

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.

A. SPECIFICATIONS		EP47P-□-□ (Positive)	EP47V-□-□ (Vacuum)	EP47C-□-□ (Compound)		
Rated pressure range		-0.100 ~ 1.000MPa	0.0 ~ -101.3kPa	-100.0 ~ 100.0kPa		
Setting pressure range		-0.103 ~ 1.030MPa	10.0 ~ -103.0kPa	-103.0 ~ 103.0kPa		
Withstand pressure		1.5MPa		500kPa		
Fluid			Filtered air, Non-corrosive / Non-flammable gas			
Set pressure resolution	kPa	—		0.1		
	MPa	0.001		—		
	kgf/cm ²	0.01		0.001		
	bar	0.01		0.001		
	psi	0.1		0.01		
	inHg	—		0.1		
	mmHg	—		1		
Power supply voltage		12 to 24V DC ±10%, Ripple (P-P) 10% or less				
Current consumption		≤ 40mA (With no load)				
Switch output	Output type	open collector output (NPN or PNP)				
	Load current	Max. 80mA				
	Residual voltage	≤ 1.0V				
	Response time	≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selections)				
Analog output	Output voltage	0.6~5V ±2.5% F.S. (within rated pressure range)	1 ~ 5V ±2.5% F.S. (within rated pressure range)			
	Output impedance		about 1kΩ			
	Linearity		±1% F.S.			
Display	Display	Two color(Red/Green) main & unit display, Orange sub-display (Sampling rate: 0.2,0.5,1 seconds/time selectable)				
	Indicator accuracy	±1% F.S. ±1 digit (ambient temperature: 25 ±3°C)				
	Repeatability (Switch output)	±0.3% F.S. ±1 digit				
	Switch ON indicator	Orange Indicator OUT				
Environment	Enclosure	IP 40				
	Operating temp.	0 ~ 50°C				
	Temp. characteristic	±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C				
	Ambient temp. range	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	50MΩ (at 500V DC, between case and lead wire)				
	Vibration	Total amplitude 1.5mm,10Hz-150Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z				
	Shock	100m/s ² (10G), 3 times each in direction of X, Y and Z				
Port size		F1 : R1/8"; F2 : NPT1/8"; F3 : G1/8"(BSPP); M5 : M5				
Lead wire		Oil-resistance cable(0.15mm ²)				
Weight		Approx. 67g (with 2 meter lead wire)				

B. ORDERING INFORMATION

E P 4 7 C - 0 1 - F 1

Pressure Range

C : Compound (-103.0 ~ 103.0 kPa)
V : Vacuum (10.0 ~ -103.0 kPa)
P : Positive (-0.103~1.030 MPa)

