



Universal Input Indicator

DP70

Optional Analog Output



Universal Input Indicator	1
I. Example of application	2
II. Wiring diagram	2
III. setting	3
1. Menu Input Type	5
2. Menu Scale	7
3. Menu Analog Output	8
4. Menu Alarm	10
5. Menu Calibrate	12

Universal Input Indicator

DP70



- 5 Digits Display
- Programmable Input type
- 2 Alarm Relay
- 1 Analog output or RS485 (Option)

Universal Input Indicator is panel meter with programmable input. It has 5 digit and 2 set of alarm (Hi/Low). Moreover there is optional for analog output

Specifications

Serial Interface (Optional)

Serial Standards: RS485 (Isolated)

2 Pin Terminal Block

Loading: RS485 Max 32 Unit

Distance: RS485 Length 1 Km.

Protocol: MODBUS ASCII/RTU

Supply Software: Citect, Wonderware, LAB View etc.

Monitor

Display: 5 digits, 14.2 mm. (7-Segment)

Display Color: Red (std)

Analog Input

Number of channel: 1 Channel

Input type: Programmable

Input range:

Thermocouple (R, S, K, E, J, T, B)

RTD (Cu10, PT100, PT1000)

Resistance (0 to 600 Ω , 0 to 1200 Ω , 0 to 4000 Ω)

Voltage mVDC (0 to 80, 0 to 150 mVDC)

Voltage (0 to 1, 0 to 5, 0 to 10, 0 to 30 VDC)

Current (4 to 20, 0 to 20, 0 to 40 mA)

ADC Resolution: 16 bits

Accuracy: ± 1 least significant digit

Analog Output (Optional)

Number of channel: 1 Channel

Output type: Current, Voltage

Output range:

Current (0 to 20, 4 to 20 mA)

Voltage (0 to 1, 0 to 5, 0 to 10 VDC)

Output Impedance:

Current Max Load 800 Ω

Voltage Min Load 1000 Ω

Relay Output

Number of Channel: 2 Channels (Alarm)

Relay Type: N.O. or N.C.

Contact Rating: 6A@250VAC, 6A@30VDC

Power Requirements

Power Supply: 85 to 230 VAC

(12 to 35 VDC Optional)

Environmental Limits

Operating Temperature: 0 to 55 $^{\circ}\text{C}$

Operating Humidity: 5 to 95% RH

Storage Temperature: 0 to 70 $^{\circ}\text{C}$

Physical Characteristics

Dimension: W96 x H48 x D120 mm.

Panel Cutout: W90 x H40 mm.

