Precautions

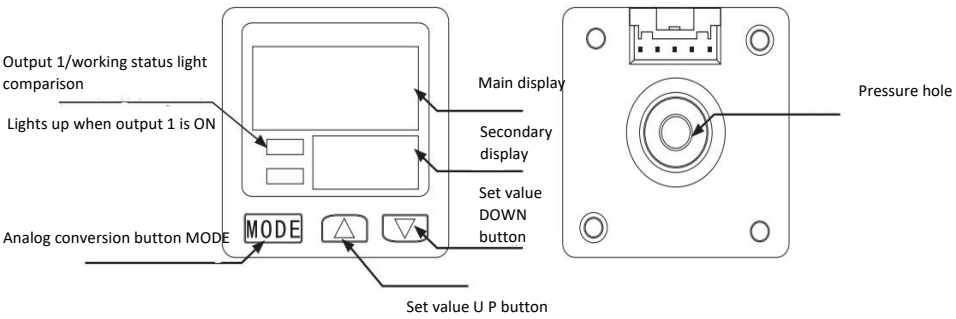
This product is suitable for non-corrosive gases. Please do not use it in environments with corrosive gases, flammable and explosive gases or liquids.

Please use within the rated voltage range

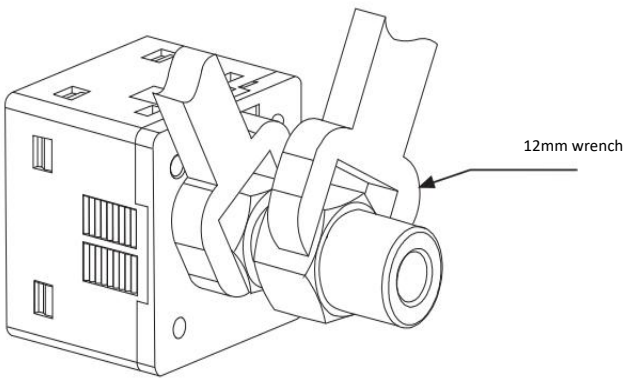
Please pay attention to the pressure range of this product. If the pressure range is exceeded, it may cause dangerous situations.

Do not use this product as a detection device for human protection

1. Part name

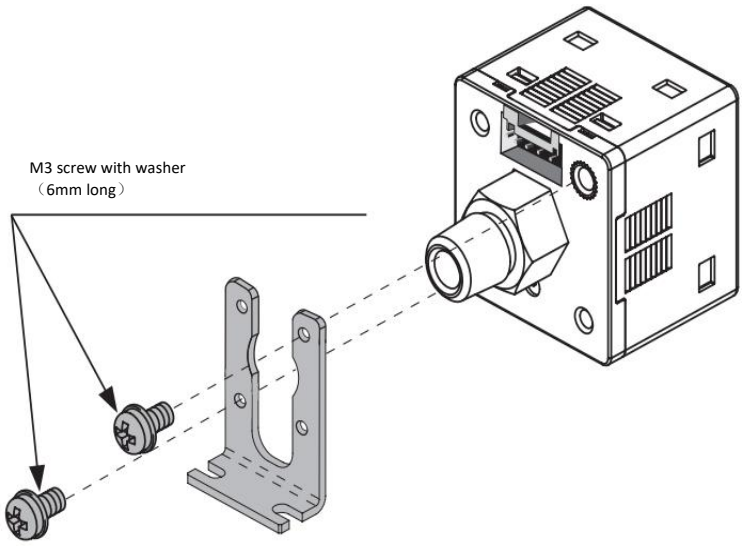


2，Assembling the air pipe



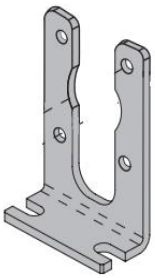
When connecting a universal connector to the pressure port, use a 12mm wrench to tighten the hexagonal area of the pressure port. The tightening torque should be less than 5.1Nm (less than 1Nm when using an M5 internal thread screw). Excessive tightening torque can damage the connector or the pressure port. To prevent leakage, wrap sealing tape around the connector during connection.

