



Industrial Data Logger 4G LTE

ORDER CODE: RDL838

DOCUMENT VERSION: V5.1



CONTENTS

1.	COM Port	3
1.1	. Local Login:	4
2.	I/O Settings	5
2.1	Digital Input Settings	5
2.2	Digital Input Specification	6
Appli	ication Wiring Diagram	7
2.3	Counter Settings	9
Appli	ication Wiring Diagram	10
2.4	Time Enabled Counter	10
3.	Digital Output	11
3.1	Digital Output Specification	11
Appli	ication Wiring Diagram	12
4.	Relay Output	15
5.	Analog	17
Appli	ication Wiring Diagram	18
6.	MODBUS RTU	19
6.1	Com Port Settings	19
6.1 6.2	Com Port Settings MODBUS RTU Polling Interval	19 24
6.1 6.2 Appli	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram	19 24 25
6.1 6.2 Appli 7.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings	19 24 25 26
6.1 6.2 Appli 7. Appli	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram	19 24 25 26 27
6.1 6.2 Appli 7. Appli 8.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings	19 24 25 26 27 28
6.1 6.2 Appli 7. Appli 8. 8.1	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings	19 24 25 26 27 28 28
6.1 6.2 Applii 7. Applii 8. 8.1 8.2	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format:	19 24 25 26 27 28 28 28 30
6.1 6.2 Appli 7. Appli 8. 8.1 8.2 8.3	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format: 4G/LTE JSON Settings	19 24 25 26 27 28 28 30 32
6.1 6.2 Appli 7. Appli 8. 8.1 8.2 8.3 8.4	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings	19 24 26 26 27 28 28 30 32 35
6.1 6.2 Applii 7. Applii 8. 8.1 8.2 8.3 8.4 9.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format: 4G/LTE JSON Settings 4G/LTE MQTT Settings	19 24 25 26 27 28 28 30 32 35 40
6.1 6.2 Appli 7. Appli 8. 8.1 8.2 8.3 8.4 9. 11.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format: 4G/LTE JSON Settings 4G/LTE MQTT Settings: Wi-Fi Settings Offline Data	19 24 25 26 26 27 28 28 30 32 35 40 54
6.1 6.2 Applii 7. Applii 8. 8.1 8.2 8.3 8.4 9. 11. 12.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format: 4G/LTE JSON Settings 4G/LTE MQTT Settings Wi-Fi Settings Offline Data Device Settings	19 24 25 26 27 28 28 30 32 35 40 54 55
6.1 6.2 Appli 7. Appli 8. 8.1 8.2 8.3 8.4 9. 11. 12. 13.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format:	19 24 25 26 27 28 28 28 30 32 35 40 54 55 57
6.1 6.2 Appli 7. Appli 8. 8.1 8.2 8.3 8.4 9. 11. 12. 13. 14.	Com Port Settings MODBUS RTU Polling Interval ication Wiring Diagram MODBUS TCP Settings ication Wiring Diagram Wi-Fi/GPRS/4G/LTE Settings 4G/LTE FTP Settings 4G/LTE FTP Data Uploading Format: 4G/LTE JSON Settings 4G/LTE MQTT Settings Wi-Fi Settings Offline Data Device Settings Change Password Remote Login:	19 24 25 26 27 28 28 30 35 40 54 55 57 58



1. COM Port

This should be the initial step before using the data logger configuration manager.



Connect the USB Port to the configuration system as shown above

File Action View Help	
and the state of the	
■ goaltech ■ Audio inputs and outputs ■ Batteries ■ Batteries ■ Disk drives ■ Mice and other pointing devices ■ Other devices ■ Unknown device ■ Unknown device	
b SD host adapters	

Check the COM Port \rightarrow Device Manager \rightarrow Ports as shown above



NOTE: Ensure that you have the FTDI Com port driver loaded. Please download and install from the link provided below if it is not installed.

Link: https://www.ftdichip.com/Drivers/VCP.htm

For Installation Guide ,<u>CLICK HERE</u>

Device can be logged in two ways for configuration: 1. Local Login and

2. Remote Login(Refer Page 58)

Local Login:

Ø			Data Logger Configuration Manager
Com.Port	• USB	○ Remote	
Image: The second secon	Com. Port:		✓ Open

- 1. Click on Com Port Select USB.
- 2. Select your Com Port and click on Open.

3		_ 🗆 🗙
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port	• USB CRemote	
Debug Image: Debug Image: Debug Image: Debug	Com. Port: COM7 Close Connected	
	Firmware Version: RDL V2.00.1	
	Serial Number: RDL0009	
	Logn	
	Password	
	Login	

3. Use the Default Password "**RDL123**" during Login



2. I/O Settings

Ü		- 🗆 🗙
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port ∴ I/O Settings I/O Settings Modbus RTU Modbus TCP Modbus TCP Modbus TCP Modbus TCP Modbus TCP Modbus TCP Modbus TCP Device Settings Device Settings Debug Change Password Modbus Change Password Modbus TCP	Settings Analog Digital Input Modbus I Analog Digital Input Modbus TCP Read	Version : V.I.2.5
Help		

Select the required I/O options and click on **Save** button.

2.1 Digital Input Settings

Ö				×
		Data Logger Configuration M	lanager	© www.rdltech.in Version : V.1.2.5
Com.Port Settin	ngs Analog Digital Input			
1/O Settings	Save Log (Saves to S	D Card)		
Modbus RTU	Read	/		
Modbus TCP	Digital Input O 22	hit Counter O Time Enchlad Counter		
WiFi / GPRS /4G / LTE	Digital input	on Counter O Inne Enabled Counter		
Alarm	Read			
A Offling Data	Channel	Enable/Disable		
• Onnie Data	1	2		
O Device Settings	2			
	3			
Debug	• 4			
Change Deserverd				
Change Password				
Analyze				
➡ Logout	Read	/		
1 Help	Note: Data Logged Only	when Input		



This Setting will indicate which digital input needs to be logged.

- 1. Select check box \square to save the data to the SD Card and click on **Save** button.
- 2. Select the type of **Digital Input** (Digital Input High/Low, 32 Bit Counter, Time Enabled Counter) and click on **Save** button.
- 3. Select the Check box ☑ to Enable/Disable Digital Input channel and click on **Save** button.
- 4. Click on Read to display the configuration that is already saved.

NOTE: Data Logged only when Input channel status changed (From High to Low or Low to High)

2.2 Digital Input Specification

- Channels: 4
- Input Voltage: 0-24V
 - \circ Logic High: > 5V
 - \circ Logic Low: < 4V
- Isolation : 3750 VRMS
- Supports Inverted DI Status
- Supported Connection: Dry and Wet both
- Maximum Switching Frequency : 5Khz





Application Wiring Diagram











2.3 Counter Settings

Ö						- ¤ ×
	191		Data Logger	r Configuration	Manager	© www.rdltech.in Version : V.1.3.0
Com.Port	Settings	Analog Digital I	input			
心 I/O Settings		Save Log (Save	s to SD Card)		1	
Modbus RTU		Save	1			
Modbus TCP		Digital Input	• 32 hit Counter 0 1	Time Enabled Counter		
WiFi / GPRS /4G / LTE		Save		The English Counter		
Alarm						
↓ Offline Data		Channel	Enable/Disable	Count		
	•	1	V	1		
Device Settings		2	v 7	1		
	-	4	V	1		
Debug			1100		1	
(6) Change Password						
Analyze		Save	×			
☐ Logout						
1 Help	Not Cha	te: Data Logged (mnel status chang	Only when Input ed			

These Settings will configure Digital counter input.

