

## Standard Information

**Standard Number:** UL 1034

**Standard Name:** Standard for Safety for Burglary-Resistant Electric Locking Mechanisms

**Standard Edition and Issue Date:** 6<sup>th</sup> Edition Dated May 18, 2011

**Date of Revisions:** May 18, 2011, and July 8, 2015

**Date of Previous Revisions to Standard:** 5<sup>th</sup> Edition Dated February 23, 2000 Revised August 1, 2008

## Effective Date of New/Revised Requirements

**Effective Date (see Processing Schedule below):** **September 1, 2016**

## Impact, Overview, Fees and Action Required

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date of **September 1, 2016** unless the product is found to comply with new/revised requirements.

**Overview of Changes:** Addition of electrical rating marking requirements for DC powered units, and incorporate the changes to the Electrical Transient Tests. Specific details of new/revised requirements are found in table below.

**If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).**

**Processing Schedule:** So that production of products bearing Listing Marks will not be interrupted, the following schedule of **approximate** dates has been established to ensure Listing Reports are found compliant by Effective Date:

- January 4, 2016 = 8 Month Report Review – Intertek will review all Reports. Update if compliance is verified or issue Findings Letter/Quote for any re-evaluations needed
- March 1, 2016 = 6 Month Quote Cut-off – Quotes returned for necessary re-evaluations
- August 1, 2016 = 30 Day Warning – Client advised of all non-compliant Reports to be Suspended
- **September 1, 2016** = Effective Date – ATM Suspended for all non-compliant Reports

**Fees:** An initial review of Listing Report (s) will be covered by a direct billing project and will be invoiced at not more than \$1000 per report.

### Client Action Required:

**Information** – To assist our Intertek Engineer with review of your Certification Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements not apply to your product (s).

**Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.**

## Description of New/Revised Technical Requirements

Clause	Verdict	Comment
-	-	<b>Revisions dated May 18, 2011</b>
62.1(d)2		These changes specifically address the addition of electrical rating marking requirements for DC powered units. DC Powered Units – Rated voltage; amperes, watts, or volt-amperes.
		<b>Revisions dated July 8, 2015</b>
44	Info	Electrical Transient Tests
44.1.1		<p><del>A product using electronic components, such as transistors, silicon controlled rectifiers (SCR's), integrated circuits, and the like, shall operate for its intended performance after being subjected to:</del></p> <p><del>a) 500 supply line transients;</del></p> <p><del>b) 500 internally induced transients; and</del></p> <p><del>c) 60 input/output circuit transients</del></p> <p><del>while energized from a source of supply in accordance with 26.3.1.</del></p> <p><u>While energized from a source of supply in accordance with 26.3.1 the product shall</u></p> <p><u>a) Experience no electrical or mechanical failure of any components of the product;</u></p> <p><u>b) Operate as intended following the test;</u></p> <p><u>c) As applicable, retain required stored memory (such as date, time, and location) within the unit when subjected to the tests described in 44.2 – 44.4.</u></p> <p><u>Exception No. 1: Annunciation of a trouble signal that, either automatically restores or is manually resettable through the operator interface is acceptable during the internally induced and field-wiring transient tests.</u></p> <p><u>Exception No. 2: Supplemental information stored within the product is not required to be retained during any of the transient tests.</u></p>
44.2.1		<p><del>A high-voltage, AC-operated unit shall operate as intended when subjected to supply line transients induced directly onto the power supply circuit conductors of the equipment under test</del></p> <p><u>be subject to supply line transients induced directly between the power supply circuit conductors of the unit under test.</u></p>

# Standards Update Notice (SUN)

Issued: January 8, 2106

44.2.2		<del>For this test, the unit is to be connected to a transient generator that produces the transients described in 44.2.3. The output impedance of the transient generator is to be 50 ohms. For this test, the product is to be connected to a transient generator capable of producing the Location Category A, 100 kHz Ring Wave transient as defined in Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits, ANSI/IEEE C62.41.</del>
44.2.3	Info	Deleted
44.2.4		
44.4.1		<p>The unit is to be energized in the normal standby condition while connected to a source of supply in accordance with 26.3.1. All <u>input/output, low-voltage (field-wiring) circuits</u> are to be tested as specified in 44.4.2 and 44.4.3, and as a result of the test, shall comply with 44.1.1.</p> <p><i>Exception: A circuit or cable that interconnects equipment located within the same room need not be subjected to this test. This test is not required when manufacturer's installation instructions indicate that it is not permitted to connect with input/output circuit cables greater than 98.5 ft (30 m) long.</i></p>
44.4.2		<del>Input/output circuits are to be tested as specified in 44.4.3 — 44.4.5. The equipment connected to these circuits shall operate as intended when subjected to transient voltage pulses as described in 44.4.3. For this test, each input/output circuit is to be subjected to the transient waveforms specified in Table 44.1 as delivered into a 200-ohm load. The transient pulses are to be coupled directly onto the input/output circuit conductors of the equipment under test.</del>
Table 44.1		NEW Table Input/output circuit transients
Figure 44.1		NEW Figure Input/output circuit transients – 2400V curve
Figure 44.2		NEW Figure Input/output circuit transients – 1000V curve
Figure 44.3		NEW Figure Input/output circuit transients – 500V curve
Figure 44.4		NEW Figure Input/output circuit transients – 100V curve
Figure 44.5		NEW Figure Minimum transient pulse duration vs. transient peak voltage
Figure 44.6		NEW Figure Minimum transient energy level vs. transient peak voltage
Figure 44.7		NEW Figure Minimum transient pulse rise time vs. transient peak voltage



