



PHD33 Differential Pressure Transmitter

Pressure

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Application

- Silicon chips on Differential Pressure Module of MEMS integration technology
- Off set function by bottom / UI software
- Low-pressure monitoring, high pressure bearable
- Option RS-485 communication interface, Modbus RTU protocol
- DIP switch output and range
- Physical switch : mbar / Pa / hPa / kPa / mmH₂O / mmWS / inH₂O / mmHg
- Square root function
- Application Field — monitor differential pressure of Cleanroom / hospital / air duct / filter environment and monitor air flow

Specification

Input

input type	Piezoelectric Differential Pressure Module
measuring range	$\pm 50 \sim \pm 2500$ pa

Output

output	0-20mA / 4-20mA / 0-1V / 0-5V / 1-5V / 2-10V / 0-10V
signal connection	3-wire
ModBus	RS-485
accuracy (at 25°C)	± 2.0 % of F.S.
load resistance (current output)	4~20mA < 500Ω / 0~10V $\geq 10K\Omega$
response time (t 63)	≤ 2 ms
display type	LCD Module with back light, double line character
display range	upon request, 2 decimal place (as unit is Pa : 1 decimal place)
height of character	5.56 mm

Environment

media measured	air
environment temperature	0...+50 °C
environment humidity	0 ... 95 %RH (non-cond.)
storage temperature	-20...+60 °C

Temperature Influence

temperature drift	± 1.75 % (5°C ... 55°C)
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Electrical

power supply	8 ... 35 VDC / 12 ... 30 VAC
current consumption	DC 8V : ≤ 130 mA(display) / ≤ 115 mA(non-display) DC 24V : ≤ 45 mA(display) / ≤ 40 mA(non-display) AC 12V : ≤ 150 mA(display) / ≤ 130 mA(non-display) AC 24V : ≤ 95 mA(display) / ≤ 90 mA(non-display)
overvoltage protection	≤ 40 VDC
electrical connection	M12 connector

Installation

installation	wall
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Protection

protect rating	IP 65
electric protection	Ⓢpolarity protection Ⓢover-voltage Ⓢshort circuit
proof pressure	$\pm 50 \sim \pm 250$ pa : 0.25 bar ; $\pm 300 \sim \pm 2500$ pa : 0.5 bar
burst pressure	$\pm 50 \sim \pm 250$ pa : 0.25 bar ; $\pm 300 \sim \pm 2500$ pa : 0.5 bar

