PCM3051S-DP Intelligent Differential Pressure Transmitter

Features

- Advanced monocrystalline silicon differential pressure sensor adopted
- Wide pressure range covering -0.1～3MPa
- 2-wire mode, 4～20mA analog output, HART® protocol digital communication
- Intelligent LCD gauge with backlight
- With both remote transmission and local zero and pressure range adjustment
- Complete varieties, high accuracy, good stability
- Isolation ex-proof housing structure, strong resistance to frequency conversion interference
- High static pressure, high overpressure protection
- Patented two pressure ends overpressure protection diaphragm design
- Lightning protection circuit design

Applications and industries

- Process control fields for the industries of petroleum, chemical industry, metallurgy, electricity, food, papermaking, medicine, machine manufacturing, scientific experiment and military aviation etc.

Notes:

1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.

2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.

3 Strictly follow the wiring method for wiring, otherwise it may cause product damage or other potential faults.

Product overview

PCM3051S-DP intelligent differential pressure transmitter is a high performance pressure transmitter based on the international leading technology, adopting the world advanced monocrystalline silicon pressure sensor technology and the patented packaging process. This product adopts the patented two pressure ends overpressure protection diaphragm design, with the internal circuit surge protection design, and can accurately measure the gauge pressure, absolute pressure, flow, vacuum degree, liquid level and density.

Notes:

1 Do not misuse documentation.

2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

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Performance parameters	
Pressure range	±1kPa；±6kPa；±40kPa；±100kPa；±250kPa；±1MPa；±3MPa
Pressure reference	Gauge pressure, Differential pressure
Supply	12～32VDC, recommend 24VDC
Output	4～20mA+HART® protocol
Accuracy	±1kPa：±0.2%FS； ±6kPa：±0.1%FS； Other ranges：±0.075%FS (Standard ranges, 25±5℃)
Temp. drift	±1kPa：±0.5%FS； ±6kPa：±0.3%FS； Other ranges：±0.25%FS (Standard ranges, -20～70℃)
Ambient temperature	-30℃～80℃; with LCD gauge -30℃～70℃
Medium temp.	-40℃～125℃
Storage temp.	-20℃～70℃
Insulation resistance	≥200MΩ/250VDC
Protection grade	IP65
Ex-proof grade	Ex d IIB T6 Gb
Static pressure range	16MPa for ranges ±1kPa；±6kPa；±40kPa； 25MPa for ranges ±100kPa；-100～250kPa； 40MPa for ranges -0.1～1MPa；-0.1～3MPa
Overpressure limitation	16MPa
Long-term stability	±0.1%FS/year (standard ranges)

Structural performance	
Diaphragm material	316L, Hastelloy C
Exhaust/Drain valve	304
O-ring	Silicone rubber (contact with measurement medium)
Filling liquid	Silicon oil
Flange and clamp block	304
Housing material	Die-cast aluminium alloy, painted epoxy coating
Electrical connection	M20×1.5 (Female), NPT1/2 (Female)
Pressure connection	M20×1.5 with welded pipe, NPT1/4 (Female), NPT1/2, NPT1/2 (Female), G1/2 with welded pipe, G1/4, tri-valve set M20×1.5 with welded pipe (304/316 options), tri-valve set NPT1/4 (Female) (304/316 options)
Weight	3.5kg (not including accessories)

