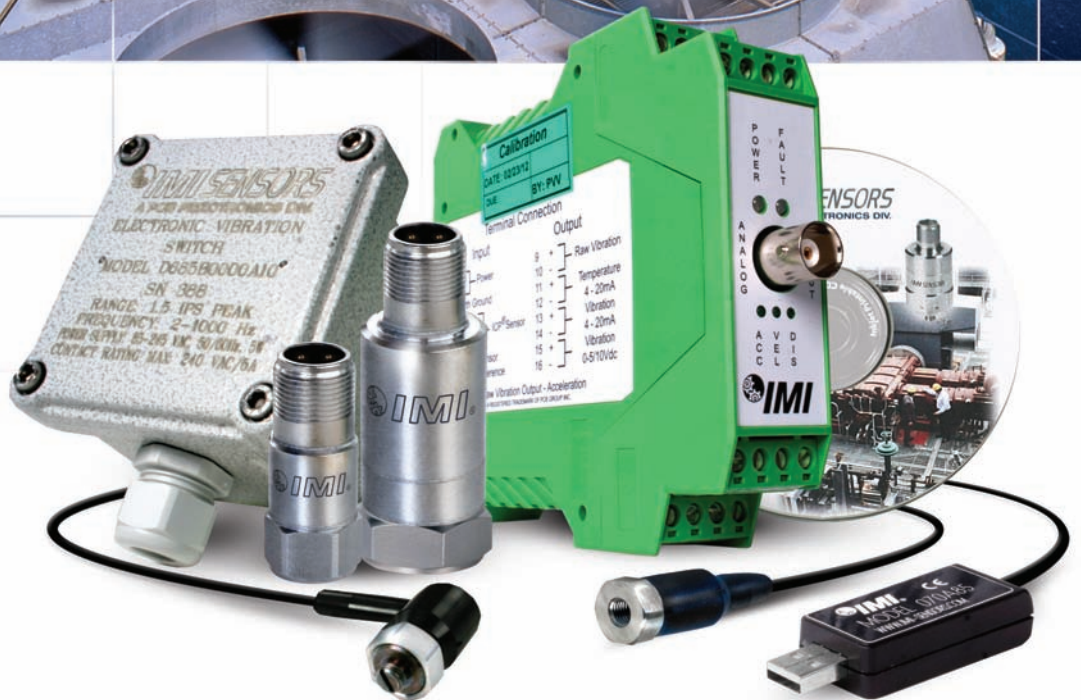
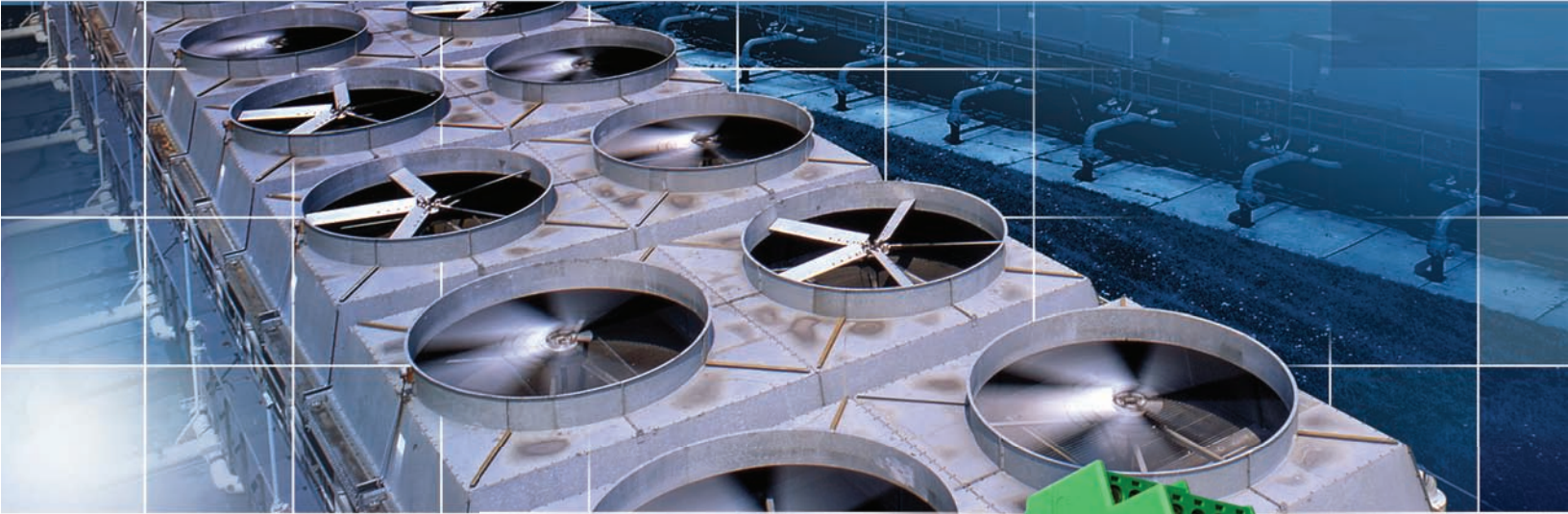




