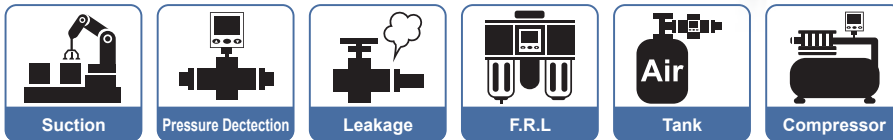


# KP45 SERIES

# IP65 Pressure Sensor

## Features

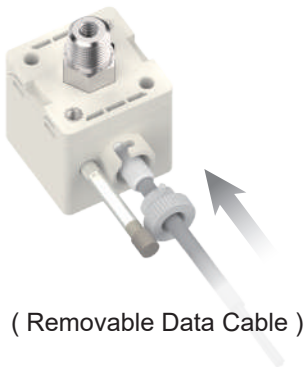
- 2-color digital LCD display
- Copy function
- Selectable pressure unit :  
kPa 、 MPa 、 kgf / cm<sup>2</sup> 、 bar 、 psi 、 inHg
- IP65 enclosure



## Features Highlight

### 1 Quick Installation

- Save installation time
- Easy removal



### 2 Copy Setting

- Avoid setting errors
- Reduce setting time



### 3 Easy Unit Identification

- Unit conversion easy to read



### 4 2-Color Display

- User selectable color mode, for different conditions use



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

### 5 IP65 Compliance



### 6 Environmental Protection Design

- RoHS Compliance / Without Harmful Substance



## Specifications

MODEL		KP45C	KP45V	KP45P
		Compound	Vacuum	Positive
<b>Rated Pressure Range</b>		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
<b>Set Pressure Range</b>		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
<b>Withstand Pressure</b>		300 kPa		1.5 MPa
<b>Fluid</b>		Filtered air, Non-corrosive / Non-flammable gas		
<b>Set Pressure Resolution</b>	kPa	0.1		-
	MPa	-		0.001
	kgf / cm <sup>2</sup>	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
<b>Power Supply Voltage</b>		12 ~ 24 V DC ± 10 %, Ripple ( P-P ) ≤ 10 % ( UL class 2 )		
<b>Current Consumption</b>		≤ 40 mA ( with no load )		
<b>Switch Output</b>		2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
<b>Repeatability</b>		± 0.2 % F.S. ± 1 digit		
<b>Hysteresis</b>	One Point Set Mode	Adjustable ※1		
	Hysteresis Mode			
	Window Comparator Mode			
<b>Response Time</b>		≤ 2.5 ms ( Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable )		
<b>Output Short Circuit Protection</b>		Yes		
<b>Display</b>		3 ½ digital, 7 segment LCD display ( Red / Green / Orange ) ( Sampling rate : 5 times / sec. )		
<b>Indicator Accuracy</b>		± 2 % F.S. ± 1 digit ( Ambient temperature : 25 ± 3 °C )		
<b>Switch on Indicator</b>		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2		
<b>Analog Output ( Voltage Output ) ※2</b>		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. ( within rated pressure range ) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ		
<b>Analog Output ( Current Output ) ※3</b>		Output Current : 4 ~ 20 mA ± 2.5 % F.S. ( within rated pressure range ) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω		
<b>Environment</b>	<b>Enclosure</b>	IP65 ※4		
	<b>Ambient Temp. Range</b>	Operation : 0 ~ 50 °C, Storage : -10 ~ 60 °C ( No condensation or freezing )		
	<b>Ambient Humidity Range</b>	Operation / Storage : 35 ~ 85 % RH ( No condensation )		
	<b>Withstand Voltage</b>	1000 V AC in 1-min ( between case and lead wire )		
	<b>Insulation Resistance</b>	≥ 50 MΩ ( at 500 V DC, between case and lead wire )		
	<b>Vibration</b>	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		
	<b>Shock</b>	100 m/s <sup>2</sup> ( 10 G ), 3 times each in direction of X, Y and Z		
<b>Temperature Characteristic</b>		± 2 % F.S. of detected pressure ( 25 °C ) at temp. ( Range of 0 ~ 50 °C )		
<b>Port Size</b>		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" ( BSPP ), M5 F1C : Rc1/8" ; F2C : NPT1/8" ; F3C : G1/8" ( BSPP )		
<b>Lead Wire</b>		Ø4 Oil-resistance cable ( PVC ) - 26 AWG ( 0.15 mm <sup>2</sup> ) - 5 cores		
<b>Weight ( with 2 Meter Lead Wire )</b>		Approx. 86 g ( Port F1 ~ F3 ) ; Approx. 114 g ( Port F1C ~ F3C )		

### NOTE

※1 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

※2 : If analog voltage output is selected, the analog current output cannot be selected at the same time.

