

For your safety, please read the following before using.

- ① Do not use corrosive or flammable gas or liquid with this product.
- ② Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- ③ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- ④ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
- ⑤ Do not use in environment containing steam or oil vapor.
- ⑥ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- ⑦ Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
- ⑧ Sensors at end-of-life must be disposed of in accordance with E-Waste regulations of the country/region, NOT disposed of with regular garbage.

A SPECIFICATIONS

MODEL		KP30C (Compound Pressure)	KP30V (Vacuum Pressure)	KP30P (Positive Pressure)
Rated pressure range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
Set pressure range		-100.0 ~ 100.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
Withstand pressure		300 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Set pressure resolution	kPa	0.1		—
	MPa	—		0.001
	kgf/cm ²	0.001		0.01
	bar			0.01
	psi	0.01		0.1
	inHg			—
	mmHg	1		—
	mmH ₂ O			—
Power supply voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current consumption		≤ 60mA		
Switch output		2 NPN : open collector 2 outputs Max. Load Current : 100 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1 V	2 PNP : open collector 2 outputs Max. Load Current : 100 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1 V	
Repeatability		± 0.2 % F.S. ± 1 digit		
Hysteresis	Hysteresis Mode	Adjustable		
	Window Comparator Mode	Fixed (3 digits)		
Response time		≤ 2.5ms (chattering-proof function: 24ms, 192ms and 768ms selectable)		
Output short circuit protection		Yes		
Display		3 ½ digital, 7 segment LED display (Red) (Sampling rate : 5 times / sec.)		
Indicator accuracy		±2% F.S. ±1 digit (ambient temperature : 25±3°C)		
Switch on indicator		Green Indicator : OUT1 & Red Indicator : OUT2		
Analog output *(Only type KP30□-01-□, KP30□-03-□)		Output voltage: 1 ~ 5V ±5%F.S. (within rated pressure range) Linearity: ±1% F.S.	Output voltage: 1 ~ 5V ±2.5%F.S. (within rated pressure range) Linearity: ±1% F.S.	
Environment	Enclosure	IP40		
	Ambient temp. range	Operation : 0 ~ 50 °C, Storage : -20 ~ 60 °C (No condensation or freezing)		
	Ambient humidity range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand voltage	1000V AC in 1-min (between case and lead wire)		
	Insulation resistance	≥ 50 MΩ (at 500V DC, between case and lead wire)		
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 55 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z		
	Shock	980 m/s ² (100 G), 3 times each in direction of X, Y and Z		
Temperature characteristic		±2%F.S. of detected pressure (25°C) at temp. (Range of 0 ~ 50°C _		
Port size		F1:R1/8", M5 ; F2:NPT1/8", M5 ; F3: G1/8"(BSPP), M5		
Lead wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 5 cores (KP30□ - 01 / 03) ; Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 4 cores (KP30□ - 02 / 04)		
Weight		Approx. 67g (with 2 meter lead wire), Approx. 35g (with M8, 4Pin male connector)		

B ORDERING INFORMATION

K P 3 0 C - 0 1 - F 1 -

Pressure Range

C : Compound (-100.0 ~ 100.0 kPa)
V : Vacuum (10.0 ~ -101.3 kPa)
P : Positive (-0.100~1.000 MPa)

Output Specifications

01 : 2 NPN output & Analog output (1~5V)
02 : 2 NPN output
03 : 2 PNP output & Analog output (1~5V)
04 : 2 PNP output

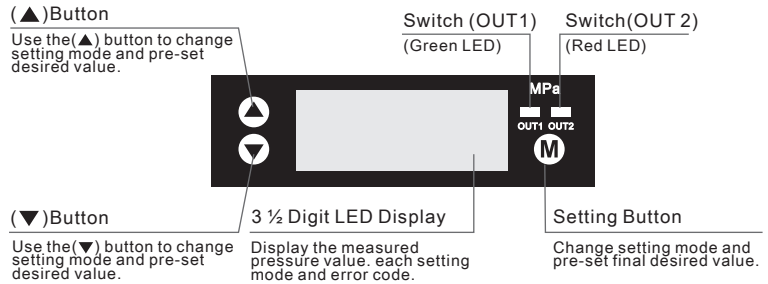
Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", M5
F3 : G1/8"(BSPP), M5

