



Dual Display Type Pressure Sensors

PSK Series

PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime / disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use or store the unit in the place where flammable / explosive / corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel or to a pressure port directly to use.**
Failure to follow this instruction may result in fire.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
- 05. Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 06. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 02. Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire.
- 03. This product is designed to detect the pressure of noncorrosive medium. Do not use for corrosive medium.**
Failure to follow this instruction may result in product damage.
- 04. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.
- 05. Do not apply excessive force or drop the product during installation.**
Failure to follow this instruction may result in malfunction due to internal component damage, even if the exterior is not damaged.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Wire as short as possible and keep away from high voltage lines or power lines, to prevent inductive noise.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000 m
 - Pollution degree 3
 - Installation category II

PR-0799A 2025/12 Printing We reserve the right to change the specification without prior notice.

Ordering Information

This is only for reference, the actual product does not support all combinations.

PSK - ① ② ③ ④ ⑤ - ⑥

① Pressure type

C: Compound

② Pressure range [unit: kPa]

1: -101.3 to 1,000

③ Cable

C: Connector type

④ Control output

No mark: NPN open collector output

P: PNP open collector output

⑤ Analog output

A: Current (4-20 mA)

⑥ Pressure port

R1/8: R1/8, M5

Product Components

- Product
- Instruction manual

Sold Separately

- Mounting bracket: BK-PSK-03, BK-PSK-04
- Panel bracket: BK-PSK-F03, BK-PSK-F04 (Front protective cover included)

Specifications

Model	PSK-C1CA-R1/8	PSK-C1CPA-R1/8
Rated pressure range	-101.3 to 1,000 kPa	
Setting pressure range	-101.3 to 1,000 kPa	
Max. pressure range	1,500 kPa	
Applicable medium	Filtered air, Non-corrosive / non-flammable gas	
Power supply	15 - 24 VDC≐, ripple P-P: ≤ 10 %	
Current consumption	≤ 40 mA (no load)	
Response time of digital filter ⁰¹⁾	OFF, 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms, 1500 ms, 3000 ms selectable	
Control output	NPN open collector output: 2	PNP open collector output: 2
Load current	≤ 150 mA	
Supply voltage	≤ 30 VDC≐	≤ 24 VDC≐
Residual voltage	≤ 1 V	
Analog output	4 ~ 20 mA ± 1 % F.S.	
Linearity	≤ ± 1 % F.S.	
Max. load impedance	Power supply of 15 VDC≐: 250 Ω Power supply of 24 VDC≐: 600 Ω	
Min. load impedance	5 Ω	
Zero-point	≤ ± 2 % F.S.	
Span	≤ ± 2 % F.S.	
Display part	7 segment LCD, 4 ½-digit - 3 Color main display: red / white / pink - Sub-display section: orange	
Sampling rate	0.2 sec, 0.5 sec, 1 sec / time selectable	
Indicator accuracy	± 0.5 % of Setting Range (at ambient temperature: 25 ± 3 °C)	
Repeatability	± 0.2 % of Setting Range (at ambient temperature: 25 ± 3 °C)	
Protection circuit	Over current protection circuit	
Connection	Connector type (PVC, Ø4 mm, 5-wire, 0.15 mm ²)	
Pressure port	R1/8, M5	
Certification	CE, UK	
Weight	≈ 67 g (including 2 m wiring)	

01) When the digital filter function is set to OFF, the response time is 4 to 6 ms.

Protection structure	IP40 (IEC standard)
Ambient temperature	0 to 50 °C, storage: -10 to 60 °C (no freezing or condensation)
Temp. characteristic	± 0.5 % F.S. of detected pressure 25 °C (at temp. 0 to 50 °C)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Residual voltage	1,000 VAC~ 1 min. (between case and lead wire)
Insulation resistance	≥ 50 MΩ (500 VDC≐) (between case and lead wire)
Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz to 150 Hz to 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z
Shock	100 m/s ² (10 G), 3 times each in direction of X, Y and Z

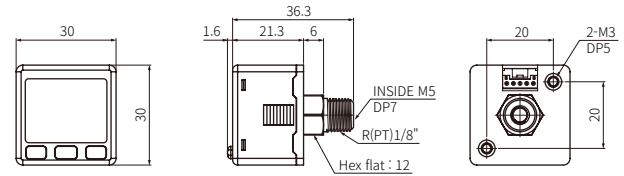
Minimum Display Interval per Pressure Unit

