Technical & User Manual
Indicator: SMIT-3016

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1. Introduction

This Manual provides general information on the installation, configuration, calibration and operation of Process Indicator: model SMIT-3016.

It is based on a popular micro controller. It provides excitation to the Load cell accepts differential analog signal from the Load cell, converts into engineering values & displays. It has 6-digit, 7-segment Red LED Display and 4 keys.

The unit can be used as an Indicator & Controller. It can generate alarm outputs and/or perform batching/filling operation.

It is housed in a panel mount plastic enclosure.

2. Technical Specifications

2.1 Operating Power Supply

Input Power Supply: 24VDC or 230 VAC +/- 10%, Power Consumption < 5.0 W

2.2 Performance

Sampling Rate : 15 Readings /Second
Excitation Supply : +5VDC, Load Cell Signal Input Range: 0-15mV
Filtering : Analog & Digital
Decimal : 0, 0.0, 0.00, 0.000 selectable
Calibration Method : Via Front Panel Key Board or Computer Interface Using Serial port

2.3 Display: 6-Digits 7-Segment 0.56" Red LED Display
Keyboard: Keyboard: 4 keys Membrane type

2.4 Hardware Features

EEPROM to store various configuration parameters, Peak/Hold value

2.5 Environmental

Operating Temperature: 0 to 55 °C
Storage Temperature : 0 to 70 °C
Humidity : 30 to 90% RH (Non-condensing)
Warm-up time : <10 Min

2.6 Analog Input

Type : 24-bit
Load cell : 4-wire single channel load cell input
Digital Inputs: Up to 2, Potential free contacts

2.7 Outputs Options:

Relay outputs : Up to 2, Configured as Alarm or Batching
Serial Interface : RS 232/485 serial port for remote display/Printer/Computer
Standard Protocol : MODBUS/ASCII
Baud Rate : 9600, 19200, 38400, 57600 selectable

2.8 Analog Output

Resolution : 16-bit
Current: 4-20mA (Compliance resistance up to 500 Ohms)/Voltage: 0-10VDC

2.9 Mechanical

Enclosure : General purpose made up of Plastic
Mounting : Panel Mount
Dimensions: Outer : 96 mm (W) x 48 mm (H) x 120 mm (D)
Cutout: 92 mm (W) x 44 mm (H)

3. Installation & Mounting Details

3.1 Installation

- The instrument is to be powered from an external 24VDC or 230VAC source. Clean power source is required for reliable operation.
- The incoming power should be from a source, isolated from other process equipments.
- Cables carrying primary and switched power should be routed away from load cell and other signal cables to avoid electrical interference.
- Relays, motor starters and other inductive devices connected to the equipment must have reliable and effective arc/surge suppression.
- Plastic insulating tape should not be used on load cell connections.
- Heavy electrical equipment should not be installed close to the weighing equipment.
- Excessive vibration will affect the accuracy of the weigh system and depending on the severity; it can cause damage to electrical and electronic components.
- The atmosphere should be dust free and not contain any corrosive gasses or materials, which could adversely affect the equipment.
- Check proper earthing of the unit.
- Check proper voltage is available from source
- Check proper connection of load cell.

3.2 Mounting

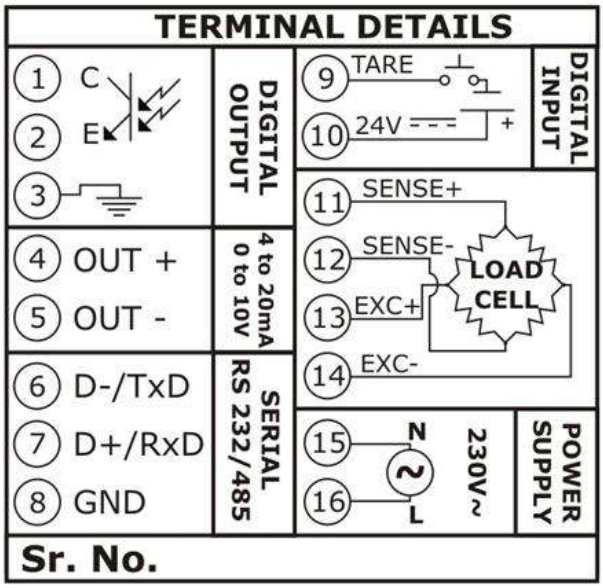
- Install the instrument in a location, where it will not be subjected to excessive heat, humidity or vibration.
- The unit should be installed at eye level to allow easy viewing of the display and access to the front panel keys.
- Avoid direct sunlight on the front of the instrument.
- Mount the instrument in the panel cutout of 92 mm (W) * 42 mm (H).
- Fix the instrument with the panel using two nos. brackets provided with the instrument.

4. Features and Wiring Details

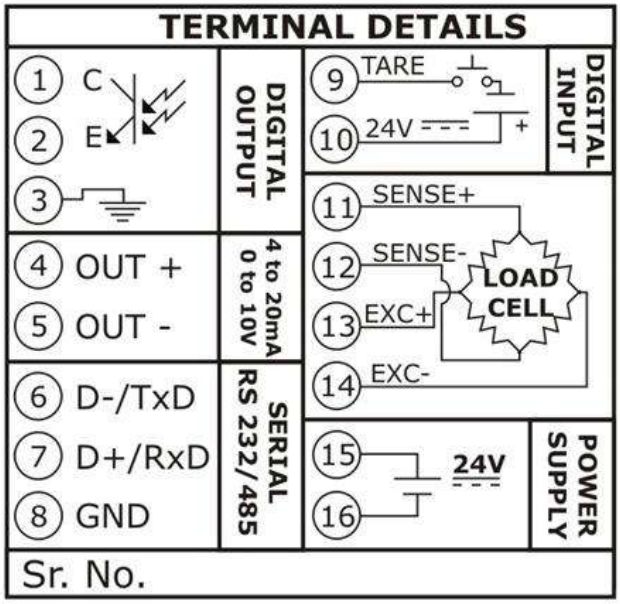
4.1 Back Terminal Detail

Refer Back Terminal details for connections.

Connections details for 230VAC



Connections details for 24VDC



4.2 Power Supply

Unit is to be operated with external 24VDC or 230 VAC supply. Power source should be clean for reliable and accurate operation of the unit. External supply should have necessary surge protection to avoid damage to the indicator

Connect Positive node (+Ve) of power supply to Terminal No.1 and connect Negative node (-Ve) of power supply to Terminal No.2 of the unit.