Optional Parts

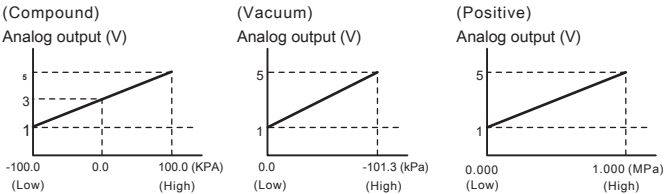
Blank : With 2 meter cable
QD : With M8, 4Pin male connector
*(Only type KP30□-02-□, KP30□-04-□)

C PANEL DESCRIPTION

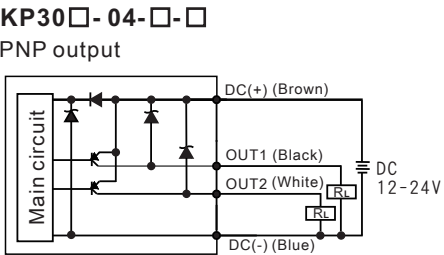
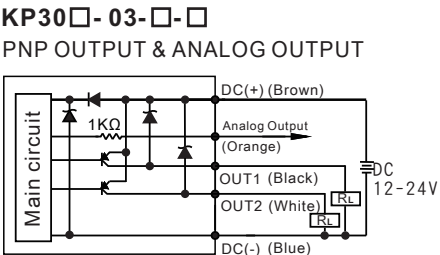
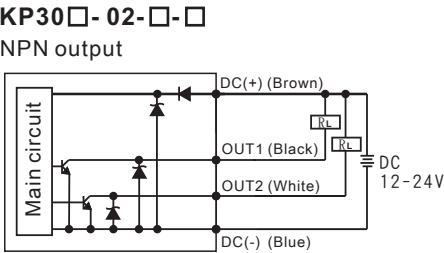
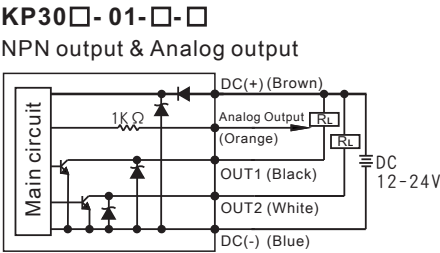


D ANALOG OUTPUT

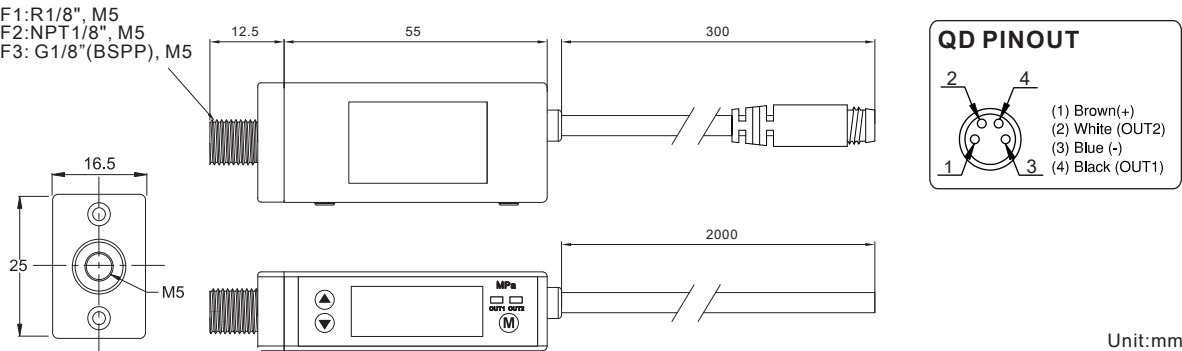
Analog output range 1 to 5V, proportional to the pressure range.



