

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-ZE-12024-01-00 according to DIN EN ISO/IEC 17065:2013

Valid from: 12.04.2024

Date of issue: 12.04.2024

Holder of accreditation certificate:

Bureau Veritas Consumer Products Services Germany GmbH
Mettenheimerstraße 12-14, 19061 Schwerin

with the location:

Businesspark A96
86842 Türkheim

The certification body meets the requirements of DIN EN ISO/IEC 17065:2013 to carry out the conformity assessment activities listed in this annex. The certification body meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17065 are written in the language relevant to the operations of certification bodies and confirm generally with the principles of DIN EN ISO 9001.

Certification of products, processes and services in the areas of:

- 1 Grid Integration of Power Generating Units, -plants and storage systems 2**
- 2 Electrical safety of generating units, generating systems, electrical storage systems and their components in the field of renewable energy and charging infrastructure, including the classification of environmental conditions 4**

Without previous information and agreement of the DAkkS, the certification body is allowed to use within the accreditation fields marked with * different revisions of the herewith specified certification schemes and related documents.

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

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1 Grid Integration of Power Generating Units, -plants and storage systems

Products:

- Grid-tied and islanding inverters (primary source photovoltaic, wind, water, fuel cell, battery etc.)
- Storage systems
- Bidirectional-chargers and charging stations (external or integrated in vehicles)
- Electric generators and power generators
- direct or inverter coupled generators for Combined heating and power stations (CHP)
- direct or inverter coupled generators for Organic Rankine Cycle (ORC) Systems
- Power plant controller

NSOP-0032-DEU-ZE-ES-V10 Zertifizierungsprogramm Netzintegration 2023-08	Certification program: Net Integration of Power Generating Units, -plants and storage systems in the Low-, Medium-, High- and Extra-High-voltage grids
FGW TR 8* Rev. 9:2019	Certification of the Electrical Characteristics of Power Generating Units, Systems as well as their components on the grid

On the basis of:

Germany	
FGW TR 8* Rev. 9:2019	Certification of the Electrical Characteristics of Power Generating Units, Systems as well as their components on the grid
FGW TR4* Rev. 10:2022	Technical Guidelines for Generating Units Part 4: Requirements for modeling and validating simulation models of the electrical properties of generating units and installations
Spain	
PVVC* Rev. 11: 2018 Rev. 10: 2012 Rev. 09:2011	Procedimientos de verificación, validación y certificación de los requisitos del PO 12.3 y PO12.2 sobre la respuesta de las ubstalaciones eólicas y fotovoltaicas ante huecos de tensión. <i>Procedures for verification, validation and certification of the requirements of PO 12.3 and PO12.2 on the response of wind and photovoltaic installations to voltage gaps.</i>
NTS SEPE* Rev. 2.1:2021 Rev. 2.0:2020 Rev. 1.0:2019	Norma técnica de supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016-631 (El tipo de producto certificado y las actividades de evaluación se detallan en el Cuadro 1) <i>Technical standard for monitoring the compliance of electricity generation modules according to EU Regulation 2016/631 (The</i>

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	<i>certified type of product and the assessment activities are detailed in Table 1 below)</i>
NTS SENP* Rev. 1.1: 2021 Rev. 1:2019	Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP (El tipo de producto certificado y las actividades de evaluación se detallan en el Cuadro 1) <i>Technical standard for monitoring the compliance of power generating modules according to P.O. 12.2 SENP (The certified type of product and the assessment activities are detailed in Table 1 below)</i>
Anexo de la NTS* Rev. 1.0: 2021	Anexo sobre los subapartados 5.6, 5.9 y 5.10 de la versión 2.1 (del 9/7/2021) de la NTS <i>Annex on subsections 5.6, 5.9 and 5.10 of version 2.1 (of 9/7/2021) of the NTS</i>
Poland	
Roga (PSE NC RfG) * 2018	Wymogi ogólnego stosowania wynikające z Rozporządzenia Komisji (UE) 2016/631 z dnia 14 kwietnia 2016 r. ustanawiającego kodeks sieci dotyczący wymogów w zakresie przyłączenia jednostek wytwórczych do sieci (NC RfG) <i>The general operational requirements resulting from Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (hereinafter referred to as NC RfG)</i>
EqC PTPiREE* V1.2:2021 V1.1:2020	Wdrożenie wymogów wynikających z zapisów Rozporządzenia Komisji (UE) 2016/631 z dnia 14 kwietnia 2016 r. ustanawiającego kodeks sieci dotyczący wymogów w zakresie przyłączenia jednostek wytwórczych do sieci Warunki i procedury wykorzystania certyfikatów w procesie przyłączenia modułów wytwarzania energii do sieci elektroenergetycznych <i>Implementation of the requirements under the Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators</i> <i>Conditions and procedures for the use of certificates in the process of connecting power-generating modules to power networks</i>
specific grid regulations	
FORM-0764-DEU-ZE-ES 2023-08	grid code compliance list: for connection guidelines/standards see Normenliste D-ZE-12024-01-00

