N4D3E16 16-channel RS485 IO input and output controller
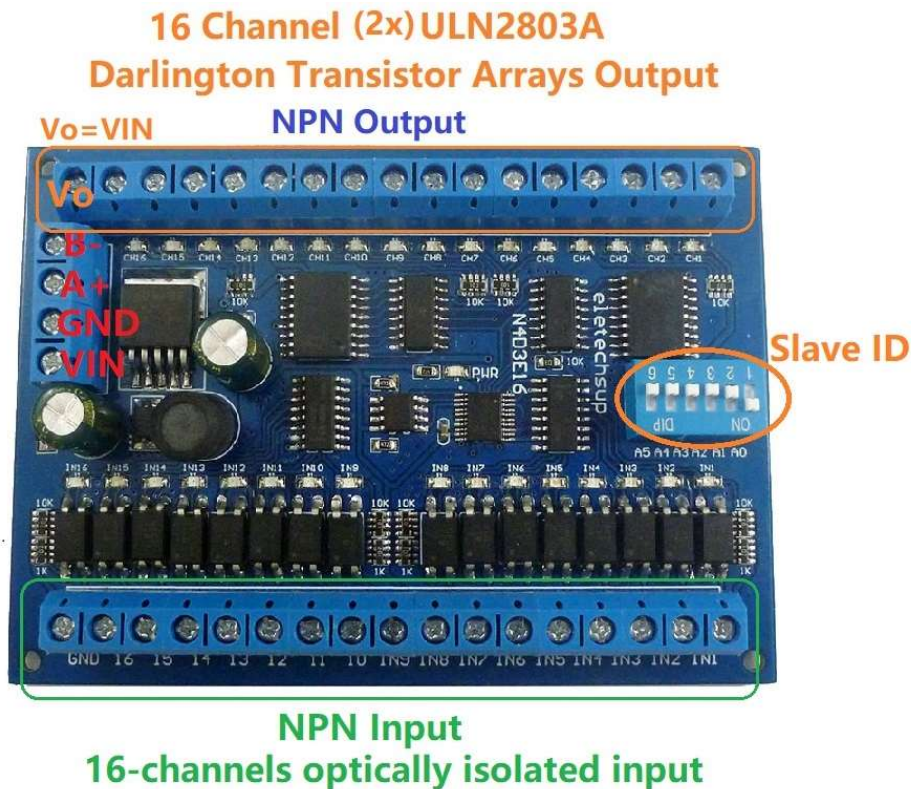
Manual

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http://v.youku.com/v_show/id_XMTM0ODY4NzkxMg==.html

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http://v.youku.com/v_show/id_XMTM0ODY4OTg5Mg==.html

1. Features:

1: Working voltage: DC 6.5-30V (9V 12V 24V)

2: Working current: 8-50MA

3: 16 channels photoelectric isolation Input ports (NPN   low level active)

4: 16 channels Darlington output (ULN2803 NPN output)

5: "open" "close"   "Momentary" "Self-locking" "Interlock" "Delay" 6 Commands

6: 16 inputs can remotely control 16 outputs of another board via RS485 bus (relevant registers must be set)

7: MODBUS RTU command, Support 03 06 function code(Some registers support 16 function

codes)

8: Under the "Delay" command ,the maximum delay is 255 seconds;

