



PMD330

## Differential Pressure-PMD330

[www.eyc-tech.com](http://www.eyc-tech.com)

# Differential Pressure Transmitter(Indoor)



## | Features |

- Uses piezoresistive differential pressure sensor
- No flow-through structure, pressure ports are not interconnected
- Differential pressure measurement range of  $\pm 50 \dots \pm 10,000$  Pa
- Compact and easy to install
- Includes square root function for converting into air velocity
- Provides analog output, optional RS-485 communication function
- DIP switch to adjust range and square root function

## | Introduction |

The eyc-tech PMD330 differential pressure transmitter (Indoor) is designed for indoor environmental monitoring. It uses a piezoresistive differential pressure sensor with a no flow through structure. The built-in square root function is used for converting into air velocity, and it provides flexible output options to meet the needs of different scenarios. Users can easily configure it using the DIP switch, making it an ideal choice for various differential pressure measurement applications.

## | Applications |

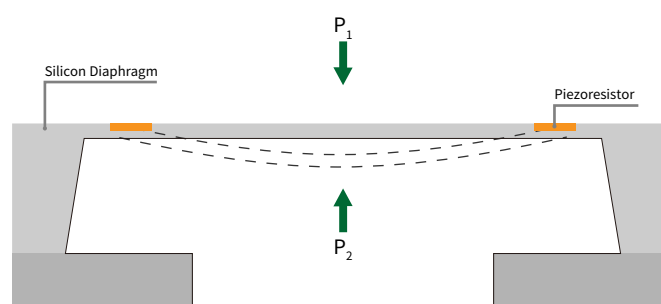
Environmental monitoring (HVAC, clean rooms, hospitals) / Differential pressure monitoring (air ducts, filters) / Airflow monitoring

## | Specification |

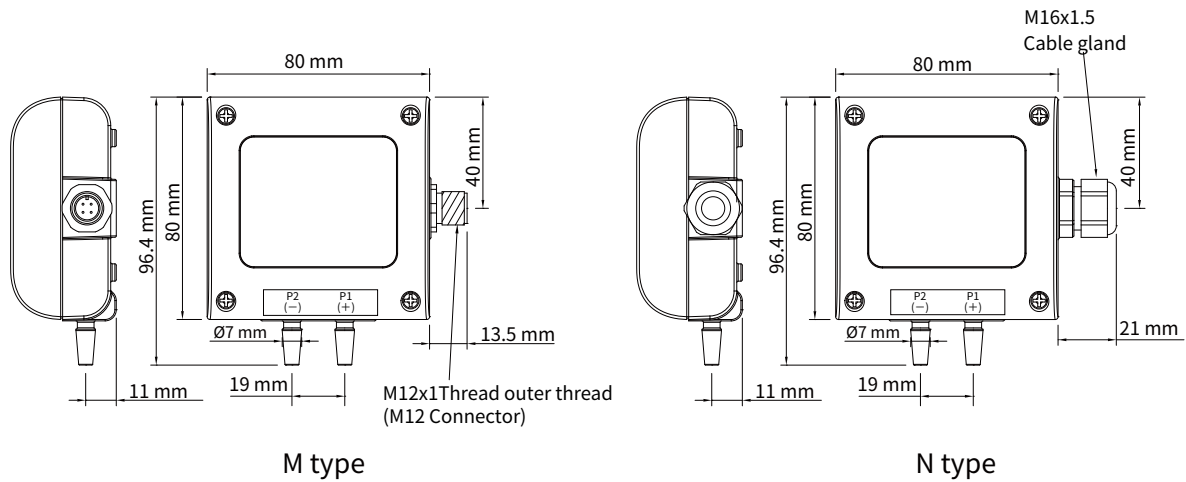
<b>Measurement</b>		<b>Electrical</b>	
Measuring element	Piezoresistive diff. pressure sensor, no flow-through	Power supply	DC 24 V $\pm$ 10% & AC 24 V $\pm$ 10%
Measuring range	$\pm 50 \dots \pm 10000$ pa	Current consumption	DC 24 V : $\leq 45$ mA(Display) / $\leq 40$ mA(Non-display) AC 24 V : $\leq 95$ mA(Display) / $\leq 90$ mA(Non-display)
<b>Output</b>		Overvoltage protection	$\leq$ DC 40 V
Output	4 ... 20 mA / 0 ... 10 V / RS-485	Electrical connection	M type ( M12 - 4 PIN connector ) / ( M12 - 5 PIN connector ) N type ( M16 plastic cable gland )
Signal connection	3-wire		
Load resistance	Current output : $\leq 500 \Omega$ Voltage output : $\geq 10 K\Omega$		*M type with 2 m cable
Response time	$t_{63} \leq 2$ ms	<b>Installation</b>	
Display type	LCD module with back light, double line character	Installation	Indoor wall type
Display range	Upon request, 2 decimal place (as unit is Pa : 1 decimal place)	<b>Protection</b>	
Digit height	5.56 mm	IP rating	IP65
<b>Accuracy</b>		Electrical protection	■ Over-voltage ■ Reverse polarity ■ Short circuit
Accuracy	$\pm 1.0\%$ F.S. $\pm 5\%$ M.V	Pressure resistance	$\pm 50 \dots \pm 500$ pa : 0.25 bar $\pm 1000 \dots \pm 10000$ pa : 0.5 bar
Temperature influence	$\pm 1.75\%$	Burst pressure	$\pm 50 \dots \pm 2500$ pa : 0.75 bar $\pm 5000 \dots \pm 10000$ pa : 1.25 bar
<b>Environment</b>		<b>Certification</b>	
Measuring medium	Air	Certification	CE
Operating temperature	0 ... 50°C	<b>Material</b>	
Operating humidity	0 ... 95%(Non-condensing)	Housing	PC fire-proof class(PC-110)(UL94V-2)
Storage temperature	-20 ... +60°C	Weight	Display : 152g ; Non-display : 127g

