INDUSTRIAL MONITORING INSTRUMENTATION
Predictive Maintenance (PdM) is a process by which a maintenance technician is alerted to a problem developing in a critical production machine. If a PdM program is run successfully, this alert gives enough warning not only to determine what the problem is but also to order the parts and schedule the people necessary to repair it. Ideally, this warning would also provide the luxury to schedule the maintenance during a planned outage rather than at an inopportune time. This, in a nutshell, is how Predictive Maintenance programs work and they have been used successfully in many industries for decades.

**HIGHLIGHTS**

- Durable, stainless steel housing
- Welded, hermetic sealing
- Electrical case isolation
- 10 mV/g, 50 mV/g, 100 mV/g, 500 mV/g sensitivities available
- Integral, and armored integral, options available
- Hazardous area approved versions available

**APPLICATIONS**

- Gearboxes
- Motors
- Bearings
- Machine Tools
LOW COST ICP® ACCELEROMETERS
Higher sensitivity tolerance than precision accelerometers
NIST traceable, single-point calibration at 100 Hz

LOW-PROFILE
MODEL 602D01
Most popular side-exit accelerometer
Low profile casing
Ceramic shear, hermetically sealed

SMALL SIZE
MODEL 603C01
Our most popular accelerometer
Compact & low cost
0.5 to 10,000 Hz

SMALL SIZE, LOW COST
MODEL 608A11
Excellent sensor for submersible applications
Small size (9/16” footprint)
Integral cable easily connects to boxes

THE SWIVELER® & SPINDLER® ICP® ACCELEROMETERS

THE SWIVELER®
MODEL 607A01, M607A01
Patented 360° swivel mount design
Frequency range: 0.5 to 10k Hz

THE SWIVELER®
MODEL 607A11
Completely submersible Ideal for sub pumps & applications
The world’s smallest submersible industrial accelerometer

THE SPINDLER®
MODEL 607A61
Armored integral cable is ideal for rugged applications
PRECISION ICP® ACCELEROMETERS

Higher sensitivity tolerances for effective machinery analysis & fault diagnostics

NIST traceable calibration through full frequency range locations

CERAMIC, GENERAL PURPOSE
MODEL 625B01

- 5% sensitivity tolerance
- Through-hole mounting
- Intrinsically safe, velocity output versions

QUARTZ, GENERAL PURPOSE
MODEL 628F01

- 5% sensitivity tolerance
- Excellent for transient temperature applications
- Intrinsically safe, velocity output versions

CERAMIC, GENERAL PURPOSE
MODEL 622B01

- 5% sensitivity tolerance
- Excellent high frequency energy (HFE) response
- Intrinsically safe, velocity output versions

ICP® ACCELEROMETERS WITH QUARTZ SENSING ELEMENT

GENERAL PURPOSE
MODEL 624B01

- Temperatures to 325 °F (163 °C)
- Through-hole mounting

SMALL SIZE
MODEL 627A01

- Temperature stable
- 0.33 to 10,000 Hz

PRECISION
MODEL 628F01

- Frequency range: 0.3 to 12k Hz
- Low temperature coefficient
HIGH TEMPERATURE ICP® ACCELEROMETERS

CERAMIC, GENERAL PURPOSE
MODEL HT602D01
- Through-hole mounting
- Temperatures to 325 °F (163 °C)
- Ceramic sensing element

CERAMIC, GENERAL PURPOSE
MODEL HT628F01
- Low noise
- Temperatures to 325 °F (163 °C)
- Ceramic sensing element

QUARTZ, GENERAL PURPOSE
MODEL 637A06
- 25 mV/g Sensitivity
- Operates in temperatures down to -320 °F (-196 °C)
- Low profile

QUARTZ, GENERAL PURPOSE
MODEL 638A06
- 25 mV/g Sensitivity
- Operates in temperatures down to -320 °F (-196 °C)
- Top exit

CRYOGENIC ICP® ACCELEROMETERS

QUARTZ, GENERAL PURPOSE
MODEL 637A06
- 25 mV/g Sensitivity
- Operates in temperatures down to -320 °F (-196 °C)
- Low profile

