

CENTRA SMART HUB

EIGHT-CHANNEL REMOTE SMART SENSOR
PLATFORM WITH ETHERCAT® CONNECTIVITY



Advanced Energy's Centra™ Smart Hub is an eight-channel centralized platform engineered for synchronized, real-time data acquisition, featuring built-in EtherCAT® capability for fast, reliable communication. With support for customizable small-form-factor sensors spanning a wide wavelength range and optional 1U, 19 in rack-mount hardware for seamless integration into existing equipment, the Centra Smart Hub delivers exceptional flexibility in space-constrained semiconductor environments. Its modular, scalable architecture streamlines complex sensing setups and enhances measurement density, stability, and throughput—making it a powerful solution for advanced semiconductor process monitoring and control.

PRODUCT HIGHLIGHTS

- Built-in EtherCAT and Ethernet communication protocols
- Connect up to eight sensors with simultaneous output
- Configurable 1U, 19 in rack mounting hardware
- Highly flexible, module-based sensor platform architecture
- Allows for increased measurement density
- Enhances process data acquisition potential
- Allows for implementation of next generation communication (EtherCAT)
- Increases stability and reliability across multiple chambers and substrate materials

AT A GLANCE

Temperature Range

50 to 1700°C (122 to 3092°F)

Spectral Range

UV to 6 μm

Read Rate

Up to 1 kHz

Accuracy

$\pm 1.5^\circ\text{C}$ (1 μm), $\pm 3^\circ\text{C}$ (3.3 μm),
 $\pm 5^\circ\text{C}$ (5.2 μm)

Resolution

0.01°C

Interfaces

EtherCAT (RJ45), Ethernet (RJ45),
USB (Type-A), Serial (RJ12),
Analog Output (RJ12)

SPECIFICATIONS

Description	Specification
Reference Sensor Specifications¹	
Channel Configuration	Eight-channel, simultaneous sensor output
Filter Range ²	UV to 6 μm
Temperature Range ³	50 to 1700°C (122 to 3092°F)
Accuracy ⁴	$\pm 1.5^\circ\text{C}$ (1 μm), $\pm 3^\circ\text{C}$ (3.3 μm), $\pm 5^\circ\text{C}$ (5.2 μm)
Control/Repeatability	$\pm 0.1^\circ\text{C}$ typical
Resolution	0.01°C
Read Rate	Up to 1000 Hz
Data Logging	Function available in AE PyroConnect GUI
Electrical Specifications	
Power Requirements	AC: 90 to 264 VAC, 3-pole AC inlet
	External AC to 24 VDC power supply (accessory)
Power Supply Line Current	< 1 A at 100 VAC
DC Input Voltage	24 VDC, 1 x M8 A-Code
Power Indicator	LED
Environmental and Mounting Specifications	
Operating Temperature	15 to 45°C (59 to 113°F)
Operating Humidity	20 to 80% relative humidity (non-condensing)
Physical Dimensions	Excluding rack mount hardware: 126 mm x 443 mm x 43 mm
	Including rack mount hardware: 126 mm x 484 mm x 43 mm
Weight	1.6 kg (3.5 lb)
Chassis-EMI Ground	Tapped hole in chassis (M3)
Mounting (Rack)	19", 1U, see product manual for mounting detail
Mounting (Standard)	M5 x 0.75 threaded inserts, see product manual for mounting detail
Clearance (Rear)	50 mm required for rear clearance of electrical cables
Clearance (Front)	50 mm required clearance of electrical cables
Mounting Orientation	The unit will function when operated in any orientation
Outer Package Materials	Powder coated aluminum, powder coated steel

¹ See Centra Smart Sensor specifications for more detail.

² Filter transmission customizable, please contact AE Applications engineering for configuration support.

³ Temperature range is wavelength dependent, please contact AE Applications engineering for configuration support.

⁴ Accuracy range is wavelength dependent, please contact AE Applications engineering for additional details.

INTERFACES

Description	Specification
Interface Specifications	
Serial Interface	RS-232/485, 1 x RJ12
EtherCAT	2 x RJ45
Ethernet	1 x RJ45
USB	1 x type A
Analog Output	0 to 10 V, 4 to 20 mA, 1 x RJ12
Sensor Interface Specifications	
Sensor Communication Cable	USB type C, M12, with locknut
Sensor Maximum Cable Length	3 meters
Sensor Cable Operating Temperature Range	USB type C, M12, with locknut
Sensor Cable Maximum Bend Radius	50 mm





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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE | TRUST

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