



# NHOA

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# E N E R G Y

Datasheet

NHEXUS

NHEXUS\_006\_UL\_TD\_GEN

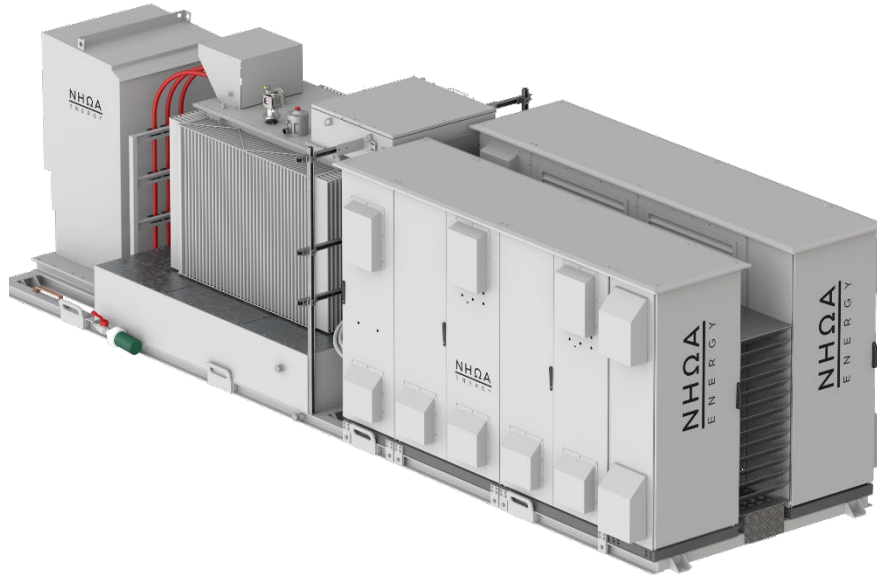
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## 1. GENERAL OVERVIEW

**NHEXUS** is NHOA Energy's advanced high-density MV/LV all-in-one Power Conversion station. It combines DC-to-MV conversion with auxiliary distribution and Power Plant Controller integration, enabling the decentralized and seamless management of NHOA Energy's proprietary PROPHET control platform.

With its modular design and inherent flexibility, NHEXUS perfectly fits every utility-scale application combining the highest plant safety requirements with minimized logistic and installation cost.



+ **Perfect matching:** designed to fit NHOA products and pre-integrated 3<sup>rd</sup> party battery technology

+ **High-density footprint:** by integrating MV switchgear, MV transformer, PCS, Control platform and Auxiliary distribution in the same baseplate

+ **Easy O&M:** designed to ensure operators safety and optimize its integration into existing networks and systems

+ **Enhanced safety:** built with upwards gas discharge, natural ester oil, DMCR and integrated oil collection tank with fire suppression trap

+ **Maximum flexibility:** different configurations available to optimize BESS sizing according to project specific requirements

+ **Global compliance in different markets:** engineered to meet local MV & LV standards and flexibility to comply with most relevant grid codes worldwide

## 2. TECHNICAL SPECIFICATION

### AC features / grid interface

Operating voltage	Up to 34.5 kV <sup>1)</sup>
Rated current @ 4 MVA	67 A
Rated current @ 4.4 MVA	74 A
Grid frequency	60 Hz
AC output power @40°C	4.4 MVA
AC output power @50°C	3.9 MVA
Maximum inverter efficiency	99.0 %
Maximum total efficiency	98.1 % <sup>2)</sup>
Short-time withstand current	25 kA (3s)
Internal arc classification	IAC A FLR 25kA (1s)

### DC features / battery interface

Maximum DC voltage	1500 Vdc
Minimum DC voltage	850 ÷ 1200 Vdc <sup>3)4)</sup>
Nominal total DC Current (@1300 Vdc)	3140 A
Withstanding DC short circuit current (per DC input)	250 kA
Number of separate DC inputs	2 or 4

### Electrical protections & disconnection devices

AC	Ring Main Unit 50, 50N, 51, 51N Transformer Surge Protection Device <sup>5)</sup>
DC	Insulation Monitoring Device Surge Protection Device - Type I DC-switch disconnector Fuses
Aux	Surge Protection Device - Type I + II Circuit Breaker

### Safety features

Transformer type	Hermetically sealed KNAN
DMCR	Y
Pressure Release Valve	Y
Oil retention tank (on the skid)	Y, 110% of the oil volume
Fire Trap	Y
Oil extraction system	Y
Rainwater extraction system	Y
Rainwater filter against hydrocarbons	Y

## Environmental data

Operating ambient temperature range at rated power	-4°F ÷ 104 °F
Operating ambient temperature range	-4°F ÷ 122 °F <sup>6)</sup>
Humidity range external	5 % ÷ 100 %
Pollution degree	PD4
Maximum altitude	3281 ft (without derating)
Seismic qualification	High performance level (ZPA=1.0g) according to IEEE693-18
Wind speed resistance	134 mph

## General Data

Type of installation	Outdoor
Painting Treatment (ISO 12944-2018)	C3-H (optional: C5-H)
Material baseplate and tank	S235JR
Dimensions W x D x H	303 x 87 x 90 in
Total weight	41900 lb
Protection degree	NEMA3R
Rated aux voltage - Main	480 VAC 3PH
Rated aux voltage - Essential	480 VAC 3PH or 208 VAC 3PH
Sound pressure level (LpA) at rated power	< 80 dBA @ 3.28 ft
Communication	Modbus TCP / Profinet

## Reference standards

MV Switchgear	C37 <sup>7)</sup>
MV/LV Transformer	C57 <sup>7)</sup>
Inverter	UL 1741SB
Control and Distribution cabinets	UL 508A <sup>7)</sup> / UL891 <sup>7)</sup>

## Notes:

<sup>1)</sup> MV voltage tolerance ± 10%

<sup>2)</sup> Including auxiliary consumption and ECO Design transformer efficiency

<sup>3)</sup> Minimum DC voltage will be derated in accordance to the rated AC voltage

<sup>4)</sup> Consult NHQA Energy to receive minimum DC voltage value for one specific model

<sup>5)</sup> Optional, discharge counter also available on request

<sup>6)</sup> Optional extended temperature range -40°C ÷ 50°C (-40°F ÷ 122°F)

<sup>7)</sup> Only the applicable parts of the series are considered

# CONTACT US

## Legal Seat

Piazzale Lodi, 3 - 20137 Milan - Italy

## Business Office

Via Livorno, 60 - 10144 Turin - Italy

## Industrial Plant

Via Dei Boschi Vecchi, 23013 Cosio Valtellino, Sondrio - Italy

## NHOA Taiwan

No. 113, Sec. 2, Zhongshan North Road, Zhongshan Dist., Taipei, Taiwan

## NHOA Australia

Tower One - International Towers, Sydney' L 46, 100 BARANGAROO AV., BARANGAROO NSW 2000, Australia

## NHOA Americas

251 Little Falls Drive, Wilmington, DE 19808, New Castel County, USA

## NHOA Latam

Av. Alvarez Calderon, 185 - San Isidro, Lima, Peru

## NHOA UK

WSM, Connect House 133-137, Alexandra Road, Wimbledon, London, SW19 7JY, United Kingdom



[nhoa.energy](http://nhoa.energy)



+39 02 49541830



[info@nhoa.energy](mailto:info@nhoa.energy)

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