

## APM489-BAR-ALM Bargraph Indicator with Four Trip Set Points

### DESCRIPTION

- Red or Green LED high-brightness display.
- Suitable for most Process signals. V/I.
- Up to four alarm set points as standard.
- Vertical or Horizontal mounting options.
- Display can be scaled in % or engineering units.
- Supply options: 10 - 28 Vdc / 86 - 264 Vac
- High stability & low cost
- 8 Level brightness control buttons on front fascia.

### TECHNICAL SPECIFICATION

#### Input

Input Range	Input Impedance	Input Range	Input Impedance
Voltage 1 ~ 5 V	≥ 1M ohm	Current 0(4)~20	250 ohm

➤ Other ranges available on request.

**Over load:** Voltage: 1.5 x rated continuous.  
2 x rated for 10 seconds.

**Display LED:** 101 Segments High-brightness red or green LED

**Scaling:** % or Engineering units.  
Vertical or Horizontal mounting options

**Operating Temp:** -30 ~ +70 °C.

**Relative humidity:** <85 %R.H.

**Storage temp:** -30 ~ +70 °C.

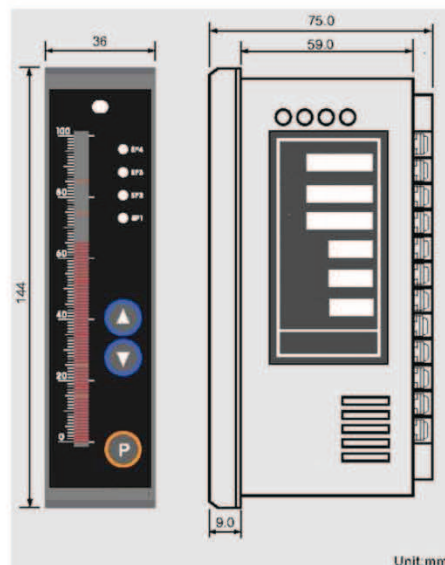
**Power supply:** 10-28Vdc / 86-264Vac

**Power consumption:** ≤ 0.7 W(F.S.)

**Dielectric Strength:** DC 1 KV for 1 min. (Between Power / Input)

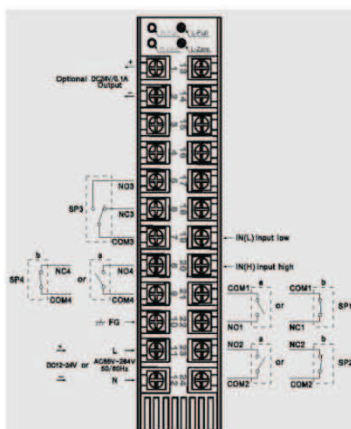
**Weight:** ≤100g

### DIMENSIONS



Panel Cut-out dimensions: 33.5 x 137.5 mm

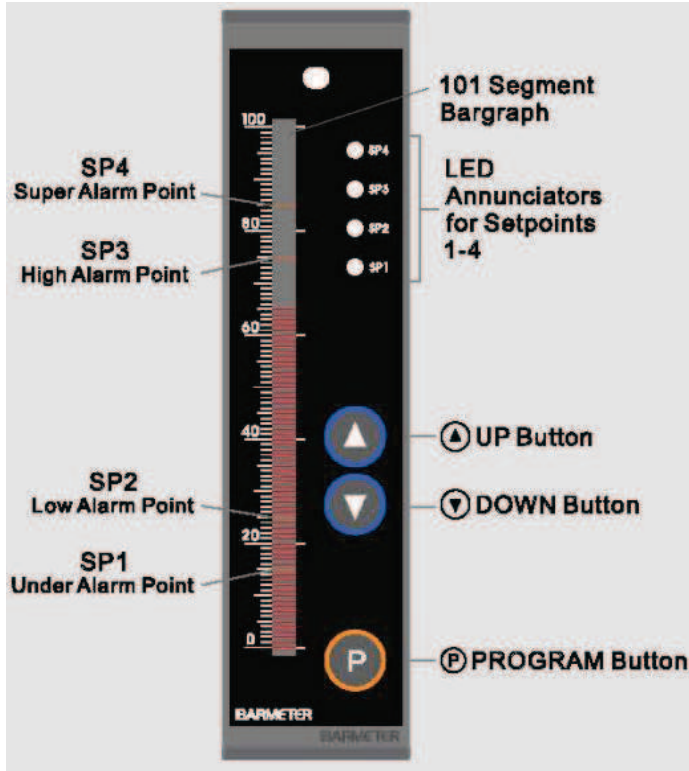
### CONNECTION DIAGRAM



### Wiring Diagram

NO.	Symbol	I/O	Function
1	Vout (H)	O	DC 24V Output (+) (Optional)
2	Vout (L)	O	DC 24V Output (-) (Optional)
5	NO3	O	Normally Open for SP3
6	NC3	O	Normally Closed for SP3
7	COM3	O	Common for SP3
8	NO4/NC4	O	Normally Open or Normally Closed for SP4
9	COM4	O	Common for SP4
10	FG	I	Ground
11	PS+ / L	I	DC Power Positive or AC Power L
12	PS- / N	I	DC Power Negative or AC Power N
19	IN (L)	I	Signal Input Low
20	IN (H)	I	Signal Input High
21	COM1	O	Common for SP1
22	NO1/NC1	O	Normally Open or Normally Closed for SP1
23	NO2/NC2	O	Normally Open or Normally Closed for SP2
24	COM2	O	Common for SP2

## Controls and Indicators



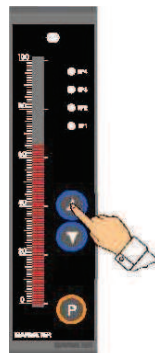
## Operating Instructions

### 1. Bar Brightness Setting

The meter will enter into the Bar Brightness Setting state when press and hold the and buttons for 3 seconds in the measurement state.

