



Certificate of Compliance

Certificate: 80127114

Master Contract: 300612

Project: 80247927

Date Issued: May 16, 2025

Issued To: GoodWe Technologies Co., Ltd.
No.90, Zijin Road, New District
Suzhou, Jiangsu, 215011
China

Attention: Jing Xie

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: *Rita Ren*
Rita Ren



PRODUCTS

CLASS - C531109 - POWER SUPPLIES Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation Power Systems Equipment - Certified to U.S. Standards

Transformerless Grid Support Utility Interactive PV Inverter, Models GW22KLV-SMT-US, GW28KLV-SMT-US, GW50K-SMT-US and GW60K-SMT-US. Wall mounted, permanently connected.

Note:

1. For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance Annex A, or the Descriptive Report.



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2. Models GW22KLV-SMT-US, GW28KLV-SMT-US, GW50K-SMT-US and GW60K-SMT-US are verified with PVRSS function according to NEC-2020& NEC-2023 Article 690.12 and CEC-2021 Sec 64-218 with Inverter integrated transmitter and external mounted RSD as following:

Model	Attenuators	Initiation Device	Inverter	System Ratings
Goodwe PVRSS System	Altenergy Power System Inc. RSD-S-PLC-A RSD-S-PLC-B RSD-D-15-1000 RSD-D-20-1000 RSD-D-25-1000 RSD-D-15-1500 RSD-D-20-1500 RSD-D-25-1500	GoodWe Technologies Co., Ltd. Single Core/Dual Core GT-BF-20, GT-KF-20	GoodWe Technologies Co., Ltd. GW22KLV-SMT-US, GW28KLV-SMT-US, GW50K-SMT-US, GW60K-SMT-US	1000 Vdc maximum system voltage. Rapid shutdown time limit 30s with inverter. Initiated by the loss of inverter power of AC Grid.
	GoodWe Technologies Co., Ltd. GR-A1F-20, GR-B1F-20, GR-A2F-20, GR-B2F-20			
	Altenergy Power System Inc. RSD-S-PLC-A RSD-S-PLC-B RSD-D-15-1000 RSD-D-20-1000 RSD-D-25-1000 RSD-D-15-1500 RSD-D-20-1500 RSD-D-25-1500	Altenergy Power System Inc. Single Core/Dual Core Transmitter-PLC (no power supply)		
	Tigo Energy Inc. TS4-A-F TS4-A-2F	Tigo Energy Inc. RSS Transmitter DIN Rail, Single RSS Core/Dual RSS Core		

3. The power control system function (PCS) is evaluated on the following power control system configuration. The evaluated operating mod is Export Limiting from all source Mode (PEL) according to the standard, and the mode function is set up by the Goodwe APP.

Configuration	Inverter	Meter	Maximum open loop response time	Maximum time to steady state



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Power Control System	GoodWe Technologies Co., Ltd. GW50K-SMT-US, GW60K-SMT-US, GW22KLV-SMT-US, GW28KLV-SMT-US	GM330	1.28s	2.74s
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APPLICABLE REQUIREMENTS

- CSA-C22.2 No.107.1-16 - Power Conversion Equipment
- CSA-C22.2 No.292-18 - DC arc fault protection for photovoltaic applications
- CSA-C22.2 No.330-17 - Photovoltaic Rapid shutdown systems
- *UL Std No. 1741 3rd - Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Sources (Third Edition, Dated April 12, 2023)
- **UL1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010)
- **UL 1699B - Outline of Investigation for Photovoltaic (PV) DC Arc-Fault Circuit Protection (Issue Number 2, January 14, 2013)
- **UL 1699B - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Dated August 22, 2018)
- ****UL1741 CRD - Power Control Systems (PCS) (Dated March 08, 2019)
- ****UL3141 - Outline of Investigation for Power Control Systems (Issue Number 2, October 9, 2024)

***Note:** Conformity to UL 1741(Third Edition, Dated April 12, 2023) includes compliance with applicable requirements of IEEE 1547-2018, IEEE1547.1-2020, 1547a-2020, Grid support function is verified according to UL 1741 Supplement SB and IEEE 1547.1-2020 with the SRDs of IEEE 1547-2018, IEEE 1547a-2020 and Hawaiian Electric Co. SRD-V2.0, New York State Standardized Interconnection Requirements and Application Process (2022), Default New England Bulk System Area Settings Requirement (2021). While the grid support function evaluated according to IEEE 1547.1-2020, the interoperability is verified with IEEE 2030.5-2018 communication protocol.

****Note:** The functional safety has been evaluated according to applicable requirement of CSA C22.2 No. 0.8-19 and UL 1998 Edition 3 as required by the product standard.

*****Note:** The products have been verified with PVRSS function according to NEC-2020& NEC-2023 Article 690.12 and CEC-2021 Sec 64-218.

******Note:** The products have been evaluated with Export Limiting from all source (PEL) Mode according to UL 1741 PCS CRD and UL 3141



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Notes:

Products certified under Class C531109 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca





Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80247927	2025-05-16	Update the report 80127114 to include following content: <ol style="list-style-type: none">1. Improve the response time performance for UL 1741 PCS to be within 2seconds to meet Rule 21 requirement.2. Update the report to include the evaluation according to UL 3141-Issue 2 based on the evaluation result of UL 1741 PCS CRD.3. Enclosure changed from Die-casting enclosure to Sheet metal enclosure. WMTC assessment for this Facility.
80188298	2024-01-29	Update report 80127114 to model GW22KLV-SMT-US &GW28KLV-SMT-US add requirements of UL1741CRD - Power Control Systems (PCS) (Dated March 08, 2019)
80185581	2024-01-26	Update the report 80127114 to add models GW22KLV-SMT-US and GW28KLV-SMT-US.
80177271	2023-09-27	Update report 80127114 to add new components and match for new PVRSE.
80127115	2023-02-24	Update the report 80127114 to include requirements of UL1741CRD - Power Control Systems (PCS) (Dated March 08, 2019) for models GW50K-SMT-US, GW60K-SMT-US and added alternative components.
80127116	2022-08-16	Update report 80127114 to verify the PVRSS function compatibility with alternate PV rapid shut down equipment.
80127114	2022-08-11	Transformerless Grid Support Utility Interactive PV Inverter, Models GW50K-SMT-US and GW60K-SMT-US certification. (C/US)