

Small size, High accuracy pressure control digital pressure sensor

■ Features

- High accuracy digital pressure sensor
- High brightness red LED(LED height : 9.5mm)
- High resolution : 1/1000
- Convertible pressure unit
 - Negative pressure, Compound pressure : kPa, kgf/cm², bar, psi, mmHg, mmH₂O, inHg
 - Standard pressure : kPa, kgf/cm², bar, psi
- Various output modes : Hysteresis mode, Automatic sensitivity setting mode, Independent 2 output mode, Window comparative output mode
- Chattering prevention for output (Selectable response time : 2.5, 5, 100, 500ms)
- Analog output(1-5VDC) scale function
- Reverse power polarity and overcurrent protection circuit
- Zero-point adjustment function
- Peak and Bottom hold display

⚠ Please read "Caution for your safety" in operation manual before using.



■ Ordering information

| PS | A | - | V | 01 | C | P | - | Rc1/8 | Pressure port |
|----|---|---|---|----|---|---|---|-------|---------------------------------|
| | | | | | | | | | Output type |
| | | | | | | | | | Cable ^{※1} |
| | | | | | | | | | Pressure range |
| | | | | | | | | | Pressure type |
| | | | | | | | | | Appearance |
| | | | | | | | | | Item |
| | | | | | | | | | R1/8 |
| | | | | | | | | | Standard(PSA Series) |
| | | | | | | | | | NPT1/8 |
| | | | | | | | | | Option(PSA Series) |
| | | | | | | | | | M5 |
| | | | | | | | | | Standard(PSB Series) |
| | | | | | | | | | No mark |
| | | | | | | | | | NPN open collector output |
| | | | | | | | | | P |
| | | | | | | | | | PNP open collector output |
| | | | | | | | | | No mark |
| | | | | | | | | | Positive(Cable integrated type) |
| | | | | | | | | | C |
| | | | | | | | | | Connector type |
| | | | | | | | | | 01 |
| | | | | | | | | | 100kPa |
| | | | | | | | | | 1 |
| | | | | | | | | | 1,000kPa |
| | | | | | | | | | No mark |
| | | | | | | | | | Standard pressure |
| | | | | | | | | | V |
| | | | | | | | | | Negative pressure |
| | | | | | | | | | C |
| | | | | | | | | | Compound pressure |
| | | | | | | | | | A |
| | | | | | | | | | Regular square(30mm×30mm) |
| | | | | | | | | | B |
| | | | | | | | | | Rectangular(10.2mm×54mm) |
| | | | | | | | | | PS |
| | | | | | | | | | Pressure Sensor |

※1: It is only applied to PSB Series.

■ Pressure and Max. pressure display range

| Type | kPa | kgf/cm ² | bar | psi | mmHg | inHg | mmH ₂ O |
|-------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------------------|----------------------------------|--------------------------------------|
| Negative pressure | 0.0 to -101.3 (5.0 to -101.3) | 0.000 to -1.034 (0.051 to -1.034) | 0.000 to -1.013 (0.05 to -1.013) | 0.00 to -14.70 (0.74 to -14.70) | 0 to -760 (38 to -760) | 0.0 to -29.9 (1.5 to -29.9) | 0.0 to -103.4 (5.2 to -103.4) |
| Standard pressure | 0.0 to 100.0 (-5.0 to 110.0) | 0.000 to 1.020 (-0.051 to 1.122) | 0.000 to 1.000 (-0.050 to 1.100) | 0.00 to 14.50 (-0.72 to 15.96) | — | — | — |
| | 0 to 1000 (-50 to 1100) | 0.00 to 10.20 (-0.51 to 11.22) | 0.00 to 10.00 (-0.50 to 11.00) | 0.0 to 145.0 (-7.2 to 159.6) | — | — | — |
| Compound pressure | -100.0 to 100.0 (-101.2 to 110.0) | -1.020 to 1.020 (-1.034 to 1.122) | -1.000 to 1.000 (-1.012 to 1.100) | -14.50 to 14.50 (-14.70 to 15.96) | -750 to 750 (-760 to 824) | -29.5 to 29.5 (-29.8 to 32.6) | -102.0 to 102.0 (-103.4 to 112.2) |

※() is Max. pressure display range.

※For using a unit mmH₂O, multiply display value by 100.

■ Pressure conversion chart

| from | to | Pa | kPa | MPa | kgf/cm ² | mmHg | mmH ₂ O | psi | bar | inHg |
|----------------------|----|------------|-----------|-------------|---------------------|------------|--------------------|-------------|-------------|------------|
| 1Pa | | 1 | 0.001 | 0.000001000 | 0.000010197 | 0.007501 | 0.101972 | 0.000145038 | 0.000010000 | 0.0002953 |
| 1kPa | | 1000.000 | 1 | 0.001000 | 0.010197 | 7.500616 | 101.9716 | 0.145038 | 0.010000 | 0.2953 |
| 1MPa | | 1000000 | 1000 | 1 | 10.197162 | 7500.61683 | 101971.553 | 145.038243 | 10 | 295.299875 |
| 1kgf/cm ² | | 98066.54 | 98.066543 | 0.09806 | 1 | 735.5595 | 10000.20 | 14.22334 | 0.980665 | 28.95878 |
| 1mmHg | | 133.322368 | 0.133322 | 0.000133 | 0.001359 | 1 | 13.5954 | 0.019336 | 0.001333 | 0.039370 |
| 1mmH ₂ O | | 9.80665 | 0.00980 | — | 0.000099 | 0.0735578 | 1 | 0.00142 | 0.000098 | 0.002895 |
| 1psi | | 6894.757 | 6.89757 | 0.00689 | 0.070307 | 51.71630 | 703.07 | 1 | 0.068947 | 2.036003 |
| 1bar | | 100000.0 | 100.0000 | 0.100000 | 1.019689 | 750.062 | 10196.89 | 14.50339 | 1 | 29.52998 |
| 1inHg | | 3386.417 | 3.388418 | 0.003386 | 0.034532 | 25.40022 | 345.31849 | 0.491158 | 0.033863 | 1 |

Ex) For calculating 760mmHg as kPa : According to above chart, 1mmHg is 0.133322kPa, therefore 760mmHg will be 760×0.133322kPa=101.32472kPa.

(A) Photo electric sensor
(B) Fiber optic sensor
(C) Door/Area sensor
(D) Proximity sensor
(E) Pressure sensor
(F) Rotary encoder
(G) Connector/Socket
(H) Temp. controller
(I) SSR/Power controller
(J) Counter
(K) Timer
(L) Panel meter
(M) Tacho/Speed/ Pulse meter
(N) Display unit
(O) Sensor controller
(P) Switching mode power supply
(Q) Stepper motor& Driver&Controller
(R) Graphic/ Logic panel
(S) Field network device
(T) Software
(U) Other

