MACHINERY CONDITION MONITORING
World Class Sales & Service Support

- Prevent machinery failure
- Increase uptime
- Decrease unscheduled downtime
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 invented the technology of simple, affordable machinery protection with our vibration switch offerings, revolutionary 4-20mA vibration transmitters, robust high-temperature velocity sensors, and innovative impact transmitter technology.

Metrix is again revolutionizing the industry with our Digital Proximity System. Imagine being able to support a multitude of cable lengths, target materials and older probe systems with just 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.
Leading Products

Digital Proximity System

When one considers that the Metrix Digital Proximity System (DPS) is field proven with tens of thousands of installations, is field configurable for different manufacturer’s probes and cables, variable system lengths up to 12 meters, speed systems out to 22 meters, and for a wide variety of common shaft materials, while maintaining the best amplitude and frequency resolution for a proximity probe system, with the fastest factory standard delivery times in the industry – in a single device, is nothing short of revolutionary.

Seismic Transmitters & Sensors

With over 50 years of experience building the best in class vibration transmitters and sensors, Metrix has the vibration systems you can trust. We invented the velocity and impact transmitter, that are now benchmarks in the industry. Our transducers are trusted by many OEMs for their accuracy and reliability, which are the hallmarks of our manufacturing technology and continuous improvement programs.

Monitors & Switches

Metrix vibration switches provide for overall vibration monitoring and trending without the necessity of complex systems. Models are available with Hazardous Area Ratings and explosion-proof housings. Our state-of-the-art electronic switches are configurable to suit user needs. Our Datawatch IX provides a local display, data recording, alarm levels and remote connectivity. Our monitors and switches are easy to install as stand-alone or integrated systems.

Hardy Shakers

The Hardy Shakers are the industry standard for portable shaker tables. With the ability to check the accuracy of both seismic and proximity sensors, the portable shaker provides the assurance that your vibration monitoring system, the complete vibration loop, is working properly and reporting the correct vibration levels. With the compliment of our newer models, Metrix has a portable shaker to meet your needs.
Digital Proximity System

Imagine being able to support a multitude of older probe systems, cable lengths, and target materials with just a single device. The Metrix Digital Proximity System (DPS) allows the user to change the configuration in the field for use with any Metrix, or major competitor, proximity probe and cable.

The Metrix DPS combines the performance of a fully API 670 compliant eddy-current proximity measurement system with the flexibility of digital configurability. Users can configure their transducer system in the field using a custom field-generated curve, as well as, factory pre-configured calibrations for a variety of probe tip diameters, manufacturers, extension cable lengths, target materials, and linear ranges.

Change manufacturer probe, system length and target material in the field.

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

**Transmitter, MX2034**
4-20 mA
- Selectable for vibration, position or speed
- Buffered raw signal output via BNC or pin connector

**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. TightView™ proximity system option available for installations with limited clearances.

**8mm Ceramic Probes, MX2030**
For those applications in a harsh environment (e.g. Ammonia, Ammonia Hydroxide, Hydrogen Sulfide, etc.)
DPS Features

Reduce the number of spare parts needed to monitor your machines.

**Digitally Configure for:**
- Different Common Shaft Materials
- Unknown Common Shaft Materials
- Trimmable System Lengths
- TightView™ for Limited Clearances
- Other Manufacturer’s Probes and Cables
- Older Probes and Cables
- Field Configurable Changes
- No Crosstalk
- Configurable Spike Suppression

Proximity Compatibility

The Metrix DPS is compatible with 5mm, 8mm and 11mm proximity probe systems
- Metrix MX8030, MX2030, 7200 and 3000 Series Probes
- Other major manufacturer probe and cable systems
- Easily configure a custom DPS with unknown shaft material, variable system lengths up to 12 meters, with various manufacturer 5mm, 8mm and 11mm probe types

Accessories

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

- **Shaft Calibrator, 9060-SCTS**
  Touch settings allow users to check gap voltages every 10 mils (250 μm) to ensure the proximity probe system is working properly with shaft material (up to 22mm probes).

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

- **Cable Trimming and Connector Kit, MX8020**
  Allows users to trim extension cable and add connector.

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

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

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

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

- **Low Pressure Feed Through, 5494LP**
  Seals up to 4 cables to 3 bar (50 PSI). Hazardous Area Rated.

- **Conduit Body (Junction Box) with Low Pressure Feed Through, 5498JB**
  Makes internal probe installation easy. Hazardous Area Rated.

- **High Pressure Feed Through, 5494**
  Seals up to 2 cables to 10 bar (150 PSI).

