ADVANCED ENERGY®

AE 3TL 600 Series

Three-Phase Transformerless String Inverter

The AE 3TL 600 Series adds broader functionality to a proven robust design. With over 3 GW installed worldwide, it is a well established product with a great reliability track record. The AE 3TL also is lightweight and easy to install. With a peak efficiency over 98% and versatile monitoring options, this is the field-proven string inverter of choice for project developers, site designers, and installers.

The AE 3TL is designed with many different applications in mind. These high-quality inverters can be used for commercial rooftop and carport installations, as well as solar power plants. With a power range of 12 to 23.2 kilowatts, the AE 3TL is situated to serve installations large and small. The AE 3TL optimizes space in the site design, and allows for flexible placement within the array, saving site owners highly valued space.

Highly precise MPP tracking combined with AE advanced monitoring solutions gives solar stakeholders the vital data needed to operate and maintain a highly efficient site, providing maximum return for investors in solar energy.

AE listens carefully to customer demands. The AE 3TL is fully compliant to NEC 2011 with standard serviceable "touch-safe" fuses and optional AFCI. Weighing just over 100 pounds, the easily installed inverter is very well suited for rooftop or space-constrained installations. Additional savings are recognized with lowered shipping costs, and there is no need for the heavy machinery associated with installing larger, heavier inverters. Arrays designed with the AE 3TL string inverters have best-in-class uptime, system yields, and problem resolution.

Versatility

- Wide range of output power allows for integration on a variety of site designs, with an emphasis on design flexibility and project yield.
- Superior efficiency, low shipping costs, and distributed design offer solar stakeholders increased return on investment and reduced upfront costs.
- Maximizes space for energy production
- Optional AFCI
- Unprecedented 1.75 DC:AC ratio enables lowest inverter cost per DC Watt.

Reliability

- 3 GW installed worldwide
- Proven reliability
- Low maintenance
- Improved system uptime

Superior installability

- Lightweight, easy to install
- Less space needed on site
- Lowered balance of system (BoS) costs
- Inverters closer to array

AE Solar Energy is a US based company.

Lightweight design supports ease of installation

Maximizes project space and energy production

Highly reliable and efficient; Saves money on maintenance costs and improves energy harvest

Lower initial system costs for projects under 400 kW

Wide range of output power allows for integration on a variety of site designs

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AE 3TL 600 Series Summary Specifications*

Mechanical	AE 3TL-12	AE 3TL-16	AE 3TL-20	AE 3TL-23
Dimensions	21"(W) x 35"(H) x 11"(D) (535 x 895 x 280 [mm])			
Weight	108 lb (49 kg)			
Environmental Rating	NEMA 4/ connection box NEMA 3R			
DC Input Power Connectors	Terminal block 8-12 AWG			
AC Output Power Connectors	Terminal block 6-10 AWG			
User Interface	LCD			
Electrical				
DC Inputs				
Maximum DC Input Power**	21 kW	28 kW	35 kW	40.6 kW
Maximum Input Voltage	500 V			
Array Configuration	Ungrounded, dual array			
Maximum Operating Input Current	2 x 27.5 A	2 x 33 A	2 x 37.5 A	2 x 40 A
Maximum Short Circuit Current (Isc)	2 x 76 A			
MPPT Voltage Range	125 V to 450 V			
Minimum Voltage for Full Power	225 V	250 V	275 V	300 V
Open-Circuit Turn-On Voltage	200 V			
Number of Strings	10			
AC Output				
Continuous Output Power	12 kW	16 kW	20 kW	23.2 kW
Operating Voltage Range	423 to 528 V			
Rated Apparent Power	12 kVA	16 kVA	20 kVA	23.2 kVA
Electrical Service Compatibility	3 AC 480 V Wye +N			
Maximum Continuous Current	14.5 A	19.3 A	24.1 A	27.9 A
Short-Circuit Fault Current	16.5 A; duration < 10 msec	21 A; duration < 10 msec	26 A; duration < 10 msec	29 A; duration < 10 msec
Nominal Frequency	60 Hz (57 Hz to 63 Hz adjustable)			
Total Harmonic Distortion	< 3%			
Efficiency				
Peak Efficiency	98.2%			
Weighted Efficiency (CEC Method)	97.5%	97.5%	97.5%	98%
Standby Losses	< 0.5 W			
Inverter Controls and Monitoring				
Anti-Islanding	In accordance with IEEE 1547 and UL 1741			
Reactive Power and Power Factor	±0.99 standard, settable from ±0.90			
Inverter Monitoring				
Communication Interfaces and Protocols	Ethernet, RS-485			
Environmental				
Operating Ambient Temp. Range**	-13°F to +131°F (-25°C to +55°C)			
Standby/Storage Ambient Temp. Range	-22°F to +158°F (-30°C to +70°C)			
Cooling	Natural convection			
Relative Humidity	95% before derating			
Elevation	6500' before derating			
Noise Emission	45 dBA at 16.5'			
Regulatory				
Agency Approvals / Regulatory Compliance	UL 1741, 1699B, IEEE 1547, CSA C22.2, FCC Part 15 (Class A and B)			
Inverter Warranty	5 years standard, extendable to 20 years			
Model Numbers Without AFCI	AE_3TL-12_6-08	AE_3TL-16_6-08	AE_3TL-20_6-08	AE_3TL-23_6-08
Model Numbers With AFCI	AE_3TL-12_6	AE_3TL-16_6	AE_3TL-20_6	AE_3TL-23_6

Subject to change without notice. Refer to user manual for detailed specification.
*Not all performance window specifications can be achieved simultaneously. Performance varies per site.
**Derating at temperatures > 122°F (50°C) for the 12 kW and 16 kW; > 113°F (45°C) for 20 kW; > 104°F (40°C) for 23 kW
Consult your AE sales or service representatives for specific PV system design questions at sales.support@aei.com.

Options

- 5, 10, and 15 year warranty extension; Extensions are optional.
- Premium monitoring solutions
- AFCI

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