

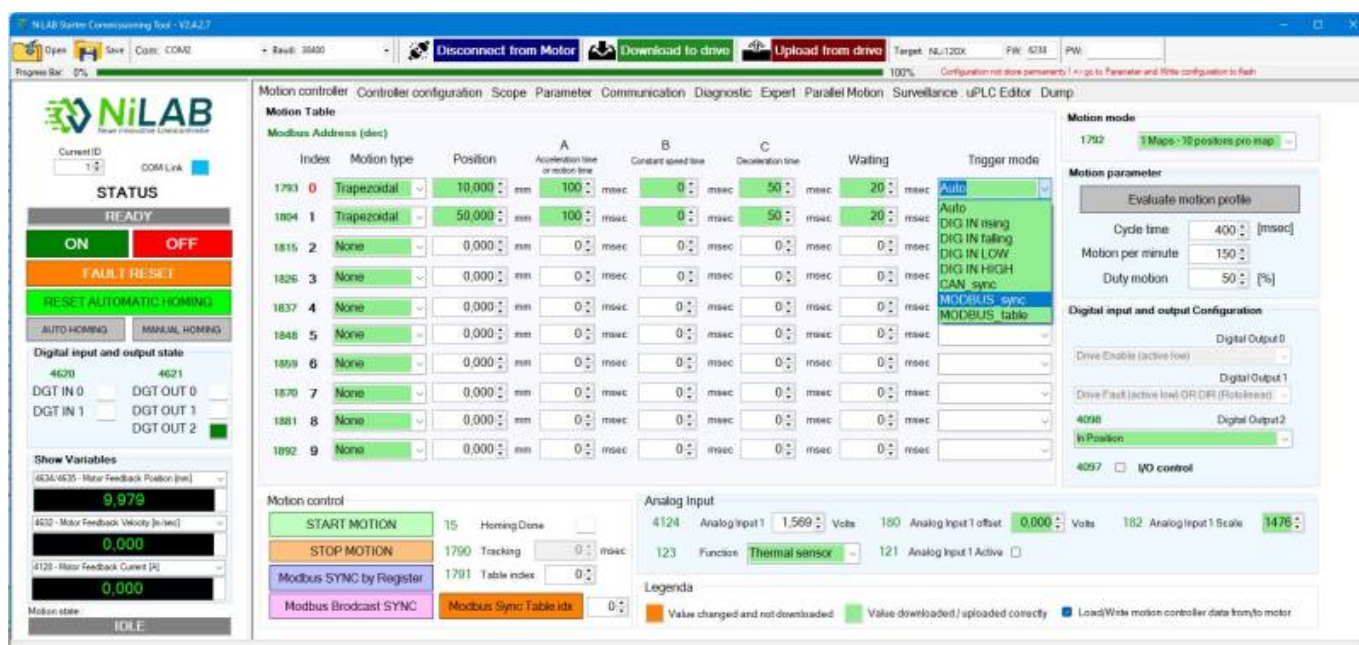
MODBUS Trigger Configuration

This functionality is available using Firmware ≥ 6233 .

There are two ways to start the motion using MODBUS communication:

Item
Using broadcast message (special message to send using RS485 communication)
Writing the modbus sync signal register
Writing the modbus sync signal register with id address equal to 0
Writing the modbus sync register with the table index value

First of all you have to configure the motion controller to receive the motion trigger using modbus trasmission selecting the right motion trigger type for the rows you want to trigger.



Using broadcast message

If the motors to synchronized are more than 1 and you want to send just one message, you have to use this method.

In particular you have to send two characters on the RS485 MODBUS like in this table. The motor will not reply to this message to avoid collision on the modbus.

1st character	2nd character
0x00	0x80

In this way all the nodes will received the trigger command the trasmission time is minimized.

Writing the modbus sync signal register

If the motor involves in the synchronization is just one you can write a MODBUS register to send the trigger signal.

The Modbus register is **4622**. When this address is write with the value = 1 and then to confirm again the register 4622 to zero.

Writing the modbus sync signal register with id address equal to 0

If the motor involves in the synchronization are more than 1 you can write a MODBUS register to send the trigger signal.

If the address of the modbus write is 0 (node id = 0), the write is receive from all the nodes on the bus and the synchronization starts accordingly fro all nodes.

Writing the modbus sync signal register with the table index value

Instead of the value 1 and 0, the register 4622 can contains the value of the table row to triggered. Also in this case the address can be 0 in case of broadcast message to all the motors connected on the same modbus rtu bus. In order to configure this mode please set the trigger to MODBUS_table.

The screenshot displays the NILAB Starter Commissioning Tool interface. The main window shows the 'Motion Table' configuration. The table lists various motion profiles with columns for Index, Motion type, Position, Acceleration time, Constant speed time, Deceleration time, and Waiting time. The 'Trigger mode' column is set to 'MODBUS_table'. The 'Motion mode' is set to '1790: 1 Maps: 10 positions per map'. The 'Motion parameter' section shows 'Cycle time' set to 400 ms and 'Motion per minute' set to 150. The 'Digital input and output Configuration' section shows 'Drive Enable (active low)' and 'Digital Output 0' set to 'InPosition'. The 'Motion control' section shows 'START MOTION' and 'STOP MOTION' buttons. The 'Analog input' section shows '4124 Analog Input 1' set to 1.500 Volts and '180 Analog Input 1 offset' set to 0.000 Volts. The 'Legenda' section shows 'Value changed and not downloaded' (orange) and 'Value downloaded / uploaded correctly' (green).

Testing the synchronization using NILAB Starter

You can testing this functionality using the NILAB Starter software using the two button on the motion controller.

With the button Modbus SYNC by register the interface write 1 and 0 in squence on the 4622 modbus address.

With the button Modbus Broadcast SYNC the interface will send the two characters corresponding to

broadcast message on the Modbus serial.

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