

STANDARD INFORMATION

Standard: IEEE C37.60 / IEC 62271-111

Standard ID: High-Voltage Switchgear and Controlgear - Part 111: Automatic Circuit Reclosers and Fault Interrupters for Alternating Current Systems up to 38 Kv [IEC 62271-111:2019 Ed.3/IEEE C37.60:2018]

Previous Standard ID: High-Voltage Switchgear and Controlgear - Part 111: Automatic Circuit Reclosers and Fault Interrupters for Alternating Current Systems up to 38 Kv [IEC 62271-111:2012 Ed.2/IEEE C37.60:2012]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **February 12, 2026**

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 Reports not updated to this version by the effective date above will be withdrawn.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:

- Adoption of the “standard test method” for the conduction of wet tests for both IEEE and IEC voltage ratings
- Line and cable charging tests
- Added test voltage level requirements
- Added test specifications for effectively earthed neutral systems
- Added low current tests
- Time-current test requirements changes including increased number of test current levels and tests at each level
- Mechanical duty tests added requirements for testing at high and low temperature
- Added pass/fail criteria for fault interruption tests with restrikes
- New sections added for Guide to the selection of reclosers, Information to be given with enquiries, tenders and orders, transport, storage, installation, operating instructions and maintenance, safety, and Influence of the product on the environment

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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i>
7	Info	Type Tests
7.2	Info	Dielectric Tests
7.2.7	Info	Tests of switchgear and controlgear of $U_r \leq 245$ kV
		<i>New clause added;</i>
7.2.7.2		Power-frequency voltage tests
		Subclause 7.2.7.2 of IEC 62771-1:2017 is applicable.
7.101	Info	Line-changing current and cable-charging current interruption tests
		Test voltage
		Single phase testing is not permitted for verification of three-phase switching performance except as provided in 7.101.4.2.
		<u>The power-frequency test voltage is the average of the phase-to-phase voltages and shall be measured in the interval between 1 cycle and 1,5 cycles after the final phase arc-extinction. An acceptable alternative is the average of the phase-to-ground voltages multiplied by $\sqrt{3}$.</u>
7.101.6		<u>The test voltages in the case of three-phase tests on three-phase reclosers or on single-phase reclosers shall be equal to or greater than the maximum voltage of the recloser. The three individual phase voltages shall not vary by more than 10% of the average value.</u>
		<u>The power frequency test voltage and the DC voltage resulting from the trapped charge on the capacitive circuit shall be maintained for a period of at least 0,3 s after breaking.</u>
		<u>The voltage magnitude after clearing can escalate with multiple restrikes and test laboratories may shut power off to protect their equipment. The recloser shall withstand the recovery voltage for a minimum of 0,3 s after breaking for the operation to be considered successful. Otherwise, the operation shall not be counted as either a successful or unsuccessful operation.</u>



CLAUSE	VERDICT	COMMENT
7.103	Info	Rated short-circuit breaking current tests <i>New clause added;</i> Verification of short-circuit breaking current The standard operating duty test as specified in 7.103.4 is required for all reclosers to qualify for $k_{pp} = 1,5$.
7.103.3		If the recloser is to be rated for $k_{pp} = 1,3$, it shall also be tested according to one of the three test methods in 7.103.5. Qualification for $k_{pp} = 1,3$ (use on effectively earthed neutral systems) is an optional capability of this document. Single-phase reclosers that have completed the standard operating duty test at the required rated voltage U_r are automatically qualified for both non-effectively earthed and effectively earthed neutral systems. <i>New section added;</i> Tests rated for $k_{pp} = 1, 3$ (effectively earthed neutral systems)
7.103.5		If a three-phase recloser is to be rated for $k_{pp} = 1,3$ (application on effectively earthed neutral systems), it shall be tested as specified in 7.103.5. See standard for details. <i>New section added;</i>
7.104		Low current tests Applicability
7.104.1		These tests are in addition to the standard operating duty covered by 7.103 and are required for all reclosers to demonstrate the switching capability at low currents. See standard for details. <i>New section added;</i> Time-current tests
7.108		The purpose of this type test series is to verify the clearing time capability of the entire recloser system (recloser switch unit, control, and any interconnecting means) for time-current curve operation, based upon the phase current applied to recloser. See standard for details.