Specifications

| Pressure type | | Gauge pressure | | | |
|--------------------------------|---------------------------|--|--------------------------------------|-----------------------------------|---|
| | | Negative pressure | Standard pressure | | Compound pressure |
| Model ※1 | NPN open collector output | PSA-V01-□ PSB-V01-□ PSB-V01C-□ | PSA-01-□ PSB-01-□ PSB-01C-□ | PSA-1-□ PSB-1-□ PSB-1C-□ | PSA-C01-□ PSB-C01-□ PSB-C01C-□ |
| | PNP open collector output | PSA-V01P-□ PSB-V01P-□ PSB-V01CP-□ | PSA-01P-□ PSB-01P-□ PSB-01CP-□ | PSA-1P-□ PSB-1P-□ PSB-1CP-□ | PSA-C01P-□ PSB-C01P-□ PSB-C01CP-□ |
| Rated pressure range | | 0.0 to -101.3kPa | 0.0 to 100.0kPa | 0.0 to 1,000kPa | -100.0 to 100.0kPa |
| Display and set pressure range | | 5.0 to -101.3kPa | -5.0 to 110.0kPa | -50 to 1,100kPa | -101.2 to 110.0kPa |
| Max. pressure range | | 2 times of rated pressure | | 1.5 times of rated pressure | 2 times of rated pressure |
| Applied fluid | | Air, Non-corrosive gas | | | |
| Power supply | | 12-24VDC ±10%(Ripple P-P : Max. 10%) | | | |
| Current consumption | | Max. 50mA | | | |
| Control output | | NPN or PNP open collector output • Load voltage: Max. 30VDC • Load current: Max. 100mA • Residual voltage - NPN: Max. 1V, PNP: Max. 2V | | | |
| Hysteresis※2 | | 1digit fixed(2digits for psi unit) | | | 2digit fixed |
| Repeat error | | ±0.2% F.S. ±1digit | | | ±0.2% F.S. ±2digit |
| Response time | | Selectable 2.5ms, 5ms, 100ms, 500ms | | | |
| Short circuit protection | | Built-in | | | |
| Analog output | | • Output voltage: 1-5VDC ±2% F.S. • Zero-point: Within 1VDC ±2% F.S. • Span: Within 4VDC ±2% F.S. • Linear: Within ±2% F.S. • Resolution: Approx. 1/200 • Output impedance: 1kΩ | | | |
| Display digit | | 3½digit | | | |
| Display method | | 7Segment LED | | | |
| Min. display interval | | 1digit(psi unit: 2 digits are fixed) | | | 2digits |
| Pressure unit | | kPa, kgf/cm ² , bar, psi, mmHg, mmH ₂ O, inHg | kPa, kgf/cm ² , bar, psi | | kPa, kgf/cm ² , bar, psi, mmHg, mmH ₂ O, inHg |
| Display accuracy | | 0°C to 50°C: Max. ±1% F.S., -10 to 0°C : Max. ±2% F.S. | | | |
| Environ- ment | Ambient temperature | -10 to 50°C, storage: -20 to 60°C | | | |
| | Ambient humidity | 35 to 95%RH, storage: 35 to 95%RH | | | |
| Vibration | | 1.5mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours | | | |
| Material | | • PSA: Front case: PC, Rear case: PC(Insert glass), Pressure port: die-cast(Zn) • PSB: Case, Pressure port: PA • PSB-C: Case, Pressure port, Cover: IXEF | | | |
| Protection | | IP40(IEC standard) | | | |
| Cable | Cable integrated type | ø4, 5-wire, Length : 2m (AWG24, Core diameter: 0.08mm, Number of cores: 40, Insulation out diameter: ø1mm) | | | |
| | Connector type | 5-wire, Length : 3m(AWG24, Insulation out diameter : ø1mm) | | | |
| Approval | | CE | | | |
| Unit weight | | • PSA: Approx. 120g • PSB: Approx. 70g • PSB-C: Approx. 80g | | | |

※1: '□' is pressure port type.

※2: In hysteresis output mode, detection difference is variable.

※There may be ±1digit error in hysteresis by pressure unit calculation error.

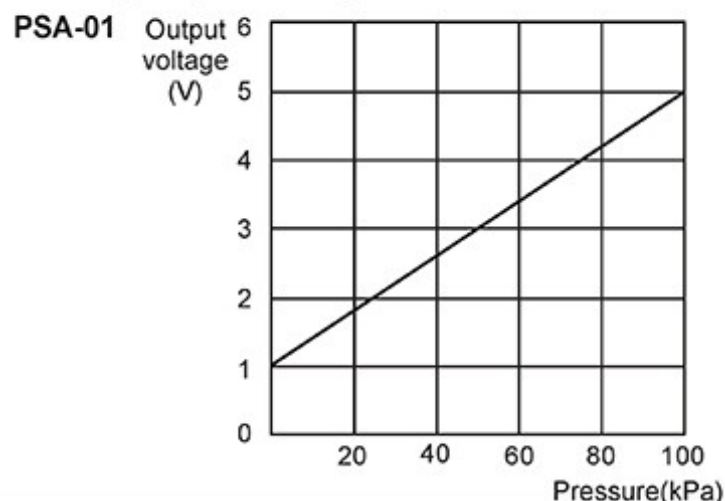
※The specification of pressure port is marked on the upper part of the case.

Pressure ports are distinguished by the colors, silver [Rc(PT)1/8] or black [NPT1/8].

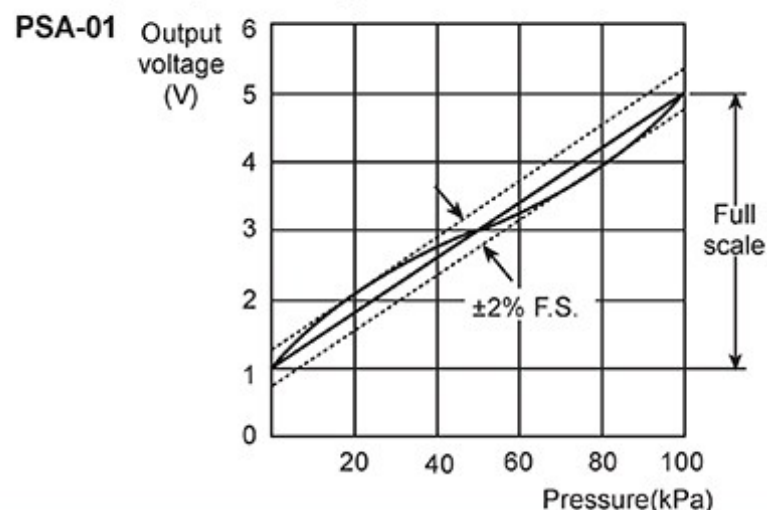
※Environment resistance is rated at no freezing or condensation.

※F.S.: Rated pressure.

• Analog output voltage-Pressure characteristic



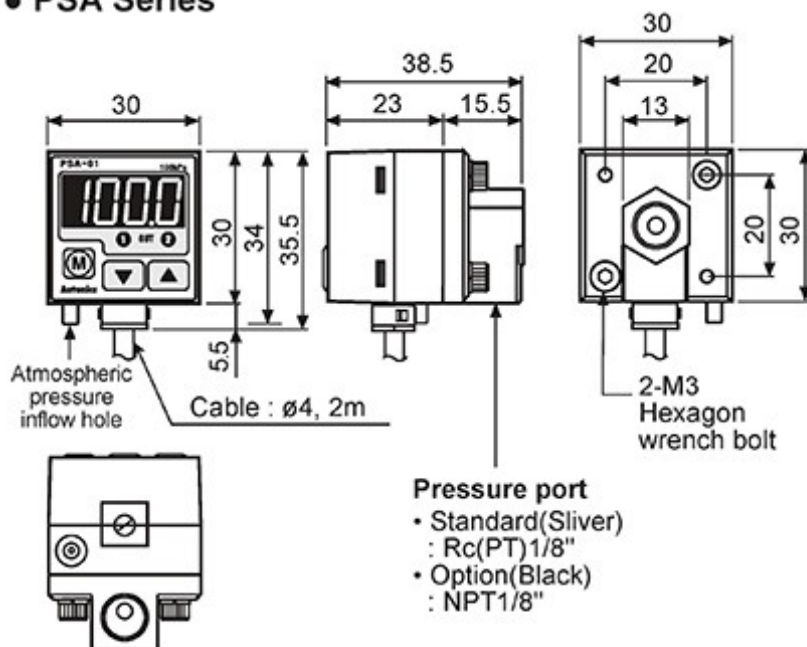
• Analog output voltage-Linear characteristic



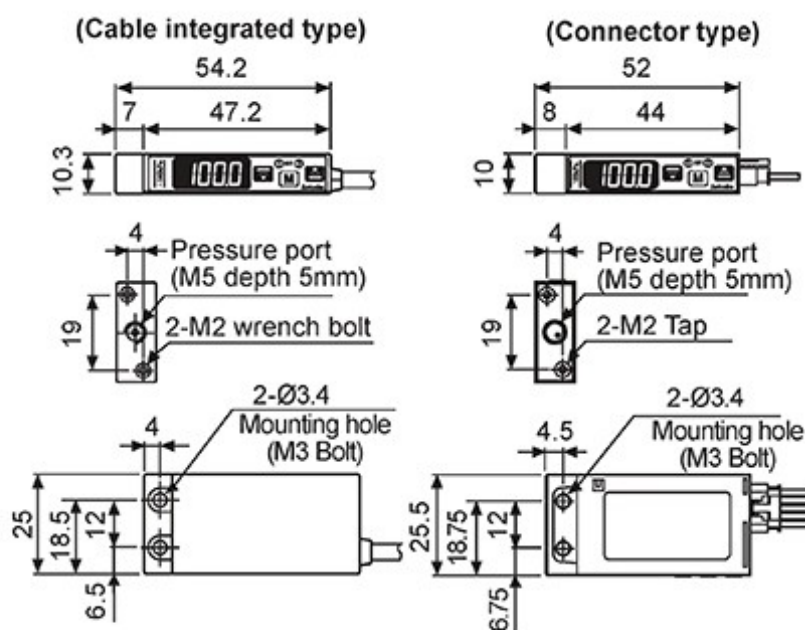
■ Dimensions

(unit: mm)

