

For your safety, please read the following before using.

- ① Do not use corrosive or flammable gas or liquid with this product.
- ② Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- ③ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- ④ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
- ⑤ Do not use in environment containing steam or oil vapor.
- ⑥ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- ⑦ Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
- ⑧ Sensors at end-of-life must be disposed of in accordance with E-Waste regulations of the country/region, NOT disposed of with regular garbage.

A SPECIFICATIONS

MODEL		KP47S								
Pressure range type		01	02	03	04	05	06	07	08	09
Rated pressure range (kPa)		0.00 ~ -10.00	0.00 ~ -5.00	0.00 ~ -3.00	0.00 ~ 10.00	0.00 ~ 5.00	0.00 ~ 3.00	-10.00 ~ 10.00	-5.00 ~ 5.00	-3.00 ~ 3.00
Set pressure range (kPa)		0.00 ~ -10.00	0.00 ~ -5.00	0.00 ~ -3.00	0.00 ~ 10.00	0.00 ~ 5.00	0.00 ~ 3.00	-10.00 ~ 10.00	-5.00 ~ 5.00	-3.00 ~ 3.00
Withstand pressure		20 kPa								
Fluid		Filtered air, Non-corrosive / Non-flammable gas								
Set pressure resolution		0.01 kPa								
Power supply voltage		12 ~ 24 V DC \pm 10 %, Ripple (P-P) \leq 10 %								
Current consumption		\leq 30mA (with no load)								
Switch output		NPN : open collector outputs Max. Load Current : 80 mA Max. Supply Voltage : 30 V DC Residual Voltage : \leq 1 V				PNP : open collector outputs Max. Load Current : 80 mA Max. Supply Voltage : 24 V DC Residual Voltage : \leq 1 V				
Repeatability		$\leq \pm 0.4$ kPa								
Hysteresis	One point set mode	Adjustable (※1)								
	Hysteresis mode									
	Window comparator mode									
Response time		\leq 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selectable)								
Output short circuit protection		Yes								
Display		4 digital, 7 segment LCD display (Red/Green/Orange) (Sampling rate : 0.2, 0.5, 1 sec./ time)								
Indicator accuracy		$\leq \pm 0.4$ kPa								
Switch on indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2								
Analog output (Voltage output)		Output voltage : 1 ~ 5V \pm 2.5% F.S. (within rated pressure range) Linearity : \pm 1% F.S. Output impedance : about 1 k Ω								
Environment	Enclosure	IP40								
	Ambient temp. range	Operation : 0 ~ 50 °C, Storage : -10 ~ 60 °C (No condensation or freezing)								
	Ambient humidity range	Operation / Storage : 35 ~ 85 % RH (No condensation)								
	Withstand voltage	1000V AC in 1-min (between case and lead wire)								
	Insulation resistance	\geq 50 M Ω (at 500V DC, between case and lead wire)								
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z								
	Shock	100 m/s ² (10 G), 3 times each in direction of X, Y and Z								
Temperature characteristic		± 0.4 kPa of detected pressure (25°C) at temp. (Range of 0 ~ 50°C)								
Port size		F1: R1/8", M5; F2: NPT1/8", #10-32 UNF; F3: G1/8"(BSPP), M5; M5: M5 female thread								
Lead wire		\varnothing 4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 4 cores								
Weight (with 2 meter lead wire)		Approx. 67g								

※1. Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

B ORDERING INFORMATION

K P 4 7 S - 0 1 - F 1

Output Specifications

- 01 : 1 NPN output + Analog output (1~5V)
- 02 : 2 NPN output
- 03 : 1 PNP output + Analog output (1~5V)
- 04 : 2 PNP output

