INDUSTRIAL MONITORING INSTRUMENTATION

IMI SENSORS
A PCB DIVISION

pcb.com/imi-sensors | 1 800 959 4464

PREDICTIVE MAINTENANCE

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

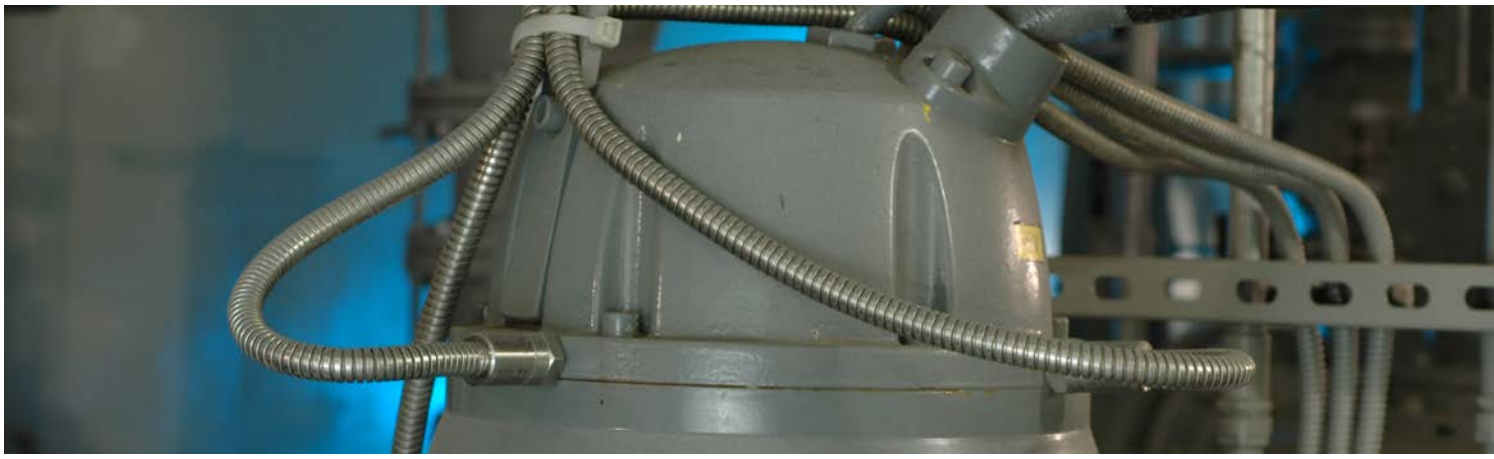
Completely submersible Ideal for sub pumps & applications

The world's smallest submersible industrial accelerometer

THE SPINDLER®

MODEL 607A61

Armored integral cable is ideal for rugged applications



PRECISION ICP® ACCELEROMETERS

Tighter 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 HT622B01

- Low noise
- Temperatures to 325 °F (163 °C)
- Ceramic sensing element

QUARTZ, GENERAL PURPOSE
MODEL HT628F01

- Quartz sensing element
- Temperatures to 325 °F (163 °C)
- Welded hermetic sealing

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 kH
- 1/4-28 thru bolt, 2-pin MIL connector