Pressure unit	kPa	kgf/cm ²	bar	psi	inHg	mmHg	mmAq (mmH ₂ O) ⁰¹⁾
Display interval	0.1	0.001	0.001	0.01	0.1	1	1

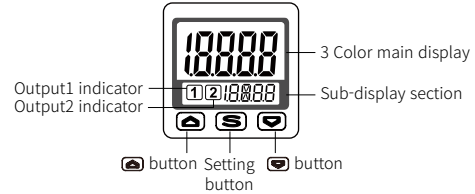
01) Actual value = Display value × 10

Dimensions

- Unit: mm

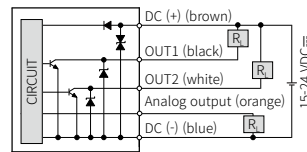


Unit Descriptions

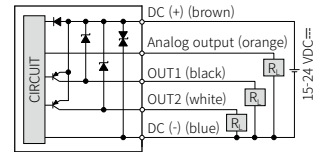


Output Circuit Connections

■ NPN open collector type



■ PNP open collector type



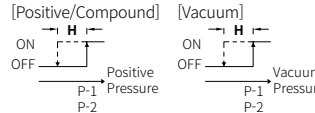
Output Mode

- 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.

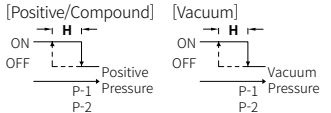
- H: Hysteresis
- P-1, P-2: Present pressure
- H-1, H-2: Upper limit of pressure setting
- L-1, L-2: Lower limit of pressure setting

■ One point set mode

- N.O. mode

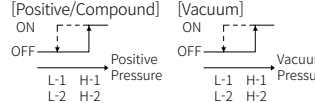


- N.C. mode

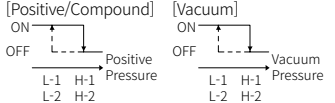


■ Hysteresis mode

- N.O. mode

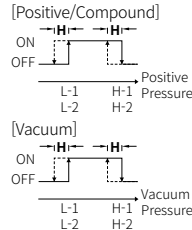


- N.C. mode

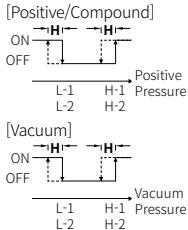


■ Window comparator mode

- N.O. mode

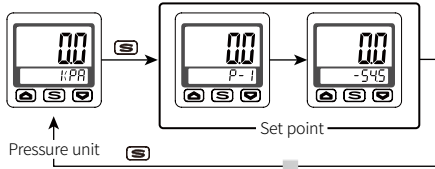


- N.C. mode



Sub-display Setting

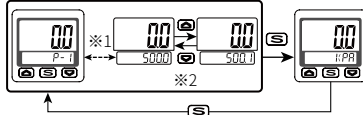
In measure mode ¹⁾, press (S) button to switch pressure unit / set point, and set the set point.
1) PSK is power-on and not in the function setting or checking state.



※1: Alternately display
※2: Press (▲) or (▼) button to adjust set value.

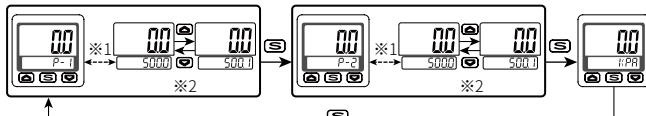
Setting Condition 1

OUT 1: "oP5" (One point set mode)
OUT 2: "oFF" (Not used)



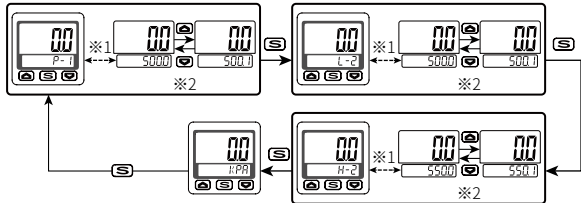
Setting Condition 2

OUT 1: "oP5" (One point set mode)
OUT 2: "oP5" (One point set mode)



