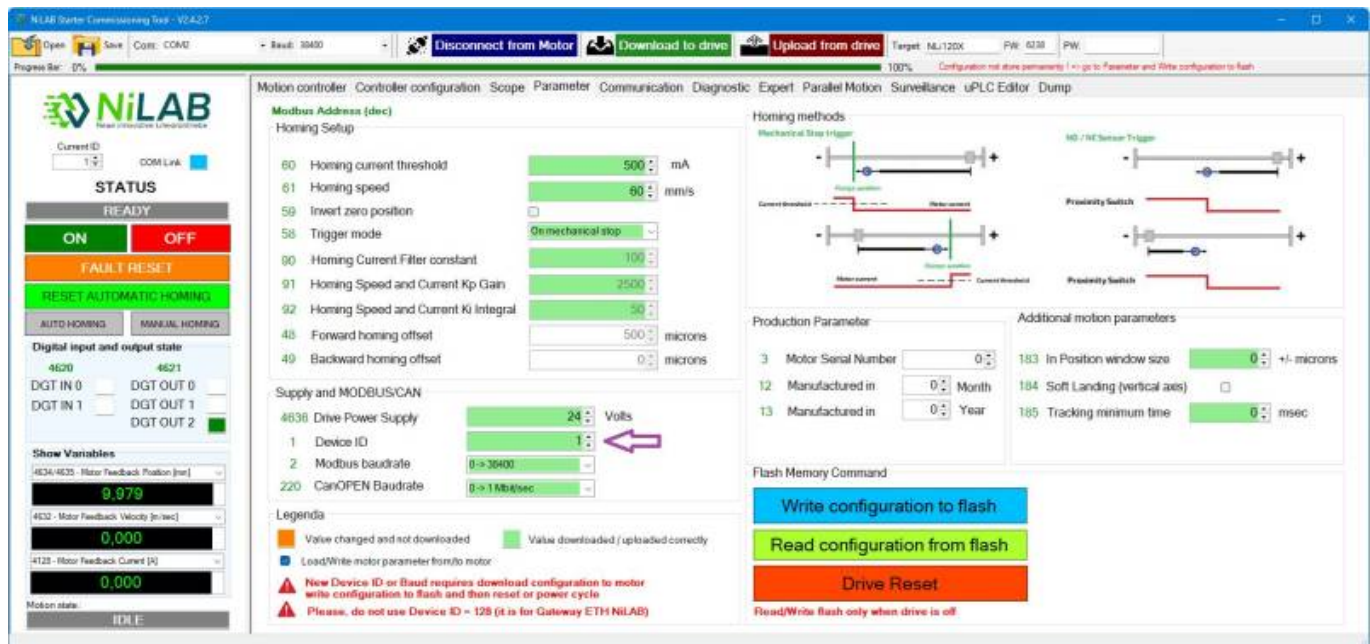


MODBUS RTU Interface

How to set the right NODE ID inside the motor configuration

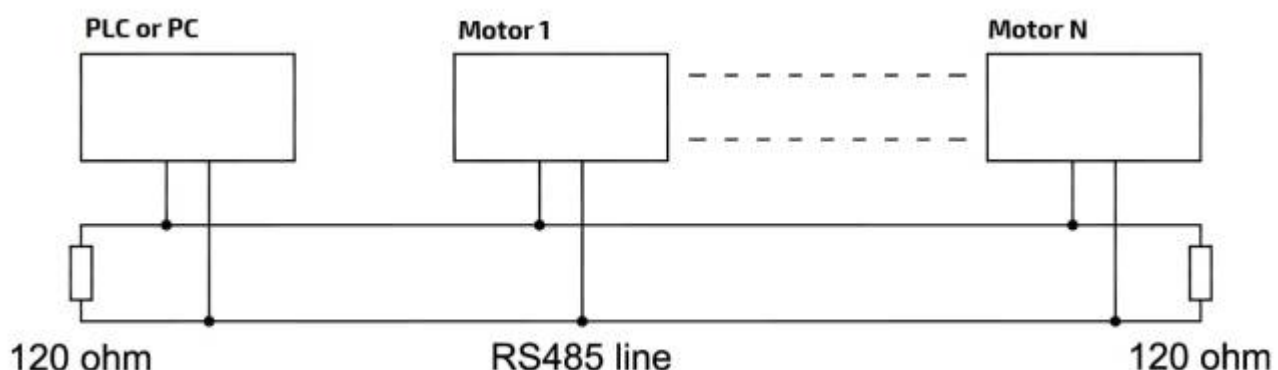
Using NILAB Starter, connect to the single motor and store a different address in the Motor Parameter window. Then press Download configuration to the motor and Store configuration to Flash to permanently store the node id inside the memory of the motor.

