

**OPERATING MANUAL  
FOR  
WATER FLOW CONTROLLER  
MODEL : SMIT-1272**

**Samyak Instrumentation Pvt. Ltd.**

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## INTRODUCTION:

This is a microcontroller based universal Process Indicator controller 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.

### *General Specifications of this unit are:*

- This is a Microcontroller based unit.
- Power Supply: 230VAC from Terminals of unit
- Output Options:
  - Tranmitter Power Supply: +24V DC +/- 5%, 50mA
- Indication: Four Digit Seven Segment Red LED
- Key board: Four keys membrane like
- Accuracy: 0.2% + +/- 1 digit
- Warm up time: 15 minutes
- Configuration Data are stored in serial NVRAM
- Mechanical data:

Mounting : Panel Mount  
Outer Dimension : 72 mm (W) x 72 mm (H) x 122 mm (Depth)  
Cutout Size : 67 mm x 67 mm

## SYSTEM DESCRIPTION:

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, Relay card and KB/Display card.

The CPU and KB/Display card has necessary hardware for:

- Driving four digit multiplexed Display on CPU card.
- Watch dog circuit CPU card
- Four key keypad interface on KB/Display card.
- DC regulated supply: +5V, +24V.

The CPU card is connected with KB/Display card and Relay card through connectors.

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## INSTALLATION GUIDE:

- ❖ Unpack the instrument from the packing box carefully.
- ❖ Mount the instrument in the panel.
- ❖ Refer the Connection details which are given on the unit.
- ❖ Make sure that no wire is connected loosely to avoid generation of spark and RFI. Before connecting the mains, check the mains configuration on the unit.

## 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:

It displays Process variable/Flow.

Unit has 4 key membrane keypad organized as 4 x 1 matrix.

List of keys and their functions:

Keys	Function
Index	Enter into data entry/verification mode Select parameter
Enter	Save new data and Terminate Edit mode.
Digit Select (→)	Select next digit
Increment (↑)	Increment selected digit value

## EDIT MODE:

In this mode user can verify or modify various parameters. Entry into Edit mode is protected by Password.

Press 'Index' key to enter into edit mode. The display window will show 'PASS' for a moment and then it will start displaying '0000' with flashing Left most digit .The unit is prompting for Password. Password is a four digit no. There are two different passwords.

Operator's Password: **0101/ 1234**

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Enter any one of the above password using data entry keys. When 'Enter' key is pressed, the validity of Password is checked. If wrong password is entered the unit comes out of edit mode and displays engineering value.

Press 'Index' key again if you want to enter into edit mode.

If correct password is entered, then also the unit starts Indicating Engineering value of input. Now press 'Index' key, the display will show name of the parameter to be modified and its value after a moment.

Pressing the 'Index' key again will display next parameter. The various parameters that will appear on the display with successive depression of the 'Index' key are:

Parameter description	Display	Values
Password	PASS	1234 / 0101
CL L		0 - 9999
St L		0 - 9999
CAL n		0 - 9999
dP		0,0.1,0.01

When a parameter is selected, its name will be first displayed for a moment and then current value is displayed in the same field of display. The left most digit will start flashing.

Use Increment (Up arrow) key, if you want to modify the flashing digit.

Press increment key, flashing digit will increment up to 9 and rolls back to 0 when it reaches at 9.

Once all the four digits are set, press 'Enter' key. The parameter value will be modified as per new set value. Display will start indicating Input.

When in data entry/EDIT mode, if no key is pressed for 30 Seconds, the unit will terminate data entry mode automatically and start indicating Process value.

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Press 'Index' key to go to next parameter. If 'Index' key is not pressed for more than 30 seconds, the unit will terminate 'Edit' mode automatically and start indicating Process value. To enter into 'Edit' mode, one has to enter Password again.

### **CALIBRATION PROCEDURE:**

3. Go to EDIT mode:

Enter engineers; Password '0101'.

1. First goto parameter CALM: calibration mode by pressing the shift key.
2. Now press the *incr* key to start the calibration and it will also switch on the relay.
3. After calibration is over , that is for how much time user needs to switch on the relay, press *incr* key again to finish the calibration.
4. Controller will count the time between start and stop of the calibration.
5. Now enter the amount of water filled during calibration in the CL L: calibration liter parameter by using shift and incr key.
6. For example calibration time is 10 sec and CL L is 50 liters then for 1 sec it will count as 5 liters
7. If the ST L : set liter is now set 100 liters then on start relay will remain ON for 20 sec as per our example.

### **RELAY OPERATION:**

Increment key is used to start the operation. On pressing the increment key relay will be set ON and remain ON for the calculated amount of time and will set OFF after desired time is over.

### **DIGITAL INPUT FOR REMOTE START/STOP:**

User can also use digital input to start stop the operation.

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## TERMINAL DETAILS: SMIT-1272

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① NO	RELAY O/P	⑦ GND	TRANSMITTER POWER SUPPLY
② ----		⑧ ----	
③ COMMON		⑨ +24V	
④ PHASE	MAINS SUPPLY 230V AC	⑩ START/STOP	DIGITAL INPUT
⑤ NEUTRAL		⑪ GND	
⑥ EARTH		⑫ ----	
<b>SR NO:1506039802</b>			

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