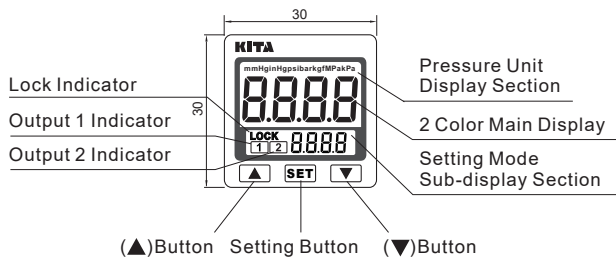
Pressure Port

- F1 : R1/8", M5
- F2 : NPT1/8", #10-32UNF
- F3 : G1/8"(BSP), M5
- M5 : M5

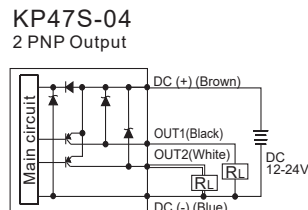
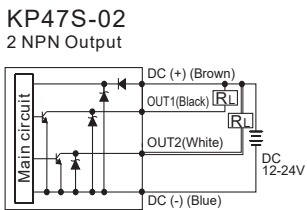
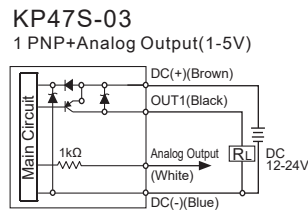
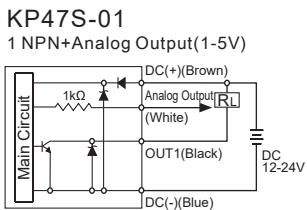
Optional Parts

- BT-22 : Mounting bracket
- BT-23 : Mounting bracket
- PA-C : Panel adapter
- PA-D : Panel adapter + Front protective lid

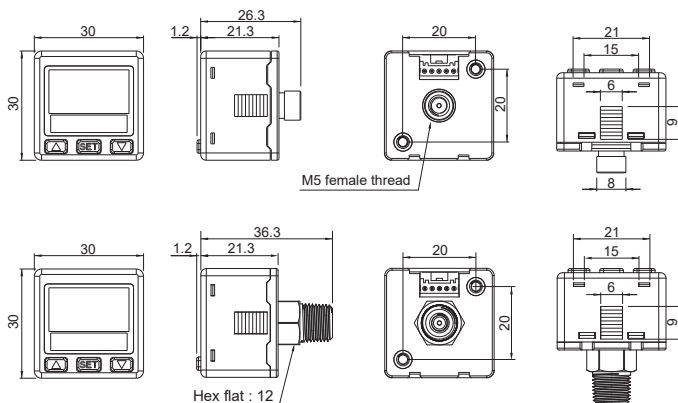
C PANEL DESCRIPTION



D OUTPUT CIRCUIT WIRING DIAGRAMS



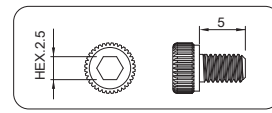
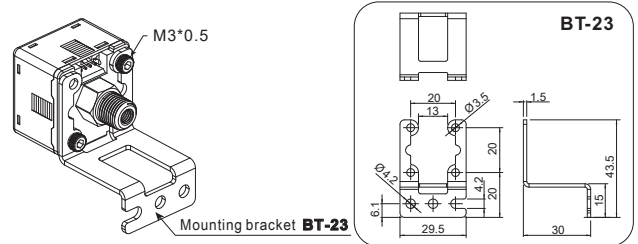
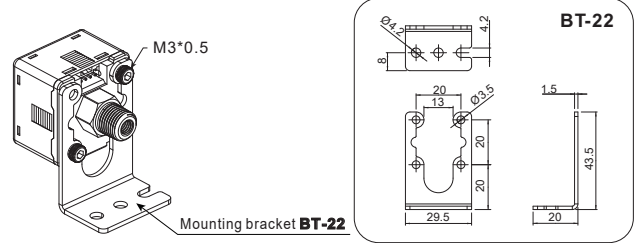
E DIMENSIONS