3，Installation

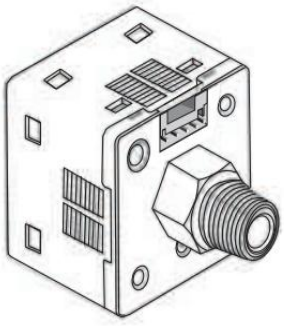


When installing with the matching mounting bracket, the tightening torque should be within 12N.m, and the screws used should be M3 and 6mm long.

! Optional accessories need to be purchased separately

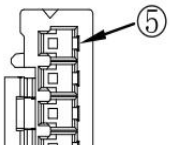


3，Connect the wires

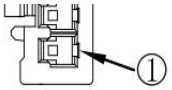


Please use the connecting cable with plug included in the accessories. Note: When removing, please press the connector part to remove it, otherwise it will cause the cable to break and the connecting cable to be damaged.

Connector pin configuration diagram



Connector pins NO.	Terminal name
1 brown	+V
2 black	Switch output 1



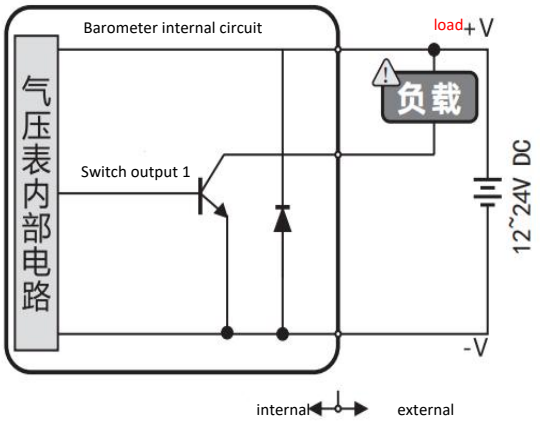
3 White	——
4 orange	Analog output
5 blue	OV

* DP□-001-□	This series has no analog output

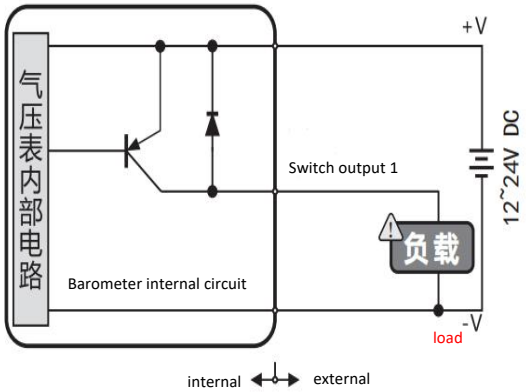
4. I/O circuit diagram

! Please be careful! It must be connected in series with the load before use, otherwise the pressure gauge may burn out!

NPN output type

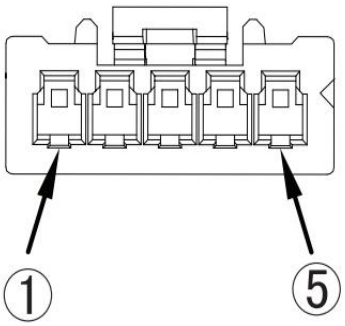


PNP output type



Terminal arrangement diagram

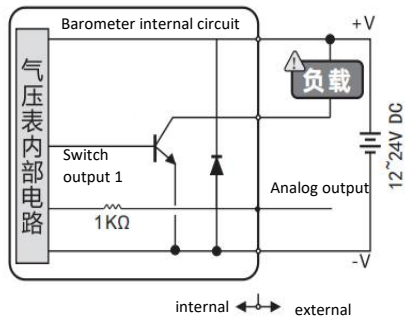
Connector pins NO.	Terminal name
1 brown	+V
2 black	Switch output 1
3 White	——
4 orange	——
5 blue	OV



