

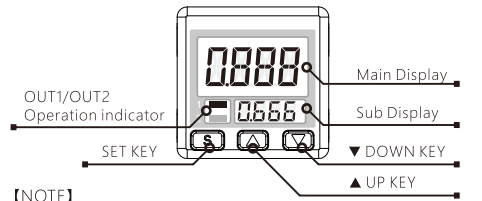
INSTRUCTION MANUAL

Digital Pressure Sensor

◆◆◆WARNING◆◆◆

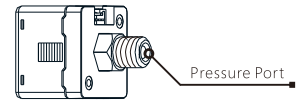
- Do not use corrosive or flammable gas or liquid with this product.
- Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- Do not drop, hit or allow excessive shock. Even if switch body 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.

A. PANEL DESCRIPTION



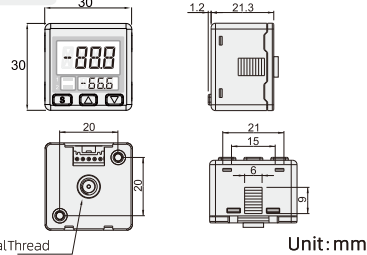
[NOTE]

1*. For high-pressure modes, the unit here is MPa; for low-pressure modes, it is kPa. This is for model identification only and does not represent the on-screen display unit. To set the on-screen display unit, use the settings menu.

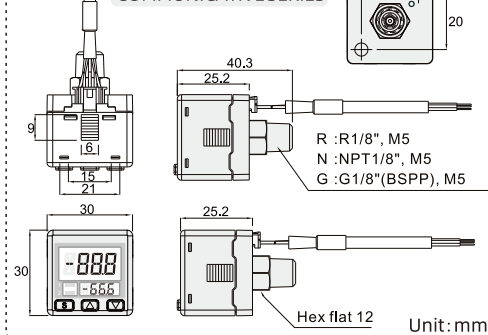


B. OVERALL DIMENSIONS

ECONOMIC SERIES

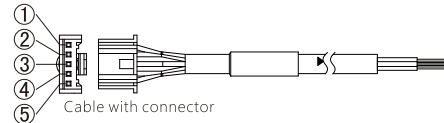


STANDARD SERIES AND COMMUNICATIVE SERIES



C. CONNECTION CONNECTOR PIN ARRANGEMENT

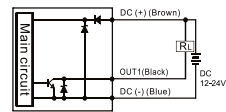
Note: Do not pull by holding the cable without pressing the release lever, as this can cause cable break or connector break.



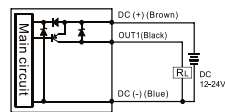
Pin NO.	Terminal name □ STANDARD SERIES □	Terminal name □ ECONOMIC SERIES □
① Brown	DC+	DC+
② Black	OUT1	OUT1
③ White	OUT2	
④ Orange	AIO	
⑤ Blue	DC-	DC-

D. OUTPUT CIRCUIT WIRING DIAGRAMS

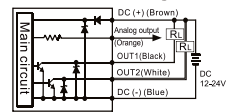
1 NPN



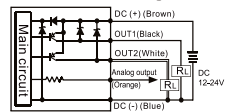
1 PNP



2 NPN+1 Analog



2 PNP+1 Analog

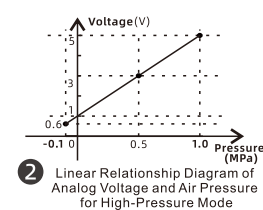
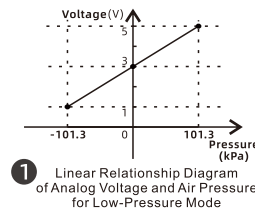


[NOTE]

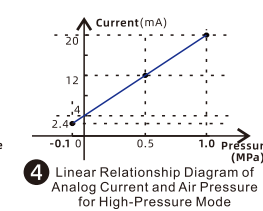
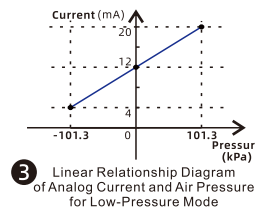
OUT1 is a multi-functional port for both switch output and parameter copying. Please switch between functions via the settings.

E. ANALOG OUTPUT

ANALOG VOLTAGE OUTPUT



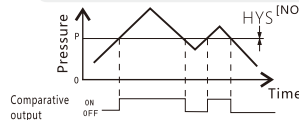
ANALOG CURRENT OUTPUT



F. OUTPUT TYPE

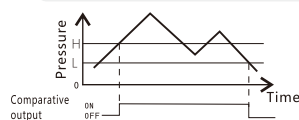
The EASY mode, hysteresis mode or window comparator mode can be selected as the output mode for comparative output 1 and comparative output 2. Please refer to <J.NORMAL MODE> for details.