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

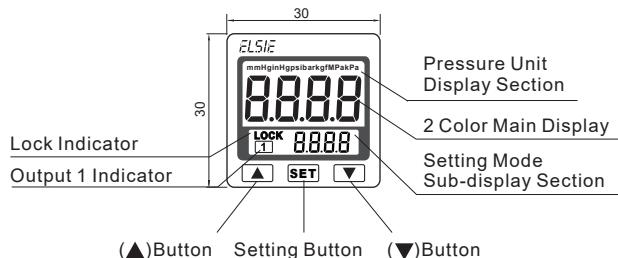
Pressure Port

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

Optional Parts

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

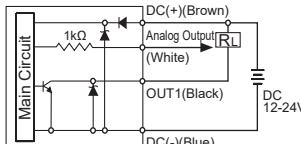
C. PANEL DESCRIPTION



D. OUTPUT CIRCUIT WIRING DIAGRAMS

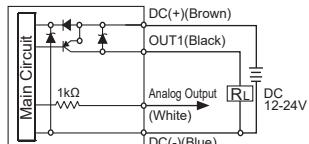
EP47□-01-□

1 NPN+Analog Output(1~5V)
(0.6~5V only positive)



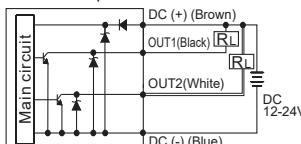
EP47□-03-□

1 PNP+Analog Output(1~5V)
(0.6~5V only positive)



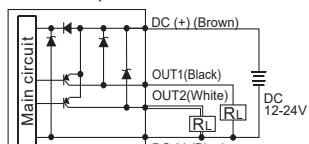
EP47□-02-□

2 NPN Output

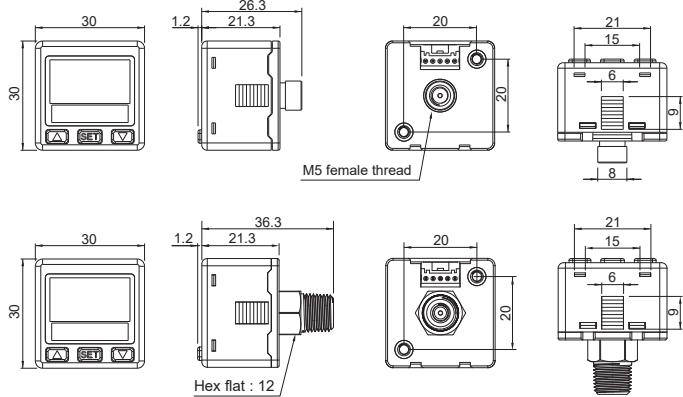


EP47□-04-□

2 PNP Output



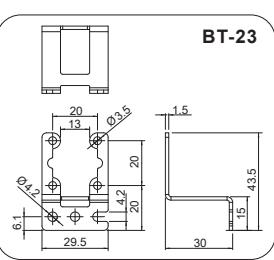
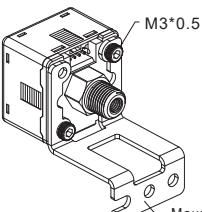
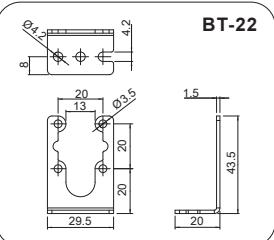
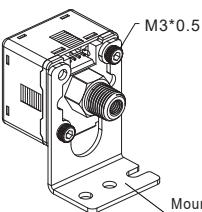
E. DIMENSIONS



Unit:mm

F. OPTIONAL PARTS DIMENSIONS

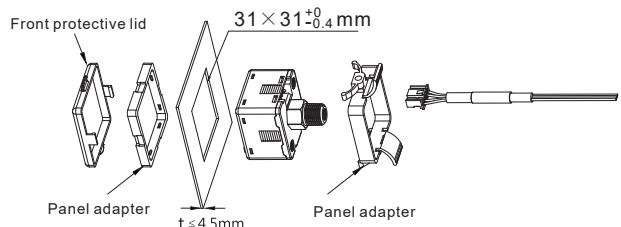
① Mounting bracket



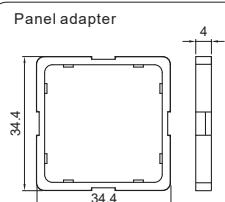
Caution :