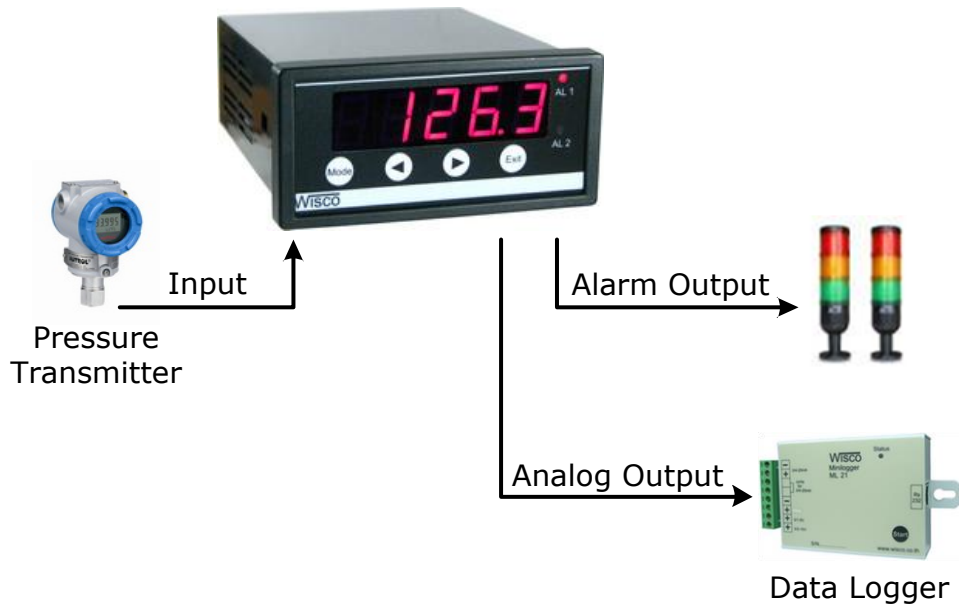
Mounting: Panel Flush Mounting

Wiring: Screw terminals

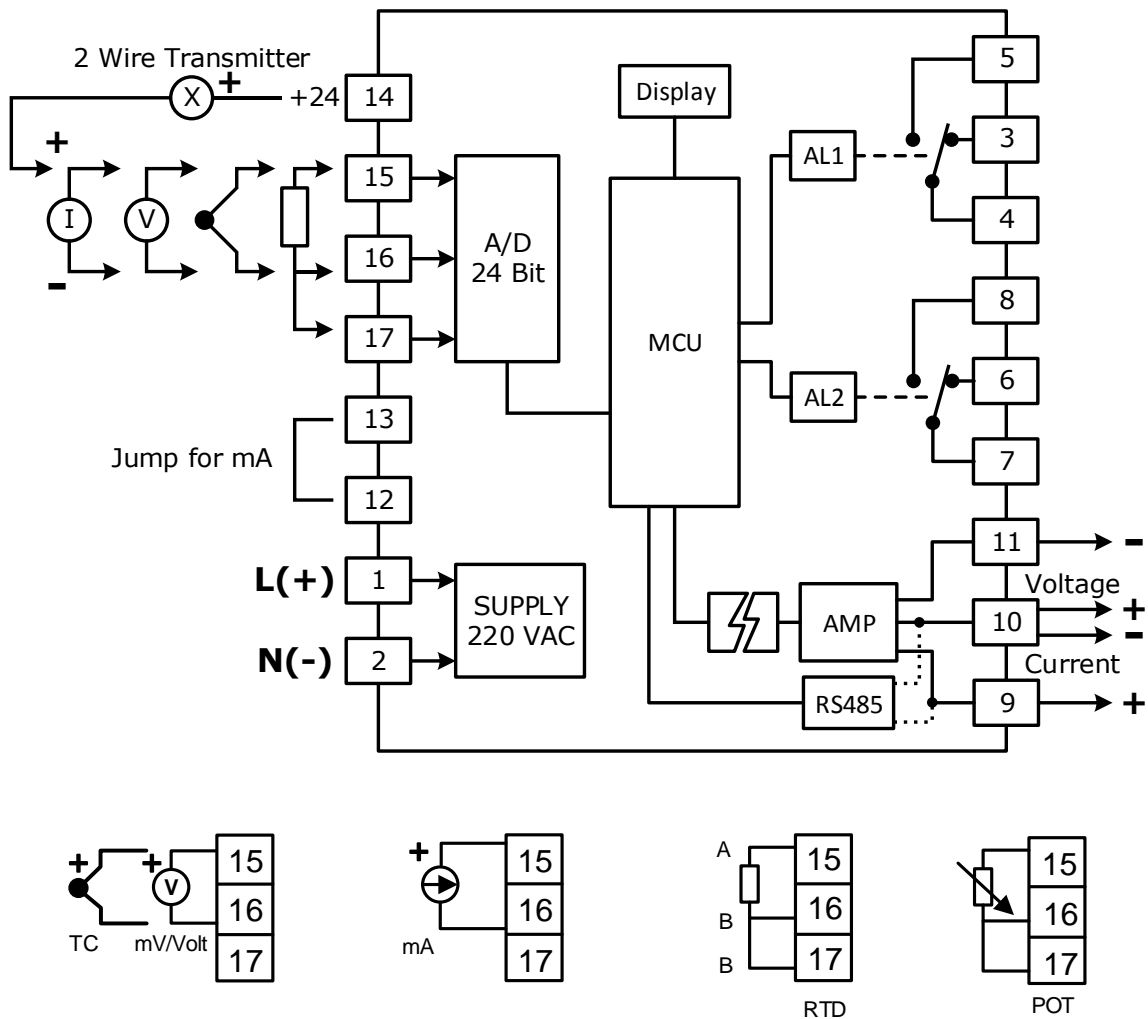
Warranty

Warranty Period: 5 Year

I. Example of application

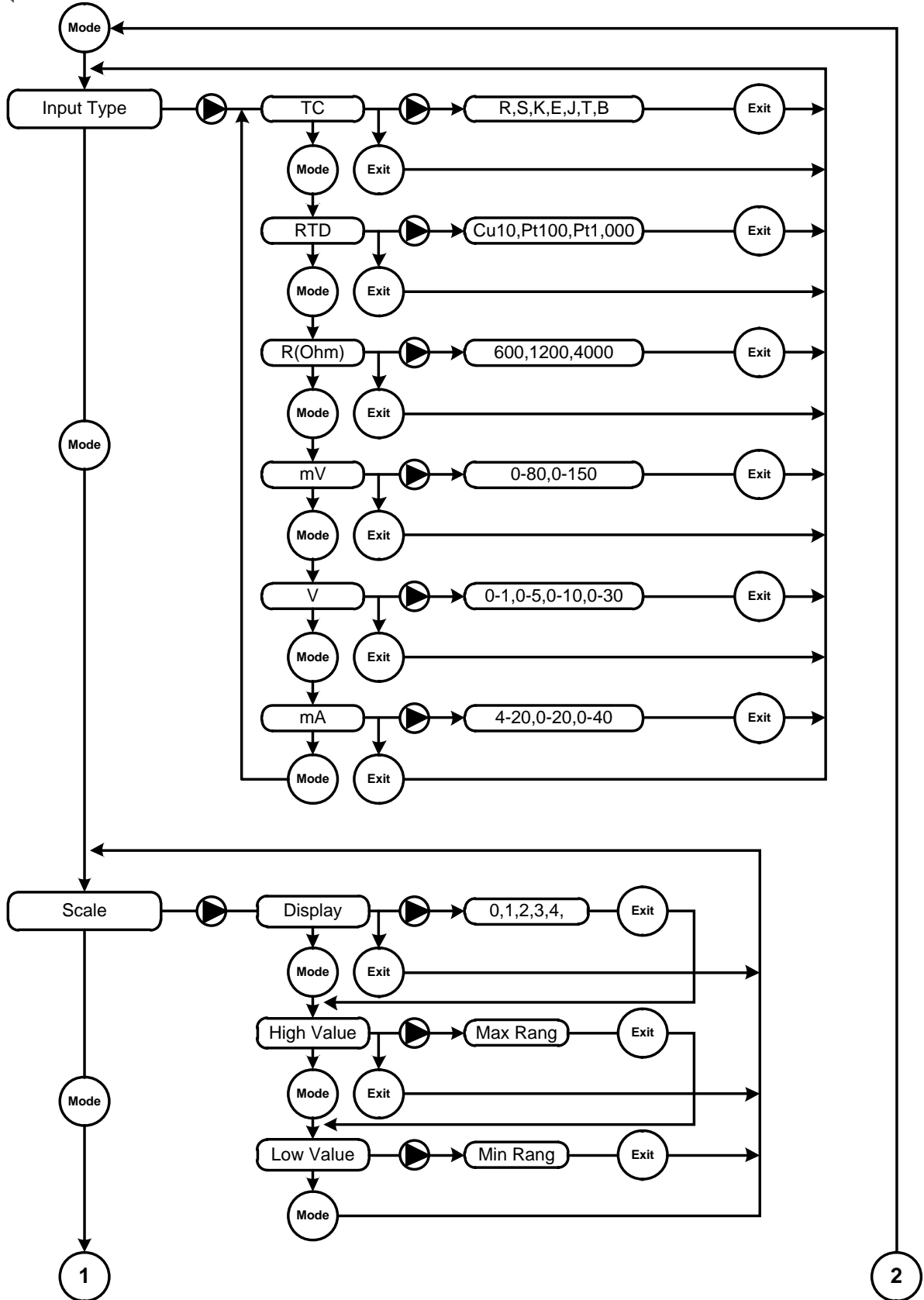


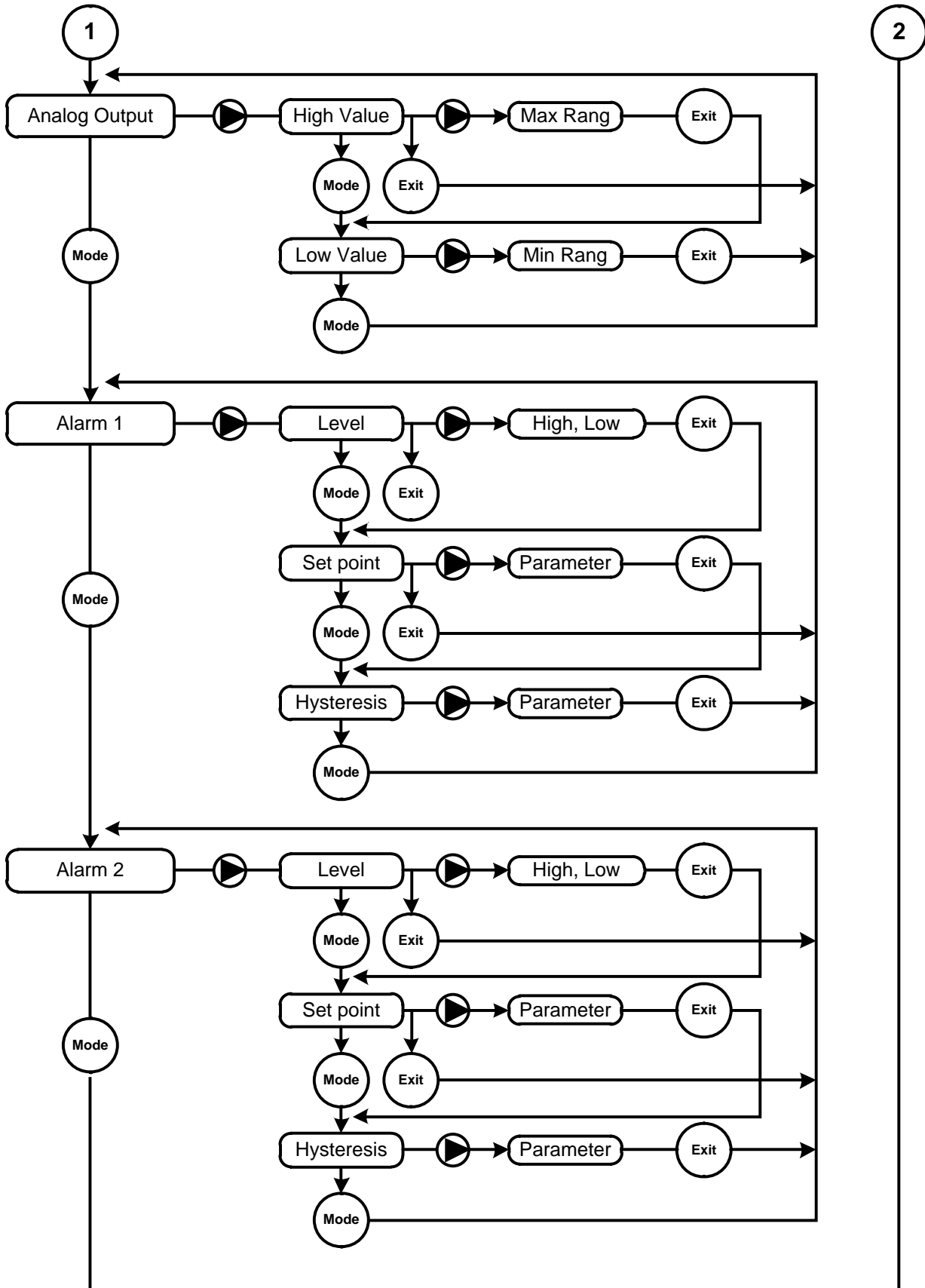
II. Wiring diagram



III. Setting Menu

กดปุ่ม Mode ค้าง 3 วินาที

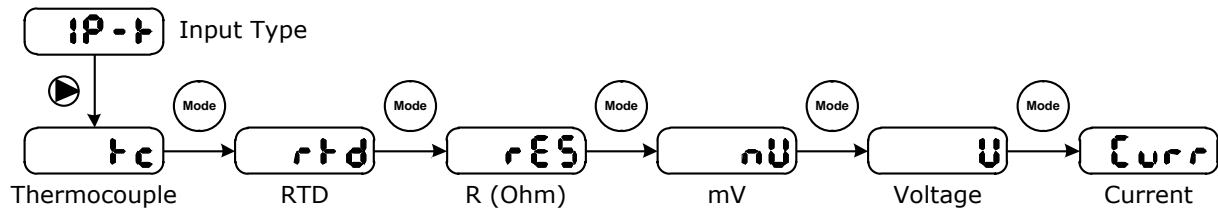




Exit the menu by hold Exit button for 3 second

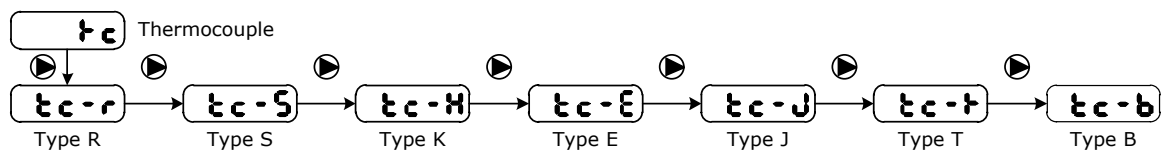
