SMDAQ-100W

DATA ACQUISITION SYSTEM

Manufacturer
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Product Description **SMDAQ-100W**

USER MANUAL

SMDAQ-100W is the Data Acquisition System.
I/O interfaces include:
• 8 CH 24V I/O
• 4 CH 0-10V/4-20mA 18bit input
• 2 CH 0-10V/4-20mA 12bit output
• Isolated RS485 transceiver
• Isolated power zones.
“IND.I/O” stands for “Industrial level I/O”. The Board offers an abundance of interface options, and has isolated power supplies for each of its three functional zones.
The processing and UI module of the Industruino IND.I/O comes in two variants:
• 32u4: 32K Flash / 2K RAM
• 1286: 128K Flash / 8K RAM

Safety instructions

WARNINGS

Do not connect any part of the device to voltages higher than 24V.

Always switch off power before you connect or disconnect An external device or accessory.

Avoid circuit or wire exposure. Do not touch exposed Connections or components when the device is powered on or when devices connected to it are powered on.

Use only with cables and accessories that are approved or recommended by Smark Automations.

Do not operate with suspected failures. If suspected Damage occurs with the device, have it inspected by qualified service personnel before further operations.

Do not operate in an explosive atmosphere.

Do not use in wet/damp conditions.

Keep device surfaces clean and dry.

Use only for applications described in the catalogue and the Manual, and only with third party devices or components if they have been approved or recommended by Smark Automations.

The device must be installed and wired by a trained Technician following the applicable local safety standards and regulations.

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Content

Product Description **SMDAQ-100W**

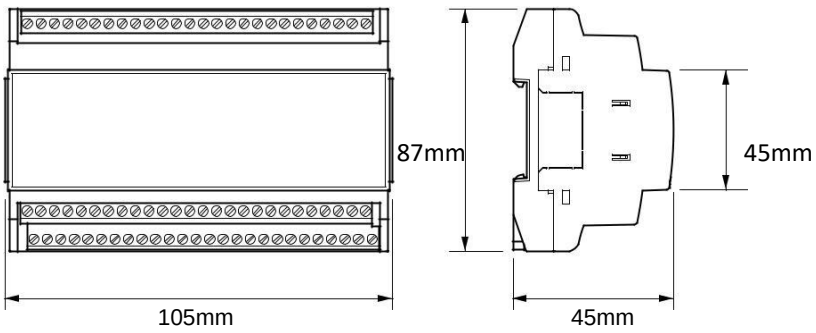
Item

SMDAQ-100W	Data Acquisition Module

Technical Data

Nominal voltage	DC 24 V ± 10%, 500 mA
Fuse	Resettable 0.5 A
Temperature Inputs	4 K-type thermocouple inputs, Cold junction compensated
Analogue Inputs	4, 0-10V OR 4-20mA configurable inputs
Digital Inputs	4, Pulled up to 24V through 10 Kohm resistor, Falling edge trigger
	Pulse counter inputs up to 500 Hz
Digital Outputs	2, Transistor output DC 24V, max 100 mA
Indicators	3 LEDs for indicating power, Network, and any error for the device
Interfaces	RS485, Wi-Fi
Housing	ABS Plastic housing
Degree of protection	IP20
Ambient temperature	0 °C to 45°C
Ambient humidity	20% to 80% r.h., non-condensing
Installation	Switch cabinet installed on top hat rail DIN TH 35-7.5
Weight	g
Dimensions	WxHxD mm 105 x 87 x 45