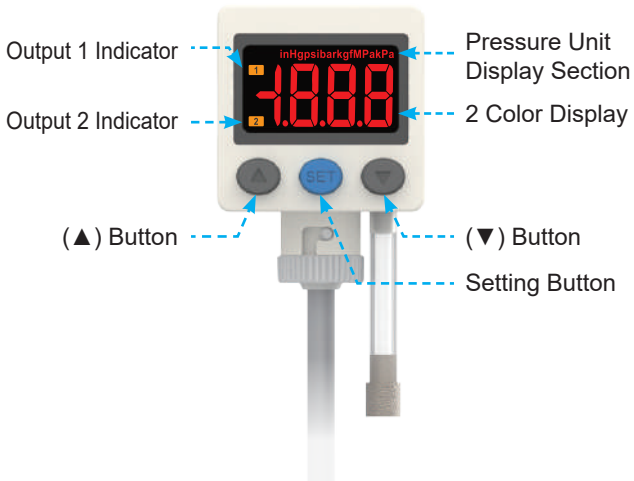
※3 : If analog current output is selected, the analog voltage output cannot be selected at the same time.

※4 : Dustproof protector must be installed to maintain IP65.

# KP45 SERIES

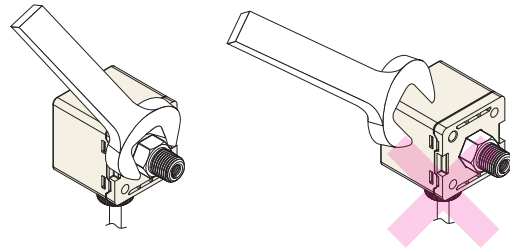
# IP65 Pressure Sensor

## Panel Description



## Installation Precautions

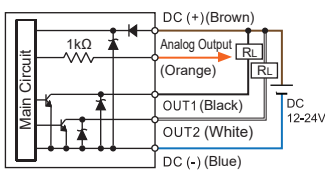
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.



## Circuit Wiring Diagrams

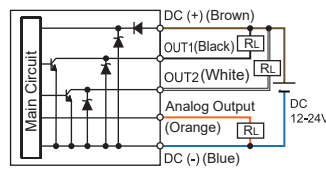
### KP45 □ - 010 - □

2 NPN + Analog Output ( 1 ~ 5 V )



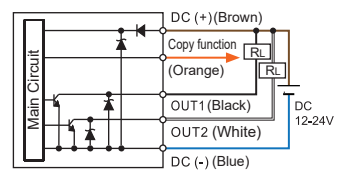
### KP45 □ - 011 - □

2 NPN + Analog Output ( 4 ~ 20 mA )



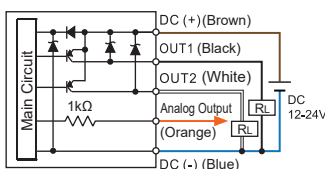
### KP45 □ - 02 - □

2 NPN + Copy Function



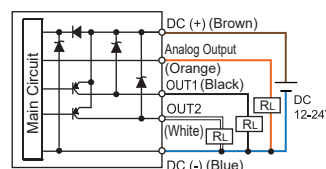
### KP45 □ - 030 - □

2 PNP + Analog Output ( 1 ~ 5 V )



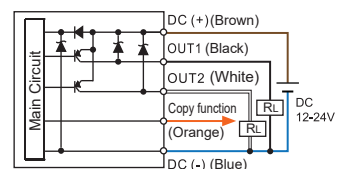
### KP45 □ - 031 - □

2 PNP + Analog Output ( 4 ~ 20 mA )



### KP45 □ - 04 - □

2 PNP + Copy Function



## Ordering Information

**K P 4 5 C - 0 1 0 - F 1**

### Pressure Range

- C : Compound (-101.0 ~ 101.0 kPa)
- V : Vacuum (10.0 ~ -101.3 kPa)
- P : Positive (-0.100 ~ 1.000 MPa)

