

Digitized Automation for a Changing World

# Delta Multifunction Pressure Sensor DPA / DPB Series



[www.deltaww.com](http://www.deltaww.com)



# Multifunction Pressure Sensor DPA /DPB Series

Implements Large LCD and supports multiple globally adopted pressure units.  
Capable of fast copying the internal parameters to other slaves and collecting real-time pressure data.  
Suitable for mechanical processing, solar energy, electronic components, food packaging, semiconductor and automatic assembly industries



## Various Unit Conversion

Offers 6 kinds of globally adopted pressure units for measurement and display



## Large 3-Color LCD Display

The large LCD with a green, red and orange 3-color LCD display allows users to set the display color according to the ambient environment, such as when the pressure is in the normal range or exceeds the tolerance range. The display's color is orange when in parameter setup mode. This makes it easier for reading and reduces operation errors

## Safety Control Mode

The safety control mode prevents operators from carelessly touching relevant parameters and affecting the operation and production of the equipment

Color for upper /lower limit display  
(green/red)

Parameter set up  
(orange)



DPA/DPB

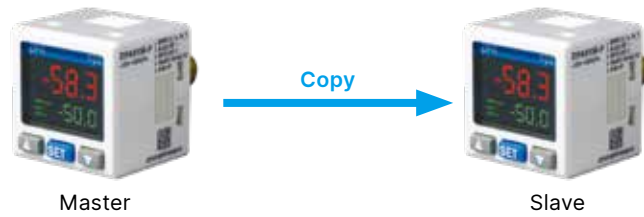


## Standard Multifunction Pressure Sensor DPA Series

- Energy-saving mode
- Fast zero reset
- Analog output function
- RS-485 communication
- Various output modes
- Various unit conversions
- 3 sets of color displays
- 10 sets of output response time setup
- Safety control function
- Easy code display
- Parameter copy function

### Fast Parameter Copy

The DPA Series fast copies the internal parameters to other slaves and saves repeated parameter setup time



### Collect Real-time Pressure Data through RS-485



## Basic Multifunction Pressure Sensor DPB Series

- Various unit conversions
- 10 sets of output response time setup
- Various output modes
- 3 sets of color displays
- Fast zero reset
- Safety control function
- Easy code display



# Specifications

## DPA Series

Power Supply	Voltage range	12 ~ 24 V <sub>DC</sub> ± 10 % no isolation
	Power consumption	40 mA Max.; current output type 60 mA Max.
Interface	(Only for Communication Type)	RS-485
Pressure Measurement	Pressure type	Non-corrosive gas, gauge type
	Measurable range	DPA01: - 100 ~ 100 kPa
		DPA10: - 100 ~ 1,000 kPa
	Max. durable pressure	DPA01: 200 kPa
		DPA10: 1,100 kPa
Measurement accuracy	± 3 % entire process	
Temperature inaccuracy	± 2 % entire process	
Display	Setup display	2-line LCD display, 4 digits for measured value and 3.5 digits for setup display
	Status display	LCD output status display
	Display mode	3 colors for different modes
	Cycle (ms)	250, 500, 1,000
	Pressure Unit	DPA01 (Low-pressure Type): kPa, kgf/cm <sup>2</sup> , bar, psi, mmHg, inchHg DPA10 (High-pressure Type): MPa, kgf/cm <sup>2</sup> , bar, psi, cmHg, inchHg Displays to the first decimal place
Output	Number of outputs	Built-in 2 NPN or PNP transistor digital outputs and 1 analog output
	Transistor output	Max. Durable Pressure 30 V/100 mA, Drain Voltage < 1.5 V
	Analog output	1 ~ 5 V: Min. output load resistance 1,000 Ω
		4 ~ 20 mA: Max. output load resistance 400 Ω; linear inaccuracy < 2 % entire process
	Response time (ms)	2, 4, 10, 30, 50, 100, 250, 500, 1,000, 5,000
Output inaccuracy	Linear inaccuracy: < ± 2 % entire process	
Shock Resistance		10 ~ 550 Hz, 100 mm, 3 axes for 2 hours
Vibration Resistance		Max. 100 m/s <sup>2</sup> , 3 axes 6 directions, 3 times each
Operating Ambient Temperature		0 ~ 50 °C
Storage Temperature		- 20 ~ 65 °C
Altitude		< 2,000 m
Operating Relative Humidity		35 % ~ 80 % RH (non-condensing)

