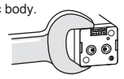
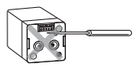
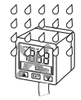
MP800 Series

For your safety, please read the following before use.

① Do not use corrosive or flammable gas or liquid with this product.
② Please use within the specifications.
③ Please ensure the pressure difference between port A and port B is within the withstand pressure.
④ When mounting, please never apply a wrench to the plastic body.
⑤ Do not insert metal or sharp objects into the pressure port. With IP40 compliance, please protect the sensor against dust and water splash.

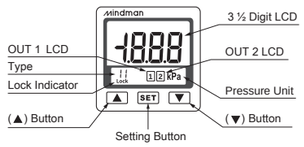




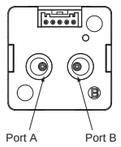


⑥ Please use a separate route for the sensor product wiring and keep separate from any other power or high voltage wiring to avoid noise interruption.
⑦ If cable is longer than 100 meters and 0.3mm² cable, please use shielded wire as the output wire.

A. PANEL DESCRIPTION



B. INLET DESCRIPTION



※ **MP801, MP802, MP805**
Please use Port B for high-pressure side and Port A for low-pressure side.

C. ADJUSTMENT METHOD

Press SET button to begin : (Pressing ▼▲ buttons within 3 sec., it will display End.)

Press 1 time (Setting 1) → Wait for 3 sec. → OUT 1 Setting → H-1 ⇄ 050 (Alternately) → OUT 1 setting value 0.50 → Use ▼or▲ button to change → Press SET button → h-1 ⇄ 005 (Alternately) → OUT 1 hysteresis 0.05 → Use ▼or▲ button to change → Press SET button → End

When window comparator mode is selected
H→A (Lower limit value)
h→b (Upper limit value)

Press 2 times (Setting 2) → Wait for 3 sec. → OUT 1 Operating mode setting → ou1 ⇄ HYS (Alternately) → OUT 1 hysteresis mode (Please refer to the item "D Figure 1".) → Use ▼or▲ button to select → ou1 ⇄ CnP (Alternately) → OUT 1 Window comparator mode (Please refer to the item "D Figure 2".) → Use ▼or▲ button to select → ou1 ⇄ oFF (Alternately) → OUT 1 sets oFF ※1. This setting mode will not display when OUT 1 is set to oFF. → Use ▼or▲ button to select → Press SET button to select → End

Press 3 times (Setting 3) → Wait for 3 sec. → OUT 2 Setting → H-2 ⇄ -050 (Alternately) → OUT 2 setting value - 0.50 → Use ▼or▲ button to change → Press SET button → h-2 ⇄ -005 (Alternately) → OUT 2 hysteresis - 0.05 → Use ▼or▲ button to change → Press SET button → End

When window comparator mode is selected
H→A (Lower limit value)
h→b (Upper limit value)

Press 4 times (Setting 4) → Wait for 3 sec. → OUT 2 Operating mode setting → ou2 ⇄ HYS (Alternately) → OUT 2 hysteresis mode (Please refer to the item "D Figure 1".) → Use ▼or▲ button to select → ou2 ⇄ CnP (Alternately) → OUT 2 Window comparator mode (Please refer to the item "D Figure 2".) → Use ▼or▲ button to select → ou2 ⇄ oFF (Alternately) → OUT 2 sets OFF ※2. This setting mode will not display when OUT 2 is set to oFF. → Use ▼or▲ button to select → Press SET button to select → End

Press 5 times (Setting 5) → Wait for 3 sec.

