



BNsens
Differential Pressure
Transmitter
KSPD3051



BNsens

DESCRIPTION

KSPD3051 intelligent differential pressure transmitter is a high-performance pressure transmitter of international leading technology carefully developed with the world's advanced monocrystalline silicon pressure sensor technology and patented packaging process. The product adopts patented double overload protection diaphragm design and internal circuit surge protection design, which can accurately measure gauge pressure, absolute pressure, flow rate, vacuum degree, liquid level and density.

CHARACTERISTICS

- Advanced monocrystalline silicon differential pressure sensor
- Wide range coverage -0.1 ~ 3MPa
- Two-wire system, 4 ~ 20mA analog output, HART® protocol digital communication
- Smart LCD LCD watch head with backlight
- Both remote transmission and local zero, range adjustment
- Complete variety, high precision, good stability
- Flameproof shell structure, strong resistance to frequency conversion interference
- High static pressure, high overload guarantee
- Patented double overload protection diaphragm design
- Lightning protection circuit design

PREFORMANCE

Parameter	KSPD3051
Range range	± 1kPa ; ± 6kPa ; ± 40kPa ; ± 100kPa ; ± 250kPa ; ± 1MPa ; ± 3MPa
Pressure type	Differential pressure
Supply voltage	2VDC to 32VDC. 24VDC is recommended
Output signal	4 to 20mA+HART® protocol
Accuracy	± 1kPa: ± 0.2%FS; ± 6kPa: ± 0.1%FS; Other range: ± 0.075%FS (standard range, 25 ± 5)
Temperature drift	± 1kPa: ± 0.5%FS; ± 6kPa: ± 0.3%FS; Other range: ± 0.25%FS (standard range, -20 ~ 70)
Ambient temperature	-30 ~ 80 ; With liquid crystal watch head -30 ~ 70
Medium temperature	-40 ~ 125
Storage temperature	-20 ~ 70
Insulation resistance	200M /250VDC
Class of protection	IP65
Flameproof rating	Ex d IIB T6 Gb
Static pressure range	± 1kPa; ± 6kPa; ± 40kPa static pressure 16MPa; ± 100kPa; -100 ~ 250kPa static pressure 25MPa; -0.1 ~ 1MPa; -0.1 ~ 3MPa static pressure 40MPa;
Overvoltage limit	16MPa
Long-term stability	± 0.1%FS/ year (standard range)

Parameter	KSPD3051
Diaphragm material	316L, Alloy C
Bleeder valve	304
O-ring	Silicone rubber (in contact with measuring media)
Potting fluid	Silicone oil
Splint	304
Shell material	Housing die-cast aluminum alloy, painted epoxy coating
Electrical interface	M20 × 1.5, NPT1/2
Process interface	M20 × 1.5 with welded pipe, NPT1/4(F), NPT1/2, NPT1/2(F), G1/2 with welded pipe, G1/4, triple valve M20 × 1.5 with welded pipe (304/316 optional), triple valve NPT1/4F(304/316 optional)
Weight	3.5kg(optional not included)

APPLICATIONS

- Process control in petroleum, chemical industry, metallurgy, electric power, food, paper making, medicine, machinery manufacturing, scientific experiments, aviation and military industries;

DIMENSIONS

Product model	Dimension drawing	Unit: mm
KSPD3051 (without accessories)	<p>Technical drawing of the KSPD3051 pressure transmitter. The drawing includes three views: a front view, a side view, and a top view. Dimensions are provided in millimeters (mm). The front view shows a width of 145±5 mm and a height of 103 mm. The side view shows a height of 78 mm and a total height of 185±10 mm. The top view shows a width of 105±5 mm and a height of 60.7 mm. A note specifies: Note: Display , L=126 ± 5mm; No display , L=108 ± 5mm.</p>	

PARTS SELECTION

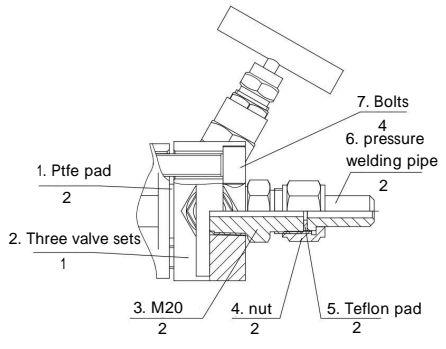
Mounting bracket	Unit : mm		
<p>B1: Pipe with bent bracket</p>			
<p>B2: Disc mounting bracket</p>			
<p>B3: Pipe mounting bracket</p>			

