



ONYX™-S
SINGLE-CHANNEL
OPTICAL TEMPERATURE PYROMETERS
PRECISION TEMPERATURE MEASUREMENT
FOR DEMANDING INDUSTRIAL APPLICATIONS





**Accurate,
repeatable,
and reliable
temperature
measurement**
under the
harshest industrial
conditions

Onyx™-S Single-Channel Optical Temperature Pyrometers 700 to 1550 nm

The new Onyx™ series meets the most demanding accuracy and repeatability requirements over a broad temperature range. Based on over 20 years of pyrometry and optical temperature measurement experience in some of the world's most demanding applications, the Onyx series provides measurement precision, repeatability, and reliability for industrial applications.

EXPAND YOUR APPLICATION OPTIONS

Onyx-S pyrometers are available in a variety of wavelengths, from 700 to 1550 nm. These wavelengths are within the near-infrared range and are ideally suited for a wide variety of industrial materials and applications, such as measurement of steel, non-ferrous metals, graphites, silicon carbon (SiC), carbon fiber, and ceramics.

- **Single-channel, fully integrated pyrometer**
- **Single-color measurement for standard processes**
- **Stainless steel housing with IP65 protection class**





ENHANCED POINT-TO-POINT UNIFORMITY AND TEMPERATURE READING ACCURACY

Traditional thermocouple measurement is unsuitable for many applications where physical contact with the substrate is not possible, or where heat transfer effects cause measurement inaccuracies. Onyx-S systems measure the substrate or work piece directly, in-situ for enhanced point-to-point uniformity and temperature reading accuracy.

RUGGED CONSTRUCTION AND PERFORMANCE FOR HARSH ENVIRONMENTS

Built for harsh industrial conditions, Onyx-S pyrometers meet IP65 industrial protection classification and withstand environmental temperatures up to 70°C.

INSTALLATION AND ALIGNMENT

- › Integrated laser alignment
 - The Onyx-S pyrometer has an integrated laser that can be activated during installation to ensure optimal alignment of the pyrometer.
- › Optical alignment
 - The Onyx-S pyrometer can be ordered with an integrated optical alignment scope for installations where it's not possible to use a laser, such as when the pyrometer is looking inside a processing furnace.

OPTIONAL ACCESSORIES FOR THE HARSHEST ENVIRONMENTS

- › Water-cooling jacket
 - Enables continuous operation in temperatures up to 250°C
- › Air-purge collar
 - Enables consistent, accurate operation in contaminating environments by delivering a constant flow of air or purge gas across the pyrometer lens

