

# Pressure switches Series SWCN-V01-P6 SWCN-P10-P6



Mat. 93-7519-0006 Rev.A Doc. 5000030255 Ver.02  
PR-0621B 2021/03 Printing

Thank you for purchasing Camozzi's product.  
Please take care below sentences to use this product safely.  
Retain this instruction with the product for further consultation whenever necessary.  
Please read the instruction manual or the catalog about more details.

## 1 General recommendations



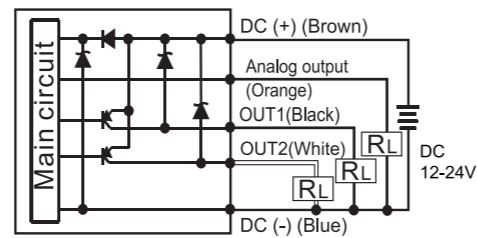
**WARNING**  
For your safety, please read the following before using.

- 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.
- For Use on a Flat Surface of a Type 1 Enclosure.

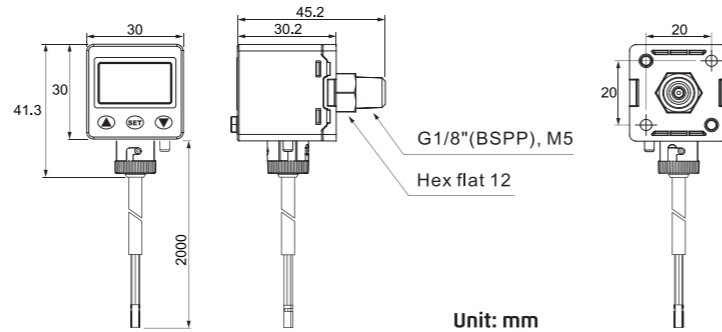
## 2 General data

	V01	P10
<b>Rated pressure range</b>	-1 ÷ 1 bar	0 ÷ 10 bar
<b>Setting pressure range</b>	-1.01 ÷ 1.01 bar	-1 ÷ 10 bar
<b>Withstand pressure</b>	3 bar	15 bar
<b>Fluid</b>	Filtered air, Non-corrosive / Non-flammable gas	
<b>Set pressure resolution</b>	kPa	0,1
	MPa	-
	kgf/cm <sup>2</sup>	0,001
	bar	0,001
	psi	0,01
<b>Power supply voltage</b>	12 to 24V DC ±10%, Ripple (P-P) 10% or less Class2	
<b>Current consumption</b>	≤ 40mA (with no load)	
<b>Switch output</b>	<b>Output type</b>	2 PNP open collector
	<b>Max. load current</b>	125 mA
	<b>Max. supply voltage</b>	24V DC
	<b>Residual voltage</b>	≤ 1.5V
<b>Output short circuit protection</b>	<b>Response time</b>	≤ 2.5 ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selections)
	<b>Output short circuit protection</b>	Yes
<b>Analog output</b>	<b>Current</b>	4-20 mA (±2,5%)
	<b>Impedance</b>	Max. Load Impedance: 250Ω at power supply of 12V 600Ω at power supply of 24V Min. Load Impedance: 50Ω
<b>Display</b>	<b>Linearity</b>	±1% F.S.
	<b>LCD display</b>	3½ digit, 7 segment (red/green)
	<b>Switch ON Indicator</b>	Orange (1 & 2 Indicator) OUT1 OUT2
	<b>Updates time</b>	About 0.2 s
<b>Repeatability (Switch output)</b>	<b>Indicator accuracy</b>	±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)
	<b>Enclosure</b>	±0.2% F.S. ±1 digit
<b>Environment</b>	<b>Enclosure</b>	IP65
	<b>Operation ambient temp. range</b>	0 - 50°C
	<b>Storage ambient temp. range</b>	-10 ÷ 60°C (No condensation or freezing)
	<b>Ambient humidity range</b>	35 - 85% RH (No condensation)
	<b>Withstand voltage</b>	1000VAC in 1-min (between case and lead wire)
	<b>Insulation resistance</b>	50MΩ min. (at 500V DC, between case and lead wire)
<b>Temperature characteristic</b>	<b>Vibration</b>	Total amplitude 1.5mm or 10G, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z
	<b>Shock</b>	100m/s <sup>2</sup> (10G), 3 times each in direction of X, Y and Z
<b>Port size</b>	G1/8"(BSPP), M5	
<b>Lead wire</b>	Oil-resistance cable (0.15mm <sup>2</sup> )	
<b>Weight</b>	Approx. 86g (including 2 meter lead wire)	

