

bar MPM288DI



- Cost-effective and compact
- Range: -1bar...0bar~0.35bar...35bar
- Gauge and Absolute
- Dual 24-bit ADC for pressure and temperature data acquisition
- Standard I²C communication protocol
- Dedicated power consumption control pins
- 019mm standard OEM pressure sensor
- Full stainless steel 316L

APPLICATION

- Industrial process control
- Level measurement
- Smart pressure gauges
- Gas and liquid pressure measurement
- Medical devices
- IoT

ELECTRICAL PERFORMANCE

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Power supply	3.0V ~ 5.5V DC
External port	Standard PH2.0-5P
Output signal	Digital I²C (pressure, temperature)
Continuous operating current	<3mA DC
Low-power consumption current	<100nA
Temperature error	±2°C
Pressure error	±0.2%FS (±0.5%FS@0.35bar)
Overall error	±1%FS(-10°C~80°C)
Insulation resistance	50MΩ@50V DC
Dielectric strength	50Hz, 500V AC
Operating temperature	-10°C ~80°C
Storage temperature	-25°C ~85°C
Overpressure	2.0 × FS
Burst pressure	3.0 × FS



MPM288DI pressure sensor is produced on mass production line. It outputs I²C digital signal. It features the same outline construction, mounting dimensions, and sealing method as international mainstream products, ensuring excellent interchangeability. It utilizes a mature pressure chip production process and a dedicated conditioning chip with dual 24-bit ADC for stable and reliable performance. It also features lowpower consumption control pins for convenient and precise mode control with networking function (CS). In low power consumption mode, its power supply current is <100nA, making it applicable to pressure measurement in conditions with strict power consumption requirements.

BASIC CONDITIONS

Media temperature	(35±1)°C
Environment temperature	(35±1)°C
Vibration	0.1g (1m/s²) Max
Relative humidity	(50±10)%RH
Local air pressure	(0.86 ~ 1.06)bar
Power supply	(3.3±0.1)V DC

CONSTRUCTION PERFORMANCE

Diaphragm	Stainless steel 316L		
Housing	Stainless steel 316L		
Vent tube	Stainless steel 304		
Plug wire	Standard PH2.0-5P		
O-ring	FKM		
Net weight	About 16g		







ENVIRONMENTAL CONDITIONS

Vibration	No change at 10gRMS, (20~2000)Hz
Shock	100g, 11ms
Medium compatibility	Liquid or gas that is compatible with stainless steel and FKM

OUTLINE CONSTRUCTION (UNIT:mm)





Absolute

The suggested installation dimension is $\Phi 19 + 0.05 + 0.02 + 0.02$ mm,

Note: The inner diameter of the locking ring should not be less than $\Phi15$ mm

COMMUNICATION PROTOCOL

The communication mode of MPM288DI pressure sensor is based on the standard I²C communication protocol.

This product has a pin KEY that specifically controls the switching of the operating mode of the product. When the pin is set to a V_{ih} (Input High Level Voltage), the product enters standby mode, in which it is in an "off" state, the ADC operation and I²C communication are not available. When the pin is set to a Vil (Input Low Level Voltage), the product enters operating mode, allowing ADC conversion operations and supporting I²C communication access. This control line is similar to the conventional "CS" chip select signal. Based on the above logic, the device address of this product is a unique fixed value and cannot be changed. Its I²C address is as follows (0x6D):

A7	A6	A5	A4	A3	A2	Al	W/R
1	1	0	1	1	0	1	0/1

MPM288DI has dual 24-bit ADC dedicated to the acquisition of pressure and temperature data. The respective data, stored as 8-bit per byte, are stored in on-chip EEPROM registers ranging from 0x06 to 0x0b. Furthermore, the pressure and temperature data are transmitted separately, enabling flexibility and efficiency in the protocol.

The data obtained by the user through the I²C protocol is normalized through temperature compensation and linear correction. This product operates with a wide range of supply voltage ($3.0V \sim 5.5V$ DC). The pressure data is not directly proportional to the supply voltage but corresponds to a percentage of the full-scale value of the 24-bit ADC (where the highest bit represents the sign bit).



ELECTRICAL CONNECTION



Electrical Connection	Cable	Silicone Wire
Low Power Control (KEY)	Gray	Yellow
Negative (GND)	Gray	Black
Data Line (SDA)	Gray	White
Clock Line (SCL)	Gray	Blue
Positive (V+)	Red	Red



Data frame structure for MPM288DI pressure sensor

I²C communication is as follows:

Pressure data acquisition

Start	Address_W = 0xda	Ack	Reg_address = 0x06	Ack	
Start	Address_R = 0xdb	Ack	Reg_0x06_Value	Ack	
	Reg_0x07_Value		Reg_0x08_Value	No_Ack	Stop

Temperature data acquisition

Start	Address_W = 0xda	Ack	Reg_address = 0x09	Ack	
Start	Address_R = 0xdb	Ack	Reg_0x09_Value	Ack	
	Reg_0x0a_Value	Ack	Reg_0x0b_Value	No_Ack	Stop

2.	When the KEY lead is	set to a V _{ih} ,	the	chip enters t	he low
	nower consumption n	node When	tho	KEV load is a	e ot to a

Notes

power consumption mode; When the KEY lead is set to a V_{il}, the chip enters the continuous operating mode.
Other wiring and electrical connection (4-wire I²C) are

1. The above charts need to be cross-referenced for inquiry.

available, please feel free to contact with our sales representatives or call for details.



ORDER GUIDE

MPM288DI	Digital Output Pressure Sensor										
	Range code	Measur	Measuring range Obar~0.35bar		Measuring range		ng range Ref.		Ra	nge code	Measuring range Ref.
	0A	0bar~			G.A			09	0bar~7bar G.A		
	02	0bar-	~0.7bar	r G.A			10	0bar~10bar G.A			
	03	0bai	0bar~1bar		(G.A		12	0bar~20bar G.A		
	07	0bai	r~2bar		(G.A		13	0bar~35bar G.A		
	08	0bar -	~ 3.5baı	-	(G.A					
		Code	Press	ure ty	уре						
	G Gauge										
		A Absolute			bsolute						
	Code		Code Supply voltage								
			3/5		3/5 3.0V ~ 5.5V DC						
					Code Output type						
					0						
					5						
							Code	Electrica	l connection		
							1	Gray cab	le with PH2.0-5P		
							2	100mm s	silicone flexible wire		
								Code	Special measurements		
								Y	Gauge sensor to measure negative pressure (-1bar ~ 0bar)		
									·		
MPM288DI	0A	G	3	/5	0)	1	Y	the whole spec		

Notes:

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1. The default unit is kPa, 1kPa=0.01bar.

2. The listed range is the standard range for the product. Please feel free to contact us for special range requirements.

3. A wide range of supply voltage (3.0V ~ 5.5V DC) is available. The supply voltage covered by the order guide refers to the typical supply voltage that the system can provide for the product in its application.

4. It's recommended to use a "suspended" construction when assembling the pressure sensor to avoid applying direct pressure to its end face during sealing, preventing any interference with the sensor's stability.

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