MRA21

OEM Piezo-Resistive Pressure Sensor

Features

- High Measuring Accuracy
- Pressure Measurement Range of -1 to 1000bar
- Compact and Rugged Model
- Wide Range of Media Compatibility
- Low Static and Thermal Errors

Description

MRA21 series with SS316L or Hastelloy diaphragm is a rugged Piezo-resistive silicon technology based pressure sensing element suitable for OEM applications in harsh environments. This compact pressure sensor offers great flexibility and reliability for a wide range of applications with highly competitive pricing.

MRA21 is available in pressure ranges from -1 to 1000bar with an output of mV. It is suitable for pressure measurement of gases & liquids compatible with SS316L. While the standard Precision is 0.5% FS, you can optionally get a precision of 0.25% FS.

The robust construction of MRA21 with its high performance makes it ideal for demanding long term applications.

Applications

- Process control systems
- Production machinery
- Hydrology research
- Machine tool control
- Air conditioning and compressed air lines
- Chemical industries
- Agricultural equipment
- Open cut mining
- Hydraulic pumps
- Power plants

Technical Specifications

- **Pressure media:** all fluids compatible with SS316L or hastelloy
- **Ranges:** -1 to 1000bar
- **Pressure references:** Gauge, Sealed Gauge, Absolute
- **Overpressure rating:** 150% FS
- **Excitation:** 1.5mA
- **Output signals:** 70mV, 40mV
- **Precision:** 0.5% FS (standard), 0.25% FS, combined LRH error
- **Long term stability:** <0.2% FS/year
- **Zero offset:** ≤ ±2mV
- **Life cycle:** > 10^8 cycles
- **Response time:** ≤ 1ms (10%-90%)
- **Compensated temp. range:** 0 to 70°C
- **Operating temp. range:** -20 to +80°C
- **Temp. coefficient of zero:** 0.02% FS /°C
- **Temp. coefficient of span:** 0.02% FS /°C
- **Input / output resistance:** 2-6kΩ
- **Insulation resistance:** 100MΩ @ 50VDC
- **Electrical connection:** 4- wire or 6 Kovar-pin connection
- **Case material:** SS316L
- **Diaphragm materials:** SS316L, Hastelloy or others
- **Sealing:** fluoro-rubber sealing ring
- **Filled oil:** silicon oil or olive oil (for sanitary applications)
- **Vibration:** 20g (20 to 5000Hz)
- **Net weight:** 23g

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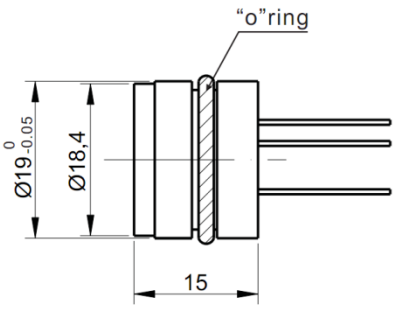
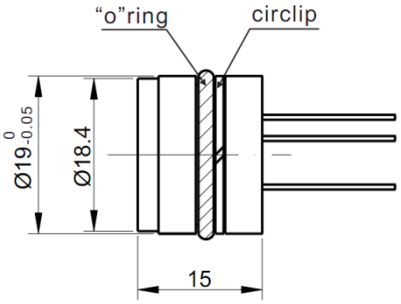
Dimensions

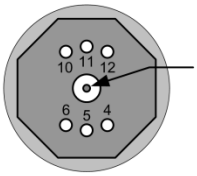


MRA21 for pressure range of 0.2 to 250bar



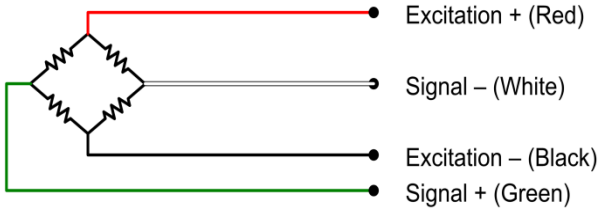
MRA21 for pressure range of 250 to 1000bar

Connection Diagrams



Pin 4: Signal +
Pin 5: Excitation +
Pin 6: Excitation -
Pin 10: Signal -
Pin 11,12: not connected

6 pins connection



4-wire connection

Ordering Code

MRA21								
Range	**[-1/0]; [-0.2/0]; [0/+0.2]; 1, 2.5, 4, 6, 10, 16, 25, 50, 100, 250, 400, 600, 1000bar or other ranges in bar or psi**							
	Pressure Reference							
	VG (vented gauge)	**SG** (sealed gauge)	**Abs** (absolute)					
		Precision ±						
		0.5% FS	**0.25%** FS					
			Output Signal					
			70mV	**40mV**				
				Pressure Port				
				No pressure port	**G1/4**(¼" BSPP male)			
				G1/2(½" BSPP male)	**others**			
					Electrical Connection			
					4wire cable	**6 pins** connection		
						Diaphragm Material		
						SS (316L)		
						Hastelloy (C-276)		
							Filled Oil	
							Silicone	
							Olive	
MRA21	**250bar**	**SG**	**0.5%**	**70mV**		**4wire**	**SS**	**Silicon**

Note:

All specifications are subject to change without prior notice

Ver. 5.41-15/05

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