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

- **Explosion Proof Housings**
  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.

- **5497DTPH Dual Thrust Probe Holder**
  Offers two 5497PM’s in a convenient easy mount enclosure. Hazardous Area Rated.
Seismic Transmitters & Sensors

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

**Transmitters**

- **Velocity Transmitter, ST5484E**
  - 4-20 mA, loop terminals with Independent Polarity Terminals (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 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).

- **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 in reciprocating compressors with the convenience of 4-20 mA in 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).

- **High Frequency Accelerometer, SA6250**
  - Uses a built-in amplifier to provides 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**
  - 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, 5485C**
  - High-Temperature Velocity Sensor is 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).

**Coming Soon - 5580 Signal Conditioner**

5580 Smart Vibration Signal Conditioner

The 5580 is a new generation DIN rail mounted Smart Vibration Signal Conditioner from Metrix. It has been designed to accept signals from machine casing mounted velocity sensors, accelerometers or shaft observing proximity probe systems and produce a 4-20 mA output proportional to the measured variable. It provides the user with a configurable signal input type for two independent channels plus a configurable feature to scale output either to peak or RMS units. For each channel, a green LED indicates sensor and cable integrity. A BNC connector gives access to the raw input signal for local analysis. A built-in 3-digit LCD display is included.

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

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<td>IT6810</td>
<td>IT6811</td>
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## Accessories

### Cables & Accessories
- 8978-111-XXXX Splashproof Cable Assembly, no armor
- 8978-200-0000 Cable Connector-Only Assembly
- 8978-211-XXXX Standard Cable Assembly, no armor
- 8978-311-XXXX Submersible (IP67) Cable Assembly, no armor
- 9334-111-XXXX-YYYY Splashproof Cable Assembly with stainless steel armor
- 9334-211-XXXX-YYYY Standard Cable Assembly with stainless steel armor
- 9193-A-BBBB High Temp. Signal Cable 8169-75-002-AAA Two-Wire Cable Assembly
- 4850-AAA High Temp. Armored Cable 9061-XXX Bulk Cable
- 93825-XXX Clamps
- 100463 Barrel-type Ferrite Bead
- 97007-007 Clamshell-type Ferrite Bead
- 93818-004 Cable Grip Strain Relief
- 93818-018 Cable Grip Strain Relief
- 93818-015 Cable Grip Strain Relief
- 8841-090 Cable Adapter

### Conduit Elbows & Unions
- IP4X Capped Elbows
- 8200-XXX IP56 Capped Elbows
- 8200-XXX IP4X Capped Elbows w/terminal strip
- 8200-XXX Conduit Elbows & Reducers

### Mounting Adaptors
- 9338-101 Spot Facing kit
- 3719-XXX Mounting Stud
- 8253-002 Stud Adapter
- 8841-044 Stud Adapter Bushing
- 8841-084 Stud Adapter Bushing
- 8841-058 Reducer
- 8841-099 Stud Adapter Bushing
- 99506-020 Magnetic Mount Adapter
- 99506-021 Magnetic Mount Adapter
- 9289-XXX Mounting Adapter for 9288
- 99506-040 Mounting Pad

### Explosion Proof Housing
- 7295-XXX XP Housing
- 9288-XXX XP Housing for IT6812

### Junction Boxes
- NEMA 4

For additional accessories, visit www.metrixvibration.com or email quotes@metrixvibration.com.
Monitors & Switches

With more customers realizing the need for early warning, alarm condition, local display, recording and remote connectivity, the DATAWATCH IX is a perfect fit. Metrix also provides reliable vibration switches that are regarded as the industry standard. These devices offer reliable 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.

DATAWATCH IX

Local display and data recording combined with alarm capabilities

The DATAWATCH IX vibration monitor recording device is a powerful, compact panel mount unit offering four (4) or eight (8) channel inputs for vibration monitoring and recording. The recording functionality within the DATAWATCH IX instrument makes capturing and storing machinery data easy.

Features include:

- Automatic data recording
- Panel mounted
- Four or eight 4-20mA inputs
- 50MB internal Flash memory for data storage
- USB port
- 8Hz sample and recording rate (every 0.125 seconds)
- VGA crystal clear display
- Multiple I/O options
- Web server
- Secure, binary data or open (CSV) data files
- 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.
**Monitors & Switches**

**Coming Soon - Programmable Switch, SW5484E**
Self-contained combination of seismic velocity transmitter and programmable switch. This switch incorporates a piezoelectric accelerometer, signal integrator, RMS peak detector, 4-20 mA signal conditioner and a digital microcontroller, with two solid state relays, into a single package. Rated for Class I Div 1 or Class I Div 2 hazardous areas.

