

## Energy Storage Solution (E.S.S.)

### INV ESS 5.12 kWh Stack Mount



#### Battery Management System (BMS):

- Cell-level voltage, current & temperature monitoring.
- State of Health (SOH) estimation & reporting.
- Safety logic for over-current, over-temp & fault shutdown.

#### Enclosure & Protection:

- IP55 rated for outdoor protection.

#### Control & Communication:

- Supports RS485, CAN communication protocols.
- 3.5 inch Display screen.

#### Scalability:

- Upto 6 Batteries can be connected in a single stack.
- Supports parallel connection of up to 16 batteries for capacity expansion.

#### Safety & Protection:

- Over-temp, overcharge, over-discharge & short-circuit protection.
- Active cell balancing feature.

#### Installation Type:

- Indoor Installation

| General Specification             | INV ESS 5.12 kWh                                                                                                                                                                                                                                                   |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Type                      | Rechargeable Li-ion Battery                                                                                                                                                                                                                                        |
| Model Number                      | INV ESS 51.2 V/100 Ah                                                                                                                                                                                                                                              |
| Rated Voltage (V)                 | 51.2 V                                                                                                                                                                                                                                                             |
| Rated Capacity (Ah)               | 100 Ah                                                                                                                                                                                                                                                             |
| Rated Energy (kWh)                | 5.12 kWh                                                                                                                                                                                                                                                           |
| Charge–Discharge Rate ( C )       | 0.5 C                                                                                                                                                                                                                                                              |
| Depth of Discharge (%)            | 80%                                                                                                                                                                                                                                                                |
| Operating Temperature (°C)        | –20 to 60 °C                                                                                                                                                                                                                                                       |
| Warranty                          | 5 Years (0.5C Charge/ Discharge, @80% DoD, @25 °C)                                                                                                                                                                                                                 |
| Cell Balancing                    | Active Balancing                                                                                                                                                                                                                                                   |
| Electrical Characteristics        |                                                                                                                                                                                                                                                                    |
| Max. Charge Voltage (V)           | 58.4 V                                                                                                                                                                                                                                                             |
| Min. Discharge Voltage (V)        | 40 V                                                                                                                                                                                                                                                               |
| Max Continuous Charge Current (A) | 50 A                                                                                                                                                                                                                                                               |
| Max. Continuous Discharge (A)     | 50 A                                                                                                                                                                                                                                                               |
| Operating Voltage Range (V)       | 40 V – 58.4 V ± 0.5                                                                                                                                                                                                                                                |
| Charge Temp (°C)                  | 0 to 50 °C (<85 % RH)                                                                                                                                                                                                                                              |
| Discharge Temp (°C)               | –20 to 60 °C (<85 % RH)                                                                                                                                                                                                                                            |
| Protection Feature                |                                                                                                                                                                                                                                                                    |
| Over Temp Protection              | Yes                                                                                                                                                                                                                                                                |
| Overcharge Protection             | Yes                                                                                                                                                                                                                                                                |
| Overdischarge Protection          | Yes                                                                                                                                                                                                                                                                |
| Short Circuit Protection          | Yes                                                                                                                                                                                                                                                                |
| Cell Specification                |                                                                                                                                                                                                                                                                    |
| Cell Type                         | LFP Prismatic                                                                                                                                                                                                                                                      |
| Cell Model                        | 3.2 V 100 Ah                                                                                                                                                                                                                                                       |
| Nominal Voltage (V)               | 3.2 V                                                                                                                                                                                                                                                              |
| Rated Capacity (Ah)               | 100 Ah                                                                                                                                                                                                                                                             |
| Voltage at End of Charge (V)      | 3.65 V                                                                                                                                                                                                                                                             |
| Voltage at End of Discharge (V)   | 2.5 V                                                                                                                                                                                                                                                              |
| Max Charge Rate ( C )             | 0.5C                                                                                                                                                                                                                                                               |
| Max Discharge Rate ( C )          | 0.5C                                                                                                                                                                                                                                                               |
| Cell Weight (kg)                  | 2.3 kg                                                                                                                                                                                                                                                             |
| Pack Specification                |                                                                                                                                                                                                                                                                    |
| Pack configuration                | 16S1P                                                                                                                                                                                                                                                              |
| Pack Nominal Voltage (V)          | 51.2V                                                                                                                                                                                                                                                              |
| Pack Capacity (Ah)                | 100 Ah                                                                                                                                                                                                                                                             |
| Pack Energy (kWh)                 | 5.12 kWh                                                                                                                                                                                                                                                           |
| Features                          |                                                                                                                                                                                                                                                                    |
| Battery Management System (BMS)   | Cell-Level Monitoring: Manages voltage, current, and temperature for every cell/module.<br>State of Health (SOH): Estimates and reports the degradation status.<br>Safety Logic: Executes emergency shutdown on over-current, over-temperature or fault detection. |
| Enclosure & Protection            | IP Rating: IP55 (for outdoor environmental protection).                                                                                                                                                                                                            |
| Safety & Protection               | Over Temperature, Overcharge, Overdischarge & Short Circuit Protection                                                                                                                                                                                             |
| Control & Communication           | Monitoring Communication: Standard Industrial protocols (eg. RS485 , CAN)                                                                                                                                                                                          |
| Scalability                       | Upto 6 Batteries can be connected in a single stack.<br>Supports parallel connection of up to 16 batteries for capacity expansion.                                                                                                                                 |