Deutsche Akkreditierungsstelle

Anlage zur Teil-Akkreditierungsurkunde D-ZE-12007-01-02 nach DIN EN ISO/IEC 17065:2013

Gültig ab: **01.03.2024**

Ausstellungsdatum: 01.03.2024

Diese Urkundenanlage ist Bestandteil der Akkreditierungsurkunde D-ZE-12007-01-00.

Inhaber der Teil-Akkreditierungsurkunde:

TÜV NORD CERT GmbH
Am TÜV 1, 45307 Essen

mit dem Standort

TÜV NORD CERT GmbH
Am TÜV 1, 45307 Essen

Die Zertifizierungsstelle erfüllt die Anforderungen gemäß DIN EN ISO/IEC 17065:2013, um die in dieser Anlage aufgeführten Konformitätsbewertungstätigkeiten durchzuführen. Die Zertifizierungsstelle erfüllt gegebenenfalls zusätzliche gesetzliche und normative Anforderungen, einschließlich solcher in relevanten sektoralen Programmen, sofern diese nachfolgend ausdrücklich bestätigt werden.

Die Anforderungen an das Managementsystem in der DIN EN ISO/IEC 17065 sind in einer für Zertifizierungsstellen relevanten Sprache verfasst und stehen insgesamt in Übereinstimmung mit den Prinzipien der DIN EN ISO 9001.

Zertifizierungen von Produkten, Prozessen und Dienstleistungen in den Bereichen:

Typen- und Projektzertifizierung von On- und Offshore Windenergieanlagen und deren Komponenten, Condition Monitoring Systemen, Klein- und Mikro- Windenergieanlagen

Zertifizierung der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen und deren Komponenten in Bezug auf Netzintegration und Systemdienstleistungen bei dezentraler Erzeugung

Anlage zur Teil-Akkreditierungsurkunde D-ZE-12007-01-02

Typzertifizierung von Anlagen und Komponenten der Netzanschlussinfrastruktur

Innerhalb der mit * gekennzeichneten Akkreditierungsbereiche ist der Zertifizierungsstelle - ohne dass es einer vorherigen Information und Zustimmung der DAkkS bedarf - die Anwendung der hier aufgeführten Zertifizierungsprogramme/Anforderungsdokumente mit unterschiedlichen Ausgabeständen gestattet. Die Zertifizierungsstelle verfügt über eine aktuelle Liste aller Dokumente im Akkreditierungsbereich.

Typen- und Projektzertifizierung von On- und Offshore Windenergieanlagen und deren Komponenten

P20-VA-002, Rev. 18 2020-02	Type Certification of Wind Turbines and Components	
P20-001, Rev. 1 2013-10	TÜV NORD Standard for the certification of wind turbines	
P20-VA-004, Rev. 5 2020-01	Project certification (here: wind plants)	
P20-VA-006, Rev. 0 2017-08	Other Certifications Wind Energy	
IEC 61400-22 ed. 1.0 2010-05	Wind turbines - Part 22: Conformity testing and certification of wind turbines *(zurückgezogener Standard)*	*
IEC WT 01 2001-04	IEC-system for the conformity testing and certification of wind *(zurückgezogener Standard)*	
IECRE OD-501 2018-05	Type and Component Certification Scheme	*
IECRE OD-502 2018-10	Project Certification Scheme	*
Germanischer Lloyd (GL) 2010	Richtlinie für die Zertifizierung von Windenergieanlagen Guideline for the Certification of Wind Turbines	*

Germanischer Lloyd (GL) 2003 with supplement 2004	Richtlinie für die Zertifizierung von Windenergieanlagen Guideline for the Certification of Wind Turbines	*
Germanischer Lloyd (GL) 2005 & 2012	Richtlinie für die Zertifizierung von Windenergieanlagen Guideline for the Certification of Offshore Wind Turbines	*
DNVGL-SE-0263 2016-03	Certification of Lifetime Extension	*
DNVGL-SE-0441 2016-06	Type and Component Certification of Wind Turbines	*
DNVGL-SE-0190 2015-12	Project Certification of Wind Power Plants	*
Danish Klima-, Energi- og Bygningministeriet 2013-01	Bekendtgørelse number 73, "Bekendtgørelse om teknisk"* certificeringsordning for vindmøller". Instruction for the certification program for the design, manufacture, maintenance, service and installation of wind turbines (Executive Order on a Technical Certification Scheme for Wind Turbines)	*
IS/IEC 61400-22 2018-06	Wind turbines – Part 22: Conformity testing and certification	
C-WET 2003	Preliminary type certification program 2000 (TAPS-2000, amended 2003)	*
DIBt 2012-10	German Institute for Structural Engineering (DIBt) „Guideline for Wind Turbine"	*
German Federal Maritime and Hydrographic Agency (BSH) 2015-07	Standard: Constructional realization of offshore wind turbines, BSH 7005, including amendments	*

WSV-Rahmenvorgaben, Version 3.0 2019-07	WSV-Rahmenvorgaben, Kennzeichnung Offshore-Anlagen	*

Oben genannte Zertifizierungsprogramme auf Basis von:

IEC 61400-1 1999-02 Ed. 2.0	Wind Turbine Generator Systems -Part 1: Safety Requirements *(zurückgezogener Standard)*	*
IEC 61400-1 2005-08 Ed 3.0	Wind Turbines- Part 1: Safety Requirements *(zurückgezogener Standard)*	*
IEC 61400-1-am1 2010-10 Ed. 3	Amendment 1 - Wind turbines - Part 1: Design requirements *(zurückgezogener Standard)*	*
IEC 61400-1 2019-02 Ed 4.0	Wind Turbines- Part 1: Design Requirements	*
IEC 61400-3 2009-02 Ed. 1.0	Wind Turbine Generator Systems - Part 3: Design Requirements for Offshore Wind Turbines *(zurückgezogener Standard)*	*
IEC 61400-3-1 2019-04	Wind energy generation systems - Part 3-1: Design requirements for fixed offshore wind turbines	*
IEC TS 61400-3-2 2019-04	Wind energy generation systems - Part 3-2: Design requirements for floating offshore wind turbines	*
IEC 61400-4 2012-12 Ed. 1.0	Wind turbines - Part 4: Design requirements for wind turbine gearboxes	*
IEC 61400-5 2020-03 (FDIS)	Wind energy generation systems - Part 5: Wind turbine rotor blades	*
IEC 61400-6 2020-04	Wind energy generation systems - Part 6: Tower and foundation design requirements	*

