

Sensor Portfolio for Machinery Health Applications



- One source of responsibility for the entire measurement chain
- Unique sensors co-developed with experienced sensor suppliers

- Q Factor filtering to enhance PeakVue™ measurements

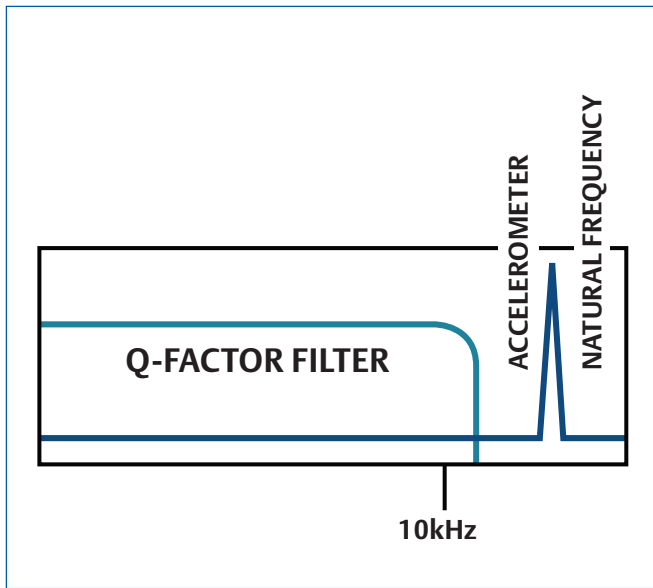
Overview

Improving the reliability of your mechanical assets requires advanced yet easy-to-use technology for analyzing all kinds of data. But in the end, the analysis can only be as good as the data it relies on. Whatever kind of measurement is required – acceleration, velocity, displacement, speed or pressure – must be counted on for quality and accuracy to avoid “garbage in, garbage out”. The smallest item in your technology investment could be the most important purchase you make for increasing availability and reducing downtime. Quality sensors from your technology provider mean one source of responsibility for the entire measurement chain.

Emerson offers a full line of quality sensors to complement its machinery health systems. Working with a leading third-party sensor supplier, Emerson has introduced a variety of specialized sensors to improve the accuracy of the measurement as well as the ability to physically capture early stage asset failure data. Technology improvements include:

- Better sensor mounting connectivity
- Special sensor filtering
- Optimized sensor measurements
- Reduced voltage sensors for longer-lasting battery-powered wireless requirements

By implementing these sensor innovations, Emerson is able to impact asset reliability by optimizing data collection and providing the best measurement possible.



Emerson's Q Factoring filtering eliminates the natural frequency distortion of the accelerometer for more accurate data.



Low profile swivel-based accelerometers are ideal for difficult mounting locations.

Q Factor Tuning

Emerson co-introduced a line of advanced accelerometers with a special Q Factor tuning to enhance measurements taken using Emerson's unique PeakVue technology. PeakVue measurements require high frequency data that can be distorted by the natural frequency of non-tuned accelerometers. A sensor's natural frequency will cause distortion of any high frequency-based early mechanical failure detection system. Emerson recognized this effect and worked with a leading accelerometer vendor to eliminate this effect, thereby providing more accurate and reliable measurements both with and without PeakVue technology. Non-tuned accelerometers often offer a higher frequency range than Emerson accelerometers, but they have not eliminated the effect of the natural frequency distortion effect.

Emerson accelerometers are typically offered with a 10% or better sensitivity variation and unless otherwise noted have at least a 3-point frequency calibration.

Better Connectivity, Reduced Voltage

Another aspect to improving the accuracy of an accelerometer is ensuring that it can be easily and properly installed and interact efficiently with the collection device. With this in mind, Emerson introduced accelerometers with unique features to address these concerns:

- Swivel-based, low profile designs to eliminate cable strain in tight, small-space environments.
- Low voltage accelerometers for use with the CSI 9420 Wireless Vibration Transmitter, resulting in longer battery life in the transmitter.
- An integrated magnetic base with a matching keyed base as part of Emerson's exclusive triaxial sensor for the CSI 2140. The integrated base ensures solid and secure placement for the most accurate measurement.

Accelerometers (Top Exit, Connector)

A0322L5 Industrial Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2B stud (included)

A basic accelerometer with a wider sensitivity range and a simpler (single point) calibration than a premium accelerometer. Ideal for permanent mounting in an online monitoring application.



