



# HYD 3K~6K-ES

3000/3600/4000/4600/5000/6000

## Single-Phase Energy storage integrated inverter



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

| Datasheet                                | HYD<br>3000-ES  | HYD<br>3600-ES | HYD<br>4000-ES | HYD *<br>4600-ES | HYD<br>5000-ES | HYD<br>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.

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