

For your safety, please read the following before using.

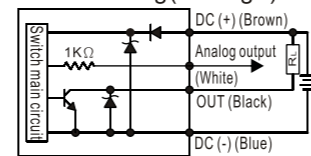
- Do not use corrosive or flammable gas or liquid with this product.
- Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- Do not drop, hit or allow excessive shock. Even if switch body 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.

SPECIFICATIONS		MPS-V34 (Vacuum)	MPS-P34 (Positive)	MPS-R34 (Compound)
Rated pressure range		-101.3 ~ 0.0kPa	0 ~ 1MPa	-101 ~ 500kPa
Setting pressure range		-101.3 ~ 10.0 kPa	-0.1 ~ 1MPa	-101 ~ 500kPa
Withstand pressure		300kPa	1.5MPa	800kPa
Fluid		Air, Non-corrosive gases, incombustible gases		
Set pressure resolution ※3	MPa	—	0.001	—
	kPa	0.1	—	1
	kgf/cm ²	0.001	0.01	0.01
	bar	0.001	0.01	0.01
	psi	0.01	0.1	0.1
	InHg	0.1	—	—
	mmHg	1	—	—
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less		
Current consumption		≤45mA (With no load)		
Switch output		NPN open collector Max. load current : 125mA Max. supply voltage: 30VDC Residual voltage : ≤1.5V (load current 125mA)		PNP open collector Max. load current : 125mA Max. supply voltage: 24VDC Residual voltage : ≤1.5V (load current 125mA)
Repeatability(Switch output)		≤±0.2% F.S. ±1digit		
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode			
Response time		≤2.5ms (chattering-proof function: 24ms, 250ms, 500ms, 1000ms and 1500ms selections)		
Output short circuit protection		Yes		
7 segment LCD display		Two color(Red/Green) display (Sampling rate: 5 times/1sec.)		
Indicator accuracy		≤±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)		
Switch ON Indicator		Green OUT Indicator		
Analog output (Voltage Output)		※1 Output Voltage: 1 to 5V ≤±2.5%F.S. (within rated pressure range) Linearity: ≤±1% F.S. Output impedance: about 1kΩ		
Analog output (Current Output)		※1※2 Output Current: 4 to 20mA ≤±2.5%F.S. (within rated pressure range) Linearity: ≤±1% F.S. Max. Load Impedance: 300Ω at power supply of 12V, 600Ω at power supply of 24V Min. Load impedance: 50Ω		
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	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC M, between case and lead wire)		
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-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		
Temperature characteristic		≤±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C		
Port size		R: 1/8"PT(male), N: 1/8"NPT(male), G: G1/8"(male)		
Lead wire		Oil-resistance cable(0.15mm ²)		
Weight		Appro*75g(with 2-meter lead wire), Appro*45g(with male connector)		

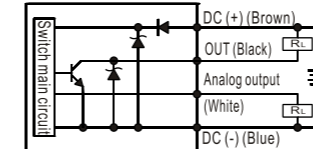
※1 The analog output of positive pressure(P) is DC1-5V or 4-20mA. The pressure range of -0.1-0 is without voltage output.
 ※2 Type current 4-20mA is only for Vacuum (V) and Positive Pressure(P).
 ※3 The pressure unit set to an SI unit at the time of shipment. The sale out of SI unit is not acceptable by regulation of measurement in Japan.

OUTPUT CIRCUIT WIRING GRAPH

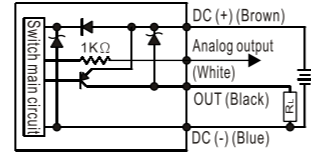
MPS-□34□-NGA
NPN+Analog(Voltage) output



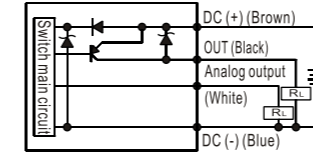
MPS-□34□-NGI
NPN+Analog(Current) output



MPS-□34□-PGA
PNP+Analog(Voltage) output



MPS-□34□-PGI
PNP+Analog(Current) output



ORDERING INFORMATION

MPS - **V** 34 **R** - **N** **G** **A**

① Pressure range

- V Vacuum(-101.3~0.0kPa)
- P Positive(-0.1~1MPa)※
- R Compound(-101~500kPa)

