

MEDIUM-VOLTAGE POWER SKID

NEXUS

N2500

2.5 MW · 10–35 KV

2 × 1.25 MW DC GROUPS

2 500 kW	10–35 kV	2 × 1.25 MW	99 %	IP54
RATED AC POWER	MV OUTPUT	DC GROUPS	PCS PEAK	OUTDOOR
2 750 kW maximum	2 500 kVA step-up	6 × 215 kW per group	215 kW module	−30 … +60 °C

WHY IT HOLDS UP

FIVE DESIGN DECISIONS

01
Straight to medium voltage
Conversion, step-up and distribution in one skid. Site work is placement and terminations.

02
Two 1.25 MW groups
Each DC bus feeds six converters. A group isolates on its own; the other keeps running.

03
Faults stay local
A converter or a group trips, not the skid. Breakers per module and per group.

04
Grid-forming ready
Virtual-synchronous-generator control supports a weak or islanded grid.

05
Cluster management
String-level control lifts usable capacity and evens out battery ageing.

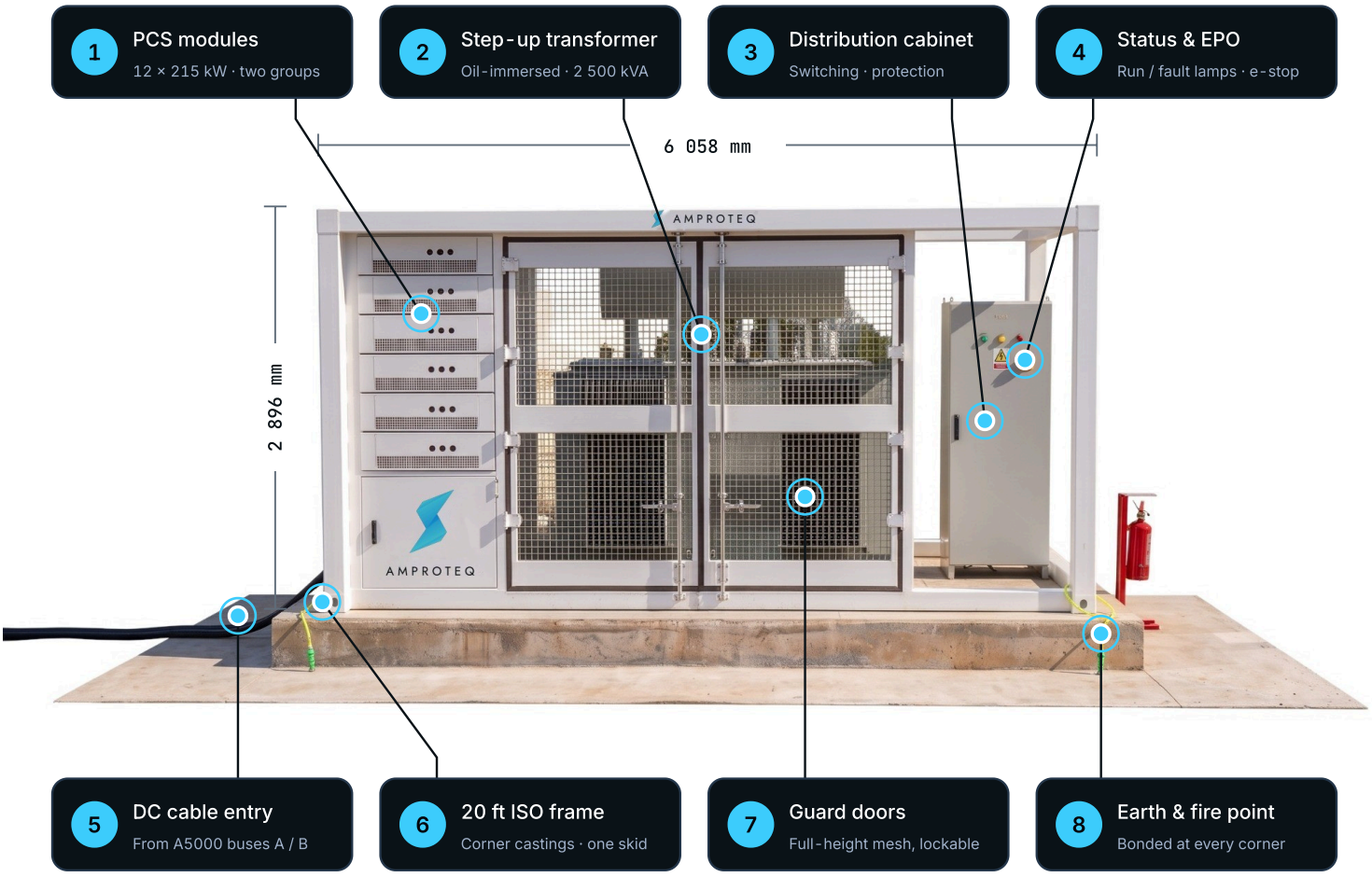
CONVERSION	SA GRID CODE · PCS MODULE	CONTROL
12 × 215 kW string PCS	NRS 097-2-1	Solaris™ EMS

