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BASSO-1010DS

User Manual

Version 1.0.1 2020/12/8

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Revision History

Revision Date	Document Ver.	Pages Revised	Revised/Added/Removed	Details of Revision
2020.12.08	1.0	All	-	New

Contents

Please be sure to read this manual before using and use the product safely and accurately.

• Pictures and photos in the manual may be different from the physical, and the document is subject to change without notice to improve performance. For the last information, please visit our website (www.sysbas.com).

• To view frequently asked questions and answers, please visit our website and find Support –Technical Support – FAQ section.

• Documents can be downloaded from the product page or Download section.

• Sellers or users should be aware of the fact that this device is intended for industrial use(Class A), not for residential use.

• Warranty Policy is included in the product packaging.

• The exchange/return of the device can be handled by the procedure described in the Warranty Policy.

1. Serial Converter

Converter

Function of equipment doubles when connected to other equipment, devices, computers and so on. Therefore, communication of equipment is an important factor of both users at industrial sites and end users. In order for the incoming and outgoing data to be transmitted without any problems, each device participating in the communication must be able to recognize the data sent by each other.

However, the communication is often impossible because different equipment uses different communication specifications and protocols. This is similar to what happens when two people who use different words. An interpreter that translates them between different words is required. Likewise, the communication of equipment requires something that transforms between different communication specifications and protocols: converter.

The converter allows both sides to communicate without any variation in existing communication specifications and protocols. Because there are so many different types of communication specifications and protocols, there are also many different types of converters.

Serial

RS232 is the most simple and common equipment communication standard established by the EIA(Electronic Industries Association). As it only supports 1:1 communication and is mainly used for communication within 100m(vary on the speed of communication), it has been used in many industrial sites up to now due to its simplicity and affordability.

RS422 and RS485 are complementary standards to RS232 shortcomings. As compared to RS232 with only 1:1 communication and limited to short distance communication, RS422 and RS485 uses four or two signal lines, supporting long distance communication up to 1.2km with a stronger response to noise. RS422/485 also supports multi-drop mode, enabling communication in a more complex and wider environment.

2. Components

Components	Ordering Information
BASSO-1010DS	BASSO-1010DS

3. Product

LED

- Power (Red): Illuminates at BASSO-1010DS power input (when Power LED switch is ON)

Connector

Serial Port(RS232, Female)

Serial Port(RS422/RS485)

- Serial Port(RS232, RS422/RS485): The serial port that can communicate.
  (Please refer to APPENDIX for pin specifications)

4. Function

BASSO-1010DS converts RS232 signal to RS422 or RS485 signal and performs the following functions:

1) Converts RS232 to RS422/485

Converts short distance communication RS232 to long distance communication RS422/RS485.

2) Port Powered

This product is designed to operate without external power supply when connected to RS232 connector(DB9) on a PC or any serial device(additional power connection is required when using RS232 for extended use). However, the external power input terminals are also ready for use in environments which require extra power.

[Tip]

This product uses the RTS, DTR signals that are output from the RS232 port of a PC or device as power source when power is not supplied externally(if the cable length is extended or RS232 power specification is insufficient, it is recommended to use external power).

The Power LED on the converter shows if the power is ON. The power supply part embeds a high capacity condenser to supply stable power to the converter circuit using RTS and DTR signals. This condenser may not operate for a shot time(within 0.1 seconds) until it is fully energized. The LED lights up when power is applied to the converter. If the LED does not illuminate or the color of the LED is not clear, blinks or changes in brightness periodically, please use an external power source.

3) Terminating Resistance

The built-in terminating resistance allows users to set the terminating resistance(120Ω) to solve the problem if noise on track causes a communication failure.

