

# Vacuum sensor (digital display)

## MPS-33 series



- Wide pressure range,  $-0.1 \sim 1.0\text{MPa}$

Vacuum pressure type:  $-101.3\text{ kPa}$ , Positive pressure:  $-0.1 \sim 1\text{MPa}$   
Compound pressure:  $-101 \sim 500\text{kPa}$

- Easy settings

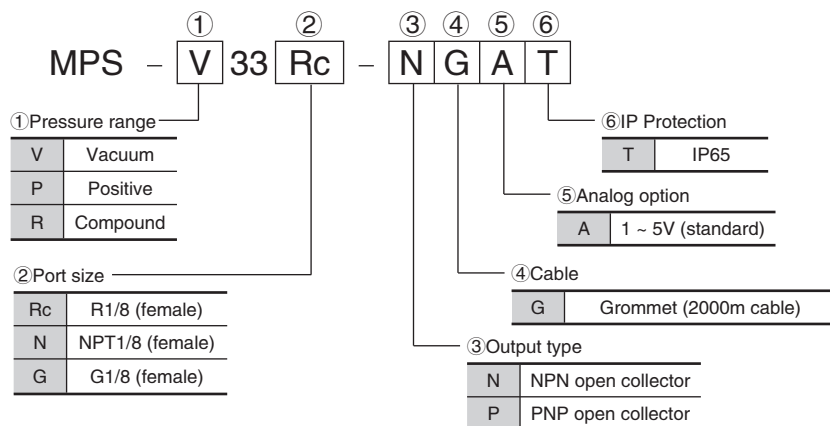
Use UP and DOWN keys to set the value.  
Automatic settings mode available.

- Standard switch output and analog output

Switch output (open collector) Analog output ( $1 \sim 5\text{V}$ )

- IP65

### How to order

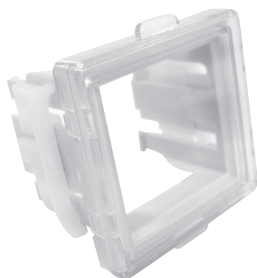


### Mounting parts

Surface panel mounting of MPS-33 L3 · F3 Bracket of MPS-33

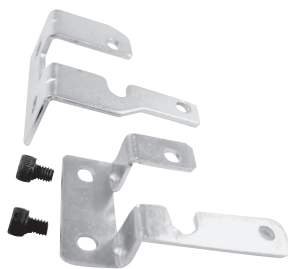
#### MPS-ACCH8

Adapter for panel mounting (2 types) with its protection cover.



#### MPS-ACCK8

L3 fitting, F3 fitting and 2 setting screws (M4) set.



## Specifications

Description		Unit	MPS-V33	MPS-P33	MPS-R33
Fluid			Air (non corrosive, nonflammable gas)		
Diaphragm			Silicon diaphragm *1)		
Pressure range		kPa	-101.0 ~ 0kPa	-0.1 ~ 1MPa	-101 ~ 500kPa
Proof pressure		MPa	0.3	1.5	0.8
Operating ambient temperature		°C	0 ~ 50		
Operating humidity		%	35 ~ 85 RH(without condensation)		
Port size			Rc1/8(female)、NPT1/8(female)、G1/8(female)		
Power supply		V	DC12 ~ 24 ± 10%、Ripple(Vp-p) less than 10%		
Power consumption		mA	less than 55		
Switch output	type		NPN or PNP open collector 2 points output		
	Current load	mA	max.80mA		
Analog output (Option)	Voltage output	V	DC1 ~ 5 (± 0.1%), linearity less than ± 0.5% of F.S., output impedance 1kΩ *2)		
	Repeatability	%	± 0.2 F.S., 1digit or less		
Temperature characteristic			Less than ± 2% of F.S. (At standard temperature 25°C, range 0 ~ 50°C)		
Response time		ms	Less than 2.5 (Variable 24, 192, 768 options)		
Hysteresis			Variable		
Digital display			3 1/2 digits 7 segments, 1 color (Red) LCD		
Resolution			0.1kPa	0.001MPa	1kPa
Protection structure			IP65		
Vibration resistance			10 ~ 55Hz, total amplitude 1.5mm (2 hours in direction of XYZ)		
Shock resistance		m/s <sup>2</sup>	980 (3 times in direction of XYZ)		
Electrical connection			Grommet		
Cable	Grommet		φ4 0.15mm <sup>2</sup> 5 lead wires 2000mm		
Accessory			Atmospheric pressure port for tube connection *3)		
Mass		g	105 (with lead wire)		

