MACHINERY CONDITION MONITORING
World Class Sales & Service Support

Increase uptime
Decrease unscheduled downtime
Prevent machinery failure

METRIX
Experienced Leader

With more than 50 years of service, Metrix is the preferred supplier of industrial vibration monitoring systems and services to many of the world’s leading manufacturers and users of cooling towers, gas turbines, generators, pumps, motors, fans, reciprocating compressors, and other rotating machinery. With headquarters in Houston, Texas, we operate in more than 40 countries via factory-direct sales and service professionals, along with a strategic network of instrumentation partners.

We pioneered the concept of simple, affordable machinery protection with our mechanical vibration switch offerings, revolutionary 4-20mA vibration transmitters, robust high-temperature velocity sensors, and innovative impact transmitter technology.

Recently, we introduced a way for our customers to monitor radial vibration, thrust or shaft speed using a single device. Our new Digital Proximity System (DPS) combines the performance of a fully API 670 compliant eddy-current proximity measurement system with the flexibility of digital configurability. DPS saves our customers time and money.

Metrix continuously works with our customers to provide the best solution to meet their requirements.

Hazardous Area Approvals

Metrix serves customers in the oil & gas, chemical processing, power generation, wastewater and other industries where hazardous area approvals are increasingly common. Most of our products are available with North American, ATEX, and IECEx approvals, along with CE mark compliance for Europe and country-specific approvals where appropriate.
Proximity Products

Metrix\(^1\) offers an array of probes, cables and drivers that feature ProxMatch™ to ensure you have the correct probe to cable to instrument connection. For convenience, our proximity probe families are interchangeable with Bently Nevada\(^2\) proximity probe families including 3300 XL, NSv/RAM*, 7200 series, and 3000 series. Our new Digital Proximity System can use the new MX8030 proximity probe system which comes standard with Triaxial Cables for greater durability and VibeLock\(^1\) Connectors for a secure fit. The proximity probe system can be ordered with CSA, ATEX and IECEx hazardous area approvals.

**SETPOINT DPS (Digital Proximity System)**

**Probe Driver, MX2033**
3-Wire, Dynamic Voltage Output (mV/mm or mV/mil)

**Extension Cable, MX8031**
Available with and without protective armor with Triaxial Cable and VibeLock™ Connector.

**Proximity Probe, MX8030**
5mm and 8mm tip diameter with Triaxial Cable and VibeLock™ Connector.

**Or**

**Transmitter, MX2034**
4-20 mA

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### Proximity Compatibility Table

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<td>MX2033</td>
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<td>5510C</td>
<td>5516C</td>
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</tbody>
</table>

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### Accessories

- **Static Calibrator, 9060**
  Tool that allows users to ensure the proximity probe system is working properly.

- **Dynamic Signal Checker, MX2040**
  Tool that dynamically tests the proximity probe system loop by the simulation of rotor vibration.

- **Probe Mounting System, 5497PM**
  Works with reverse mount 8mm proximity probes. Provides physical protection in an attractive package.

- **Heavy Duty Reverse Mount Probe Housing, 5499**
  Heavy duty accessory for reverse mount probes. Can withstand pressures to 1000 PSIG (6.89 MPa).

- **Probe Brackets, 7646**
  Available for all standard probe sizes.

- **NPT Threaded Hole Probe Holder, 9059**
  Available for all standard probe sizes, (3/4" pictured) and 1/2" NPT available.

- **Feed Through Extension Cable, 5494**
  Extension cables with High Pressure Cable Seal to 150 PSI.

- **Weatherproof Housing**
  NEMA 4 / IP 65 rated enclosures for 2, 4 or 8 DPS units.

- **Explosionproof Housing**
  NEMA 4 / IP 65 rated enclosures for 2 or 4 DPS units.

- **Signal Cables, 9041**
  Bulk cable for wiring probe drivers, transmitters, monitors or signal conditioners.
Seismic Transmitters & Sensors

We offer a wide selection of seismic vibration sensing solutions—most with hazardous area approvals. A broad selection of accessories is also available to ensure flexibility and ease of installation.

Transmitters

**Velocity Transmitter, ST5484E***
4-20 mA, loop terminals with Independent Polarity Terminal (IPT®) to prevent incorrect wiring, frequency response 2Hz to 2kHz (±3dB).

**Indicating Velocity Transmitter, ST5491E**
Same as ST5484E with LCD indicator. Built-in protection against temperature shock and “ski slope” problem.