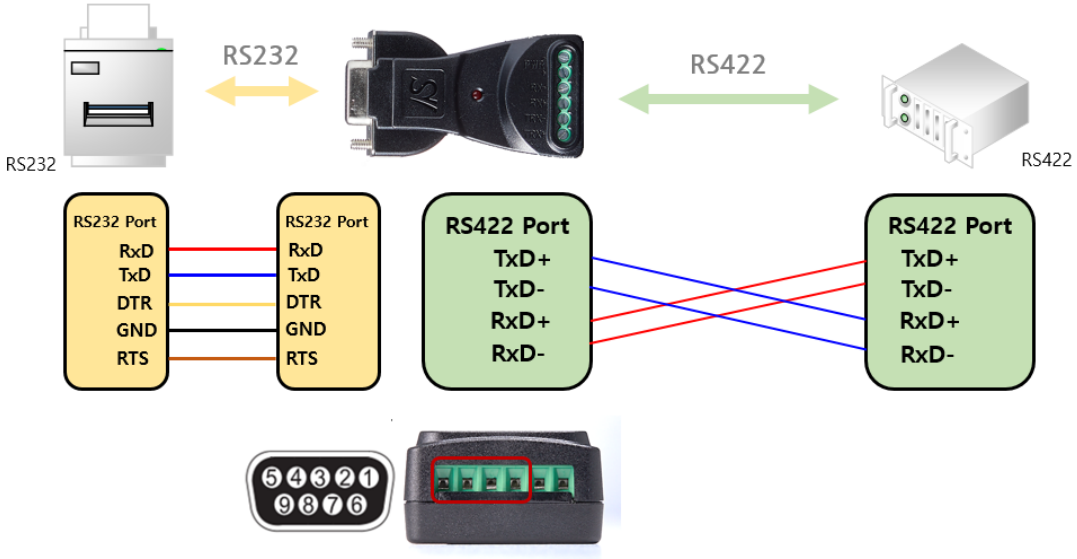
(Please refer to 6. Settings for terminating resistance setting method)

6. Connection

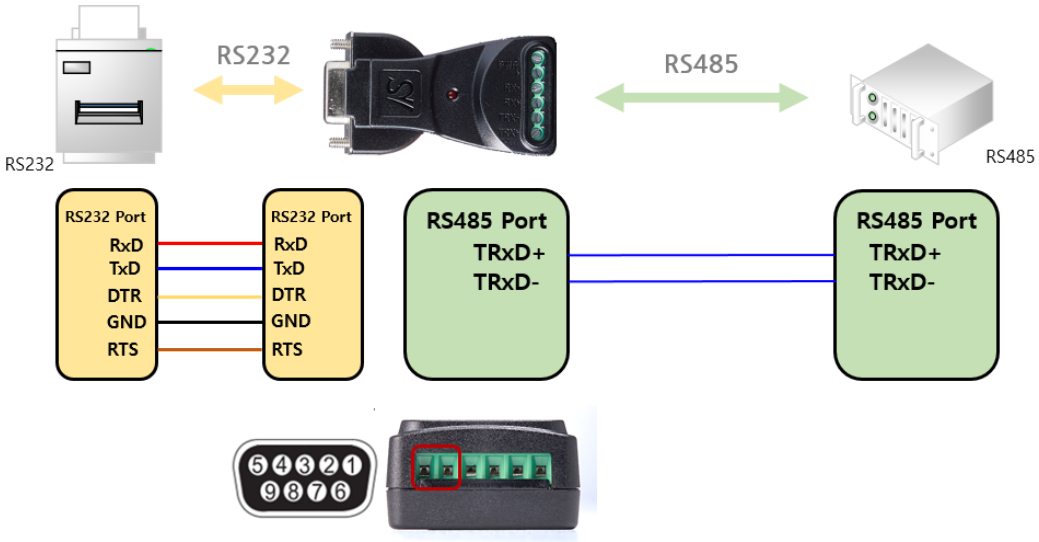
Device – Device#1 Connection(RS422/485)

The device-to-device connection is performed by converting RS232 to RS422/485.

Wiring1. Device – Device#1 (RS422)

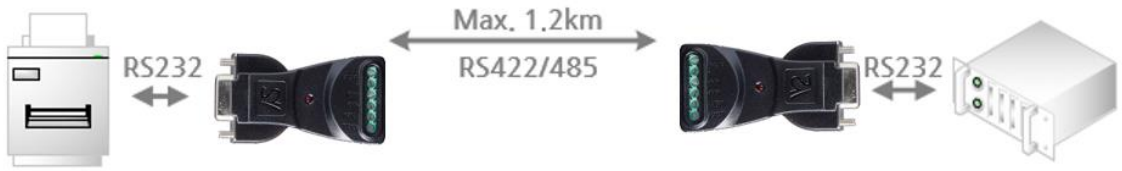


Wiring2. Device – Device#1 (RS485)