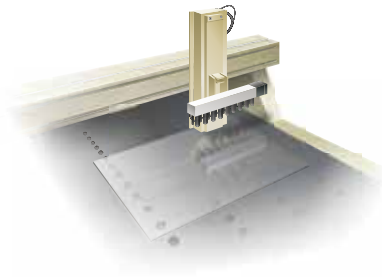
## DPB Series

Power Supply	Voltage range	12 ~ 24 V <sub>DC</sub> ± 10 % no isolation
	Power consumption	Max. 40 mA
Pressure Measurement	Pressure type	Non-corrosive gas, gauge type
	Measurable range	DPB01: -100 kPa ~ 100 kPa; DPB10: -100 kPa ~ 1,000 kPa
	Max. durable pressure	DPB01: 200 kPa; DPB10: 1,500 kPa
Display	Accuracy	± 3 % entire process
	Setup display	2-line LCD display, 4 digits for measured value and 3.5 digits for setup display
Output	Cycle (ms)	100, 250, 500, 1,000
	Number of outputs	Built-in 2 NPN or PNP transistor digital outputs
	Transistor output	Max. durable pressure 30V/100mA, residual voltage 1.5V
Temperature	Response time (ms)	2, 4, 10, 30, 50, 100, 250, 500, 1,000, 5,000
	Ambient humidity	Ambient: 0 ~ 50 °C; Storage: -20 ~ 65 °C
Ambient humidity		35 ~ 80 % RH (non-condensing)

## Applications

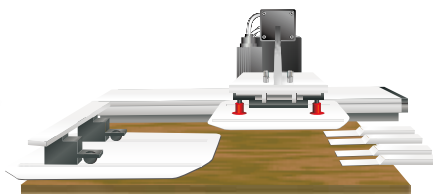
### Mechanical Processing Industry

Mechanical product processing and fixing



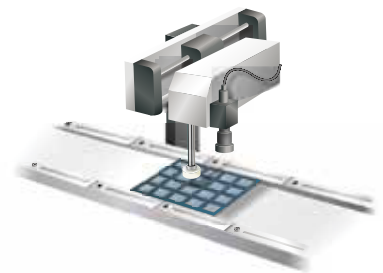
### Solar Energy Industry

Turnkey module lines suction



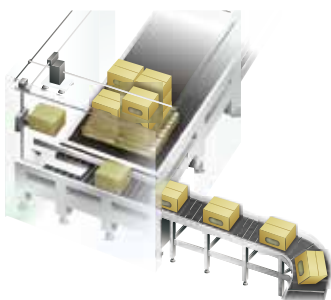
### Electronic Components Industry

IC component suction and confirmation



### Food Packaging Industry

Drinks, can suction and packaging



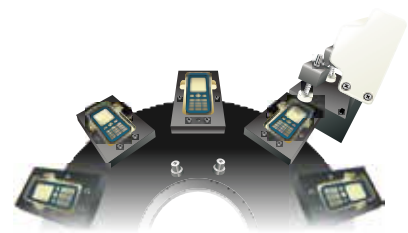
### Semiconductor Industry

Wafer suction and loading



