



# HYD 3K~6K-ES

3000/3600/4000/4600/5000/6000

## Single-Phase Energy storage integrated inverter



-  Outdoor IP65 design
-  Compatible with on grid and off grid
-  A variety of work modes are optional
-  EPS function, switching time is less than 10ms
-  Built-in zero export function
-  Flexible configuration of lead acid or lithium battery
-  Integrated fanless self-recognition heat dissipation design

Datasheet	HYD 3000-ES	HYD 3600-ES	HYD 4000-ES	HYD * 4600-ES	HYD 5000-ES	HYD 6000-ES
<b>Battery Parameters</b>						
Battery Type	Lithium-ion, Lead-acid					
Nominal battery voltage	48V					
Battery voltage range	42-58V					
Battery Capacity	50-2000Ah					
Maximum Charging / Discharging Power	3000W					
Maximum Charging Current	65A (Programmable)					
Maximum Discharging Current	70A (Programmable)					
Charging curve(Lithium-ion)	BMS					
Charging curve(Lead-acid)	3-Stage adaptive with maintenance					
Depth of discharge	Lithium-ion: 0-90% DOD adjustable, Lead-acid:0-50% DOD adjustable					
<b>Input DC(PV side)</b>						
Recommended Max. PV input power	3990Wp	4790Wp	5320Wp	6120Wp	6650Wp	7980Wp
Max DC power for single MPPT	2000W	2400W	2600W	2800W	3000W	3500W
Max. input voltage	600V					
Start-up voltage	120V					
Nominal DC Voltage	360V					
MPPT operating voltage range	90-580V					
Full power MPPT voltage range	160V-520V	180V-520V	200V-520V	230V-520V	250V-520V	300V-520V
MPPT number	2					
The max DC input current	12A/12A					
The max DC input short current	15A/15A					
<b>Output AC(Grid side)</b>						
Rated Power	3000W	3680W	4000W	4600W	5000W	6000W
Max. Output Power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Nominal Grid Voltage	L/N/PE, 220, 230, 240					
Operation phase	Single (L-N-PE)					
Max. Input / Output current	13.7A	16A	18.2A	21.0A	22.8A	27.3A
AC voltage Range	180V~276V (According to local standard)					
Grid Frequency range	44-55Hz/54-66Hz (According to local standard)					
THD	<3%					
Power factor	1 default (+/-0.8 adjustable)					
<b>Output AC(Emergency Power Supply)</b>						
EPS rated power	3000VA					
Operation phase	Single (L-N-PE)					
EPS rated voltage,Frequency	230V, 50/60Hz					
EPS rated current	13.2A					
Peak Output Apparent Power	4000VA, 10s					
THD	<3%					
Switch time	10ms default					
<b>Efficiency</b>						
MPPT efficiency	99.9%					
Max efficiency of solar Inverter	97.6%	97.6%	97.6%	97.8%	97.8%	98.0%
European efficiency of solar Inverter	97.2%	97.2%	97.2%	97.3%	97.3%	97.5%
Max. Charging efficiency of battery	94.6%					
Max. DisCharging efficiency of battery	94.6%					
<b>Protection</b>						
PV reverse polarity protection	Yes					
PV insulation detection	Yes					
Ground fault monitoring	Yes					
Over current protection	Yes					
Over voltage protection	Yes					
Battery soft start protection	Yes					
SPD protection	III					
<b>General Data</b>						
Ambient temperature range	-25°C~ +60°C (Above 45°C Derating)					
Standby Losses	< 10W					
Topology	High frequency insulation (for bat)					
DC-Switch	Yes					
Degree Of Protection	IP65					
Allowable Relative Humidity Range	0~100%					
Communication	RS485, Wifi/Ethernet/GPRS, SD, CAN2.0					
Protective class	Class I					
Max. Operating Altitude	2000m					
Current Sensor Connection	External					
Noise	<25dB					
Weight	20.5kg					
Cooling	Natural					
Dimension (W*H*D)	566*394*173 mm					
Display	LCD display					
Warranty	5 Years or more					
<b>Standard</b>						
EMC	EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12					
Safety standards	IEC62109-1/2, IEC62040-1, IEC62116, IEC61727, IEC-61683, IEC60068(1,2,14,30)					
Grid standards	AS/NZS 4777, VDE V 0124-100, V 0126-1-1, VDE-AR-N 4105, CEI 0-21, EN50549, G83/G59/G98/G99, UTE C 15-712-1, UNE 206 007-1					

The models marked with "\*" should be available only for some designated countries.