Protecting Cooling Towers & HVAC Systems

Reliable and Cost-Effective Vibration Monitoring Solutions for Cooling Fans and Other Low Frequency Equipment



Process Monitoring & Protection

Protecting Cooling Towers

Cooling towers are a critical component of production in many industries today. Most towers use a horizontal electric motor driving a jack shaft into a right angle gearbox with vertical output to a large fan. Vibration monitoring of this drive train is essential to provide signals for early warning or provide shutdown when vibration levels exceed a predetermined threshold. The classic legacy solution involved the use of "earthquake" mechanical switches. These devices utilize a spring and magnet concept and are designed to mechanically trip during high vibration. Reliability becomes an issue with mechanical switches due to harsh cooling tower environments, especially in critical applications.

The next generation 686B Smart Vibration Switches are USB programmable and employ piezoelectric sensing elements coupled with field adjustable threshold settings. In addition, integrated programmable time delays virtually eliminate false trips. When streaming vibration data is required, the 685B Series electronic vibration switch provides 4-20 mA output as well as analog vibration data output for data analysis. Two separate relay outputs, for alert and alarm, are field adjustable with separate time delays for each relay. Other IMI® solutions include 4-20 mA output sensors for continuous monitoring in conjunction with existing PLCs, DCS and SCADA systems. All products are available with hazardous area approvals.

