



MS5541C

Miniature 14 bar Module

The MS5541C is the miniature version of MS5535C pressure sensor module. The MS5541-HE is the high endurance pad technology version of MS5541C pressure sensor module. It contains a precision piezoresistive pressure sensor and an improved version of the 16 Bit Micropower Sensor interface IC known from the MS5535C. Compared to the previous version the ESD sensitivity has been improved to 4kV on all pins. In addition to this the MS5541C is from its outer dimensions compatible to the MS54xx series of pressure sensors. It uses an antimagnetic polished stainless steel ring for sealing with O-ring. The sensor provides 16 Bit pressure and temperature data via a 3 wire serial interface that can be easily interfaced with 4 Bit low power microcontrollers. 64 Bit of factory programmed PROM provides calibration data for a highly accurate pressure and temperature calculation. The MS5541C is fully software compatible to the MS5535C and previous versions of MS5541.

FEATURES

- 0 – 14 bar absolute pressure range
- 6 coefficients for software compensation stored on-chip
- Piezoresistive silicon micromachined sensor
- Integrated miniature pressure sensor 6.2 x 6.4 mm
- 16 Bit ADC
- 3-wire serial interface
- 1 system clock line (32.768 kHz)
- Low voltage and low power consumption
- High Endurance (HE version)

APPLICATIONS

- Diving computers and watches
- Mobile water depth and measurement systems
- High endurance pad technology (HE version)

TECHNICAL DATA

Sensor Performances ($V_{DD} = 3\text{ V}$)				
Pressure	Min	Typ	Max	Unit
Range	0		14	bar
ADC		16		bit
Resolution		1.2		mbar
Accuracy 0°C to +40°C, 0 to 10 bar	-50		+20	mbar
Accuracy -40°C to +85°C 0 to 10 bar	-60		+180	mbar
Response time		35		ms
Long term stability		20		mbar/yr
Temperature	Min	Typ	Max	Unit
Range	-40		+85	°C
Resolution	0.005		0.015	°C
Accuracy	-0.8		+0.8	°C

FUNCTIONAL BLOCK DIAGRAM