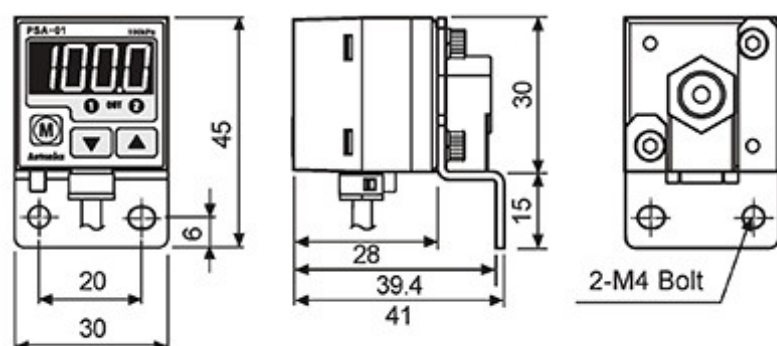
• PSA Series



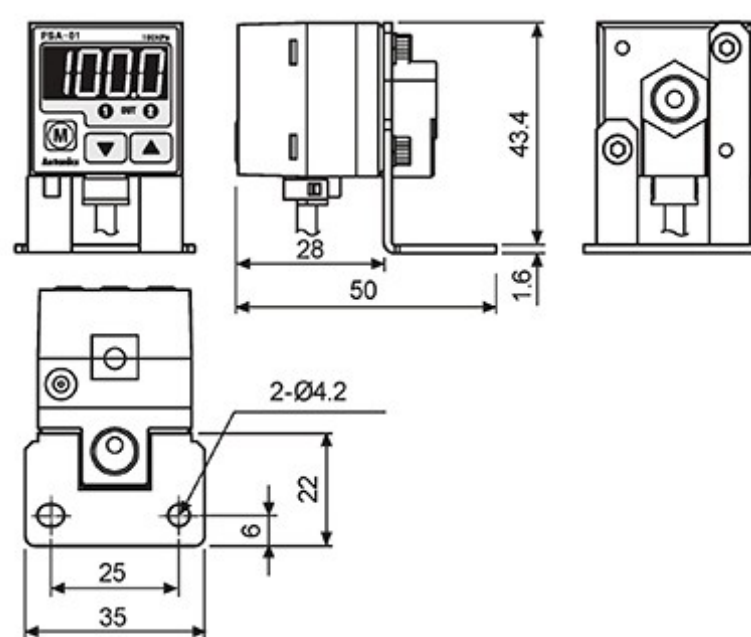
• PSB Series



• Fixing bracket A for mounting(PSA Series)

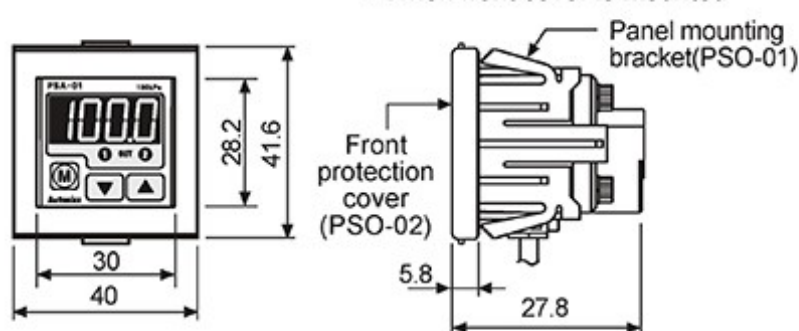


• Fixing bracket B for mounting(PSA Series)

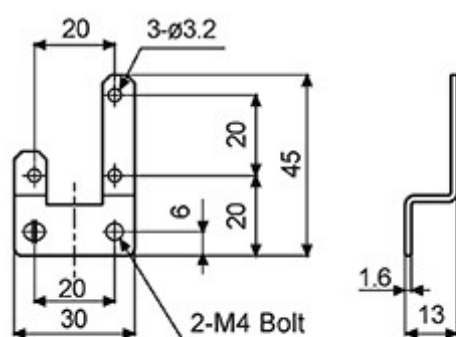


• Panel mounting bracket(PSA Series)

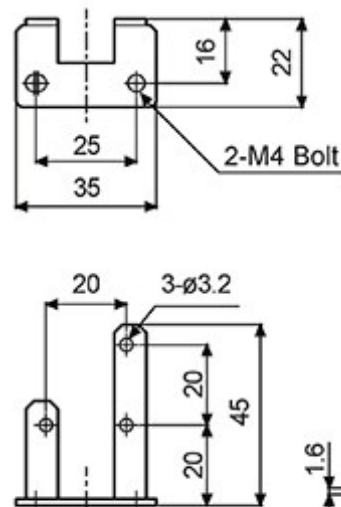
• When front cover is mounted



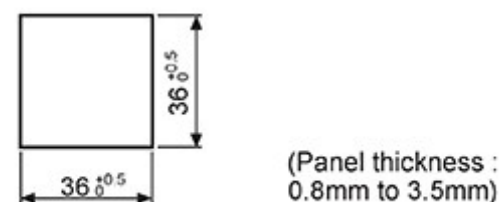
• Bracket A



• Bracket B



• Panel cut-out



• Accessory(sold separately)

• Panel mounting bracket (PSO-01)

• Front protection cover (PSO-02)



(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity sensor

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/Socket

(H) Temp. controller

(I) SSR/Power controller

(J) Counter

(K) Timer

(L) Panel meter

(M) Tacho/Speed/ Pulse meter

(N) Display unit

(O) Sensor controller

(P) Switching mode power supply

(Q) Stepper motor& Driver&Controller

(R) Graphic/ Logic panel

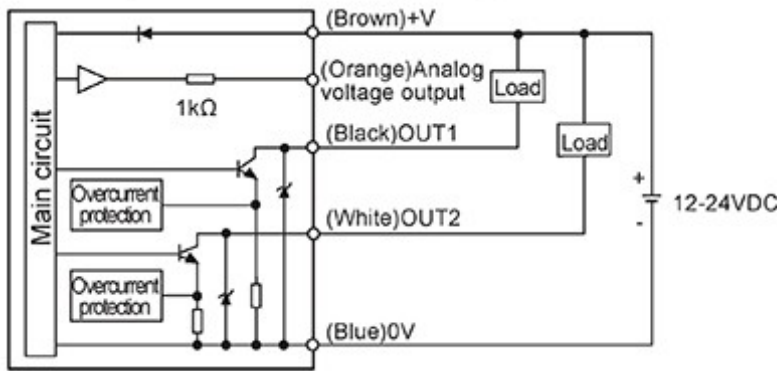
(S) Field network device

(T) Software

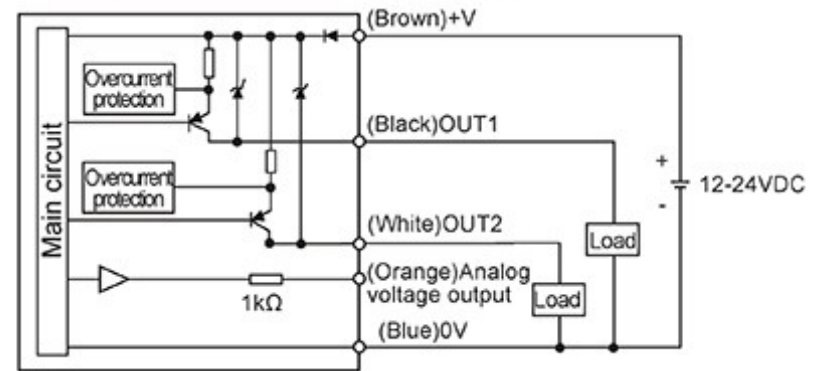
(U) Other

Control output diagram(PSA/PSB)

• NPN open collector output type

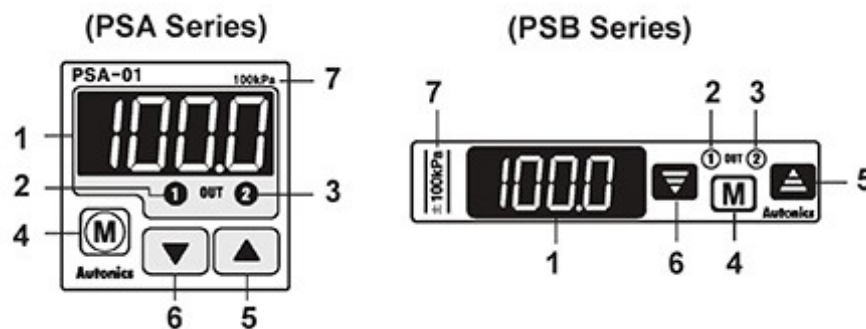


• PNP open collector output type



✗ There is no short-circuit protection in analog voltage output. Do not connect this output to power supply or capacitive load directly.
✗ Please observe input impedance of connected equipment when use analog voltage output.
And be sure to check voltage drop caused by resistance of extended wire.

