

# HYD-40-60K-T1

40 / 49.9 / 50 / 60 kW

*Three-phase hybrid inverter*



## Simplicity

- Light weight and convenient transportation
- LCD and App for easy commissioning



## Safety

- IP66 protection rating
- DC SPD type I+II, AC SPD type II
- AI based AFCI protection



## Flexibility

- Multiple inverters in parallel connection
- Supports intelligent control of non critical loads



## Robustness

- Maximum 200% PV input, and 40A per MPPT
- Supports 100% unbalanced loads
- 150% overload capability for 10 seconds
- Integration of generators to extend backup duration

| Model                                                  | HYD-40K-T1 |                  | HYD-49.9K-T1-A |                                                | HYD-50K-T1 |                  | HYD-60K-T1 |                  |
|--------------------------------------------------------|------------|------------------|----------------|------------------------------------------------|------------|------------------|------------|------------------|
| PV Input                                               |            |                  |                |                                                |            |                  |            |                  |
| Recommended Max. PV Power                              |            | 80 kWp           |                | 100 kWp                                        |            | 120 kWp          |            |                  |
| Max. Input Voltage                                     |            |                  |                | 1000 Vd.c                                      |            |                  |            |                  |
| Start-up Voltage <sup>[1]</sup>                        |            |                  |                | 200 Vd.c.                                      |            |                  |            |                  |
| Rated Input Voltage                                    |            |                  |                | 600 Vd.c.                                      |            |                  |            |                  |
| MPP Voltage Range                                      |            |                  |                | 160-950 Vd.c.                                  |            |                  |            |                  |
| Number of MPPT                                         |            |                  |                | 4                                              |            |                  |            |                  |
| Max. Number of Input Strings per MPPT                  |            |                  |                | 2/2/2/2                                        |            |                  |            |                  |
| Max. Input Current                                     |            |                  |                | 40/40/40/40 A                                  |            |                  |            |                  |
| Max. Isc                                               |            |                  |                | 50/50/50/50 A                                  |            |                  |            |                  |
| Battery                                                |            |                  |                |                                                |            |                  |            |                  |
| Voltage Range                                          |            |                  |                | 600-1000 Vd.c.                                 |            |                  |            |                  |
| Number of Battery Input Channels                       |            |                  |                | 1                                              |            |                  |            |                  |
| Max. Charging Power                                    |            |                  |                | 60 kW                                          |            |                  |            |                  |
| Max. Discharging Power                                 |            | 40 kW            |                | 49.9 kW                                        |            | 50 kW            |            | 60 kW            |
| Max. Charging Current                                  |            |                  |                | 100A                                           |            |                  |            |                  |
| Max. Discharging Current                               |            | 64A              |                | 79.8A                                          |            | 80A              |            | 100A             |
| Battery Type <sup>[2]</sup>                            |            |                  |                | Lithium-ion                                    |            |                  |            |                  |
| BMS Communication                                      |            |                  |                | CAN                                            |            |                  |            |                  |
| AC Backup                                              |            |                  |                |                                                |            |                  |            |                  |
| Rated Output Voltage                                   |            |                  |                | 3N→PE, 380/400/415 Va.c.                       |            |                  |            |                  |
| Rated Output Frequency                                 |            |                  |                | 50/60 Hz                                       |            |                  |            |                  |
| Rated Output Power                                     |            | 40 kW            |                | 49.9 kW                                        |            | 50 kW            |            | 60 kW            |
| Rated Output Current                                   |            | 60.8/57.7/55.6 A |                | 75.8/72.0/69.4 A                               |            | 76.0/72.2/69.6 A |            | 91.2/86.6/83.5 A |
| Rated Apparent Power                                   |            | 40 kVA           |                | 49.9 kVA                                       |            | 50 kVA           |            | 60 kVA           |
| Max. Apparent Power                                    |            | 44 kVA           |                | 49.9 kVA                                       |            | 55 kVA           |            | 66 kVA           |
| Max. Output Current                                    |            | 66.9/63.5/61.2 A |                | 75.8/72.0/69.4 A                               |            | 83.6/79.4/76.5 A |            | 100/95.3/91.8 A  |
| Peak Output Apparent Power <sup>[3]</sup>              |            |                  |                | 1.5 times of rated power, 10s                  |            |                  |            |                  |
| THDv(@ linear load)                                    |            |                  |                | < 3%                                           |            |                  |            |                  |
| Switching Time <sup>[4]</sup>                          |            |                  |                | 4ms                                            |            |                  |            |                  |
| Asymmetric load                                        |            |                  |                | Yes, Supports 100% three-phase unbalanced load |            |                  |            |                  |
| AC Smartload/Generator                                 |            |                  |                |                                                |            |                  |            |                  |
| Rated Output Voltage                                   |            |                  |                | 3N→PE, 380/400/415 Va.c.                       |            |                  |            |                  |
| Rated Output Frequency                                 |            |                  |                | 50/60 Hz                                       |            |                  |            |                  |
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| AC Grid                                                |            |                  |                |                                                |            |                  |            |                  |