※ Setting/Operating pressure range: -0.1~1MPa

② Pressure Port

- R 1/8" PT(male)
- N 1/8" NPT (male)
- G G1/8" (male)

※ Inner: M5 female

Installation metal fittings

- Surface installation panel MPS-ACCH9
- L3, F3 metal fittings MPS-ACCK10

③ Output Specifications

- N NPN output
- P PNP output

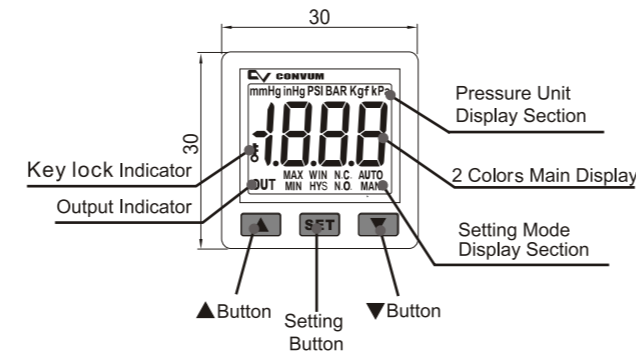
④ Cable specification

- G 4-Core 2m lead wire
- C M8, 4 Pin male connector (0.15M)

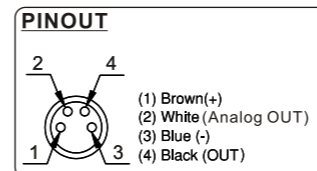
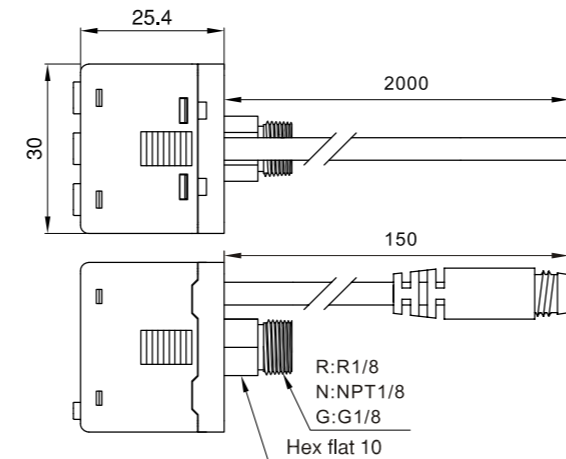
⑤ Analog output

- A※1 Analog output (1 - 5V)
- I※2 Analog output (4 - 20mA)
- ※1 Analog output 1-5V (standard)
- ※2 Type current 4-20mA is only for Vacuum (V) and Positive Pressure(P)