DC Power Supply	SMIT-3016 Terminal
+Ve (24VDC)	Terminal No.15
-Ve (24VDC)	Terminal No.16

DC Power Supply	SMIT-3015 Terminal
Neutral	Terminal No.15
Line	Terminal No.16

4.3 Load Cell interface

4-wire load cell is to be connected with the unit. Load cell cable should be shielded. Unit provides excitation voltage of 5VDC to the load cell.

Connect Shield of the cable to Terminal #11, SENSE+ (Green) to Terminal #12, SENSE- (White) to Terminal #13, EXC+ (Red) to Terminal #14, EXC- (Black)

Load Cell Cable (4-core shielded)	**SMIT-3015 Terminal**
SENSE+ (Green)	Terminal No.11
SENSE- (White)	Terminal No.12
EXC+ (Red)	Terminal No.13
EXC- (Black)	Terminal No.14

4.4 Analog Output

Indicator generates analog output signal (4-20mA or 0-10VDC, factory configured) proportional to displayed weight. The same can be used as an analog input proportional weight to PLC.

This is an optional feature.

- It is generated by using 16-bit fast settling DAC.
- It can be electrically isolated or non-isolated from load cell input & power supply.
- Compliance resistance of current output is 500 Ohms.

Use Terminal #4 for the Positive node (+) of Retransmission output (4-20mA/0-10V) and Terminal #5 for the Negative node (-) of Retransmission output (4-20mA/0-10V).

Analog Output	**SMIT-3015 Terminal**
OUT+	Terminal No.4 (OUT+)
OUT-	Terminal No.5 (OUT-)

4.5 Serial Output Connections

The indicator can be factory configured to provide serial interface.

- This serial Port can be factory configured as RS-232 or RS-485.
- RS-232 connections: Use Terminal No.6 for TxD, Terminal No.7 for RxD and Terminal No.8 for GND
- RS-485 connections: Use Terminal No.6 for D- and Terminal No. 7 D+

For Serial RS-232 Connection:

9-PIN D TYPE CONNECTOR (COMPUTER)	SMIT-3015 Terminals
Pin No.2 (TxD)	Terminal No.7 (RxD)
Pin No.3 (RxD)	Terminal No.6 (TxD)
Pin No.5 (GND)	Terminal No.8 (GND)

For RS-485 Connection:

INTERFACE DEVICE	SMIT-3015 Terminal
D-	Terminal No.6 (D-)
D+	Terminal No.7 (D+)

Serial interface can be either ASCII type or MODBUS RTU type.
It can be configured to provide weight data as continuous output, periodic output or on demand output.

Various parameters can be read & configured thro' this port by a master.

4.6 Digital Inputs

Indicator can have two digital inputs (Tare & Start/Stop). External power source & push buttons are required. Refer terminal drawing for external push button/switch connections.

Connect Positive of 24 VDC to Terminal No.10. Connect Tare PUSH button between Terminal 9 and Common of 24 VDC. Connect START/STOP PUSH button between Terminal no 17 and Common of 24 VDC.

Digital Inputs	SMIT-3016 Terminal
24V	Terminal No. 10
TARE	Terminal No. 9
START/STOP	Terminal No. 17

4.7 Control Relay Outputs

Indicator can have up to two relay outputs. These are optional. Function of the relay can be configured as Alarm/Batching. Both relays are normally configured to provide NO contact. They can factory configured as NC.

Use Terminal No.18 for Relay 2 NO/NC2 and Terminal No. 19 for Relay 1 NO/NC1 and Terminal No. 20 for the common for the both outputs.

Relays	**SMIT-3015 Terminal**
NO/NC2	Terminal No. 18
NO/NC1	Terminal No. 19
COMMON	Terminal No. 20

5. 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.

5.1 Display and Keyboard

The indicator has 0.56", 6-digit, 7-segment red Led display.

It has 4-key keypad.

List of keys and their functions:

	Key	Function	Special Function
1	**Index**	If in Edit Mode Save New data Else select new Menu.	
2	**Select** ▸	Enter into data entry/verification mode. The Edit Mode is identified with Blinking of Selected Display. When In Edit mode selects Next Digit	Used for Start/Stop function in non-edit mode in specific instruments
3	**Increment** ▲	Increment selected parameter value	Used as Tare key in non-edit mode
4	**Esc**	Cancel Selection and Terminate Edit mode	

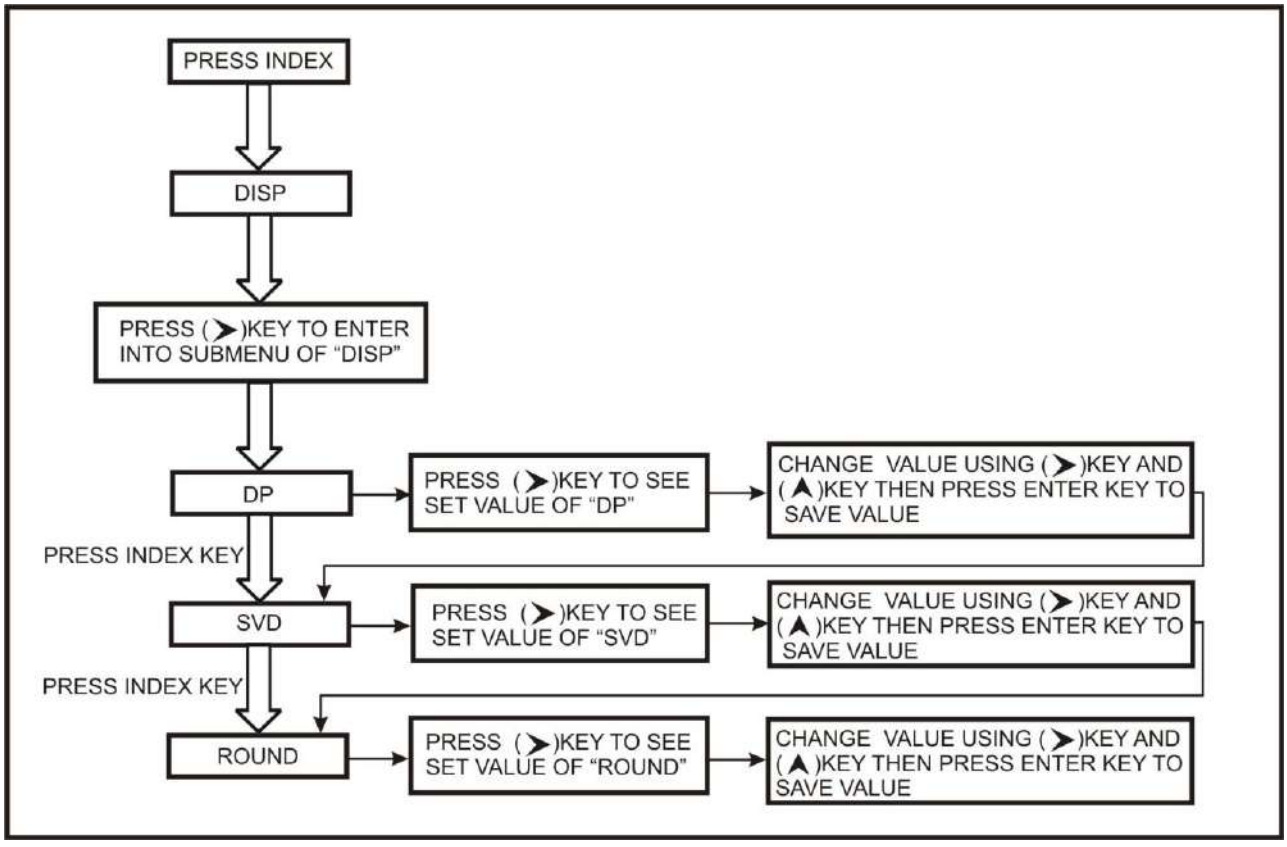
6. Menu List Functions

Parameter in Weight Indicator SMIT 3015 is divided in three main Menus.

- Display “DISP” Menu
- Operation “OPER” Menu
- Calibration “CAL” Menu

6.1 Display “DISP” Menu

Display	Values
DP (Decimal)	0, 0.0, 0.00, 0.000
SVD (Step Width)	0, 0.2, 0.5, 1, 2, 5
ROUND (Rounding)	1, 2, 5



❖ Decimal Position: ‘DP’

This parameter decides position of decimal point in weight display and other weight related parameters: Set point, offset etc.

Setting desired value of DP

- Press Index key, to see “DISP” Menu
- Press ‘Right arrow’ key to see current selected “DP” decimal position.
- Press ‘Right key’ to enter “DP” Menu
- Use ‘Up arrow' key to select desired decimal point position like for 0, 0.0, 0.00 and 0.000.
- Select any one and press 'ENTER' key to store it in NVRAM.
- Value on the Display will come with selected Decimal point

❖ Step width: “Svd”

Step width is the minimum change in weight required to change displayed weight. Displayed weight will update only, if change in weight is greater than or equal to set value of Step width.

Setting Svd = 0 will update Display weight directly.

e.g. If Svd = 2 and display weight is 15.0 kg. Displayed weight will only update when consecutive reading of weight is more than or equal to 15.2.

Setting desired value of Step Width:

- Press Index key, to see “DISP” Menu
- Press ‘Right arrow’ key to see currently selected “Svd”.
- Press ‘Right key’ for enter “Svd” Menu
- Use 'UP arrow' key to select desire Svd value like for 0,0.2,0.5,1,2 & 5
- Select any require value and press 'ENTER' key to store it in NVRAM.

❖ Rounding: “rOUnd”

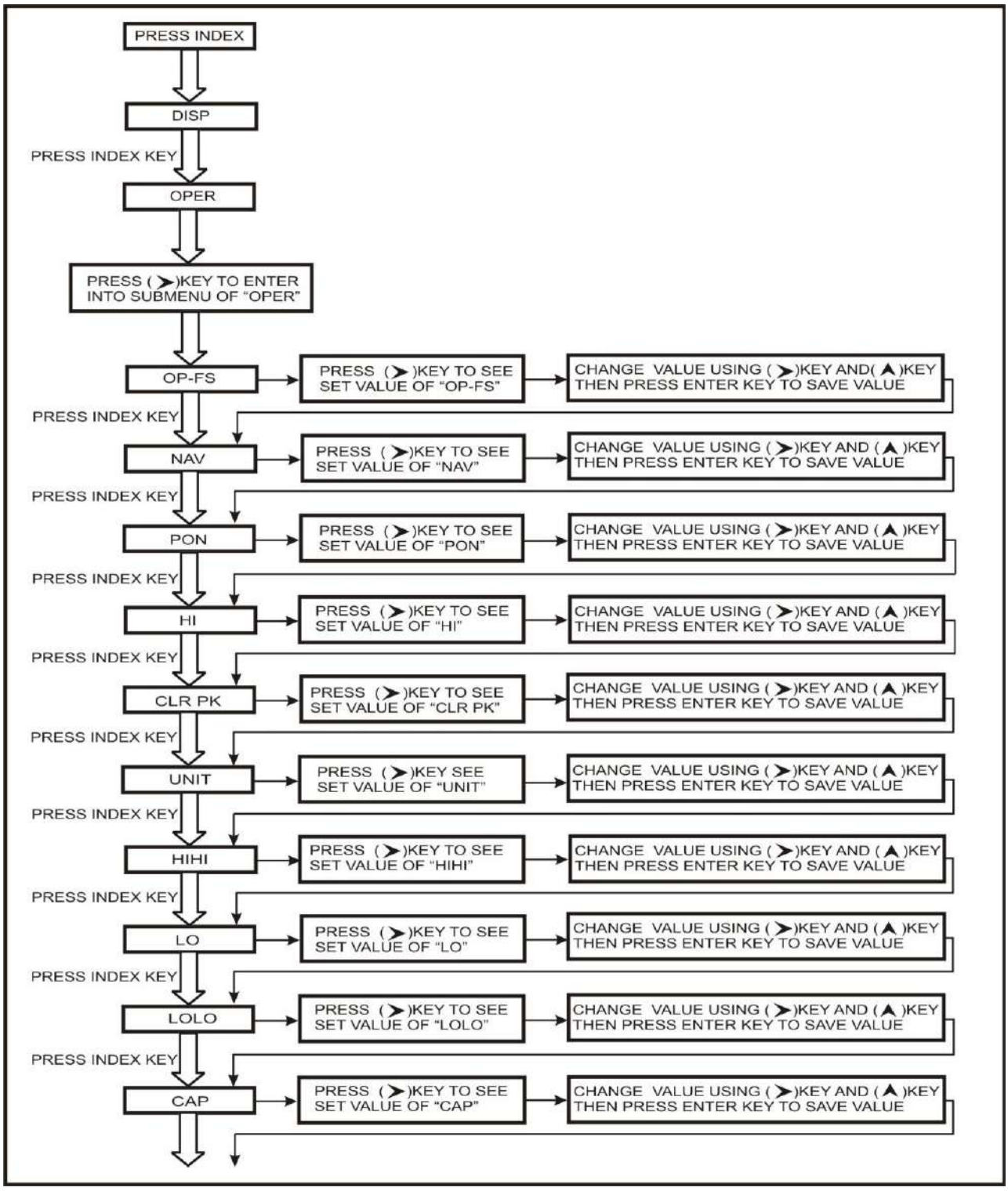
Least digit of Displayed weight will be rounded off by selected rounding value.
For example, If rOUnd = 1, then weight will be displayed 0, 1, 2, 3….
If rOUnd = 2, Least digit of weight displayed will change between 0, 2, 4, 6….
If rOUnd = 5, Least digit of weight displayed will change between 0 & 5

