

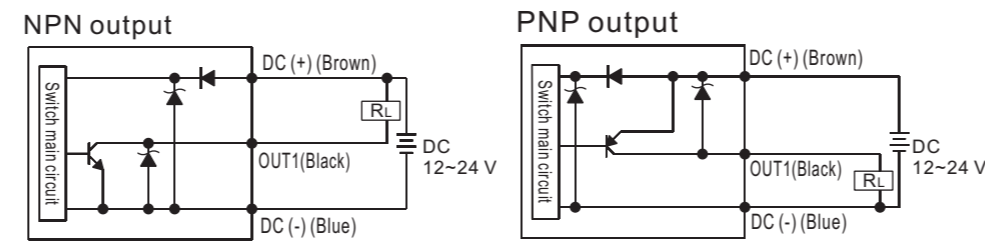
**For your safety, please read the following before using.**

- Do not use corrosive or flammable gas or liquid with this product.
- Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
- Do not use in environment containing steam or oil vapor.
- This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.

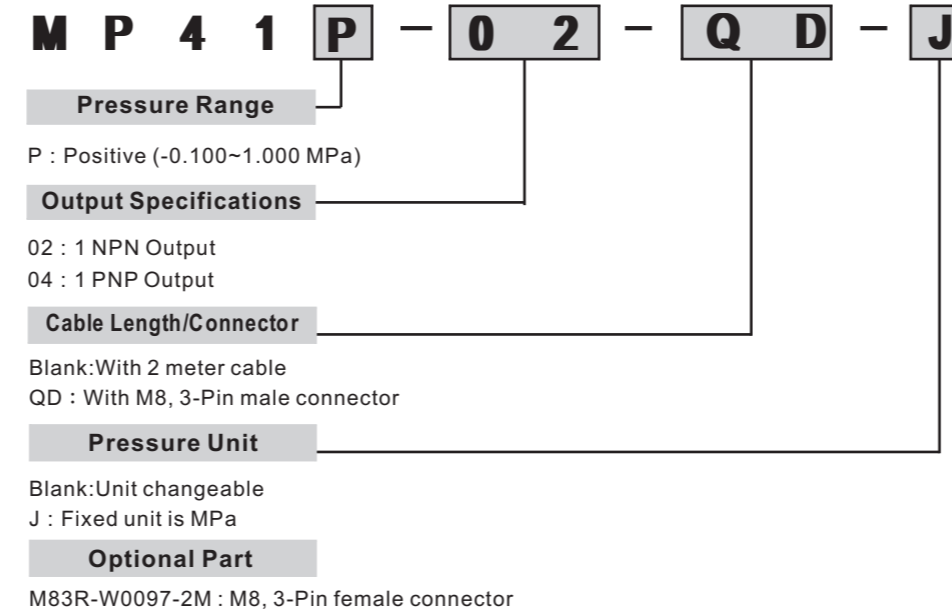
**A. SPECIFICATIONS**

TYPE		MP41P-□-□ (Positive)	
Rated pressure range		0.000 ~ 1.000MPa	
Setting pressure range		-0.100 ~ 1.000MPa	
Withstand pressure		1.5MPa	
Fluid		Air, Non-corrosive gases, incombustible gases	
Set pressure resolution	MPa	0.001	
	kgf/cm <sup>2</sup>	0.01	
	bar	0.01	
	psi	0.1	
Power supply voltage		12 to 24V DC ±10%, Ripple (P-P) 10% or less	
Current consumption		≤40mA (With no load)	
Switch output	NPN open collector Max. load current : 125mA Max. supply voltage : 30V DC Residual voltage : ≤1.5V (load current 125mA)	PNP open collector Max. load current : 125mA Max. supply voltage : 24V DC Residual voltage : ≤1.5V (load current 125mA)	
	Repeatability(Switch output)	±0.2% F.S. ±1 digit	
One point set mode	Adjustable		
Hysteresis mode	Adjustable		
Window comparat or mode	Adjustable		
Response time	Chattering-proof function: 0.05s, 0.25s, 0.5s, 1s, 2s, 3s selections		
Output short circuit protection	Yes		
7 segment LCD display	Two color(Red/Green) main & unit display, Orange sub-display (Sampling rate : 5 time / 1sec.)		
Indicator accuracy	±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)		
Switch ON Indicator	Orange out 1 Indicator		
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	50Mohm min. (at 500V DC), between case and lead wire)	
	Vibration	Total amplitude 1.5mm or 10G, 10Hz-150Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z	
Shock	100m/s <sup>2</sup> (10G), 3 times each in direction of X, Y and Z		
Temperature characteristic	±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C		
Lead wire	Oil-resistance cable(0.15mm <sup>2</sup> )		
Weight	Approx. *65g(with 2-meter lead wire), Approx. *30g(with male connector)		