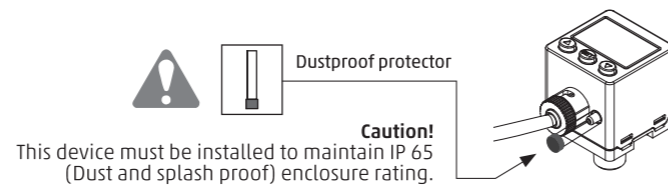
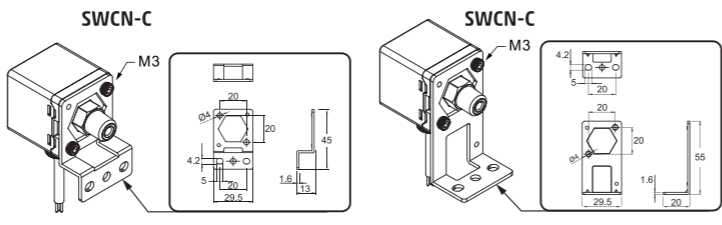
## 3 Output circuit wiring diagram



## 4 Dimensions



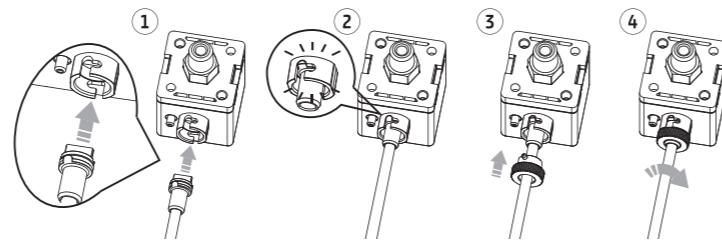
## 5 Optional parts dimensions



## 6 Wire installation

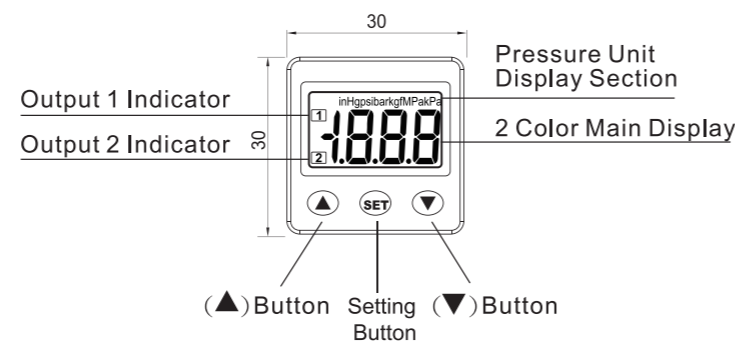
Please install the wire as the following step:

- Turn upward the salient point by terminal. (See figure 1)
- Install to the terminal to the groove by pressure sensor. (See figure 2)
- Terminal cover instal l to the products. (See figure 3)
- Turn the terminal cover to lock. (See figure 4)

