

Industrial Data Logger User Manual

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1. COM Port

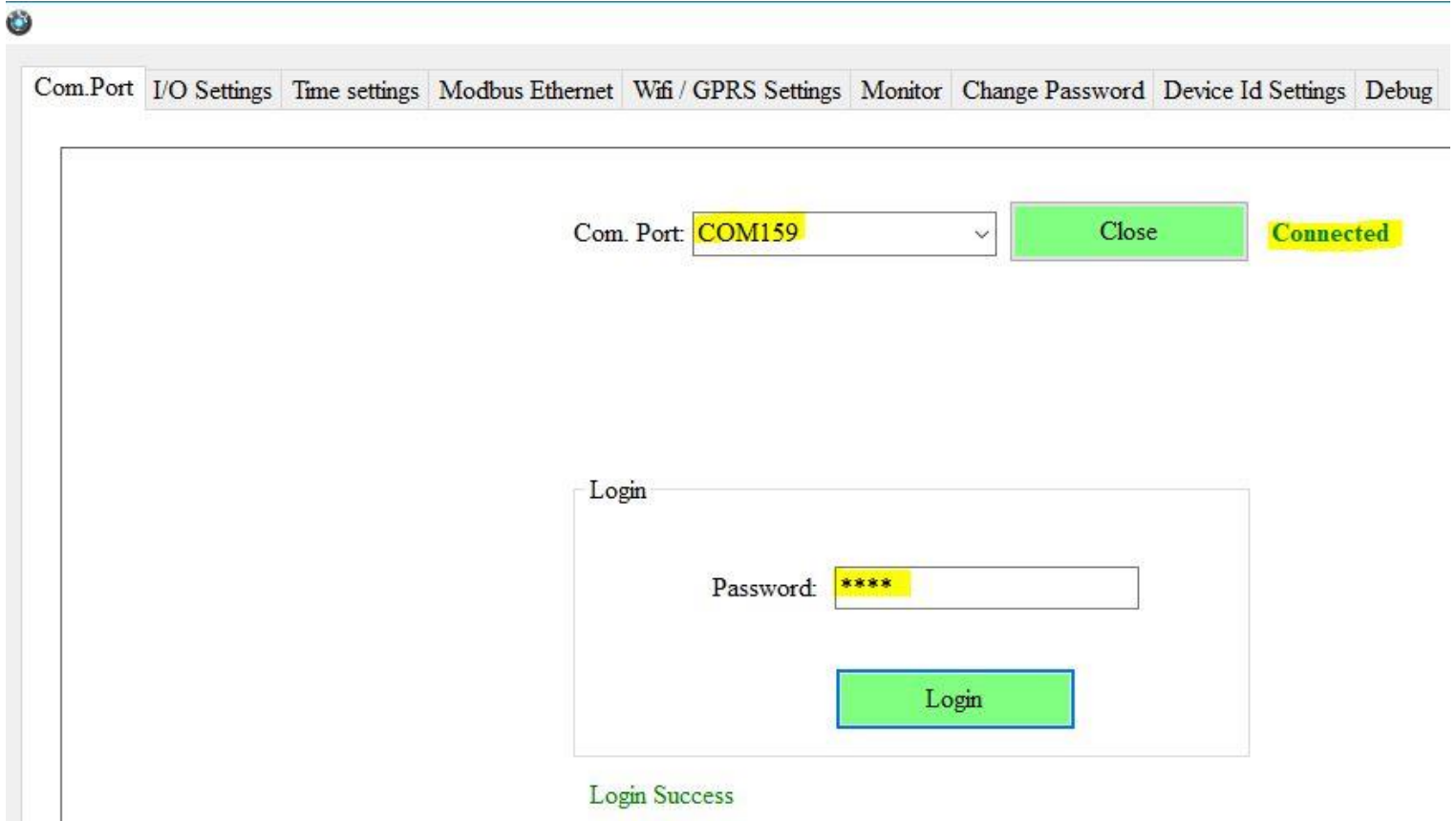
This should be the first step before in using the Data Logger UI.

1. Plugin the hardware and check for the COM Port number in **Computer->System Properties->Device Manager->Ports**
2. Select the COM Port number in the UI App as shown below and Click Open.
3. Use the Default Password “**RDL123**” during Login.

Note: Make sure that FTDI Com port driver installed. If not installed please download and install from below given link.

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

Note: Make sure that power supply disconnected during configuration mode.



2. UI Settings

2.1. MODBUS RTU

1. Select the MODBUS and click on Apply.
2. Clicking on Read will display the configuration that is already saved

2.1.1. Com Port Settings

This is the UART settings for Modbus Communication. Refer the screenshot below.

The screenshot displays the 'I/O Settings' tab of the Industrial Datalogger software. The 'MODBUS' option is selected with a checked checkbox, and the 'Apply' button is highlighted in green with a green checkmark. The 'Read' button is highlighted in blue. Below this, the 'MODBUS' sub-tab is active, showing 'Com.Port Settings', 'MODBUS Settings', and 'Polling Interval' sub-tabs. The 'MODBUS Settings' sub-tab is selected, displaying four dropdown menus: 'Baud Rate' (9600), 'Data Bit' (8 bit), 'Parity' (None), and 'Stop Bit' (1 bit). The 'Apply' button is again highlighted in green with a green checkmark, and the 'Read' button is highlighted in blue.

1. Select **Baud Rate** from the list.
2. Select **Data Bit** from the list.
3. Select **Parity** from the list.
4. Select **Stop Bit** from the list.
5. Click on Apply.
6. Clicking on Read will display the configuration that is already saved.

2.1.2. Modbus Settings

Com.Port I/O Settings Time settings Modbus Ethernet Wifi / GPRS Settings Monitor Change Password Device Id Settings Debug

MODBUS Analog Digital Input Modbus TCP Apply Read ✓

MODBUS Analog Digital Input

Com.Port Settings MODBUS Settings Polling Interval

S.No	Slave ID	Start Address	Type	Length	Status
1	1	1	Coil	5	<input checked="" type="checkbox"/>
2	2	10	Input Register	6	<input type="checkbox"/>
3	3	20	Holding Register	4	<input checked="" type="checkbox"/>
4	4	30	Coil	3	<input type="checkbox"/>
5					<input type="checkbox"/>
6					<input type="checkbox"/>
7					<input type="checkbox"/>
8					<input type="checkbox"/>
9					<input type="checkbox"/>
10					<input type="checkbox"/>

* Max 10 Slave Address Apply Read ✓

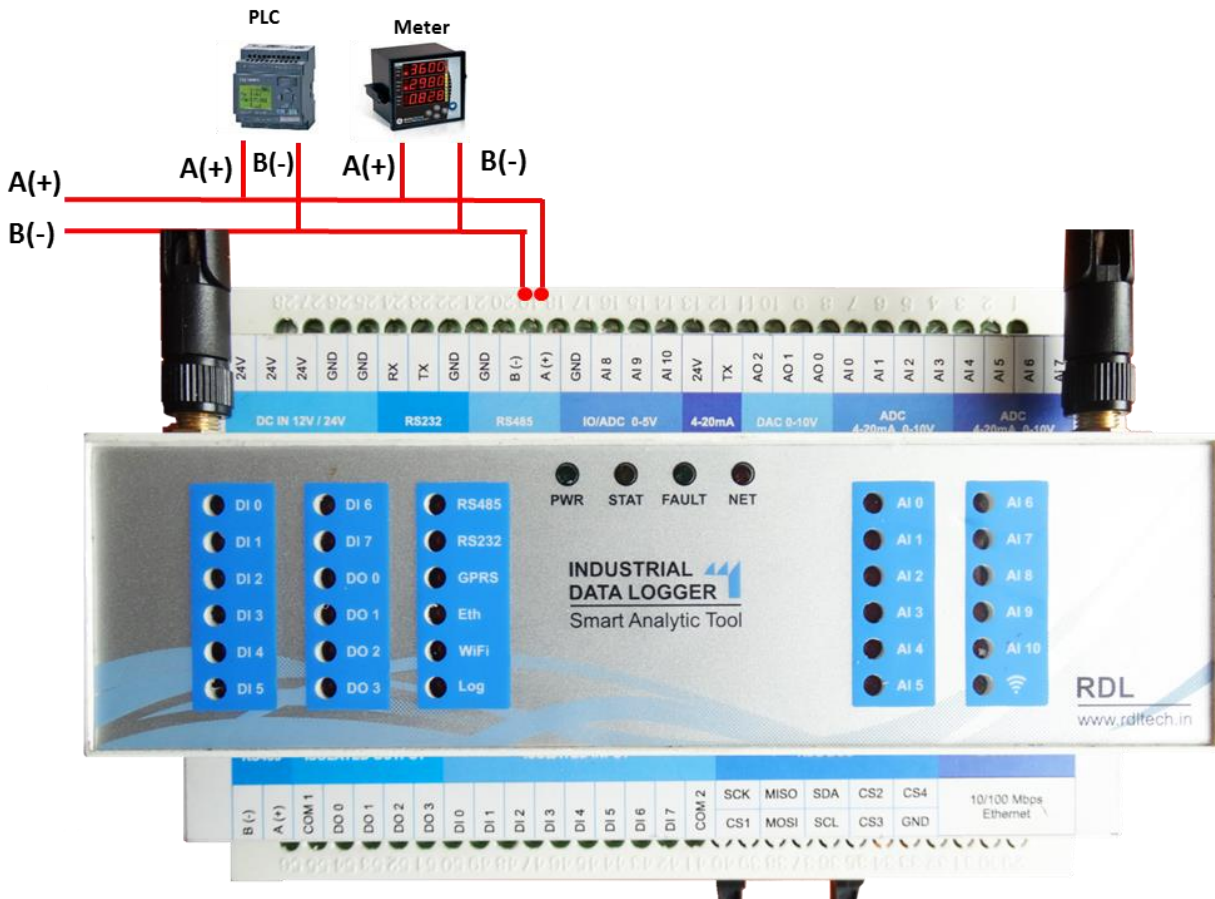
- Slave ID:** This is the Modbus Slave ID. Maximum 10 Slave info can be accessed.
- Start Address:** This is the starting address of the slave from where data needs to be read.
- Type:** Mention the register type. It could be Coil/Input Register/Holding Register.
- Length:** Number of data to read. Ex: 5 indicates registers are read from address 0001 to 0005, a total of $5 \times 2 = 10$ bytes as each data is 2 bytes wide (16bit).
- Status:** If tick is enabled, the slave id will be ENABLED for polling, else pertaining slave id polling will be DISABLED.
- Click Apply will write these configuration settings in the memory.
- Clicking on Read will display the configuration that is already saved.

2.1.3. Modbus Polling RTU Interval

The screenshot shows the web interface for configuring the Modbus Polling Interval. At the top, there is a navigation bar with tabs: Com.Port, I/O Settings (highlighted), Time settings, Modbus Ethernet, Wifi / GPRS Settings, Monitor, Change Password, Device Id Settings, and Debug. Below the navigation bar, there are checkboxes for MODBUS (checked), Analog, Digital Input, and Modbus TCP. There are two buttons: a green 'Apply' button and a blue 'Read' button. Below this, there is a sub-menu with tabs: MODBUS (highlighted), Analog, and Digital Input. Under the MODBUS tab, there are sub-tabs: Com.Port Settings, MODBUS Settings, and Polling Interval (highlighted). In the Polling Interval section, there are radio buttons for 'sec' (selected), 'min', and 'hour'. Below the radio buttons is a text input field labeled 'MODBUS Polling Interval:' with the value '10' entered. There is a checkbox for 'Save Log (Saves to SD Card)' which is checked. At the bottom of this section, there are two buttons: a green 'Apply' button and a blue 'Read' button, with a green checkmark to the right of the 'Read' button.

1. Select the Polling Interval **sec/min/hour**
2. Set the **MODBUS Polling Interval**
3. **Save Log:** If tick is enabled, the slave data pertaining to that slave id will be logged, if tick is not enabled, slave data is not logged.
4. Click Apply will write these configuration settings in the memory.
5. Clicking on Read will display the configuration that is already saved.

2.1.3.1 Application Wiring Diagram



2.1.4. Modbus TCP (Master)



1. Select the **Modbus TCP (Master)**.
2. Click Apply will write these configuration settings in the memory.
3. Clicking on Read will display the configuration that is already saved.

2.1.5. Modbus Ethernet Settings

Com.Port I/O Settings Time settings **Modbus Ethernet** Wifi / GPRS Settings Monitor Change Password Device Id Settings Debug

Device IP

Data Logger IP: 192 . 168 . 1 . 15 Modbus TCP Interval: 30
 Subnet Mask: 255 . 255 . 255 . 0 sec min hour
 Gateway: 192 . 168 . 1 . 1 Save Log (Saves to SD Card)

Apply Read

Apply Read

Note: Device and Slave Should be in Same Network!

