

Air-blow Module

LLB1 Series

(Produced upon receipt of order)

How to Order

LLB1 - C4 [] - [] [] [] F - X1

Fitting size

C4	ø4 One-touch fitting
C6	ø6 One-touch fitting

Fitting type

Nil	Straight
L	Elbow

Regulator

Nil	Without regulator
R	Without pressure gauge
RN	Digital pressure switch, NPN open collector
RP	Digital pressure switch, PNP open collector
RG	With pressure gauge

Restrictor + Filter

F	Without pressure switch
F1	With pressure switch

* Used to check the differential pressure of the clean filter, etc.

ON/OFF valve

Nil	Without 2 port solenoid valve
V5	24 VDC/2.9 W
V5E	24 VDC/1.8 W
V6	12 VDC/2.9 W

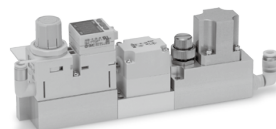
Set pressure range ^{Note 1)}

Nil	0.05 to 0.6 MPa specification (standard)
5	0.05 to 0.35 MPa specification ^{Note 2)}

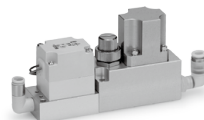
Note 1) There is no need to enter the symbol, when "without regulator" is selected.
Note 2) A pressure gauge with a full span of 0.4 MPa is provided.

Variations

Regulator + (Digital pressure switch)	ON/OFF valve	Restrictor + Filter + Pressure switch	Weight (g)
—	—	●	254
—	●	●	356
●	●	●	565



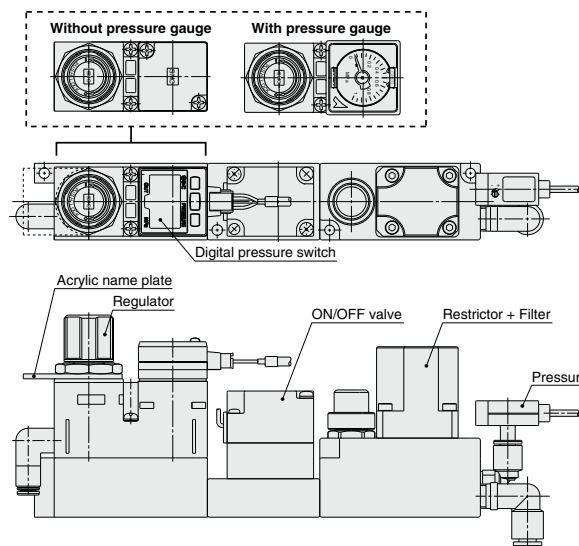
Regulator + Digital pressure switch +
ON/OFF valve + Restrictor + Filter



ON/OFF valve + Restrictor + Filter



Restrictor + Filter



Specifications

Air-blow Module Common Specifications

Fluid		Air, N ₂ gas
Maximum operating pressure		0.7 MPa
Set pressure range		0.05 to 0.6 MPa (0.05 to 0.35 MPa) ^{Note 3)}
Withstand pressure		1.0 MPa
Fluid temperature		5 to 45°C (No freezing)
Ambient temperature		
Flow range ^{Note 1)}		Up to 100 L/min (ANR)
Nominal filtration rating ^{Note 2)}		0.01 μm (Filtration efficiency 99.99%)
Fluid contact space material	Body	AL
	Bushing	AL
	Seal	HNBR, FKM
Fitting material	Straight ø4	POM, Stainless steel, PBT, NBR (Fluorine coated)
	Straight ø6	POM, Stainless steel, Brass (Electroless nickel plated), NBR (Fluorine coated)
	Elbow	POM, Stainless steel, Brass (Electroless nickel plated), PBT, NBR (Fluorine coated)
Applicable tubing material		PFA, Polyolefin, Soft polyolefin, Polyurethane ^{Note 4)}

Note 1) The maximum flow rate varies depending on set pressure. Refer to "Flow Rate Characteristics" for detail.

Note 2) According to SMC measurement conditions.

Note 3) The upper limit value of the set pressure range of each product number can be changed.

Note 4) Due to the softness of polyurethane tubing, it may fold when being inserted.

Hold the end of the tubing and insert it all the way in.

Regulator Unit Specifications

Regulator type		Direct acting
Relief mechanism		Relief type
Pressure gauge specifications	Display accuracy	±3%F.S. (Full Span)
	Calibration angle	230°
	Limit indicator	With limit indicator
Fluid contact space material	Body, Port plug	PBT
	Valve seat, Stem	POM
	Diaphragm	Weatherproof NBR
	Valve	Aluminum alloy (chromate), HNBR
	Valve spring	Stainless steel
	O-ring	HNBR
	Without pressure display	POM, HNBR
	With pressure gauge	Brass, HNBR
	Digital pressure switch	PPS, Silicone, HNBR