Dimensions



Installation

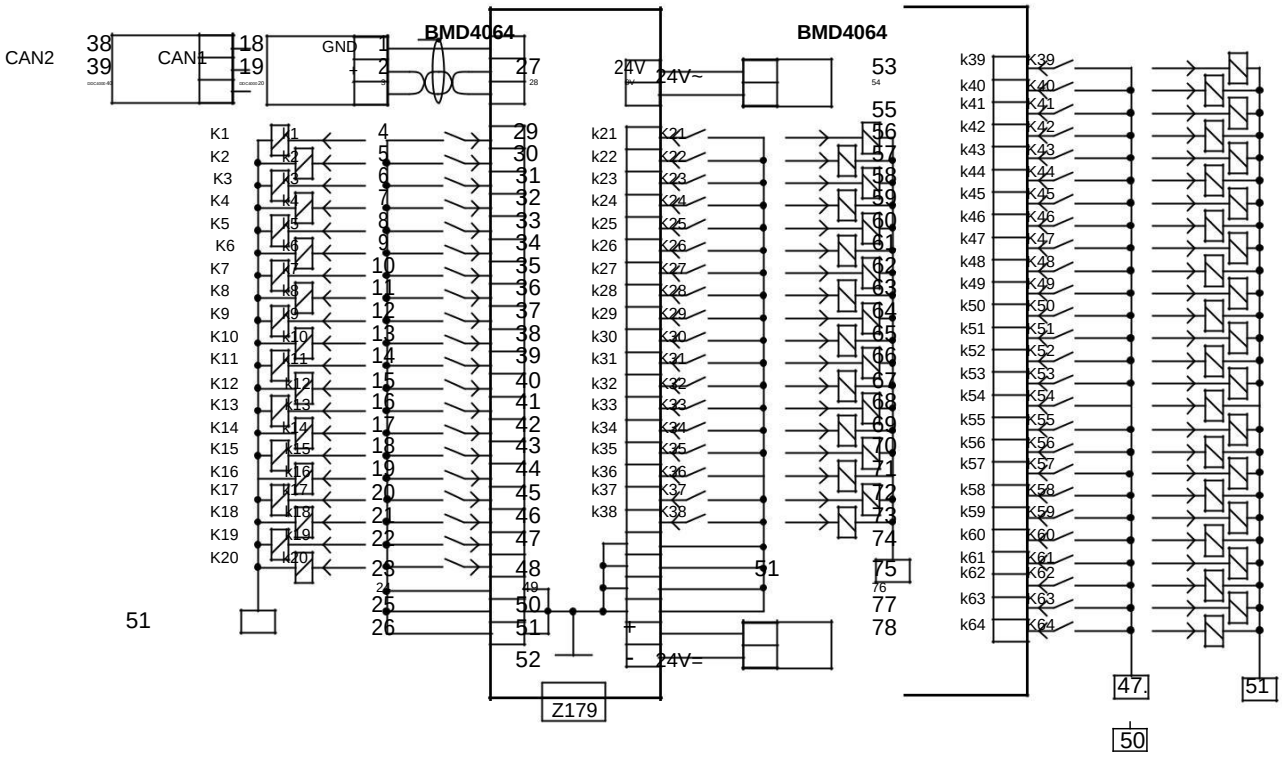
CAUTION

Switching on the power supply of unparameterized products can lead to unforeseen consequences such as malfunctions or material damage.
Switch on the power only after the device has been configured by the commissioning technician.

RS485 bus

Product Description

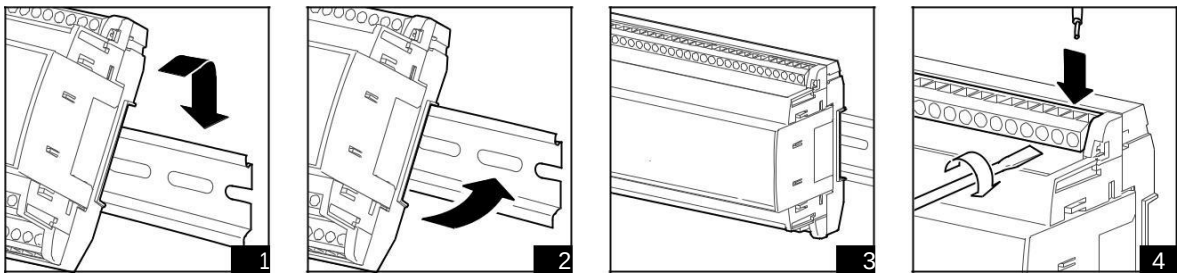
Connection



Mounting

WARNING

Contact with live parts of electrical domestic installation can cause death due to electric shock.
Mounting/removal may only be carried out when power is switched off.