PROCESS INTERFACE

<p>C1: M20 x 1.5 external welded pipe</p>		<table border="1"> <thead> <tr> <th>Number</th> <th>Name</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>T-joint</td> <td>2</td> </tr> <tr> <td>2</td> <td>M10 x 20 bolts</td> <td>4</td> </tr> <tr> <td>3</td> <td>O-ring</td> <td>2</td> </tr> <tr> <td>4</td> <td>Ptfe gasket</td> <td>2</td> </tr> <tr> <td>5</td> <td>M20 nut</td> <td>2</td> </tr> <tr> <td>6</td> <td>14 x 4 pressure welding pipe</td> <td>2</td> </tr> </tbody> </table>	Number	Name	Quantity	1	T-joint	2	2	M10 x 20 bolts	4	3	O-ring	2	4	Ptfe gasket	2	5	M20 nut	2	6	14 x 4 pressure welding pipe	2
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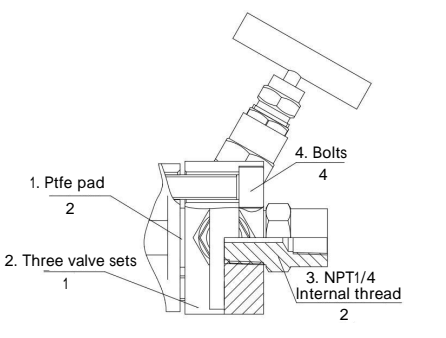
PROCESS INTERFACE

SFZC1 :
Triple valve group-M20
Welded pipe
304/316 Optional



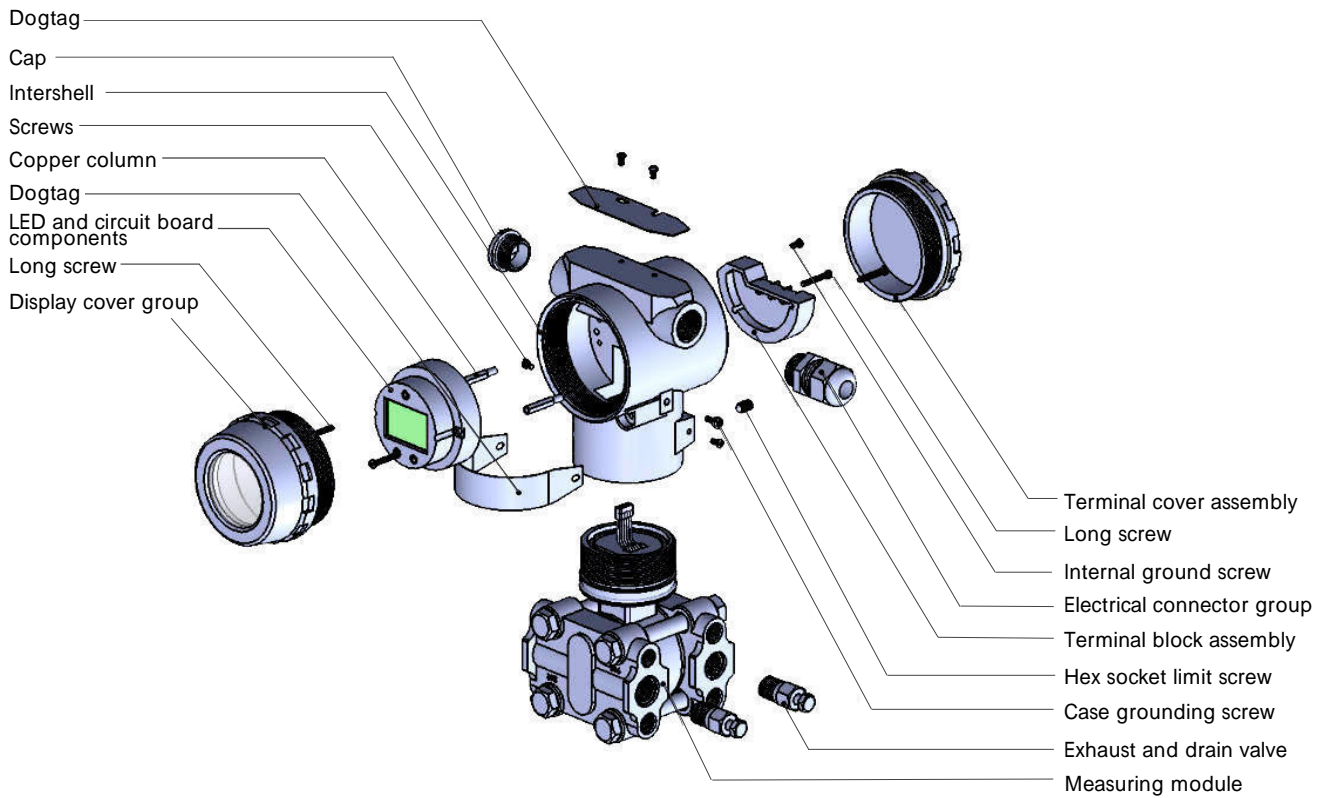
Number	Name	Quantity
1	Teflon pad	2
2	Three-valve bank	4
3	M20 x 1.5 connector	2
4	M20 x 1.5 nuts	2
5	Teflon pad	2
6	14 x 4 pressure welding pipe	2
7	Teflon pad	2