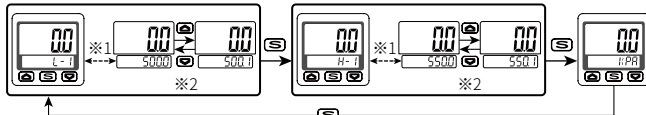
Setting Condition 3

OUT 1: "oP5" (One point set mode)
OUT 2: "H45" (Hysteresis mode) or "Hn" (Window comparator mode)



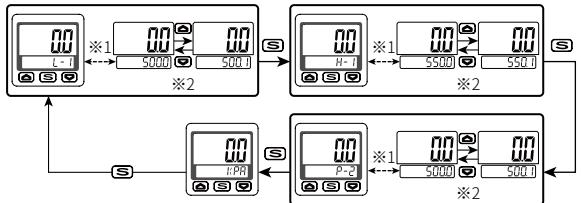
Setting Condition 4

OUT 1: "H45" (Hysteresis mode) or "Hn" (Window comparator mode)
OUT 2: "oFF" (Not used)



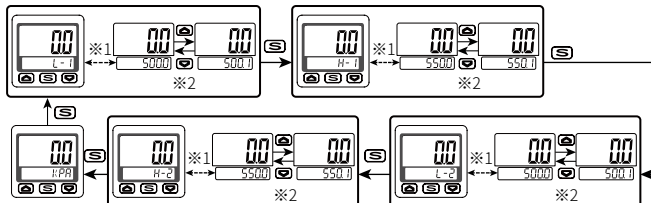
Setting Condition 5

OUT 1: "H45" (Hysteresis mode) or "Hn" (Window comparator mode)
OUT 2: "oP5" (One point set mode)



Setting Condition 6

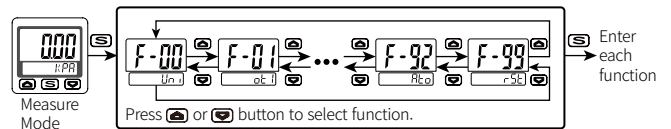
OUT 1: "H45" (Hysteresis mode) or "Hn" (Window comparator mode)
OUT 2: "H45" (Hysteresis mode) or "Hn" (Window comparator mode)



Operation Instructions

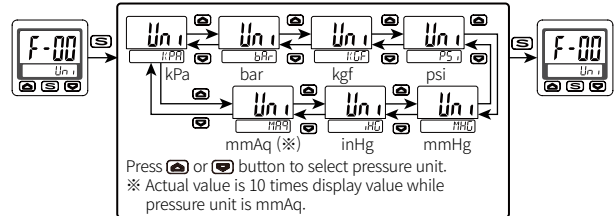
Function Selection

In Measure Mode, press (S) button for more than 3 sec. to display [F-00][Un].
Press (S) for 3 sec. to return to Measure Mode.



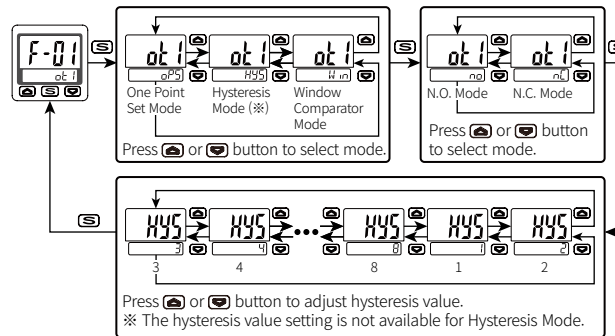
[F-00] Unit Setting

Press (▲) or (▼) button at Function Selection to [F-00][Un].



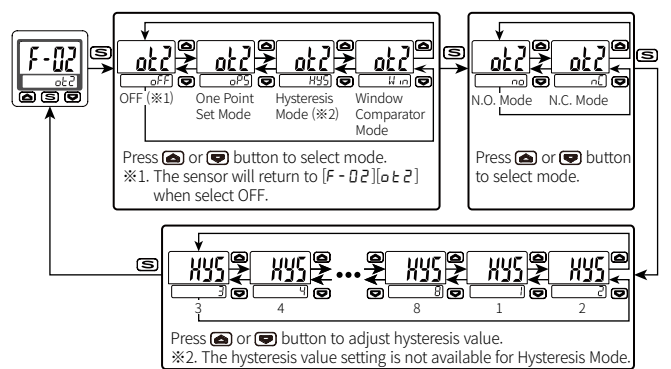
[F-01] OUT1 Setting

Press (▲) or (▼) button at Function Selection to [F-01][ot 1].