IEC 61400-23 2014-04 Ed. 1	Wind Turbine Generator Systems - Part 23: Full-scale structural testing of rotor blades	*
IEC 61400-24 2010-06 Ed. 1.0	Wind Turbine Generator Systems - Part 24: Lightning Protection	*
IECRE OD-501-1 2017-09	Conformity assessment and certification of Blade by RECB	*
IECRE OD-501-2 2017-09	Conformity assessment and certification of Gearbox by RECB	*
IECRE OD-501-3 2017-09	Conformity assessment and certification of Tower by RECB	*
IECRE OD-501-4 2017-04	Conformity Assessment and Certification of Loads by RECB's	*
IECRE OD-501-5 2017-09	Conformity assessment and certification of Control and Protection System by RECB	*
IECRE OD-501-7 2019-03	Conformity assessment and certification of Main Electrical Components by RECB	*
UL 6141 2016-05	Wind turbines permitting entry of personnel	*
Germanischer Lloyd (GL) 2013-09	Technical Note for the Certification of Wind Turbines for tropical Cyclones	*
DNVGL-ST-0376 2015-12	Rotor blades for wind turbines	*
DNVGL-ST-0438 2016-04	Control and protection systems for wind turbines	*
DNVGL-ST-0076 2015-05	Design of electrical installations for wind turbines	*
DNVGL-ST-0126 2016-04	Support structures for wind turbines	*
DNVGL-ST-0262 2016-03	Life Time Extension of Wind Turbines	*

DNVGL-ST-0054 2017-06	Transport and installation of wind power plants	*
Det Norske Veritas (DNV) 2013	OS-J101: Design of Offshore Wind Turbine Structures (Entwicklung von Offshore - Windenergieanlagen)	*
Det Norske Veritas (DNV) 2010	OS-J102: Design and manufacture of wind turbine blades, offshore and onshore wind turbines	*
Det Norske Veritas (DNV) 2009	OS-J201: Offshore substations for wind farms	*
DNVGL-ST-0145 2016-04	Offshore Substations	*
DNVGL-ST-0437 2016-11	Loads and Site Conditions for Wind Turbines	*
DNVGL-ST-0361 2016-09	Machinery for Wind Turbines	*
DNVGL-ST-0359 2016-06	Subsea Power Cables for Wind Power Plants	*
DNVGL-SE-0436 2016-03	Shop Approval in Renewable Energy	*
German Federal Maritime and Hydrographic Agency (BSH) 2008-02	Standard - Baugrunderkundung für Offshore-Windenergieparks, BSH 7004	*
MVVTB 2019-01	Deutsches Institut für Bautechnik (DIBt): „Muster-Verwaltungsvorschrift Technische Baubestimmungen“ (nur Bereich Windenergie)	*
DIN EN 50308 2005-03	Wind turbines - Protective measures - Requirements for design, operation and maintenance	*

DIN EN 50308 Correction 1 2008-12	Wind turbines - Protective measures - Requirements for design, operation and maintenance	*
DIN 18088-1 2019-01	Structures for wind turbines and platforms - Part 1: Basic principles and actions	*
DIN 18088-2 2019-01	Structures for wind turbines and platforms - Part 2: Concrete structures	*
DIN 18088-3 2019-01	Structures for wind turbines and platforms - Part 3: Steel structures	*
DIN 18088-4 2019-01	Structures for wind turbines and platforms - Part 4: Soil and foundation elements	*
GL Technical Note 067 Ed. 2013	Certification of Wind Turbines for Extreme Temperatures (here: Cold Climate), Scope of Assessment, Revision 5	*
DNVGL-RP-0175 2017-12	Icing of Wind Turbines	*
DNVGL-RP-0363 2016-04	Extreme Temperature Conditions for Wind Turbines	*

Condition Monitoring Systeme

P20-AA-13, Rev. 2 2017-08	Certification of condition monitoring Systems for wind turbines	
Germanischer Lloyd (GL) 2007 & 2013	Guideline for the certification of condition monitoring systems for wind turbines	*
DNVGL-SE-0439 2016-06	Certification of Condition Monitoring	*

Klein- und Mikro-Windanlagen

P20-AA-14, Rev. 1 2011-02	Certification of Small Wind Turbines Zertifizierung kleiner Windenergieanlagen
IEC 61400-2 2006-03 Ed. 2.0	Wind Turbine Generator Systems -Part 2: Safety of Small Wind Turbines
IEC 61400-2 2013-12 Ed. 3.0	Wind Turbine Generator Systems -Part 2: Safety of Small Wind Turbines
MCS 006, Issue 1.5 2009-07	Product Certification Scheme Requirements: Micro and Small Wind Turbines, DECC (Department of Energy and Climate Change), UK 2009 (Produktzertifizierungsanforderungen: Klein- und Mikro-Windenergieanlagen, DECC, UK 2009)
MCS 010, Issue 1.5 2009-12	Product Certification Scheme Requirements: Factory Production Control Requirements, DECC UK 2008 (Produktzertifizierungsanforderungen: Anforderungen an Kontrollen von Fertigungsstätten, DECC, UK 2008)
MCS 011, Issue 1.4 2009-01	Product Certification Scheme Requirements: Acceptance Criteria for Testing Required for Product Certification, DECC UK 2008 (Produktzertifizierungsanforderungen: Annahmekriterien für zur Produktzertifizierung erforderliche Prüfungen, DECC, UK 2008)
BWEA Standard 2008-02	Small Wind Turbine Performance and Safety Standard (Leistung und Sicherheit kleiner Windenergieanlagen, Standard)
AWEA Standard 9.1 2009	Small Wind Turbine Performance and Safety Standard (Leistung und Sicherheit kleiner Windenergieanlagen, Standard)

