

SMARTLOG 08/16 Data Logger



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1. Installation

Thanks for Choosing **Sunsui Process System's** Data logging system. Following are the details of how to install the software for **Sunsui** make Data Loggers.

1.1 Installation Procedure

- (1) Prepare the panel cutout on to the panel door with size – 92mm (H) X 187mm (V)
- (2) Insert the rear of the instrument through the front of the prepared hole.
- (3) With the front bezel of the instrument held tightly against the front of the panel, position the instrument and attach the mounting clamp from rear side (inside panel) the clamp may be mounted on sideways or top-bottom in pair.
- (4) Tighten the clamps on both sides equally. DO NOT OVERTIGHTEN THESE CLAMPS.
- (5) Wire up the terminals as per wiring diagram.

1.2 Mounting Dimensions

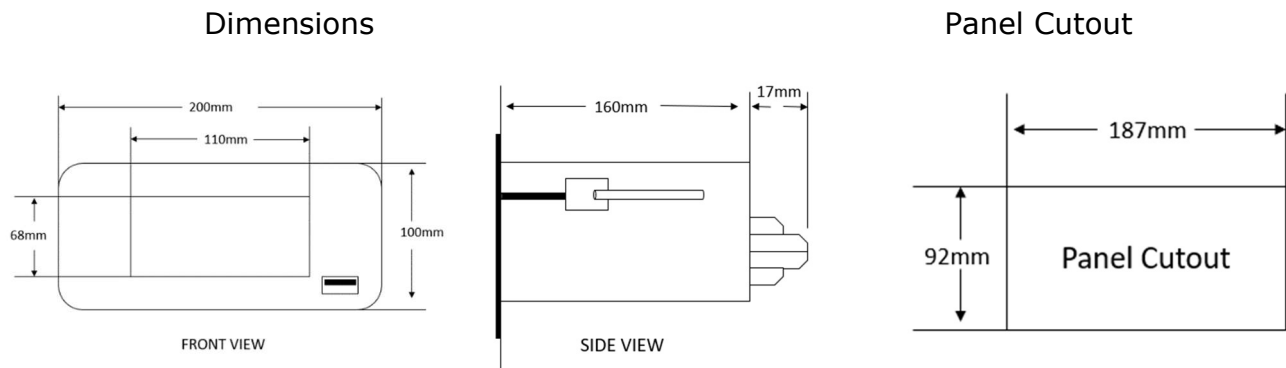


Figure 1: Dimensions and Panel Cutout

2. Wiring Details

2.1 Wire Diagram

Please refer to below diagram for connection of sensors, power and relay contacts

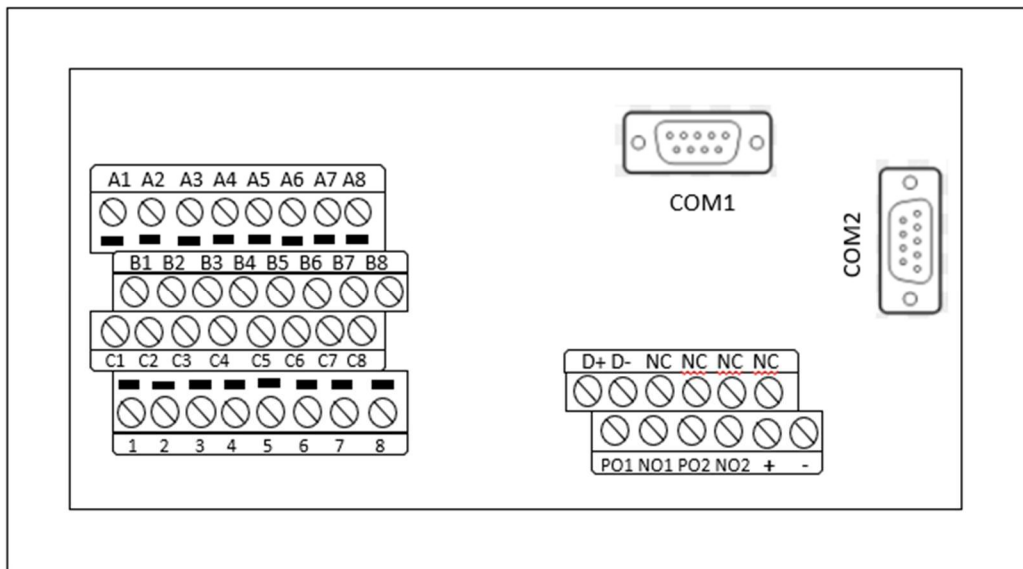


Figure 2: Back Panel Wiring

Terminal Details for Input Signal Connector Ch-1 to Ch-8
As per the sticker provided on Data logger