A0322L5-EX Industrial Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, CSA, ATEX
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2B stud (included)

The A0322L5-EX is a safety agency rated version of the A0322L5. See the full spec sheet for the safety agency details.



A0760GP General Purpose Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-8 UNF-2B stud (included)

Selected for tight sensitivity accuracy and verified with a multipoint calibration, this premium accelerometer is ideal for the CSI 2140 where high repeatability in multiple measurements is critical.



Accelerometers (Top Exit, Connector)

A0761GP-EX Agency Rated Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, CSA, ATEX
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2B stud (included)

Adds CSA- and ATEX-agency approvals to A0760GP allowing it to be used in hazardous areas. See the full sensor specification sheet for safety agency approval details.



A0120LF Low Frequency Accelerometer

Specifications	
Sensitivity	500 mV/g (51 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.2 Hz to 6 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	N/A
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2B stud (included)

Superior low-frequency, low-amplitude performance for slow-speed machinery.



A0220HF High Frequency Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.8 Hz to 15 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2B stud (included)

Wide frequency range, up to 15 kHz, for measuring special applications that generate high-frequency output.



Accelerometers (Top Exit, Connector)

PR9270-Ex Agency Rated Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.2 Hz to 15 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, ATEX (see spec sheet)
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 to M6x1 or M10x1 (included)

This agency qualified accelerometer was designed to be integrated into a machinery protection system but can be also used for online and portables applications



A0420HT High Temperature Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.2 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 163°C (-65 to 325°F)
Mounting	¼-28 UNF-2B stud (included)

This accelerometer is designed to provide high accuracy acceleration measurements under high ambient temperatures, up to 163°C (325°F).



A021251-EX Industrial Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.8 Hz to >10 kHz
Sealing	IP67
Agency Rating	CE, ATEX
Temperature Range	-55 to 115°C (-67 to 239°F)
Mounting	¼-28 UNF stud (included)

General purpose accelerometer, safety agency certified for use with the CSI 2125 portable analyzer.



Accelerometers (Top Exit, Connector)

A021252-EX Industrial Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 15 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, ATEX
Temperature Range	-50 to 120°C (-58 to 248°F)
Mounting	¼-28 UNF stud (included)

The A021252-EX is safety agency certified for use with the CSI 2125 portable analyzer.



Triaxial Accelerometers (Top Exit, Connector)

A0643TX Triaxial Accelerometer

Specifications	
Sensitivity all 3 Axis	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Top Exit, 5 Pin
Z Axis Frequency Range ±3dB	0.5 Hz to 10 kHz
X & Y Axis Freq. Range ±3dB	2Hz to 3.5 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	N/A
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	Magnetic with Optional Keyed Base

Premium triaxial accelerometer optimized for maximum frequency response per axis. Includes unique integral magnetic base with optional keyed bases that can be installed on each measurement point to ensure fast and accurate axis alignment. Exclusive to Emerson and designed for use with the CSI 2140.



Shown with optional keyed base

Accelerometers (Top Exit, Connector)

A0322LC Low Cost Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Top Exit, Integral 2 Wire Cable
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF stud (included)

An economical basic sensor design with an integrated -2A cable and wider sensitivity range. The sensor and cable combination are available in a variety of cable lengths, cable armoring, and sensor safety ratings:

A0322LC	10 foot (3 meter) long integral cable
A0322LC-1	30 foot (9 meter) long integral cable
A0322LC-2	50 foot (15 meter) long integral cable
A0322LC-EX	10 foot (3 meter) long integral cable, Safety Agency Rated
A0322LC-1-EX	30 foot (15 meter) long integral cable, Safety Agency Rated



A0322DS Dual Output Sensor with Temperature

Specifications

Acceleration Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Temperature Sensitivity	10 mV/°C with -50°C offset
Connector Arrangement	Top Exit, Integral 3 Wire Cable
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2A stud (included)

Combines acceleration and temperature measurements. Two analyzer inputs are required to monitor the two sensor outputs. The sensor comes in different integral cable length versions:

A0322DS	10 foot (3 meter) long integral cable
A0322DS-1	30 foot (9 meter) long integral cable



Accelerometers (Side Exit, Connector)

A0322R5 Industrial Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	0.5 Hz to 8 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2A included bolt

A basic low-profile design with a wider sensitivity and a single-point calibration. Ideal for high-volume online monitoring systems where a short stack height is desired.