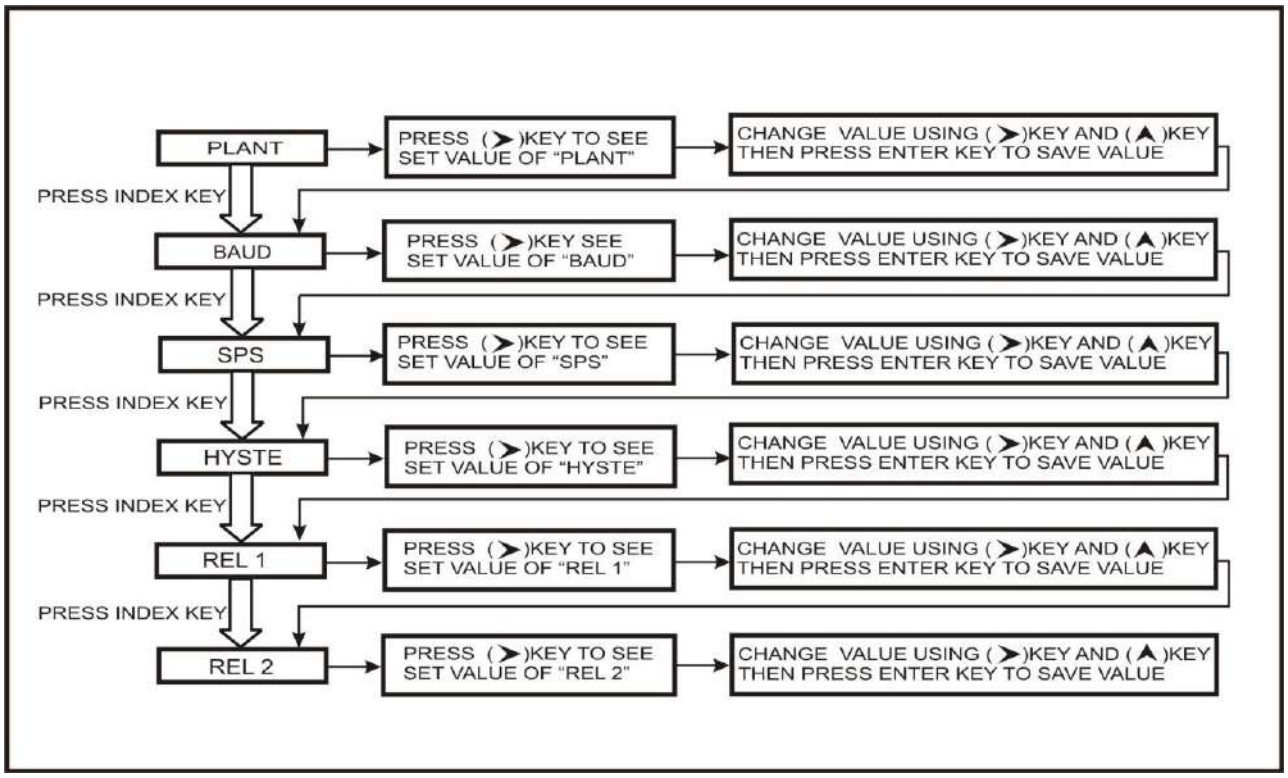
Setting desired value of Rounding:

- Press Index key, to see “DISP” Menu
- Press ‘Right arrow’ key to display currently selected “rOUnd”.
- Press ‘Right’ key to enter in “rOUnd” Menu
- Use 'Up arrow' key to select desired Round value like for 1,2 and 5
- Press 'ENTER' key to store it in NVRAM.

6.2 Operation “OPER” Menu

Display	Values
OP-FS (Output Full Scale)	00000-99999
AVG (Average Time)	
NAV (Moving Average)	01-32
PON (Power On Time)	01-30
SetPnt (Setpoint)	
CLR PEK (Clear Peak)	PASSWORD 3210
UNIT (Unit No)	01-32
Offset (OFFSET)	
CAP (Capacity)	00000-99999
PLANT (Plant Name)	Set Plant Name Up to 18 characters
BAUD (Baud Rate)	9.6,19.2,38.4,57.6 and 115.2
SPS (Sample per Second)	12.5,25,50,100


PRESS INDEX
DISP
PRESS INDEX KEY
OPER
PRESS (➤)KEY TO ENTER INTO SUBMENU OF "OPER"
OP-FS
PRESS (➤)KEY TO SEE SET VALUE OF "OP-FS"
CHANGE VALUE USING (➤)KEY AND(▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
NAV
PRESS (➤)KEY TO SEE SET VALUE OF "NAV"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
PON
PRESS (➤)KEY TO SEE SET VALUE OF "PON"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
HI
PRESS (➤)KEY TO SEE SET VALUE OF "HI"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
CLR PK
PRESS (➤)KEY TO SEE SET VALUE OF "CLR PK"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
UNIT
PRESS (➤)KEY SEE SET VALUE OF "UNIT"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
HIHI
PRESS (➤)KEY TO SEE SET VALUE OF "HIHI"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
LO
PRESS (➤)KEY TO SEE SET VALUE OF "LO"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
LOLO
PRESS (➤)KEY TO SEE SET VALUE OF "LOLO"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE
PRESS INDEX KEY
CAP
PRESS (➤)KEY TO SEE SET VALUE OF "CAP"
CHANGE VALUE USING (➤)KEY AND (▲)KEY THEN PRESS ENTER KEY TO SAVE VALUE



❖ Full-scale OUTPUT: "oP-FS"

Retransmission output from Indicator will be scaled between Zero & oP-FS.

- Press Index key twice , "Oper" Menu will be displayed
- Press 'Right Key' to select "oP-FS" parameter.
- Press 'Right key' again to edit "oP-FS" Menu
- Use 'UP and RIGHT key' to set the value of displayed weight where user wants Maximum current or voltage output from the unit (20mA. Or 10V)
- Press 'ENTER' key to store it in NVRAM.

