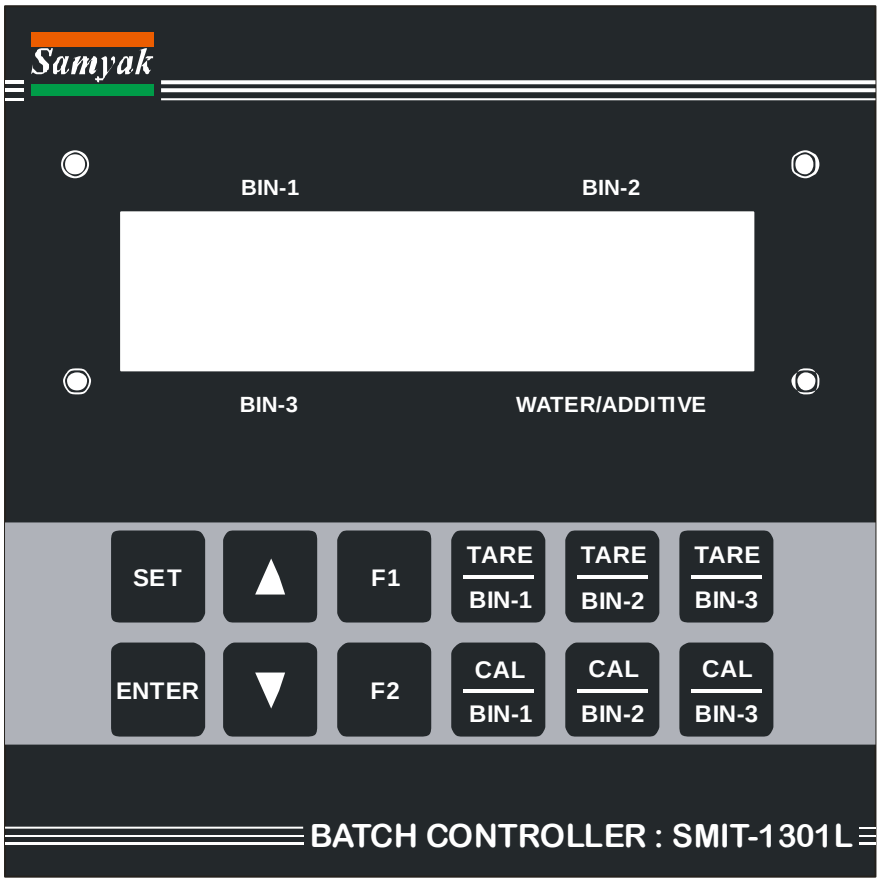
OPERATING MANUAL
OF
RM PLANT CONTROLLER
SMIT-1301L



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CHAPTER 1

1.1 INTRODUCTION

- This RM PLANT CONTROLLER UNIT is based on a Popular 8-bit Microcontroller. The system is designed to have Two load cell inputs and 16*2 LCD Display.

1.2 SPECIFICATIONS:

1.Mains supply	110-230V AC +/- 10% Single Phase, 50 Hz Nominal
2. Key board	12 keys keypad
3. Display	16*2 LCD Display
4. Analog Input	2 Channel Load Cell Inputs
5.Relay Output	3 Relays Outputs

CHAPTER 2

2.1 SYSTEM DESCRIPTION

- The system has 16*2 LCD display
- It has Two Load Cell inputs, Three Relays Output

2.2 HARDWARE DESCRIPTION

- The unit has only order type's hardware. Construction of the system is Modular. The system consists of:
  - CPU CARD
  - Front Panel (KB/Display)
  - Power Supply card
  - Analog input card

2.2.1 CPU CARD

- As described earlier, it is based on microcontroller. The configuration data is stored in non-volatile RAM. Battery is not required for retention of data.
- Watch dog circuit is also incorporated on the CPU card to prevent malfunctioning of the system due to external noise thro' power supply or any other source. If the CPU starts malfunctioning, the watch dog circuit resets it and system will be brought to it's Power On status.
- The card is fitted on the backside of the front panel on four fixing screws with Nuts.