Please use NODE ID starting from 1 to 128. The new node ID will be updated after a new power cycle.



How to connect the motors on the BUS

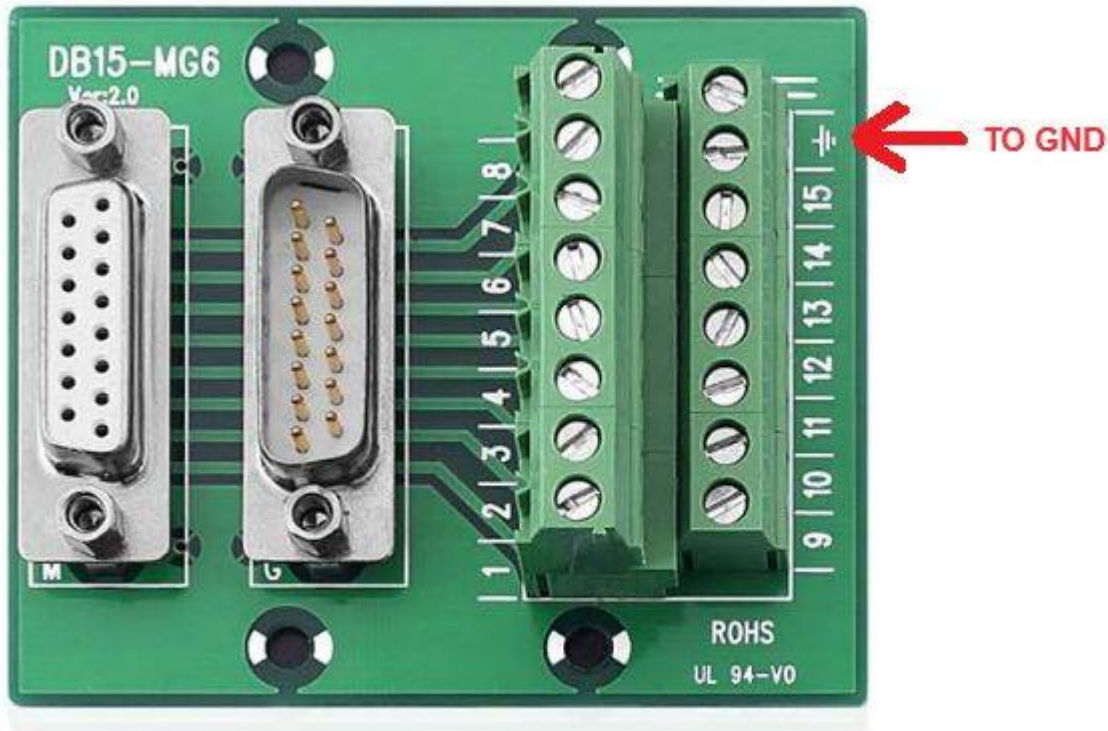
The NLi integrated miniature linear motors are equipped with MODBUS RTU communication interface. More information about this type of fieldbus can be read here: <https://en.wikipedia.org/wiki/Modbus>



As in the schema above, for long connections we suggest using a terminal resistor of 120 ohm.

If the motor is used with the NL-DB15-MG6 terminal block from NILAB, please connect earth to ground, all grounds present must be connected together when the cable length is more than 5 meters.

