

## Model:UT-242E

**RS-232 to RS-485/422 Port-Powered Converter**

## Datasheet



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## 1. Overview

To facilitate remote data communication between computers, external devices or smart instruments equipped with different standard serial interfaces, it is necessary to convert the standard serial interfaces to each other. The converter is compatible with RS-232C, RS-485 and RS-422 standards and can convert single-ended RS-232 signals to balanced differential RS-485 or RS-422 signals, and the converter can extend the RS-232 communication distance up to 1.2 km without external power supply using a unique "RS-232 charge pump". The converter can extend the RS-232 communication distance up to 1.2 km without external power supply, using the unique "RS-232 charge pump" driver, no need to initialize the RS-232 serial port to get power, with zero delay automatic transceiver conversion, unique I/O circuitry automatically controls the data flow direction without any handshake signal (such as RTS, DTR, etc.), no jumper setting to achieve full-duplex (RS-422), half-duplex (RS-485) mode conversion, thus ensuring the program written in RS-232 full-duplex and half-duplex mode can be run in RS-422/485 mode without any changes, ensuring that it is suitable for existing operating software and interface hardware. The converter can be used to form a point-to-point or point-to-multipoint remote multi-computer communication network between the main controller, or between the main controller and a microcontroller or peripheral, to achieve Multi-computer answering communication. It is widely used in industrial automation control system, one-card, access control system, parking system, self-service banking system, bus fare collection system, canteen vending system, company staff attendance management system, highway toll station system, etc.

## 2. Major Functions & Features

- Support RS-232 to RS-485/422 Port-Powered Converter

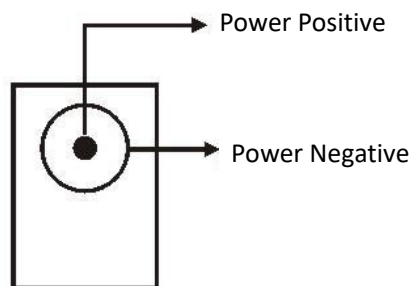
## 3. Technical Parameters

- Interface features: interface compatible with EIA/TIA RS-232C, RS-485/RS-422 standards
- Electrical interface: DB9 female type connector at RS-232 port, 6-position terminal block at RS-485/422 port
- Operating mode: asynchronous full-duplex, half-duplex differential transmission automatically selected, no jumper settings
- Transmission medium: twisted pair or shielded wire
- Transmission rate: 300bps-115.2Kbps
- Dimension: 62mm×40.5mm×21mm
- Operating temperature: -40~ 85°C
- Relative humidity: 5~95%
- Transmission distance: 1,200m (RS-485/422 end) 5m (RS-232 end)
- Protection level: Lightning surge protection level 2KA

## 4. PIN Definition

- RS-232C PIN Assignment

| DB9 Female(PIN) | RS-232C interface signal |
|-----------------|--------------------------|
| 1               | GND                      |
| 2               | Transmit data SOUT (TXD) |
| 3               | Receive data SIN (RXD)   |
| 4               | DTR                      |
| 5               | GND                      |
| 6               | DSR                      |
| 7               | RTS                      |
| 8               | CTS                      |
| 9               | RI                       |



9V  $\pm$ 1/50mA DC power supply  
can be used when the serial port  
voltage is low

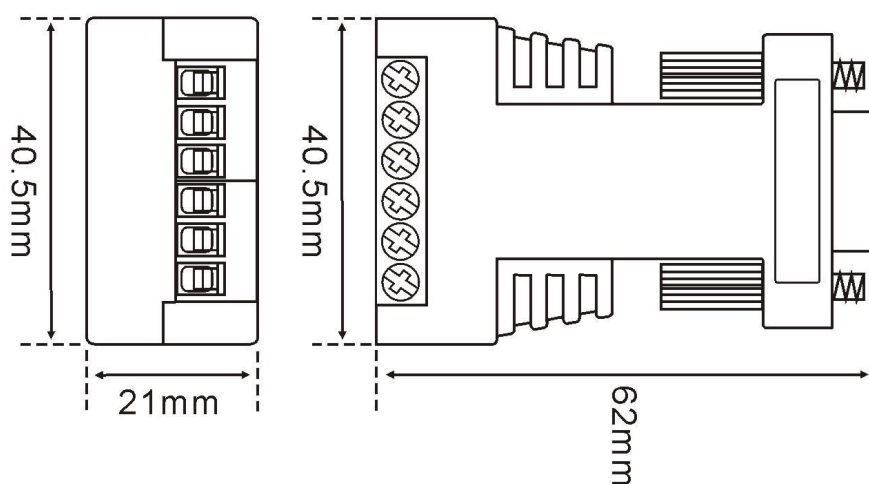
- RS-485/RS-422 output signal and terminal pin assignment

| Terminal block(PIN) | Output signal | RS-422 full-duplex wiring    | RS-485 half-duplex wiring |
|---------------------|---------------|------------------------------|---------------------------|
| 1                   | T/R+          | Transmitting(A+)             | RS-485(A+)                |
| 2                   | T/R-          | Transmitting(B-)             | RA-485(B-)                |
| 3                   | RXD+          | Receiving(A+)                | -                         |
| 4                   | RXD-          | Receiving(B-)                | -                         |
| 5                   | GND           | GND                          | GND                       |
| 6                   | VCC           | Power supply 9 $\pm$ 1V/50mA | -                         |

## 5. Product View (Appearance)



## 5. Structure Dimension



## 7. Ordering Information

### ORDERING

| Model   | Signal/Interface |                |        | Protection level |                               | Baud rate            | Operating Environment |         |          | Power            |                                 |
|---------|------------------|----------------|--------|------------------|-------------------------------|----------------------|-----------------------|---------|----------|------------------|---------------------------------|
|         | RS-232           | RS-485         | RS-422 |                  |                               |                      | Temperature           |         | Humidity |                  |                                 |
|         | DB9<br>Male      | Terminal block |        | RS-232           | RS-485/422<br>2               |                      | -25~70℃               | -40~85℃ | 5~95%    | plug and<br>play | External<br>power               |
| UT-242E | √                | √              | √      | -                | ±15KV<br>ESD/2KA<br>lightning | 300bps-115.2<br>kbps | √                     |         | √        | √                | Additional<br>9VDC<br>available |