Removal

WARNING

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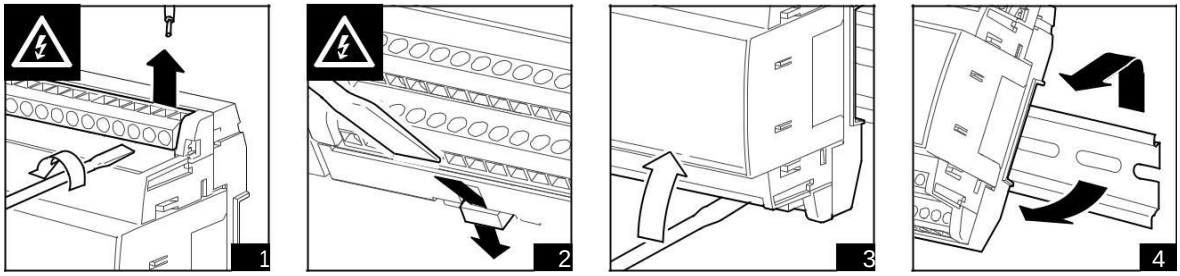
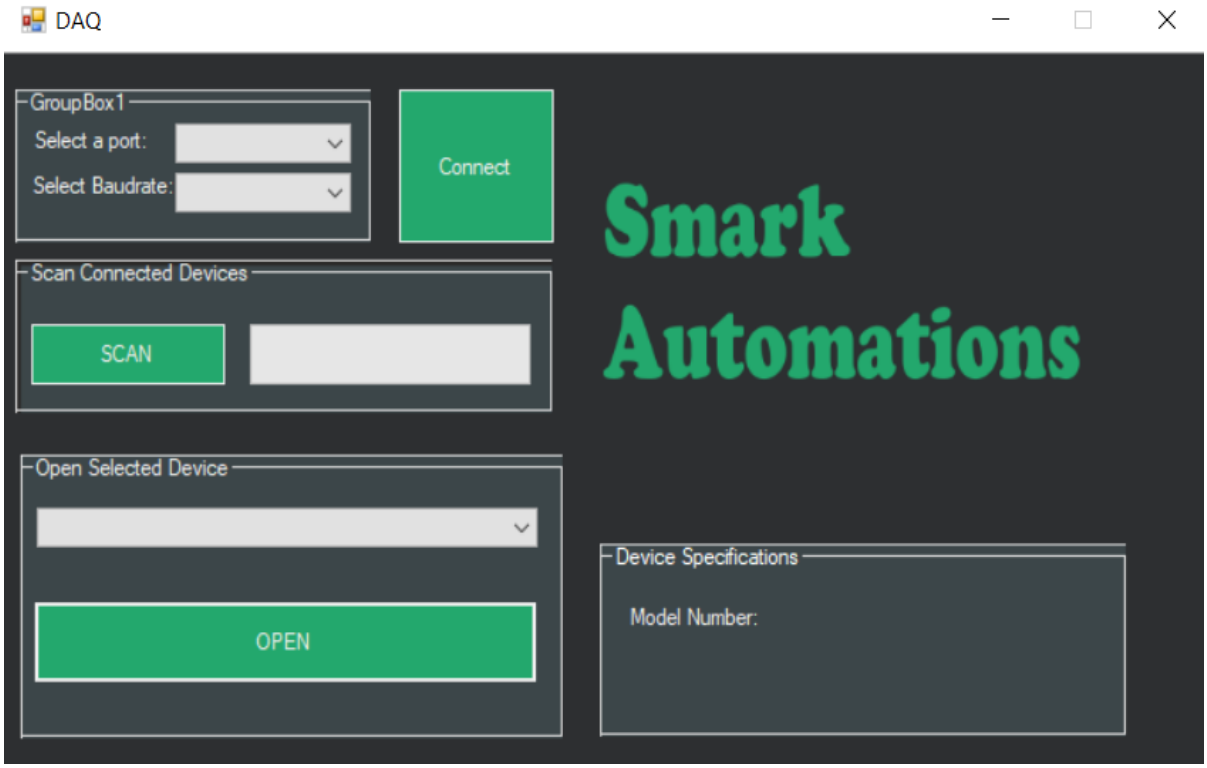


GRAPHICAL INTERFACE TO SET UP DATA ACQUASITION SYSTEM

STARTUP PAGE:

PROCEDURE TO SELECT CONNECT DEVICE-

- Select com port and baud rate and then click on connect to start communication.
- Click on scan button to get all the connected devices in drop down box.
- Select device and click on open to configure that device.