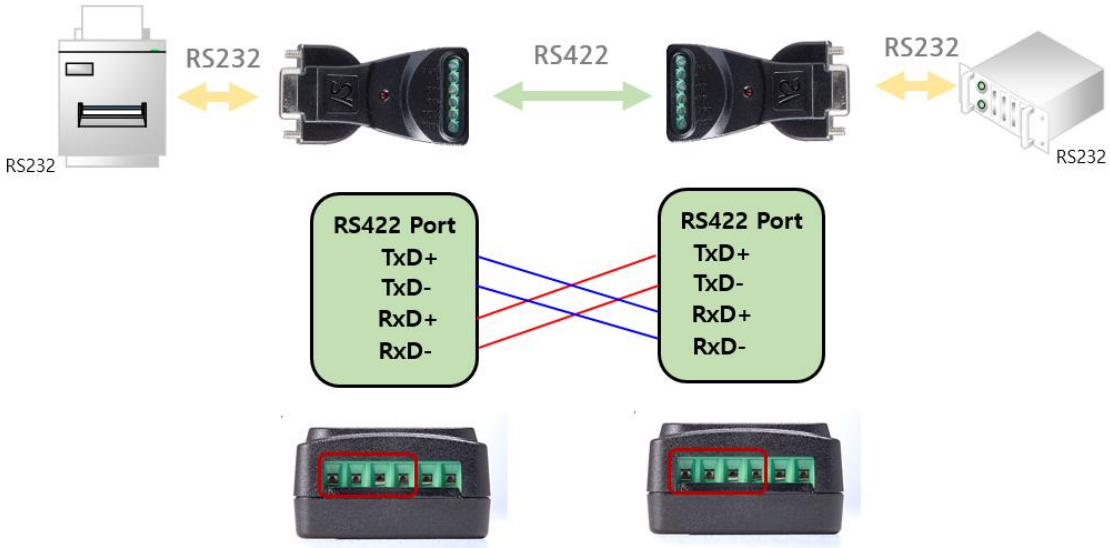
The RS232 port is as DCE(Data Communication Equipment) mode, connected to the DTE port such as a PC in direct connection.

Device – Device#2 Connection(RS422/485)

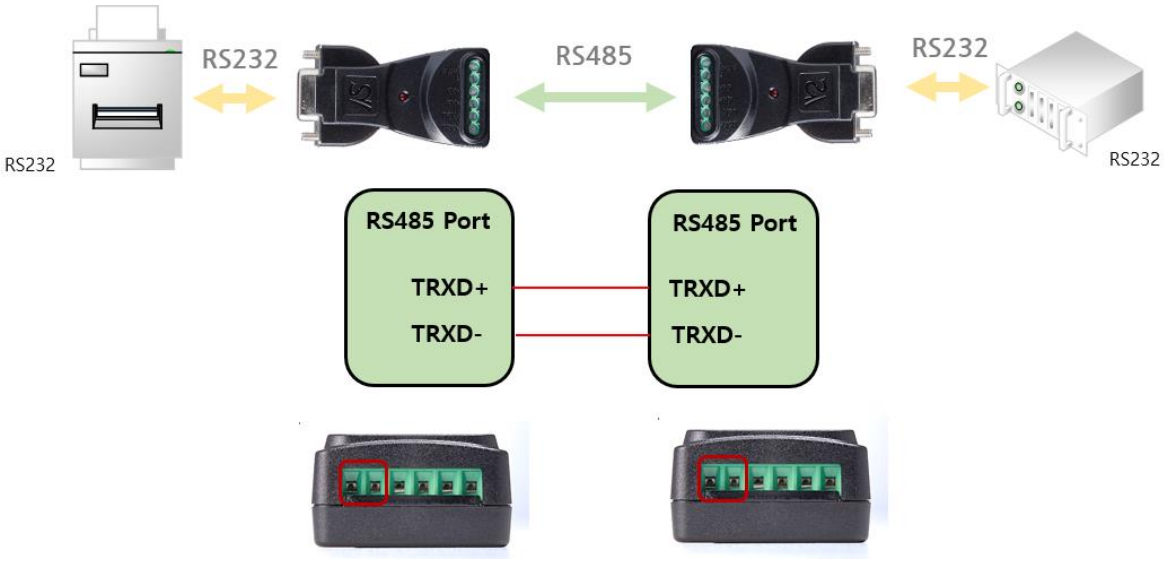


Connecting BASSO-1010DS to both sides of two RS232-communicating devices enables RS232 long distance communication.