Unit:mm

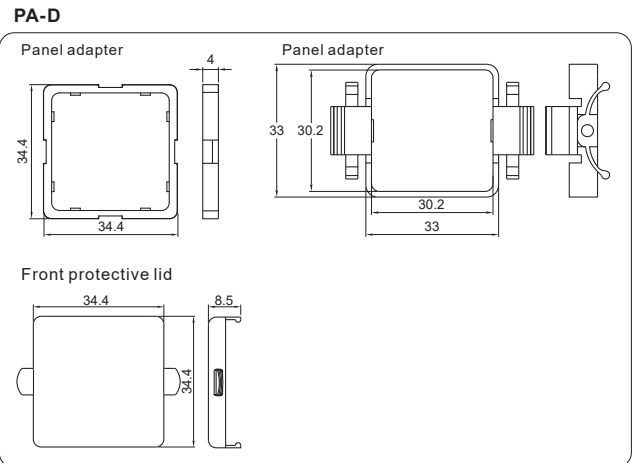
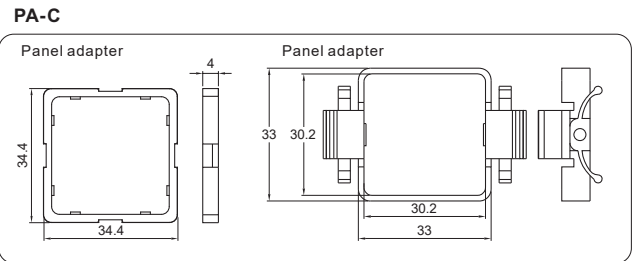
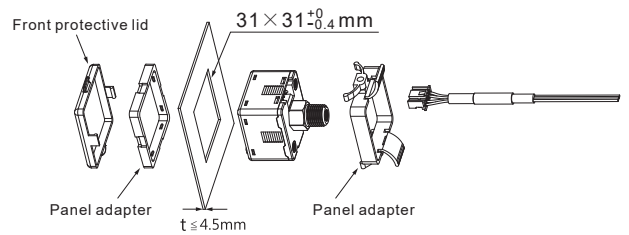
F OPTIONAL PARTS DIMENSIONS

① Mounting bracket



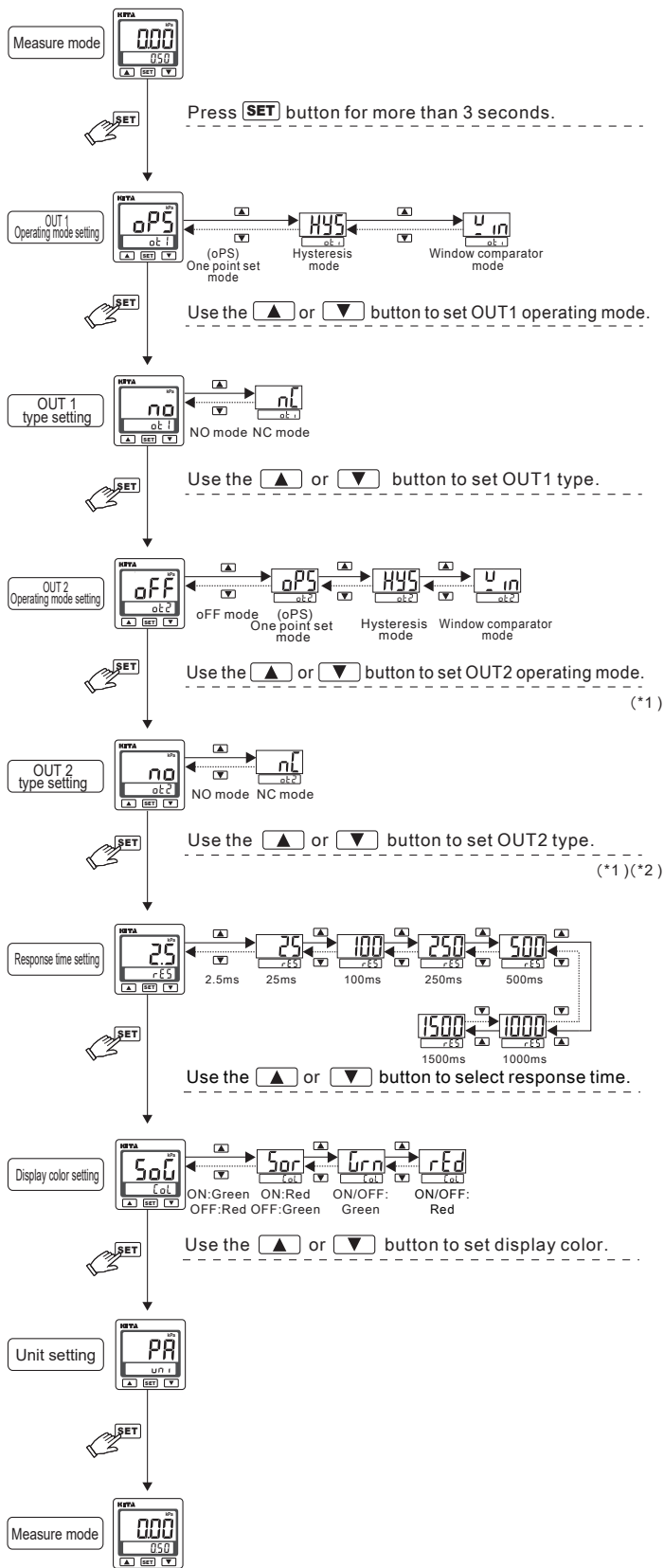
- Caution :**
- *1. Screws suitable hexagonal wrench size is 2.5mm.
 - *2. Use non-standard screws, the length must be limited to 5mm.