With analog output

DP□-050/051-□

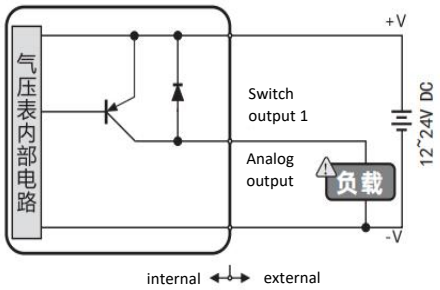
NPN output type



Terminal arrangement diagram

Connector pins NO.	Terminal name
1 brown	+V
2 black	Switch output 1
3 White	——
4 orange	Analog output
5 blue	OV

PNP output type

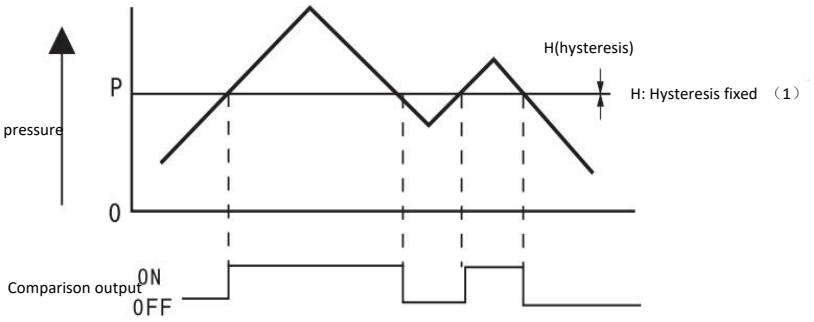


5，Output Mode and Output Examples

For comparison output 1, out-of-bounds mode can be selected from EASY mode, hysteresis mode, and window comparison mode.

EASY MODE

The EASY mode is a mode for controlling the ON/OFF of the comparison output.

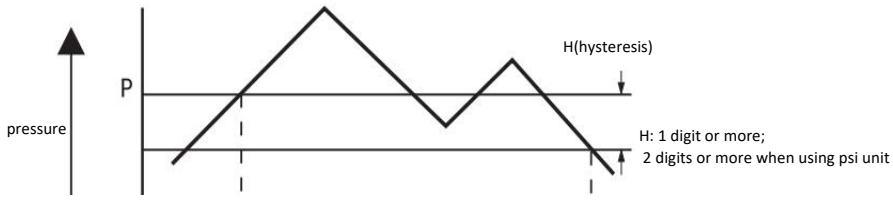


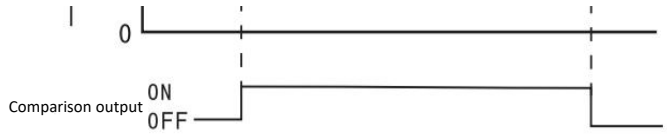
1：The hysteresis can be fixed in 8 stages:

2：When the comparison output is 1, the secondary display sl "P-1"

Hysteresis mode

The hysteresis mode is a mode in which the hysteresis (hysteresis) of the comparison output is arbitrarily set to control ON or OFF.

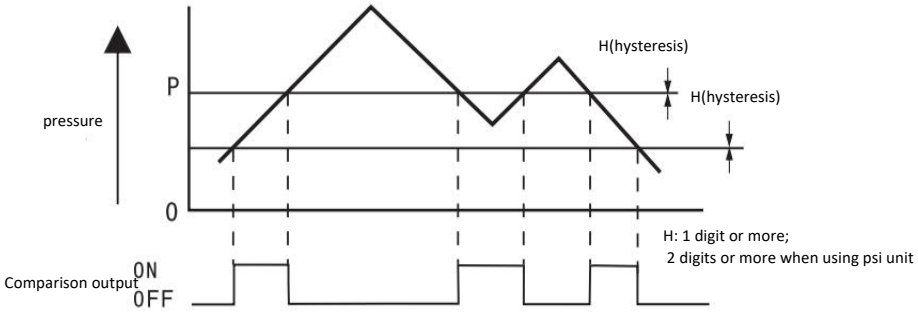




1：When the comparison output is 1, the secondary display s" "HI-1" "Lo-1"

Window comparison mode

Window comparator mode is a mode that controls the ON or OFF of the comparison output by the pressure within the specified range.