Zertifizierung der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen und deren Komponenten in Bezug auf Netzintegration und Systemdienstleistungen bei dezentraler Erzeugung

P30VA01 2019-07	Verfahrensanweisung zur Netzanschlusszertifizierung	

in Verbindung mit den nachfolgend aufgelisteten Anforderungs- und Grundprüfnormen:

VDE AR-N 4105 2018-11	Erzeugungsanlagen am Niederspannungsnetz - Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz	*
VDE-AR-N 4110 2018-11	Technische Regeln für den Anschluss von Kundenanlagen an das Mittelspannungsnetz und deren Betrieb (TAR Mittelspannung)	*
VDE-AR-N 4120 2018-11	Technische Regeln für den Anschluss von Kundenanlagen an das Hochspannungsnetz und deren Betrieb (TAR Hochspannung)	*
VDE-AR-N 4130 2018-11	Technische Regeln für den Anschluss von Kundenanlagen an das Höchstspannungsnetz und deren Betrieb (TAR Höchstspannung)	*
FGW TR 3, Rev. 24 2016-03	Technische Richtlinien für Erzeugungseinheiten und -anlagen - Teil 3 Bestimmung der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen am Mittel-, Hoch- und Höchstspannungsnetz	*
FGW TR 4, Rev. 8 2016-03	Technische Richtlinien für Erzeugungseinheiten und -anlagen - Teil 4 Anforderungen an Modellierung und Validierung von Simulationsmodellen der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen	*
FGW TR 8, Rev. 8 2016-12	Technische Richtlinien für Erzeugungseinheiten und -anlagen - Teil 8 Zertifizierung der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen am Nieder-, Mittel-, Hoch- und Höchstspannungsnetz	*
DIN VDE V 0124-100 2012-07	Netzintegration von Erzeugungsanlagen - Niederspannung - Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und Parallelbetrieb am Niederspannungsnetz	*
VDE FNN 2010-02	Lastenheft Blindleistungsrichtungs-Unterspannungsschutz (Q-U-Schutz)	*
VDE FNN 2012-06	Technische Anforderungen an die automatische Frequenzentlastung	*
VDE FNN 2009-09	Leitfaden zum Einsatz von Schutzsystemen in elektrischen Netzen	*

VDE/FNN 2013-06	Technische Hinweise: Ausschluss und Betrieb von Speichern am Niederspannungsnetz	*
SDLWindV 2015-02	Verordnung zu Systemdienstleistungen durch Windenergieanlagen Systemdienstleistungsverordnung - SDLWindV	
TransmissionCode 2007-08	TransmissionCode 2007 Netz- und Systemregeln der deutschen Übertragungsnetzbetreiber	*
BDEW-TR 2008-06	Technische Richtlinie Erzeugungsanlagen am Mittelspannungsnetz Richtlinie für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Mittelspannungsnetz mit der 4. Ergänzung (gültig ab 01.01.2013)	*
GL 065 2005-06	GL Wind-Leitfaden 065 Netzanschlusseigenschaften von Windenergieanlagen nach Netzanschlussregeln (NAR) Zertifizierungsverfahren	
GL 066 2005-06	GL Wind-Leitfaden 066 Netzanschlusseigenschaften von Windenergieanlagen nach Netzanschlussregeln (NAR), Durchfahren von Spannungseinbrüchen (LVRT), Testverfahren	
DNVGL-SE-0124 2016-03	Certification of grid code compliance	
DNVGL-ST-0125 2016-03	Grid code compliance	
NETWORK CODE (EU) 2016/631 2016-04	COMMISSION REGULATION (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators	
IEC 61400-21 2008-08	Wind Turbine Generator Systems Part 21: Measurement and assessment of power quality characteristics of grid connected wind turbines	*
IEC 61400-27-1 2015-02	Windenergieanlagen -Teil 27-1: Elektrische Simulationsmodelle für die Erzeugung von Windenergie	
PVVC, Version 10 2012-01	Asociacon Empresarial Eolica PVVC, Version 10 Procedures for Verification and Certification of the Requirements of the PO 12.3 on the Response of Wind Farms and Photovoltaic Plants in the Event of Voltage Dips	

Spanish Grid Code 2018-09	Porcedimientos de verificación, validación y certification para los requisites del P.O.12.3 y P.O.12.2 senp sobre la respuesta de las instalaciones eólicas y fotovoltaicas ante huecos de tension (Verification, validation and certification procedures for the requirements of P.O.12.3 and P.O.12.2 sent on the response of wind and photovoltaic installations to voltage gaps)	
G59/3 Issue 3, amendment 2 2015-09	Engineering Recommendation G59/3 Energy Networks Association: Recommendations for the connection of generating plant to the distribution systems of licensed distribution network operators	
G59/3 Issue 3, amendment 3 2018-02	Engineering Recommendation G59/3 Energy Networks Association: Recommendations for the connection of generating plant to the distribution systems of licensed distribution network operators	
G59/3 Issue 3, amendment 4 2018-07	Engineering Recommendation G59/3 Energy Networks Association: Recommendations for the connection of generating plant to the distribution systems of licensed distribution network operators	
G83/1 Issue 1, amendment 1 2008-06	Engineering Recommendation G83/1 Energy Networks Association: Recommendations for the Connection of Small-scale Embedded Generators (Up to 16 A per Phase) in Parallel with Public Low-Voltage Distribution Networks	
G99/1-3 Issue 1, amendment 3 2018-05	Engineering Recommendation G99/1 Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019	
G99/1 Issue 1, amendment 3 2018-12	Engineering Recommendation G99/1 Modification to incorporate the Integrated Micro Generation and Storage procedure (otherwise known as the energy storage fast track procedure) into EREC G98 and G99	
G99/1 Issue 1 Amendment 6 2020-03	Engineering Recommendation G99/1 Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019	*
UK Grid Code 2016-02	The Grid Code – Issue 5, Revision 15	