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

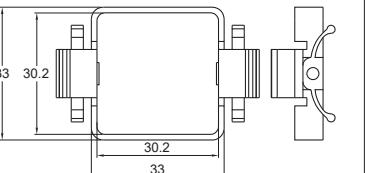
② Panel Mounting



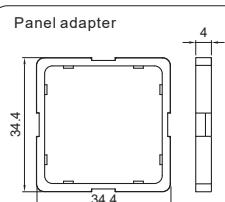
PA-C



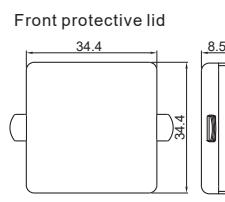
Panel adapter



PA-D

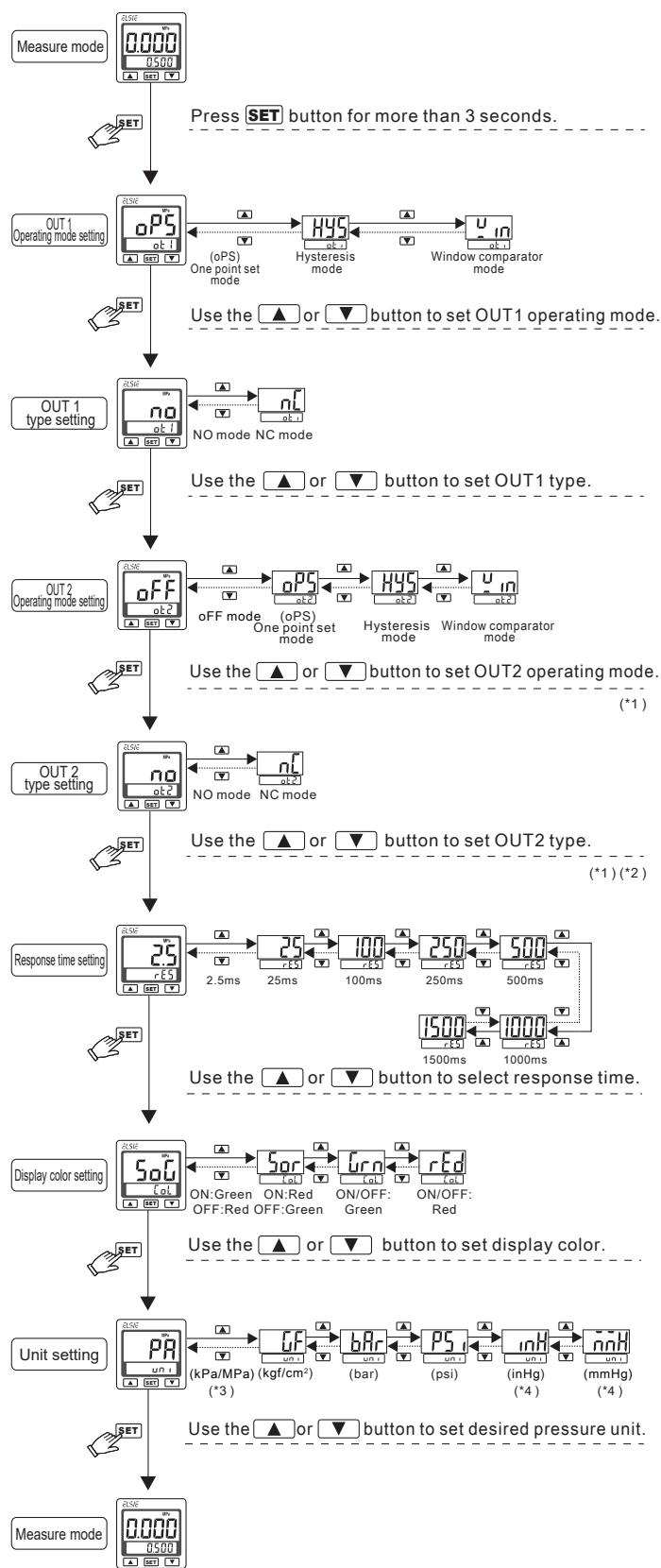


Panel adapter



Unit:mm

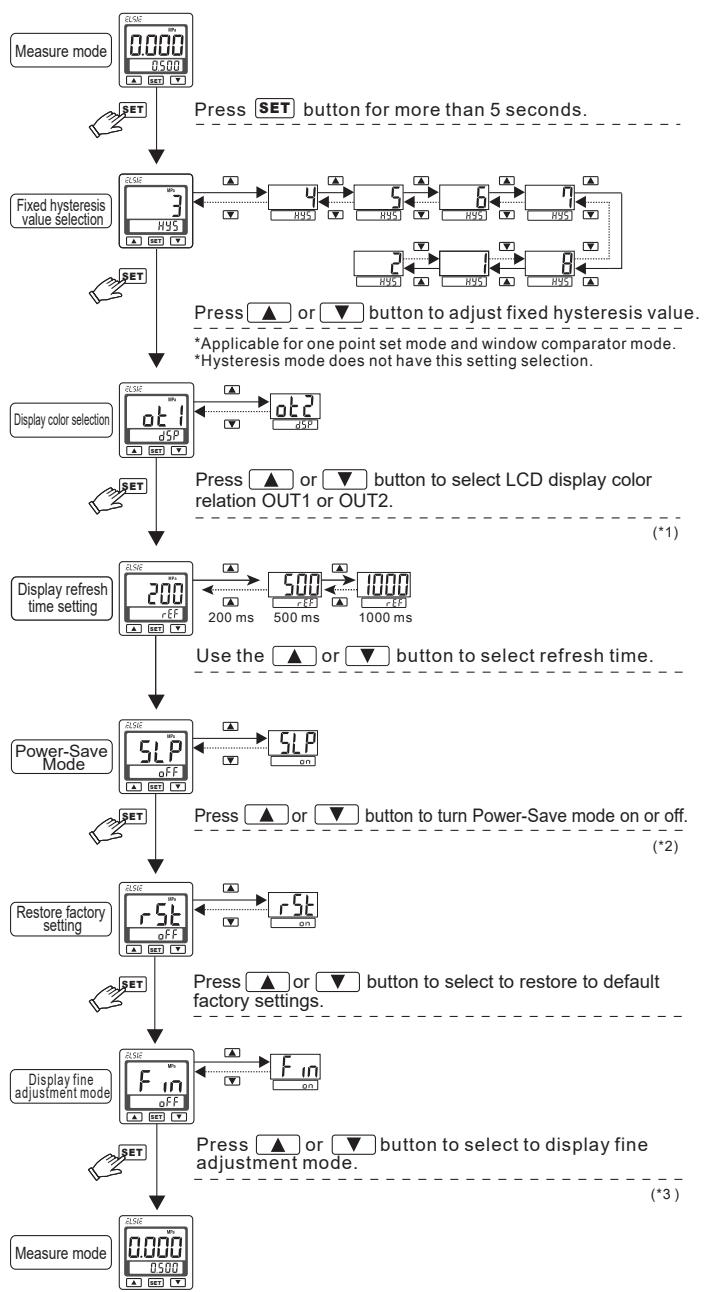
G. INITIAL SETTING MODE



【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.
- *3. Pressure unit is MPa with positive pressure.
- Pressure unit is kPa with vacuum and compound pressure.
- *4. Only applicable for Vacuum/Compound.

H. ADVANCE SETTING MODE

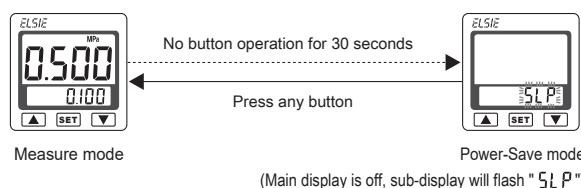


【NOTE :】

- *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 " **② POWER-SAVE MODE**" in detailed.
