



**Atop Technologies, Inc.**

**Compact plug-on RS-232  
to RS-485/422 media converter**

SS100 Series

## Hardware Installation Guide

Version 1.1  
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## Overview

The SS100 series provide complete signal conversion between RS232 and RS422/485, and without requiring an external power source (Noted it depend on device power output). It also supports both half-duplex 2-wire RS485 and full-duplex 4-wire RS422/485. There are two type of SS100 series, SS100 and SS100-ISO. SS100-ISO support 3kV isolation at RS232 side.

The maximum baud rate is 500Kbps for both RS232 and RS422/485 side. The operating temperature is -40 to 85 °C

## Model Name: SS100, SS100-iso

Product	RS232	RS232/485	Isolation Voltage	Power Connector
SS100	DB9	TB-6	N/A	TB
SS100-ISO	DB9	TB-6	3000 VDC at RS232	TB

## Product Content

- 1 unit of SS100 or SS100-ISO
- User Guide

## Specification

RS232 Side	
Connector	DB9 female
Signal Line	TxD, RxD, CTS, DSR, SG
Maximum Baud Rate	500Kbps
Protection	IEC61000-4-2 (ESD), IEC610004-4 (EFT), IEC61000-4-5 (Surge)

RS422 and RS485 Side	
Connector	Terminal Block 5 pins
Signal Line	RS422: TxD-, TxD+, RxD-, RxD+, GND RS485-4 wire: TxD-, TxD+, RxD-, RxD+, GND RS485-2 wire: D+, D-, GND
Mode	RS422: Point to point Mode, Multi-Drop Mode RS485: Echo Mode, Non-Echo Mode
Data Control	Auto-toggling
Maximum Baud Rate	500Kbps
Protection	IEC61000-4-2 (ESD), IEC610004-4 (EFT), IEC61000-4-5 (Surge)
Terminal Resistor	Enable/Disable with dip-switch

## Power

- Power supply via RS232 port (DSR, CTS)
- Power input: 5 VDC
- Power consumption: Non-ISO 115mW Max, ISO 220mW Max

## Environment

- Operating temperature: -40 to 85 °C
- Storage temperature: -40 to 85 °C
- Humidity: 5~95%, non-condensing

## Standards and Certifications

- EMC: EN55032/24
- EMI: FCC Part 15B Class A

## Installation

### Supplying Power from RS232 Side

- The connector of RS232 side is DCE mode, so it could be connected to computer or device with RS232 mode directly.
- SS100 uses RS232 signal line to power up the unit. You may be able to use RTS/DTR to driven it. **Noted that SS100-ISO need to have external power supply.**
- When there are many devices connected to RS422 or RS485 signal lines, we recommend that external power supply is necessary.
- When the SS100 series is working fine, the PWR led will be on.

### External Power Supply

- There is a DC power connector at RS422/485 side. Please supply 5VDC power input.

### Selecting RS422 or RS485 Modes and Termination Resistor

		SW1		SW2		SW3	
On	Off	RS485 Echo Mode	RS485 Non-Echo Mode	Rx Termination Resistor	None	Tx Termination Resistor	None

### Pin Assignment

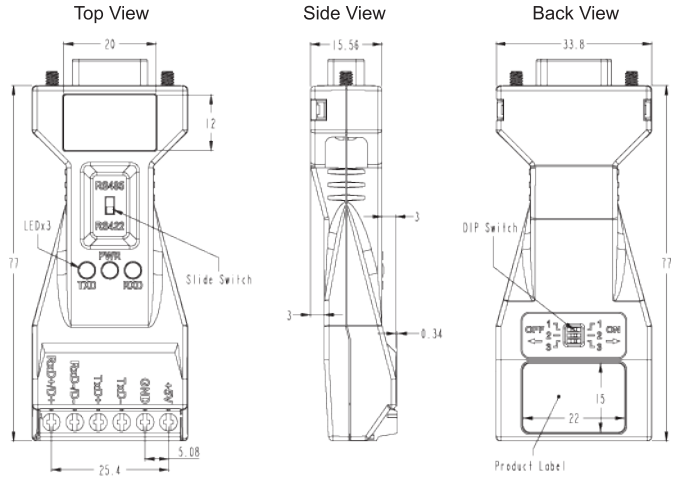
TB5 RS422/485 pinout

		Pin					
		1	2	3	4	5	6
RS-422 / 4-W RS-485	RxD+	RxD-	TxD+	TxD-	GND	+5V	
2-W RS-485	D+	D-	-	-	-	-	