Specifications

ON/OFF Valve Unit Specifications

Valve type		2 port poppet pilot operated
Ambient and fluid temperature		-10 to 50 ^{Note 1)}
Impact resistance/Vibration resistance		150/30 m/s ² ^{Note 2)}
Internal leakage cm ³ /min		15 or less
Exterior leakage cm ³ /min		15 or less
Mounting orientation		Free
Coil rated voltage		12 VDC, 24 VDC
Allowable voltage fluctuation		±10% rated voltage
Type of coil insulation		Equivalent to B type
Power consumption	V5, V6	Inrush: 2.9 W Holding: 0.6 W
	V5E	1.8 W
Electrical entry		Grommet
Flow rate characteristics	C [dm ³ /(s·bar)]	V5,V6: 1.4, V5E: 0.71
	b	V5,V6: 0.23, V5E: 0.25
	Cv	V5,V6: 0.33, V5E: 0.17
Minimum operating pressure differential		0.01 MPa ^{Note 3)}
Maximum operating pressure		0.6 MPa
Response time ^{Note 4)}	ON	10 ms or less (with power-saving circuit)
	OFF	15 ms or less (with power-saving circuit)
Fluid contact space material	Body	PBT
	Diaphragm	HNBR
	Armature/Fixed armature	Stainless steel

Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature (value at the initial state).

Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature for both energized and de-energized states (value at the initial state).

Note 3) If a restrictor (nozzle, etc.) is mounted on the outlet side piping, the pressure differential when ON is smaller. Be sure that the pressure differential does not drop below 0.01 MPa.

Note 4) JIS 8375(At supply pressure 0.5 Mpa)

(Value of high response time is subject to change upon pressure, quality of air.)

Restrictor Unit Specifications

Cv factor	0.28
Number of needle rotations	8 rotations
Fluid contact space material	Stainless steel

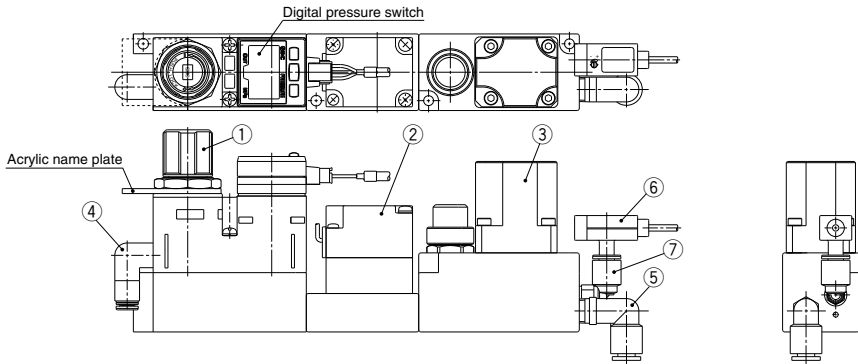
Filter Unit Specifications

Nominal filtration rating ^{Note 1)}		0.01 μm (Filtration efficiency 99.99%)
Element withstand differential pressure ^{Note 2)}		0.5 MPa
Flow capacity		Up to 100 L/min (ANR)
Fluid contact space material	Filter case	PC, ABS
	Hollow fiber	PP, PET
	Potting	PU
	O-ring	FKM

Note 1) According to SMC measurement conditions.

Note 2) This means that the element does not break at 0.5 MPa. Refer to "Specific Product Precautions".

Component Parts

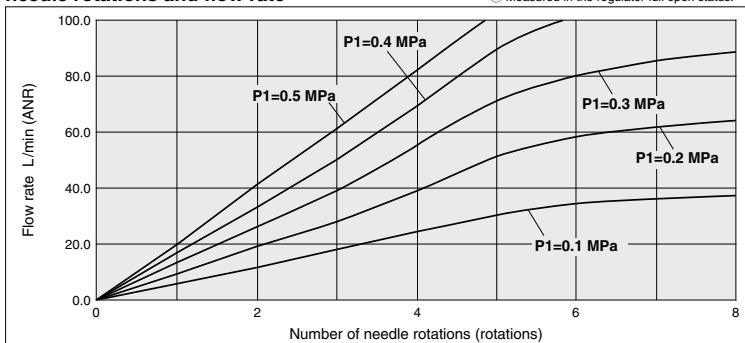


No.	Description	Individual part no.	Note	
1	Regulator assembly	Without pressure gauge	LVB1-1	
		Digital pressure switch NPN open collector	LVB1-2-1	For set pressure range 0 to 0.35 MPa LVB1-2-2
		Digital pressure switch PNP open collector	LVB1-3-1	For set pressure range 0 to 0.35 MPa LVB1-3-2
		With pressure gauge	LVB1-4-1	For set pressure range 0 to 0.35 MPa LVB1-4-2
2	ON/OFF valve	Acrylic name plate	136163-2	
		12 VDC	LVB1-5-1	
		24 VDC (2.9 W)	LVB1-5-2	
		24 VDC (1.8 W)	LVB1-5-3	
3	Regulator clean air filter assembly	LVB1-6		
4	In side One-touch fitting assembly	Replacement element	SFD-EL101	
		Straight	ø4	VVQ1000-50A-C4-X17
			ø6	VVQ1000-50A-C6-X17
		Elbow	ø4	VVQ1000-50A-L1C4-X17
ø6	VVQ1000-50A-L1C6-X17			
5	Out side One-touch fitting assembly	Straight	ø4	KPH04-01
			ø6	KPH06-01
		Elbow	ø4	KPL04-01
			ø6	KPL06-01
6	Pressure switch	PSE510-R06		
7	Fitting for pressure switch	KPGL06-M5-X193		

Flow Rate Characteristics Note) The flow rate characteristics are representative values.