② Panel Mounting



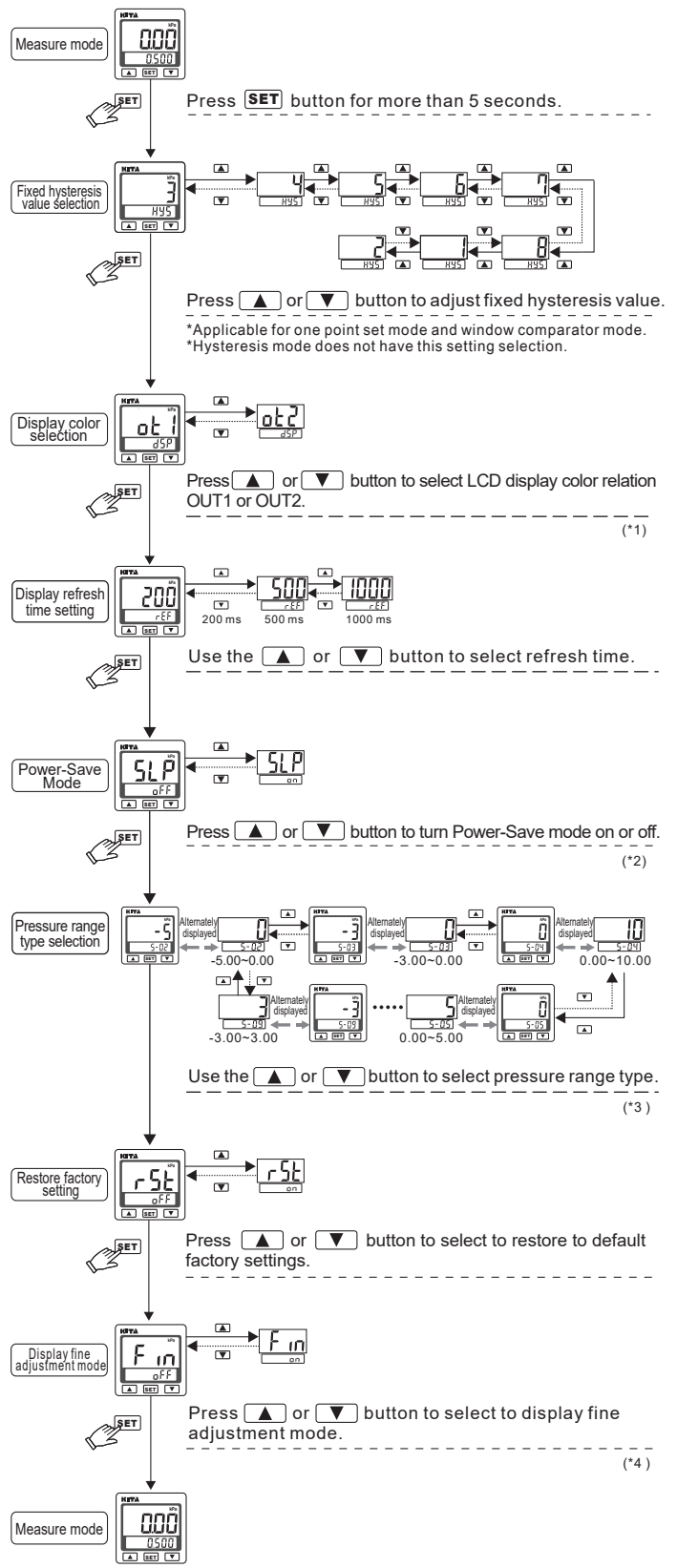
Unit:mm

G INITIAL SETTING MODE



【NOTE :】
 *1. This setting mode will not display when output spec. is 1 OUT.
 *2. This setting mode will not display when output 2 is set to oFF.

H ADVANCE SETTING MODE

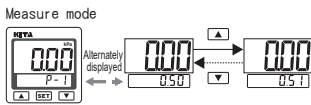


【NOTE :】
 *1. This setting mode will not display OUT2 when output spec. is 1 OUT.
 *2. When setting is "oN", the power-save mode is active. Please refer to the item "POWER-SAVE MODE" in detailed.
 *3. After selecting pressure range type, please return to zero. Please refer to the item "ZERO POINT SETTING" in detailed.
