PCM3051S-AP/GP Monocrystalline Silicon Pressure Transmitter

Features

- Germany imported MEMS monocrystalline silicon pressure die adopted
- Wide pressure range covering
- Double-wire mode, 4～20mA HART® protocol digital communication option
- Intelligent LCD gauge outfit with backlight
- With both the local zero point and pressure range adjustment
- Complete varieties, high accuracy, good stability,
- Isolation ex-proof housing structure, strong resistance to the frequency conversion interference
- Without mechanical transmission component, firm and shockproof

Applications and industries

- Process control fields for the industries such as 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 Monocrystalline Silicon Pressure Transmitter adopts Germany imported MEMS monocrystalline silicon pressure die as the internal die, and through the special signal processing module, the sensor signal is transformed into the standard signal output; after the long-term aging and stability selecting, the product performance is stable and reliable, applies to the outdoor field with quite harsh environment, and meanwhile ensures the field pressure display, with zero point and full span transferable.

For PCM3051S Monocrystalline Silicon Pressure Transmitter installation connection mode, it can be processed based on the user's requirement, or the specification compatible with the transmitters of other brands can be provided. The products of this series widely apply to the industrial process control, petroleum, chemical industry, metallurgy and other industries.

Notes:

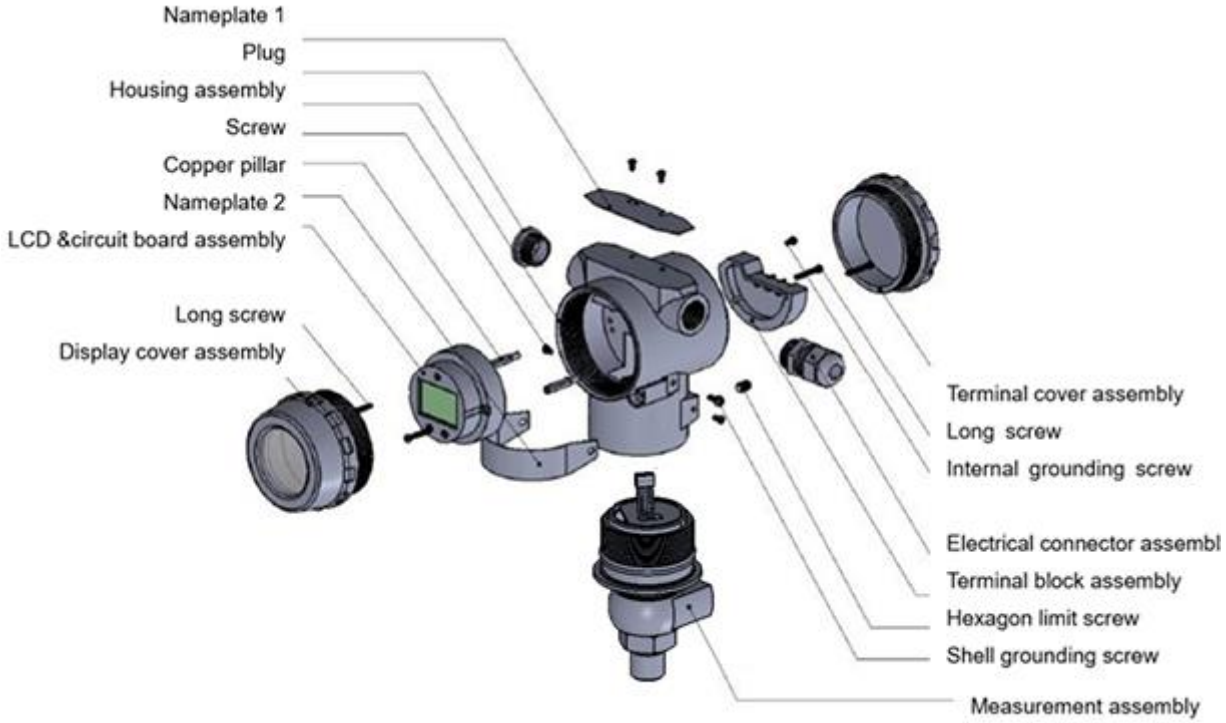
1 Do not misuse documentation.