- 1. Select the Checkbox ☑ to **Enable/Disable** Digital Counter Input channel.
- 2. Set the Max Count
- 3. Click **Save** to write these count settings in the memory.
- 4. Click on Read to display the configuration that is already saved. will display the current max count / channel.

NOTE: 1. Data Logged only when Input Channel status changed (From High to Low or Low to High).

2. Data will be pushed to the Remote Server once counter reaches to max set count (Applicable only when counter option enabled).

3. Once counter reaches the max count then it resets to zero (Applicable only when counter option enabled).



Application Wiring Diagram



2.4 Time Enabled Counter

Counting with respect to time in sec

Ö						- 🗆 🗙
			Data Loggei	· Configuration	Manager	© www.rdltech.in Version : V.1.3.0
Com.Port	Settings	Analog Digital In	put			
1/O Settings		Save Log (Saves	to SD Card)			
Andbus RTU		Save	1			
Modbus TCP		Disital Insut	22 hit Counter 0.1	Sma Fashlad Counter		
WiFi / GPRS /4G / LTE			32 bit Counter •	ime Enabled Counter		
Alarm		Save	×			
A Offline Data		Channel	Enable/Disable	Time(sec)		
• Offinite Data	<u>۲</u>	1	v	30		
O Device Settings		2	Image: A state of the state	30		
		3	✓	30		
Debug		4		30		
Change Password					<u> </u>	
Analyze		Save	1			
⊡ Logout						
1 Help	No Cha	te: Data Logged Or annel status change	ıly when Input d			

- 1. Select the Checkbox 🗹 to Enable/Disable Digital Counter Input channel.
- 2. Set the **Time**(sec)
- 3. Click **Save** to write these count settings in the memory.

4. Click on Read to display the configuration that is already saved. will display the current max count / channel.





3. Digital Output

3.1 Digital Output Specification

- Channels: 3
- Open Collector
- Isolation : 3750 VRMS
- Absolute maximum voltage 35V, Current 100mA
- Maximum PWM frequency : 5Khz



NOTE: Max load current 100mA, 35v In the case of load drawing more current you need to add the additional driver.



Application Wiring Diagram







Digital Output:

Digital Output / PWM can controlled directly from server using MQTT Subscribe service.

<u>Command:</u> Digital _Channel =Logic High/ Low

Example:

- **1.**DO1=0 \rightarrow Digital output (DO) 1 becomes LOW
- **2.**DO1=1 \rightarrow Digital output (DO) 1 becomes HIGH
- **3.**DO2=0 \rightarrow Digital output (DO) 2 becomes LOW
- **4.**DO2=1 \rightarrow Digital output (DO) 2 becomes HIGH
- **5.**DO3=0 \rightarrow Digital output (DO) 3 becomes LOW
- **6.**DO3=1 \rightarrow Digital output (DO) 3 becomes HIGH

NOTE: Digital Output works only for 4G and 2G, it doesn't support for WiFi Communication.



Digital Output handling using MQTT subscribe service

Send message	Received messa	ges	~
Fopic	Торіс	Message	
INTEST	INTEST	DO1=0	
Message			
DO1=0			

essages are displayed in real-time as l	they are received by the broker. It's not p	ossible to view historical data.	
Send message	Received messa	ges	~
Торіс	Topic	Message	
INTEST	INTEST	DO1=0	
Message	INTEST	DO1=1	
D01=1			



4. Relay Output

Relay can be controlled directly from server using MQTT Subscribe service.

<u>Command:</u> Relay = Logic High/ Low



Relay output command:

- RL1=1 \rightarrow Relay becomes HIGH
- RL1=0 \rightarrow Relay becomes LOW



Relay Output handling using MQTT subscribe service

lessages are displayed in real-time as t	hey are received by the broker. It's not po	ossible to view historical data.	
Send message	Received messa	ges	
Торіс	Topic	Message	
INTEST	INTEST	RL1=1	
Message	INTEST	Rit=0	
RL1=0		July V	



5. Analog

5.1 Analog Channel Settings

The below given settings shows how to configure Loop current (4-20mA) and 0-10V Analog Channels.

Ö											- 🗆 ×
	Data Logger Configuration Manage									© Ve	www.rdltech.in rsion : V.1.3.0
Com.Port L/O Settings Modbus RTU Modbus TCP WW WiFi / GPRS /4G / LTE	Settings	Analog Digi	tal Input ● Sec () rval: 30 ☑ Save L Sa	○ Min ○] og (Saves to ve	Hour (sec) SD Card)						
▲ Alarm ↓ Offline Data		Channel	Resolution	Enable/Dis	ab Mode			Enable Scalling Channel	Min	Max	
Device Settings		2 3 4	16 bit 16 bit 16 bit 16 bit	I I I I I	0-10V 0-10V 0-10V 4-20mA	•	•	1 2 3 4	20 25 30	40 35 45	
Change Password		Extension ADC Channel	Resolut 16 bit	ion M	Iode 20mA	^		4 5 6 7	4 0 5	0 10 10 10	
Logout		6 7	16 bit 16 bit	4-	20mA 20mA	v	<	8	4 10	8 30	
1 Help					Save	~				Save	~

- 1. Select the Polling Interval sec/min/hour
- 2. Set the **Polling Interval**
- 3. Save Log: Select the Check box \square to store the data to the SD Card.
- 4. Click on **Save** button will write these configuration settings in the memory.
- 5. Select the Check box to Enable/Disable Analog channel
- 6. Select 4-20mA / 0-10V from the dropdown.
- Extension ADC is an additional option under this the first four analog channels are for 4-20mA loop current and the next four for 0- 24V channel.
- 8. Scaling: Click on the check box ☑ to enable scaling. Scale the raw value of input to required output value.
- 9. Click on **Save** button to save the above configuration.
- 10. Click on **Read**, to display the configuration that is already saved.



Application Wiring Diagram





NOTE: Don't connect Voltage source when Channel is set for Current Source Mode.



6. MODBUS RTU

	Data Logger Configuration Manager
Com.Port	Settings Analog Digital Input
di Dosenings	
And Modbus RTU	2 Moden - 2 Juston - 2 Divid locat - 2 Moden 17.9
Modeus TCP	
WHET / OPPLS /40 / LT	n Read 🖌
Alarma	
V Office Date	

Select the check box \square for enabling the **MODBUS** and Click on **Save** button.

6.1 Com Port Settings

Ö		- 🗆 🗙
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port	Com.Port Settings Modbus R1 Modbus R2 Modbus R3 Polling Interval	
I/O Settings	Baud Rate: 9600 v	
Modbus RTU	Data Bit: 8 bit ~	
B Modbus TCP	Parity: Even ~ Stop Bit: 1 bit ~	
WiFi / GPRS /4G / LTE		
Alarm	Read 🗸	
✔ Offline Data		
Device Settings		
Debug		
Change Password		
Analyze		
□ Logout		
1 Help		

- 1. Click on MODBUS RTU from the side bar menu
- 2. Click on **Read** to know the previous stored Configuration.
- 3. Click on Com Port Settings
 - a. Select **Baud Rate** from the dropdown.



- b. Select **Data Bit** from the dropdown.
- c. Select **Parity** from the dropdown.
- d. Select **Stop Bit** from the dropdown.
- e. Click on **Save** button.
- f. Click on Read to display the configuration that is already saved., will display the configuration that is already saved.

Based on Meter/Slave type the register polling classified in three Bank R1, R2 and R3.

R1 Register Bank meant for reading maximum 10 slave devices and maximum register length of 100 for each slave.

R2 Register Bank meant for reading maximum 32 similar slave /meters with 30 register length for each slave/meter

R3 Register Bank meant for reading maximum 10 devices with 100 register length for each slave devices and all slaves can be set for different polling time.