PANEL INSTRUCTIONS



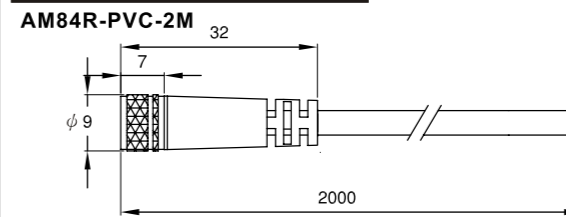
DIMENSION GRAPH



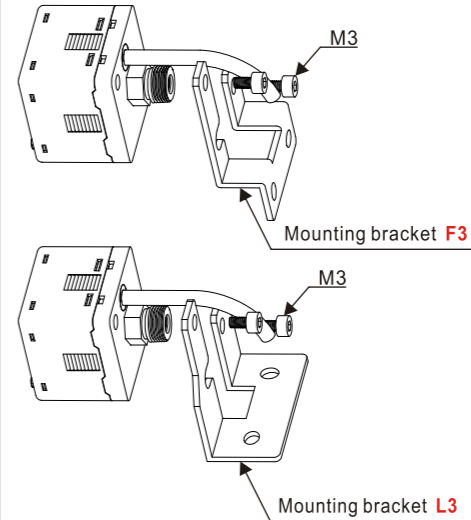
Unit:mm

TYPE OF OPTION PARTS / DIMENSION GRAPH

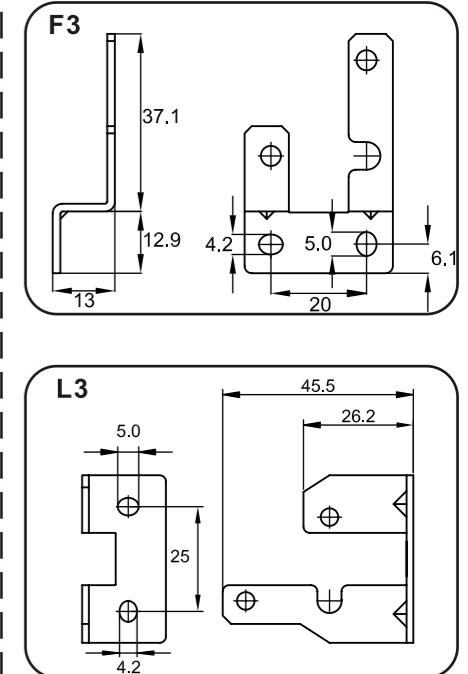
① M8 Female connector



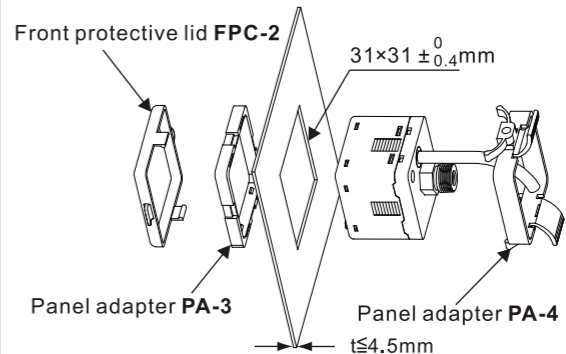
② Mounting bracket



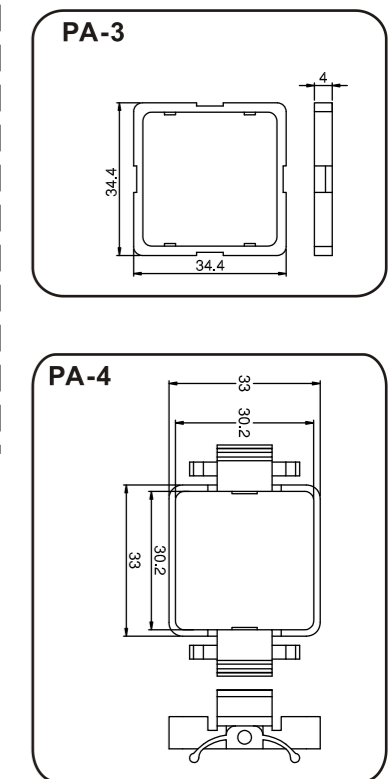
MPS-ACCK10



③ Panel type

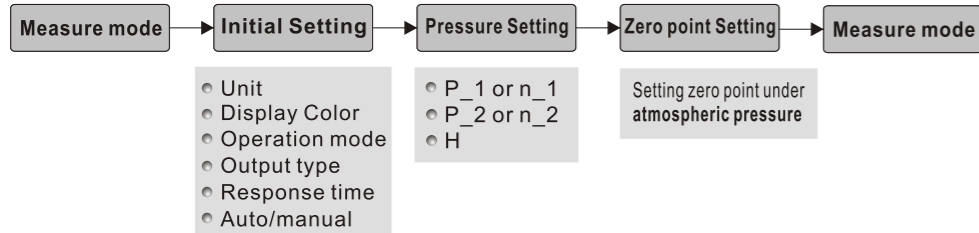


MPS-ACCH9

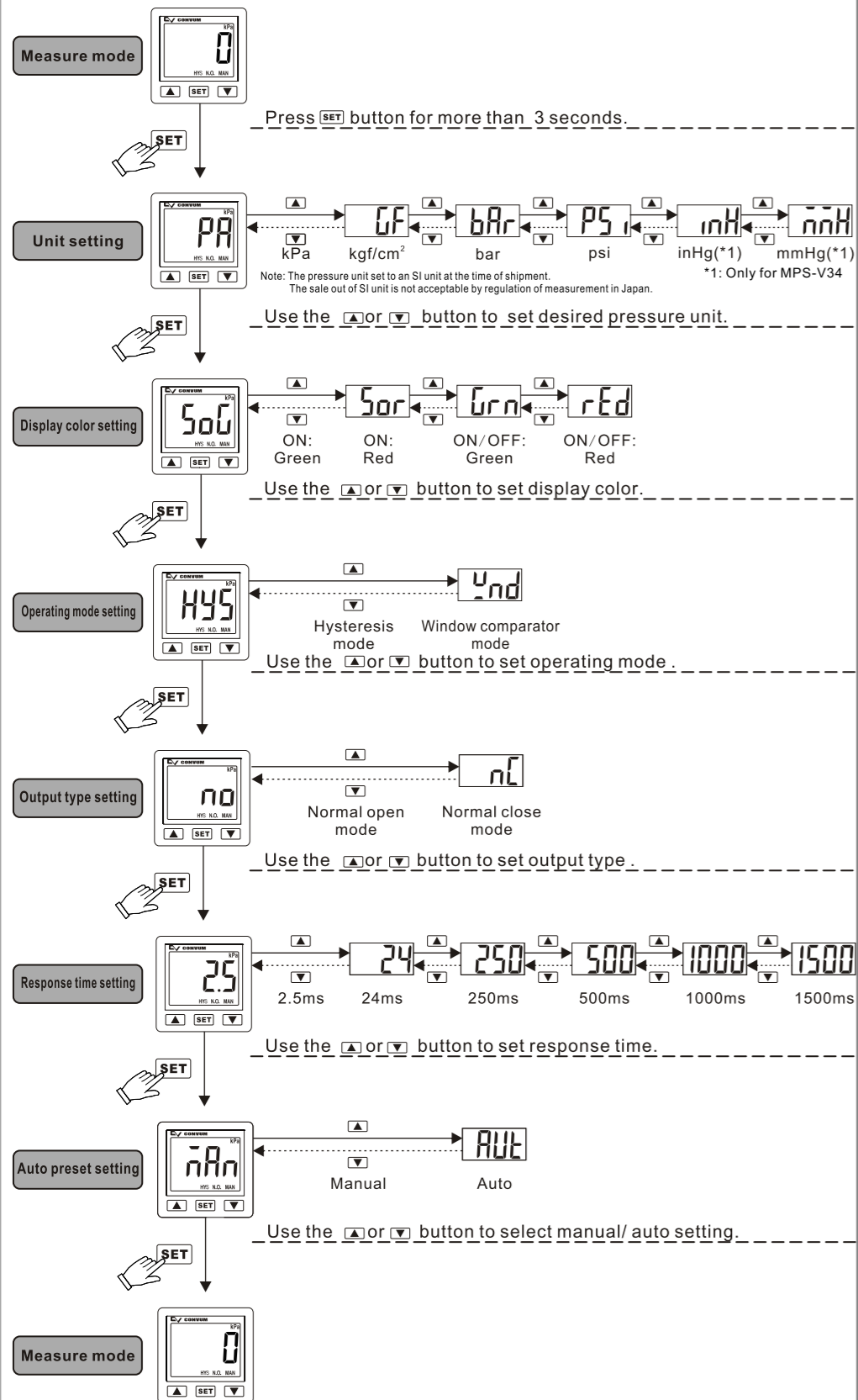


Unit:mm

SETTING STEPS



INITIAL SETTING MODE

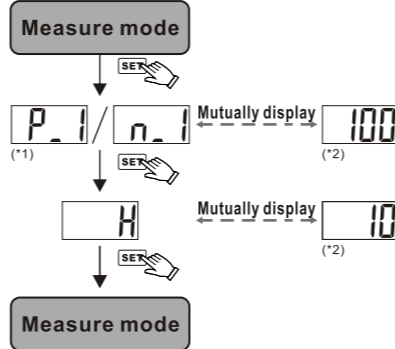


PRESSURE SETTING MODE

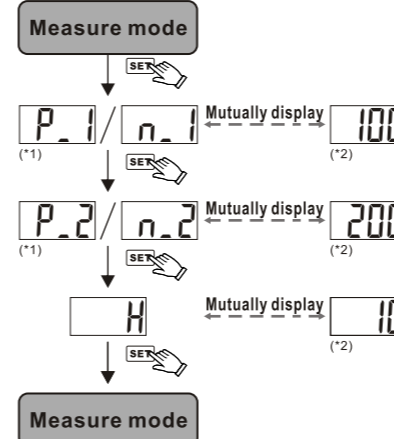
Select auto/manual setting mode during initial set-up

