

# AZZURRO - THREE-PHASE STRING INVERTER

50000TL/60000TL/70000TL



The **ZCS Azzurro Three-phase** inverters are the best solution for medium to large roof and ground mounted photovoltaic systems.

The advanced technology developed by ZCS makes the Azzurro series efficient, versatile and highly functional.

The wide input range of the three MPPTs, the DC and AC switch and the DC and AC surge protection devices make these inverters safe, robust, easy to configure and suitable for any need.



## ZCS AZZURRO TECHNOLOGY

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



## MAXIMUM ENERGY EFFICIENCY

- Maximum performance 98.6%
- Stable efficiency in all working conditions
- Rapid and accurate MPPT algorithm
  - Triple input section with independent MPPTs



## FLEXIBLE, ECONOMICAL AND EASY-TO-INSTALL SOLUTION

- Protection rating of IP65
- Integrated string combiner with different configuration options
  - Power Management Unit
  - 4-inch LCD graphic display
- SD card for updates and diagnostics



## RELIABILITY, DURABILITY AND FLEXIBILITY

- Rust-proof, corrosion-proof and UV-proof aluminium exterior casing
- Flexible and user-friendly management of operating parameters
- Optional Class II surge protection devices (AC and DC)
- Topology without transformer
  - 5 - 10 year ZCS warranty



## INTELLIGENT GRID MANAGEMENT

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



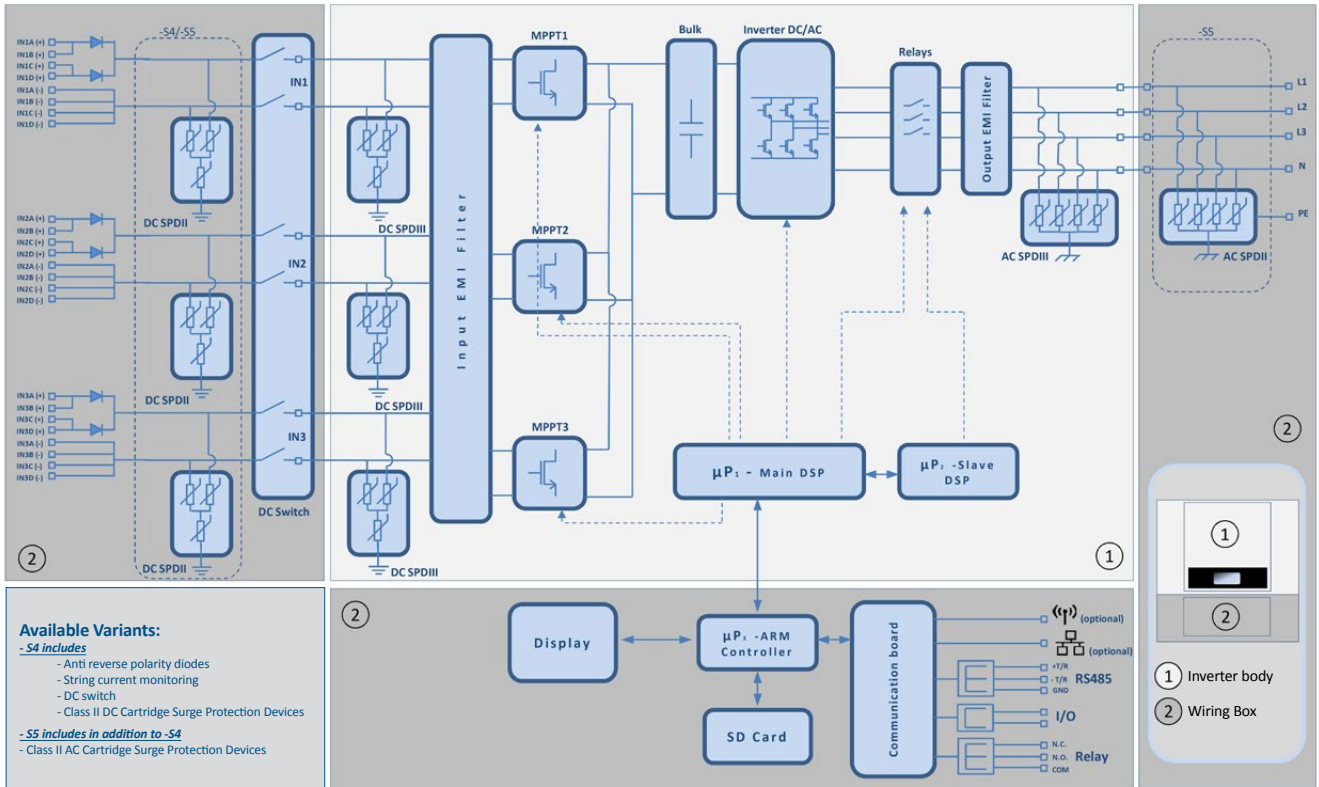
## IDEAL FOR RETROFITTING

- Wide operating input range from 250V to 960V also suitable for small string systems
  - Compact size
- Simple and user-friendly installation and configuration
  - Triple MPPT channel