SFZC5F :
Three-valve bank
- Inside NPT1/4
304/316 Optional

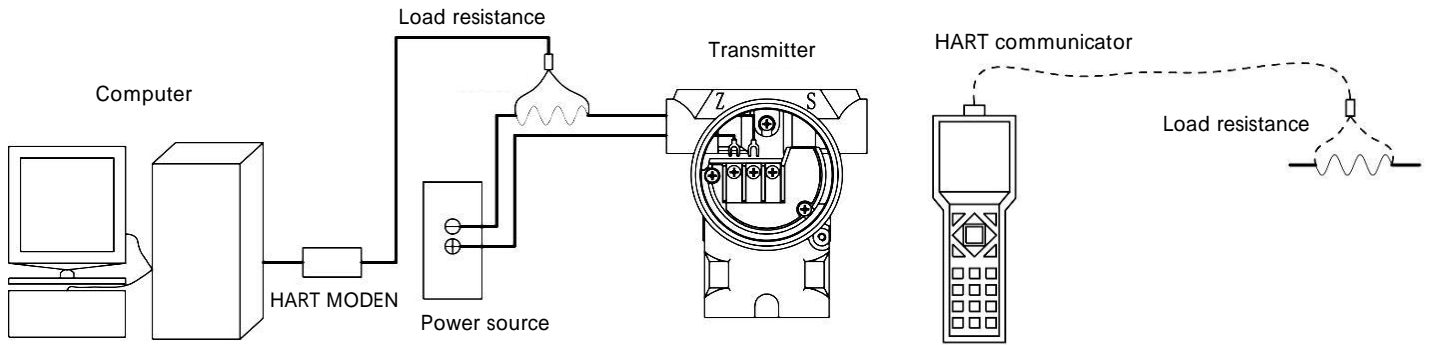


Number	Name	Quantity
1	Teflon pad	2
2	Three-valve bank	1
3	NPT1/4 connector	2
4	M10 x 35 bolts	4