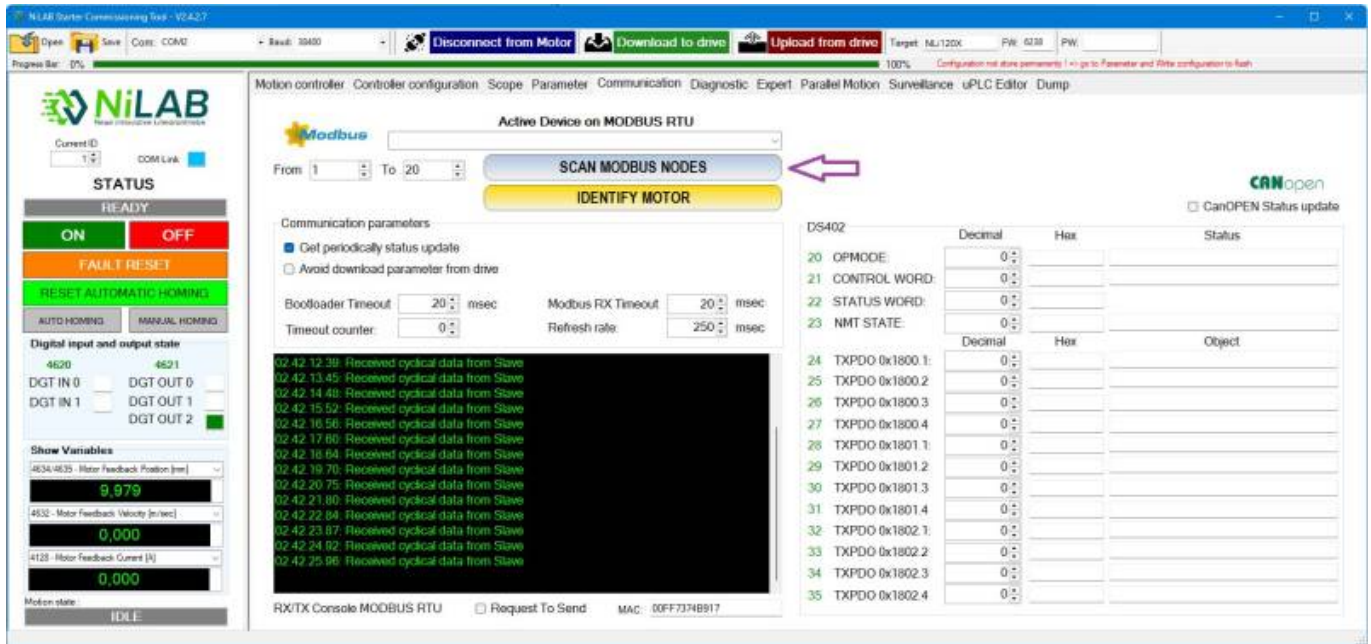
This connection ensures the shielding of the cable.



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 areas depending on the function involved.

How to scan the bus looking for motors

It is possible to scan the modbus using the 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.

