

Early Warning
System for
Plant
Maintenance
Engineers

DR X!

DR X is a patented set of 'fit and forget' modules for early detection and avoidance of plant and machinery failure.

By using a range of technologies, DR X modules can sense increases in bearing wear, fluid leaks, abnormal rises in temperature and vibration, mechanical knocking, and loss of steady state heating.

Modules are firmly clamped to the test point; the unique design ensures direct contact with the measurement sensor whilst maintaining IP67 environmental ratings.

Benefits

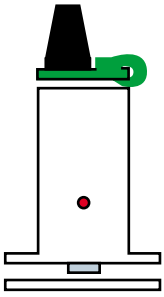
- **Instant indication of changes in operating conditions**
- **Relative, not absolute, detection of changes**
- **Saves man-hours spent on absolute measurement and recording**
- **Early detection prevents catastrophic failure and reduces the costs of routine 'just in case' replacement**
- **Standalone, plc or local annunciator interface**
- **Wide range of applications in process and machinery based industries**
- **Low voltage supply**
- **Easy deployment**
- **Low cost**

All wear is relative, not absolute, so DR X takes account of existing environmental noise during the simple set-up procedure: Turn the setting screw until the light changes from green to red and then back-off a quarter turn. Now any 2% increase in the measurement will cause a red light and close the volt-free contacts provided.

DR X modules can be 'mixed and matched' to suit most machinery health monitoring tasks.

Change of machinery health is indicated by the colour of the light in the body of DR X. Any plant personnel can rapidly recognise this change simply by visually inspecting the plant, removing the need for continuous measurement and logging.

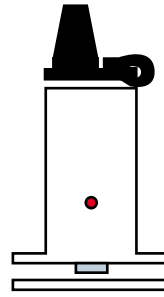




DR RUMBLE

Early detection of wear in bearings and other rotating machinery.

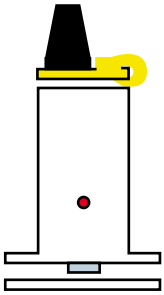
Using the high frequency noise characteristics which bearings exhibit, wear can be detected well in advance of failure or 'running rough'.



DR HISS

Leak detection in pipes, tanks and containers.

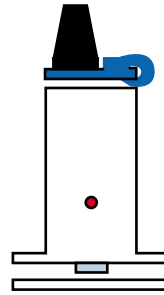
Minute leaks are detected for systems containing gases or liquids under pressure or vacuum, by listening to high frequency noise emissions.



DR VIBE

Low frequency vibration increase indicates system imbalance.

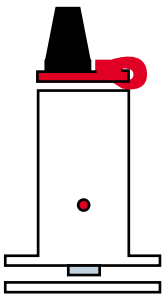
Vibration change (0.6 - 2.7g to 300Hz) can indicate instability in process systems, water hammer, loss of damper mechanisms and shock absorbers.



DR COOL

Temperature drop indicates loss of heating, blockage or breakdown.

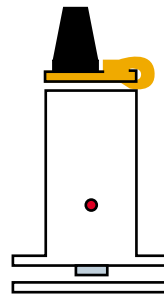
Applicable to electric heating systems, hot water supplies, oil coolers, air conditioning outlets, exhaust venting systems, chimneys, etc.



DR HEAT

Temperature increase often indicates impending failure or loss of control.

Applicable to many areas in the range -40°C to +80°C. Gearboxes 'running hot', temperature regulation breaking down, electrical switchgear, refrigerant failure.



DR KNOCK

Mechanical noise from machines and plant, cavitation in pumps and pipes.

Impulse noise is caused by a wide range of situations such as mechanical tapping, nucleate boiling, loosening of bolts or mountings, poor fluid flow.



Engineers Investigation Kit

In the minimum 'standalone' application the only requirement is a low-voltage D.C. supply. For more alarm critical situations or much larger plant, the change of machinery condition can make use of the isolated volt-free contacts provided. These can be hardwired into local PLC systems, outstations, local annunciators or alarm systems.

Installation: the units are mounted using two 4mm set screws or studs at the measurement point. Once fitted DrX modules conform to IP67 environmental rating. Power connection is via the IP67 connector provided. Each unit comes with its own application card.

Dr X Module Specification:

Power Supply: 10 - 32V DC @ 20mA typical
 Temperature range: -25°C to +85°C
 Size: 18mm x 53mm x 97mm
 Fixing: 2 off M4 set screws or studs (cable wraps for pipes)
 Body Material: Injection Moulded Nylon 66 and ABS
 Output: Red/Green LED. Isolated volt-free N/O contact rated at 48Vmax A.C or D.C, 100mA.

Part Numbering	
P270-010-1	Dr Knock
P270-010-2	Dr Hiss
P270-010-3	Dr Rumble
P270-010-4	Dr Vibe
P270-010-5	Dr Heat
P270-010-6	Dr Cool
P270-011-0	Engineers Investigation Kit (carrying case with 1 of each of Dr Knock, Dr Hiss, Dr Rumble, Dr Vibe and Dr Heat with connectors)
P270-011-1	Engineers Investigation Kit (carrying case with 1 of each of Dr Knock, Dr Hiss, Dr Rumble, Dr Heat and Dr Cool with connectors)

Supplied by:

