



# MOTOR VIBRATION

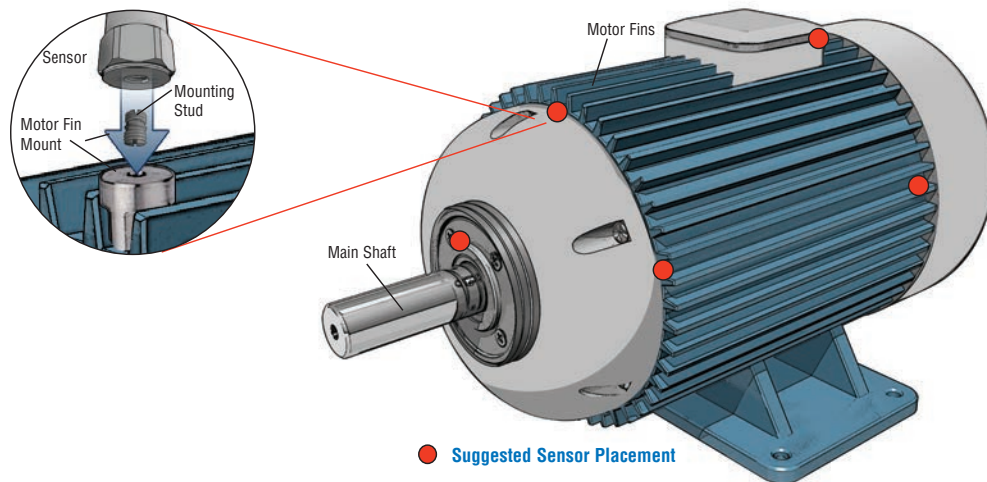
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# MOTOR VIBRATION

Monitoring vibration on induction motors is at the core of any predictive maintenance program. Typical applications demand vibration measurements in the horizontal, vertical and axial direction on both the inboard and outboard motor bearings. Aside from typical mechanical issues, such as misaligned couplings and unbalance, the vibration analyst can also detect electrical issues that cause mechanical vibrations. Some common electrical faults include air gap variation, broken rotor bars and bearing fluting.

Vibration analysts can use one accelerometer, mounted magnetically and rotate it around the motor to capture various data collection points. In some cases the motor is in an inaccessible location and thus permanent mount sensors are used and routed to a junction box for walk up data collection. Accelerometers are permanently mounted by drilling and tapping into the motor housing or they can be adhesively affixed or welded using a mounting pad.

Electric motors driving capital machinery and ancillary equipment are critical plant processes. Unscheduled shutdowns or failures result in costly downtime, equipment damage and possible safety hazards for personnel. Although your maintenance engineers can't be everywhere at once, IMI® vibration and fault transmitters provide continuous protection and early detection of issues such as soft foot, imbalance, bearing faults, bearing fluting and misalignment. Using a 4-20 mA signal, our transmitters directly communicate with customer PLC, PI, SCADA, or DCS systems and data can be easily trended, managed, with proper alerts and notifications to keep your process up and running.



## CERAMIC SHEAR ICP® ACCELEROMETERS W/ OR W/O INTEGRAL POLYURETHANE CABLE

MODELS RTD602D91, RTD602D11



Dual output vibration & Resistance Temperature Detector

Sensitivity ( $\pm 10\%$ ): 100 mV/g (10.2 mV/(m/s<sup>2</sup>))

Measurement Range:  $\pm 50$  g ( $\pm 490$  m/s<sup>2</sup>)

Single-point ISO 17025 accredited calibration

## SINGE AXIS ICP® ACCELEROMETERS



### LOW COST SIDE EXIT ACCELEROMETER

MODEL 602D01

- Easy installation in tight spaces
- Through-bolt aides in cable orientation
- Low profile, less than 1 in. height
- M12 connector version available



### LOW COST TOP EXIT ACCELEROMETER

MODEL 603C01

- General purpose, hermetically sealed
- IMI's most popular accelerometer
- Small footprint
- M12 connector version available



### PRECISION TOP EXIT ACCELEROMETER

MODEL 622B01

- Full frequency sweep calibration: 5% sensitivity deviation tolerance
- 15 kHz high frequency response ideal for early detection of bearing fluting conditions
- Ideal for route-based data collection

## TRIAXIAL ICP® ACCELEROMETERS



### LOW COST ACCELEROMETER

MODEL 604B31

- General purpose, hermetically sealed accelerometer
- Perfect for permanent mount applications



### PRECISION ACCELEROMETER

MODEL 629A31

- Ideal for route-based data collection, magnet mount
- Full frequency sweep calibration, superior frequency response



### HIGH FREQUENCY ACCELEROMETER

MODEL 639A91

- Sensitivity: ( $\pm 10\%$ ) 100 mV/g (10.2 mV/(m/s<sup>2</sup>))
- Measurement Range:  $\pm 50$  g pk ( $\pm 491$  m/s<sup>2</sup> pk)
- Frequency Range: ( $\pm 3$ dB) 0.5 to 13 kHz

## VIBRATION TRANSMITTERS



### BEARING FAULT DETECTOR

MODEL 682C05

- Provides early warning of bearing and gear faults
- Operates with PLC, DCS, SCADA, alarm and control systems
- Outputs 4-20 mA signals for peak acceleration and overall vibration



### VIBRATION TRANSMITTER

MODEL 682C03

- Outputs 4-20 mA signal proportional to acceleration, velocity, or displacement
- ICP® accelerometer input
- Analog vibration output via front BNC



### 4-20 MA OUTPUT SENSOR

MODEL 640B01

- Peak velocity
- Side exit housing available
- Intrinsically safe/explosion proof versions available





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