

How Do You Know Which "Zone" Your Equipment Is In?



here is a need to use condition monitoring equipment in many hazardous locations, to measure vibration levels and temperatures of rotating machinery to diagnose faults such as misalignment, unbalance or impending bearing failure. The instruments needed to do the monitoring must therefore be "intrinsically safe" and incapable of igniting an explosive atmosphere.

The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) put the

onus firmly on the plant operator to decide which "Zone" the equipment is in and therefore what level of certification is required for any instrumentation used there.

This is because the likelihood of an explosive atmosphere existing is dealt with by the definition of a series of "Zones". These range from Zone 0, where an explosive atmosphere is likely to be present most of the time, to Zone 2, where it is not likely to occur in normal operation, with Zone 1 the "grey area" in between.



Deciding which parts of your plant are in which Zone is not easy and may require expensive surveys to determine. However, this is where the true benefit of Zone 0 certification comes in. Basically, you don't have to think! Because Zone 0 certified devices can be used literally anywhere!

Zone 0 certified devices are typically more expensive due to increased manufacturing costs (e.g. additional safety components and higher levels of redundancy). However, Test Products International (TPI) has achieved a significant Zone 0 cost breakthrough with the very affordable TPI 9085Ex vibration analyser.

The "go anywhere" TPI 9085Ex is certified for Zone 0 IECEx/ATEX with North American approval. This means you simply don't have to think what potentially explosive atmospheres you might encounter. The 9085Ex is certified to be intrinsically safe for ANY atmosphere WORLD-WIDE.

The 9085Ex measures "bearing noise" and displays it in bearing damage units (BDU), which is roughly equivalent to "percentage wear". In other words, readings above 100 BDU are indicative of a worn bearing. In addition, the 9085Ex uniquely incorporates a directly contacting temperature sensor within its vibration probe.

This gives a highly accurate, virtually instantaneous, surface temperature reading for the bearing, simultaneously as the vibration reading is being taken. With a high BDU reading and high temperature you know that what you are seeing really is a worn bearing!

Additionally, a lot of machinery is remotely located (e.g. pumping stations), often in the "middle of nowhere", requiring highly mobile teams of operatives to access them. However, the compact handheld TPI 9085Ex is extremely affordable and simple to use. It can, and indeed should, be included in every operative's basic tool kit. Also by using the FREE TPI Bridge App, "routes" and readings can be transferred to and from the 9085Ex anywhere in the world using mobile devices (e.g. smart phone or tablet PC) and then via Bluetooth to and from the 9085Ex.

"Routes" are simply lists of machines showing exactly what readings need to be taken and where to take them. The readings are then automatically time and date stamped by the 9085Ex and saved in the route for automatic transfer to computer-based trending software.

Trending is the cornerstone of condition-based maintenance (CBM). By looking at trends of bearing noise and temperature readings, you can determine well in advance when a bearing will likely need replacing. The TPI 9085Ex comes with powerful, yet simple to use, subscription free trending software, which includes automatic email notification of alarms and report generation, giving you everything you need for a full CBM strategy.

For more information please contact TPI Europe's head office on +44 1293 530196 or take a look on the website at www.tpieurope.com or email sales@tpieurope.com

