

CleverIR

Customized Infrared Non-Contact Temperature Sensor Solutions

Temperature is the most measured parameter in the world, with human body temperature measurements taking a big share. Traditional forms of temperature measurements have improved over the years with the use of advanced sensor technologies, increasing patient comfort, improved accuracy, and creating better tools for monitoring. Within the healthcare field, in processes such as diagnostic procedures, skin treatments, and medical interventions - where blood or saline solutions are involved - temperature monitoring is crucial for the success and reliability of the procedure. However, off-the-shelf sensors that are currently available in the marketplace do not necessarily provide the required reliability and accuracy. To that end, Exergen Corporation, a Watertown, MA-based firm, provided industrial non-contact infrared temperature sensor solutions that accurately and reliably measure temperature at process critical points, optimizing the application and increasing product throughput. Bram Stelt, CEO of CleverIR, says, "We are a global supplier of infrared temperature sensors that measure temperature without making any contact." CleverIR is a distributor of the OEM division of Exergen Corporation, a worldwide leader of industrial and medical temperature technology. The firm is recognized for providing non-invasive temperature measurement devices that offer lower cost, higher accuracy, and greater reliability than previously possible. Exergen's sensor technology is widely used in medical applications and various other markets such as agriculture,

" Besides, our sensors do not have any micro-processors or active computing components, which mean unlike other sensors, they won't drift "

printing, food, semiconductor, and many more. CleverIR's solutions offer the quality edge required to increase the speed of industrial production processes and reduce waste.

At the core of Exergen's sensors is its patented infrared technology that combines a smart mechanics approach with the team's in-depth knowledge of thermal management processes (code-named Sensoranics) to develop best-in-class infrared temperature sensor solutions that augment sensor performance and meet the demands of increasingly high-performance applications. "Besides, our sensors do not have any microprocessors or active computing components, which mean unlike

other sensors, they won't drift. They remain accurate, stable, and reliable throughout their lifetime regardless of environmental impediments," adds Stelt.

Alongside, another aspect that sets Exergen's sensors a cut above the rest is the fact that they are self-powered and relies on incoming infrared radiation to produce thermocouple signals through thermoelectric effects, resulting in extremely low noise levels. Furthermore, the solution's small size enables easy integration into diagnostic systems, laboratory equipment, ablation systems, cooling systems for tissues, and perfusion systems, among other medical applications.

Over the last year, during the COVID-19 pandemic, Exergen's non-contact temperature sensors saw an increased demand in extracorporeal membrane oxygenation systems (ECMO systems) - equipment that effectively serves as an artificial lung or heart. ECMO supports critically ill patients with COVID-19 for whom ventilation is insufficient to sustain blood oxygen levels. "With the typical non-contact sensors that work with infrared radiation, one can only measure surface temperatures. However, our sensors' patented heat balance methodology enables measurement of fluid temperature internally and non-invasively using disposable tubing," mentions Stelt. In addition, Exergen's sensors also guarantee sterility, eliminate the risk of contamination, and unlike contact probes, can be reused, which is a big cost-saver and adds to the ease and speed of use. Consequently, they find greater use in rapid infusing pump and blood warming systems that play a crucial role in quickly providing fluids to patients during surgery, accidents, childbirth, or other trauma situations.

CleverIR's mission is to develop and offer a family line of easy-to-use, cost-efficient temperature measurement solutions, with the highest quality and performance, for non-contact temperature measurements in the industrial field with minimal footprint. In that quest, the company is working on a new sensor line. "We are looking to develop sensors that will provide outputs that are in line with the new market standards. In parallel, we are also focused on miniaturization - reducing the size of the sensors even more to enhance its ease of use," informs Stelt. "We will continue to remain dedicated to providing thermal management solutions that help clients keep costs minimal while also focusing on our customers; profitability," concludes Stelt.



Bram Stelt