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2 Electrical safety of generating units, generating systems, electrical storage systems and their components in the field of renewable energy and charging infrastructure, including the classification of environmental conditions

Products:

- Grid-tied and islanding inverters (primary source photovoltaic, wind, water, fuel cell, battery etc.)
- Storage systems, Battery Management System (BMS) and Batteries
- charger and charging stations (external or integrated in vehicles)
- Uninterruptible power systems (UPS)
- Network and system protection units (NS-protection)
- Low-voltage switchgear and combinations as electrical connection and distribution devices
- Communication, control and control system boxes / devices
- Photovoltaic Tracking-Systems
- MPPT DC/DC Converter
- Power to gas (f.e. inverter for Electrolysis of water)
- Power plant controller

NSOP-0038-DEU-ZE-ES-V02 Zertifizierungs-programm Elektrische Sicherheit 2023-08	Certification of electrical safety of equipment, units and their components for the generation, storage and distribution of renewable energies, including classification of environmental conditions
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On the basis of:

FORM-0759-DEU-ZE-ES 2023-08	Electrical safety list Normenliste D-ZE-12024-01-00
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FORM-0760-DEU-ZE-ES 2023-08	classification of environmental conditions / simulation list Normenliste D-ZE-12024-01-00
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FORM-0758-DEU-ZE-ES 2023-08	Certification of Batteries list Normenliste D-ZE-12024-01-00
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Anexo I

Annex I

ALCANCE DE LA ACREDITACIÓN

SCHEDULE OF ACCREDITATION

Detalles sobre el tipo de producto y las actividades de evaluación para la certificación según las normas NTS españolas:

Details on type of product and the assessment activities for the certification according to the Spanish NTS standards:

Tipo de producto <i>Type of product</i>	Sistema de certificación y base para la evaluación actividades <i>Certification scheme and basis for the assessment activities</i>	Requisitos de certificación <i>Certification requirements</i>
<p>Grupos electrógenos y componentes adicionales (por ejemplo STATCOM o controlador centrales eléctricas), plantas generadoras y sistemas de almacenamiento de energía para energía eólica fotovoltaica y otras energías (por ejemplo, cualquier potencia síncrona sincrónicos).</p> <p><i>Power generating units and additional components (e.g. STATCOM or power plant controller), generating plants and energy storage systems for wind energy, photovoltaics and other energies (e.g. any synchronous power generating modules).</i></p>	<p>Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631, as listed above (NTS-631).</p> <p><i>Technical standard for monitoring of conformity of electricity generation modules according to EU Regulation 2016/631, as listed above (NTS-631).</i></p> <hr/> <p>Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP.</p> <p><i>Technical standard for monitoring the conformity of electricity generation modules according to P.O. 12.2 SENP</i></p>	<p>Requisitos de certificación planteados en el capítulo 5 (como se detalla a continuación) y siguiendo los procedimientos definidos en el capítulo 4 del esquema de certificación para la conexión a la red de los tipos de producto definidos.</p> <p><i>Certification requirements raised within chapter 5 (as detailed below) and following the procedures defined in chapter 4 of the stated certification scheme regarding the grid connection of the defined product types.</i></p>
Tipo de producto <i>Type of product</i>	Sistema de certificación y base para la evaluación actividades	Requisitos de certificación <i>Certification requirements</i>

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	<i>Certification scheme and basis for the assessment activities</i>	
	<p>Tal como se define en la tabla 1 de la NTS-631, así como en la tabla 1 de la NTS SENP, la base para la certificación pueden ser los ensayos correspondientes, las declaraciones del fabricante, las simulaciones o los certificados de equipos y/o componentes adecuados. Esto incluye la realización de simulaciones complementarias si es necesario.</p> <p>As defined in table 1 of NTS-631 as well as table 1 of NTS SENP, the basis for the certification could be corresponding tests, manufacturer declarations, simulations or appropriate equipment and / or component certificates. This includes performing complementary simulations if required.</p>	<p>Limited Frequency Sensitive ModeOverfrequency (LFSM-O)</p> <p>Limited Frequency Sensitive ModeUnderfrequency (LFSM-U)</p> <p>Frequency Sensitive Mode (FSM)</p> <p>Power-frequency control capability</p> <p>Capability to limit the production up and down ramps</p> <p>Active power control capability and range</p> <p>Synthetic Inertia</p> <p>Reactive power capability at maximum capacity and below maximum capacity</p> <p>Reactive power control in PPM</p> <p>Power oscillations damping for SPGM</p> <p>Power oscillations damping for PPM</p> <p>Robustness requirements: Active power recovery after a fault, fault ride through capability, transient overvoltage and fast fault current injection</p> <p>Black start</p> <p>Island operation</p> <p>Fast re-synchronization</p>