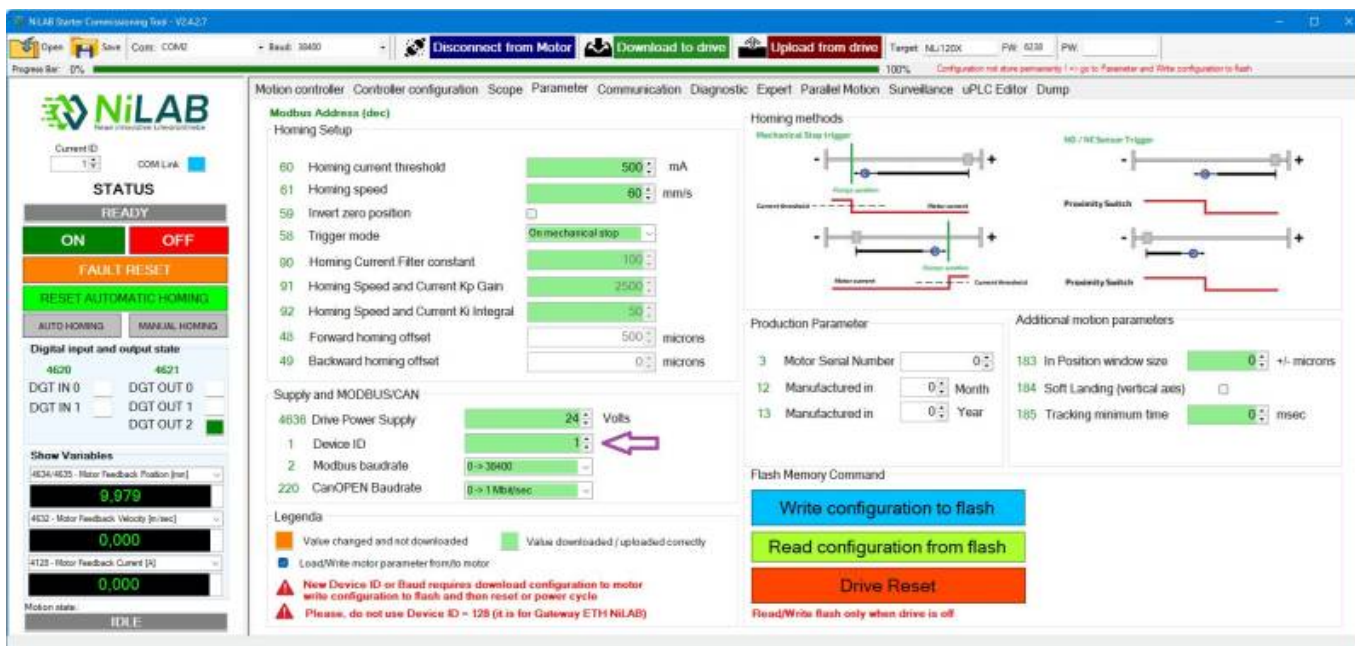


# MODBUS RTU Interface

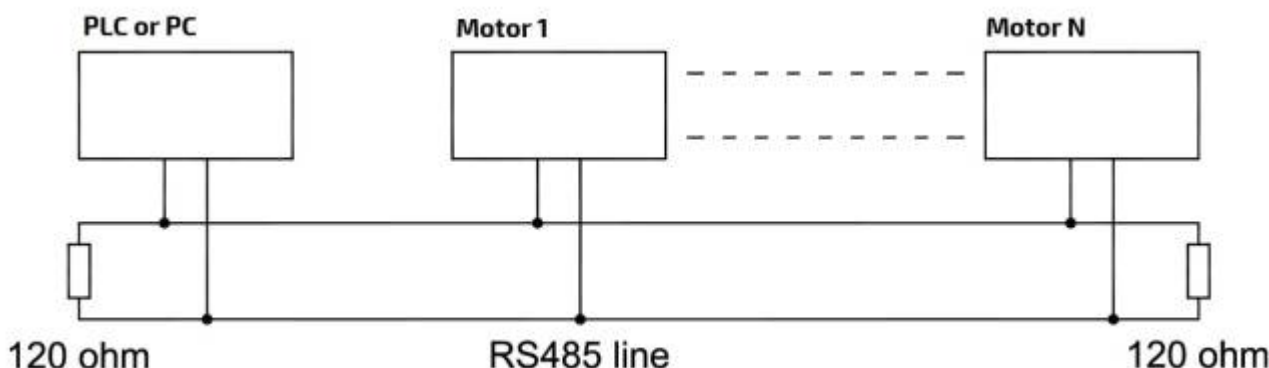
## How to set the right NODE ID inside the motor configuration