A0322R5-HT High Temperature Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	0.8 Hz to 8 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 162°C (-65 to 325°F)
Mounting	¼-28 UNF-2A included bolt

A high-temperature version of the A0322R5.



A0322RM Right Angle Swivel Based Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	0.43 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

A premium high-accuracy accelerometer with multipoint calibration and a swivel base to relieve cable strain.



Accelerometers (Side Exit, Connector)

A0322RTS Temperature Hardened Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	0.8 Hz to 10 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF-2A included bolt

The quartz element of this accelerometer resists damage due to thermo shock, such as being washed down with a fire hose on a paper machine or tissue machine during a paper break.



A0710GP General Purpose Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	0.2 Hz to 10.5 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 UNF captive bolt (included)

A side-exit version of the A0760GP.



A021253-EX Industrial Accelerometer

Specifications

Sensitivity	100 mV/g (10.2 mV/m/s ²) ±5%
Connector Arrangement	Side Exit, C5015/2 Pin
Frequency Range ±3dB	1.0 Hz to 12 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, ATEX
Temperature Range	-50 to 120°C (-58 to 248°F)
Mounting	¼-28 UNF captive bolt (included)

High-frequency (12kHz) and safety certified for use with the CSI 2125 portable analyzer.



Accelerometers (Side Exit, Cabled)

A0322RI Right Angle Integral Cable Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, Integral 2 Wire Cable
Frequency Range ±3dB	0.43 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

Low-profile, swivel-based accelerometer with an integral cable. The accelerometer’s unique swivel base design, which was co-developed by Emerson and a leading accelerometer manufacturer, allows the sensor’s angular position to be adjusted to reduce cable strain. A variety of cable lengths are available:

- A0322RI 10 foot (3 meter) long integral cable
- A0322RI-1 30 foot (9 meter) long integral cable
- A0322RI-2 50 foot (15 meter) long integral cable



Yellow jacket

A0322RA Right Angle Armored Cable Accelerometer

Specifications	
Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, Armored 2 Wire Cable
Frequency Range ±3dB	0.43 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

An armored cable version of the A0322RI available in several cable lengths and agency safety ratings:

- A0322RA 10 foot (3 meter) long integral cable
- A0322RA-EX 10 foot (3 meter) long integral cable with ATEX agency rating
- A0322RA-1 30 foot (9 meter) long integral cable
- A0322RA-1-EX 30 foot (9 meter) long integral cable with ATEX agency rating
- A0322RA-2 50 foot (15 meter) long integral cable



Accelerometers (Side Exit, Cabled)

A0322DR Dual Output Sensor with Temperature

Specifications	
Acceleration Sensitivity	100 mV/g (10.2 mV/m/s ²) ±10%
Temperature Sensitivity	10 mV/°C with -50°C offset
Connector Arrangement	Side Exit, Integral 3 Wire Cable
Frequency Range ±3dB	0.5 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

Low-profile, swivel-based accelerometer that includes a separate temperature output and an integral cable. Two analyzer inputs are required to monitor the two sensor outputs. A variety of cable lengths are available:

- A0322DR 10 foot (3 meter) long integral cable
- A0322DR-1 30 foot (9 meter) long integral cable



Red Jacket

Low Voltage Accelerometers (Side Exit, Cabled)

A0394R Low Voltage Accelerometer

Specifications	
Acceleration Sensitivity	25 mV/g (2.55 mV/m/s ²) ±10%
Connector Arrangement	Side Exit, Integral 3 Wire Cable
Frequency Range ±3dB	1.6 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE, CSA, ATEX (see spec sheet)
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

Low-voltage, low-profile, swivel-based accelerometer designed exclusively for Emerson's CSI 9420 wireless system and available in a variety of cables types and cable lengths. The sensor comes standard with several agency safety ratings:

- A0394RI-1 30 foot (9 meter) long integral cable
- A0394RI-4 100 foot (30 meter) long integral cable
- A0394RA-1 30 foot (9 meter) long integral armored cable
- A0394RA-4 100 foot (30 meter) long integral cable with 75 foot (≈23 meter) of armor
- A0394RAC-1 30 foot (9 meter) long Teflon coated integral armored cable
- A0394RAC-4 100 foot (30 meter) long Teflon coated integral cable with 75 foot (≈23 meter) of armor



