

# AZZURRO - HYBRID STORAGE INVERTER

HYD 10000 ZSS / HYD 15000 ZSS  
HYD 20000 ZSS



Automatic management of the energy  
flows from the photovoltaic system,  
battery and grid

On-board Energy Metre

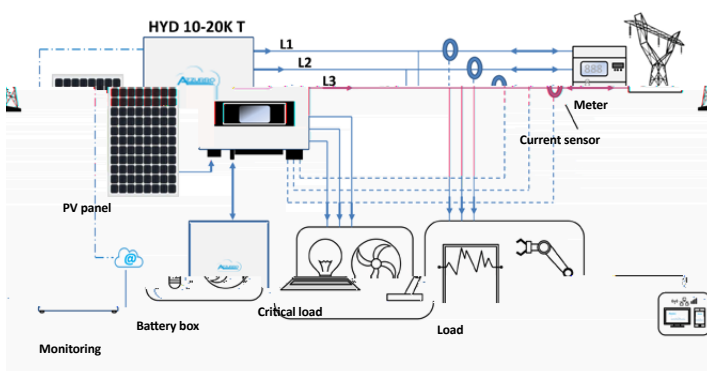
Parallel-ready

Possibility of operation in zero grid  
feed-in mode

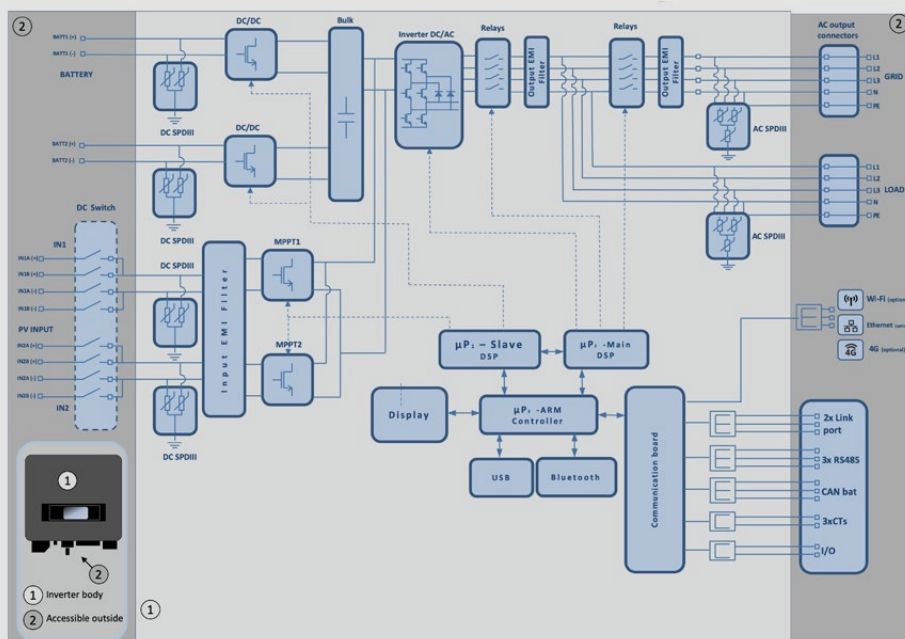
Unit compatible with high voltage  
lithium battery (200-750V)

Stand-Alone support mode guarantees  
continuity of operation and "island"  
operation, both from the photovoltaic  
source and battery in the event of  
power failure.