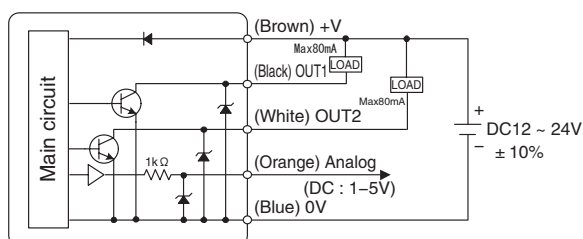
Note 1) Non grease specifications.

Note 2) Analog output of positive pressure type (P) in range of pressure 0 to 1 Mpa can output DC1~5V and 4~20mA. In range of pressure -0.1 to 0 it does not output.

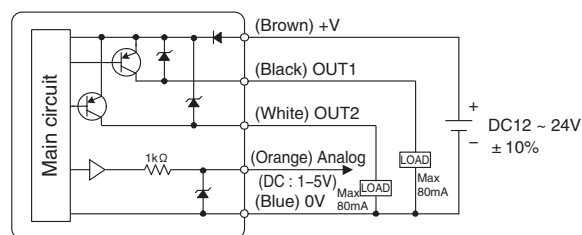
Note 3) In case of water splash against the sensor, please use the atmospheric pressure port with a tube.

## Internal circuit

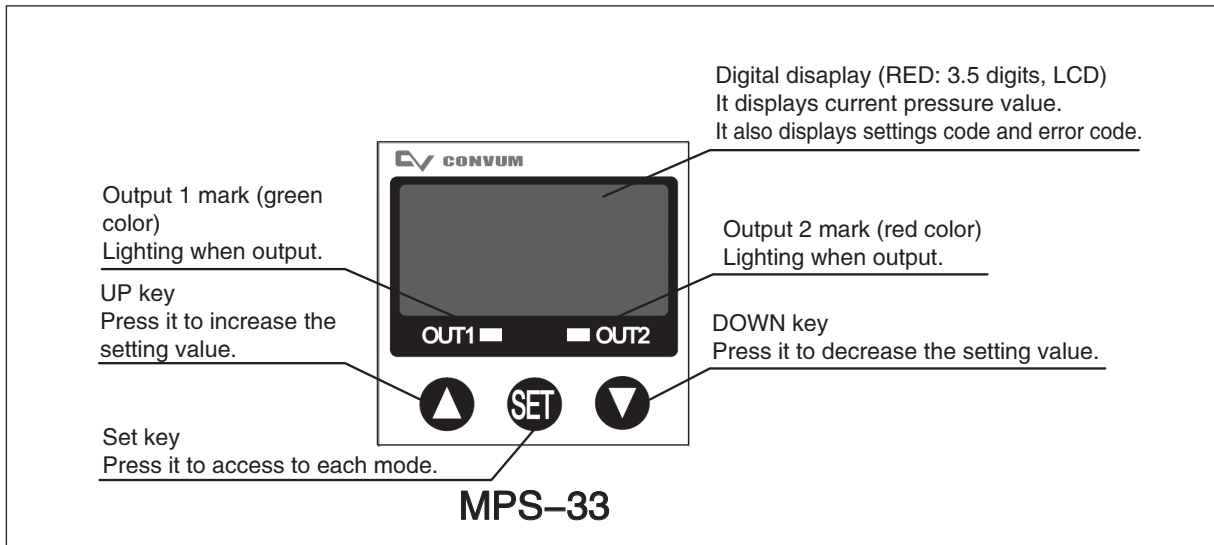
NPN output (Analog voltage output)



PNP output (Analog voltage output)