LOW FREQUENCY ICP® ACCELEROMETERS

CERAMIC, HIGH SENSITIVITY
MODEL 626B01

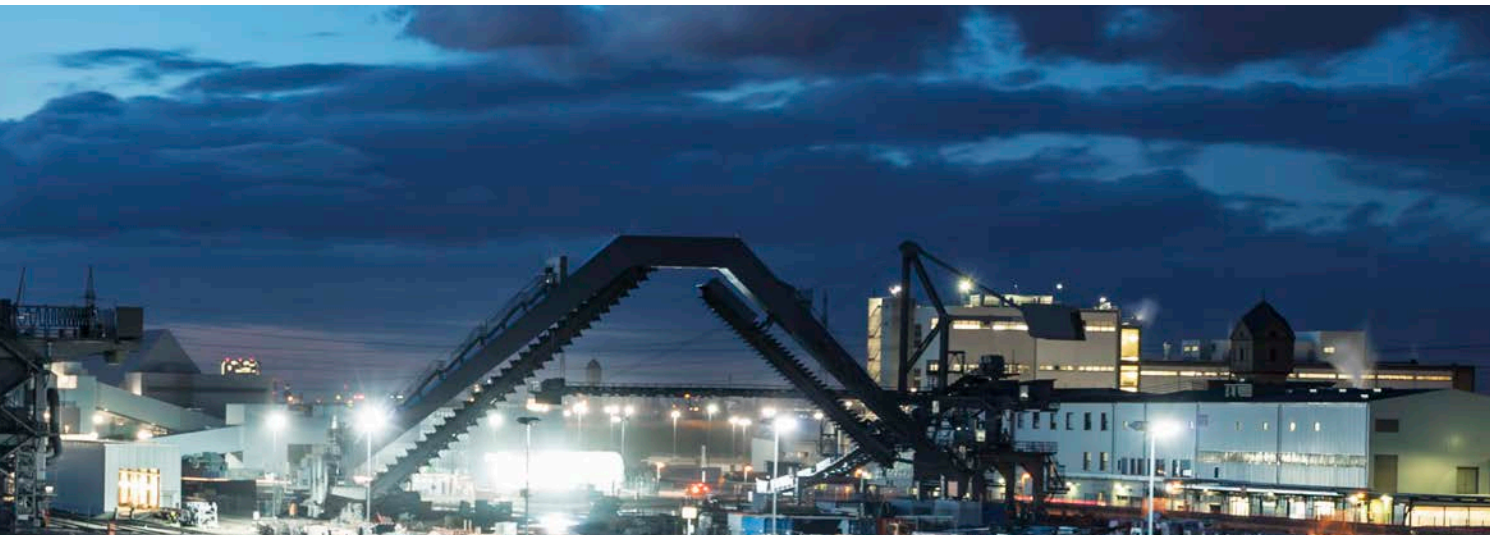
- 100 mV/g sensitivity
- ±3 dB frequency response down to 0.2 Hz

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

LOW PROFILE
MODEL TO-5

PRECISION TRIAXIAL
MODEL TO-5

PRECISION TRIAXIAL
MODEL TO-8

PROCESS MONITORING & PROTECTION

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

RECIPROCATING MACHINERY PROTECTOR

MODEL 649A01

- Detects faults / mechanical looseness in reciprocating compressors
- Outperforms impact transmitters