Setting Menu for DP70



1. Menu Input Type



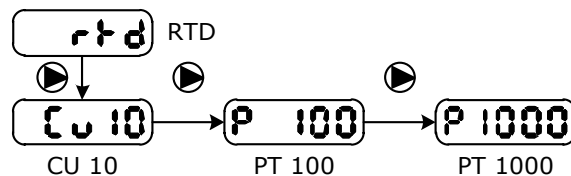
Menu Input Type is for setting type of input. DP70 has 6 type of input which is Thermocouple, RTD, R (Ohm), mV, Voltage and Current as detail below


❖ Thermocouple Input



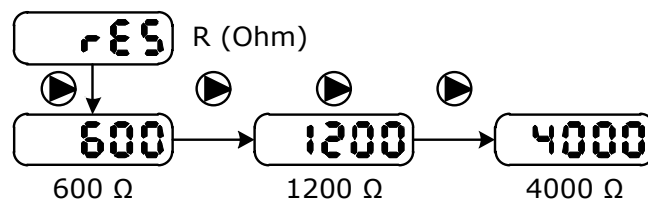
Set up Thermocouple Input push Mode button for 3 second then choose **IP-t** using  to choose **tc** for thermocouple then using  to select thermocouple type R, S, K, E, J, T, and B. click on Exit button to go the next step.


