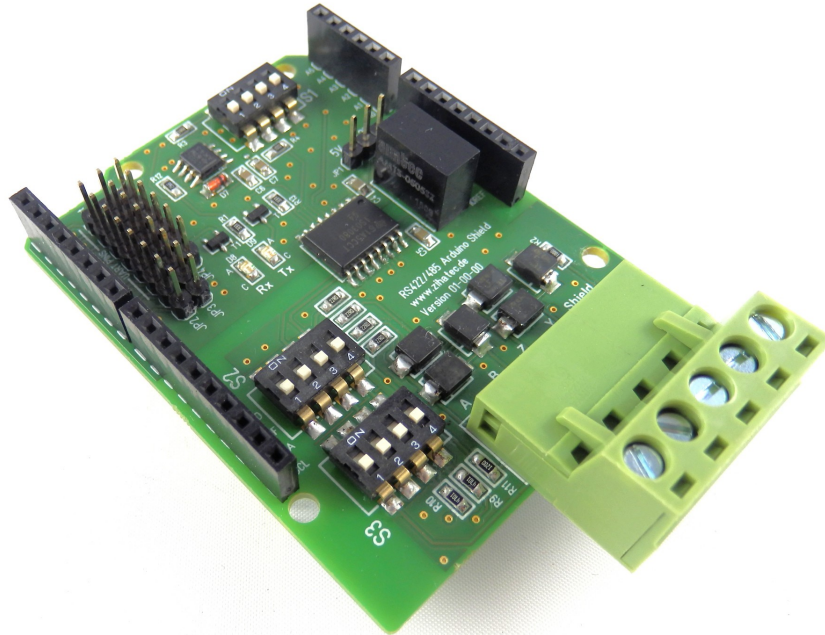


RS422/RS485 Shield

for Arduino



Features:

- RS485 mode (half duplex)
- RS422 mode (full duplex)
- galvanic isolation between Arduino and connected RS485 bus
- Free choice of TX pin between pins 0-5
- Free choice of RX pin between pins 0-5
- Enhanced ESD protection
- adjustable automatic transceiver switching for RS485 mode
- adjustable control of transceiver/receiver via pin 6 or 7
- adjustable Pull-Up, Pull-Down und terminating resistors
- removable block terminal for bus connection
- Indicator LEDs for RX and TX signals
- many options adjustable via DIP switches
- For Arduino UNO and compatible boards

RS422/RS485 Shield

for Arduino

Applications:

- Smart Home
- Building Control
- Industrial Control
- Lighting Control
- Video Surveillance

Protocols:

- Modbus
- DMX
- Pelco D
- NMEA0183
- etc

Terminals:

| Pin | Meaning | Description |
|--------|---------|--|
| B* | R- | Receiver inverting input on the bus-side |
| A* | R+ | Receiver non inverting input on the bus-side |
| Z | T- | Driver inverting output |
| Y | T+ | Driver non inverting output |
| Shield | Shield | Shield of cable |

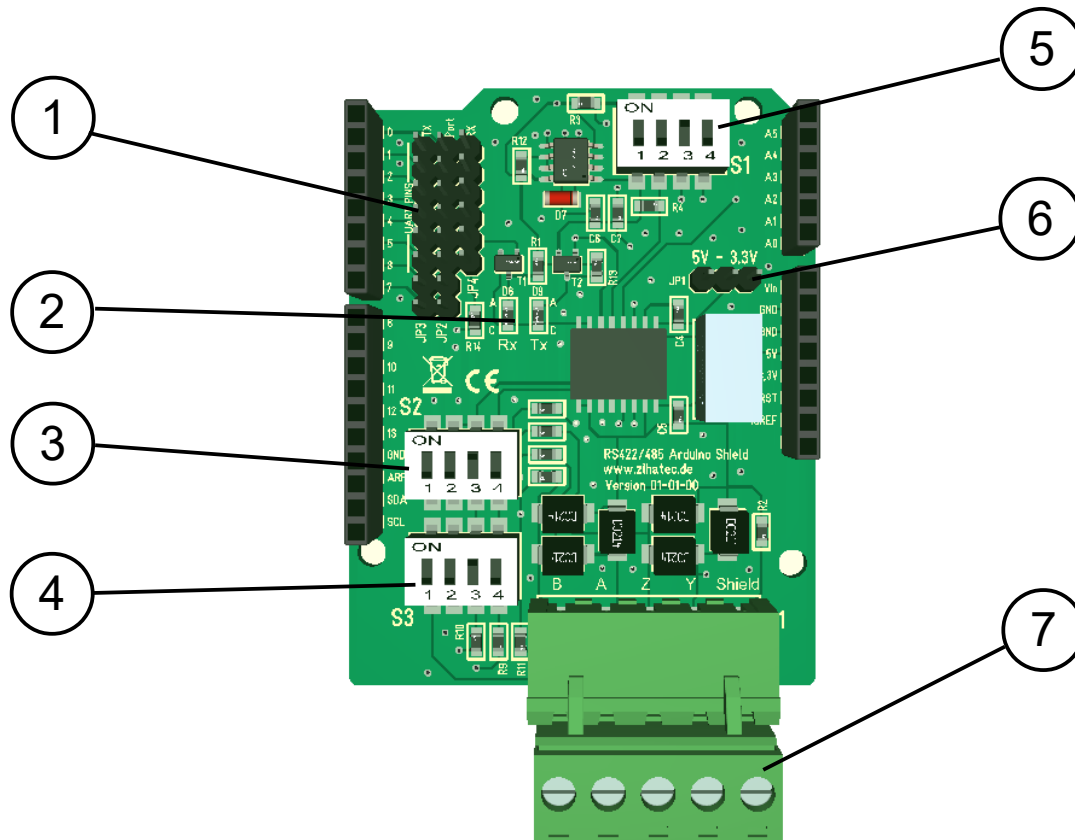
Please note: In RS485 mode B terminal will be internally connected with Z terminal and A terminal will be connected with Y terminal. Y and Z terminals have no function in RS485 mode.