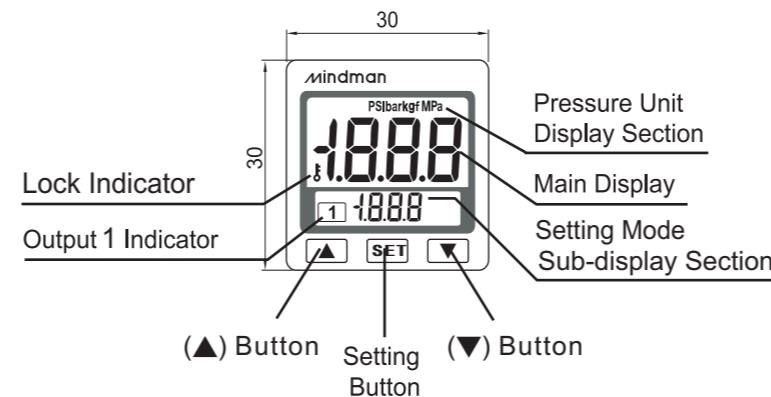
**B. OUTPUT CIRCUIT WIRING DIAGRAMS**



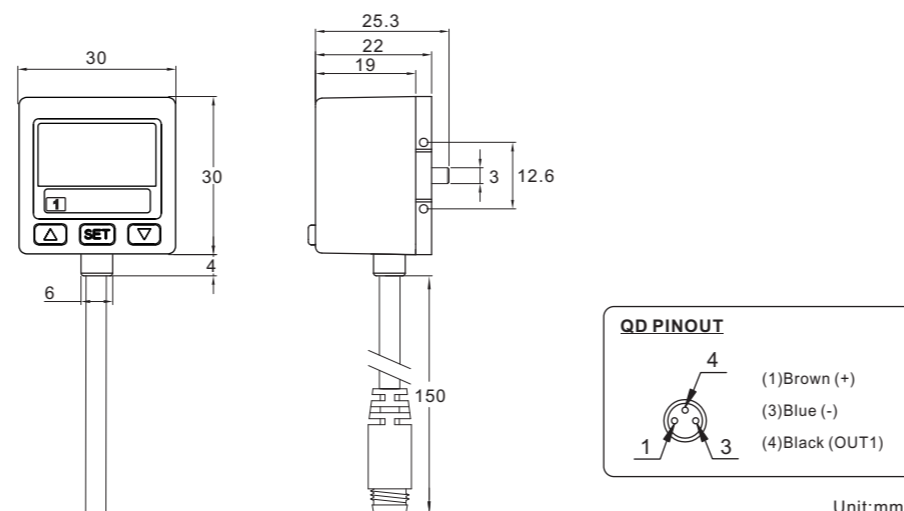
**C. ORDERING INFORMATION**



**D. PANEL