - CHANGE 2: Readout Timing changed: In the past we discovered that there are many meters out in the market, who need a special treatment in the timing, e.g. very old KAMSTRUP meters need often two readout cycles with a gap of at least 10-15 seconds. This is non standard to the MBUS. Or other meters have problems with secondary addressing, if there is a too small gap between the readout. So we introduced a new parameter: Poll Timeout. This timeout defines the pause after finishing reading of a meter and starting reading the next meter. In the previous firmware versions this timeout was fixed to 250ms gap, which was ok for 99% of the meter readout on the markets. But some meter fail to process this little gap.
 - Value 1..30: Gap time 1 seconds to 30 seconds
 - Value 101..400: Gaptime=(Value-100)*0.1s → 0.1s .. 30s e.g. 105 → 0.5s
 - Value 65535: Gap time is 1 second
 - Value 65534: Gap time is 250ms
 - Value 65533: Gap time is 500ms
 - Value 65532: Gap time is 7250ms
 - All other values: Gap time is 1000ms
 - CHANGE 3: MBUS timing adopted for 300bd and 9600bd. We improved the timing according to the MBUS standard to fulfill better the timing with extreme low baudrates and extreme high baudrates
 - CHANGE 4: Special frame answer types: Until this firmware version we have supported only the frame types 0x73:FIXED LENGTH FRAME and 0x72:12 BYTE HEADER+VARIABLE LENGTH FRAME. But there are more and more meters on the market which use special frames to distinguish their products from others on the market. So we implemented the following frame types:
 - 0x7A: 4 BYTE HEADER+VARIABLE LENGTH FRAME: The header is mirrored in our ident number of the meter, the variable length frame data is read completely
 - 0x78: NO HEADER+VARIABLE LENGTH FRAME: Our ident number of the meter is set to 0xFFFFFFFF, the variable length frame data is read completely
 - 0x90..0x97: MANUFACTURER SPECIFIC FRAME(OBSOLETE): The variable length frame data is read completely
 - 0xA0..0xAF: MANUFACTURER SPECIFIC FRAME 1: The variable length frame data is read completely
 - 0xB0..0xB7: MANUFACTURER SPECIFIC FRAME 1: The variable length frame data is read completely
 - CHANGE 5: We improved the filtering of wrong MBUS characters on the MBUS line due to impact of ling cables or electrical noise on the cable
 - CHANGE 6: We improved the search functionality of the MODBUSConfigurator software. use V1.9.012 February 2019 in combination with this new firmware