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Датчик дифференциального давления MDM491. Технические характеристики.



Features

- Full stainless steel construction, compact size, easy installation;
- Welding and full-sealed construction; housing protection IP65;
- Using piezoresistive differential pressure sensor, 316L isolated diaphragm;
- Temperature compensation and aging, stable performance;
- Zero and span adjustable outside for plug connection version.

Application

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

Introduction

MDM491 Piezoresistive Differential Pressure Transmitter is a compact full-welded (no sealed ring) differential measurement element. Silicon oil is filled in between die and two diaphragms, when the measured differential pressure is added on two diaphragms, the pressure could be transferred onto die through silicon oil. Sensor die connects with amplifier circuit through wires, using semi-conductor's piezoresistive effect, transforming differential pressure signal into electric signal. The output signal from Weston Bridge on the sensing die has a good linear relationship with differential pressure, so the measured differential pressure could be measured precisely. The whole product is used for differential pressure measurement of various gases and liquids in pipeline in many fields including petroleum, chemi-industry, power station and hydrology, etc.

Electrical Performance

- Power Supply: 15V~28V DC
- Output Signal: 4mA~20mA DC(2-wire); 0V/1V~5V/10V DC, 0mA~10mA/20mA DC(3-wire)
- Electrical Connection: plug or cable
- Response Time: (10%~90%): ≤1ms
- Insulation Resistance: 100MΩ, 50VDC

Construction Performance

- Housing: SS 1Cr18Ni9Ti
- Diaphragm: SS 316L
- Filled liquid: silicon oil

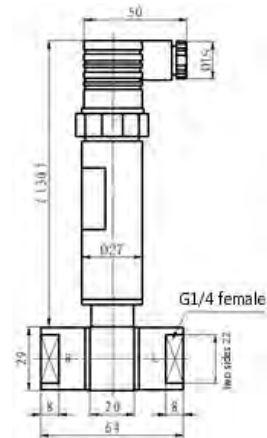
Environment Condition

- Shock Effect: $\leq \pm 1\%$ at 3gRMS, 30Hz~2000Hz
- Impact: $\leq 1\%$ at 100g, 10ms
- Media: liquid or gas which is compatible with construction material

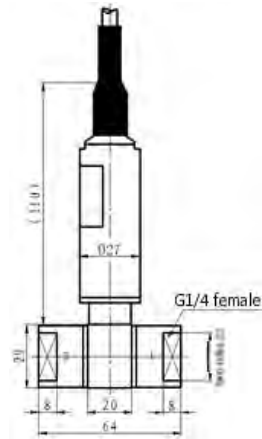
Specification

Range Code	0A	02	03	07	08	09	10	12
Unit	KPa						MPa	
Pressure Range	0~35	0~70	0~100	0~200	0~350	0~700	0~1	0~2
+overpressure	70	150	200	400	700	1400	2.0	4.0
-overpressure	35	70	100	200	350	700	1.0	1.0
Static Pressure	$\leq 20\text{MPa}$							

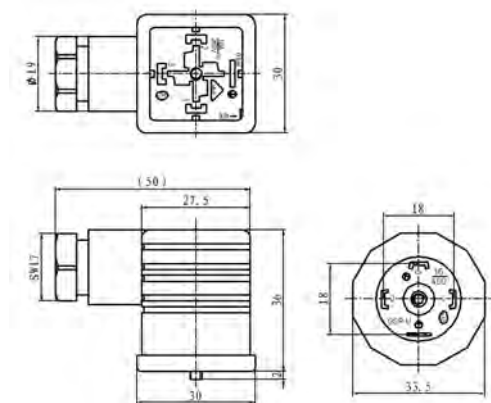
Item*		Min.	Typ.	Max.	Unit
Accuracy			0.5		±%FS
Zero Thermal Error	≤ 200kPa		0.75	1.25	±%FS, @35℃
	> 200kPa		0.5	0.75	
Span Thermal Error	≤ 200kPa		0.75	1.25	
	> 200kPa		0.5	0.75	
Stability	≤ 200kPa	0.5			±%FS/year
	> 200kPa	0.2			
Static Pressure Effect		0.05			±%FS, per 100kPa
Compensation temp.		0~70			℃
Operation temp.		-10~80			
Storage temp.		-40~120			

Outline Construction (Unit: mm)

Outline Construction and Dimension(plug connection)



Outline Construction and Dimension(cable connection)



Plug Outline Construction and Arrangement

Electrical Connection

Plug Connection:

Pin	2-wire	3-wire
1	+V	+V
2	0V/+OUT	GND
3	Null	+OUT

Cable Connection:

Wire color	2-wire	3-wire
Black	+V	+V
Red	0V/+OUT	+OUT
White	Null	GND

Order Guide

MDM491		Piezoresistive Differential Pressure Transmitter								
		Code	Pressure Range							
		[0~X] kPa or MPa	Range Code	Pressure Range (kPa)	Overpressure kPa		Range Code	Pressure Range (MPa)	Overpressure MPa	
	+				-	+			-	
	0A		0~35	70	35	08	0~0.35	0.7	0.35	
	02		0~70	150	70	09	0~0.7	1.4	0.7	
	03		0~100	200	100	10	0~1.0	2.0	1.0	
	07	0~200	400	200	12	0~2.0	4.0	1.0		
		Code	Output Signal							
		E	4mA~20mA DC							
		F	1V~5V DC							
		J	0V~5V DC							
		Q	0mA~10mA DC							
		U	0mA~20mA DC							
		V	0V~10V DC							
			Code	Construction Material						
				Diaphragm		Pressure port		Housing		
				22	SS 316L		SS		SS	
				24	SS 316L		SS 316L		SS 316L	
				Code	Others					
					C ₁	M20×1.5 male with face type seal				
			C ₂		G1/4 male					
			C ₃		G1/2 male					
			C ₄		G1/4 female					
			B ₁		4-core plug connection					
			B ₂		Cable connection length:1.5m					
			M ₃		3½LCD digital indicator (only 4~20mADC)					
			M ₄		3½LED digital indicator (only 4~20mADC)					
MDM491	[0~100]kPa	E	22	C ₄ B ₂	the whole spec.					

Notes

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