Indicating Pressure and Differential pressure transmitter for Dry air and Gas

Model : **DP100 (Differential pressure transmitter)**
GP100 (Pressure transmitter)

WISE SENSOR

Advantages

- High-precision pressure and differential pressure transmitter for Versatile applications
- Various Pressure measurement ranges
- Excellent accuracy and long term stability
- Various choice of electrical connection
- Flow rate output (% of square root output)
- Cannot be used for corrosive fluids
- 4-Digit display
- Alarm contact output

< DP100 >

< GP100 >

Applications

Transmitters can be used in the design of process control, automatic machinery, and hydraulic or pneumatic systems in semiconductor, clean room, process control, and automation applications.

- Medical equipment such as ventilators, CPAP, blood analysis, breast pumps, drug dosing, oxygen concentrators, blood pressure monitoring, etc
- HVAC transmitters, life sciences, air control and regulation, Industrial applications such as process gas monitoring and valve positioning
- Air brakes, CNG monitoring, fork lifts and fuel level measurement
- The differential pressure of the control room and flow rate of the air duct in the semiconductor process
- The differential pressure of clean room, air filter and dust collector

Descriptions

IDP100 series differential pressure and pressure high precision pressure transmitters provide high accuracy pressure measurement and output transmission for a wide range of applications. The transmitter is built with a waterproof aluminum housing to protect it in harsh environments. Designed as an advanced device for measuring pressure in industrial and general purpose applications.
It is extremely versatile and suitable for measuring dynamic, static or differencetial pressure. The transmitters are available as absolute and relative pressure types with either 4-wire current or 5-wire voltage output.
The pressure to be measured is a piezoresistive silicon pressure sensor, acting through a high-precision bridge circuit that can read pressure over the entire specified pressure range. The output signal of this bridge is temperature compensated and converted into a standardized current or voltage output signal.

Specification

Input				
Model name	DP100		GP100	
Technology	Differential pressure sensor		Gage pressure sensor	
Pressure ranges	±0.2kPa ~ ±60kPa (Selectable in range)		0~1kPa to 1030kPa (Selectable in range)	
Pressure reference	Differential pressure Port1 - Port2		Only pressure Port1	
Over pressure Common mode pressure	See to "Pressure range table.1"			
Output				
Display	Type : 4-digit , 7-Segment LED Color : 4digit-Red ,Alarm-White 4-Digit size : 40mm(W) x 12mm(L)			
	Unamplified			
Electrical connection type	2-wire technique		3 or 4-wire technique	
Full scale output signal	20mA	±0.5%	5 to 10V	±0.5%
Zero measured output	4mA	±0.3%	0 to1V	±0.3%
	Other signals available on request			
Alarm output (Option)	Type : Relay contact 2xSPDT Rating : Max switching power - 60W, 125VA Max switching voltage & current - 220V DC or 250V AC / 2A DC or AC			
Electrical Specification				
Excitation voltage	24V DC (12~36V DC)			
Load resistance max @ 24V	500Ω at 24V			
Influence of excitation	0.01% FSO/V			
Power ripple	≤500mV P-P			
Life	1 million full scale pressure cycles minimum			
Reverse polarity	Protected			
Shock resistance	75 g, 6 ms duration			
Vibration	15 g, 10 Hz to 2 kHz			
Response time(10~90%)	≥2.5 ms			
Performance Specification				
Accuracy	10 ~ 90% only ±0.3% FSO (Non-Linearity & Non-Repeatability & Hysteresis)			
Long term stability	±0.3% FSO over 6 month			
Cutoff frequency(-3 d B)	≤2KHz			
Reference temperature	25 ℃			
Operating temperature range	-20~80 °C			
Storage temperature range	-40~110 °C			
Thermal error band (0 to 50°C)	≤ ± 1.5% FSO			
Thermal error band (-20 to 85°C)	≤ ± 3.0% FSO			
Thermal error band (-40 to 110°C)	≤ ± 4.5% FSO			
Humidity	0 to 95 % rH, non-condensing			
Physical Specification				
Process connection	PT1/4 , PT3/8 , PT1/2 male thread, PF1/4 , PF3/8 , PF1/2 male thread			
	Tube connector male 4, 6, 8mm			
	Female thread & other connections available on request			
Process media	Dry gases only,			
Materials	Diaphragm : High temperature polyamide			
	Housing (Body) : Aluminium Die-casting (ALDC)			
	Process connection : Brass			
	Gasket O-ring : Silicone			
	Electrical connector : Standard - NYLON, Option - Brass with nickel plated, SUS304			
Enclosure rating	Weather proof			
Influence of mounting position	Not critical but 0.1 to 0.5bar should be mounted vertically			
Weight	Approx. (??g)			
Options	Silicon tube			

Note : ① The tolerances for these products are only 10-90% of the full pressure range.