- *3. When setting is " **on** ", the display fine adjustment mode is active. Please refer to the item " **③ FINE ADJUSTMENT MODE**" in detailed.

I. 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.



J. PRESSURE SETTING MODE (2 OUT)

◎ Setting Condition 1 :

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

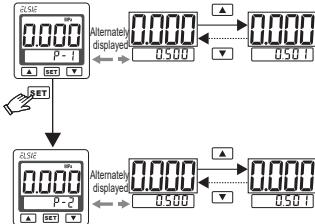
Measure mode



◎ Setting Condition 2 :

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

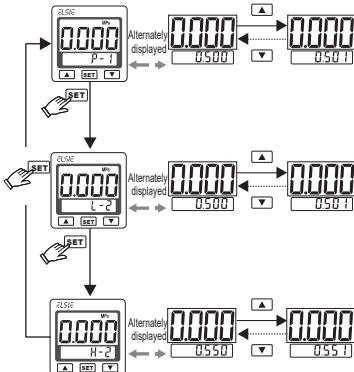
Measure mode



◎ Setting Condition 3 :

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

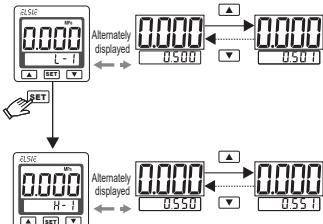
Measure mode



◎ Setting Condition 4 :