DESCRIPTION**

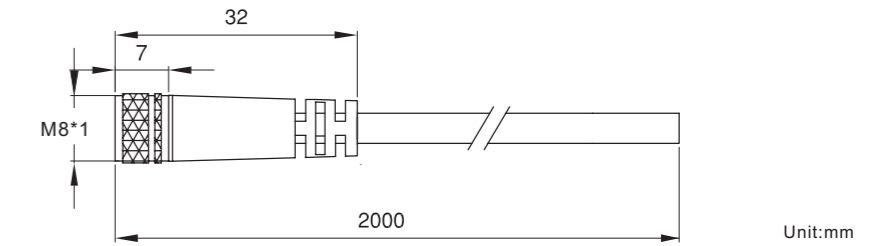


**E. DIMENSIONS**

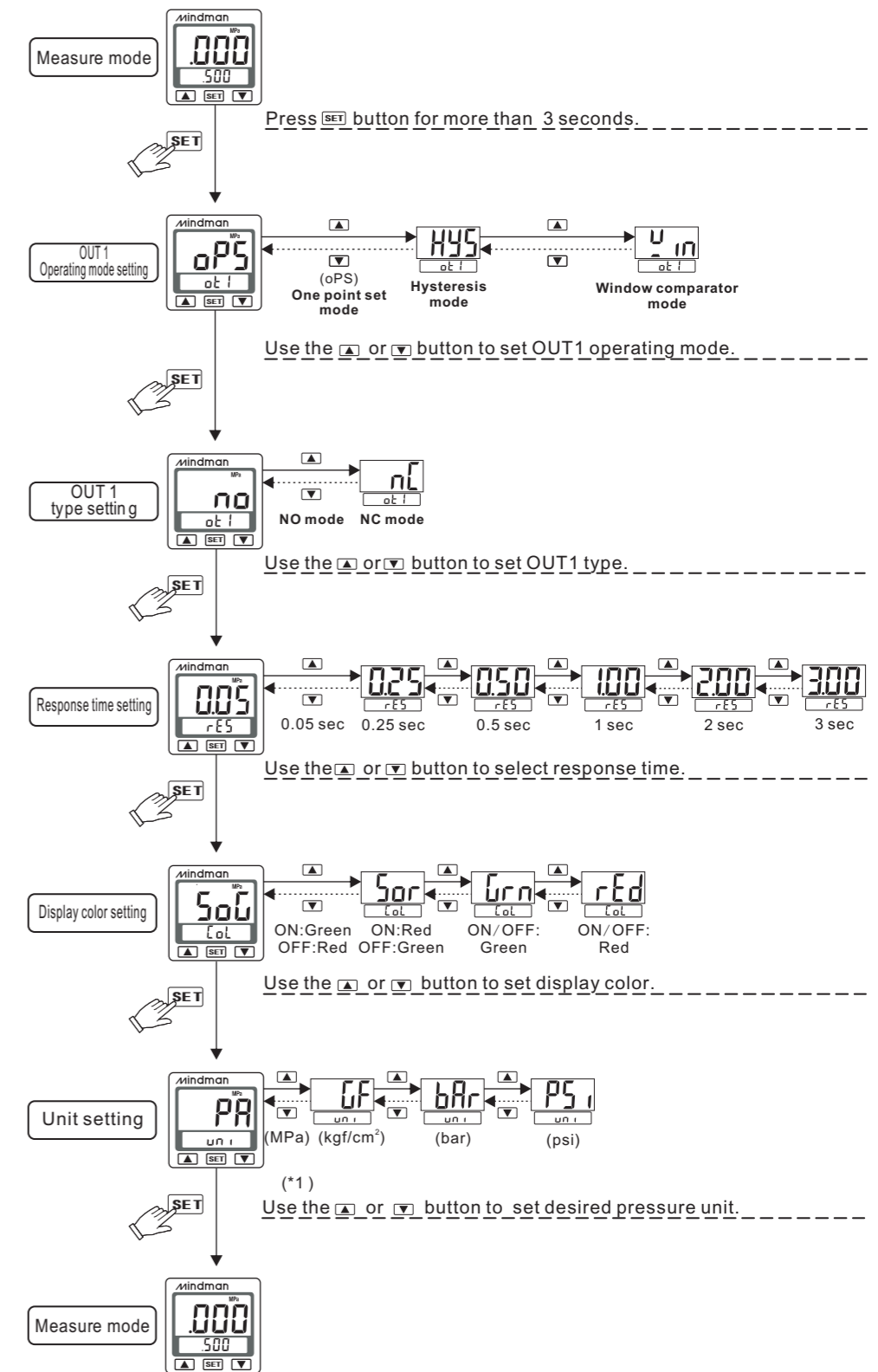


**F. OPTIONAL PART DIMENSIONS**

**M8 