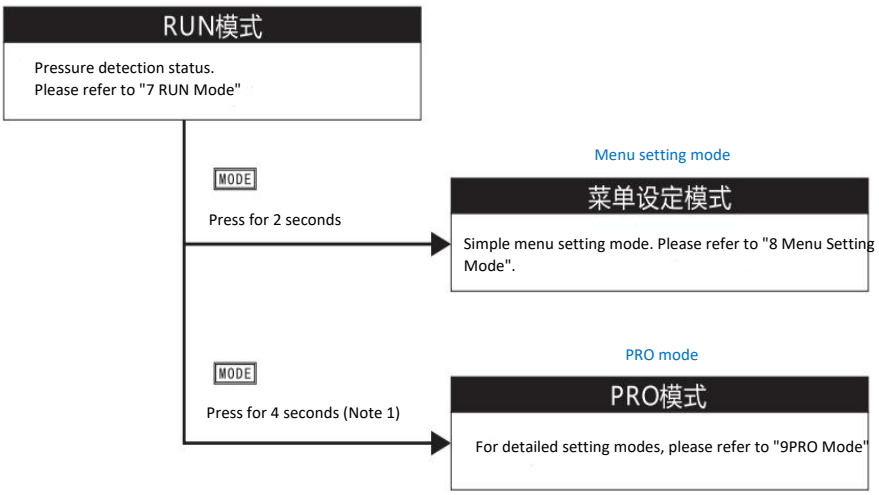
1：Hysteresis can be fixed in 8 stages

2：When the comparison output is 1, the secondary display sh "HI-1" "Lo-1"

6. Settings

Setting steps

RUN mode

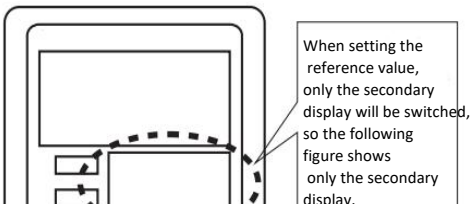


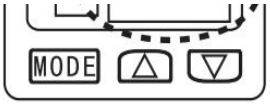
Note 1：Pressing the mode switch button for 2 seconds switches to menu setting mode. To switch to PRO mode, keep pressing the button.

7，RUN MODE

Benchmark value setting

For more information on how to set the conditions, refer to "Menu Setting Mode".



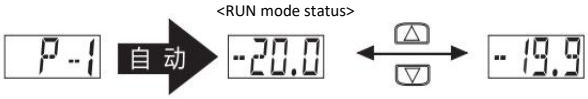


display.

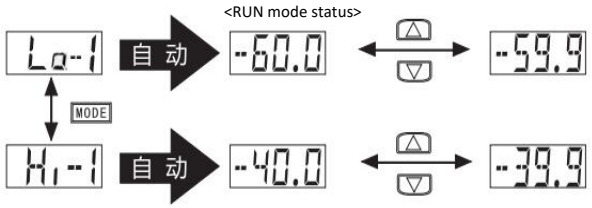
If the set pressure range is exceeded, the secondary display will light up and show "UP" (exceeding the upper limit) or "DOMN" (exceeding the lower limit). At the same time, when setting the reference value of the "hysteresis mode/window comparison mode", if the reference value of Hi is lower than the reference value of Lo, "DOMN" will be displayed.