E OUTPUT CIRCUIT WIRING DIAGRAMS

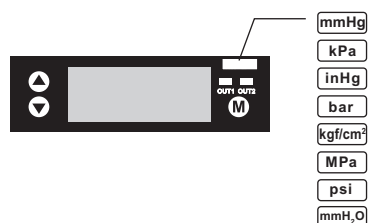


F DIMENSIONS



G CHANGE PRESSURE UNIT TAG

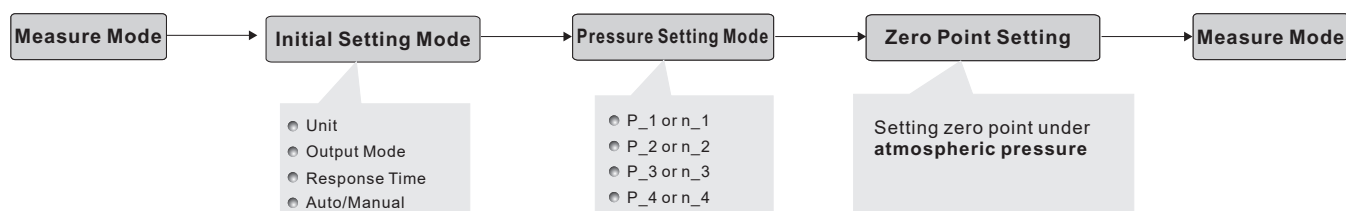
When the pressure setting is not kPa or MPa, please remove the pressure unit tag and place the selected tag on the indicated area of the faceplate to assure the pressure unit is not misemployed and that setting error does not occur.



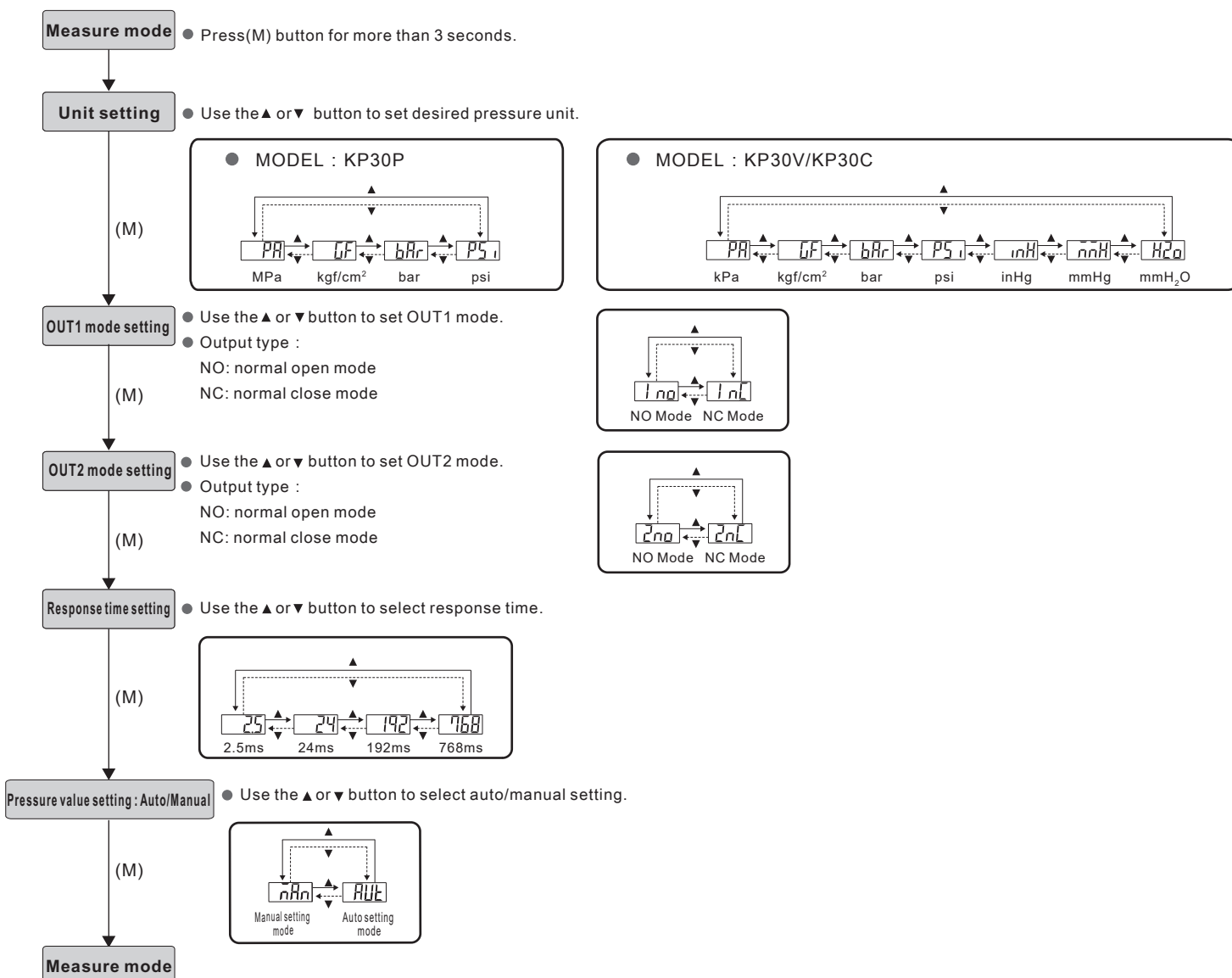
From \ To	Pa	kPa	MPa	kgf/cm ²	mmHg	psi	bar	inHg	mmH ₂ O
1 Pa	1	0.001	0.000001	0.000010197	0.00750062	0.000145038	0.00001	0.0002953	0.101968
1 kPa	1000.000	1	0.001000	0.010197	7.500616	0.145038	0.010000	0.2953	101.9689
1 MPa	1000000	1000	1	10.197	7500.616	145.038	10	295.2998	101968.9
1 kgf/cm ²	98066.5	98.0665	0.0980665	1	735.559	14.2233	0.980665	28.95979	10000.20
1 mmHg	133.32	0.13332	0.001333	0.0013595	1	0.019336	0.0013332	0.039370	13.5954
1 psi	6895	6.895	0.006895	0.07031	51.7157	1	0.06895	2.036074	703.07
1 bar	100000.0	100.0000	0.100000	1.01972	750.062	14.5038	1	29.52998	10196.89
1 inHg	3386.388	3.386388	0.003386	0.034530	25.40000	0.491141	0.033863	1	345.324
1 mmH ₂ O	9.80665	0.00980	-	0.000099	0.0735578	0.00142	0.000098	0.002895	1