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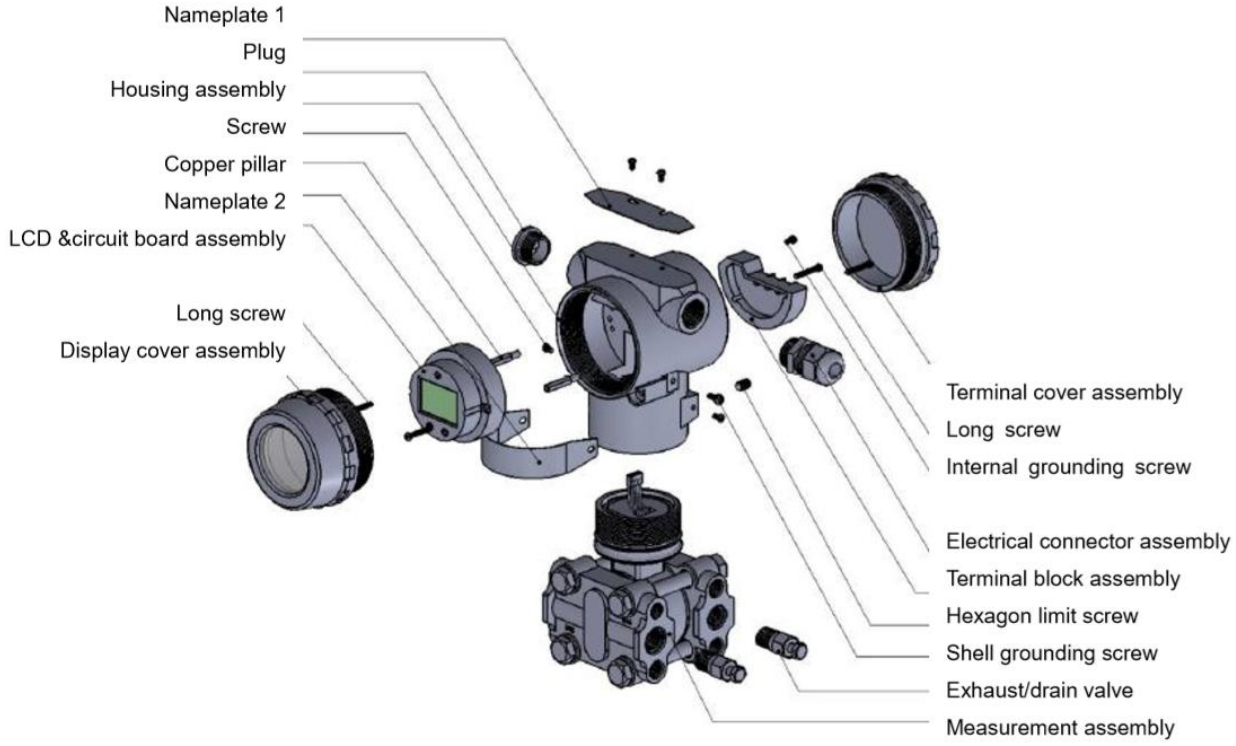
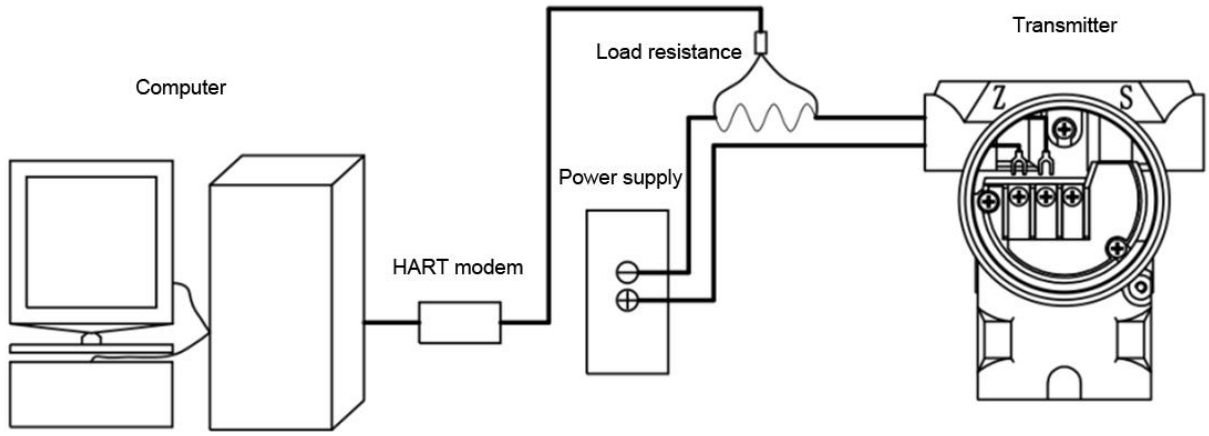
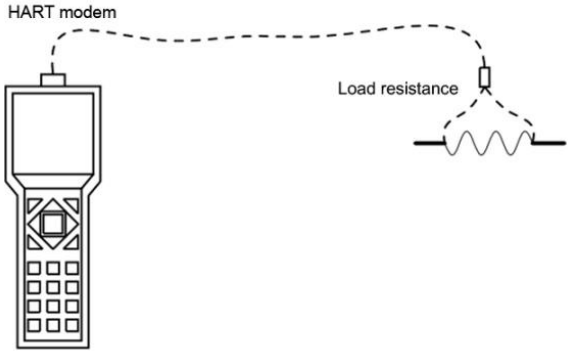
Component diagram