RTD Input



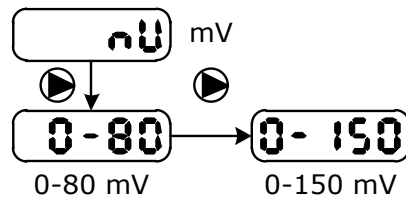
Set up RTD Input push Mode for 3 second then choose **IP-t** click Mode then select **rtd** then using  button to select type of RTD which is Cu10, PT100, PT1000 then click Exit button to go to the next step.

❖ R (Ohm) Input



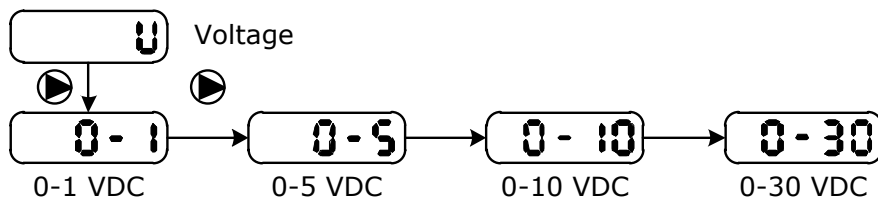
Setting R (Ohm) Input by click Mode button and hold for 3 second then setting menu will appear **IP-t** click on mode button to select **rES** for input then click  to select type of desire input which are Type 600 Ω, 1200 Ω, 4000 Ω then click on Exit button to go to the next step.

❖ mV Input



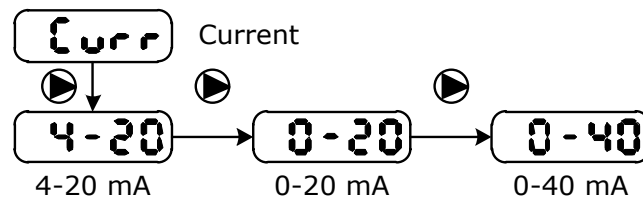
Setting mV Input by click Mode button and hold for 3 second to go setting menu then select IP-t to choose input type. Click on Mode button to select mV for mV input. Use button to choose mV type which is 0-80 mV, 0-150 mV then click on Exit button to go to the next step.

