

Sparr Electronics Limited



User Manual

ISO 485/422 Isolator / Repeater

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Manual Revision	Revision Date	List of Updates
00	23/09/2016	
01	20/07/2017	1. Contact Information

1. Introduction

- The RS 485/422 Isolator / Repeater - ISO 485/422 is primarily intended to provide complete Isolation between communication devices, so that they are protected against any inadvertent damage due to electrical disturbances. The ISO 485/422 also provides necessary immunity to a system against Electrical Noise Interferences and differential ground.
- The product can also be used for extending the operational distance by acting as a RS 485 / 422 Repeater / Amplifier.
- ISO 485/422 is available as a compact unit enclosed in a plastic casing, which takes power from the supplied power adaptor.
- The converter is populated with surface mount components for high reliability and for reducing the size, at the same time, it provides isolation to data signals.

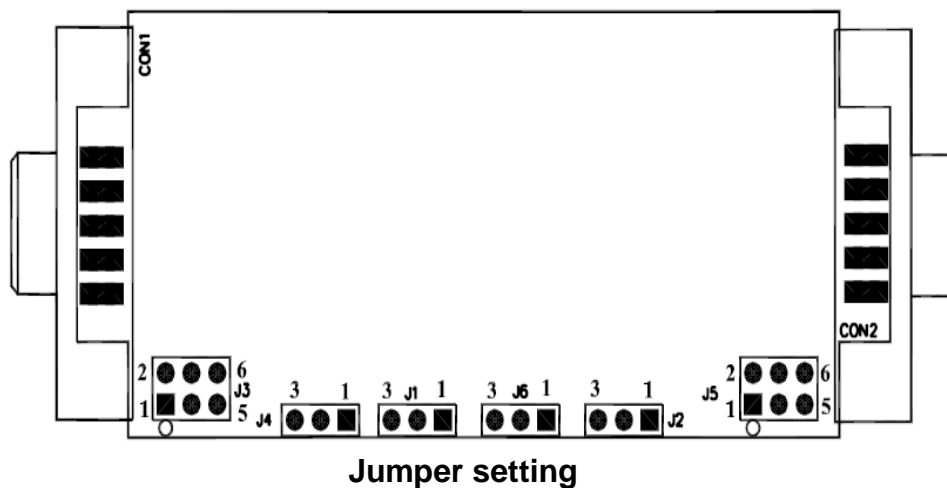
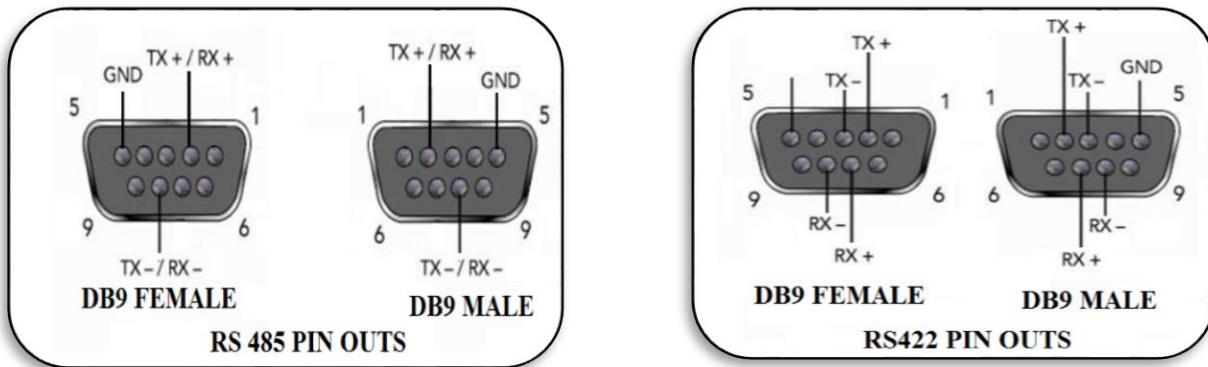
2. Technical Specifications

Serial Interface	
Interface	RS 485 and RS 422
Connectors	RS 485/422- DB 9 connector, Power Input- Screw type connector
RS 485	
Maximum cable length (RS 485)	1200 meters on either side
Baud Rate	Up to 1 Mbps Maximum
Isolation	
Power & Signal Isolation	2500 Vrms
Indicators (LED)	
Transmit Data(TxD)	Yellow
Receive Data (RxD)	Green
Power ON	Red
Power	
Input	5 V to 24 V DC (External 12V Power Adapter supplied)
Environmental	
Operating Temperature	0°C to 70°C
Storage Temperature	-40°C to 85°C
Packaging	
Dimensions (LxWxH)	115mm(L) x 43mm(W) x 20mm(H)
Weight	60 Grams
Warranty	12 Months

3. Applications

- Noisy Data Communications environments.
- Industrial Control Systems & Communication.
- Building Automation.
- Video Surveillance & Security Control Panel.
- Computer & Automation System.
- Isolation between RS 485/422 Devices.
- Where more than 32 nodes are connected to the bus.
- For Extending Operational Distance.