HART communication connection diagram





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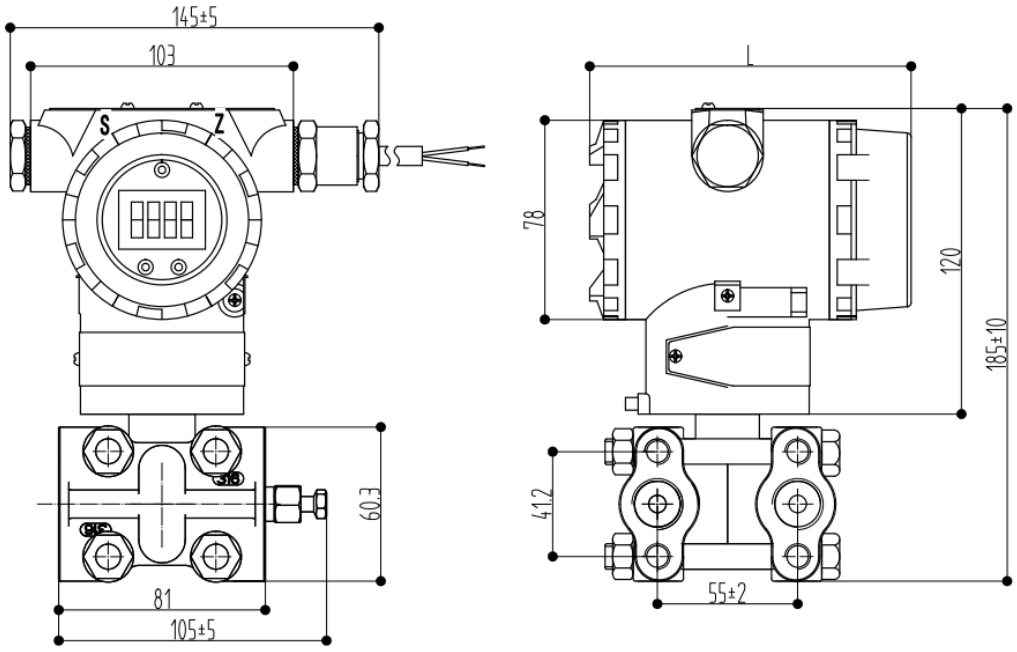
Dimensional drawing

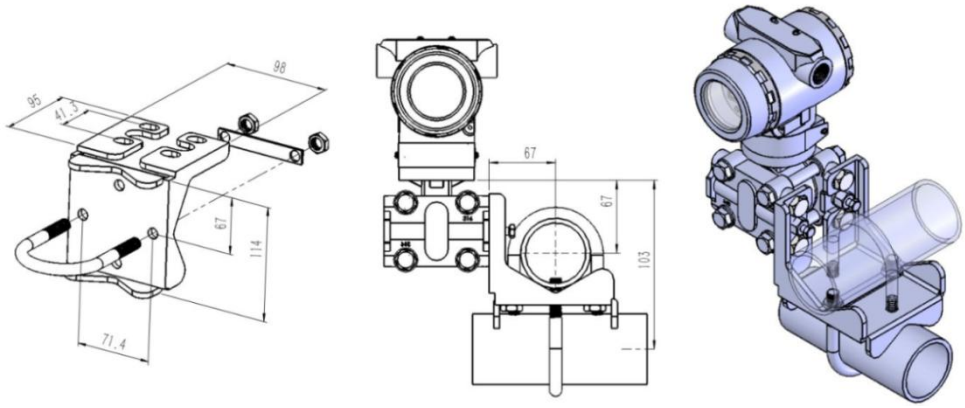
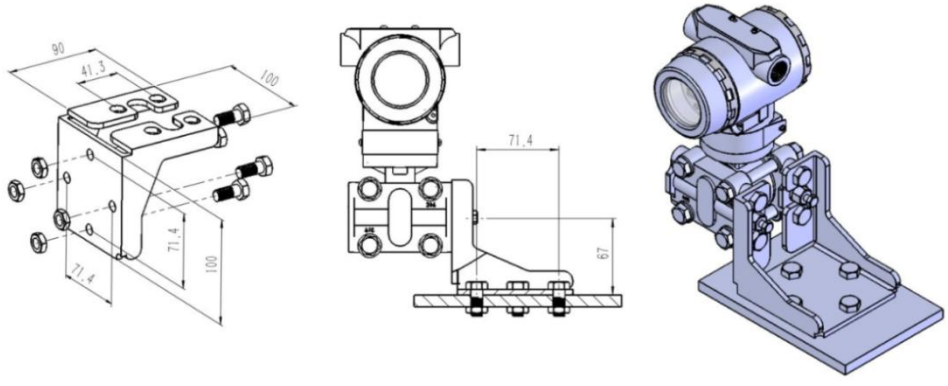
Product model	Dimensional drawing	In mm
PCM3051S-DP (no accessory)		