MP81□ Base port setting → Pot ⇄ A (Alternately) → Setting of base port → Use ▼or▲ button to select →
A : Differential pressure of Port A
b : Differential pressure of Port B
Ab : Absolute value of differential pressure between Port A and B
→ Press SET button → End

MP80□ Base port setting → Pot ⇄ A (Alternately) → Base port fixed as Port A → Unable to use ▼▲ to select → Press SET button → End

Press 6 times (Setting 6) → Wait for 3 sec. → Display refresh and responese time setting → dSP ⇄ 0.1 (Alternately) → Display refresh time (sec.) → Use ▼or▲button to change 0.1 ~ 3.0 sec. → Press ▶▶ button → AvE ⇄ 1 (Alternately) → Response time (2.0 msec.) → Use ▼or▲ button to change
1 : 2.0 msec.
16 : 32 msec.
64 : 128 msec.
512 : 1024 msec.
→ Press SET button → End

Press 7 times (Setting 7) → Wait for 3 sec. → Max. , min. and the difference between max. and min. settings → Pb ⇄ on (Alternately) → Max., Min. Function selection → Use ▼or▲ button to select → Pb ⇄ oFF (Alternately) → Press SET button to select ON or OFF
OFF is End → Pbt ⇄ 10 (Alternately) → Sampling time setting range is 2 ~ 99 sec. More than 99 sec. is Cur (permanent) → Press SET button → Pbd ⇄ PE (Alternately) → Display selection → Use ▼or▲ button to change
PE : Max.
bo : Min.
du : The difference between max. and min.
→ Press SET button → End

Press 8 times (Setting 8) → Wait for 3 sec. → Power-save mode → SLP ⇄ on (Alternately) (※3) → Use ▼or▲ button to select → SLP ⇄ oFF (Alternately) → Press SET button → End

※3. When setting is "on", the power-save mode is active. Please refer to the item "J" in detailed.

※
- 1 - is OUT 1 data setting.
- 2 - is OUT 1 Operating mode setting.
- 3 - is OUT 2 data setting.
- 4 - is OUT 2 Operating mode setting.

※ The number 1 and 2 in data setting of H,h,A,a indicate OUT1 and OUT2 respectively.

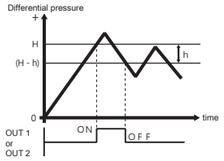
Example of base port setting

Port A is within 3.20 kPa and Port B is within 1.4 kPa.
Differential pressure of Port A as base port : -180 shown. (1.40 - 3.20 = - 1.80)
Differential pressure of Port B as base port : 180 shown. (3.20 - 1.40 = 1.80)
Absolute value of differential pressure between Port A and B as base port : 180 shown. (| 1.40 - 3.20 | = 1.80)

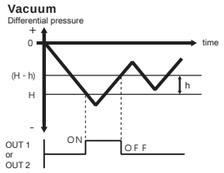
D. OPERATION CHART

1. Hysteresis mode

Positive



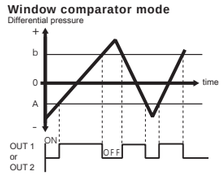
Vacuum



Set the sensor ON point "H" and hysteresis "h".
(Notice: Please set "h" value equal or higher than 2 to avoid "Error")
H: Sensor ON
H-h: Sensor OFF

2.Window comparator mode

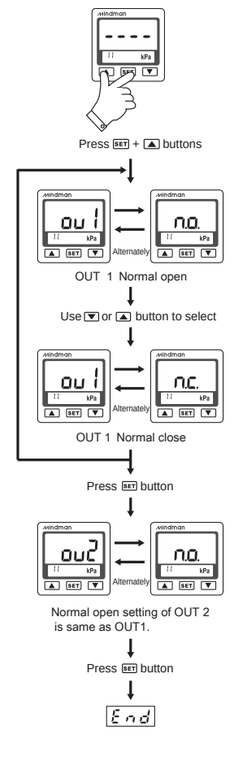
Window comparator mode



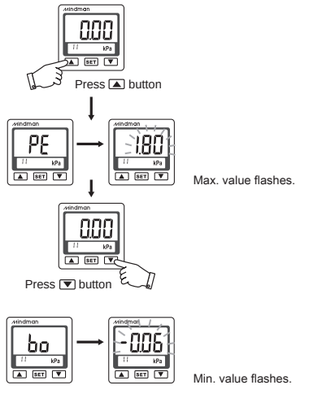
A is lower limit value of window comparator mode.
b is upper limit value of window comparator mode.
(It can not be set A > b.)

