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Сенсор дифференциального давления MDM291. Технические характеристики.



Introduction

MDM291 piezoresistive differential pressure transducer is an OEM differential pressure measuring element consisting of a 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 an 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 a stainless steel 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.

Features

- Pressure range: 0kPa~35kPa...2MPa
- Constant current / constant voltage power supply
- No O-rings, all welding construction, possible for various fluid media
- Stainless steel 316L
- High static pressure 20MPa
- Wide temperature compensation: 0°C ~70°C
- 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

Electric Performance

- Power supply: $\leq 2.0\text{mA DC}$; $\leq 10\text{V DC}$
- Electrical connection: 100mm silicon rubber flexible wire
- Common Mode Voltage Output: 50% input (typ.)
- Input impedance: $2\text{k}\Omega \sim 8\text{k}\Omega$
- Output impedance: $3.5\text{k}\Omega \sim 6\text{k}\Omega$
- Response (10%~90%): $< 1\text{ms}$
- Insulation Resistor: $100\text{M}\Omega, 100\text{VDC}$
- Overpressure: refer to Order Guide
- Max static pressure: 20MPa
- Zero drift/ Static pressure: $\leq 0.5\text{mV/MPa}$
- 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

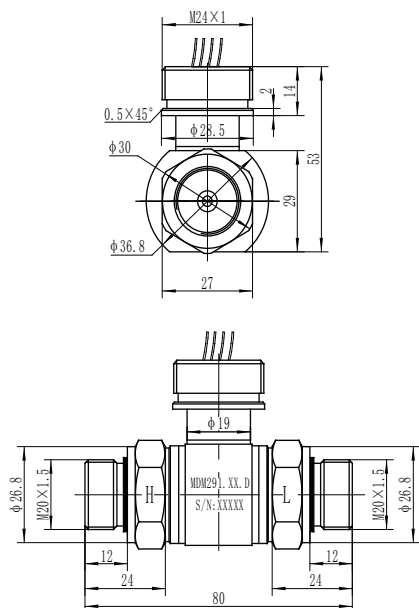
- Media temperature: (35±1)°C
- Environment temperature: (35±1)°C
- Shock: 0.1g(1m/s²) Max
- Humidity: (50%±10%)RH
- Local Air Pressure: (86~106) kPa
- Power supply: (1.5±0.0015) mA DC

Specification

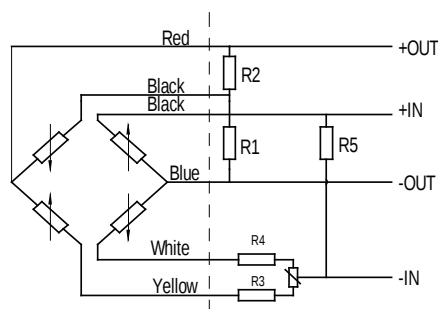
Item*	Min.	Typ.	Max.	Units
Linearity		±0.20	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2	mV DC
FS output	70			mV DC
Zero thermal error		±0.5	±0.75	%FS, @35℃
Span thermal error		±0.5	±0.75	%FS, @35℃
Compensated temp. range	0 ~ 70			℃
Working temp. range	-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.

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