

THEIA TL CENTRAL INVERTERS

SOLAR INVERTERS: 20-500 kW

3-phase Transformerless Inverters. With a wide input voltage window, Maximum Power Point Tracking, and high efficiency, the THEIA Solar Inverter range is designed to provide maximum power for maximum time, with minimal maintenance. The versatility of the THEIA TL Central Inverter range means that it can be used in a wide variety of photovoltaic power generation systems around the world.



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357104.DS3 rev8

PRODUCT DESCRIPTION

Performance

The THEIA TL Central Inverter range has been developed using bespoke high frequency IGBT switching designs to produce a high performance, high efficiency inverter system with very low harmonic distortion.

Expandability

The inverter's ability to be interconnected together means they are ideal for all sizes of photovoltaic power generation systems, including phased building of sites to minimize initial investment costs.

Reliability

Using innovative MPPT algorithms to maximize the output power of the PV array under all conditions, and well proven design methods.

Flexibility

With their flexible design, which includes options for input fusing, grounding kits, and diode protection, the inverter system can be configured to specific site needs.

Intelligence

PV power generation site with the integration of multiple temperature, irradiance, and wind speed sensors, as well as PV array monitoring, webcams and anti-theft equipment with the inverter system to provide comprehensive site information.

Monitoring

Its advanced system control and diagnostics, including local and remote interface, makes set-up and installation easier, with operation and maintenance also extremely cost effective by reducing the need for expensive site visits.

Communication

RS232, USB and RS485 connections enable communication locally, remotely by modem or via Data Control Interfaces, while volt-free contacts can be available for alarm signaling.

Global compliance

The THEIA TL Central Inverter range is CE marked, and compliant to EN 50178, IEC 62103, VDE V 0126-1-1, AS 4777 (Australia), RD 1663 and RD 661 (Spain), and DK 5940/ENEL Guidelines (Italy), with local language certification available.

Applications

From Low Voltage grid-connected systems, and power generation on Medium Voltage grids, to hybrid systems, THEIA inverters are suitable for all photovoltaic plant needs.

Coupled with Eltek's market leading Global Service and Support network, which is able to provide site planning, installation, monitoring and maintenance services, the THEIA TL Central Inverter range is the ultimate choice for any central inverter solution.

Power - kW		20	30	50	100	150	200	250	350	500
INPUT DATA										
Input voltage – Max Value Range MPPT	V _{dc}	900 (950 with optional EIV kit 450 - 820)								
Max recommended PV power	kWp	24	35	60	120	180	240	295	410	580
Input max. current	A _{dc}	46	69	115	230	345	460	570	795	1140
Input protection		Circuit breaker Fuses (20kW to 50 kW)								
OUTPUT DATA										
Nominal output power	kW	20	30	50	100	150	200	250	350	500
Nominal output voltage (*range adjustable to local reqs)	V _{ac}	300V, 3-phase + PE (+/-20%*)								
Output frequency	Hz	50 or 60 (+/-5Hz configurable)								
Power factor at	cosØ	> 0,99 (nominal power and input voltage)								
Current harmonics	THD	<2%								
Output protection		<ul style="list-style-type: none"> Short circuit detection Fuses 							<ul style="list-style-type: none"> Output contactor 	
PERFORMANCE DATA										
Maximum efficiency	%	>97,4	>97,4	>97,6	>97,6	>97,7	>97,8	>97,9	>98,3	>98,5
EU efficiency	%	>96,7	>96,7	>96,9	>97,1	>97,2	>97,4	>97,5	>98,0	98,2
Sleep mode power	W	<5								
Heat dissipation – nominal load	W	650	850	1500	2600	3500	4500	5600	8200	10500
MECHANICAL DATA										
Protection degree (IEC529)		IP 20 (others on request)								
Color		RAL 7024								
Dimensions (mm)	W	690	690	690	800	800	1000	1000	1600	1600
	D	895	895	895	800	800	800	800	1000	1000
	H	1345	1345	1345	1900	1900	2100	2100	2100	2100
Weight	Kg	212	212	266	440	483	625	690	935	1140
Cable access		Bottom (Top on request)								
DESIGN STANDARDS										
Acoustic noise (according EN 62040)	dB	<62	<62	<63	<64	<65	<65	<65	<68	<68
EM compatibility		EN61000-6-2, EN61000-6-4								
CE marking		Yes - Restricted application								
Other standards		DIN VDE V 0126-1-1, ENEL Guidelines (DK 5940) AS 4777, RD 1663/2000, RD 661/2007, EN 50178, IEC 62103, EN 55011, IEC 61000-3-11, IEC 61000-3-12, IEC 61000-6-3								
ENVIRONMENTAL DATA										
Operating temperature:	°C	-20 to +55 (output power derating typically above +45°C)								
Storage temperature:	°C	-30 to +70								
Relative humidity (non-condensing):		<95%								
Ventilation:		Forced, expelled from top (optional redundant fans)								
Required cooling air flow:	m ³ /h	300	300	300	1000	1000	1500	1500	2000	2000
Altitude:	M	<1000								
INTERFACE										
Front Panel		LCD display with status LEDs								
Communication		RS232 and USB RS485 Modbus protocol								
Remote connection option		Data Control Interface								
Volt free contact option		Alarm relay card (8x outputs)								