

Sensoranics: powered by Exergen

This is a unique methodology developed by Exergen to augment the performance of our non-contact IR sensor technology using the smart mechanics approach that is the hallmark of Exergen Global's competitive difference combined with implementing in depth knowledge of thermal management processes.

Sensoranics requires three building blocks.

1. Innovative sensor technology is the basis for the Sensoranics approach, and our non-contact IR sensors that measure temperature, are the foundational building blocks. The working of a sensor can be compared with a human eye: it converts electromagnetic radiation into an electrical signal. Whereas the human eye sees visible light and colors, our sensor detects infrared radiation, which is a measure for temperature. The sensor can do this in a very accurate and reliable way because of its elegant design.
2. Adding mechanical features to sensor technology is the next ingredient for Sensoranics. Although the sensors are capable of reaching very high performance levels, they can be limited in doing so because of environmental constraints. The mechanical add-ons to the sensor are designed to remove the constraints. This is not a trivial task: the added mechanics can influence the trajectory of the IR waves, the surface properties of the used materials, and the thermal properties of the assembly. These must all be understood and accounted for to help increase the sensors performance. It is an approach that requires multidisciplinary knowledge.
3. A thorough understanding of thermal management. The sensor's performance can only be augmented properly if there is an in-depth understanding of how IR waves interact with materials and surfaces, how heat is absorbed and reflected, how thermal energy is convected or conducted through materials, and how all these factors combined affect the sensor performance in its working environment. The term "working environment" is highlighted because the sensor's environment has a profound impact on how it works. This must be understood in detail to provide a solution based on Sensoranics.

Measuring temperature accurately and reliably at process critical points is key to optimizing the application and increasing product throughput. As processes are getting faster and more technically advanced, it's essential to have a more accurate temperature measurement. Similarly, environmental circumstances are becoming more challenging, pushing the limits of the sensors. Providing a solution that meet the very specific needs of application while addressing environmental challenges simply cannot be done with the one-product-fits-all approach. Off-the-shelf sensors will not provide the required reliability and accuracy.

Advantages

Sensoranics improves product quality by optimizing the production process based on the product's actual temperature and thermal signature. It increases production throughput by using precise knowledge of actual temperatures and heat flows to increase application speeds. These steps combine to increase a customer's profitability, and decrease their costs (reduced energy consumption, less downtime and scrap). It's a very economic choice!

Our customers , especially in the graphics and medical/aesthetical market, are always looking for sensor solutions that offer better performance under more challenging circumstances. While other companies focus on a „one-product-fits-all” approach, Exergen Global chooses to go after a very, very customized approach. Our sensor technology delivers very accurate and reliable measurements. However, as is true for all sensor technologies, some applications operate under strenuous conditions that make it difficult for the sensor to deliver maximum performance. For example, very high ambient temperatures or dusty environments can limit sensor performance. Sensoranics is aimed at reaching maximum sensor performance under the most challenging conditions. Think about a sports car with a lot of horse power: the car itself is capable of reaching high speeds, but it need additional equipment such as spoilers and special tires to allow it to reach those high speeds on a wet, curved track.