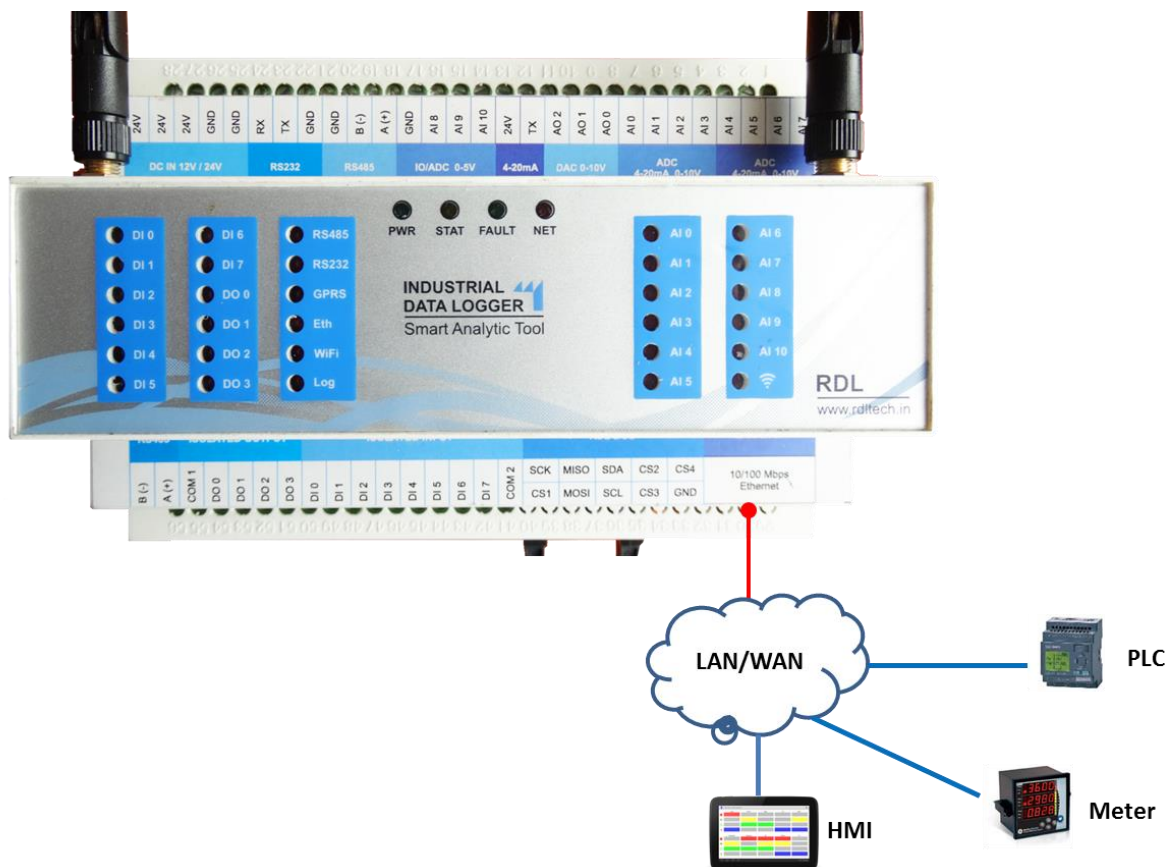
S.No	Slave ID	Slave IP	Slave Port No.	Start Address	Type	Length	Status
1	1	192 . 168 . 1 . 20	502	1	Coil	5	<input checked="" type="checkbox"/>
2	2	192 . 168 . 1 . 21	502	10	Input Register	4	<input type="checkbox"/>
3	3	192 . 168 . 1 . 22	502	20	Holding Register	6	<input checked="" type="checkbox"/>
4							<input type="checkbox"/>
5							<input type="checkbox"/>
6							<input type="checkbox"/>
7							<input type="checkbox"/>
8							<input type="checkbox"/>
9							<input type="checkbox"/>
10							<input type="checkbox"/>

Save Read

1. Set the Device IP Address, Subnet Mask, Gateway and click on Apply.
2. **Slave ID:** This is the Modbus Slave ID. Maximum 10 Slave info can be accessed.
3. **Slave IP:** Mention the IP Address of the Slave.
4. **Slave Port No:** Mention the Port No. (Default 502)
5. **Start Address:** This is the starting address of the slave from where data needs to be read.
6. **Type:** Mention the register type. It could be Coil/Input Register/Holding Register.
7. **Length:** Number of data to read. Ex: 5 indicates registers are read from address 0001 to 0005, a total of 5x2=10 bytes as each data is 2 bytes wide(16bit).
8. **Status:** If tick is enabled, the slave id will be ENABLED for polling, else pertaining slave id polling will be DISABLED.
9. Click on Save will write these configuration settings in the memory.

10. Clicking on Read will display the configuration that is already saved
11. Select the Polling Interval **sec/min/hour**
12. Set the **MODBUS TCP Interval**
13. **Save Log:** If tick is enabled, the slave data pertaining to that slave id will be logger, if tick is not enabled, slave data is not logged.
14. Click Apply will write these configuration settings in the memory.
15. Clicking on Read will display the configuration that is already saved.

2.1.5.1 Application Wiring Diagram:



2.2. Analog

2.2.1. Analog Channel Settings

These Settings will configure Analog as either loop current channel (4-20mA) or 0-10V Analog Channel.

Com.Port I/O Settings Time settings Modbus Ethernet Wifi / GPRS Settings Monitor Change Password Device Id Settings Debug

MODBUS Analog Digital Input Modbus TCP Apply Read ✓

MODBUS Analog Digital Input

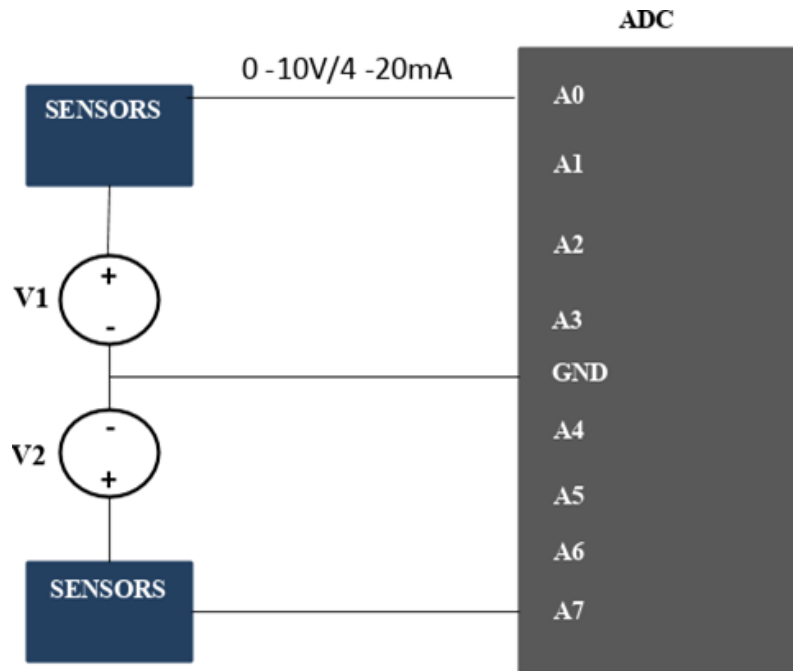
sec min hour
 Analog Polling Interval: (sec)
 Save Log (Saves to SD Card)
Apply Read ✓

Channel	Resolution	Enable/Disable	Mode
1	16 bit	<input checked="" type="checkbox"/>	0-10V
2	16 bit	<input checked="" type="checkbox"/>	4-20mA
3	16 bit	<input checked="" type="checkbox"/>	0-10V
4	16 bit	<input checked="" type="checkbox"/>	4-20mA
5	10 bit	<input type="checkbox"/>	0-10V
6	10 bit	<input type="checkbox"/>	0-10V
7	10 bit	<input type="checkbox"/>	0-10V
8	10 bit	<input type="checkbox"/>	0-10V

Apply Read ✓

1. Select the Polling Interval **sec/min/hour**
2. Set the **Analog Polling Interval**
3. **Save Log:** If tick is enabled, the slave data pertaining to that slave id will be logger, if tick is not enabled, slave data is not logged.
4. Click Apply will write these configuration settings in the memory.
5. **Tick the Checkbox to Enable/Disable** Analog channel(A0-A3 16bit and A4-A7 10bit).
6. Selecting **4-20mA** will configure the Analog as a loop current channel, leaving ADC in **0-10V** will configure Analog as an Analog channel.
7. Click Apply will write these configuration settings in the memory
8. Clicking on Read will display the configuration that is already saved.

2.2.2. Application Wiring Diagram:



Note: When Analog channel selected for loop current, voltage source should not apply. If given, damage could happen to the internal circuitry.

Note: Recommended to Use Ground connected shielded cable

2.3. Digital Input

2.3.1. Digital Input Settings

Com.Port **I/O Settings** Time settings Modbus Ethernet Wifi / GPRS Settings Monitor Change Password Device Id Settings Debug

MODBUS Analog Digital Input Modbus TCP Apply Read ✓

MODBUS Analog **Digital Input**

Save Log (Saves to SD Card)

Apply Read ✓

Channel	Enable/Disable	Condition	Digital Output Channel
1	<input checked="" type="checkbox"/>	Low	D0
2	<input checked="" type="checkbox"/>	High	D1
3	<input checked="" type="checkbox"/>	Low	D2
▶ 4	<input type="checkbox"/>	High	D3
5	<input type="checkbox"/>	Low	No Connection
6	<input type="checkbox"/>	Low	No Connection
7	<input type="checkbox"/>	Low	No Connection
8	<input type="checkbox"/>	Low	No Connection

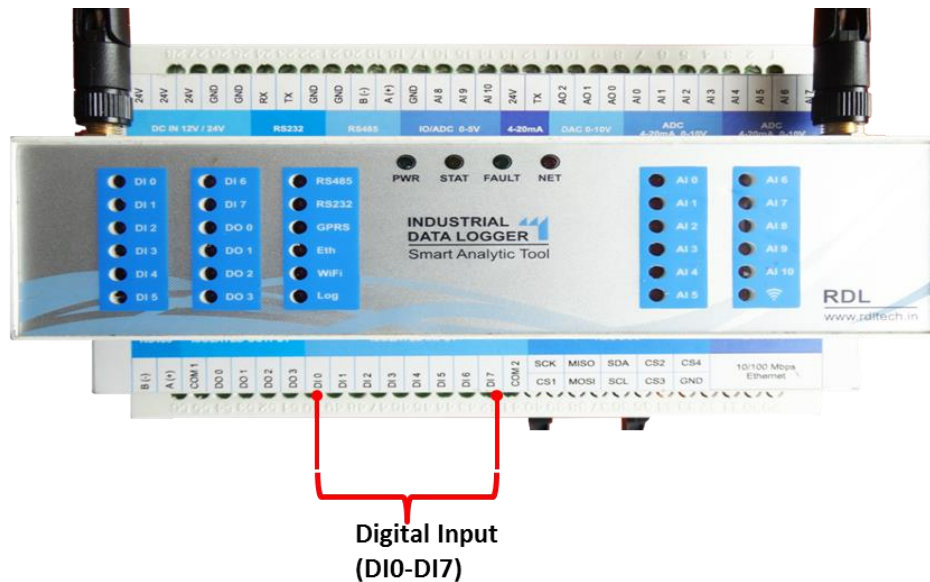
Note: Data Logged Only when Input Channel status changed Apply Read ✓

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

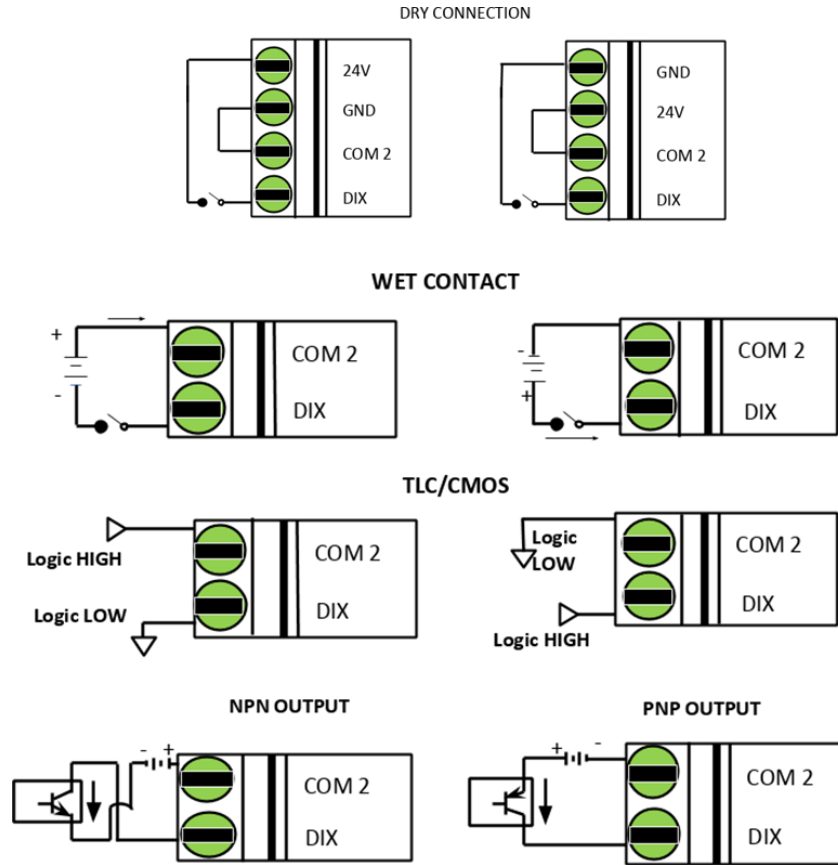
1. **Tick the Checkbox to Enable/Disable** Digital Input channel.
2. Digital Input channel can set for condition (**HIGH/LOW**) to the selected Digital Output channel.
3. If you don't want to attach **Digital Input** to the **Digital Output** set as **No Connection**
4. Click Apply will write these configuration settings in the memory.
5. Clicking on Read will display the configuration that is already saved.

