

AE 500TX SOLAR INVERTER

The complete inverter solution for large commercial and small utility-scale projects

Leading the industry in reliability, performance, and innovation, Advanced Energy® offers the AE 500TX inverter for large commercial and utility-scale projects. Options include an integrated DC circuit breaker subcombiner that enables low-cost compliance with NEC 2011 and improves serviceability. Subcombiner monitoring, a revenue-grade meter, and a performance monitoring gateway can be factory-installed for a completely integrated solution.

Communication interfaces, remote disable inputs, and an optional 24 V auxiliary power supply are housed in a dedicated low-power compartment for safe and easy access. The entire system, including the isolation transformer, is contained within a single NEMA 4-rated cabinet—significantly reducing installation time and expense.

Designed for DC loading up to 175%, the AE 500TX inverter maximizes energy harvest and accelerates payback with a 97%-weighted CEC efficiency, wide DC operating range, and fast convergence MPPT. It also has the ability to produce full power all the way to 55°C. Uptime and revenue generation are assured by superior, built-in reliability consisting of engineered busbar power connections, a redundant cooling system and power supply, a card cage circuit board design, and solder-free intelligent power modules.

Advanced power controls provide essential utility support functions, including power factor and curtailment with a controlled ramp rate—making it easy to comply with interconnection requirements.

Total integration, reliability, and utility-support functionality make the AE 500TX inverter the complete solution for large commercial and utility-scale projects.

The AE 500TX inverter is backed by an industry-leading, 10-year, warranty and a comprehensive optional 20-year warranty—in addition to the most responsive service and support team in the business.

Superior Reliability

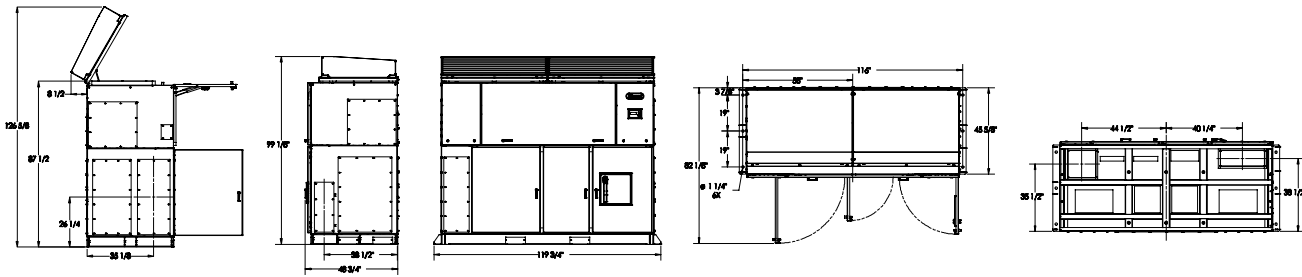
- Redundant power supply and cooling system with Smart Air Management™
- Increased availability with >99% monitored fleet availability
- Rated for full power operation up to 55°C
- Low parts count for reduced potential failure points
- Engineered busbar power connections
- Card cage circuit board system to minimize electronic interconnections

Exceptional Installability

- No external transformer to connect in the field
- Optional DC circuit breaker subcombiner
- DC loading up to 175%
- Bottom and side entry with bottom side chases, generous bending area, and oversized busbar landings
- Exterior mounting flanges for fast and easy anchoring with no pre-drilling

Easy to Maintain

- All maintenance and service via front and side access
- Fast change circuit board system to shorten service time
- Optional load-break-rated AC service disconnect
- Dedicated performance monitoring section separate from AC and DC modules



AE 500TX Summary Specifications

Physical	
Weight	8750 lb
Construction	Powder-coated steel
Environmental Rating	NEMA 4
Mounting	Pad mount
Isolation Transformer	Integrated
Integrated AC/DC Disconnect	Optional AC disconnect, DC breakers
AC and DC Surge Protection	Included
Electrical	
DC Inputs	
Array Configuration	Positive or negative ground
Maximum Operating Input Current	1600 A
Maximum DC Input Voltage (VOC)	600 V
MPPT Voltage Range	310-595 V
Open-Circuit Turn-On Voltage	330 V
AC Outputs	
Continuous Output Power	500 kW
Nominal Voltage	480 Y
	600 Y
Operating Voltage Range	-12% / +10%
Electrical Service Compatibility	3 phase, 4 wire, grounded Wye
Maximum Continuous Current	480 V - 608 A
	600 V - 486 A
Short Circuit Fault Current	891 A _{RMS} @ 480 VAC, 60.3 ms
Nominal Frequency	60 Hz
Frequency Range	59.3 - 60.5 Hz, adjustable to 57.0 Hz
Total Harmonic Distortion	< 3% THD
Efficiency	
Efficiency: Peak / CEC	480 V - 97.8% / 97.0%
	600 V - 97.6% / 97.0%
Standby Losses	< 80 W
Inverter Controls and Monitoring	
Power Factor	> 0.99 at rated power; ± 0.90 PF range, ± 217 kVAr max
Power Curtailment	5 - 100%, 1% increments
Communication Interfaces and Protocols	RS-485, Ethernet, Modbus, TCP/IP
Environmental	
Operating Ambient Temp. Range	-30°C to 55°C
Standby/Storage Ambient Temp. Range	-40°C to 60°C
Cooling	Forced convection
Relative Humidity	0 to 95%, non-condensing
Elevation	6000'
Regulatory	
Agency Approvals / Regulatory Compliance	UL 1741, IEEE 519, IEEE 929, IEEE 1547, CSA 107.1-1, FCC Class A
Inverter Warranty	10 year

Advanced Power Controls

- Power factor
- Curtailment
- Controlled ramp rate
- Remote enable/disable

Options

- DC subcombiner circuit breakers: 8 - 20 inputs, 80 A - 400 A trips (max total of 3500 A)
- Subcombiner monitoring (up to 16 inputs)
- Integrated AC disconnect
- Integrated third-party data monitoring
- Integrated revenue-grade meter
- Positive ground
- 24 V auxiliary power supply
- Preventive maintenance program
- 20-year extended warranty

Performance Monitoring

Increase uptime and reduce maintenance costs with integrated performance monitoring hardware that enables connectivity to a variety of software solutions from industry-leading monitoring partners. The tight integration between Advanced Energy and our monitoring partners creates a superior service and support experience while seamlessly delivering meaningful data. Factory integration and testing of our UL-listed monitoring solution ensure high reliability and significantly reduces field installation costs.



World Headquarters
1625 Sharp Point Drive
Fort Collins, CO 80525 USA

970.221.4670 Main
970.221.5583 Fax

www.advanced-energy.com

Specifications are subject to change without notice.

© 2014 Advanced Energy Industries, Inc. Advanced Energy® is a trademark of Advanced Energy Industries, Inc.

ENG-AE500TX-250-10 0M 6.14