



**Addressable**

User Manual

**485-Converter**

## CONTENTS

1. Overview.....	3
2. Packed Box Contains.....	3
3. DB9 Male connector for RS232 interface.....	3
4. 3way screw Connector for RS485.....	3
5. Power Input.....	4
6. Supported Modbus Functions.....	4
7. Configurable Parameters.....	4
RS232 (Serial).....	4
RS485 (Modbus).....	6
8. Loading default settings.....	8
9. Functions.....	8
Write Single Register/Write Multiple Register.....	8
Read Holding Registers.....	8
10. Contact and Support.....	8

Manual Revision	Revision Date	List of Updates
00	23/09/2016	
01	27/07/2017	1. Contact Information

## 1. Overview:

- Addressable RS 485 to RS232 Converter. Users can easily add/remove a Serial Port in their RS485 network to talk to RS232 based Serial Devices with the added feature of addressability.
- Power and Data Isolated RS485 port gives protection to the unit and also the connected RS232 device from the RS485 network. Unit address can be set by 8 way DIP switch allowing 255 addresses
- Baud Rate and other RS232 / RS485 port parameters are set by writing in to Modbus Registers.
- Address 0 of the DIP switch loads known defaults to the RS232 / RS485 ports to ensure configurability at all times.

## 2. Packed Box Contains:

Addressable Converter	1
12VDC 1Amp Power Adaptor	1

## 3. DB9 Male connector for RS232 interface.

DB9 Pin	Signal
2	TXD
3	RXD
5	Ground
7	RTS
8	CTS

## 4. 3way screw Connector for RS485

3way CON from LHS to RHS	Signal
1	TRX+(A)
2	TRX-(B)
3	Ground

## 5. Power Input:

- 9- 24V DC. 12V power adaptor supplied with device.

2way Con from LHS to RHS	Signal
1	+
2	-

## 6. Supported Modbus Functions:

1. Read Holding Registers
2. Write Single Register
3. Write Multiple Registers

## 7. Configurable Parameters:

Serial configurable Parameters can be changed by writing into registers using write single register.

### RS232 (Serial):

#### Baud rate: R1

Baud rate	Function	Address	Value
600	Write Single Register	1	0
1200	Write Single Register	1	1
2400	Write Single Register	1	2
4800	Write Single Register	1	3
9600	Write Single Register	1	4
19200	Write Single Register	1	5
38400	Write Single Register	1	6
57600	Write Single Register	1	7
115200	Write Single Register	1	8

**Data Parameters: R2**

<b>Data Parameters</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
<b>N81</b>	Write Single Register	2	0
<b>E81</b>	Write Single Register	2	1
<b>O81</b>	Write Single Register	2	2
<b>N82</b>	Write Single Register	2	3
<b>E72</b>	Write Single Register	2	4
<b>O72</b>	Write Single Register	2	5
<b>E71</b>	Write Single Register	2	6
<b>O71</b>	Write Single Register	1	7

**Parity:** N- None, E- Even, O- odd

**Data Bits:** 8- 8 bits, 7- 7 bits

**Stop Bit:** 1 – 1 stop bit, 2 – 2 stop bit.

**Character Wait Timeout: R3**

<b>Character Wait Timeout</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
	Write Single Register	3	0 – 65535 mSec

**Flow Control: R4**

<b>Flow Control</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
<b>None</b>	Write Single Register	4	0
<b>X ON/X OFF</b>	Write Single Register	4	1
<b>RTS/CTS</b>	Write Single Register	4	2

**RS485 (Modbus):**

**Baud rate: R5**

<b>Baud rate</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
<b>600</b>	Write Single Register	5	0
<b>1200</b>	Write Single Register	5	1
<b>2400</b>	Write Single Register	5	2
<b>4800</b>	Write Single Register	5	3
<b>9600</b>	Write Single Register	5	4
<b>19200</b>	Write Single Register	5	5
<b>38400</b>	Write Single Register	5	6
<b>57600</b>	Write Single Register	5	7
<b>115200</b>	Write Single Register	5	8

**Data Parameters: R6**

<b>Data Parameters</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
<b>N81</b>	Write Single Register	6	0
<b>E81</b>	Write Single Register	6	1
<b>O81</b>	Write Single Register	6	2
<b>N82</b>	Write Single Register	6	3
<b>E72</b>	Write Single Register	6	4
<b>O72</b>	Write Single Register	6	5
<b>E71</b>	Write Single Register	6	6

**Parity:** N- None, E- Even, O- odd

**Data Bits:** 8- 8 bits, 7- 7 bits

**Stop Bit:** 1 – 1 stop bit, 2 – 2 stop bit.

**Character Wait Timeout: R7**

<b>Character Wait Timeout</b>	<b>Function</b>	<b>Address</b>	<b>Value</b>
	Write Single Register	7	0 – 65535 mSec

**Restart: R8**

	<b>Function</b>	<b>Address</b>	<b>Value</b>
<b>Restart</b>	Write Single Register	8	1

**Configured parameters value can be read using Read Holding registers, function3.**

**Register R1 to R8**

## 8. Loading default settings:

Select the slave ID as 0 on power-on for 2 seconds. This will load the default settings of the unit. Restart the unit with the desired slave ID and proceed further.

## 9. Functions:

### Write Single Register/Write Multiple Register:

The slave unit, after receiving the query from the master, responds to it. If the function of the query is to write single register or write multiple registers, the data to be written is sent out to the serial port (RS232). The first 8 registers, ie R1 to R8 are reserved for the configuration parameters. To send out any value to the serial port, master has to send a query with the starting address as R9 or above. Up to 16 registers.

Setting R8 as 1 restarts the unit.

### Read Holding Registers:

Data is received from the serial port. If the master queries to read holding register, the data received is sent to the master. If the master queries for any of the first 8 registers, i.e. R1 to R8, then the configuration values are sent back. Otherwise, data from the serial side, if any, is returned. Querying for more number of registers than what is available at the serial side will return an error. Maximum of 16 registers can be read at a time using read holding register function. These registers can be read only once. Maximum 1023byte data in HEX format can be sent from the serial. This 1023bytes data can be read using read holding register from register address 9 to 24. 16byte data is read for every read command.

## 10. Contact and Support

**Sparr Electronics Limited.,**  
No.414A, 7<sup>th</sup> Main Road,  
1<sup>st</sup> Block, HRBR Layout,  
Banaswadi,  
Bangalore - 560 043, INDIA.  
Phone: +91-80-41278033

**Call Technical Support at +91-80-41278033**

**Website** : [www.sparrl.com](http://www.sparrl.com)  
**Email for:**  
**Product Information** : [info@sparrl.com](mailto:info@sparrl.com)  
**Support** : [support@sparrl.com](mailto:support@sparrl.com)  
**Sales** : [sales@sparrl.com](mailto:sales@sparrl.com)