#### Step A

Press and hold the and buttons for 3 seconds



The bar will present zebra-stripe

#### Step B

Press the or button to control the bar's brightness (there are 8 grades)



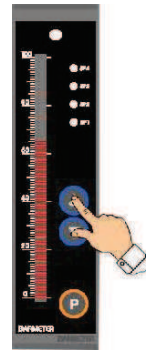
### Step C

Press and hold the button for the 3 seconds or no operation for 10 seconds to enter into the measurement state.



### 2. The Cursor and Setting

The cursors have memory function and brighter than normal segments. In the measurement state, press the button repeatedly, the cursor will disappear or reappear



Cursor disappear



Cursor reappear

The meter will enter into the Cursor Setting state when press and hold the button for 3 seconds in the measurement state.

#### Step A

Press and hold the button for 3 seconds to enter into the Cursor Setting state.

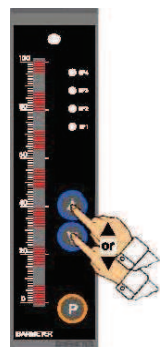
Press the button to switch between the set points.



#### Step B

Press the or button to set the cursor's position.

Each cursor can be set from bottom to top. And they must meet the following conditions.  $SP1 < SP2 < SP3 < SP4$



### Step C

Press and hold the **P** button for the 3 seconds or no operation for 10seconds to enter into the measurement state.



## 3. The retardation of alarm exit and setting

### 3.1 Retardation of alarm exit

The bar will blink and the LED annunciators will activate to alarm at the moment of the measure value out of range of the point. Recovery from the alarm status is 'alarm exit'.

The alarm exit can delay some value to operate, and that is the 'retardation of alarm exit'. Each cursor has 4 grades retardation to choose. They can be set separately according to the needs.

### 3.2 Retardation of alarm exit setting

The module will enter into the Retardation of Alarm Exit Setting state when press and hold the **P** and **▲** button for 3 seconds in the measurement state.

### Example

The retardation of SP1 and SP4 is on the 4<sup>th</sup> grade, SP2 is on the 2<sup>nd</sup> grade, SP3 is on the 3<sup>rd</sup> grade.

### Step C

Press and hold **P** button 3 seconds or no operation for 10seconds to enter into the measurement state.



## 4. Measure and Control Output

In the measurement state, the bar goes up and down in accordance with the input analogue signal. When the measure value out of range of the set point, the meter will enter into the alarm state.

In the alarm state, the bar will blink, the relevant LED annunciators will bright on and the relevant relay will activate.



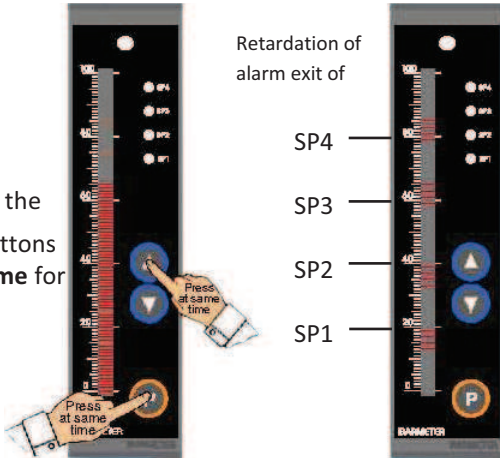
Input signal higher than SP4



Input signal lower than SP2

### Step A

Press and hold the **P** and **▼** buttons at the same time for 3 seconds.



Retardation of alarm exit of

Each set point has 4 grades retardation.

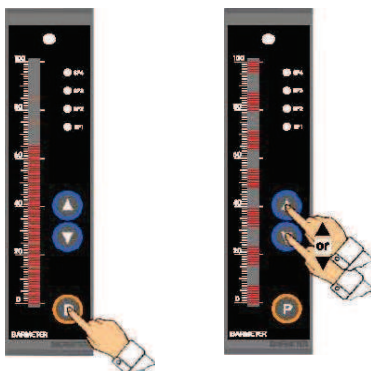
From low to high, the grade of retardation elevated

The bar will present

### Step B

Press the **P** button to switch the set point which need to set. The top segment of selected part will blink.

Press the **▲** or **▼** button to elevate or reduce grades.



Select set point

Select grade

## 5. Return to the default state

Press the **P** button and turn on the power simultaneously, system will return to the default state. The default state is that the brightness of the bar is on the 4<sup>th</sup> grade, four cursors located on 15<sup>th</sup>, 25<sup>th</sup>, 75<sup>th</sup> and 85<sup>th</sup>, retardation of alarm exit are all on the 1<sup>st</sup> grade.