[F-02] OUT2 Setting

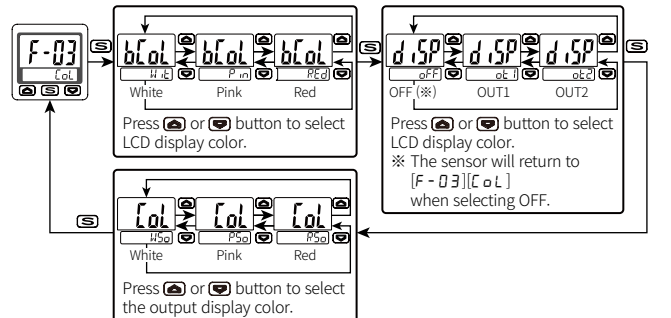
Press (▲) or (▼) button at Function Selection to [F-02][ot 2].



[F-03] LCD Display Color Setting

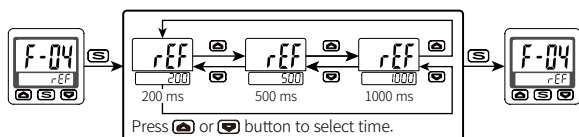
Press (▲) or (▼) button at Function Selection to [F-03][Col].
The color of LCD display and output display can be different.

• When using 2 outputs, one of output display color can be selected and the other is the same as LCD display color.



■ [F-04] Sampling Rate Setting

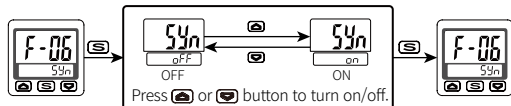
Press or button at Function Selection to [F-04][rEF].



■ [F-06] Output & Display Sync.

Press or button at Function Selection to [F-06][SYn].

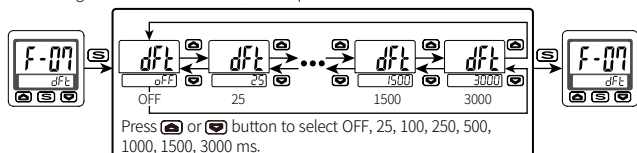
- When turning on the sync function, the value of analog output and switch output will be the same as display value.



■ [F-07] Response Time of Digital Filter Setting

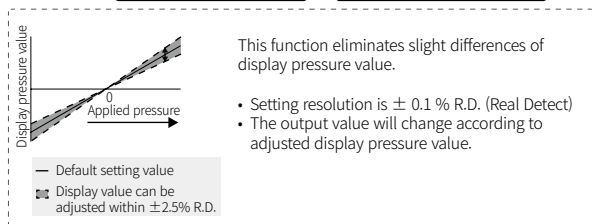
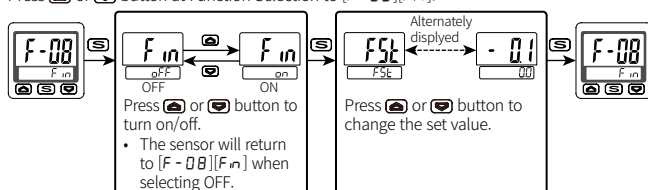
Press or button at Function Selection to [F-07][dFE].

- When digital filter function is OFF, the response time is 4 to 6ms.



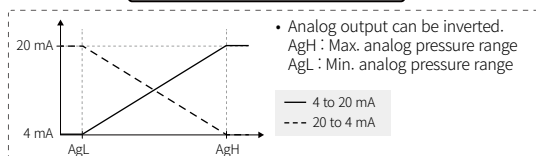
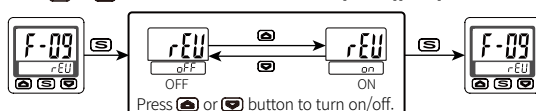
■ [F-08] Fine Adjustment Setting

Press or button at Function Selection to [F-08][F.n].



■ [F-09] Invert Analog Output Setting

Press or button at Function Selection to [F-09][rEU].