9 MODBUS commands can be made serial HyperTerminal (serial assistant)　OR "Modbus Poll" Enter;

10 Under the MODBUS command mode, it can support up to 64 devices in parallel

11 The default baud rate is 9600BPS. The baud rate can be selected through jumpers: 2400 4800 9600 19200BPS

12　Size: 100 * 72 * 20mm(Only PCB Board);120 * 88* 42mm(with Din Rail Box)

13 Weight: 64g(Only PCB Board);143g(with Din Rail Box)

14 Maximum load: the maximum load current of each channel is 300MA
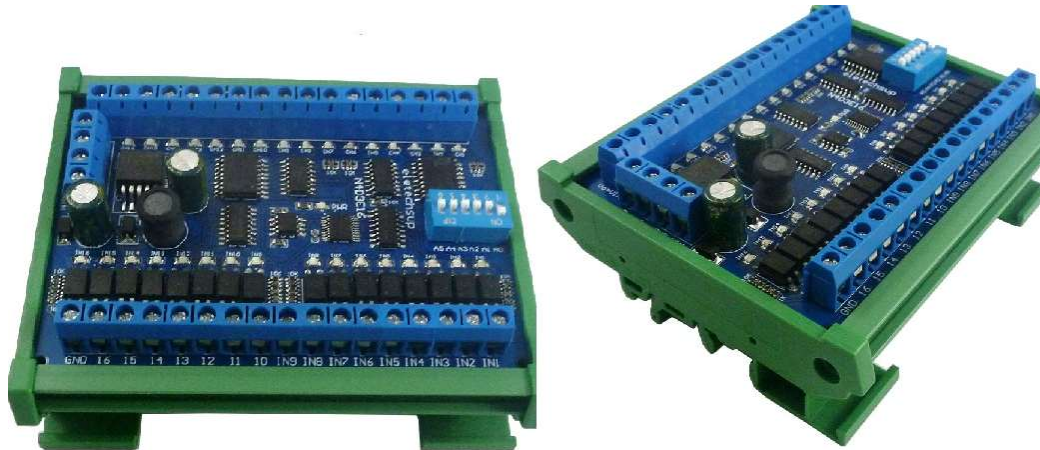
DIN rail Box parameters:

Product model: UM72
Color: green
Width: suitable for PCB board width UM72(72mm)
Insulation grade: flame-retardant VO grade
Backplane length: suitable for 136 mm PCB boards
Net weight: 99g
Installation: DIN35 and C45 rail

2. Glossary:

Vo: equal to the working voltage DC 6.5-30V

CH1/2/3…16: 16 output ports, low-level output

"Open": the output port outputs low level

"Close": The output port outputs high impedance (floating)

Momentary : Enter the Momentary command, the Rreceiver Relay is Open, delay of 0.5 seconds after, Relay is Close;

Toggle　: Enter the Toggle command, the Rreceiver Relay is Open, Enter the Toggle command again, Relay is Close;

Latched : Enter the Channel 1 Latched command, the receiver Channel 1 is Open, the Channel 2 is

Close.

Enter the Channel 2 Latched command the receiver Channel 2 is Open, the Channel 1 is Close.

Enter the Channel 3 Latched command the receiver Channel 1 is Close, the Channel 2 is Close.

Delay : Enter the Delay command, the Rreceiver Relay is Open, delay of 0-9999 seconds(MODBUS command is 0-255 seconds)after, Relay is Close;

During the delay, Eter the Close command, immediately close the relay
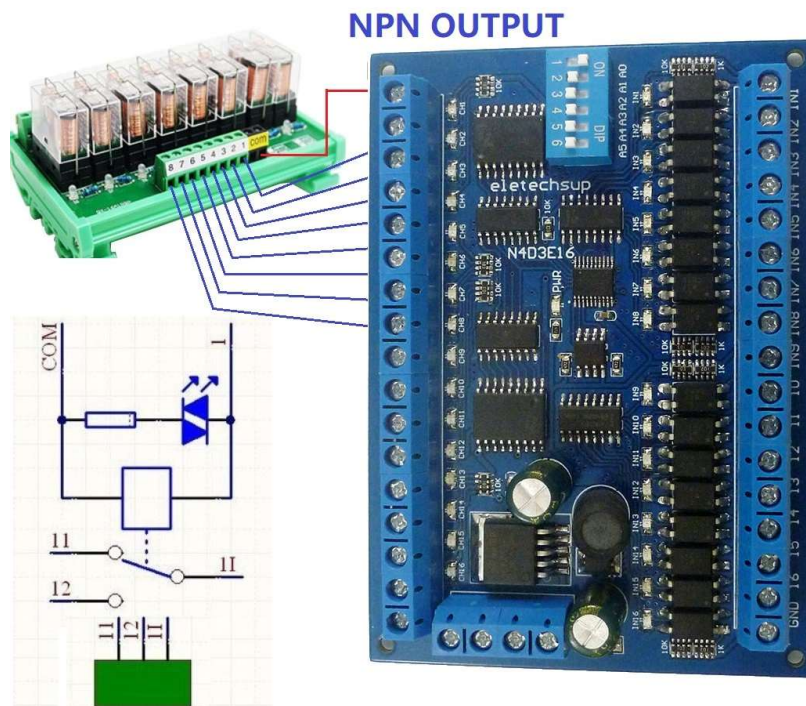