2.1.1 3 Wire RTD Connections

A	WHITE
B	WHITE
C	RED

2.1.2 0-20mA / 4-20 mA Connections

1	+ Ve
C	- Ve

2.1.3 mV Connections

1	+ Ve
C	- Ve

2. Wiring Details

2.1.4 Communication Port Details

COM1 – RS232 RS485 -- D+ & D-.

2.1.5 Terminal connections for power

+	+12 VDC
-	-12 VDC

2.1.6 Terminal connection for Relay Output

NO	Normally Open Terminal
PO	Common Terminal

2.2 Wiring precautions

Please take the following precautions while wiring.

- (1) Field wiring to the instrument, should be placed so as to avoid blocking the air flow, yet provide a suitable service loop to allow easy removal of unit with wiring attached.
- (2) Wires should be tied to maintain their order in the event they must be disconnected for any reason.
- (3) For connecting the wiring to the terminals, we recommend use of crimp terminal lugs with Insulated sleeves.
- (4) Route the input circuit wiring away as possible from the power and ground circuits to avoid Noise pickup.
- (5) Use proper-shielded wire to avoid electromagnetic interference.
- (6) Use of Auxiliary relay is recommended if load exceeds the output relay contact rating (230vac, 5A resistive load).
- (7) For using an inductive load such as Auxiliary relay on output relay contact, use a diode (For DC) or an RC filter (for AC) in parallel as a surge suppressor circuit.

3. Operation

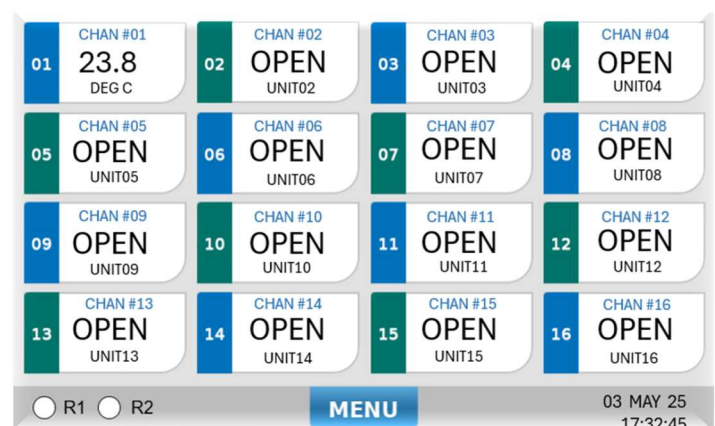
3.1 General Description

Front Panel Features.

- ✓ Capacitive touch screen display for easy handling.
- ✓ Brilliant: 5.1" Capacitive Touch Screen Display as a frontend display for optimum readability.
- ✓ USB 2.0 Port for data retrieval.
- ✓ All Channels digital readouts at a glance.



08 Channel Data Logger



16 Channel Data Logger

Figure 3: Front Screen

If you view the logger from the front in normal mode ON The Bottom Right-side figure is the Date (i.e.: -08 DEC 23) & below the date is the time (i.e.: 12:58:08) Then you will see the box for each channel with channel number, channel name, unit and value in black color. If this value crosses high set point, then the back ground color of value shown turns to RED color and upper side triangle in red color, and if it falls below the low set point, back ground color of value shown turns to RED color and downside triangle in red color. Bottom Left side replay status is showing. When the relay turns ON then circle turn to Green color from gray color. Menu button is available to enter in the setting functions.

3. Operation

3.2 Display Mode Settings

The SMARTLOG unit has two major display modes. Normal display mode and Individual channel display mode. In normal display mode the measured value for all the 08/16 channel displayed in single screen with individual channel blocks. The Individual channel display mode can be achieved by pressing any channel box. When the "PLAY" is pressed the channel No & its corresponding value is scrolled after every five second. In this mode the display shows the measured reading in 1-inch digital format for individual channel with its channel no. You can toggle the display to Normal display mode by pressing "BACK".

