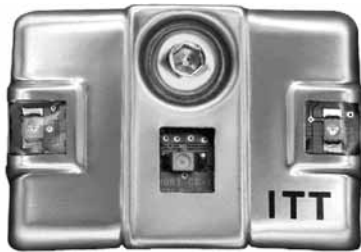


e-SV™ Series

i-ALERT™ – Conditional Monitoring



i-ALERT™ – The patent-pending condition monitoring device, originally intended for use within the Industrial Process market, is now incorporated within the e-SV product offering.

The device's onboard condition monitoring intelligence serves to reduce life cycle costs by increasing Mean time between failures (MTBF).

Features

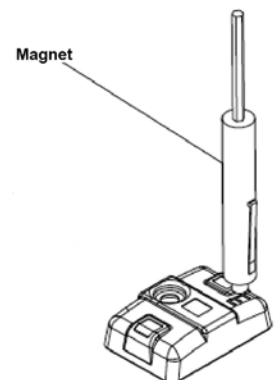
- Continuously measures vibration – observing responses from the motor and the pump during operation.
- If pre-set limits are exceeded – the monitoring device alerts the end-user via blinking red LED. This allows the pump operator to make changes to the process or the pump before a catastrophic failure occurs.
- The i-ALERT™ is also equipped with a single green LED to indicate when it is operational and has sufficient battery life.
- Both blinking green and red LED lights would be seen by operator or others during scheduled inspections or walk-bys.

Alarm Mode

- The condition monitor enters alarm mode when vibration limits are exceeded over two consecutive readings within a ten minute period. Alarm mode is indicated with two red flashing LEDs within two second intervals.
- Vibration limit: 100% increase over baseline or 0.5 in/sec max vibration levels. (Hydraulic Institute Standards, ISO 10816).
- Minimum vibration level to cause alarm mode is 3.175 mm/sec to minimize nuisance tripping.

Setup

- The condition monitor is ready for activation when the pump is running and has reached a steady flow, pressure, and temperature
- Place a small magnet on the condition monitor over the ITT logo and then remove it, as this example shows
- When the condition monitor is activated it:
 1. Displays a series of red LEDs followed by a solid green LED.
 2. Collects eight samples that are spaced one second apart.
 3. Averages these readings to establish the baseline vibration level.
 4. Flashes a green LED after approximately twelve seconds.



Monitoring Mode

- Measurement intervals for the condition monitor during normal operation and when the monitor is in alarm mode:

Mode	Measurement Interval
Normal (Green)	Five minutes
Alarm (Red)	Two minutes

- When the i-ALERT™ measures a reading beyond the specified vibration limit, the appropriate red LED flashes. After the process or pump condition that causes the alarm is corrected, the i-ALERT™ returns to normal mode after one normal-level measurement.

Possible Causes of Vibration

- Entrained air into the process fluid.
- Turbulence process flow within the system.
- Worn bearings (pump or motor)
- Water hammer
- Loose anchor / hold-down bolts
- Bent shaft / misalignment
- Harmonic vibration
- Unbalanced rotating equipment
- Many additional symptoms may cause elevated vibrations.

Battery Life

- The i-ALERT™ Condition Monitor battery is not replaceable. You must replace the entire unit once the battery runs out of power. Battery life is not covered by the standard pump warranty.

Mode	Battery Life
Normal (Green)	3 to 5 years
Alarm (Red)	1 year

Product Approval Standards

CSA certification

Intrinsically safe for:

- Class I, Div. 1, Groups A, B, C, D
- Class II, Div. 1, Groups E, F, G
- Class III
- Certified to Canadian and US requirements

Explosion-proofing standards

All explosion-proof products for use in explosive atmospheres are designed in compliance with one or more of the following approvals:

- EN, ATEX Directive 94/9/EC
- FM According to NEC
- Class 1 Div 1 Groups "C", and "D"
- Class 2 Div 1 Groups "E", "F", and "G"
- Class 3 Div 1 Hazardous Locations

ATEX/IECEx:

- Group: IIC
- Category: Ex ia
- Temperature Class: T4 (for ambient up to 100°C)
- ATEX Marking: Ex II 1 G



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