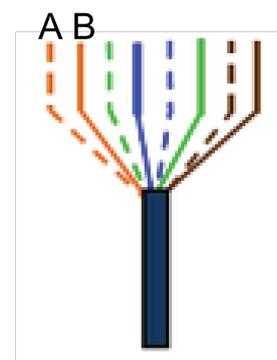
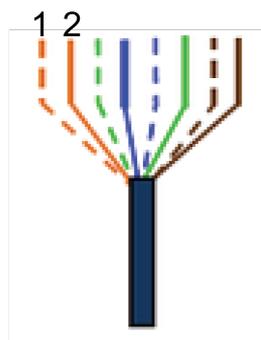
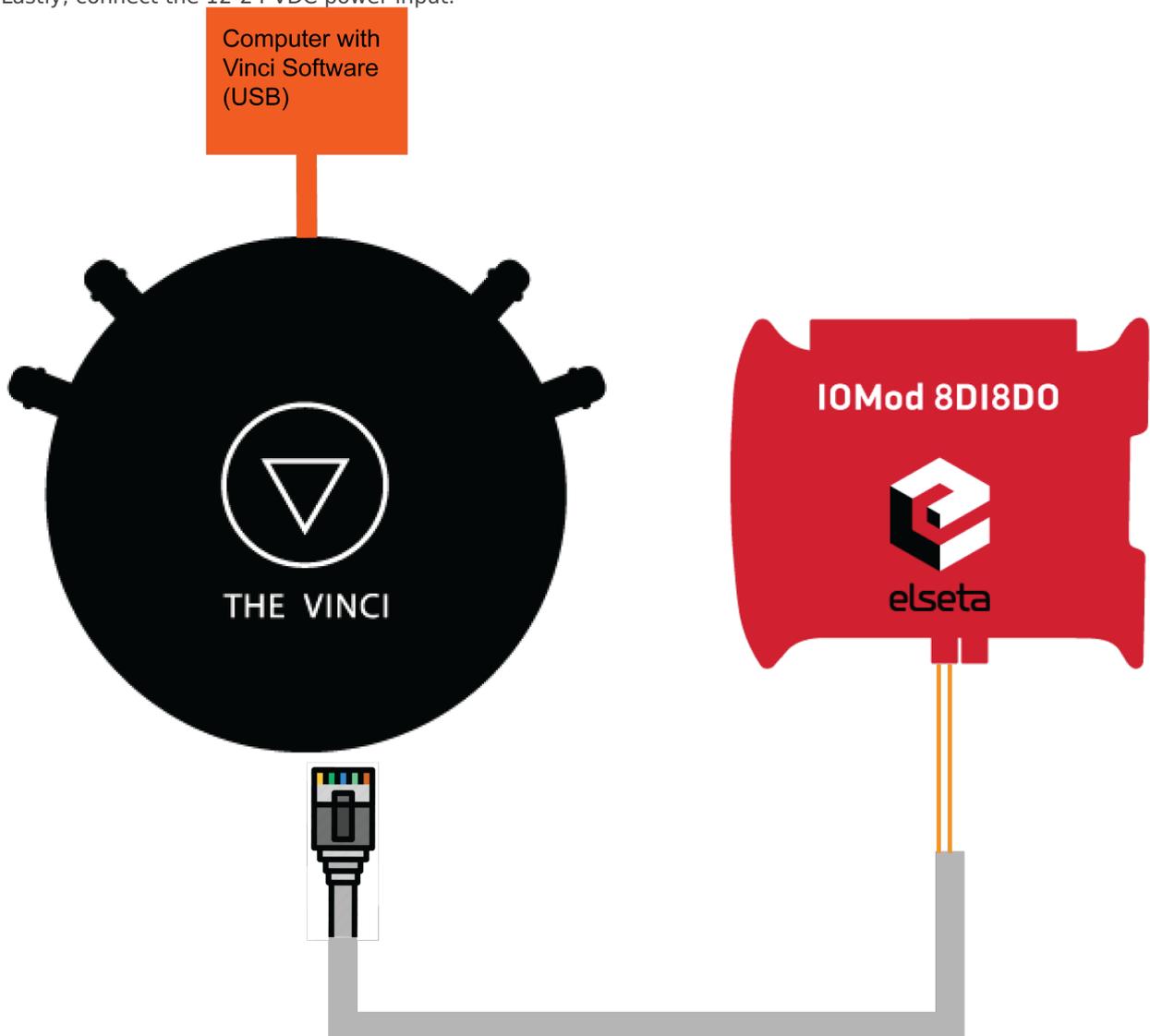


Testing IOMod 8DI8DO IEC-103

Initial Setup

The first thing to do when setting up is to connect the IOMod to the computer using The Vinci Expert to convert from RS485 to USB. You need to connect it like in the diagram depicted below.

