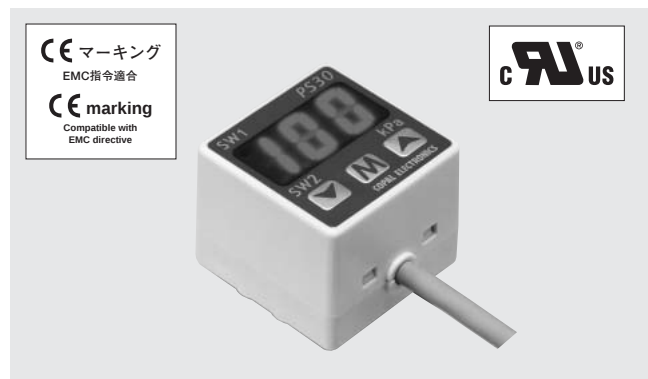


PRESSURE SWITCHES WITH GAUGE

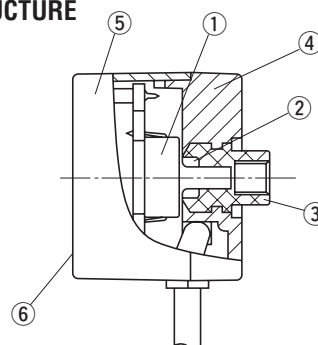
PS30



FEATURES

- Optimum for pneumatic equipment and semiconductor manufacturing equipment
- Larger size display and high luminance LED for best visibility
- Eight switch output modes
- Low consumption by nondisplay mode

INTERNAL STRUCTURE



	Part name	Material
①	Pressure transducer	P-2000
②	“O” ring	Fluoro-rubber
③	Pressure port	Brass (Ni-plated)
④	Base	ABS (Acrylonitrile-butadiene-styrene)
⑤	Housing	
⑥	Panel sheet	Polyester

MODEL NUMBER DESIGNATION

P S 3 0 - 1 0 2 R - N

Series name

Rated pressure range

102R : -100 ~ 100 kPa

103R : -0.1 MPa ~ 1.00 MPa

Switch output interface

N : NPN open collector

P : PNP open collector

LIST OF MODEL NUMBERS

Switch output interface	Pressure reference	Gauge	
	Rated pressure range	-100 ~ 100 kPa	-100 ~ 1000 kPa
NPN		PS30-102R-N	PS30-103R-N
PNP		PS30-102R-P	PS30-103R-P

※Please refer to the LIST OF MODEL NUMBERS when placing orders.

PS30

PRESSURE SWITCHES WITH GAUGE

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of $25 \pm 5^\circ\text{C}$ and excitation voltage of 24 V DC.

Item		Model number	PS30	
			102R	103R
General specifications	Pressure reference		Gauge	
	Rated pressure range	kPa	– 100 ~ 100	– 100 ~ 1000
	Maximum pressure	kPa	200	1500
	Break-down pressure	kPa	500	2000
	Operating temp. range	$^\circ\text{C}$	– 10 ~ 50	
	Compensated temp. range	$^\circ\text{C}$	0 ~ 50	
	Thermal error		$\pm 3\%$ F.S. (0 ~ 50 $^\circ\text{C}$)	
	Operating humidity	%RH	35 ~ 85 (No condensation)	
	Storage temp.	$^\circ\text{C}$	– 20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum)	
	Pressure medium		Non-corrosive gases	
	Insulation resistance	M Ω minimum	100 (DC 500 V)	
	Dielectric strength		500 V AC, 60 s (Leakage current 1 mA maximum)	
	Pressure port		M5 female screw, “O” ring groove (P8)	
	Net weight	g	Approx. 60 (Including 1.5 m cable)	
Power	Supply voltage	V DC	12 ~ 24 V $\pm 10\%$ (ncluding ripple voltage)	
	Consumption current	mA maximum	40	
Display	Display element		LED (2 and 1/2 digit)	
	Rated display range	kPa MPa	– 100 ~ 100 —	— – 0.10 ~ 1.00
	Display accuracy		$\pm 1\%$ F.S.	
	Resolution		1 count	
Switch output	No. of outputs		2	
	Output interface		Open collector output (NPN or PNP)	
	Display		Output 1 (SW1), Output 2 (SW2) Light on when output is ON.	
	Repeatability	%F.S.	± 0.3 maximum	
	Switch hysteresis		0 ~ 30 counts (Adjustable)	
	Switching capacity		30 V DC 100 mA maximum Short-circuit protection	
	Residual voltage	V maximum	1.2 V (NPN), 2.2 V (PNP)	
	Response	ms	Approx 5, 25, 250 (Adjustable)	

ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Permissible change
Vibration	10 ~ 500 Hz, 98.1 m/s ² or 1.5 mm P-P, 3 directions for 2 hours each	$\pm 2\%$ F.S. maximum after test ※1
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure、10 ⁶ cycles	
Moisture resistance	40 $^\circ\text{C}$, 90 ~ 95 %RH, 240 hrs.	
EMC	EMI : EN55011: 2007, A2 : 2007 Group 1, class B EMS : EN61326-1 : 2006 Table 2	Switch operating pressure : $\pm 5\%$ F.S., maximum during tset ※1

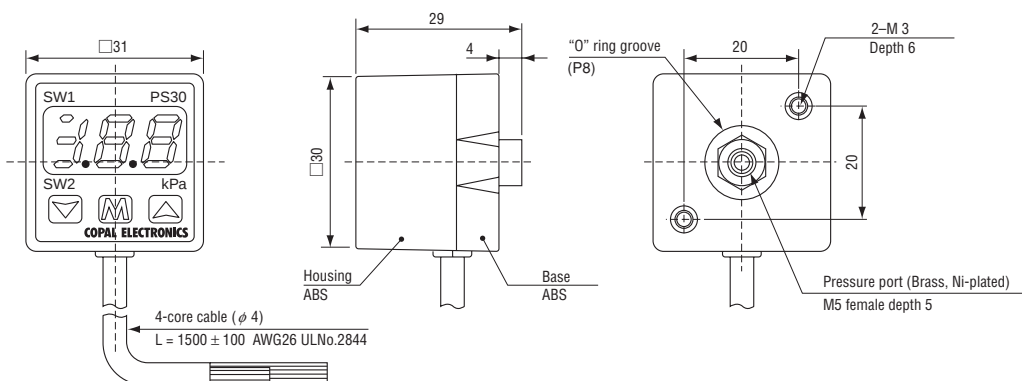
※1 Change in the pressure indication, switch operating points.

PS30

PRESSURE SWITCHES WITH GAUGE

OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit : mm)

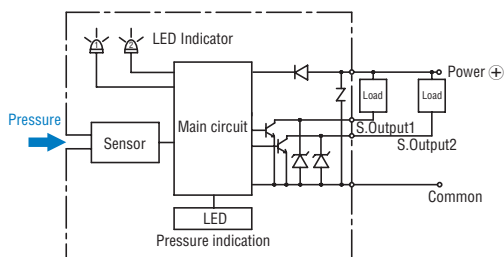


PS30

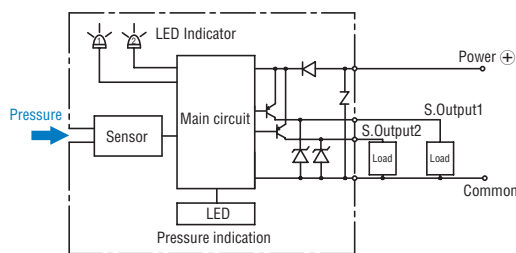
Wire color	Connection
Brown	Power ⊕
Black	Switch output 1
White	Switch output 2
Blue	Common

INTERNAL ELECTRICAL SCHEMATICS

● NPN output type



● PNP output type



PRESSURE UNIT SETTING

Please refer to the right list.

(Note) Diagonal column : No unit can be selected due to resolution and number of digits.

Selection number	Pressure unit	Pressure range			
		102R		103R	
		Display multiplier	Display range	Display multiplier	Display range
0	kPa	×1	−100 ~ 100		
1	MPa			×1	−0.10 ~ 1.00
2	cmHg	×0.75	−75 ~ 75		
3	bar	×0.01	−1.00 ~ 1.00	×10	−1.0 ~ 10.0
4	psi	×0.145	−14.5 ~ 14.5	×145	−14 ~ 145

SWITCH OUTPUT MODE

Output		SW 1				SW 2			
Mode		Separate		Window comparator		Separate		Window comparator	
Operation		HI	LO	A	B	HI	LO	A	B
Selection number	0	○				○			
	1	○					○		
	2		○			○			
	3		○				○		
	4			○				○	
	5			○				○	○
	6				○			○	
	7				○			○	○
		Setting 1 Note 1		Lower limit : Setting 1 Upper limit : Setting 1 Note 1		Setting 1 Note 1		Lower limit : Setting 1 Upper limit : Setting 1 Note 2	

Separate mode	Window comparator mode
(HI operation) (LO operation) $P1 \leq P2$ or $P1 \geq P2$ P1 : Setting 1, P2 : Setting 2 H : Switch hysteresis	(A operation) (B operation) $P1 \leq P2 + 2H$

(Note 1) In the Separate Mode, setting 1 corresponds to SW1, and Setting 2 corresponds to SW2.

