

## THREE PHASE HYBRID INVERTER



**Product Code:** ATE-HINV3PH5-20KW

**Family:** Smart Energy

**Subcategory:** 3PH Hybrid Inverter

## Product Overview

Artic Tech ATE-HINV3PH5-20KW is an advanced hybrid power conversion solution designed for high-efficiency solar and storage integration. Supporting up to 1000 Vdc PV input with dual MPPT tracking and wide battery voltage compatibility (180–800 Vdc), it ensures optimized energy harvesting and intelligent battery management. Engineered for stable three-phase output with low THDi and up to 99.9% MPPT efficiency, it delivers reliable performance, seamless backup capability, and flexible communication for modern residential, commercial, and industrial energy systems.

## Product Features

- Up to 2 MPPTs, allowing a flexible configuration
- Various operational modes for optimal performance
- Multiple parallel systems, more flexible system solutions
- Off-grid output can be connected to unbalanced load, three-phase separate output is supported
- Maximum two battery inputs
- Fully digital operation, enabling higher control accuracy

| Model                           | ATE-HINV3P<br>H5KW | ATE-HINV3P<br>H6KW | ATE-HINV3P<br>H8KW | ATE-HINV3P<br>H10KW | ATE-HINV3P<br>H10KWI | ATE-HINV3P<br>H15KW | ATE-HINV3PH<br>20KW |
|---------------------------------|--------------------|--------------------|--------------------|---------------------|----------------------|---------------------|---------------------|
| PV Input                        |                    |                    |                    |                     |                      |                     |                     |
| Recommended<br>Max. PV Power    | 7500 Wp            | 9000 Wp            | 12000 Wp           | 15000 Wp            | 15000 Wp             | 22500 Wp            | 30000 Wp            |
| Max. Input<br>Voltage           | 1000 Vd.c.         |                    |                    |                     |                      |                     |                     |
| Start-up Voltage                | 200 Vd.c.          |                    |                    |                     |                      |                     |                     |
| Rated Input<br>Voltage          | 600 Vd.c.          |                    |                    |                     |                      |                     |                     |
| MPPT Operating<br>Voltage Range | 180–960 Vd.c.      |                    |                    |                     |                      |                     |                     |
| Number of MPPT                  | 2                  |                    |                    |                     |                      |                     |                     |
| Max. Strings per<br>MPPT        | 1/1                |                    |                    | 2/2                 |                      |                     |                     |

|                        |                           |             |             |         |         |          |         |
|------------------------|---------------------------|-------------|-------------|---------|---------|----------|---------|
| Max. Input Current     | 16/16 A                   | 16/16 A     | 16/16 A     | 32/32 A | 32/32 A | 32/32 A  | 32/32 A |
| Max. Isc               | 22.5/22.5 A               | 22.5/22.5 A | 22.5/22.5 A | 45/45 A | 45/45 A | 45/45 A  | 45/45 A |
| AC OUTPUT (GRID)       |                           |             |             |         |         |          |         |
| Rated Output Power     | 5 kW                      | 6 kW        | 8 kW        | 10 kW   | 10 kW   | 15 kW    | 20 kW   |
| Rated Output Voltage   | 3N~PE, 380/400/415 Vac    |             |             |         |         |          |         |
| Rated Output Frequency | 50/60 Hz                  |             |             |         |         |          |         |
| Max. Apparent Power    | 5.5 kVA                   | 6.6 kVA     | 8.8 kVA     | 11 kVA  | 10 kVA  | 16.5 kVA | 22 kVA  |
| THDi                   | <3%                       |             |             |         |         |          |         |
| Power Factor Range     | 0.8 lagging – 0.8 leading |             |             |         |         |          |         |
| BATTERY                |                           |             |             |         |         |          |         |
| Battery Type           | Lithium-ion & Lead-acid   |             |             |         |         |          |         |
| Voltage Range          | 180–800 Vdc               |             |             |         |         |          |         |
| Battery Input Channels | 1                         | 1           | 1           | 2       | 2       | 2        | 2       |
| Max. Charging Power    | 5 kW                      | 6 kW        | 8 kW        | 10 kW   | 10 kW   | 15 kW    | 20 kW   |
| Max. Discharging Power | 5 kW                      | 6 kW        | 8 kW        | 10 kW   | 10 kW   | 15 kW    | 20 kW   |

|                        |                        |        |        |        |        |        |        |
|------------------------|------------------------|--------|--------|--------|--------|--------|--------|
| BMS Communication      | CAN/RS485              |        |        |        |        |        |        |
| AC OUTPUT (BACKUP)     |                        |        |        |        |        |        |        |
| Rated Output Power     | 5 kW                   | 6 kW   | 8 kW   | 10 kW  | 10 kW  | 15 kW  | 20 kW  |
| Rated Output Voltage   | 3N~PE, 380/400/415 Vac |        |        |        |        |        |        |
| Rated Frequency        | 50/60 Hz               |        |        |        |        |        |        |
| Switching Time         | 10 ms (default)        |        |        |        |        |        |        |
| EFFICIENCY             |                        |        |        |        |        |        |        |
| Max. MPPT Efficiency   | 99.90%                 | 99.90% | 99.90% | 99.90% | 99.90% | 99.90% | 99.90% |
| Max. Efficiency        | 98.00%                 | 98.00% | 98.00% | 98.20% | 98.20% | 98.20% | 98.20% |
| European Efficiency    | 97.50%                 | 97.50% | 97.50% | 97.70% | 97.70% | 97.70% | 97.70% |
| PROTECTION             |                        |        |        |        |        |        |        |
| DC Switch              | Yes                    |        |        |        |        |        |        |
| Anti-island Protection | Yes                    |        |        |        |        |        |        |
| Surge Protection       | PV Type II, AC Type II |        |        |        |        |        |        |
| GENERAL PARAMETERS     |                        |        |        |        |        |        |        |

|                       |  |         |         |                |                |                |                |
|-----------------------|--|---------|---------|----------------|----------------|----------------|----------------|
| Operating Temperature | -30°C ~ +60°C                            |         |         |                |                |                |                |
| IP Rating             | IP65                                     |         |         |                |                |                |                |
| Installation          | Wall Mounted                             |         |         |                |                |                |                |
| Cooling Mode          | Natural                                  | Natural | Natural | Forced Airflow | Forced Airflow | Forced Airflow | Forced Airflow |
| Weight                | 32 kg                                    | 32 kg   | 32 kg   | 39.5 kg        | 39.5 kg        | 39.5 kg        | 39.5 kg        |
| Communication         | RS485 / CAN / Wi-Fi (Optional: LAN / 4G) |         |         |                |                |                |                |
| Display               | LCD & APP                                |         |         |                |                |                |                |