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

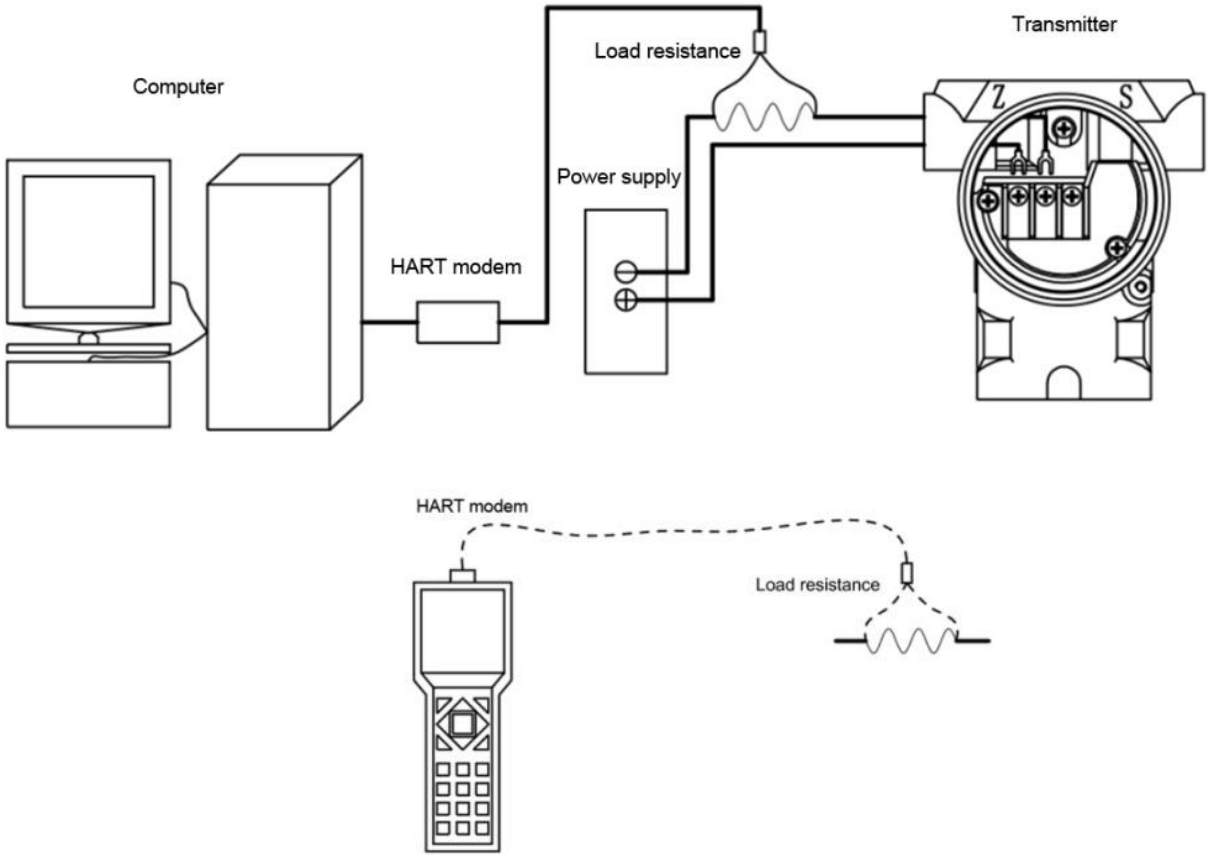
3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

Performance parameters	
Pressure range	±6kPa G, ±40kPa G, ±100kPa G, -100～250kPa G, 0～100kPa A, 0～250kPa A, -0.1～1MPa G, -0.1～3MPa G, 0～10MPa S, 0～20MPa S, 0～40MPa S
Pressure reference	Gauge pressure, Absolute pressure, Sealed gauge pressure
Power supply	12～32V, 24V recommended
Output	4～20mA+HART protocol
Accuracy	±6kPa: ±0.1%FS; Other pressure ranges: ±0.075%FS (Standard pressure ranges, 25±5℃)
Temperature drift	±6kPa: ±0.3%FS; Other pressure ranges: ±0.25%FS (Standard pressure ranges, -20～70℃)
Ambient temperature	-30℃～80℃; with LCD gauge outfit -30℃～70℃
Medium temp.	-40℃～104℃
Storage temp.	-30℃～70℃
Insulation resistance	≥200MΩ/250VDC
Mechanical vibration	20g (20~5000Hz)
Shock	100g (11ms)
Overpressure	Refer to “Pressure range selection”
Long-term stability	±0.1%FS/year
Protection grade	IP65
Ex-proof grade	Ex d IIB T6 Gb
Material	Cast aluminium alloy for Housing; SS316L Diaphragm
Medium compatibility	All kinds of media compatible with SS316L
Response time	HART board acquisition sensor 0.1s; HART board output 0.5s

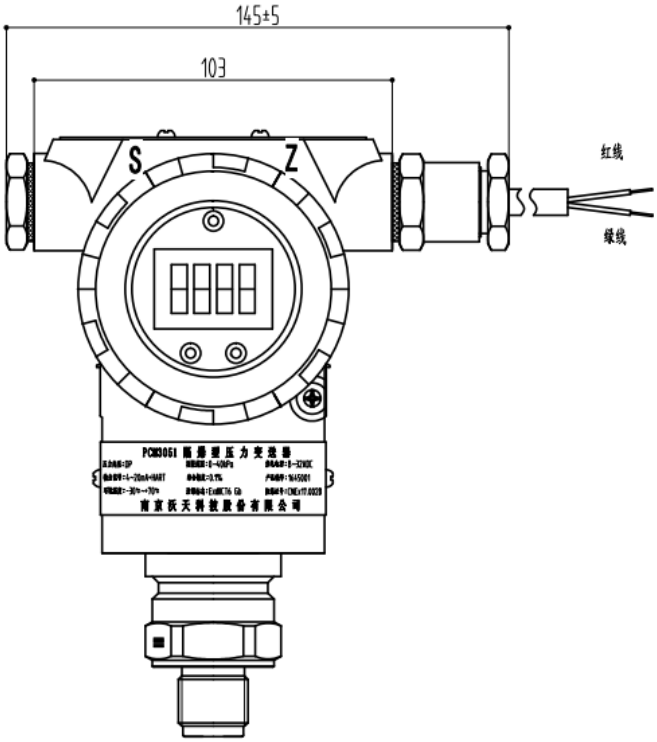
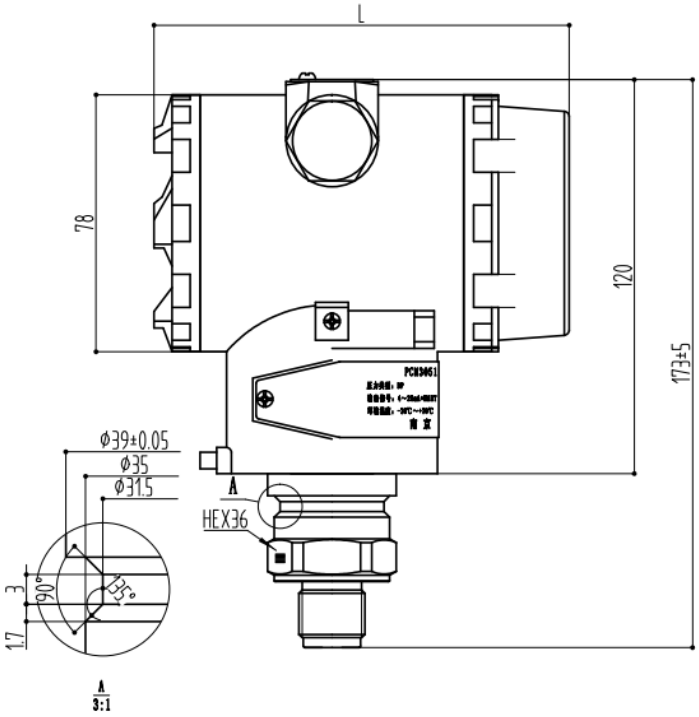
Component diagram



