



Smart Meter Performance Testing

Your Global Access partner for the Merer Market

UL (Underwriters Laboratories) is an independent standards development organization, testing laboratory and certification body with a mission to enhance life safety and facilitate global commerce. Our solid expertise, established objectivity and proven history make us a symbol of trust and that enables us to help you obtain Smart Meter approvals globally.

UL certification services for smart meters

UL has more than 10 years' experience in evaluating energy meters, both in providing reliable certification services and in educating manufacturers on safety standards.



Smart Meters

Take control of energy use

Throughout its more than 117-year history, UL's reputation, experience, knowledge and brand name have been recognized and trusted worldwide by manufacturers, retailers, code officials and consumers. With our intensive experience in Smart Meter testing, UL has got major accreditations and experience below:

- NVLAP Accreditation (US)
- Nationally Recognized Testing Laboratory (NRTL) (US)
- Active member of SGIP and ANSI C12
- Active participant in and contributor to all panels of NFPA 70, National Electrical Code (US)
- Australian Government National Measurement Institute Accreditation (Australia)
- IANZ accreditation (New Zealand)

UL tests electronic electricity meters and their smart features to the requirements of the United States, Asia, Australia, Europe and South Africa. Specifically, UL evaluates energy meters to the following standards:

- ANSI (American National Standards Institute)
- AS/NZS (Australian and New Zealand Standards)
- IEC (International Electrotechnical Commission)
- EN (European Standards)
- UL Safety Standards

UL's meter testing services include:

- Accuracy Testing
- Product Safety Certification Subjects 2735 (Electric Meters) and 2745 (Meter Socket Adapters)
- Performance Testing
- EMC Testing
- Surge Testing
- ESD Testing
- Wireless Regulatory Testing
- Interoperability Information Compliance Testing
- Environmental Testing
- Radiation Testing for Meter with RF Module Inserted
- Software Verification Test
- Other Customized Test Programs

For more information, please contact us at smart.meter@ul.com or visit ul.com

Summary List of Tests for Electronic Meters (Solid State Type)

Test Item:	IEC/AS 62052 Part 11	IEC/AS 62053 Part 21	EN50470 Part 1	EN50470 Part 3	ANSI C12.1	ANSI C12.20
General Mechanical Requirement	●	●	●	●		
Protection against Penetration of Dust and Water, Terminals - Terminal Block, Resistance to Heat and Fire, Marking of Meter, Spring Hammer Test	●		●			
Temperature Test: Dry Heat Test, Cold Test, Damp Heat Cyclic Test and Solar Radiation Test, Vibration and Shock Test	●		●		●	●
Starting Current, Test of No Load Condition, Influence of Ambient Temperature Variation, Voltage Variation, Frequency Variation, Effect of External Power Frequency Magnetic Field, Influence of Short-time Overcurrent, Influence of Self- heating, Accuracy Measurement at Different Loads		●		●	●	●
Auxiliary Voltage Variation		●				
Harmonic Component, DC and Even Harmonics, Odd Harmonics in the AC Current Circuit, Sub-harmonics in the AC Current Circuit, Reversed Phase Sequence, Voltage Unbalance, Interpretation of Test Results, Meter Constant, Operation of Accessories		●		●		
Continuous Magnetic Induction of External Origin		●	●	●		
Immunity to Earth Fault	●			●		
Power Consumption		●		●	●	●
Fast Transient Burst Test, Immunity to Electromagnetic RF Fields, AC Voltage Test	●	●	●	●	●	●
Immunity to RF-conducted Disturbances	●	●	●	●		
Radio Interference Suppression, Voltage Dips and Short Interruptions, Surge Immunity Test, Impulse Voltage Test, Heating ESD	●		●		●	●
Damped Oscillatory Waves Immunity Test	●		●	●	●	●
Maximum Permissible Error, Durability, Reliability				●		
Salt-Spray and Rain-tightness Test					●	●

In addition to the above scope of testing, we can also offer additional tests for meters – for example: ANSI C62.41, ANSI C37.90.1:1989, ANSI C37.90.1:2002, ANSI C12.10, IP Test and more.

Apart from full metering test service, UL has the flexibility to offer customized test programs to help your R&D team minimize failure retests during design. Furthermore, in furtherance of UL’s mission to “work for a safer world”, UL is also developing the safety standard UL2735 for Smart Meters. For details please contact us at: smart.meter@ul.com.

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