E. CHANGE OUTPUT TYPE

Normal open or Normal close mode setting:



F. THE MAX. & MIN. DISPLAY MODE



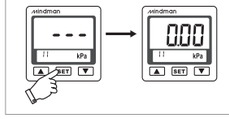
* This data shows the max. (min.) pressure detected when power supplied.

G. INITIAL DISPLAY

First 2 seconds after Power-ON, LCD will display OUTPUT setting.

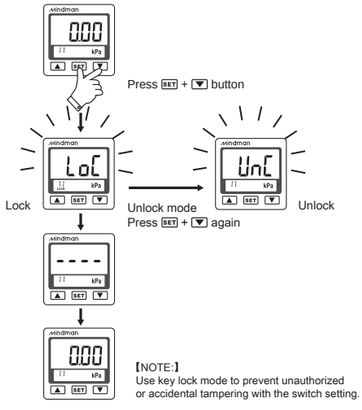
Power on → 0.5sec. -1888 : LCD ON
→ 0.5sec. nPn : NPN or PNP
→ 0.5sec. PA : Measurement Unit
→ 0.5sec. - - - - : "- - - -" displayed
→ 0.00

H. ZERO POINT SETTING



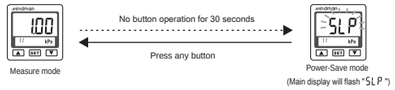
Press SET more than 3 sec. until the "0" is shown.
Do not perform zero reset with pressure apply to ports A and B. The range that can be reset to zero is within ± 3% F.S.

I. KEY LOCK / UNLOCK MODE



J. POWER-SAVE MODE

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

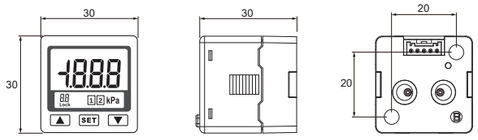


K. ERROR CODE INSTRUCTION

Error code	Error Type	Error Condition	Troubleshooting
Er1	OUT 1 excess load current error	Load current is more than 125mA	Turn power off and check the cause of overload current or lower the current load under 125mA, then restart.
Er2	OUT 2 excess load current error	Load current is more than 125mA	
Err	Zero point setting error	During zero point setting, ambient pressure is over ±3% F.S.	Change input pressure to ambient pressure and perform zero reset again.
Er1	System error	Internal error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
FFF	Applied pressure error	Supply pressure is exceed the upper limit of pressure setting.	Upper limit of differential pressure.
-FF	Applied pressure error	Supply pressure is exceed the lower limit of pressure setting.	Adjust the pressure within setting pressure range.

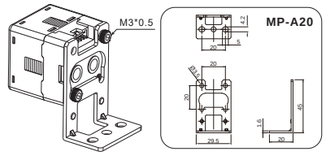
L. DIMENSIONS / OPTIONAL PARTS DIMENSIONS

① Pressure sensor

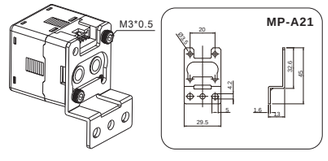


② Mounting bracket

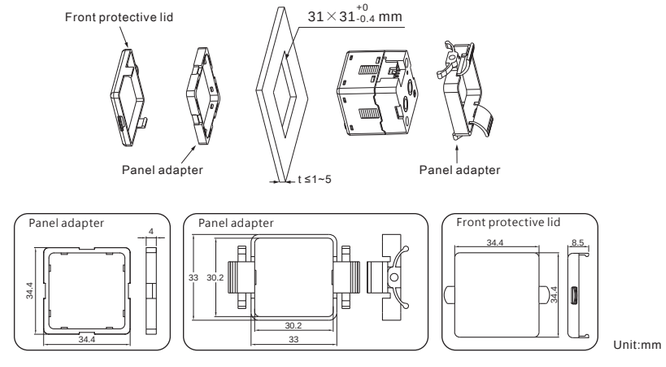
MP-A20



MP-A21



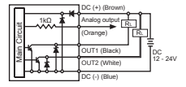
③ Panel Mounting



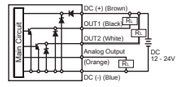
Unit:mm

M. OUTPUT CIRCUIT WIRING DIAGRAMS

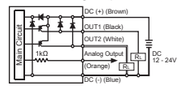
MP8□- 010 - M5
2 NPN + Analog Output (1~5V)



