OPERATING MANUAL
FOR
WEIGHT INDICATOR CONTROLLER
MODEL : WI-2013L

INTRODUCTION:

This is a microcontroller based Indicator unit. It is highly versatile, accurate and different from the conventional indicators.

The set Parameters are stored in serial NVRAM. No battery back up is required.

SPECIFICATIONS:

1.Mains Power supply	230V AC,50 Hz
2. Key board	6 keys keypad
3. LCD Display	20* 4 Character LCD display
4. Digital Inputs	3 Digital Inputs for Print, Clear Length and Tare
5.Proximity Inputs	NPN / PNP
6.Enclosure	General purpose Panel Mount Made up of MS
7.Panel Mounting Dimensions	Cutout Size:187mm*90mm Outer:191mm(W)*95mm(H)*135mm(Depth)

Samyak Instrumentation Pvt. Ltd.

F/4, Memnagar Complex, Opp. Petrol Pump, Memnagar, Ahmedabad-380 052, India
Phone: 91-79-27495500/5600
E-mail: sales@samyak.com url: www.samyak.co.in

SYSTEM DESCRIPTION:

The unit is based on an 8-bit microcontroller.
With the help of the keypad and display, unit allows to set and modify various configuration parameters and calibration.

HARDWARE DESCRIPTION:

The unit consists of a CPU Card and KB/Display card.
1. CPU CARD:

The CPU card has necessary hardware for**:**

- 6-key keypad interface.
- Watch dog circuit
- DC regulated supply**:** +5V, +24V
- Analog to Digital Converter (ADC)

The connectors are accessible from back panel cut-out. Mating female connectors are supplied along with the instrument.

Mains connection for 230V AC is to be done from back panel. There are total three terminals for mains connection. One of them is for Earthing. Necessary connection for configuration of 230V mains is indicated on the sticker on the back panel.

2. KB/DISPLAY CARD AND FRONT PANEL**:**

- Display/KB card has Character LCD Display for weight indication.
- Six keys are mounted on this card.

The card is connected with CPU card through 20-pin connector. The card is fitted with the front bezel.

Samyak Instrumentation Pvt. Ltd.

F/4, Memnagar Complex, Opp. Petrol Pump, Memnagar, Ahmedabad-380 052, India
Phone: 91-79-27495500/5600
E-mail: sales@samyak.com url: www.samyak.co.in

INSTALLATION GUIDE:

- Remove instrument from the packing box carefully.
- Mount the instrument in the panel cutout for the instrument.
- Fix the instrument with the panel using two side brackets.
- All the electrical connections to be done at the back panel terminals
- Make sure that no wire is connected loosely to avoid generation of spark and RFI.
- Apply mains supply between terminals as per the CONNECTION DETAILS.
- Earth the instrument properly.

APPLYING LOADCELL INPUT:

- The instrument takes analog input from the load cell to be connected at the back panel of the instrument.
- Excitation voltage 5V is available from the unit.
- Connect the load cell as per the CONNECTION DETAILS.

OPERATING DETAILS:

The following paragraphs give detailed description of how to operate the unit. Before using the instrument, make sure to study and understand this section.

DISPLAY & KEYBOARD:

The unit has LED Display.
Unit has 6-keys membrane keypad organized as 3 x 2 matrix.

List of keys and their functions:

KEYS	FUNCTION
HOME	To view Main Page of unit.
PAGE	To change the Page.
TARE	To Tare the Load cell Weight (Press 10 Sec For Tare)
EDIT Edit/Digit Select (Right Arrow)	To Edit/Select Next digit
NEXT Next/Increment (Up Arrow)	To Next/Increment selected digit value Also use for Clear Length.
ENTER	Save New Data and Terminate Edit Mode. Also use for Print.

EDIT MODE:

- Entry into Edit mode is protected by Password.
- Press 'PAGE' key to Enter into edit mode.
- The display window will show 'PASSWORD'.
- Press 'EDIT' Key So Left Most digit will be flashing. Now Enter Password: 0101 using up arrow and Right arrow key.
- Now Press "ENTER" key and then Press "PAGE" Key. So Following Menu Page Will be Display

1. RUN PARA (Cursor Is Here, To Move Cursor Down Press "NEXT" Key)
2. CAL MODE
3. SYSTEM PARA (Now Press NEXT key to see DATE/TIME Menu)
4. DATE / TIME

1. RUN PARA

Press "ENTER" Key So Run Parameter Configuration page will be open and following Parameter list will be display.

```
MACHINE NO. : 00-99
 K-FACTOR     : 00.00-99.99
 CLR LENGTH   : YES/NO
 ACC TIME     : 00-10 SEC
```

2. CAL MODE

Press ENTER Key So Calibration Password page will be open.
Enter "PASSWORD' 1234 For Calibration of Load cell.

```
CALZERO     :  0000 KG
CALSPAN     :  9999 KG
```

- Press "HOME" key for Return in to Menu Page.