BEARING CONDITION TRANSMITTER

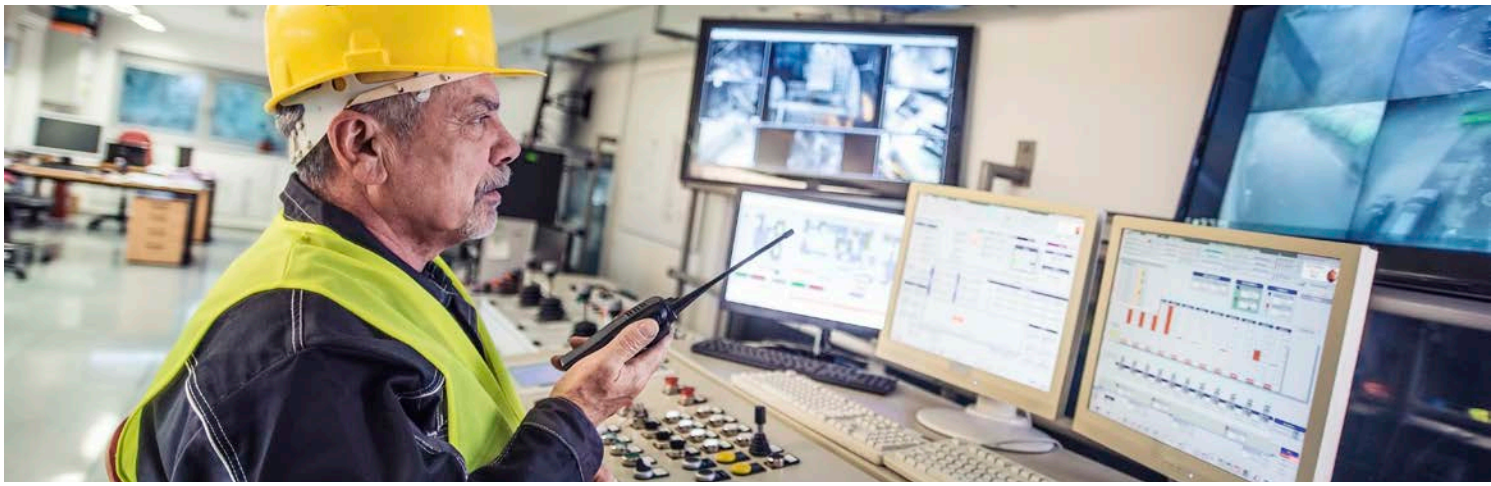
MODEL 649A03

- 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)

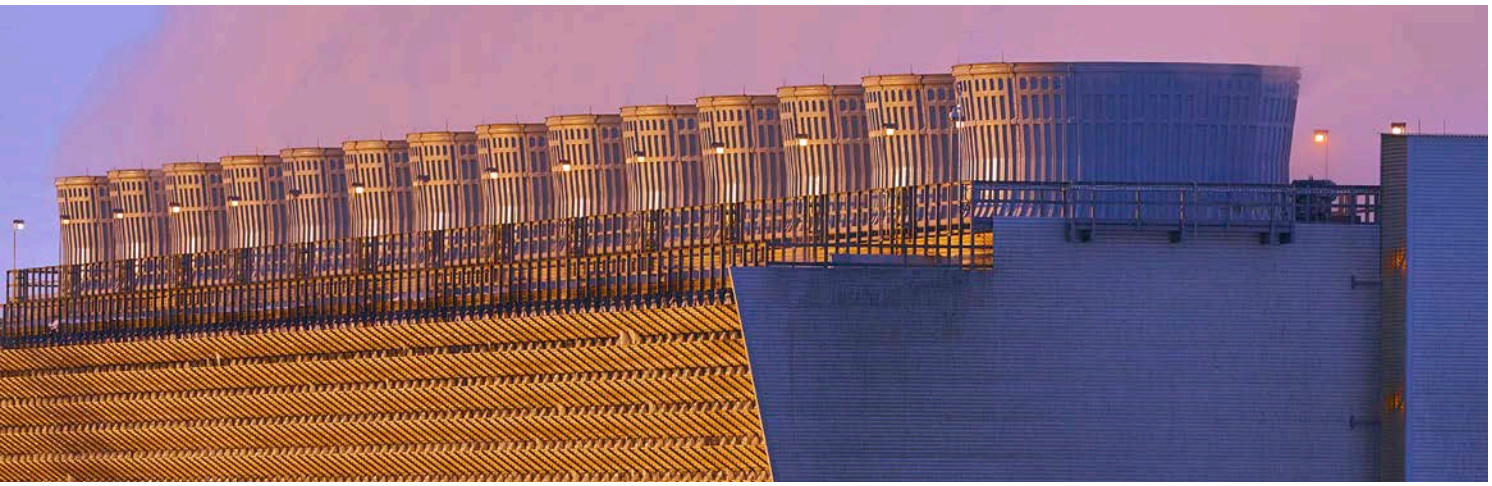
ICP® power for ICP® (682A16)

