



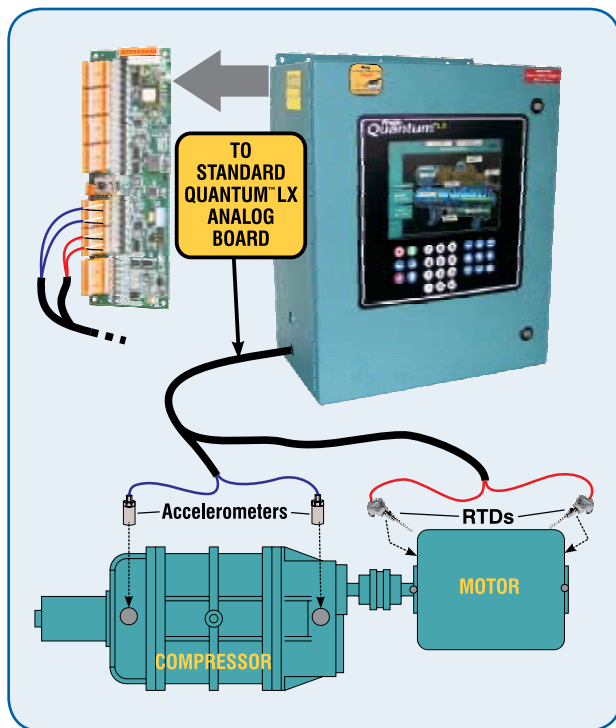
Vibration Monitoring System *Onboard!*

HIGHEST DEGREE OF ANALYSIS AND EARLY FAILURE DETECTION

Put your own full-time genius to work with the Frick® QUANTUM™ LX integrated PhD™ Vibration Monitoring System. PhD™ provides the highest degree of analysis and early failure detection for compressor and motor bearings.

Simple To Use

- Vibration expertise not required. PhD™ understands rotary screw compressor and motor bearings and will alert your technicians before a crisis occurs.



Field Retrofit

- Upgrade existing QUANTUM™ LX installations with **plug-in-place PhD™ brain**.
No special tools required!

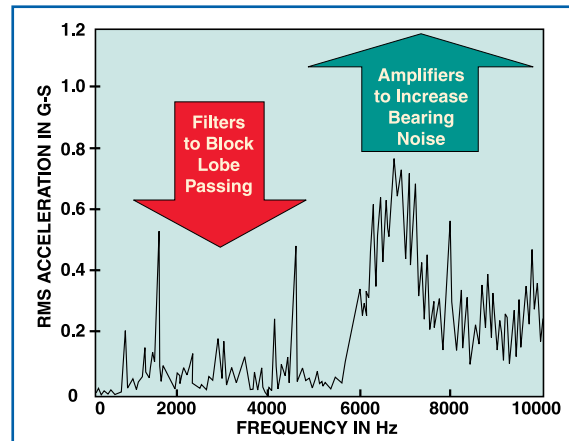
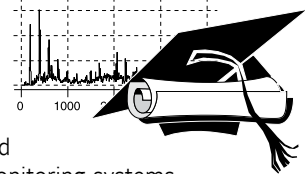
Lower costs MEAN HIGHER PROFITS

- Scheduled maintenance means less down time, greater production, and lower costs.

Early Warning System

- PhD™ uses ultrasonic technology to detect early bearing failure. This means **advanced warning** for scheduled repairs, unlike velocity-based monitoring systems that may not warn until costly damage has occurred.
- Early detection avoids expensive rotor and housing replacement.

Genius at work.



Continuous monitoring (24/7)

- Unlike periodic monitoring, **PhD™ is always on duty**. PhD™ also detects temporary liquid slugging, allowing automatic shutdown to save your compressor.
- Onboard accelerometer signals are managed by **QUANTUM™ LX** to ignore frequencies that give false alarms. They are filtered to distinguish from normal gas pumping and harmonics.
- Motor winding and bearing temperature monitoring is available as a standard **QUANTUM™ LX** selection.

