

STANDARD INFORMATION

Standard: UL 486A-486B / CSA C22.2 No. 65

Standard ID:

Wire Connectors [UL 486A-486B:2025 Ed.4]

Wire Connectors [CSA C22.2#65:2025 Ed.7]

Previous Standard ID:

Wire Connectors [UL 486A-486B:2018 Ed.3+R:20Jul2023]

Wire Connectors [CSA C22.2#65:2018 Ed.6+U1;U2]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **March 14, 2027**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- Revised requirements for testing with copper wire
- New requirements for multi-tap wire connectors
- Addition of installation instructions for tangles connectors

Specific details of new/ revised requirements are found in table below

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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<p>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</p>
8	Info	Sampling Requirements
8.1	Info	General
		<p>With reference to 8.1.3, for a multi-tap connector, the basic specimen set shall be as follows:</p> <p>a) <u>For a multi-tap connector in the form of a connector strip (i.e., “neutral bar”), the basic specimen set shall consist of two specimens of three connector holes cut from a length of the connector strip. The distance between the holes cut from the connector strip shall be representative of the minimum distance.</u></p> <p>b) <u>For a line of multi-tap connectors of similar design with multiple termination locations on a connector block, the basic specimen set shall consist of two specimens with connections for the largest conductor or set of conductors, and a sufficient number of connections for the smaller conductors to most closely match the ampacity of the largest conductors. See 8.2.4 and 8.3.5. These specimens may be cut from a larger connector block or special made to be representative of the multi-tap connector.</u></p> <p><u>NOTE: A representative sample for a line of multi-tap connectors will result in all clamping units being terminated to conductors that are conducting current during the Current Cycling and Static Heating tests.</u></p> <p>c) <u>For a single design multi-tap connector not intended to represent a line of connectors, the specimen set shall be two specimens of the design being evaluated.</u></p> <p><u>NOTE: Testing of a single design may result in clamping units that are not terminated to conductors during testing.</u></p>
8.1.5		
8.2	Info	Current-cycling
		<p><i>New clause added;</i></p> <p>For a multi-tap connector not intended for paralleling, testing shall be as follows:</p> <p>a) Without an assigned ampere rating: The largest conductor size in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating” as indicated in Table 7.5. If the “assigned maximum ampere rating” of the largest conductor size does not match the “assigned maximum ampere rating” of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall be the basis for determining the test current. The size of the conductors used during the test shall be based on the “assigned maximum ampere</p>
8.2.4		



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		<p>rating” for those conductor sizes that is equal to, but not less than, the ampere rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.</p> <p>b) With an assigned ampere rating: Specimens shall be tested using the sizes of conductors corresponding to the assigned maximum ampere rating. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.5, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the “maximum assigned ampere rating” for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating.</p> <p>NOTE: See Annex B for examples.</p> <hr/> <p><i>New clause added;</i></p> <p>For a multi-tap connector intended for paralleling, testing shall be as follows:</p> <p>a) Without an assigned ampere rating: Two tests shall be performed as follows:</p> <ol style="list-style-type: none">1) The largest conductor size in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating” as indicated in Table 7.5. If the ampere rating of the largest conductor size does not match the ampere rating of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall be the basis for determining the test current. The size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the ampere rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.2) The largest conductors paralleled with the maximum parallel conductor sizes in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating”. For conductors that are paralleled, the “assigned maximum ampere rating” is determined from Table 7.6, for conductors that are not paralleled, the “assigned maximum ampere rating” is determined from Table 7.5. If the ampere rating of the largest paralleled conductor sizes does not match the ampere rating of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall
8.2.5		