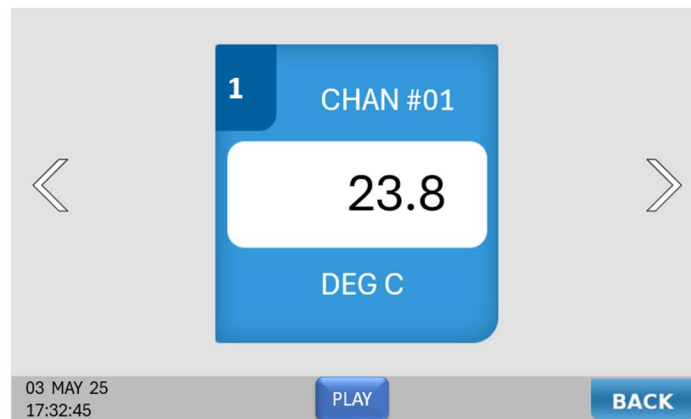


Figure 4: Individual Channel Readout

3.2.1 MENU

Observe the Digital reading display screen. Press "MENU" It shows New Screen, Give Password (Ex. ADMIN) & enter.

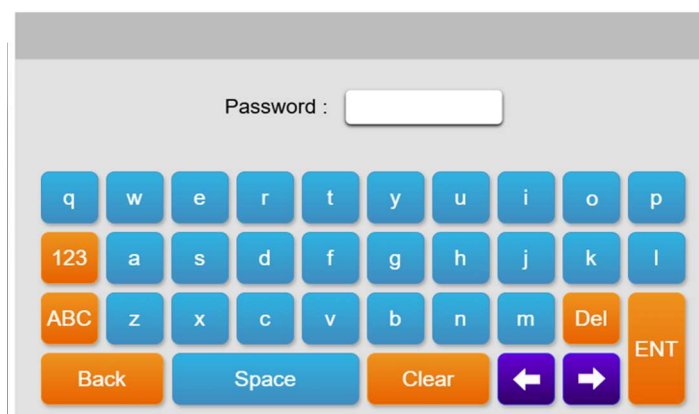


Figure 5: Enter Password Screen

3. Operation

3.3 Parameter Setting

After entering the password, the display shows new screen. The two main menus appear in screen 1. USB Backup and Settings

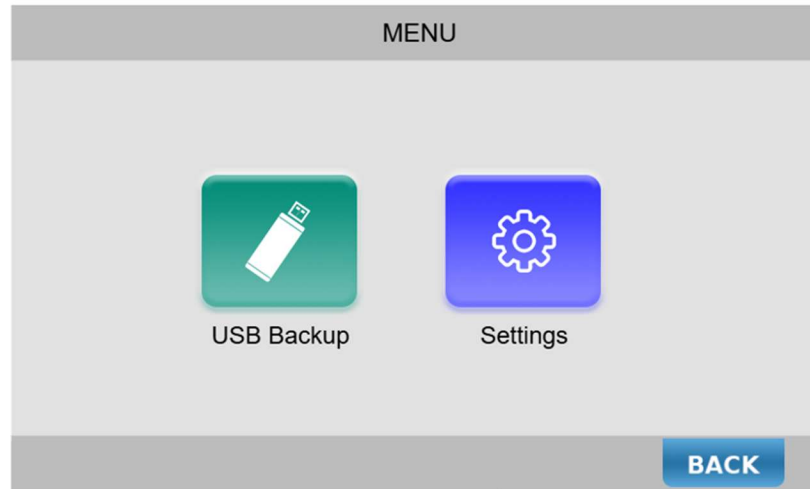


Figure 4: Parameter Setting

3.3.1 USB BACKUP

This menu is used to take the data in the pen drive. By connecting the pen drive to the data logger all the selected date and time data will be dump in pen drive. The data will be generated in excel format and Binary format. Excel format data is directly visible and Binary format data needs to dump in software and from the software user can generate the report in PDF, Excel format.

- To take the data in Excel format follow the below procedure.
 - 1) After clicking in the "USB Backup" option new window will open.
 - 2) Two options will be shown on screen "CSV File" and "Binary File".
 - 3) Click on the "CSV File" option.
 - 4) Select the Start Date, Start time and End date, End time.
 - 5) Click on "Backup" option.

