

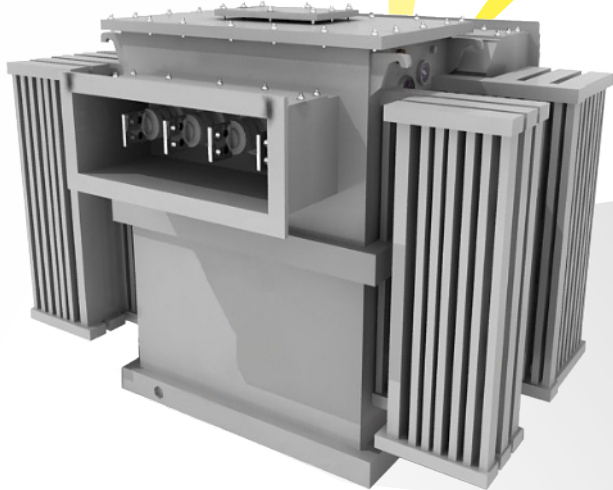


*The ultimate solution for monitoring
of power station transformers*





TherCom



The monitoring of power and station transformers and, in general, of any electrical facility is of paramount importance to assure a reliable, safe and efficient power delivery.

Some of the most important parameters to be monitored are the thermal and the mechanical stresses. The magnitude of temperature or vibrations, and other related factors such as the hottest region in the body of an electrical facility, play an important role in the degradation of performance, both in terms of safety and efficiency.

There are a number of power station sensing and monitoring solutions already available on the market. The amount of information gathered by these systems can provide valuable knowledge of the facility status, and **anticipate corrective measures**.

However, these devices and systems still lack of features and convenience that fulfil the customer's demands. **Innovatec S&C has recently introduced the T-Elec®** device in its family of temperature and movement monitoring systems (TherCom®). T-Elec® meets all the requirements to monitor electrical facilities.



The T-Elec® system has been devised to provide the correct level of expertise and equipment for efficient fault detection, limitation of secondary damage, and economic use of maintenance effort.

T-Elec® system includes a **software application and a portable device with 4 high-accuracy external temperature** measurement channels to measure simultaneously the temperature at different locations and one internal actigraphy channel, to measure movement, acceleration, or vibrations. The accuracy of these measurements has been independently certified.



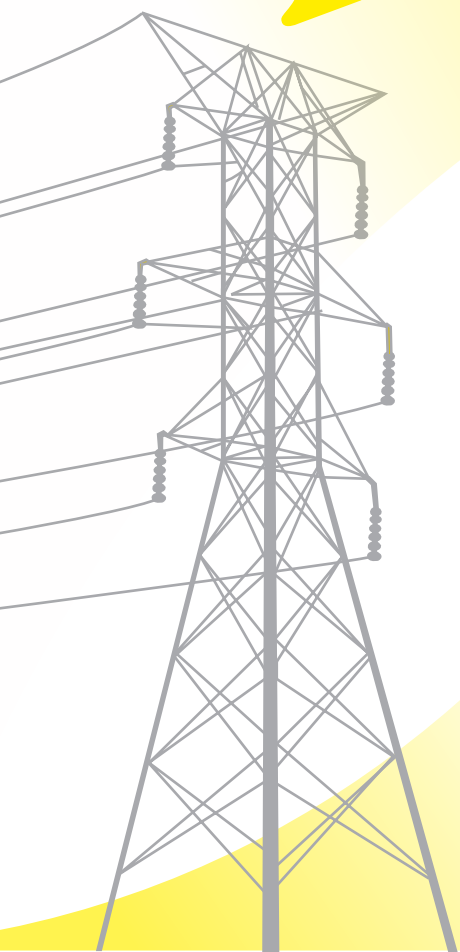
The data gathered by the **T-Elec®** system can be wirelessly **transmitted in real time to a host computer or mobile device such as a smartphone or tablet, using a Bluetooth® interface for short range communications, or a GSM interface for long range transmission.** A software application enables data visualization (including geo-references), analysis, distribution and storage, device management, and remote alarm configuration (thresholds, email alarms, SMS alarms).





