STANDARDS UPDATE NOTICE (SUN)
ISSUED: December 18. 2020

STANDARD INFORMATION

Standard Number: UL 1008 / CSA C22.2 No. 178.1 / NMX-J-672 ANCE
Standard Name: Transfer Switch Equipment
Standard Edition and Issue Date: 8th Edition Dated December 22, 2014
Date of Revision: September 24, 2018
Date of Previous Revision of Standard: October 15, 2015

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **October 11, 2021**

IMPACT, OVERVIEW, 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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes:

- Revisions to address the grounding and bonding of neutral circuits
- Revisions to the overload, endurance, and short circuit testing
- Revisions to single pole inlets
- Revisions regarding the use of "circuit breaker based" transfer switches
- Revisions covering freestanding complete packaged fire pump power transfer units

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).

Client Action:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements do 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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.

STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are underlined and deletions are shown ~~lined out~~ below.
4	Info	**Characteristics**
4.2	Info	**Ratings**
4.2.2		Short-circuit characteristics – The available fault current indicated in 5.2.3.1, 5.2.4.1, and 5.2.5.1 shall be determined using Table 25. ~~a) 500 A for a switch rated 100 A or less;~~ ~~b) 10,000 A for a switch rated 101 - 400 A;~~ ~~c) 20 times the current rating of the transfer switch, but not less than 10,000 A for a switch rated more than 400 A; or~~ ~~d) One of the values indicated in Table 1 when rated more than specified in (a), (b), or (c) for the switch rating.~~
6	Info	**Construction Requirements**
6.19	Info	**Transfer switches with integral inlets for portable generator connection**
6.19.19		Transfer equipment with separable single-pole connectors need not comply with 6.19.18 when the connector rating is greater than 60 A, ~~cable size for the conenctors is equal to or greater than 1/0 AWG~~ and the transfer equipment is marked in accordance with 5.2.7.5 – 5.2.7.7.
7	Info	**Performance Requirements**
7.1		**Operating mechanism**
7.1.3		Other than as noted in 7.1.4, the operating mechanism shall be such that the load must be connected to either the normal or alternate source of supply, if one or both are available with sufficient voltage and frequency to permit proper operation. This requirement does not preclude the use of service disconnect switches in transfer switches marked for service use, as opening of a service disconnect is considered to render the source unavailable. If intended for use with paralleled engine-generator sets, transfer to the generator source or sources may be inhibited until sufficient power for the connected load is available. Refer to 5.2.2.5.

CLAUSE	VERDICT	COMMENT
8	Info	**Service Equipment Requirements**
8.1	Info	**Service equipment for use in Mexico and the United States**
8.1.2	Info	**Service-disconnecting means**
8.1.2.6		***New clause added;*** Transfer switches using circuit breakers as the transfer mechanism may use the circuit breaker(s) as the required service disconnect(s). In this case, the operating mechanism shall be such as to prevent automatic closing of the circuit breaker(s) when the service disconnect has been opened via manual means.
8.2	Info	**Service equipment for use in Canada**
8.2.3	Info	**Grounding and bonding of neutral circuits**
8.2.3.1		Equipment intended to function as service equipment on ac services involving a neutral shall have a neutral assembly located within the service equipment enclosure. The neutral assembly shall have an adequate number of suitable pressure-terminal connectors, clamps, or other acceptable means for connecting the following: a) The incoming (grounded) neutral conductor; b) The corresponding outgoing (load) conductor, where present; c) The service-grounding conductor; d) The bonding conductor to the enclosure; and e) The bonding conductor to the service conduit (or the equivalent). The connectors, clamps, etc., shall be grouped together and shall use pressure-type wire connectors for all field-made terminations. Terminal sizes shall be determined in accordance with Tables 16 and 41 of the Canadian Electrical Code, Part I. <u>Where the neutral assembly is located within the service-disconnecting compartment, a second neutral assembly shall be installed outside the service-disconnecting compartment and within the service equipment enclosure.</u> <u>Where the neutral assembly is located within the service-disconnecting compartment, and where a neutral between the normal power supply source and the emergency power supply source is not interrupted in the transfer switch, a second neutral assembly shall be installed outside the service-disconnecting compartment and within the service equipment enclosure and shall be connected to the neutral assembly located in the service-disconnecting compartment by the conductor sized in accordance with Annex A1, Item 1.</u>