EASY mode



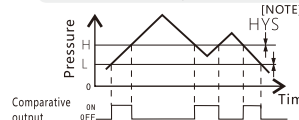
[NOTE] 1* The pressure set value is P. The output will be ON when the pressure is higher than P, and OFF when it is lower.

Hysteresis mode



The pressure set values are H/L. The output remains ON when the pressure is higher than H, and switches to OFF when the pressure drops below L.

Window comparator mode



[NOTE] 2* The pressure set values are H and L. The output is ON only when the pressure is between L and H; otherwise, the output is OFF.

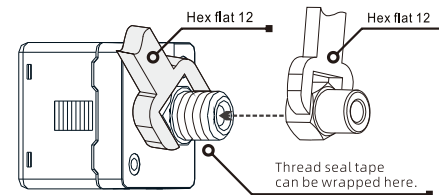
In this mode, the ON or OFF state of the comparative output is controlled with a pressure in the set range.

[NOTE]

*1. In the EASY mode, $P-1$ is displayed on the sub-display, $P-2$ is displayed in the other mode. *2. HYS is the hysteresis value; it can be adjusted in <PRO setting>.

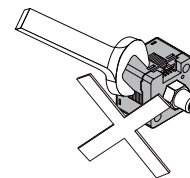
G. PIPING

When connecting a commercial coupler to the pressure port, the available interface types include male threads (R1/8, G1/8, NPT1/8) or female thread (M5 specification); select the specific type based on actual needs. When tightening, control the torque to 9.8 N·m or less (1 N·m or less for M5 female threads). Excessive tightening torque may damage the commercial coupler or the pressure port. To prevent leaks during connection, wrap sealing tape around the coupler's threaded joint.

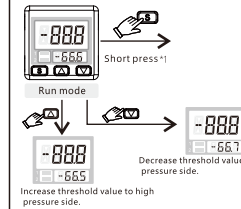


Warning

During installation, do not apply force directly to the plastic parts!



H. RUN MODE.

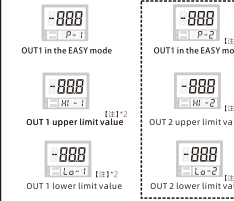


Pressing **SET** allows you to query and switch the output port and mode corresponding to the current secondary screen display value. In the query interface, pressing **ON** or **OFF** will exit the query interface and enable incrementing or decrementing the current value. If there is no operation within 1 second, the query interface will exit, and the secondary screen will display the set value of the output port and mode corresponding to the query interface.

[NOTE]

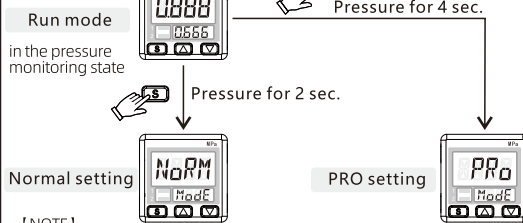
1. Use a short press; otherwise, it will enter other setting modes.
2. The upper limit value must be greater than the lower limit value.
3. If OUT2 is set to OFF, the three interfaces in the dashed box will not appear. Additionally, the economy series does not have an OUT2 setting item.

Press **SET** button can change display to:



I. MENU SETTING MODE

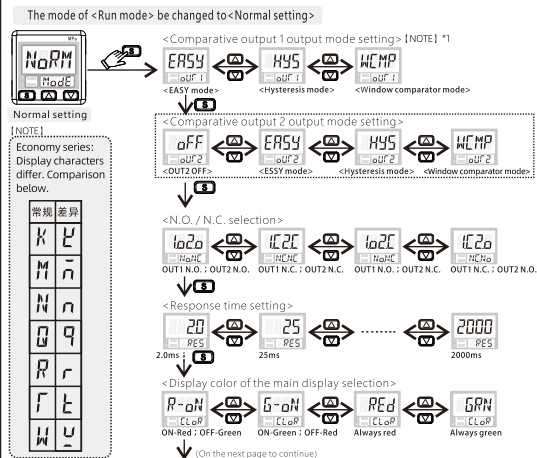
[NOTE] *1



[NOTE]

1. Long press the **SET** button for 2 seconds on any screen in <Normal Setting Mode> to return to <Run Mode>.
2. Long press the **SET** button for 4 seconds on any screen in <PRO Setting Mode> to return to <Run Mode>.

J. NORMAL SETTING



(Connect page)

<Unit selection> [NOTE] *4

MPa kPa kgf/cm² bar

[NOTE] *5

Pressure for 2 sec.