 *4. When setting is "oN", the display fine adjustment mode is active. Please refer to the item "FINE ADJUSTMENT MODE" in detailed.

I PRESSURE SETTING MODE (2 OUT)

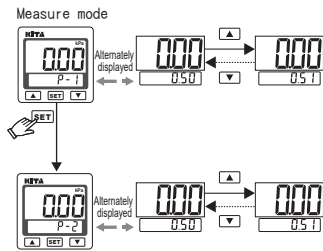
Setting Condition 1 :

OUT 1 mode setting :
" oP5 " (One point set mode)
OUT 2 mode setting :
" oFF " (Not used)



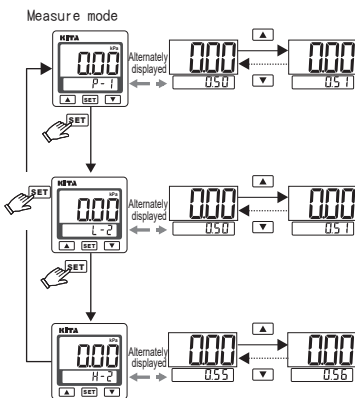
Setting Condition 2 :

OUT 1 mode setting :
" oP5 " (One point set mode)
OUT 2 mode setting :
" oP5 " (One point set mode)



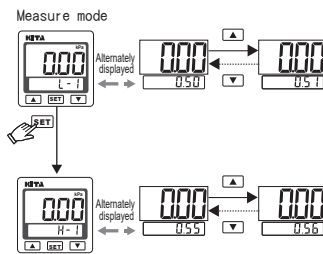
Setting Condition 3 :

OUT 1 mode setting :
" oP5 " (One point set mode)
OUT 2 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)