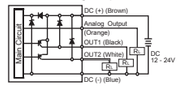
MP8□- 011 - M5
2 NPN + Analog Output (4~20mA)



MP8□- 030 - M5
2 PNP + Analog Output (1~5V)



MP8□- 031 - M5
2 PNP + Analog Output (4~20mA)



N. ORDERING INFORMATION

M P 8 [01] - [010] - M 5

Pressure Range
01 : -100~1000 Pa
02 : -0.20~2.00 kPa
05 : -0.50~5.00 kPa
11 : -1000~1000 Pa
12 : -2.00~2.00 kPa
15 : -5.00~5.00 kPa

Output Specifications
010 : 2 NPN output + Analog output (1 ~ 5V)
011 : 2 NPN output + Analog output (4 ~ 20mA)
030 : 2 PNP output + Analog output (1 ~ 5V)
031 : 2 PNP output + Analog output (4 ~ 20mA)

Optional Parts
MP-A20 : Mounting bracket
MP-A21 : Mounting bracket
MP-B2 : Panel adapter
MP-C2 : Panel adapter + Front protective lid

O. SPECIFICATIONS

MODEL		MP801	MP811	MP802	MP812	MP805	MP815
Rated pressure range		0~1000 Pa	-1000~1000 Pa	0.00~2.00 kPa	-2.00~2.00 kPa	0.0~5.00 kPa	-5.00~5.00 kPa
Set pressure range		-100~1000 Pa	-1000~1000 Pa	-0.20~2.00 kPa	-2.00~2.00 kPa	-0.50~5.00 kPa	-5.00~5.00 kPa
Withstand pressure		3 kPa		6 kPa		15 kPa	
Fluid		Filtered air, Non-corrosive / Non-flammable gas					
Set pressure resolution	Pa	1		—			
	kPa	—		0.01			
Power supply voltage		12 ~ 24V DC ±10%,Ripple (P-P) ≤ 10%					
Current consumption		≤ 40mA (With no load)					
Switch output		2 NPN: open collector 2 outputs Max. load current : 125mA Max. supply voltage: 30V DC Residual voltage : ≤ 1.5V		2 PNP: open collector 2 outputs Max. load current : 125mA Max. supply voltage: 24V DC Residual voltage : ≤ 1.5V			
Repeatability		±0.5% F.S. ±1 digit					
Hysteresis	Hysteresis mode	Adjustable					
	Window comparator mode						
Response time		≤ 2.0ms (chattering-proof function: 32ms, 128ms, 1024ms selectable)					
Output short circuit protection		Yes					
Display		3 ½ digital, 7 segment LCD display (White) (Sampling rate: 0.1~3 sec select)					
Indicator accuracy		±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)					
Switch on indicator		White Indicator 1 : OUT1 & White Indicator 2 : OUT2					
Analog output (Voltage Output)		Output Voltage : 1 ~ 5V ±2.5% F.S. (within rated pressure range) Linearity : ±1% F.S. Output impedance : about 1kΩ					
Analog output (Current Output)		Output Current : 4 ~ 20mA ±2.5% F.S. (within rated pressure range) Linearity : ±1% F.S. Max.Load Impedance : 250Ω 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	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 or 10G, 10Hz-150Hz-10Hz scan for 1 minute, 2 hours each direction of X, Y and Z					
	Shock	100m/s²(10G) ,3 times each in direction of X、Y and Z					
Temperature characteristic		±3% F.S. of detected pressure (25°C) at temp. (Range of 0 ~ 50°C)					
Port size		M5 : M5 female thread					
Lead wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores					
Weight		Approx. 75g (with 2 meter lead wire)					