HP10LC Digital Pressure Sensor

Nanjing Hangjia Electronic Technology Co., Ltd.

Overview

HP10LC digital pressure sensor is an oil-filled OEM pressure core isolated by 316 stainless steel corrugated diaphragm. Sensitive components selected from the international advanced high stability, high precision silicon pressure chip, the application of the latest production technology and high-precision production and inspection equipment, so that the product has excellent stability, through a dedicated integrated circuit for -10~70 ℃ wide temperature zone temperature compensation and non-linear correction, direct output of the standard I2C digital signal.

Products after long-term aging and stability screening, reliable and stable performance, very low power consumption, can be easily docked to a variety of devices or wireless modules, easy to assemble, strong application, can be widely used in a variety of fluid pressure detection, but also widely used on the Internet of Things industry, all kinds of pressure detection.

Features

- I^2C digital signal output
- Low power hibernation control pin
- Can be powered by external lithium battery
- Wide range
- Universal form factor, easy to install
- Support customer customized development

Technical Parameters

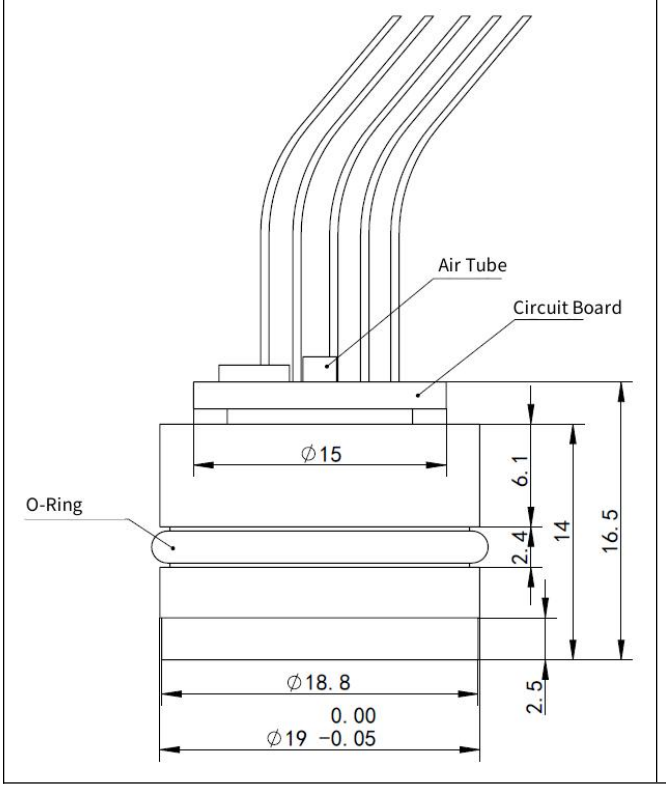
Measuring Range	
Gauge pressure	-100kPa…0~10kPa…100MPa
Absolute pressure	0~20kPa…10MPa
Overload	1.5 times of full scale
Measuring Medium	
Medium type	Various liquids compatible with contact materials
Output Signal/Power Supply	
Output Signal	I^2C
Power Supply	3.0~5.5 V_{DC}
Power consumption	
Normal mode	<3mA
Hibernation mode	<100nA
Wake up time	8ms
Performance	
Accuracy	±0.5%FS (default) ±0.25%FS (optional)
Long-term Stability	±0.25%FS/year
ADC resolution	24bit
Conversion rate	10~2400Hz
Environment condition	

Temperature range	Ambient temperature: -40~85℃ Medium temperature: -40~125℃ Storage temperature: -40~85℃
Temperature drift characteristics	
Compensation temperature range	-10~70℃(other ranges); 0~60℃ (≤70kPa)
Temperature Coefficient of Zero	±1.5%FS (reference 30℃, in compensation range); ±2.0%FS (10kPa)
Temperature Coefficient of Full Scale	±1.5%FS (reference 30℃, in compensation range); ±2.0%FS (10kPa)
Mechanical stability	
Vibration	20g(20~5000Hz)
Impact resistance	100g(10ms)
Insulation	
Insulation resistance	>100MΩ, 500VDC