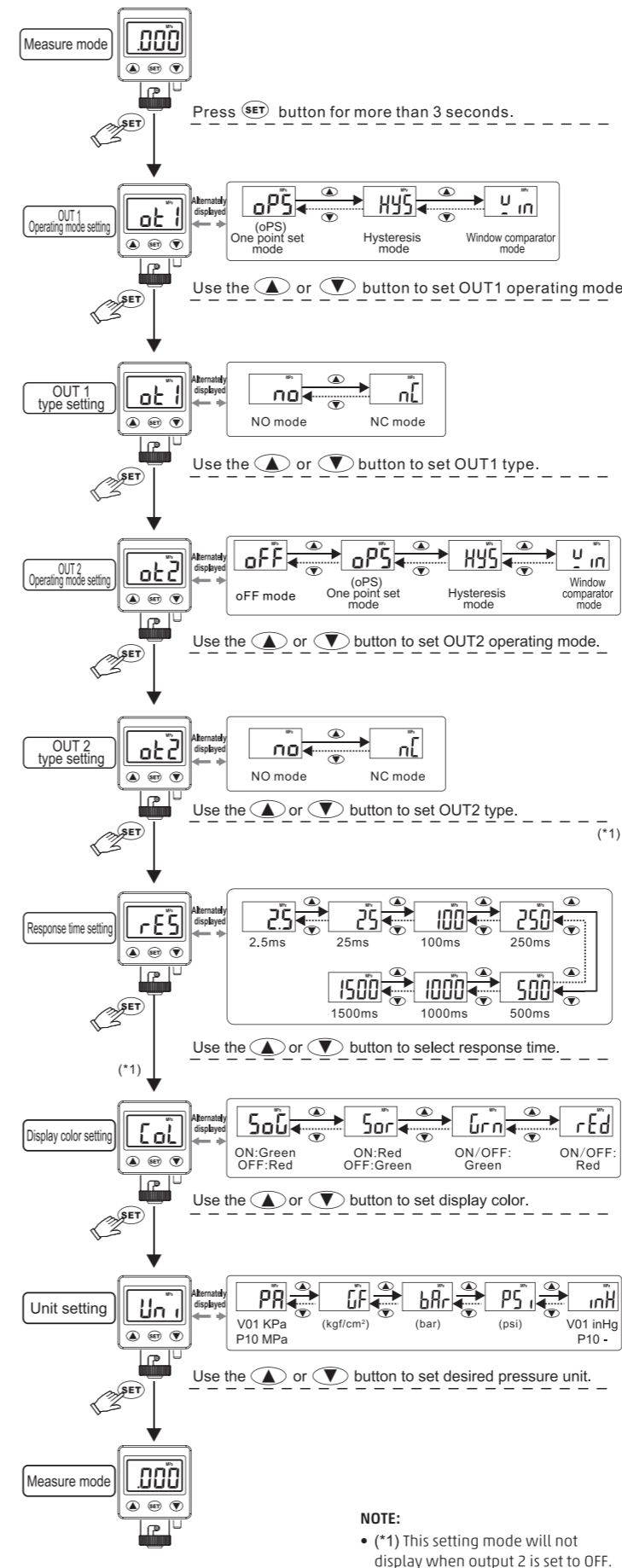


NOTE: Recommend not insert-extract over 20 times.

