

# AZZURRO - HYBRID STORAGE INVERTER

HYD 10000 T / HYD 15000 T  
HYD 20000 T

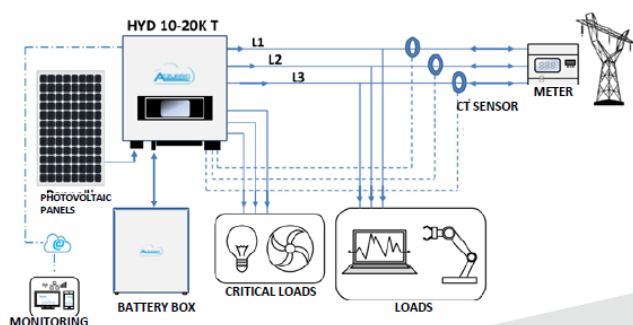


The brand-new ZCS Azzurro hybrid three-phase inverter is available in three power capacities (10-15-20kW) to meet the storage needs of the commercial sector.

Full power available also directly from the battery during a power outage, and the high storage capacity make it the ideal solution to ensure continuous operation and optimisation of self-consumption. Furthermore, the possibility of parallel installation guarantees scalability for higher power and greater storage capacity. Like every inverter in the Azzurro series, all this is accompanied by easy and flexible installation.



## STORAGE DIAGRAM



### SIMPLE AND RELIABLE



- Automatic management of the energy flows from the photovoltaic system, battery and grid
  - Dual MPPT
- LCD graphic display for local monitoring
- Remote monitoring system through APP for viewing consumption, PV production, stored energy and exchange with the grid

### SIMPLE INSTALLATION



- On-board Energy Metre
- Does not require changes or upgrades to the existing electrical system thanks to the use of an open-core current sensor
- Possibility of parallel installation

### FLEXIBLE DISCHARGE SOLUTION



- Flexible charging/discharging management in accordance with local standards
- Maximisation of self-consumption above 80%
  - Possibility of operation in zero grid feed-in mode
- Unit compatible with high-voltage lithium battery (200-750V)

### FUNCTIONALITY IN THE EVENT OF GRID DISCONNECTION



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

TECHNICAL SPECIFICATIONS	HYD 10000 T	HYD 15000 T	HYD 20000 T
<b>DC input technical data (photovoltaic)</b>			
Maximum DC Power	12000W	17500W	20000W
Number of independent MPPTs / Number of strings per MPPT		2/2	
Maximum input voltage		1000V	
Start-up voltage		250V	
Rated input voltage		600V	
MPPT DC voltage range		200V-960V	
DC voltage range at full load	250V-850V	350V-850V	400V-850V
Maximum input current for each MPPT		25A/25A	
Maximum absolute current for each MPPT		30A/30A	
<b>Battery connection technical data</b>			
Type of compatible battery		Lithium-ion	
Allowable voltage range		200V-750V	
Recommended battery capacity		25Ah-100Ah	
Number of batteries that can be connected		2	
Maximum charge/discharge power	10000W	15000W	20000W
Allowable temperature range		-10°C-50°C	
Maximum charge current per battery pack		25A (35A of peak per 60s)	
Maximum discharge current per battery pack		25A (35A of peak per 60s)	
Charge curve (Lithium)		Managed by battery BMS	
Depth of Discharge (DOD)		0%-90% (programmable)	
<b>AC Output (grid side)</b>			
Rated power	10000W	15000W	20000W
Maximum Power	11000VA	16500VA	20000VA
Maximum current	16A	24A	30A
Connection type/Rated voltage		Three-phase 3/N/PE, 220/380, 230/400	
AC voltage range		184V-276V (according to the local standards)	
Rated frequency		50Hz/60Hz	
AC frequency range		45Hz-55Hz / 55Hz-65Hz (according to the local standards)	
Total harmonic distortion		<3%	
Power factor		1 default (programmable +/- 0.8)	
Grid feed limit		Programmable from display	
<b>EPS Output (Emergency Power Supply)</b>			
Power output in EPS mode** in case of no photovoltaic production	10000VA	15000VA	20000VA
Apparent peak power in EPS** in case of no photovoltaic production	14000VA per 60s	21000VA per 60s	28000VA per 60s
EPS output voltage and frequency		Three-phase 230V/400V 50Hz	
Current supplied in EPS mode	16A	24A	30A
Peak current in EPS	21A per 60s	31A per 60s	41A per 60s
Total harmonic distortion		3%	
Switch time		<20ms	
<b>Efficiency</b>			
Maximum efficiency	97.2%	97.8%	98.0%
Weighted efficiency (EURO)	97.0%	97.5%	97.8%
MPPT efficiency		99.9%	
Maximum efficiency of battery charge	97.0%	97.5%	97.8%
Maximum efficiency of battery discharge	97.0%	97.5%	97.6%
Consumption in standby		<10W	
<b>Protections</b>			
Internal interface protection		No	
Safety protections		Anti-islanding, RCMU, Ground Fault Monitoring	
DC reverse polarity protection		Yes	
DC circuit breaker		Integrated	
Overheating protection		Yes	
MOV input/output surge category		II	
Input surge protection		Yes	
Battery soft start		Yes	
<b>Standard</b>			
EMC	EN61000-1, EN61000-2, EN61000-3, EN61000-4, EN61000-4-16, EN61000-4-18, EN61000-4-29		
Safety standard	IEC62109-1, IEC62109-2, NB-T32004/IEC62040-1		
<b>Communication</b>			
Communication interfaces	Wi-Fi, RS485 (proprietary protocol), SD card, CAN 2.0 (for battery connection) Bluetooth, GPRS (optional)		
<b>General data</b>			
Permissible ambient temperature range	-25°-60°C		
Topology	Transformerless		
Environmental protection degree	IP65		
Permissible relative humidity range	0-100%		
Maximum operating altitude	4000m (in derating starting from 2000m)		
Noise level	<45 dB @ 1m		
Weight	25 kg	30 kg	35 kg
Cooling	Natural convection	Forced convection	
Dimensions (W*H*D)	570 x 560 x 230 mm		
Display	LED display and APP		
Warranty	10 years		



AS4777 G83/2 G59/3

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

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

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



**ZUCCHETTI**  
Centro Sistemi



Zucchetti Centro Sistemi S.p.A. - Green Innovation Division  
Palazzo dell'Innovazione - Via Lungarno, 167 - 52028 Terranuova Bracciolini - Arezzo, Italy  
tel. +39 055 - 91971 - fax. +39 055 - 9197515 - innovation@zcscompany.com  
zcsazzurro.com - zcscompany.com