<Setting conditions ①> ： Comparative output 1 output mode: "EASY" (EASY mode)

Setting Conditions ②>
Comparative Output 1 Output Mode: "HYS" (Hysteresis Mode) or "WCMP" (Window Comparator Mode)

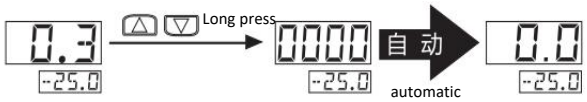


<Setting conditions ③> Comparative output 1 output mode: "HYS" (hysteresis mode) or "WCMP" (window comparator mode)



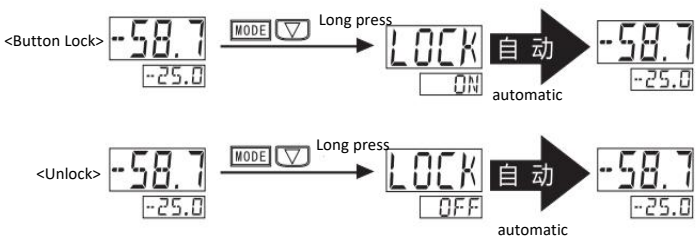
Zero calibration function

The zero calibration function is to force the pressure value to be displayed as "0" when the pressure hole is at atmospheric pressure.



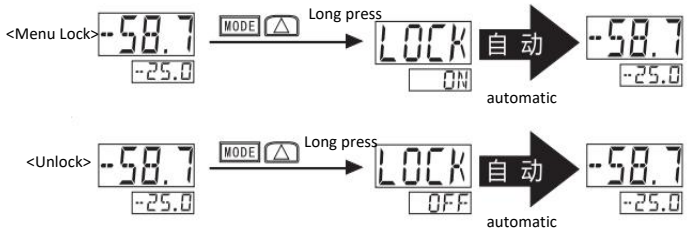
Button lock function

The button lock function prevents each setting mode from being changed by mistake in the set state by making the sensor not respond to button operations.



Menu lock function

The menu lock function allows you to set the reference value even when the menu item is locked.



8，Menu setting mode

DP series barometer working mode is absolute value output

In RUN mode, press and hold the mode switch button for 2 seconds to switch to menu setting mode. If you press and hold the mode switch button during setting, it will switch to RUN mode. At this time, the setting content is the content set in the middle. The left end of the display is the initial state (factory state).

<RUN mode>

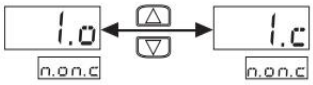
MODE Long press for 2 seconds

<Comparative output 1 output mode setting>

(EASY mode) (Hysteresis mode) (Window comparison mode)

MODE

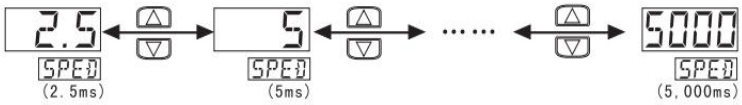
<N.O./N.C. Conversion> (Note 1)



Mode 1: N.O. Mode 1: N.C
Mode 2: N.O. Mode 2: N.C

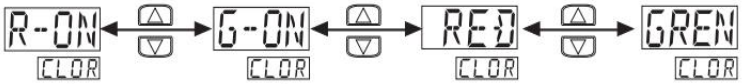
MODE

Response time setting



MODE

<Display color conversion of the main display>

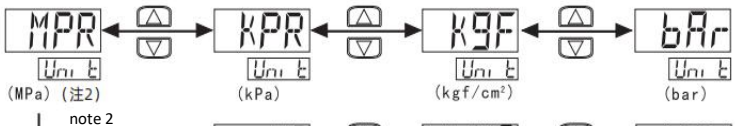


Red when ON Green when 0N Usually red (usually green)
Green when 0FF Red when 0FF

MODE

(Take DP2 positive pressure type as an example, when using DP5 compound pressure type, please refer to "Note 2"

<Unit Conversion>



(MPa) (注2) (kPa) (kgf/cm²) (bar)
note 2

MODE

(inchHg)(注3) (mmHg)(注3) (psi)
note 3 note 3

<RUN mode>

(Note 1): The initial state of the comparison output of the positive pressure type is "1N.O.", and

(Note 1): The initial state of the comparison output of the positive pressure type is "1N.O.", and the initial state of the comparison output of the compound pressure type is "1N.C.