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

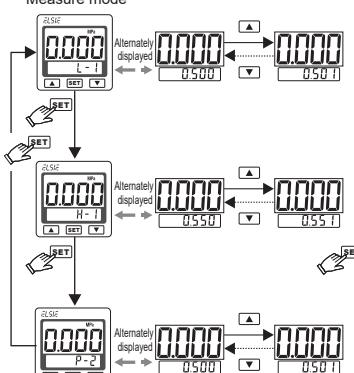
Measure mode



◎ Setting Condition 5 :

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

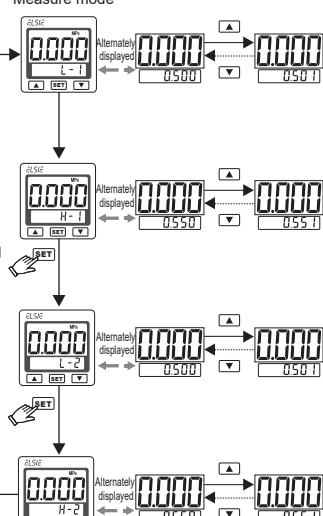
Measure mode



◎ Setting Condition 6 :

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

Measure mode



【NOTE :】

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

K. PRESSURE SETTING MODE (1 OUT)

◎ Setting Condition 1 :

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

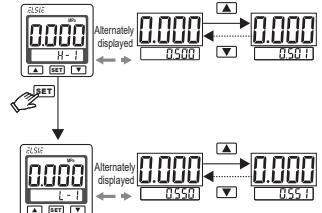
Measure mode



◎ Setting Condition 2 :

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

Measure mode



【NOTE :】

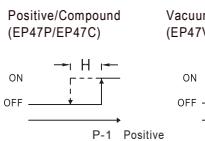
Do not disconnect power when the sub-display and setting value is flashing alternately; otherwise the system cannot store the values.

L. OUTPUT TYPE

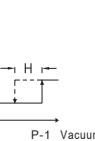
(1) One point set mode:

Normal open mode

Positive/Compound (EP47P/EP47C)

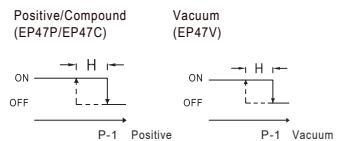


Vacuum (EP47V)



Normal close mode

Positive/Compound (EP47P/EP47C)

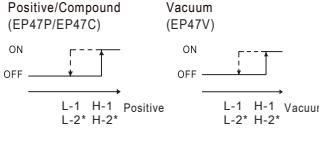


Vacuum (EP47V)

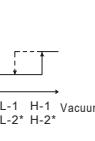
(2) Hysteresis mode:

Normal open mode

Positive/Compound (EP47P/EP47C)

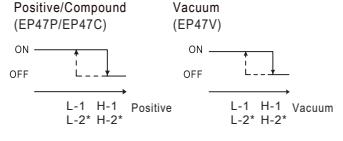


Vacuum (EP47V)



Normal close mode

Positive/Compound (EP47P/EP47C)

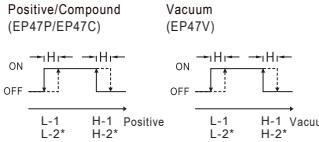


Vacuum (EP47V)

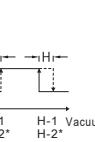
(3) Window comparator mode:

Normal open mode

Positive/Compound (EP47P/EP47C)

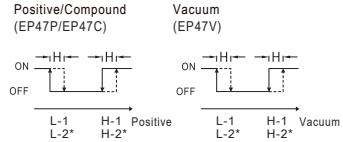


Vacuum (EP47V)



Normal close mode

Positive/Compound (EP47P/EP47C)



Vacuum (EP47V)

【NOTE :】

*1. Pressure setting value of P-2, L-2 or H-2 won't be shown when output spec. is 1 OUT.

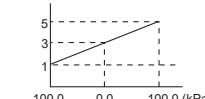
*2. In case hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.

*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.

