

SYSTEM PACKAGE DATA SHEET

Package 3: AlphaESS

10.45 kWp + 26.68 kWh

Package headline reproduced from the supplied image, with an important model-compatibility correction based on official AlphaESS documents.

Supplier model confirmation required before quoting or procurement

The image combines a 10 kW AlphaESS hybrid inverter with two SMILE-BAT-13.3P batteries. Official AlphaESS documents show the 13.3P battery with the 5 kW SMILE5 platform, while the 10 kW SMILE-G3-T10 uses different high-voltage G3 battery modules. Do not issue this configuration as confirmed until the supplier provides a matching approved model schedule.

PACKAGE 3



10.45kW SOLAR + 26.6kWh BATTERY

- ✓ 10.45kW Solar PV System
- ✓ x22 Trina Solar N-Type Panels
- ✓ 10kW AlphaESS Hybrid Inverter
- ✓ 26.6kWh Battery Storage (2 x 13.3kWh Batteries)
- ✓ Online Monitoring & Mobile App
- ✓ Smart Load Management
- ✓ NETCC Approved Installation



PERFECT FOR:

Medium to large homes looking for significant bill savings.

10.45 kWp

DC solar array

10.0 kW

Claimed inverter size

26.68 kWh

Two 13.34 kWh batteries

22

475 W PV modules

Package configuration

Component	Selected model / quantity
Solar modules	22 x Trina Solar TSM-475NEG9RH.28 N-type Vertex S+ modules
Claimed inverter	10 kW AlphaESS hybrid inverter (exact model not stated in supplied image)
Claimed battery	2 x AlphaESS SMILE-BAT-13.3P, 13.34 kWh each
Confirmed 13.3P inverter family	AlphaESS SMILE5 (5 kW single-phase)
Confirmed current 10 kW family	AlphaESS SMILE-G3-T10, using SMILE-G3-BAT-4.0S / 3.8S high-voltage modules

Capacity reconciliation

Solar: 22 x 475 W = 10,450 W (10.45 kWp). Battery: 2 x 13.34 kWh = 26.68 kWh. Compatibility: the energy arithmetic is valid, but the stated 10 kW inverter / 13.3P pairing is not supported by the official documents reviewed.

Design basis

This sheet preserves the package concept while preventing an unsupported product claim. The supplier must nominate the exact inverter model, phase configuration, compatible battery model and approved quantity. The final customer-facing package should then be regenerated.

1. Solar PV array and module data

10.45 kWp	22	475 W	1.045
Array rating (STC)	Module quantity	Module rating	PV / inverter ratio

Trina Solar TSM-475NEG9RH.28 (Vertex S+)

N-type i-TOPCon dual-glass module in the 440-475 W Vertex S+ NEG9RH.28 series. Twenty-two 475 W modules produce the stated 10.45 kWp array.

PV module parameter	Official datasheet value
Rated maximum power	475 W at STC
Module efficiency	Approximately 23.7% for the 475 W model
Cell / construction	N-type i-TOPCon; 96-cell layout; dual glass
Dimensions / weight	1762 x 1134 x 30 mm; approximately 21 kg
Maximum system voltage	1500 V DC
Operating temperature	-40 C to +70 C
Temperature coefficients	Pmax -0.29%/C; Voc -0.24%/C; Isc +0.04%/C
Product / power warranty	25-year product warranty; 30-year linear power warranty

Array calculation and design notes

Item	Calculation / requirement	Result
Nameplate array	22 modules x 475 W	10,450 W
Approx. module area	22 x 1.762 m x 1.134 m	43.96 m ² before gaps
Claimed DC/AC ratio	10.45 kWp / 10.0 kW	1.045
Model compatibility	PV string arrangement depends on the exact AlphaESS inverter selected	Cannot finalise yet

Final string design required

Do not complete string calculations against a generic "10 kW AlphaESS" label. Obtain the exact model code and its Australian datasheet, then calculate minimum/maximum string voltage and MPPT current for the site.

Official source

[Trina Solar Vertex S+ NEG9RH.28 Australian datasheet](#)

2. Hybrid inverter / energy controller data

AlphaESS model review: SMILE5 versus SMILE-G3-T10

Two official inverter families are relevant, but neither official document supports the exact combination shown in the supplied image without further evidence.