**Slim-bodied Transmitter, 162VTS**
Same functionality as ST5484E except it is ideal for narrow spaces.

**General Purpose Acceleration Transmitter, ST6911**
Compact transmitter, 4-20 mA proportional to acceleration. Frequency response 3Hz to 10kHz (±3dB).

**General Purpose Velocity Transmitter, ST6917**
Compact transmitter, 4-20 mA proportional to velocity. Frequency response 3Hz to 1kHz (±3dB).

**Impact Transmitter, IT6810***
Measures mechanical looseness with the convenience of 4-20 mA loop powered sensor technology and a 2 pin MIL-C-5015 style connector.

**Impact Transmitter, IT6811***
Impact Transmitter with integral cable twisted shielded pair 20 AWG black polyurethane jacket, 1/2-14 NPT connection.

**Impact Transmitter, IT6812**
IT6810 with 12in (305mm) integral cable enclosed in explosion proof housing.

*Sensors*

**General Purpose Accelerometer, SA6200A***
Fully API 670 compliant sensor. Designed for use on a wide variety of machine types with its broad frequency response of 0.5Hz to 10kHz (±3dB).

**Underwater Accelerometer, SA6200UW***
Designed for applications that are continuously or frequently exposed to very high levels of condensing humidity on continuous submersion. Frequency response 0.3Hz to 10kHz (±3dB).

**Low Profile Accelerometer, SA6210**
Uses a side-exit cable connection that allows it to be used in physically constrained locations where a top-exit cable design will not fit. Frequency response 0.2Hz to 11.5kHz (±3dB).

**High Frequency Accelerometer, SA6250***
Uses a built-in amplifier to provide a 100mV/g low-impedance, constant-current output that is compatible with vibration monitoring systems, electronic switches, and 4-20mA signal conditioners. Frequency response 0.8Hz to 15kHz (±3dB).

**Piezo Velocity Sensor, SV6300***
Piezo-Velocity Sensor provides a velocity output. Solid-state design has no moving parts to wear out and may be mounted in any axis. Frequency response 2Hz to 8kHz (±3dB).

**High Temperature Accelerometer, SA6350***
Suitable for use in temperatures up to 325°C. Designed for gas turbines and other machinery with high surface temperatures where an acceleration signal is desired. Frequency response 5Hz to 10kHz (±3dB).

**High-Temperature Accelerometer, SA6350***
High-Temperature Accelerometer is suitable for use in temperatures up to 325°C. Designed for gas turbines and other machinery with high surface temperatures where an acceleration signal is desired. Frequency response 5Hz to 10kHz (±3dB).

**High-Temperature Velocity Sensor, SA6350***
Suitable for use in temperatures up to 375°C. It is designed for gas turbines and other machinery with high surface temperatures where a velocity signal is desired. Frequency response 15Hz to 2kHz (±3dB).

*NOTE: Can be used in a Class I Div I, ATEX/IECEx Ex ia IIC environment.

**Signal Conditioners**

**Velocity Signal Conditioners, 5534/5544**
Accept signals from machine casing mounted velocity sensors and produce a 4-20 mA current source output proportional to the measured variable.

**Accelerometer Signal Conditioners, 5535/5545**
Accept signals from machine casing mounted acceleration sensors and produce a 4-20 mA current source output proportional to the measured variable.
Seismic Compatibility Table

