MITSUMI

PRELIMINARY

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 speciality 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 mesurement error

MMR920C02 : ±2.0%FS

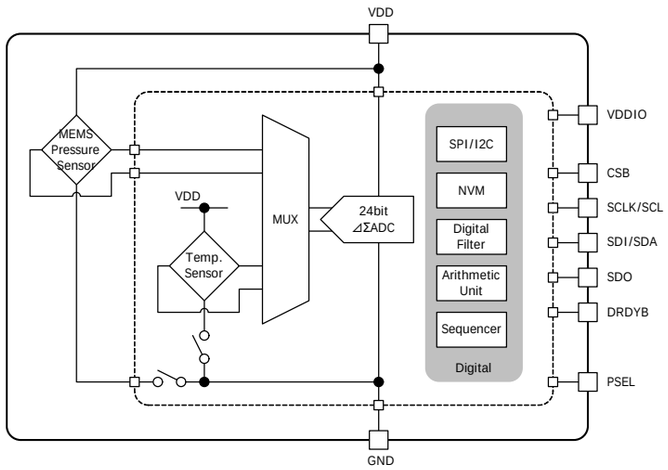
MMR920C04/C07/C10 : ±1.0%FS

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
Operating pressure range	±1.96kPa (±20cmH2O)	±3.92kPa (±40cmH2O)	±6.86kPa (±70cmH2O)	±9.80kPa (±100cmH2O)
Pressure type	Gage Pressure			
Pressure medium	Non-corrosive Gas (No Condensation)			
Operating temperature range	-40 ～ 85℃			
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 mesurement error	±2.0%FS	±1.0%FS		
Pressure span accuracy	±1.3%FS	±0.65%FS		
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			

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