* in some older versions the silkscreen marking of B and A terminal is interchanged. In any case the terminal pinout is B, A, Z, Y.

RS422/RS485 Shield

for Arduino

Control Elements:

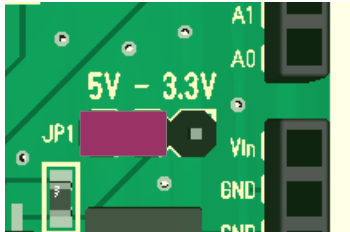


- ① Jumper for pin selection
- ② Indicator LEDs
- ③ DIP Switch S2
- ④ DIP Switch S3
- ⑤ DIP Switch S1
- ⑥ Jumper for voltage selection
- ⑦ Removable Terminal Block

RS422/RS485 Shield

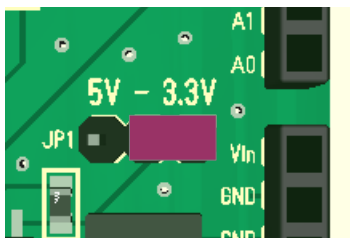
for Arduino

Jumper J1 – voltage settings:



5V Selection

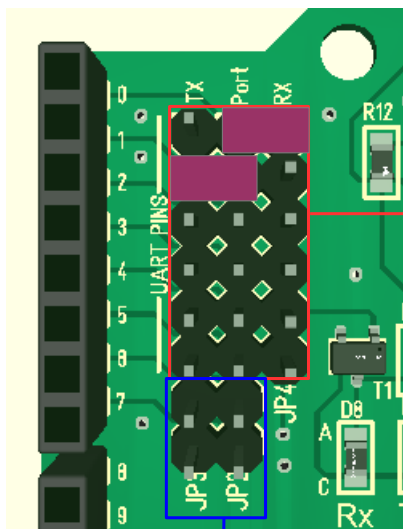
Jumper to left position
(default for Arduino Uno)



3.3V Selection

Jumper to right position
(for example Genuino 101)

Jumper J2 – J4 pin settings:



Connection to Tx & Rx Pin

- Jumper to left position Tx
- Jumper to right position Rx

Default;

- Jumper 1st row right
- Jumper 2nd row left

Tx control Pin

- no jumper: no pin control
- Jumper to 1st row: pin 6
- Jumper to 2nd row: pin 7

Default;

- no jumper

RS422/RS485 Shield

for Arduino

S1 - DIP Switch Configuration – send/receive control:

| Channel | Description |
|---------|-----------------------------------|
| 1 | Receiver always on |
| 2 | Transmitter connected to Receiver |
| 3 | Automatic DE/RE control |
| 4 | DE/RE control via Pin 6 or 7 |

S2 - DIP Switch Configuration – RS422/485 mode:

| Channel | Description |
|---------|---------------------------|
| 1 | Connect Y to terminal K2 |
| 2 | Connect Z to terminal K2 |
| 3 | Connect internally Y to A |
| 4 | Connect internally Z to B |

S3 - DIP Switch Configuration – termination resistors:

| Channel | Description |
|---------|---------------------------------|
| 1 | 120 Ohm Terminating Resistor On |
| 2 | Not used |
| 3 | 4,7k Pull-down Resistor on B |
| 4 | 4,7k Pull-up Resistor on A |

RS422/RS485 Shield

for Arduino

Example RS422 mode:

| SW1 | |
|-----|------|
| 1 | ON |
| 2 | OFF |
| 3 | OFF |
| 4 | ON * |

| SW2 | |
|-----|-----|
| 1 | ON |
| 2 | ON |
| 3 | OFF |
| 4 | OFF |

| SW3 | |
|-----|-----|
| 1 | ON |
| 2 | OFF |
| 3 | OFF |
| 4 | OFF |

Examples RS485 mode:

Send/receive control via Pin 6 or 7, no terminating resistor

| SW1 | |
|-----|------|
| 1 | OFF |
| 2 | ON |
| 3 | OFF |
| 4 | ON * |

| SW2 | |
|-----|-----|
| 1 | OFF |
| 2 | OFF |
| 3 | ON |
| 4 | ON |

| SW3 | |
|-----|-----|
| 1 | OFF |
| 2 | OFF |
| 3 | OFF |
| 4 | OFF |

automatic send/receive control, multipoint master

| SW1 | |
|-----|-----|
| 1 | OFF |
| 2 | ON |
| 3 | ON |
| 4 | OFF |

| SW2 | |
|-----|-----|
| 1 | OFF |
| 2 | OFF |
| 3 | ON |
| 4 | ON |

| SW3 | |
|-----|-----|
| 1 | ON |
| 2 | OFF |
| 3 | ON |
| 4 | ON |

* Set Pin 6 or 7 to high level to transmit protocols