3. Operation

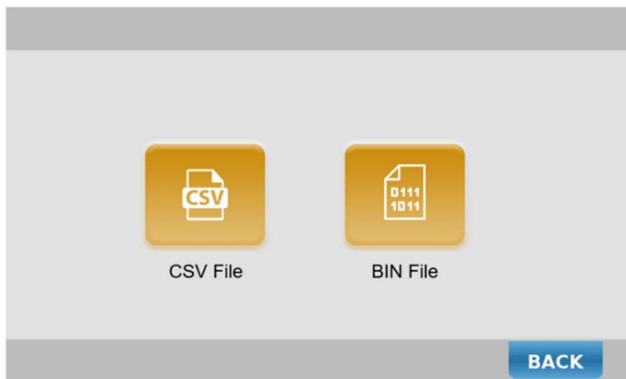


Figure 7: Click on "CSV File"

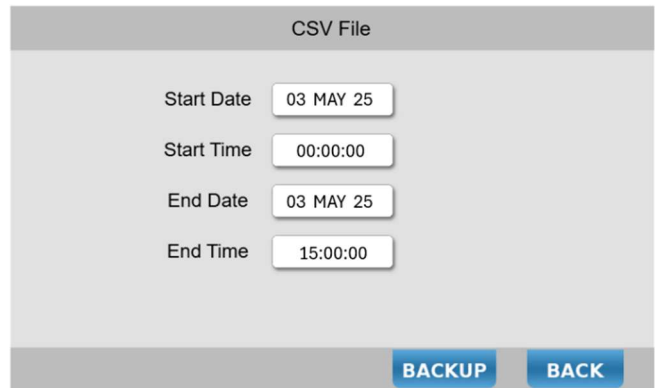


Figure 8: Select Date and Time and Click on "Backup"

- To take the data in Binary format follow the below procedure.
 - 1) After clicking in the "USB Backup" option new window will open.
 - 2) Two options will be shown on screen "CSV File" and "Binary File".
 - 3) Click on the "Binary File" option.
 - 4) Select the Start Date and End date.
 - 5) Click on "Backup" option.

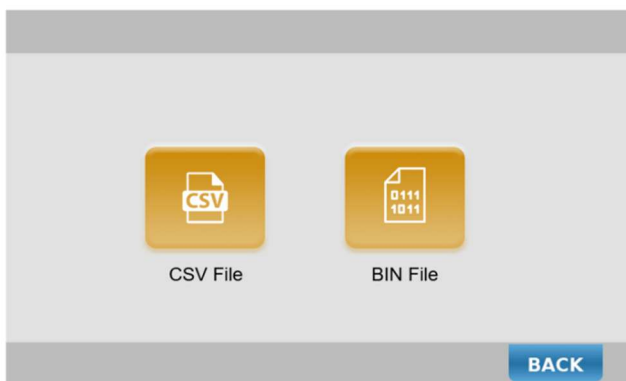


Figure 9: Click on "Binary File"

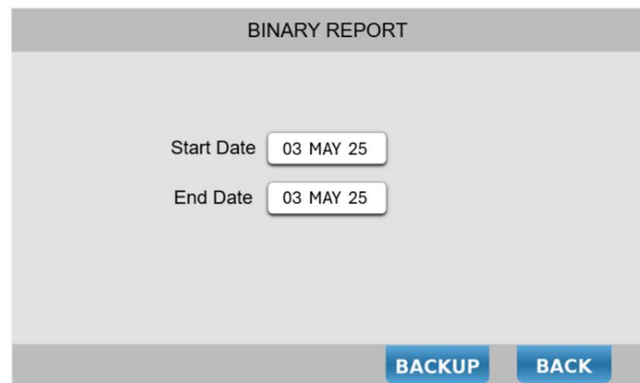


Figure 10: Select Start and End Date and click on "Backup"

3. Operation

3.3.2 SETTINGS

All the datalogger parameters will be set from the settings functions. Settings function contains the sub functions like CHANNEL, ALARM, RELAY, LOGGER & ERASE.

