

PR 9268/0x0-100-RAD Overview

The absolute vibration sensors PR9268/x0x-100-RAD are designed to measure absolute vibrations in the frequency range 4...1000 Hz and with vibration amplitudes of up to 1500 mm (peak-peak). These types provide electrical signals proportional to the vibration velocity.

The sensors offer several basic types to cover a wide range of industrial measuring applications.

The robust construction and the splash-proof housing permits the sensors to be mounted even in hostile environments.

Application areas of the sensors are all kind of turbo machinery, fans, compressors, gear boxes, pumps, coal mills and other machines.

The high output level and the low impedance of the measuring coil effect a high interference immunity. Subsequent measuring amplifiers of the MMS 3000 and A 6000 machine monitoring systems can process the vibration signal without the need of additional intermediate amplifiers.

The measuring element of the absolute bearing vibration sensors PR9268/x0x-100-RAD consist of a seismic mass with a coil, suspended on membrane springs and moving in the circular gap of a permanent magnet. The membrane springs lead the measuring element in the longitudinal direction.

The sensors are operated above the resonance frequency, which is 4,5 Hz. The seismic mass remains at rest and due to the vibration of the sensor housing, an electric signal proportional to the vibration velocity is generated.

The sensors are dynamic sensors with the measuring coil as part of the seismic element, moving in the field of the permanent magnet. Damping of the measuring elements is realized by damping cylinders resp. by external wiring and set to a value of approx. 0.6, resulting in a very linear characteristic over the entire frequency range.

Measurements below the resonance frequency can be made with corresponding corrections of the amplitude responses.

In case of too high vibration amplitudes, mechanical limit stops reduce the maximum amplitude of the seismic systems.

The transducers PR9268/20x-100-RAD are designed for vertical and PR9268/30x-100-RAD for horizontal operation.

- For measurement of absolute vibrations at machines
- Operating temperature range up to 80 °C (176 °F)
- Seismic function principle
- Easy mounting
- High sensitivity

- Rugged construction for industrial applications
- Splash proof, protection class IP 55
- Frequency range from 4 Hz to 1000 Hz
- Part of the A6000 and MMS 3000 system for rotating machinery
- Radioactive radiation resistant



