

Digital output micro pressure sensor



MMR920 Series

Outline

The MMR920 series is a Gauge pressure sensor module that includes a MEMS pressure die with a dedicated analog front end IC to provide a fully calibrated and temperature compensated digital output (I2C/SPI). The specially developed MEMS diaphragm structure with highly sensitive makes the output be low-noise required for measurement in low pressure range. Its unique packaging structure that doesn't expose the electronics to the high pressure port realizes high robust. Furthermore, noise reduction is possible by a built-in digital filter. Cutoff frequency of the digital filter is able to be changed. It does not require complicated sensor drive or control circuit, and devices with high performance can be made only with this module and an external microcontroller which will be the host.

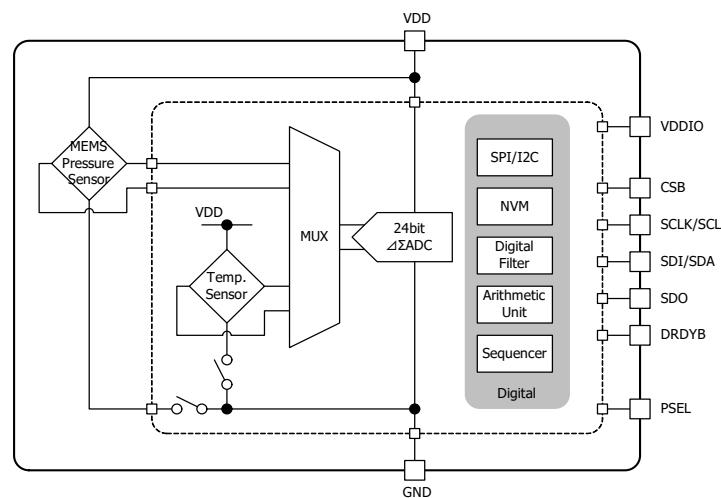
Applications

Medical, HVAC systems for building, White goods
Devices using air pressure

Features

- ① Small package 7.0(W) × 7.0(D) × 7.2(H)mm
- ② A high-accuracy pressure value can be output
Pressure measurement error
 - MMR920C02 : ±2.0%FS
 - MMR920C04/C07/C10 : ±1.0%FS
 - MMR920C25 : ±2.0%FS
- ③ It corrects the differences of sensors and temperature characteristics when shipped from our factory
- ④ It digitally outputs pressure value (SPI,I2C)
- ⑤ Noise reduction is possible by a built-in LowPassFilter.

Block Diagram



Specification

ITEM		SPECIFICATION				
Model		MMR920C02	MMR920C04	MMR920C07	MMR920C10	MMR920C25
Operating pressure range		±1.96kPa (±20cmH2O)	±3.92kPa (±40cmH2O)	±6.86kPa (±70cmH2O)	±9.80kPa (±100cmH2O)	±24.52kPa (±250cmH2O)
Overpressure				±19.6kPa (±200cmH2O)		±49kPa (±500cmH2O)
Burst pressure					±49kPa (±500cmH2O)	
Pressure type						Gage Pressure
Pressure medium						Non-corrosive Gas (No Condensation)
Operating temperature range						-40 ~ 85°C
Supply voltage range						3.0 ~ 3.6V (3.3V typ.)
Current consumption						0.8mA
Conversion time						0.4 / 0.8 / 1.6 / 3.2ms
Pressure measurement error	Ta = 0~50°C	±2.0%FS		±1.0%FS		±2.0%FS
Pressure span accuracy		±1.3%FS		±0.65%FS		±1.3%FS
Pressure linearity		±0.44%FS	±0.22%FS	±0.4%FS	±0.4%FS	±0.8%FS
Pressure resolution		0.00001cmH2O		0.00002cmH2O		0.00008cmH2O
Pressure effective resolution		0.019 / 0.009 / 0.004 / 0.002 cmH2ORMS				
Interface		SPI / I2C				
Size		7.0(W) × 7.0(D) × 7.2(H)mm				