NOTE: Maximum 1000+ tags can be polled by combining R1, R2, and R3 Register Banks.



MODBUS R1:

Ö													- 6	⊐ ×	
				Data	Logger Conf	iguration	Manage	er					© www.rdlte Version : V.1.3.	ech.in .0	
Com.Port	Com.	Port Settir	igs Modbus	R1 Modb	us R2 Modbus R3	Polling Interv	ral								
I/O Settings	⊡ Ei	nable Mod	bus R1												
🔛 Modbus RTU		Save													
Modbus TCP		S.No	Start Address	Offset	Туре	Conversion	Length	Enable / Disable		Enable / Disable	Slave Id	Action			
(()) WiFi / GPRS /4G / LTE		1	3460	0	Holding Reg 🗸	Float: Big	✓ 2					Deed	17.		
Marrielle and a start and a		2	3462	0	Holding Reg Y	Float: Big	v 2	~	P		1	кеаа	Up		
Alarm		3	3464	0	Holding Reg V	Float: Big	× 2						Down		
		4	3470	0	Holding Reg 🗸	Float: Big	× 2	•							
V Offline Data		5	3476	0	Holding Reg V	Integer	× 2							í l	
• Onnie Data		6	3480	0	Holding Reg 🗵	Integer	× 2	~							
Davice Sattings			7	3486	0	Holding Reg V	Raw Hex	× 2					-		
bevice settings		8	3490	0	Holding Reg V	Raw Hex	× 2	~							
Dobug		9	3494	0	Holding Reg V	Raw Hex	× 2							í I	
Debug	•	10	3496	0	Holding Reg 🗵	Raw Hex	× 2								
Change Password]	~	
Analyze															
➡ Logout															
Help															

- 1. Click on the check box 🗹 to enable MODBUS Register Bank R1, and click on Save button.
- 2. Enter MODBUS Register details as shown above
- 3. Enter MODBUS credential.

R1 Register Bank supports 10 slave devices for each slave you can configure max length up to 100 register.

- 4. Select **Enable/Disable** check box \square to poll the register.
- 5. Click on Save button.



MODBUS R2:

0														- 🗆 🗙
				Data Lo	gger Configur	at	ion Mana	ge	r					© www.rdltech.in Version : V.1.2.5
Com.Port	Com	Port Setti	ngs Modbus R1	Modbus R2	Modbus R3 Pollin	ng	Interval							
I/O Settings	☑ Ei	nable Mod	lbus R2											
Modbus RTU		Read	 Image: A second s									No.	of Slaves:	4 <u>*</u>
Modbus TCP		S.No	Start Address	Offset	Туре		Conversion		Length	Enable / Disable	^		Sl no	Slave ID
WiFi / GPRS /4G / LTE		1	10	0	Holding Register	~	Raw Hex	~	1	· ·			2	2
		2	12	0	Holding Register	~	Raw Hex	~	1	· •			3	3
Alarm		3	13	0	Holding Register	¥	Integer	~	1	· ·		Þ.	4	4
		4	14	0	Holding Register	×	Integer	~	1 .	· v				
V Offline Data		5	15	0	Holding Register	×	Double	~	1	· •				
		6	16	0	Input Register	~	Double	~	1 \	· •				
Device Settings		7	18	0	Input Register	*	Float: Big	~	2 \	· ·	-			
tor Device Settings		8	20	0	Input Register	~	Float: Big	~	1	· •				
Debug		9	21	0	Input Register	~	Raw Hex	~	2 .	· 🔽				
Debug		10	23	0	Input Register	~	Raw Hex	~	2 \	· •				
Change Deserved		11	25	0	Holding Register	¥	Raw Hex	~	1	· •				
(m) Change Password		12	28	0	Holding Register	¥	Integer	~	2 .	· V				
		13	30	0	Holding Register	Y	Integer	~	2 .	· 🗸				
Analyze		14	32	0	Holding Register	~	Integer	~	2 \	· 🗸				
		15	24	0	Uolding Posistor	~	Integer	~	12		~			
Logout		Read												Read
Help														

- 1. Click on the check box ☑ to enable **MODBUS Register Bank R2**, and click on **Save** button.
- 2. Enter MODBUS credential as shown above.

This supports for 32 similar slaves/meters with 30 registers length for each slave/meter

- 3. Select Enable/Disable check box 🗹 to poll the register
- 4. Click on **Save** button.

NOTE: In R2, Address configuration is same for multiple slaves; it has only facility to change Slave ID of each device.



MODBUS R3:

Ö													- 🗆 🗙
				Da	ata Log	gger Configu	iration M	anagei	1				© www.rdltech.in Version : V.1.2.5
Com.Port	Com.	Port Set	tings Mo	odbus R1 M	lodbus R2	Modbus R3 Po	lling Interval						
I/O Settings	☑ Ei	nable Mo	ođbus R3										
Modbus RTU		Read	•							٠	Sec O	Min	○ Hour
Modbus TCP		S.No	Slave ID	Start Address	Offset	Туре	Conversion	Length	Enable/ Disable		Sl no	Interval Time	
WiFi / GPRS /4G / LTE		1	1	10	0	Holding Re	Raw Hex	1			1	1	
Alarm		3	2 3	12	0	Holding Re	Raw Hex Raw Hex	1			3	1	
		4	4	18	0	Holding Re	Raw Hex	1			4	2	
↓ Offline Data		5	5	20	0	Holding Re	Raw Hex	2		_	5	2	
		6	6	25	0	Holding Re	Raw Hex	1		_	6	2	
O Device Settings		0	0	28	0	Holding Re	Raw Hex	1			7	5	
		0	0	17	0	Holding Re	Raw Hex	2			0	5	
Debug	Þ.	10	10	65	0	Holding Re	Raw Hex	2		Þ	10	5	
6 Change Password												-	
Analyze		Read										Re	ad 🖌
☐→ Logout	* 14-	w 10 Sta	vo Addros										
Help	* Ma	x 100 R	egisters c	an be Scanne	ed								

- 1. Click on the check box ☑ to enable **MODBUS Register Bank R3**, and click on **Save** button.
- 2. Enter MODBUS credential as shown above.

This supports 10 slaves, for each slave 10 start registers are available and for each start register configure up to 100 lengths.

- 3. R3 has the facility to add polling time for each slave ID.
- 4. Select **Enable/Disable** check box \square to poll the register.
- 5. Click on Save button.



6.2 MODBUS RTU Polling Interval

0		_ = ×
	Data Logger Configuration Manager	© www.rdltech.in Version : V1.2.5
Com.Port	Com.Port Settings Modbus R1 Modbus R2 Modbus R3 Polling Interval	
谢 I/O Settings	Modbus R1 Polling Interval	
modbus RTU	• Sec O Min O Hour 5 (sec)	
Modbus TCP	Save Log (Saves to SD Card)	
💮 WiFi / GPRS /4G / LTE	Read 🗸	
Alarm	Modbus R2 Polling Interval	
✓ Offline Data	• Sec \bigcirc Min \bigcirc Hour	
Device Settings	3 (sec) ✓ Save Log (Saves to SD Card)	
Debug	Read 🖌	
Definition Change Password		
Analyze	Modbus R3 Save Log	
⊡ Logout	☑ Save Log (Saves to SD Card)	
1 Help	Read	

- 1. Select the Polling Interval sec/min/hour.
- 2. Set the MODBUS Polling Interval.
- 3. Click on check box \square to Save the Log.
- 4. Click on **Save** button to save the above configuration.
- 5. Click on Read to display the configuration that is already saved.