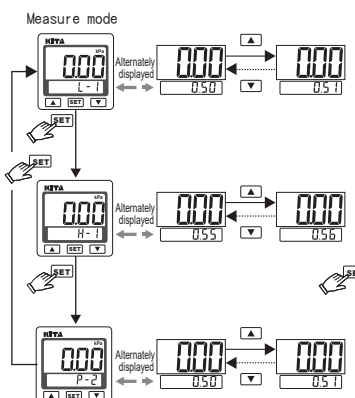
Setting Condition 4 :

OUT 1 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)
OUT 2 mode setting :
" oFF " (Not used)



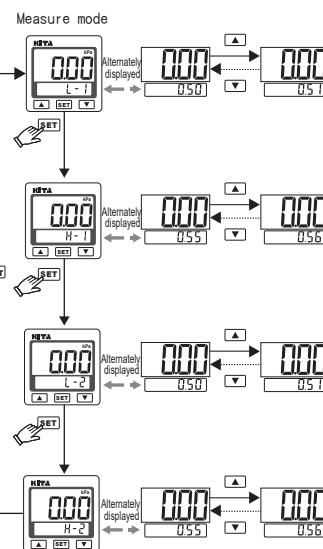
Setting Condition 5 :

OUT 1 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)
OUT 2 mode setting :
" oP5 " (One point set mode)



Setting Condition 6 :

OUT 1 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)
OUT 2 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)

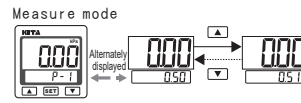


[NOTE :]
Do not disconnect power when the sub-display and setting value is flashing alternately; otherwise the system cannot store the values.

J PRESSURE SETTING MODE (1 OUT)

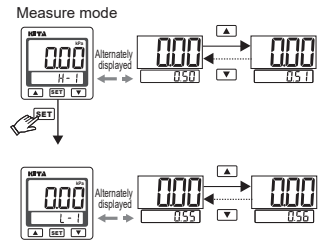
Setting Condition 1 :

OUT 1 mode setting :
" oP5 " (One point set mode)



Setting Condition 2 :

OUT 1 mode setting :
" HYS " (Hysteresis mode)
" U in " (Window comparator mode)

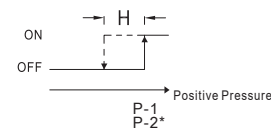


[NOTE :]
Do not disconnect power when the sub-display and setting value is flashing alternately; otherwise the system cannot store the values.

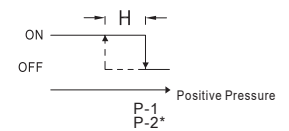
K OUTPUT TYPE

(1) One point set mode:

Normal open mode

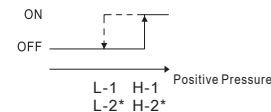


Normal close mode

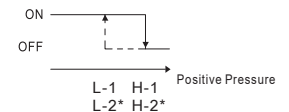


(2) Hysteresis mode:

Normal open mode

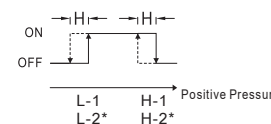


Normal close mode

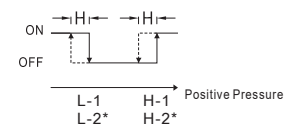


(3) Window comparator mode:

Normal open mode



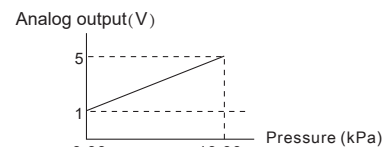
Normal close mode



[NOTE :]
*1. Pressure setting value of P-2, L-2 or H-2 won't be shown when output spec. is 1 OUT.
*2. In case hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.
*3. When using window comparator mode, the difference between two set points must be greater than the fixed hysteresis, otherwise will cause the switch output to malfunction.