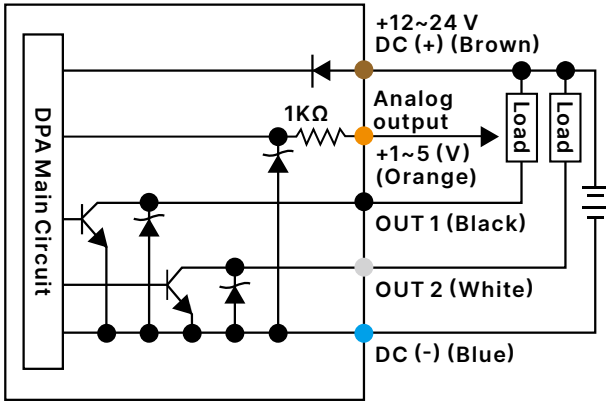
### Automatic Assembly Industry

Automation component assembly and confirmation

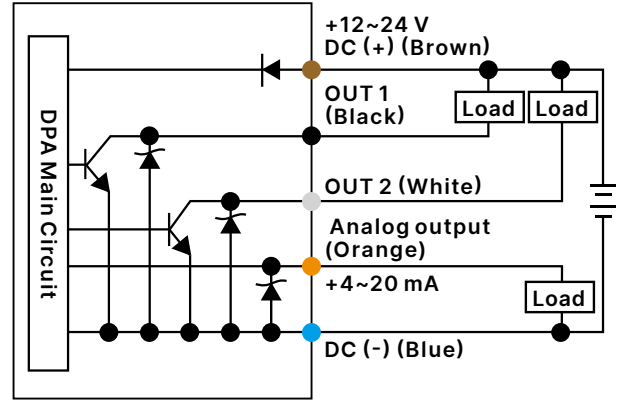


# Various Output Control Modes

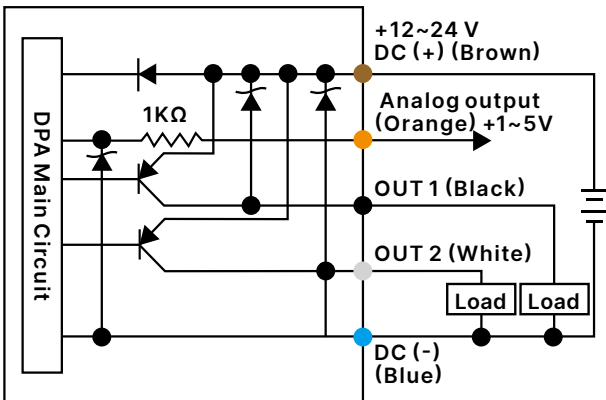
## DPA Series



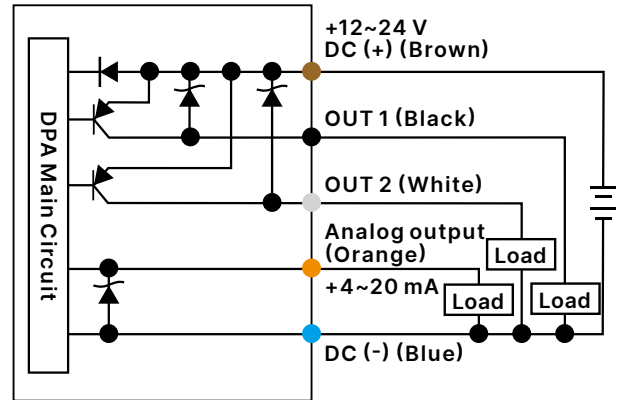
NPN +1 ~ 5V Output



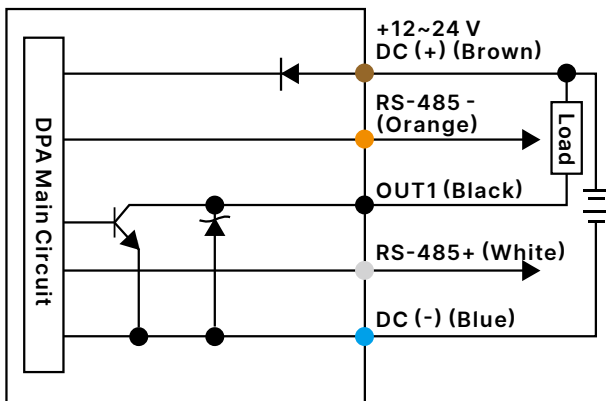
NPN +4 ~ 20mA Output



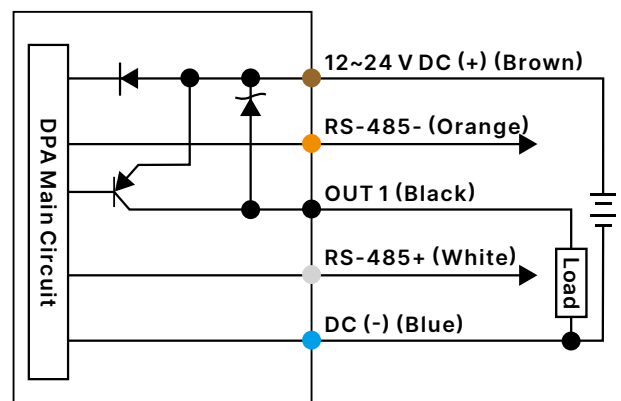
PNP +1 ~ 5V Output



PNP +4 ~ 20mA Output

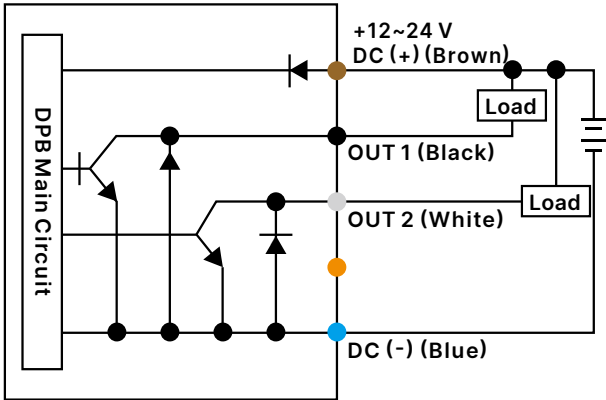


NPN RS-485 Output