DB9 RS232 pinout

		Pin								
		1	2	3	4	5	6	7	8	9
RS-232	-	TxD	RxD	DSR	GND	-	CTS	-	-	-

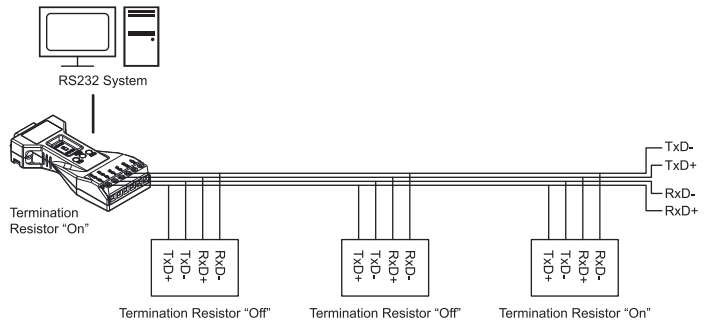
# Dimension



# Installation

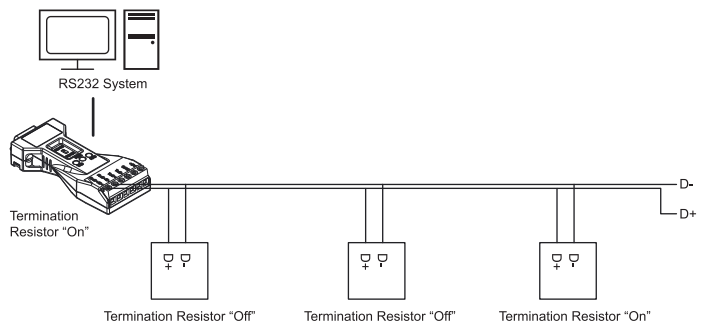
## RS422/485-4 wire Wiring (Master-Slave System)

The termination resistors should be enabled at the both ends of the cables; the master and the last slave.



## RS485-2 wire Wiring

The termination resistors should be enabled at the both ends of the cables; the master and the last slave.



# Baud Rate and Cable Lengths

Test Condition: Room temperature, CAT-5e UTP(Unshielded Twisted Pair) cable.

Distance(m) \ Speed(bps)	300	600	900	1200
9600	O	O	O	O
19200	O	O	O	O
38400	O	O	O	O
57600	O	O	O	O
115200	O	O	O	O
230400	O	O	O	X
460800	O	X	X	X

## RS485-2 wire communication

Test Condition: Room temperature, CAT-5e UTP(Unshielded Twisted Pair) cable.

Distance(m) \ Speed(bps)	300	600	900	1200
9600	O	O	O	O
19200	O	O	O	O
38400	O	O	O	O
57600	O	O	O	X
115200	O	O	X	X
230400	O	O	X	X
460800	O	X	X	X

Noted that the performance might depend on the environment.

# Warranty Policy

## Warranty Conditions

Products supplied by Atop Technologies are covered in this warranty for sub-standard performance or defective workmanship. The warranty is not, however, extended to goods damaged in the following circumstances:

- (a) Excessive forces or impacts
- (b) War or an Act of God: wind storm, fire, flood, electric shock, earthquake
- (c) Use of unqualified power supply, connectors, or unauthorized parts/kits
- (d) Replacement with unauthorized parts

## RMA and Shipping Costs Reimbursement

Customers shall always obtain an authorized "RMA" number from Atop before shipping the goods to be repaired to Atop. When in normal use, a sold product shall be replaced with a new one within 3 months after purchase. The shipping cost from the customer to Atop will be reimbursed by Atop.

After 3 months and still within the warranty period, it is up to Atop whether to replace the unit with a new one; normally, as long as a product is under warranty, all parts and labor are free of charge to the customers.

After the warranty period, the customer shall cover the cost for parts and labor. Three months after purchase, the shipping cost from the customer to Atop will not be reimbursed, but the shipping cost from Atop to the customer will be paid by Atop.

## Limited Liability

Atop shall not be held responsible for any consequential losses from using Atop's product.

## Warranty Period

Product Categories	Warranty	Product Categories	Warranty
Ethernet Switches	5 Years	DIN-Rail Power Supplies	3 Years
Wireless		Power Adaptors	1 Years
Serial Device Servers			
Modbus Gateways			
Media Converters		Antennas	
Embedded Device Servers	Other Accessories		

The warranty certification will not be effective until an authorized stamp issued by Atop's overseas agents.

Purchase Date:            /            /            (yyyy/mm/dd)

Serial Number



## Atop Customer Services and Supports

1. Please contact your local dealers or Atop Technical Support Center at the following numbers.  
 + 886-3-550-8137 (Atop Taiwan)  
 + 86-21-6495-6232 (Atop China)
2. Please report the defected problems via Atop's Web site or E-mail account  
 Web Site : www.atop.com.tw, e-mail : service@atop.com.tw  
 Web Site : www.atop.com.cn, e-mail : service@atop.com.cn

— Any changes to this material will be announced on Atop website. —