4. Pin Description



RS485, RS422 JUMPER SELECTION

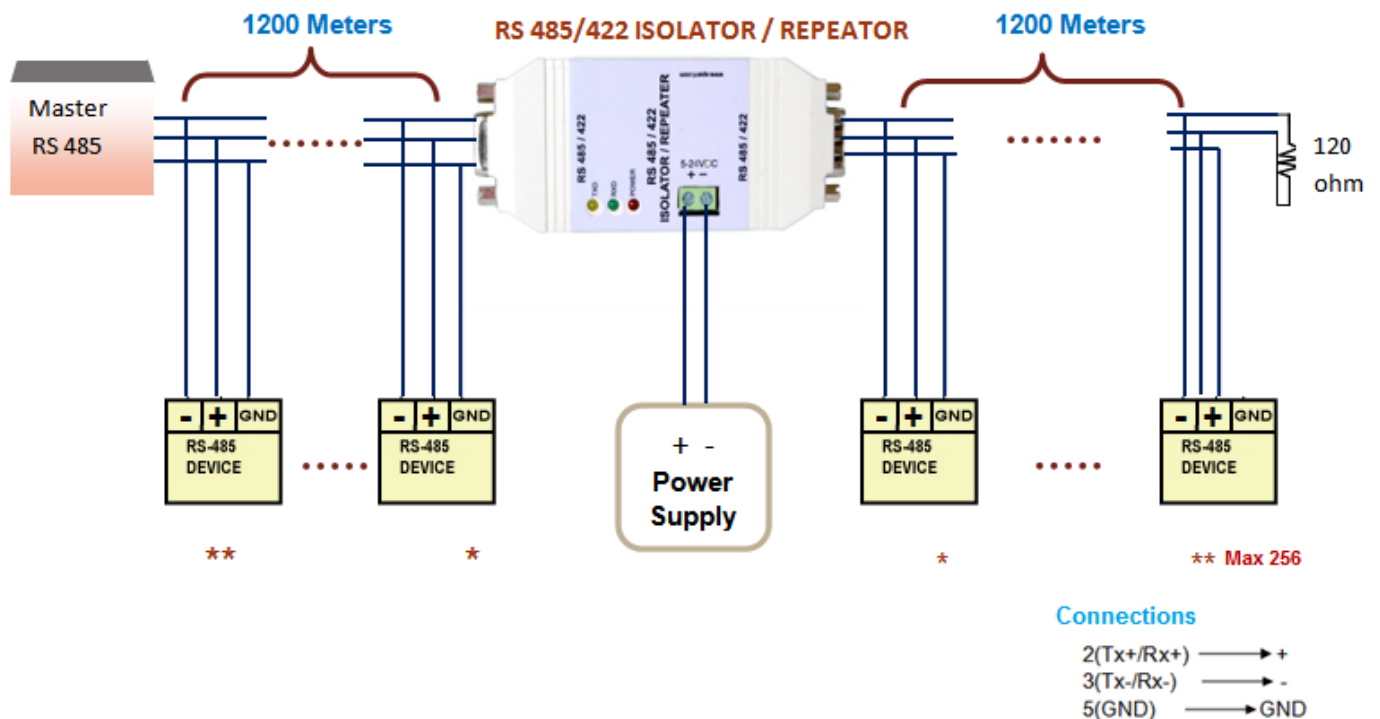
Modes	Jumper					
	J3	J4	J1	J5	J2	J5
RS485	SHORT 1&2,3&4	SHORT 2&3	SHORT 2&3	SHORT 2&3	SHORT 2&3	SHORT 1&2,3&4
RS485 TERMINATION	SHORT 5&6					SHORT 5&6
RS422	OPEN 1&2,3&4	SHORT 1&2	SHORT 1&2	SHORT 1&2	SHORT 1&2	OPEN 1&2,3&4
RS422 TERMINATION	SHORT 5&6					SHORT 5&6