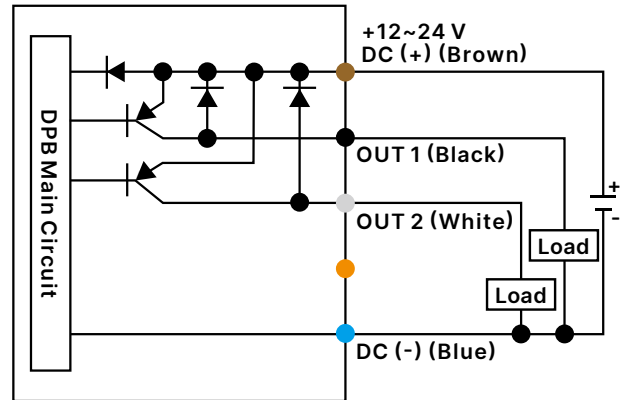


PNP RS-485 Output

## DPB Series



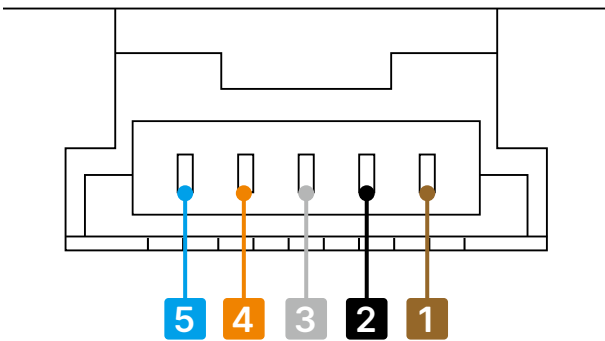
NPN



PNP

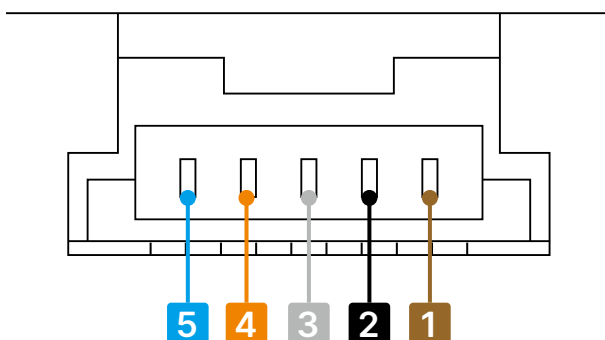
## Terminals

### DPA Series



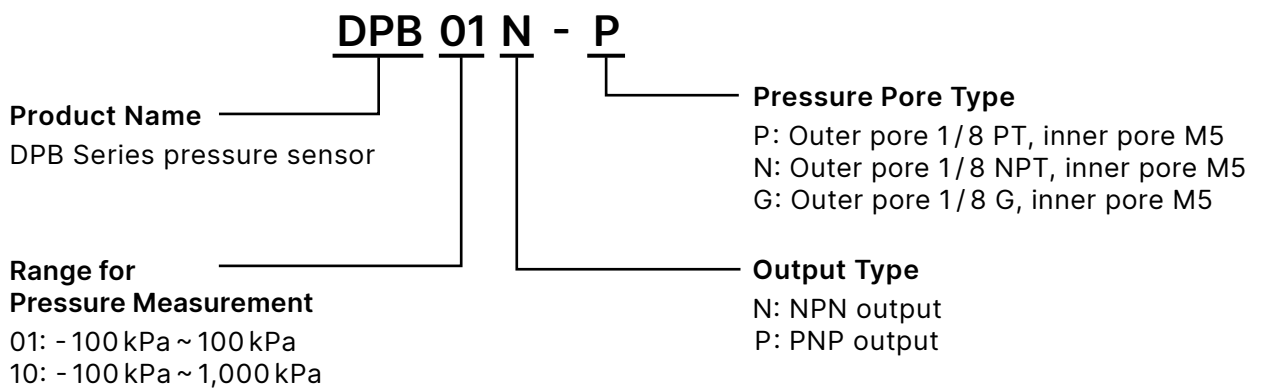
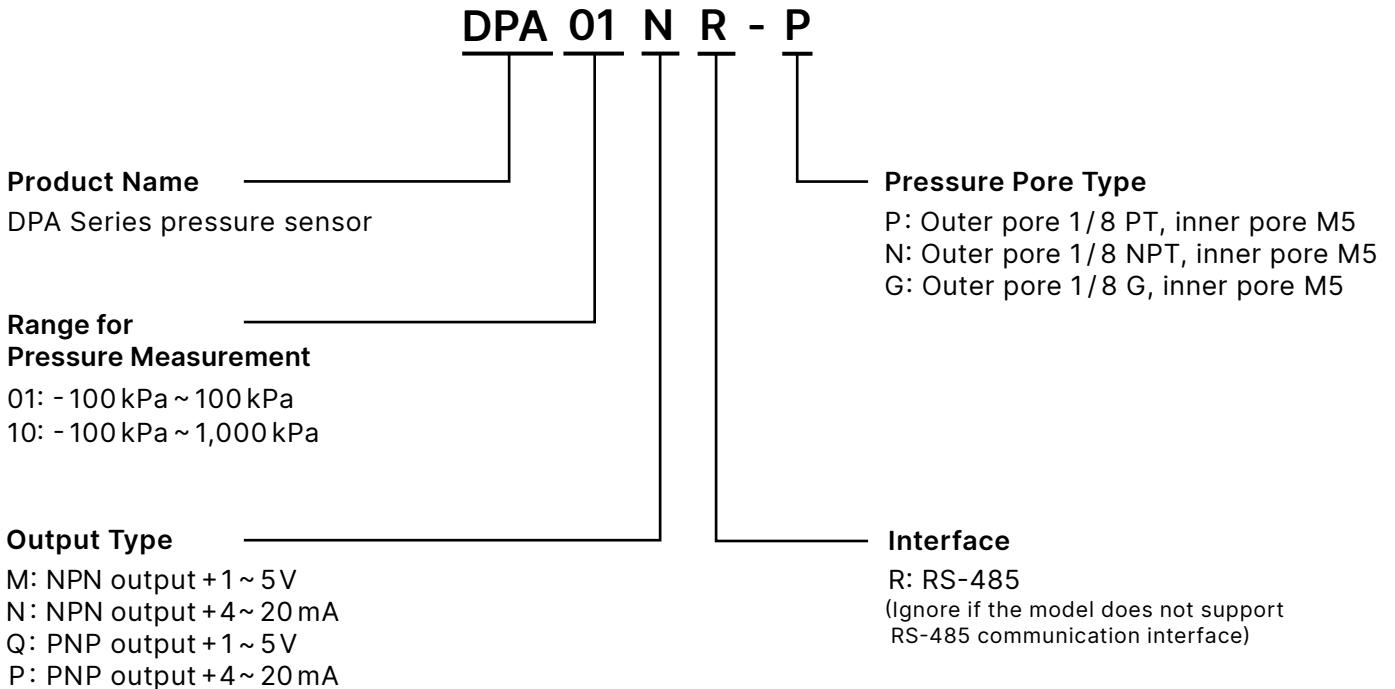
No.	General Model	RS-485 Model
1	Positive power supply input (Brown)	
2	Digital output 1 signal (Black)	
3	Digital output 2 signal (White)	RS-485+ (White)
4	Analog output signal (Orange)	RS-485- (Orange)
5	Negative power supply input (Blue)	