【NOTE : 】 When using a unit mmH₂O, please multiply display value by 100.

H SETTING STEPS



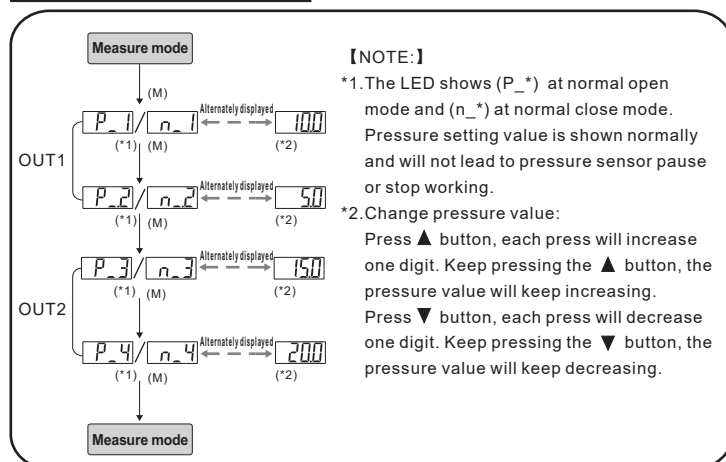
I INITIAL SETTING MODE



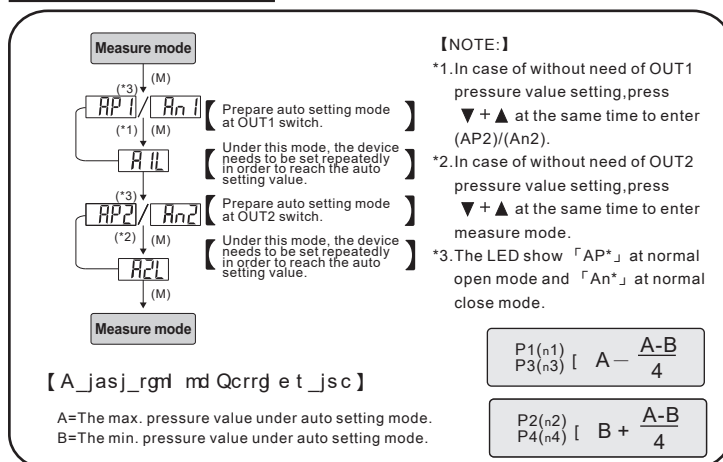
J PRESSURE SETTING MODE

Select auto/manual setting mode during initial set-up.