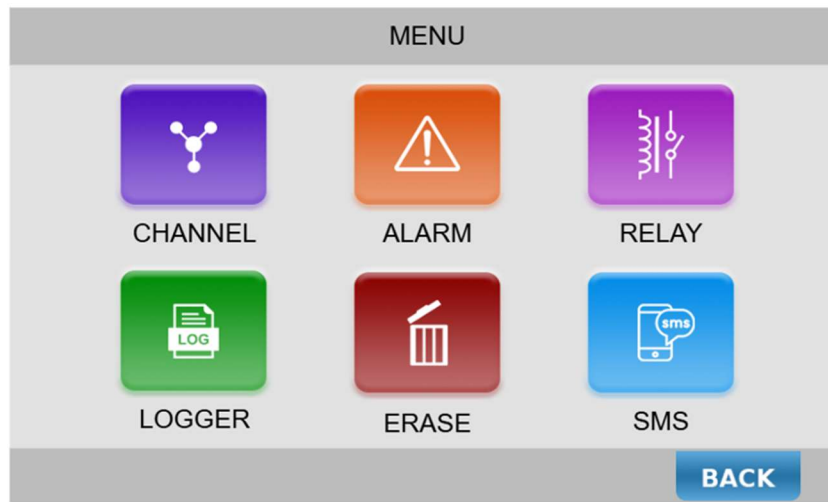


Figure 11: Setting function

3.3.2.1 CHANNEL

The image shows a 'Channel Setting' screen. At the top, it says 'Select Channel : 1' with left and right arrow buttons. Below this, there are two columns of input fields. The left column contains: 'Name' (CHAN #01), 'Type' (0-10V), 'Unit' (UNIT01), 'Format' (XXXX.X), and 'High Volt' (10.0). The right column contains: 'Offset' (+000.0), 'Mulfact' (+01.00), 'High Range' (1000.0), 'Low Range' (+000.0), and 'Low Volt' (0.0). At the bottom right, there is a blue button labeled 'BACK'.

Figure 12: Channel Setting

User can configure each and every channel through this mode. The various parameters that user can configure for each channel are:

1. Channel Number: User has to select the channel number which is to be configured
2. Channel Name: To assign any name to any channel. The name should be maximum 8 characters long.

3. Operation

3. Channel Type: To select any of the pre-programmed channel type. User should take precaution to select proper channel type and should apply signals according to the channel selected. The pre-defined channel types are:
 - PT 100
 - 0 – 20 mA
 - 4 – 20 mA
 - 0 – 250 mV
 - 0 – 500 mV
 - 0 – 1000 mV
 - 0 – 2 V
4. Channel Unit: To assign any unit to each channel. The unit should be of maximum 6 characters long.
5. Display Format: User can select the display format (**For millivolt & Current Input channel only**). The formats can be:
 - XXXXX
 - XXXX.X
 - XXX.XX
 - XX.XXX
 - X.XXXX
6. High Value: The highest value of the parameter when maximum signal is applied. **Applicable to all inputs.**
7. Low Value: The lowest value of the parameter when minimum signal is applied. **Applicable to all inputs.**

CAL CONFIG:

1. **Offset:** The user can configure offset for each channel. The maximum range for offset is -50.0 to +50.0. Default offset value is 0.0.
2. **Multiplication Factor:** Each channel can have a multiplication factor value. The range of Multiplication factor is 90 to 100. Default multiplying factor is 100.00.
3. **High Voltage:** For a sensor giving 0.2 to 1.8 Volt output for 600 mbar to 1100 mbar signal. The High Voltage should be programmed as 1.8V or 1800mV. **Applicable to only voltage input.**
4. **Low Voltage:** For a sensor giving 0.2 to 1.8 Volt output for 600 mbar to 1100 mbar signal. The Low Voltage should be programmed as 0.2V or 200mV. **Applicable to only voltage input.**