Application Wiring Diagram





7. MODBUS TCP Settings

e															- • ×
				Data L	ogger C	Configu	uration 1	Manag	er					© v Vers	ww.rdltech.in ion : V.1.2.5
Com.Port	De	vice IP	-												
I/O Settings		MAC Ad	idress: ger IP: [1	00 : 01 : AB : 92.168.1.175	AF : FF	: 00		Modhus	• Sec • M	Min	O Hour				
Modbus RTU		Culma	+ Mander 1	FE 255 255 0				Interval:	5			(se	c)		
Modbus TCP		Ga	teway: 1	92.168.1.251					☑ Save Log	(Sa	ives to SD C	ard)		
WiFi / GPRS /4G / LTE				Save	×-				Read	l	~				
Alarm	-														
	No	ote: Device	and Slave	Should be in Sam	e Network!										
✓ Offline Data		S.No	Slave	Slave IP	Socket	Slave Port	Start	Offset	Туре		Conversion	n	Length	Status	
Oracle Settings			Ш			No.	Address								
		1	1	11 192.168.1.	1	502	1	0	Holding Register	~	Raw Hex	~	1	•	
▶ Debug		2	1	192.168.1	1	502	5	0	Holding Register	¥	Raw Hex	~	2	v	
Change Deserverd		3	2	192.108.1	151	502	8	0	Holding Register	Y	Raw Hex	Y	2		
Change Password		5	2	192 168 1	151	8080	26	0	Holding Register	v	Integer	v	1	2	
Analyze		6	2	192.168.1.	151	8080	29	0	Holding Register	~	Integer	~	1	~	
IIII T Mady Le		7	2	192.168.1.	151	8080	33	0	Holding Register	Y	Integer	~	2	~	
□ Logout		8	3	192.168.1.	145	5152	38	0	Holding Register	~	Float: B	~	2	-	
		9	3	192.168.1.	145	5152	45	0	Holding Register	~	Float: B	~	1	-	
(?) Help	•	10	3	192.168.1.	145	5152	49	0	Holding Register	~	Float: B	~	1	•	
	* M:	ax 100 Reg	isters can	be Scanned								R	ead	~	

- 1. Set the Device MAC Address, Data Logger IP, Subnet Mask, Gateway and click on **Save**.
- 2. Slave ID: This is the MODBUS Slave ID. Maximum10 Slave info can be accessed.
- 3. Slave IP: Mention the IP Address of the Slave.
- 4. Socket: If the Slave IP address is same for multiple requests then the socket number will be the same. If the IP address is different, then the socket number is different as shown above (Ex: For Slave ID 1 and 3 the slave IP is same (192.168.1.187) so the socket number should be the same (0)).
- 5. Slave Port No: Mention the Port No. (Default 502)
- 6. Start Address: This is the starting address of the slave from where data needs to be read.
- 7. Offset: Enter Offset of the Slave device.
- 8. Type: Mention the register type. It could be Coil/Input Register/Holding Register.
- 9. Conversion:

Raw Hex: MODBUS 16 bits are extracted from slaves.

Integer: MODBUS 16 bits are extracted from slaves.

Float-Big Endian: MODBUS floats are extracted from slaves in Big Endian format.



Float-Little Endian: MODBUS floats are extracted from slaves in Little Endian format.
Mid-Little Endian Float: MODBUS floats are extracted from slaves in Mid-little Float format.
Mid-Big Endian Float: MODBUS floats are extracted from slaves in Mid-big Float format.
64-bit UINT: MODBUS 64 bits are extracted from slaves.

- 10. Length: Total length will be 100, you can use length of 1-100 of 16 bit data
- 11. **Status:** If check box ☑ is enabled, the slave id will be ENABLED for polling, else slave id polling will be DISABLED.
- 12. Click on Save button to save the above configuration.
- 13. Click on Read to display the configuration that is already saved., to display the configuration that is already saved
- 14. Select the Polling Interval sec/min/hour
- **NOTE:** 1. Device and Slave should be in same network
 - 2. Max 100 registers can be scanned.

Application Wiring Diagram





8. Wi-Fi/GPRS/4G/LTE Settings

8.1 4G/LTE FTP Settings

Ü			- 🗆 ×
	Data Logger Con	figuration Manager	© www.rdltech.in Version : V.1.3.5
Com.Port	Communication Media 4G/LTE		
WW WiFi / GPRS /4G / LTE Alarm Offline Data	FTP OJSON OMQTT ODis Save FTP JSON MQTT	able	
 Online Data Device Settings Debug Change Password Analyze Logout Help 	FTP Server IP: YourServerIP Username: demo@YourServerIP Password: ****** * Port Number: 21 Log Folder: datalogger	FTP Polling Time • Sec O Min O Hour Polling Interval: 5 (sec) Save)

- 1. Choose 4G/LTE in the Communication Media. Click on Save.
- 2. Select the protocol **FTP** and **Save**.
- Provide FTP Server IP(Ex:YourServerIP/),Username(Ex:demo@YourServerIP), Password(Ex:abcdef).
- 4. Log Folder: Provide folder name for the FTP Server(Ex:datalogger).
- 5. Click on Save will save these settings in the memory.
- APN: Provide APN for the connection.Click on Save.
 Ex: for BSNL it is "bsnlnet".
- 7. FTP Uploading Time: Select the Polling Interval sec/min/hour
- 8. Click on **Save** button to save the above configuration.
- 9. Click on Read to display the configuration that is already saved.



NOTE: FTP Account creating guideline document. Please go through the below

given link document.

LINK1:<u>https://github.com/researchdesignlab/Industrial-</u> Data-Logger/blob/master/CREATING%20FTP%20ACCOUNT .pdf

YouTube Link: <a href="https://www.youtube.com/watch?v="https://ww

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	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.3.5
Com.Port Com.Port Modbus RTU Modbus RTU Modbus TCP WiFi / GPRS /4G / LTE	Communication Media 4G/LTE Save 4G/LTE APN	
 ▲ Alarm ♦ Offline Data ♦ Device Settings ▶ Debug ♦ Change Password ♠ Analyze ▶ Logout ● Help. 	APN: airtelgprs.com	

APN: Provide APN for the connection. Click on Save.

Ex: for BSNL \rightarrow "bsnlnet".

Airtel → "airtelgprs.com"

Idea \rightarrow "internet"



8.2 4G/LTE FTP Data Uploading Format:

8.2.1 MODBUS RTU Data Uploading Format

File uploading format for given date 15/11/2019 will be

151119:142501R.csv



8.2.2 MODBUS TCP Data Uploading Format

File uploading format for given date 15/11/2019 will be

151119:142501T.csv





8.2.3 Digital Input Data Uploading Format

File uploading format for given date 15/11/2019 will be

151119:142501D.csv



8.2.4 Analog Input Data Uploading Format

File uploading format for given date 15/11/2019 will be

151119:142501A.csv





8.3 4G/LTE JSON Settings

Ö		- 🗆 ×
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.3.5
Com.Port Com.Port VO Settings Modbus RTU Modbus TCP WiFi / GPRS /4G / LTE Alarm Coffine Data	Communication Media 4G/LTE 4G/LTE APN FTP JSON MQTT Disable Save	
Device Settings Debug Change Password Analyze Logout Help	Post URL: http://yourdomainname/yourfolder/json. php Save	

- 1. Choose 4G/LTE in the Communication Media. Click on Save.
- 2. Select the protocol **JSON and Save**.
- 3. Post URL: Provide Your Server URL(Ex:http://yourdomainname/yourfolder/json.php).
- 4. Click on **Save** button to save the above configuration.
- 5. APN: Provide APN for the connection. Click on Save.

Ex: for BSNL it is "bsnlnet".

NOTE: JSON implementation guideline document. Please go through the below given link document.