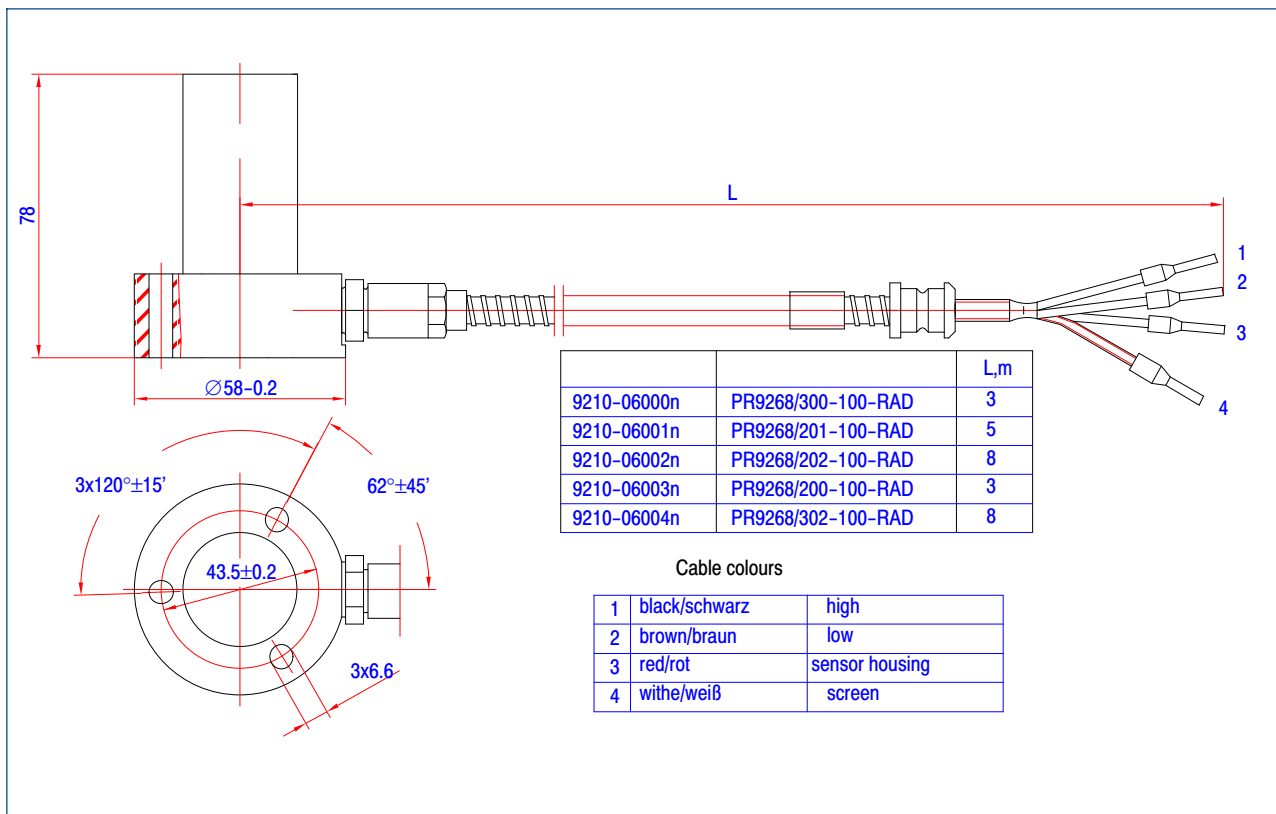
PR 9268/x0x-100-RAD

Technical Data

Measuring principle	
Low tuned system for absolute vibration measurement	
Mechanical / electrical conversion	
Electro-dynamic	
Operation direction	
PR 9268/20x-...	vertical
PR 9268/30x-...	horizontal
Signal frequency and amplitude	
Frequency range	4 Hz to 1000Hz
Vibration amplitude	±1500µm
Sensitivity	
Sensitivity at 80 Hz 20°C (68°F) and 100 kΩ load	29 mV/mm s ⁻¹
Tolerance	±5%
Linearity error	<2%
Transversal sensitivity	
PR 9268/20x-...	0.13g
PR 9268/30x-...	0.27g
Damping factor D	
	approx. 0.56 at 20°C /68°F
	approx. 0.42 at 100°C/ 212°F
Effective capacities	
	< 1.2 nF inclusive cable
Electrical data of meas. coil	
DC resistance	375 Ohm For Channel Clear detection, A6120 requires additional serial resistance of approx. 1500 Ohm within sensor circuit. This reduces the sensitivity to 28.5 mV/mm s ⁻¹ .
Inductance	<90mH
Permissible acceleration	
Measuring direction	10g continuously 20g short time
Transversal direction	2g
Temperature range	
Sensor without connector	
Continuous	-10 to +80°C (14 to 176°F)
Short time (1 minute)	-10 to +105°C (14 to 221°F)
Storage / transport	-10 to 70°C (14 to 158°F)
Environmental conditions	
Protection class	IP55
Relative humidity	0 to 100% (non-condensing)

Material	
Housing material	Aluminium
Connection cable	PVC (coating, cable and wires)
Weight	
Sensor with cable and connector	approx. 930g (2.05 lb)
Sensor with cable and connector including packing	approx. 1200g (2.65 lb)
Connection cable	
Wires	3-wires, 0.22mm ² (AWG 24)
Radiation resistant	
Radiation resistant	8x10 ⁵ Gy

Dimensions



Ordering information

Type	Description	Order number
PR 9268/300-100-RAD	Electro-dynamic absolute vibration sensor, horizontal measuring direction with a connection cable of 3 m, protection hose and open cable end	9210-06000n
PR 9268/201-100-RAD	Electro-dynamic absolute vibration sensor, vertical measuring direction with a connection cable of 5 m, protection hose and open cable end	9210-06001n
PR 9268/202-100-RAD	Electro-dynamic absolute vibration sensor, vertical measuring direction with a connection cable of 8 m, protection hose and open cable end	9210-06002n
PR 9268/200-100-RAD	Electro-dynamic absolute vibration sensor, vertical measuring direction with a connection cable of 3 m, protection hose and open cable end	9210-06003n
PR 9268/302-100-RAD	Electro-dynamic absolute vibration sensor, horizontal measuring direction with a connection cable of 8 m, protection hose and open cable end	9210-06004n

Emerson Process Management
Asset Optimization
Jöbkesweg 3
48599 Gronau
T +49 2562 709 0
F +49 2562 709 401

©2013, Emerson Process Management.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability.

All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

All rights reserved. Machinery Health is a mark of one of the Emerson Process Management group of companies. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

