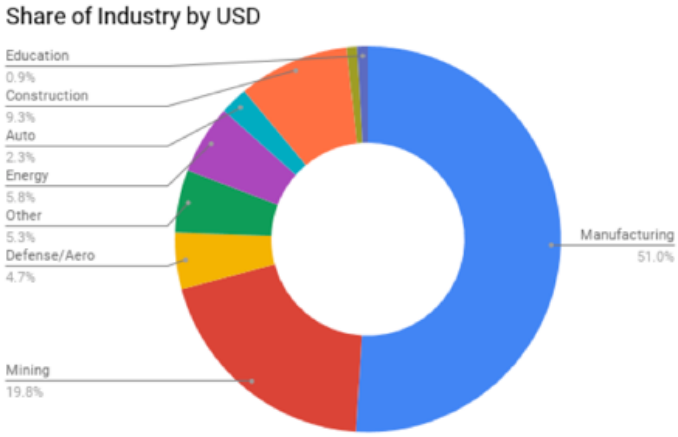
Wireless Measurement Read (WiMER3) - Safety Improvement

Case Study

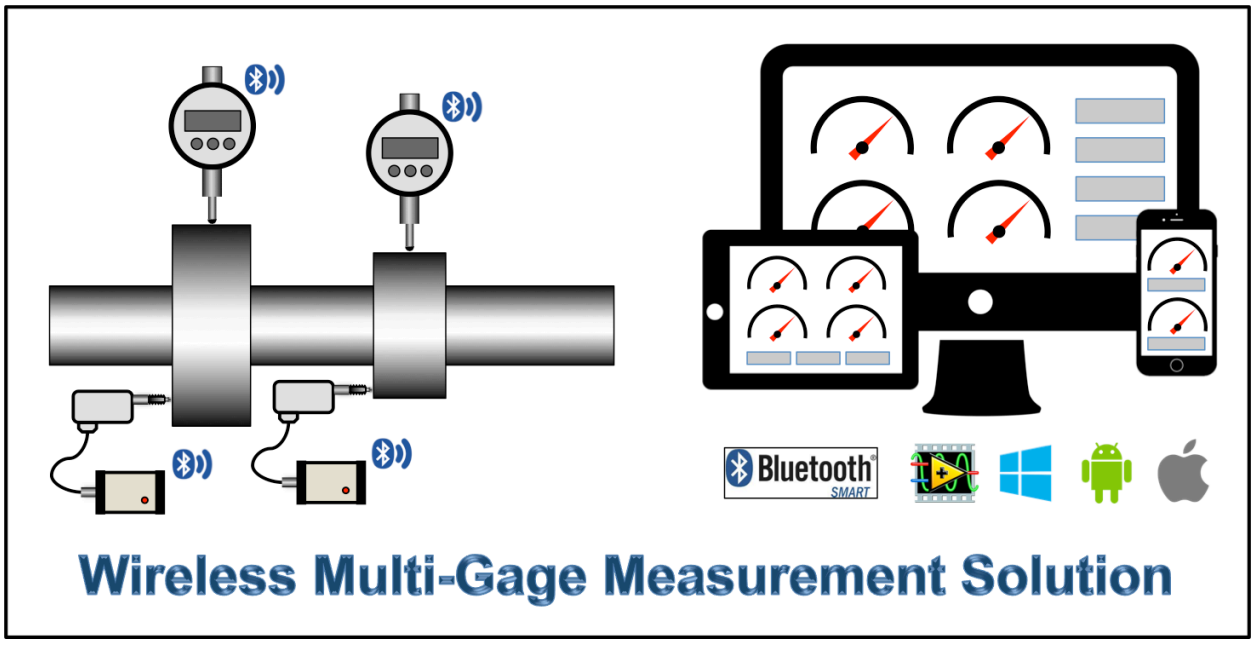
Motionics LLC

Introduction

Motionics LLC, located in Austin, TX, USA, specializes in metrology, machinery diagnostics, advanced vibration analysis, and instrumentations. Many industries they service, such as manufacturing, mining, and construction, have serious safety concerns. Their wireless measurement solutions can increase work safety and decrease the risk of injury by eliminating the need of having an operator close to machinery during a measurement. Motionics MultiGage measurement solutions allows measurement and simultaneous data collection from several gages using smart devices or any computer.



Sales of Motionics Products by Industry Category



WiMER3, one of the Motionics products, is a data collector and wireless transmitter developed for the Mitutoyo Linear Gage and LVDTs. WiMER3 sends readings to iPhone, iPad, and PC for convenient and accurate measurement. Below is a case study of a mining

company that implemented the WiMER3 for on site measurements to decrease risk of injury for workers.

Wireless Measurement Read (WiMER3) transmitter for Linear Gages and LVDTs

Case Study

What is happening?

An Australian mining company needs to measure slew bearing deflection on their heavy equipment every 100 hours to trend the rate of flew bearing wear and assist in the forecasting for component life. The task is generally completed using a dial indicator and a magnetic base. There is generally a spotter on the ground, an operator in the cab, and someone near the machine reading the dial indicator while movements are conducted. This is hazardous because a worker is close to swing bearing while the machine is being operated. There is potential for major crushing injuries to occur.

How was it improved?

Motionics WiMER3 wireless gage removes the requirement for personnel to be near the machine. A person in the cab operates the machine, and the measurements are sent wirelessly via the transponder to either a recorder on the ground or in the cab. The measurements are either recorded in an app on a phone, a tablet or a computer.

What impact did we see from this technology?

The Risk Score is reduced from major injury likely (ten times per year) to minor injury unlikely (one every ten years). Furthermore, the device helps to reduce the amount of exposure to risk by getting the job completed quicker. It also provides more accurate and reliable measurements and eliminates the human reading error.

Photos in Use


Australian mining site and the equipment under measurement


Motionics WiMER3 measurement instrumentations in use

WiMER3 taking wireless measurements on site

Likelihood / Consequence	5 Almost Certain (50 times per year)	4 Likely (10 times per year)	3 Possible (1 per year)	2 Unlikely (1 every ten years)	1 Rare (> every ten years)
5 Catastrophic **S:** Fatality, long term illness **E:** Long term perm damage	HIGH 25	HIGH 20	HIGH 15	MEDIUM 10	MEDIUM 5
4 Major **S:** Extensive injury **E:** Med effect/ off site release	HIGH 20	HIGH 16	MEDIUM 12	MEDIUM 8	LOW 4
3 Moderate **S:** Medical treatment **E:** Mod effect/ off site emission	HIGH 15	MEDIUM 12	MEDIUM	MEDIUM 6	LOW 3
2 Minor **S:** First Aid **E:** Min off site impact	MEDIUM 10	MEDIUM 8	MEDIUM 6	LOW 4	LOW 2
1 Insignificant **S:** Pain, inconvenience **E:** No offsite impact	MEDIUM 5	LOW 4	LOW 3	LOW 2	LOW 1

Risk chart showing the reduction in injury risk using the Motionics WiMER Tool.