LINK1: https://github.com/researchdesignlab/Industrial-Data-Logger/blob/master/JSON%20PARSING.pdf

YouTube Link: <u>https://www.youtube.com/watch?v=8W-eybka80s</u>

www.rdltech.in

8.3.1 4G/LTE JSON Data Uploading Format

MODBUS RTU Data Uploading Format:

API FORMAT:

{"Type":"MR","ID":"1235","DATE":"1/11/19","TIME":"12:47:9","SL_ID":"1","Reg Ad":"1003","Length":"6","D1":"0","D2":"0","D3":"0","D4":"0","D5":"0","D6":"0"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hex decimal format.

MODBUS TCP Data Uploading Format:

API FORMAT:

{"Type":"MT","ID":"1123","DATE":"4/11/19","TIME":"12:21:21","SL_ID":"1","Reg Ad":"1060","Length":"6","D1":"1165","D2":"1166","D3":"1167","D4":"1168","D5":" 1169","D6":"1170"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format



ANALOG Input Data Uploading Format:

API FORMAT:

{"Type":"AN","ID":"6549","DATE":"18/08/21","TIME":"15:54:43","AC1":"0.00","AC2":"0. 00","AC3":"0.00","AC4":"0.00","AC5":"0.00","AC6":"0.00","AC7":"0.00","AC8":"0.00","A C9":"0.00","AC10":"0.00","AC11":"0.00","AC12":"0.00"}

Digital Input Data Uploading Format:

API FORMAT:

{"Type":"DI","ID":"1234","DATE":"2/11/19","TIME":"12:35:15","DC1":"0","D C2":" 0","DC3":"0","DC4":"0"}



8.4 4G/LTE MQTT Settings:

U			- • ×
	Data Logger Config	uration Manager	C www.rditech.in Version V1.3.5
Com.Port Com DO Settings Modbus RTU Modbus TCP MiPi / GPRS /4G / LTE Alarm FIP	APN OFTP JSON MQTT ISON MQTT		
Contine Data Contine Data Debug Change Password Analyze Logout Subs	roker Address: Yourbrokkeraddress.doudmgtt.com UserName: doudmgttusername Password:	Enable SSL/TSL	

- 1. Choose **4G/LTE** in the Communication Media. Click on **Save**.
- 2. Select the protocol **MQTT** and **Save**.
- 3. Broker Address: Enter your broker address of MQTT(Ex:yourbrokeraddress.cloudmqtt.com).
- 4. Cloud Username: Enter MQTT cloud Username(Ex:Cloudmqttusername).
- 5. Password: Enter MQTT cloud Password(Ex:abcdef).
- 6. **Port**: Enter Port number for MQTT cloud(Ex:15590).
- 7. **Publish Topic**: Enter Topic name to publish the data to server(Ex:Publish_Data).
- 8. **Subscribe Topic**: To receive the data from the server(Ex:Subscribe_Data).
- 9. Device Id/Tag: Enter the Device ID(Ex:DT1)
- 10. Click on **Save** will save these settings in the memory.
- 11. APN: Enter APN for the connection. Ex: for BSNL it is "bsnlnet".
- 12. Click on Save.

NOTE: MQTT Broker creating guideline document. Please go through the below given link document.

LINK 1:<u>https://github.com/researchdesignlab/Industrial-Data-</u> Logger/blob/master/MQTT_Linux_Bringup_ver1.0.pdf LINK 2: <u>https://www.cloudmqtt.com/docs/index.html</u> YouTube Link: <u>https://www.youtube.com/watch?v=qNFmfBpNMsg&t=3s</u>

8.4.1 4G/LTE MQTT Data Parsing Format:

MODBUS RTU Data Parsing Format:

Parsing Format:

{"Type":"MR","ID":"1235","DATE":"1/11/19","TIME":"12:47:9","SL_ID":"1","Reg Ad":"1003","Length":"6","D1":"0","D2":"0","D3":"0","D4":"0","D5":"0","D6":"0"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format

MODBUS TCP Data Parsing Format:

Parsing Format:

{"Type":"MT","ID":"1123","DATE":"4/11/19","TIME":"12:21:21","SL_ID":"1","Reg Ad":"1060","Length":"6","D1":"1165","D2":"1166","D3":"1167","D4":"1168","D5":"1 169","D6":"1170"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format



ANALOG Input Data Parsing Format:

Parsing Format:

{"Type":"AN","ID":"6549","DATE":"18/08/21","TIME":"15:54:43","AC1":"0.00","AC2":"0.00","AC3 ":"0.00","AC4":"0.00","AC5":"0.00","AC6":"0.00","AC7":"0.00","AC8":"0.00","AC9":"0.00","AC10": "0.00","AC11":"0.00","AC12":"0.00"}

NOTE: For Analog Input configuration look into the section 2.2 in this document

Digital Input Data Parsing Format:

Parsing Format:

{"Type":"DI","ID":"1234","DATE":"2/11/19","TIME":"12:35:15","DC1":"0","DC2":" 0","DC3":"0","DC4":"0"}



8.5 4G/LTE MQTT with SSL Settings

0					- 0
		Data Logger Configurati	on Manager		
Cam.Port : DO Settings Modbus RTU Modbus TCP With roppes/46 / LTE Alarm Cofficient Data	Communication Mee 4G-LTE 4G-LTE APN G-FTP S FTP JSON MQTT	fia ave JSON • MQIT O Disable ave			
Change Password Change Tassword Change Tasswor	Broker Address UserName Password Port Publish Topic Subscribe Topic	Yourbrokkeraddress.cloudmqtt.com cloudmqttusername ******* 15590 Publish_Data Subscribe_Data	☑ Enable SSL/TSL SSL Parameters Protocol: SSLvI CA Certificate C. Us	• rs RDLTechnologie Browse Delete Certificate	
1 Help	Subscribe Password Device Id/Tag	Password DT1	Save		

- 1. Choose 4G/LTE in the Communication Media. Click on Save.
- 2. Select the protocol MQTT and Save.
- 3. Broker Address: Enter your broker address of MQTT

(Ex:yourbrokeraddress.cloudmqtt.com).

- 4. Cloud Username: Enter MQTT cloud User Name.(Ex:cloudmqttusername).
- 5. **Password:** Enter MQTT cloud Password(Ex:abcdef).
- 6. **Port:** Enter Port number for MQTT cloud(Ex:15590)
- 7. **Publish Topic:** Enter Topic name to publish the data to server(Ex:Publish_Data).
- 8. **Subscribe Topic:** To receive the data from the server(Ex:Subscribe_Data)
- 9. Device Id/Tag: Provide the Device ID(Ex:DT1)
- 10. Click on Enable SSL/TSL and set the SSL Parameters.
- 11. **Protocol:** Select in the dropdown which protocol you are using.



- 12. CA Certificate: Please upload the CA Certificate.
- 13. Click on Save button to save the above configuration.
- 14. Click on Delete Certificate to delete the uploaded Certificate.
- 15. **APN:** Provide APN for the connection. Ex: for BSNL ->"bsnlnet".Click on Apply.

NOTE: Make sure that power supply connected during the process of uploading the SSL certificate



9. Wi-Fi Settings

9.1 Wi-Fi DHCP Settings

Û				- 🗆 ×
	Data Logger Configurat	ion Manager		© www.rdltech.in Version : V.1.3.5
 Com.Port I/O Settings Modbus RTU Modbus TCP Mofbus TCP WiFi / GPRS /4G / LTE Alarm Offline Data Offline Data Device Settings Debug Change Password Analyze Logout Help 	Communication Media WiFi Save WiFi • JSON MQTT Disable Read JSON MQTT WiFi Settings • DHCP • Static Save Primary DNS: Secondary DNS: Read	Access Point SSID: Password:	yourwifissid ****** Save	•

- 1. Choose Wi-Fi in the Communication Media. Click on Save.
- 2. Wi-Fi Settings are enabled now.
- 3. Select protocol MQTT/JSON and click on Save button.
- 4. Wi-Fi Settings: Select DHCP. Click on Apply.
- 5. Access Point: Set the SSID (Ex:yourwifissid) and Password (EX:abdcdef).
- 6. Click on **Save** button to save these settings in the memory.