Conditions ① ø6 pipe length
 In side = 600 mm
 Out side = 100 mm
 Measured under the conditions shown above.
 ② Measured in the regulator full open status.

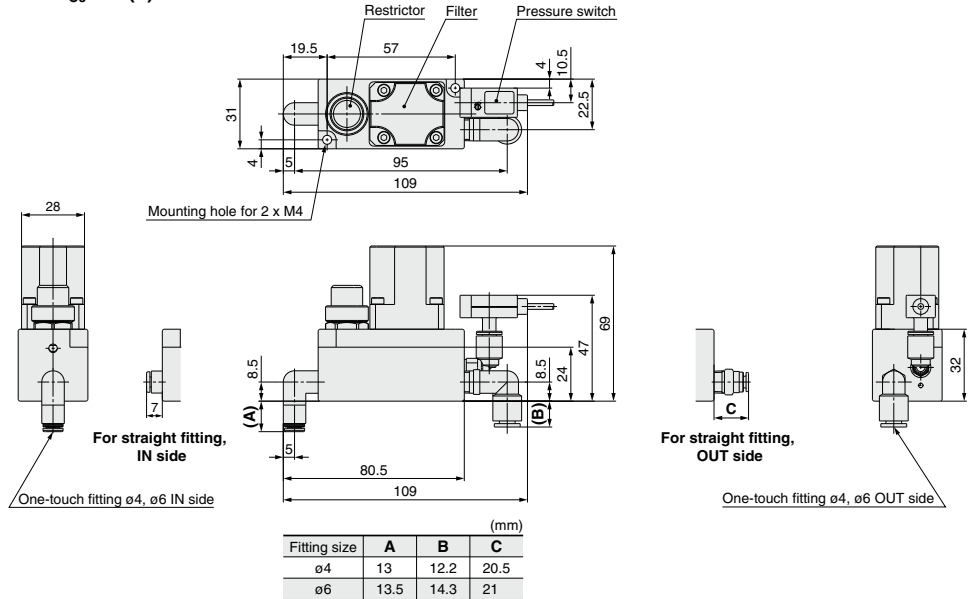
Relationship between number of needle rotations and flow rate