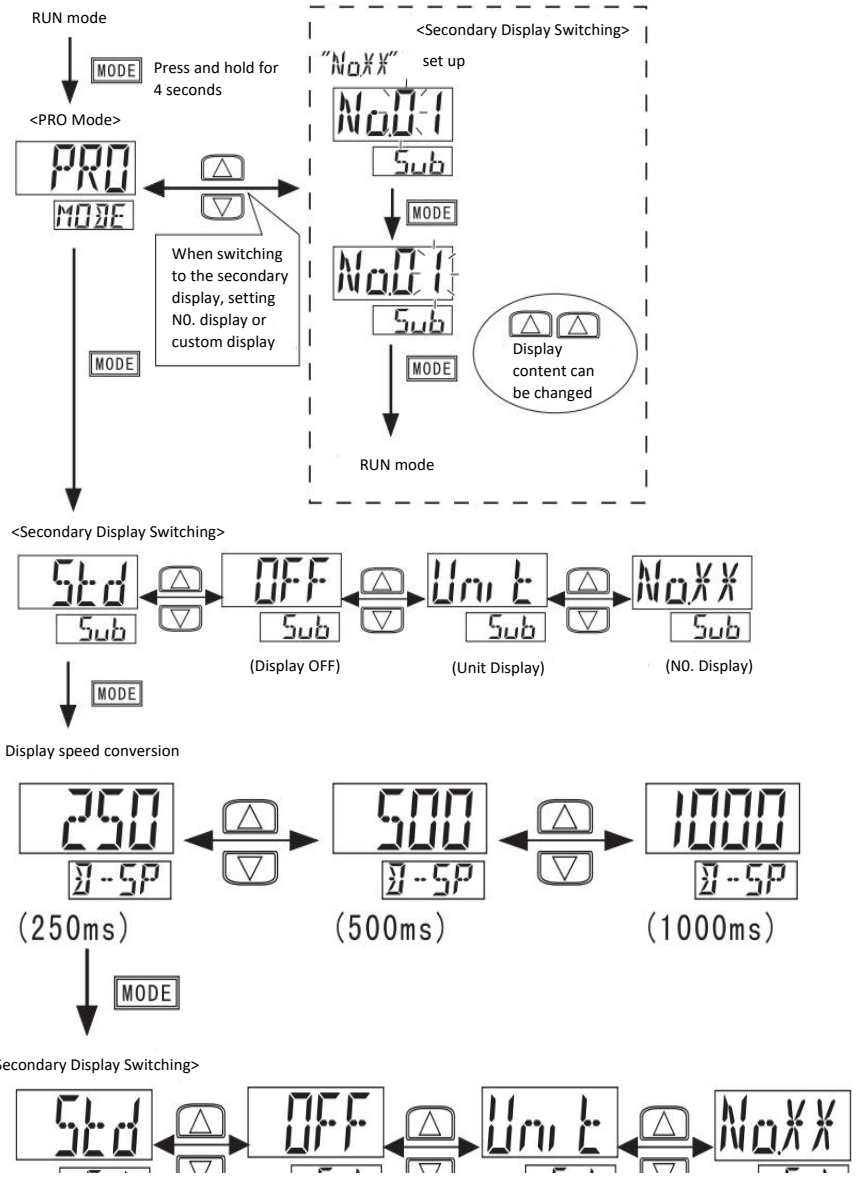
(Note 2): The initial state of the composite press is "KPR" and "MPR" is not displayed.