3.SYSTEM PARA

Press ENTER Key So System Parameter Configuration page will be open and following parameter list will be display.

```
DP              : 0, 0.0, 0.00, 0.000
MOVING AVG      : 00-32
STEP WIDTH      : 0, 1, 2, 5
ROUNDING        : 1, 2, 5, 10, 20, and 50.
UNIT NO         : 1-32
BAUD RATE       : 1200, 2400, 4800, 9600, 19200
CLEAR BATCH     : YES /NO
PON DELAY       : 0-30SEC
```

4. DATE/TIME

This parameter is use for set Date & Time.

HOW TO CHANGE PARAMETER VALUE:

 For change any Parameter value .Go to that parameter and Press 'EDIT' Key So Left most digit will be flashing. Now enter new value using up arrow and Right arrow key. Once all the four digits are set, then press 'Enter' key so parameter value will be modified as per new set value.

Samyak Instrumentation Pvt. Ltd.

F/4, Memnagar Complex, Opp. Petrol Pump, Memnagar, Ahmedabad-380 052, India
Phone: 91-79-27495500/5600
E-mail: sales@samyak.com url: www.samyak.co.in

<u>CALIBRATION PROCEDURE</u>:

    One can do calibration through the keyboard itself; No trimming of potentiometer is required. The Zero and Full-scale values are stored in NVRAM. The calibration is allowed only in Engineer's Password (1234) mode.

(1) LOADCELL CALIBRATION

1. Switch on the instrument and allow 15 minutes of warm up time before starting calibration.
2. Connect the load cell to be used for the weight measurements at the load cell input terminal**.** (See the CONNECTION DETAILS for the same.).
3. Go to CAL MODE parameter :

- Enter engineers' Password '1234'
- CALZERO and CALSPAN Parameter Will Display.
- For Zero-calibration, there should be no load (weight) on the weigh-platform which is connected to the load cell.

- Press **'EDIT'** key after entering this Password.
- So Left most digit will be flashing.
- Now Enter known value to be displayed for empty platform: generally this should be set as '0000'.
- Allow the reading to settle, press **'ENTER'** Key.
- This count will be stored as Zero-calibration reading.

4. Now put some known weight on the weigh-platform.

- Press **'NEXT'** key.
- So Cursor Will be Move To CALSPAN Parameter.
- Now Press EDIT Key .So Left most digit will be flashing.
- Enter Current value of known weight using up arrow and Right arrow key.
- Press **' ENTER'** key after few seconds.
- This reading will be stored.

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

For again entering into calibration mode, you have to wait till the instruments go to normal mode. After that go to cal mode in menu page then   enter Engineers' Password and perform calibration.

INDICATIONS

In normal mode of operation, the instrument shows following parameters:

Proximity Interface:

Here we can use Either PNP Or NPN Proxy.

View Weight Parameters:

HOME

Press ' ' key to display absolute value of weight reading. By pressing this key successively following three parameter values will be displayed.

GROSS WGT: 00000-99999 KG
TARE WGT   : 00000-99999 KG
(Stored value of Tare when 'Tare' key is pressed.)

NOTE:
Net Weight = Gross Weight – Tare Weight

Samyak Instrumentation Pvt. Ltd.

MOVING AVERAGE:

Averaging parameter for the ADC samples.

STEP WIDTH:

Step width is the minimum change in weight required to display the weight.

ROUNDING:

Rounding is the least digit rounding to display weight.

BAUD RATE:

Baud parameter is used for setting different baud rate.
To change this parameter desired value, go to 'EDIT' mode after entering correct password. Using Index key, select 'BAUD'. The currently setting will be displayed. Using 'Up arrow key, select desired value and press 'ENTER' key.

SELECT	BAUD RATE
1	19200
2	9600
3	4800
4	2400
5	1200