Female connector**



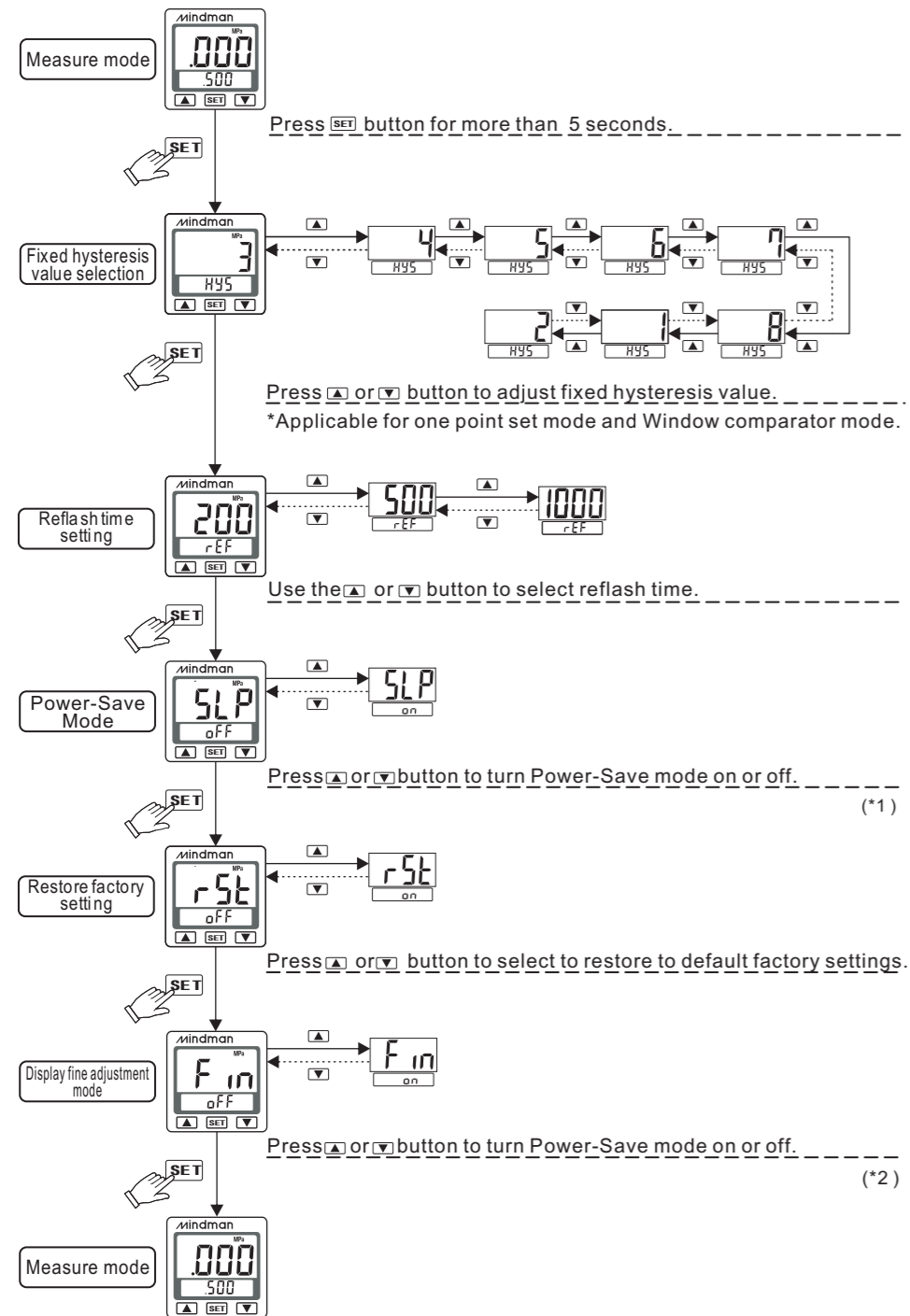
**G. INITIAL SETTING MODE**



【NOTE :】

\*1. Not selectable for fixed SI unit (MP41P-□-□-J).