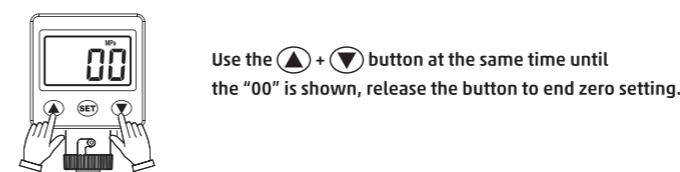
## 7 Panel description



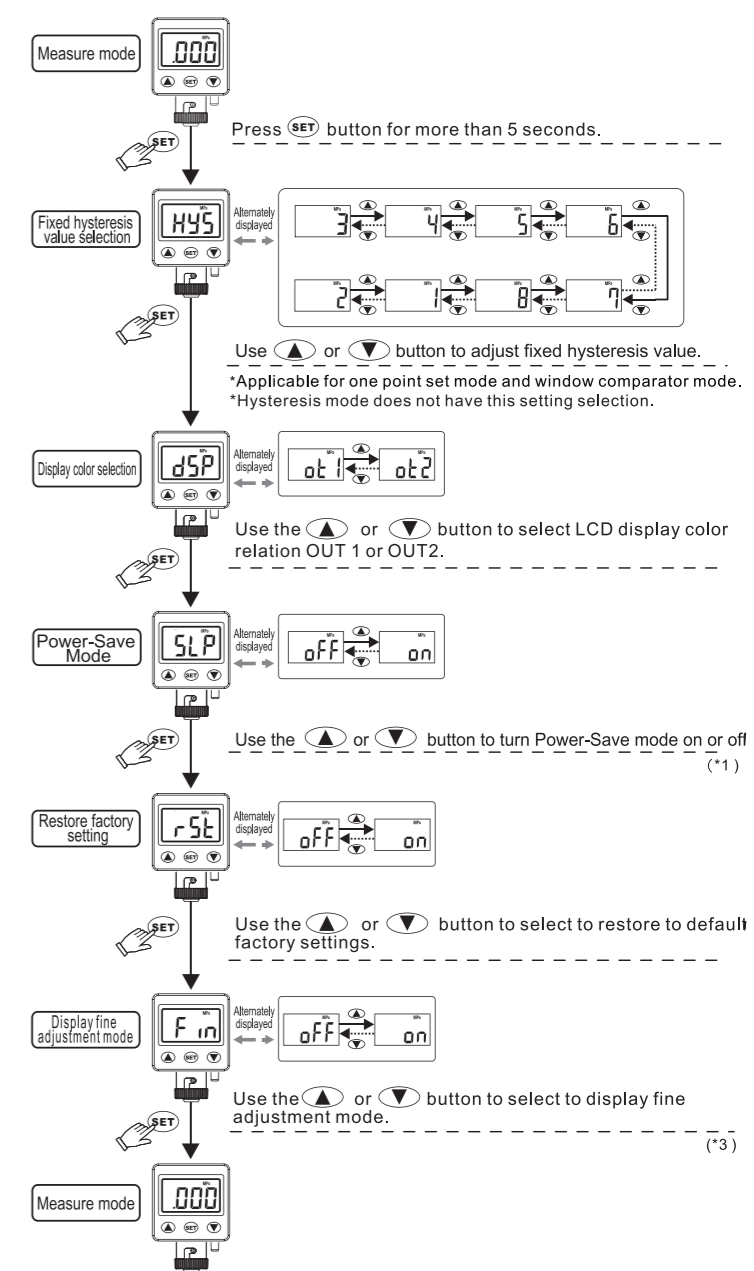
## 8 Initial setting mode



## 9 Zero point setting



## 10 Advanced setting mode



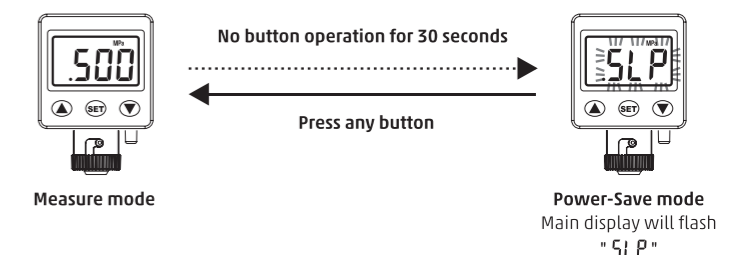
### NOTE:

- (\*1) When setting is "on" the power-save mode is active. Please refer to the item "11" in detailed.

- (\*3) When setting is "on", the display fine adjustment mode is active. Please refer to the item "18" in detailed.

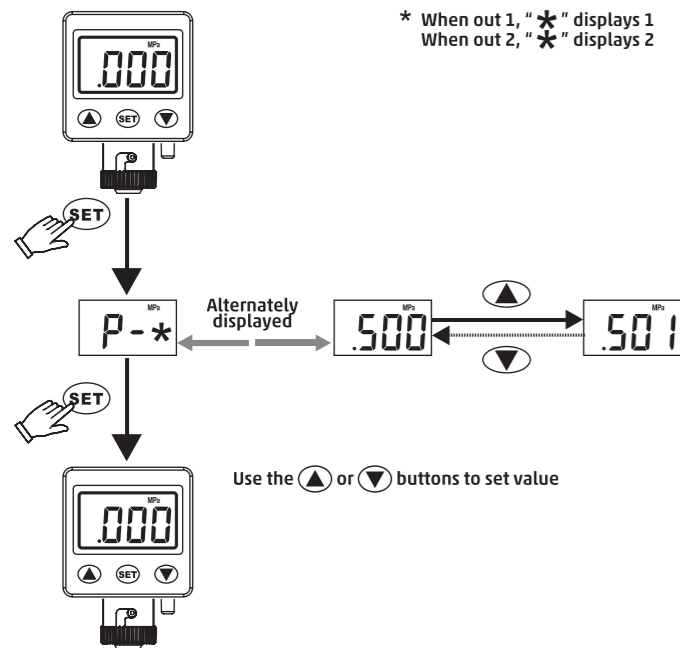
## 11 Power-save mode

- 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 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.