## | Piezoresistive Differential Pressure Principle |

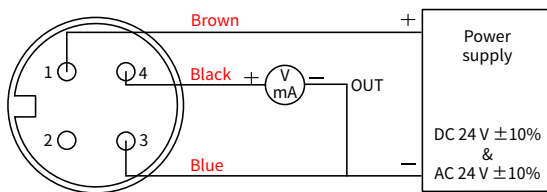
The working principle of a piezoresistive differential pressure transmitter is based on the piezoresistive effect, a phenomenon where the electrical resistance of a material changes when subjected to stress. The main structure of the sensing element includes a diaphragm made of silicon material and piezoresistive elements integrated on the diaphragm. When there is a pressure difference on the two sides of the sensing element, the diaphragm deforms due to the pressure difference. This deformation causes the piezoresistive elements to change their shape, resulting in a change in their electrical resistance. The amount of resistance change is proportional to the pressure difference between the two sides, and after signal processing, an electrical signal proportional to the pressure difference is obtained.



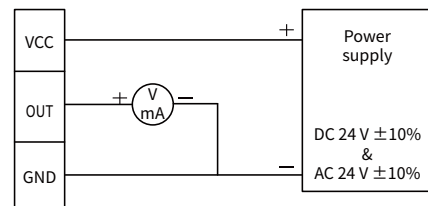
## | Dimension |



## | Analog Diagram |

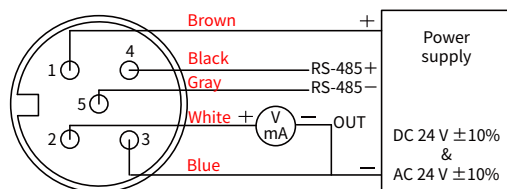


M12 - 4 PIN connector

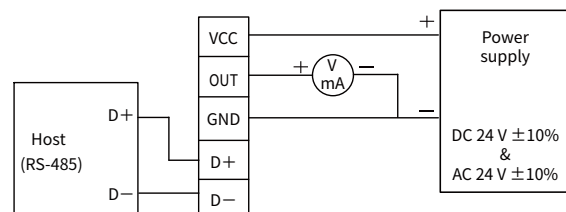


M16 plastic cable gland - 3P Terminal

## | Analog + RS-485 Diagram |



M12 - 5 PIN connector



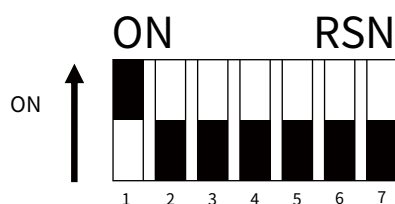
M16 plastic cable gland - 5P Terminal

\*Please make sure the product and the device which connect with RS-485 are on common ground, avoid damaged product.

## Pressure Unit Conversion Table

Unit	Pa	mbar	hPa	kPa	mmWS	inH <sub>2</sub> O	mmHg
Range	±50 / 100	0.5 / 1	0.5 / 1	0.05 / 0.1	5 / 10	0.2 / 0.4	0.375 / 0.75
	±300 / 500	3 / 5	3 / 5	0.3 / 0.5	30 / 50	1.2 / 2	2.25 / 3.75
	±1000 / 1600 / 2500	10 / 16 / 25	10 / 16 / 25	1 / 1.6 / 2.5	100 / 160 / 250	4 / 6.4 / 10	7.5 / 12 / 18.75
	±5000 / 7500 / 10000	50 / 75 / 100	50 / 75 / 100	5 / 7.5 / 10	500 / 750 / 1000	20 / 30 / 40	37.5 / 56.25 / 75