## H. ADVANCE SETTING MODE

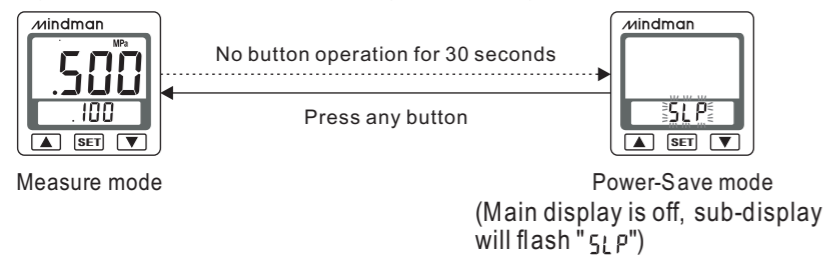


**[NOTE :]**

- \*1. When the sub-display shows "ON", Power-Save mode is activated. Please refer to Section **I** for detailed explanation.
- \*2. When the sub-display shows "ON", Display fine adjustment mode is activated. Please refer to Section **O** for detailed explanation.

## I. POWER-SAVE MODE

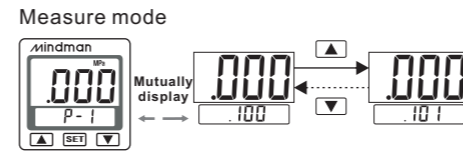
- During Power-Save mode, the main display will turned off if no buttons is pressed after 30 seconds.
- During Power-Save mode, the output LCD's may not be synchronize with the output. It is normal and will not affect output operation.
- Press any button to turn-on main display temporarily.



## J. PRESSURE SETTING MODE

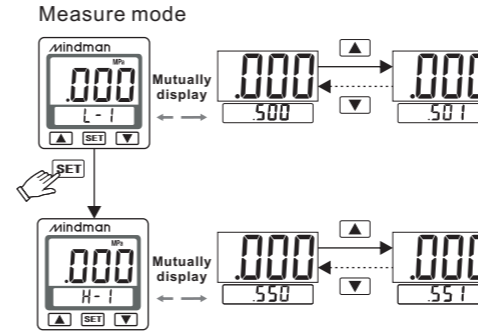
Setting Condition 1 :

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



Setting Condition 2 :

OUT 1 mode setting :  
"HY5" (Hysteresis mode)  
"U in" (Window comparator mode)



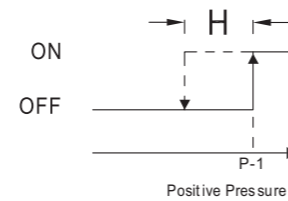
**[NOTE :]**

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**

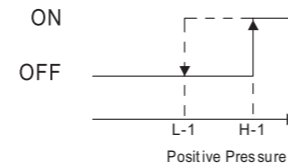


**Normal close mode**

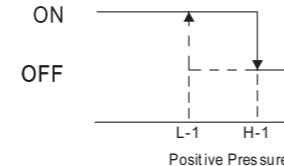


(2) Hysteresis mode:

**Normal open mode**

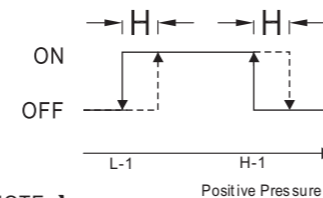


**Normal close mode**

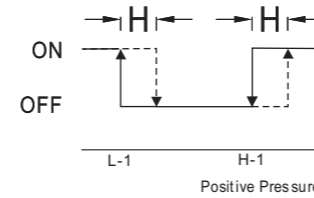


(3) Window comparator mode

**Normal open mode**



**Normal close mode**



**[NOTE :]**

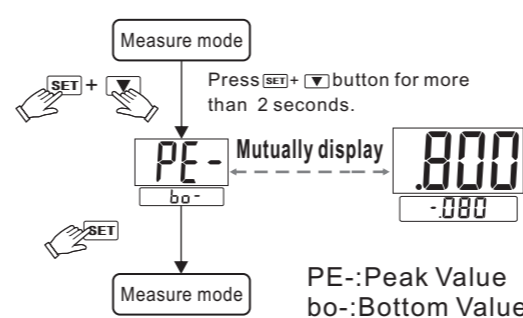
- \*1 In case hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.
- \*2 When using window comparator mode, the difference between two set points must be greater than the fixed hysteresis, otherwise will cause the switch output to malfunction.