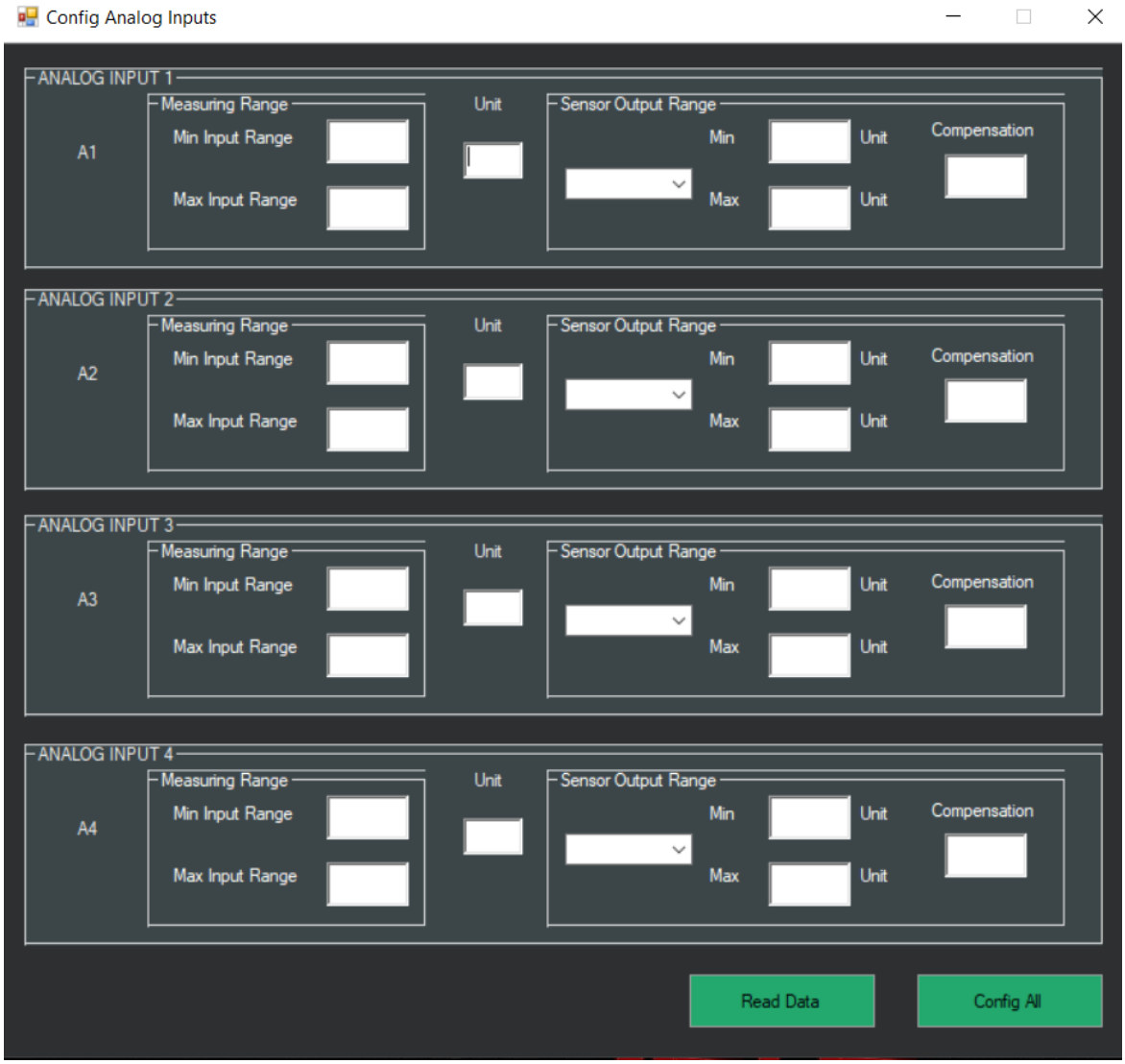


LIVE DATA WINDOW:

- After selecting a device, new window will be opened which will read and show real time values of sensors connected to the device.
- Data is refreshed every two seconds.
- It is showing connected sensor's required values.
- 'Temp graph" button will plot all the temperatures values on one graph.
- To Configure connected sensors click on settings

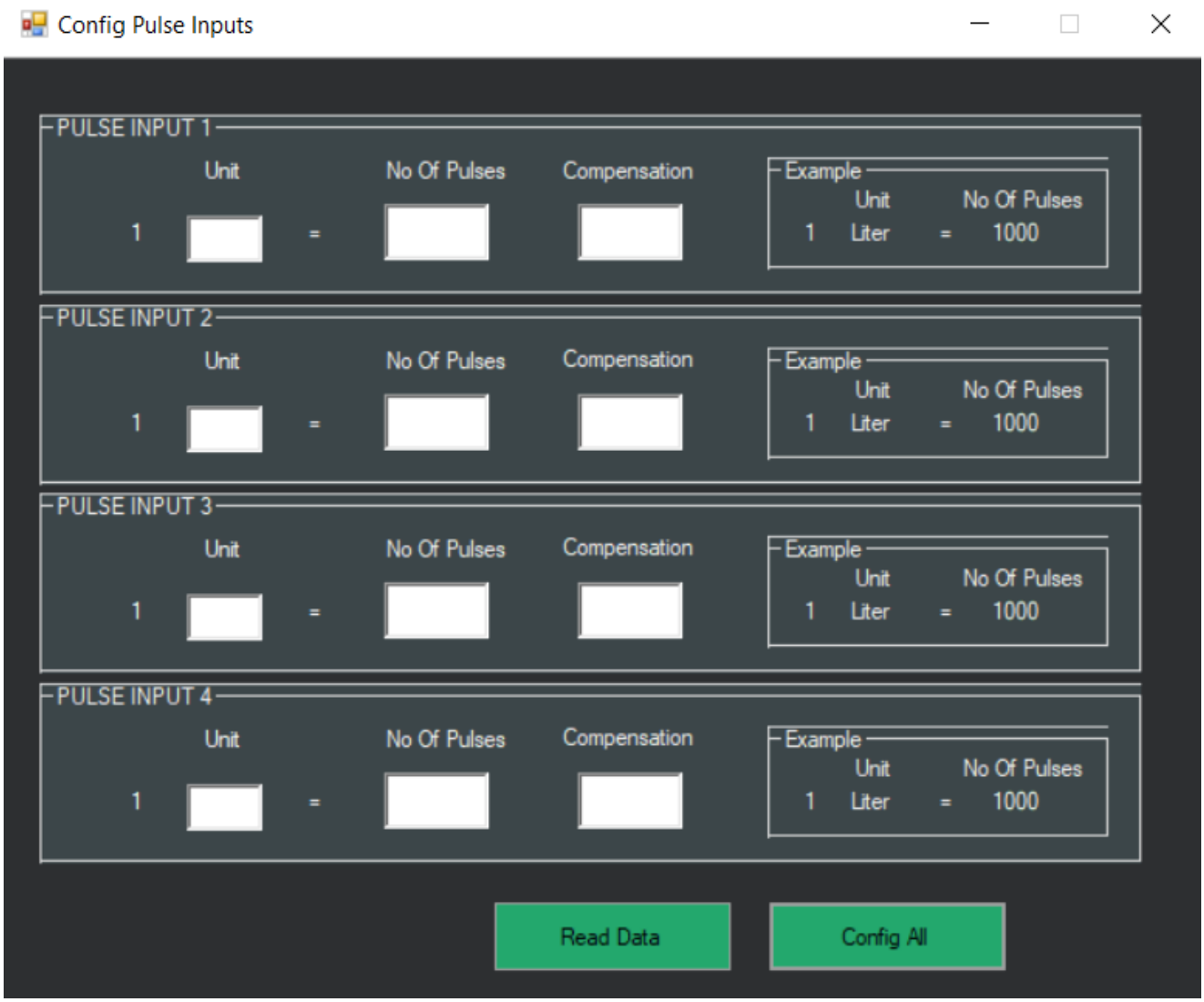
Analog Inputs Configuration:

- After selecting “Config Analog Inputs” from settings a new window will be opened which can be used for configuring analog inputs.
- Measuring range is range of connected sensor & unit is depend on type of sensor connected.
- Sensor Output range is range in which output of sensor will be mapped in terms of Voltage or Current which can be selected from drop down box in “Sensor Output range”.
- Compensation is provided by User to compensate existing error present in sensor.
- Click on “Read Data” to read saved existing settings.
- After reading make required Changes and then click on “Config All” to change settings.