### Output Specifications

- 010 : 2 NPN Output & Analog Output ( 1 ~ 5 V )
- 011 : 2 NPN Output & Analog Output ( 4 ~ 20 mA )
- 02 : 2 NPN Output & Copy Function
- 030 : 2 PNP Output & Analog Output ( 1 ~ 5 V )
- 031 : 2 PNP Output & Analog Output ( 4 ~ 20 mA )
- 04 : 2 PNP Output & Copy Function

### Pressure Port

- F1 : R1/8", M5 , with external threads
- F2 : NPT1/8", #10-32UNF, with external threads
- F3 : G1/8" ( BSPP ), M5, with external threads
- F1C : Rc1/8", with internal threads
- F2C : NPT1/8", with internal threads
- F3C : G1/8" ( BSPP ), with internal threads

### Optional Parts

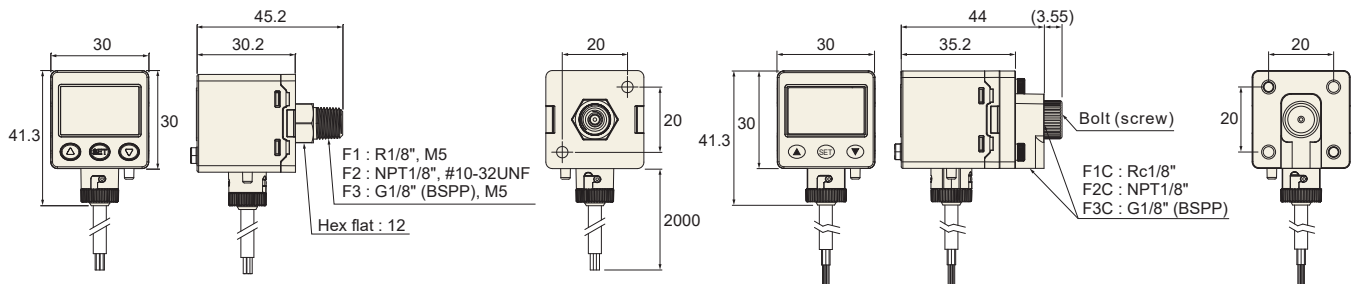
- BT-10 : Mounting bracket ( for Pressure Port F1 ~ F3 )
- BT-11 : Mounting bracket ( for Pressure Port F1 ~ F3 )
- BT-1 : Mounting bracket ( for Pressure Port F1C ~ F3C )
- BT-17 : Mounting bracket ( for Pressure Port F1C ~ F3C )
- PA-E : Panel adapter
- PA-F : Panel adapter + Front protective lid

### Optional Parts

- Mounting Bracket : BT-10 / BT-11 ( For Pressure Port F1 ~ F3 )  
BT- 1 / BT-17 ( For Pressure Port F1C ~ F3C )
- Panel Adapter : PA-E
- Panel Adapter + Front Protective Lid : PA-F