## DIP Switch



### Function

1.DIP switch active / Deactivate



3~4.Switch measuring range

5.Zero switch



6.Linear / Square root, output switching

7.Filtering On / Off

1.DIP switch active / Deactivate : Set the DIP switch as On / Off

STATUS	ON	OFF
DIP switch 1		



5.Zero switch

STATUS	0 ... 100 %	-100 ... 100%
DIP switch 5		



3~4.Switch measuring range : Upon ordering code(Unit : Pa)(Note:1)

DIP switch 3	DIP switch 4	Range(10)	Range(20)	Range(30)	Range(40)
		50	300	1000	5000
		100	500	1600	7500
				2500	10000
		Upon request			

6.Linear / Square root, output switching

STATUS	$\sqrt{\quad}$	LINEAR
DIP switch 6		

7.Filtering On / Off

STATUS	ON	OFF
DIP switch 7		

(Other unit : Please reference pressure unit conversion table)

※Note 1 : If the user switches the measuring range by dip switch, the accuracy only for reference.

## | Ordering Guide |

Installation	Range	Output	Electrical connection	Optional
PMD <b>330</b>	— <b>20</b>	<b>1</b>	— <b>M</b>	<b>D</b>
330 : Indoor	10 : $\pm 50$ / 100 pa 20 : $\pm 300$ / 500 pa 30 : $\pm 1000$ / 1600 / 2500 pa 40 : $\pm 5000$ / 7500 / 10000 pa	1 : 4 ... 20 mA 6 : 0 ... 10 V	N : Plastic cable gland M : M12 connector ( 4 PIN or 5 PIN ) <i>*M type with 2 m cable</i>	D : Display(LCD) 1 : RS-485

\*Recommended best-selling

Product ordering number	Product Specifications
PMD330-201-MD1	$\pm 300$ / 500 pa, 4 ... 20 mA + RS-485, M12, display
PMD330-301-MD1	$\pm 1000$ / 1600 / 2500 pa, 4 ... 20 mA + RS-485, M12, display
PMD330-401-MD1	$\pm 5000$ / 7500 / 10000 pa, 4 ... 20 mA + RS-485, M12, display

## | Additional Option Test Report |

For more detailed information please contact us.

### ■ ISO 9001

Project	Measurand level or range
Pressure	Differential pressure : 0 ... 500 Pa / 0 ... 1000 Pa / 0 ... 10000 Pa