Slave ID: A0-A5 is the slave ID, you can choose 64 different slave ID.

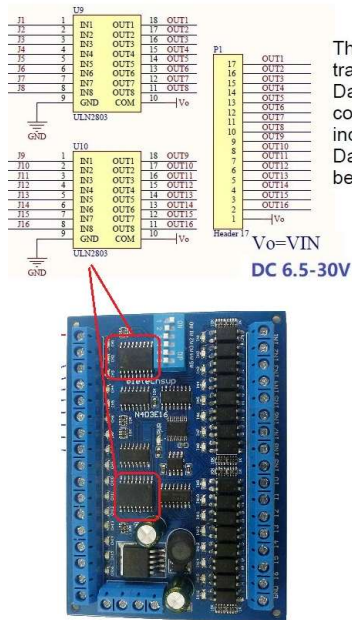Under the MODBUS command mode,the slave ID must be correct

command Description, Please refer to " N4D3E16 16-channel RS485 IO input and output controller commamd"

3 .Output description

Wiring diagram of driving PLC amplifier board

NPN OUTPUT

2X ULN2803 drive circuit diagram

The ULN2803A device is a 50 V, 500 mA Darlington transistor array. The device consists of eight NPN Darlington pairs that feature high-voltage outputs with common-cathode clamp diodes for switching inductive loads. The collector-current rating of each Darlington pair is 500 mA. The Darlington pairs may be connected in parallel for higher current capability.
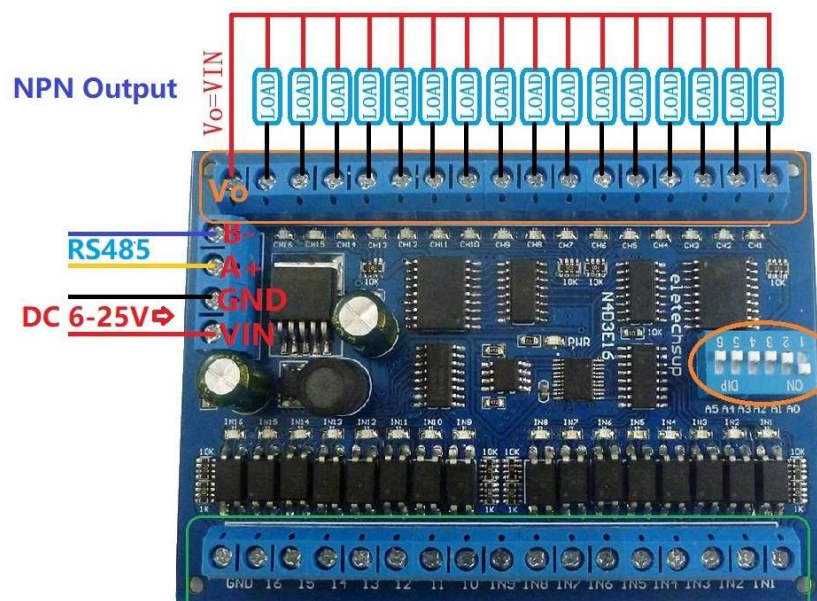
Applications

Relay Drivers
Hammer Drivers
Lamp Drivers
Display Drivers (LED and Gas Discharge)
Line Drivers
Logic Buffers
Stepper Motors
IP Camera
HVAC Valve and LED Dot Matrix