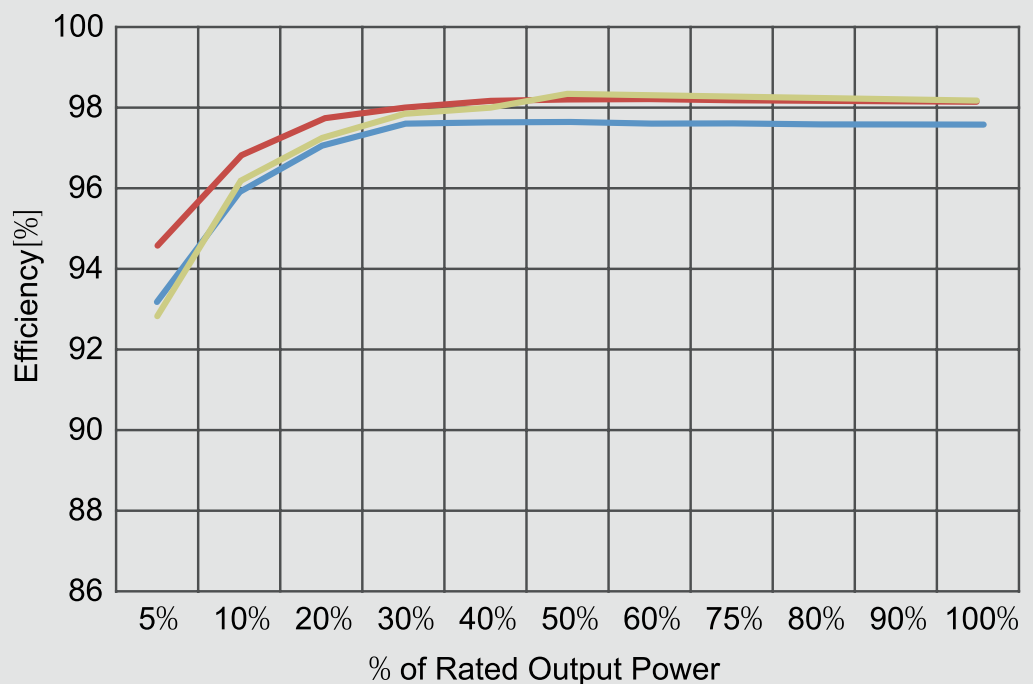


\*Possible through current sensor (ZST-ACC-TA) and anti-reverse power controller (ZSM-ZEROINJ)

# FLOW CHART



# EFFICIENCY CURVE



TECHNICAL DATA	50000TL	60000TL	70000TL
<b>DC input data</b>			
Typical DC power	55000W	66000W	77000W
Maximum DC power for each MPPT	22000W (500V-800V)	22000W (530V-800V)	26000W (660V-800V)
No of independent MPPTs/No. of strings per	3/(4/3/3)		3/(4/4/4)
Maximum DC input voltage	1000V		
Activation voltage	350V		
Nominal DC input voltage	600V		700V
MPPT range of DC voltage	250V-960V		
DC voltage range at full load	500V-800V	530V-800V	660V-800V
Maximum input current for each MPPT	40A/30A/30A		40A/40A/40A
Maximum input current per string	12A		
<b>AC output data</b>			
Nominal AC power	50000W	60000W	70000W
Maximum AC power	50000VA	60000VA	70000VA
Maximum AC current per phase	80A		90A
Connection type/Grid nominal voltage	Three-phase 3PH/N/PE, 220V, 230V, 240V/380V, 400V, 415V or Three-phase 3PH/PE, 220V, 230V, 240V/380V, 400V, 415V		Three-phase 3PH/N/PE, 277V/480V Three-phase 3PH/PE, 277V/480V
Grid voltage range	180V~270V (according to the local standards)		243V~304V (according to the local standards)
Grid nominal frequency	50Hz/60Hz		
Grid frequency range	45Hz~53Hz / 57Hz~63Hz (according to the local 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*		
<b>Efficiency</b>			
Maximum efficiency	98.5%	98.6%	
Weighted efficiency (EURO)	98.3%	98.4%	
MPPT efficiency	>99.9%		
Night-time consumption	<1W		
<b>Protections</b>			
Safety protections	Anti-islanding, RCMU, Ground Fault Monitoring		
DC reverse polarity protection	Yes		
DC switch	Integrated		
Surge protection	Yes		
Protection class/Surge category	I/III		
Integrated dischargers	AC/DC MOV: Type III standard, optional AC/DC dischargers type II (only S5 models)		
<b>Standard</b>			
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	CE, CGC, ZVRT, AS 4777, AS 3100, VDE-AR-N 4105, EN50438, G83/2, G59/3, C10/11, CEI 0-21, CEI 0-16		
<b>Communication</b>			
Communication interface	Wi-Fi (Optional), RS485 (proprietary protocol), SD card		
Additional inputs or connections	I/O inputs for anti-reverse power controller connections		
Data storage on SD	25 years		
<b>General information</b>			
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	< 60dB @ 1mt		
Weight	68Kg	70Kg	
Cooling	Forced ventilation		
Dimensions (H*L*D)	737mm*713mm*297 mm		
Display	LCD		
Warranty	5 - 10 years		

\*Possible by connecting current sensor (ZST-ACC-TA) and anti-reverse power controller (ZSM-ZEROINJ)