QUARTZ, GENERAL PURPOSE
MODEL 638A06
- 25 mV/g Sensitivity
- Operates in temperatures down to -320 °F (-196 °C)
- Top exit
HIGH FREQUENCY ICP® ACCELEROMETERS

**CERAMIC, HIGH FREQUENCY**
MODEL 623C01
- 10 mV/g or 100 mV/g sensitivities
- ±3 dB frequency response up to 15 kHz
- Intrinsically safe options available

**VERY HIGH FREQUENCY**
MODEL 621C40
- 10 mV/g sensitivity
- ±3 dB frequency response up to 30 kHz
- Intrinsically safe options available

**CERAMIC, GENERAL PURPOSE**
MODEL 635A01
- 100 mV/g sensitivity
- ±3 dB frequency response up to 15 kHz
- 1/4-28 thru bolt, 2-pin MIL connector

LOW FREQUENCY ICP® ACCELEROMETERS

**CERAMIC, HIGH SENSITIVITY**
MODEL 626B01
- 100 mV/g sensitivity
- ±3 dB frequency response down to 0.2 Hz

**CERAMIC, HIGH SENSITIVITY**
MODEL 626B02
- 500 mV/g sensitivity
- ±3 dB frequency response down to 0.2 Hz

**CERAMIC, HIGH SENSITIVITY**
MODEL 626A04
- 10 V/g sensitivity
- ±3 dB frequency response down to 0.04 Hz
MULTI-AXIS INDUSTRIAL ICP® ACCELEROMETERS

TRIAXIAL, LOW COST
MODEL 604B31
- Low cost triaxial option
- 0.5 to 5000 Hz
- Side exit, 4-pin connector

PRECISION TRIAXIAL
MODEL 629A31
- Precision triaxial sensor
- 0.8 to 8000 Hz
- 4-pin bayonet connector

PRECISION TRIAXIAL
MODEL 639A91
- Precision triaxial sensor
- 0.5 to 13000 Hz
- M12 connector

EMBEDDABLE ACCELEROMETERS

Mountable via adhesive or soldering and choice of either integral cable or solder pin electrical connections

Variety of sensitivities to accommodate a wide range of applications

Charge output piezoelectric, voltage output ICP®, and 3-wire low power options
IMI's 4-20 mA industrial vibration sensors integrate an accelerometer and vibration transmitter within a standard, robust accelerometer housing. This provides a more compact and cost-effective solution than a conventional accelerometer with separate vibration transmitter. Scaled in velocity or acceleration output signals, these 4-20 mA industrial vibration sensors provide 24/7 online protection for critical plant machinery.

All IMI sensors and vibration switches are designed to withstand the rigors of harsh industrial environments.

**HIGHLIGHTS**

- Cost effective
- Provides 24 / 7 protection
- Operates from loop power
- Outputs acceleration, velocity, or displacement
- Works with PLC, DCS, & SCADA systems
- Intrinsically safe versions available for all models

**APPLICATIONS**

- Cooling Towers
- Pumps
- Reciprocating Machinery
- Bearing Condition
- Air separators
4-20 mA INDUSTRIAL VIBRATION SENSORS & TRANSMITTERS

4-20 MA VIBRATION SENSORS
SERIES (EX)64X
- Available in top or side exit casings
- Peak or RMS, acceleration or velocity

ICP® IN-LINE TRANSMITTER
MODEL 682A09
- Converts ICP® sensors to loop powered transmitters
- Outputs 4-20 mA proportional to velocity plus analog raw vibration output

ULTRA LOW FREQUENCY DISPLACEMENT SENSOR
MODEL 653A01
- Ideal for slow rotating equipment
- Measures absolute peak to peak displacement

4-20 mA USB PROGRAMMABLE VIBRATION TRANSMITTERS

RECIPIROCATING MACHINERY PROTECTOR
MODEL 649A01
- Detects faults / mechanical looseness in reciprocating compressors
- Outperforms impact transmitters

BEARING CONDITION TRANSMITTER
MODEL 649A03
- Provides early warning of Rolling Element Bearing faults
- Works on constant & variable speed drives