Certification

certification	CE
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Material

case	Aluminum alloy
weight	display : 497g ; non-display : 478g

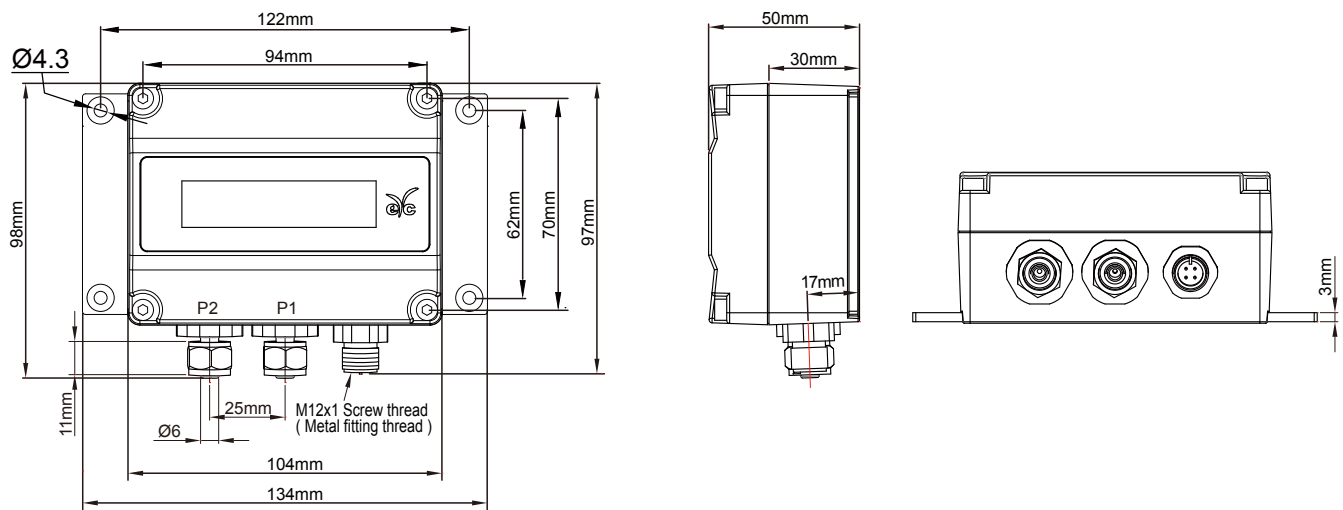
Ordering Guide

type	PHD	33	—	20	1	—	M	D
installation	wall	33						
range	± 50 / 100 / 250 pa ± 300 / 500 / 1000 pa ± 1000 / 1600 / 2500 pa		—	10 20 30				
output	4 ... 20mA 0 ... 20mA 2 ... 10V 1 ... 5V 0 ... 10V 0 ... 5V 0 ... 1V				1 2 4 5 6 7 8			
electrical connection	plastic cable gland M12x1 metal connector					— —	N M	
display	display RS-485							D 1

Pressure unit conversion table

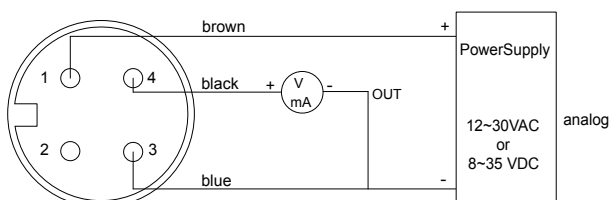
Unit	Pa	mbar	hPa	kPa	mmWS	inH2O	mmHg
Range	± 50/100/250	0.5/1/2.5	0.5/1/2.5	0.05/0.1/0.25	5/10/25	0.2/0.4/1	0.375/0.75/1.875
	± 300/500/1000	3/5/10	3/5/10	0.3/0.5/1	30/50/100	1.2/2/4	2.25/3.75/7.5
	± 1000/1600/2500	10/16/25	10/16/25	1/1.6/2.5	100/160/250	4/6.4/10	7.5/12/18.75

Diagram

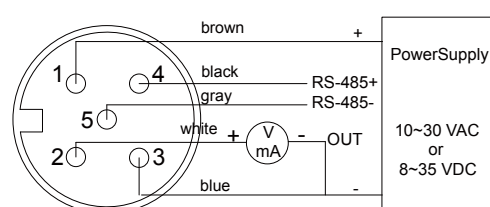


※ P1/P2 : Connected to Ø6 PVC/PTFE compressed air pipe

Connection

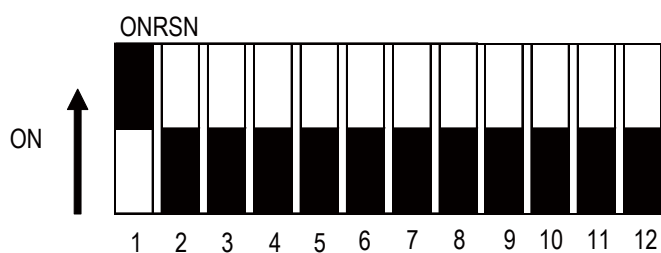


4P M12 Connector + Analogue



5P M12 Connector + RS-485

DIP Switch



【 Function 】

1. DIP Switch Active / Deactivate
2. The Type for Analog Output
- 3 & 4. Switch Measuring range
- 5 & 6 & 7. Switch physical quantity unit
8. Zero switch

9. Linear / square root output switching
10. Filtering On / Off
- 11 & 12 . RS-485 Station no. switch

◎ 1. DIP Switch Active / Deactivate : Set the DIP switch as On / Off

STATUS	OPEN	CLOSE
DIP Switch 1		

◎ 2. The Type for Analog Output

STATUS	0-10V	4-20mA
DIP Switch 2		

◎ 3 & 4. Switch Measuring range : upon ordering code (unit : Pa)

DIP Switch 3	DIP Switch 4	Range (10)	Range (20)	Range (30)
		50	300	1000
		100	500	1600
		250	1000	2500
		upon request		

(Other unit : please reference pressure unit conversion table)

◎ 8. Zero switch

STATUS	0-100 %	-100~100%
DIP Switch 8		

◎ 9. Linear / square root output switching

STATUS	√	LINEAR
DIP Switch		

◎ 10. Filtering On / Off

STATUS	OPEN	CLOSE
DIP Switch 10		

◎ 11 & 12. RS-485 Station no. switch ID 1-4

DIP Switch 11	DIP Switch 12	STATION
		1
		2
		3
		4

◎ 5 & 6 & 7. Switch physical quantity unit

DIP Switch 5	DIP Switch 6	DIP Switch 7	UNIT
			mbar
			Pa
			hPa
			kPa
			mmH2O
			mmWS
			inH2O
			mmHg