### DPB Series



No.	Standard Models
1	Positive power supply input (Brown)
2	Digital output 1 signal (Black)
3	Digital output 2 signal (White)
4	No function (Orange)
5	Negative power supply input (Blue)

## Ordering Information





# Models Specifications

## DPA Series

-100~100kPa NPN Series Specification	
DPA01M-G	-100~100kPa, NPN, 1~5V output, 1/8G outer port, M5 inner port
DPA01M-N	-100~100kPa, NPN, 1~5V output, 1/8NPT outer port, M5 inner port
DPA01M-P	-100~100kPa, NPN, 1~5V output, 1/8PT outer port, M5 inner port
DPA01N-G	-100~100kPa, NPN, 4~20mA output, 1/8G outer port, M5 inner port
DPA01N-N	-100~100kPa, NPN, 4~20mA output, 1/8NPT outer port, M5 inner port
DPA01N-P	-100~100kPa, NPN, 4~20mA output, 1/8PT outer port, M5 inner port

-100~100kPa PNP Specification	
DPA01Q-G	-100~100kPa, PNP, 1~5V output, 1/8G outer port, M5 inner port
DPA01Q-N	-100~100kPa, PNP, 1~5V output, 1/8NPT outer port, M5 inner port
DPA01Q-P	-100~100kPa, PNP, 1~5V output, 1/8PT outer port, M5 inner port
DPA01P-G	-100~100kPa, PNP, 4~20mA output, 1/8G outer port, M5 inner port
DPA01P-N	-100~100kPa, PNP, 4~20mA output, 1/8NPT outer port, M5 inner port
DPA01P-P	-100~100kPa, PNP, 4~20mA output, 1/8PT outer port, M5 inner port

NPN RS-485 Communication Type Specification	
DPA01NR-P	100~100kPa NPN, outer port 1/8PT Inner port M5
DPA10NR-P	-100~1,000kPa NPN, outer port 1/8PT Inner port M5

-100~1,000kPa NPN Specification	
DPA10M-G	-100~100kPa, NPN, 1~5V output, 1/8G outer port, M5 inner port
DPA10M-N	-100~1,000kPa, NPN, 1~5V output, 1/8NPT outer port, M5 inner port
DPA10M-P	-100~1,000kPa, NPN, 1~5V output, 1/8PT outer port, M5 inner port
DPA10N-G	-100~1,000kPa, NPN, 4~20mA output, 1/8G outer port, M5 inner port
DPA10N-N	-100~1,000kPa, NPN, 4~20mA output, 1/8NPT outer port, M5 inner port
DPA10N-P	-100~1,000kPa, NPN, 4~20mA output, 1/8PT outer port, M5 inner port

-100~1,000kPa PNP Specification	
DPA10Q-G	-100~100kPa, PNP, 1~5V output, 1/8G outer port, M5 inner port
DPA10Q-N	-100~1,000kPa, PNP, 1~5V output, 1/8NPT outer port, M5 inner port
DPA10Q-P	-100~1,000kPa, PNP, 1~5V output, 1/8PT outer port, M5 inner port
DPA10P-G	-100~1,000kPa, PNP, 4~20mA output, 1/8G outer port, M5 inner port
DPA10P-N	-100~1,000kPa, PNP, 4~20mA output, 1/8NPT outer port, M5 inner port
DPA10P-P	-100~1,000kPa, PNP, 4~20mA output, 1/8PT outer port, M5 inner port

PNP RS-485 Communication Type Specification	
DPA01PR-P	-100~100kPa PNP, outer port 1/8PT Inner port M5
DPA10PR-P	-100~1,000kPa PNP, outer port 1/8PT Inner port M5

## DPB Series

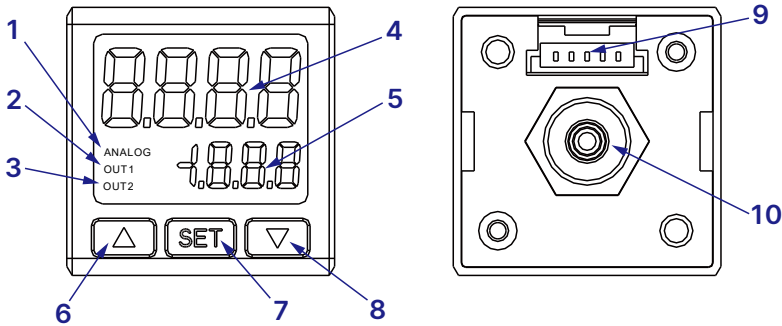
DPB Series	
DPB01N-P	-100~100kPa NPN, outer port 1/8PT Inner port M5
DPB10N-P	-100~1,000kPa NPN, outer port 1/8PT Inner port M5