❖ Moving Average Time: "nAv"

Moving Average is used to get stable weight reading. Stability of weight reading depends on site conditions also. Setting OFF provides no averaging; Setting 32 provides maximum averaging.

Higher averaging number will give higher stability but will take longer time to settle weight display.

Setting nAv:

- Press Index key twice , "Oper" Menu will be displayed
- Press 'Right Key' to select "oP-FS"

- Press ‘Index key’ to select “nAv” parameter,
- Press RIGHT key to edit “nAv”
- Use ‘Up arrow' key to select desired valued like 1,2,3, up to 32 and OFF
- Press 'ENTER' key to store it in NVRAM.

❖ Power on delay Time:“POn”

- Press Index key twice , “Oper” Menu will be displayed
- Press ‘Right Key’ to select “oP-FS”
- Press ‘Index key’ for select “POn”
- Press RIGHT key to edit “POn”
- Use ‘Up arrow and RIGHT arrow key’ to set Power on delay time
- Press 'ENTER' key to store it in NVRAM.

❖ Clear Peak: “CLr Pk”

The unit has Peak hold feature. Highest value of calculated/displayed weight is stored as Peak. This value can be cleared using this setting.

- Press Index key twice, “Oper” Menu will be displayed
- Press ‘Right Key’ to see “oP-FS”
- Press ‘index key’ to select “CLr PEk”
- Press RIGHT key to edit “CLr PEk”
- Use ‘UP and RIGHT arrow key’ to set password “3210”
- Press 'ENTER' key to Clear Peak Value.

❖ Unit no: “Unit”

This is a device identification number when communicating on serial port. The device is configured as MODBUS slave. This is slave address. It is editable. Each device on single serial network should have different Unit number.

Setting Unit no.:

- Press Index key twice, “Oper” Menu will be displayed
- Press ‘Right Key’ to see “oP-FS”.
- Press ‘Index key’ to select “Unit”
- Press RIGHT key to edit “Unit”
- Use ‘UP and RIGHT arrow key’ to set Values like 01, 02, up to 32
- Select any one value and press 'ENTER' key to store it in NVRAM.

❖ Capacity weight For over message:" CAP

If displayed/calculated weight exceeds this value, 'OVER' will be displayed

- Press Index key twice, "Oper" Menu will be displayed
- Press 'Right Key' to see "oP-FS"
- Press 'Index key' to select "CAP"
- Press RIGHT key to edit "CAP"
- Use 'UP and RIGHT arrow key' to set capacity
- Press 'ENTER' key to store it in NVRAM.

❖ Plant Name "PLAnt"

Plant name can be edited. It can have maximum 18 characters. Plan name is displayed when unit is switched On.

- Press Index key twice , "Oper" Menu will be displayed
- Press 'Right Key' to see "oP-FS"
- Press 'Index key' to select "PLAnt"
- Press RIGHT key to edit "PLAnt"
- Use 'UP and RIGHT arrow key' to set Plant name at power ON Time
- Press 'ENTER' key to store it in NVRAM.

❖ Baud Rate: "bAUd"

This parameter is required for serial communication. It should be same as that of other device (Computer/Printer/PLC).

Other parameters for serial communication are fixed: Parity: None, Data bits: 8

Setting Baud rate:

- Press Index key twice, "Oper" Menu will be displayed
- Press 'Right Key' to see "oP-FS"
- Press 'Index key' to select "bAUd"
- Press RIGHT key to edit "bAUda"
- Use 'UP and RIGHT arrow key' to set Values like 600, 19200, 38400, 57600, 115200
- Select required Baud Rate and press 'ENTER' key to store it in NVRAM.

❖ **Samples per second "SPS"**

Using this parameter, one can set ADC reading speed. It is called sampling rate (Samples per second). For better stability and accuracy, select lower rate SPS. For application requiring fast readings (bagging, check weighing etc..), set higher SPS. SPS & moving average helps in digital filtering.

Higher SPS will be more sensitive to external electro-mechanical disturbances.

There are four possible selections of SPS: 12.5, 25, 50 & 100

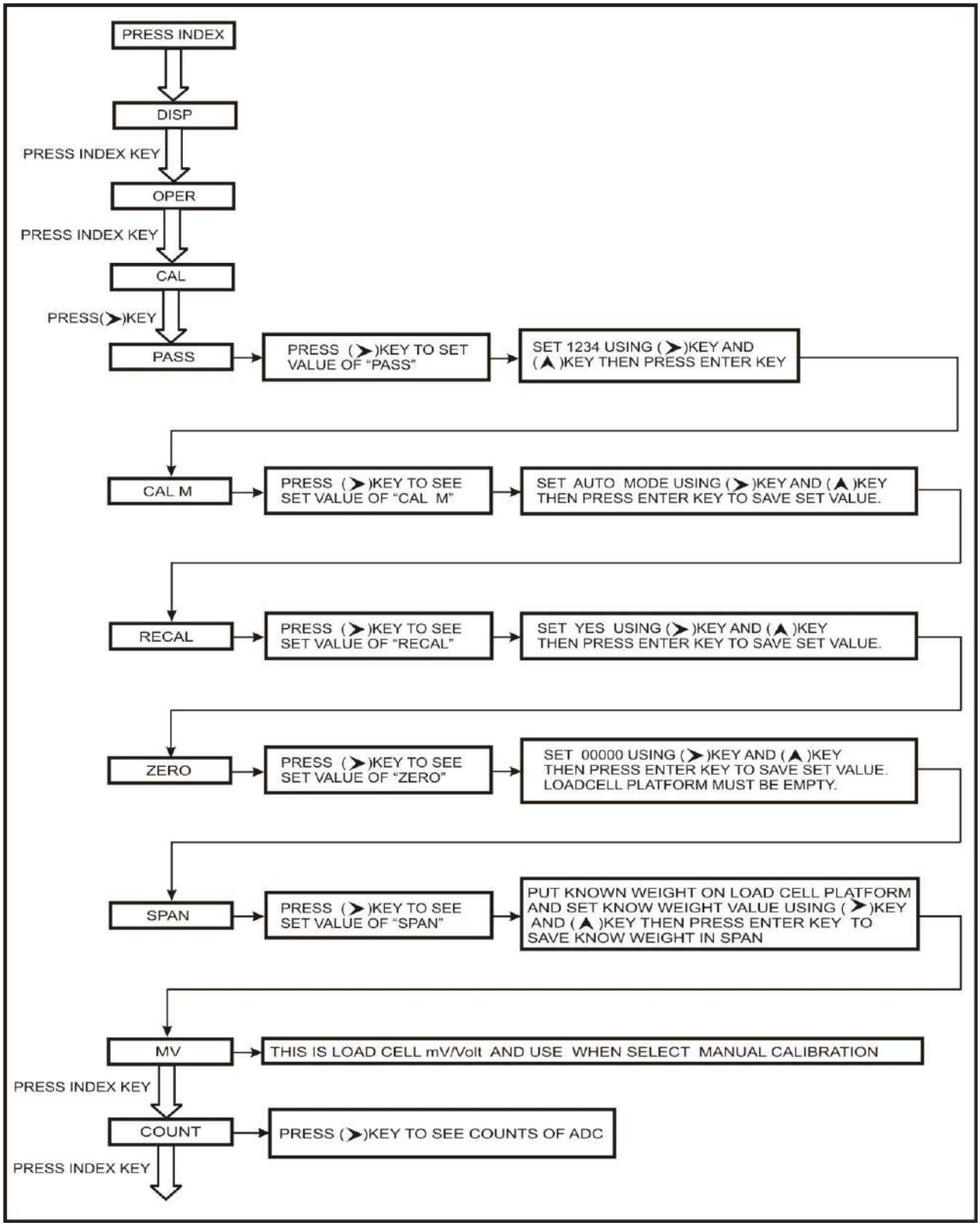
Setting SPS:

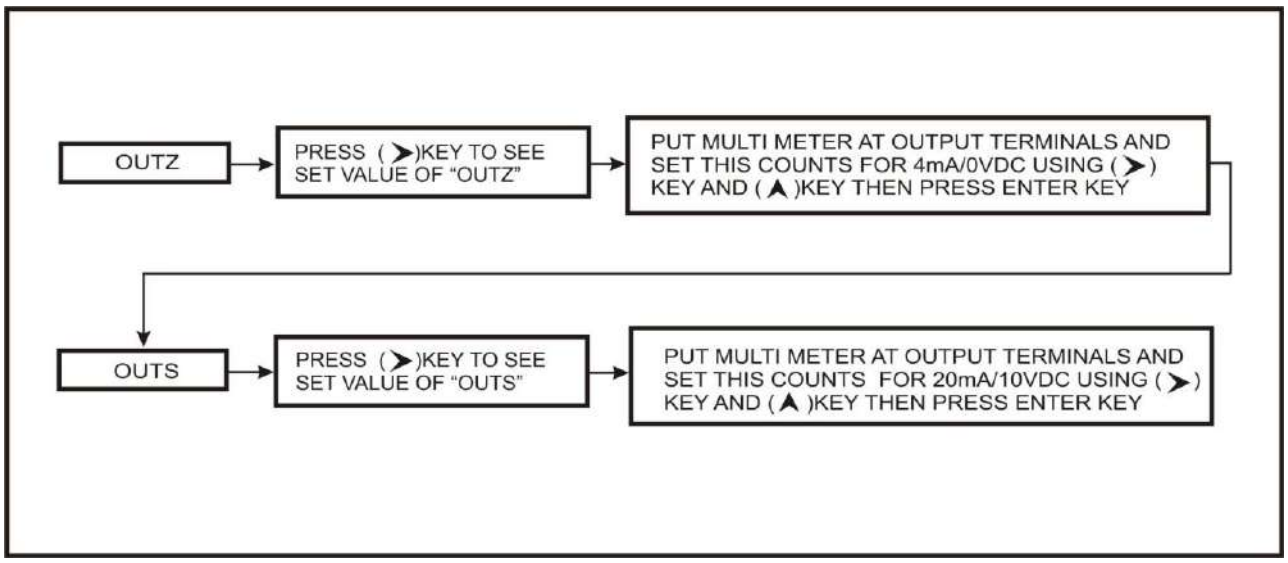
- Press Index key twice, "Oper" Menu will be displayed
- Press 'Right Key' to see "oP-FS"
- Press 'Index key' to select "SPS"
- Press RIGHT key to edit "SPS"
- Use 'UP and RIGHT arrow key' to select one of 12.5, 25, 50 & 100
- Select require one value and press 'ENTER' key to store it in NVRAM.

6.3 Calibration "CAL" Menu

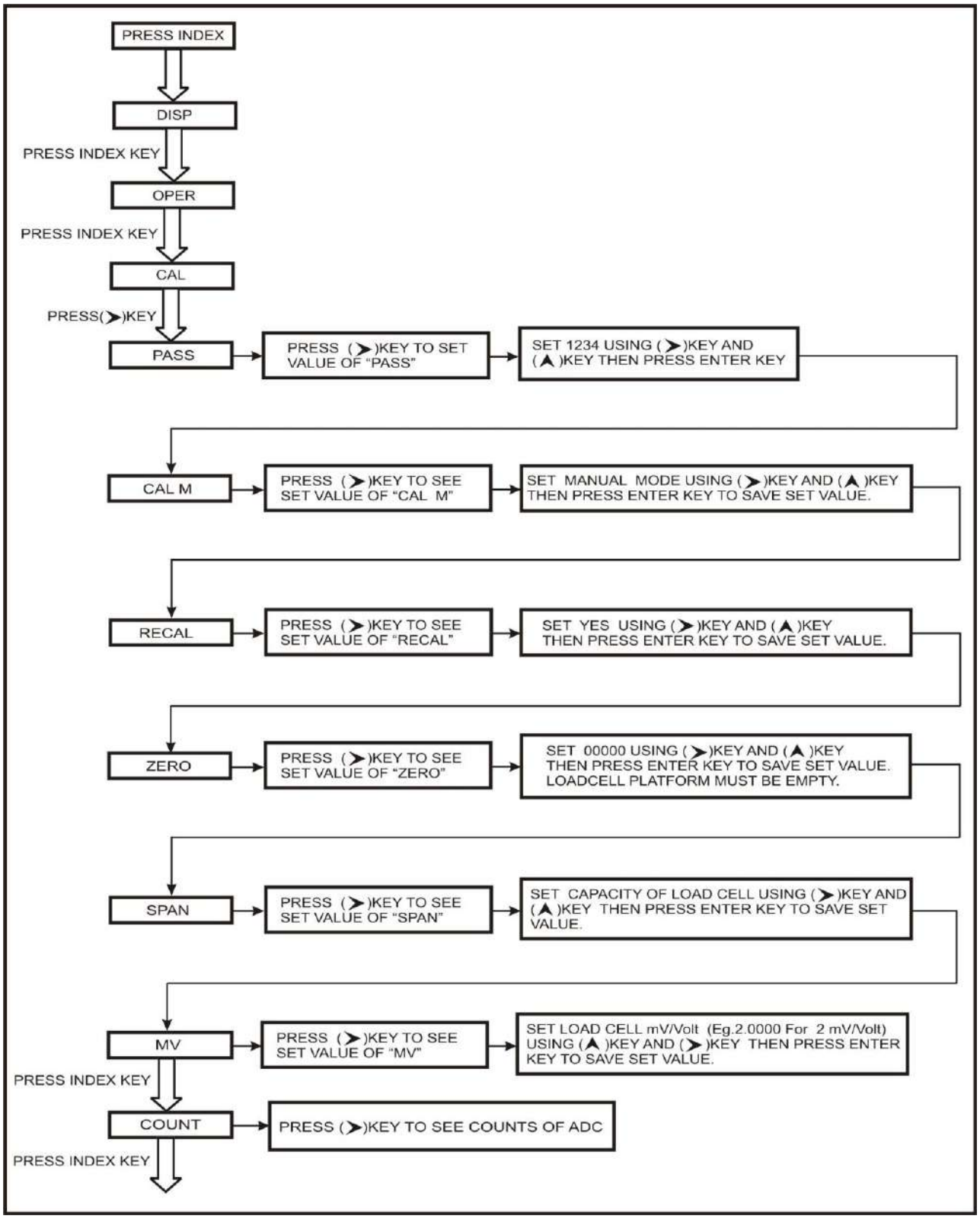
Display	Value
CAL M	Auto/Manual
RECAL	Yes/No
ZERO (Zero)	00000-99999
SPAN (Span)	00000-99999
MV	0.0000-9.9999
COUNT (ADC Count)	00001-65535
OUTZ (Output Zero)	00001-65535
OUTS (Output Span)	00001-65535