COMPONENT DIAGRAM



HART CONNECTION

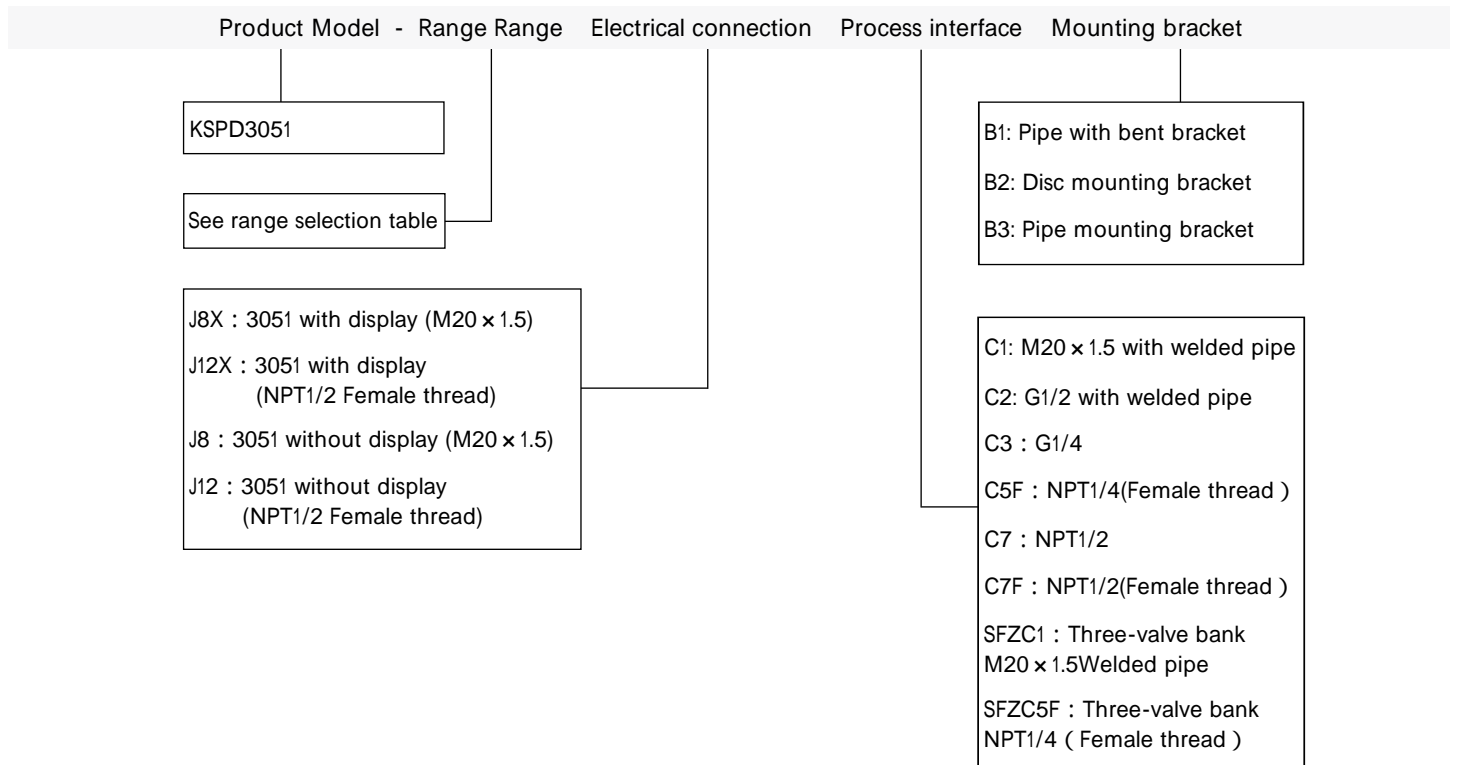


RANGE SELECTION

Range code	Range range
1k	$\pm 1\text{kPa}$
6k	$\pm 6\text{kPa}$
40k	$\pm 40\text{kPa}$
100k	$\pm 100\text{kPa}$

Range code	Range range
250k	$\pm 250\text{kPa}$
1M	$\pm 1\text{MPa}$
3M	$\pm 3\text{MPa}$

NOMENCLATURE



FOR EXAMPLE : KSPD3051-1MJ8XC1B1

Product model KSPD3051 series, the measuring range is ± 1 MPa, the electrical connection is 3051 red shell with display (M20*1.5), 316L diaphragm, the process interface is M20*1.5 with welded pipe, and the installation bracket is the pipe mounted bend bracket.

NOTES:

- Accessories need to be purchased separately.
- Do not touch the diaphragm with hard objects. This will cause damage to the diaphragm.
- Please read the product manual carefully before installation, and check the relevant information of the product.
- Strictly follow the wiring method, otherwise it will cause product damage and other potential failures.

DISCLAIMER

Warning

LIFE OR PROPERTY RISK

- Please ensure that this product has been designed as part of whole system and already considered related risks, make sure the product has the correct ratings and is designed based on the entire system. It must not be used when applications related to serious life or property damage risks.

Failure to follow this instruction can result in death or serious injury.

Warning

PERSONAL INJURY

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to follow this instruction can result in death or serious injury.

Warning

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to follow this instruction can result in death or serious injury.

Warranty/Remedy

Banning warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Banning's standard product warranty applies unless agreed to otherwise by Banning in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Banning during the period of coverage, Banning will repair or replace, at its option, without charge those items that Banning, in its sole discretion, finds defective. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Banning be liable for consequential special, or indirect damages.

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