DPB Series	
DPB01P-P	-100~100kPa PNP, outer port 1/8PT Inner port M5
DPB10P-P	-100~1,000kPa PNP, outer port 1/8PT Inner port M5

## DPA / DPB Accessories

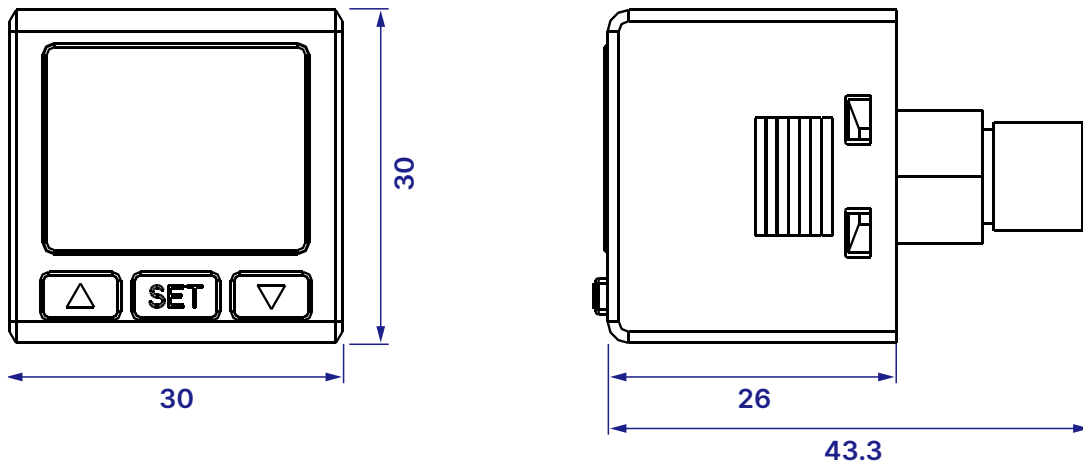
Model	DPA/DPB Accessories
DPA-PFKIT	Panel Installation Accessories
DPA-FMKIT	Bracket Accessories
DPA-FPKIT	Transparent Protection Cover Accessories

## Product Profile



- 1 Pressure/parameter display
- 2 SV/setup item display
- 3 Pressure unit display
- 4 Digital output 1 & 2 indicator
- 5 UP key
- 6 SET key
- 7 DOWN key
- 8 Power supply and output terminals
- 9 Pressure input pore

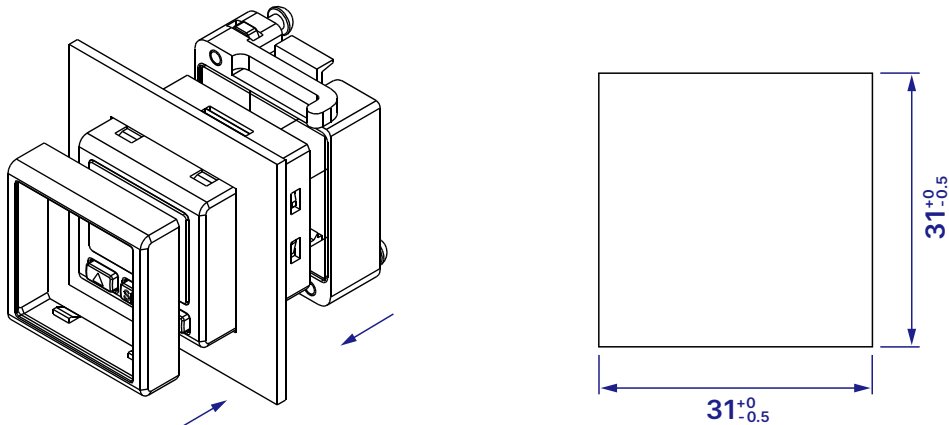
## Dimensions (DPA/DPB)