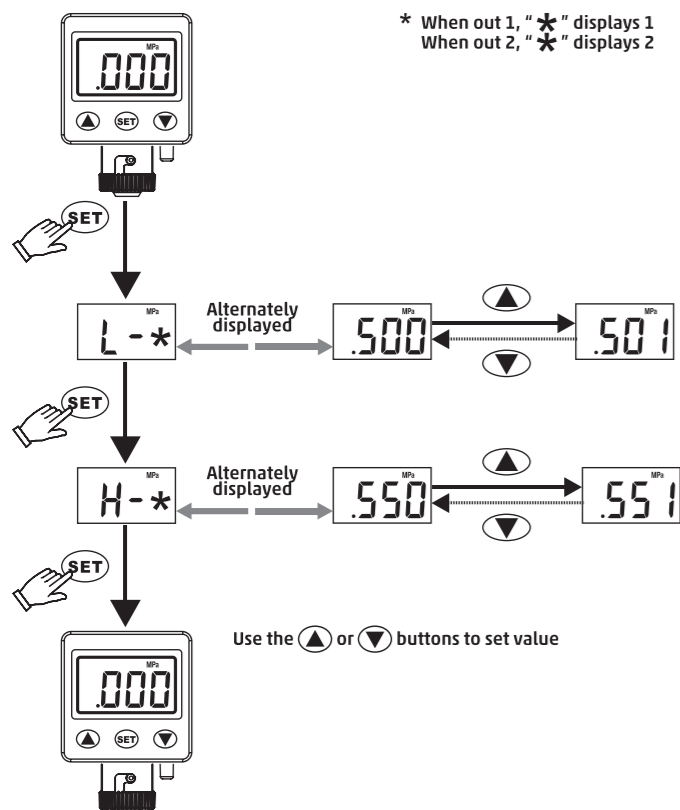


### 12 Pressure setting mode

#### • One point set mode:

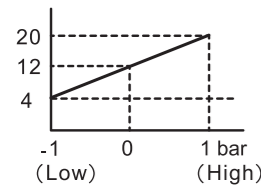


#### • Hysteresis mode/ Window comparator mode:

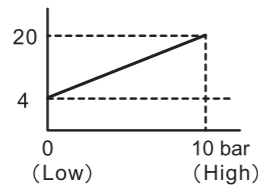


### 13 Analog output description

#### V01 Analog output (mA)

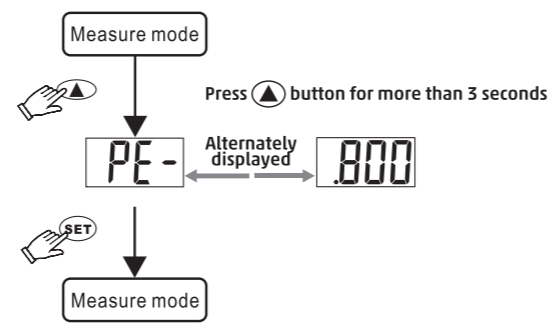


#### P10 Analog output (mA)

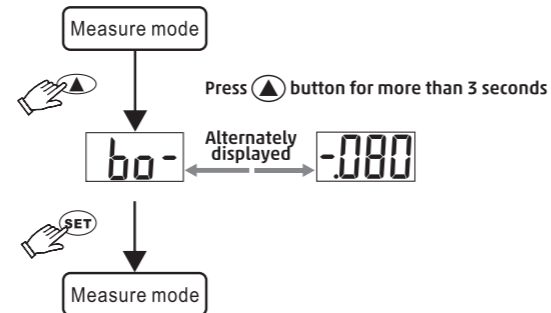


### 14 The Max. & Min. display mode

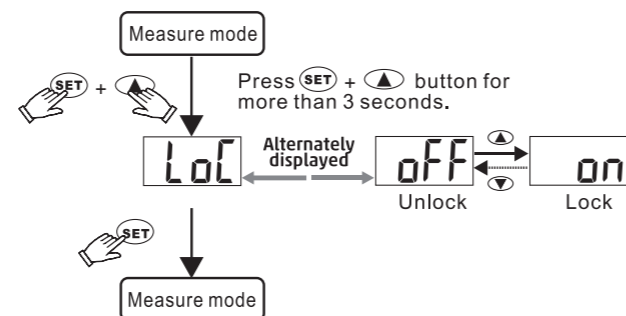
#### • The Max. value display mode:



#### • The Min. value display mode:



### 15 Key lock/unlock mode



• Key lock mode, it displays as picture when pressing any key. After some time, it would be returned to measure mode.