❖ Voltage Input



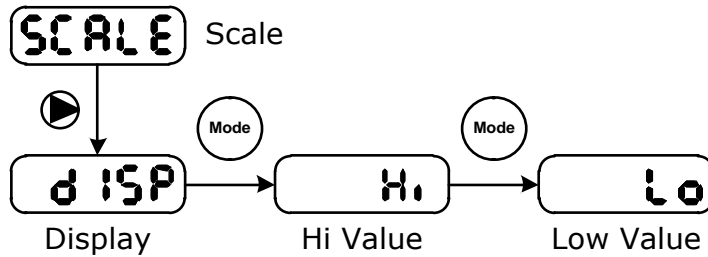
Set up Voltage Input click Mode button and hold for 3 second to go to setting menu then select IP-t to choose input type. Click on mode button to select U for Voltage input. Use button to choose Voltage input type which is 0-1, 0-5, 0-10, 0-30 VDC then click on Exit button to go to the next step

❖ Current Input



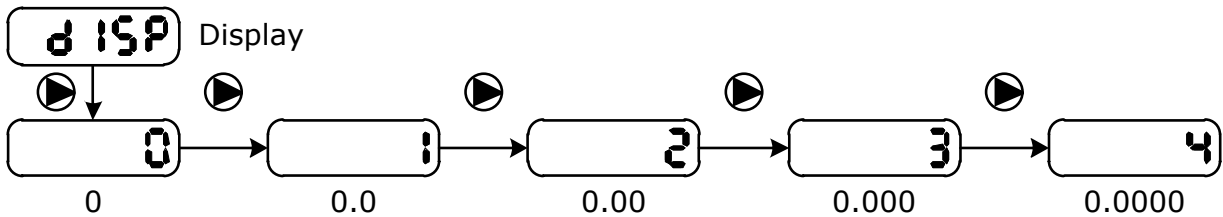
Set up Current Input click Mode button and hold for 3 second to getting in to setting menu then select IP-t to choose input type. Click on mode button to select Curr for Current input. Use to select type of Current input which is 4-20, 0-20, 0-40 mA then click on Exit button to go to the next step.

2. Menu Scale



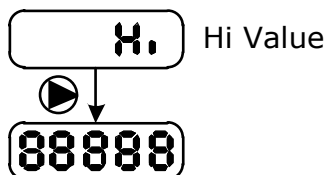
Menu Scale is use for calibrate display scale and set up display digit.

❖ Display



Display menu is for set up display digit by click Mode button and hold for 3 second to go to setting menu and the select **SCALE** use Mode button to select **d ISP** and use to select digit type. Clcik Exit button to go to the next step.

❖ Hi Value

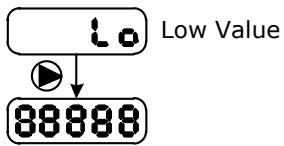



Hi Value is for set maximum value of the scale. Click Mode button and hold for 3 second and then select **SCALE** use choose **Hi** then use to select maximum desire value. Click Exit to go to the next step

Function of each button in Hi Value mode:

- to increase
- to decrease
- changing position




❖ Low Value



Low Value is for minimum scale setting. Click Mode button and hold for 3 second to get in to setting menu then select on **SCALE** use Mode button to select **Lo** then set minimum desired value by click 

Click Exit button to go to the next step

Function for each button in low value mode:

-  increase value
-  decrease value
-  change position

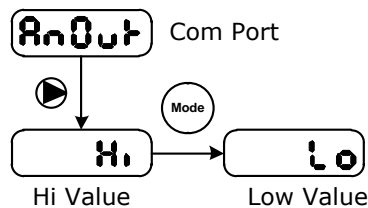
Example DP70

Input type 4-20 mA and display on panel as 0-100. So, Hi =100 and Low = 0

Input = 4 mA Show 0

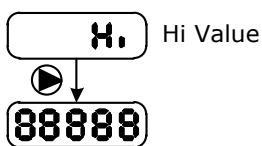
Input = 20 mA show 100



3. Menu Analog Output






Menu Analog Output set up value of analog Output (Optional Analog Output)

