

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

EPRO

PR9268/617-100-CNS

HIGH-TEMPERATURE ELECTRODYNAMIC VELOCITY SENSOR

Used with the applicable PR9268 electrodynamic velocity sensors configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Emerson official manufacturer documentation

Machinery Health™ Sensor

PR 9268/xxx-xxx, Absolute Vibration Transducers



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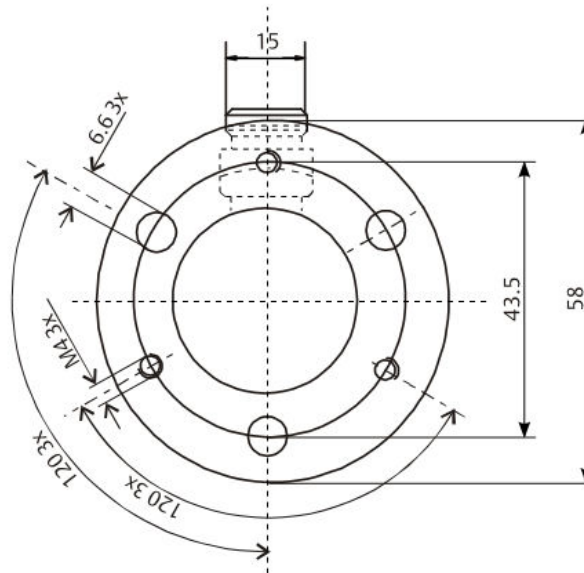
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PR 9268/60x-000 and PR 9268/70x-000

The Harting connectors of the PR 9268/60x-000 and PR 9268/70x-000 transducers contain a resistor network. Install the Harting connector only in environments with temperatures not higher than 100°C. Do not open the connector.

Emerson recommends to use the enclosed screws M6x20, washers, and spring washers to mount the transducers. The transducers have three through bores with a diameter of 6.6 mm and three M4 threaded holes for an alternative mounting option. See [Figure 4-8](#) for the position of the mounting holes.

Figure 4-8: Position of mounting holes



All dimensions in mm.

Install the cable without torsion and elongation and protect it against damage. If you install a transducer with a metal protection hose, use a clamp to fix the metal protection hose as closely as possible to the transducer.

Connect pin 5 of the Harting plug to protective machine earth only if the transducer housing is mounted without earth-connection or due to national standards, with respect to Ex-i regulations or customer's demands. See [Figure 4-9](#) for circuit and connection diagram.

Sensitivity	17.5 mV/(mm/s) $\pm 8.5\%$ (nominal value at 20°C, 80 Hz, and 100 k Ω load)
Damping factor	Approximately 0.6

PR 9268/20x-x00 and PR 9268/30x-x00

Frequency range	4 Hz to 1000 Hz
Natural frequency	4.5 Hz ± 0.75 Hz (at 20°C and 100 k Ω load)
Transverse sensitivity	0.13 at 110 Hz (PR 9268/20x-x00; vertical mounting) 0.27 at 110 Hz (PR 9268/30x-x00; horizontal mounting)
Sensitivity	28.5 mV/(mm/s) $\pm 5\%$ (nominal value at 20°C, 80 Hz, and 100 k Ω load)
Damping factor	0.56 (at 20°C and 100 k Ω load) 0.42 (at 100°C and 100 k Ω load)

PR 9268/60x-000 and 9268/70x-000

Frequency range	10 Hz to 1000 Hz
Natural frequency	8.0 Hz ± 1.5 Hz (at 20°C and 100 k Ω load)
Transverse sensitivity	0.1 at 80Hz
Sensitivity	Nominal value at 20°C and 80 Hz
Pin 3, 100 k Ω electrical load	22.0 mV/(mm/s) $\pm 5\%$
Pin 1, 50 k Ω electrical load	16.7 mV/(mm/s) $\pm 5\%$
Pin 4, 20 k Ω electrical load	16.7 mV/(mm/s) $\pm 5\%$
Damping factor	Approximately 0.7 (at 100 k Ω load)

PR9268/20x-100-RAD and PR9268/30x-100-RAD

Frequency range	4 Hz to 1000 Hz
Natural frequency	4.5 Hz $\pm 11.1\%$ (at 20°C and 100 k Ω load)
Transverse sensitivity	see PR 9268/20x-x00 and PR 9268/30x-x00
Sensitivity	28.8 mV/(mm/s) $\pm 2.5\%$ (at 20°C and 100 k Ω load)
Damping factor	0.56 (at 20°C and 100 k Ω load)

PR9268/60x-100-RAD and PR9268/70x-100-RAD

Frequency range	10 Hz to 1000 Hz
Natural frequency	10 Hz $\pm 5\%$ (at 20°C and 100 k Ω load)
Transverse sensitivity	see PR 9268/60x-000 and 9268/70x-000
Sensitivity	42.8 mV/(mm/s) (at 20°C and 100 k Ω load)

PR 9268/60x-100-RAD and PR 9268/70x-100-RAD

Resistance only measuring coil	900 $\Omega \pm 5\%$ (at 20°C)
Insulation resistance	see PR 9268/60x-000 and PR 9268/70x-000
Recommended maximum lifting current for installation deviating from nominal measuring direction	