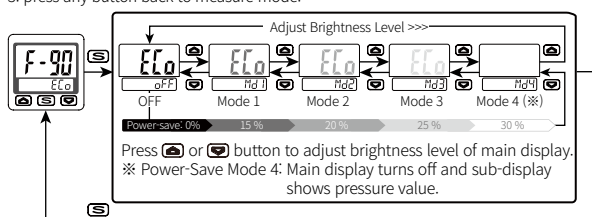


■ [F-90] Power-Save Mode Setting

Press or button at Function Selection to [F-90][EEo].

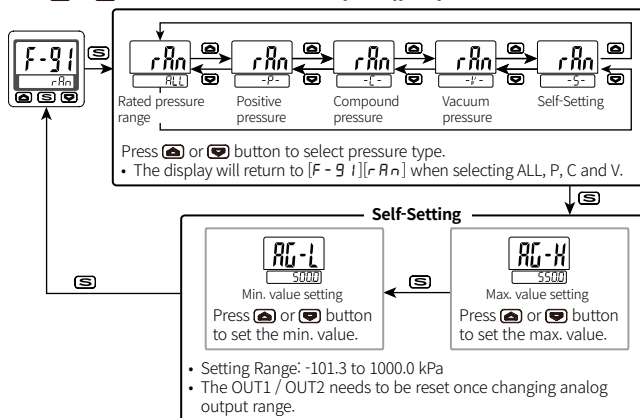
When Power-Save Mode turns on,

- the main-display will be into the selected mode (Mode1 to 4), if no buttons are pressed after 30 seconds.
- the output indicator may not sync, but the sensor still work functionally.
- press any button back to measure mode.

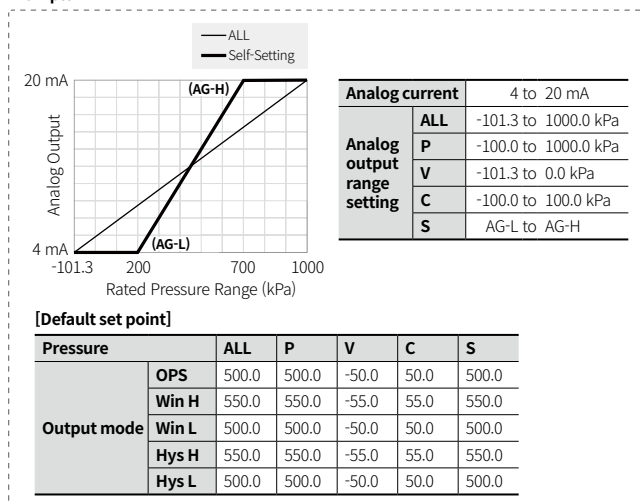


■ [F-91] Analog Output Range Setting

Press or button at Function Selection to [F-91][rAn].

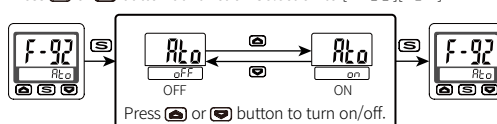


Example:



■ [F-92] Auto Zero Point Setting

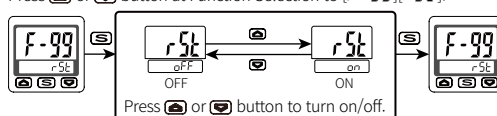
Press or button at Function Selection to [F-92][Rto].



- When the setting turns on, the display value will be 0 automatically every 10 secs and not be recorded after power off, then will be 0 automatically after supplying power again.
- The auto zero range is $\pm 1\%$ F.S.

■ [F-99] Reset to Default Setting

Press or button at Function Selection to [F-99][rSE].

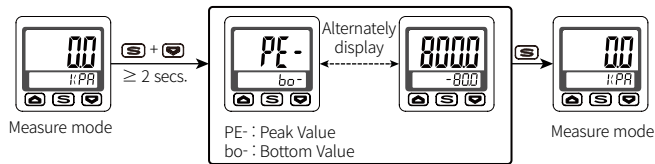


Zero Point Setting

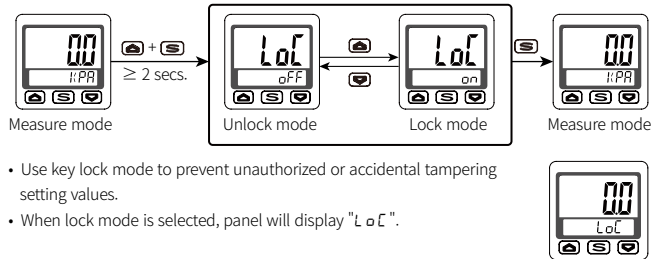
Press the + button at the same time until the "00" is shown.