AS 4777.1 2016-09	Grid connection of energy systems via inverters - Part 1: Installation requirements
AS 4777.2 2015-10	Grid connection of energy systems via inverters - Part 2: Inverter requirements
AS 4777.3 2005-05	Grid connection of energy systems via inverters - Part 3: Grid protection requirements
IEEE 1547.1 2005-07	IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems
IEEE 519 2014-03	IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems
RM05-4-001 2005-12	United States of America, Federal Energy Regulation Commission, 18 CFR Part 35, Interconnection for Wind Energy
PRC-024-2 2015-05	Generator Frequency and Voltage Protective Relay Settings
SAGC Version 2.8 2014-07	Grid connection code for renewable power connected to the electricity transmission system the distribution system (DS) in South Africa
SAGC Version 2.6 2013-10	Grid connection code requirements for renewable power plants (RPPs) connected to the transmission system (TS) or the distribution system (DS) in South Africa
NRS 097-2-1 Edition 1 2010	Grid interconnection of embedded generation - Part 2: Small-scale embedded generation - Section 1: Utility interface
GB/T 19964 2012-12	National Standard of Peoples Republic of China: Technical requirements for connecting photovoltaic power station to power system
no.12/X/STD(CONN)/ GM/CEA 2007	Central Electricity Authority, Technical Standard for Connectivity to the Grid, Central Electricity Authority, Indian Grid Code 2007 - Substation
no.12/X/STD(CONN)/ GM/CEA 2013	Central Electricity Authority, Technical Standard for Connectivity to the Grid, Central Electricity Authority, Indian Grid Code 2013 - Generation Units
no.12/X/STD(CONN)/ GM/CEA 2018	Central Electricity Authority, Technical Standard for Connectivity to the Grid, Central Electricity Authority, Indian Grid Code 2018 - Generation Units

Nordic Grid Code 2007-01	Nordel - Nordic Grid Code 2007 (Nordic collection of rules)	
Turkish Grid Code 2014-05	ELEKTRİK PİYASASI ŞEBEKE YÖNETMELİĞİ ("Electricity market grid regulation" incl. Appendix 18 connection criteria required for wind generators (Version 29013)	
Submodule 3.6 Rev. No. 1.1 2010-06	Operador Nacional do Sistema Elétrico, Sub-module 3.6 Requisitos técnicos mínimos para a conexão às instalações de transmissão (National Electrical System Operator of Brasilia, Sub-module 3.6 Minimum technical requirements for connection to transmission facilities)	
EN 50549-1 2019-02	Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B	*
EN 50549-2 2019-02	Requirements for generating plants to be connected in parallel with distribution networks - Part 2: Connection to a MV distribution network - Generating plants up to and including Type 8	*
Austrian Grid Code, TOR Term 2022-04, Version 2.5	The technical and organisational rules for the electricity market	*
OVE-RICHTLINIE R 25 2020-03	Test requirements for generating units (generators) intended for connection and parallel operation to low-voltage distribution networks	*
TOR Erzeuger Typ A 2022-04, Version 1.2	Technical and organizational rules for operators and users of networks - TOR Generator - Connection and parallel operation of type A power generation systems and miniature generation systems (maximum capacity <250 kW and nominal voltage <110 kV)	*
TOR Erzeuger Typ B 2022-04, Version 1.2	Technical and organizational rules for operators and users of networks - TOR Generator - Connection and parallel operation of type B power generation systems (maximum capacity ≥250 kW and <35 MW and nominal voltage <110 kV)	*

TOR Erzeuger Typ C 2022-04, Version 1.2	Technical and organizational rules for operators and users of networks - TOR Generator - Connection and parallel operation of type C power generation systems (Maximum capacity ≥ 35 MW and <50 MW and nominal voltage <110 kV)	*
TOR Erzeuger Typ D 2022-04, Version 1.2	Technical and organizational rules for operators and users of networks - TOR Generator - Connection and parallel operation of type D power generation systems (Maximum capacity ≥ 50 MW or nominal voltage ≥ 110 kV)	*
CEI 0-21:2019 incl. Amendment v1 2020-12, 2019 + V1 2020-12	Reference technical rules for the connection of active and passive users to the LV electrical Utilities	*
CEI 0-16:2019 incl. Amendment V2 2021-06, 2019 + V2 2021-06	Reference technical rules for the connection of active and passive consumers to the HV and MV electrical networks of distribution Company	*
Polish PSE Grid Code 2018-12	Requirements of general application resulting from Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (NC RfG)	*
Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.55 0.2.201821 2019-01	Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.201821 of January 2, 2019 "General application requirements resulting from the EU Commission Regulation 2016/631 of April 14, 2016 establishing a network code on the requirements for connecting generating units to the grid"	*
PTPiREE Code of good practice 2021-04, Version 1.2	Conditions and procedures for the use of certificates in the process of connecting power generation modules to power grids	*

PN-EN 50549-1 2019-02	Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B	*
PN-EN 50549-2 2019-04	Requirements for generating plants to be connected in parallel with distribution networks - Part 2: Connection to a MV distribution network - Generating plants up to and including Type 6	*
IEC 61727 2004-12	Photovoltaic (PV) systems – Characteristics of the utility interface	*
IEC 62116 2014-02	Utility-interconnected photovoltaic inverters – Test procedure of islanding prevention measures	*
CEA:2019	Central Electricity Authority (Technical standard for connectivity to the grid)	*
VDE AR-N 4100 2019-03	Technical rules for connecting customer systems to the low-voltage network and their operation (TAR low voltage)	*
VDE-AR-E 2510-50 2017-05	Stationary energy storage systems with lithium batteries	*
VDE AR-E 2510-2 2021-02	Stationary electrical energy storage systems intended for connection to the low-voltage network	*
IRiESD:2021	Instrukcje Ruchu i Eksploatacji Sieci Dystrybucyjnej	*
G98 issue 1 Amendment 7:2022	Requirements for the connection of Fully Type Tested Micro-generators (up to and including 16 A per phase) in parallel with public Low Voltage Distribution Networks	*
AS/NZS 4777.2:2020	Grid connection of energy systems via inverters, Part 2: Inverter requirements	*
AS/NZS 4777.2:2020 AMD 1:2021	Grid connection of energy systems via inverters, Part 2: Inverter requirements	*