Manual setting mode

Hysteresis mode



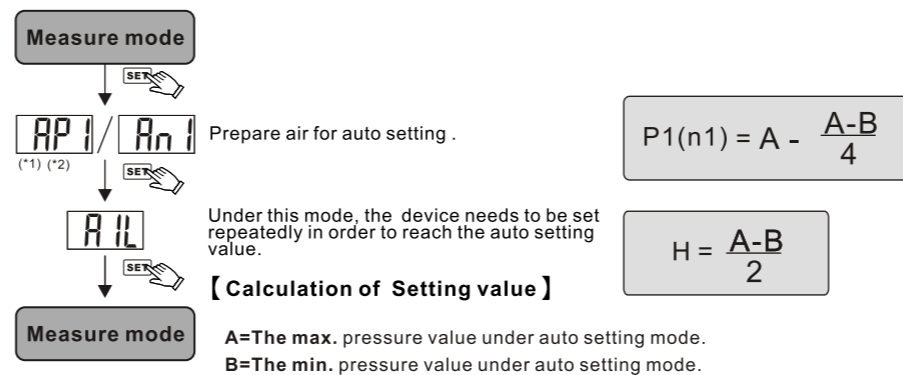
Window comparator mode



[NOTE:]

- The LCD shows :
(P_*) at normal open mode ,(n_*) at normal close mode.
- Change pressure value :
Press **▲** button , each press will increase one digit. Keep pressing the **▲** button, the pressure value will keep increasing.
Press **▼** button , each press will decrease one digit. Keep pressing the **▼** button, the pressure value will keep decreasing.
After proper pressure value has been selected/entered, press the **SET** button or wait 10 sec. without pressing any button to return to the pressure setting value display mode.

Auto setting mode



[NOTE:]

- The LCD show 「AP1」 at normal open mode and 「An1」 at normal close mode.
- In case of without need of auto pressure value setting, press **▲**+**▼** at the same time to enter measure mode.

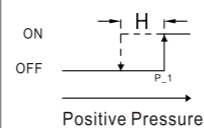
OUTPUT TYPE

Output hysteresis value can be pre-set.
Within pressure setting range, pressure sensor output can be ON or OFF.

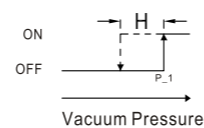
Hysteresis mode

Normal open mode

Positive/Compound (MPS-P34/MPS-R34)

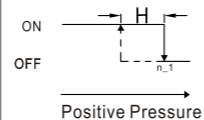


Vacuum (MPS-V34)

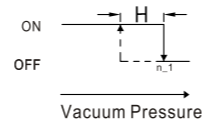


Normal close mode

Positive/Compound (MPS-P34/MPS-R34)



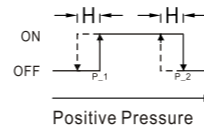
Vacuum (MPS-V34)