Using NiLAB Starter, connect to the single motor and store different address inside Motor Parameter window. Then press Download configuration to the motor and Store configuration to Flash to permanently store the node id inside the memory of the motor. Please use NODE ID starting from 1 to 128. The new node id will be update after a new power cycle.



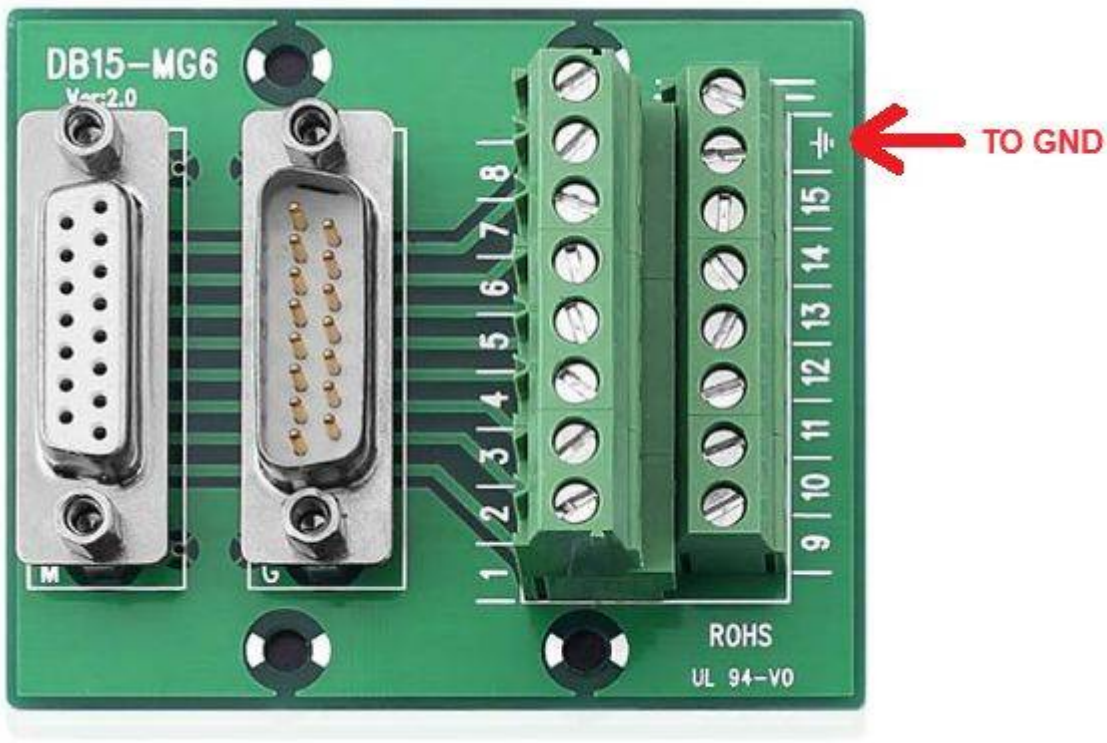
## How to connect the motors on the BUS

The NLI integrated miniature linear motors are equipped with MODBUS RTU communication interface. More information about this type of fieldbus can be read here: <https://en.wikipedia.org/wiki/Modbus>



As in the schema above, for long connection we suggested to use a terminal resistor of 120 ohm.