Green Jacket

A0394D Low Voltage Dual Output Accelerometer

Specifications

Acceleration Sensitivity	25 mV/g (2.55 mV/m/s ²) ±10%
Temperature Sensitivity	10 mV/°C with -50°C offset
Connector Arrangement	Side Exit, Integral 4 Wire Cable
Frequency Range ±3dB	1.6 Hz to 10 kHz
Sealing	IP68, Molded Cable Connection
Agency Rating	CE, CSA, ATEX (see spec sheet)
Temperature Range	-40 to 121°C (-40 to 250°F)
Mounting	¼-28 included adaptor

Low-voltage, low-profile, swivel-based accelerometer with a separate temperature output. When the A0394D is used with a CSI 9420, it uses both analyzer inputs. The sensor is available in a variety of cables types and cable lengths. The sensor comes standard with several agency safety ratings:

- A0394DI-1 30 foot (9 meter) long integral cable
- A0394DI-4 100 foot (30 meter) long integral cable
- A0394DA-1 30 foot (9 meter) long integral armored cable
- A0394DA-4 100 foot (30 meter) long integral cable with 75 foot (≈23 meter) of armor
- A0394DAC-1 30 foot (9 meter) long Teflon coated integral armored cable
- A0394DAC-4 100 foot (30 meter) long Teflon coated integral cable with 75 foot (≈23 meter) of armor



Blue Jacket

Velocity Sensors

A0324VO Velocity Sensor

Specifications

Velocity Sensitivity	101.6 mV/in/s (4 mV/mm/s) ±5%
Connector Arrangement	Top Exit, 5m, Braided 3 Wire Cable
Frequency Range ±3dB	1.5 Hz to 4 kHz
Sealing	IP67, Potted Cable Connection
Agency Rating	N/A
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	¼-28 included adaptor

Economical basic design with an integrated metal braided 5-meter cable for extra protection.



A0520VO Velocity Sensor

Specifications	
Velocity Sensitivity	100 mV/in/s (3.94 mV/mm/s) ±10%
Connector Arrangement	Top Exit, C5015/2 Pin
Frequency Range ±3dB	1.5 Hz to 6 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	N/A
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting Stud	¼-28 UNF (included)

A premium velocity sensor with a 6 kHz frequency range.



PR9270V-Ex Agency Rated Velocity Sensor

Specifications	
Velocity Sensitivity	100 mV/in/s (3.94 mV/mm/s) ±10%
Connector Arrangement	Top Exit, C5015/ 2 Pin
Frequency Range ±3dB	3 Hz to 9 kHz
Sealing	IP68, Welded Hermetic
Agency Rating	CE, ATEX (see spec sheet)
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting Stud	¼-28 UNF (included)

Safety agency qualified and designed to be integrated into a machinery protection system.