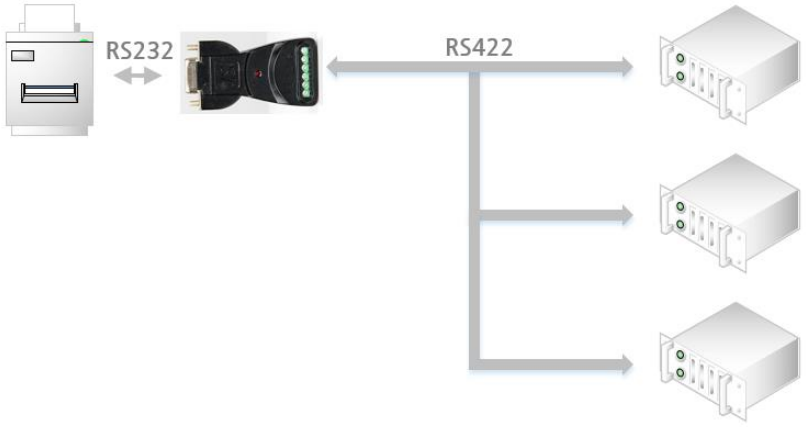
Wiring1. Device – Device#2 (RS422)



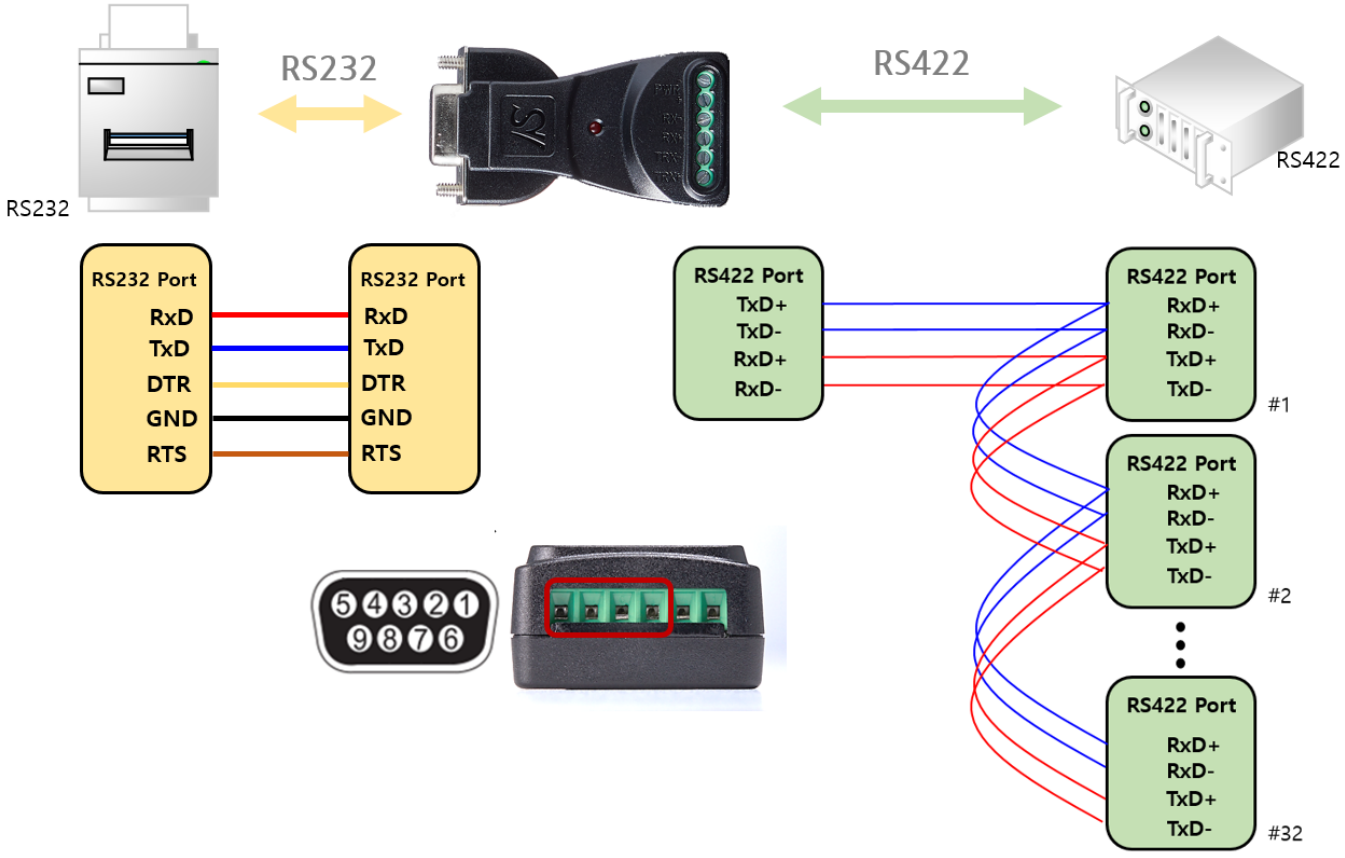
Wiring2. Device – Device#2 (RS485)

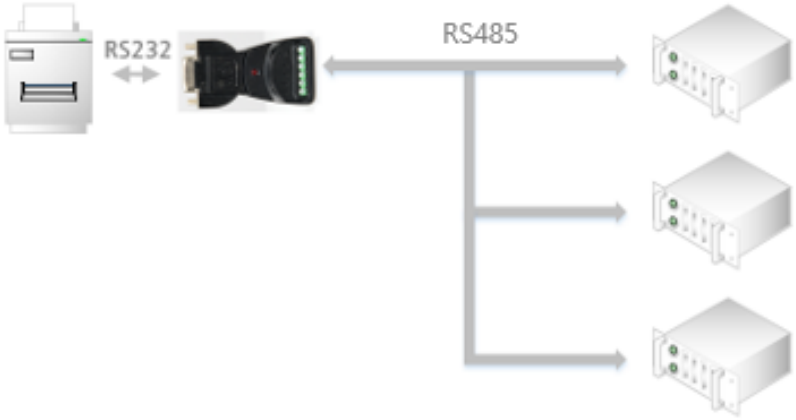


Device – Device#3 Connection(RS422/RS485 Multi-Drop)

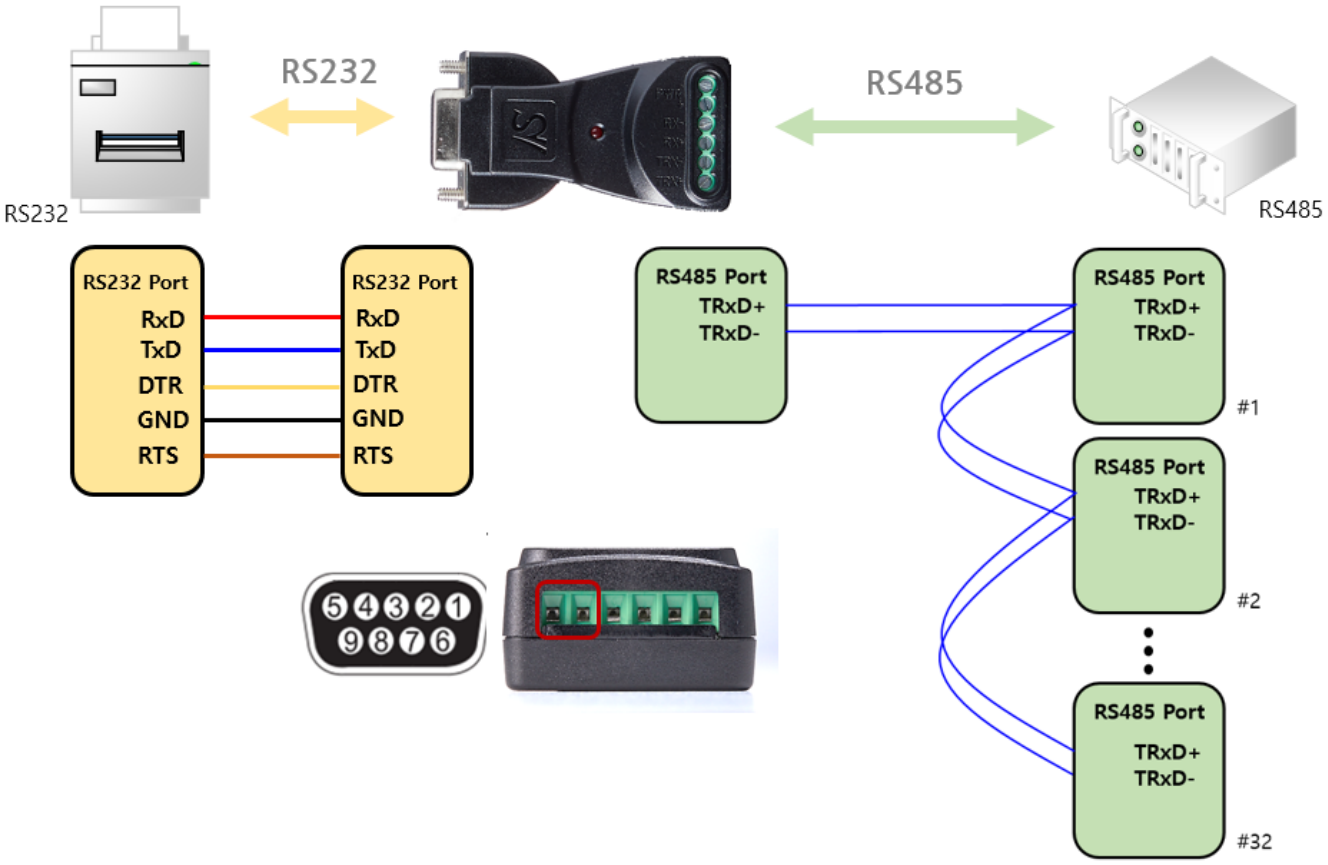


Wiring1. Device – Device#3 (RS422)





Wiring2. Device – Device#3 (RS485)



6. Settings

Set the setting switch on bottom of BASSO-1010DS to the desired mode.

Switch No	ON	OFF
1	RS485	RS422
2	Echo(RS485 Only)	Non-Echo(RS485 Only)
3	RS422 Termination	
4	Rs485 Termination	

Turn switch 1 ON to operate as RS485, OFF to operate as RS422. (Default: RS422)