NRS 097-2-1 2017 ed2.1	Grid Interconnection of embedded Generation, Part 2: Small-scale embedded Generation, Section 1: Utility Interface	*
SAGC:2022	Grid Connection Code for Renewable Power Plants (RPPs) Connected to the Electricity Transmission System (TS) or the Distribution System (DS) in South Africa	*
ABNT NBR 16149 2013-03	Photovoltaic (PV) systems - Characteristics of the utility interface	*
ABNT NBR 16150:2013	Photovoltaic (PV) systems - Characteristics of the utility interface - Conformity test procedure	*
Ordinance N0 140:2022	Approves the Technical Regulation on Quality and the Conformity Assessment Requirements for Equipment for Generation, Conditioning and Storage of Electric Energy in Photovoltaic Systems - Consolidated	*
DEWA:2016	Standard for Distributed Renewable Resources Generators connected to the Distribution Network	*
C10/11:2019 ed2.2	Specific Technical Regulations for Electricity Generation Installations Operating in Parallel with the Distribution Network	*
PEA:2016	Thailand Provincial Electricity Authority's Regulation on the Power Network System Interconnection Code	*
MEA:2015	Grid-connected Inverter Regulation Metropolitan Electricity Authority	*
UTE C15-712-1:2013	Photovoltaic installations without storage and connected to the public distribution network	*
XP C15-712-3:2019	Photovoltaic installations with energy storage and connected to a public distribution network	*
DIN VDE 0126-1-1 VFR 2019	Automatic Switching Point between a Grid-Parallel Own Generation System and the Public Low-Voltage Network	*
SEI REF 04 V7	"Decoupling Protection for the Connection of Decentralized Generation at HTA and BT in Non-Interconnected Areas"	*

Enedis-PRO-RES_10E:2020	Description and study of decoupling protections for the connection of Generation Facilities to the Public Distribution Network	*
NTS 631:2020	Technical standard for monitoring the compliance of power generating modules according to EU Regulation 2016/631 (für mehr Details siehe Tabelle 1)	*
Royal Decree 647/2020	Royal Decree 647/2020, of July 7, regulating aspects necessary for the implementation of the network codes for the connection of certain electrical installations (unter Berücksichtigung auf EU Regulation 2016/631)	
Order TED/749/2020	Order TED/749/2020, of July 16, establishing the technical requirements for connection to the network necessary for the implementation of connection network codes (unter Berücksichtigung auf EU Regulation 2016/631)	
Royal Decree 1699/2011	Royal Decree 1699/2011 of 18 November 2011, regulating the connection to the electrical grid of small-scale power generation facilities	
UNE 217002:2020	Grid connected inverters. Testing of requirements for DC grid injection, overvoltage generation and island operation detection system	*
UNE 217001:2020	Tests for systems intended to avoid the energy transmission to the distribution network	*
IEC TS 62910:2020	Utility-interconnected photovoltaic inverters - Test procedure for under voltage ride-through measurements	*
MGC:2020	Grid Code Amendments 2020 for Peninsular Malaysia	*
PGC:2016	Philippine Grid Code	*

Arrêté du 9 juin 2020 relatif aux prescriptions techniques de conception et de function-nement pour le raccordement aux réseaux d'électricité	Order of June 9, 2020 relating to technical design and operating requirements for connection to electricity networks

Tabelle 1: Angaben zur Art des Produkts und zu den Bewertungstätigkeiten für die Zertifizierung nach den spanischen NTS-Normen:

Art des Produkts	**Zertifizierungsprogramm und Grundlage der Bewertungstätigkeiten**	**Produktspezifikation**
PGU (UGE): Photovoltaics, wind energy, inverter based technologies, other types e.g. synchronous generators	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
Limited Frequency Sensitive Mode-Overfrequency (LFSM-O) [5.1]	Test and / or Simulation (1)	
Limited Frequency sensitive mode-Underfrequency (LFSM-U) [5.2]	Test and / or Simulation (1)	
Frequency Sensitive Mode (FSM) [5.3]	Test and / or Simulation (1)	
Active power control capability and range [5.5]	Test	
Reactive power capability at maximum capacity and below maximum capacity [5.7]	Test	

Reactive power control modes [5.8] **Robustness requirements:** active power recovery after a fault, fault ride through capability, and fast fault current injection capability [5.11] Black start capability of SPGM [5.12] Fast resynchronisation capability of SPGM [5.14]	Test Test Test Test	
PGU (UGE) model validation	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Section 6.2	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
ACPGM model validation	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Section 6.3	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
PPC	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631

	módulos de generación de electricidad según el P.O. 12.2 SENP Section 4.6.2	Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
STATCOM	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Section 4.6.1	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
Battery storage system	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Section 4.6.4	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
Synchronous compensator	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Section 4.6.3	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
PPM&SPGM type B except the cases indicated in NTS Photovoltaics, wind energy, inverter based technologies,	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631

other types e.g. synchronous generators **Final certificate based on the requirements:** Limited Frequency Sensitive Mode-Overfrequency (LFSMO) [5.1] Reactive power capability at maximum capacity and below maximum capacity [5.7] Reactive power control modes [5.8] **Robustness requirements:** Active power recovery after a fault, fault ride through capability, and fast fault current injection capability [5.11]	Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Certification and complementary simulation (1) Certification and complementary simulation (1) Certification and complementary simulation (1) Certification and complementary simulation (1)	Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP
PPM&SPGM type C Photovoltaics, wind energy, inverter based technologies, other types e.g. synchronous generators **Final certificate based on the requirements:** Limited Frequency Sensitive Mode-Overfrequency (LFSMO) [5.1]	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP Certification and complementary simulation (1)	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP

Limited Frequency sensitive mode-Underfrequency (LFSMU) [5.2]	Certification and complementary simulation (1)	
Frequency Sensitive Mode (FSM) [5.3]	Certification and complementary simulation (1)	
Active power control capability and range [5.5]	Certification	
Inertia emulation [5.6] (2)	Certification	
Reactive power capability at maximum capacity and below maximum capacity [5.7]	Certification and complementary simulation (1)	
Reactive power control modes [5.8]	Certification and complementary simulation (1)	
Robustness requirements: active power recovery after a fault, fault ride through capability, and fast fault current injection capability [5.11]	Certification and complementary simulation (1)	
Black start capability of SPGM [5.12] (2)	Test or certification	
Capability to take part in island operation [5.13] (2)	Simulation or certification	
Fast resynchronisation capability of SPGM [5.14]	Test or certification	
PPM&SPGM type D Photovoltaics, wind energy, inverter based technologies, other types e.g. synchronous generators **Final certificate based on the requirements:**	Test or certification and complementary simulation (1)	Norma técnicade supervision de la conformidad de los módulos de generación de electricidad según el Reglamento UE 2016/631 Norma técnica de supervisión de la conformidad de los módulos de generación de electricidad según el P.O. 12.2 SENP

Limited Frequency Sensitive Mode-Overfrequency (LFSMO) [5.1]	Test or certification and complementary simulation (1)	
Limited Frequency sensitive mode-Underfrequency (LFSMU) [5.2]	Test or certification and complementary simulation (1)	
Frequency Sensitive Mode (FSM) [5.3]	Test or certification	
Active power control capability and range [5.5]	Certification	
Inertia emulation [5.6] (2)	Test or certification and complementary simulation (1)	
Reactive power capability at maximum capacity and below maximum capacity [5.7]	Test or certification and complementary simulation (1)	
Reactive power control modes [5.8]	Test and simulation or certification and complementary simulation (1)	
Robustness requirements: active power recovery after a fault, fault ride through capability, and fast fault current injection capability [5.11]	Test or certification	
Black start capability of SPGM [5.12] (2)	Simulation or certification	
Capability to take part in island operation [5.13] (2)	Test or certification	
Fast resynchronisation capability of SPGM [5.14]		

(1) Simulationen und ergänzende Simulationen werden in den in der Regelung festgelegten Fällen durchgeführt
(2) Nicht obligatorische Anforderung

Typzertifizierung von Anlagen und Komponenten der Netzanschlussinfrastruktur

P 12-VA-01 2019- 06	Certification of consumer products, machineries and products for PV applications	

In Verbindung mit den nachfolgend aufgelisteten Anforderungs- und Grundprüfnormen:

EN 50618 2014-12	Electric cables for photovoltaic systems	*
IEC 61701 2020-06	Photovoltaic (PV) modules - Salt mist corrosion testing	*
EN IEC 61701 2020-08	Photovoltaic (PV) modules - Salt mist corrosion testing	*
EN 61215 2005-05	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	*
IEC 61215 2005-04	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	*
EN 61215-1-1 2016-06	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules	*
IEC 61215-1-1 2016-03	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules	*
EN 61215-1-2 2017-04	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-2: Special requirements for testing of thin- film Cadmium Telluride (CdTe) based photovoltaic (PV) modules	*
IEC 61215-1-2 2016-12	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-2: Special requirements for testing of thin-film Cadmium Telluride (CdTe) based photovoltaic (PV) modules	*
EN 61215-1-3 2017-05	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-3: Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules	*

IEC 61215-1-3 2016-12	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-3: Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules	*
EN 61215-1-4 2017-05	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-4: Special requirements for testing of thin-film Cu(In,GA)(S,Se)2 based photovoltaic (PV) modules	*
IEC 61215-1-4 2016-12	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-4: Special requirements for testing of thin-film Cu(In,Ga)(S,Se)2 based photovoltaic (PV) modules	*
IEC 61215-1 2016-03	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements	*
EN 61215-1 2016-12	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements	*
IEC 61215-2 2016-03 +COR1 2018-03	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 2: Test procedures	*
EN 61215-2 2017-02 +AC 2017-07 +AC 2018-04	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 2: Test procedures	*
IEC 61439-1 2020-05	Low-voltage switchgear and controlgear assemblies - Part 1: General rules	*
EN IEC 61439-1 2021-05	Low-voltage switchgear and controlgear assemblies - Part 1: General rules	*
IEC 61439-2 2020-07	Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies	*
EN IEC 61439-2 2021-05	Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies	*
EN 61646 2008-08	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval (zurückgezogener Standard)	*

IEC 61646 2008-05	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval (zurückgezogener Standard)	*
EN 61701 2012-03	Salt mist corrosion testing of photovoltaic (PV) modules	*
IEC 61701 2011-12	Salt mist corrosion testing of photovoltaic (PV) modules	*
IEC 61724-1 2017-03	Photovoltaic system performance - Part 1: Monitoring	*
EN 61724-1 2017-05	Photovoltaic system performance - Part 1: Monitoring	*
IEC TS 61724-2 2016-10	Photovoltaic system performance - Part 2: Capacity evaluation method	*
IEC TS 61724-3 2016-07	Photovoltaic system performance - Part 3: Energy evaluation method	*
EN 61730-1 2007-05 + A1; 2012-02 + A2; 2013-05 + A11; 2014-11	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction	*
IEC 61730-1 2016-08	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction	*
IEC 61730-1 2004-10 + Amd.1; 2011-11 + Amd.2; 2013-03	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction (zurückgezogener Standard)	*
EN IEC 61730-1 2018-04 + AC 2018-06	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction	*
EN 61730-2 2007-05 +A1 2012-02	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing	*
IEC 61730-2 2016-08	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing	*

