

Modbus IO module

LSP-MIO-4D4



Brief description

The LSP-MIO-4D4 is a modbus expander with 4 digital inputs and a modbus input and 4 digital outputs. Its parameters are customizable by accessing the menu with modbus communication.

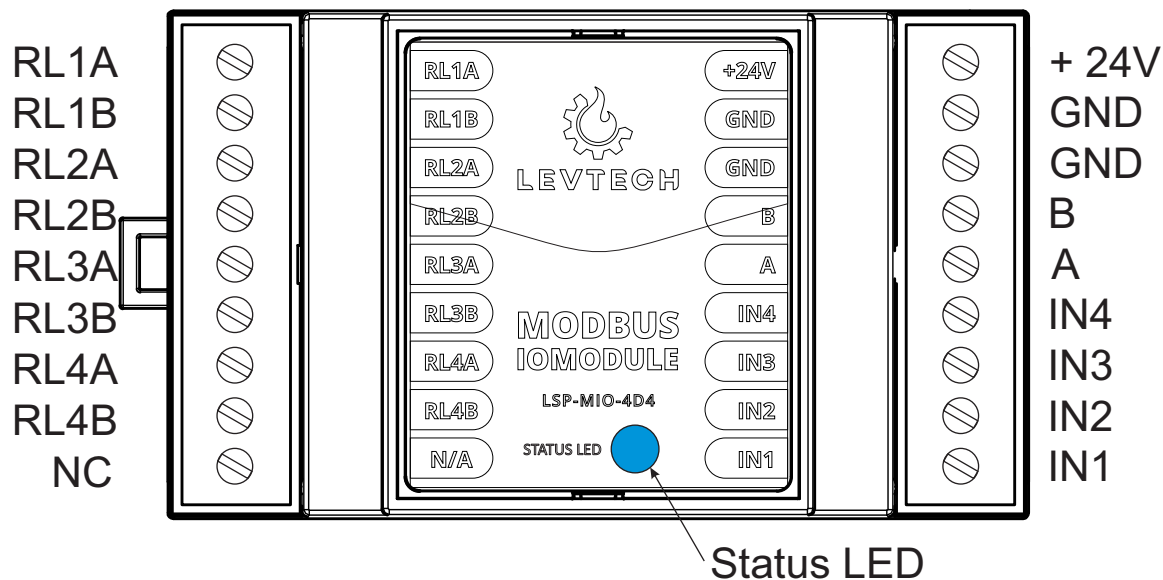
Functioning

The LSP-MIO-4D4 module is a great solution to expand the number of existing digital I/Os using our device's Modbus communication. If we have run out of free digital outputs on our controller which has a modbus communication option, we can add more with this module.

Features

- Overvoltage protection
- Din rail mountable
- Programmable
- Low consumption

Connector description



Pin	Description
RL1A	Connector A of relay 1
RL1B	Connector B of relay 1
RL2A	Connector A of relay 2
RL2B	Connector B of relay 2
RL3A	Connector A of relay 3
RL3B	Connector B of relay 3
RL4A	Connector A of relay 4
RL4B	Connector B of relay 4
NC	Not Connected
+24V	Power supply +24 VDC
GND	Power supply Ground
GND	Digital inputs' Ground
B	Modbus RTU B wire of twisted pair
A	Modbus RTU A wire of twisted pair
IN4	Digital input 4
IN3	Digital input 3
IN2	Digital input 2
IN1	Digital input 1