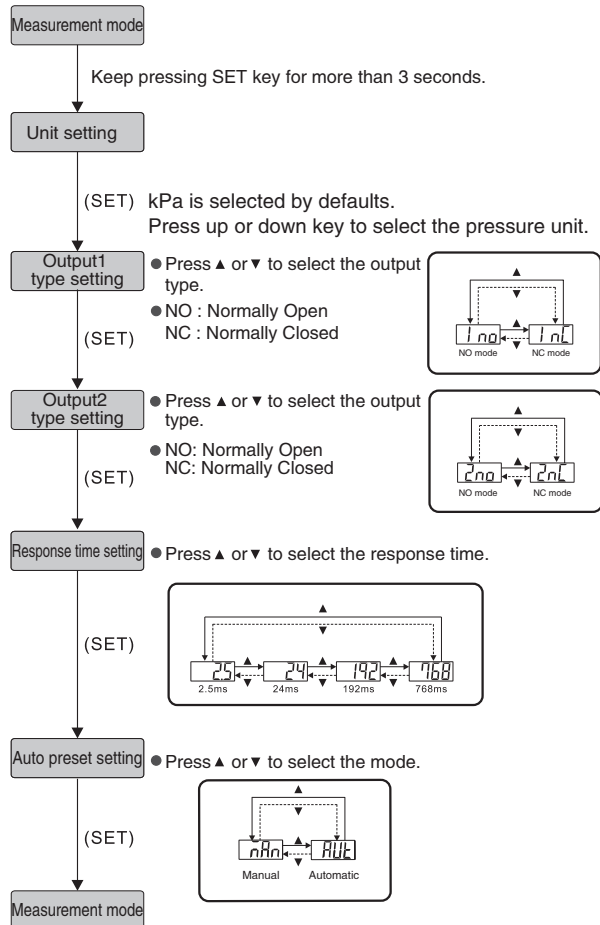
## Display description



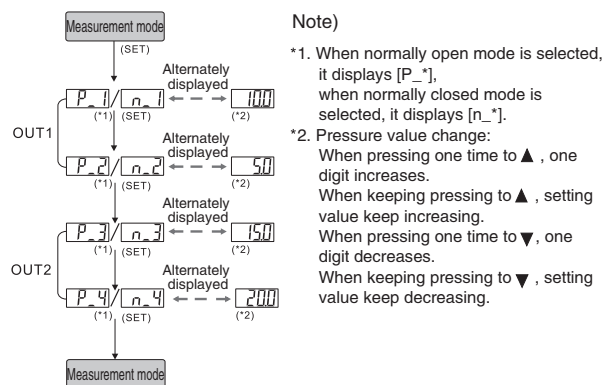
## Setting method

Please refer to the instruction manuals for details

### Initial settings mode



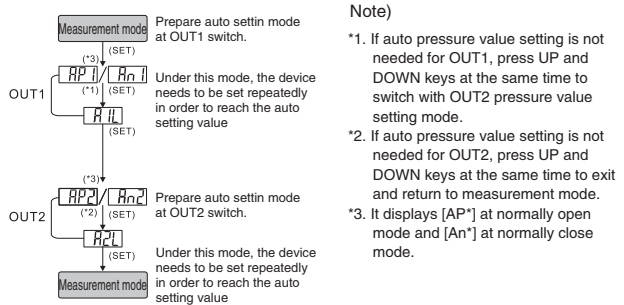
### Manual settings



Note)

- \*1. When normally open mode is selected, it displays [P\_\*], when normally closed mode is selected, it displays [n\_\*].
- \*2. Pressure value change:  
When pressing one time to ▲, one digit increases.  
When keeping pressing to ▲, setting value keep increasing.  
When pressing one time to ▼, one digit decreases.  
When keeping pressing to ▼, setting value keep decreasing.

### Auto setting mode



Note)

- \*1. If auto pressure value setting is not needed for OUT1, press UP and DOWN keys at the same time to switch with OUT2 pressure value setting mode.
- \*2. If auto pressure value setting is not needed for OUT2, press UP and DOWN keys at the same time to exit and return to measurement mode.
- \*3. It displays [AP\*] at normally open mode and [An\*] at normally close mode.

