

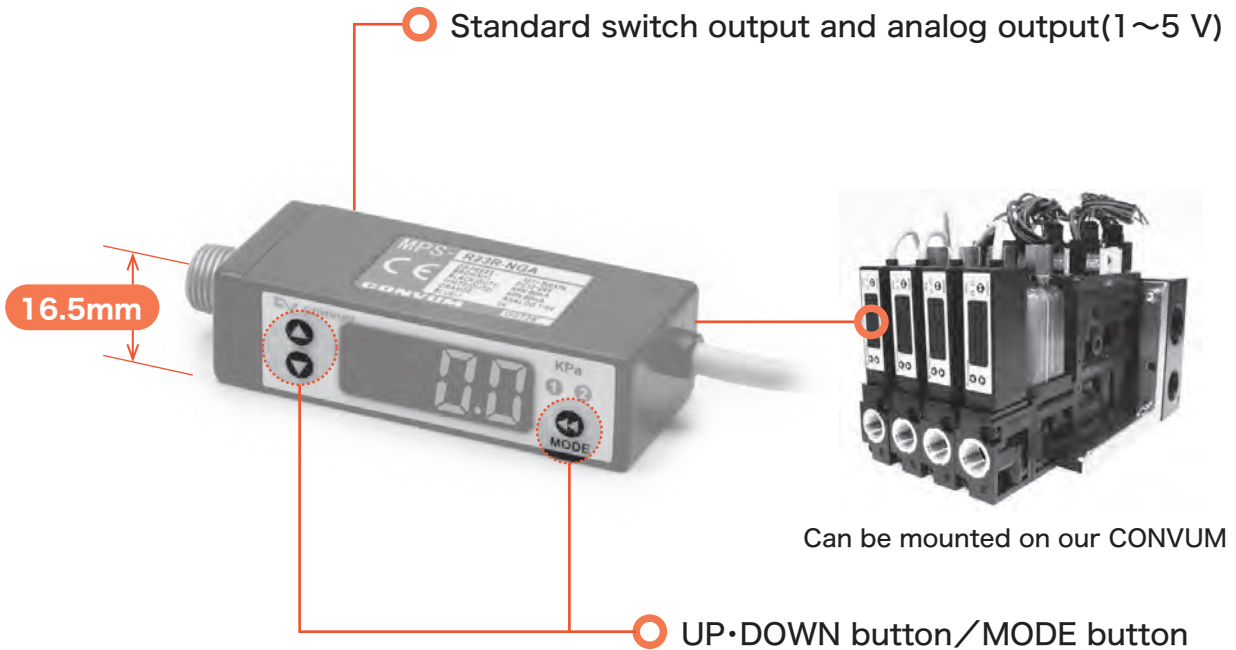
# MPS-23 Series

## Digital Display Pressure Sensor



Pressure Sensor  
Digital Display Pressure Sensor

Compact, clear display!



Easy to set by 3 buttons.

04 Pressure sensor

MPS-35

MPS-23

MPS-9

MPS-10

MVS-201

MVS-030AB

## How to Order

### • Single Type

MPS — **V** 23 **R** — **N** **G** **A**

①

① Pressure Range

Symbol	Type	Range
V	Vacuum	-101~0kPa
P	Positive	0~1MPa
R	Compound	-101~500kPa

②

② Port Size

Symbol	Specifications
R	R1/8 (Male)
N	NPT1/8 (Male)
G	G1/8 (Male)
C	for CONVUM <sup>Note</sup>

Note) Without base, mounting screw.

③

③ Output Type(Switch output)

Symbol	Specifications
N	NPN open collector
P	PNP open collector

— Analog Output  
1 ~ 5V Voltage output

— Cable  
Grommet (with lead wire 2m)

### • CONVUM Mounting Type

MPS — **V** 23 **C** — **N** **G** **A** — **MC22**

①

① Pressure Range

Symbol	Type	Range
V	Vacuum	-101~0kPa
R	Compound	-101~500kPa

②

② Output Type(Switch output)