CLAUSE	VERDICT	COMMENT
		<i>New section added;</i>
		Mechanical duty test
7.109		Two series of mechanical tests are required: Mechanical endurance test at ambient temperature (first series) Operational test at low and high temperature (second series) See standard for details.
7.112	Info	Condition of recloser after each test of 7.101, 7.103 and 7.104
		General requirements
		After performing the specified making and breaking test duties, the recloser shall be in the following condition.
7.112.1		a) Maintenance: During the test, the recloser shall have functioned without failure and without maintenance or replacement of parts. b) Mechanical: The recloser shall be substantially in the same mechanical condition as at the beginning and the recloser shall be capable of automatic and manual operation. The time current characteristics of the recloser as defined in 7.108 shall be substantially the same as initial (prior to test duty) values. The arcing contacts or any other specified renewable parts might be worn. The quality of the oil used for arc extinction in oil reclosers may be impaired and its quantity reduced from the normal level. There may be deposits on the insulators caused by the decomposition of the arc-extinguishing medium. c) Electrical: The recloser shall be capable of withstanding 80 % of the rated power frequency insulation withstand test level for 1 min, and of carrying rated continuous (normal) current, but not necessarily without exceeding rated temperature rise. Resistance measurements taken before and after the operating duty test may be used to establish the ability to carry the rated continuous (normal) current. For devices that have both interrupting and non-interrupting gaps, each gap shall be tested in its respective open position. Gaps that may be open continuously shall withstand 80 % of the values shown in column 5 of Table 2 and Table 3. Gaps that may be exposed to voltage stresses for short durations significantly less than 1 min shall be capable of withstanding a voltage to be stated by the manufacturer but not less than the rated maximum voltage of the device. Visual inspection and no-load operation of the used recloser after tests are usually sufficient for checking these requirements. For reclosers having contact structures not readily visible, a contact resistance check in accordance with 7.4.4 shall be made to determine the recloser's current carrying ability.



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		<p>If the resistance has increased to more than specified in 7.4.4, a continuous current test at rated continuous (normal) current with thermocouples placed as practicable shall be conducted to ensure the recloser will not experience thermal runaway (see 7.113).</p> <p><u>If faults occur which are neither persistent nor due to defect in design, but rather are due to errors in assembly or maintenance, the faults can be rectified and the recloser subjected to the repeated test-duty concerned. In those cases, the test report shall include reference to the invalid tests.</u></p> <p><u>NSDDs may occur during the recovery voltage period following a breaking operation. However, their occurrence is not a sign of distress of the switching test object. Therefore, their number is of no significance to interpreting the performance of the test object. They shall be reported in the test report in order to differentiate them from restrikes.</u></p> <p><u>During the test series, only one occurrence of a restrike shall be permitted. The duration of the restrike current shall not exceed one half-cycle of power frequency current. If the restrike occurs during the last sequence of the test series, then one additional full sequence shall be made to demonstrate that there is no further occurrence of a restrike.</u></p> <p><u>An operation containing one or more restrikes that results in an inability of the test object to successfully clear the test current constitutes a failure of the test.</u></p>
		<p><i>New section added;</i></p>
9		<p>Guide to the selection of reclosers</p> <p>See standard for details.</p>
		<p><i>New section added;</i></p>
10		<p>Information to be given with enquiries, tenders and orders</p> <p>See standard for details.</p>
		<p><i>New section added;</i></p>
11		<p>Transport, storage, installation, operating instructions and maintenance</p> <p>See standard for details.</p>
		<p><i>New section added;</i></p>
12		<p>Safety</p> <p>See standard for details.</p>



CLAUSE	VERDICT	COMMENT
		<i>New section added;</i>
13		Influence of the product on the environment See standard for details.