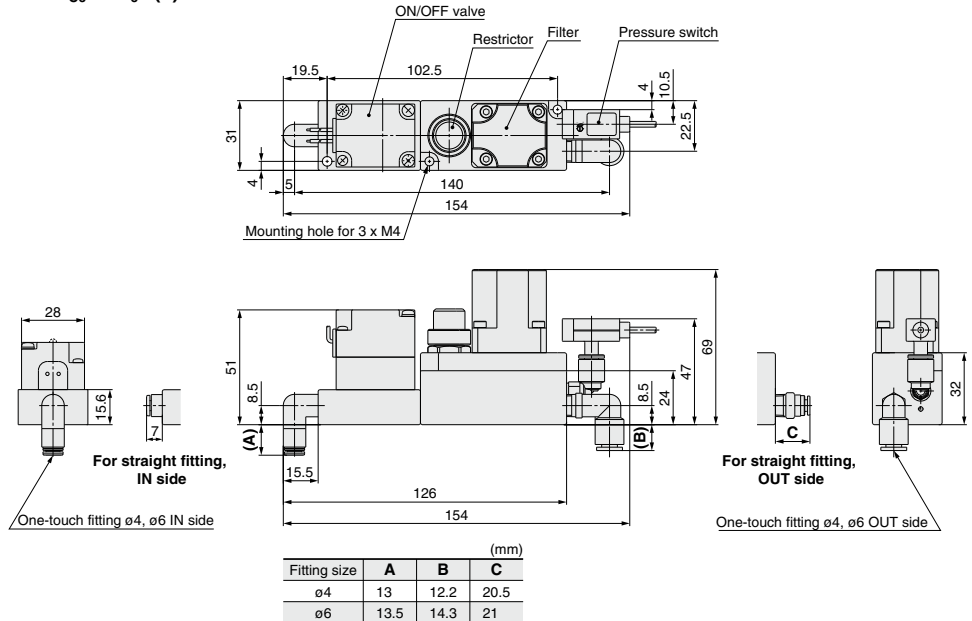
LLB1 Series

Dimensions

LLB1-C₄/₆□-F(1)-X1

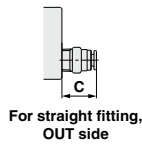
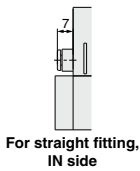
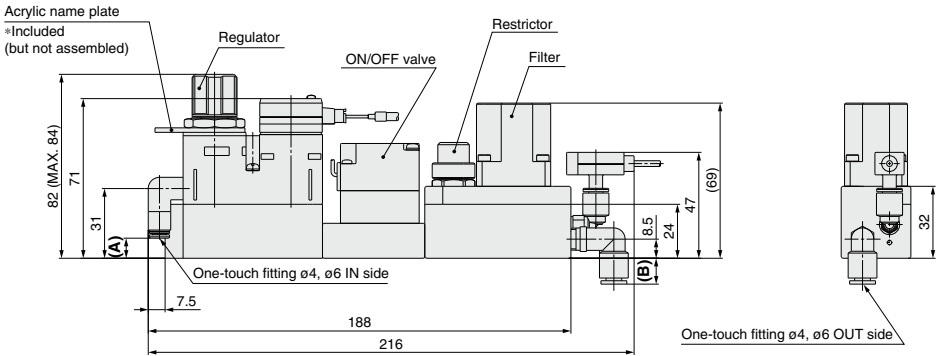
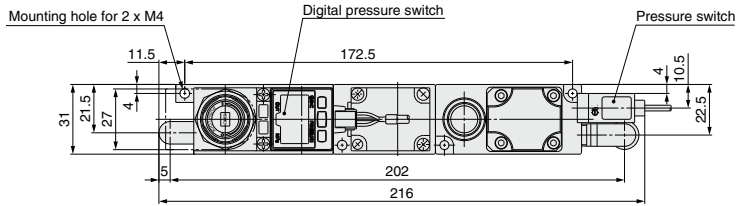


LLB1-C₄/₆□-V₆⁵F(1)-X1



Dimensions

LLB1-C₆⁴□-R_G^N□V₆⁵F(1)-X1



(mm)

Fitting size	A	B	C
ø4	9.5	12.2	20.5
ø6	9	14.3	21

Digital pressure switch

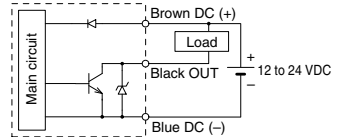
Specifications

Rated pressure range	0 to 1 MPa
Set pressure range	- 0.1 to 1 MPa
Withstand pressure	1.5 MPa
Set pressure resolution	0.01 MPa
Power supply voltage	12 to 24 VDC, Ripple (p-p) $\pm 10\%$ or less (with power supply polarity protection)
Current consumption	55 mA or less (at no load)
Switch output	NPN or PNP open collector 1 output
Maximum load current	80 mA
Maximum applied voltage	30 V (at NPN output)
Residual voltage	1 V or less (with load current of 80 mA)
Response time	1 s
Anti-chattering function	(0.25, 0.5, 2, 3)
Short circuit protection	With short-circuit protection
Repeatability	$\pm 1\%$ F.S. or less
Hysteresis	Variable (0 or above)
Hysteresis mode	
Window comparator mode	
Display	3-digit, 7-segment indicator, 2-color display (Red/Green) can be interlocked with the switch output
Display accuracy	$\pm 2\%$ F.S. ± 1 digit (at 25°C $\pm 3^\circ$ C)
Indicator light	OUT: Lights up when output is turned ON (Green)
Environmental resistance	Enclosure IP40
Lead wire with connector	$\phi 3.4$ 3 cores 25AWG 2 m

Output specifications

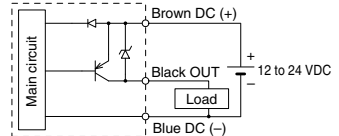
NPN open collector output

Max. 30 V, 80 mA
Residual voltage: 1 V or less



PNP open collector

Max. 80 mA
Residual voltage: 1 V or less

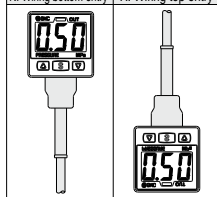


Model

ISE35 - N - 25 - M - X501

Electrical entry specifications

N: Wiring bottom entry R: Wiring top entry



Output specifications

Symbol	Contents
25	NPN output
65	PNP output

Unit specifications

Symbol	Contents
M	Fixed SI unit

Semi-standard specifications

Symbol	Contents
NII	None
X501	Oil-free

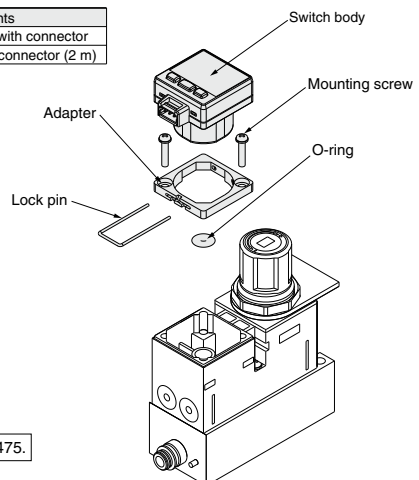
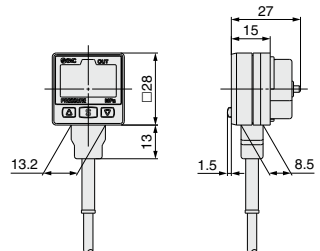
Option 2

Symbol	Contents
NII	Switch body only
B ^(Note)	With mounting option

(Note) Adapter, O-ring, and lock pin mounting screws (2 pcs.) are included.