Manual setting mode



Auto setting mode



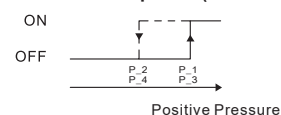
K OUTPUT TYPE

Hysteresis Mode : $P1(n1) > P2(n2)$
 $P3(n3) > P4(n4)$

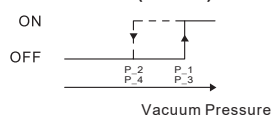
Output hysteresis value can be pre-set.

Normal open mode

Positive/Compound(KP30P/KP30C)

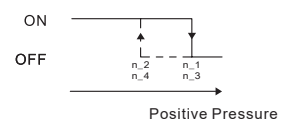


Vacuum (KP30V)

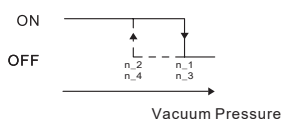


Normal close mode

Positive/Compound(KP30P/KP30C)



Vacuum (KP30V)



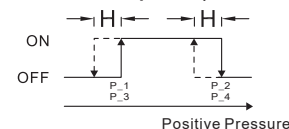
【Note :】 When hysteresis mode setting is within 2 digits, if the input and pre-set pressure is quite near, pressure sensor output might cause chattering.

Window comparator mode : $P1(n1) < P2(n2)$
 $P3(n3) < P4(n4)$

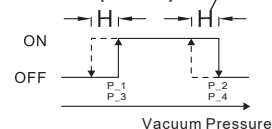
Within pressure setting range, pressure sensor output can be ON or OFF.

Normal open mode

Positive/Compound(KP30P/KP30C)

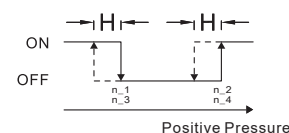


Vacuum (KP30V)

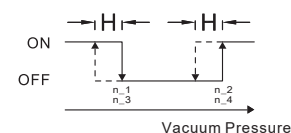


Normal close mode

Positive/Compound(KP30P/KP30C)



Vacuum (KP30V)



【Note :】 Hysteresis is fixed in 3 digits.
Pressure value level setting : At least 6 digits.

L ZERO POINT SETTING/THE MAX.& MIN. DISPLAY MODE

Zero point setting :

- Press the ▼ + ▲ button at the same time until the "00" is shown. Release the button to end zero setting.

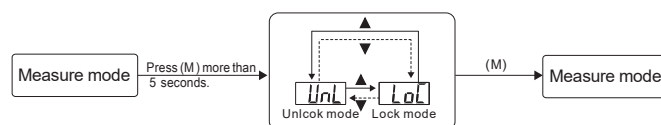
The Max. value display mode :

- Press ▲ button 2 seconds to enter the max. value mode, pressure sensor will detect the max. value and keep display.
- Press ▲ button 2 seconds to return to measure mode.

The Min. value display mode :

- Press ▼ button 2 seconds to enter the min. value mode, pressure sensor will detect the min. value and keep display.
- Press ▼ button 2 seconds to return to measure mode.

M KEY LOCK/UNLOCK MODE



- Use ▼ or ▲ to select key lock/unlock mode.
- Key lock mode can prevent operation mistakes.

N ERROR CODE INSTRUCTION

Error Name	Error code	Error instruction	Troubleshooting
Excess load current error	OUT1 $Er1$	Excess load current of 100 mA	Turn power off and check the cause of overload current or lower the current load under 80 mA, then restart.
	OUT2 $Er2$		
Residual pressure error	$Er3$	During zero reset, ambient pressure is over $\pm 3\%$ F.S.	Change input pressure to ambient pressure and perform zero reset again.
Applied pressure error	---	The applied pressure is excess the upper limit of pressure setting.	Adjust the pressure within applied pressure range.
	---	The applied pressure is excess the lower limit of pressure setting.	
System error	$Er4$	Internal data error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
	$Er6$	Internal system error	
	$Er7$	Internal data error	
	$Er8$	Internal system error	