2.3.2. Digital Input Specification

- Channels: 8
- Input Voltage: 0-24V
 - Logic High: >9V
 - Logic Low: <6V
- Isolation : 3750 VRMS
- Supports Inverted DI Status
- Supported Connection: Dry and Wet both
- Maximum Frequency : 200Hz-38KHz



2.3.3. Application Wiring Diagram

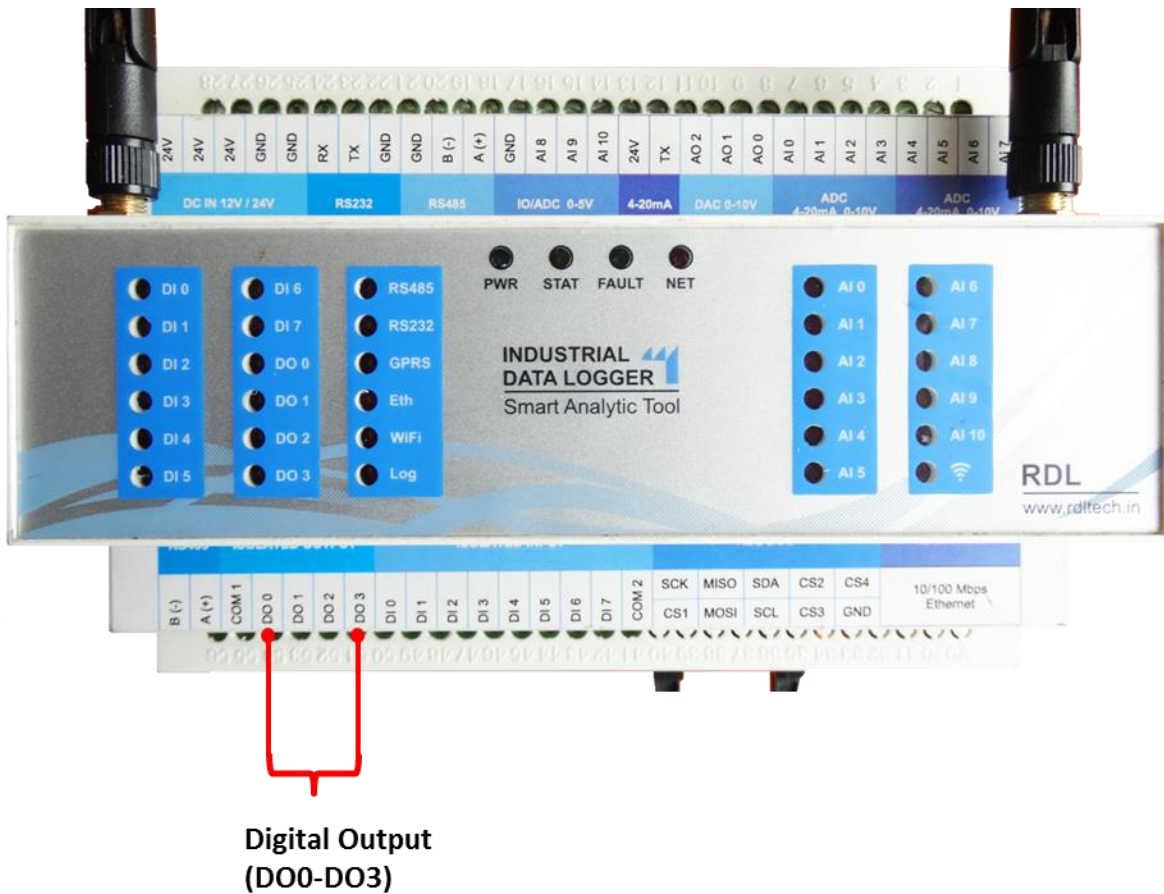


Note: Recommended to Use Ground connected shielded cable

3. Digital Output

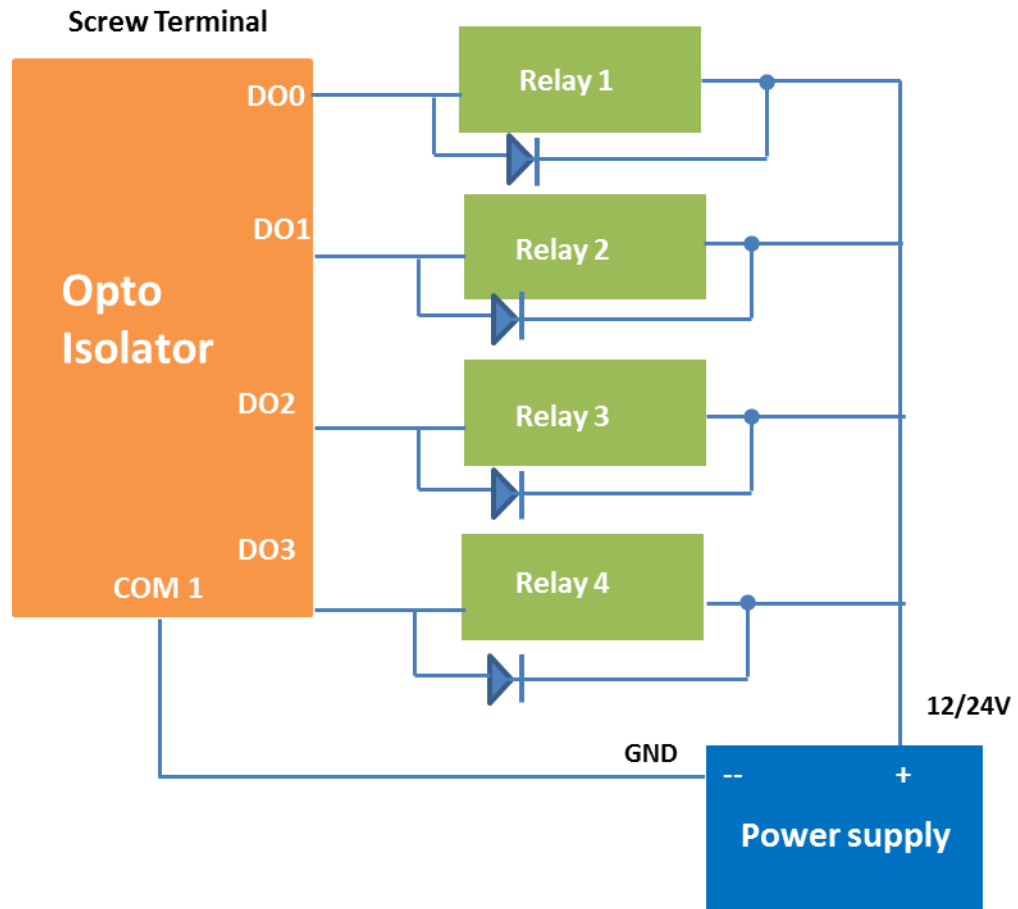
3.1 Digital Output Specification

- Channels: 4
- Open Collector
- Isolation : 3750 VRMS
- Absolute maximum voltage 35V, Current 100mA
- Cut-Off Frequency : 10KHz



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

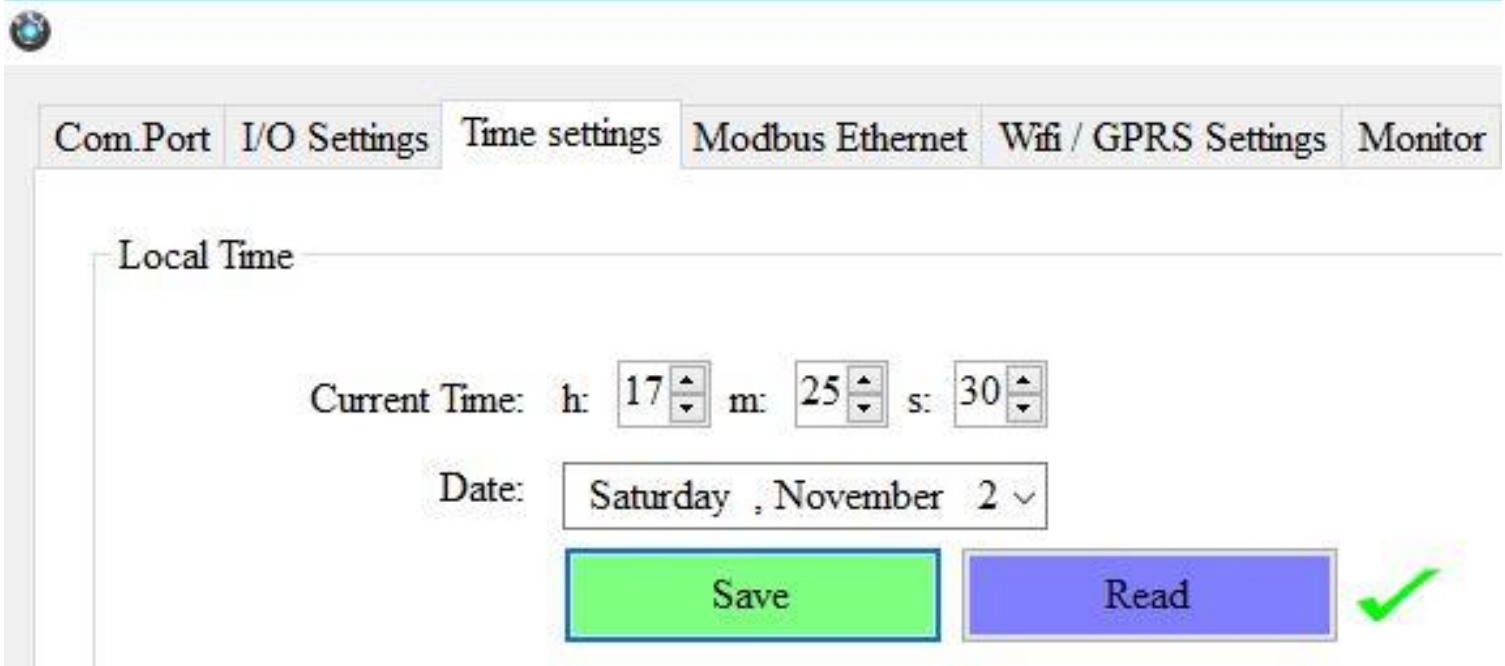
3.2 Application Wiring Diagram:



4. Time Settings

This setting is for Setting/getting time from local machine.

1. **Current Time:** Time in hour, minute and seconds.
2. **Date:** Select from the drop down menu
3. Click Save will write these time settings in the memory.
4. Clicking on Read will display the current time.



Com.Port I/O Settings **Time settings** Modbus Ethernet Wifi / GPRS Settings Monitor

Local Time

Current Time: h: 17 m: 25 s: 30

Date: Saturday , November 2

Save Read ✓

5. WiFi/GPRS Settings

5.1. GSM/GPRS FTP Settings

The screenshot displays the configuration interface for GSM/GPRS settings. At the top, a navigation bar includes 'Com.Port', 'I/O Settings', 'Time settings', 'Modbus Ethernet', 'Wifi / GPRS Settings' (highlighted), 'Monitor', 'Change Password', 'Device Id Settings', and 'Debug'. Below this, the 'Primary Connection' is set to 'GSM/GPRS'. A 'Save' button and a 'Read' button with a green checkmark are visible. The 'GPRS Settings' tab is active, showing radio buttons for 'FTP' (selected), 'JSON', 'MQTT', and 'Disable'. The 'APN' field is set to 'bsnlnet', with 'Save' and 'Read' buttons (the latter has a green checkmark). Underneath, the 'FTP' sub-tab is active, showing fields for 'FTP Server IP' (cloudplc.in), 'Username' (abcabc), 'Password' (abc12345), 'Port Number' (21), and 'Log Folder' (remote_folder). The 'FTP Uploading Time' section has radio buttons for 'sec' (selected), 'min', and 'hour', with an 'Uploading Interval' of 10 seconds. 'Apply' and 'Read' buttons (the latter has a green checkmark) are present. At the bottom, another 'Apply' and 'Read' button pair (the latter has a green checkmark) is shown.

1. Choose **GSM/GPRS** in the **Primary Connection**. Click on Save.
2. **GPRS Settings** are enabled now, ready for **FTP**
3. **FTP**: Data logging happens to FTP server. Click on Apply.
4. **FTP Server IP**: Provide IP address for the FTP connection.
5. **Username**: Provide Username for the FTP Server.
6. **Password**: Provide Password for the FTP Server.
7. **Port Number**: Provide Port number for the FTP Server.
8. **Log Folder**: Provide folder name for the FTP Server.
9. Click Apply will save these settings in the memory.
10. **APN**: Provide APN for the connection. Click on Save. Ex: for BSNL it is "bsnlnet".
11. **FTP Uploading Time**: Select the Polling Interval **sec/min/hour**
12. Click Apply will save these settings in the memory.
13. Clicking on Read will display the configuration that is already saved.

Note: FTP Account creating guideline document. Please go through the below given link document.