Option 1

Symbol	Contents
NII	Without lead wire with connector
L	With lead wire with connector (2 m)



For details about setting and operating procedures, refer to pages 471 to 475.

Pressure Setting

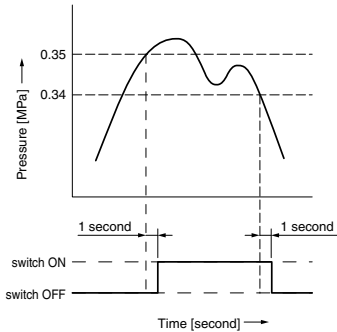
Operation

When the pressure level exceeds the set value, the switch turns ON.

When the pressure level decreases only the hysteresis from the set value, the switch turns OFF.

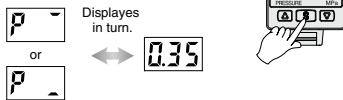
With the factory default settings, when the pressure level exceeds 0.35 MPa, the switch turns ON. When the pressure level becomes 0.34 MPa or less, the switch turns OFF.

When the operation shown in the Fig. below has no problem, use the product with the factory default settings.

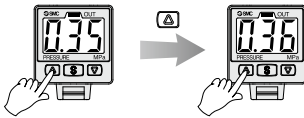


<Operating procedure>

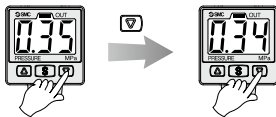
- 1 Press the **[S]** button in the measurement mode to display the set value.



- 2 Press the **[Δ]** or **[▽]** button to change the set value. Pressing the **[Δ]** button will increase the set value while pressing the **[▽]** button will decrease the set value.
 - Press the **[Δ]** button once to increase the numeric value. Keep the **[Δ]** button pressed to continuously increase the numeric value.



- Press the **[▽]** button once to decrease the numeric value. Keep the **[▽]** button pressed to continuously decrease the numeric value.



- 3 Press the **[S]** button to complete the setting.

For details about how to set the pressure in window comparator mode, refer to "Pressure Setting (Window comparator mode)" on page 473.

Function Settings

Factory default settings

The factory default settings are as follows.

When there is no problem with the factory default settings, use the product as it is. To change any setting, make the setting properly while referring to relevant page.

Setting item	Factory default settings
Switch output Whether or not the switch output is used can be selected. The product can be used as pressure gauge without using the switch output. Switch output → P.472	ON
Display color The display color can be selected. Display color → P.472	ON: Green OFF: Red
Response time When the response time is set, this prevents chattering output. Response time → P.472	1s
Operation mode The switch operation mode can be selected. Operation mode → P.472	Hysteresis mode
Hysteresis Hysteresis → P.473	0.01 MPa (1psi)

The numeric value in () shows the value when the unit specifications are P.

Setting item	Factory default settings
Output mode The switch output mode can be set. Output modes → P.473	Normally Open
Power-saving mode Power-saving mode can be selected. Power-saving mode → P.473	OFF
Security code setting It can be set whether code number input is required or not when key is locked Security code setting → P.474	OFF

Special function settings

Setting item	
Flip display mode The display can be flipped vertically. Display mode → P.474	

Handling precautions

- When changing the factory default settings, the setting item is changed with the **[S]** button. Be sure to check that the item you want to change is displayed, and then make the setting without fail.

About measurement mode

In this measurement mode, the pressure is detected and displayed or the switch is operated after the power has been turned ON. The measurement mode is a basic mode that allows you to change the setting or set other functions according to the purpose.

Turn ON the power.

The display that shows the unit specifications is lit for approx. 1 second.

Unit specifications: M 5.0	Unit specifications: P 5.0	Unit specifications: Nil 5.F
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The operation enters the measurement mode and the current pressure value is displayed.



Function Settings

1. Switch output (S_U)

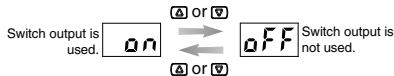
Whether or not the switch output is used can be selected. When it is selected that the switch output is not used, the product can be used as a pressure gauge without using the switch output. In this case, only the display color changes as it interlocks with changes in pressure setting. The indicator light does not light up.

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode. "S_U" and current set value are displayed alternately.



- Press the **[Δ]** or **[▽]** button to select whether or not the switch output is used.



- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

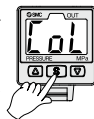
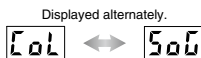
2. Display color (CoL)

Four kinds of display can be selected.

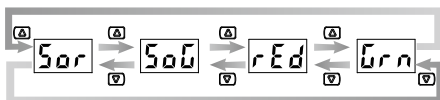
switch		Display
ON	OFF	
Red	Green	SoR
Green	Red	SoG
Red		rEd
Green		Grn

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode. When "S_U" is displayed, press the **[S]** button. "CoL" and current set value are displayed alternately.