92 Wi-Fi Static Settings

Ö			- = ×
	Data Logger Configuration	Manager	© www.rdltech.in Version : V.1.3.5
Com.Port UO Settings	Communication Media WiFi v Save		
Modbus TCP WiFi / GPRS /4G / LTE Alarm Offline Data	JSON MQTT Disable Read JSON MQTT WiFi Settings		
Device Settings Device Settings Debug Change Password	DHCP • Statie	Access Point SSID: yourwifissid	
Analyze Logont Help	Subnet Mask: [255.255.0] Gateway: [192.168.1.251 Primary DNS: [192.168.1.251 Secondary DNS: [192.168.1.1]	Password: ********	2

- 1. Choose Wi-Fi in the Communication Media. Click on Save.
- 2. Select the protocol JSON
- 3. Wi-Fi Settings: Select Static. Click on Apply.
- 4. Enter the IP, Subnet Mask, Gateway, Primary DNS, Secondary DNS and click on Save.
- 5. Access Point: Set the SSID (Ex:yourwifissid) and Password(Ex:abcdef), Click on Save button.



93 Wi-Fi JSON Settings

0		- 🗆 ×
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.3.5
Com.Port Com	Communication Media WiFi Save WiFi • JSON • MQTT • Disable Save	
 Offline Data Device Settings Debug Change Password Analyze Logout Help 	Post URL: http://yourdomainname/yourfolder/json Save	

- 1. Choose Wi-Fi in the Communication Media. Click on Save.
- 2. Wi-Fi Settings: Select the protocol JSON and Save.
- 3. Post URL: Provide Your Server URL.(Ex: http://yourdomainname/yourfolder/json.php)
- 4. Click on **Save** button to save the above configuration.

•



9.3.1 Wi-Fi JSON Data Uploading Format

MODBUS RTU Data Uploading Format

API FORMAT:

{"Type":"MR","ID":"1235","DATE":"1/11/19","TIME":"12:47:9","SL_ID":"1","Reg Ad":"1003","Length":"6","D1":"0","D2":"0","D3":"0","D4":"0","D5":"0","D6":"0"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format

MODBUS TCP Data Uploading Format

API FORMAT:

{"Type":"MT","ID":"1234","DATE":"4/11/19","TIME":"12:21:21","SL_ID":"1","Reg Ad":"1060","Length":"6","D1":"1165","D2":"1166","D3":"1167","D4":"1168","D5":"1 169","D6":"1170"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format



Analog Input Data Uploading Format

API Format:

{"Type":"AN","ID":"6549","DATE":"18/08/21","TIME":"15:54:43","AC1":"0.00","AC2":"0.00","AC3 ":"0.00","AC4":"0.00","AC5":"0.00","AC6":"0.00","AC7":"0.00","AC8":"0.00","AC9":"0.00","AC10": "0.00","AC11":"0.00","AC12":"0.00"}

Digital Input Data Uploading Format

API Format:

{"Type":"DI","ID":"1234","DATE":"2/11/19","TIME":"12:35:15","DC1":"0","DC2":" 0","DC3":"0","DC4":"0"}



9.4 Wi-Fi MQTT Settings

Ö		- • ×
	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.3.5
Com.Port Com	Communication Media WiFi Save WiFi JSON • MQTT • Disable Save	
Offline Data Device Settings Debug	JSON MQTT WiFi Settings JSON MQTT WiFi Settings Broker Address: brokeraddress UserName: cloudmattusername	
Change Password Change Password Change Password Change Password Change Password Data	Password: **** Port: 8080 Topic: topic1 Client Id/Tag datalogger	
	Save	

- 1. Choose Wi-Fi in the Communication Media. Click on Save.
- 2. Wi-Fi Settings are enabled now, ready for MQTT
- 3. MQTT: Data logging happens to MQTT server. Click on Save.
- 4. Broker Address: Provide your broker address of MQTT (Ex: yourbrokeraddress.cloudmqtt.com)
- 5. Cloud Username: Provide MQTT cloud Username.(Ex: Cloudmqttusername)
- 6. Password: Provide MQTT cloud Password.(Ex:abcdef)
- 7. **Port:** Provide Port number for MQTT cloud.(Ex:15590)
- 8. **Topic:** Provide Topic name.(Ex:Topic1)
- 9. Device Id/Tag: Provide the Device ID(Ex:datalogger)
- 10. Click on **Save** button to save the above configuration.

9.4.1 Wi-Fi MQTT Data Parsing Format:

MODBUS RTU Data Parsing Format:

Parsing Format:

{"Type":"MR","ID":"1235","DATE":"1/11/19","TIME":"12:47:9","SL_ID":"1","Reg Ad":"1003","Length":"6","D1":"0","D2":"0","D3":"0","D4":"0","D5":"0","D6":"0"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format

MODBUS TCP Data Parsing Format

Parsing Format:

{"Type":"MT","ID":"1123","DATE":"4/11/19","TIME":"12:21:21","SL_ID":"1","Reg Ad":"1060","Length":"6","D1":"1165","D2":"1166","D3":"1167","D4":"1168","D5":"1 169","D6":"1170"}

NOTE: MODBUS RTU/TCP 16bit/32bit data parsed in hexadecimal format



Analog Input Data Parsing Format:

Parsing Format:

{"Type":"AN","ID":"6549","DATE":"18/08/21","TIME":"15:54:43","AC1":"0.00","AC2 ":"0.00","AC3":"0.00","AC4":"0.00","AC5":"0.00","AC6":"0.00","AC7":"0.00","AC8":" 0.00","AC9":"0.00","AC10":"0.00","AC11":"0.00","AC12":"0.00"}

Digital Input Data Parsing Format:

Parsing Format:

{"Type":"DI","ID":"1234","DATE":"2/11/19","TIME":"12:35:15","DC1":"0","DC2":" 0","DC3":"0","DC4":"0"}



10. Alarm

Device sends emergency alerts and different Escalation level SMS to the remote user on real time basis. Device also supports Automating the remote asset based on set threshold. Alarm can be applied for Digital, Analog and Modbus Inputs.

Setting up Alarm for Digital Input:

8							= = ×
		Da	ta Lo	ogger Configui	ation Manager		© www.rdltech.in Version : V 1.2.5
Com.Port	Digital I/O Modb	us Analog SMS	Setting	s			
I/O Settings	• Enable	Disable					
Modbus RTU	Read	~					
Modbus TCP	Channel 1 Chann	el 2 Channel 3 0	Channel	4			
WiFi / GPRS /4G / LTE	Alert Settings A	utomated Task					
Alarm	Rea	d 🤛					
✓ Offline Data	Alert Mess	age Escalation Lev	re1	Threshold Time:	Contact Number:	Message:	
Of Device Settings	Level 1:	Enable	v	10	99*****	Temperature HIGH	
Debug	Level 2:	Enable	~	10	98*****	Temperature LOW	
Change Password	Level 3:	Disable	¥				
	Level 4:	Disable	v				
Analyze	Level 5:	Disable	~	-			
G→ Logout							
1 Help	Read						

- 1) Enable Digital I/O and Click on Save button.
- 2) Click on Channel 1 and select Alert Settings tab and Enable it and then Save.
- 3) Alert Message Escalation Level, enable the Levels, set the Threshold Time, enter the contact number and write the alert message to be sent and click on Save button.
- Maximum 5 phone numbers and maximum 25 character length alert messages can be registered.