5. LED Indications

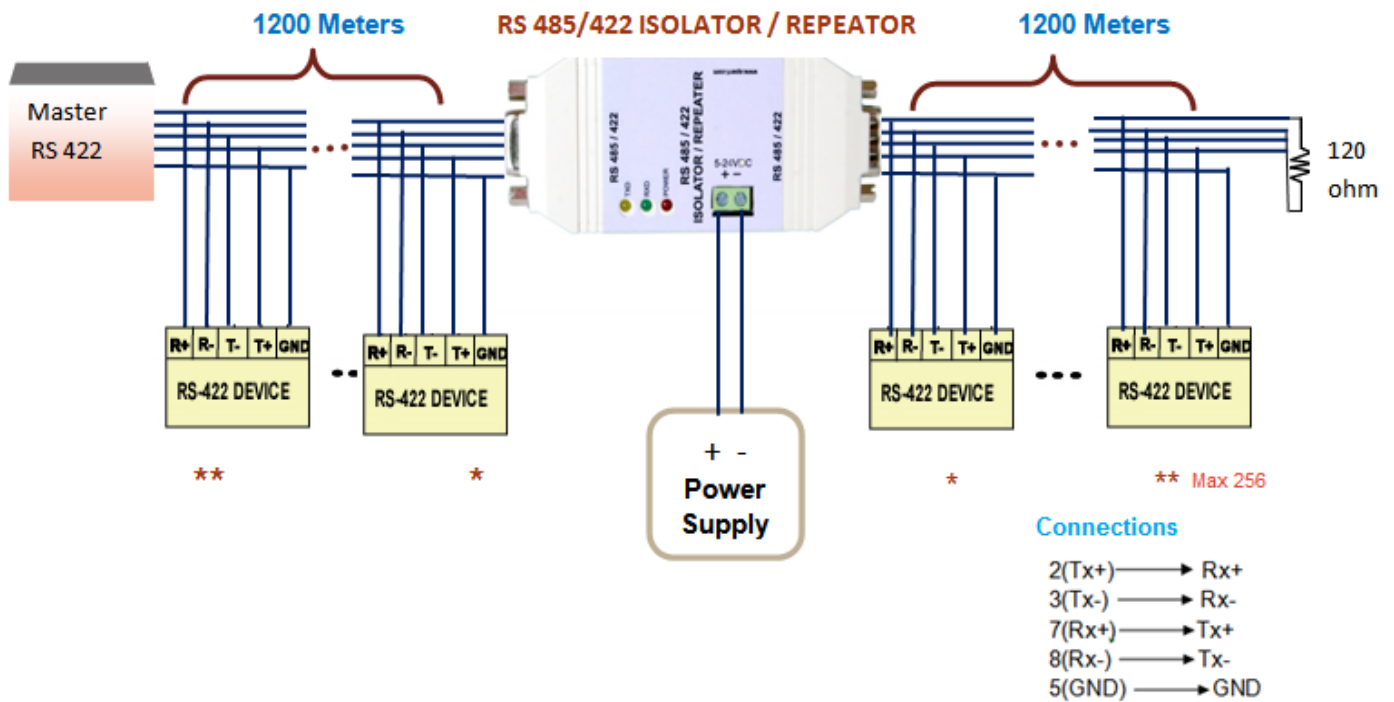
- **Yellow -TxD:**This LED lights up during data transmission.
- **Green - RxD:**This LED lights up during data reception.
- **Red-POWER:**This LED remains ON when the unit receives power and indicates that the unit is functional and ready to send & receive data.

6. Connection Diagram of RS485/422 Converter

TWOWIRE RS-485 ISOLATOR / REPEATER



FOURWIRE RS-422 ISOLATOR / REPEATER



Note: For selecting RS 485 & RS422 Modes refer jumper selection table

7. Troubleshooting

Problems	Solutions
1) No Data communication	<p>Make sure power supply is given and RED LED is ON.</p> <p>Make sure RS 485 / 422 output interface cable is OK.</p> <p>Make sure the wire terminal connection is OK.</p> <p>Make sure the TxLED is blinking when sending the Query.</p> <p>Make sure the RxLED is blinking when receiving the Query.</p> <p>Make sure the Jumper selection is as per the requirements.</p>
2) Incorrect Data	<p>Check Serial Parameters Baud Rate, Parity, Number of Bits, Stop Bit are same on both the Sides of RS 485 / 422 Converter.</p>

8. Frequently Asked Questions

Questions	Answers
1) What type of connector does ISO 485/422 use?	For RS 485 / 422 connection it uses DB 9 connector and for Power Input it uses Screw type connector
2) What is the maximum connection distance using RS 485 device?	1200 meters on either side
3) Can I boost the RS 485 signal to add more nodes or distance?	Yes. You can use this as repeater.
4) What is the advantage of using to Isolated Converter?	An isolated Serial to RS 485 / 422 Converter have Opto Couplers and TVS (Transient Voltage Suppressors) separating the data lines inside the unit to prevent high voltage spikes, surges, ground-loops and noise from damaging and interfering with your computer or the device you have connected to the Serial port. This provides additional protection and reliability.
5) Where would I use an RS 485 network?	RS 485 has been used in many factory environments to gather data and control Addressable Motor Drives, Cameras, PLC's, Time Clocks, Bar Code Scanners for process control and other factory equipment.

9. Contact and Support

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