

## PRODUKT



# SOLARWATT C&I ESS-Trene (Air Cooled)

## AC-coupled ESS Cabinet

### Reliable operation, flexible deployment

The commercial energy storage system impresses with robust technology, intelligent energy management and a well-designed concept that integrates seamlessly into existing systems. Smart control profiles and time-based tariffs ensure efficient, stable operation day and night – delivering measurable benefits and dependable performance.

The system is highly adaptable: compact in design, scalable from one to ten megawatt-hours via grid-connected or off-grid deployment. Continuous monitoring and permanently available operating data provide transparency for users and enable rapid responses in service situations.

Safety is a key design principle. A multi-layer fire protection concept minimises risks to both the installation and its surroundings during continuous operation.

Whether for a new project or future-proof reinvestment in commercial operations, SOLARWATT supports partners from planning and energy management through to after-sales service.

## PRODUCT FEATURES

- Fully integrated C&I solution
- Air cooled
- 100 kW AC inverter + 215 kWh LFP battery (280 Ah)
- Scalable through parallel connection of up to 10 systems
- Flexible deployment: on-grid / off-grid / microgrid / PV / EV / generator
- Four-stage fire protection system
- Intelligent energy management: BMS / EMS / PCS
- VPP-ready, AI optimisation, cloud monitoring
- Real-time data & monitoring (10 s); 1 year of local data storage
- 10-year performance warranty\* on the battery system

## SOLARWATT SERVICE

### Project Consulting & Planning

Personalised consulting, technical feasibility assessment and system design with the appropriate storage selection.

### Business Case Analysis

Calculation of returns, payback periods and optimisation potential for the project with different usage scenarios.

### Advanced Storage Solutions

With Aelio and Trene commercial storage systems, we provide powerful solutions for a wide range of requirements

### Technical & Commissioning Support

Remote or on-site assistance for initial commissioning, configuration and integration.

## TRENE-P100B215

| AC INPUT AND OUTPUT (GRID-CONNECTED) |                                                    |
|--------------------------------------|----------------------------------------------------|
| Rated power                          | 100 kW                                             |
| Maximum apparent output power        | 110 kVA                                            |
| Rated AC current                     | 151.9 A @380 V<br>144.4 A @400 V                   |
| Max. continuous output current       | 167.1 A @380 V<br>158.8 A @400 V                   |
| Rated AC voltage                     | 3 / N / PE, 220 / 380 V<br>3 / N / PE, 230 / 400 V |
| AC voltage range                     | 340 - 460 V                                        |
| AC frequency                         | 50 Hz / 60 Hz                                      |
| Power factor                         | adjustable from 1 leading to -1 lagging            |
| THDi (rated power)                   | < 3%                                               |
| DC current component                 | < 0.5% (rated power)                               |

| DC SIDE                |              |
|------------------------|--------------|
| Battery type           | LFP / 280 Ah |
| Total battery capacity | 215 kWh      |
| Rated battery voltage  | 768 V        |
| Battery voltage range  | 650 - 876 V  |

| GENERAL DATA                |                                     |
|-----------------------------|-------------------------------------|
| Dimensions (W × H × D)      | 1,680 × 2,420 × 1,200 mm            |
| Nettogewicht                | 2,800 kg                            |
| Operating temperature range | -30 to +50°C (derating above +45°C) |

| AC SIDE (OFF-GRID)                    |                                                    |
|---------------------------------------|----------------------------------------------------|
| Rated AC voltage                      | 3 / N / PE, 220 / 380 V<br>3 / N / PE, 230 / 400 V |
| Rated AC frequency                    | 50 Hz / 60 Hz                                      |
| THDv (linear load)                    | < 3% (linear load)                                 |
| Unbalanced load capability (off-grid) | 100 %                                              |
| Overload capability                   | 110% continuous operation; 120% for 1 min.         |
| Max. continuous AC output current     | 151.9 A @380 V<br>144.4 A @400 V                   |

| GENERAL DATA                                  |                                                                                  |
|-----------------------------------------------|----------------------------------------------------------------------------------|
| Relative humidity                             | 0–95% (non-condensing)                                                           |
| Max. operating altitude                       | 3,000 m                                                                          |
| Cooling concept                               | Intelligent air cooling                                                          |
| Protection rating                             | IP55                                                                             |
| Topology                                      | Transformerless                                                                  |
| Standards                                     | IEC62619, IEC63056, IEC61000, IEC62477-1, IEC62040, UN38.3, GB/T36276, GB/T34131 |
| Communication interfaces                      | Ethernet                                                                         |
| Communication protocol                        | Modbus TCP                                                                       |
| Corrosion protection rating                   | C4 (C5 optional)                                                                 |
| Safety configuration                          | Aerosol fire suppression system + water-based fire suppression + ventilation     |
| Max. number of systems in parallel (off-grid) | 10                                                                               |