- Press the **[Δ]** or **[▽]** button to select a display color you want to use.



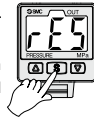
- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

3. Response time (rES)

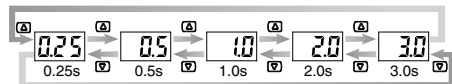
The switch output response time can be set to a desired level. As the response time is changed, the display update time is also changed accordingly. If the switch output or display chatters, make the response time longer.

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode. When "rES" is displayed, press the **[S]** button twice. "rES" and current set value are displayed alternately.



- Press the **[Δ]** or **[▽]** button to select a response time you want to use.



- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

4. Operation mode (oPE)

The switch operation mode can be selected.

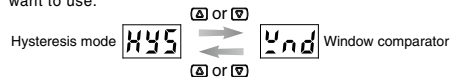
For details about operation in the hysteresis mode or window comparator mode, refer to "List of output modes" on page 474.

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode. When "S_U" is displayed, press the **[S]** button three times. "oPE" and current set value are displayed alternately.



- Press the **[Δ]** or **[▽]** button to select an operation mode you want to use.



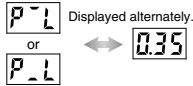
- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

Function Settings

Pressure Setting (Window comparator mode)

<Operating procedure>

- 1 Press the **[S]** button in the measurement mode to display the set value.



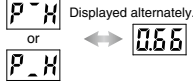
- 2 Press the **[Δ]** or **[▽]** button to change the set value.
Pressing the **[Δ]** button will increase the set value while pressing the **[▽]** button will decrease the set value.
- Press the **[Δ]** button once to increase the numeric value. Keep the **[Δ]** button pressed to continuously increase the numeric value.



- Press the **[▽]** button once to decrease the numeric value. Keep the **[▽]** button pressed to continuously decrease the numeric value.



- 3 Press the **[S]** button to display the set value at the 2nd location.



- 4 Press the **[Δ]** or **[▽]** button to change the set value.

- 5 Press the **[S]** button to complete the setting.

5. Hysteresis (H)

A hysteresis can be set.

<Operating procedure>

- 1 Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode.
When "S_U" is displayed, press the **[S]** button four times. "H" and current set value are displayed alternately.



- 2 Press the **[Δ]** or **[▽]** button to set a hysteresis you want to use.
- Press the **[Δ]** button once to increase the numeric value. Keep the **[Δ]** button pressed to continuously increase the numeric value.



- Press the **[▽]** button once to decrease the numeric value. Keep the **[▽]** button pressed to continuously decrease the numeric value.



- 3 After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

6. Output mode (oU_L)

A desired switch output mode can be set.

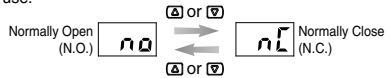
For details about operation in the normally open or normally close mode, refer to "List of output modes" on page 474.

<Operating procedure>

- 1 Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode.
When "S_U" is displayed, press the **[S]** button five times. "oU_L" and current set value are displayed alternately.



- 2 Press the **[Δ]** or **[▽]** button to select an output mode you want to use.



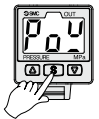
- 3 After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

7. Power-saving mode (Po_U)

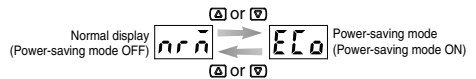
When the power-saving mode is selected, the numeric value display disappears to reduce the current consumption.

<Operating procedure>

- 1 Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode.
When "S_U" is displayed, press the **[S]** button six times. "Po_U" and current set value are displayed alternately.



- 2 Press the **[Δ]** or **[▽]** button to select whether or not the power-saving mode is used.



- 3 After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

When any key is operated in the power-saving mode, the display changes to the normal display. When no key is operated for 30 seconds, the display returns to the power-saving mode. (Measurement mode only)

In the power-saving mode, the display becomes that shown in the Fig. on the right.



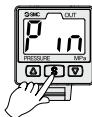
Function Settings

8. Security code setting (Pin)

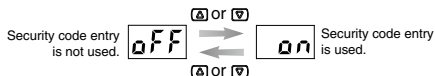
It can be set whether code number input is required or not in the key lock mode.

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode.
When "S_U" is displayed, press the **[S]** button seven times. "Pin" and current set value are displayed alternately.



- Press the **[Δ]** or **[▽]** button to select whether or not the security code entry is used.



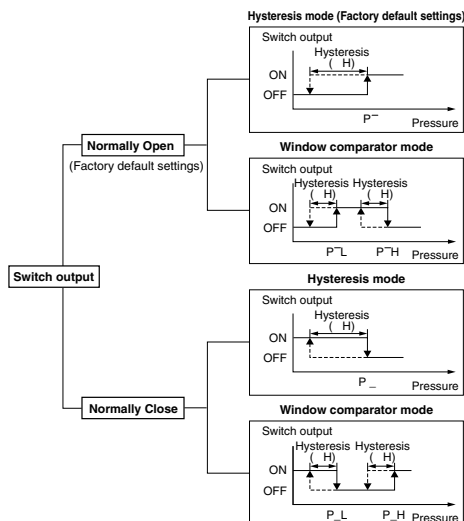
- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

When you select to use the security code entry, you need to enter the security code so as to unlock the key. A desired security code can be set by the user.