WHY T-Elec ?

Why should I monitor an electrical facility?



With the **T-Elec®** system, the monitoring process will **reduce costs by providing managers with the best possible assessment of their facilities' condition, enabling risk profiling, gaining of new insights into failure progression, and to minimise possible damage.** Additional improvements come from the data gathered, i.e. better knowledge of facility status and behaviour, identification of benign conditions to support contractual and warranty claims, also to reduce the manpower expertise and requirements for routine fault detection and maintenance. T-Elec helps avoiding system breakdown blackouts, personal and material risks, with assurance of service quality.

Are there any other similar systems already available on the market? Does T-Elec make any difference?

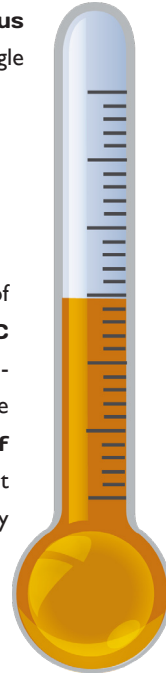
T-Elec® is a certified high-accuracy wireless, long-term monitoring system. **It can simultaneously measure temperature and vibration values at 4 different locations at a high sampling rate, including frequency content and entropy analysis.** The use of specific software tools enables faster and more effective data analysis and a faster reaction for fault management. It is portable, very convenient for manpower, and easily integrated into other systems. In addition, the very low cost makes it affordable and cost effective for any facility.

_What does “multichannel” mean?

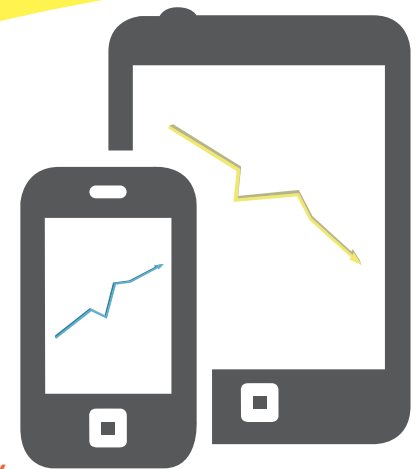
The **T-Elec®** device allows simultaneously monitoring up to 4 different temperature points; it can monitor several points simultaneously. In addition to obtaining an overview of **various parameters on site** there is a cost saving from using a single device.

_How do we define high-accuracy?

Unlike most similar devices on the market, the accuracy of **T-Elec®** has been ratified by an independent **ENAC official body**, according to one of the most demanding standards in this field: the one applied to measure temperature on medical devices. **The error in the measurement of T-Elec® is, in the worst cases, less than 0.3°C.** Most similar products in the market offer a much lower accuracy ratio: at least 1°C and often 2°C.



The T-Elec device allows simultaneously monitoring up to 4 different temperature points as well as movement, acceleration, or vibrations.



_Why do you think I need a portable device?

T-Elec® allows monitoring the temperature of a selection of transformers in an electrical substation, without them being limited to a fixed location. You could track the temperature of the transformers, monitoring the heating status permanently.



IN ADDITION...+

_Are you sure it's that easy to use?

T-Elec® does not require a complex installation (cabinet or rack type) or the presence of specialized personnel. You simply need to launch the device, place the supplied temperature probes (adapted to the specific need of each station), and link it to your computer or mobile phone. Innovatec S&C of course offers an after-sales service, either remotely or on site.

_Our facilities already include a monitoring system, WE can not afford to pay for a new system like T-Elec®.

T-Elec® is a very flexible, low-cost monitoring solution; you may choose to reach other points in your facility or equipment not covered by your current system. **It does not need wires or cables**, and can work along with other pre-existing systems. The **T-Elec®** data system can augment the existing data and provide additional cover for the overall monitoring scheme.



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