CERTIFICATE OF ACCREDITATION

This is to attest that

DEKRA TESTING AND CERTIFICATION (SUZHOU) CO., LTD.

NO. 99, HONGYE ROAD, SUZHOU INDUSTRIAL PARK,
SUZHOU, 215006, JIANGSU, PEOPLE'S REPUBLIC OF CHINA

Testing Laboratory TL-1085

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories.* This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date June 29, 2023

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DEKRA TESTING AND CERTIFICATION (SUZHOU) CO., LTD.

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Accredited to ISO/IEC 17025:2017 *Effective Date June 29, 2023*

ABNT NBR 16149	Technical specification of grid-connected PV inverter for Brazil
ABNT NBR 16150	Test procedure for grid-connected PV inverter
ABNT NBR IEC 62116	Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters
AS 62040.1	Uninterruptible power supply systems (UPS) - Part 1: Safety requirements
AS/NZS 4777.2	Grid connection of energy systems via inverters Part 2: Inverter requirements
BDEW	Generating Plants Connected to the Medium-Voltage Network Guideline for generating plants' connection to and parallel operation with the medium-voltage network
C10/11	Specific technical prescriptions regarding power-generating plants operating in parallel to the distribution network
CEA Regulation	Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations (India grid code)
CEI 0-16	Reference technical rules for the connection of active and passive consumers to the HV and MV electrical networks of distribution Company
CEI 0-21	Reference technical rules for the connection of active and passive users to the LV electrical Utilities
DANSK ENERGI LV	Guide for connection of power-generating plants to the low voltage grid (≤1 kV) Type A and B -Denmark Guide for Power generating plants LV
DANSK ENERGI MV and HV	Guide for connection of power-generating plants to the medium and high-voltage grid (>1 kV) Type B, C and D - Denmark Guide for Power generating plants MV and HV
DOC-030221-GAP	Conditions Governing the Connection and Operation of Micro-Generation up to and including 72 A single-phase / 72 A three-phase (c. 17 kVA/50 kVA, LV)
DOC-250221-GBT	Conditions Governing the Connection and Operation of Export Limiting Schemes at LV and MV, Up to and including 72 A three-phase (c. 50 kVA, LV)

DTIS-230206-BRL	Conditions Governing the Connection and Operation of Micro-Generation Up to and including 25 A single-phase / 16 A three-phase (c. 6 kVA/11 kVA, LV)
Dubai Electricity & Water Authority (DEWA)	Standards for distributed renewable resources generators connected to the distribution network (DRRG)
EHV-NPD-DC-14-108-08022	The technical requirements for connecting new generation to the transmission system
EIFS 2018.2	The Energy Market Inspectorate's Regulations on the determination of generally applicable requirements for network connection of generators
EN 50530	Overall efficiency of grid connected photovoltaic inverters
EN 50549-1	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	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 B
EN 50549-10	Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units
EN 61000-3-2	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <=16 A per phase)
EN 61000-3-3	Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 61000-3-11	Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection
EN 61000-3-12	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and <= 75 A per phase
EN 62109-1	Safety of power converters for photovoltaic power generation systems – Part 1: General requirements
EN 62109-2	Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for inverters
EN 62477-1	Safety requirements for power electronic converter systems and equipment – Part 1: General
EN IEC 62040-1	Uninterruptible power supply systems (UPS) - Part 1: Safety requirements