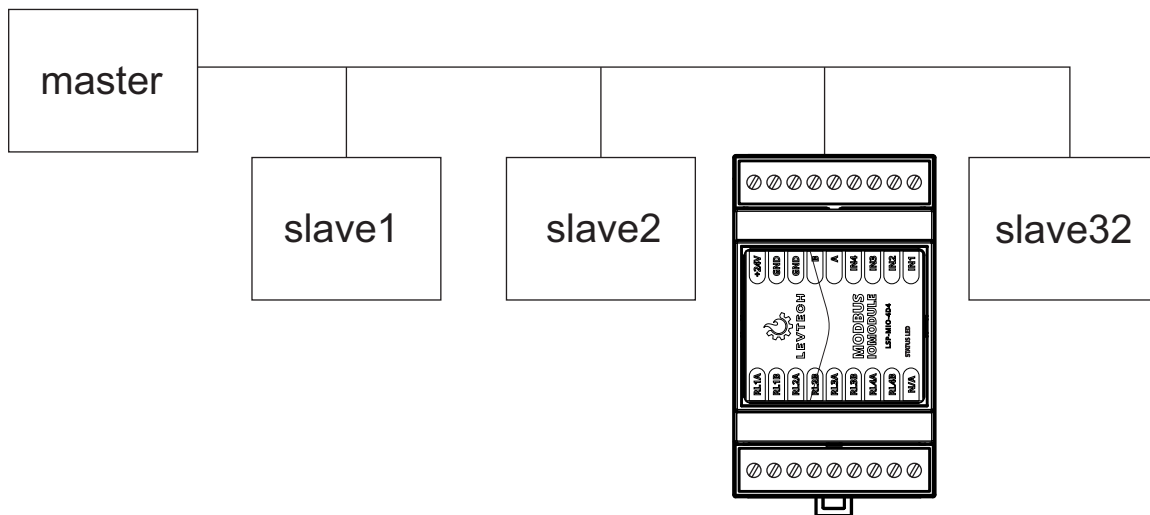
Connector description



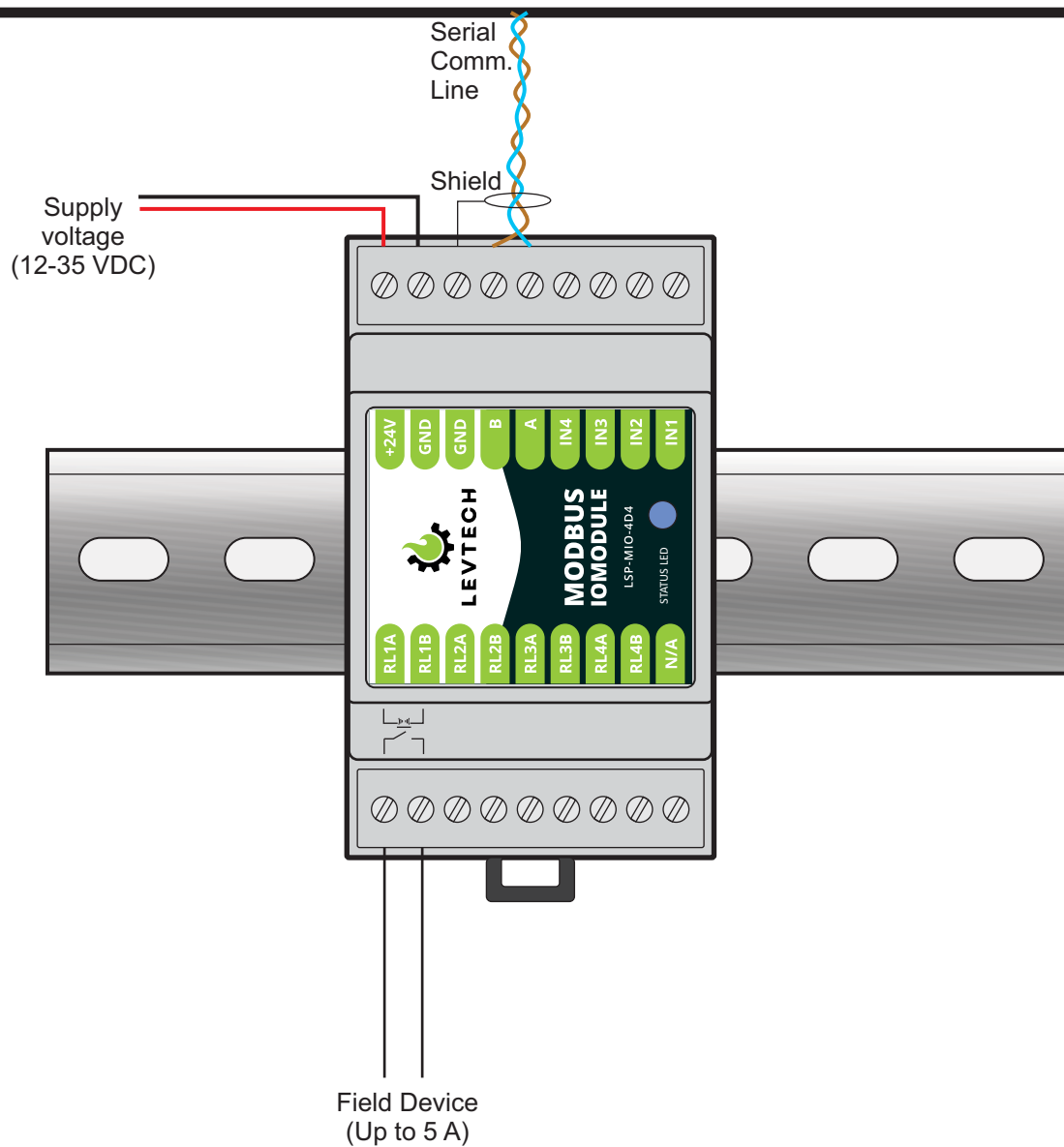
Technical data

Power supply voltage	12-35VDC
Consumption	Max 1.2W
Number of inputs	4 (IN1, IN2, IN3, IN4)
Input voltage	12V-24VDC
Maximum current on outputs	5 A (on each relay)
Communication protocol	Modbus RTU
Modbus response time	1ms
Function mode	Slave only
Possible address	1-65
Baud rate	up to 115200
Number of outputs	4 (RL1, RL2, RL3, RL4)
Data length	8 bit
Normal state of relays	Normally open (NO)
Weight	110 g
Dimensions	53 x 53 x 90 mm

Wiring diagram



Wiring diagram



Accessing setup menu

In order to change the address, baud rate, parity or stop bit of the device, we need to access the settings menu. Here we need a Serial to USB converter to connect to a computer. (You can use our USB/RS485 converter.)

Step 1

Connect your product to a computer using a Serial/USB converter.



Step 2

Connect the device to a power supply.

Step 3

Gently press and hold the button from the side of the device using a pointed object like a pen.

Hold it pressed until the Status LED blinks 2 and turns off.

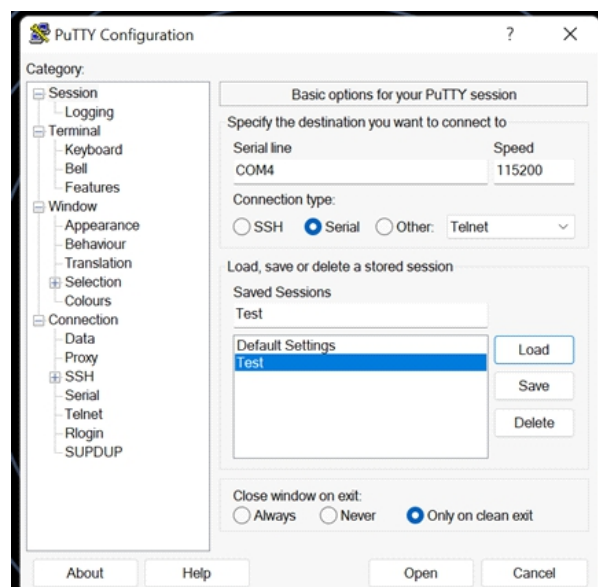


Step 4

After connecting to your computer, you need a terminal program to run. For example the **PuTTY** is a free downloadable (<https://www.putty.org/>).

You need to find the comport and set the baud rate to **115200**.

Then choose the **Serial** connection type. Now you can **Open** the port.



Accessing setup menu