3. Operation

3.3.2.2 ALARM

Select Channel : ◀ 1 ▶

Enable ENB

Type HiLo Alarm

High Alarm 0040.0

Low Alarm +0015.0

Dwell time 00

Deadband 0.0

BACK

Figure 13: Alarm setting

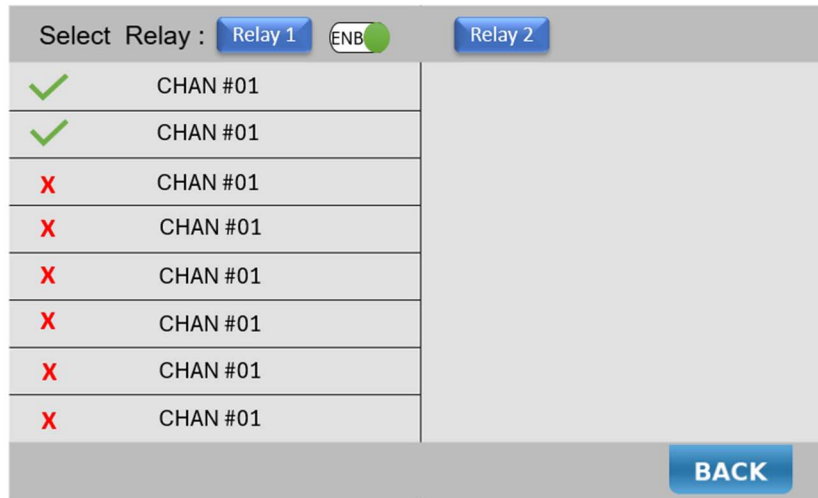
1. Channel Number - User has to select the channel number for which alarm settings to be carried out.
2. Alarm Enable: Enable or Disable alarm for the channel selected.
3. Alarm Type: Alarm type can be selected as High/Low/High-Low.
4. High set point: In High alarm type, the alarm will be generated when the parameter value is more than the set value.
5. Low set point: In Low Alarm type, the alarm will be generated when parameter value is less than the set value.

How to set the Alarm set point?

To set Alarm set point, click on the respective parameter button. The Previous set point value will be displayed. Select digit through INC and DEC button, to jump on next digit click SEL button. Click on ENT button to save the settings.

3. Operation

3.3.2.3 RELAY



The Relay Setting interface shows a 'Select Relay' section with two buttons: 'Relay 1' and 'Relay 2'. Below this is a table with 8 rows, each containing a status icon (green checkmark or red X) and the text 'CHAN #01'. The first two rows have green checkmarks, and the remaining six rows have red X's. To the right of the table is a large empty rectangular area. At the bottom right is a 'BACK' button.

Select Relay : Relay 1 ENB Relay 2	
✓	CHAN #01
✓	CHAN #01
✗	CHAN #01
✗	CHAN #01
✗	CHAN #01
✗	CHAN #01
✗	CHAN #01
✗	CHAN #01

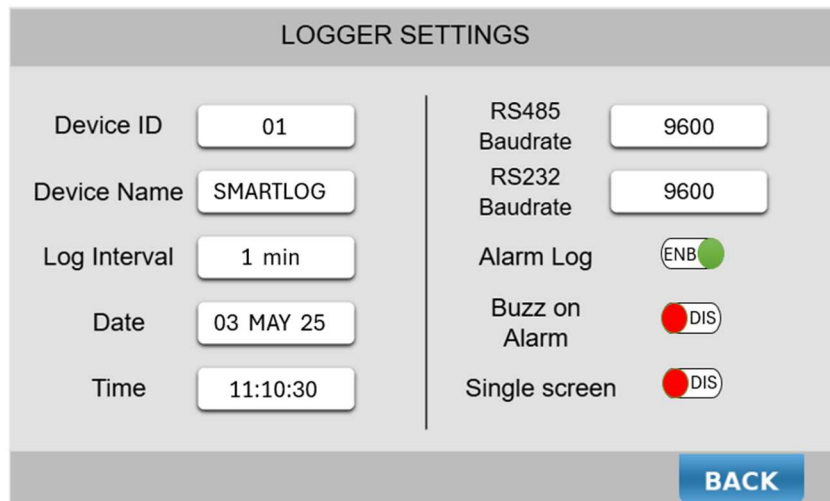
BACK

Figure 14: Relay Setting

There are two alarm relays available. User can configure the 2 relays for individual channels.

1. Select relay: Click on the relay 1 or 2 to select the relay.
2. Enable: Click on the enable to turn ON the selected relay.
3. Select channel: click on the RED color box to enable the channels. After clicking the box color will change to Green. Green color indicates the channel is enabled for replay output.

3.3.2.4 LOGGER



The Logger Settings interface is titled 'LOGGER SETTINGS'. It contains two columns of settings. The left column has: 'Device ID' (01), 'Device Name' (SMARTLOG), 'Log Interval' (1 min), 'Date' (03 MAY 25), and 'Time' (11:10:30). The right column has: 'RS485 Baudrate' (9600), 'RS232 Baudrate' (9600), 'Alarm Log' (ENB), 'Buzz on Alarm' (DIS), and 'Single screen' (DIS). At the bottom right is a 'BACK' button.

