MDM291 Welded Differential Pressure Sensor

Features

- Pressure range: 0bar~0.35bar…20bar
- Constant current or Constant voltage power supply for option
- No O-rings, all welding construction, possible for various fliud media
- Stainless steel 316L
- High static pressure 200bar
- Wide temperature compensation: 0℃ ~70℃
- Pressure port (optional)
- 2 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 welded differential pressure sensor 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
- 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
- Max static pressure: 200bar
- Zero drift or Static pressure: ≤0.05mV/bar

Construction Performance

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Leading wire: Silicon rubber flexible wire
- O-ring:FKM
- Net weight: ~355g

Environment Condition

- Shock: No change at 10gRMS, (20~2000) Hz
- Impact: 100g,11ms
- Media compatibility: Gas or Liquid that is compatible with stainless steel

Basic Condition

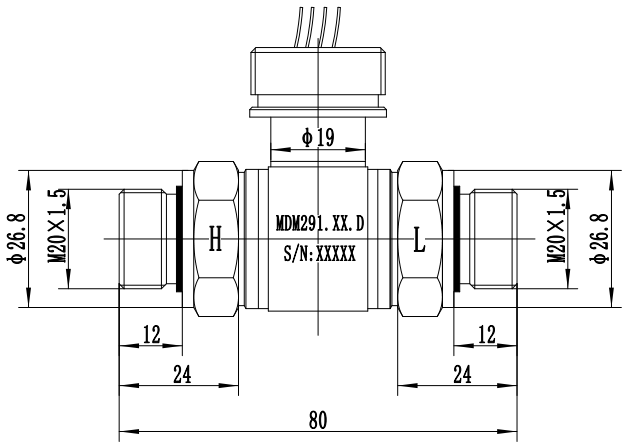
- Media temperature: (35±1)℃
- Environment temperature: (35±1)℃
- Shock: 0.1g (1m/s^2) Max
- Humidity:(50±10)%RH
- Local air pressure: (0.86~1.06) bar
- Power supply: (1.5±0.0015) mA DC

Specification

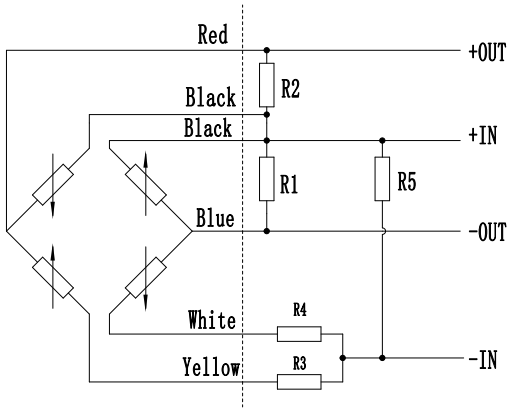
Item*	Min.	Typ.	Max.	Units
Linearity		±0.15	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2.0	mV DC
Output/Span**	70			mV DC
Zero thermal error***		±0.75	±1.0	%FS, @35℃
Span thermal error***		±0.75	±1.0	%FS, @35℃
Compensated temp. range	0 ~ 70			℃
Working temp. range	-40 ~ 125			℃
Storage temp. range	-40 ~ 125			℃
Long-term stability		±0.3	±0.5	%FS/Year

*testing at basic condition
**Output/Span=full scale output - zero point
***Code 0A :Max. Zero and FS thermal Error: ±1%FS(@35℃)

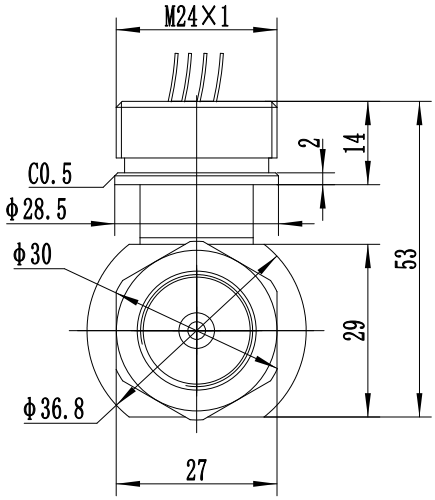
Outline Construction (Unit: mm)



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	Welded Differential Pressure Sensor			
Range Code	Pressure range		Range Code	Pressure range
0A	0bar~0.35bar		08	0bar~3.5bar
02	0bar~0.70bar		09	0bar~7bar
03	0bar~1bar		10	0bar~10bar
07	0bar~2bar		12	0bar~20bar
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.

*The default code for electrical connection is “1”on the parameter card. And it is also allowed to print code “1” if the electrical connection is flexible wire (original code “2”). The wire length shall be as per customers’ request on the contact.

Notes

1. The default unit of the company’s products is kPa,1kPa=0.01bar.
2. High pressure side and Low pressure side are marked "H" and "L" on the body.
3. During application, the pressure on the high side should not be lower than the low side.
4. Please protect the diaphragm to prevent any damage.
5. Please do not pull or drag the 6 leading wires.