Symbol	Specifications
N	NPN open collector
P	PNP open collector

③

③ Applicable CONVUM

Symbol	Applicable CONVUM
MC22	MC22
MC7	MC72
MPV3	MPV3

# MPS-23 Digital Display Pressure Sensor

## Specifications

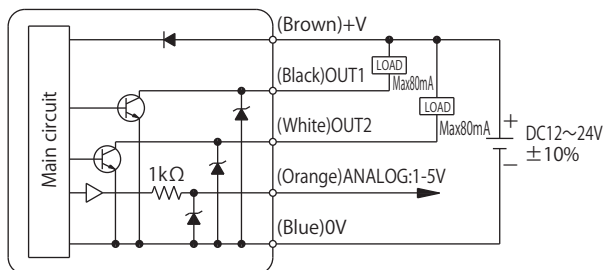
Description \ Model number		Unit	MPS-V23	MPS-P23	MPS-R23
Fluid			Air, non-corrosive gas, non-flammable gas		
Diaphragm			Silicon diaphragm <sup>Note1</sup>		
Rated pressure range			-101~0kPa	0~1MPa	-101~500kPa
Setting pressure range			-101.3~10kPa	0.1~1MPa	-101~500kPa
Withstand pressure		MPa	0.3	1.5	0.8
Ambient temperature range		°C	0~50(No freezing)		
Ambient humidity range		%RH	35~85(No condensation)		
Port size			R1/8, NPT1/8, G1/8(Male with M5 female screw)		
Power supply voltage		V	DC12~24±10%, ripple(Vp-p) 10% or less		
Maximum power consumption		mA	55		
Switch output	Type		NPN or PNP open collector 2 outputs		
	Maximum load current	mA	80		
Analog output		V	DC1~5V(±0.1) linearity 0.5% F.S. output impedance1kΩ <sup>Note2</sup>		
Repeatability		%	±0.2F.S 1digit or less		
Temperature characteristic		%	Less than±2 F.S. (At standard temperature 25°C, range0~50°C)		
Response time		ms	2.5 or less (Variable 24, 192, 768 options)		
Hysteresis			Variable		
Display	Digital		3 1/2-digits, 7-segment, red LED		
	Operation		OUT1:Green LED(ON lighting), OUT2:Red LED(ON lighting)		
Display/set resolution			0.1kPa	0.001MPa	1kPa
IP class			IP40		
Vibration resistance			10~55Hz, total amplitude 1.5mm, 50m/s <sup>2</sup> 2 hours each direction of XYZ		
Shock resistance		m/s <sup>2</sup>	980 3 times each direction of XYZ		
Electrical connection			Grommet		
Cable			φ4 0.15mm <sup>2</sup> 5 lead wires 2m		
Weight (with cable)		g	135		

Note 1) Non grease specifications.

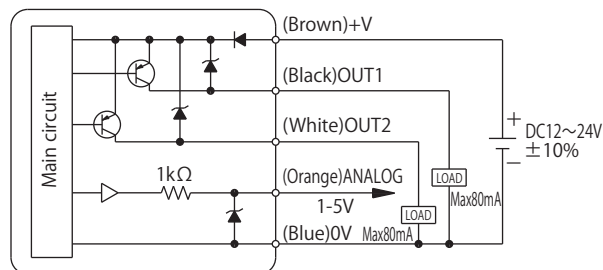
Note 2) Analog output of positive pressure type (P) in range of pressure 0 to 1 Mpa can output DC1-5V. In range of pressure -0.1 to 0 it does not output.

## Internal Circuit

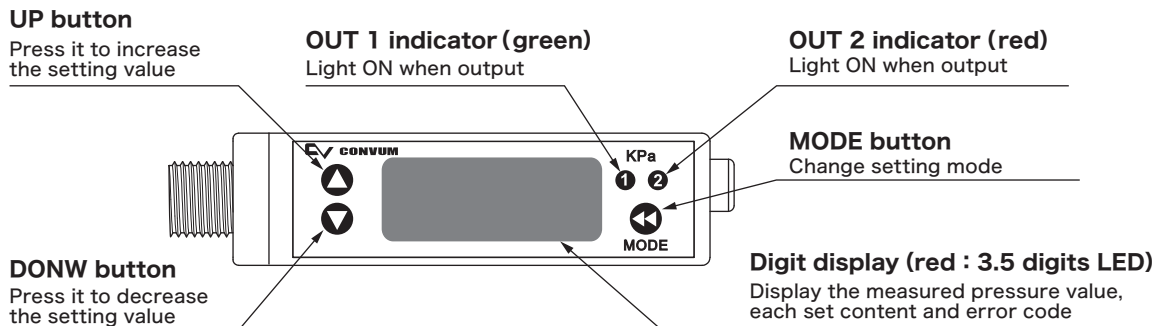
### NPN Output (Analog voltage output)