IEC 61730-2 2004-10 + Amd.1; 2011-11	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing (zurückgezogener Standard)	*
EN IEC 61730-2 2018-04 + AC 2018-06	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing	*
IEC 61851-1 2017-02	Electric vehicle conductive charging system - Part 1: General requirements	*
EN IEC 61851-1 2019-07	Electric vehicle conductive charging system - Part 1: General requirements	*
IEC 61851-21-1 2017-06	Electric vehicle conductive charging system - Part 21-1 Electric vehicle on-board charger EMC requirements for conductive connection to AC/DC supply	*
EN 61851-21-1 2017-10 +AC 2017-11	Electric vehicle conductive charging system - Part 21-1 Electric vehicle on-board charger EMC requirements for conductive connection to AC/DC supply	*
IEC 61851-21-2 2018-04	Electric vehicle conductive charging system - Part 21-2: Electric vehicle requirements for conductive connection to an AC/DC supply - EMC requirements for off board electric vehicle charging systems	*
EN 61851-21-2 2018-02	Electric vehicle conductive charging system - Part 21-2: Electric vehicle requirements for conductive connection to an AC/DC supply - EMC requirements for off board electric vehicle charging systems	*
IEC 61851-23 2014-03 +COR1 2016-05	Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station	*
EN 61851-23 2014-05 +AC 2016-06	Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station	*
IEC 61851-24 2014-03 +COR1 2015-06	Electric vehicle conductive charging system - Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging	*
EN 61851-24 2014-05 +AC 2015-06	Electric vehicle conductive charging system - Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging	*

IEC 62040-1 2017-07 +COR1 2019-10 +AMD1 2021-05	Uninterruptible power systems (UPS) - Part 1: Safety requirements	*
EN IEC 62040-1 2019-07 +AC 2019-11 +A11 2021-02	Uninterruptible power systems (UPS) - Part 1: Safety requirements	*
IEC 62040-3 2011-03 +COR1 2011-09	Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements	*
EN 62040-3 2011-06	Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements	*
IEC 62040-4 2013-04	Uninterruptible power systems (UPS) - Part 4: Environmental aspects - Requirements and reporting	*
EN 62040-4 2013-09	Uninterruptible power systems (UPS) - Part 4: Environmental aspects - Requirements and reporting	*
IEC 62040-5-3 2016-10	Uninterruptible power systems (UPS) - Part 5-3: DC output UPS - Performance and test requirements	*
EN 62040-5-3 2017-02	Uninterruptible power systems (UPS) - Part 5-3: DC output UPS - Performance and test requirements	*
EN 62093 2005-05	Balance-of-system components for photovoltaic systems - Design qualification natural environments	*
IEC 62093 2005-03	Balance-of-system components for photovoltaic systems - Design qualification natural environments	*
EN 62108 2016-12	Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval	*
IEC 62108 2016-09	Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval	*
IEC 62109-1 2010-04	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements	*
EN 62109-1 2010-07	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements	*

IEC 62109-2 2011-06	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters	*
EN 62109-2 2011-09	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters	*
IEC 62109-3 2020-07 +COR1 2020-11	Safety of power converters for use in photovoltaic power systems - Part 3: Particular requirements for electronic devices in combination with photovoltaic elements	*
EN IEC 62109-3 2020-08	Safety of power converters for use in photovoltaic power systems - Part 3: Particular requirements for electronic devices in combination with photovoltaic elements	*
IEC TS 62257-9-5 2018-06	Recommendations for renewable energy and hybrid systems for rural electrification - Part 9-5: Integrated systems - Laboratory evaluation of stand-alone renewable energy products for rural electrification	*
EN 62446-1 2016-04 + A1 2018-10	Photovoltaic (PV) systems - Requirements for testing, documentation and maintenance - Part 1: Grid connected systems - Documentation, commissioning tests and inspection	*
IEC 62446-1 2016-01 + AMD1, 2018-08	Photovoltaic (PV) systems - Requirements for testing, documentation and maintenance - Part 1: Grid connected systems - Documentation, commissioning tests and inspection	*
IEC TS 62446-3 2017-06	Photovoltaic (PV) systems - Requirements for testing, documentation and maintenance - Part 3: Photovoltaic modules and plants - Outdoor infrared thermography	*
IEC 62477-1 2012-07 +AMD1 2016-07	Safety requirements for power electronic converter systems and equipment - Part 1: General	*
EN 62477-1 2012-10 +A11 2014-08 +A1 2017-02 +A12 2021-02	Safety requirements for power electronic converter systems and equipment - Part 1: General	*
EN 62509 2011-09	Battery charge controllers for photovoltaic systems - Performance and functioning	*
IEC 62509 2010-12	Battery charge controllers for photovoltaic systems - Performance and functioning	*

IEC 62548 2016-09	Photovoltaic (PV) arrays - Design requirements	*
EN 62716 2013-08 + AC 2014-05	Photovoltaic (PV) modules - Ammonia corrosion testing	*
IEC 62716 2013-06	Photovoltaic (PV) modules - Ammonia corrosion testing	*
IEC TS 62738 2018-08	Ground-mounted photovoltaic power plants - Design guidelines and recommendations	*
IEC 62790 2020-07	Junction boxes for photovoltaic modules - Safety requirements and tests	*
EN IEC 62790 2020-09	Junction boxes for photovoltaic modules - Safety requirements and tests	*
IEC 62817 2014-08 + AMD1 2017-07	Photovoltaic systems - Design qualification of solar trackers	*
EN 62817 2015-03 +A1 2017-11	Photovoltaic systems - Design qualification of solar trackers	*
IEC 62852 2014-11 +AMD1 2020-03	Connectors for DC-application in photovoltaic systems - Safety requirements and tests	*
EN 62852 2015-03 +AC 2019-02 +A1 2020-05	Connectors for DC-application in photovoltaic systems - Safety requirements and tests	*
IEC 62930 2017-12	Electric cables for photovoltaic systems with a voltage rating of 1,5 kV DC	*
EN IEC 62933-2-1 2018-03	Electrical energy storage (EES) systems - Part 2-1: Unit parameters and testing methods - General specification	*
IEC 62933-2-1 2017-12	Electrical energy storage (EES) systems - Part 2-1: Unit parameters and testing methods - General specification	*