<table>
<tr><th>CLAUSE</th><th>VERDICT</th><th>COMMENT</th></tr>
<tr><td>9</td><td>Info</td><td>Test Requirements – General</td></tr>
<tr><td>9.13</td><td>Info</td><td>Short-circuit test</td></tr>
<tr><td>9.13.3</td><td>Info</td><td>Rated short-circuit capacity (withstand)</td></tr>
<tr><td>9.13.3.11</td><td></td><td>For a time duration test, the test current shall pass through the transfer switch for at least ~~0.050 seconds~~ the time duration shown in Table 25. In addition to this time duration test, any other time durations may be tested, including those less than the minimum time duration, but shall be one of the values in Table 27. The transfer switch markings shall be as specified in 5.2.4.1. The marked time duration shall be equal to the duration used during the test ~~0.050 seconds~~.</td></tr>
<tr><td>9.13.3.18</td><td></td><td>A transfer switch intended for use on an alternating-current system shall be tested with alternating current at a frequency in accordance with Table 15 on a circuit as indicated in Figure 9.13.3.1. The test shall be performed in accordance with the following:

e) The power factor of the circuit shall be determined using Table 25; and ~~0.40 - 0.50 for currents of 10,000 A or less, 0.25 - 0.30 for currents 10,001 - 20,000 A and 0.20 or less for currents greater than 20,000 A. Less power factors may be used if agreeable to those concerned;~~</td></tr>
<tr><td>Table 25</td><td></td><td>Available short-circuit current
<table>
<tr><th>Switch rating</th><th>Current in amperes[a]</th><th>Power factor[b]</th><th>Time duration test time in seconds, minimum[c]</th></tr>
<tr><td>100 A or less
101 - 400A
401 A - 100 A

1001 A and greater</td><td>5,000
10,000
20 times rating, but not less than 10,000 A
20 times rating</td><td>0.40 -0.50
0.40 -0.50
0.25 -0.30

0.30 or less</td><td>0.008
0.025
0.050

0.050</td></tr>
<tr><td colspan="4">[a] This value may be higher at the option of the manufacturer. The value shall be one of the acceptable values shown in Table 1.
[b] This value may be lower at the option of the manufacturer.
[c] Test times are minimum values for the time duration test for Type A transfer switches in accordance with 9.13.3.11. In addition to the minimum value test, any other time durations may be tested at the option of the manufacturer but shall be one of the values shown in Table 27.</td></tr>
</table></td></tr>
<tr><td>Annex E</td><td>Info</td><td>Transfer switches for fire pump service</td></tr>
<tr><td>E2</td><td>Info</td><td>Construction – General</td></tr>
<tr><td>E2.3</td><td></td><td>New clause added;

This clause contains requirements for disconnecting means for isolating switches and circuit breakers (see standard for details).</td></tr>
<tr><td>E.2.4</td><td></td><td>A fire pump transfer switch shall be provided with undervoltage sensing of all ungrounded conductors for the normal source. If a circuit breaker is provided as part of the transfer switch assembly, the normal source voltage shall be sensed at the load terminals of the ~~fire pump controller circuit breaker, if provided~~ circuit breaker. If a circuit breaker is not provided, the normal source voltage shall be sensed at the line terminals of the transfer switch.</td></tr>
</table>

CLAUSE	VERDICT	COMMENT
E3	Info	**Performance**
E3.2		***New clause added;*** The performance of a fire pump transfer switch assembly which includes disconnecting means on the normal and/or alternate supply input shall be additionally investigated by subjecting the representative assembly or assemblies in commercial form to the tests described in Performance Tests – Transfer Switch Assembly, Section E3A.
E3A		***New section added;*** **Performance Tests – Transfer Switch Assembly** This section contains requirements for performance tests for transfer switch assemblies (see standard for details).
E5	Info	**Marking – Details**
E5.1		In addition to the marking requirements in 5.2, a fire pump transfer switch shall be marked "Fire Pump Power Transfer Switch". Where applicable, this marking shall also include one of the markings in E5.2 – E5.4. For enclosed devices, this marking shall be on the front exterior of the enclosure.
E5.6		***New clause added;*** With reference to E2.3(a)(5) and E2.3(c)(5), an isolating switch shall be marked on the outside of the enclosure adjacent to the operating handle with the signal word, "WARNING", and the following or equivalent statement, "RISK OF ELECTRIC SHOCK – DO NOT OPEN OR CLOSE THIS SWITCH WHILE THE CIRCUIT BREAKER (DISCONNECTING MEANS) IS IN THE CLOSED POSITION."
E5.7		***New clause added;*** With reference to E2.3(c)(4), an instruction label shall be provided on the outside of the enclosure adjacent to the operating handles of the isolating switch and circuit breaker which directs the order of operation.
E5.8		***New clause added;*** The circuit breaker defined in E2.3(b) shall be provided with a nameplate with the legend, "CIRCUIT BREAKER – DISCONNECTING MEANS", in letters not less than 10 mm (3/8 in) high, located on the outside of the transfer switch assembly enclosure adjacent to the means for operating the circuit breaker.
Annex G	Info	**Softload Transfer Switches**
G5	Info	**Product Information**
G5.2	Info	**Marking Requirements**

CLAUSE	VERDICT	COMMENT
		New clause added
G5.2.3		A softload ATS shall be marked, " The short-circuit and short-time ratings marked on this product assume only one source is suppling power. During soft load transition, the transfer switch could be subjected to fault current from both sources."
		CUSTOMERS PLEASE NOTE: This Table and column "Verdict" can be used in determining how your current or future production is or will be in compliance with new/revised requirements.