Peak / Bottom Hold Function



Key Lock / Unlock Mode



- Use key lock mode to prevent unauthorized or accidental tampering setting values.
- When lock mode is selected, panel will display "LoL".

Pressure Unit Conversion Table

From	To						
	kPa	kgf/cm ²	mmHg	psi	bar	inHg	mmAq ⁰¹⁾
1 kPa	1	0.010197	7.500616	0.145038	0.010000	0.2953	101.97
1 kgf/cm ²	98.0665	1	735.559	14.2233	0.980665	28.95979	10000
1 mmHg	0.13332	0.0013595	1	0.019336	0.0013332	0.039370	13.595
1 psi	6.895	0.07031	51.7157	1	0.06895	2.036074	703.1
1 bar	100.0000	1.01972	750.062	14.5038	1	29.52998	10197.2
1 inHg	3.386388	0.034530	25.40000	0.491141	0.033863	1	345.30
1 mmAq	0.009806	0.0001	0.0735559	0.001423	0.000098	0.0029	1

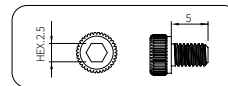
01) The actual value is 10 times display value while the pressure unit is mmAq.

Error Code and Troubleshooting

Error	Code	Error Condition	Troubleshooting
Excess load current error	OUT1	OUT1 load current is more than 150 mA	Turn power off and check the cause of overload current or lower the current load under 150 mA, then restart.
	OUT2	OUT2 load current is more than 150 mA	
Residual pressure error	Err3	During zero point setting, ambient pressure is over $\pm 3\%$ F.S.	Change input pressure to ambient pressure and perform zero point setting again.
Applied pressure error	HHH	Supply pressure exceeds the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
System error	Err4	Internal system error	Turn power off, and then restart. If error condition remains, please contact customer service center.
	Err5	Internal system error	
	Err6	Internal data error	

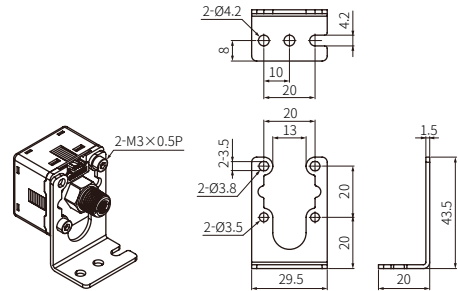
Sold Separately: Mounting Bracket

- Unit: mm

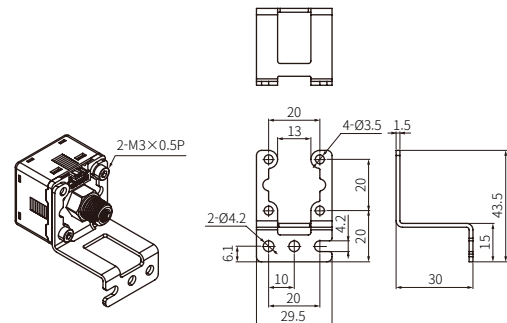


- Use 2.5 mm hexagonal wrench.
- The length of screw should be 5 mm.
- Tightening torque = 5 kgf.cm

■ BK-PSK-03

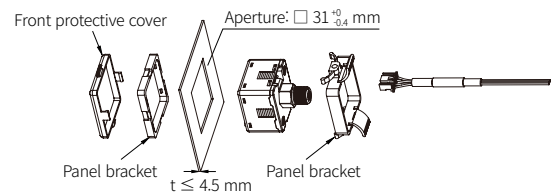


■ BK-PSK-04



Sold Separately: Panel Bracket

- Unit: mm



■ BK-PSK-F03 (Panel bracket)

BK-PSK-F04 (Panel bracket + Front protective cover)

- Panel bracket