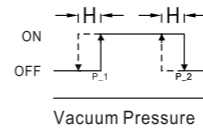
Window comparator mode

Normal open mode

Positive/Compound (MPS-P34/MPS-R34)

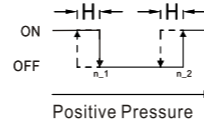


Vacuum (MPS-V34)

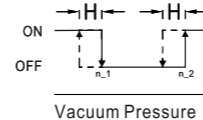


Normal close mode

Positive/Compound (MPS-P34/MPS-R34)



Vacuum (MPS-V34)

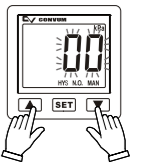


[Note:] In case Hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.

ZERO POINT SETTING / THE MAX. & MIN. DISPLAY MODE

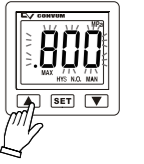
Zero setting:

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



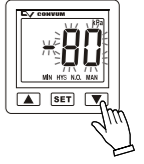
The Max. value display mode:

Press **▲** button 2 seconds to enter the max. value mode, pressure sensor will detect the max. value and keep display.
Press **▲** button 2 seconds to return to measure mode.

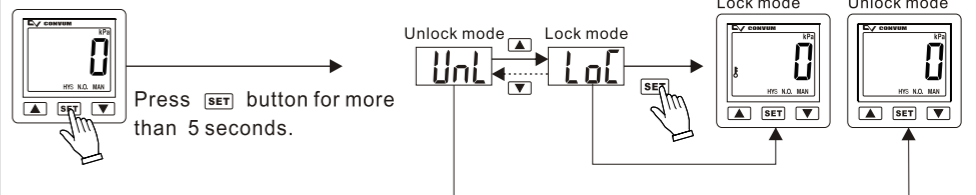


The Min. value display mode:

Press **▼** button 2 seconds to enter the min. value mode, pressure sensor will detect the min. value and keep display.
Press **▼** button 2 seconds to return to measure mode.

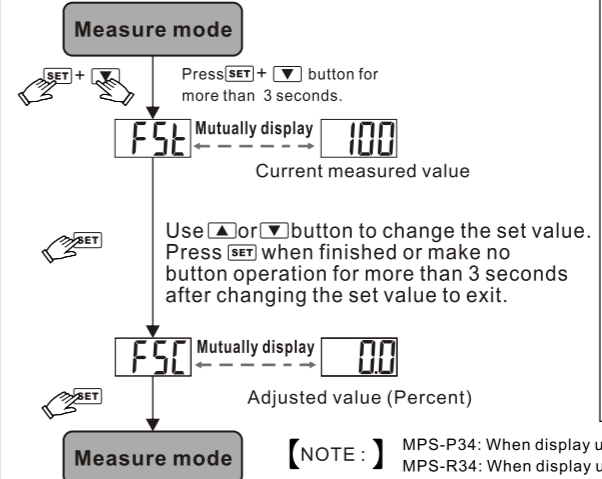


KEY LOCK/UNLOCK MODE

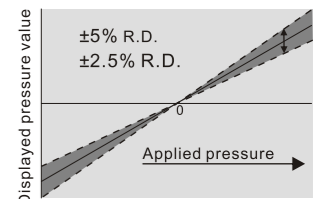


Use **▲** or **▼** to select key lock/unlock mode.
Key lock mode can prevent operation mistakes.

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 ±5% for MPS-P34/MPS-R34, and ±2.5% for series MPS-V34.



[NOTE:] MPS-P34: When display unit is in "MPa", setting resolution is 0.001MPa.
MPS-R34: When display unit is in "kPa", setting resolution is 1kPa.
MPS-V34: When display unit is in "kPa", setting resolution is 0.1kPa.

ERROR CODE INSTRUCTION

Error Type	Error code	Error Condition	Troubleshooting
Excess load current error	oCP	Output 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	oUr	During zero reset, ambient pressure is over ±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 data error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
	Er6	Internal system error	
	Er7	Internal data error	
	Er8	Internal system error	

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