## STORAGE DIAGRAM



## FLOW CHART



TECHNICAL DATA	3PH HYD10000 ZSS	3PH HYD15000 ZSS	3PH HYD20000 ZSS
DC photovoltaic input			
Typical DC power *	15000W	22500W	30000W
Maximum DC power on each MPPT	7500W (300V-850V)	11250W (450V-850V)	15000W (600V-850V)
Independent MPPTs/Strings each MPPT		2/2	
Maximum DC voltage		1000V	
Start-up voltage		250V	
Nominal DC voltage		600V	
MPPT range in DC		180V-960V	
Full power range in DC	220V-850V	350V-850V	450V-850V
Maximum DC input current each MPPT		25A/25A	
Maximum absolute DC input current each MPPT		30A/30A	
Battery input data			
Type of batteries	Lithium Ion (supplied by Zucchetti)		
Voltage range	180V-750V		
Number of battery channels	2 (set as independent or parallel)		
Maximum charge/discharge power	10000W	15000W	20000W
Allowed temperature range**	-10°C/+50°C		
Maximum charge current	25A (35A for 60s)		
Maximum discharge current	25A (35A for 60s)		
Charge curve	Managed by integrated BMS		
Depth of Discharge (DoD)	0%-90% (set)		
AC output			
Nominal AC Power	10000W	15000W	20000W
Maximum AC Power	11000VA	16500VA	22000VA
Maximum AC current each phase	16A	24A	32A
Type of connection/Nominal AC grid voltage	Three Phase 3/N/PE, 220/380, 230/400		
AC voltage range	180V~276V (according to local standards)		
Nominal AC frequency	50Hz/60Hz		
AC frequency reange	45Hz~55Hz / 54Hz~64Hz (according to local standards)		
Total Harmonic Distortion (THD)	< 3%		
Power Factor	1 default (set +/- 0.8)		
Active power grid injection	Set by display		
EPS (Emergency Power Supply) output			
Maximum Power in EPS***	10000W	15000W	20000W
Peak apparnet power in EPS***	20000VA for 60s	22000VA for 60s	22000VA for 60s
Voltage and frequency in EPS	Three Phase 230V/400V 50Hz		
Maximum current in EPS	16A (30A for 60s)	24A (32A for 60s)	32A (33A for 60s)
Total Harmonic Distortion (THD)	3%		
Switch time	<20ms		
Efficiency			
Maximum Efficiency	98.2%		
Euro efficiency	97.7%		
Efficiency MPPT	99.9%		
Maximum charge/discharge efficiency	97.8%		
Standby consumption	<15W		
Protections			
Internal interface protection	Yes	No	
Safety protections	Anti islanding, RCMU, Ground Fault Monitoring		
DC reverse polarity protection	Yes		
DC switch	Integrated		
Overheating protection	Yes		
Overvoltage category/Protection class	Overvoltage Category III / Protective class I		
Integrated dischargers	AC/DC MOV: Type 2 standard		
AC output overcurrent protection	Yes		
Battery Soft start	Yes		
Standard			
EMC	EN61000-1, EN61000-3		
Safety standards	IEC62109-1, IEC62109-2, NB-T32004/IEC62040-1		
Grid standards	Grid standards and certificates available on <a href="http://www.zcsazzurro.com">www.zcsazzurro.com</a>		
Communication			
Interfaces	Wi-Fi/4G/Ethernet (optional), (proprietary protocol), USB , CAN 2.0 (Battery data connection), Bluetooth		
Additional I/O	RS485 bus for external meters (up to 4 meter connectable), 6 digital inputs (5V TTL), CT direct connections		
Environmental data			
Temperature working range	-30°C...+60°C (limitazione di potenza sopra i 45°C)		
Topology	Transformerless		
Environmental protection degree	IP65		
Humidity range	0~100%		
Maximum operative altitude	4000m		
Acustic noise	<45 dB @ 1m		
Weight	37Kg		
Cooling system	FANs cooled		
Dimensions (H*W*L)	515mm*571mm*264mm		
Display	LED display and APP		
Warranty	10 years		

\* Typical Dc power is not an absolute maximum rating. Online configurator available on [www.zcsazzurro.com](http://www.zcsazzurro.com) will guide the user on valid and possible configurations

\*\* Standard value for lithium-ion batteries; maximum operativity in the range +10°C/+40°C

\*\*\* Power in EPS depends on battery type and on status of the storage system (residual capacity, temperature)