**3One data**

# USB232/485/422

**USB to RS232/485/422 converters**

# User Manual

**Shenzhen 3onedat Technology CO., LTD**

Address: 3/B, Zone 1, Baiwangxin High Technology Industrial

park, Song Bai Road, Nanshan District, Shenzhen, 518108, China

Website: www.3onedata.com

Phone: +86 0755-26702688

Fax: +86 0755-26703485

## 【Introduction】

USB232/485/422 is kind of industrial USB to RS-232/485/422 converter, plug and plag, 9-48VDC external power supply or USB power supply or both of them, it support DIN-Rail and wall mounting installation, can support latest operation system, wide working temperature, 2KVAC isolation protect, easy using for your projects

## 【Packing list】

Please check the package and all the components inside are in good condition before you use the switch.

- 3one data USB232/485/422*1
- Type AM USB to type AM USB cable"1
- User manual*1
- CD*1
- Generate card*1
- Certificate of Quality

## 【Feature】

- Convert USB to 1 RS-232 or RS-485 or RS-422
- Low CPU occupation rate, steadily performance
- RS-485/422 can establish at most 32 nodes
- RS-485/422 transmit distance can reach up to 1200m
- Serial port support 2KVAC isolation protect
- Auto sense serial signal rate, band rate: 300～115200bps
- Industrial grade design, IP30 degree of protection
- No fan, low consumption design
- Plug and play, 9-48VDC external power supply or USB power supply or both of them
- Storage temperature: -40℃～85℃; Humidity: Relative humidity 5% to 95%
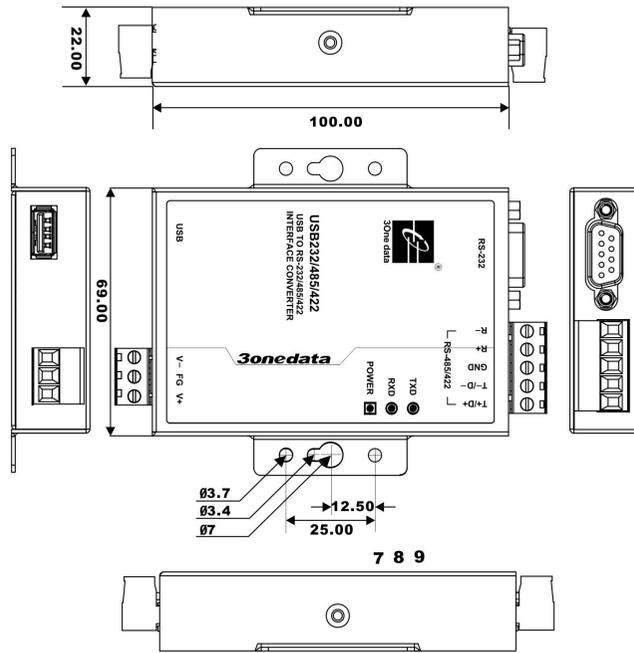
## 【Panel design】

**USB232/485/422**



Front view



Vertical view



Vertical view
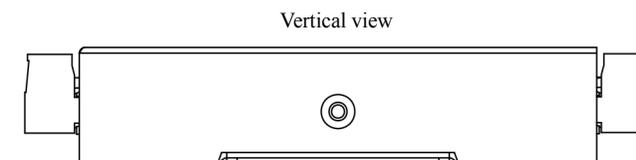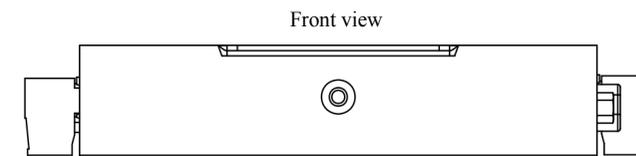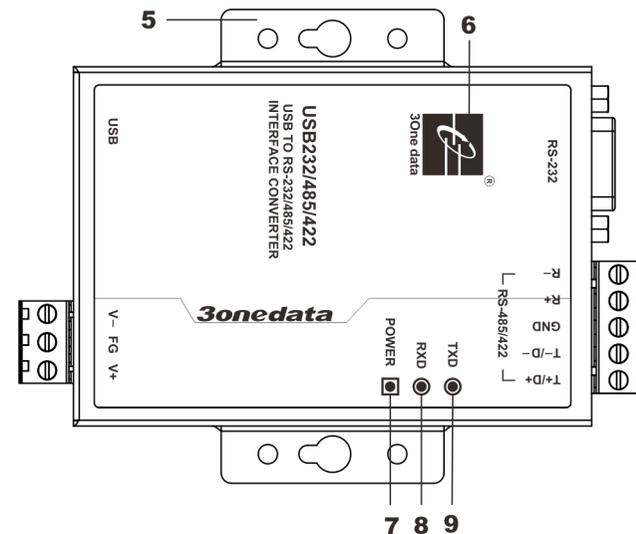
Left view      Right view
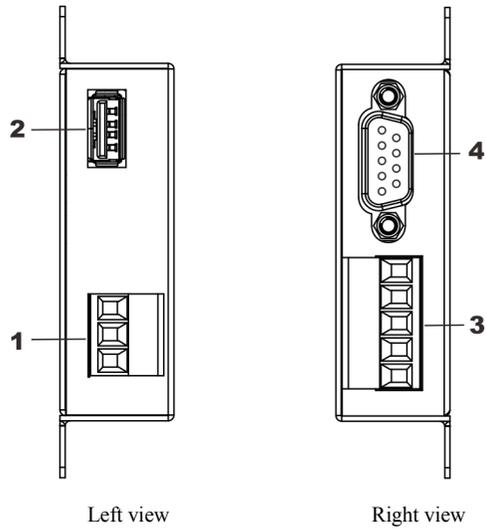
1、 Power input（9~48V）