[Calculation of setting value]

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

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

$$P3(n3) = A - \frac{A-B}{4}$$

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

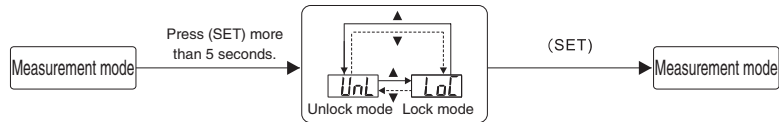
$$P4(n4) = B + \frac{A-B}{4}$$

## Other settings

### ① Zero reset setting:

Press UP and DOWN key at the same time until the "00" is displayed.  
Release the keys to end the settings.

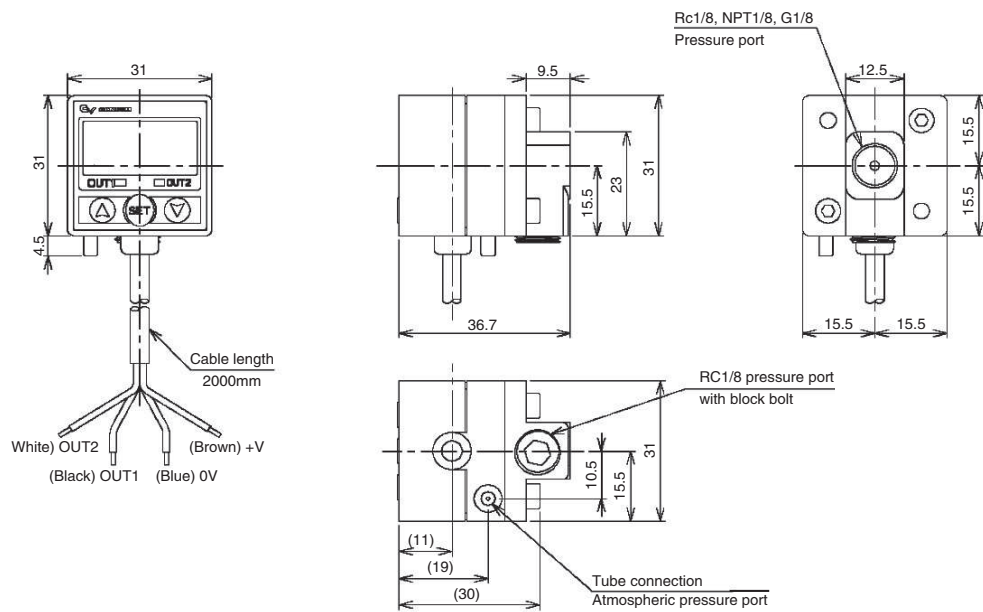
### ② Security lock setting



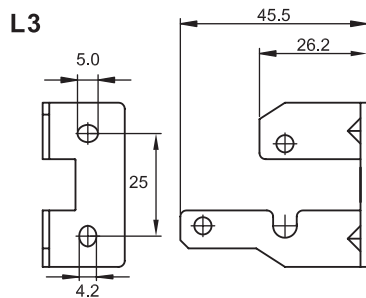
- Use ▲ and ▼ to change status of locking mode.

## Dimensions

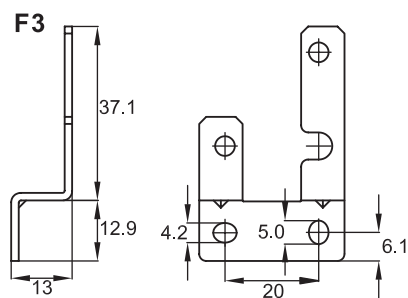
(mm)



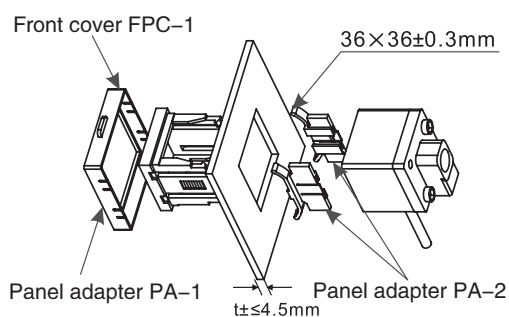
L3 bracket fitting



F3 bracket fitting



Surface panel mounting



Atmospheric air connection port