LOGGER SETTINGS	
Device ID	01
Device Name	SMARTLOG
Log Interval	1 min
Date	03 MAY 25
Time	11:10:30
RS485 Baudrate	9600
RS232 Baudrate	9600
Alarm Log	ENB
Buzz on Alarm	DIS
Single screen	DIS

BACK

Figure 15: Logger Setting

3. Operation

In this function user can set the Device ID, Device name, Date, Time, Log Interval and communication baud rate.

Device ID- This ID is unique and used in the software while communication.

Device Name- User can give any name like area, ID number etc. which will be printed on the report.

Log Interval- The data will be logged in the data logger through this interval. User can select the interval from the given list. The given intervals are 1s, 5s, 10s, 15s, 30s, 1min, 5min, 10min, 15min, 30min, 60min.

Date- User can set the current date in the logger.

Time- User can set the current time in the logger if any mismatch.

Baud Rate – There are two types of communication RS485 and RS232. Baud rate is used to communicate the logger with software. Software and logger baud rate should be the same.

3.3.2.5 ERASE

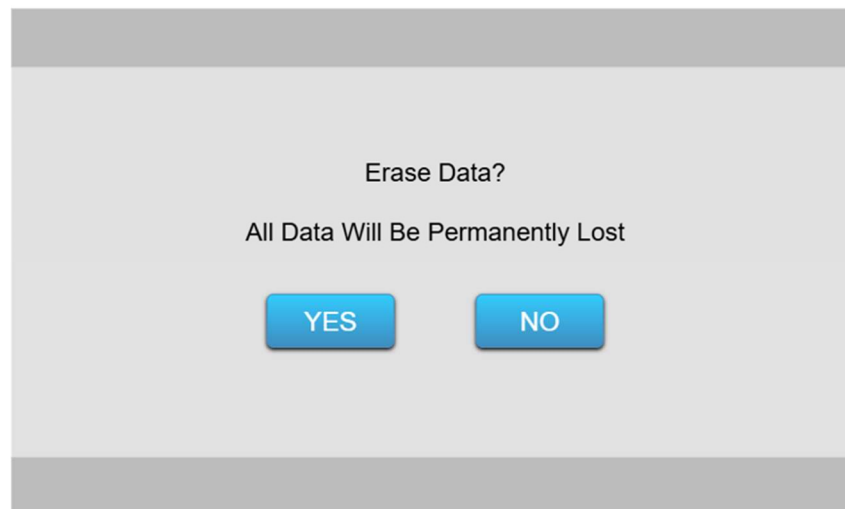


Figure 16: Erase Data

In this function all the data from the data logger will be permanently deleted. It will take 10-15 Min for complete delete process.

4. Maintenance

Basic troubleshooting procedure

The following questions should be asked & appropriate action is to be taken to the negative answers. All major corrective action can be accomplished by replacing the basic unit. No special tools are required except screwdriver & multimeter.

1. When you switching ON the unit check whether the display is showing anything? If yes then go for step 2 & if not check for the power input connections, check whether the unit is getting proper supply at proper terminals. Connecting the supply to the wrong terminals may damage the unit permanently.
2. Check, is the display showing actual value properly. If yes follow step 3, if not check the sensor input, check whether the sensor or input is connected at proper terminals in proper way (+ve & -ve polarity).
3. After connecting the sensor if the actual value shown is not proper then check the calibration is correct according to the calibration constant table.

5.Installation of Software

Insert the pen drive.

- Copy the setup file "smartscanSetup.exe" which available in the pen drive to any folder on the PC.
- Before installing the setup file, turn off the antivirus for moment to install the setup.
- Double click on the "smartscanSetup.exe". installation process will start.
- After installation the setup file, copy the license file from the pen drive in the "Smartscan" folder which is created in the C drive/Program files (x86).
- Shortcut will be created on the desktop to open the software.

6.Miscellaneous

CHECKING ACCESSORY ITEMS

Check that all of the following items are present.

- SMARTLOG data logger unit
- Mounting Clamp – 1 pair
- Serial link cable between data logger/Recorder & PC Software CD
- Pen Drive contains – Software setup, license file, calibration certificate and user manual.