② Due to the nature of the product, the weight of the product can vary depending on the type of process connector.

③ Please refer to the user guide for product settings.

Pressure range table.1

① DP100

Pressure range	Over pressure ④		Common mode pressure ⑤
	Port 1	Port 2	
±0.2kPa to ±3kPa	67kPa		-
±3.1kPa to ±29kPa	200kPa	100kPa	200kPa
±30kPa to ±60kPa	1,600kPa	-	16,000kPa

② GP100

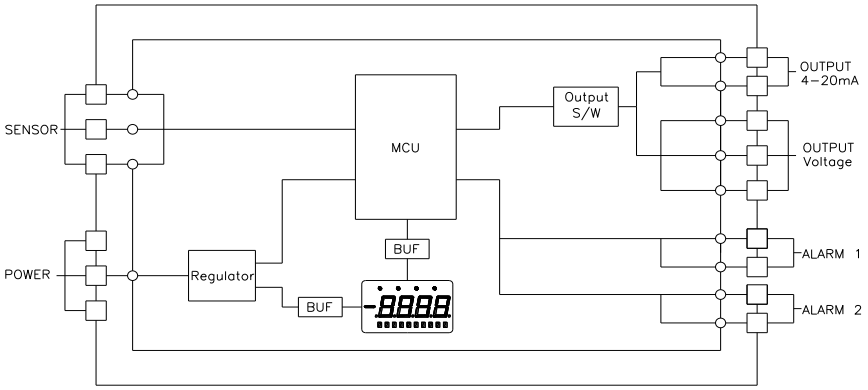
Pressure range	Over pressure ④
0~1kPa to 1.2kPa	67kPa
0~1.21kPa to 40kPa	200kPa
0~41kPa to 1,000kPa	1,654kPa

Note : ④ Overpressure: The maximum pressure which may safely be applied to the product for it to remain in specification once pressure is returned to the operating pressure range. Exposure to higher pressures may cause permanent damage to the product. Unless otherwise specified, this applies to all available pressure ports at any temperature within the operating temperature range.

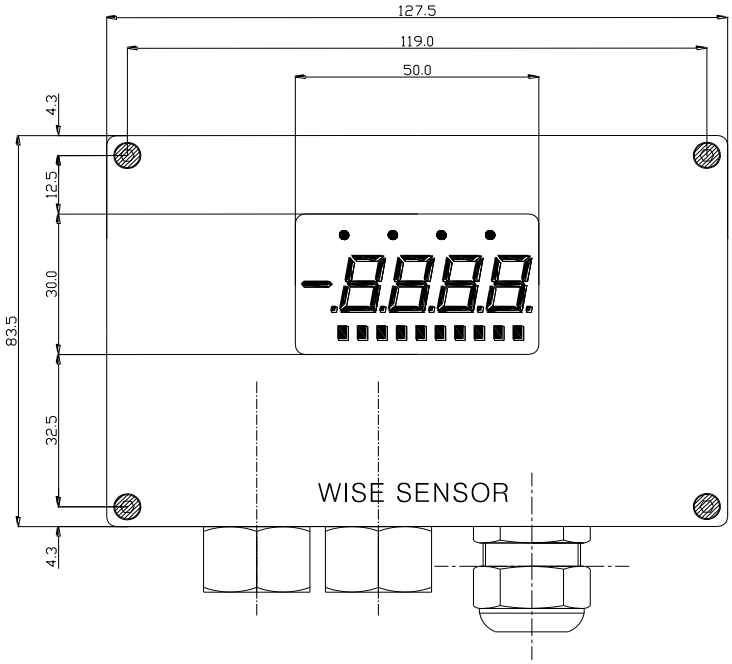
⑤ Common Mode Pressure: The maximum pressure that can be applied simultaneously to both ports of a differential pressure sensor without causing changes in specified performance.