## Panel Accessory (DPA/DPB)

Model: DPA-PFKit

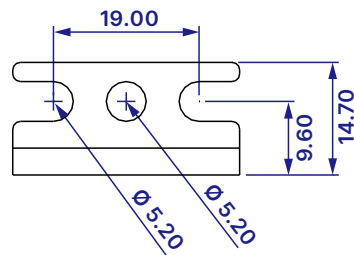
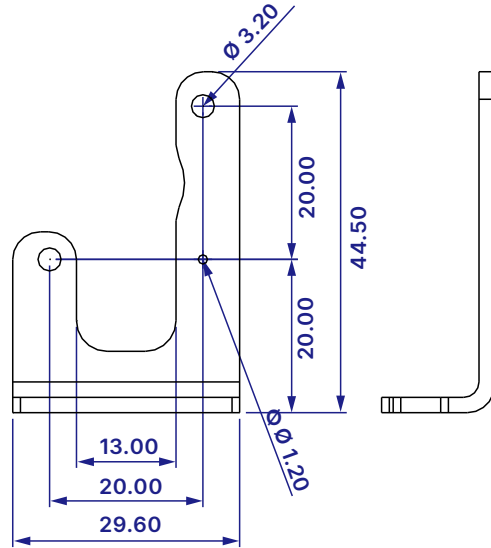
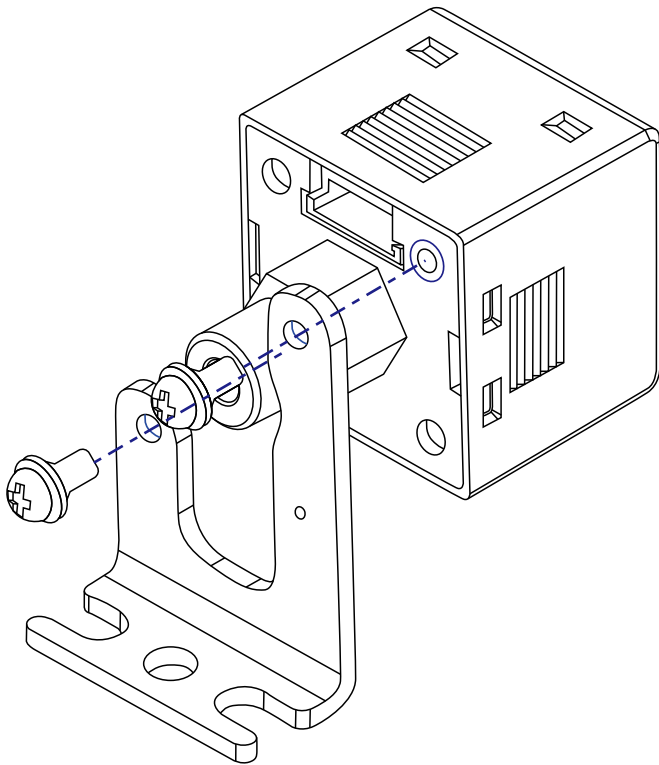
Unit: mm



## Shelf Accessory (DPA/DPB)

Model: DPA-FMKit

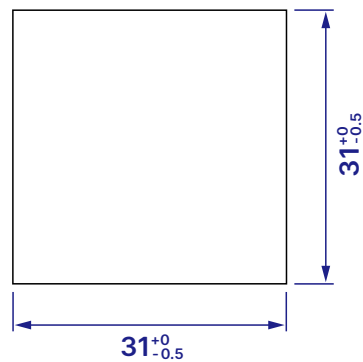
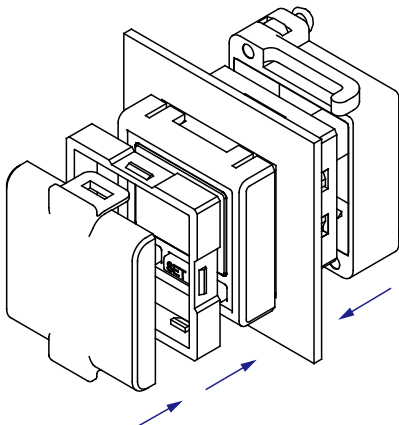
Unit: mm



## Transparent Protective Cover (DPA/DPB)

Model: DPA-PFKit

Unit: mm





Smarter. Greener. Together.

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