

Programming AT MBUS NE



1. Device activation

Device are turn to sleep mode after production process in order to save energy. To wake up device magnet must be approached to reed switch on printed circuit board. Picture below indicate location of reed switch on different kind of NE device.



2. Connecting device to programmer

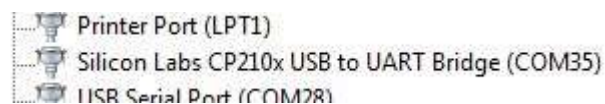
In order to program device it is required to connect them to programmer AT-K-MBUS-01. Wires must be connected according to table below.

Function	AT-MBUS-NE-XX	AT-K-MBUS-01
Ground	Green	Black
Date	Yellow	Black-Red

Pictures of connection are shown below.

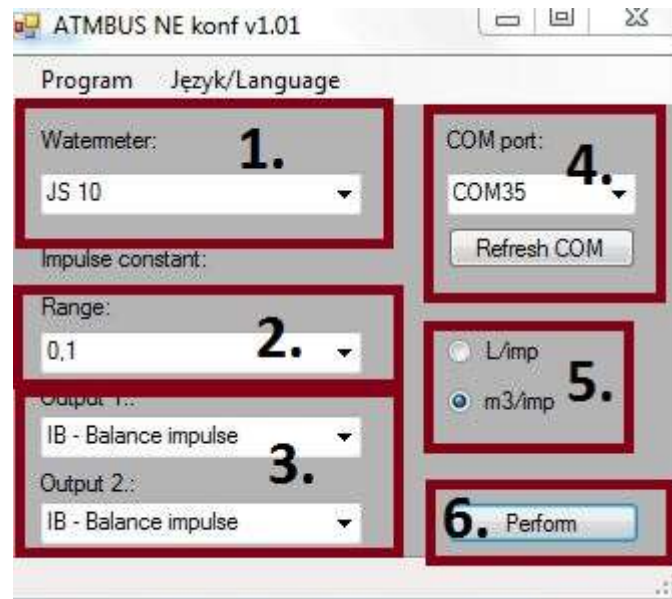


Programmer requires driver „The CP210x USB to UART Bridge Virtual COM Port (VCP)” from company Silicon Labs. After connecting device to PC and driver installation device will be seen as virtual port COM.



3. Device programming

For programming can be used „ATMBUS NE konf” program. Programs main window:



1. Select watermeter on which device will be placed.
2. Impulse constant. It depends from watermeter type, which must be set first.
3. Impulse output type. Default value:
 - IB – bilance impulse – Impulses are set according to counter state.
 - PR – flow impulse – Impulses are set according to flowing volume, independently from flow direction.
4. Select proper COM port.
5. Here range for field 2. can be changed to different units.
6. Click here to start programming.

After clicking „Perform” button program will try to program device. If programming failed, Program will wait few seconds and will try to program again, until device is programmed, or maximum number of retries was reached. Default values of parameters: maximum number of retries – 20, time between retries - 5000 ms. Parameter values can be changed in menu „Program” => „Settings”.

Device after connection to programmer can not be programmed yet. Device checks every minute if it is connected to programmer, configuration is possible after checking.

In case of „timeout” during programming check wire connection to programmer, make sure you selected proper COM port.

Parameter „Time between data transmission” in Program -> Settings was added. In case of connection instability – increase parameter.

Regarding pulse modules AT-MBUS-NE-XX and output configurations:

Output setting	When pulses are generated at the output	How many pulses are output
IB – Balance pulse	Pulses are generated only during forward flow.	<p>The number of generated pulses corresponds to the difference of the forward flow volume and the reverse flow volume divided by the pulse weight.</p> <p>If reverse flow occurs, its volume must be compensated with the same forward flow volume before the next pulses will be generated by the module on the output. This means that during this period there will be no pulses at the output, even if the water flows through meter in the forward direction.</p>
WP – Forward flow pulse	Pulses are generated only during forward flow.	The number of pulses generated corresponds to the forward flow volume divided by the pulse weight.
WS – Backward flow pulse	Pulses are generated only during reverse flow.	The number of generated pulses corresponds to the reverse flow volume divided by the pulse weight.
PR – Flow pulse	Pulses are generated both during forward and reverse flow.	The number of generated pulses corresponds to the sum of the volume of both flow types divided by the pulse weight.
PT – Forward and backward pulse	Pulses are generated both during forward and reverse flow.	The number of generated pulses corresponds to the sum of the pulses generated for the forward flow (the forward flow volume divided by the pulse weight) and the pulses generated for the reverse flow (back volume divided by the pulse weight). For the identification of pulses generated for backflow and forward flow, the "state of the direction" output is used.
SK – Direction state	The forward flow causes the low impedance state, the backward flow causes a high impedance state.	not applicable
AW – Failure state	Any event detected by the module results in a high impedance state.	not applicable