4. Input and output wiring diagram:

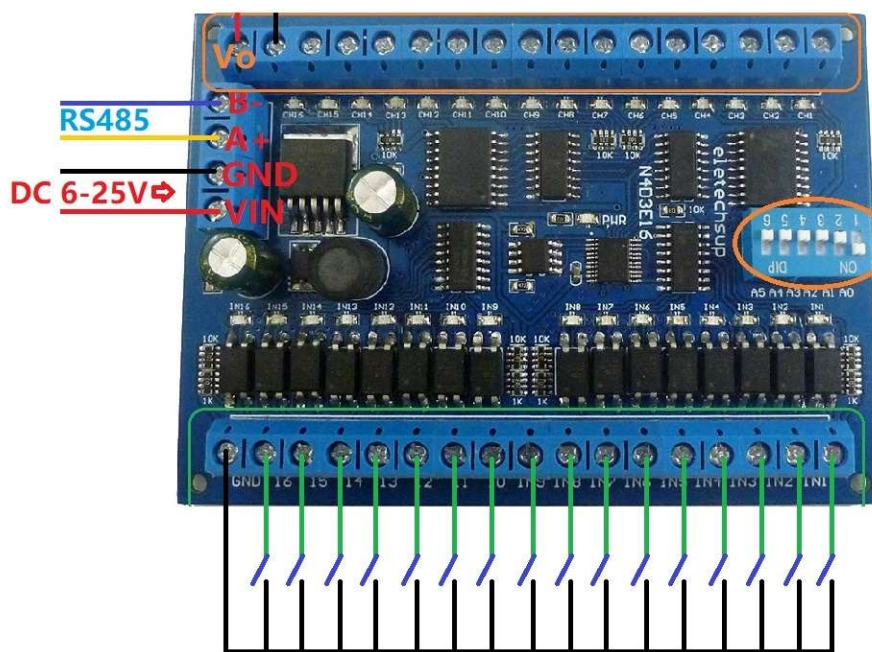Application 1: Control 16-channel switch output through RS485 bus

Application 1:
Control 16-channel switch output through RS485 bus

NPN Output

Vo=VIN

LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD LOAD

Vo

B-
RS485
A+

GND
DC 6-25V ⇨ VIN

Application 2: Read 16-channel switch input via RS485 bus

Application 2:
Read 16-channel switch input via RS485 bus

Vo

B-
RS485
A+

GND
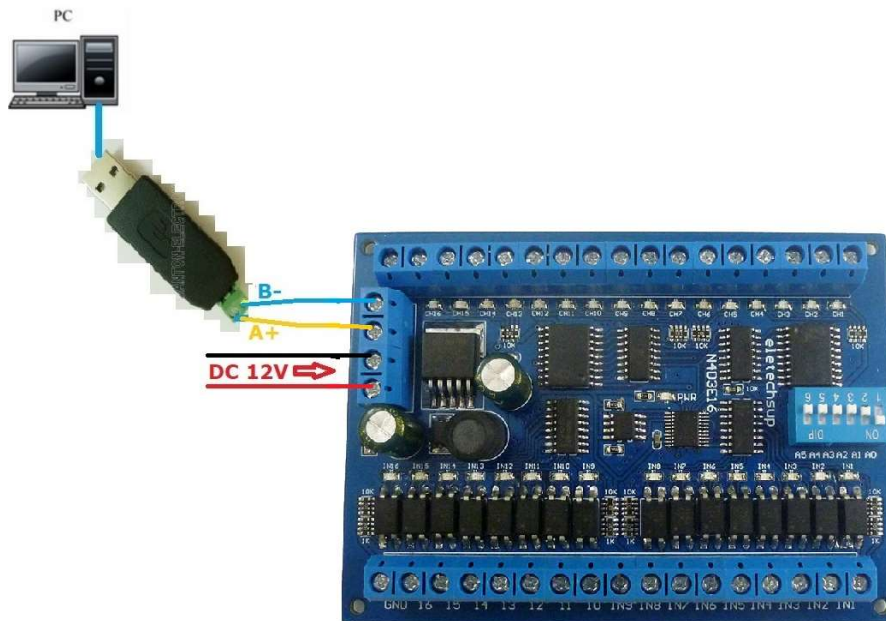DC 6-25V ⇨ VIN

NPN Input
16-channels optically isolated input

Application 3: 16-channel input remote control 16-channel output

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16-channel input remote control 16-channel output