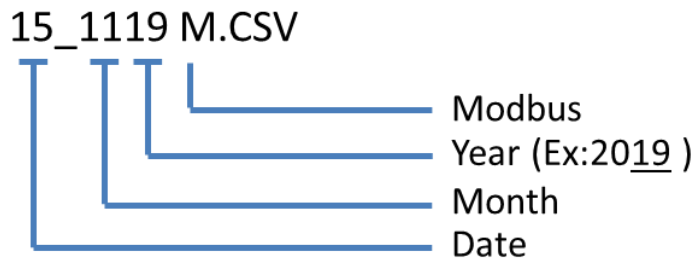
LINK1:<https://github.com/researchdesignlab/Industrial-Data-Logger/blob/master/CREATING%20FTP%20ACCOUNT.pdf>

Youtube Link: <https://www.youtube.com/watch?v= MfcA8Jcmtk>

5.2. GSM/GPRS FTP Data Uploading Format:

5.2.1 MODBUS RTU Data Uploading Format

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

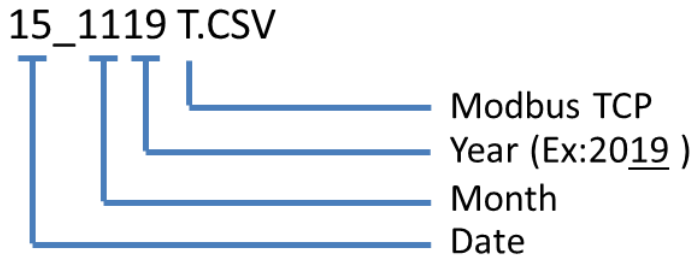


Uploaded .CSV File Looks as below

	A	B	C	D	E	F	G
1	DATE	TIME	SLAVE ID	ADRESS	LENGTH	DATA	
2	24/10/19/	14:35:01	120	2	291	123	1234
3	24/10/19/	14:35:01	140	2	1929	789	1011
4	24/10/19/	14:35:01	160	2	869	365	563
5	24/10/19/	14:35:11	120	2	291	123	1234
6	24/10/19/	14:35:11	140	2	1929	789	1011
7	24/10/19/	14:35:11	160	2	869	365	563
8	24/10/19/	14:35:21	120	2	291	123	1234
9	24/10/19/	14:35:21	140	2	1929	789	1011
10	24/10/19/	14:35:21	160	2	869	365	563
11	24/10/19/	14:35:31	120	2	291	123	1234
12	24/10/19/	14:35:31	140	2	1929	789	1011
13	24/10/19/	14:35:31	160	2	869	365	563
14	24/10/19/	14:35:41	120	2	291	123	1234
15	24/10/19/	14:35:41	140	2	1929	789	1011
16	24/10/19/	14:35:41	160	2	869	365	563
17	24/10/19/	14:35:51	120	2	291	123	1234
18	24/10/19/	14:35:51	140	2	1929	789	1011
19	24/10/19/	14:35:51	160	2	869	365	563
20	24/10/19/	14:36:01	120	2	291	123	1234
21	24/10/19/	14:36:01	140	2	1929	789	1011

5.2.2 MODBUS TCP Data Uploading Format

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

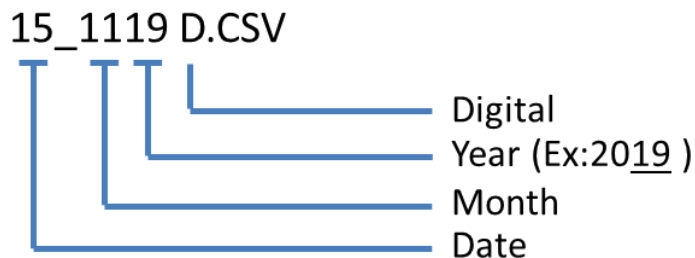


Uploaded .CSV File Looks below

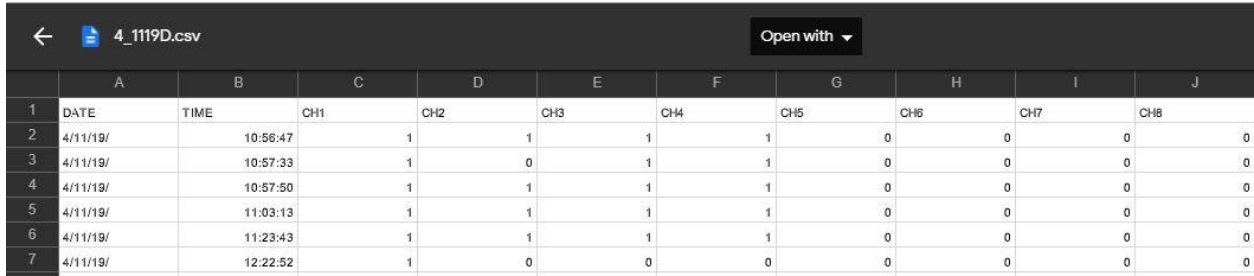
	A	B	C	D	E	F	G
1	DATE	TIME	SLAVE ID	ADRESS	LENGTH	DATA	
2	24/10/19/	14:35:01	120		2	291	123
3	24/10/19/	14:35:01	140		2	1929	789
4	24/10/19/	14:35:01	160		2	869	365
5	24/10/19/	14:35:11	120		2	291	123
6	24/10/19/	14:35:11	140		2	1929	789
7	24/10/19/	14:35:11	160		2	869	365
8	24/10/19/	14:35:21	120		2	291	123
9	24/10/19/	14:35:21	140		2	1929	789
10	24/10/19/	14:35:21	160		2	869	365

5.2.3 Digital Input Data Uploading Format

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



Uploaded .CSV File looks below.



	A	B	C	D	E	F	G	H	I	J
1	DATE	TIME	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
2	4/11/19/	10:56:47	1	1	1	1	0	0	0	0
3	4/11/19/	10:57:33	1	0	1	1	0	0	0	0
4	4/11/19/	10:57:50	1	1	1	1	0	0	0	0
5	4/11/19/	11:03:13	1	1	1	1	0	0	0	0
6	4/11/19/	11:23:43	1	1	1	1	0	0	0	0
7	4/11/19/	12:22:52	1	0	0	0	0	0	0	0

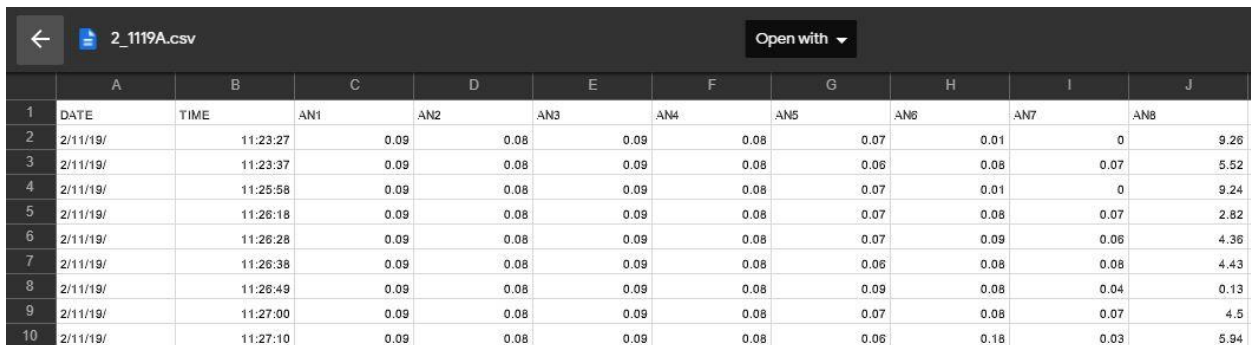
5.2.3.1 Analog Input Data Uploading Format

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

15_1119 A.CSV



Uploaded .CSV File looks below.



	A	B	C	D	E	F	G	H	I	J
1	DATE	TIME	AN1	AN2	AN3	AN4	AN5	AN6	AN7	AN8
2	2/11/19/	11:23:27	0.09	0.08	0.09	0.08	0.07	0.01	0	9.26
3	2/11/19/	11:23:37	0.09	0.08	0.09	0.08	0.06	0.08	0.07	5.52
4	2/11/19/	11:25:58	0.09	0.08	0.09	0.08	0.07	0.01	0	9.24
5	2/11/19/	11:26:18	0.09	0.08	0.09	0.08	0.07	0.08	0.07	2.82
6	2/11/19/	11:26:28	0.09	0.08	0.09	0.08	0.07	0.09	0.06	4.36
7	2/11/19/	11:26:38	0.09	0.08	0.09	0.08	0.06	0.08	0.08	4.43
8	2/11/19/	11:26:49	0.09	0.08	0.09	0.08	0.09	0.08	0.04	0.13
9	2/11/19/	11:27:00	0.09	0.08	0.09	0.08	0.07	0.08	0.07	4.5
10	2/11/19/	11:27:10	0.09	0.08	0.09	0.08	0.06	0.18	0.03	5.94

5.3 GSM/GPRS JSON Settings

Com.Port I/O Settings Time settings Modbus Ethernet **Wifi / GPRS Settings** Monitor Change Password Device Id Settings Debug

Primary Connection: **GSM/GPRS** ✓

Wifi Settings **GPRS Settings**

FTP **JSON** MQTT Disable APN: ✓

✓

FTP **JSON** MQTT

Post URL:

Hash Key:

Path:

Content Type:

Device ID/Tag:

Port No:

✓

- Choose **GSM/GPRS** in the **Primary Connection**. Click on Save.
- **GPRS Settings** are enabled now, ready for **JSON**
- **JSON**: Data logging happens to JSON server. Click on Apply.
- **Post URL**: Provide Server URL.
- **Hash Key**: Provide AES encryption key for security.
- **Path**: Provide Path for the URL.
- **Content Type**: Choose from dropdown.
- **Device ID/Tag**: Provide the ID
- **Port No**: Mention the port number.

- Click Apply will save these settings in the memory.
- **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: <https://www.youtube.com/watch?v=8W-eybka80s>

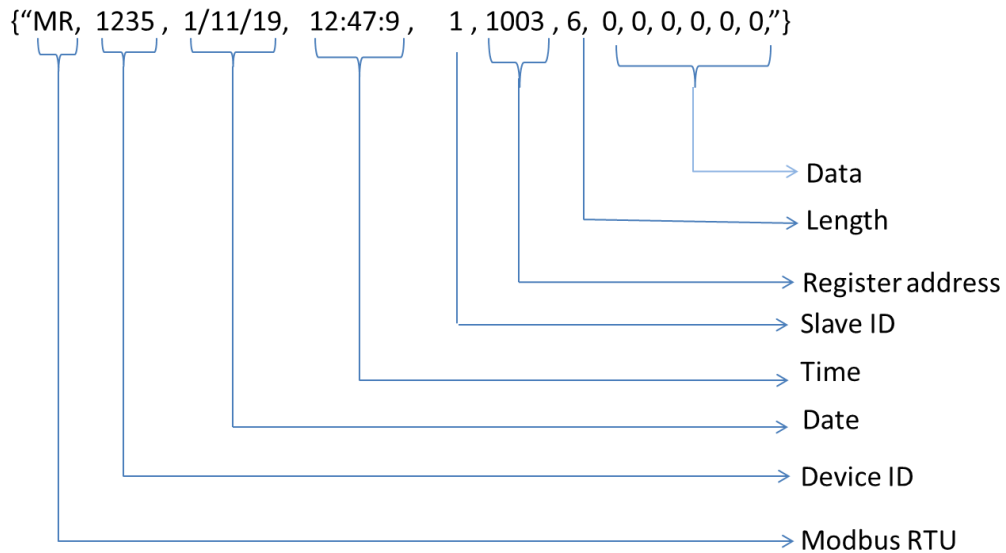
5.3.1 GSM/GPRS JSON Data Uploading Format:

5.3.1.1 MODBUS RTU Data Uploading Format:

API FORMAT:

`{"MR,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length,"}`

EX:



Note:

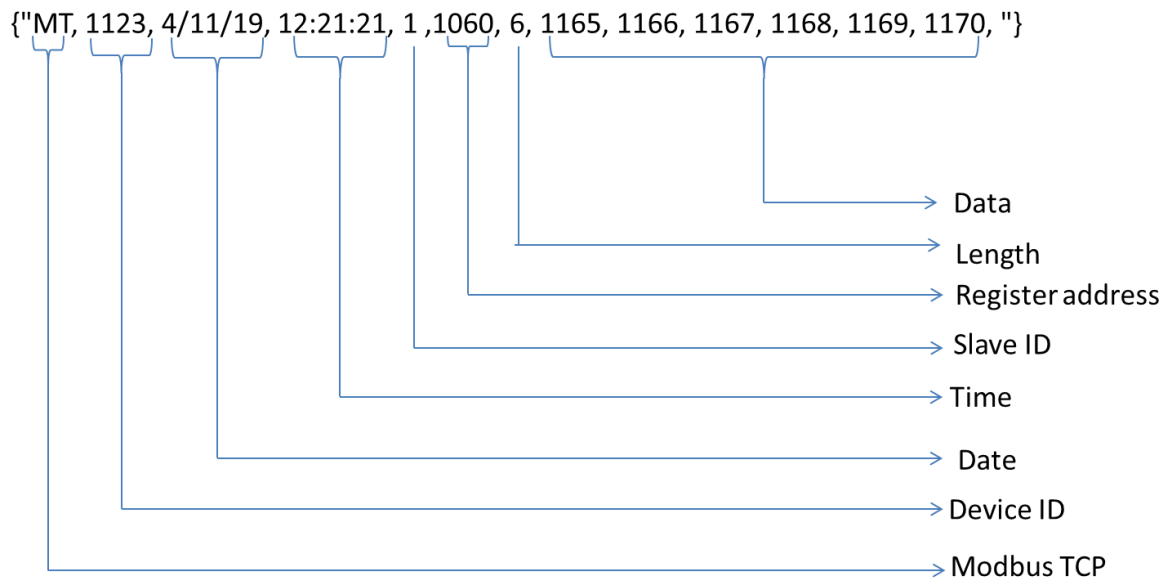
1. MODBUS RTU configuration looks into the section 2.1 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format.