**Electronic Switch, 440**
Vibration on the 440 is monitored in RMS velocity units. Its enclosure carries a NEMA 4X rating. Rated for Class I Div 2 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, Class II Div 1 and Class III hazardous areas.

**Electronic Switch, SW6000**
Versatile vibration protection instrument with LCD display using an internal transducer. Its standard configuration, the SW6000 is a vibration switch loaded with standard features and packaged in an explosion-proof 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 explosion-proof housing. CSA and ATEX rated.

**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 electromechanical relays. PRO450 and PRO6000 are Class I Div 1 rated and housed in an explosion-proof enclosure.

### Monitors & Switches Compatibility Table

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<td>Acceleration</td>
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<tr>
<td>Dual setpoint</td>
<td>S550 or S550G</td>
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</tr>
<tr>
<td>Velocity</td>
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<td></td>
</tr>
<tr>
<td>Single setpoint</td>
<td>PRO440</td>
<td></td>
</tr>
<tr>
<td>Dual setpoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Velocity/Displacement</td>
<td>Single setpoint</td>
<td></td>
</tr>
<tr>
<td>Dual setpoint</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Can be configured with internal sensor or optional external vibration sensor.
2. Available with or without optional integral display.
3. Velocity or integrated displacement measurement with external velocity sensor only.
4. XP (Explosion Proof) rating applies to housing only.

### Accessories

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

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

**Electronic Module, S8372**
Use with 5477B

**Flange Mount Adapter, 7084-001**
1/2” NPT to 3-hole, 303 SST
Hardy Shakers

The Hardy Shakers ensure that the seismic sensors and transmitters that you have installed are working properly and giving you the results you need. Just like the pressure and flow instruments in your facility need calibration checks every year, so do your seismic sensors and transmitters. This system puts the calibration check of those seismic sensors and transmitters within your control, and within your budget.

**HI-903 & HI-913 Hardy Shakers**

**Deluxe Portable Shaker, HI-903**
The HI-903 is our top of the line Hardy Shaker. It is compact, battery powered, and completely self-contained vibration reference source which can be conveniently used to calibrate individual sensors, vibration switches and data collectors, as well as to validate the entire condition monitoring system.

**Features include:**
- Easy frequency amplitude adjustment
- Battery life up to 18 hours
- Lightweight waterproof ruggedized case
- Precision control and stability

**Standard Portable Shaker, HI-913**
The HI-913 is our Standard Model for heavy duty field use. Necessary for any plant that uses accelerometers or velocity sensors to ensure their proper operation. The unit is a small, handy, completely self-contained vibration reference source.

**Features include:**
- Works in high vibration background environment
- USB flashdrive/automated reports (HI-903 only)
- Proximity Probe Option Available
Contact Us

Our knowledgeable sales representatives have decades of experience.

• Quotes Team - Our global representatives and distributors are available and willing to support your needs. Visit the website to find your local team representative or distributor, or send the inquiry to our headquarters at quotes@metrixvibration.com, or give us a call at 281.940.1802.

• Customer Service - If you would like to place an order, check on the status of an order, or would like to know the status of your shipment please give us a call at 281.940.1802 or email us at orders@metrixvibration.com.

• Technical Support - If you have a product related, installation or an application question please give us a call at 281.940.1802 or email us at techsupport@metrixvibration.com.

Ways to Contact Us

Call Us: 281.940.1802
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www.metrixvibration.com • info@metrixvibration.com
Metrix Capabilities Brochure
February 2020-Rev M
| Prevent machinery failure | • Metrix invented the Vibration Transmitter for its simplicity in connecting to the machinery Control System, PLC or SCADA System – We’ve been the Leader for over 50 years  
• Our Hazardous Area Certifications validate that our switches and monitors prevent catastrophic machine failure |
|---------------------------|---------------------------------------------------------------------------------------------------------------|
| Increase uptime           | • Our Digital Proximity System (DPS) is the best on the market. It’s field configurable for target material, system length and probe type for all your sleeve bearing or reciprocating assets  
• Metrix is the global leader in reciprocating machine monitoring, our scalable solution allows you to get the highest value at the least cost  
• The Metrix high temperature velocity sensor is an excellent example of how our vibration transducers are trusted by OEMs to prevent false shutdowns |
| Decrease unscheduled downtime | • Metrix provides early warning of rotating and reciprocating equipment problems, so maintenance can be planned  
• Reduce cost and save money by avoiding unscheduled downtime, production loss and expedited repair cost |