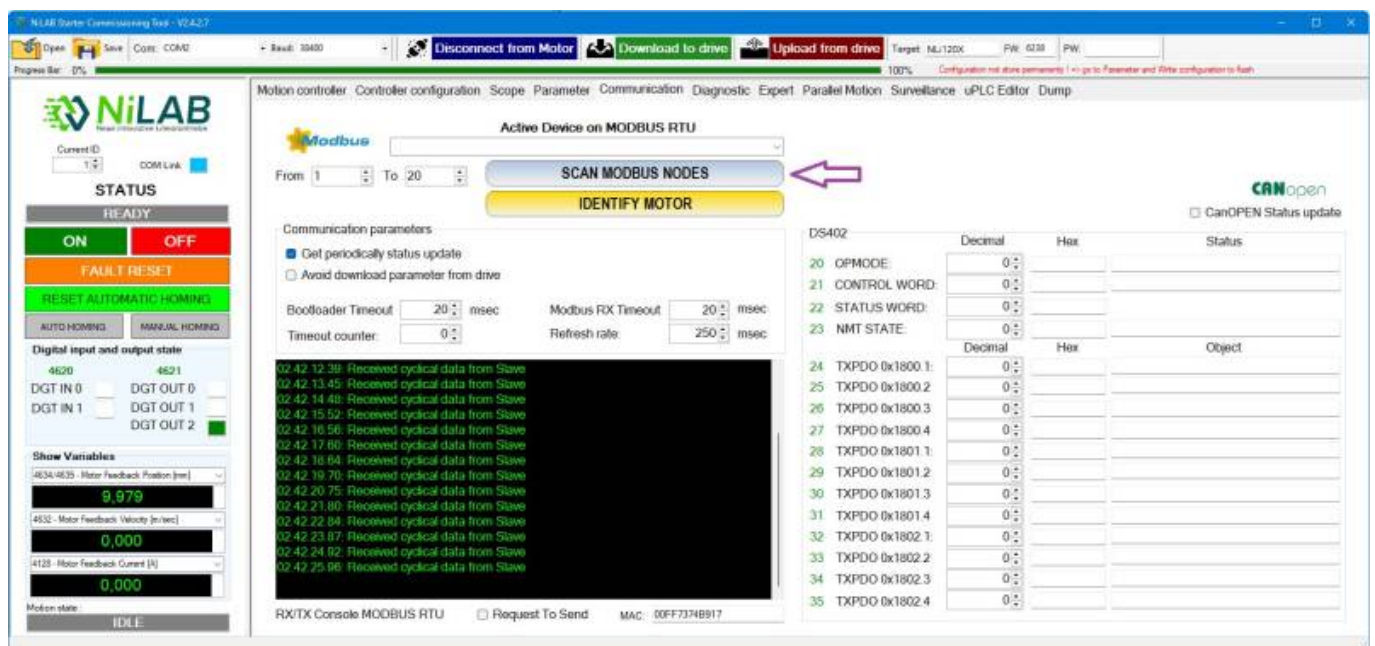
If the motor are used with NL-DB15-MG6 terminal block from NiLAB, please connect earth to ground, all ground present must be connected together with the cable length is more than 5 meters. This connection ensure the shielding of the cable.



Please note that you can read a maximum of 2 registers per read operation with standard communication speed of 38400 and parity Even. The MODBUS parameters are organized in different area in respect to the function involved.

### How to scan the bus looking for motors

It is possible to scan the modbus using NILAB Starter Function call : SCAN MODBUS NODES Please, uncheck Get periodically status update checkbox. Then, check Avoid download parameter from drive checkbox, Connect to the right COM port using CONNECT to MOTOR button and then press SCAN MODBUS NODES button to scan the bus looking for the motors.