### PNP Output (Analog voltage output)

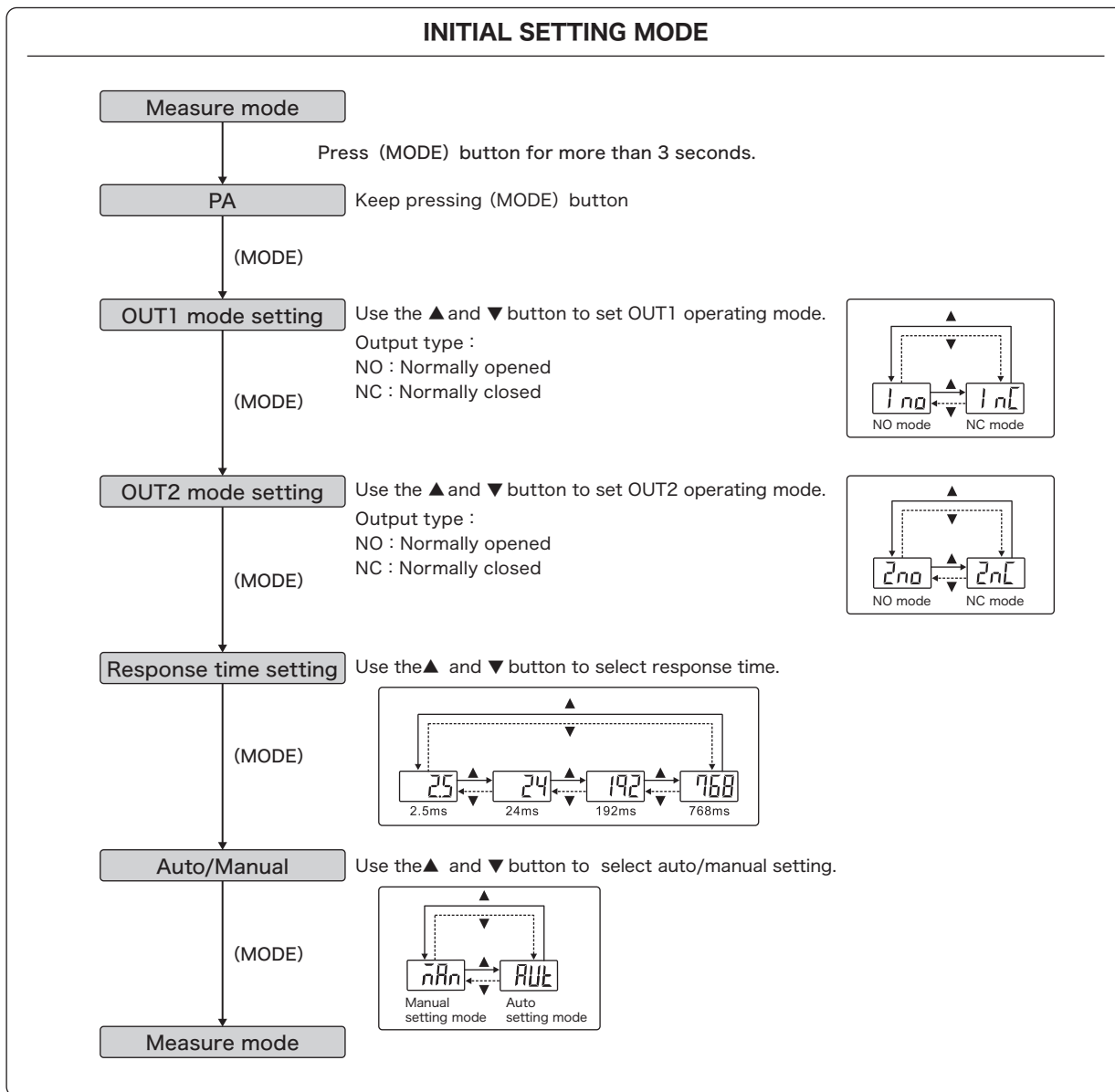


## Display Description



## Setting · Function

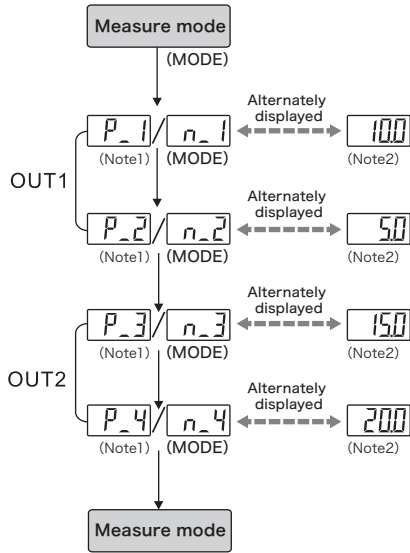
※ Please refer to the instruction manuals for details.



## Setting · Function

※ Please refer to the instruction manuals for details.

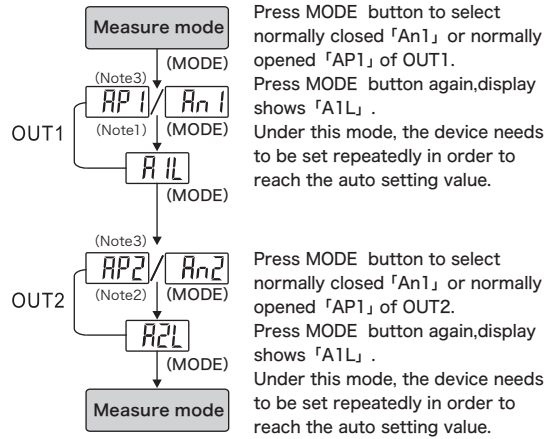
### MANUAL SETTING MODE



Note1. When normally opened is selected, it displays 「P\_\*」, When normally closed is selected, it displays 「n\_\*」.

Note2. Pressure value change  
When pressing one time to ▲ button, one digit increases.  
When keep pressing, setting value keep increasing.  
When pressing one time to ▼ button, one digit decreases.  
When keep pressing, setting value keep decreasing.

### AUTO SETTING MODE



Press MODE button to select normally closed 「An1」 or normally opened 「AP1」 of OUT1.  
Press MODE button again, display shows 「A1L」.  
Under this mode, the device needs to be set repeatedly in order to reach the auto setting value.