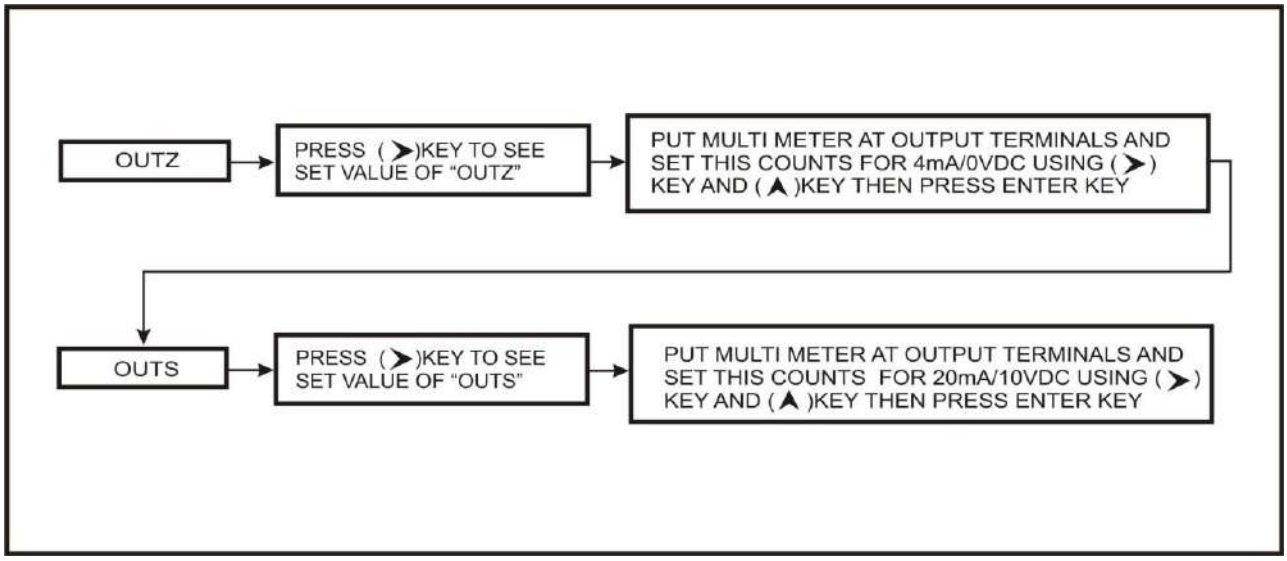
Auto Calibration:




OUTZ
PRESS (➤)KEY TO SEE SET VALUE OF "OUTZ"
PUT MULTI METER AT OUTPUT TERMINALS AND SET THIS COUNTS FOR 4mA/0VDC USING (➤) KEY AND (▲)KEY THEN PRESS ENTER KEY
OUTS
PRESS (➤)KEY TO SEE SET VALUE OF "OUTS"
PUT MULTI METER AT OUTPUT TERMINALS AND SET THIS COUNTS FOR 20mA/10VDC USING (➤) KEY AND (▲)KEY THEN PRESS ENTER KEY

Manual Calibration:





Calibration Menu

- Press INDEX key three times, to reach "CAL" Menu
- Press 'RIGHT Key' to see PASS
- Press 'RIGHT Key' to edit Password 0000
- Use 'UP and RIGHT Key' set password 1234
- Press Enter key, you will be able to browse following Menu:

    - Calibration Mode: "CAL M"
    - Recalibration: "RECAL"
    - Calibration Zero: "ZERO"
    - Calibration Span: "SPAN"
    - Load Cell mV/V: "MV"
    - COUNT
    - Calibration Out Zero: "OUTZ"
    - Calibration Out Span: "OUTS"

AUTO CALIBRATION:

Calibration Mode: “CAL M”

This parameter allows you to Set Auto/Manual Mode for Calibration.

- After enter into password operator can see “CAL M” menu
- Press ‘RIGHT key’ to edit “CAL M”
- Use ‘UP and RIGHT key’ to set Auto Mode for Auto Calibration
- Press 'ENTER' key to store it in NVRAM.

Recalibration: “RECAL”

This parameter allows you to Set Yes/No. Set this parameter Yes when you Change Calibration Mode.

- After enter into password operator can see “RECAL” menu
- Press ‘RIGHT key’ to edit “RECAL”
- Use ‘UP and RIGHT key’ to set yes for Recalibration
- Press 'ENTER' key to store it in NVRAM.

Calibration Zero: “ZERO”

This parameter allows you to calibrate the Indicator for Zero Input. Before you go to this parameter, connect Load cell to the indicator & Keep the platform empty.