02 · ANATOMY

Everything between the battery and the grid.

02

One 20 ft skid carries the conversion, the step-up and the switching. It lands on a plinth, is earthed at each corner and is terminated on site.



CONVERTER
215 kW
String PCS module, 680–1 500 V DC platform, up to 99 %.

× 6 →

GROUP
1.25 MW
Six converters on one DC bus, one group breaker.

× 2 →

STEP-UP
2 500 kVA
690 V bus into one oil-immersed transformer.

MV →

GRID
10–35 kV
Fused load-break switching at the point of connection.

FOOTPRINT	HEIGHT	WEIGHT	PROTECTION	AMBIENT
6 058 × 2 438	2 896 mm	≈ 16 t	IP54	–30 … +60 °C
mm, 20 ft ISO	frame, excl. plinth	complete skid	outdoor, forced air	derating above 45 °C

Photograph shows a typical configuration. Plinth, earthing and fire point are site scope and are drawn per project.

03 · SPECIFICATION

NEXUS N2500 · 2 500 kW

Typical configuration. Final values are fixed in the project technical agreement.

2 500 kW	10—35 kV	1 000—1 500 V	≈ 16 t
RATED · 2 750 MAX	MV OUTPUT	DC WINDOW	20 FT SKID · IP54

01 DC SIDE

Operating voltage	**1 000 – 1 500 V**
DC inputs	12 × 206 A · paralleled into 2 groups
Converters	12 × 215 kW string PCS, bidirectional
Groups	2 × 1.25 MW · 6 converters each
Charging method	BMS command · three-stage · MPPT
Operating modes	CC · CP · MPPT · AC or DC voltage source

02 AC LOW-VOLTAGE SIDE

Rated / maximum	**2 500 / 2 750 kW**
Rated grid voltage	690 V
Frequency	50 / 60 Hz ± 5 Hz
Current distortion	THDi < 3 % at rated power
Power factor	−1 leading to +1 lagging
Grid support	VSG control, grid-forming capable
PCS peak efficiency	Up to 99 % · 215 kW module

03 MEDIUM-VOLTAGE SIDE

Transformer	Oil-immersed step-up
Rated / maximum	**2 500 / 2 750 kVA**
Voltage ratio	0.69 / 10 – 35 kV
MV current, rated	131 A at 11 kV · 66 A at 22 kV · 44 A at 33 kV Calculated, unity power factor
MV switching	Fused load-break switch · surge arresters · voltage indication

04 ENCLOSURE & ENVIRONMENT

Enclosure	20 ft ISO frame skid, IP54
Dimensions (W × D × H)	6 058 × 2 438 × 2 896 mm
Weight	≈ 16 t
Operating temperature	−30 … +60 °C · derating > 45 °C
Relative humidity	0 – 100 %, non-condensing
Altitude	3 000 m · derating > 3 000 m
Cooling	Forced air

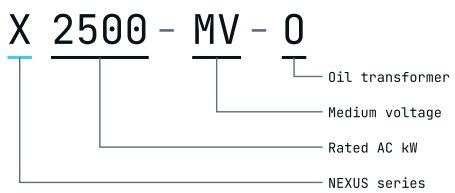
05 CONTROL & COMMUNICATION

Energy management	Solaris™ EMS
Communication	RS-485 / CAN / Ethernet
Battery interface	Cluster management, BMS command
Applications	Ground-mounted storage · C&I plants · utility nodes

06 PCS MODULE · TESTED TO

NRS 097-2-1 · EN 62109 · IEC 62477 · EN IEC 61000 · EN 62920 · EN 50549-1 / -2 · VDE-AR-N 4110 · NC RfG · G99 · G100 · IEC 61727 · IEC 62116 · FD C11-519-12 · SunSpec

MODEL CODE



SCOPE OF SUPPLY

PCS modules, LV distribution, step-up transformer, MV switching and the EMS interface, factory-integrated and tested before dispatch. Battery, MV cabling and civil works are scoped per project. Certificates apply to the 215 kW PCS module; skid-level tests per project.