5.3.1.2 MODBUS TCP Data Uploading Format:

API FORMAT:

{“MT,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length,”}

EX:



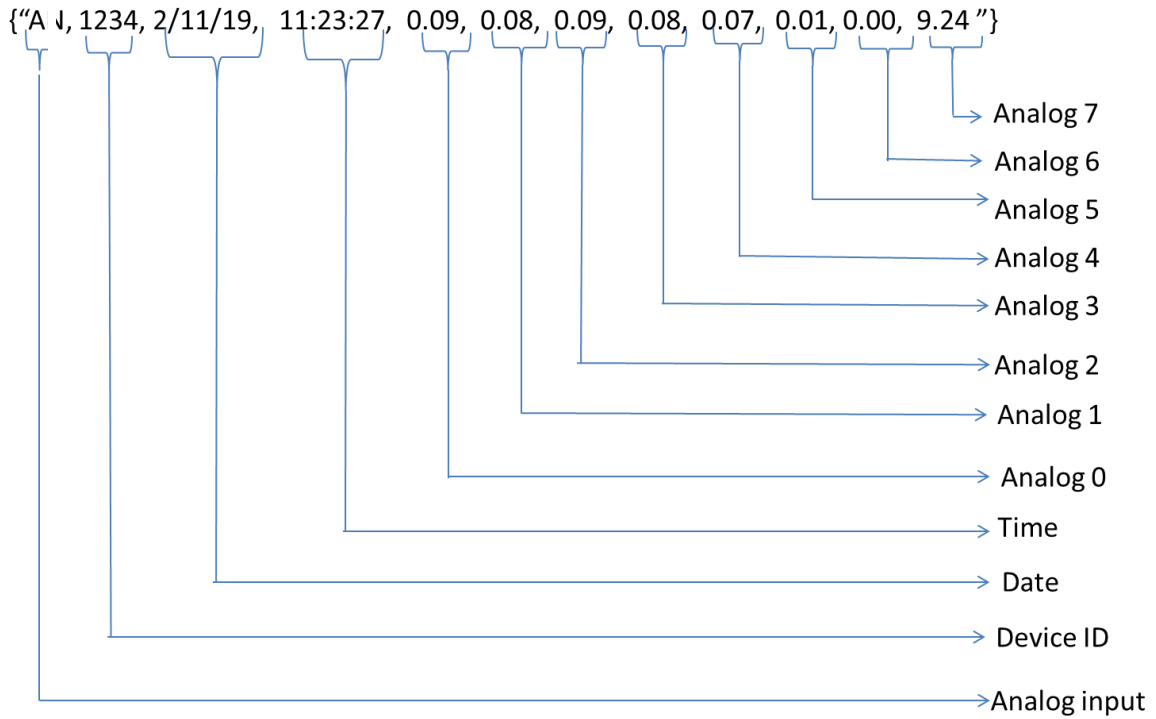
Note:

1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.3.1.3 ANALOG Input Data Uploading Format:

API Format: {"AN,DeviceID,DATE,TIME,AI0,AI1,AI2,AI3,AI4,AI5,AI6,AI7,"}

Eg:

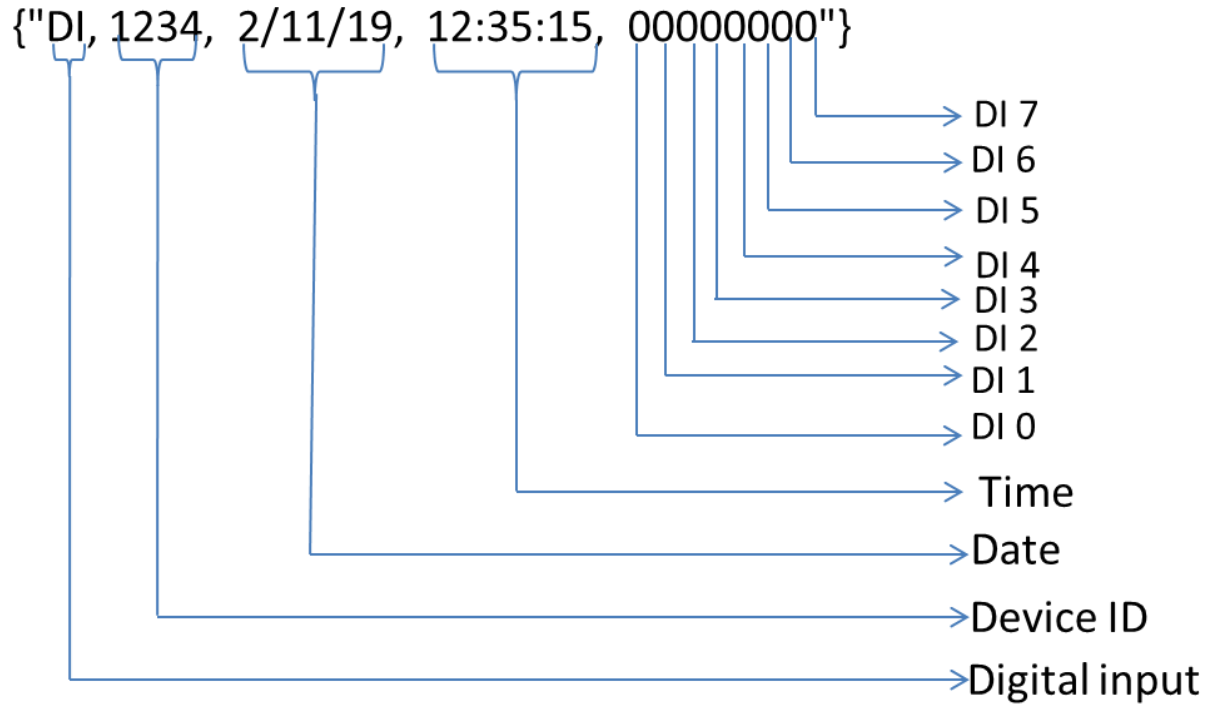


Note: For Analog Input configuration look into the section 2.2 in this document.

5.3.1.4 Digital Input Data Uploading Format:

API Format: {"DI,DeviceID,DATE,TIME,CH1CH2CH3CH4CH5CH6CH7CH8"}

EX:



Note: For Digital Input configuration look into the section 2.3 in this document.

5.4 GSM/GPRS MQTT Settings:

Com.Port I/O Settings Time settings Modbus Ethernet **Wifi / GPRS Settings** Monitor Change Password Device Id Settings Debug

Primary Connection: **GSM/GPRS**

Save Read ✓

Wifi Settings **GPRS Settings**

FTP JSON **MQTT** Disable APN: **bsnlnet**

Apply Read ✓ Save Read ✓

FTP JSON **MQTT**

Profile Type: **MQTT Broker** Enable SSL/TSL

Broker Address: your_broker_address.com
 UserName: user
 Password: 12345
 Port: 11139
 Topic: datalogger
 Device Id/Tag: 1

Apply Read ✓

- Choose **GSM/GPRS** in the **Primary Connection**. Click on Save.
- **GPRS Settings** are enabled now, ready for **MQTT**
- **MQTT**: Data logging happens to MQTT server. Click on Apply.
- **Profile Type**: Select in the dropdown menu **MQTT Broker**
- **Broker Address**: Provide your broker address of MQTT
- **Cloud UserName** : Provide MQTT cloud User Name.
- **Password**: Provide MQTT cloud Password.
- **Port**: Provide Port number for MQTT cloud.
- **Topic**: Provide Topic name.
- **Device Id/Client ID**: Provide the Device ID
- Click Apply will save these settings in the memory.
- **APN**: Provide APN for the connection. Ex: for BSNL it is "bsnlnet".
- Click on Save.

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

LINK_1 : https://github.com/researchdesignlab/Industrial-Data-Logger/blob/master/MQTT_Linux_Bringup_ver1.0.pdf

LINK2: <https://www.cloudmqtt.com/docs/index.html>

Youtube Link: <https://www.youtube.com/watch?v=qNFmfBpNMsg&t=3s>

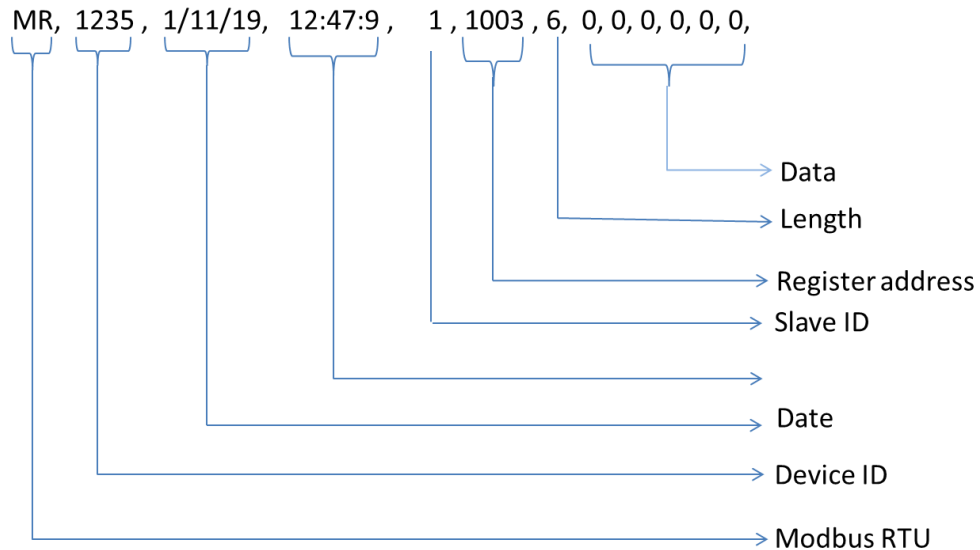
5.4.1 GSM/GPRS MQTT Data Parsing Format:

5.4.1.1 MODBUS RTU Data Parsing Format:

Parsing Format:

MR,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length

Ex:



Note:

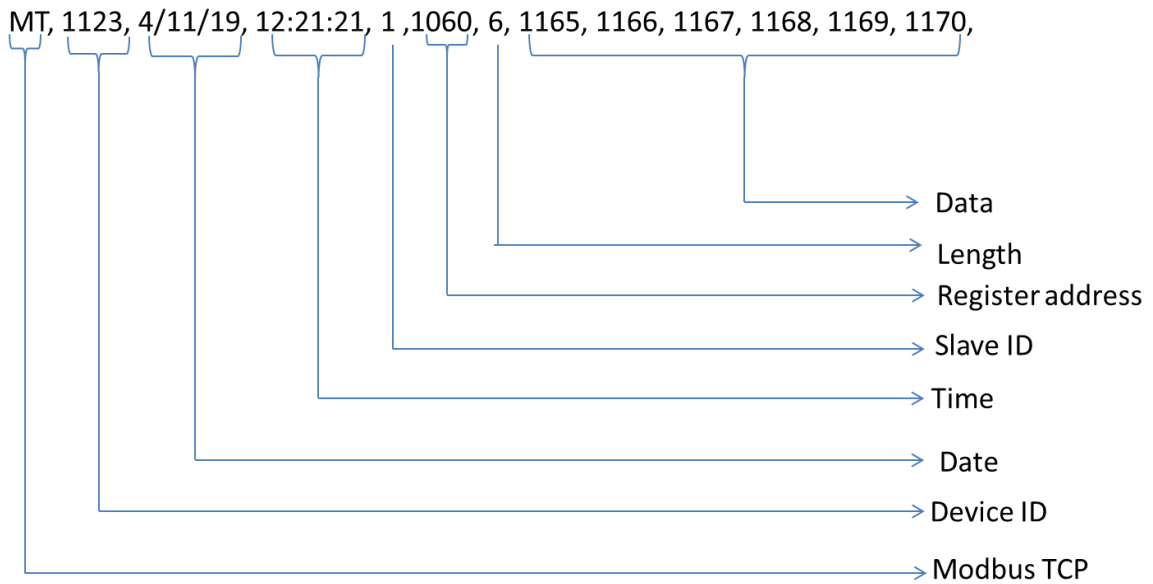
1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.4.1.2 MODBUS TCP Data Parsing Format:

Parsing Format:

MT,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length

Ex:



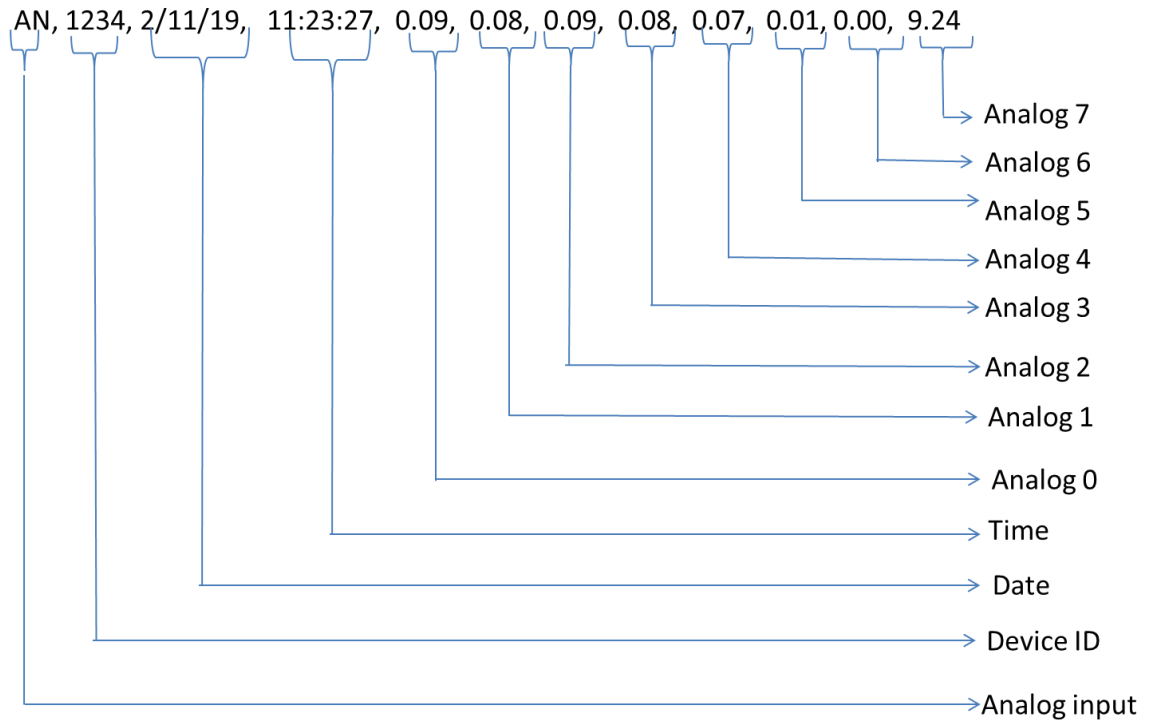
Note:

- 1. MODBUS TCP configuration looks into the section 2.1.4 in this document.**
- 2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format**