VIBRATION TRANSMITTER

MODEL 682C03

Outputs 4-20 mA signal proportional to acceleration, velocity, or displacement

ICP® accelerometer input



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

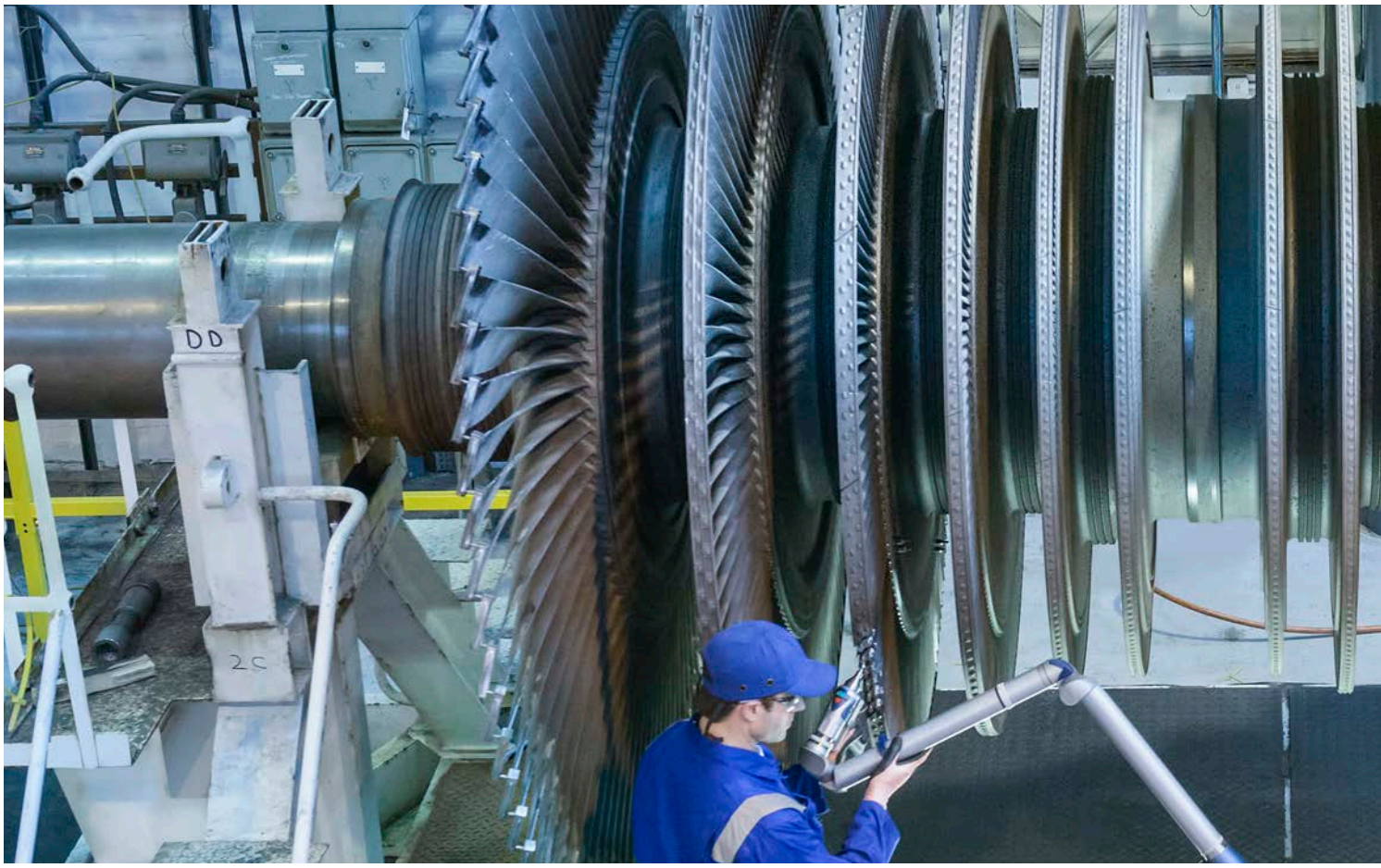
SERIES 685AX9

- 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



ENERGY & POWER GENERATION

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.