Size your plant.

Send the grid offer and the dispatch you need. We return the block count, skid layout and single-line diagram.

info@amproteq.energy
+27 82 552 6696

04 · SINGLE-LINE

Two groups, one step-up.

The A5000's twelve clusters land on two DC buses. Each bus feeds six 215 kW converters: two 1.25 MW groups on one 690 V bus.

FIG 04-1 · SYSTEM SINGLE-LINE

A5000 → NEXUS N2500 → GRID · SIMPLIFIED

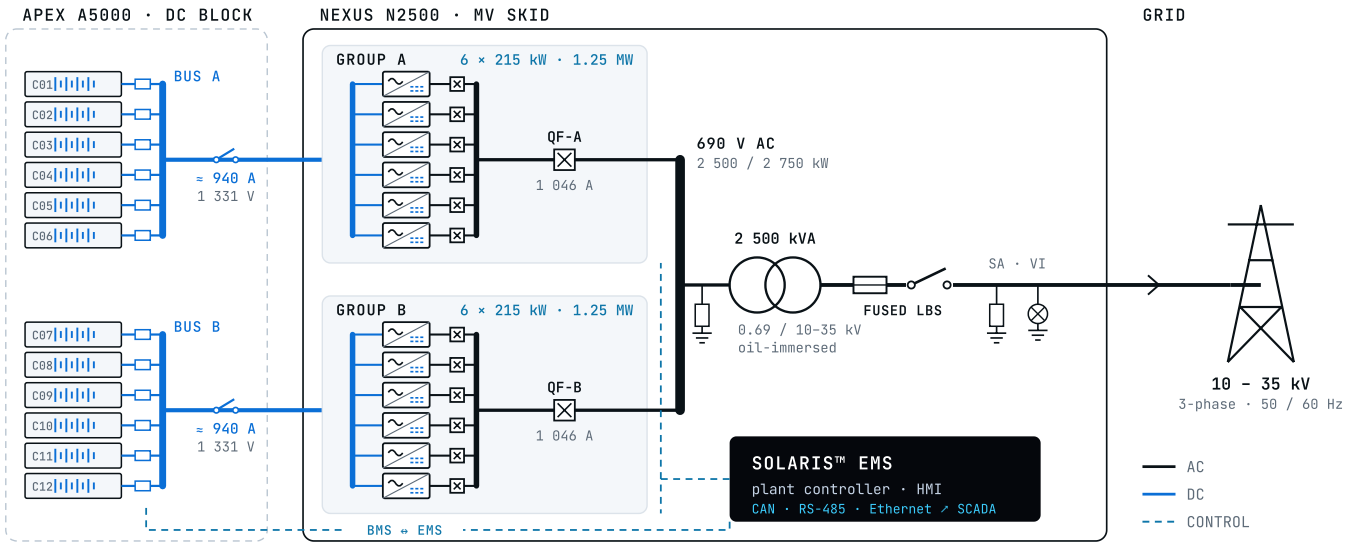
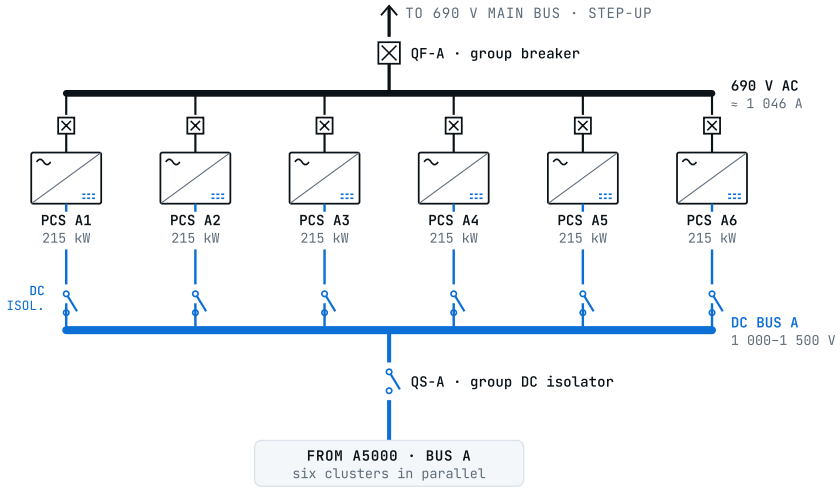