- Connect The Vinci Device to the computer using a micro USB cable.
- Using an ethernet cable connect one end to the Vinci, and the other two wires to IOMod A and B pins.
 - If the wire is connected using RJ-45 the A wire will be the orange striped wire and the B wire will be the single color orange wire.
- Lastly, connect the 12-24 VDC power input.



To test IOMod with default settings, the user connects the device through RS485 to IEC 60870-5-103 master. For example, using "The Vinci Expert" as a serial interface converter and adapter to PC with "The Vinci" software. When opening "The Vinci" software, choose IEC 60870-5-103 – Master mode. Initial settings – 9600 baud rate; 8 data, no parity, 1 stop bit. Press Start, send Time synchronization, General interrogation, and go to the "Statistic" tab:

The screenshot shows the 'THE VINCI PROTOCOL ANALYZER' software interface. At the top, there are menu options: File, Tags, Options, Hardware, Help. Below the menu is a settings bar with a protocol dropdown set to 'IEC 60870-5-103', a mode dropdown set to 'Master', and a red 'STOP' button. To the right, there are fields for Port (COM11), Baudrate (9600), Parity (None), Data bits (8), and Stop bits (One). Further right are 'Extra' settings with buttons for 'Set Vinci ports', 'Swap ports', and 'Device Manager'.

The main window is divided into 'Settings', 'Console', and 'Statistic' tabs. The 'Statistic' tab is active, displaying a table with the following columns: TI, Cause, ASDU, FUN, INFO, INDEX, Value, Status, Time Tag, Name, and Count. The table contains 20 rows of data, with the 6th row highlighted in green, indicating a 'Command (20)' with FUN: 128, INFO: 6, and INDEX: 0.

On the right side, there are three control panels under the 'System' tab:

- General Interrogation:** Includes a 'Send' button and a 'Scan' field set to 1.
- Clock synchronization:** Includes a 'Send' button, checkboxes for IV, SM, and SB, and a 'PC time' field showing 2021-12-31 12:37:48.
- General Command:** Includes fields for FUN (128), INF (6), and RI (0), and 'ON' and 'OFF' buttons.

At the bottom right, there is a small image of the physical 'THE VINCI' device, which is a circular black unit with various ports and a central display.

Fig. 1. Testing IOMOD device with "THE VINCI" software

As seen in Figure 1, Outputs and inputs are shown with info numbers 1-8, and function types are 128 and 160 respectively.

General Interrogation, Time Synchronization, and General Command options can be found on the right side of the program, in the "System" tab.

Output commands are controlled by the "General command" window on the right side of the program, in the "System" tab, with Output address (Function type) 128, and output number (Info number).

Figure 2 shows the 6th output command sent and the "CMD ACK" response received.

This screenshot is similar to Figure 1, showing the 'THE VINCI PROTOCOL ANALYZER' software interface. The 'Statistic' tab is active, and the table shows the 6th row highlighted in green, representing the 6th output command sent. The data in this row is: TI: Time Tagged Mes..., Cause: GeneralInterrogati..., ASDU: 1, FUN: 128, INFO: 6, INDEX: 0, Value: 0x(1), Status: SIN:1, Time Tag: 17:14:28:568, Name: 2, Count: 2.

The right-side control panels are identical to those in Figure 1, showing the 'General Interrogation', 'Clock synchronization', and 'General Command' options.

At the bottom right, there is a small image of the physical 'THE VINCI' device, which is a circular black unit with various ports and a central display.

Fig. 2 Replies from IOmod device after a command has been sent through “THE VINCI” software

⊙Revision #12

★Created 31 December 2021 10:51:33

✎Updated 25 March 2022 14:40:50