HYD 3000/3600/4000/4600/5000/6000-ES\_EN\_202009\_V1



# HYD 5K~20KTL-3PH

5000/6000/8000/10000/15000/20000

## Three-Phase Energy storage integrated inverter

-  2 MPPT inputs, more flexible configuration
-  APF Maximum two battery inputs
-  Diversified work patterns and rapid gains
-  Full digital control, higher control accuracy
-  Multiple parallel systems, more flexible system solutions
-  Off-grid output can be connected to unbalanced load, three-phase separate output is supported

# Datasheet

HYD 5KTL-3PH      HYD 6KTL-3PH      HYD 8KTL-3PH      HYD 10KTL-3PH      HYD 15KTL-3PH      HYD 20KTL-3PH

## Battery Input Data

Battery type	Li-Ion					
No. of battery input	1	1	1	2	2	2
Battery voltage range	180V-800V					
Battery voltage range for full load	200V-800V	240V-800V	320V-800V	200V-800V	300V-800V	400V-800V
Nominal charging/discharging power	5000W	6000W	8000W	10000W	15000W	20000W
Max. charging/discharging current	25A	25A	25A	50A(25A/25A)	50A(25A/25A)	50A(25A/25A)
Peak charging/discharging current, Duration	40A, 60s	40A, 60s	40A, 60s	70A(35A/35A), 60s	70A(35A/35A), 60s	70A(35A/35A), 60s
Charging strategy for battery	Self-adaption to BMS					
Communication interfaces	CAN(RS485)					

## PV String Input Data

Recommended Max. PV input power	7500Wp(6000Wp/6000Wp)	9000Wp(6600Wp/6600Wp)	12000Wp(6600Wp/6600Wp)	15000Wp(7500Wp/7500Wp)	22500Wp(11250Wp/11250Wp)	30000Wp(15000Wp/15000Wp)
Max. DC voltage	1000V					
Start-up operating voltage	200V					
MPPT voltage range	180V-960V					
Nominal DC voltage	600V					
Full power MPPT voltage range	250V-850V	320V-850V	360V-850V	220V-850V	350V-850V	450V-850V
Max. input current	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A	25A/25A	25A/25A	25A/25A
Max. short current	15A/15A	15A/15A	15A/15A	30A/30A	30A/30A	30A/30A
No. of MPP trackers	2					
No. of strings per MPP tracker	1	1	1	2	2	2

## AC Output Data (On-grid)

Nominal AC power	5000W	6000W	8000W	10000W	15000W	20000W
Max. AC power output to utility grid	5500VA	6600VA	8800VA	11000VA	16500VA	22000VA
Max. AC power from utility grid	10000VA	12000VA	16000VA	20000VA	30000VA	40000VA
Max. AC current output to utility grid	8A	10A	13A	16A	24A	32A
Max. AC current from utility grid	15A	17A	24A	29A	44A	58A
Nominal grid voltage	3/N/PE, 220/380Vac, 230/400Vac					
Grid voltage range	184Vac~276Vac					
Nominal grid frequency	50/60Hz					
Grid frequency range	45Hz~55Hz/55Hz~65Hz					
Output power factor	~1(0.8 leading to 0.8 lagging)					
Output THDi (@Nominal output)	< 3%					

## AC Output Data (Back-up)

Nominal output power	5000W	6000W	8000W	10000W	15000W	20000W
Max. output power	5500VA	6600VA	8800VA	11000VA	16500VA	22000VA
Peak output power, Duration	10000VA, 60s	12000VA, 60s	16000VA, 60s	20000VA, 60s	22000VA, 60s	22000VA, 60s
Max. output current	8A	10A	13A	16A	24A	32A
Peak output current, Duration	15A, 60s	18A, 60s	24A, 60s	30A, 60s	32A, 60s	32A, 60s
Nominal output voltage	3/N/PE, 220/380Vac, 230/400Vac					
Nominal output frequency	50/60Hz					
Output THDv (@Liner load)	< 3%					
Switch time	< 20ms					

## Efficiency

MPPT efficiency	99.9%					
Euro efficiency	97.5%	97.5%	97.5%	97.7%	97.7%	97.7%
Max. efficiency	98.0%	98.0%	98.0%	98.2%	98.2%	98.2%
Max. battery charge/discharge efficiency	97.6%	97.6%	97.6%	97.8%	97.8%	97.8%

## Protection

DC switch	Yes
PV reverse polarity protection	Yes
Output over current protection	Yes
Output over voltage protection	Yes
Anti-islanding protection	Yes
Residual current detection	Yes
Insulation resistor detection	Yes
Surge protection level	II
Battery reverse protection	Yes

## General Data

Dimension	571.4*515*264.1mm					
Weight	33kg	33kg	33kg	37kg	37kg	37kg
Inverter topology	Transformerless					
Standby self-consumption	< 15W					
Operating temperature range	-30°C~+60°C					
Relative humidity	0~100%					
Noise	< 45dB					
Operating altitude	< 4000m					
Cooling	Natural	Natural	Natural	Forced airflow	Forced airflow	Forced airflow
Protection degree	IP65					

## Feature

DC terminal	MC4
Grid AC terminal	5P Connector
Back-up AC terminal	5P Connector
Display	LCD Display
Monitoring interfaces	Bluetooth / RS485 / WIFI / GPRS (optional)
Parallel operation	Yes
Standard warranty	Standard 5 years

## Certifications & Standards

EMC	EN61000-6-1, EN61000-6-3
Safety	IEC62109-1, IEC62109-2, NB-T32004/IEC62040-1
Grid	AS/NZS 4777, VDE V 0124-100, V0126-1-1, VDE-AR-N 4105, CEI 0-16/CEI 0-21, EN50549, G98/G99, UTE C15-712-1