



**PRECISION OPTICAL TEMPERATURE
MEASUREMENT PYROMETERS
& SCR POWER CONTROLLERS**

SUPERIOR PROCESS CONSISTENCY, PRODUCT QUALITY, AND
PRODUCTIVITY IN TEMPERATURE-CRITICAL ENVIRONMENTS





**Reduce risk,
improve product
quality, and
maximize yield**
with proven
AE[®] technology,
comprehensive
expertise, and
best-in-class
support.

AE® enables the highest consistency, reliability, and performance precision in temperature-critical environments. We are an established supplier for heating applications with technologies, expertise, and quality processes based on decades of experience in the most demanding applications in the world.

PROCESS CONSISTENCY, PRODUCT QUALITY, AND PRODUCTIVITY



Proven Technology, Proven Performance

AE technologies, expertise, and support are proven in the most demanding industries in the world. To our industrial temperature measurement and control products, we bring the same rigor that has made us a leading supplier to the semiconductor industry. Furthermore, our SCRs have a global track record in industrial applications.



Precise Processes, Precise Products

Precision is inherent to our philosophy, technologies, and processes. With an infrastructure and controls developed for the tightest application tolerances, we deliver exacting performance where it is most critical to your process recipes and quality products.



One Supplier, Critical Process Expertise

With comprehensive insight into your entire temperature-critical process, AE provides technologies for two of the most critical functions of your operation. This expertise enables us to ease process integration and ensure that you receive the best solution for your unique requirements.



Best-in-Class Support

Our industry-leading support network accelerates your productivity and enhances product quality with fast turnaround on your refit and maintenance periods, as well as readily available product and process expertise.



SATISFY A WIDE RANGE OF MANUFACTURING PRIORITIES.

CONTROL

YOUR REQUIREMENT: I need to be able to depend on highly precise temperature measurement and control.

AE optical temperature measurement pyrometers and SCR power controllers enable constant and precise control of your demanding heat-critical processes:

- › Proven pyrometer temperature measurement precision and repeatability
 - Industry-leading, proprietary calibration methodology
 - Extreme accuracy even for moving or inaccessible work pieces, or when direct physical contact would damage the work product
- › Proven SCR control precision with a 50-year global track record in industrial applications
- › Multiple SCR operation and control modes for performance that is optimized for your process
 - Digital mains load optimization (dASM) virtually eliminates system perturbations for multi-zone applications.
 - Voltage sequence control (VSC) virtually eliminates harmonics for applications using phase-angle firing.
- › Simple connection to process and automation systems for advanced monitoring and control

YIELD

YOUR REQUIREMENT: Process variability is not an option. I need to keep up and running with consistent yield to meet production goals.

- › The stability and repeatability of AE thermal measurement and control products enable remarkable process uniformity, with proprietary technologies that ensure dependable performance over a wide range of environmental temperature conditions.
- › AE's highly experienced applications experts are available with valuable process insights to optimize process performance and yield.
- › Fast turnaround and dependable service on your refit and maintenance periods from regional centers close to your location help maximize your productivity.

QUALITY

YOUR REQUIREMENT: I need a dependable product that keeps my process within extremely tight temperature parameters over time.

AE thermal products provide ultra-reliable performance within your specific parameters, as well as steady and constant performance over the lifetime of your process.

- › Pyrometer control/repeatability specification of less than 0.01°C for stable out-of-box performance regardless of changing thermal or environmental conditions
- › Robust SCR technology plus the highest quality and design standards for long-term trouble-free performance

SAFETY

YOUR REQUIREMENT: Protecting my personnel and equipment from safety issues is a top priority.

Safety begins with precise control. In addition, our products offer the following safety features:

- › Pyrometers:
 - Minimum and maximum temperature alarms to alert of changing conditions
- › SCRs:
 - Integrated load-circuit monitoring
 - Integrated semiconductor fuses
 - Secure separation between power and control sections
 - Interlock for immediate switch-off in the unlikely event of failure

EASE OF USE

YOUR REQUIREMENT: System components have to integrate quickly and easily without any hassle.

AE is a Rockwell Automation® Encompass™ partner. Our thermal products are designed for fast, easy integration and seamless operation:

- › Ethernet/IP® compliance and connectivity
- › Add-on profile for easy integration into Rockwell Automation® systems (SCRs)
- › SCR features for easy process control, monitoring, and data analysis:
 - Front-panel LEDs
 - Thyro-Touch mobile touchscreen interface
 - Bluetooth® connectivity to mobile devices
 - Thyro-Tool PC software

**Seamless integration with
Rockwell Automation® systems***

*SCRs



- Seamless closed-loop thermal control
- Simplified installation
- Optimized accuracy



Advanced Energy® delivers unsurpassed accuracy, repeatability, and dependability where you need it most: the critical temperature measurement and control components of your manufacturing system.

ASK US ABOUT OUR SOLUTIONS FOR YOUR UNIQUELY VALUED PRODUCTS

We welcome the opportunity to be your vendor of choice for process automation for a range of critical materials in key worldwide markets.