2.2.2 POWER SUPPLY CARD

- This card provides regulated DC voltages to the system.
- SMPS is fitted in this card.

2.2.3 ANALOG INPUT CARD

- This card provides Load cell Inputs to the system. This card is connected with CPU card by Flow solder.

2.2.4 BACK PANEL

- For back panel connection refer Appendix. Termination details are available on the back panel. The unit is supplied with all the mating connectors.

2.2.5 ENCLOSURE

- This is a metallic enclosure. It is fully powder coated. This enclosure needs DIN standard (138x138 mm) cut out for mounting in the panel. It is mounted on the panel using side brackets.

2.2.6 FRONT PANEL

- Front of the instrument is a key board. On the front there is LCD display. As explained earlier. The front panel has 12-keys.

2.3 INSTALLATION GUIDE

- Unpack the instrument from the packing box carefully.
- Mount the instrument in the panel cutout of 138mm * 138 mm.
- Fix the instrument with the panel using side brackets.
- All the electrical connections to be done at the back panel of the unit using spade lugs. Refer the Appendix for back panel layout.
- Make sure that no wire is connected loosely to avoid generation of spark and RFI. Connect mains cord on the back panel on the Phase, Neutral and Earth terminals.
- Instrument is configured for 230VAC Mains SELECTABLE operation.
- Earth the instrument properly.
- Some of the contacts are powered. Hence don't touch any terminal directly when power is applied to the instrument. Whenever any connection is to be made or removed from the unit, always switch off the power.

CHAPTER 3:

OPERATING DETAILS

The following paragraphs give detailed description of how to operate the unit. For efficient use of the instrument one must study and understand this section.

3.1 Display & Keyboard

The unit has LCD Display. The system has 12 keys organized as 6*2 Matrix.

List of keys and their functions:

KEYS	FUNCTION
SET	Use As "INDEX" Key to See and Modify All Parameters
△ (INCREMENT)	For Increment Select Digit Value.
F1	Use As "HOME" Key
TARE BIN-1	For Tare Bin-1 Weight & it is Also use for Zero Calibration of Bin-1
TARE BIN-2	For Tare Bin-2 Weight & it is Also use for Zero Calibration of Bin-2
TARE BIN-3	For Tare Bin-3 Weight & it is Also use for Zero Calibration of Bin-3
ENTER	For save Parameter Value.
▽ (DIGIT SELECT/NEXT)	For Digit Select / Go to Next Parameter
F2 (EDIT)	For Edit Value Of Parameter
CAL BIN-1	For Span Calibration Of Bin-1
CAL BIN-2	For Span Calibration Of Bin-2
CAL BIN-3	For Span Calibration Of Bin-3

3.2 Edit Mode

In this mode user can verify or update various parameters. One can perform this Mode only when the instrument is in Stop mode.

How to Change Parameter Value:

- For Change Any Parameter Value Press “SET” Key So Pass word page will be Display.
- Now Press “F2” (Edit Key) So First Digit Will be Flashing.
- Now Set Pass word: 1234 Using (Digit Select) key and (Increment) key.
- Now Press “ENTER” Key So Following Parameters Will be Display.

1. DATE
2. TIME
3. TIMER 1 (0000-9999) (Time in Second)
4. TIMER 2 (0000-9999) (Time in Second)
5. TIMER 3 (0000-9999) (Time in Second)
6. TIMER 4 (0000-9999) (Time in Second)
7. 1:SKIP/UNSKIP (For Channel 1 Skip/Unskip)
8. 2:SKIP/UNSKIP (For Channel 2 Skip/Unskip)
9. 3:SKIP/UNSKIP (For Channel 3 Skip/Unskip)
10. TIMER 5 (0000-9999) (Time in Second)
11. CLEAR TOTAL (Enter Pass word :3210 For Clear Totaliser)
12. PRINT LAST (0000-9999)
13. CLEAR BATCH
14. BAUD RATE(4800/9600/19200)
15. SP 1 (0000-9999)
16. SP 2 (0000-9999)
17. SP 3 (0000-9999)
18. SITE NAME

- After Change Any Parameter Value Press “ENTER” Key to Save This Value.