After opening the port we can navigate in the menu. On the top, there are the current values. Below, the setup menu where we can modify the values. To reach the sub menu, type the number of the option you want to change, then hit Enter.

For exit and save, type "x", then Enter.

To backstep from the sub-menu, type "c", then Enter.

Main menu

```
COM4 - PuTTY
Current values:

Address: 2
Baud Rate: B9600
Parity: EVEN
Stop bit: TWO

Setup menu

Options:
  1: Set address
  2: Set Baud rate
  3: Set parity
  4: Set stop bit

  Press x to exit

Enter option: █
```

Sub-menus

```
ADDRESS SETTING

c-Cancel

Set address, please enter a number between 1-65: █
```

```
BAUD RATE SETTING      PARITY SETTING      STOP BIT SETTING
B9600 = 0              NONE = 0             ONE = 0
B14400 = 1             EVEN = 1             TWO = 1
B19200 = 2             ODD = 2              c-Cancel
B38400 = 3             c-Cancel
B56000 = 4             Set parity: █
B57600 = 5
B115200 = 6
c-Cancel
Set baud: █
```

Registers

Functions implemented:

- 1 read holding registers
- 2 write single register

Register description:

- Holding register 0 = inputs
- Holding register 1 = outputs

Holding register 0 inputs read only register

bit15	bit14	bit13	bit12	bit11	bit10	bit9	bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
x	x	x	x	x	x	x	x	x	x	x	x	in4	in3	in2	in1

Holding register 1 outputs read/write register

bit15	bit14	bit13	bit12	bit11	bit10	bit9	bit8	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
x	x	x	x	x	x	x	x	x	x	x	x	out4	out3	out2	out1

Write single register mode

