



Conformity assessment of distributed energy resources

Safety. Science. Transformation.™

Supporting global market access for distributed energy resources

UL Solutions is committed to being a world leader in the assessment of safety, performance and quality of distributed energy resource (DER) systems and products such as solar inverters and battery converters. In addition to our participation in the development of international and national power conversion standards, UL Solutions DER testing laboratories in Germany, Spain, Greater China, India, Italy, Taiwan and the United States (U.S.) provide conformity services including safety, performance and electromagnetic compatibility (EMC) testing for global markets.

Services offered by UL Solutions:

- Global market access services, for the U.S., Europe, Australia, China and other markets to support seamless product launches
- Standard research and performance testing
- Energy efficiency and performance measurements based on local/regional market requirements
- EMC evaluations
- Advanced DER testing to the UL 1741 (the Standard for Inverters, Converters, Controllers and Interconnection

System Equipment for Use with Distributed Energy Resources) Supplement A (SB) and other Source Requirement Documents (SRDs), UL 1741 Supplement B (SB), IEEE 1741 (2018) and IEEE 1741.1 (2020)

- Grid code compliance services for more than 60 grid codes worldwide
- Continuous compliance management
- Education and training services to explain the technical standard requirements

Dedicated support for DER manufacturers

- We leverage our global network of technical experts and state-of-the-art facilities to test, assess and certify products that meet applicable requirements to support manufacturers in accessing and competing in the global marketplace.
- We have a longstanding participation on standard technical panels and industrial associations.
- UL Solutions offers dedicated support to help our customers streamlining administration and project management efforts related to market access.
- We offer grid interoperability services for DERs including assessment for compliance with IEEE 2030.5, SunSpec Modbus and DNP3 interoperability protocols.

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	Europe	IEC	North America	Others
Safety standards (regionally)	Low Voltage Directive: 2006/95 EN 50178 Wind & Fuel Cells EN 62109-1 (EN 60730-1 FS) EN 62109-2 CE Marking	IEC 62109 IEC 62909 IEC 62477	U.S.: UL 1741 UL 62109 UL 1699B (AFCI) Canada: C22.2 / 107.1 / 62109.1-2	China: Golden Sun Mark Japan: JETPvm technical standard for electrical equipment Australia: AS 3100
EMC specific requirements	EMC Directive 2004/108: EN 61000-6-1/2/3/4 EN 61000-3-2/12 EN 61000-3-3/11 EN 55011 R&TTE Directive 1999/5: ETSI series CE marking	IEC 61000 Series CISPR11 IEC 62920	IEEE 1547 IEEE 1547.1 IEEE C37.90 IEEE C62-41.2 IEEE C62-45 IEEE C90.2 FCC Part 15	
Performance standards	EN 3744, EN 3746: noise EN 50530: efficiency EN 61683: conversion efficiency	ISO 3744 ISO 3746 IEC 61683	ANSI C12.1 (metering req.) SunSpec Inverter Control V1 CA: California Energy Commission (CEC) efficiency NJ: efficiency	China: Golden Sun Mark India: IEC 61683, IEC 60068-2
Utilities (grid connected)	Europe: EN 50549-1, EN 50549-2 Germany: VDE-AR-N 4005, VDE-AR-N 4110, VDE-AR-N 4120, VDE-AR-N 4130 Italy: CEI 0-21, CEI 0-16 U.K.: ENA-EREC G998, ENA-EREC G99 Austria: OVE E 8001-4-712, TOR 04 V2.0 Spain: NTS 631 V2.1 SEPE, NTS 631 V2.1 SENP, P.O. 12.2, P.O. 12.3, UNE 217001, UNE 217002 Belgium: C10/11 France: UTE C 15-712-1, Arrêté du 9 juin 2020	IEC 61727 IEC 62116	IEEE 1547 (2018) 1547.1 IEEE (2020) Advanced DER testing to UL 1741 SB, UL 1741 SA for CA Rule 21, HECO 14H and other SRDs per state/jurisdiction CA-Rule 21 (Grid Support)	Australia: AS/NZS 4777.2 Brazil: ABNT NBR 16149, ABNT NBR 16150, INMETRO ordinances 004/2011, INMETRO ordinances 357/2014, NDU 013, NDU 015 South Africa: NRS 097-2-1, RPPS
	And many more here: Grid Code Compliance Services for Power Generating Units UL Solutions and Grid Code Compliance Services for Power Generating Systems (PGS) UL Solutions			
Software	EN 60730-1	IEC 60730-1	UL 1998, UL 60730-1, UL 61508	
Education and training programs	UL 1699B, UL 1998, UL1741, UL 62109-1, UL 60730-1, UL 61508, National Electrical Code®, Grid Code Compliance, CE marking, IEC 62109-1 and IEC 62109-2 Programs are available in various delivery formats, including open-registration public workshops, private on-site workshops, custom on-site programs and web-based			

Why UL Solutions

Confidence in quality services — Our experienced staff can assist you in understanding the compliance requirements for your specific markets. Through our testing and certification services, we can help you demonstrate that your product complies with the relevant standards.

Knowledge you can trust — Our subject matter experts can help you understand the various safety and performance requirements for your specific market location through custom educational programs and on-site expertise. We are ready to be your single source provider and can test and certify to both international UL Standards and IEC standards, as well as local grid codes.

Global reach and access — UL Solutions has a powerful global network of technical experts who understand both the national and global requirements. Our DER laboratories located in multiple regions of the world offer convenient access to our global customers.

Supporting evaluation to global standards —

With independent, ISO 17025 accredited test facilities and ISO 17065 accredited certification bodies in Europe, Asia and North America, UL Solutions offers performance and safety evaluations to appropriate DER testing standards required to access global markets.

For more information on UL Solutions' services for distributed energy resources, please visit [UL.com](https://www.ul.com) or contact GCC.info@ul.com.