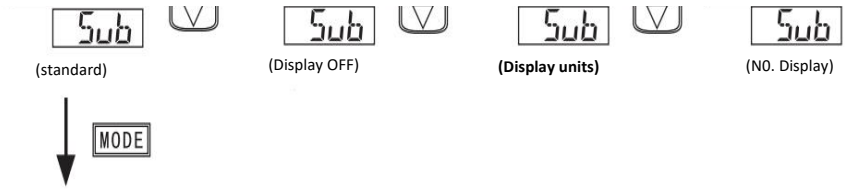
(Note 3): Positive pressure type has no display

Setting Project	illustrate
Comparative output 1 output mode setting	Set the comparison output 1 output mode
N.0./N.C. conversion	Set to normally open (N.0.) or normally closed (N.C.)
Reflection time setting	The response time can be set. Select from 2.5ms, 5ms, 10ms, 25ms, 50ms, 100ms, 250ms, 500ms, 1000ms, and 5000ms.
Display color conversion of the main display	Display colors for switchable displays
Unit conversion	Convertible pressure units

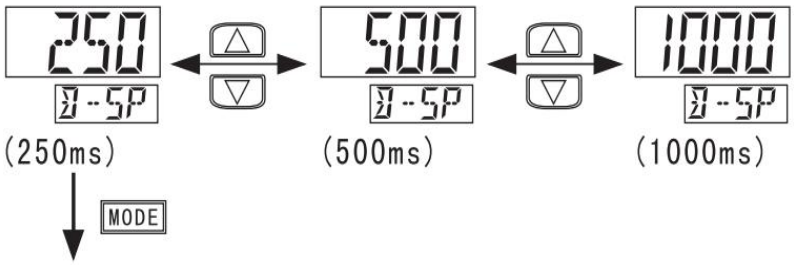
9，PRO Mode

In RUN mode, press and hold the mode switch button for 4 seconds to switch to PRO mode. If you press and hold the mode switch button during setting, it will switch to RUN mode. At this time, the setting content is the content set in the middle. The left end of the display is the initial state (factory state).

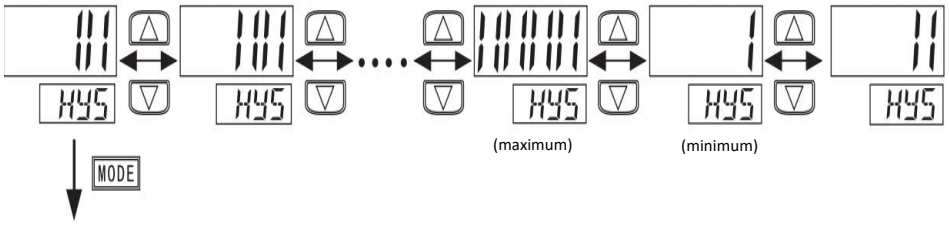




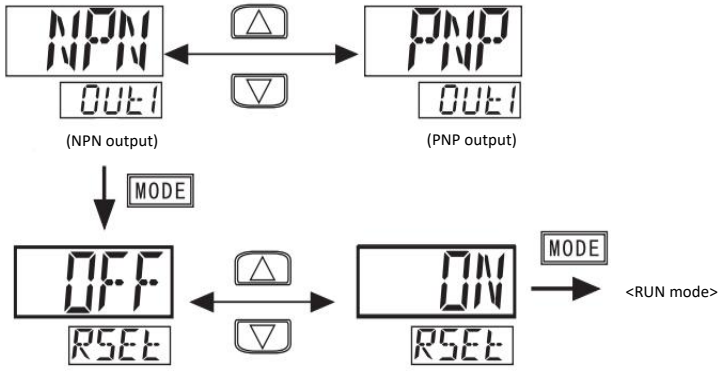
<Display Speed Conversion>



<Conversion of fixed hysteresis value> (1 level: approximately 1 digit) (When the unit is Pa)



<Comparative output 1 output mode setting>



Setting items	
Secondary display conversion	Switches the secondary display in RUN mode “ OFF ” No display “Unit” Displays the current pressure unit “No××” Display the desired number
Display speed conversion	Switches the display speed of the pressure value shown on the main display
Hysteresis fixed value conversion	Set the hysteresis between EASY mode and window comparator mode. (8 levels)
Display color linked conversion (only for standard type)	By switching the display color of the main display in the menu setting mode, the setting contents can be switched to link either comparative output 1 or
Reset settings	Change to factory state