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<th>Accessories</th>
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<tr>
<td>ST5484E</td>
<td>162VTS</td>
<td>ST6917</td>
<td>ST5491E</td>
</tr>
<tr>
<td>Acceleration</td>
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<tr>
<td>Sep. Cable</td>
<td>Integral Cable</td>
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<tr>
<td>Impact</td>
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<tr>
<td>Standard</td>
<td>Standard</td>
<td>XP</td>
<td></td>
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</tr>
<tr>
<td>Cables &amp; Accessories</td>
<td>Conduit Elbows &amp; Unions</td>
<td>Mounting Adaptors</td>
<td>Explosion Proof Housing</td>
</tr>
<tr>
<td>8978-111-XXXX Splashproof Cable Assembly, no armor</td>
<td>8200-XXX IP56 Capped Elbows</td>
<td>9338-101 Spot Facing kit</td>
<td>7295-XXX XP Housing</td>
</tr>
<tr>
<td>8978-200-0000 Cable Connector-Only Assembly</td>
<td>8200-XXX IP4X Capped Elbows w/terminal strip</td>
<td>3719-XXX Mounting Stud</td>
<td>9288-XXX XP Housing for IT6812</td>
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<tr>
<td>8978-211-XXXX Standard Cable Assembly, no armor</td>
<td>8200-XXX Conduit Elbows &amp; Reducers</td>
<td>8253-002 Stud Adapter</td>
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</tr>
<tr>
<td>8978-311-XXXX Submersible (IP67) Cable Assembly, no armor</td>
<td>8840-014 Stud Adapter Bushing</td>
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<tr>
<td>9334-111-XXXX-YYYY Splashproof Cable Assembly with stainless steel armor</td>
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</tr>
<tr>
<td>9334-211-XXXX-YYYY Standard Cable Assembly with stainless steel armor</td>
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<td>9193-A-BBBB High Temp. Signal Cable Assembly</td>
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<td>8169-75-002-AAA Two-Wire Cable Assembly</td>
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<td>4850-AAA High Temp. Armored Cable 9061-XXX Bulk Cable</td>
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<tr>
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<tr>
<td>100463 Barrel-type Ferrite Bead</td>
<td>8200-XXX IP56 Capped Elbows</td>
<td>3719-XXX Mounting Stud</td>
<td>9288-XXX XP Housing for IT6812</td>
</tr>
<tr>
<td>97007-007 Clamshell-type Ferrite Bead</td>
<td>8200-XXX IP4X Capped Elbows w/terminal strip</td>
<td>8253-002 Stud Adapter</td>
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</tr>
<tr>
<td>93818-004 Cable Grip Strain Relief</td>
<td>8200-XXX Conduit Elbows &amp; Reducers</td>
<td>8840-044 Stud Adapter Bushing</td>
<td></td>
</tr>
<tr>
<td>93818-018 Cable Grip Strain Relief</td>
<td>3841-058 Reducer</td>
<td>3841-099 Stud Adapter Bushing</td>
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<tr>
<td>93818-015 Cable Grip Strain Relief</td>
<td>99506-020 Magnetic Mount Adapter</td>
<td>99506-021 Magnetic Mount Adapter</td>
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<tr>
<td>8841-090 Cable Adapter</td>
<td>9289-XXX Mounting Adapter for 9288</td>
<td>9289-XXX Mounting Adapter for IT6812</td>
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<tr>
<td>For additional accessories, visit <a href="http://www.metrixvibration.com">www.metrixvibration.com</a> or email <a href="mailto:quotes@metrixvibration.com">quotes@metrixvibration.com</a>.</td>
<td></td>
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</tbody>
</table>
Switches & Monitors

Metrix provides reliable vibration switches that are regarded as the industry standard. These devices offer basic vibration protection in a stand-alone package. Various hazardous area approvals and enclosure styles are available to ensure that most applications can be addressed with standard product offerings.

### Switches/Monitor

**Mechanical Switch, 5550**

Designed to meet all requirements in a single, affordable package. It provides vibration protection for low to medium speed machinery. Rated for Class I Div I, Class II Div 1, ATEX/IECEx Ex d. IIB + H2.

**Electronic Switch, 440**

Vibration on on the 440 is monitored in RMS velocity units. Its enclosure carries a NEMA 4X rating. Rated for Class I Div I hazardous areas.

**Electronic Switch, 450**

The 450 switch has the same internal electronics as the 440, except it is in an explosion-proof enclosure for CSA-approved use in Class I Div 1 and Class III hazardous areas.

**Electronic Switch, SW6000**

Versatile vibration protection instrument with LCD display. In its standard configuration, the SW6000 is a vibration switch loaded with standard features and packaged in an industrial grade housing. CSA and ATEX rated.

**Electronic Monitor, SM6100**

The SM6100 is an single input vibration monitor with LCD display using external transducer. Available in velocity or displacement units. Packaged in an industrial grade housing. CSA and ATEX rated.

**Electronic Switch, 5477B**

Features two-wire hookup and solid state reliability. This makes it an ideal replacement for mechanical vibration switches when increased accuracy and repeatability are required.

**Electronic Switch Family (PRO440, PRO6000)**

Advanced capabilities allow these programmable switches to deliver self-contained, single channel vibration protection with one or (optional) two fully adjustable alarm levels and corresponding electro mechanical relays. PRO450 and PRO6000 are Class I Div 1 rated and housed in an explosion proof enclosure.

### Switches & Monitors Compatibility Table

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<tr>
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<td>S550</td>
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<td>PRO6000</td>
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<tr>
<td>Dual setpoint</td>
<td>S550 or S550G</td>
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<td>PRO4401,2</td>
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<tr>
<td><strong>Velocity</strong></td>
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<tr>
<td>Single setpoint</td>
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<td>SW60001,2</td>
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<td>Dual setpoint</td>
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</tr>
<tr>
<td>Single setpoint</td>
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<td></td>
</tr>
<tr>
<td>Dual setpoint</td>
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</tr>
</tbody>
</table>

1. Can be configured with internal sensor or optional external vibration sensor.
2. Available with or without optional integral display.
3. Displacement measurement with external velocity sensor only.
4. XP rating applies to housing only.

