



BW-DKS-DP600 series

**PA Grade High Static Pressure Monocrystalline
Silicon Differential Pressure Sensors**

Technical Manual

BW - DKS - DP 600 PA Grade High Static Pressure Monocrystalline Silicon Differential Pressure Sensors



BW-DKS-DP600 Differential Pressure Sensor adopts monocrystalline silicon sensor chip made of German advanced MEMS technology, and the world's original monocrystalline silicon double-beam suspension design, which achieves the international leading over-pressure performance and ensures the excellent stability of the signal. Embedded with the intelligent original imported pressure measuring diaphragm and signal processing module, it realises the perfect combination of static pressure and temperature compensation, which can provide high measurement accuracy and stability under a wide range of static pressure and temperature.

BW-DKS-DP600 Differential Pressure Sensor is a pressure sensor that acts directly on the diaphragm of the sensor, causing the diaphragm to produce a micro-displacement proportional to the pressure, detecting this change with an integrated electronic circuit and converting the output to a standard measurement signal corresponding to the pressure.

Fields of application

- Oil / Petrochemical / Chemical
Provides accurate flow measurement and control in conjunction with a throttling device. Accurate measurement of pressure and level in pipelines and tanks.
- Electric power / city gas / other companies and businesses.
Pressure, flow and level measurements requiring high stability and accuracy.
- Pulp and Paper
Pressure, flow and level measurement of chemical and corrosion resistant liquids.
- Steel / Non-Ferrous Metals / Ceramics
Furnace pressure, negative pressure measurement, etc., where high stability and high accuracy are required.
- Machinery / Shipbuilding
For stable pressure, flow, and level measurements under tightly controlled

keywords

- Monocrystalline silicon sensor chip
- High accuracy, high static pressure characteristics
- mV output or intelligent digital output
- OEM custom threaded connections

Product Characteristics

- High Accuracy
Highly stable monocrystalline silicon sensor chip made of German advanced MEMS technology, embedded with German original
- Imported pressure measuring cartridge and signal processing module, to ensure that the transmitted signal has a high degree of accuracy and consistency.
- Excellent overpressure performance
40kPa standard range unilateral overpressure up to 25MPa
- Excellent environmental suitability
For use in a wide range of harsh environments with operating temperatures from -40 to 85°C. Intelligent static pressure and temperature compensation
- Intelligent static pressure compensation and temperature compensation protect the sensor from temperature, static pressure and overpressure.
- The sensor is protected from temperature, static pressure and overpressure, reducing the overall measurement error in the field.
- Convenient installation
The sensor is equipped with a variety of mounting accessories, suitable for different
- The sensors are supplied with a wide range of mounting accessories to suit different installation requirements.
- Suitable for a wide range of housings
Standard M45, M27, G55 connections are available for a wide range of housings.
- The sensor is available with a wide range of mounting accessories for different mounting requirements.

Product Specification

Performance specifications

- Measurement principle: double beam suspension type / single crystal silicon sensor
- Bridge resistance: 10k Ω (at 25 ° C)
- Measurement range:

Capsule	kPa/MPa	bar	inH ₂ O	mmH ₂ O
S2	6kPa	0.06	24	600
M1	40kPa	0.4	160	4000
M2	100kPa	1	400	10000
M4	400kPa	4	1600	40000
L1	3MPa	30	12000	300000

- Work pressure:

Capsule	Range	Unilateral overvoltage	Bilateral static pressure
S2	6kPa	25MPa	40MPa
M1	40kPa	25MPa	40MPa
M2	100kPa	25MPa	40MPa
M4	400kPa	25MPa	40MPa
L1	3MPa	25MPa	40MPa

- Power supply Voltage: 3~8V DC, constant voltage power supply

- Response time: 10ms

- Long-term stability:

≤ 0.03% FS/ Year

- Accuracy:

Capsule	Range	Nonlinear	Temperature coefficient
S1	1kPa	≤ 0.2% FS	≤ 0.1%FS/10K
S2	6kPa	≤ 0.2% FS	≤ 0.1%FS/10K
M1	40kPa	≤ 0.2% FS	≤ 0.1%FS/10K
M2	100kPa	≤ 0.16% FS	≤ 0.1%FS/10K
M4	400kPa	≤ 0.16% FS	≤ 0.1%FS/10K
L1	3MPa	≤ 0.2% FS	≤ 0.1%FS/10K

- Output signal:

Capsule	Range	Output signal (pressure signal, mean value)
S1	1kPa	4mV/V
S2	6kPa	10mV/V
M1	40kPa	14mV/V
M2	100kPa	14mV/V
M4	400kPa	20mV/V
L1	3MPa	20mV/V

- Output method: analogue mV signal output

- Working temperature: -40~85°C

- Positional impact: about 200Pa between horizontal and vertical position

- Diaphragm material:

Selection Code	Diaphragm material
SS	SUS 316L
HC	Hastelloy
TA	Tantalum diaphragm
GD	Gold plated diaphragm