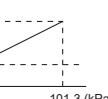
M. ANALOG OUTPUT DESCRIPTION

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

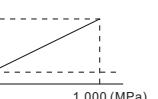
(Compound)
Analog output(V)



(Vacuum)
Analog output(V)

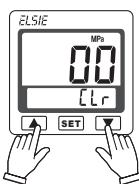


(Positive)
Analog output(V)

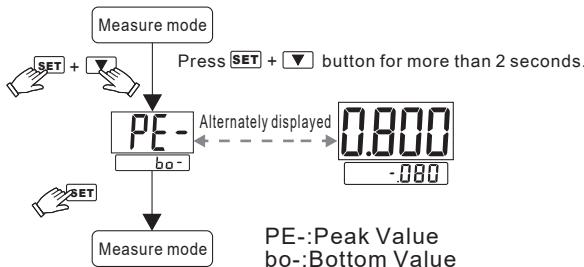


N. ZERO POINT SETTING

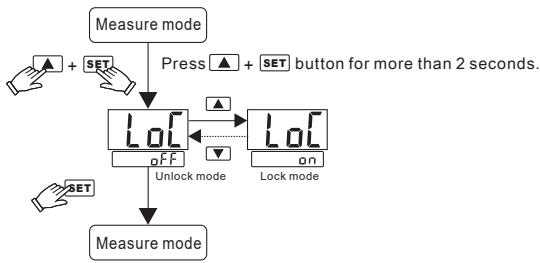
Press the  +  button at the same time until the "00" is shown.
Release the button to end zero setting.



O. PEAK/BOTTOM HOLD FUNCTION



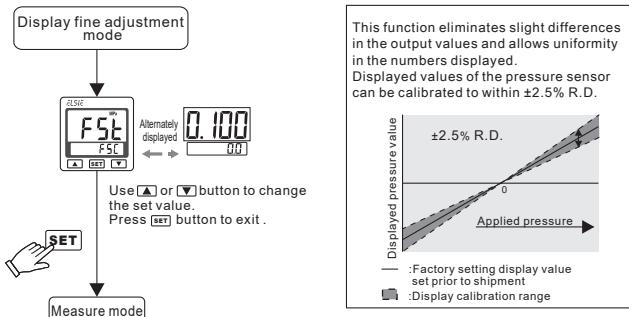
P. KEY LOCK/UNLOCK MODE



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



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.

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.

R. ERROR CODE INSTRUCTION

Error Type	Error code	Error Condition	Troubleshooting
Excess load current error	Er 1 out1 out2	Output 1 load current is more than 80 mA Output 2 load current is more than 80 mA	Turn power off and check the cause of overload current or lower the current load under 80 mA, then restart.
Residual pressure error	Er 3	During zero reset, ambient pressure is over $\pm 3\%$ F.S.	Change input pressure to ambient pressure and perform zero reset again.
Applied pressure error	HHH LLL	Supply pressure exceeds the upper limit of pressure setting. Supply pressure exceeds the lower limit of pressure setting.	Adjust the pressure within operating pressure range.
System error	Er 4 Er 5 Er 6 Er 7	Internal system error Internal system error Internal data error Internal data error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.

S. PRESSURE UNIT CONVERSION TABLE

From	To	Pa	kPa	MPa	kgf/cm ²	mmHg	psi	bar	inHg
1Pa	1	0.001	0.00001	0.000010197	0.00750062	0.000145038	0.00001	0.0002953	
1kPa	1000.000	1	0.001000	0.010197	7.500616	0.145038	0.010000	0.2953	
1MPa	1000000	1000	1	10.197	7500.616	145.038	10	295.2998	
1kgf/cm ²	98066.5	98.0665	0.0980665	1	735.559	14.2233	0.980665	28.95979	
1mmHg	133.32	0.13332	0.000133	0.0013595	1	0.019336	0.0013332	0.039370	
1psi	6895	6.895	0.006895	0.07031	51.7157	1	0.06895	2.036074	
1bar	100000.0	100.0000	0.100000	1.01972	750.062	14.5038	1	29.52998	
1inHg	3386.388	3.386388	0.003386	0.034530	25.40000	0.491141	0.033863	1	

T. 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.