Front panel identification



1. 3½digit LED display(red)
: Display sensing pressure, every setting value and display error.
2. 1 output indicator(red) : Output 1 is ON, LED will be ON.
3. 2 output indicator(PSA: red, PSB: green)
: Output 2 is ON,LED will be ON.

4. Mode key

: Parameter setting mode or preset setting mode, save setting value.

5. Up key

: Set the setting value to lower step in preset setting or pressure unit, output mode, response time, analog output scale, key lock, peak hold value, bottom hold value display in parameter setting.

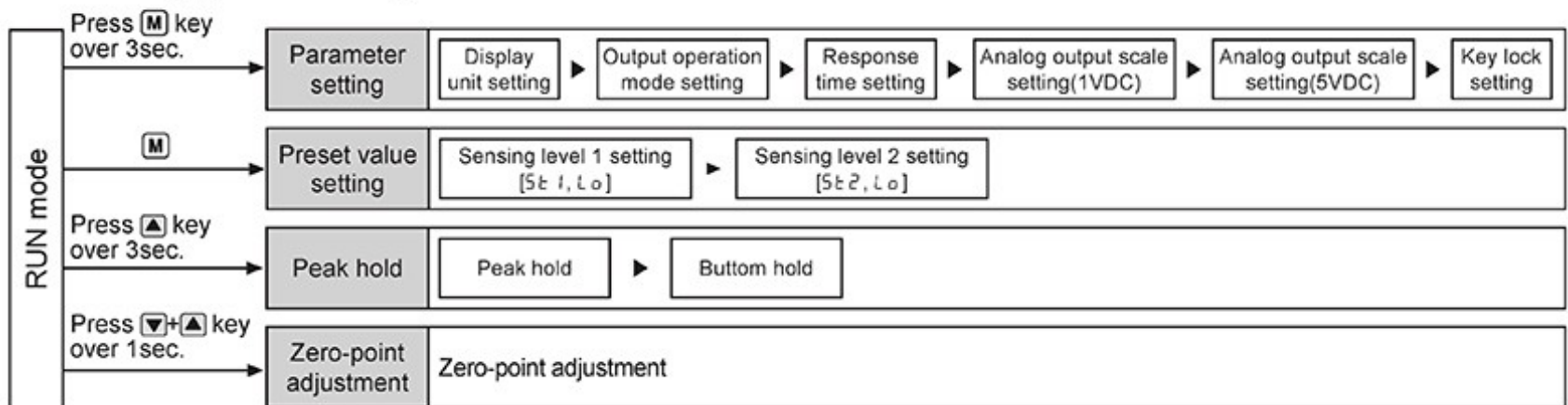
6. Down key

: Set setting value to upper step in preset setting or pressure unit, output mode, response time, analog output scale, key lock, peak hold, bottom hold display in parameter setting.

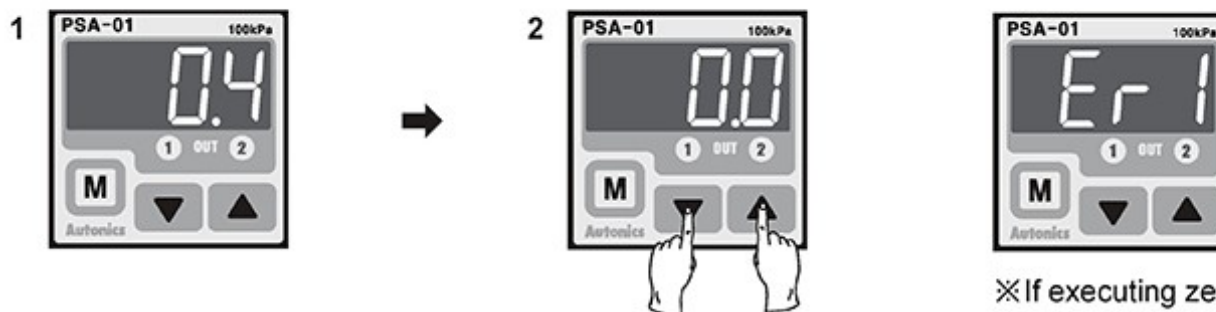
7. Range of rated pressure

: It is possible to change the pressure unit in PSA Series. Please use different unit as label for your application.

Setting(PSA/PSB)



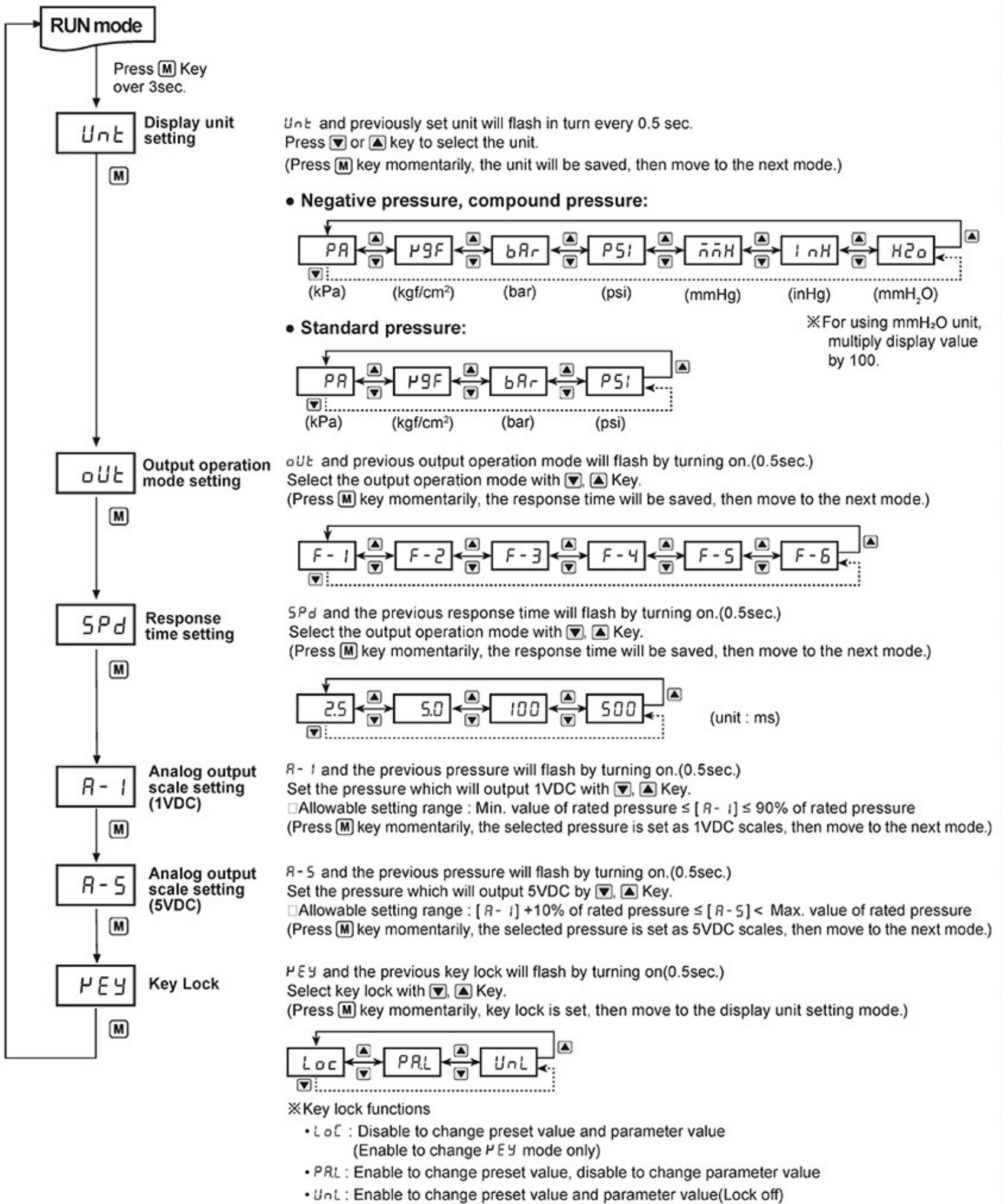
Zero point adjustment(PSA/PSB)