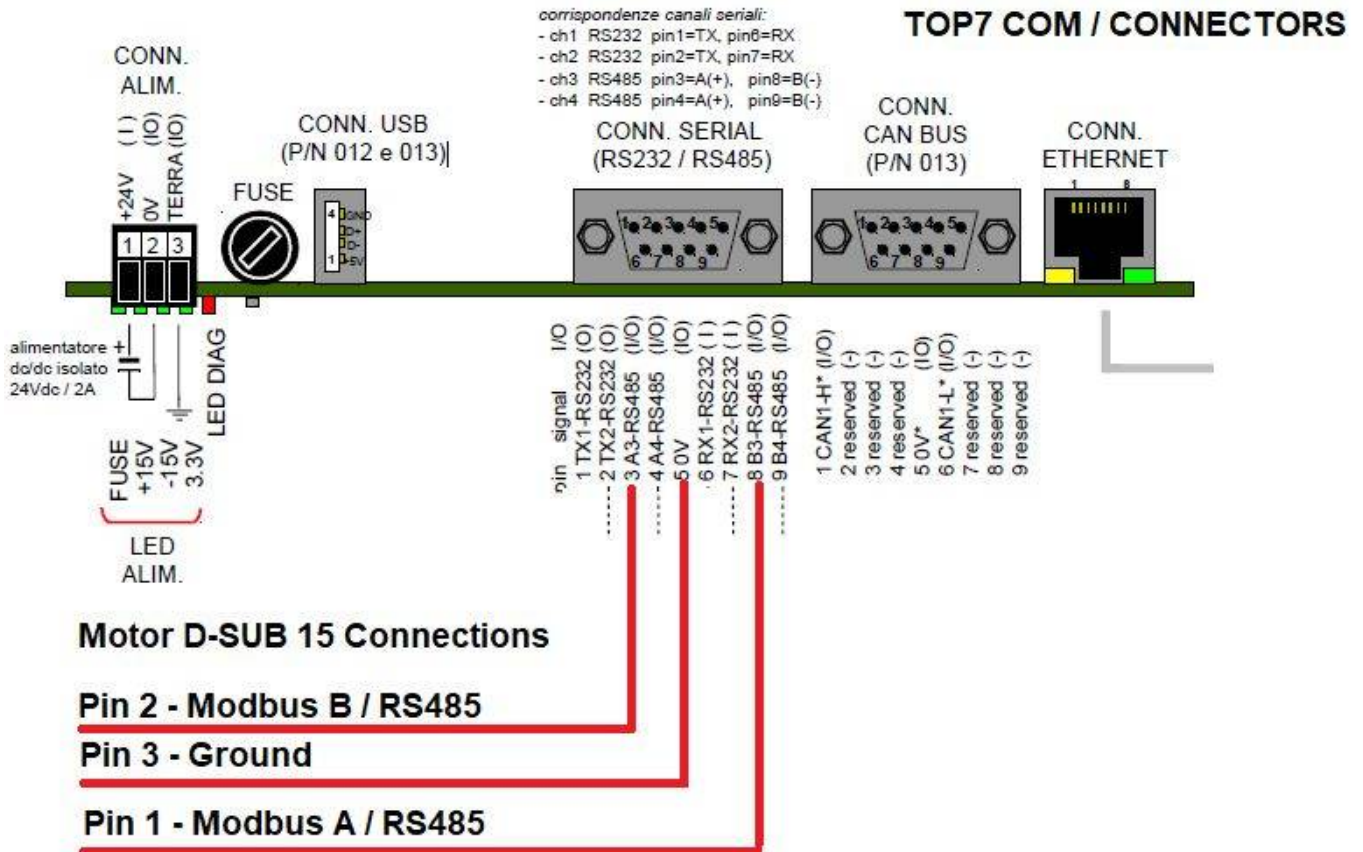


# Standard Device for MODBUS Communication with NLI integrated motor

## TOP7 PLC Touch

For the programming, diagnosis and parameterization of integrated miniature linear motor is possible to use TOP7 touch panel. NiLAB provide a solution with Software running on this device to be use in industrial automation. Info about TOP7 are available here:

[http://www.elcoelettronica.it/en/products/products\\_view.php?name=TOP%207](http://www.elcoelettronica.it/en/products/products_view.php?name=TOP%207)



## Helmholz 600-400-7BA31 module

In combination with FCT640 PLC Master controller, it is possible to use this MODBUS RTU interface for communicate with integrated drive miniature linear motor using standard CODESYS program.



