Mounting Options for Watchman 360 Vibration Programs

To ensure high quality data is being transmitted through a rotating asset and into the vibration sensor, the way in which the sensor in mounted onto the machine must be considered. There are several factors to consider when setting up a portable, wireless, or permanent online acquisition system.

Here are the most common mounting configuration solutions for various sensor options

1. Watchman AIR™ – Accel 310 Wireless Sensors

Q: Can I use a magnetic mount with the wireless sensor?

A: Though the printed materials for Watchman AIR may make references to a magnetic mount as an option provided by the OEM, in application, these magnet mounts are inadequate for the long-term solution. A magnet mount could be used to test placements of sensor and gateways during the initial setup and configuration exercise, but these magnetic mounts do not adequately connect to the asset to capture diagnostic data nor have the magnetic strength to hold these sensors for any extended length of time. The glue-mount pad is our only recommended solution.

2. TRIO® – Coil-cabled, Triaxial Sensors for Portable/Routine Data Collection

Q. When should I use the bronze AK-BR mounting pad or the stainless steel Quick-connect pad?

A: Each has an advantage and disadvantage.

The two-part Quick-connect kit installs a ¼-turn base to the machine locations and a receptable is connected to the triaxial sensor. The advanced of this system is that it does not require tools to make the connection, simply align and then twist a corner turn to lock in place. The disadvantage is data quality can suffer in the off-axis and greater care must be taken to ensure the connection can lock together.

The AK-BR pad's advantage is with its lower price and the data quality. However, the tradeoff is that it requires a tool (5/32 tapered allen or balldriver) to secure the sensor to the machine.

Quick Connect Pad/Receptacle

AKBR Mounting Pad

Accel 310 Glue-pad

3. Watchman Online System – Single-axis sensors

Q. What options are available when adding sensors for an Online System?

A. The Watchman Online System is a custom engineered solution. As such, there are a number of ways to source and install sensors for these assets. In most applications, single-axis sensors are preferred given the lower cost and flexibility in configurations. It is still recommended to glue these sensors to the machine using an appropriate mounting pad. Each machine has unique characteristics and thus determining which sensor and which mount adapter would be determined during a site walk-down during the scoping process.

Watchman Online System can support a number of different data inputs beyond 2-wire IEPE accelerometers, these include 3-wires accelerometer / temperature inputs, 4-20mA inputs, tachometer/trigger inputs, AC or DC couplers. Mounting and integrating these devices requires an engineering review.

4. 35# and 55# 2-rail Magnet Options

Q. Symphony Industrial AI has magnet options available, when are these applied to assets?

A. For all routine collection programs, Symphony Industrial AI does not condone the use of magnet mounts. In our opinion, the magnet does not provide a repeatable enough data quality to support the Expert Automated Diagnostic System. Meaning, when relying on repeatable data quality, the placement of the magnet by different users can result in deviations in the data captured, which could result in inconsistencies in the identification of emerging faults. Magnet mounts have less high-frequency dynamics, further limiting the capabilities of the analysis, such as impact demod, early bearing detection.

Magnetic mounts, however, are highly used for troubleshooting. And thus Symphony Industrial AI carries two of the most common sizes to support most troubleshooting requirements.