NOTE: If digital Input is triggered then send a configured message to the configured number based on threshold time priority.



Automated Digital I/O Alarm Task:

Ö			- 🗆 ×
	Data Logger C	Configuration Manager	© www.rdltech.in Version : V.1.3.0
Com.Port	Digital I/O Modbus Analog SMS Settings		
1/O Settings	• Enable O Disable		
Modbus RTU	Save 🗸		
Hodbus TCP	Channel 1 Channel 2 Channel 3 Channel 4		
WiFi / GPRS /4G / LTE	Alert Settings Automated Task		
Aiarm	Enable O Disable	Moddus Enable O Disable	
✓ Offline Data	Save 🗸	Save 🖌	
Device Settings		Function Code: 05	
Debug	DO: 1 • Output	Slave ID: 1	
December 2015 Change Password	Status: High 🗸	Register: 10 Data: 1	
Analyze	Save	Save	
G→ Logout	Save	Jave V	
1 Help			

<u>**Case 1:**</u> Automate Task when Digital Input Channel 1 goes High, make the Digital Output Channel High.

To do the above task, follow the below given steps:

- 1) Click on Channel 1.
- 2) Click on Automated Task tab and enable the Digital Output and Save.
- 3) Select the Digital Output Channel
- 4) Make the bit status High/Low.
- 5) Click on **Save** button to save the above configuration.

<u>Case 2:</u> Automate Task when Digital Input Channel 1 goes High ,write data to slave ID 1 and register ID 10.

To do the above task, follow the below given steps:

- 1) Click on Channel 1.
- 2) Click on Automated Task tab and enable the Digital Output and Save.
- 3) Select the Digital Output Channel



- 4) Make the bit status High/Low.
- 5) Enable the MODBUS and Click on Save button.
- 6) Enter the Slave ID, Register address and Data.
- 7) Click on **Save** button to save the above configuration.

Setting up Alarm for MODBUS:

		Data L	ogger Confi	guration Manager		© www.rdliech.i Venini (V1.2.5
Com.Port	Digital I/O Modbus	Analog SMS Settin	pi			
10 Settings	Settings Channel 1	Channel 2 Channel	3 Channel 4 C	annel 5 Channel 6 Channel 7	Channel 8 Channel 9 Channel 10	
🕮 Modbus RTU	Condition: <=	v 5.	(Value)			
Modbus TCP		Read 🖌				
WEI/OPRS/40/LTE	Alert Settings At	tomated Task				
Alim	• Enable	O Disable				
V Offine Data	Read	-				
Device Settings	Alert Mess	age Escalation Level	Threshold Tir	ne: Contact Number:	Message:	
. Debrag.	Level 1:	Enable	v 10	99*******	Energy Value 1	
	Level 2:	Enable	+ 10	98******	Energy Value 2	
g contrage rendeword	Level 3:	Disable	-	1		
Analyze	Level 4:	Disable	4			
- Logout	Level 5:	Disable	÷			
1 Help	Read					
	Note: Alert only app	licable for Modhus R3	bank register			

- 1) Select MODBUS, Click on Channel 1 and select Alert Settings tab and Enable it and then Save.
- 2) Alert Message Escalation Level, enable the Levels, set the Threshold Time, enter the contact number and write the alert message to be sent and click on Save button.
- 3) Maximum 5 phone numbers and maximum 25 character length alert messages can be registered.

NOTE: MODBUS Alarm is linked to MODBUS Register Bank R3.

MODBUS Register Bank R3 set slave received value match with an alarm registered condition and value, if the condition is successful, then send a configured message to the configured number based on threshold time and escalation priority.





Automated MODBUS Alarm Task:

U			- 🗆 🗙
	Data Logger C	onfiguration Manager	© www.rdltech.in Version : V.1.3.0
Com.Port i/O Settings Modbus RTU Modbus TCP WiFi / GPRS /4G / LTE	Digital I/O Modbus Analog SMS Settings Settings Channel 1 Channel 2 Channel 3 Channel Condition: <= 10 (Value) Save ✓ Alert Settings Automated Task	4 Channel 5 Channel 6 Channel 7 Channel 8 Channel 9 Channel 10	
 ▲ Alarm ♦ Offline Data ♦ Device Settings ▶ Debug ♦ Change Password ♠ Analyze ▶ Logout ♦ Help 	Digital Output • Enable • Disable Save Do: 1 • • Output • PWM Status: Low •	Modbus • Enable Disable Read • Enable Disable • Enable Disable Disable • Enable Disable	

Case 1: Automate Task when MODBUS Channel 1 goes High, make Digital Output Channel High.

To do the above task, follow the below given steps:

- 1) Click on Channel 1 and select Automated Task tab and Enable it and then Save.
- 2) Select the Digital Output Channel
- 3) Make the bit status High/Low.
- 4) Click on **Save** button to save the above configuration.

<u>Case 2:</u> Automate Task when MODBUS Input Channel 1 goes High , write data to slave ID 1 and register ID 10.

To do the above task, follow the below given steps:

- 1) Click on Channel 1 and select Automated Task and Enable it and then Save
- 2) Select the Digital Output Channel
- 3) Make the bit status High/Low.
- 4) Enable the MODBUS and Click on Save button.



- 5) Enter the Slave ID, Register address and Data.
- 6) Click on **Save** button to save the above configuration.

Setting up Alarm for Analog:

		Data Lo	ogger Configurat	ion Manager		C www.rdliech.in Version: V1.2.5
Com.Port	Digital I/O Modbu	a Analog SMS Setting	s			
10 Settings	Settings A1	A2 A3 A4 A	.5 A6 A7 A1	8 A9 A10 A1	1 A12	
111 Modbus RTU	• Enable	O Disable	Conditio	m: <= v 10	(Value)	
Modbus TCP	Read			Read	1	
WIFI / OPRS /4G / LT	Alert Settings A	utomated Task		-		
Alarmi 🛆	• Enab	e 🔿 Disable				
V Offline Data	R	ead 🖌				
Device Settings	Alert Mess	age Escalation Level	Threshold Time	Contact Number	Message	
	Level 1:	Enable	10	99******	Analog Value 1	
Debug			ATTACK			
Debug Change Password	Level 2:	Enable	- 10	98*******	Analog Value 2	
Debug Change Password	Level 2: Level 3:	Enable Disable	• 10 •	98*****	Analog Value 2	
Debug Change Password Analyze	Level 2: Level 3: Level 4:	Enable	• 10 •	98*****	Analog Value 2	

- 1) Click on Analog and select the Channels (A1-A12) and Click on Enable and Save.
- 2) Select Alert Settings tab and Enable it and then Save
- 3) Alert Message Escalation Level, enable the Levels, set the Threshold Time, enter the contact number and write the alert message to be sent and click on Save button.
- 4) Maximum 5 phone numbers and maximum 25 character length alert messages can be registered.

NOTE: Analog value, match with an alarm registered condition and value, if the condition is successful, then send a configured message to the configured number based on threshold time priority.



Automated MODBUS Alarm Task:

Ö			- 🗆 ×
	Data Logger	Configuration Manager	
Com.Port	Digital I/O Modbus Analog SMS Settings		
1/O Settings	• Enable O Disable		
main Modbus RTU	Save 🖌		
Modbus TCP	Channel 1 Channel 2 Channel 3 Channel 4		
WiFi / GPRS /4G / LTE	Digital Output	Modbus	
Alarm	• Enable O Disable	• Enable O Disable	
✔ Offline Data	Save 🗸	Save 🗸	
Device Settings		Function Code: 05	
Debug	DO: 1 🗸	Slave ID: 1	
Change Password	Status: Low 🗸	Register: 10 Data: 50	
Analyze	Save	Save	
G→ Logout			
1 Help			

Case 1: Automate Task when Analog Channel 1 goes High, make Digital Output Channel High.