FIG 04-2 · ONE 1.25 MW GROUP

GROUP A SHOWN · GROUP B IDENTICAL



PER GROUP

× 2

Rated power	1 250 kW
Converters	6 × 215 kW
DC source	A5000 bus A / B
DC voltage	1 000 – 1 500 V
DC current	≈ 940 A at 1 331 V
Per converter, DC	≤ 206 A
AC current, 690 V	≈ 1 046 A
Per converter, AC	≈ 180 A
Isolation	QF group · QS DC

MV CURRENT AT 2 500 KVA

A

11 kV	131 A
22 kV	66 A
33 kV	44 A

ISOLATION

TWO LEVELS

Per converter: an AC breaker on the 690 V side and a DC isolator on the bus side, so one module comes out alone.

Per group: QF on the AC side and QS on the DC side take a whole 1.25 MW group out while the other runs.

READING THE FIGURES

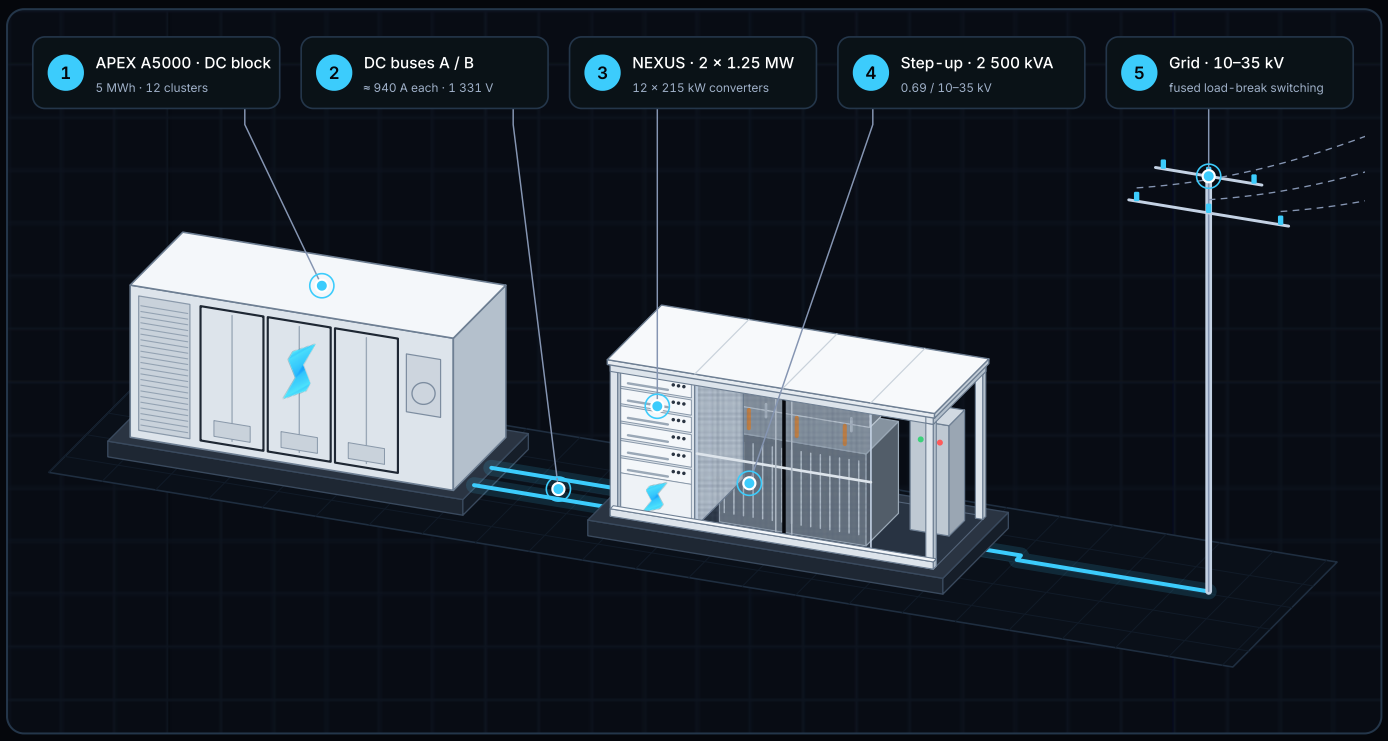
Currents are calculated at rated power and unity power factor; cluster voltage is the A5000 nominal of 1 331 V.