Note:

L=126±5mm if with display; L=108±5mm if without display

Accessory

Mounting bracket — In mm

Pipe installation bending bracket: B1	
Plane installation bending bracket: B2	

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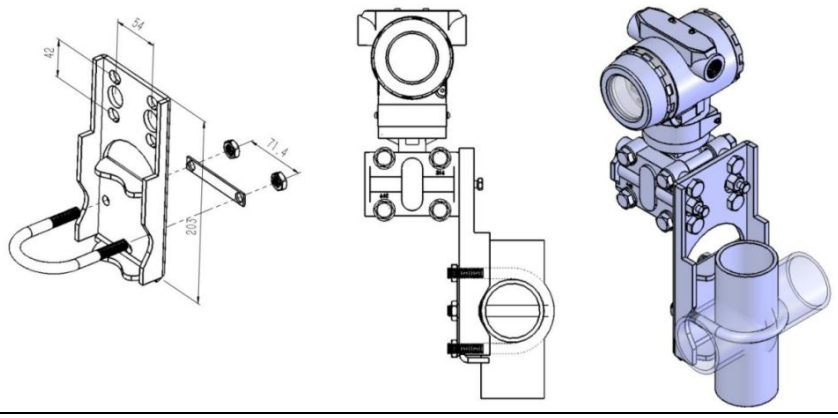
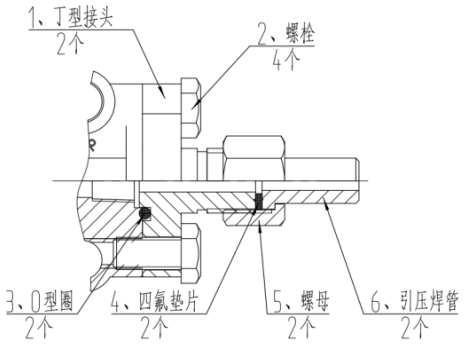
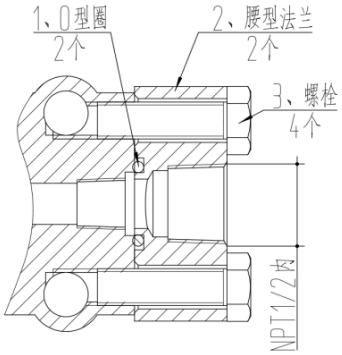
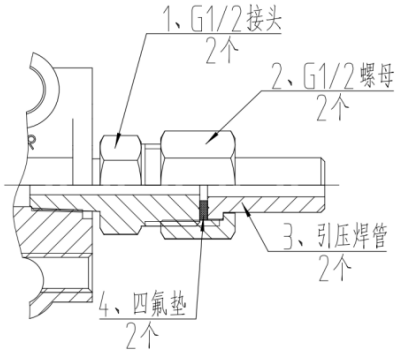
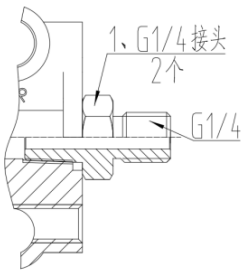
Pipe installation flat bracket: B3	

Pressure connection

		Name	Qty.
C1: M20×1.5 with welded pipe		1. T shape connector	2
		2. M10×20 bolt	4
		3. O-ring	2
		4. PTFE gasket	2
		5. M20 nut	2
		6. Φ14×4 pressure welded pipe	2
C7F: NPT1/2(F) Waist shape flange		Name	Qty.
		1. O-ring	2
		2. Waist shape flange	2
		3. M10×35 bolt	4
		-	-
		-	-
		-	-
C2：G1/2 with welded pipe		Name	Qty.
		1. NPT1/4 to G1/2 adaptor	2
		2. G1/2 nut	2
		3. Φ14×4 pressure welded pipe	2
		4. PTFE gasket	2
		-	-
		-	-
C3：G1/4		Name	Qty.
		1. NPT1/4 to G1/4 adaptor	2
		-	-
		-	-
		-	-