10，Error Display

Error Display	Cause	Treatment method
Err1	Excessive current caused by load short circuit.	Please cut off the power and check the load.
		The external pressure of the pressure

	Increase pressure when calibrating to zero.	The external pressure of the pressure hole should be atmospheric pressure, please re-calibrate the zero
	External input is performed outside the rated pressure range.	The applied pressure should be within the rated pressure range.
	The applied pressure exceeds the upper limit of the displayable pressure range.	The applied pressure should be within the rated pressure range.
	The applied pressure exceeds the lower limit of the displayable pressure range (reverse pressure).	

11, Product Specifications

Item		Compound pressure (DP5)	
Types of pressure		Standard pressure	
Rated pressure range		-100kPa-100kPa	
Setting pressure range		-100kPa-100kPa	
Pressure resistance		500kPa	
Applicable fluid		non-corrosive gas	
Power supply voltage		12~24V DC±5%	
Consuming current		12V60mAMax	
Switch output		NPNO.C Output : 80mA / 24VDC Max or PNPO.C Output : 80mA / 24VDC	
Repeating accuracy		±0.5% F.S.	
Response time		Select by key operation : 2.5ms, 5ms, 10ms, 25ms, 50ms, 100ms, 250ms, 500ms, 1000ms, 5000ms	
Analog output	Voltage output	1V ~ 5V (or slightly smaller)	Linearity : ± 1 % F.S. Output impedance : 1KΩ.
	Current output	1V ~ 5V (or slightly smaller)	Linearity : ± 1 % F.S. Output impedance : 1KΩ.
Temperature range		Working temperature : 0 ~ 50 °C Storage temperature : -10 ~ 60 °C (no condensation, no icing)	
Humidity range		35~85%RH	
Temperature characteristics		±1%F.S.(25'C)	
Protection grade		IP40	
Material		Housing : nylon + glass fiber LCD display : acrylic button : silicone rubber pressure port : external thread POM + inlaid M5 copper nut sealing ring : H-NBR	

Appearance size	30X30X25mm (plastic part) / 30X30X43mm (including connectors)
Weight	About 80g (pressure indicator body + user interface connector)

[Note 1] : Due to the influence of temperature and linear compensation, there may be slight fluctuations near the upper / lower range of the pressure indicator, which is normal.
[Note 2] : Factory default NPN output. [Note 3] : Factory default value : -50 kPa

12. Notes

⚠ warn
DP series is designed for use with non-corrosive gases. It is not suitable for use with liquids or corrosive gases.

This product was developed and manufactured for use in industrial environments.

Please make sure to turn off the power before wiring. Incorrect wiring may cause malfunction.

When initially installing the product, powering on after a power outage, or testing small pressures, please preheat the product for 10 to 15 minutes to maintain optimal operating conditions.

If the power supply is provided by a general-purpose switching regulator, make sure the frame ground (F.G.) terminal of the power supply is connected to ground.

If you use noise-generating equipment (switching regulator, variable frequency motor, etc.) near this product, ensure that the frame ground terminal (F.G.) of the equipment is securely grounded.

Do not use the device within a short period (0.5 seconds) after the power is turned on.

Do not run wires in parallel with high-voltage or power lines or in the same conduit as this may cause malfunction due to induction.

It will not perform well in a strong magnetic field.

Do not use this product in places with excessive steam, dust, etc.

Do not place the pressure gauge in direct contact with water, oil, grease or organic solvents such as diluents.

Do not insert wires, etc. into the pressure hole, otherwise the diaphragm will be damaged and normal operation will be affected.

Do not use points or pointed objects to operate the buttons.

Do not put pressure on the base of the cable, such as bending or pulling it hard.

Do not use it in shock pressure situations for a long time (please also consider buffering measures).