

HP10BL Low Power Consumption Pressure Sensor

Datasheet



Nanjing Hangjia Electronic Technology Co., Ltd.

Overview

HP10BL low power consumption pressure sensor adopts a small structure design, uses a high-performance silicon piezoresistive sensor, and is assembled and produced through a strict process with a dedicated electronic conditioning circuit. This product has the characteristics of stainless-steel appearance, multiple output signals, wide temperature range compensation, and high accuracy. In addition, the pressure sensor inside the product adopts an isolated diaphragm structure, which can complete the pressure measurement and control of various media such as gas, liquid, steam and so on.

This product can be directly powered by an external lithium battery and has very low power consumption. It can be easily connected to various devices or wireless modules. It is easy to assemble and has strong applicability. It can be widely used in various pressure detection in IoT industry.

Features

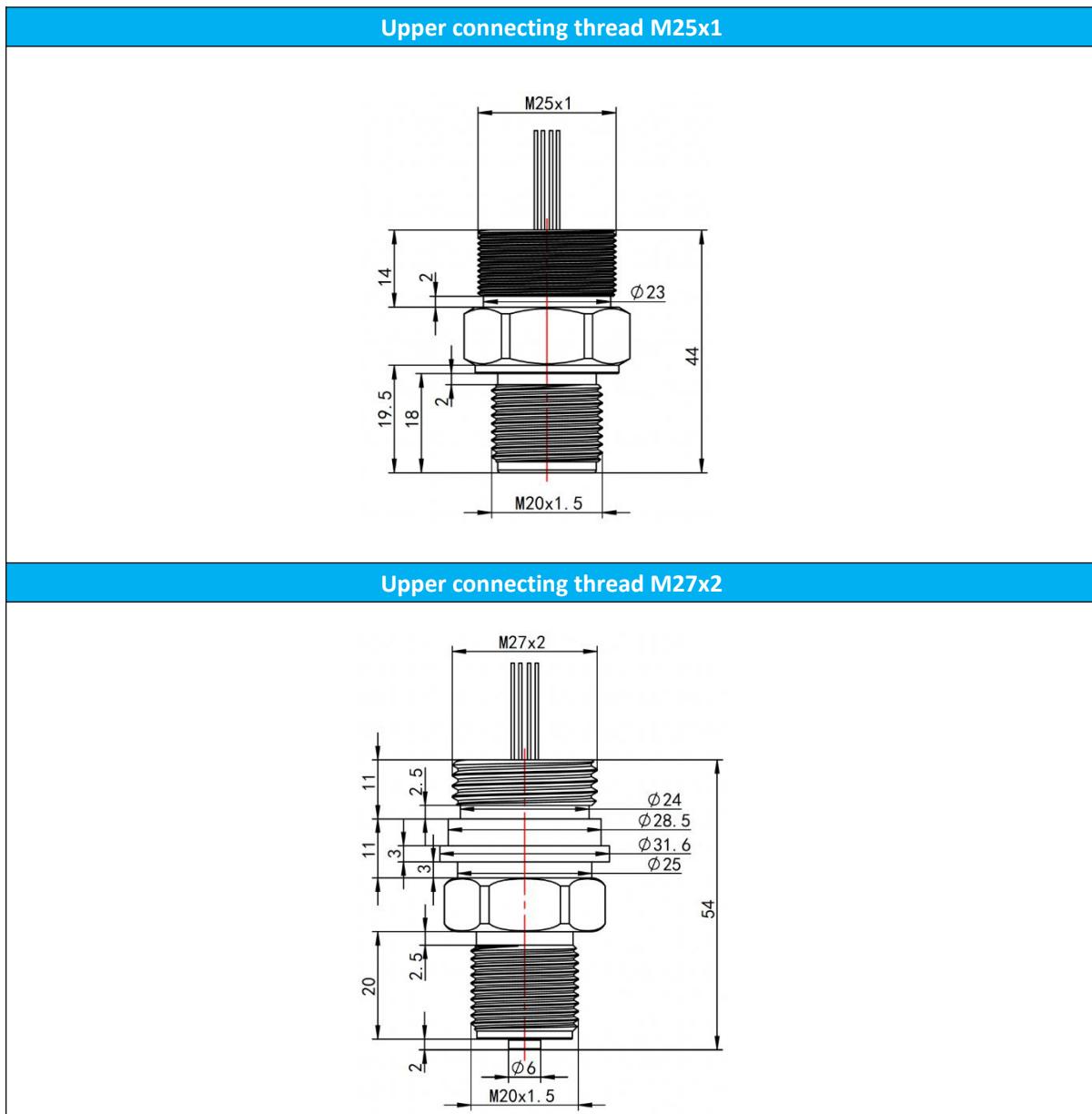
- Dedicated design for IoT
- Can be powered by external lithium battery
- Low power consumption
- Support I²C, RS485 or voltage signal output
- Compact size and easy to install
- All stainless steel structure
- Support customer customization

Technical Parameters

Measuring Medium	Various liquids and gases compatible with contact materials
Measuring Range	-100kPa…0~10kPa…100MPa (Gauge) 0~20kPa…10MPa(Absolute)
Overload	1.5 times of full range scale
Output Signal	I ² C / Vs=3.0~5.5 VDC RS485 / Vs=3.0~5.5 VDC 0.25~1.25、0.5~2.5V etc./ Vs=3.1~8.0 VDC
Power consumption (I²C output)	Normal working mode <3mA Sleep mode <100nA Wake-up time 8ms