NPN Input

DC 6-25V   RS485

DC 6-25V   RS485

NPN Output

Vo~VIN

Remote control

Enable Remote IO Sender : 01 06 00 F9 00 04 58 38
Disable Remote IO Sender : 01 06 00 F9 00 00 59 FB

Enable Remote IO Receiver : 01 06 00 FA 00 01 68 3B
Disable Remote IO Receiver: 01 06 00 FA 00 00 A9 FB

1 RS485 address must be the same
2 The Remote IO Sender Register Enable (Register 0x00F9 >0)
3 The Remote IO Receiver Register Enable(Register 0x00FA >0)

5 Typical applications:

1 The dial switch (slave address) is invalid and can only control one module at a time.
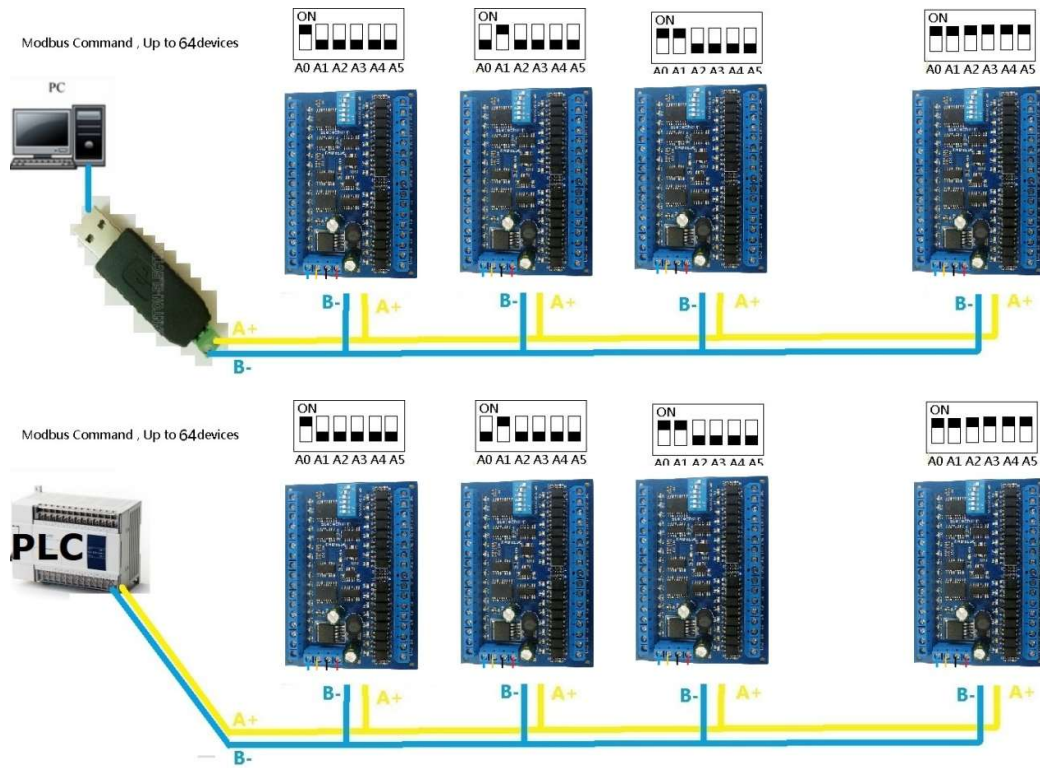
MODBUS command mode (HEX), you can control a variety of ways: Serial Hyper Terminal Control (need to manually add the CRC), Modbus Poll software control (software automatically add the CRC), PLC or MCU process control