3.3 LOAD CELL CALIBRATION

- The Zero and Full-scale values are stored in NVRAM. Switch on the instrument and allow 15 minutes of warm up time before starting calibration.
- Connect the load cell to be used for the weight measurements at the load cell input terminal**.** (See the CONNECTION DETAILS for the same).

ZERO CALIBRATION:

- For Zero-calibration, there should be No load (weight) on the weigh-platform connected to the load cell.
- Press**"TARE/BIN-1"** key.
- This value will be stored as Zero-calibration reading.

SPAN CALIBRATION:

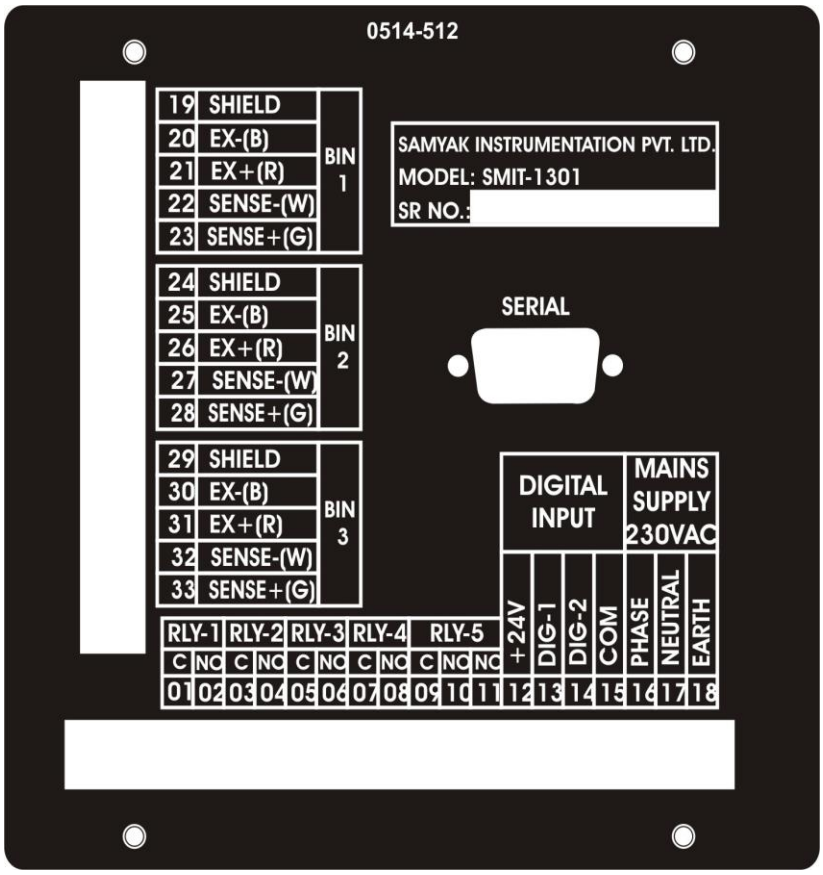
- Now put some known weight on the platform
- Press **'CAL/BIN-1'** key So PASSWORD Page will be Display
- Now Set Pass word 1234 and Press Enter Key so Digit Will be flashing on Window.
- Now Set Current value of known weight on platform using digit select key & increment key
- Press **' ENTER'** key after few seconds.
- This reading will be stored as span value.
- For calibration of **BIN-2** and **BIN-3** Apply same procedure.

Now the instrument is calibrated. Check linearity of the instrument by applying different weights on the weigh-platform.

CHAPTER 4: BACK PANEL CONNECTOR DETAILS

RELAY OUTPUT:

- **RL 5 is Use For RELAY-1**
- **RL 3 is Use For RELAY-2**
- **RL 4 is Use For RELAY-3**



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