## POWER CONVERSION SYSTEM (PCS) X3-TRENE-100K

| AC SIDE (GRID-CONNECTED)                    |                                                    |
|---------------------------------------------|----------------------------------------------------|
| Rated AC power                              | 100 kW                                             |
| Max. apparent output power                  | 110 kVA                                            |
| Rated AC current                            | 151.9 A @380 V<br>144.4 A @400 V                   |
| Max. AC output current                      | 167.1 A @380 V<br>158.8 A @400 V                   |
| Rated AC voltage                            | 3 / N / PE, 220 / 380 V<br>3 / N / PE, 230 / 400 V |
| AC voltage range                            | 320 - 460 V                                        |
| Rated AC frequency                          | 50 Hz / 60 Hz                                      |
| AC frequency range                          | 50 ± 5 Hz / 60 ± 5 Hz                              |
| Power factor                                | adjustable from 1 leading to -1 lagging            |
| THDi (rated power)                          | < 3%                                               |
| DC current component                        | < 0.5% (rated power)                               |
| Unbalanced load capability (grid-connected) | 100 %                                              |

| DC SIDE                       |             |
|-------------------------------|-------------|
| Battery voltage range         | 650 - 936 V |
| Max. charge/discharge current | 161.8 A     |

| AC SIDE (OFF-GRID)                    |                                                    |
|---------------------------------------|----------------------------------------------------|
| Rated AC voltage                      | 3 / N / PE, 220 / 380 V<br>3 / N / PE, 230 / 400 V |
| Rated AC frequency                    | 50 Hz / 60 Hz                                      |
| THDv (linear load)                    | < 3% (linear load)                                 |
| Unbalanced load capability (off-grid) | 100 %                                              |
| Overload capability                   | 110% continuous operation; 120% for 1 min.         |
| Max. continuous AC output current     | 167.1 A @380 V<br>158.8 A @400 V                   |

TRENE-P100B215

| GENERAL DATA                |                                  |
|-----------------------------|----------------------------------|
| Maximum efficiency          | 98.0 %                           |
| Protection rating           | IP66                             |
| Operating temperature range | -30 - 55°C (derating über +45°C) |
| Max. operating altitude     | 3,000 m                          |
| Relative humidity           | 0–95% (non-condensing)           |
| Dimensions (W × H × D)      | 310 × 665 × 880 mm               |
| Weight                      | 85 kg                            |
| Cooling concept             | Intelligent air cooling          |
| Communication interfaces    | RS485, CAN, Ethernet, DI         |

| CERTIFICATIONS                                                                                                           |                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CE, EN50549, VDE4105, VDE-AR-N 4110, VDE-AR-N 4120, G99, AS4777, CEI 0-21, IEC61727, PEA / MEA, NRS-097-2-1, RD1699, TOR |                                                                                                                                                                                                                                                                  |
| SAFETY                                                                                                                   |                                                                                                                                                                                                                                                                  |
| Safety features                                                                                                          | AC overvoltage and undervoltage protection<br>DC component monitoring<br>AC input phase sequence fault protection<br>Grid overfrequency and underfrequency protection<br>Communication failure protection<br>Type II surge protection device (SPD) on the AC sid |

PACK HR140

| GENERAL DATA                     |              |
|----------------------------------|--------------|
| Battery type                     | LFP / 280 Ah |
| Battery capacity (single module) | 14.3 kWh     |
| Battery configuration            | 1P16S        |
| Nominal battery voltage          | 51,2 V       |
| Battery voltage range            | 40 - 58.4 V  |
| Net weight                       | 115 kg       |

| GENERAL DATA               |                    |
|----------------------------|--------------------|
| Dimensions (W × H × D)     | 461 × 228 × 778 mm |
| Charge/discharge current   | 140 A              |
| Maximum operating altitude | 3,000 m            |
| Protection rating          | IP20               |
| Communication with PCS     | CAN                |