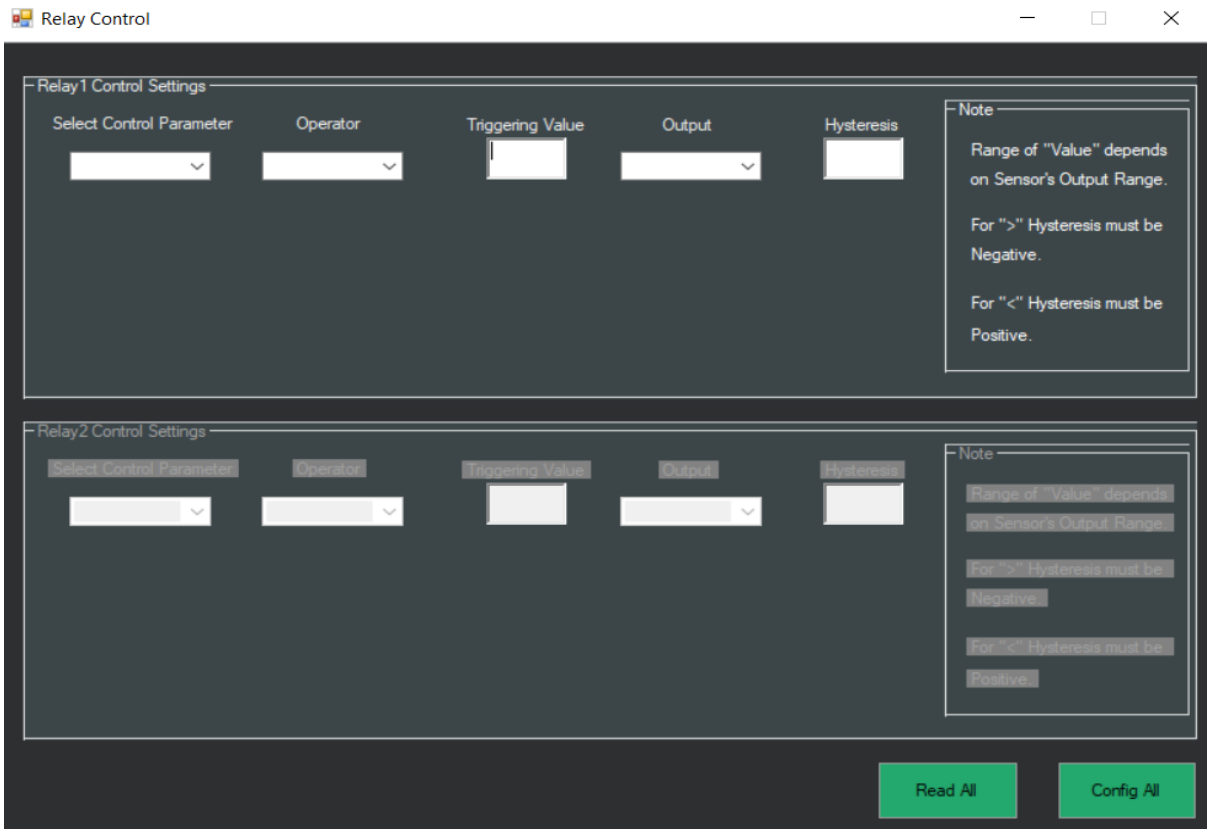
Pulse Inputs Configuration:

- After selecting “Config Pulse Inputs” from a new window will be opened which can be used for configuring pulse inputs.
- Unit depends on connected Sensor type. For flow sensor unit will be Litter (1 Litter = 1000 no of Pulses).



