

AZZURRO - SINGLE-PHASE STRING INVERTER

3000TLM/3680TLM/4000TLM/4600TLM
5000TLM/6000TLM



The TLM series **ZCS Azzurro Single-Phase** inverters are the ideal solution for photovoltaic systems in residential or commercial buildings. Available in sizes from 3 to 6kw, they are small, easy to manage, easy to install and are all equipped with dual MPPT channel.

The wide range of input makes them easy to configure and suitable for any type of need, for both new installations or for retrofitting on existing systems.

The multifunction graphic display provides immediate viewing of all the data and the Wi-Fi connectivity allows remote monitoring at no cost.



ZCS AZZURRO TECHNOLOGY

- Performance optimisation
- Wi-Fi integration on ZCS platform for stable, effective and intelligent connectivity



MAXIMUM ENERGY EFFICIENCY

- Maximum performance 97.6%
- Stable efficiency in all working conditions
- Rapid and accurate MPPT algorithm
 - Dual input section with independent MPPTs



FLEXIBLE, ECONOMICAL AND EASY-TO-INSTALL SOLUTION

- Protection rating of IP65
- "Plug & Play" AC and DC connections
 - Wireless communication with integrated Web Server
 - 4-inch LCD graphic display
 - ENEL Autotest in standard or fast versions
- Updates and diagnostics via SD card



RELIABILITY, DURABILITY AND FLEXIBILITY

- Rust-proof, corrosion-proof and UV-proof aluminium exterior casing
 - Natural ventilation cooling
 - Fast and flexible management of operating parameters
- Simple and user-friendly monitoring
 - 10 year ZCS warranty



INTELLIGENT GRID MANAGEMENT

- Dynamic management of grid feed-in
 - "Zero Grid Feed-in" functionality*
 - Remote control of the deliverable active/reactive power limit



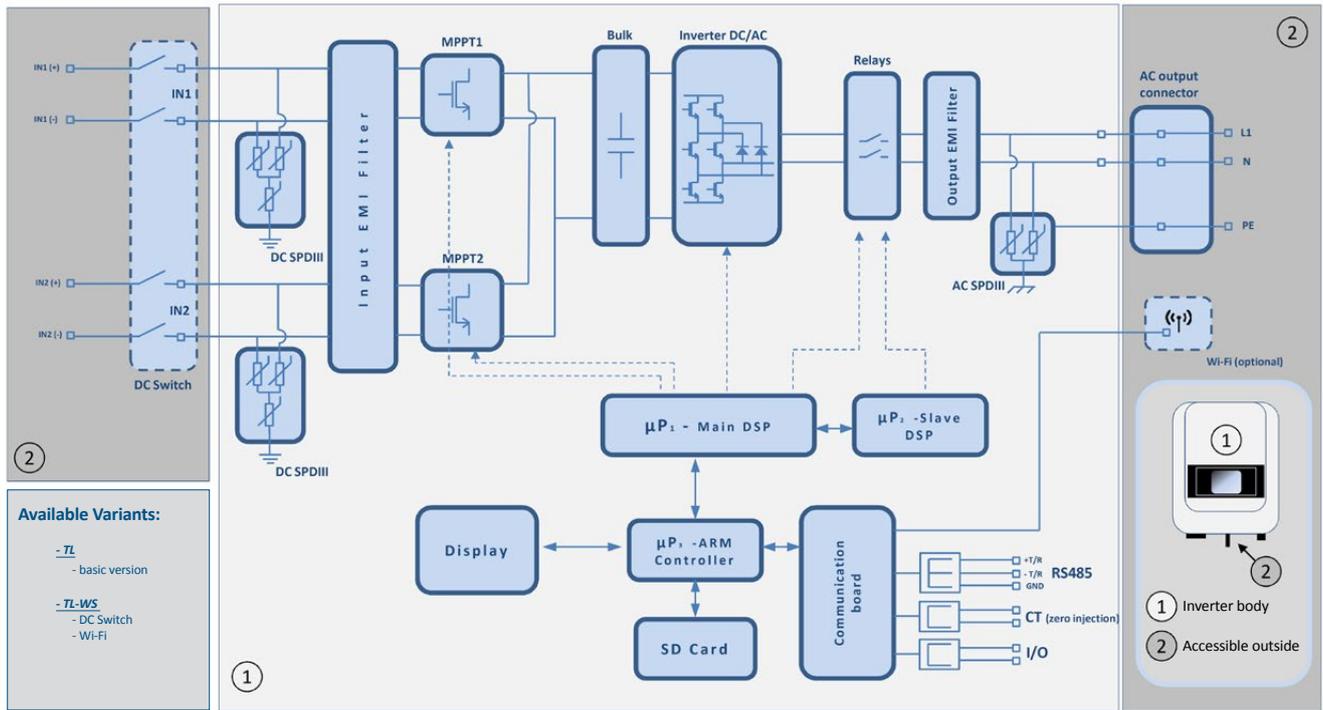
IDEAL FOR RETROFITTING

- Wide input operating range from 100V to 550V
 - Compact size
- Simple and user-friendly installation and configuration
 - Dual MPPT channel