0.0000 0.0000 0.0000 0.0000

RUN mode

[NOTE]

*1. OUT1 defaults to output, cannot be disabled.
 *2. If there is no OUT2, this setting is invalid.
 *3. If OUT is OFF, this setting as right figure:
 *4. High-pressure models: inHg/mmHg not allowed; Low-pressure models: Mpa not allowed.
 *5. Press **[ON/OFF]** for 2 seconds in any interface of <Normal Setting Mode> to exit this mode and return to <Running Mode>.

<NO/NC Mode Setting>

INO OUT1 NO INC OUT1 NC

K. PRO SETTING

Go to <Pro setting> by **[ON/OFF]**

Pro setting

<Sub-display selection>

Sub1 Sub2 Sub3 Sub4

<NO setting>

NO.01 NO.02 NO.99

<Display speed selection>

100ms 250ms 500ms 1000ms

<Hysteresis fixed value selection>

Level 1 Level 2

<Displayed color relation selection> [NOTE] *3

OUT1 OUT2

<Copy function setting> [NOTE] *3

OFF ON-M ON-S

<Display fine adjustment setting> [NOTE] *6 [NOTE] *7

0.1 0.1 5.0

<Display fine adjustment setting> [NOTE] *7

ADJ2

<Restore factory setting>

OFF ON-M ON-S

Restore factory and back to <Run mode>

[NOTE] *4

[NOTE] *6

Unless specially required, do not change this setting, as it may cause discrepancies between the displayed value and the measured value!

[NOTE] *7

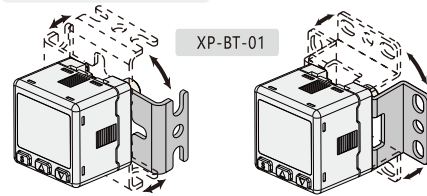
Please refer to <R.Display fine adjustment setting> for details

[NOTE]

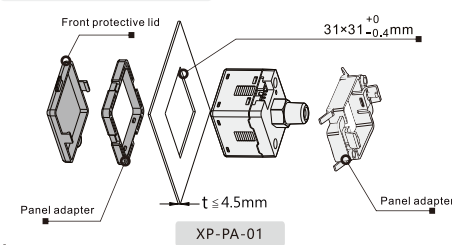
*1. For multiple "pressure gauges" in the same environment, assign a unique ID to each via this setting for easy management.
 *2. Level 1 = 1 digit hysteresis; Level 2 = 2 digits, and so on. Setting hysteresis prevents display flickering or false switching outputs caused by small pressure fluctuations near the set target.
 *3. Color linkage: When OUT1/OUT2 output is active, the screen display color changes (e.g., from green to red or from red to green).
 *4. <Pro setting Mode>: Long-press **[ON/OFF]** for 4 seconds in any interface to exit this mode and return to <Running Mode>.
 *8. Micro-pressure shielding value setting Adjustable range: 0 to 100 When this option is set to a non-zero value N, all pressure values within the range of -N to N (based on the minimum display unit) will be displayed as 0.

L. MOUNTING

1 - Mounting bracket



2 - panel mounting



[Note]
 All the aforementioned items are optional accessories, which require separate selection during the ordering process.

M: SUPERSPEED MODE

By the SUPERSPEED mode, response time can up to 1ms!

[NOTE] This function only supports the standard series. The fastest response speed of the economy series is 2ms.

Press **[ON/OFF]** + **[ON/OFF]** button at the same time on the <Run mode> until display show as:

Release the buttons to end setting.

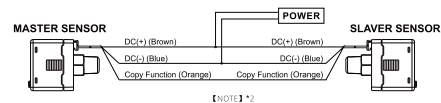
[NOTE]
 To ensure response speed, the screen display update rate and key response speed will be appropriately reduced (without affecting normal use).

SUPERSPEED ON SUPERSPEED OFF

N: COPY FUNCTION SETTING

- Copy function setting can use the master sensor to copy the pressure value to the slave sensors.
- Before copying, please confirm the model of pressure sensor. The function cannot use in difference mode. [NOTE] *1
- The copy function only can be one-to-one.

[NOTE]
 1. Refer to this manual - "K. PRO Setting Mode" to set the (main) air pressure gauge as Master and the (slave) air pressure gauge as Slave



- The economy series products do not have the single-wire "Copy function setting".
- The copy function is multiplexed with OUT1, and when the copy function is enabled, the OUT1 output is invalid.
- Meanwhile, turn on the power supplies of the (master) and (slave) air pressure gauges [Note] *2. At this time, the display is as shown in the right figure:
- Copy success: (Slave) gauge auto-reverts to <Run Mode>; "Copy function setting" disabled.
- Repeat steps 1-3 to copy (Master) settings to another (Slave).