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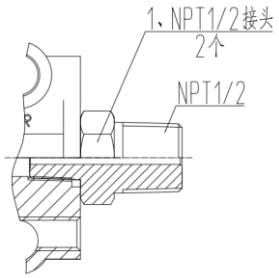
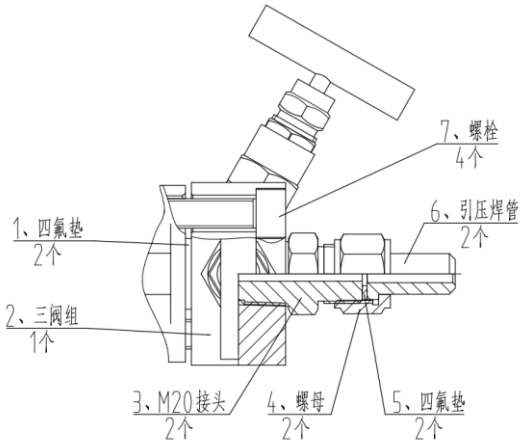
C7：NPT1/2



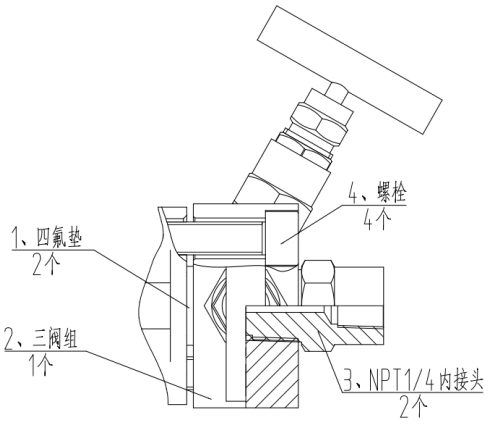
Name	Qty.
1. NPT1/4 to NPT1/2 adaptor	2
-	-
-	-
-	-

SFZC1：tri-valve set M20 with welded pipe (304/316 options)



Name	Qty.
1. PTFE gasket	2
2. tri-valve set	1
3. M20×1.5 connector	2
4. M20×1.5 nut	2
5. PTFE gasket	2
6. Φ14×4 pressure welded pipe	2
7. M10×35 bolt	4
-	-
-	-

SFZC5F：tri-valve set NPT1/4 Female (304/316 options)



Name	Qty.
1. PTFE gasket	2
2. tri-valve set	1
3. NPT1/4 connector	2
4. M10×35 bolt	4
-	-
-	-
-	-
-	-

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How to order

PC3051S-DP - 6k J8X M1

Product model:
PCM3051S-DP

Pressure range selection:
1k=±1kPa
6k=±6kPa
40k=±40kPa
100k=±100kPa
250k=±250kPa
1M=±1MPa
3M=±3MPa

Diaphragm material:
NA: 316L
M1: Hastelloy C

Electrical connection:
J8 = 3051 gray white housing without display (M20×1.5 female)
J8X= 3051 gray white housing with display (M20×1.5 female)
J12 = 3051 blue isolation ex-proof housing without display (M20×1.5 female)
J12X = 3051 blue isolation ex-proof housing with display (M20×1.5 female)
J22 = 3051 blue isolation ex-proof housing without display (NPT1/2 female)
J22X = 3051 blue isolation ex-proof housing with display (NPT1/2 female)

How to order for accessories

C1 B3

Pressure connection:
C1=M20×1.5 with welded pipe
C2=G1/2 with welded pipe
C3=G1/4 (Male)
C5F=NPT1/4 (Female) (default)
C7=NPT1/2
C7F=NPT1/2 (Female)
SFZC1= tri-valve set M20×1.5 with welded pipe
SFZC5F= tri-valve set NPT1/4 (Female)

Mounting bracket:
B1=Pipe installation bending bracket
B2=Plane installation bending bracket
B3=Pipe installation flat bracket

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Example: PCM3051S-DP-6kJ8XM1 -Z Accessory C1B3
Refer to product model: PCM3051S-DP, pressure range selection: ±6kPa, output: 4～20mA+HART® protocol, electrical connection: 3051 housing with display (M20×1.5 female), pressure connection: M20×1.5 with welded pipe, mounting bracket: Pipe installation flat bracket

Ordering tips

Accessory should be purchased separately.