FAQ's

EXERTHERM™
24x7 Thermal Monitoring

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Q Is Exertherm similar to thermal imaging?

A Both use non-contact infrared to measure temperature of the target, but that's where the similarity ends. Thermal imaging is done from OUTSIDE the enclosure, and can only be used for terminations / components immediately adjacent and with direct line of sight to the panel surface, (because it's measuring the temperature of the panel not the component).

Exertherm uses patented, small, plastic housed non-contact IR sensors, which require no external power. These are placed INSIDE the enclosure to directly thermally monitor any component in ANY location in the panel.

A key difference is that thermal imaging inspections are periodic, generally 1 or 2 days a year. To rely on detecting problems prior to failure in mission critical equipment, 1 or 2 days inspection out of 365 leaves an unacceptable reliance on luck.

"Don't thermal windows overcome these problems?"

"They improve the view from camera to target, but don't resolve some key issues, like how to inspect targets with no direct line of sight, nor the fact that the inspections remain periodic, and also add significant cost."

Q What main benefit does direct and continuous thermal monitoring provide?

A Exertherm continuously protects 24x7 365 days a year to detect and identify the location of problems at an early stage of development via on going trend analysis / alarms.

"24x7 Continuous Thermal Monitoring is 'Best Practice' technology for Mission Critical Facilities"

"What does Exertherm do?"

"Exertherm is a system specifically designed to provide continuous 24x7 thermal monitoring of mission critical electrical equipment within enclosures, and to detect and identify the exact location of the problem long BEFORE the failure."

Q Can it be interfaced by existing BMS / SCADA systems?

A Yes, and very easily. ModbusRS485 is the 'standard' export protocol but Modbus232 & Ethernet options are also available.

Q What should be monitored?

A Thermal inspection is internationally recognised as the best method of detecting poor terminations, the most common cause of power outages. Thus, if it's mission critical and within the enclosure, it should be considered. Generally, the IR sensors are utilised to monitor key busbar terminations (ACB's, switches, busbars etc). The cable sensors are utilised to monitor critical cable terminations (i.e. MCB's, MCCB's etc) which simply strap onto the cable, adjacent to the termination to be monitored.

Q Can it be retrofitted to existing equipment?

A As well as being designed into new installations, Exertherm can also be retro-fitted and / or subsequently expanded, by just adding to the existing system.

Q How reliable are the IR sensors?

A The IR sensors have a MTBF of in excess of 1,000 years.

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Q What if the problem develops quickly or trend data is not acted upon?

A We recommend your system is configured with 2 alarm levels, warning and critical, which trigger in the event the temperature of any monitored component exceeds the pre-set (user definable) limits. These can be created in most BMS or other host systems, sending SMS messages, or simply providing a remote warning.

"What type of business is most likely to benefit from installing Exertherm?"

"Any business which is 'power critical' i.e. will incur significant downtime costs, or safety is compromised in the event of a major power failure. Examples include data centres, financial services, telecommunications, oil and gas, Government establishments / defence, large scale manufacturing, shipping, healthcare, metro transport systems, petro-chemical industry etc."

"Exertherm protects your system from electrical power failure & arc flash, improving facility and operator safety"

Q Is the system expensive?

A No. In fact, over the lifetime of the switchgear, Exertherm will provide a considerable saving against the total cost of periodic thermal imaging inspections. In addition, shutdowns for conventional intrusive maintenance can often be extended, providing further significant savings. Generally payback is within 1-3 years.

"What is the importance of continuous thermal monitoring?"

- *Increased device reliability and uptime*
- *Extend conventional maintenance periods, thus achieving downtime savings*
- *Can potentially provide circa 20% extra life expectancy on major capital assets*
- *Prediction of electrical failure BEFORE the event*
- *Improved facility and operator safety (Arc flash)*
- *Integrated real time data 24x7 365 days a year*

Q Are there any other unique features of Exertherm?

A Yes, unique to Exertherm is 'Thermal Mapping' – this can only be accurately achieved by combining your load data with the ΔT data provided by Exertherm to create a bespoke thermal map of your facility.

Q How do the sensors connect back to the system?

A Each sensor connects back to an 8 channel data acquisition card, which conditions & linearises the input signal and converts to Modbus.

Within each panel the data cards are interconnected, providing a single cable connection to the host system outstation. Exertherm can also be installed as a stand alone system where required.

"Can Exertherm be used to thermally monitor other critical plant?"

"Yes – an increase in heat is a common symptom of malfunction across a diverse cross section of plant (i.e. bearings, motors, gearboxes, pumps etc). Therefore, virtually all key plant can also be continuously thermally monitored on the same system, using non-contact IR sensors, or contact cable sensors."