Press MODE button to select normally closed 「An2」 or normally opened 「AP2」 of OUT2.  
Press MODE button again, display shows 「A1L」.  
Under this mode, the device needs to be set repeatedly in order to reach the auto setting value.

Note1. In case of without need of OUT1 pressure value setting, press ▲ + ▼ at the same time to enter 「AP2」 / 「An2」.

Note2. In case of without need of OUT2 pressure value setting, press ▲ + ▼ at the same time to enter measure mode.

Note3. The LED show 「AP\*」 at normally opened mode and 「An\*」 at normally closed mode.

#### [Calculation of setting value]

A=The max. pressure value under auto setting mode.  
B=The min. pressure value under auto setting mode.

$$P1(n1) = A - \frac{A-B}{4}$$

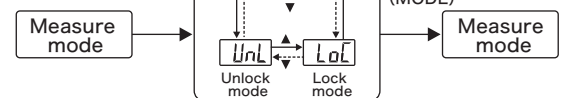
$$P2(n2) = B + \frac{A-B}{4}$$

### ZERO POINT SETTING

Press the ▲ ▼ button at the same time until the [00] is shown.

### KEY LOCK/UNLOCK MODE

Press (MODE) button for more than 5 seconds.



Use ▲ and ▼ button to select lock/unlock mode.  
Key lock mode can prevent operation mistakes.

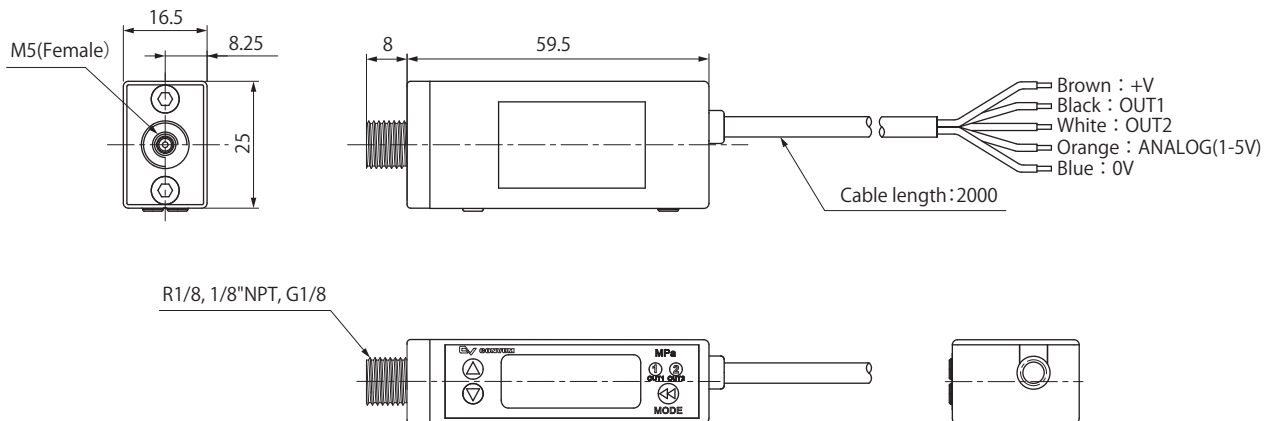
### ERROR CODE INSTRUCTION

Error type	Error code	Error condition	Trouble shooting
Excess load current error	OUT1 Er1	Output 1 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.
	OUT2 Er2	Output 2 load current is more than 80 mA.	
Residual pressure error	Er3	During zero reset, input pressure is over ±3% F.S. of ambient pressure.	Change input pressure to ambient pressure and perform zero reset again.
Applied pressure error	---	Supply pressure is exceeding the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
	----	Supply pressure is exceeding the lower limit of pressure setting.	
System error	Er4	Internal data error	Turn power off, and then restart. If error condition remains, please contact us.
	Er6	Internal system error	
	Er7	Internal data error	
	Er8	Internal system error	

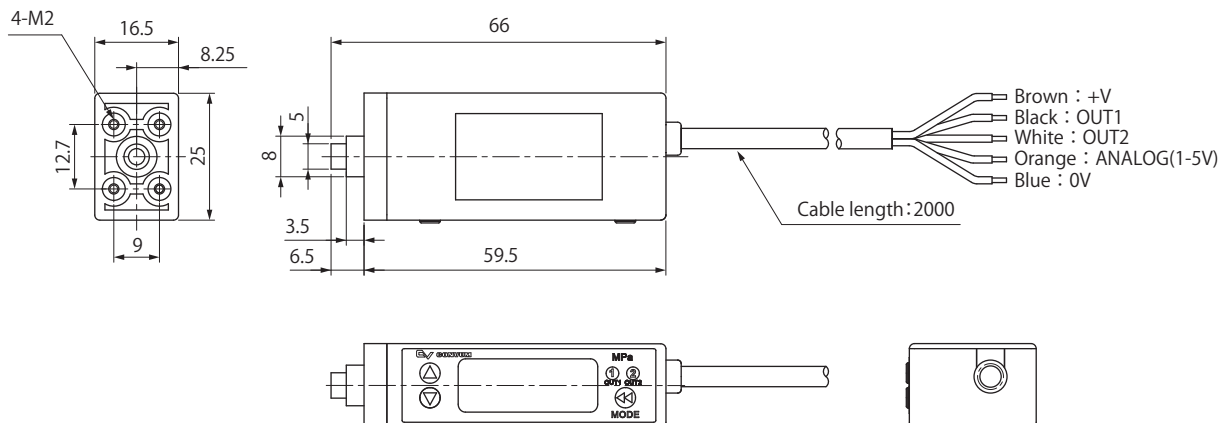
## Dimensions

(mm)

### Single Type



### CONVUM Mounting Type



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