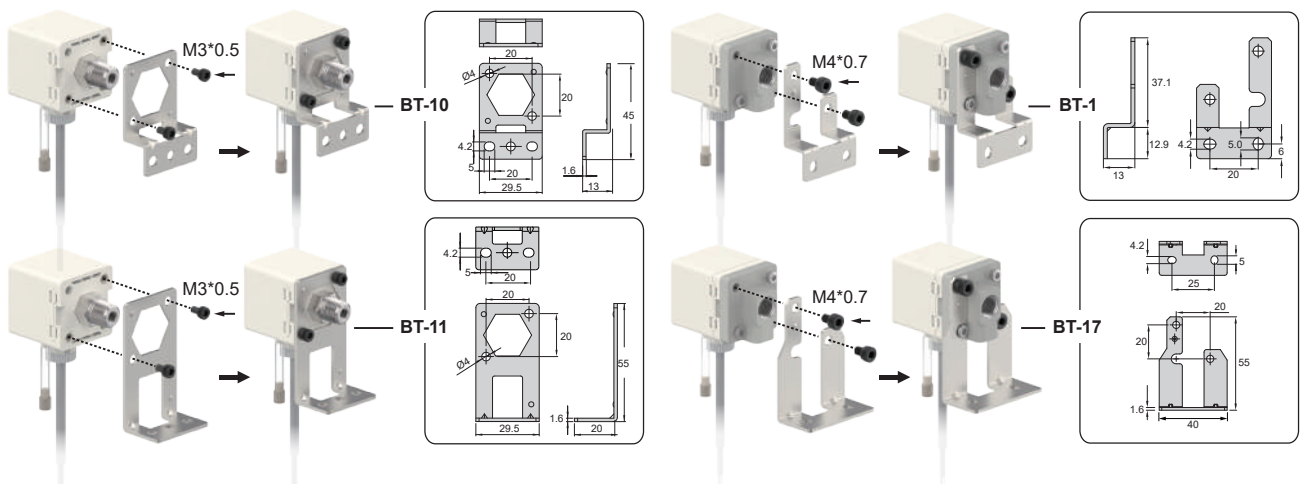


## Dimensions

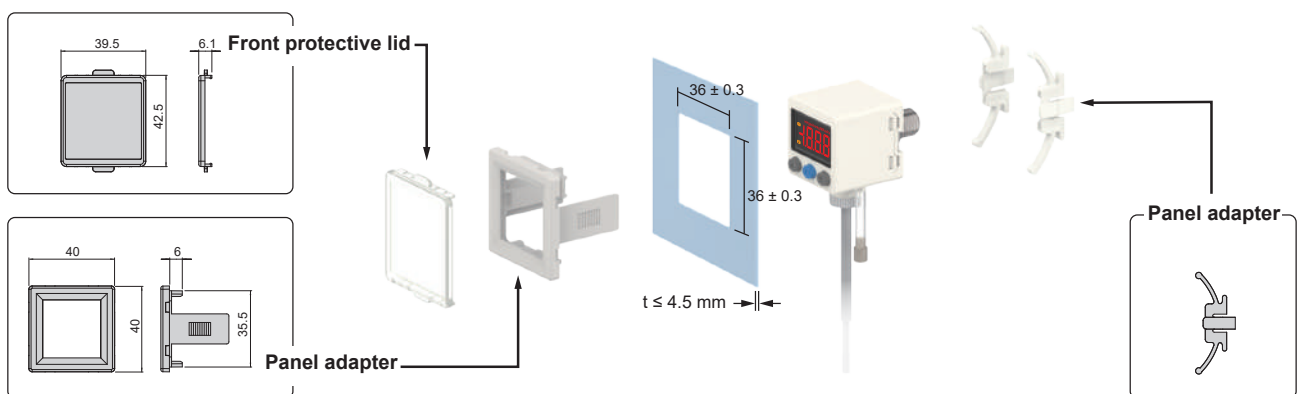


## Optional Parts Dimensions

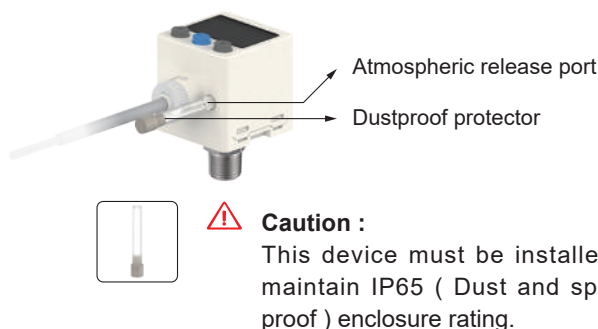
### 1 Mounting Bracket



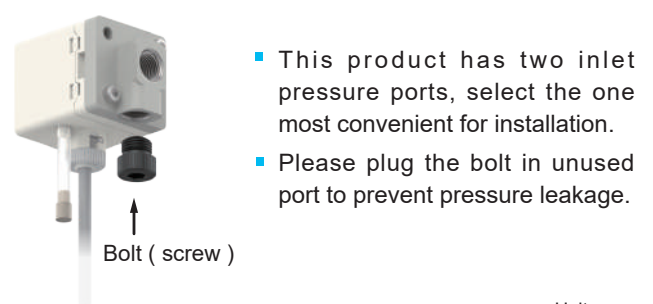
### 2 Panel Mount Adapter + Front Protective Lid



### 3 IP65 Protector



### 4 KP45 Accessory for Pressure Port F1C ~ F3C



Unit : mm