

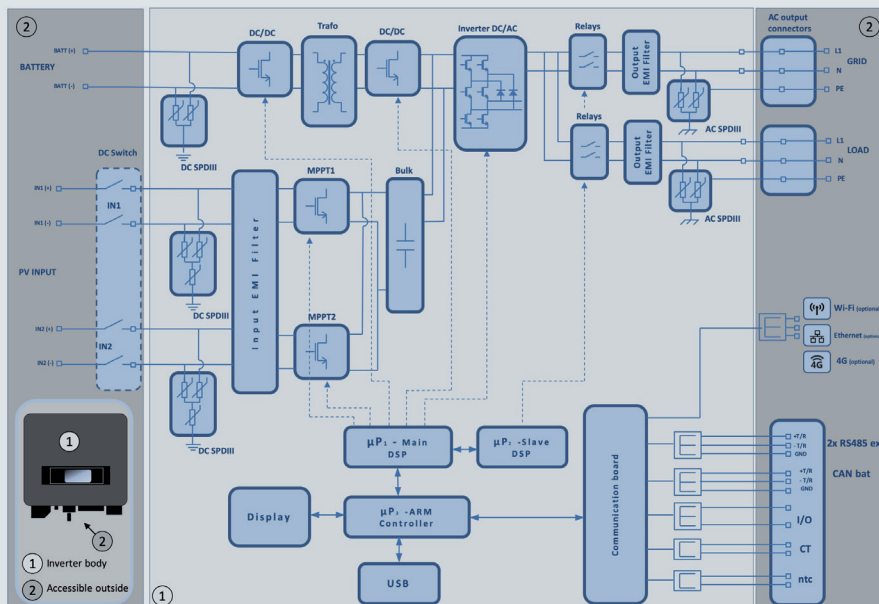
ZCS AZZURRO - HP SERIES SINGLE-PHASE HYBRID INVERTER

1PH HYD 3000 ZSS HP/ 1PH HYD 3600 ZSS HP/ 1PH HYD 4000 ZSS HP/ 1PH HYD 4600 ZSS HP
1PH HYD 5000 ZSS HP/ 1PH HYD 6000 ZSS HP



- » Automatic management of the energy flows from the photovoltaic system, battery and grid
- » On-board Energy Meter
- » Parallel-ready
- » 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.
- » Maximum charge/discharge power 5000W

BLOCK DIAGRAM



TECHNICAL DATA	1PH HYD 3000 ZSS HP	1PH HYD 3600 ZSS HP	1PH HYD 4000 ZSS HP	1PH HYD 4600 ZSS HP	1PH HYD 5000 ZSS HP	1PH HYD 6000 ZSS HP
DC input data (photovoltaic)						
Typical DC power*	4500W	5400W	6000W	6900	7500W	9000W
Maximum DC power for each MPPT	3500W (270V-520V)				3750W (300V-520V)	
No. of independent MPPTs / No. of strings per MPPT				2/1		
Maximum input voltage				600V		
Start-up voltage				100V		
Rated Input voltage				360V		
MPPT DC voltage range				90V-550V		
DC voltage range at full load	160V-500V	180V-500V	200V-500V	230V-500V	250V-500V	300V-500V
Maximum input current for each MPPT				13A/13A		
Maximum absolute current for each MPPT				18A/18A		
Battery connection data						
Type of compatible battery	Lithium-ion (supplied by Zucchetti)					
Rated voltage	48V					
Allowable voltage range	42V-58V					
Maximum charge/discharge power**	3750W	4000W	4250W		5000W	
Allowable temperature range***	-10°C/+50°C					
Maximum charge current	75A (programmable)	80A (programmable)	85A (programmable)		100A (programmable)	
Maximum discharge current	75A (programmable)	80A (programmable)	85A (programmable)		100A (programmable)	
Charge curve	Managed by the BMS					
Depth of Discharge (DoD)	0%-90% (programmable)					
AC output (grid side)						
Rated power	3000W	3680W	4000W	4600W	5000W	6000W
Maximum Power	3300VA	3680VA	4400VA	4600VA	5500VA	6000VA
Maximum current	15A	16A	20A	20.9A	25 A	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					
EPS Output (Emergency Power Supply)						
Maximum power supplied in EPS mode****	3000VA (3600VA for 60s)	3680VA (4400VA for 60s)	4000VA (4800VA for 60s)	4600VA (5520VA for 60s)	5000VA (6000VA for 60s)	
EPS output voltage and frequency	Single-phase 230V 50Hz/60Hz					
Current supplied in EPS mode	13.6A	16A	18.2A	20.9A	22.7A	
Total harmonic distortion	< 3%					
Switch time	< 10ms					
Efficiency						
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	< 10W					
Protections						
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					
Standard						
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 at www.zcsazzurro.com					
Communication						
Communication interfaces	Wi-Fi/4G/Ethernet (optional), RS485 (proprietary protocol), USB, CAN 2.0 (for battery connection), Bluetooth					
Additional inputs or connections	Input for current sensor connection or meter					
General data						
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	4000m					
Noise level	< 25dB @ 1mt					
Weight	21.5kg					
Cooling	Natural convection					
Dimensions (H x L x D)	482mmx503mmx183mm					
Data monitoring	LCD Display + APP					
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 will provide any applicable configurations.

**Only referred to the drum channel

*** 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)