ACCURATE MEASUREMENT REGARDLESS OF ENVIRONMENTAL CONDITIONS

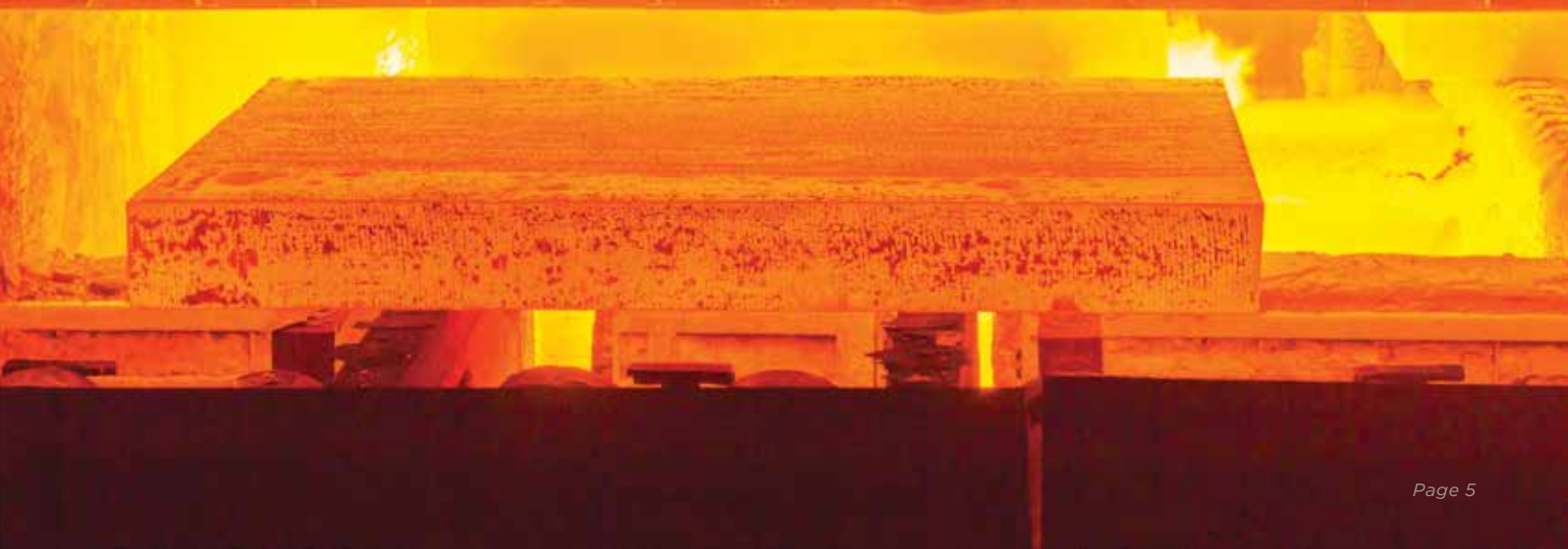
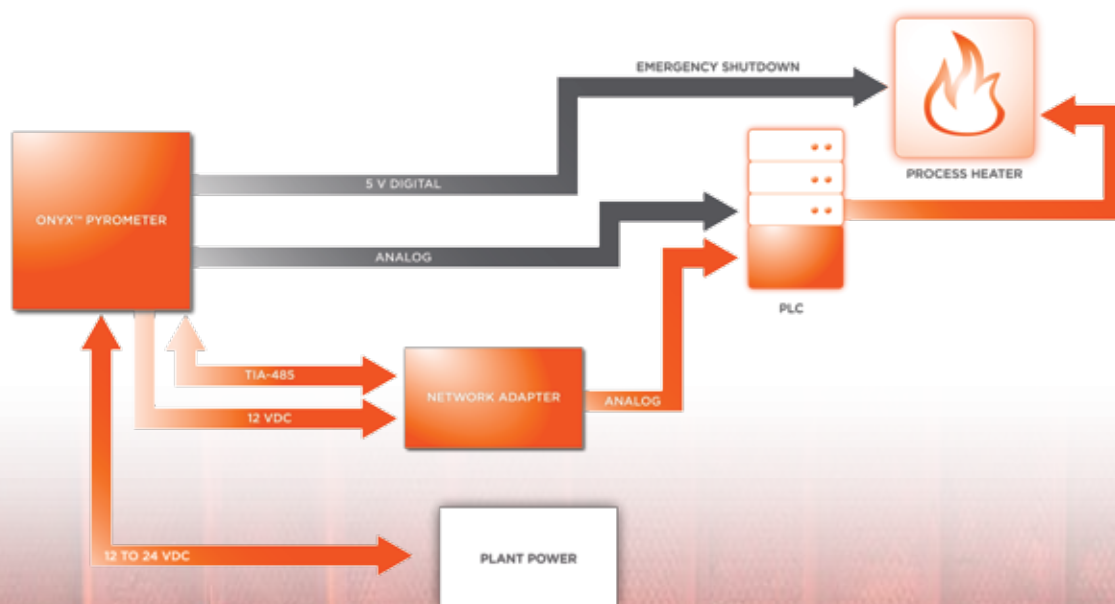
Proprietary ambient-temperature calibration ensures ongoing temperature measurement accuracy across a wide range of ambient variation (5 to 70°C) by continuously monitoring each unit's internal temperature and automatically compensating for any temperature variation.