## L. ZERO POINT SETTING

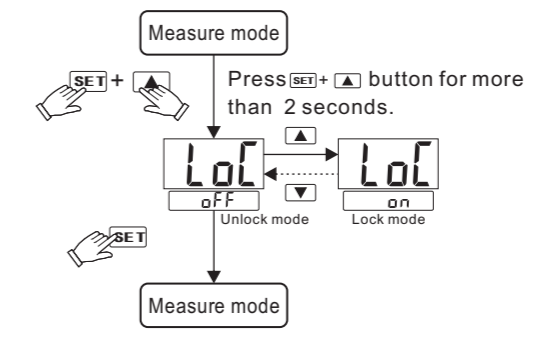
Press the **▲+▼** button at the same time until the "00" is shown. Release the button to end zero setting.



## M. PEAK/BOTTOM HOLD FUNCTION



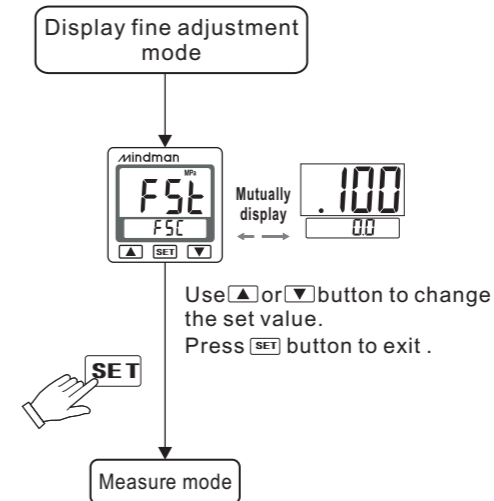
## N. KEY LOCK/UNLOCK MODE



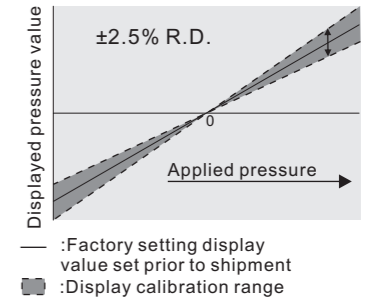
- Use key lock mode to prevent unauthorized or accidental tampering with the switch setting.
- When lock mode is selected, panel will display "LoC".



## O. 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 :]**  
setting resolution is  $\pm 0.1\%$  R.D.

## P. ERROR CODE INSTRUCTION

Error Type	Error code	Error Condition	Troubleshooting
Excess load current error	Er1	Output 1 load current is more than 125 mA	Turn power off and check the cause of overload current or lower the current load under 125 mA, then restart.
Residual pressure error	Er3	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	Supply pressure is exceeds the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
	LLL	Supply pressure is exceeds the lower limit of pressure setting.	
System error	Er4	Internal system error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
	Er5	Internal system error	
	Er6	Internal data error	
	Er7	Internal data error	

## Q. PRESSURE UNIT CONVERSION TABLE

From \ To	Pa	kPa	MPa	kgf/cm <sup>2</sup>	psi	bar
1 Pa	1	0.001	0.000001	0.000010197	0.000145038	0.00001
1 kPa	1000.000	1	0.001000	0.010197	0.145038	0.010000
1 MPa	1000000	1000	1	10.197	145.038	10
1 kgf/cm <sup>2</sup>	98066.5	98.0665	0.0980665	1	14.2233	0.980665
1 psi	6895	6.895	0.006895	0.07031	1	0.06895
1 bar	100000.0	100.0000	0.100000	1.01972	14.5038	1