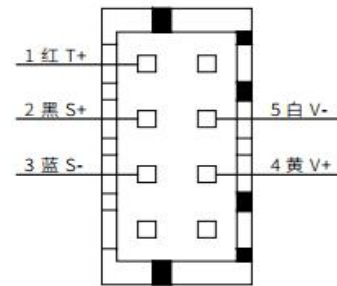
- Sensor body material: stainless steel 316

- Weight:

BW-DKS-DP600: about 0.8kg

Electrical wiring diagram

Analogue output wiring diagram



Pin Number	Annotate	Clarification
1 (RED)	T+	Temperature sensor positive signal
2 (BLACK)	S+	Pressure sensor positive signal
3 (BLUE)	S-	Pressure sensor negative signal
4 (YELLOW)	V-	Sensor power supply positive power
5 (WHITE)	V+	Sensor power supply negative power

Product Details

- Fully automatic welding robot

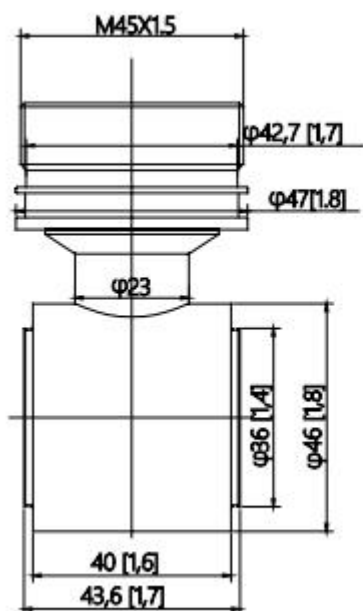


- Fully automated encapsulation and commissioning equipment from Germany

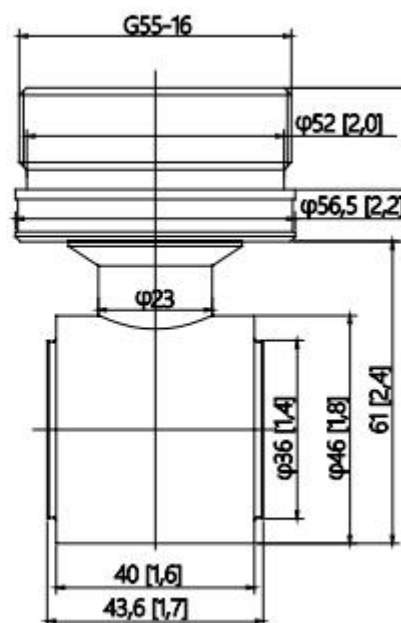


Product Dimensions

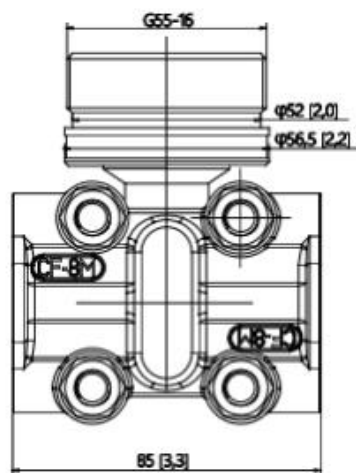
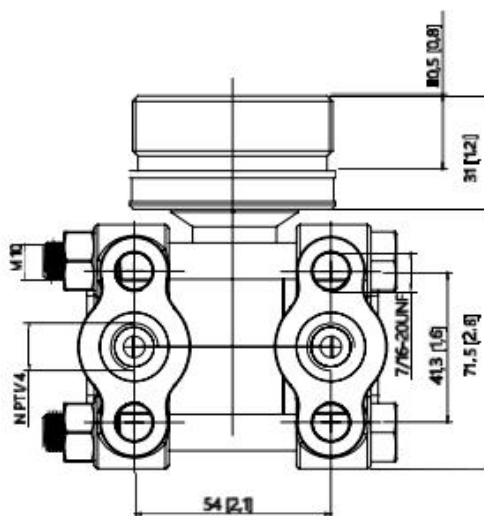
- Differential pressure sensor with M45 housing connection



- Differential pressure sensor with G55 housing connection



Process connection scheme



Model and specification code list

Model	Specification code		Clarification
BW-DKS- DP600			PA Grade Monocrystalline Silicon Differential Pressure Sensors
Range (Capsule)	S 2	-6kPa~6kPa	
	M1	-40kPa~40kPa	
	M2	-100KPa~100KPa	
	M4	-400kPa~400kPa	
	L 1	-3MPa~3MPa	
Shell connection thread	N00	No	
	M45	M45*1.5 Thread	
	G55	G55*16 Thread	
	M56	M56*1.5 Thread	
Isolation diaphragm	SS	SUS 316L	
	HC	Hastelloy C-276	
	TA	Tantalum	
	GD	SUS 316L Gilt	
Filler fluid	S	Silicone oil	
	F	Fluorine oil	
	O	Vegetable oil	
Clamping block seal	FS	Fluorine rubber	
	DS	Nitrile rubber	
	TS	Polytetrafluoroethylene	
Additional options			Please contact sales

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Silicon Differential Pressure Sensors**

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