5.4.1.3 ANALOG Input Data Parsing Format:

Parsing Format: AN,DeviceID,DATE,TIME,AI0,AI1,AI2,AI3,AI4,AI5,AI6,AI7

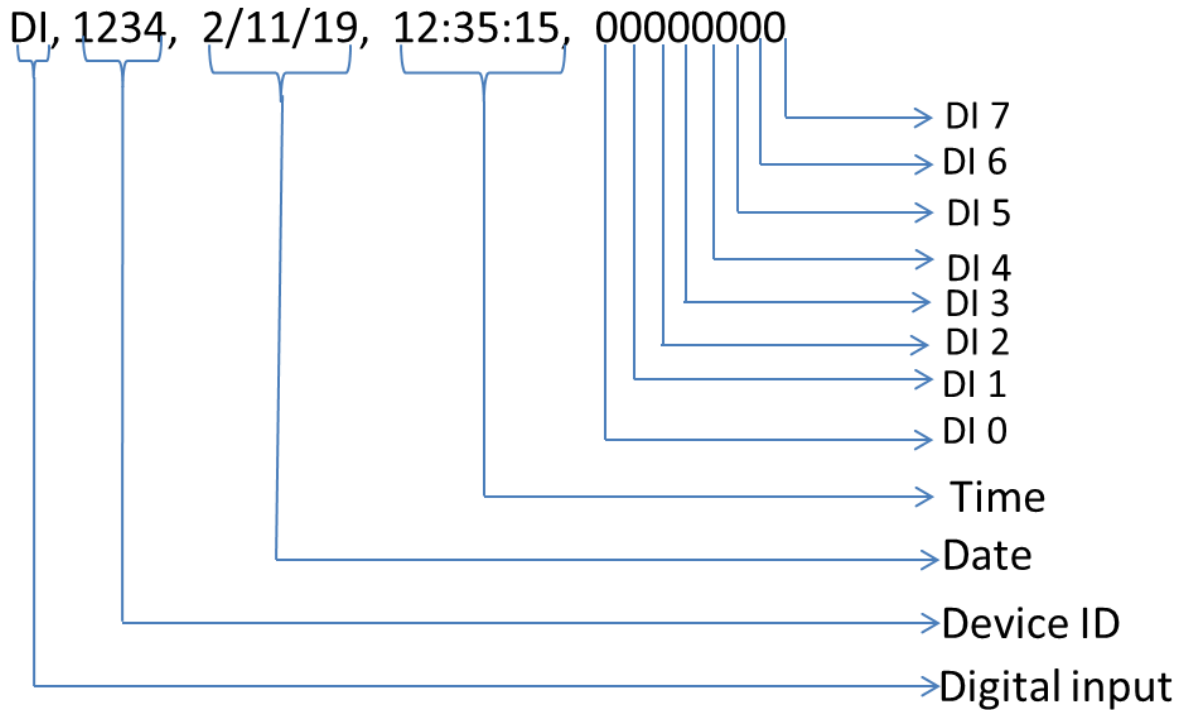
Ex:



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

5.4.1.4 Digital Input Data Parsing Format:

Parsing Format: **DI,DeviceID,DATE,TIME,CH1CH2CH3CH4CH5CH6CH7CH8**



Note: For Digital Input configuration look into the section 2.3 in this document.

5.5 GSM/GPRS MQTT with SSL Settings

The screenshot displays the configuration interface for GSM/GPRS MQTT with SSL settings. At the top, there is a navigation bar with tabs: Com.Port, I/O Settings, Time settings, Modbus Ethernet, Wifi / GPRS Settings (selected), Monitor, Change Password, Device Id Settings, and Debug. Below the navigation bar, the 'Primary Connection' is set to 'GSM/GPRS'. There are 'Save' and 'Read' buttons, with a green checkmark next to the 'Read' button. The 'Wifi Settings' section is active, with 'GPRS Settings' selected. Under 'GPRS Settings', there are radio buttons for FTP, JSON, MQTT (selected), and Disable. The 'APN' is set to 'bsnlnet'. There are 'Apply', 'Read', 'Save', and 'Read' buttons, with green checkmarks next to the 'Read' buttons. The 'MQTT' section is expanded, showing 'Profile Type' set to 'MQTT Broker'. The 'Broker Address' is 'your_broker_address.com', 'UserName' is 'user', 'Password' is '12345', 'Port' is '11139', 'Topic' is 'datalogger', and 'Device Id/Tag' is '1'. The 'Enable SSL/TSL' checkbox is checked. The 'SSL Parameters' section shows 'Protocol' set to 'TLSv1.2' and 'CA Certificate' set to 'e:\RAM\certificate\cacert.pem', with a 'Browse..' button. There is a 'Delete Certificate' button. At the bottom, there are 'Apply' and 'Read' buttons.

- Choose **GSM/GPRS** in the **Primary Connection**. Click on Save.
- **GPRS Settings** are enabled now, ready for **MQTT**
- **MQTT**: Data logging happens to MQTT server. Click on Apply.
- **Profile Type**: Select in the dropdown menu **MQTT Broker**
- **Broker Address**: Provide your broker address of MQTT
- **Cloud UserName** : Provide MQTT cloud User Name.
- **Password**: Provide MQTT cloud Password.
- **Port**: Provide Port number for MQTT cloud.
- **Topic**: Provide Topic name.
- **Device Id/Client ID**: Provide the Device ID
- Click on **Enable SSL/TSL and** set the **SSL Parameters**.
- **Protocol**: Select in the dropdown which protocol you are using.
- **CA Certificate**: Please upload the CA Certificate.
- Click Apply will save these settings in the memory.
- **APN**: Provide APN for the connection. Ex: for BSNL it is "bsnlnet". Click on Apply.

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

5.6 WiFi Settings

5.6.1 WiFi DHCP Settings:

Com.Port I/O Settings Time settings Modbus Ethernet **Wifi / GPRS Settings** Monitor Change Password Device Id Settings Debug

Primary Connection: **Wifi**

Save Read ✓

Wifi Settings GPRS Settings

JSON MQTT Disable

Apply Read ✓

JSON MQTT **Wifi Settings**

DHCP Static

Apply Read ✓

IP:

Subnet Mask:

Gateway:

Primary DNS:

Secondary DNS:

Apply Read

Access Point

SSID:

Password:

Apply Read ✓

- Choose **WiFi** in the **Primary Connection**. Click on Save.
- **WiFi Settings** are enabled now, ready for **JSON/MQTT**
- **WiFi Settings**: Select DHCP. Click on Apply.
- **Access Point**: Set the SSID and Password
- Click Apply to save these settings in the memory.

5.6.2 WiFi Static Settings

The screenshot displays the 'Wifi / GPRS Settings' tab in the web interface. The 'Primary Connection' is set to 'Wifi'. Below this, there are 'Save' and 'Read' buttons with a green checkmark. The 'Wifi Settings' sub-tab is active, showing 'JSON' selected with a radio button, and 'Apply' and 'Read' buttons with a green checkmark. The 'Wifi Settings' sub-tab is further expanded to show 'Static' selected with a radio button. Below this, there are 'Apply' and 'Read' buttons with a green checkmark. The static IP configuration fields are filled with: IP: 192.168.1.25, Subnet Mask: 255.255.255.0, Gateway: 192.168.1.1, Primary DNS: 192.168.1.251, and Secondary DNS: 192.168.1.251. At the bottom of this section are 'Apply' and 'Read' buttons with a green checkmark. To the right, the 'Access Point' section has 'SSID' set to 'RDL' and 'Password' set to '12345', with 'Apply' and 'Read' buttons and a green checkmark.

- Choose **WiFi** in the **Primary Connection**. Click on Save.
- **WiFi Settings** are enabled now, ready for **JSON**
- **WiFi Settings**: Select Static. Click on Apply.
- Enter the IP, Subnet Mask, Gateway, Primary DNS, Secondary DNS.
- Click Apply will save these settings in the memory.
- **Access Point**: Set the SSID and Password
- Click Apply will save these settings in the memory.

5.7 WiFi JSON Settings

The screenshot displays the configuration interface for the Industrial Datalogger. At the top, there is a navigation bar with tabs: Com.Port, I/O Settings, Time settings, Modbus Ethernet, **Wifi / GPRS Settings**, Monitor, Change Password, Device Id Settings, and Debug. Below this, the 'Primary Connection' is set to 'Wifi'. There are 'Save' and 'Read' buttons, with a green checkmark next to the 'Read' button. The 'Wifi Settings' tab is active, showing radio buttons for 'JSON' (selected), 'MQTT', and 'Disable'. Below these are 'Apply' and 'Read' buttons, also with a green checkmark next to 'Read'. The 'JSON' sub-tab is active, showing a form with the following fields: 'Post URL' (your_domain_name.com), 'Hash Key' (1234), 'Path' (datalogger/json_passing.php), 'Content Type' (application/json), and 'Port No' (80). At the bottom right, there are 'Apply' and 'Read' buttons, with a green checkmark next to 'Read'.

- Choose **WiFi** in the **Primary Connection**. Click on Save.
- **WiFi Settings** are enabled now, ready for **JSON**
- **JSON**: Data logging happens to JSON server. Click on Apply.
- **Post URL**: Provide Server URL.
- **Hash Key**: Provide AES encryption key for security.
- **Path**: Provide Path for the URL.
- **Content Type**: Choose from dropdown.
- **Port No**: Mention the port number.
- Click Apply will save these settings in the memory.

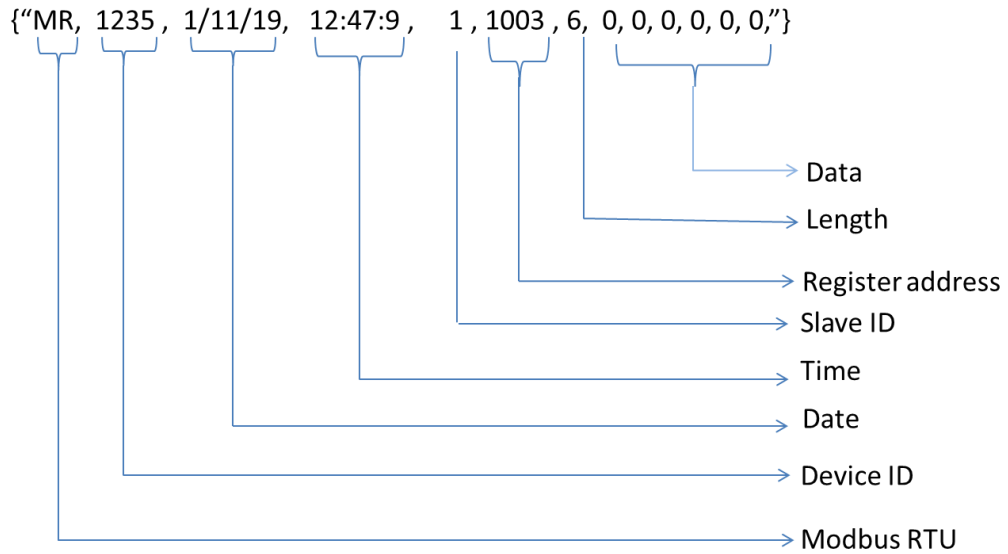
5.7.1 WiFi JSON Data Uploading Format:

5.7.1.1 MODBUS RTU Data Uploading Format:

API FORMAT:

```
{"MR,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length,"}
```

EX:



Note:

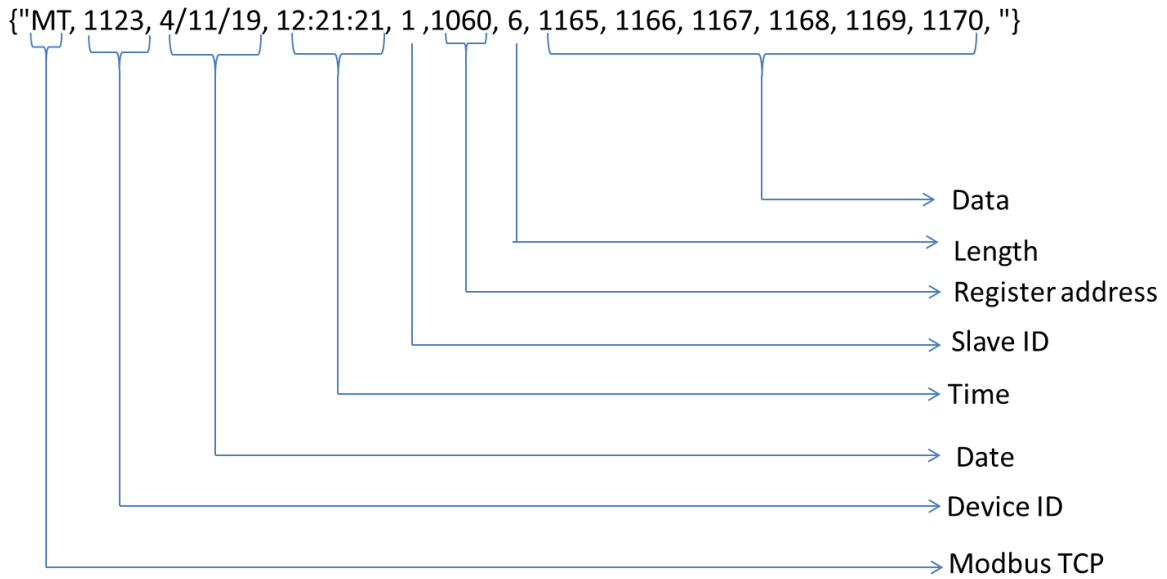
1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.7.1.2 MODBUS TCP Data Uploading Format

API FORMAT:

`{"MT,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length,"}`

EX:



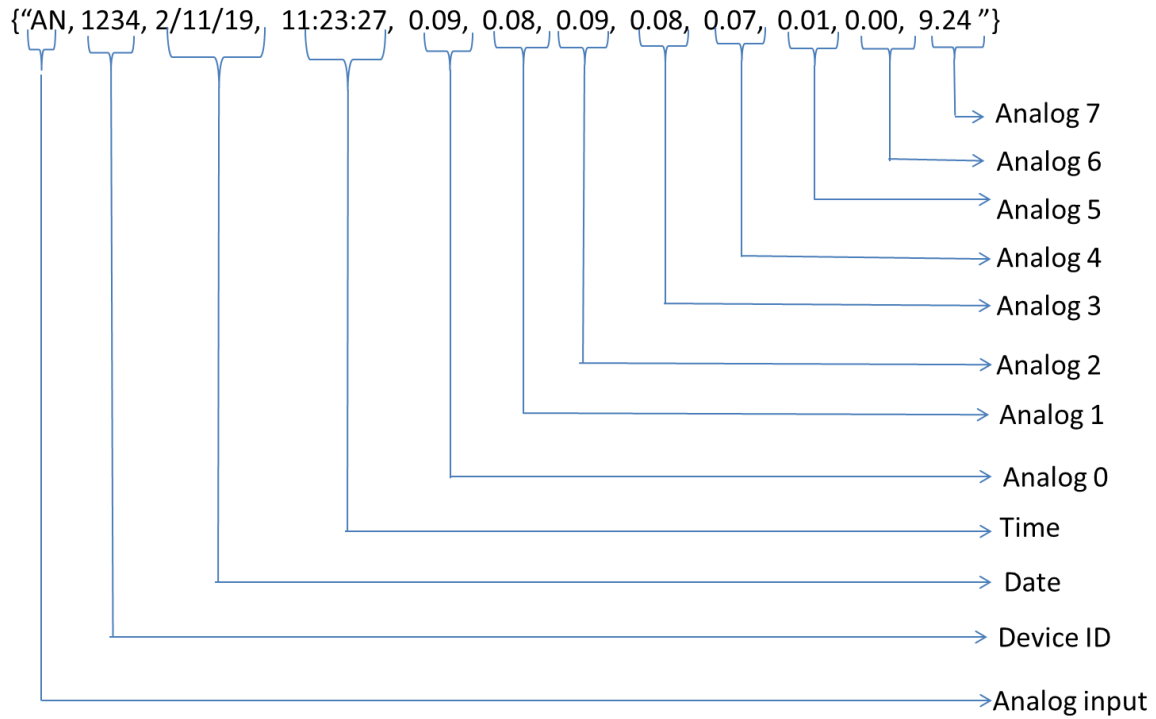
Note:

1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.7.1.3 ANALOG Input Data Uploading Format

API Format: {"AN,DeviceID,DATE,TIME,AI0,AI1,AI2,AI3,AI4,AI5,AI6,AI7,"}

Eg:

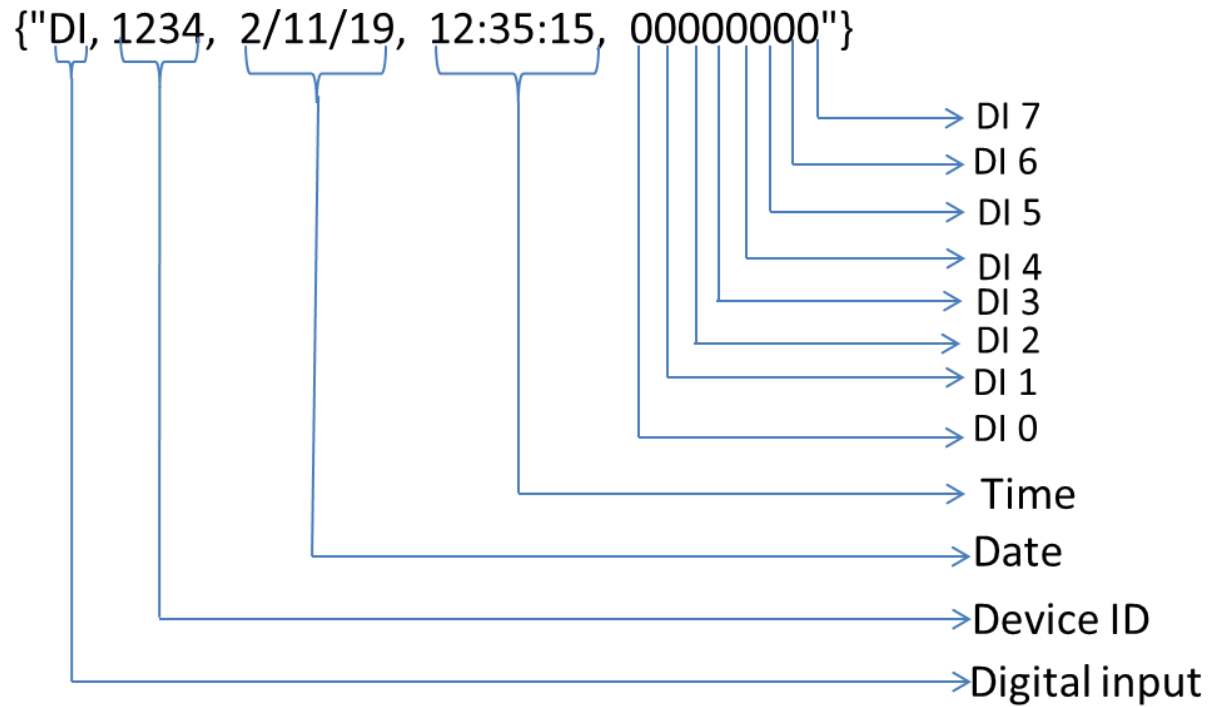


Note: For Analog Input configuration look into the section 2.2 in this document.

5.7.1.4 Digital Input Data Uploading Format

API Format: {"DI,DeviceID,DATE,TIME,CH1CH2CH3CH4CH5CH6CH7CH8"}

EX:



Note: For Digital Input configuration look into the section 2.3 in this document.

5.8 WiFi MQTT Settings

Com.Port I/O Settings Time settings Modbus Ethernet **Wifi / GPRS Settings** Monitor Change Password Device Id Settings Debug

Primary Connection: **Wifi** ✓

Wifi Settings GPRS Settings

JSON **MQTT** Disable

✓

JSON **MQTT** Wifi Settings

Profile Type: **MQTT Broker**

Broker Address:

UserName:

Password:

Port:

Topic:

Device Id/Tag:

✓

- Choose **WiFi** in the **Primary Connection**. Click on Save.
- **WiFi Settings** are enabled now, ready for **MQTT**
- **MQTT**: Data logging happens to MQTT server. Click on Apply.
- **Profile Type**: Select in the dropdown menu **MQTT Broker/Google Cloud IOT**
- **Broker Address**: Provide your broker address of MQTT
- **Cloud UserName** : Provide MQTT cloud User Name.
- **Password**: Provide MQTT cloud Password.
- **Port**: Provide Port number for MQTT cloud.
- **Topic**: Provide Topic name.
- **Device Id/Client ID**: Provide the Device ID
- Click Apply will save these settings in the memory.

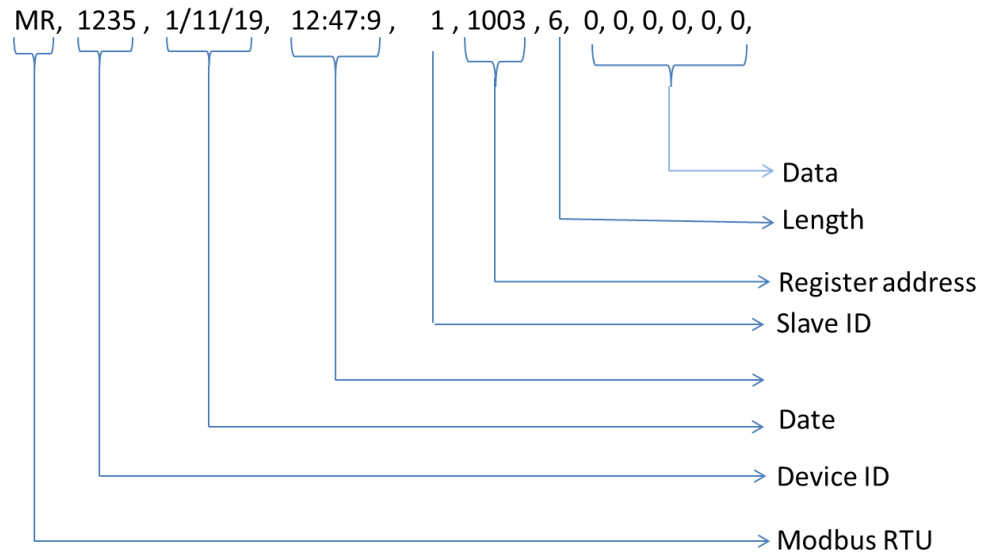
5.8.1 WiFi MQTT Data Parsing Format:

5.8.1.1 MODBUS RTU Data Parsing Format:

Parsing Format:

MR,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length

Ex:



Note:

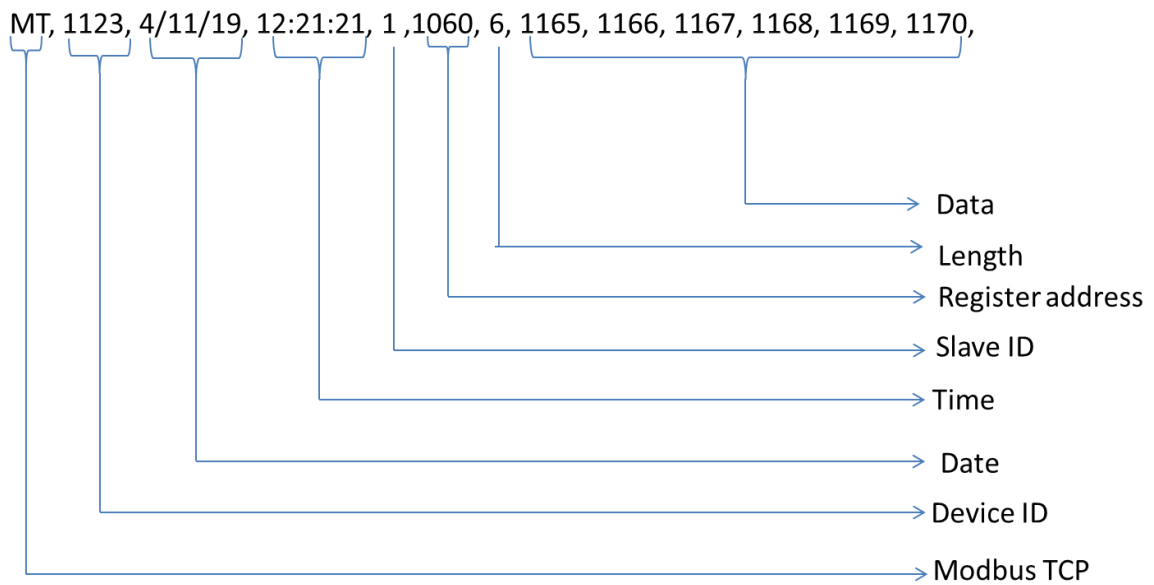
1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.8.1.2 MODBUS TCP Data Parsing Format

Parsing Format:

MT,DeviceID,Date,Time,SlaveID,SlaveAddress,Length,Data1,Data2,.....Data_Length

Ex:



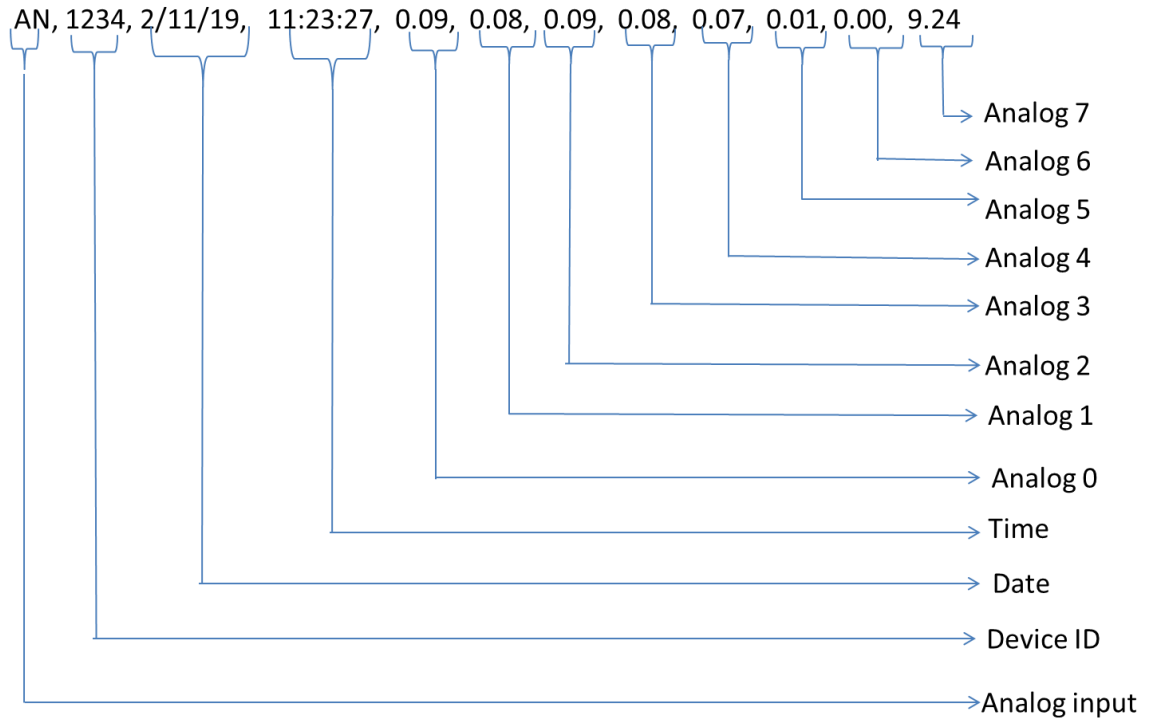
Note:

1. MODBUS TCP configuration looks into the section 2.1.4 in this document.
2. MODBUS RTU/TCP 16bit/32bit data parsed in hexa decimal format