Turn switch 2 ON to operate in RS485 Echo mode, OFF to operate RS485 Non-Echo mode. (Default: Non-Echo)

Turn switch 3 ON to activate RS422 termination resistor. (Default: Terminating Resistance OFF)

Turn switch 4 ON to activate RS485 termination resistor. (Default: Terminating Resistance OFF)

Class A equipment

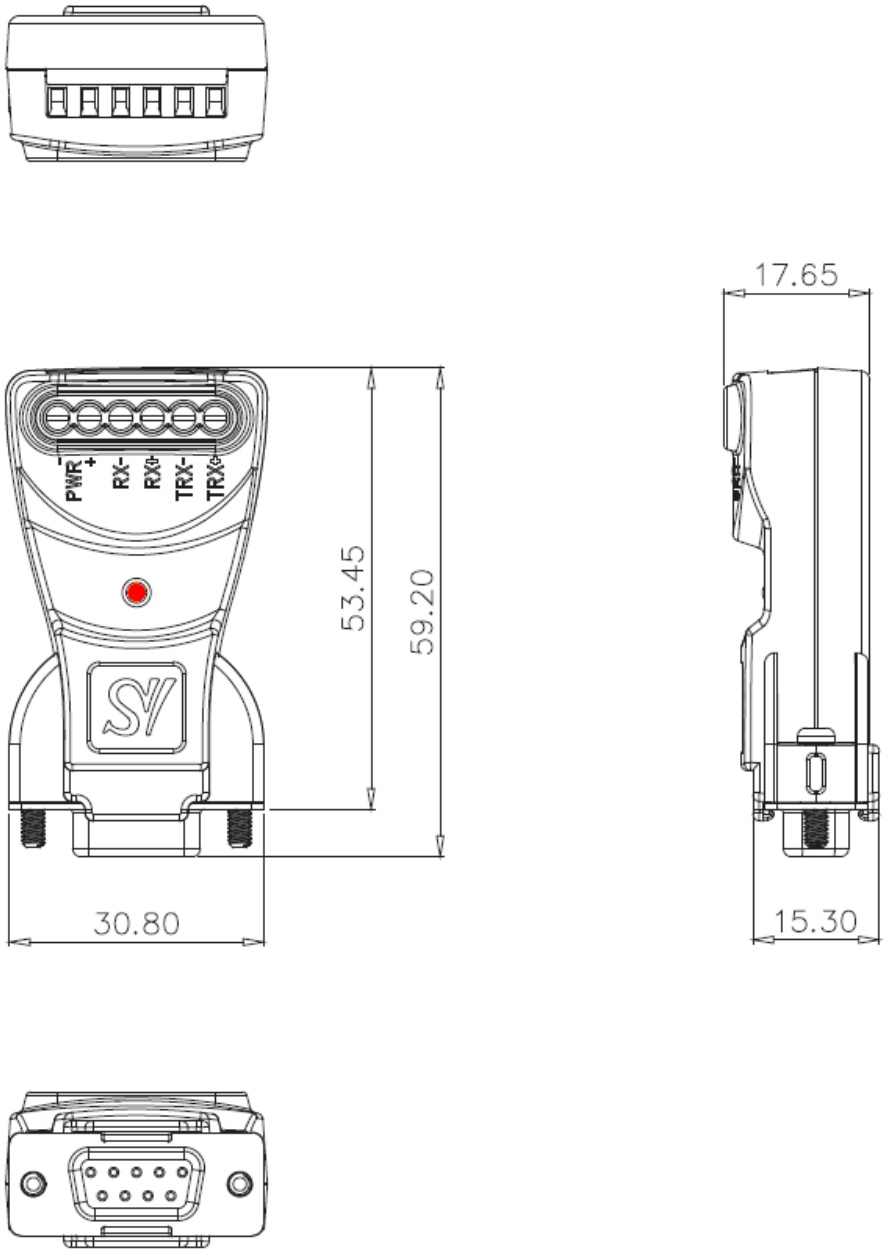
Sellers or users should be aware of the fact that this device is intended for industrial use(Class A), not for residential use.