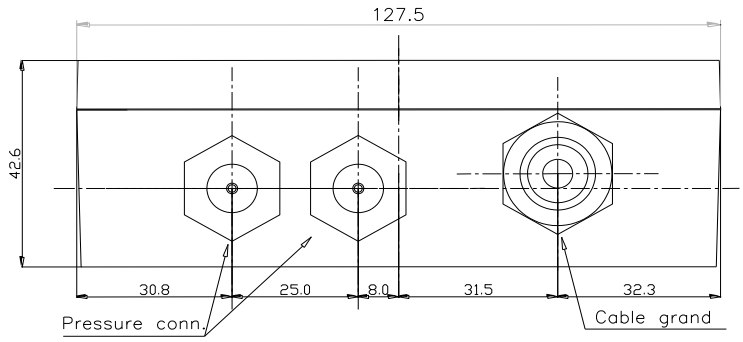
⑥ Pressure exceeding the overpressure will cause physical damage to the measurement sensor.

System connection for transmitter & switch



Dimension (mm)





Electrical connection

P : Power
O : Output
C : Common

System / Pin	4~20mA	Volt out
DC 24V+	P+	P+
DC 24V-	P-	P-
AL1_1	Alarm 1	Alarm 1
AL1_2		
AL2_1	Alarm 2	Alarm 2
AL2_2		
+I_O	O+	
-I_O	O-	
+V_O		O+
-V_O		O-

Ordering Information

Indicating Pressure and Differential pressure transmitter for Dry air and Gas

1. Base model

DP100	Differential pressure transmitter
GP100	Gage Pressure transmitter

2. Process connection type "1"

T	Tube connector (DP100 only, Fixed with X in step 3.)
M	Male thread (GP100 only)
F	Female thread (GP100 only)

3. Process connection type "2"

T	PT thread as standard
N	NPT thread
F	PF thread
X	Other process connections available on request

4. Process connection size

1	1/4"
2	3/8"
3	1/2"
4	Tube socket ø 4 mm male (Process connection type "1" "T" only)
5	Tube socket ø 6 mm male (Process connection type "1" "T" only)
6	Tube socket ø 8 mm male (Process connection type "1" "T" only)
X	Other units available on request

5. Accuracy

L	±0.30% F.S.O

6. Measuring range

	DP100 Range		GP100 Range
01	±0.2 kPa (0.8 Inch H_2O)	10	0~1 kPa (4 Inch H_2O)
02	±0.5 kPa (2 Inch H_2O)	11	0~5 kPa (20 Inch H_2O)
03	±1 kPa (4 Inch H_2O)	12	0~10 kPa (40.1 Inch H_2O)
04	±5 kPa (20 Inch H_2O)	13	0~20 kPa (80.3 Inch H_2O)
05	±10 kPa (40.1 Inch H_2O)	14	0~35 kPa (140.5 Inch H_2O)
06	±20 kPa (80.3 Inch H_2O)	15	0~50 kPa (200.7 Inch H_2O)
07	±35 kPa (140.5 Inch H_2O)	16	0~100 kPa (401 Inch H_2O)
08	±50 kPa (200.7 Inch H_2O)	17	0~500 kPa (2.007 Inch H_2O)
09	±60 kPa (240.9 Inch H_2O)	18	0~1 MPa (4.014 Inch H_2O)
xx	Other calibration ranges available on request		

7. Unit

M	Calibration in mmH_2O
K	Calibration in kgf/cm2
A	Calibration in Mpa
B	Calibration in bar
P	Calibration in psi
I	Calibration in Inch H2O
S	Calibration in kPa
X	Other units available on request

8. Output signal / Electrical connection type

A1	4~20mA DC,4-wire output & 0~5 or 0~10V DC, 5-wire
A2	4~20mA DC,4-wire output & 0~5 or 0~10V DC, 5-wire, 2 AL

9. Electrical connector

S	PG 11L 10GL, Available cable sizes 5~10Ø (Standard)
C	PG 11L 7GL, Available cable sizes 3~7Ø

10. Option

N	Non option
A	Silicon Tube Ø6 * 3mm, XX(02~50)meter
B	Silicon Tube Ø8 * 3mm, XX(02~50)meter
C	Silicon Tube Ø10 * 3mm, XX(02~50)meter
X	Other option available on request

DP100	T	X	4	L	2	S	A1	S	N	Sample ordering code

Specifications subject to change without notice