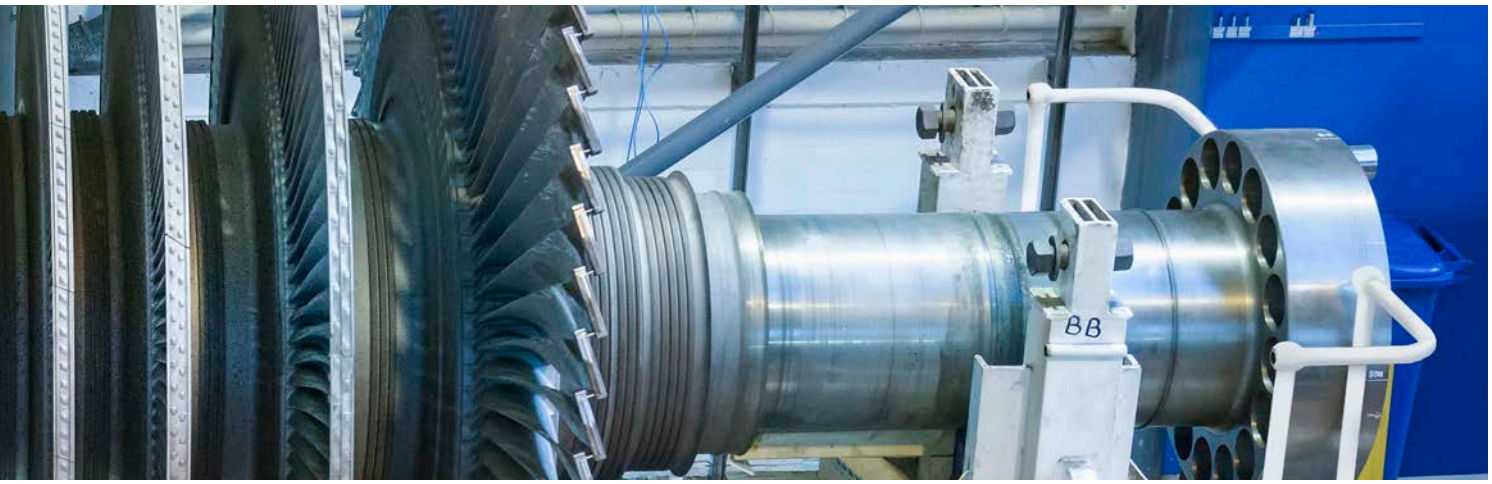
APPLICATIONS

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 ºF (260 ºC)

HIGH TEMPERATURE ACCELEROMETER
MODEL EX600B13

100 pC/g sensitivity

Temperatures up to 500 ºF (260 ºC)

VERY HIGH TEMPERATURE ACCELEROMETER
SERIES EX619A11

50 pC/g sensitivity

Temperatures up to 900 ºF (482 ºC)

HIGH TEMPERATURE CHARGE OUTPUT ACCELEROMETER
MODEL 357B63

.53 pC/g sensitivity

Temperatures up to 900 ºF (482 ºC)

