



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.

ELTEK VALERE - RENEWABLE

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, the THEIA TL Central Inverter range can be trusted to provide long term, reliable energy harvesting even under adverse conditions.

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

Participates in management of a 'smart' 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 signalling.

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 Valere'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.

THEIA TL CENTRAL

INVERTERS: 20-500 kW



TECHNICAL SPECIFICATIONS

POWER - kW	20	30	50	100	150	200	250	350	500
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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 50kW)								

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:	cos ϕ	> 0,99 (nominal power and input voltage)								
Current harmonics:	THD	< 2%								
Output protection:		Short circuit detection Fuses 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								
Dimension (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)								

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