To do the above task, follow the below given steps:

- 1) Click on Channel 1 and select Automated Task tab and Enable it and then Save
- 2) Select the Digital Output Channel
- 3) Make the bit status High/Low.
- 4) Click on Save button to save the above configuration.

<u>Case 2:</u> Automate Task when Analog Input Channel 1 goes High, write data to slave ID 1 and Register ID 10.

To do the above task, follow the below given steps:

- 1) Click on Channel 1 and select Automated Task tab and Enable it and then Save.
- 2) Select the Digital Output Channel
- 3) Make the bit status High/Low.
- 4) Enable the MODBUS and Click on Save button.
- 5) Enter the Slave ID, Register address and Data and Save it.



11. Offline Data

Ü			- 🗆 🗙
	Data Logger Configu	ration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port Offline File Uplo Image: Display to Settings Image: Display to Settings Image: Modbus RTU Image: Display to Settings Image: Modbus RTU Image: Display to Settings Image: Modbus TCP Image: Display to Settings Image: Modbus TCP Image: Display to Setting	ad Disable Schedule • YourftpServerIP •: demo@yourftpServerIP	Offline Log File Log Files: <u>50 7 21 CSV</u> V 文 Download	Delete
Image: Change Password Password Image: Change Password Schedule Image: Change Password Time: h: 4 = 1 Image: Change Password Date: 31	i: ••••••• • • 7: 21 7: datalogger m: 15 ÷ s: 0 ÷ (24 Hr Format) ty 2021 ■•		
Logout Read Help	×		

- 1. Enable: Select enable to upload the file offline/when there is no internet connectivity.
- 2. Select radio button to Enable/Disable offline file
- 3. Live: Offline data sent to a configured server after receiving an internet connection.
- 4. **Schedule:** Offline data is stored in the "jsn_bup.txt" file. That file is sent to the Configured FTP Server at configured time.
- 5. **FTP Details:** Enter the FTP Server IP (Ex:yourftpServerIP), Username (Ex:demo@yourftpserverIP), Password(Ex:abcdefg) and the Port Number
- 6. Click on Save button.
- 7. **Backup Log Folder:** Enter FTP server folder name(In case of multiple folder enter folder name with path)
- 8. Schedule: Set the Time and Date for offline data FTP poll.
- 9. Offline Log Data:

Log Files: You can select the .CSV files

Download: You can select the Log files from the Dropdown and Click on Download.

Delete: You can select the Log files which you want to delete from the

Dropdown and click on Delete.



12. Device Settings



- 1. Set the Device Id (Ex:6549) and click on Save
- 2. Click on **Read** to display the configuration that is already saved.
- 3. Select the **Enable Debug** and click on Save.

Current 1	fime: h: 1	d: m:	15 : s.	0 :	
1	Date: 30	July	2021	0.	
			_		- 10

- 1. Set the device **Current time** in hour, minute and seconds.
- 2. **Date:** Select the date from the drop down menu.
- 3. Click on Save to save the above configuration.



Factory	Default Restart
	Factory

- 1. Click on **Backup** to take the entire data logger configuration backup.
- 2. Click on **Restore** and select the file to restore the data logger Configuration.
- 3. **Factory Default**: Click on Factory Default to restore the factory default configuration settings.
- 4. **Restart**: Click on Restart button to restart the Data Logger.



13. Change Password

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		Data Logger Config	uration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port				
I/O Settings	Current Password:	*****		
Modbus RTU	New Password:	******		
G Modbus TCP	Confirm New Password:	Save		
WiFi / GPRS /4G / LTE				
Alarm				
✔ Offline Data				
Device Settings				
Debug				
Change Password				
Analyze				
⊡ Logout				
Help				

You can change the default password by entering the New Password.



14. Remote Login:

NOTE: (Before Configuring the Remote, make sure that under Local login you have selected GPRS/WIFI. (For Ex:If you want to select GPRS in Remote, first you need to configure GPRS in Local Login. Similarly if Wifi in Remote then you need to configure WiFi in Local Login).

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			Data Logger Configura	ation Manager			© www. Version : 1	ch.in
Com.Port Debug Pebug Help	O USB Server Confi	• Remote	Port 5152 Listen	Connections Device IP	Device Name	Enable / Disable		

1. Click on Comport and Select Remote from the radio button.

Data Logger Configuration Manager © www.rdltech.in. Version : V.1.3.5 Com.Port O USB © Remote Port Server Server Port S152 Device IP Device IP Disable	٥							<u> 11</u>		C.
Com.Port O USB @ Remote Server Port S152 Listen Device IP Device Enable / Disable Orm. Port Com.IVIT Open				Data Logger Configura	tion Manager				dltech.in 1.3.5	
	Com.Port Debug Telp	O USB Server Com	● Remote figure t COM10 ∨	Port 5152 Listen Open	Connections Device IP	Device Name	Enable / Disable			

- 2. Click on Configure
- 3. Select the Com Port and click on Open



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	Data Logger Configuration Manager	
Com.Port Debug Other thelp	Data Logger Configuration Manager O USB • Remote Server Port S152 Connections. Device IP Device Enable / Disable Com Port COM7 Close Connections. Com Port COM7 Close Connected e GPRS WIFI None Server Read Server Read Image: Server Read Image: Server Read Server Read Image: Server Read Image: Server Server Read	© www.rdllech.in Version: V1.3.5
	Server Interval: 60 Save Read ✓	

- 1. Click on **Configure** and Choose **WiFi** or **GPRS** from the radio button and enter the IP address.
- 2. In GPRS Configuration use Public IP address. If the configuration is Wi-Fi then you can use Private or Public IP addresses.
- To get the Public IP address you can use <u>https://whatismyipaddress.com/</u> where you can get the Public IP.(refer the below image)





4. While using GPRS option, user has to enable the port forwarding in their router settings(Image reference given below).

	GPON ONT								
	Advanced > Port Forwarding								
0	Port Forwarding								
Status									
Network									
Advanced	Application	Start	~End Port	Protocol	To IP A	ddress	Start	~End Port	Enable
NTP		5151	5152	Both 🗸	192.168.1.	57	5151	5152	
Port Forwarding		0	0	Both 🗸	192.168.1.	0	0	0	1 0
Firewall		0	0	Both 🗸	192.168.1.	0	0	0	1 0
Maintain		0	0	Both V	192.168.1.	0	0	0	1 0
		0	0	Both ~	192.168.1.	0	0	0	
		0	0	Both ~	192.168.1.	0	0	0	
		0	0	Both 🗸	192.168.1.	0	0	0	
		0	0	Both 🗸	192.168.1 .	0	0	0	
			4	nnly					Refresh

Note: Please contact the service provider for more details on Port forwarding.

5. To get the Private IP address, open command prompt and use the command <u>ipconfig</u> (refer the below image)





- 6. Click on **Save** Button
- 7. Click on Read to display the configuration that is already saved. will display the configuration that is already saved
- 8. Enter the Server Interval time(Ex: 60sec) of connection.
- 9. Click on Save.
- 10. Close the Com Port which is Open.
- 11. Click on Listen

Note: If you are using Linux/Mac OS then use *ifconfig* to get the IP address and other network details.



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	Data Logger Configuration Manager	© www.rdltech.in Version : V.1.2.5
Com.Port	USB • Remote Server Port 5152 Configure Stop Listen Connected with 192.168.1.151:56035	

- 1. Use the Default Password "RDL123" during Login
- 2. For next step Page 5



15. Power Supply



ATTENTION: Recommended to use Meanwell power supplies of 24V 2A





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