6.4 Environmental conditions and dimensions

Common

Temperature range for storage and transport		-40 to +100°C without packing
		-40 to +70°C with packing
Relative humidity		0 to 100%, (non-condensing in housing and plug)
Connection cable	PR 9268/20x-x00, PR 9268/30x-x00, PR 9268/60x-000, and 9268/70x-000	3 x 0.5 mm ² , shielded, coating PTFE, length: see Table 3-2 or Table 3-3
	PR 9268/01x-x00	FEP (coating) / PTFE (Isolation), 3 wires, AWG 20
	PR 9268/20x-100-RAD, PR 9268/30x-100-RAD, PR 9268/60x-100-RAD, and PR 9268/70x-100-RAD	PVC, 3 wires, AW G24, length see Table 3-2 or Table 3-3
Metal protection hose		Stainless steel
Minimum bending radius for cable and protection hose		35 mm

PR 9268/01x-x00

Operating temperature range	Transducer without connector	-20 to +100°C
		Short time (<4 hours) up to 120°C
Protection class		IP 65
Housing	Dimensions	See Figure 6-3 , Figure 6-4 , and Figure 6-5
	Material	1.4104
Connector		6-pole Harting plug (only PR 9268/01x-000 types)
		2-pole C-5051 plug (only PR 9268/018-900)
Weight	Sensor without cable	approximately 280 g

Protection class		IP 55
Housing	Dimensions	See Figure 6-6
	Material	Al Mg Si Pb F28
Connector		6-pole Harting plug, 6-pole socket enclosed
Weight	Net weight, including cable, connector, and plug)	approximately 930 g
	Transducer only	approximately 260 g
	With packing	approximately 1200 g

- To observe the explosion protection, a mechanically reliable installation of the sensor at the measuring object must be ensured and a maximum acceleration of 10 g must not be exceeded.
- The national or local regulations have to be observed.
- Do not mount the sensor on a surface or surrounding equipment that exceeds the maximum allowed ambient temperature T_a (Table 7-4).

The following additionally points must be considered during installation of PR 9268/60x-000 and PR 9268/70x-000 sensors:

- The permission for the operating in explosive areas does only apply for the sensors with metal protection hose, these are the types PR9268/(60,70)(0-3)-000.
- Sensors without metal protection hose, are not approved for the operating in explosive areas.

Table 7-1: PR 9268/20x-x00 and PR 9268/30x-x00 – permissible types

PR 9268/		X	X	X	-	X	0	0
Measure ment	Vertical	2	0					
	Horizontal	3	0					
Cable	Armored 0 (3 m), 1 (5 m), 2 (8 m), 3 (10 m)			X				
	Non-armored 4 (3 m), 5 (5 m), 6 (8 m), 7 (10 m)			X				
Cable End	HARTING					0	0	0
	OPEN CABLE END					1	0	0

Table 7-2: PR 9268/20x-x00 and PR 9268/30x-x00 – permissible types with oil-proof PTFE covered metal protection hose

PR 9268/		X	X	X	-	X	0	0	-OPR
Measure ment	Vertical	2	0						
	Horizontal	3	0						
Cable	Armored 0 (3 m), 1 (5 m), 2 (8 m), 3 (10 m)			X					
	OPEN CABLE END					1	0	0	

Table 7-3: PR 9268/60x-000 and PR 9268/70x-000 – permissible types

PR 9268/		X	X	X	-	0	0	0
Measure ment	Vertical	6	0					
	Horizontal	7	0					
Cable	Armored 0 (3 m), 1 (5 m), 2 (8 m), 3 (10 m)			X				
Cable End	HARTING					0	0	0

Connection cable

For explosion group IIC the total line capacity Cl (between the cable cores) of the connection cables and the barriers must not exceed the maximum permitted cable capacities and inductances.

Maximum permitted cable capacity PR 9268/20x-x00, PR 9268/30x-x00, PR 9268/20x-100-OPR, and PR 9268/30x-100-OPR: 275 nF

Maximum permitted cable capacity PR 9268/60x-000 and PR 9268/70x-000: 1125 nF

There is no additional limitation of the cable length in the hazardous area because of the cable capacity. The calculated maximum cable length based on the maximum permissible cable capacity exceeds the maximum technically permissible cable length of 1000 m.

7.2 Operation requirements

On operation in hazardous areas, the transducer must not be operated permanently outside its specification regarding vibration amplitude and acceleration.

7.3 Technical data, explosion protection

Specifications according to the EC-Type-Examination Certificate for PR 9268/20x, /30x, /60x, and /70x:

Table 7-4: ATEX/IECEX

PR 9268/20x-x00, PR 9268/30x-x00, PR 9268/20x-100-OPR, and PR 9268/30x-100-OPR	
Standards	EN IEC 60079-0:2018, Equipment - general requirements EN IEC 60079-11:2012, Intrinsically safe "i" EN IEC 60079-14:2014, Electrical installations design, selection and erection
Identification	1G Ex ia IIC T6 ... T4 Ga
	-20°C ≤ T _a ≤ +68°C for T6
	-20°C ≤ T _a ≤ +108°C for T4
PR 9268/60x-000 and PR 9268/70x-000	
Standards	EN IEC 60079-0:2018, Equipment - general requirements EN IEC 60079-11:2012, Intrinsically safe "i" EN IEC 60079-14:2014, Electrical installations design, selection and erection
Identification	2G Ex ib IIC T4 ... T3 Gb
	Sensor: -20°C ≤ T _a ≤ +125°C for T4 Connector: T _a ≤ 100°C for T4
	Sensor: -20°C ≤ T _a ≤ +190°C for T3 Connector: T _a ≤ 100°C for T3

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