❖ Hi Value

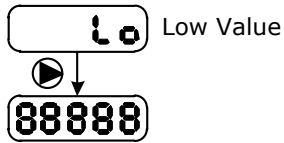


Hi Value is for setting maximum value of Output. Click Mode button and hold for 3 second. Select **AnOut** and use  button to select **Hi** click on  button to set maximum desired value. Click Exit to go to next step

Function of each button on Hi Value mode:

-  Increase
-  Decrease
-  change position

❖ **Low Value**



Low Value is for setting maximum value of Output. Click Mode button and hold for 3 second. Select **Auto** and use Mode button to choose **Lo** then set minimum desired value by click button. Click Exit to

go to the next step

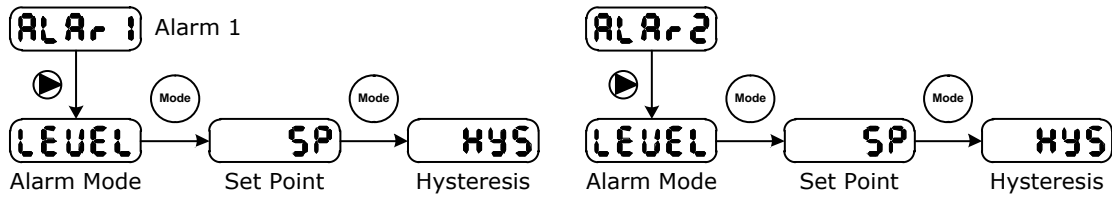
Function of each button on Low Value mode:

- Increase value
- Decrease value
- changing position

Example DP70 Input Type is RTD (PT100) set up Input range as 0-200. Hi = 200 and Low = 0

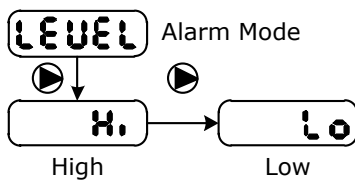
Input = 0 °C	Output = 4 mA
Input = 200 °C	Output = 20 mA

4. Menu Alarm



Menu Alarm is for set up alarm mode

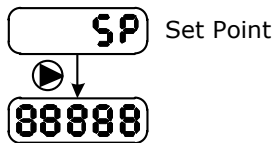
❖ Alarm Mode



Alarm Mode is setup by click on Mode button for 3 second and click **ALAR 1** or **ALAR 2** to in order to set alarm1 or alarm2 click **▶** then choose **LEVEL** and then set mode by click on **▶** Click on

the Exit button to go to the next step

❖ Set Point

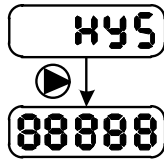


Set Point is setting alarm value. Click on Mode button for 3 second then choose **ALAR 1** or **ALAR 2** and then click mode button and choose **SP** and set value by click **▶** . Click on Exit button to go to the next step

Function of set point mode

- **▶** Increase value
- **◻** Decrease value
- **◀** Position Change

❖ **Hysteresis**



Hysteresis

Hysteresis would be setup by Click on Mode button and hold for 3 second then select **ALARM 1** or **ALARM 2** click on Mode button and choose **HYS** then set up desire value by click . Click on Exit

