

# CS-428/9AT-mini2

Industrial Grade



## » Features

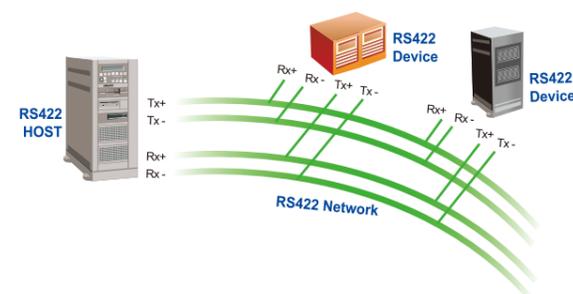
- Maximum Communication Speed: 921.6kbps
- Supports Industrial Grade Temperature: -40 ~ 85°C
- Converts RS-232 signal to RS-422/485 signal (and RS-422/485 to RS-232)
- Maximum Distance: 1.2km
- Absorbs 400W (peak pulse) at RS-422/485 side
- Operates by RS-232 signal lines
- Able to Operate with External Power (9~12VDC)
- RS-422/485 Auto Toggling by Hardware
- Check Communication Status (TX/RX) with LED
- External Switch for Selecting RS-422 or RS-485 Mode
- External Switch for Enabling Terminal Resistor (RS-422/485) or Echo/Non-echo (RS-485)
- Maximum 10 Devices Connectable for RS-422 Multi-drop Mode
- Maximum 10 Devices Connectable for RS-485 Mode

## Overview

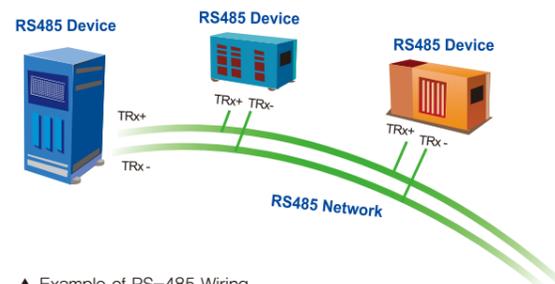
CS-428/9AT-mini2 converts RS-232 signals to RS-422 or RS-485 signals and RS-422/RS-485 signals to RS-232 signals. It is a fast and efficient solution to overcome limited distance of RS-232 and for connecting to industrial devices with an RS-422/RS-485 interface. No additional software is required for operation. With an easily accessible DIP switch users can configure the interface for RS-422 or RS-485. It is fully compatible with the serial COM port, or console port, on the PC. CS-428/9AT-mini2 is an enhanced version of CS-428/9AT-mini that it will operate with faster speed of 921.6kbps and withstand the wider range of operating temperature.

### Auto Toggling

CS-428/9AT-mini2 has a built-in hardware feature that performs automatic toggling to prevent devices from sending data at the same time. This operation is crucial when multiple devices are connected to prevent electrical collisions that lead to errors and unstable communications.



▲ Example of RS-422 Wiring



▲ Example of RS-485 Wiring

### Echo and Non-echo Mode (RS-485)

Generally, but not always, non-echo mode is used for RS-485 communication. While the data is sent, all incoming signals are blocked. When no data is being sent, input signals will be opened for receiving. The problem here is that there is no way to check whether the signal was successfully sent other than receiving a reply from the device that received the signal. In order to check this, echo mode is used. The RS-485 echo mode enables the output signal to bounce back to the input signal. Therefore, the users can ensure that the signal was sent. When the output signal is not the same as the echoed input signal, the device can send the signal again. In other word, when echo mode is enabled, that device can receive signals from other device as well as the signal from itself.

### RS-485 4-wire Operation

The 4-wire RS-485 uses the same wiring method as RS-422. There are some differences in electrical specification, however, recently, most RS-422/485 IC manufactures use a single chip to implement the function to use both communication interface that RS-485 can be used with 4-wire RS-422 without problems.

## Specification

### Serial

Maximum Speed	921.6 kbps
Maximum Distance	1.2km (24AWG Twisted Pair Cable)
Connector	RS-232: DE-09S (DB-9 Female) RS-422/RS-485: Terminal Block 4 Pins
Interface	RS-232: TXD, RXD, RTS, DTR RS-422: TXD+, TXD-, RXD+, RXD- RS-485: TRXD+, TRXD-
RS-422 Mode	Point-to-Point, Multi-Drop (Selectable with the Dip Switch)
RS-485 Mode	Echo, Non-echo (Selectable with the Dip Switch)
Dip Switch	RS-422/485 Selectable, Enable/Disable Terminal Resistor

### Operating Environment

Operating Temperature	-40 ~ 85 °C
Storing Temperature	-40 ~ 85 °C
Humidity	5 ~ 95% Non-Condensing

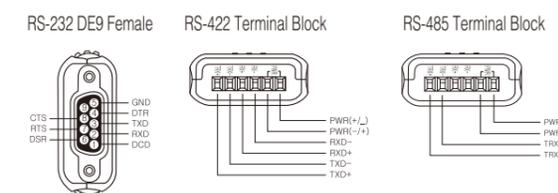
### Certifications

KC, CE, FCC

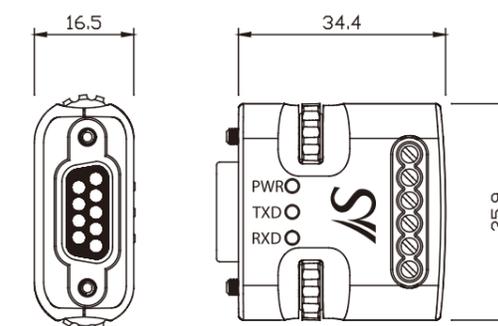
## Ordering Information

CS-428/9AT mini2	CS-428/9AT mini2, Manual
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## Pin Assignment



## Dimension



unit : mm

Sales : marketing@sysbas.com  
Technical Support : www.solvline.com