EASY INTEGRATION AND COMMUNICATION

Onyx-S pyrometers integrate easily with the following communication protocols via an external bus module:

- › Ethernet/IP®
- › Profibus® DPV1
- › DeviceNet™
- › CANopen®
- › PROFINET®
- › Modbus® TCP
- › Modbus® RTU

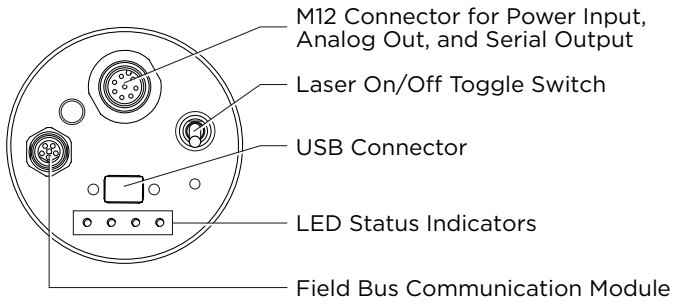
These bus modules meet IP65 requirements and can be installed adjacent to the pyrometer or in an equipment control rack in a remote location.



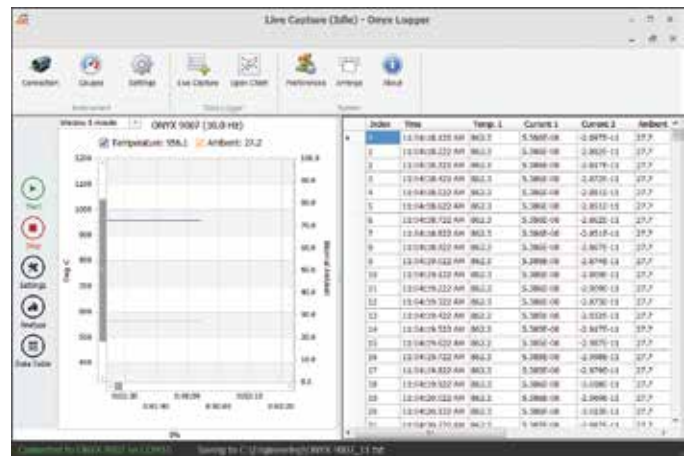


USB CONNECTION

The Onyx-S pyrometer features a USB connector for easy communication, setup, troubleshooting, and local data collection.