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44.4.3	<p><del>For this test, each input/output circuit is to be subjected to five different transient waveforms having peak voltage levels in the range of 100 to 2400 volts, as delivered into a 200-ohm load. A transient waveform at 2400 volts shall have:</del></p> <ul style="list-style-type: none"><li><del>a) A pulse rise time of 100 volts per microsecond;</del></li><li><del>b) A pulse duration of approximately 80 microseconds; and</del></li><li><del>c) An energy level of approximately 1.2 joules.</del></li></ul> <p><del>Other applied transients shall have peak voltages representative of the entire range of 100 to 2400 volts, with pulse durations from 80 to 1110 microseconds, and energy levels not less than 0.03 joule or greater than 1.2 joules. The transient pulses are to be coupled directly onto the input/output conductors of the equipment under test</del></p> <p><u>Each input/output circuit is to be subjected to transient pulses induced at the rate of six pulses per minute as follows:</u></p> <ul style="list-style-type: none"><li><u>a) Twenty pulses (four at the 2400 peak voltage level and two at each of the other transient voltage levels specified in 44.4.2) between each lead or terminal and earth ground, consisting of ten pulses of one polarity, and ten of the opposite polarity (total of 40 pulses), and</u></li><li><u>b) Twenty pulses (four at the 2400 peak voltage level and two at each of the other transient voltage levels specified in 44.4.2) between any two circuit leads or terminals, consisting of ten pulses of one polarity, and ten of the opposite polarity (total of 20 pulses).</u></li></ul>
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44.4.4		<p>Each input/output circuit is to be subjected to 60 transient pulses introduced at the rate of six pulses per minute as follows:</p> <p>a) Ten pulses (two at each transient voltage level specified in 44.4.3) between one side of each input/output circuit and earth ground. Repeat the ten pulses with the polarity reversed (total of 20 pulses).</p> <p>b) Repeat (a) between the other side of each input/output circuit and earth ground (total of 20 pulses).</p> <p>c) Ten pulses (two at each transient voltage level specified in 44.4.3) across each input/output circuit. Repeat the ten pulses with the polarity reversed (total of 20 pulses).</p> <p>As an alternate to 44.4.1 – 44.4.3, the product shall be subjected to the Standard for Surge Tests per Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test, IEC 61000-4-5, and in accordance with the following:</p>										
<table><tr><td>Open Circuit Test Voltage,<sup>a, b</sup> Line to Ground</td><td>0.5kV and 1kV</td></tr><tr><td>Polarity</td><td>+ and –</td></tr><tr><td>Minimum number of surges at each polarity, voltage, coupling mode and signal line at a maximum rate of 1 per 5 second</td><td>5</td></tr><tr><td>Impedance in series with the transient generator</td><td>40 Ohm</td></tr><tr><td>Combination Wave Generator</td><td>1.2/50 us</td></tr></table> <p><sup>a</sup> This test is not required when manufacturer's installation instructions indicate that it is not permitted to connect cables greater than 98.5 ft (30 m) long.</p> <p><sup>b</sup> The test pulses are coupled into the leads to be tested by means of appropriate coupling networks that maintain the test pulses within IEC 61000-4-5 specification.</p>			Open Circuit Test Voltage, <sup>a, b</sup> Line to Ground	0.5kV and 1kV	Polarity	+ and –	Minimum number of surges at each polarity, voltage, coupling mode and signal line at a maximum rate of 1 per 5 second	5	Impedance in series with the transient generator	40 Ohm	Combination Wave Generator	1.2/50 us
Open Circuit Test Voltage, <sup>a, b</sup> Line to Ground	0.5kV and 1kV											
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Minimum number of surges at each polarity, voltage, coupling mode and signal line at a maximum rate of 1 per 5 second	5											
Impedance in series with the transient generator	40 Ohm											
Combination Wave Generator	1.2/50 us											
44.4.5		<p><del>At the conclusion of the test, the equipment shall comply with the requirements of the Normal Operation Test, Section 27. The product under test is to be connected in accordance with the manufacturer's installation instruction, with the intended ancillary equipment and interconnecting cables insulated from ground reference for this test. Normal operation of the product shall be confirmed prior to the test.</del></p>										
44.4.6		<p><u>NEW</u></p> <p>Input/output circuits shall be subjected to transients injected by line-to-ground coupling mode only, using a 40 ohm series resistor.</p>										
44.4.7		<p><u>NEW</u></p> <p>If the product has a large number of identical inputs/outputs circuits, then representative samples of each type of input/output circuit may be subjected to this test and considered representative of other identical circuits.</p>										

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44.4.8		<p>NEW</p> <p><u>The length of the unshielded input/output circuit conductors between the product and the coupling/decoupling network(s) shall be less than or equal to 6.5 feet (2 m). If it is specified in the manufacturer's installation instructions that input/output circuit shall only be connected with shielded cables, then in these cases, the transients shall be applied directly (i.e. without the 40 ohm series resistor) to the shield of a 65.5 ft (20 m) length of shielded cable. Current compensated chokes may be used to decouple input/output circuits carrying high frequency signals, to reduce attenuation problems.</u></p>
44.4.9		<p>NEW</p> <p><u>A minimum of 5 pulses of each polarity shall be applied at each of the 0.5 kV and 1 kV, voltage levels. The maximum pulse rate of 1 per 5 sis used. If it is necessary to ensure that any failures are not due to applying the pulses too frequently then the devices shall be replaced and the test repeated with pulses at a rate of less than 1/min.</u></p>
44.4.10		<p>NEW</p> <p><u>As a result of this test, the unit shall comply with the requirements of 44.1.1.</u></p>
		<p><b>CUSTOMERS PLEASE NOTE:</b> This Table and column "Verdict" can be used in determining how your current or future production is or will be in compliance with the new/revised requirements.</p>