MDM291 Piezoresistive OEM Differential Pressure Sensor

Features

- Pressure range: 0kPa~35kPa…2MPa
- Constant current / constant voltage power supply
- No O-rings, all welding construction, possible for various fliud media
- Stainless steel 316L
- High static pressure 20MPa
- Wide temperature compensation: 0℃ ~70℃
- Pressure port (optional)
- 1.5 times overpressure

Application

- Industrial process control
- Differential pressure measurement
- Gas, liquid pressure measure
- Pressure checking meter
- Pressure calibrator
- Ventura and eddy-current flow meter

Introduction

MDM291 piezoresistive differential pressure transducer is an OEM differential pressure measuring element using stainless steel isolated diaphragm, all welding construction and having no O-rings. It has unified construction, high static pressure, good stability and reliability. The high and low pressure sides are both protected by isolated diaphragm and welded with male screw thread pressure port, therefore the two pressure sides are both possible to corrosive and conductive liquid media. The measured pressure is transmitted onto the die through isolated diaphragm and filling silicon oil. The sensor element chooses high accuracy and high stability silicon die. It achieves precise differential pressure measurement. The transducer is produced in advanced production line, through automatic computer testing and temperature compensation, so it has good temperature feature. It can be widely used in industrial process control field etc. for differential pressure measurement.

Electric Performance

- Power supply: ≤2.0mA DC; ≤ 10V DC
- Electrical connection: 100mm silicon rubber flexible wire
- Common Mode Voltage Output: 50% input (typ.)
- Input impedance: 2kΩ~8kΩ
- Output impedance: 3.5kΩ~6kΩ
- Response (10%~90%): <1ms
- Insulation Resistor: 100MΩ,100VDC
- Overpressure: refer to Order Guide
- Max static pressure: 20MPa
- Zero drift/ Static pressure: ≤0.5mV/MPa
- Housing: stainless steel 316L
- Leading wire: silicon rubber flexible wire
- Net weight: ~355g

Construction Performance

- Diaphragm: stainless steel 316L
- Housing: stainless steel 316L
- Leading wire: silicon rubber flexible wire
- Net weight: ~355g

Environment Condition

- Shock: No change at 10gRMS, (20~2000) Hz
- Impact: 100g,10ms
- Media compatibility: gas or liquid that is compatible with stainless steel

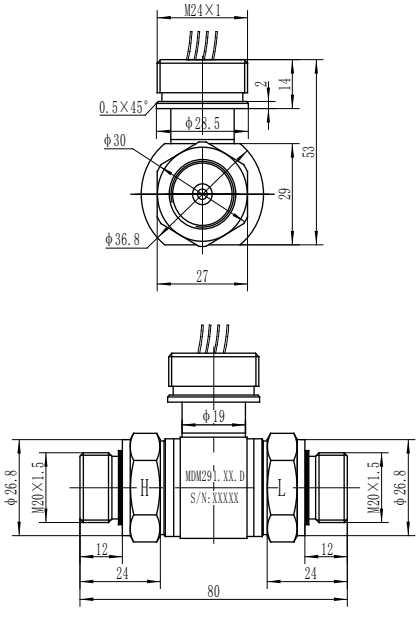
Basic Condition

- Media temperature: (35±1)℃
- Environment temperature: (35±1)℃
- Shock: 0.1g(1m/s2) Max
- Humidity:(50%±10%)RH
- Local Air Pressure: (86~106) kPa
- Power supply: (1.5±0.0015) mA DC

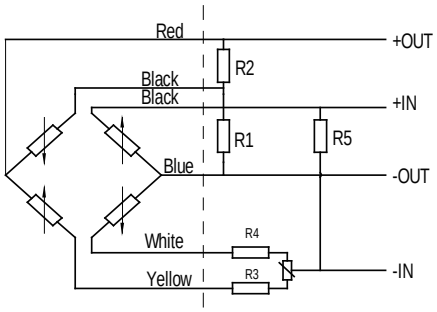
Specification

Item*	Min.	Typ.	Max.	Units
Linearity		±0.20	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2	mV DC
FS output	70			mV DC
Zero thermal error		±0.5	±0.75	%FS, @35℃
Span thermal error		±0.5	±0.75	%FS, @35℃
Compensated temp. range	0 ~ 70			℃
Working temp. range	-40 ~ 125			℃
Storage temp. range	-40 ~ 125			℃
Long-term stability		±0.3	±0.5	%FS/year
*testing at basic condition **Code 0A :Max. Zero and FS thermal Error: ±1%FS(@35℃)				

Outline Construction (Unit: mm)



Electrical Connection



Wire color	Definition
Black	+IN
Yellow	-IN
Red	+OUT
Blue	-OUT

The actual electrical connection method, please check the parameter label enclosed with products.

Order Guide

MDM291	Piezoresistive OEM Differential Pressure Sensor			
Range Code	Pressure range		Range Code	Pressure range
0A	0kPa~35kPa		08	0kPa~350kPa
02	0kPa~70kPa		09	0kPa~700kPa
03	0kPa~100kPa		10	0MPa~1MPa
07	0kPa~200kPa		12	0MPa~2MPa

Code	Compensation
L	Laser Trimming
M	Outer compensated resistor (providing resistor value)

Code	Electrical connection
2	100mm silicon rubber flexible wires

Code	Pressure connection
Null	No pressure port and electric connection port
C_1	M20*1.5 male, face type seal
C_2	G1/4 male
C_3	G1/2 male
C_4	G1/4 female

MDM291	12	L	2	C_2	whole spec.

Notes

1. High pressure side and Low pressure side are marked "H" and "L" on the body.
2. During application, the pressure on the high side should not be lower than the low side.
3. Please protect the diaphragm to prevent any damage.
4. Please do not pull or drag the 6 leading wires.