HART communication connection diagram



Outline dimension

Product model	Dimension drawing In: mm
PCM3051S-AP/GP	  Note: With display L=126±5mm Without display L=108±5mm

How to order

PCM3051S-GP - 40k C7 M1 J22X - Z

Product model
PCM3051S-GP: Gauge pressure
PCM3051S-AP: Absolute pressure

Pressure range:
6k=±6kPa Gauge pressure (GP)
40k=±40kPa Gauge pressure (GP)
100k=±100kPa Gauge pressure (GP)
250k=-100 ～ 250kPa Gauge pressure (GP)
100kA=0 ～ 100kPa Absolute pressure (AP)
250kA=0 ～ 250kPa Absolute pressure (AP)
1M=-0.1～1MPa Gauge pressure (GP)
3M=-0.1～3MPa Gauge pressure (GP)
10M=0 ～ 10MPa Sealed gauge pressure (SP)
20M=0 ～ 20MPa Sealed gauge pressure (SP)
40M=0 ～ 40MPa Sealed gauge pressure (SP)

Pressure connection:
C1=M20×1.5
C2=G1/2
C7=NPT1/2
C7F=NPT1/2 female

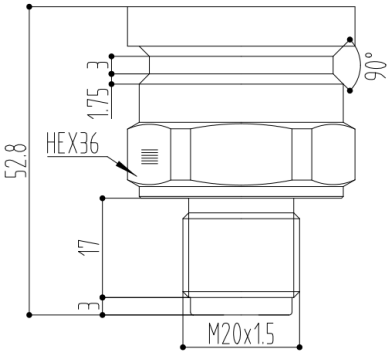
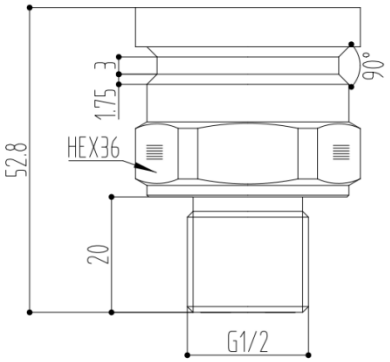
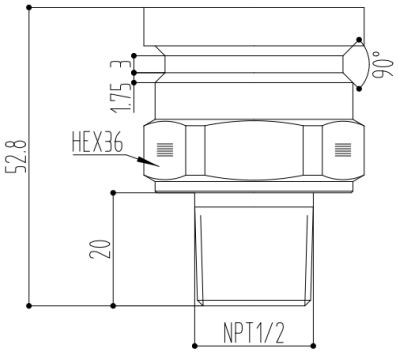
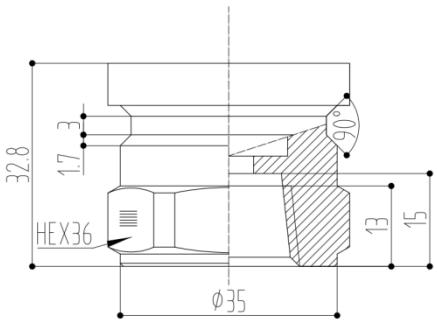
Diaphragm material
Blank: 316L
M1: Hastelloy C diaphragm

Electrical connection:
J8X = Grey and white non isolation ex-proof with display (M20×1.5)
J12X = Blue isolation ex-proof with display (M20×1.5)
J22X = Blue isolation ex-proof with display (NPT1/2 female)
J8= Grey and white non isolation ex-proof without display (M20×1.5)
J12 = Blue isolation ex-proof without display (M20×1.5)
J22 = Blue isolation ex-proof without display (NPT1/2 female)