2、 USB type A female

3、 RS-485/422 terminal block

4、 RS-232 DB9 male

5、 Wall mounting

6、 LOGO information

7、 Power supply indicator

8、 Serial transmit data indicator

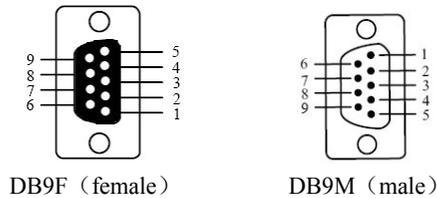9、 Serial receive data indicator

## 【Overall dimension】

**Unit（mm）**



## 【PIN define】

USB232/485/422converter, RS-485/422 side adopts 5 bits 5.08mm terminal block, RS-232 side adopts DB9 male, USB side adopt USB type A female.
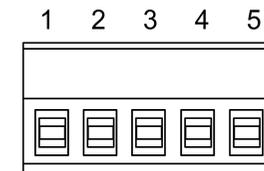
DB9 PIN define as follows:



DB9F（female）      DB9M（male）

DB9 male PIN define is as follows:

| PIN | RS-232 signal |
|---|---|
| 1 | DCD |
| 2 | RXD |
| 3 | TXD |
| 4 | DTR |
| 5 | GND |
| 6 | DSR |
| 7 | RTS |
| 8 | CTS |
| 9 | — |

RS-485/422 terminal block:

| PIN | RS-485 | RS-422 |
|---|---|---|
| 1 | D+ | T+ |
| 2 | D- | T- |
| 3 | — | GND |
| 4 | — | R+ |
| 5 | — | R- |

RS-485/422 terminal block

USB PIN define:

| Type A USB | 1 | VCC |
|---|---|---|
| | 2 | D- |
| | 3 | D+ |
| | 4 | GND |

USB A female          USB A male

【Power supply】

V-  FG  V+        V-  FG  V+

USB232/485/422 can plug and play, external power supply or USB port provide power or both of them. Power input has 3 bits terminal block（V-, FG, V+）, V-, V+ is 9VDC～48VDC. The power supply support non polarity, It can work steadily if connection opposite too.

【USB cable】
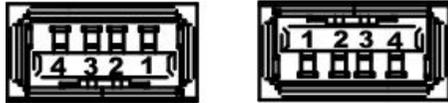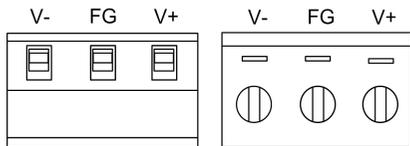
USB A          USB A

USB232/485/422 provide 1pcs USB interface, it located in front panel of the products, can use USB cable connect to PC and loading, install the driver.
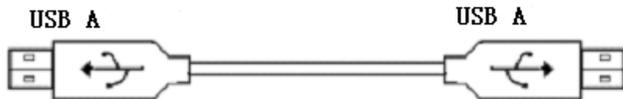
【LED Indicator】

| System status LED | | |
|---|---|---|
| **LED** | indicate | Status |
| **PWR** | ON | Power ON |
| | OFF | No power supply or incorrect |
| **TX** | OFF/ON | No data or data incorrect |
| | Blinking | In transmitting data |
| **RX** | OFF/ON | No data or data incorrect |
| | Blinking | In receiving data |

## Installation：

Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

**Installation require as below**

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.

2. Examine the cables and plugs that installation requirements.

3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.

4. Screw, nut, tools provide by yourselves.

5.Power need: power inputs(12~48DC）

6. Environment: -40°C to 85°C

Storage Temperature: -40°C to 85°C

Relative humidity 10% to 95%

**Wiring Requirements**

Wiring need to meet the following requirements:

- It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;

- It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;

- The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;

- All the cable cannot have break-down and terminal in the middle;

- Cables should be straight in the hallways and turning;

- Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;

- User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be

overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;

- Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its banding should be moderate, not too tight, and should be separated from other cables;

- It should have corresponding simple signal at both sides of the cable for maintaining.

## 【Specification】

### Communication parameter

Serial No.: 1 RS-232/485/422

USB signal: VCC, D+,D-,GND

RS-485 signal: D+, D-

RS-422 signal: T+, T-, R+, R-

RS-232 signal: DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS

Parity: None, Even, Odd, Space, Mark

Data bites: 7bit, 8bit

Stop bites: 1bit, 2bit

Band rate: 300bps～115200bps

Flow control: Data direction auto-turnaround, no flow control is required

Loading: RS-485/422 side 32 nodes

Transfer distance: RS-485/422 side 1200m, RS-232 side 15m, USB side: 5m

### Interface

USB port: USB A type female

RS-232: DB9 male

RS-485/422: 5 bits 5.08mm terminal block

Serial protection: RS-485/422: 2KVAC isolation protection, 8KV static protection

Power supply: 8KV static protection

### LED indicator

Power indicator: PWR

Serial send data indicator: TX

Serial receive data indicator: RX

### Power supply

Input voltage: 12VDC (9~48VDC)

No-load power consumption: 0.348W@12VDC

Full-load power consumption: 0.384W@12VDC

### Mechanical:

Shell: IP30 degree of protection, metal shell

Weight: 226g

Dimension(L*W*H): 100mm×69mm×22mm

### Working environment

Working temperature: -40～85℃

Storage temperature: -40～85℃

Humidity: relative 5%～95%(non-condensing)

### Standard

EMS: EN61000-4-2 (ESD), Level 2

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

### Warranty

Warranty time: 5 years

### Certification

CE, FCC, RoHS, UL508(pending)