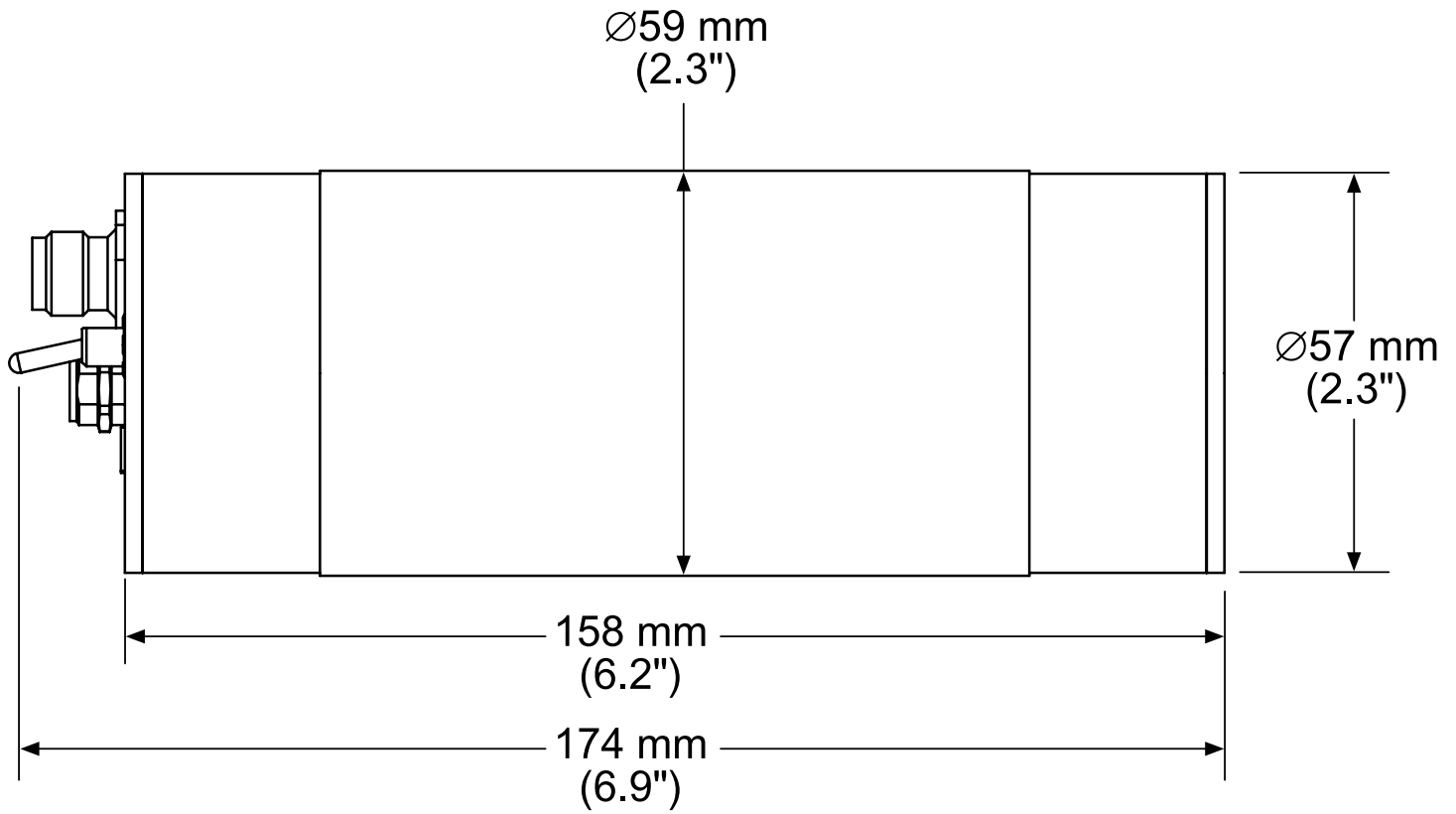


CUSTOM DATA LOGGING SOFTWARE





SPECIFICATIONS		ONYX™-S PYROMETER	
Detector Type	Single wavelength		
Measurement			
Spectral and Temperature Range	700 to 1550 nm, 200 to 2200°C, configurable		
Emissivity	0.05 to 1.0		
Response Time	1 msec to 10 sec		
Accuracy	±0.4% of reading in °C or 4°C		
Resolution	0.1°C		
Focus Range	100 mm to 3.0 m, configurable		
Sighting	Laser or optical		
Working Distance and Spot Size			
Configuration	Working Distance Range	Spot Size	
Short	0.1 to 0.6 m (3.9 to 23.6")	10 to 19 mm (0.39 to 0.75")	
Medium	0.5 to 1.3 m (19.7 to 51.2")	14 to 20 mm (0.55 to 0.79")	
Long	1.0 to 3 m (3.3 to 9'10")	17 to 29 mm (0.66 to 1.14")	
Specialized Small Spot Size	0.1 to 1.0 m (3.9 to 39.4")	8 mm (0.31")	
Communication			
Analog Out	0 to 10 V, 0 to 20 mA, or 4 to 20 mA		
Digital Interfaces	Standard: RS-232/RS-485, USB Available: Modbus® TCP, Profibus®, Ethernet/IP®, DeviceNet™, Profinet®, Modbus® RTU		
Environmental			
Ambient Temperature	0 to 70°C (32 to 158°F)		
Relative Humidity	5 to 85% (non-condensing)		
Storage Temperature	-25 to 85°C (-13 to 185°F)		
Protection Class	IP65		
Electrical			
Power Supply	+24 VDC nominal, +15 to +30 VDC		
Compliance	CE		
Physical			
Dimensions	59 mm (2.32") diameter x 157.5 mm (6.2") length		
Exterior Housing	Stainless steel		
Warranty Period	12 months		
Operation Position	Any orientation		



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