EN IEC 62109-3	Safety of power converters for use in photovoltaic power systems – Part 3: Particular requirements for electronic devices in combination with photovoltaic elements
Enedis-FOR-RES_18E	Information Collection Sheets for a Connection Proposal before completion of the file and for a Connection Offer, to the Public Distribution Network managed by Enedis, of a Photovoltaic Production Installation with a power greater than 36 kVA
Enedis-NOI-RES_13E	Protection of generating facilities connected to the public distribution system
Enedis-PRO-RES_10E	Description and study of decoupling protections for the connection of Production Installations connected to the Public Distribution Network
Enedis-PRO-RES_64E	Performance control procedures for High Voltage (HV) Generation installations connected to the Public Distribution Network managed by Enedis
ER G59	Recommendations for the Connection of Generating Plant to the Distribution Systems of Licensed Distribution Network Operators
ER G83	Recommendations for the Connection of Type Tested Small-scale Embedded Generators (Up to 16A per Phase) in Parallel with Low-Voltage Distribution Systems
ER G98	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
ER G99	Requirements for the connection of generation equipment in parallel with public distribution networks
ER G100	Technical Requirements for Customers' Export and Import Limitation Schemes
ETSI EN 303 645	Cyber Security for Consumer Internet of Things: Baseline Requirements
(EU) 2016/631	Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (Journal of Laws UE L 112/1 of 27.4.2016) (NC RfG) (Inclusion Articles 13-28, 40-42 and 44-50)
FGW TR3/TG3	Determination of the Electrical Characteristics of Power Generating Units and Systems, Storage Systems as well for their Components in Medium-, High- and Extra-High Voltage Grids
FGW TR4/TG4	Demands on Modelling and Validating Simulation Models of the Electrical Characteristics of Power Generating Units and Systems, Storage Systems as well as their Components
FGW TR8/TG8	Certification of the Electrical Characteristics of Power Generating Units, Systems and Storage Systems as well as their Components on the Grid
I.S. EN 50549-1	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
IEC 60529	Degrees of protection provided by enclosures (IP Code)

IEC 61000-3-2	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <=16 A per phase)
IEC 61000-3-3	Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
IEC 61000-3-11	Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection
IEC 61000-3-12	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and <= 75 A per phase
IEC 61439-1	Low-voltage switchgear and control equipment assembly – Part 1: General Rules
IEC 61683	Photovoltaic systems - Power conditioners Procedure for measuring efficiency
IEC 61727	Photovoltaic (PV) systems - Characteristics of the utility interface
IEC 62040-1	Uninterruptible power supply systems (UPS) - Part 1: Safety requirements
IEC 62109-1	Safety of power converters for photovoltaic power generation systems – Part 1: General requirements
IEC 62109-2	Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for inverters
IEC 62109-3	Safety of power converters for use in photovoltaic power systems – Part 3: Particular requirements for electronic devices in combination with photovoltaic elements
IEC 62116	Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters
IEC 62477-1	Safety requirements for power electronic converter systems and equipment – Part 1: General
IEC 62891	Maximum power point tracking efficiency of grid connected photovoltaic inverters
IEC 62920:2017	Photovoltaic power generating systems - EMC requirements and test methods for power conversion equipment
IEC 62920:2017/AMD1:2021	Photovoltaic power generating systems - EMC requirements and test methods for power conversion equipment
IEC TS 62910	Utility-interconnected photovoltaic inverters – Test procedure for under voltage ride-through measurements

IEC TS 63217	Utility-interconnected photovoltaic inverters – Test procedure for over voltage ride-through measurements
IEEE 1547	IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems
IEEE 1547.1	IEEE 1547.1 Standard for Conformance Tests Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems
INMETRO regulation No. 004:2011, No. 357:2014	Conformity Assessment Requirements for Photovoltaic Systems and Equipment
IRR-DCC-MV	Intermittent Renewable Resources (Wind and PV) Distribution Connection Code (DCC) At Medium Voltage (MV) (Jordan grid code)
IRR-TIC	Intermittent Renewable Resources (IRR) Wind & PV Transmission interconnection code (TIC) (Jordan grid code)
MEA	Metropolitan Electricity Authority's Grid-connected Inverter Regulation
NA/EEA-NE7-CH2020	Grid connection for power generation plants at the low-voltage grid technical requirements for connection and parallel operation in NE7
NRS 097-2-1	Grid interconnection of embedded generation Part 2: Small-scale embedded generation Section 1: Utility interface
NTS-631	Technical standard for monitoring compliance of power generation modules in accordance with EU regulation 2016 / 631
NTSyCS	Technical Standard of Safety and Quality of Service (Chile)
Ordinance No.140, of March 21, 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.
OVE-Richtlinie R 25	Test requirements for generator units to be connected to and operated in parallel with low-voltage distribution networks
P.O.12.2	Generation and demand facilities: Minimum requirements for design, equipment, operation, commissioning and safety (Spanish grid code of the grid operator)
P.O.12.3	Requirements regarding wind power facility response to grid voltage dips
PEA	Provincial Electricity Authority's Regulation on the Power Network System Interconnection Code
PGC Resolution No. 07	A resolution adopting and approving addendum to amendment No. 1 of the Philippine Grid Code (PGC), establishing the connection and operational requirements for variable renewable energy (VRE) generating facilities
PGC Resolution No. 09	A resolution adopting the rules enabling the net-metering program for renewable energy