Inverter parameter	Official datasheet value
SMILE5 nominal AC power	5 kW single-phase
SMILE5 maximum PV array	7.5 kW
SMILE5 MPPT / voltage range	2 MPPTs; 70-540 V
SMILE5 backup power	5 kW
SMILE5 efficiency / enclosure	96.5% maximum; IP65
SMILE5 dimensions / weight	610 x 210 x 627 mm; 30 kg
SMILE-G3-T10 nominal AC power	10 kW three-phase
SMILE-G3-T10 maximum PV power	20 kW
SMILE-G3-T10 MPPT / voltage	3 MPPTs; 140-950 V; 1000 V maximum
SMILE-G3-T10 grid / backup output	10 kW / 10 kW
SMILE-G3-T10 dimensions / weight	610 x 212.5 x 416 mm; 26.7 kg
SMILE-G3-T10 listed battery family	SMILE-G3-BAT-4.0S / SMILE-G3-BAT-3.8S high-voltage modules

System integration notes

Unsupported cross-family combination in the package graphic

The 13.3P battery datasheet identifies a low-voltage 48 V battery and the SMILE5 documentation is the confirmed matching platform. The 10 kW G3 inverter documentation identifies different high-voltage battery modules.

Two valid paths to correct the package

Path A: retain two 13.3P batteries and use a confirmed compatible inverter architecture, noting that the reviewed SMILE5 is 5 kW. Path B: retain a 10 kW SMILE-G3-T10 and change the battery schedule to compatible G3 high-voltage modules.

Official source

[AlphaESS SMILE5 datasheet](#)

[AlphaESS SMILE-G3-T4/T5/T6/T8/T10 datasheet](#)

3. Battery storage, backup and system notes

2 x AlphaESS SMILE-BAT-13.3P (claimed package battery)

The 13.3P is a 48 V LFP battery with 13.34 kWh usable energy and parallel expansion capability. Its official datasheet must be read together with a compatible inverter schedule.

Battery parameter	Official datasheet value
Cell chemistry	Lithium iron phosphate (LFP)
Nominal / usable energy	13.34 kWh per battery
Combined package energy	26.68 kWh for two batteries
Nominal / operating voltage	48 V / 45-54 V
Depth of discharge	100% stated
Maximum charge / discharge current	100 A
Cycle life	8000 cycles stated
Parallel capability	1-6 batteries with expansion pack
Communication	CAN / RS485
Ingress protection	IP65
Operating temperature	-10 C to +50 C
Dimensions / weight	610 x 236 x 816 mm; 121 kg each
Warranty stated in datasheet	5-year product warranty; 10-year performance warranty

Procurement hold

Do not order the claimed 10 kW inverter and 13.3P batteries together unless AlphaESS or the authorised supplier provides written model compatibility for the Australian market.

Correct capacity statement

Two batteries total 26.68 kWh, which the graphic rounds to 26.6 kWh. Use 26.68 kWh in the technical schedule.

Package functionality and commissioning scope

Function	Included / expected	Site-dependent requirement
Online monitoring	Available on AlphaESS platforms	Portal and communications depend on the selected inverter family
Backup / load control	Available on confirmed inverter systems	Power, phase arrangement and meter / CT depend on exact model
Battery expansion	13.3P uses parallel LV architecture; G3 uses modular HV architecture	Do not mix battery families
Commissioning records	Required	Retain written compatibility evidence with the project file

Official sources

[AlphaESS SMILE-BAT-13.3P datasheet](#)

[AlphaESS SMILE5 datasheet](#)

[AlphaESS SMILE-G3-T10 family datasheet](#)

Technical disclaimer: This consolidated sheet is a technical reference, not a construction drawing or final design approval. Final equipment selection, string configuration, protection, cable sizing, backup circuits, clearances, network approval, firmware compatibility and installation method must be confirmed after site inspection and completed in accordance with the latest manufacturer instructions, applicable Australian Standards, DNSP requirements and local regulations. Manufacturer specifications can change without notice. Package 3 must not be represented as a confirmed 10 kW + 2 x 13.3P system until written compatibility evidence is obtained.