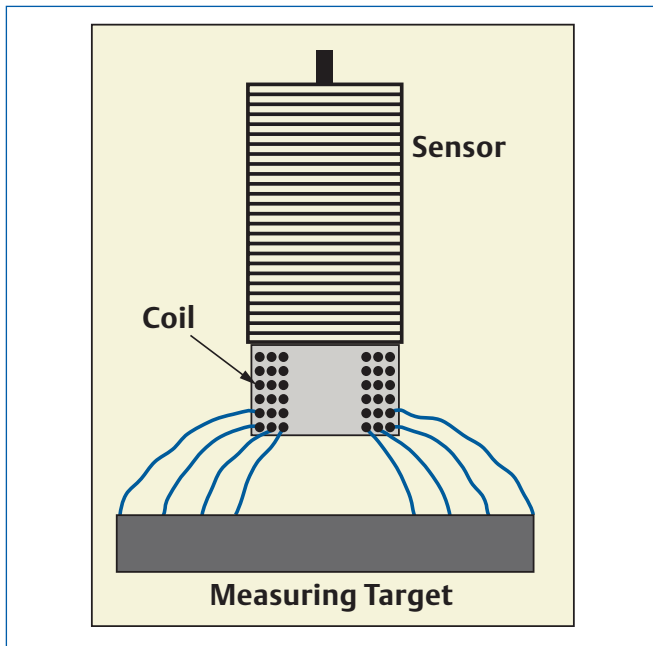
Seismic - Velocity Sensors

PR9268 Seismic Velocity Sensor

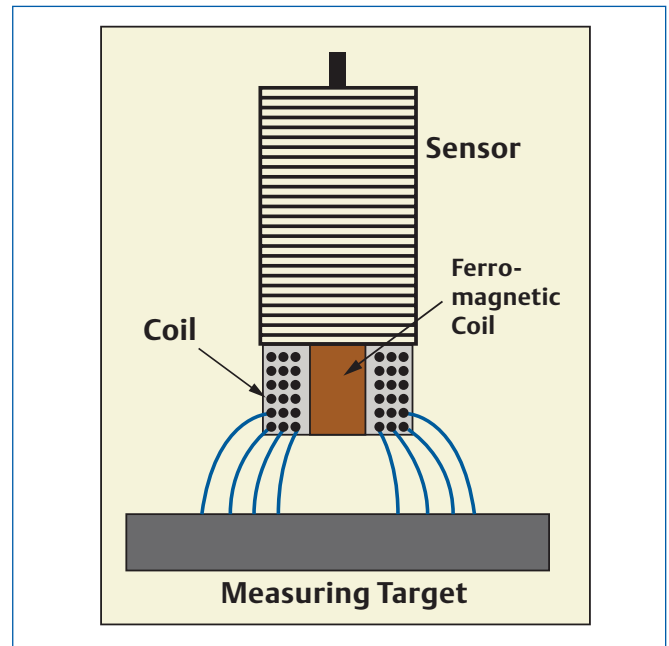
Specifications	
Velocity Sensitivity	724 mV/in/s (28.5 mV/mm/s) ±5%
Connector Arrangement	Side Exit. Integral Cable
Frequency Range	4 Hz to 1000 Hz
Sealing	IP55
Agency Rating	ATEX rated (see spec sheet)
Temperature Range	-54 to 121°C (-65 to 250°F)
Mounting	3 hole base (see spec sheet)

Designed to be integrated into a machinery protection systems, this electrodynamic mechanical spring-mass sensor comes in a variety of cable lengths and can be supplied with or without a Harting connector.





Air coil-based technology



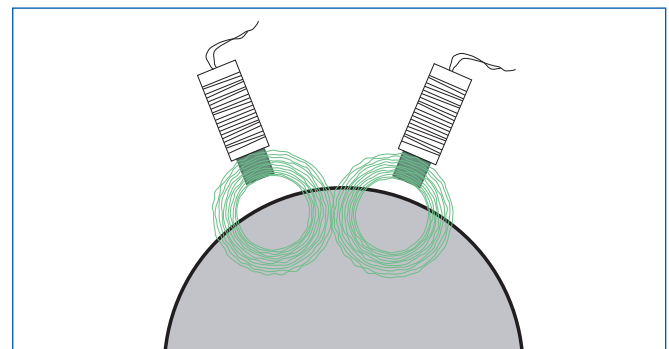
Focused ferromagnetic core technology

Eddy Current Sensor Technology

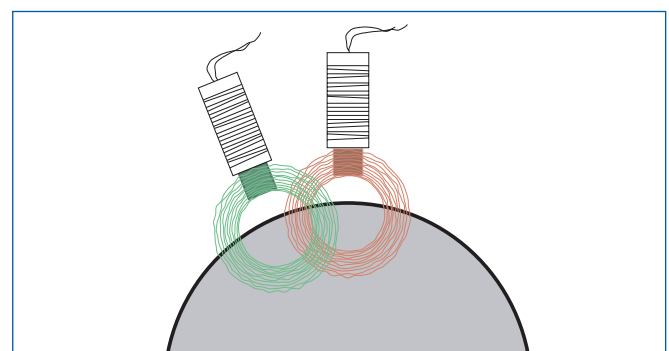
Emerson’s eddy current sensors are based on ferromagnetic core technology, providing a more focused measurement area than with air coil-based sensors. Air coil technology is more prone to interference from surrounding material and forces multiple sensors to be spaced further apart. Ferromagnetic core technology allows the sensors to be mounted closer to surrounding material and closer to each other.

Proximity of one sensor to another is also a concern in situations such as 2oo3 voting, where sensors need to be closely spaced especially on small diameter shafts. Standard eddy current sensors use a single fixed excitation frequency, represented by the green fields in the illustrations below. Because the excitation frequency is the same for every sensor, cross-talk will occur between sensors and distort the measurement. Emerson uses a flexible excitation frequency in its eddy current sensors, allowing for different frequencies and thereby eliminating cross-talk. The different frequencies allow the sensor to be mounted as closely together as 12mm from center to center (see PR6422).

Emerson eddy current sensors can be ordered in a wide variety of sensor lengths, cable lengths, converter types and cable types including armoring. The combination of variables is extensive – contact your local Emerson representative to determine the correct combination of variables for your measurement requirements.