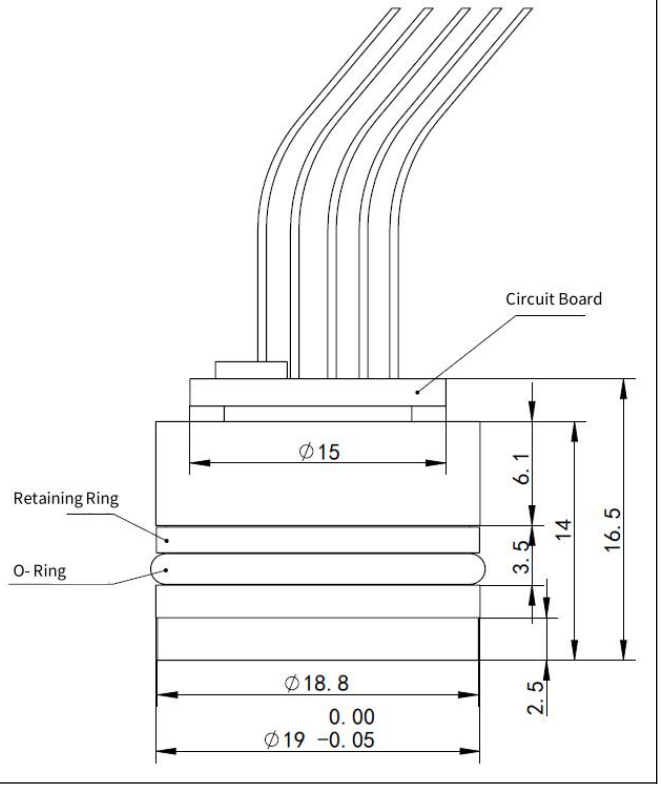
Structure Drawings (unit: mm)

I²C output

<25MPa



≥25MPa



Note:

1. The dimensions listed in the figure may change with the update of the process
2. For other shapes and dimensions, please consult the sales engineer

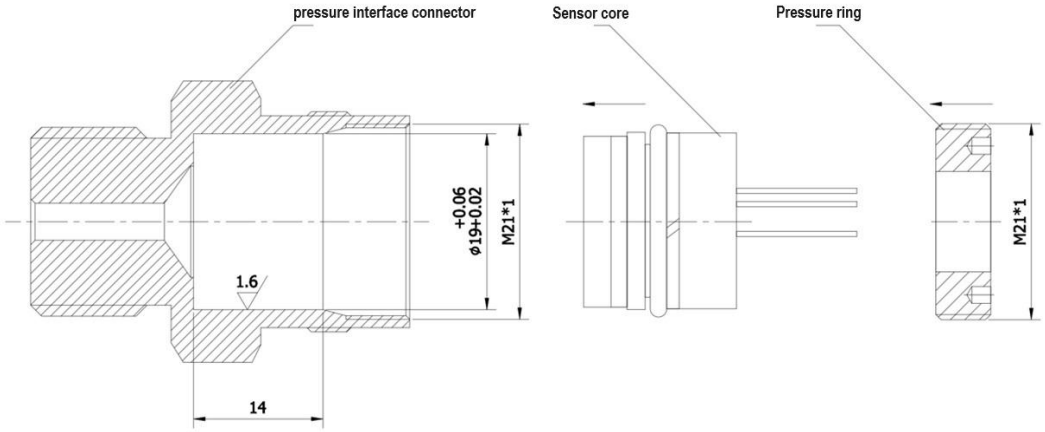
Structural Material

Ordering code	Part	Material
S6	Diaphragm	316L
S6	Case	Silicon piezoresistive sensor, 316L material
FK	Seal ring	Fluoro rubber FKM (Applicable temperature range -20~200℃)
NB		Nitrile rubber NBR (Applicable temperature range -40~120℃)

Electrical Connection

Wire color	Symbol	Color Definition
Red	VCC	Power Supply+
Black	GND	Power Supply-
Blue	PD	Hibernate pin, built-in 68k pull-up resistor, high level sleep, low level wake-up
Yellow	SCL	I^2C interface clock pin
Green	SDA	I^2C interface data pin

Installation Notes



1. When installing, apply a small amount of vacuum grease evenly on the surface of the O-ring.
2. Apply force evenly along the axial direction of the cavity to push the core into the cavity. Note that the "0" ring cannot be damaged.
3. The diaphragm of the core is a pressure-sensitive part. Do not touch it with your fingers or hard objects during use.
4. The sensor sealing method is recommended to be a suspended sealing structure to avoid its end face pressing the seal

Ordering Guide

Model No.	Type						
HP10LC	HP10LC Digital Pressure Sensor						
	Code	Output Signal					
	C	I2C					
		Pressure Range	Measuring Range				
		(0 ~ X)kPa	Fill out X directly				
			Code	Seal Ring			
			FK	FKM			
			NB	NBR			
				Code	Electrical Connection		
				NX	No cable Leads		
				ZY	Silicone cable leads		
				5264	5264 terminal block		
				X	Customized		
					Code	Hibernate Enable	
					PD	Yes(with PD PIN)	
					NPD	N/A(without PD PIN)	
						Code	Additional Functions
						G	Gauge
						S	Sealed gauge
						A	Absolute gauge
						L	cable length
e.g. : HP10L	C	(0 ~ 100)kPa	NB	5264	PD	G L=100mm	

Certification Information

Factory certification	
Certification organization	CQM
Quality management system	ISO 9001:2015
Certification scope	Research, development and manufacture of pressure transmitter and temperature transmitter
Certificate No.	00223Q21711R1S