IEC TS 62933-3-1 2018-08	Electrical energy storage (EES) systems - Part 3-1: Planning and performance assessment of electrical energy storage systems - General specification	*
IEC TS 62933-4-1 2017-07	Electrical energy storage (EES) systems - Part 4-1: Guidance on environmental issues - General specification	*
IEC TS 62933-5-1 2017-07	Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems - General specification	*
IEC 62933-5-2 2020-04	Electrical energy storage (EES) systems - Part 5-2: Safety requirements for grid-integrated EES systems - Electrochemical-based systems	*
EN IEC 62933-5-2 2020-05	Electrical energy storage (EES) systems - Part 5-2: Safety requirements for grid-integrated EES systems - Electrochemical-based systems	*
IEC TS 62941 2016-01	Terrestrial photovoltaic (PV) modules - Guideline for increased confidence in PV module design qualification and type approval	*
IEC TS 63049 2017-09	Terrestrial photovoltaic (PV) systems - Guidelines for effective quality assurance in PV systems installation, operation and maintenance	*
IEC 63056 2020-03	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy	*
EN IEC 63056 2020-05	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy	*
IEC 62619 2017-02	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications	*
EN 62619 2017-05	Secondary cells and batteries containing alkaline or other non- acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications	*
IEC 62620 2014-11	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications	*

EN 62620 2015-01	Secondary cells and batteries containing alkaline or other non- acid electrolytes - Secondary lithium cells and batteries for use in industrial applications	*
IEC 61427-1 2013-04	Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 1: Photovoltaic off-grid application	*
EN 61427-1 2013-07	Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 1: Photovoltaic Off-grid application	*
IEC 61427-2 2015-08	Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 2: On-grid applications	*
EN 61427-2 2015-11	Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 2: On-grid applications	*
GB/T 34120 (Translation) 2017	Technical specification for power conversion system of electrochemical energy storage system	*
VDE-AR-E 2510-50 2017-05	Stationary battery energy storage systems with lithium batteries - Safety requirements	*
TR 25 2016-07 + A1: 2020-12	Electric vehicle charging system	*
TR 25-1 2022-01	Electric vehicle charging system - Part 1: Electrical safety and general requirements	*
TR 25-2 2022-01	Electric vehicle charging system - Part 2: Low power charging	*
TR 25-3 2022-01	Electric vehicle charging system - Part 3: High power charging	*
TR 25-4 2022-01	Electric vehicle charging system - Part 4: Battery swapping	*
IEC 62752 2016-03 + AMD1 2018-09	In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)	*

EN 62752 2016-08 + AC 2019-03 + A1 2020-05	In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)	*
IEC 62196-1 2014-06	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements	*
EN 62196-1 2014-11	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements	*
IEC 61345 1998-02	UV test for photovoltaic (PV) modules Determines the ability of a photovoltaic module to withstand exposure to ultra-violet (UV) radiation from 280 nm to 400 nm.	*
IEC 62196-2 2016-02	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories	*
EN 62196-2 2017-04	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories	*
IEC 62196-3 2014-06	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers	*
EN 62196-3 2014-11	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers	*
IEC TS 62196-3-1 2020-03	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3-1: Vehicle connector, vehicle inlet and cable assembly for DC charging intended to be used with a thermal management system	*
IEC 60068-2-68 1994-08	Environmental testing - Part 2: Tests - Test L: Dust and sand (IEC 68-2-68 : 1 994)	*
IEC 62759-1 2015-06	Photovoltaic (PV) modules – Transportation testing – Part 1: Transportation and shipping of module package units	*

IEC 61683 1999-11	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency	*
EN 50530 2010-04 +A1 2013-03	Overall efficiency of grid connected photovoltaic inverters	*
IEC 62891 2020-07	Maximum power point tracking efficiency of grid connected photovoltaic inverters	*
IEC 60068-2-1 2007-03	Environmental testing - Part 2-1: Tests - Test A: Cold	*
IEC 60068-2-2 2007-03	Environmental testing - Part 2-2: Tests - Test B: Dry heat	*
IEC 60068-2-14 2009-02	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	*
IEC 60068-2-30 2005-08	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	*

Anlage zur Teil-Akkreditierungsurkunde D-ZE-12007-01-02

Verwendete Abkürzungen:

AR	Anschlussregeln
AS	Australische Norm
AWEA	American Wind Energy Association
BDEW	Bundesverband der Energie- und Wasserwirtschaft e.V.
BWEA	British Wind Energy Association
CEA	Central Electricity Authority of India
C-WET	Centre for Wind-Energy Technology, India
CPV	Concentrator photovoltaic
DECC	Department of Energy and Climate Change
DIN	Deutsches Institut für Normung e.V. (German Standards Institute)
EN	Europäische Norm
EU	Europäische Union
FGW	Fördergesellschaft Windenergie und andere Erneuerbare Energien
FNN	Forum Netztechnik/Netzbetrieb im VDE
GB/T	Chinesische Norm
IEC	International Electrotechnical Commission
IECRE	IEC Renewable Energy System
IEEE	IEEE Standards Association
IS	Indian Standard
ISO	International Organization for Standardization – Internationale Organisation für Normung
MCS	Microgeneration Certification Scheme
NRS	Südafrikanische Norm
OD	Operational Document
P20…	Verfahrensanweisung der TÜV NORD CERT GmbH – Hausverfahren der KBS
P30VA01	Verfahrensanweisung der TÜV NORD CERT GmbH
PRC	Protective Relay Settings
PVVC	Procedure for Verification, Validation and Certification
SAGC	South African Grid Code
TAR	Technische Anschlussregeln
TR	Technische Richtlinie
TS	Technical Specification
UK	United Kingdom (Vereinigtes Königreich)
UL	Underwriters Laboratories
VDE	Verband der Elektrotechnik e.V.
WSV	Wasserstraßen- und Schifffahrtsverwaltung des Bundes