1. In state of atmospheric pressure during RUN mode, press ▼ key and ▲ key at the same time for over 1sec.
 2. When the zero point adjustment is completed, it will display 0.0 and return to RUN mode automatically.
- ✗ Please execute zero point adjustment regularly.

✗ If executing zero point adjustment when external pressure has been applied, Er 1 will be flashing. Please execute zero point again in state of atmospheric pressure.

Parameter setting(PSA/PSB)



| | |
|-----|----------------------------------|
| (A) | Photo electric sensor |
| (B) | Fiber optic sensor |
| (C) | Door/Area sensor |
| (D) | Proximity sensor |
| (E) | Pressure sensor |
| (F) | Rotary encoder |
| (G) | Connector/Socket |
| (H) | Temp. controller |
| (I) | SSR/Power controller |
| (J) | Counter |
| (K) | Timer |
| (L) | Panel meter |
| (M) | Tacho/Speed/ Pulse meter |
| (N) | Display unit |
| (O) | Sensor controller |
| (P) | Switching mode power supply |
| (Q) | Stepper motor& Driver&Controller |
| (R) | Graphic/ Logic panel |
| (S) | Field network device |
| (T) | Software |
| (U) | Other |

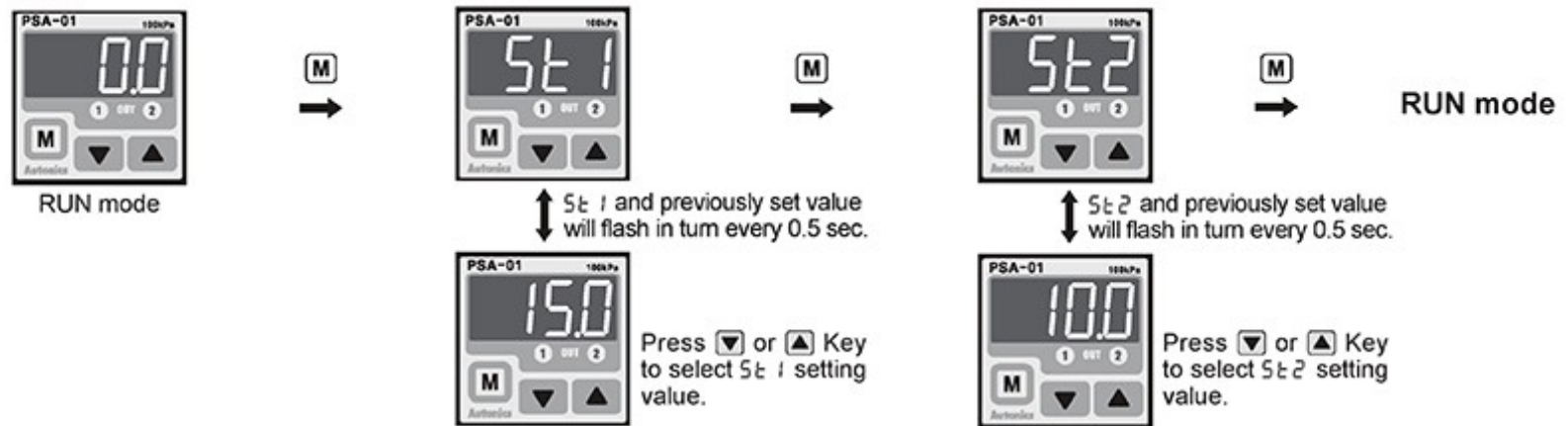
※When advance to parameter setting mode and preset setting mode, it displays "Setting item" and "Previous setting value" by 0.5 sec. turn. This display will stop by pressing **[↓]** or **[↑]** key(Display setting value), if any key is untouched for over 1 sec., it will display old value by 0.5sec. turn again.

※When **[M]** key is pressed for 3sec. during setting, it will return to RUN mode with memorizing on EEPROM. However, when there is any key is untouched for 60sec., it turns to RUN mode with keeping the previous setting value not current setting value.

※There is memory protection by EEPROM, but life cycle of EEPROM is 100,000 times.

■ Preset value setting(PSA/PSB)

◎ Hysteresis mode[F - 1] and independent 2 output mode[F - 3, F - 4, F - 5]

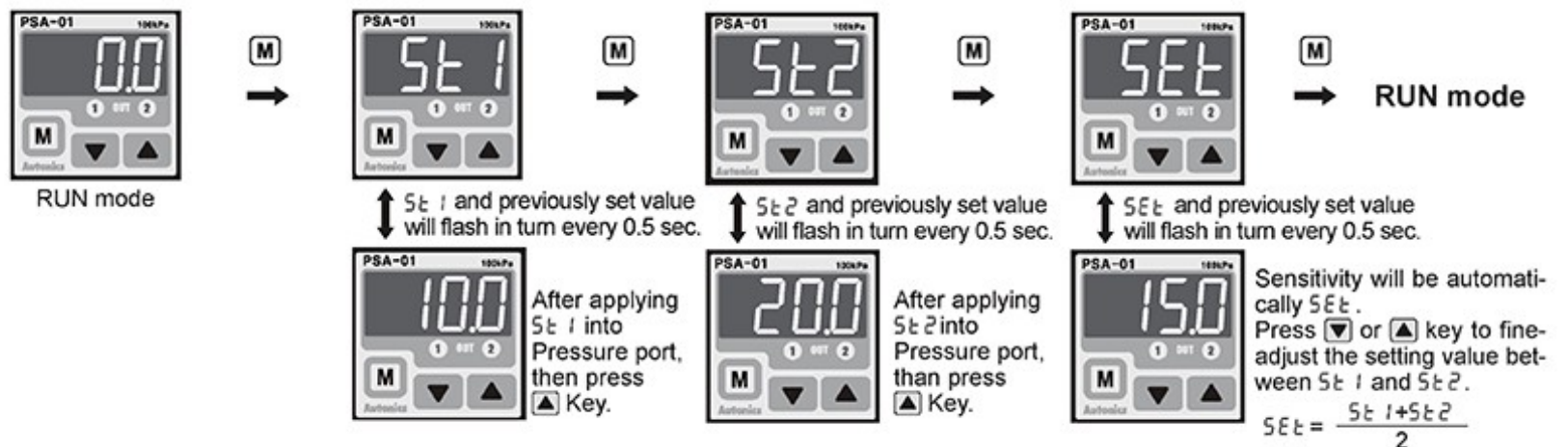


※5.1 setting range : Min. display pressure < 5.1 ≤ Max. display pressure

※5.2 setting range : - Hysteresis mode: Min. display pressure ≤ 5.2 < 5.1

- 2 independent output mode: Min. display pressure < 5.2 ≤ Max. display pressure

◎ Automatic sensitivity setting mode[F - 2]