With the factory default settings, the security code is set at "000".

When you select to use the security code entry, please also refer to page 475.

• List of output modes



If the switch output change point becomes beyond the set pressure range as the pressure set value is changed, the hysteresis (H) is corrected automatically.

• Display mode (dIS)

The display can be flipped vertically.

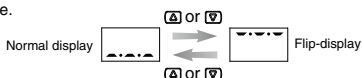
The following describes how to change the display mode after the product has been purchased.

<Operating procedure>

- Keep the **[S]** button pressed for 2 seconds or longer in the measurement mode.
When "S_U" is displayed, press the **[S]** button eight times. "dIS" and current set value are displayed alternately.

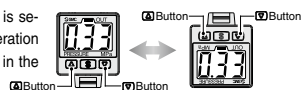


- Press the **[Δ]** or **[▽]** button to select a display mode you want to use.



- After selected, keep the **[S]** button pressed for 2 seconds or longer. The setting is then completed to return to the measurement mode.

When the flip-display is selected, the button operation is changed as shown in the Fig. on the right.



Other Settings

• Peak/Bottom value display function

The maximum (minimum) pressure up to now from the power ON is detected to update the data. This pressure is displayed in the peak (bottom) value display mode. In the peak value display mode, keep the **[▲]** button pressed for 1 second or longer to blink the maximum pressure value and hold it. To cancel the hold display, keep the **[▲]** button pressed for 1 second or longer again. In the bottom value display mode, keep the **[▼]** button pressed for 1 second or longer to blink the minimum pressure value and hold it. To cancel the hold display, keep the **[▼]** button pressed for 1 second or longer again. Keep the **[▲]** and **[▼]** buttons pressed at the same time for 1 second or longer during hold display to initialize the maximum (minimum) pressure value.

• Zero-clear function

The display value can be adjusted to zero when the pressure to be measured is within the range of $\pm 10\%$ F.S. from the factory default setting.

(Due to individual product differences, the zero-clear range varies ± 1 digit.)

Keep the **[▲]** and **[▼]** buttons pressed at the same time for 1 second or longer to reset the display value to zero.

The mode then returns to the measurement mode automatically.

• Keylock function

This function prevents incorrect operations such as accidentally changing the set-value. If any button is operated when the key is locked, "LoC" is displayed for approx. 1 sec.

<Operating procedure - Security code is not used.>

- 1 Keep the **[S]** button pressed for 5 seconds or longer in the measurement mode.

The current setting "LoC" or "UnL" is displayed. (Perform the same operation when unlocking the key.)



- 2 Press the **[▲]** or **[▼]** button to select "Lock" or "Unlock".



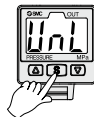
- 3 Press the **[S]** button to set the selection.

<Operating procedure - Security code is used.>

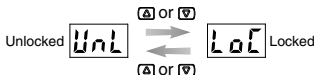
• Lock setting

- 1 Keep the **[S]** button pressed for 5 seconds or longer in the measurement mode.

"UnL" is then displayed.



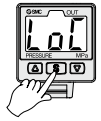
- 2 Press the **[▲]** or **[▼]** button to select the lock "LoC".



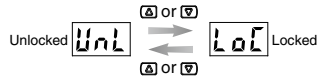
- 3 Press the **[S]** button to set the selection.

• Unlock setting

- 1 Keep the **[S]** button pressed for 5 seconds or longer in the measurement mode. "LoC" is then displayed.



- 2 Press the **[▲]** or **[▼]** button to select the unlock "UnL".



- 3 Press the **[S]** button. You are prompted to enter the security code.

For details about how to enter the security code, refer to "Security code entering/changing procedure" described below.



- 4 When the secret code is correct, "UnL" is displayed. Press any of the **[▲]**, **[S]**, and **[▼]** buttons. The key is unlocked to return to the measurement mode.

If the security code is incorrect, "FAL" is displayed and you are prompted to enter the security code again. If the security code entry is continuously failed three times, "LoC" is displayed to return to the measurement mode.

Changing of security code

With the factory default settings, the security code is set at "000", but it can be changed to a desired value.

<Operating procedure>

- 1 Make the lock setting (described on the left). After setting, make the unlock setting (steps 1 to 3 shown above).

- 2 When "UnL" is displayed, keep the **[S]** and **[▼]** buttons pressed at the same time for 5 seconds or longer. "000" is displayed, and then you are prompted to change the security code.

For details about how to enter the security code, refer to "Security code entering/changing procedure" described below.

After a desired security code has been entered completely, the set security code is displayed.

- 3 After checking, press the **[S]** button.

The mode returns to the measurement mode.

At this time, when pressing the **[▲]** or **[▼]** button, the security code is not changed and you are prompted to change the security code again.