| Rated Voltage                                          |            |                  |                | 3(N)→PE, 380/400/415 Va.c.                     |            |                  |            |                  |
| Rated Frequency                                        |            |                  |                | 50/60 Hz                                       |            |                  |            |                  |
| Rated Output Power                                     |            | 40 kW            |                | 49.9 kW                                        |            | 50 kW            |            | 60 kW            |
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| Max. Output Current                                    |            | 66.9/63.5/61.2 A |                | 75.8/72.0/69.4 A                               |            | 83.6/79.4/76.5 A |            | 100/95.3/91.8 A  |
| Max. Input Current                                     |            |                  |                | 100A                                           |            |                  |            |                  |
| THDi                                                   |            |                  |                | < 3%                                           |            |                  |            |                  |
| Power Factor Range                                     |            |                  |                | 0.8 lagging - 0.8 leading                      |            |                  |            |                  |
| Efficiency                                             |            |                  |                |                                                |            |                  |            |                  |
| Max. MPPT Efficiency                                   |            |                  |                | 99.9%                                          |            |                  |            |                  |
| Max. Efficiency                                        |            | 98.2%            |                | 98.2%                                          |            | 98.2%            |            | 98.2%            |
| European Efficiency                                    |            | 97.5%            |                | 97.5%                                          |            | 97.5%            |            | 97.5%            |
| Max. Efficiency of Charging/Discharging <sup>[5]</sup> |            | 98.2%            |                | 98.2%                                          |            | 98.2%            |            | 98.2%            |
| Protection                                             |            |                  |                |                                                |            |                  |            |                  |
| DC Switch                                              |            |                  |                | Yes                                            |            |                  |            |                  |
| PV Reverse Connection Protection                       |            |                  |                | Yes                                            |            |                  |            |                  |
| Battery Reverse Connection Protection                  |            |                  |                | Yes                                            |            |                  |            |                  |
| Output Short Circuit Protection                        |            |                  |                | Yes                                            |            |                  |            |                  |
| Output Overcurrent Protection                          |            |                  |                | Yes                                            |            |                  |            |                  |
| Output Overvoltage Protection                          |            |                  |                | Yes                                            |            |                  |            |                  |
| Insulation Impedance Detection                         |            |                  |                | Yes                                            |            |                  |            |                  |
| Residual Current Detection                             |            |                  |                | Yes                                            |            |                  |            |                  |
| Anti-island Protection                                 |            |                  |                | Yes                                            |            |                  |            |                  |
| Surge Protection <sup>[6]</sup>                        |            |                  |                | PV: Type I+II, AC: Type II                     |            |                  |            |                  |
| General Parameter                                      |            |                  |                |                                                |            |                  |            |                  |
| Inverter Topology                                      |            |                  |                | Non-Isolation                                  |            |                  |            |                  |
| Protective Class                                       |            |                  |                | Class I                                        |            |                  |            |                  |
| IP Rating                                              |            |                  |                | IP66                                           |            |                  |            |                  |
| Overvoltage Category                                   |            |                  |                | AC III, DC II                                  |            |                  |            |                  |
| Operating Temperature Range                            |            |                  |                | -30°C ~ +60°C (derating above + 45°C)          |            |                  |            |                  |
| Relative Humidity Range                                |            |                  |                | 5%-95%                                         |            |                  |            |                  |
| Max. Operating Altitude                                |            |                  |                | 4000 m (derating above 2000 m)                 |            |                  |            |                  |
| Standby Self-consumption <sup>[7]</sup>                |            |                  |                | < 15W                                          |            |                  |            |                  |
| Installation Method                                    |            |                  |                | Wall Mounted                                   |            |                  |            |                  |
| Dimensions (W×H×D)                                     |            |                  |                | 850×660×305 mm                                 |            |                  |            |                  |
| Cooling Mode                                           |            |                  |                | Intelligent Airflow                            |            |                  |            |                  |
| Weight                                                 |            |                  |                | 75kg                                           |            |                  |            |                  |
| Communication                                          |            |                  |                | RS485, Optional: WiFi/4G/LAN                   |            |                  |            |                  |
| Display                                                |            |                  |                | LCD & APP                                      |            |                  |            |                  |

[1] Minimum PV voltage to start MPPT operation. [2] Please refer to document "SOFAR inverter Model compatible battery list".

[3] Full sun. [4] In the on-grid mode, the nominal power of the hybrid inverter is higher than the total power of the home loads.

[5] Battery-AC maximum efficiency of battery charge and discharge. [6] According to EN/IEC 61643-11. [7] Standby loss at rated input voltage.

\*All specifications are subject to change without notice.