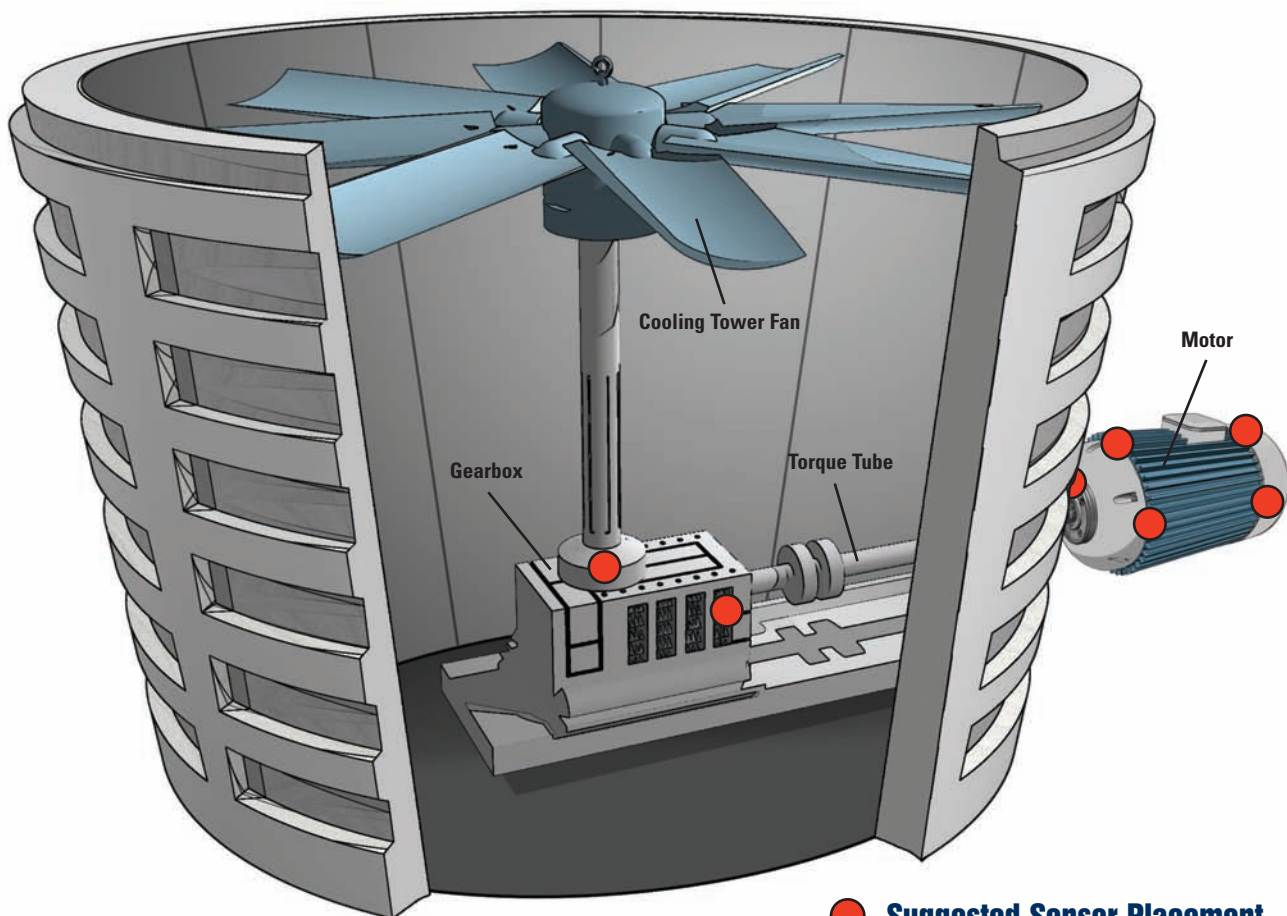




Photo Courtesy of Midwest Tower, Inc



Electronic Vibration Switches - Process Monitoring & Protection



Electronic Vibration Switch
Series 685B

- Lower cost than competitive models
- Dual set points (relays)
- Explosion proof options available
- On-board or remote piezoelectric accelerometer



USB Programmable Smart Switch
Model 686B01

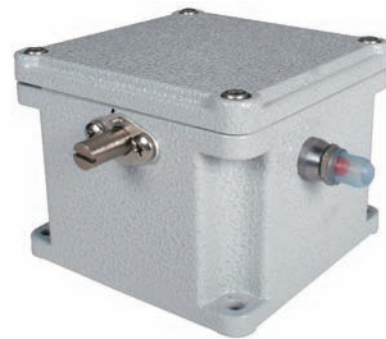
- Programmable delays eliminate false trips
- Competitive price compared to mechanical switches
- Hazardous area approvals available

Mechanical Vibration Switches - Process Monitoring & Protection



Mechanical Vibration Switch
Model 685A07

- Cost-effective protection for less critical applications
- Utilizes spring-loaded, magnetically coupled mechanism
- External reset button



Mechanical Vibration Switch
Model 685A09

- Linear trip adjustment
- Adjusts ~1/2 turn per g
- Provides better control over trip sensitivity than traditional mechanical switches



Mechanical Vibration Switch
Model 685A08

- Weatherproof & CSA/UL approved, explosions proof
- Cost-effective protection for less critical applications
- Requires no power

Process Monitoring & Protection

Heating, Ventilation & Air Conditioning (HVAC)

In some cooling applications there may be a need for vibration trending or route based inspection of critical bearing and critical gearbox conditions. In this case vibration switches may not be the correct solution. IMI Sensors supplies industry leading general purpose vibration sensors to interface with any data collector used for classic condition monitoring applications. For 24/7 vibration trending the 640 Series 4-20 mA output sensors provide current signals to interface with any PLC, SCADA, or DCS panel. These sensors are available in several measurement ranges RMS or Peak and various measurement methods (displacement, velocity, acceleration). For the best of both worlds, IMI's din-rail transmitters output 4-20 mA signals for trending plus voltage signals for time waveform and spectral analysis.

Sensors for Cooling Towers - Process Monitoring & Protection



Low Cost ICP® Accelerometer

Model 603C01, Model M603C01

- Cost-effective sensor option
- IMI's most popular accelerometer
- Small footprint



Low Cost ICP® Accelerometer

Model 608A11, Model 608A11/020BZ
Model 608A11/030BZ, Model 608A11/050BZ
Model M608A11, Model M608A11/030BZ

- Excellent sensor for submersible applications
- Small size (9/16" footprint)
- Integral cable easily connects to boxes



Low Cost 4-20 mA Output Sensor

Model 640B01

- Continuous monitoring
- Outputs acceleration or velocity
- Designed to work with any PLC, DCS, or SCADA system



Vibration Transmitter

Model 682B03

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



PTFE Jacketed Cable with MIL-Style Connector

053BRXXXBZ Cable

XXX = Denote cable length, 010 = 10 feet (Metric lengths available)



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- Shock Monitoring