Materials

- › Special glass
- › Bioceramics
- › Technical ceramics
- › Metals

Markets

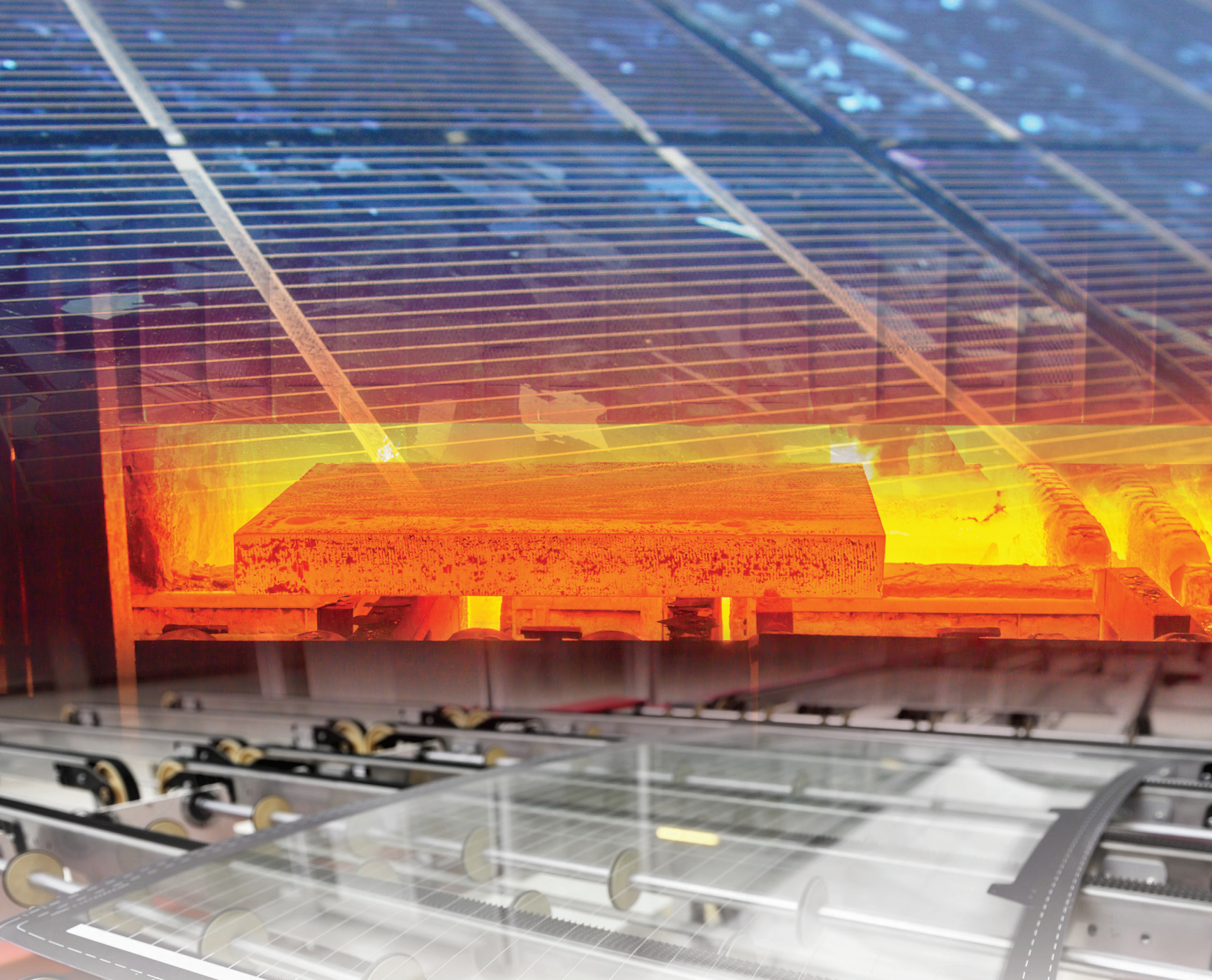
- › Aerospace
- › Automotive
- › Semiconductor
- › Medical
- › Chemical and oil
- › Furnace construction
- › IR drying
- › Other high-tech applications

ADVANCED ENERGY® THERMAL PORTFOLIO

OPTICAL TEMPERATURE MEASUREMENT PYROMETERS		SCR POWER CONTROLLERS		
Onyx™-S Single-Color Onyx™-S2C Two-Color	Onyx™-MC Temperature Onyx™-MCE Active Emissivity	Thyro-PX™ High-Precision Digital Power Controllers with Touchscreen	Thyro-AX® Digital Power Controllers with Touchscreen	Thyro-A® Digital Power Controllers
				

Improving your process or working with advanced materials?

Contact us! sales.support@aei.com or 800.446.9167



**Talk to an AE representative about solutions for your process:
sales.support@aei.com or 800.446.9167.**



For international contact information, visit advanced-energy.com.