



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

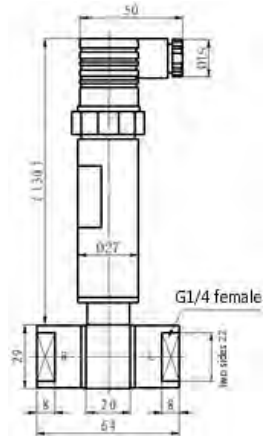
- Shock Effect: $\leq \pm 1\%$ at 3gRMS, 30Hz~2000Hz
- Impact: $\leq 1\%$ at 100g, 10ms
- Media: liquid or gas which is compatible with construction material

Specification

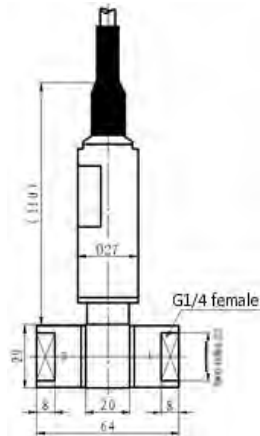
Range Code	0A	02	03	07	08	09	10	12
Unit	kPa						MPa	
Pressure Range	0~35	0~70	0~100	0~200	0~350	0~700	0~1	0~2
+overpressure	70	150	200	400	700	1400	2.0	4.0
-overpressure	35	70	100	200	350	700	1.0	1.0
Static Pressure	$\leq 20\text{MPa}$							

Item*		Min.	Typ.	Max.	Unit
Accuracy			0.5		$\pm\%FS$
Zero Thermal Error	$\leq 200\text{kPa}$		0.75	1.25	$\pm\%FS, @35^\circ\text{C}$
	$> 200\text{kPa}$		0.5	0.75	
Span Thermal Error	$\leq 200\text{kPa}$		0.75	1.25	
	$> 200\text{kPa}$		0.5	0.75	
Stability	$\leq 200\text{kPa}$	0.5			$\pm\%FS/\text{year}$
	$> 200\text{kPa}$	0.2			
Static Pressure Effect		0.05			$\pm\%FS, \text{ per } 100\text{kPa}$
Compensation temp.		0~70			$^\circ\text{C}$
Operation temp.		-10~80			
Storage temp.		-40~120			

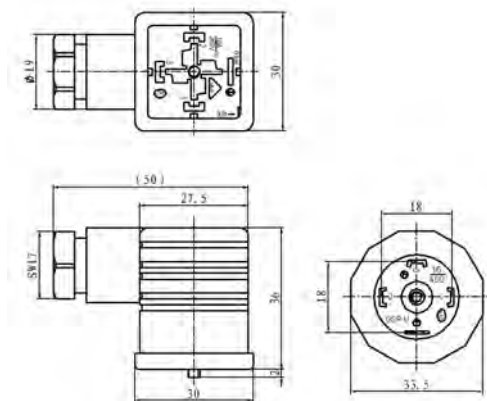
Outline Construction (Unit: mm)



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

- 1.We suggest to install tri-valve between the measured point and transmitter to protect the media adding on transmitter's positive and negative cavities slowly;
- 2.We suggest to make two pressure ports horizontally to reduce installation direction effect;
- 3.Please pay attention that the static pressure should be less than 20MPa, transmitter positive and negative cavity should be in the rating pressure range;
- 4.Digital indicator information, please refer to MPM480 datasheet;
- 5.If the user has special requirement, please feel free to contact our company.