Standard sensor fields must be spaced further apart



Emerson’s sensor fields can overlap

Eddy Current Sensors

PR6422 Eddy Current Sensor

Specifications

Tip Diameter	5.0 mm
Measurement range	±0.5 mm Position
	0 to 250 µm PP Vibration
Frequency Range	0 to 20 kHz
Sensitivity	16 V/mm (406.4 mV/mil) ±1.5%
Sensor Body Thread Options	M6x0.5 or ¼-28 UNF-2A
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)

Offers ideal vibration and position measurements in small shafts (≥20mm or 0.787"). Can be used as a tachometer for rotational speed measurements.



PR6423 Eddy Current Sensor

Specifications

Tip Diameter	8.0 mm
Measurement range	±1.0 mm Position
	0 to 500 µm PP Vibration
Frequency Range	0 to 20 kHz
Sensitivity	8 V/mm (203.2 mV/mil) ±1.0%
Sensor Body Thread Options	M10x1 or 3/8-24 UNF-2A
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)

Offers ideal vibration and position measurements in medium shafts (≥25mm or 0.984"). Can be used as a tachometer for rotational speed measurements.



PR6424 Eddy Current Sensor

Specifications

Tip Diameter	16.0 mm
Measurement range	±2.0 mm Position
	100 to 1000 µm PP Vibration
Frequency Range	0 to 20 kHz
Sensitivity	4 V/mm (101.6 mV/mil) ±1.5%
Sensor Body Thread	M18x1.5
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)

Offers ideal vibration and position measurements in large shafts (≥80mm or 3.149”).



Eddy Current Sensors

PR6425 Eddy Current Sensor

Specifications

Tip Diameter	16.0 mm
Measurement range	±2.0 mm Position
	100 to 1000 µm PP Vibration
Frequency Range	0 to 20 kHz
Sensitivity	4 V/mm (101.6 mV/mil) ±2.0%
Sensor Body Thread	M18x1.5
Temperature Range	-35 to 380°C (-31 to 716°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)

Designed for extremely hot position measurements, up to 380°C (716°F) for large shafts (≥80mm or 3.149”).



PR6426 Eddy Current Sensor

Specifications

Tip Diameter	32.0 mm
Measurement range	±4.0 mm Position
Sensitivity	2 V/mm (50.8 mV/mil) ±1.5%
Sensor Mounting	2 Bolt Base
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency rating	CE, CSA, ATEX (see converter spec sheet)

Designed for large position measurements (±4.0 mm) on large shafts (≥200mm or 7.874”).



PR6453 Eddy Current Sensor

Specifications

Tip Diameter	12.5 mm
Measurement range	±1.0 mm Position 50 to 500 µm PP Vibration
Frequency Range	0 to 20 kHz
Sensitivity	8 V/mm (203.2 mV/mil) ±1.5%
Sensor Body Thread	M18x1, M20x1, M20x1.5, M24x1
Temperature Range	-35 to 180°C (-31 to 250°F)
Agency Rating	CE, CSA, ATEX (see converter spec sheet)

Offers ideal vibration and position measurements in medium shafts (≥25mm or 0.984”).



Converters for Eddy Current Sensors

CON011 Converter

Specifications

Maximum Output Range	-4 to -20V
Reference Voltage	-12V
Connector Arrangement	Lemo
Frequency Range	0 to 20 kHz
Rise Time	<15 μs
Sealing	IP67
Temperature Range	-30 to 100°C (-22 to 212°F)
Agency Rating	CE, CSA, ATEX (see spec sheet)

Designed to be field-mounted directly on the asset. Works with all Emerson eddy current sensors.



CON021 Converter

Specifications

Maximum Output Range	-4 to -20V
Reference Voltage	-12V
Connector Arrangement	Lemo
Frequency Range	0 to 20 kHz
Rise Time	<15 μs
Sealing	IP20
Temperature Range	-30 to 100°C (-22 to 212°F)
Agency Rating	CE, CSA, ATEX (see spec sheet)

Designed to be panel mounted in an enclosure. Works with all Emerson eddy current sensors.



CON031 Converter

Specifications

Maximum Output Range	-4 to -20V
Reference Voltage	-12V
Connector Arrangement	Screw Terminal
Frequency Range	0 to 20 kHz
Rise Time	<15 μs
Sealing	IP20
Temperature Range	-30 to 100°C (-22 to 212°F)
Agency Rating	CE, CSA, ATEX (see spec sheet)

Designed to be panel mounted in an enclosure. Works with all Emerson eddy current sensors.



