



THEIA TL 3ph STRING

SOLAR INVERTERS: 12.9kW – 21.6kW

High Performance, Transformerless String Inverters

With efficiencies up to 98%, and very low power feed levels, the THEIA TL 3ph String inverter range maximizes both the energy harvested per hour and the number of working hours per day on an installation, to provide reliable and steady power for longer.

ELTEK VALERE - RENEWABLE

PRODUCT DESCRIPTION

Performance

With power feed levels of less than 21W the THEIA TL 3ph String inverter range starts working earlier in the morning, while other inverters are still sleeping, until later at night to harvest energy from even very low irradiation levels. The extraordinary wide DC input voltage range and high overload capacity enables multiple plant configurations across many PV module types, and with all inverter models having multiple PV string inputs as standard, and the option of an integrated DC disconnect switch for isolation, flexibility of plant design is ensured.

Reliability

Using state of the art components and DIVE, a patented technology, to increase efficiency, especially at the lower input power levels, the THEIA TL 3ph String inverter range achieves outstandingly high efficiency levels across the broadest operating range. High efficiency alone, however, is not sufficient to maximize the energy yield that can be obtained. The decisive measure is how many Wh an inverter can gain from a PV generator, and in this the THEIA TL 3ph String range also excels by using Rapid Adaption Control Maximum Power Point tracking (RAC-MPP), a principle for extraordinary high yields, even under extremely fluctuating and dynamic irradiation conditions. The result is quick, efficient, and top class MPP tracking. With a protection level of IP66 and smart thermal design, the inverter range has the ability to withstand environmental extremes and still operate when other devices have failed.

Ease of use

Using simple connection systems for both the AC and DC terminations, country settings adjustable on site without additional tools, and the ability to automatically transfer settings from one inverter to all the others thanks to master programming across the connected THEIA TL String inverter network, an extra quick installation is possible.

Monitoring

With a large, backlit, full graphical LCD, performance and important operating conditions are displayed in clearly arranged graphs and diagrams, including week and year review functions, to allow a quick on-site performance check at any time. Even after sunset, you can communicate with the THEIA TL 3ph String inverter to access the current measured data and plant performance, and monitor unexpected plant behaviour day and night.

Datalogger

Throughout its operating life of more than 30 years, the inverter's built-in datalogger saves your measured values, yield and performance data. The datalogger is the only one on the market that functions with the high precision of an electricity meter, with events recorded in a separate protocol memory.

Communication

With a variety of different THEIA String communication devices available, the inverters can be integrated into total plant monitoring systems. The EIA485 interface connects the THEIA TL 3ph String inverters and gives them access to the world of THEIA TL String plant monitoring. This high-performance interface allows cable lengths of up to 1,000 m.

THEIA TL 3PH STRING

INVERTERS: 12.9KW TO 21.6KW



TECHNICAL SPECIFICATIONS

MODEL	13000TL	16000TL	19000TL	22000TL
-------	---------	---------	---------	---------

INPUT DATA

Max. PV power	Wp	14,700	18,000	21,300	24,300
Max. DC power	W	12,900	15,900	18,900	21,600
Max. DC voltage	V _{dc}	880	880	880	880
Voltage range MPPT	V _{dc}	351 to 710	349 to 710	350 to 710	351 to 710
Max. input current	A _{dc}	3x 13.0	3x 16.0	3x 18.5	3x 21.0
Number of PV string inputs		6	6	6	9
Number of MPP trackers		3			
Input protection		Optional DC switch disconnecter, integrated in the device Reverse voltage protection			

OUTPUT DATA

Max. AC Power	W	12,360	15,000	18,000	20,700
Nominal output power	W	11,250	13,800	16,500	19,900
Mains output voltage range	V _{ac}	3x 230V (+/-20 %) 3-phase power feed*			
Mains frequency:	Hz	47.5 to 52.5 *			
Max. AC Current	A _{ac}	3x 17.9	3x 21.7	3x 26.1	3x 30.0
Nominal AC Current	A _{ac}	3x 16.3	3x 20.0	3x 23.9	3x 27.4
Output protection		Short circuit detection, Grid monitoring			

PERFORMANCE DATA

Maximum Efficiency:	%	>97,3	>97,4	>97,7	>98,0
EU Efficiency:	%	>96,8	>96,9	>97,3	>97,6
Power Feed Starts at	W	21	21	21	24
Night mode power	W	< 6			

MECHANICAL DATA

Protection degree (EN 60529)		IP 66, excluding digital interface			
Dimensions	mm	H 743 x W 972 x D 262			
Weight	kg	81	84	87	87
Cable access		Bottom			
Input cable connection		MC4			
Output cable connection		Spring Clamp Technology			

DESIGN STANDARDS

EM compatibility:		EN 61000-6-2, EN 61000-6-3			
CE marking:		Yes			
Other standards:		DIN VDE V 0126-1-1 EN 50438, AS 4777, ENEL Guidelines, RD 1663, RD 661, EN 61000-3-2, EN 61000-3-3 EN 61000-3-11, EN 61000-3-12			

ENVIRONMENTAL DATA

Operating temperature:	°C	-20 to +60 (output power derating above +45°C)			
Storage temperature:	°C	-20 to +80			
Ventilation		Convection cooling (fan assist at high temperature)			

INTERFACE

Front panel		Full graphic LCD: 170 x 76 pixels			
Embedded datalogger		Memory capacity for 30yrs operation			
Service		EIA 232, 9-pin D-sub female			
Remote connection option		EIA485, 2x RJ45 for network components			
Volt free contact option		1x Change over contact: 24V _{ac} /2A rated			

*- voltage and frequency range adjustable to specific grid settings

357102.DS3 rev5 - Specifications subject to change without notice