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		<p>be the basis for determining the test current. The size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the ampere rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.</p> <p>b) With an assigned ampere rating: Specimens shall be tested using the sizes of conductors corresponding to the assigned maximum ampere rating. Two tests shall be performed as follows:</p> <ol style="list-style-type: none"> 1) The largest single conductor size. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.5, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating. 2) The largest conductors paralleled. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.6, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating. <p>NOTE: See Annex B for examples.</p>
8.3	Info	<p>Static-heating sequence</p>
		<p><i>New clause added;</i></p> <p>For a multi-tap connector not intended for paralleling, testing shall be as follows:</p> <p>a) Without an assigned ampere rating: The largest conductor size in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating” as indicated in Table 7.5. If the “assigned maximum ampere rating” of the largest conductor size does not match the “assigned maximum ampere rating” of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall be the basis for determining the test current. The size of the conductors used during the test shall be based on the “assigned maximum ampere rating” for those conductor sizes that is equal to, but not less than, the ampere</p>



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rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.

b) With an assigned ampere rating: Specimens shall be tested using the sizes of conductors corresponding to the assigned maximum ampere rating. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.5, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the “maximum assigned ampere rating” for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating.

NOTE: See Annex B for examples.

New clause added;

For a multi-tap connector intended for paralleling, testing shall be as follows:

a) Without an assigned ampere rating: Two tests shall be performed as follows:

1) The largest conductor size in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating” as indicated in Table 7.5. If the ampere rating of the largest conductor size does not match the ampere rating of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall be the basis for determining the test current. The size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the ampere rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.

8.3.6

2) The largest conductors paralleled with the maximum parallel conductor sizes in combination with the number of smaller conductor sizes that match the “assigned maximum ampere rating”. For conductors that are paralleled, the “assigned maximum ampere rating” is determined from Table 7.6, for conductors that are not paralleled, the “assigned maximum ampere rating” is determined from Table 7.5. If the ampere rating of the largest paralleled conductor sizes does not match the ampere rating of a combination of the smaller conductor sizes, then the closest ampere values shall be identified, and the highest ampere rating that is attainable from the conductor sizes shall be the basis for determining the test current. The size of the conductors used during the test shall be based on the ampere rating for those conductor sizes



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		<p>that is equal to, but not less than, the ampere rating used as the basis for determining the test current. If the ampere rating used as the basis for determining the test current is based on multiple small size conductors, the corresponding currents in Table 7.5 for that small size conductor shall be the basis for calculating the test currents.</p> <p>b) With an assigned ampere rating: Specimens shall be tested using the sizes of conductors corresponding to the assigned maximum ampere rating. Two tests shall be performed as follows:</p> <ol style="list-style-type: none"> 1) The largest single conductor size. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.5, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating. 2) The largest conductors paralleled. If the assigned maximum ampere rating of a connector falls between the two values of “assigned maximum ampere rating” specified in Table 7.6, the test current used shall be that which corresponds to the higher assigned rating. The conductor size used to align with the test current shall then be compared to the other conductor sizes (either the largest conductor, or the sum of the smaller conductor sizes) and the size of the conductors used during the test shall be based on the ampere rating for those conductor sizes that is equal to, but not less than, the corresponding assigned maximum ampere rating.
		NOTE: See Annex B for examples.
9	Info	Test Methods
9.1	Info	General
9.1.5	Info	Test and control conductors
9.1.5.7		A connector for flexible copper wire other than Class B, Class C, or IEC Class 2 stranding shall be subjected to all test sequences using the class with the minimum and maximum number of strands to represent wire of that specific size with stranding counts between the tested ranges. Refer to Annex F for Conductor Stranding. <u>If the connector is rated for Class B conductors or IEC Class 2, Class B or IEC Class 2 shall be used to represent the minimum number of strands.</u>
10	Info	Marking, Labeling, and Packaging
10.12		A connector, a unit container, or an information sheet packed in the unit container for a connector tested with conductors other than Class B, SIW, or Class C stranding (see 9.1.5.7) shall also be marked with the conductor class or classes. <u>Connectors not rated for Class B or C conductors shall be marked “Flex Only” or “Class X Only”, or the equivalent on the connector. Where “X” denotes the wire Class.</u>



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
		A tangless connector shall be provided with installation instructions specifying:
10.28		a) Material of tang; b) Plating on tang; c) Minimum cross-section of tang; d) Material of mounting screw; e) Use of a washer, type and size; and f) Torque to be used to secure the connector to the tang.