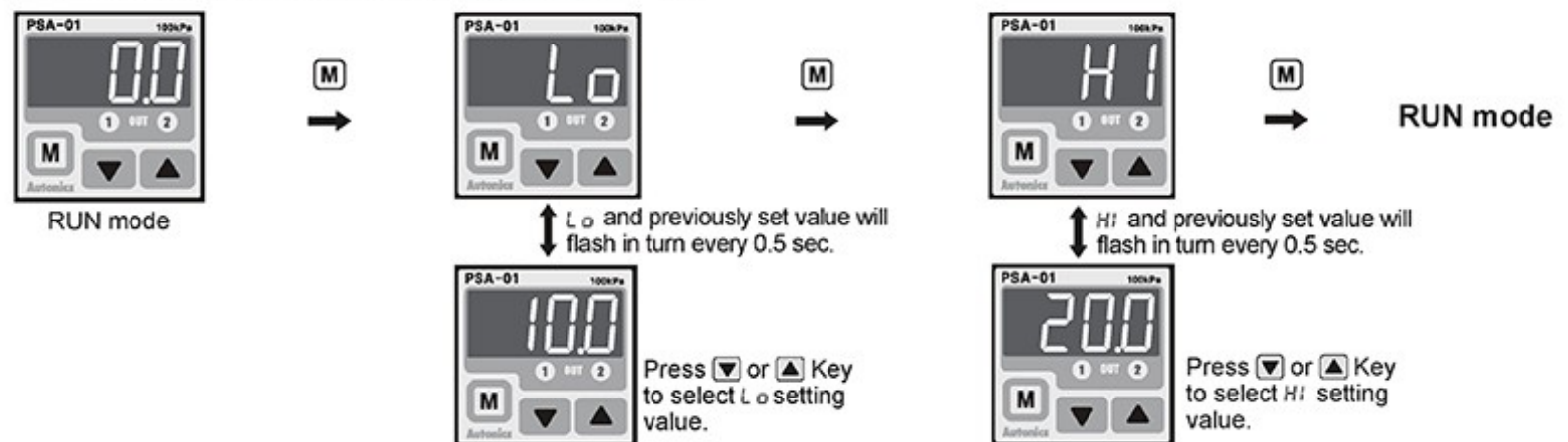


※5.1 setting range : Min. display pressure < 5.1 ≤ Max. display pressure – 1% of rated pressure

※5.2 setting range : 5.1 + 1% of rated pressure < 5.2 ≤ Max. display pressure

Adjustable range of set value: Between 5.1 and 5.2.

◎ Window comparison output mode[F - 5]



※Low value setting range : Min. display pressure < Lo ≤ Max. display pressure

※High value setting range : Lo < Hi ≤ Max. display pressure

- If no key is touched for 60sec., it will return to RUN mode. [Automatic sensitivity setting mode[F - 2] is exception]
- When changing the display unit, preset value will be calculated according to the display unit.
- Whenever key touched one time, it is increased(decreased) as 1 digit(2 digits for psi unit and compound pressure) but it will be continuously increasing(decreasing) by pressing **▼**, **▲** key constantly.

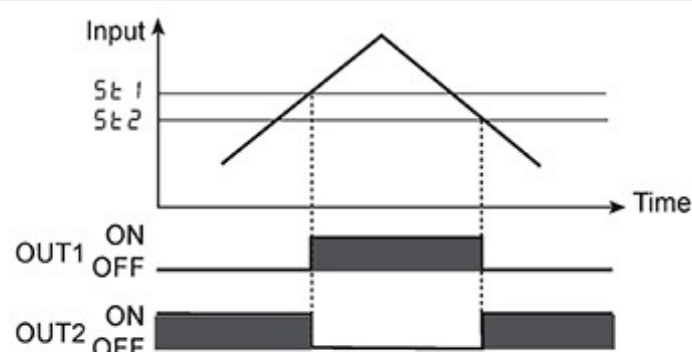
■ Peak hold and bottom hold check

1. Press **▲** key for over 3sec. in RUN mode.
 2. PE.H and memorized max. pressure(Negative pressure type is for max. negative pressure) will flash by turning on (0.5sec.) then display peak hold value.
 3. bo.H and memorized min. pressure(Negative pressure type is for min. negative pressure) will flash by turning on (0.5sec.) then display bottom hold value.
 4. If pressing **▲** key one time shortly, memorized peak hold and bottom hold value will be removed then return to RUN mode.
- ※When the peak hold and bottom hold value is over the max. display pressure value, it displays HHH, On the opposite, it displays LLL. Please remove peak hold and bottom hold value by using **▲** key.

Output operation mode(PSA/PSB)

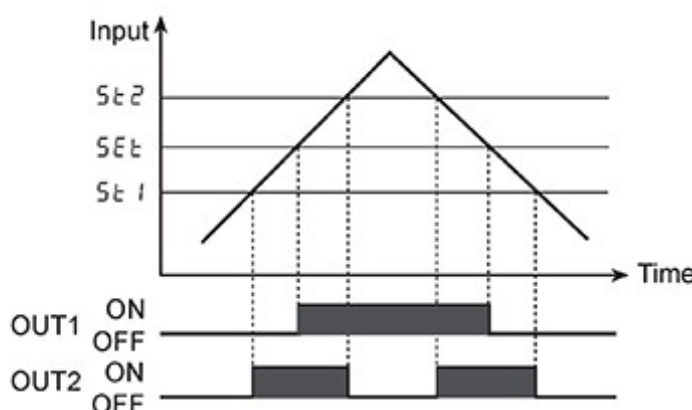
1. Hysteresis mode [F-1]

- It can be set for pressure sensing level[S_{t1}] and sensing difference[S_{t2}].
- S_{t1} setting range
: Min. display pressure < S_{t1} ≤ Max. display pressure
- S_{t2} setting range
: Min. display pressure ≤ S_{t2} < S_{t1}
- OUT 1: When applying pressure is larger than S_{t1} , it will be ON.
- OUT 2: When applying pressure is lower than S_{t2} , it will be ON.



2. Automatic sensitivity setting mode [F-2]

- This function is to set pressure sensing level to the proper position automatically, it is set by received pressure from two positions [S_{t1} , S_{t2}].
- The sensing hysteresis fixed to 1 digit(2 digits for psi unit and compound type)
- The pressure sensing level [S_{Et}] is shown in the following calculation.
$$S_{Et} = \frac{(S_{t1} + S_{t2})}{2}$$
- OUT 1 : When applying pressure is larger than S_{Et} value, it will be ON.
- OUT 2 : When applying pressure is between S_{t1} and S_{t2} , it will be ON.



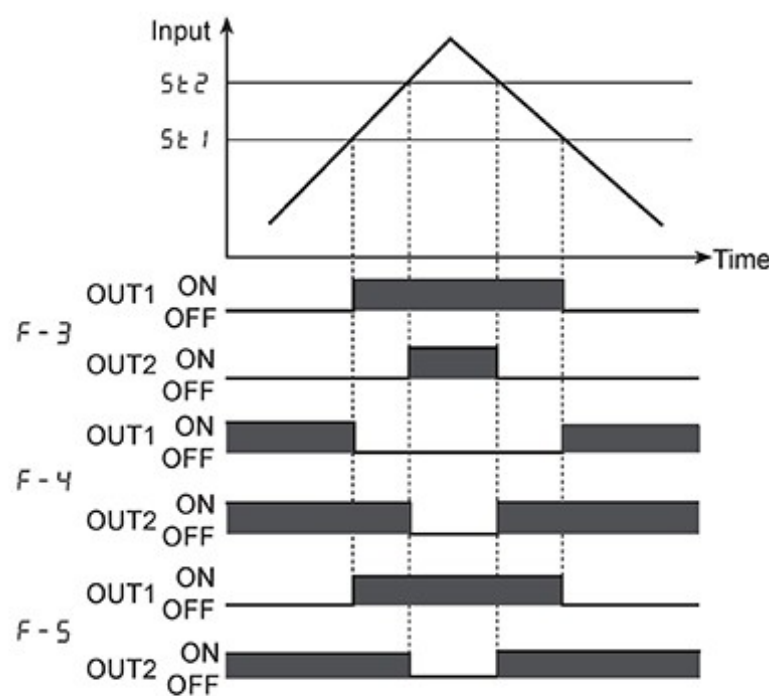
Note1) If it is not enough for difference of sensing level between S_{t1} and S_{t2} , $E-3$ will be displayed. Please set again after applying enough pressure.