## MOXA TCC-100/100I Series

Page link:

<https://www.moxa.com/en/products/industrial-edge-connectivity/serial-converters/serial-to-serial-converters/tcc-100-100i-series>

## MOXA UPORT 1100 Series

Page link:

<https://www.moxa.com/en/products/industrial-edge-connectivity/usb-to-serial-converters-usb-hubs/usb-to-serial-converters/uport-1100-series>

## WAVESHARE RS485 to EJ45 Ethernet - Rail mount



Virtual com port drive: <https://www.waveshare.com/wiki/File:Virtual-serial-port-control3.5.rar>

Vircom software: [https://www.waveshare.com/w/upload/4/42/VirCom\\_en.rar](https://www.waveshare.com/w/upload/4/42/VirCom_en.rar)

Please use this configuration:

**Device Settings**

**Device Info**

Virtual Serial: COM15

Dev Type: [ ]

Dev Name: WSDEV0001

Dev ID: 2867C2B3723F

Firmware Ver: V1.452

**Network**

IP Mode: DHCP

IP Address: 192 . 168 . 178 . 89

Port: 502

Work Mode: TCP Server

Net Mask: 255 . 255 . 255 . 0

Gateway: 192 . 168 . 178 . 1

Dest. IP/Domain: 192.168.178.66 Local IP

Dest. Port: 4196

**Advanced Settings**

DNS Server IP: 192 . 168 . 178 . 1

Dest. Mode: Dynamic

Transfer Protocol: None

Keep Alive Time: 60 (s)

Reconnet Time: 12 (s)

Http Port: 80

UDP Group IP: 230 . 90 . 76 . 1

Register Pkt: [ ]  ASCII

Restart for no data every 300 Sec.

Enable send parameter every 5 Min.

**More Advanced Settings...**

**Function of the device**

Web Download

DNS System

REAL\_COM Protocol

Modbus TCP To RTU

Serial Commnad

DHCP Support

Storage Extend

Multi-TCP Connection

**Serial**

Baud Rate: 38400

Data Bits: 8

Parity: Even

Stop Bits: 1

Flow Control: None

Get Default

Save As Default

Load Default

Modify Key

Firmware/Confir

Restart Dev

Modify Setting

Cancel

**Virtual Serial & Device Management - VirCom**

Manage(M) Config(C) View(V) Help(H)

Start Stop Device Serial

In...	Status	Com Name
1	Connected	COM15

**Information**

```
[2023-04-19,16:02:04] Connected to 192.168.178.66
[2023-04-19,16:02:04] Connecting... 192.168.178.66
[2023-04-19,16:02:04] COM15 Create ok!
[2023-04-19,16:02:04] Listen at port 4196 C
[2023-04-19,15:55:27] Close ok!
[2023-04-19,15:02:19] Connected to 192.168.178.66
```

**Virtual Serial Port Management**

Index	Com Name	COM Name	Type	Discription	Adapt Mode
1	COM15	Bridge	Bind ID	ID:2867C2B3723F	Globe Setting

**Add**

**Add Virtual Serial Port**

COM Number: COM15

Name This COM: Bridge

Serial Param Auto Adapt: As Globe Setting(Def.)

Vircom Work Mode: Bind ID(Def.)

TCP Server Mode Listen Port: 13049

Batch Create:

Number of Batch Creation: 1

Batch Increase Mode: IP Increase

**TCP Client Mode Settings:**

Client Mode Start Connection Now:

Dest. IP or Domain: 192.168.1.200

Dest. Port: 4196

Vircom Register ID: [ ]

Vircom Login Key: [ ]

Heart Beat Pakcet: [ ]

Heart Beat Interval: 0 (s)

OK Cancel

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