----------APPENDIX----------

1. Specifications

Serial	Standards	RS232(DB9 Female), RS422/485(Terminal Block)
	Maximum Speed	921.6Kbps
	Signal Lines	RS232: TXD, RXD, DTR, RTS RS422: TXD+, TXD-, RXD+, RXD- RS485: TRXD+, TRXD-
	RS422 Mode	Point to Point, Multi-Drop
	RS485 Mode	Echo, Non-Echo
	Parity bit	None, Even, Odd
	Dip Switch	RS422/485 Selectable Termination Resistor Selectable
	Protection	400W Pulse Surge Protection 15kV ESD Protection
Hardware & Environment	LED	Power LED
	Dimension (W x L x H)	59.2 x 30.8 x 17.65mm 2.33 x 1.21 x 0.69in
	Weight	21g (0.74oz)
	Operating Temperature	-40 ~ 85℃ (-40 ~ 185℉)
	Storage Temperature	-40 ~ 85℃ (-40 ~ 185℉)
	Humidity	5~90% Non-condensing
	Certification	CE, FCC, RoHS
Ordering information		BASSO-1010DS V1.0

2. Dimension



unit: mm

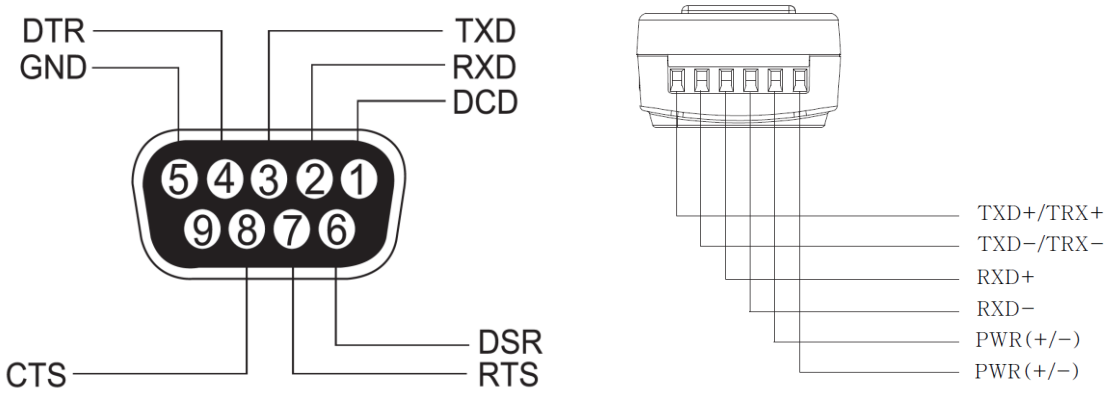
3. Serial Port Pin Specification

Pin No.	RS232
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	-

[Caution]

DCD, CTS, DSR signals are not used. DTR and RTS is used for power supply.

The RS232 port is as DCE(Data Communication Equipment) mode, connected to the DTE port such as a PC in direct connection.



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