MITSUMI

PRELIMINARY

Digital output micro differential pressure sensor

MMR941 Series

Outline

The MMR941 series is a differential pressure sensor for the low range less than 1 kPa. The sensor consists of a MEMS pressure die and a dedicated analog front end IC to provide a fully calibrated and temperature compensated digital output (I2C). The speciality developed MEMS element with highly sensitive makes the output be low-noise required for measurement in ultra low pressure range.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

Devices using air pressure

Features

① Dual nozzle package

② A high-accuracy pressure value can be output

Pressure mesurement error

: MMR941C25 ±8.0%FS

: MMR941C50 ±4.0%FS

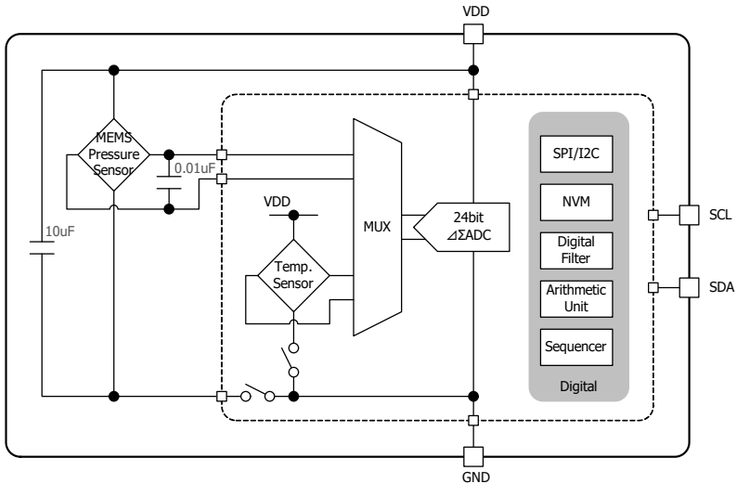
: MMR941C99 ±3.0%FS

③ It corrects the differences of sensors and temperature characteristics when shipped from our factory

④ It digitally outputs pressure value (I2C)

⑤ Noise reduction is possible by a built-in LowPassFilter

Block Diagram



Specification

ITEM	SPECIFICATION		
Model	MMR941C25	MMR941C50	MMR941C99
Operating pressure range	±250Pa	±500Pa	±1,000Pa
Pressure type	Differential 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	1.4mA (TBD)		
Conversion time	0.4 / 50ms		
Pressure mesurement error	±8.0%FS	±4.0%FS	±3.0%FS
Pressure span accuracy	±2.5%FS	±1.5%FS	±1.0%FS
Pressure effective resolution	0.05PaRMS@0.4ms / 0.005PaRMS@50ms (TBD)		
Interface	I2C		
Size	29(W)x18(D)x23.7(H)mm (TBD)		

MinebeaMitsumi
Passion to Create Value through Difference

minebeamitsumi semiconductor Search

https://product.minebeamitsumi.com/en/product/category/sensor/ics/

Mitsumi Electric CO.,LTD.
Semiconductor Business Division
Strategy Engineering Department
tel:+81-46-230-3470

December 2022 Draft.0