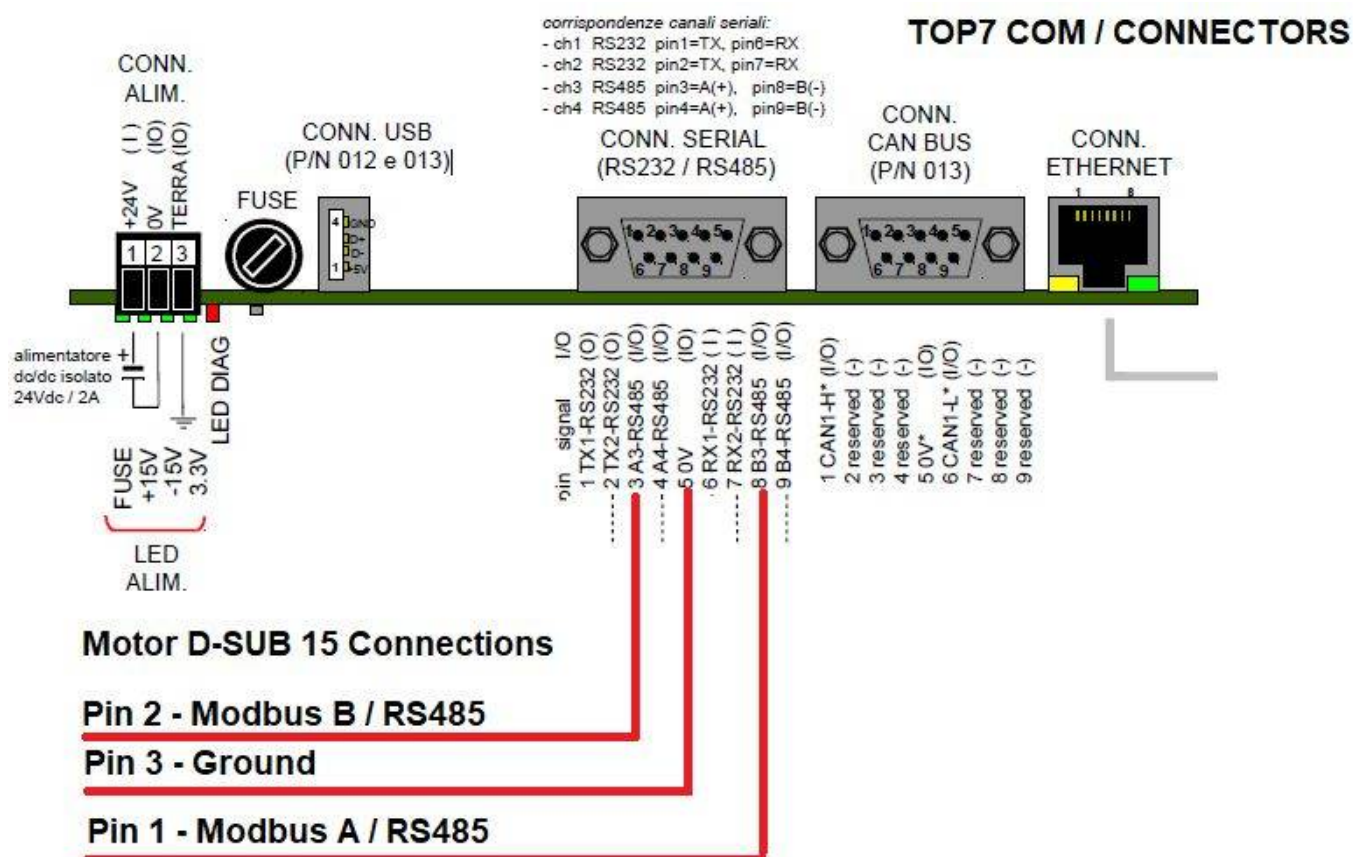


Standard Device for MODBUS Communication with NLI integrated motor

TOP7 PLC Touch

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

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 to communicate with the integrated drive miniature linear motor using a 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 RJ45 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

Please use this configuration:

Device Settings

Device Info

Virtual SerialCOM15

Dev Type

Dev NameWSDEV0001

Dev ID2867C2B3723F

Firmware VerV1.452

Function of the device

☐ Web Download

☒ DNS System

☒ REAL_COM Protocol

☒ Modbus TCP To RTU

☒ Serial Commnad

☒ DHCP Support

☐ Storage Extend

☒ Multi-TCP Connection

Network

IP ModeDHCP

IP Address192 . 168 . 178 . 89

Port502

Work ModeTCP Server

Net Mask255 . 255 . 255 . 0

Gateway192 . 168 . 178 . 1

Dest. IP/Domain192.168.178.66Local IP

Dest. Port4196

Serial

Baud Rate38400

Data Bits8

ParityEven

Stop Bits1

Flow ControlNone

Advanced Settings

DNS Server IP192 . 168 . 178 . 1

Dest. ModeDynamic

Transfer ProtocolNone

Keep Alive Time60(s)

Reconnet Time12(s)

Http Port80

UDP Group IP230 . 90 . 76 . 1

☐ Register Pkt:☐ ASCII

☐ Restart for no data every 300 Sec.

☐ Enable send parameter every 5 Min.

More Advaced Settings...

Framing Rule

Max Frame Length1300(Byte)

Max Interval(Smaller will better)3(Ms)

Get Default

Save As Defaul

Load Default

Modify Key

Firmware/Config

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

[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	Globle Setting

Add

Add Virtual Serial Port

COM Number:COM15

Name This COM:Bridge

Serial Param Auto Adapt:As Globle 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:192.168.1.208

Dest. Port:4196

☐ Vircom Register ID

Vircom Login Key:

Heart Beat Pakcet:

Heart Beat Interval:0(s)

OK

Cancel

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