Power consumption (RS485 output)	0.2~0.3mA when communicate once per second. Collection time: ~80ms
Power consumption (voltage output)	<2.5mA
Power-On Time Count	200ms (Standard) 50ms (Optional)
Accuracy	±0.5% FS (typical) @25°C ±0.25% FS (optional) @25°C
Long term accuracy	±0.25% FS/year
Compensation temperature range	0~60°C(10kPa); -10~70°C(other ranges)
Temperature Coefficient of Zero	± 2.0%FS(10kPa); ± 1.5%FS(Reference 30 °C , in compensation temperature range, other pressure ranges)
Temperature Coefficient of Full Scale	± 2.0%FS(10kPa); ± 1.5%FS(Reference 30 °C , in compensation temperature range, other pressure ranges)
Working Temperature	-40~85°C
Medium Temperature	-40~125°C
Storage Temperature	-40~85°C
Electrical Protection	Short circuit protection always Reverse polarity protection
Vibration	10g(20~2000Hz)
Shock resistance	100g(11ms)
Insulation resistance	>20MΩ @500VDC
Dielectric strength	<2mA @500VAC 1min

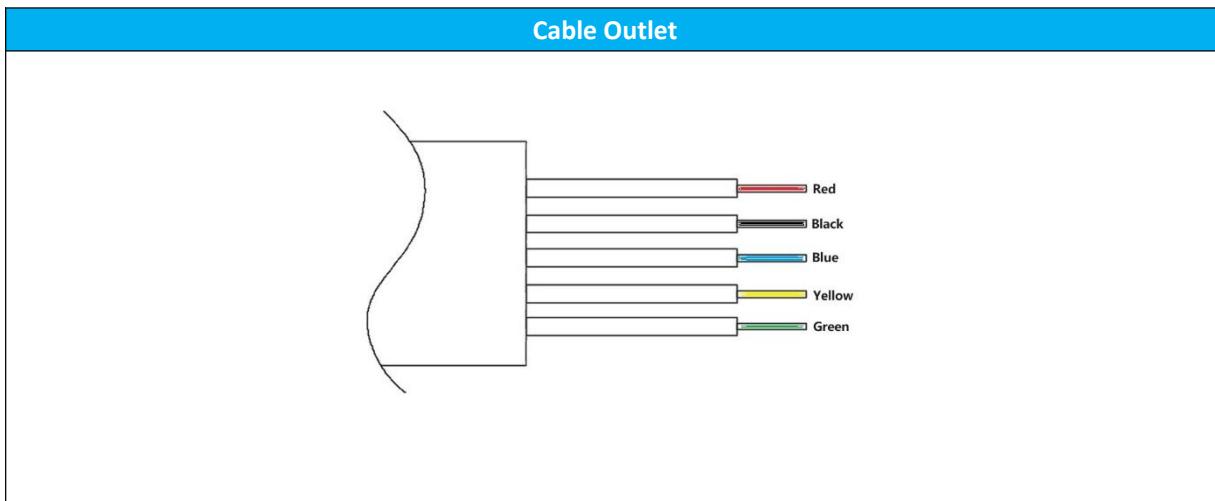
Structure Drawings(Unit:mm)



Note:

1. The dimensions listed in the picture may be changed with the update of the process.
2. Please contact us for other shapes and sizes.

Electrical Interface



Electrical Connection

Output signal	Three-wire 0.25~1.25、0.5~2.5V etc. voltage output		
Signal definition	Power supply + (+V)	Power supply - (GND)	Signal Output+ (+OUT)
Cable outlet	Red	Black	Blue

Output signal	Four-wire Modbus-RTU/RS485			
Signal definition	Power supply + (+V)	Power supply - (-V)	RS485A	RS485B
Cable outlet	Red	Black	Yellow	Green

Output signal	I ² C(Without PD hibernate control pin*)			
※ hibernate control pin, with 68k pull-up resistor inside, sleeping at high level and wake up at low level				
Signal definition	Power supply + (+V)	Power supply - (-V)	SCL	SDA
Cable outlet	Red	Black	Yellow	Green

Output signal	I ² C(With PD sleeping control pin*)				
※ hibernate control pin, with 68k pull-up resistor inside, sleeping at high level and wake up at low level					
Signal definition	Power supply + (+V)	Power supply - (-V)	SCL	SDA	PD (hibernate)
Cable outlet	Red	Black	Yellow	Green	Blue

Ordering Guide

Item No.	Type			
HP10BL	Low Power consumption pressure sensor			
	Code	Output Signal		
	C	IC		
	R	RS485		
	V	voltage		
	Range	Measurement Range		
	(0 ~ X)MPa	X is the upper limit		
	Code	Pressure Interface		
	P1	M20×1.5 male		
	P3	G1/4 male		
	P4	G1/2 male		
	Code	Upper connecting thread		
	LM25	M25×1		
	LM27	M27×2		
	X	Customized		
	Code	Housing Material		
	S4	304		
	S6	316L		
	Code	Sensor		
	M1	Silicon Pressure with diaphragm		
	Code	Others		
	G	Gauge pressure (default)		
	A	Absolute pressure		
	QF	with factory report		
		Other requests		
eg: HP10BL	C	(0 ~ 1.6)MPa	P1	LM25
				S4
			M1	G

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