

INSTALLER AND INSPECTOR QUICK-REFERENCE: NRCA-LTI-02-A Automatic Time Switch Controls	
Purpose and Scope of the Test	
<p>This test ensures that indoor lighting controlled by an automatic time switch control turns lighting on and off according to a programmed schedule and that manual override controls turn lighting on during scheduled off periods. Turning lighting off during typically unoccupied periods prevents energy waste.</p>	
Test Trigger	
<p>This test is required when automatic time switch lighting controls are installed for nonresidential and hotel/motel buildings, and multifamily building common use areas. All installed indoor lighting must be controlled by shut off controls.</p>	
Relevant Energy Code References and Required Compliance Documents	
<p>Title 24, Part 6 of the California Building Standards Code, Building Energy Efficiency Standards (Energy Code) sections 110.9(b)1Aii, 130.1(c)1, 130.1(c)3, 130.1(c)4, 130.4(a), 160.5(b)4Ci, 160.5(b)4Ciii, 160.5(b)4Civ, and 160.5(e)1; Reference Nonresidential Appendix NA7.6.2; NRCC-LTI-E, LMCC-LTI-E.</p>	
Who Can Perform the Test	
<p>This test must be performed by an acceptance test technician certified by a CEC-approved Acceptance Test Technician Certification Provider, using compliance document NRCA-LTI-02-A.</p>	
Required Tools	
<p>This test verifies the functionality of installed automatic time switch controls visually and does not require any tools.</p>	
Estimated Time to Complete Test	
<p>Construction inspection: 0.5 to 2 hours (depending on familiarity with lighting control programming).</p> <p>Functional testing: 2 to 6 hours (depending on familiarity with lighting control programming, number of lighting circuits and override switches to be tested, and programmed time delays between on and off signals).</p>	

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Automatic Time Switch Controls

Potential Issues and Cautions

The manual override time limit can be adjusted to minimize test time, but the time limit setting (not to exceed 2 hours) must be reset upon completion of the test. When possible, perform the test when the spaces are unoccupied. Turning the lights off when other occupants are present can cause problems and unsafe working conditions.

Inspection Enforcement

- Verify that the construction inspection and functional testing items on NRCA-LTI-02-A are marked with "Complies."
- Verify the contact information of the acceptance test technician is complete with the acceptance test technician certification identification.
- Verify that all declaration statements on the last page of the NRCA-LTI-02-A are complete and that the document is signed.
- All NRCA forms for Lighting Controls must have a water mark logo from a certified Lighting Controls ATTCP Provider.

Acceptance Criteria

Automatic time switch controls are programmed with acceptable weekday, weekend, and holiday schedules, per building occupancy profile.

The correct date and time are set in the time switch.

Program backup capabilities are present to prevent the loss of the device's schedules for at least 7 days, and the device's time and date setting for at least 72 hours if power is interrupted.

All lights turn on at the scheduled times.

All lights turn off automatically at the scheduled times.

The manual override switch is functional and turns associated lights on when activated.

The manual override time limit is no more than 2 hours, except for spaces that are exempt per exception to section 130.1(c)3.

Manual override switches remote from the area with controlled luminaires allow the user to see the controlled luminaires or have a visual signal or display showing the state of controlled luminaires.

Follow the **Construction Inspection** and **Functional Testing** instructions on NRCA-LTI-02-A.