### Accessories

- **DIN-Rail Mounted Relays, 94500-XXX**
  - Use with 5477B

- **USB Cable, 100468**
  - Use with 5477B

- **Electronic Module, 58372**
  - Use with 5477B

- **Flange Mount Adapter, 7084-001**
  - ½” NPT to 3-hole, 303 SST
DATAWATCH IX

Local display and data recording combined with alarm capabilities.

This powerful, compact ¼ DIN panel mount, unit offers four (4) or eight (8) high accuracy universal inputs for data monitoring and recording. The recording functionality within the DATAWATCH IX instrument makes capturing and storing machinery data easy.

- 50MB Flash memory for data storage
- 8Hz sample and recording rate
- Secure, binary data or open (CSV) data files
- 4 universal input channels (8 optional)
- 30 additional channels for use as mathematical functions, Modbus inputs or counters
- Modbus TCP/IP over Ethernet communications with PLC, DCS, SCADA system or host computer system

The monitor allows you to view your data in a bar graph, trend, or as numeric values. The clear full color display, with your data in the format you need, makes it easy for operators to see what is happening. The push buttons below the display also enable simple scrolling between configured views.

SETPOINT

SETPOINT is our rack-based machinery protection system, designed to continuously monitor up to 56 vibration channels or 84 temperature channels in a single rack.

- Intuitive touchscreen display
- Fully API 670 compliant
- Completely independent and redundant power
- Industry-first open protocol for both static (overall) and dynamic (waveform) data, including transient data
- Engineered out-of-the-box connectivity to OSIsoft*
  PI System* for condition monitoring software (CMS)
- Simplified spare parts with just 4 basic module types
- Accepts standard 24Vdc instrument power
- Simple, spreadsheet-like configuration software
- 4-slot, 8-slot, and 16-slot rack sizes available

*NOTE: Registered trademark of OSIsoft, LLC.

Portable Products

Our portable offerings augment our monitoring solutions by providing hand-held meters, calibration instruments, and multi-channel data acquisition solutions. All are ruggedized to withstand the rigors of daily, industrial use.

**Meters**

**Portable Meter, 5500**
Intrinsically safe meter is ideal for obtaining spot measurements of machine vibration.

**Vibra-Check Meter, VM2800 & VM3800**
Ideal tool for obtaining spot measurements of machinery vibration.

**Impact Meter, 6850-001**
Designed for quick check out or adjustment of Metrix Impact transmitters, either on an operating machine, or with the transmitter removed.

**Single Channel Alarm Monitor, AM3030**
Provides transmitter excitation and up to 4 programmable trip points in a neat 1/8 DIN package.

**Hardy Shakers**

**Standard Portable Shaker, HI813**
Standard Model for heavy duty field use. Necessary for any plant that uses accelerometers or velocity sensors to ensure their proper operations.

**Deluxe Portable Shaker, HI803**
Deluxe Model with Built-in Printer and Storage. The portable shaker helps ensure accelerometers and velocity transducers are working properly.

**Accessories**

**Probe Extension, 2182**
254 mm (10") long extension slips on vibration meter probe for measurements in tight quarters.

**Accelerometer Magnet, 99517-008**
High-strength magnetic base for Accelerometer Magnet for use with VM2800 and VM3800 meters.

**Headset, 99517-010**
Collecting data with the Vibra-Check, you may use the optional headphone to listen to the mechanical noise sensed by the accelerometer.

**Coiled Accelerometer Cable, 99517-012**
Coiled Accelerometer Cable for use with VM2800 and VM3800 Meters. Cable connects at the top of unit.

**Molded Plastic Carrying Case, 99517-014**
Molded Plastic Carrying Case for carrying and storing VM2800 or VM3800 Meter. Holds the meter and all of the contents in a portable case.

**Soft Portable Carrying Case, 99517-013**
This portable soft case can be worn on the shoulder or around the neck to keep the Vibra-Check meter handy but out of the way. Use with VM2800 and VM3800 Meters.

Contact us for more information:
Metrix Instrument Co.
8824 Fallbrook Dr.
Houston, TX 77064

Tel: (1) 281.940.1802
quotes@metrixvibration.com
www.metrixvibration.com