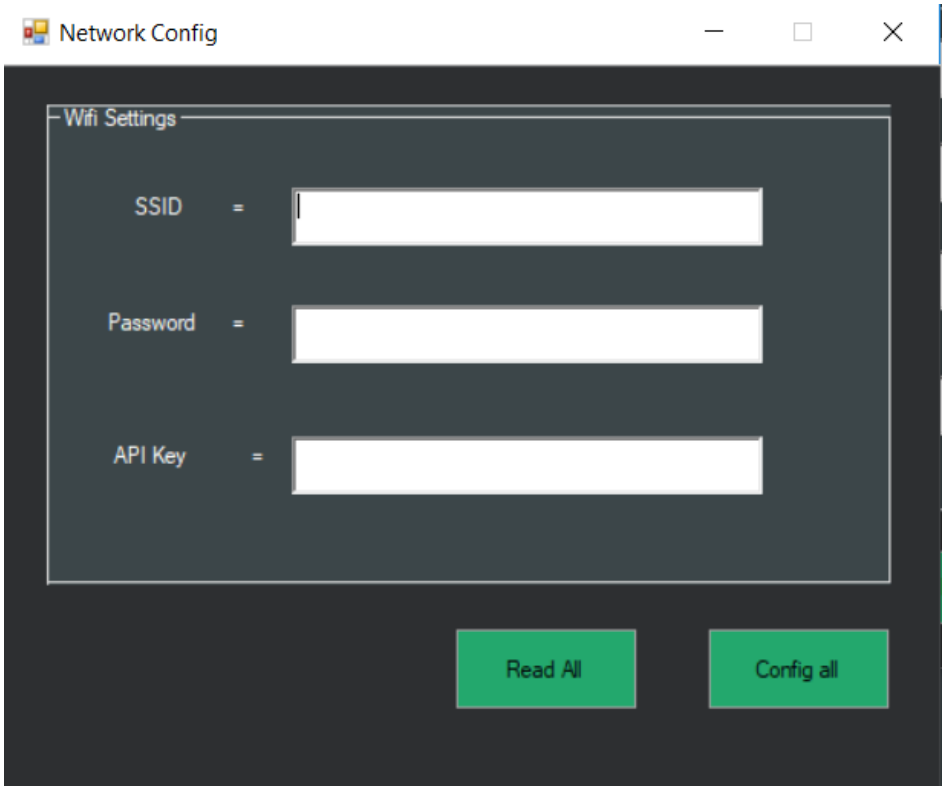
Relay Control Settings :

- To control triggering parameters of relay this window will be used.
- Relay will be triggered depending on inputs from
  - “Triggering Value” and “Hysteresis”.
- “Select Control Parameter” is used to select type of inputs for which relay will be triggered.
- Example : A1, A2, A3, A4 etc
  - A1 corresponds to Analog input channel 1.
  - T1 corresponds to Temperature input channel
- ”Operator” is Used to Select operation to be performed.
  - Example: <, >
- ”Triggering Value” is a value of relay and its range depends on “Sensors Output range” as set using “Analog Input Configuration” window.
- ”Output” is a Type of action to be performed when sensor input crosses “Triggering Value”
  - Example:Relay On ,Relay Off
- “Hysteresis” is a value by which lower or upper triggering point will be decided which depends on selected “Operator”.
  - Example: If “A1”, “>”, “Relay On” is selected then relay will be turned on when sensor input goes above
    - “Triggering Value” and it will be turned off when sensor input goes below (Triggering Value - Hysteresis)
  - Example: If “T1”, “<”, “Relay On” is selected then relay will be turned on when sensor input goes below
    - “Triggering Value” and it will be turned off when sensor input goes above (Triggering Value + Hysteresis)



NETWORK CONFIGURATION:

- After selecting “Network Config” from settings a new window will be opened which can be used for configuring Network parameters.
- SSID, Password, API key can be changed using this window.
- Read all saved settings by clicking on “Read All”. Then make required changes and configure it by clicking on “Config all”.



LED Indicators

POWER LED	INTERNET LED	ERROR LED	Meaning	Cause
Off	Off	Off	Module not in operation	No operating voltage or operating voltage too low
On	Off	Off	Module in Operation, but it is not connected to internet.	Device not connected to network.
On	Flashing	Off	Module in Operation, but it is trying to connect to internet.	
On	On	On	Module in Operation, and connected to internet but there is some error in module.	