PROGRAMMABLE 4-20 MA OUTPUT SENSOR
MODEL 649A04
- Outputs acceleration, velocity, or displacement
- Selectable low & high pass filters
4-20 mA DIN RAIL MODULES

BEARING FAULT DETECTOR
MODEL 682C05
Powers ICP® accelerometers
Dual 4-20 mA output

UNIVERSAL TRANSMITTER
MODELS 682A06, 682A16
24 VDC loop power for 4-20 mA sensors (682A06)
ICP® power for ICP® (682A16)

VIBRATION TRANSMITTER
MODEL 682C03
Outputs 4-20 mA signal proportional to acceleration, velocity, or displacement
ICP® accelerometer input

4-20 INDICATOR ALARMS

INDICATOR/ALARM
SERIES 683A
Loop power for two-wire 4-20 mA sensors or ICP® power for ICP® accelerometers
Fully programmable
Dual setpoint annunciators and relays

INDICATOR/ALARM ENCLOSURE
MODEL 684A
Designed for use with 683A modules
Available with up to 24 channels
Rugged, NEMA 4X enclosure, available in fiberglass, stainless steel, or painted steel

10
USB PROGRAMMABLE SMART SWITCH
SERIES 686
Programmable delays eliminate false trips
Competitive price compared to mechanical switches
Explosion proof options available

ELECTRONIC VIBRATION SWITCH
SERIES 685B
Lower cost than competitive models
Dual set points (relays)
Explosion proof options available

LINEAR ADJUST MECHANICAL VIBRATION SWITCH
SERIES 685AX9
Patented spring-loaded, magnetically coupled mechanism
Cost effective protection for less-critical applications
Better control over trip sensitivity

MECHANICAL VIBRATION SWITCH
SERIES 685A08
Weatherproof & CSA/UL approved, explosions proof
Cost effective protection for less-critical applications
Requires no power
IMI Sensors specializes in the design and manufacture of innovative sensors and associated signal conditioning instrumentation to meet the demanding requirements of the energy, power generation, reciprocating equipment, oil & gas, and petrochemical industries. Whether involved with design evaluations, field testing, critical component or process monitoring, IMI provides comprehensive condition monitoring solutions for all rotating machinery applications.

**APPLICATIONS**

- Gas Turbines
- Compressors
- Oil & Gas
- Wind Turbines
ACCELEROMETERS FOR GAS TURBINE MONITORING

HIGH TEMPERATURE ACCELEROMETER
MODEL EX615A42
100 pC/g sensitivity
Temperatures up to 500 °F (260 °C)

HIGH TEMPERATURE ACCELEROMETER
MODEL EX600B13
100 pC/g sensitivity
Temperatures up to 500 °F (260 °C)

VERY HIGH TEMPERATURE ACCELEROMETER
SERIES EX619A11
50 pC/g sensitivity
Temperatures up to 900 °F (482 °C)

HIGH TEMPERATURE CHARGE OUTPUT ACCELEROMETER
MODEL 357B63
.53 pC/g sensitivity
Temperatures up to 900 °F (482 °C)

EXTREME TEMP CHARGE OUTPUT ACCELEROMETER
SERIES EX357E9X
5 pC/g sensitivity
Temperatures up to 1200 °F (649 °C)

EXTREME TEMP CHARGE OUTPUT ACCELEROMETER
MODEL EX611A00
Featuring shear mode sensing element vs. compression mode
Temperatures to 1200 °F (649 °C)
COMBUSTION INSTABILITY PRESSURE SENSORS

EXTREME TEMPERATURE PRESSURE SENSOR
MODEL 176A02
Sensitivity: 6 pC/psi
Measurement Range: 725 psi pk
Frequency Range: Up to 20 kHz

EXTREME TEMPERATURE PRESSURE SENSOR
MODEL 176A03
Sensitivity: 16 pC/psi
Measurement Range: 290 psi pk
Frequency Range: Up to 10 kHz