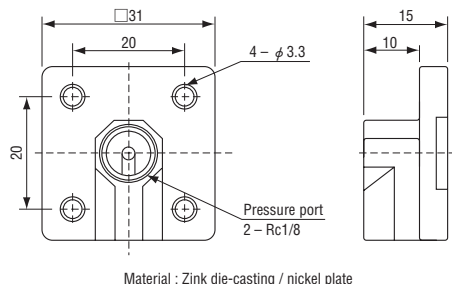
(Note 2) In the Window Comparator Mode, the minimum value for SW1 and SW2 corresponds to Setting 1 and the maximum value corresponds to Setting 2.

PS30

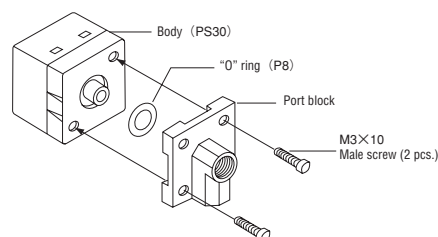
PRESSURE SWITCHES WITH GAUGE

HOW TO MOUNT OPTIONAL ACCESSORIES (Sold separately)

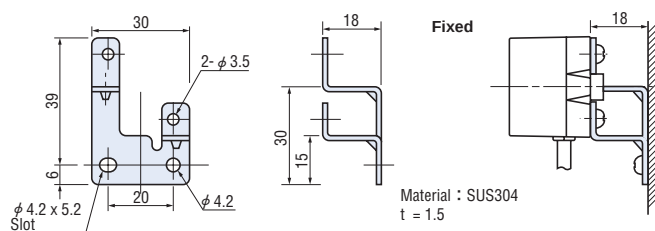
Port block



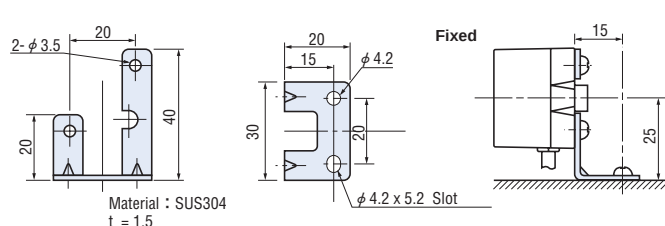
How to mount port block



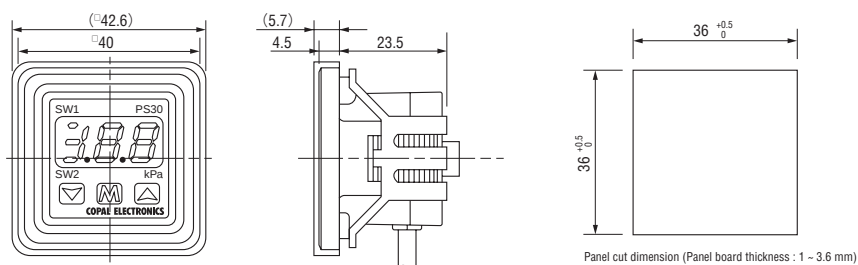
Rear panel mounting bracket



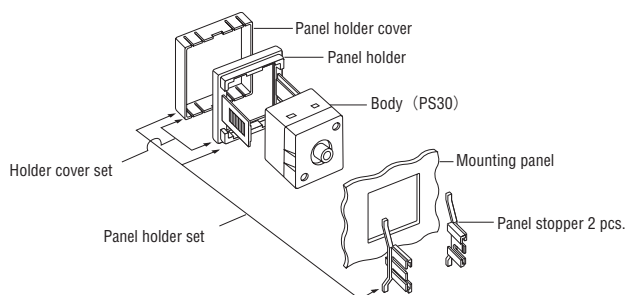
Rear panel mounting bracket



Panel mounting bracket (Option)



How to mount panel holder cover set



Name	Description	Contents
ACPG-001	Rear panel bracket set	Rear panel bracket and M3 x 4 male screw (2 pcs.)
ACPG-002	Panel bracket set	Panel bracket and M3 x 4 male screw (2 pcs.)
ACPG-003	Panel holder set	Panel holder cover Panel holder Panel stopper (2 pcs.)
ACPG-004	Holder cover set (For protecting operating panel)	Panel holder cover Panel holder
ACPG-005	Port block	Port block "O" ring (P8) M3 x 10 Male screw 2 pcs. Seal screw 1 pc.