EXERGEN EXPANDS ITS AUTOSMART IRT/C PRODUCT LINE WITH THE AGRI VERSION FOCUSED ON SMARTLY ENHANCING ACCURATE RESULTS IN HORTICULTURAL MARKET

Special AutoSmart AGRI assembly solution for leaf and crop temperature measurements in greenhouses

WATERTOWN, Mass., ZIJTAART, the Netherlands — Exergen Global today announced the AGRI edition as its latest addition to its extensive AutoSmart IRt/c family line which already consisted of 11 AutoSmart IRt/c sensors. The AutoSmart Transmitter is the first transmitter in the world capable of fully calibrating Exergen IRt/c sensors to provide unprecedented accuracy of 0,1°C or 0.2°F by custom calibration over a very specific range providing two unique advantages:

1. **an accuracy that is 10 times better than standards on infrared sensors with the same output,**
2. **a repeatability error of ± 0,01 °C.**

Over the years more and more sensors are employed in greenhouses to measure a large variety of parameters, allowing professionals to closely monitor crop or flower condition thereby increasing yield and quality. Temperature is a key parameter as it drives plant development. Greenhouse climates are controlled by air temperature. Plant or leaf temperature is of added value as it is a direct measurement of the developmental rate of the plant itself instead of the indirect measure of air temperature. Due to radiation and/or transpiration plant temperature can significantly deviate from the air temperature. The combination of air and leaf temperature improves insight in the plant water status: i.e., transpiration and thus the amount of water plants require. Plant temperature is also used to prevent heat stress.

Measuring crop or leaf temperature comes with special challenges that conventional sensors don't solve:

- contact temperature sensors can't be used: it is impossible to mount them correctly and they only measure a single spot.
- non-contact IR sensors are the preferred option yet need to be mounted in close proximity to the leaves while allowing the leaves to go through its usual daily cycle of motion.
- accurate temperature measurements are required within a narrow temperature range (0-50°C or 0-90°F).
- IR sensors need to be protected from direct sunlight – this can create unwanted sudden increases in sensor temperature.
- several cloud services are offered to greenhouses for data acquisition and alarm settings. IR sensors need to be connected easily.

Exergen Global now introduces a special AutoSmart AGRI assembly that meets all the needs for reliable and accurate leaf and crop temperature measurements in greenhouses.

Specification AGRI AutoSmart IRt/c

- Output options 0-5V, 0-10V, 4-20mA
- Repeatability error 0,1% full scale
- Interchangeability ±1,5% full scale
- Resolution approx. 0,1°C
- Special calibration for leaf temperature (-10 to 50 °C or -18 to 90 °F sensing range)
- Weight total assembly: 7,7oz (220g)

- Housing of the sensor: stainless steel, hermetically sealed, exceeds NEMA 4X, IP67. Teflon housing for thermal stability and protection.
- Housing of the transmitter: Heavy Duty SS, NEMA, IP54.

AGRI: A custom-made solution

"The AGRI solution comes with a very customized assembly specifically for this market. It has been constructed in such a way that the flexible gooseneck is very easy to position. The sensor is embedded in a special Teflon housing which is needed to protect the IRt/c from direct sunlight and rapid ambient temperature fluctuations. Next to that the assembly comes with a clamp to position the sensor properly and easily at the leaf to be measured", said Bram Stelt, CEO of Exergen Global. "A data acquisition box is available in which multiple sensors can be connected at the same time. This box will be connected to an online data platform which is very common in the horticultural market. This way the users will always have insight, can analyze results but most importantly, receive warnings if certain temperature values exceed a certain threshold", he added.

The AutoSmart IRt/c processes the mV signal from any IRt/c or Micro IRt/c model, linearizes the signal and gives an analog output signal (4-20mA, 0-20mA, 0-5V, 0-10V). You can choose from two global-standard current outputs: 4-20 mA, 0-20mA, or three global-standard current outputs: 0-10V, 0-5V, and 0-1V. No impedance, leakage current, or linearity problems to worry about. The AGRI assembly is specifically calibrated for the -10 to 50°C temperature range of interest in horticulture. In other AutoSmart models, OEM's and system integrators can choose from a range of 0-100°C or 0-250°C target temperature. They can automatically calibrate AutoSmart Transmitter sensors themselves, so calibration can take place at the manufacturing site and take into account environmental factors, such as ambient temperature. AutoSmart IRt/c sensors can be calibrated automatically by OEMs using a USB connector, software and a heat source. Also, custom calibrations are offered.

Exergen's IRt/c product line includes:

- Precalibrated IRt/cs: The world's only self-powered infrared thermocouple. Best for low temperatures (< 260°C or 500°F) and non-metal or coated metal surfaces.
- Adjustable IRt/cs: A self-powered, infrared thermocouple that is field calibrated. High temperatures (up to or 2760°C or 5000°F) and metal surfaces can be measured. Special optics available for small spots and far distances (up to 100:1).
- AutoSmart IRt/cs: The AutoSmart IRt/c line consists of the 01, M, IR, SV, 1X, 3X, 3SV, 5, MA, M4, M4SV and AGRI. They all process the mV signal from any IRt/c or Micro IRt/c model, linearizes the signal and gives an analog output signal (4-20mA, 0-20mA, 0-5V, 0-10V). Custom calibrations are offered.

About Exergen and Exergen Global (now known as CleverIR):
Exergen Corporation, the global leader in industrial and medical non-invasive temperature technology, provides non-invasive temperature measurement devices providing lower cost, higher accuracy, less invasiveness, and greater reliability than ever previously possible. Exergen is well known for its award-winning temporal artery thermometer in the healthcare and consumer market. The company was founded by MIT Ph.D. and Harvard researcher Dr. Francesco Pompei, who owns more than 70 patents. Exergen Corporation is based in Watertown, Massachusetts, U.S. Exergen Global is the worldwide solutions provider of Exergen Corporation's industrial non-contact infrared temperature sensor solutions.

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