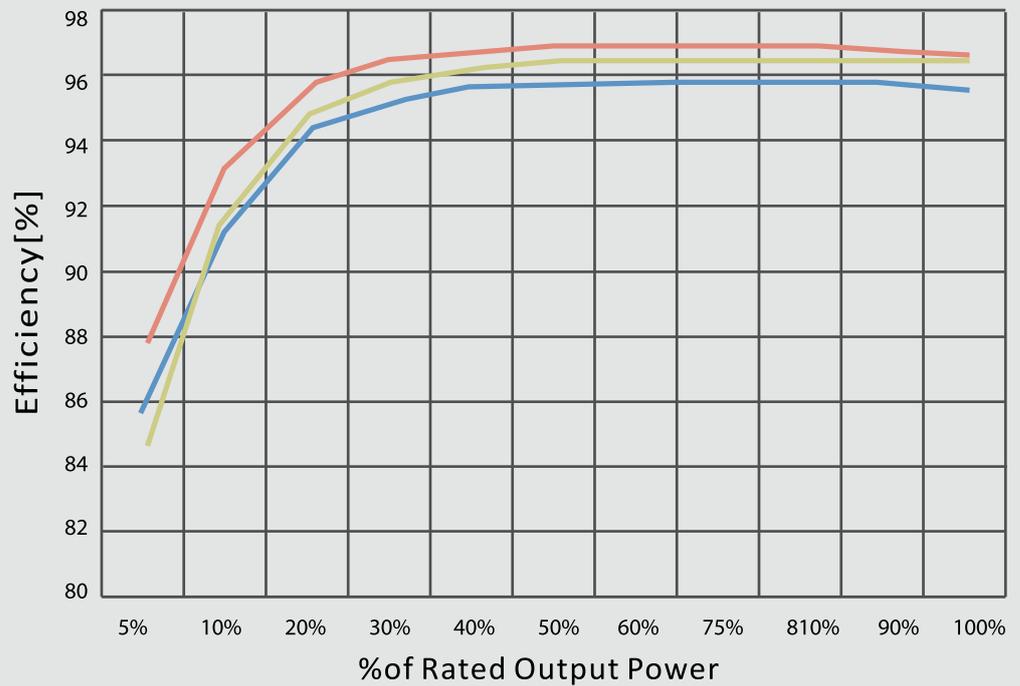


*Possible with the use of a current sensor (ZST-ACC-TA)

FLOW CHART



EFFICIENCY CURVE



TECHNICAL DATA	3000TLM	3680TLM	4000TLM	4600TLM	5000TLM	6000TLM
DC input data						
Typical DC power	3300W	4000W	4400W	5000W	5500W	6600W
Maximum DC power for each MPPT	2000W (200V-500V)	2400W (200V-500V)	2600W (200V-500V)	3000W (200V-500V)		3150W (250V-520V)
No.ofindependentMPPTs/No.ofstringsperMPPT				2/1		
Maximum DC input voltage	600V					
Activation voltage	100V	120V				
Nominal DC input voltage	360V					
MPPT range of DC voltage	80V-580V	100V-580V				
DC voltage range at full load	160V-520V	165V-520V			175V-520V	250V-520V
Maximum input current for each MPPT	10A/10A	12A/12A	13A/13A	15A/15A		
AC output data						
Nominal AC power	3000W	3680W	4000W	4600W	5000W	6000W
Maximum AC power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Maximum AC current	13A	16A	17.5A	20A	22A	26A
Connection type/Grid nominal voltage	Single-phase L/N/PE / 220V,230V,240V					
Grid voltage range	180V~270V (according to the local grid standards)					
Grid nominal frequency	50Hz/60Hz					
Grid frequency range	45Hz~53Hz / 57Hz~63Hz (according to the local grid standards)					
Total harmonic distortion	<3%					
Power factor	1 (programmable +/-0.8)					
Active power adjustment range	0~100%					
Grid feed-in limitation	Feed-in adjustable from zero to the nominal power value*					
Efficiency						
Maximum efficiency	97.6%					
Weighted efficiency (EURO)	97.1%/97.3%					
MPPT efficiency	>99.9%					
Night-time consumption	<1W					
Protections						
Safety protections	Anti islanding, RCMU, Ground Fault Monitoring					
DC reverse polarity protection	Yes					
DC switch	Optional (only WS models)					
Surge protection	Yes					
Protection class/Surge category	I/III					
Integrated dischargers	AC/DC MOV: Type III standard					
Standard						
EMC	EN 61000-6-1/2/3/4,					
Safety standard	IEC 62116, IEC 61727, IEC 61683, IEC 60068-1/2/14/30, IEC 62109-1/2					
Grid connection standard	AS 4777, AS 3100, VDE-AR-N 4105, EN50438, G83/G59, C10/11, CEI 0-21					
Communication						
Communication interfaces	Wi-Fi (only WS models), RS485 (proprietary protocol), SD card					
Additional inputs or connections	Input for current sensor connection					
Data storage on SD	25 years					
General information						
Permissible ambient temperature range	-25°C...+60°C (power limitation above 45°C)					
Topology	Transformerless					
Environmental protection rating	IP65					
Permissible relative humidity range	0%....95% without condensation					
Maximum operating altitude	2000m					
Noise	< 25dB @ 1mt					
Weight	18Kg			19Kg		
Cooling	Natural ventilation					
Dimensions (H*L*D)	478mm*344mm*170mm					
Display	LCD					
Warranty	10 years					

* Possible by connecting a current sensor (ZST-ACC-TA)



AS4777 G83/2 G59/3

CE, CEI 0-21, CQC, IEC, VDE-AR-N4105/VDE-0126, EMC, C10/11, EN50438, RD1669