[NOTE] *2. If turn on power is not synchronization, the data cannot be copied.

O. SPECIFICATIONS

MODEL		Economy Series (High Pressure)	Economy Series (Low Pressure)	Standard Series (High Pressure)	Standard Series (Low Pressure)
Rated pressure range		-0.101~1.000MPa	-101.3~101.3kPa	-0.101~1.000MPa	-101.3~101.3kPa
Display pressure range		-0.105~1.000MPa	-105.0~105.0kPa	-0.105~1.000MPa	-105.0~105.0kPa
Withstand pressure		1.5MPa	500kPa	1.5MPa	500kPa
Applicable Fluid		Filtered air, Non-corrosive/Non-flammable gas, Compliant with ISO 8573-1:2010[7:4]			
Power supply		12~24V DC ±10%			
Current consumption		≤45mA(With no load)			
Set Pressure resolution	kPa	1	0.1	1	0.1
	Mpa	0.001	-	0.001	-
	kgf/cm ²	0.01	0.001	0.01	0.001
	bar	0.01	0.001	0.01	0.001
	psi	0.1	0.01	0.1	0.01
	mmHg	-	0.1	-	0.1
	nchHg	-	1	-	1
Switch output *1		NPN: Open collector Max. load current: 100mA Max. supply voltage: 30V DC Residual voltage: ≤1.5V		PNP: Open collector Max. load current: 100mA Max. supply voltage: 24V DC Residual voltage: ≤1.5V	
Voltage output *1		—		Output voltage: 1~5V ±2.5 % F.S Linearity: ±1% F.S. Output impedance: about 1KΩ	
Current output *1		—		Output Current: 4~20mA ±2.5 % F.S Linearity: ±1% F.S Output impedance: Min. 50Ω Max. 300Ω@12V, 600Ω@24V	
MODBUS *2		—			
Indicator accuracy		±2% F.S. ±1digits(Ambient temperature 25±3°C)			
Repeatability		±0.2% F.S. ±2digits			
Response time		2.0ms, 50ms, 100ms 250ms, 500ms, 2000ms, 3000ms, 5000ms selectable [NOTE] *3		1ms [NOTE] *2, 2.0ms, 50ms, 100ms, 250ms, 500ms, 2000ms, 3000ms, 5000m selectable	
LCD display		3 color (Red/Green/Orange) Display (Sampling rate: 4times/1sec)			
Temperature characteristic		±2% F.S. detected pressure (25°C) at temperature range of 0~50°C			
Working environment		0~50°C (No condensatio or freezing); 35~85%RH(No condensation)			
Storage environment		-10~50°C (No condensatio or freezing); 35~85%RH(No condensation)			
Protection level		IP40			
Pressure port		Int M5		R: Ext 1/8, Int M5 C4H: 4mm straight outlet, straight C4L: 4mm straight outlet, right-angle elbow C6H: 6mm straight outlet, straight C6L: 6mm straight outlet, right-angle elbow	
Weight		Approximate 55g (With lead wire)		Approximate 85g (With lead wire)	
Accessories		A cable with connector & an instruction manual			

[NOTE]
 *1. Output type corresponds to product model one-to-one;
 *2. 1ms response speed is only supported when SUPERSPEED mode is enabled; refer to "M: SUPERSPEED MODE" for operation.
 *3. For response speed settings, see "J. NORMAL SETTING".

P. ZERO POINT SETTING



Press **[ON/OFF]** + **[ON/OFF]** at the same time until show as follow:



Release the button to end zero setting.

Q. KEY LOCK/UNLOCK



Press **[ON/OFF]** + **[ON/OFF]** at the same time until show as follow:



LOCK

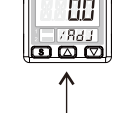
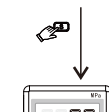


UNLOCK

Release the button to end setting

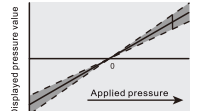
R. DISPLAY FINE ADJUSTMENT FUNCTION

<Pro setting>



Set ratio via **[ON/OFF]** + **[ON/OFF]**

Fine-tuning range: ±5.0% R.D.
 Fine-tuning range: ±0.1% R.D.



— : Factory setting display value set prior to shipment
 — : Display calibration range
 R.D. stands for measured value

[NOTE]
 1. This function eliminates minimal pressure errors. Do not change defaults unless necessary to avoid confusion.
 2. The signal would be changed with analog output after adjusting.

S. ERROR CODE

Error Type	Error Condition
EEP1	Abnormal current at switching output port
EEP2	Pressure applied incorrectly during zero adjustment
***	Pressure applied during zero calibration
EEP3	Internal error
EEP4	Internal error
For more information, please contact us. We are ready to serve you!	