5.8.1.3 ANALOG Input Data Parsing Format:

Parsing Format: AN,DeviceID,DATE,TIME,AI0,AI1,AI2,AI3,AI4,AI5,AI6,AI7

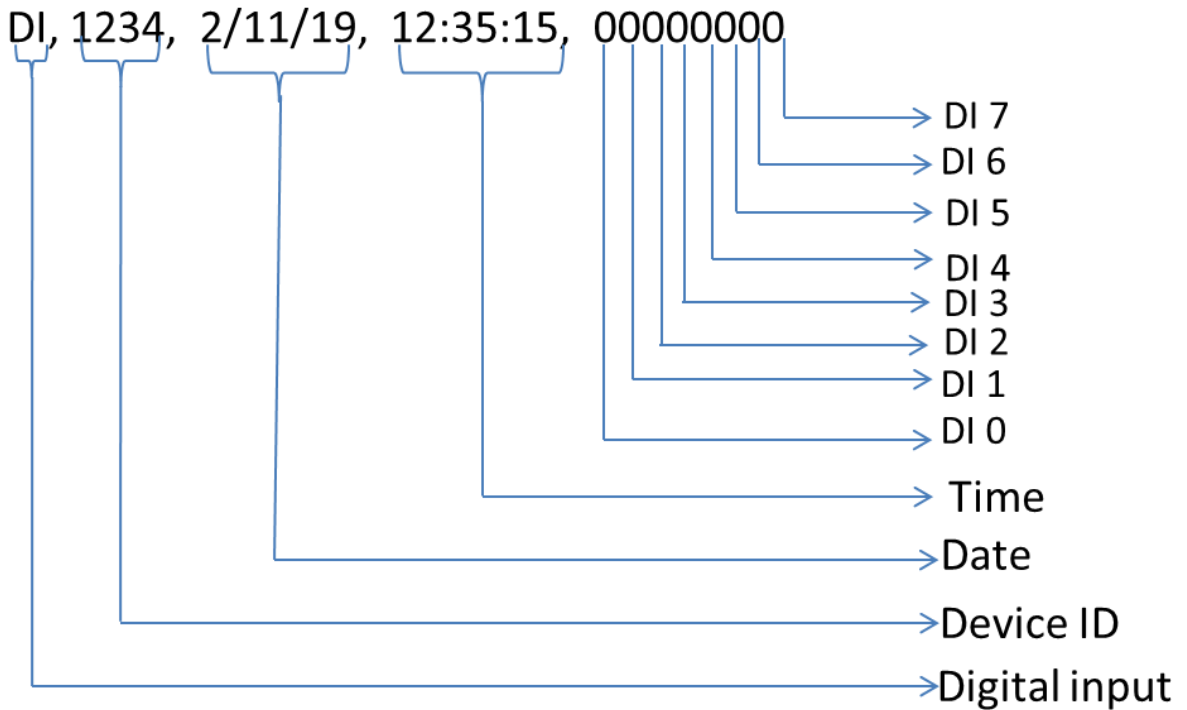
Ex:



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

5.8.1.4 Digital Input Data Parsing Format:

Parsing Format: **DI,DeviceID,DATE,TIME,CH1CH2CH3CH4CH5CH6CH7CH8**



Note: For Digital Input configuration look into the section 2.3 in this document.

6 Monitor

Com.Port I/O Settings Time settings Modbus Ethernet Wifi / GPRS Settings Monitor Change Password Device Id Settings Debug

Offline

From: Saturday, November 2, 2019 To: Saturday, November 2, 2019 Load

Log Files: 27_919A.CSV Download

Data Type: Voltage Channel: 1 To 8

	Date	Time	1	2	3	4	5	6
▶	27/9/19	11:11:49		-0.005	-0.005	-0.005	4.072	0.005
	27/9/19	11:12:25		-0.005	-0.005	-0.005	4.072	0.000
	27/9/19	11:13:1		-0.005	-0.005	-0.005	4.072	0.000
	27/9/19	11:13:36		-0.005	-0.005	-0.005	4.072	0.005
	27/9/19	11:14:12		-0.005	-0.005	-0.005	4.072	0.000
	27/9/19	11:14:48		-0.005	-0.005	-0.005	4.072	0.000
	27/9/19	11:15:24		-0.005	-0.005	-0.005	4.067	0.000
	27/9/19	11:16:0		-0.005	-0.005	-0.005	4.067	0.005
	27/9/19	11:16:36		-0.005	-0.005	-0.005	4.072	0.005
	27/9/19	11:17:11		-0.005	-0.005	-0.005	4.067	0.000
	27/9/19	11:17:47		-0.005	-0.005	-0.005	4.072	0.005
	27/9/19	11:18:23		-0.005	-0.005	-0.005	4.072	0.000
	27/9/19	11:18:59		-0.005	-0.005	-0.005	4.072	0.005

Channel: 1 Channel: 2 Channel: 3 Channel: 4 Channel: 5

Date: Monitor the Log files by selecting the Date and click on the Load

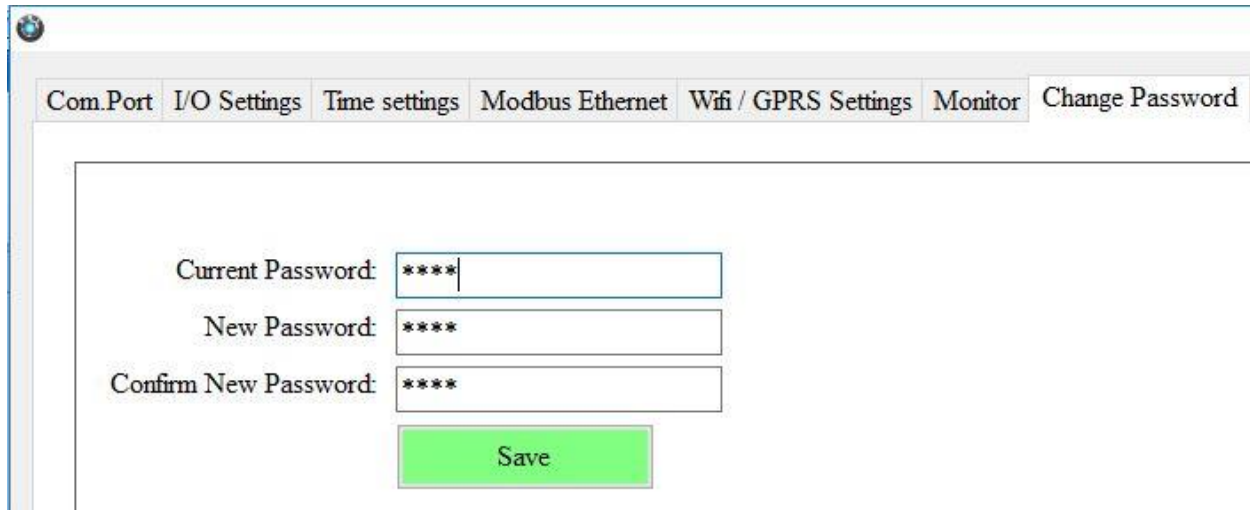
Log Files: You can select the .CSV files

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

Data Type: Convert the data to Voltage to Bits or Vice versa.

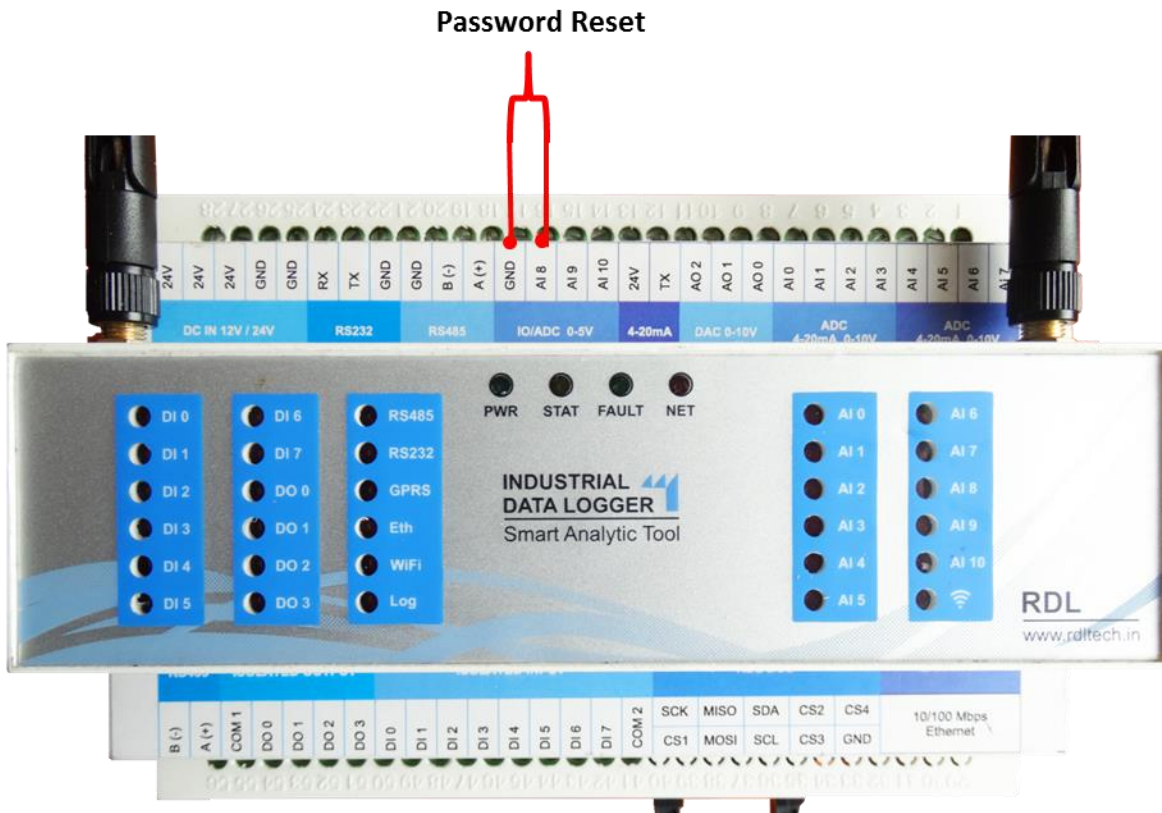
Channel: Select the Channel to display the Graph.

7 Change Password

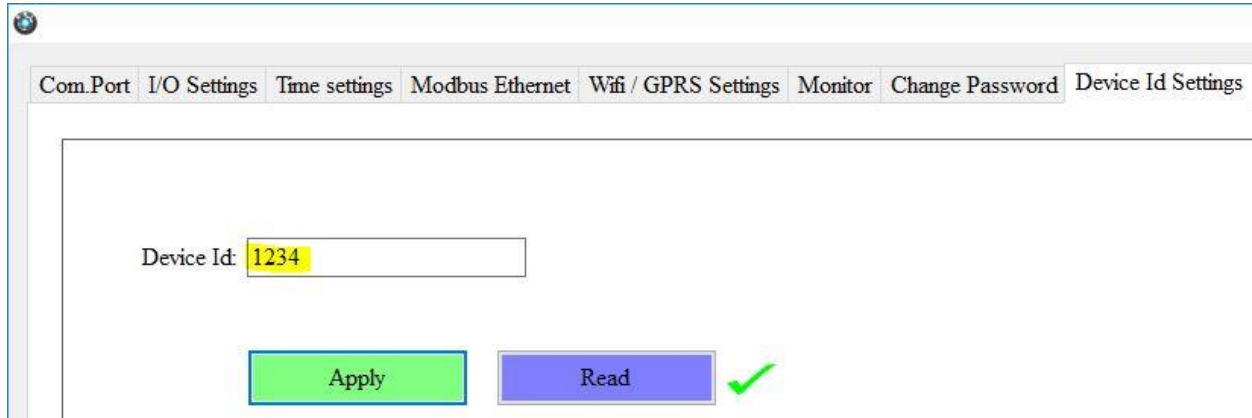


You can change the Default password by giving the New Password.

Forgot Password: You need to do the hard reset by connecting wire GND To AI8 and then restart the Datalogger. Password will be set to default password: “**RDL123**”

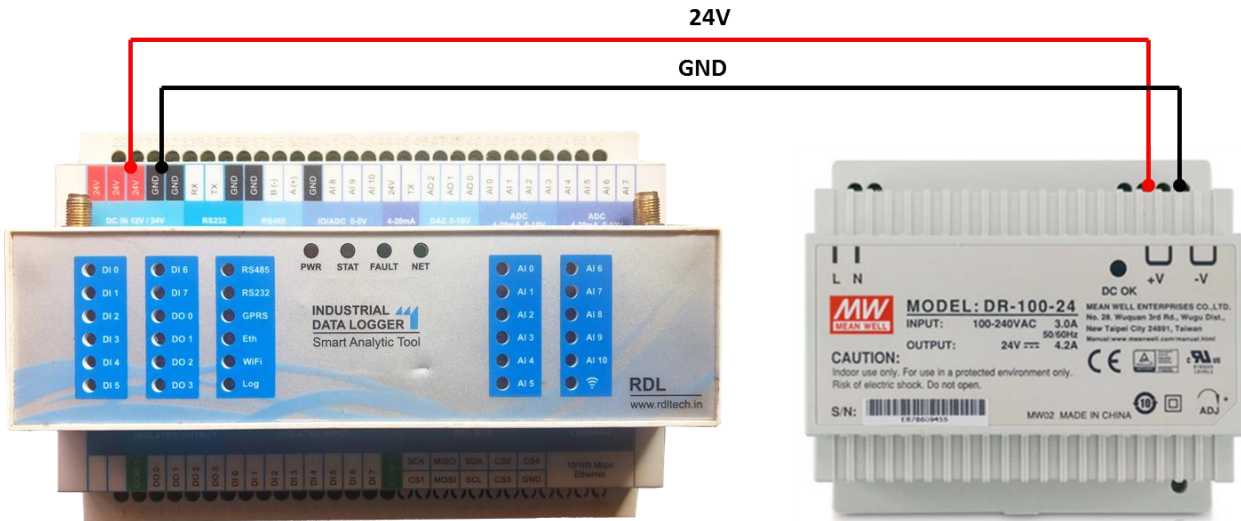


8 Device ID Settings



You can set the Device ID for the particular module.

9 Power Supply



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