EXTREME TEMP CHARGE OUTPUT ACCELEROMETER
SERIES EX357E9X

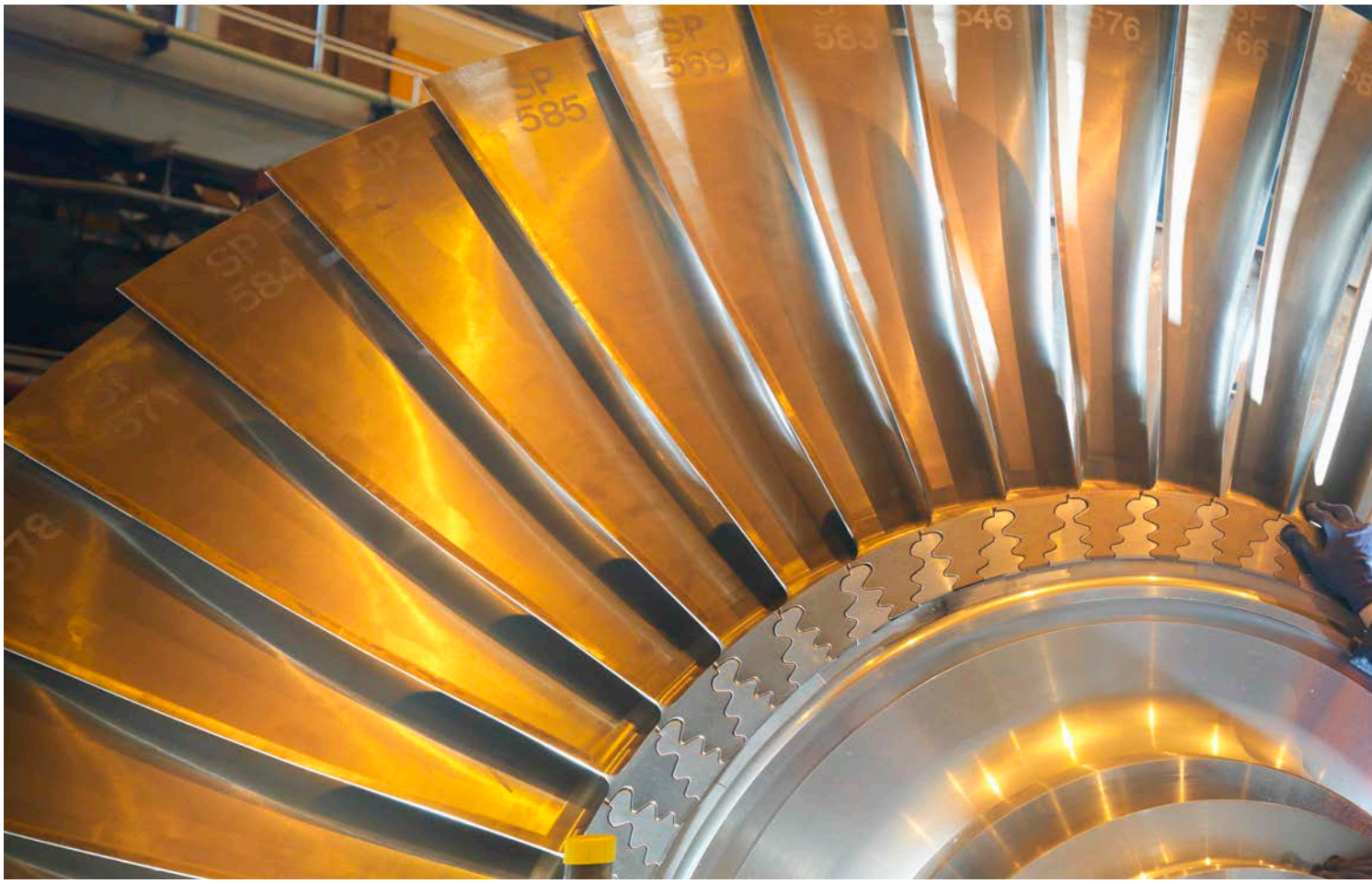
5 pC/g sensitivity

Temperatures up to 1200 ºF (649 ºC)

EXTREME TEMP CHARGE OUTPUT ACCELEROMETER
MODEL EX611A00

Featuring shear mode sensing element vs. compression mode

Temperatures to 1200 ºF (649 ºC)



COMBUSTION INSTABILITY PRESSURE SENSORS

EXTREME TEMPERATURE PRESSURE SENSOR
MODEL 176A02

Sensitivity: 6pC/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 699B02

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 MOUNTS

Easily take accurate measurements even in narrow spaces

For use in both portable & permanent monitoring applications

Multiple widths & lengths to fit your specific application

IMI SENSORS
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3425 Walden Avenue, Depew, NY 14043 USA

pcb.com/imi-sensors | imi@pcb.com | 800 959 4464 | +1 716 684 0003

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