button to go to the next step

Function of Hysteresis mode

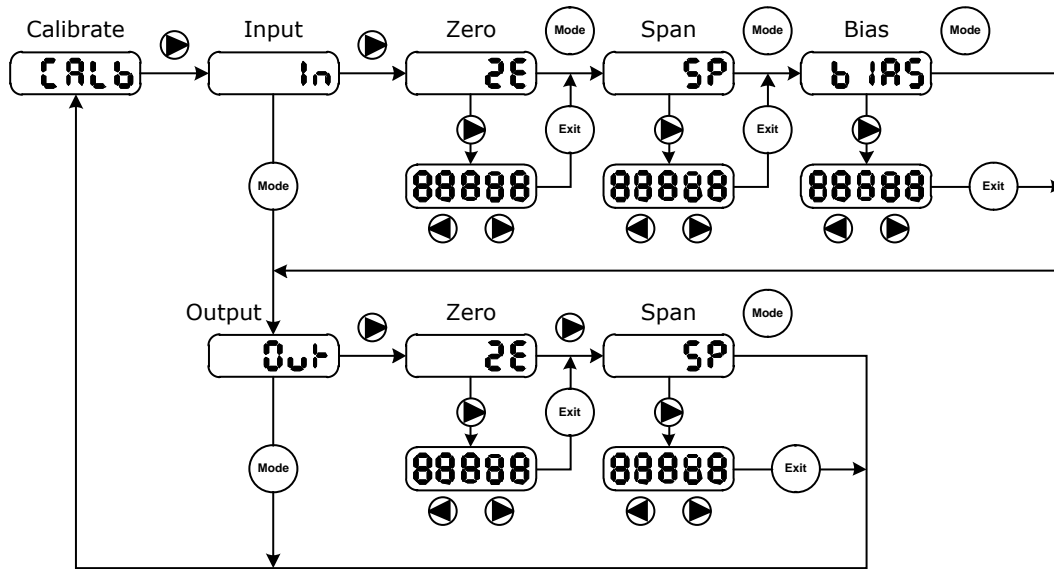
- Increase value
- Decrease value
- Position Change


Example: Input Type is 4-20 mA and display value 0-100

Alarm 1 set as High, Set Point = 80 and Hysteresis = 2
Alarm 1 is on when value is more than 80 and alarm 1 is off when value is $(80-2) = 78$

Alarm 2 set as low Set Point = 30 and Hysteresis = 1
Alarm 2 is on when value is lower than 30 and alarm 2 is off when value is $(30+1) = 31$

5. Menu Calibrate



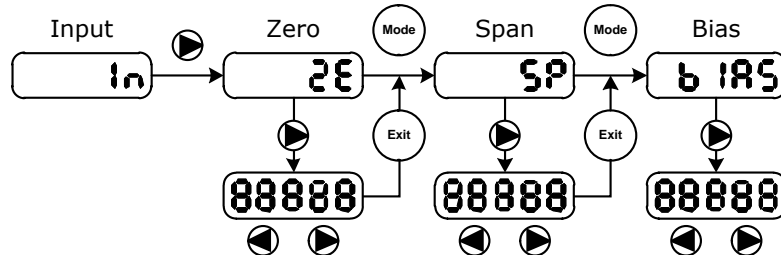
Click on  and hold for 3 second to login to calibration mode


Bias Revise Offset value on Y Axis, Shift graph up and down

Span Set up Max scale of Input/Output







Zero Set up min scale of Input/Output

❖ Calibrate of Input

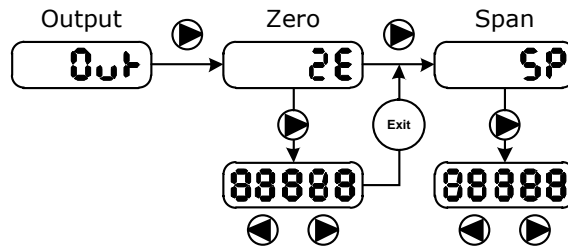


Click on  and hold for 3 second to login to calibration mode then choose

 and Click 





- **Calibrate Zero** turns on the minimum power. Minimum input will show on display and setup by click   until get desire value an then click Exit for save and go to the next step
- **Calibrate Span** turns on the maximum power. Display will show the maximum input then adjust by click   then click Exit for save and go to the next step
- **Calibrate Bias** is for set offset value for all input. Turn on the power and click   to adjust offset value then click Exit value to save and go to the next step.

❖ Calibrate of Output



Measurement equipment will be needed for calibrate output such as multi meter etc.

In order to calibrate output, Click  button and hold for 3 second to login to calibration mode then choose  and click  to select revise function

- **Calibrate Zero** turns on the minimum power. Minimum input will show on display and reading output by multi meter then setup by click   until get desire value for output an then click Exit for save and go to the next step
- **Calibrate Span** turns on the maximum power. Display will show the maximum input and multi meter will show maximum output then adjust by click   until got desired output then click Exit for save and go to the next step

P.S. Display panel show only value of input. In order to display analog output, multi meter would be needed.

Edit: 08/04/2020