Protection devices are indicative. The project single-line diagram fixes ratings and settings.

05 · IN THE PLANT

One NEXUS, one APEX A5000. Every plant is a count of them.

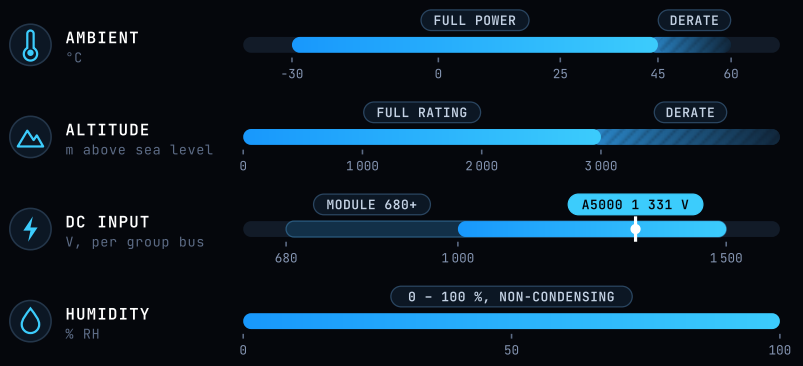
5 MWh behind 2.5 MW: the A5000's two DC buses feed the NEXUS's two groups. Larger plants add pairs on an MV collector, under one Solaris controller.



2 500 kW	5016 kWh	1.94 h	2 × 6
RATED, 2 750 MAX	RATED, 12 × 418 KWH	AT 2.5 MW · USABLE, BOL	DC BUSES × CONVERTERS

FIG 05-2 · OPERATING ENVELOPE

FULL · DERATED · WINDOW



PLANT SCALING

MV CURRENT, A

BLOCKS	POWER	ENERGY	11 KV	22 KV	33 KV
1	2.5 MW	5.0 MWh	131	66	44
2	5.0 MW	10.0 MWh	262	131	87
4	10.0 MW	20.1 MWh	525	262	175
8	20.0 MW	40.1 MWh	1 050	525	350
20	50.0 MW	100.3 MWh	2 624	1 312	875

Calculated at rated power, unity power factor. Grey: collector current that favours a higher voltage.

01

One controller

Solaris™ EMS dispatches every block against tariff, demand limit and the grid agreement.

02

Open protocols

Modbus TCP / RTU to SCADA, IEC 60870-5-104 and IEC 61850 to the utility.

03

Grid duties

Power factor, export limits and grid-forming support held as constraints at the point of connection.

06 · NEXT STEPS

From grid offer to energised.

06

Four steps from your site data to a block on the grid. We size the plant to the connection you have and the dispatch you need.

01
Site & grid data
Grid connection offer, twelve months of interval data, tariff and a site plan.

02
Technical solution
Block count, NEXUS layout, single-line diagram and the dispatch case.

03
Delivery
Factory-integrated NEXUS and A5000, tested before dispatch, set on prepared plinths.

04
Energise
Terminations, grid-code tests, then Solaris™ EMS takes over dispatch.

WHAT TO SEND 01

- Grid connection offer and NMD
- 12 months of 30-minute interval data
- Tariff and demand-charge schedule
- Site location and plinth area
- The dispatch you need: hours, peaks, backup

WHAT YOU RECEIVE 02

- Preliminary technical solution
- Single-line diagram and general arrangement
- Datasheets and PCS module certificates
- Dispatch model on your own load data
- Offer with warranty terms

THE RANGE ONE FAMILY

APEX A1000 – A6250
Containerised battery storage

APEX A5000
5 MWh DC block · pairs with NEXUS

NEXUS N2500
2.5 MW medium-voltage skid

Solaris™ EMS
Plant controller and dispatch

TALK TO US

info@amproteq.energy

+27 82 552 6696 · amproteq.energy

AMPROTEQ (Pty) Ltd
Agone House, 2nd Floor, 53 Adriana Crescent
Gateway Industrial Park, Centurion 0157, South Africa

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