HIGH TEMPERATURE PRESSURE SENSOR
MODEL 176A04
Sensitivity: 15.5 pC/psi
Measurement Range: 300 psi pk
Frequency Range: Up to 10 kHz
VERY HIGH TEMPERATURE PRESSURE SENSOR
MODEL 176A05

Sensitivity: 52 pC/psi
Measurement Range: 725 psi pk
Frequency Range: Up to 8 kHz

VERY HIGH TEMPERATURE PRESSURE SENSOR
MODELS 176M03 and 176M09

Sensitivity: 17 pC/psi
Measurement Range: 20 psi pk
Frequency Range: Up to 10 kHz

VERY HIGH TEMPERATURE PRESSURE SENSOR
MODELS 176M07 and 176M12

Sensitivity: 17 pC/psi
Measurement Range: 20 psi pk
Frequency Range: Up to 6 kHz
SENSORS FOR GAS PIPELINE PUMPS & REFINERIES

4-20 MA VIBRATION SENSOR
MODEL EX64XB71
Available in velocity or acceleration output
ATEX / CSA approved with explosion proof conduit

ICP® PRESSURE SENSOR
SERIES 121A4X
Mounts on well head & supply lines
Rugged, case isolated sensor
1/4” NPT process fitting

4-20 MA PRESSURE SENSOR
SERIES 1503
Mounts on the compressor
Withstands sourgas environments
1/2” NPT fitting
CABLES & CONNECTORS

POLYURETHANE JACKETED
SERIES 052

2-conductor twisted pair with drain, shielded (-50 to +121 °F), with BNC connector to 2-pin MIL

ARMOR JACKETED
SERIES 048

High temp FEP Cable, Armor Jacketed, 2-conductor twisted pair w/ drain, shielded (90 to +392 °F), with Right Angle 2-Pin MIL connector

FEP JACKETED
SERIES 053

High temp FEP cable, 2-conductor twister pair, shielded (-85 to +392 °F), with 2-pin MIL connector

POLYURETHANE JACKETED, COILED
MODEL 050

Coiled Polyurethane cable, 2-conductor twister pair, with 7-pin connector

BREAKAWAY SAFETY CABLE

SAFETY BREAKAWAY CABLE ASSEMBLY
MODEL 050LQ006LU

6 ft coiled 2-conductor polyurethane cable, with 2-socket MIL to 3-pin half breakaway connector

SAFETY BREAKAWAY CABLE ASSEMBLY
MODEL 052LV001AC

1 ft 2-conductor polyurethane cable, with 3-socket half breakaway connector to BNC plug
DATA COLLECTION
ACCESSORIES

ENCLOSURES

- Consolidate up to 48 channels of outputs into a convenient, centralized location
- Helps extend cable life by reducing number of connections needed for measurements
- Improve efficiency with temperature & vibration outputs in the same enclosure

BNC TERMINATION BOX
SERIES 691A5X

For use with data collectors that supply ICP® sensor power
1 to 4 input channels via terminal strip
1 to 4 output channels via BNC

SWITCH BOX
SERIES 691C4X

For use with data collectors that supply ICP® sensor power
Available with 6 or 12 input options.
BNC output connectors for switched vibration & temperature signal

PORTABLE REFERENCE SHAKER
MODEL 699802

Conveniently calibrates permanently mounted accelerometers at the machine
Verifies system performance
Confirms operation of cables, switching devices & monitoring systems
Outputs 1g pk or rms; operates at 159.2 Hz
Can perform up to 1,600 operating cycles without loss of battery power
MOUNTING ACCESSORIES

EPOXY KITS
Industrial grade adhesive for installing mounting pads
Proven to withstand the demands of factory uses
Applicator syringe helps decrease mess around measurement point

SPOT FACE TOOLS
Do-it-yourself installation method to help keep costs low
Multiple end-mill diameters to suit your specific application
Easily use with any standard drill

MAGNETIC BASES & MOUNTING PADS
Magnetic temporary installations during route data collection
Mounting pads for permanent installation
Styles for flat or curved surface mounting

MOTOR FIN FANS
Easily take accurate measurements even in narrow spaces
For use in both portable & permanent monitoring applications
Multiple widths & lengths to fit your specific application