Note2) S_{t1} setting range: Min. display pressure < S_{t1} ≤ Max. display pressure -1% of rated pressure
 S_{t2} setting range: S_{t1} +1% of rated pressure ≤ S_{t2} ≤ Max. display pressure

Note3) If fine adjustment for sensing level is required, adjust sensing level by ∇ , \blacktriangle key.
 (Adjustment range : Between S_{t1} and S_{t2})

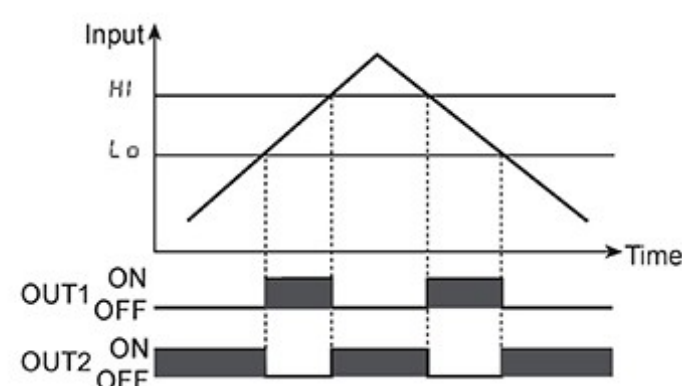
3. Independent 2 output mode [F-3, F-4, F-5]

- S_{t1} and S_{t2} can be set independently within display pressure range. One is for control, the other is for alarm or optional control.
- The sensing hysteresis fixed to 1 digit(2 digits for psi unit and compound type)
- S_{t1} setting range
: Min. display pressure ≤ S_{t1} ≤ Max. display pressure
- S_{t2} setting range
: Min. display pressure ≤ S_{t2} ≤ Max. display pressure
- Independent 2 output mode [F-3]
 • OUT 1 : It will be ON, when it is over S_{t1} .
 • OUT 2 : It will be ON, when it is over S_{t2} .
- Independent 2 opposite mode [F-4]
 • OUT 1 : It will be OFF when it is over S_{t1} .
 • OUT 2 : It will be OFF, when it is over S_{t2} .
- Independent 2 cross mode [F-5]
 • OUT 1 : It will be OFF when it is under S_{t1} .
 • OUT 2 : It will be ON, when it is under S_{t2} .



4. Window comparison output mode [F-6]

- It is able to set High limit value [H_l], Low limit value [L_o] of pressure sensing level in this mode.
- The sensing hysteresis fixed to 1 digit(psi unit and compound type 2 digits)
- L_o setting range
: Min. display pressure ≤ L_o ≤ Max. display pressure
- H_l setting range : L_o < H_l ≤ Max. display pressure
- OUT 1 : It will be ON between high limit value[H_l] and low limit value[L_o]
- OUT 2 : It will be ON when it is over high limit value[H_l] and low limit value[L_o].



| | |
|-----|----------------------------------|
| (A) | Photo electric sensor |
| (B) | Fiber optic sensor |
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| (E) | Pressure sensor |
| (F) | Rotary encoder |
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| (K) | Timer |
| (L) | Panel meter |
| (M) | Tacho/Speed/ Pulse meter |
| (N) | Display unit |
| (O) | Sensor controller |
| (P) | Switching mode power supply |
| (Q) | Stepper motor& Driver&Controller |
| (R) | Graphic/ Logic panel |
| (S) | Field network device |
| (T) | Software |
| (U) | Other |

■ Functions(PSA/PSB)

◎ Pressure unit change

PS□-V01(C)(P)/PS□-C01(C)(P) has 7 kinds of pressure unit and PS□-01(C)(P)/PS□-1(C)(P) has 4 kinds of pressure unit.

Please select the proper unit for application.

- PS□-V01(C)(P), PS□-C01(C)(P) : kPa, kgf/cm², bar, psi, mmHg, inHg, mmH₂O
- PS□-01(C)(P), PS□-1(C)(P) : kPa, kgf/cm², bar, psi
- ※When using mmH₂O multiply the display value by 100.

◎ Output mode change

There are 6 kinds of control output modes in order to provide the various detection. Select a mode for your proper application.

- **Hysteresis mode [F-1]**
When variable hysteresis is required for pressure detection.
- **Automatic sensitivity setting mode [F-2]**
When it is required to set detecting sensitivity automatically at proper position.
- **Independent 2 output mode [F-3, F-4, F-5]**
When it is required to detect pressure from two position with one product.
- **Window comparison output mode [F-6]**
When is required to detect pressure in a certain range.

◎ Response time change (chattering prevention)

It can prevent chattering of control output by changing response time. It is able to set 4 kinds of response time(2.5, 5, 100, 500ms) and if the response is getting longer, the sensing will be more stable by increasing the number of digital filter.

◎ Analog output scale setting

It is not fixed the analog output(1-5VDC) scale as the rated pressure range but this is a function to change properly for user's application. When the position[R-1] for 1VDC output and the position [R-5] for 5VDC output are set, the pressure range of R-1 to R-5 is to 1-5VDC analog output.

◎ Key lock

This unit has 2 kinds of key lock function in order to prevent wrong operation.

- **L o C** : All keys are locked, it is impossible to change any parameter setting/preset, zero point adjustment, peak hold and bottom hold. (Enable to change P E Y mode only).
- **P R L** : This is partial locked status, it is impossible to change parameter setting. (Enable to change P E Y mode only).
- **U n L** : All keys are unlocked.

◎ Zero-point adjustment

This function is to set the display value of pressure at zero when port is opened to atmospheric pressure.

◎ Peak hold and bottom hold

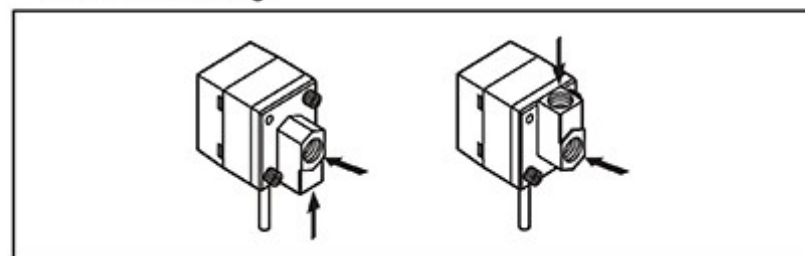
This function is diagnosis malfunction of the system caused by parasitic pressure or to check through memorizing the max./min. pressure that occurred in the system.

◎ Error display

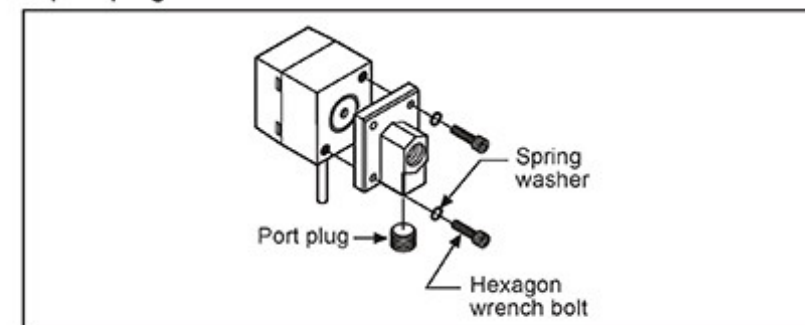
| Error display | Description | Troubleshooting |
|---------------|--|--|
| Er 1 | When external pressure is input while adjusting zero point | Try again after removing external pressure |
| Er 2 | When overload is applied on control output | Remove overload |
| Er 3 | When the setting value is not matched with setting condition | Check setting conditions and set proper setting values |
| HHH | When applied pressure exceeds High-limit of display pressure range | Apply pressure within display pressure range |
| LLL | When applied pressure exceeds Low-limit of display pressure range | |

■ Installation (PSA Series)

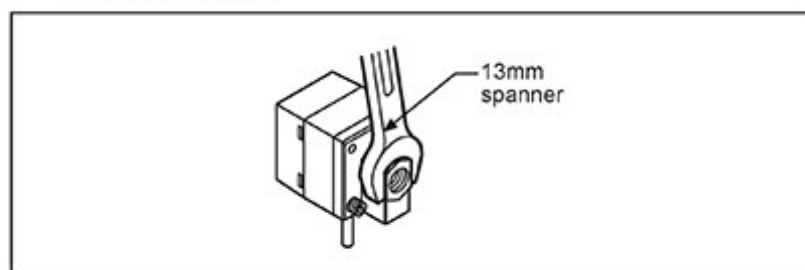
1. When installing pressure port, it is able to bring pressure from 3 directions by changing the mounting direction of the pressure port.
2. Basic spec of pressure port is Rc(PT) 1/8"(color: Silver). [option:NPT 1/8(color: black)] It is able to use general one touch fitting.