• Security code entering/changing procedure

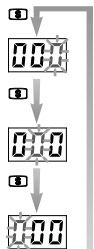
The 1st digit starts blinking.

Press the **[▲]** or **[▼]** button to set the numeric value.

Press the **[S]** button. The numeric value at the next digit starts blinking. (When pressing the **[S]** button at the most significant digit, the 1st digit then starts blinking.)

After a desired security code has been entered completely, keep the **[S]** button pressed for 1 second or longer.

(If no key is operated for 30 seconds or longer during security code entry/change operation, the mode will return to the measurement mode automatically.)



LLB1 Series

Pressure Switch



Model

PSE510 - R06

• Piping specifications

R06 | ø6 reducer

• Pressure specifications

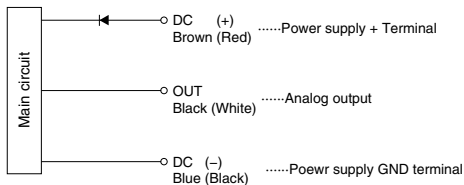
0 | For high-pressure (0 to 1 MPa)

Specifications

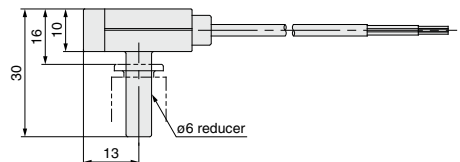
Model		PSE510-06
Operating pressure range		0 to 1 MPa
Maximum operating pressure		1 MPa
Fluid		Air/Non-corrosive gas
Output specifications		Analog output (1 to 5 V Load impedance: 10 kΩ or more)
Power supply voltage		12 to 24 VDC (Ripple ±10% or less)
Current consumption		10 mA or less
Operating temperature range		0 to 50°C (No condensation)
Temperature characteristics (Based on 25°C)	25±10°C	±1%F.S. or less
	0 to 50°C	±1.5%F.S. or less
Repeatability		±0.3%F.S. or less
Withstand voltage		1000 VAC 50/60 Hz for 1 min. between external terminal and case
Insulation resistance		2 MΩ (500 VDC measured via megohmmeter) between external terminal and case
Vibration resistance		10 to 500 Hz Pulse width 1.5 mm or acceleration 98 m/s ² (at the smaller vibration) to X, Y, Z direction (2 hours)
Impact resistance		980 m/s ² to X, Y, Z direction (3 times for each direction)
Enclosure		IP40

Internal Circuit

Lead wire colors inside () in the internal circuit of the contact protection box are those prior to conformity with IEC standards.



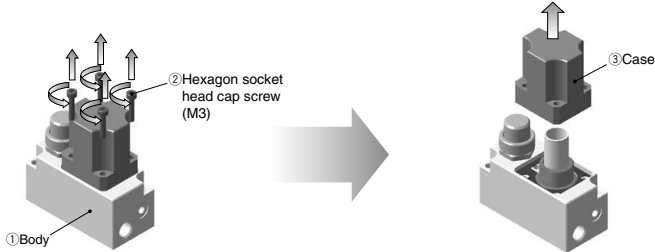
Dimensions



Element Replacing Procedure

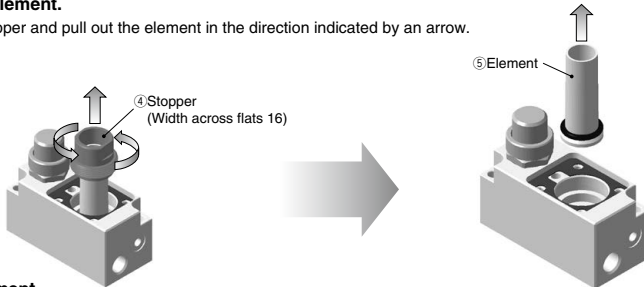
1. Remove the case.

- Remove the hexagon socket head cap screws (4 locations) that secure the case and pull out the case in the direction indicated by an arrow.
- To remove the hexagon socket head cap screws, use the hexagon wrench for M3 (width across flats, 2.5).



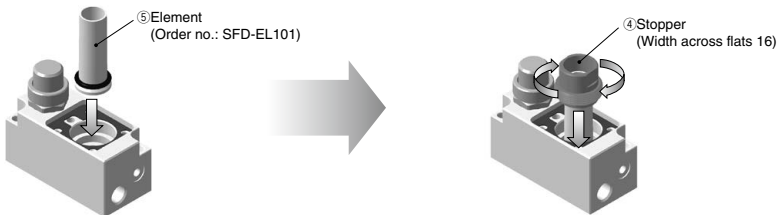
2. Remove the element.

- Take out the stopper and pull out the element in the direction indicated by an arrow.



3. Mount an element.

- Mount a new element.
- Lightly screw in the stopper by hand and tighten it with a tool such as spanner until it is no longer turned.



4. Mount the case.

- Mount the case in the direction indicated by an arrow and secure it with the hexagon socket head cap screws (4 locations).
- To tighten the hexagon socket head cap screws, use the hexagon wrench for M3 (width across flats, 2.5).
- *Tightening torque 0.6 to 1 N·m