Converters for Eddy Current Sensors

CON041 Converter

Specifications

Maximum Output Range	-4 to -20V
Reference Voltage	-12V
Connector Arrangement	Screw Terminal
Frequency Range	0 to 20 kHz
Rise Time	<15 μs
Sealing	IP20
Temperature Range	-30 to 100°C (-22 to 212°F)
Agency Rating	CE, CSA, ATEX (see spec sheet)

Designed for DIN rail mounting in an enclosure and works with all of Emerson's eddy current sensors.



LVDT Displacement Sensors

PR9350 LVDT Displacement Sensor

Specifications

Sensitivity	270 mV/V ±2%
Measurement range	±150 mm Position
Supply Voltage	5Vrms
Carrier Frequency	3 to 5 kHz
Temperature Range	-20 to 120°C (-4 to 248°F)

Emerson's LVDT sensor for contact position sensor for mounting in a variety of arrangements and applications.



Speed Sensors and Tachometers

PR9376 Hall Effect Sensor

Specifications

Output	1 pulse per revolution/gear tooth at 100 (2.2) k load and 12 V Supply
Output Level	HIGH: >10 (7) V LOW: < 1 (1) V
Voltage Input	10 to 30V
Air Gap	1.0mm (0.04") maximum
Max. Operating Frequency	12 kHz (720,000 rpm)
Target/Surface Material	Ferrous (non stainless steel)
Temperature Range	-30 to 100°C (-22 to 212°F)

Hall Effect tachometer designed to be integrated into a machinery protection system.



V425 Passive Tachometer

Specifications

Output	1 AC cycle per revolution/gear tooth
Voltage Output	8 to 190 V PP
Air Gap	0.127mm (0.005") nominal
Max. Operating Frequency	15 kHz (900,000 rpm)
Target/Surface Material	Ferrous (non stainless steel)
Gear Pitch Range	20 or 24 DP
Minimal Surface Speed	250mm/s (10 ips)
Temperature Range	-65 to 121°C (-67 to 250°F)

Self-powered and primarily used with an online system because of its tight sensor to target installation clearance requirements.



A0404B1 Infrared Optical Tachometer

Specifications

Output (NPN)	Current sinking open collector transistor
Supply Power	5 to 15 V at < 25mA
Gain	Adjustable
Max. Operating Frequency	15 kHz (900,000 rpm)

Portable, magnetically mounted, and designed for use with handheld analyzers such as the CSI 2140.



Speed Sensors and Tachometers

A0430L3 SpeedVue Laser Tachometer

Specifications

Output ($\pm 0.05\%$)	± 2.5 volts analog waveform
Range (w/o reflective tape)	> 30 feet (9 meters)
Range (with reflective tape)	> 100 feet (30 meters)
Frequency Range	2 to 120000 rpm (.07 to 2000 Hz)
Temperature Range	-10 to 50°C (-15 to 120°F)
Laser Class	FDA Class IIIa < 5mw, 650nm IEC Class 3B (International)
Agency	Intrinsically Safe

Emerson's patented SpeedVue technology provides speed detection up to 30 feet away without requiring reflective tape. Works on clean or dirty shafts. Typically used with the CSI 2140 or older versions of Emerson's portable analyzers.



Pressure Sensors

Pressure pulsations are an important application when monitoring pumps and other fluid processes. Emerson encourages the use of dynamic pressure pulsation analysis to troubleshoot and optimize processes.

A0730DP Dynamic Pressure Sensor

Specifications

Sensitivity	14.5 mV/kPa (100 mV/psi) $\pm 15\%$
Dynamic Pressure Range $\pm 5V$	344.8 kPa (50 psi)
Maximum Static Pressure	55.16 MPa (8 Kpsi)
Frequency Range	0.5 Hz to <60 kHz
Connector Arrangement	Top Exit, C5015, 2 Pin
Sealing	IP68, Welded Hermetic
Temperature Range	-54 to 121°C (-65 to 250°F)
Agency Rating	CE

Measures pulsations in fluid lines, such as press loading lines and paper machine stock approaches.



Emerson Process Management

835 Innovation Drive
Knoxville, TN 37932
T (865) 675-2400
F (865) 218-1401

©2014, 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.

