

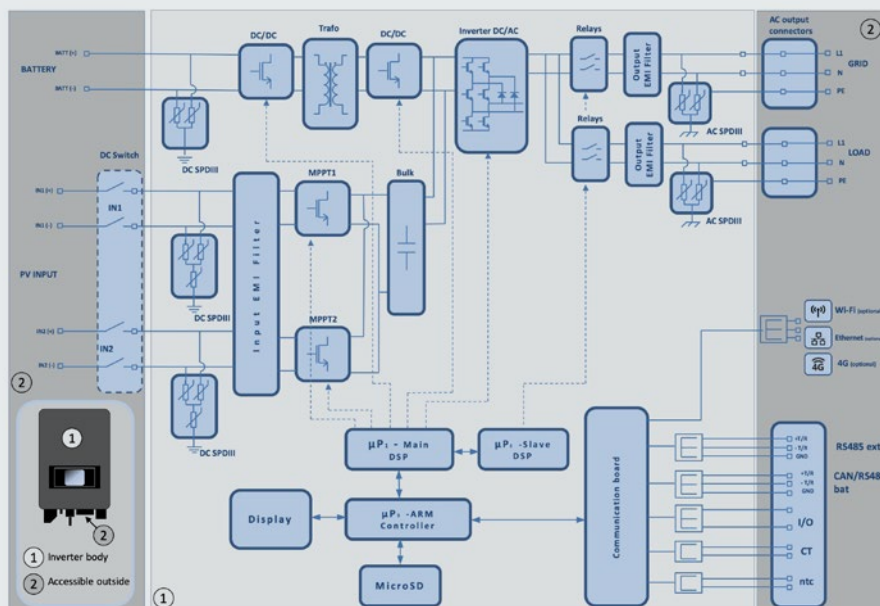
# ZCS AZZURRO - SINGLE-PHASE HYBRID INVERTER

HYD 3000-ZSS/HYD 3600-ZSS/HYD 4000-ZSS/HYD 5000-ZSS/HYD 6000-ZSS



- » Automatic management of the energy flows from the photovoltaic system, battery and grid
- » On-board Energy Meter
- » Possibility of operation in zero grid feed-in mode
- » Unit compatible with 48V lithium batteries
- » Stand-Alone support mode guarantees continuity of operation and "island" operation, both from the photovoltaic source and battery in the event of power failure.

## FLOW CHART



TECHNICAL DATA	1PH HYD3000 ZSS	1PH HYD3600 ZSS	1PH HYD4000 ZSS	1PH HYD5000 ZSS	1PH HYD6000 ZSS
<b>DC input data (photovoltaic)</b>					
Typical DC power*	3600 W	4320 W	4800 W	6000 W	7200 W
Maximum DC power for each MPPT	2000W (160V-520V)	2400W (180V-520V)	2600W (200V-520V)	3000W (250V-520V)	3500W (300V-520V)
No. of independent MPPTs / No. of strings per MPPT	2/1				
Maximum input voltage	600V				
Start-up voltage	120V				
Rated Input voltage	360V				
MPPT DC voltage range	90V-580V				
DC voltage range at full load	160V-520V	180V-520V	200V-520V	250V-520V	300V-520V
Maximum input current for each MPPT	12A/12A				
Maximum absolute current for each MPPT	15A/15A				
<b>Battery connection data</b>					
Type of compatible battery	Lithium-ion (supplied by Zucchetti)				
Rated voltage	48V				
Allowable voltage range	42V-58V				
Maximum charge/discharge power	3000 W				
Allowable temperature range**	-10°C/+50°C				
Maximum charge current	65A (programmable)				
Maximum discharge current	65A (programmable)				
Charge curve	Managed by the battery's BMS				
Depth of Discharge (DoD)	0%-90% (programmable)				
<b>AC output (grid side)</b>					
Rated power	3000 W	3680 W	4000 W	5000 W	6000 W
Maximum Power	3000VA	3680VA	4000VA	5000VA	6000VA
Maximum current	13.7A	16A	18.2A	22.8A	27.3A
Connection type/Rated voltage	Single-phase L/N/PE 220, 230, 240V				
AC voltage range	180V-276V (according to the local standards)				
Rated frequency	50Hz/60Hz				
AC frequency range	44Hz -55Hz / 54Hz -66Hz (according to the local standards)				
Total harmonic distortion	< 3%				
Power factor	1 default (Programmable +/- 0.8)				
Grid feed-in limit	Programmable from display				
<b>EPS Output (Emergency Power Supply)</b>					
Maximum power supplied in EPS mode***	3000VA				
EPS output voltage and frequency	Single-phase 230V 50Hz/60Hz				
Current supplied in EPS mode	13A				
Apparent peak power in EPS mode	4000VA for 10s				
Total harmonic distortion	< 3%				
Switch time	< 10ms				
<b>Efficiency</b>					
Maximum efficiency	97.6%		97.8%		98.0%
Weighted efficiency (EURO)	97.2%		97.3%		97.5%
MPPT efficiency	>99.9%				
Maximum battery charge/discharge efficiency	94.6%				
Consumption in stand-by	< 5W				
<b>Protections</b>					
Internal interface protection	Yes				
Safety protections	Anti-islanding, RCMU, Ground Fault Monitoring				
Reverse polarity protection DC	Yes				
DC circuit breaker	Integrated				
Overheating protection	Yes				
Overvoltage category/Protection class	Overvoltage Category III / Protection class I				
Integrated dischargers	AC/DC MOV: Type 3 Standard				
Battery soft start	Yes				
<b>Standard</b>					
EMC	EN 61000-3-2/3/11/12, EN 61000-6-2/3				
Safety standard	IEC 62116, IEC 61727, IEC 61683, IEC 60068-1/2/14/30, IEC 62109-1/2				
Grid connection standard	Connection certificates and standards available on <a href="http://www.zcsazzurro.com">www.zcsazzurro.com</a>				
<b>Communication</b>					
Communication interfaces	Wi-Fi/4G/Ethernet (optional), RS485 (proprietary protocol), SD card, CAN 2.0 (for battery connection)				
Additional inputs or connections	Input for current sensor connection or meter				
Data storage on SD	25 years				
<b>General data</b>					
Allowable ambient temperature range	-30°C...+60°C (power limit above 45°C)				
Topology	Transformerless / High-frequency isolation battery output				
Environmental protection class	IP65				
Allowable relative humidity range	0%.....95% non-condensing				
Maximum operating altitude	2000m				
Noise level	< 25dB @ 1mt				
Weight	20.5Kg				
Cooling	Natural convection				
Dimensions (H x L x D)	566mm x 394mm x 173mm				
Display	LCD				
Warranty	5 or 10 years				

\* The typical DC power does not represent a maximum applicable power limit. The online configurator available at [www.zcsazzurro.com](http://www.zcsazzurro.com) will provide any applicable configurations.

\*\* Standard value for lithium batteries; maximum operating range between +10°C and +40°C

\*\*\* Power output in EPS mode depends on the number and type of batteries, and the status of the system (e.g. residual capacity, temperature)