- After enter into password operator can see “ZERO” menu
- Press ‘RIGHT key’ to edit “ZERO”
- Use ‘UP and RIGHT key’ to set 0.0 value, when load cell platform is empty
- Press 'ENTER' key to store it in NVRAM.

Calibration Span: “SPAN”

This parameter allows you to calibrate the Indicator for Span. Before you go to this parameter, connect Load cell to the indicator & Keep known weight on the platform.

- After enter into password operator can see “SPAN” menu
- Press INDEX key to see “SPAN” Menu
- Use ‘RIGHT key’ to edit “SPAN”
- Use ‘UP and RIGHT key’ set value equal to known value.
- Press 'ENTER' key to store it in NVRAM.

Note: - Known weight must be minimum 10% of load cell capacity. This will help achieving better accuracy.

MANUAL CALIBRATION:

Calibration Mode: “CAL M”

This parameter allows you to Set Auto/Manual Mode for Calibration.

- After enter into password operator can see “CAL M” menu
- Press ‘RIGHT key’ to edit “CAL M”
- Use ‘UP and RIGHT key’ to set Manual Mode for Manual Calibration
- Press 'ENTER' key to store it in NVRAM.

Recalibration: “RECAL”

This parameter allows you to Set Yes/No. Set this parameter yes when you Change Calibration Mode.

- After enter into password operator can see “RECAL” menu
- Press ‘RIGHT key’ to edit “RECAL”
- Use ‘UP and RIGHT key’ to set yes for Recalibration
- Press 'ENTER' key to store it in NVRAM.

Calibration Zero: “ZERO”

This parameter allows you to calibrate the Indicator for Zero Input. Before you go to this parameter, connect Load Cell to the indicator & Keep the platform empty.

- After enter into password operator can see “ZERO” menu
- Press ‘RIGHT key’ to edit “ZERO”
- Use ‘UP and RIGHT key’ to set 0.0 value, when load cell platform is empty
- Press 'ENTER' key to store it in NVRAM.

Calibration Span: “SPAN”

This parameter allows you to calibrate the Indicator for Span without putting any Load on Load cell platform. You have to set Capacity of Load cell in SPAN Value.

- After enter into password operator can see “SPAN” menu
- Press INDEX key to see “SPAN” Menu
- Use ‘RIGHT key’ to edit “SPAN”
- Use ‘UP and RIGHT key’ set value equal to Capacity of Load cell.
- Press 'ENTER' key to store it in NVRAM.

Load cell mV/Volt: "MV"

This parameter allows you to Set Load cell mV/Volt. Set this parameter 2.0000 mV/V for 2 mV/V Load cell.

- After enter into password operator can see "MV" menu
- Press 'RIGHT key' to edit "MV"
- Use 'UP and RIGHT key' to set Load cell mV/V
- Press 'ENTER' key to store it in NVRAM.

Note: When Manual Calibration Procedure is over put some known weight on load cell Platform and adjust this weight on indicator by setting Load cell mV/V.

COUNT

Using this parameter, user can see Raw ADC count on the Indicator display.

- After enter into password operator can see "ZERO" menu
- Press four times INDEX key to reach "COUNT" Menu
- Use 'RIGHT key' to enter into "COUNT" Menu
- Operator can see ADC counts of the unit.

Calibration out Zero: "OUTZ"

Using this parameter, one can calibrate analog output for Zero indication. Set your digital multi meter for DC current/Voltage measurement mode. Select range covering 0-20 mA/0-10VDC. Connect DMM at analog output terminals (number 9 & 10) of the Indicator

- After enter into password operator can see "ZERO" menu
- Press twice INDEX key to see "OUTZ" Menu
- Use 'RIGHT key' to edit "OUTZ"
- Use 'UP and RIGHT key' to change value displayed
- Set count value such that you get desired output (as displayed on DMM).
- Press 'ENTER' key to store it in NVRAM.

Calibration out Span: “OUTS”

Using this parameter, one can calibrate analog output for Full scale (Span) indication. Set your digital multi meter for DC current/Voltage measurement mode. Select range covering 0-20 mA/0-10VDC. Connect DMM at analog output terminals (number 9 & 10) of the Indicator

- After enter into password operator can see “ZERO” menu
- Press three times INDEX key to see “OUTS” Menu
- Use ‘RIGHT key’ to edit “OUTS”
- Using ‘UP and RIGHT key’ set values of Counts
- Set count value such that you get desired output (as displayed on DMM)
- Press 'ENTER' key to store it in NVRAM.

7. Serial communication Details

Refer back details for Serial Connection.

This serial port supports RS232 communication.

For RS232 connection:

9-PIN D TYPE CONNECTOR (COMPUTER)	**SMIT-3015 Terminal Details**
Pin No.2 (TxD)	Terminal No.7 (RxD)
Pin No.3 (RxD)	Terminal No.5 (TxD)
Pin No.5 (GND)	Terminal No.8 (GND)

How to Test: -

To test serial interface, you may use MODSCAN32.EXE utility.
Settings:

1. Set **Device Address = 1**
2. Set **Datatype= Holding Register**
3. Set **Start Address=1**
4. Set **Length = 18**
5. **BAUD RATE = 9600**
6. Set Proper **COM Port**
7. Set **Data Format= Decimal**
8. Now click on ‘Connect’ button.

7.1 Modbus Registers

SR. NO.	Register No	Parameter	Function
1	40001	Weight	LSB of displayed weight (16-bits)R
2	40002	Weight	MSB of displayed weight (16-bits)R
3	40003	Adc count	LSB of displayed weight (16-bits)R
4	40004	Adc count	MSB of displayed weight (16-bits)R
5	40005	Decimal point	0-3 R,W
6	40006	Svd	1,2,5 R,W
7	40007	Rounding value	1,2,5 R,W
8	40008	Full-scale lower byte	LSB of displayed weight (16-bits)R,W
9	40009	Full-scale higher byte	MSB of displayed weight (16-bits)R,W
10	40010	Moving Average time	1-32 R,W
11	40011	Power on delay	0-30sec R,W
12	40012	Set point lower byte	LSB of displayed weight (16-bits)R,W
13	40013	Set point higher byte	MSB of displayed weight (16-bits)R,W
14	40014	Unit No.	1-99 R,W
15	40015	Offset	1-65534 R,W
16	40016	Capacity lower byte	LSB of displayed weight (16-bits)R,W
17	40017	Capacity higher byte	MSB of displayed weight (16-bits)R,W
18	40018	Tare, zero	1,2 W

8. Sales and Service

When you face any issue while installation, calibration or using the Indicator, you contact:

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