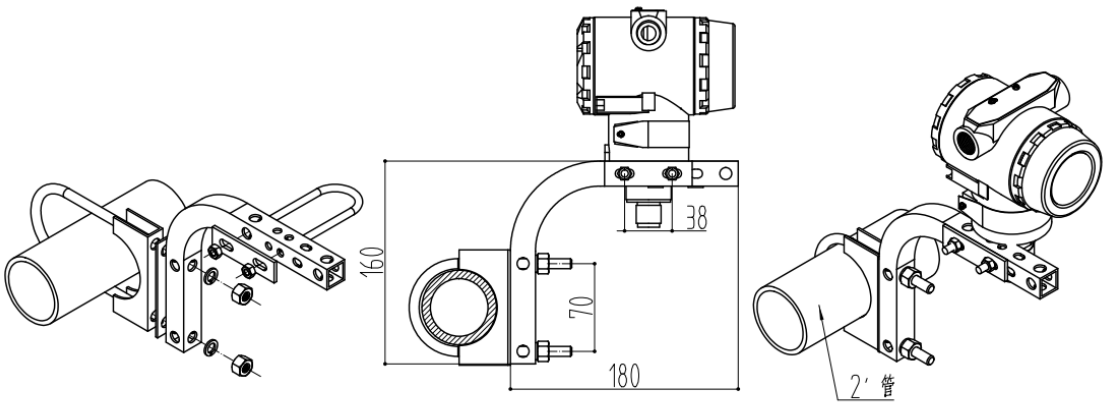
Gauge head model
Blank: Standard gauge head
Z: Zhongrui gauge head

Example: PCM3051S-GP-40kC7M1J12X-Z——Refer to the product model: PCM3051S-GP (Gauge pressure), pressure range: 40kPa, output: 4～20mA +HART® protocol, pressure connection: NPT1/2, Hastelloy C diaphragm, electrical connection: 3051 isolation ex-proof housing with display (M20×1.5); gauge head: Zhongrui gauge head.

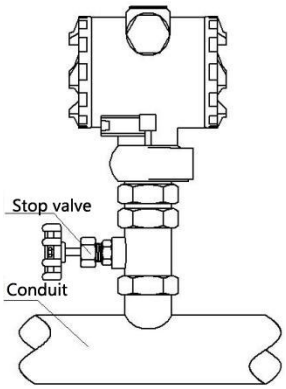
Pressure connection

Pressure connection code	C1: M20×1.5-6g	C2: G1/2
Dimension In mm		
Recommended torque	15～25Nm	15～25Nm
Pressure connection code	**C7: NPT1/2**	**C7F: NPT1/2 (Female)**
Dimension In mm		
Recommended torque	15～25Nm	15～25Nm

Mounting bracket option: In: mm

L-type bracket	

Installation instruction (for reference only)



Installation suggestion:

(1) The product is installed vertically on the field pressure connection.

(2) During the outdoor installation, try to put the transmitter in a dry and ventilated place, and avoid direct strong sunshine and rain, or else the performance will become poor or break down.

(3) When the product is installed in the area with frequent lightning, “lightning protection” should be indicated when ordering; meanwhile, we suggest that the user additionally install the lightning protection equipment on site, and ensure reliable grounding of the product and the power supply, which can reduce the probability of the transmitter damage caused by the lightning.

(4) If no output or abnormal output of the transmitter is found after the installation, please check:

a Whether the electrical connection is accurate and firm;

b Whether the supply voltage is too low and whether the load resistance is too high.

Pressure range selection

Pressure range code	Pressure range	Overpressure
6kG	±6kPa	300kPa
40kG	±40kPa	1MPa
100kG	±100kPa	2MPa
250kG	-100～250kPa	4MPa
100kA	0～100kPa A	2MPa
250kA	0～250kPa A	2MPa
1MG	-0.1～1MPa	6MPa
3MG	-0.1～3MPa	12MPa
10MS	0～10MPa	20MPa
20MS	0～20MPa	40MPa
40MS	0～40MPa	60MPa

Note: G stands for gauge pressure, A, absolute pressure, S, sealed gauge pressure.