Portaria n. º 73/2020 (Ordinance No. 73/2020)	Non-exhaustive requirements for connecting generator modules to the Public Service Electrical Network (RESP)
PPDS	Rules for the operation of distribution systems - rules for parallel operation of production and storage equipment with the network of the distribution system operator (Czech grid code)
PSE 2018-12-18	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 - approved by the Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.2018.ZJ of January 2, 2019 (Inclusion All Articles)
PTPiREE 2021-04-28	Conditions and procedures for the use of certificates in the process of connecting power generating modules to power grids
PVVC	Procedure for verification, validation and certification of the requirements of the P.O. 12.3 and P.O. 12.2 on the response of the wind farms and photovoltaic plants in the event of voltage dips" (Spanish certification procedure)
RAE DECISION NO. 1165/2020	Decision making a). by setting the maximum power thresholds applicable to power plants under Article 5.3 and b). on the general application requirements under Article 7.6 of Commission Regulation (EU) 2016/631 [RfG] establishing a network code on requirements for grid connection of generators
RD 1699 / RD 661 / RD 413 / RD 647	Regulating the connection to the electrical grid of small-scale power generation facilities
RENBLAD 342	Technical functional requirements for connection and network rental agreement for supply customers in the low voltage network
SAGC	The Saudi Arabian Grid Code
SAGC-RPPs	Grid Connection Code for Renewable Power Plants (RPPs) connected to the electricity Transmission System (TS) or the Distribution System (DS) in South Africa
TF 3.2.1	The technical regulation comprises provisions for power plants with a power output of up to and including 11kW connected to the Danish public electricity supply grid.
TF 3.2.2	The technical regulation comprises provisions for PV power plants with a power output above 11 kW which are connected to the Danish public electricity supply grid.
TF 3.3.1	The regulation specifies the technical and functional minimum requirements which battery plants must comply with in the Point of Connection in Installation if they are to be connected to the Danish grid.
TOR D4	Technical and organizational rules for operators and users of networks Main section D4: Parallel operation of generation plants with distribution networks
TOR Erzeuger	TOR generators, Connection and parallel operation of Type A, B, C, D power generation systems

UNE 206006	Tests for detection of multiple PV inverters operating in island when connected to the grid
UNE 217001	Tests for systems intended to avoid the energy transmission to the distribution network
UNE 217002	Grid connected inverters – Testing of requirements for DC grid injection, overvoltage generation and island operation detection system
UTE C 15-712-1	Photovoltaic installations without storage and connected to the public distribution network
VDE-AR-N 4100	Technical rules for the connection and operation of customer installations to the low voltage network (TCR low voltage)
VDE-AR-N 4105	Technical minimum requirements for the connection to and parallel operation with low-voltage distribution networks (TCR low voltage)
VDE-AR-N 4110	Technical requirements for the connection and operation of customer installations to the medium voltage network (TCR medium voltage)
VDE-AR-N 4120	Technical requirements for the connection and operation of customer installations to the high voltage network (TCR high voltage)
VDE V 0124-100	Test requirements for generator units to be connected to and operated in parallel with low-voltage distribution networks
VDE V 0126-1-1	Automatic disconnection device between a generator and a public low voltage grid
VDE V 0126-95	Plug-in Solar Devices for Grid-Parallel Operation-Basic Safety Requirements and Tests
VJV2018	Grid Code Specifications for Power Generating Facilities
XP C 15-712-3	Photovoltaic installations with storage device and connected to a public distribution network