3. Please use seal tape at port plug in order to prevent pressure leak.
4. Please block another two pressure ports not used with port plug.



5. Please connect it by using spanner(13mm) at the metal part in order not to overload on the body when connecting one touch fitting.

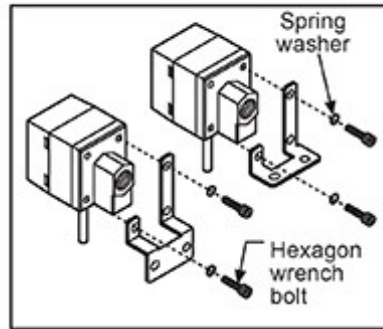


⚠ Caution

The tightening torque of one touch fitting should be max.100kgf·cm. If not, it may cause mechanical problem.

6. PSA Series has 2 kinds of brackets so it is able to install it in two different ways.

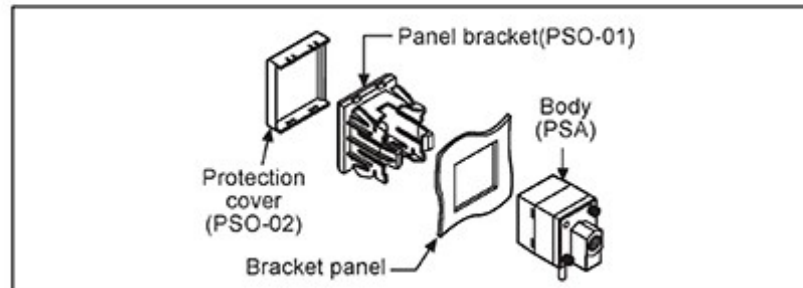
7. At first, please unscrew hexagon wrench bolt and assemble the bracket on this unit by fixing the hexagon wrench bolt.



Caution

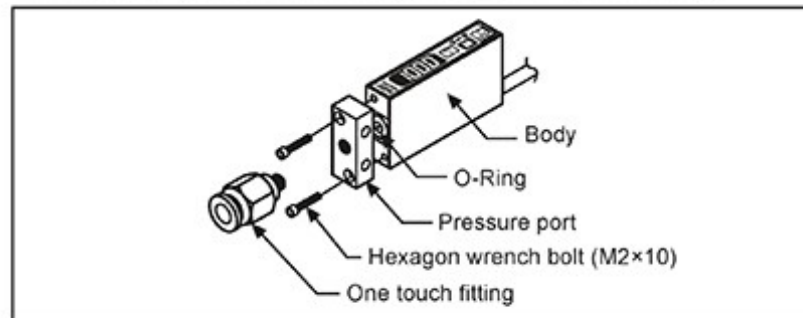
In this case, tightening torque of hexagon wrench should be max. 30kgf-cm. If not, it may cause mechanical problem.

8. Bracket(PSO-01) and front protection cover(PSO-02) are sold separately. Please see the pictures for installation.

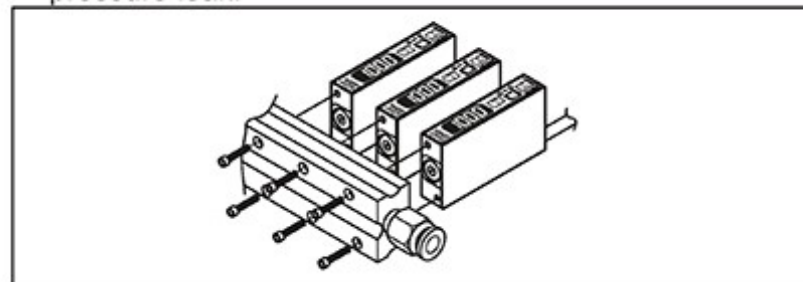


Installation(PSB Series)

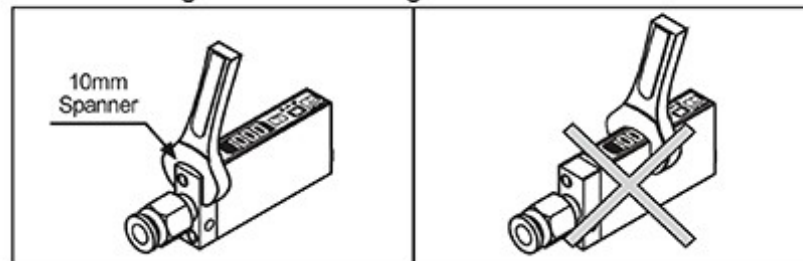
1. Pressure port is M5. Use general one touch fitting.



2. It is able to use it without the pressure port according to environment. In this case O-Ring between pressure port and its body should not be taken out in order to prevent pressure leak.



3. Please connect it by using spanner(10mm) at pressure port in order not to overload on the body when connecting one touch fitting.



Caution

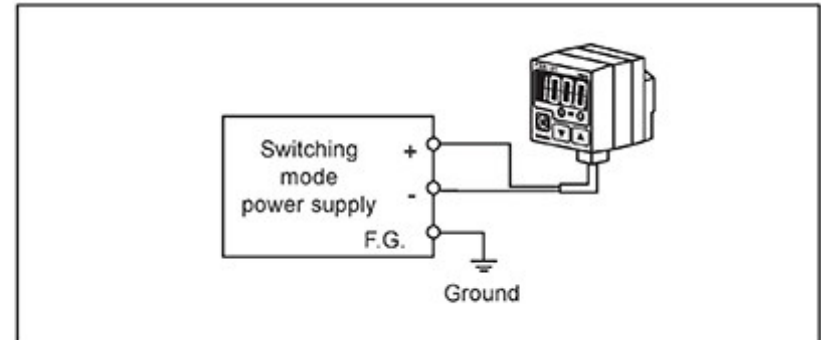
The tightening torque of one touch fitting and hexagon wrench should be Max. 50kgf-cm and 20kgf-cm. It may cause mechanical trouble. Please do not use spanner to install as it may cause mechanical trouble.

Proper usage

Caution

PSA, PSB Series is for sensing of non corrosive gas. Do not use this product at corrosive gas or flammable gas, etc.

- Please using this unit within the range of specification, if applying pressure is larger than specification, it may not be working properly due to damage.
- After supplying power, it takes 3 sec. to work.
- When using switching mode power supply, frame ground (F.G.) terminal of power supply should be grounded.



- It may cause malfunction by noise, when wiring with power line or high voltage line.
- Do not insert any sharp or pointed object into pressure port. It may cause mechanical problem due to sensor damage.
- Do not use this unit with flammable gas, because this is not an explosion proof structure.
- Be sure that this unit should not be contacted directly with water, oil, thinner, etc.



- Wiring must be done with power off.

Accessory

PSA/PSB

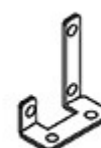
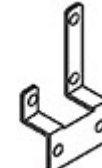
- Pressure unit label

| ±100kPa | ±101.3kPa | 100kPa | 1MPa |
|---------------------------|---------------------------|--------------------------|--------------------------|
| ±1.020kgf/cm ² | ±1.034kgf/cm ² | 1.020kgf/cm ² | 10.20kgf/cm ² |
| ±14.50psi | ±14.70psi | 14.50psi | 145.0psi |
| ±1.000bar | ±1.013bar | 1.000bar | 10.00bar |
| ±750mmHg | ±760mmHg | ×10 | ×10 |
| ±29.5inHg | ±29.9inHg | ×100 | ×100 |
| ±102.0mmH ₂ O | ±103.4mmH ₂ O | ×1000 | ×1000 |

DISPLAY UNIT LABEL

Only for PSA Series

- Port plug
- Bracket A
- Bracket B



(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity sensor

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/Socket

(H) Temp. controller

(I) SSR/Power controller

(J) Counter

(K) Timer

(L) Panel meter

(M) Tacho/Speed/Pulse meter

(N) Display unit

(O) Sensor controller

(P) Switching mode power supply

(Q) Stepper motor& Driver&Controller

(R) Graphic/Logic panel

(S) Field network device

(T) Software

(U) Other