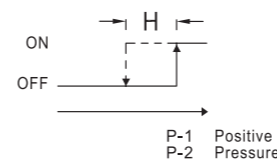
### 16 Pressure unit conversion table

From To	Pa	kPa	MPa	kgf/cm <sup>2</sup>	psi	bar	inHg
1 Pa	1	0.001	0.000001	0.000010197	0.000145038	0.00001	0.0002953
1 kPa	1000.000	1	0.001000	0.010197	0.145038	0.010000	0.2953
1 MPa	1000000	1000	1	10.197	145.038	10	295.2998
1 kgf/cm <sup>2</sup>	98066.5	98.0665	0.0980665	1	14.2233	0.980665	28.95979
1 psi	6895	6.895	0.006895	0.07031	1	0.06895	2.036074
1 bar	100000.0	100.0000	0.100000	1.01972	14.5038	1	29.52998
1 inHg	3386.388	3.386388	0.003386	0.034530	0.491141	0.033863	1

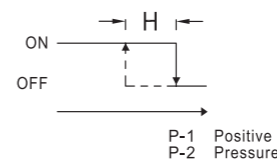
### 17 Output type

#### • One point set mode:

##### Normal open mode

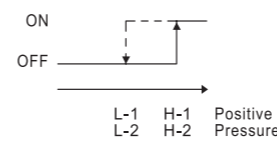


##### Normal close mode

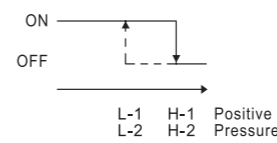


#### • Hysteresis mode:

##### Normal open mode

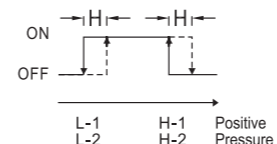


##### Normal close mode

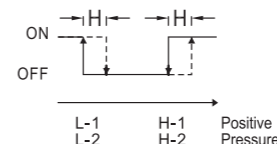


#### • Window comparator mode:

##### Normal open mode



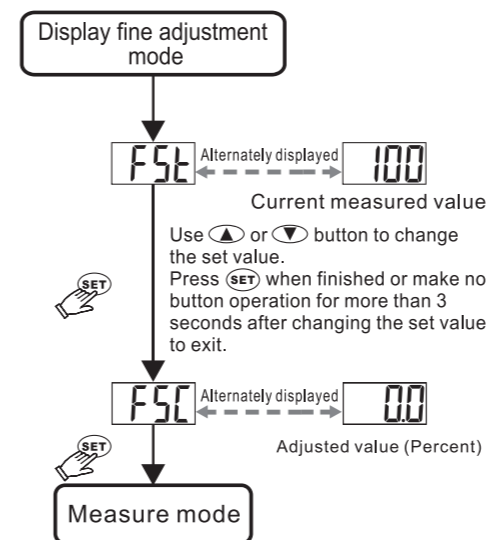
##### Normal close mode



#### 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.
- 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.

### 18 Fine adjustment mode

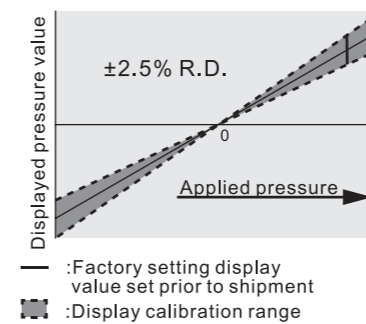


This function eliminates slight differences in the output values and allows uniformity in the numbers displayed. Displayed values of the pressure sensor can be calibrated to within ±2.5% R.D.

R.D. (Real Detect)

#### NOTE:

- Set ting resolution is ±0.1% R.D.
- The signal would be changed with analog output after adjusting



### 19 Error code instruction

Error Type	Error code	Error Condition	Troubleshooting	
Excess load current error	out 1	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 125mA, then restart
	out 2	Er2	Output 2 load current is more than 125 mA	
Residual pressure error		Er3	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 exceeds the upper limit of pressure setting	Adjust the pressure within operating pressure range
		LLL		
System error		Er4	Internal system error	Turn power off and then restart. If error conditions remains, please return to factory for inspection
		Er5		
		Er6	Internal data error	
		Er7		
Copy data error		Er8	Copy data error	Please check the model no. and wire connection. Restart to turn on power. If no return to normal condition, please return to factory for inspection

In case the malfunction found is not among those described, contact Camozzi Automation Service.