L ANALOG OUTPUT DESCRIPTION

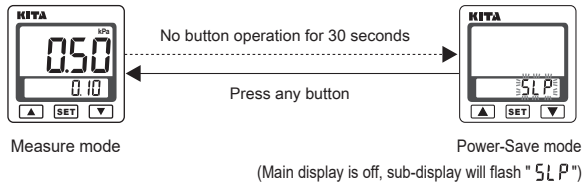
Analog output range 1-5V, proportional to the pressure range.



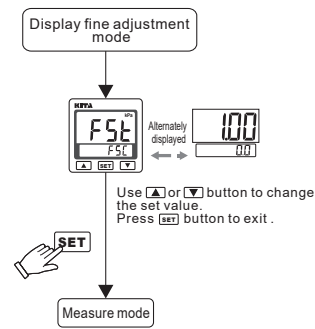
01 :	0.00	-10.00
02 :	0.00	-5.00
03 :	0.00	-3.00
04 :	0.00	10.00
05 :	0.00	5.00
06 :	0.00	3.00
07 :	-10.00	10.00
08 :	-5.00	5.00
09 :	-3.00	3.00

M POWER-SAVE MODE

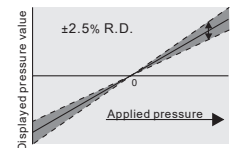
- ⊙ During Power-Save mode, the main display will turned off if no buttons is pressed after 30 seconds.
- ⊙ During Power-Save mode, the output LCD may not be synchronize with the output. It is normal and will not affect output operation.
- ⊙ Press any button to turn-on main display temporarily.



Q FINE ADJUSTMENT MODE



This function eliminates slight differences in the output values and allows uniformity in the numbers displayed. Displayed values of the pressure sensor can be calibrated to within $\pm 2.5\%$ R.D.



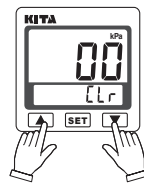
—: Factory setting display value set prior to shipment
 ■: Display calibration range

R. D. (Real Detect)

- [NOTE:] 1. Setting resolution is $\pm 0.1\%$ R.D.
 2. The signal would be changed with analog output after adjusting.

N ZERO POINT SETTING

Press the ▲ + ▼ button at the same time until the "00" is shown. Release the button to end zero setting.



R China RoHS

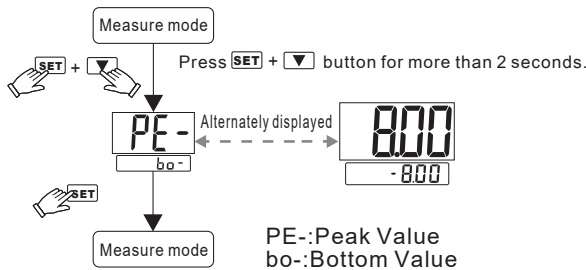
Part Name	Hazardous Substances					
	Pb	Hg	Cd	Cr Vi	PBB	PBDE
Metal Part	X	O	O	O	O	O
Plastic Part	O	O	O	O	O	O
Electronic	X	O	O	O	O	O
Cable & Cabling accessories	O	O	O	O	O	O

This table is made according to SJ/T 11364.

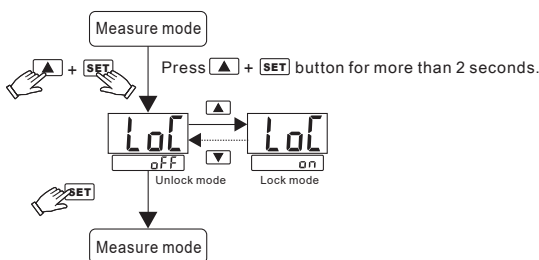
O: Indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.

X: Indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572.

O PEAK/BOTTOM HOLD FUNCTION



P KEY LOCK/UNLOCK MODE



- ⊙ Use key lock mode to prevent unauthorized or accidental tampering with the switch setting.
- ⊙ When lock mode is selected, panel will display "LOCK".

