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Philips Emergency Lighting

REDiTEST U.S. Patent No. 5,666,029

Self-Testing Fluorescent Emergency Ballasts
Frequently Asked Questions

What is REDiTEST®?

REDiTEST® is a fluorescent emergency ballast technology that performs automatic Code-compliance testing. This product automatically tests itself according to the schedule established by the Life Safety Code: 30 seconds every 30 days; 90 minutes once a year. REDiTEST® ensures readiness of emergency lighting, so you know it will work when it is needed the most — during the next power failure.

Which Philips Bodine products feature REDiTEST®?

Currently Philips Bodine offers this special feature on models B50ST for tubular lamps and B74CST for 4-pin compact fluorescent lamps. Refer to individual product Specification Sheets for complete details.

Code, Self-Testing And Self-Diagnostics

Why test unit equipment?

The National Electrical Code and Life Safety Code require periodic testing, visual inspections, and written records of the test results for emergency lighting. Fire officials, safety personnel, building owners, and specifiers all want the assurance of knowing that life safety equipment is ready at all times.

What test schedule does Code require for emergency lighting?

The NFPA's 1997 Life Safety Code requires regular testing for self-contained unit equipment and exit signs. Article 5-9.3 Periodic Testing of Emergency Lighting Equipment states:

> *A functional test shall be conducted on every required battery-powered emergency lighting system at 30-day intervals for a minimum of 30 sec. An annual test shall be conducted for a 1½-hr duration. Equipment shall be fully operational for the duration of the test. Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.*

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If emergency lighting equipment is self-testing and self-diagnostic, will written records need to be kept?

Yes, even if emergency lighting is self-testing and self-diagnostic, Code still requires that written records be provided for unit equipment. The exception reads:

> *Exception: Self-testing/self-diagnostic, battery-operated emergency lighting equipment that automatically performs a minimum 30-sec test and diagnostic routine at least once every 30 days and indicates failures by a status indicator shall be exempt from the 30-day functional test, provided a visual inspection is performed at 30-day intervals.*

The exception to Article 5-9.3 exempts only the 30-day manual test, not written records. Simply walk around and visually inspect REDiTEST® units and log test results every 30 days.

Is REDiTEST® self-testing and self-diagnostic?

Yes, even though it does not have a status indicator display panel with multiple LEDs, REDiTEST® provides a simpler method of indicating test results and other information. If the indicator light is illuminated, the unit is charging the battery and monitoring battery voltage and charging current. If the indicator light is not illuminated, the unit is conducting a self-test and monitoring emergency performance, or the emergency unit is in emergency mode due to a power failure. If the indicator light is flashing and the audible alarm is activated, the unit requires attention. A Trouble Shooting Guide appears in the Installation Instructions, providing direction on problem solutions.

Operation, Testing and Status Indicators

How does REDiTEST® test and monitor itself?

During normal operation, REDiTEST® continually monitors charging current and battery voltage, constantly comparing measurements to preset limits. During automated testing, REDiTEST® automatically simulates an AC power failure causing the unit to switch to emergency mode and initiates a discharge test monitoring battery voltage, discharge current, and emergency lamp operation.

Inside REDiTEST® is a micro-controller that knows when the AC ballast is working. The chip will evaluate the data and schedule the optimum time to initiate a test. The unit also keeps track of the tests and knows when to initiate a 30-second test and when to initiate the 90-minute full discharge test.

How can I be sure REDiTEST® is testing itself?

One of the benefits of REDiTEST® is that maintenance personnel do not have to be present when the unit tests. Because they are not physically testing the emergency unit, they may not see REDiTEST® actually testing itself. When maintenance personnel visually inspect the emergency lighting fixture, they will see the test results. The indicator light will flash only if REDiTEST® detects an abnormality. (If selected, an audible alarm will also activate.) If the indicator light is illuminated, the unit passed the last test and is ready for the next power failure.

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How does REDiTEST® indicate failed test results?
REDiTEST® provides a simple method of indicating which emergency units require service. A flashing indicator light and audible alarm indicate a failed test condition and alert maintenance personnel when emergency lighting units require service. Should REDiTEST® detect a problem after completing a routine test, the indicator light flashes and, if selected, the audible alarm sounds 4 times every 30 seconds. The indicator light will continue to flash and the audible alarm will continue to beep until maintenance corrects the fault or the fault indication is reset.

On model B74CST, the LED status indicator light and test switch are located on the test switch/monitor plate, which can be used for remote installation.

What should you do if REDiTEST® decides to test while the room is occupied?
This is not likely to happen because REDiTEST® has been designed not to interrupt end-user activity. If the lights are on, the test will be delayed until two hours after the lights are turned off. The maximum delay time is 72 hours. Only then will the unit initiate a self-test when the lights are on. Should the unit begin a test while the room is occupied, REDiTEST® provides a method of interrupting a test-in-progress. Simply reset the unit by turning the wall switch off (or on) for five seconds, then turn it on (or off) again. The unit will postpone the scheduled test for 8 hours.

Can REDiTEST® self-test in night-light applications?
For applications where lights remain illuminated, REDiTEST® postpones a scheduled test for a maximum of 72 hours, then executes the scheduled test to ensure Code requirements are met.

Installation

Will REDiTEST® require different installation?
Yes, installation of this emergency ballast is different from standard Philips Bodine models. The emergency ballast must interrupt the switched (or unswitched) hot lead feeding the AC ballast in order to simulate a power failure. It also uses this hot lead to know when the AC ballast is operating its lamps. Before beginning installation, consult wiring diagrams found in the Installation Instructions.

If REDiTEST® tests itself, why include/install the test switch?
UL requires that all emergency lighting provide a test switch, self-testing or otherwise. A single pole switch is provided with the unit, and serves as the means to reset the indicator light and audible alarm, and allows manual tests to be conducted any time.

Why does the REDiTEST® B50ST use a single pole test switch, and not double pole like the standard B50?
Since the AC ballast is powered through the emergency ballast, the REDiTEST® B50ST can use a single pole test switch to manually interrupt power to both the AC ballast and the emergency ballast.

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Can the REDiTEST® B50ST be installed inside the ballast channel like the standard B50?

Yes. Because the microcontroller and electronic circuitry fit inside the ballast case, the REDiTEST® B50ST is the same size as the standard B50. Therefore, the B50ST can be installed inside the ballast channel, on top of, or remote from the fixture. Model B74CST is supplied with conduit for installation with typical downlight fixtures for compact fluorescent lamps, and can be installed on top of, or remote from the fixture.

Will the installer be able to conduct a manual test shortly after installing the emergency ballast?

A short term test may be conducted after one hour. A long term test may be conducted after 24 hours. For more details, please refer to Installation Instructions.

Will REDiTEST® begin a self-test if the battery has not had enough time to charge?

No, REDiTEST® will not begin a self-test until the unit has charged the battery for 48 hours. REDiTEST® has a built in "gas gauge" that keeps track of the battery's state-of-charge.

What should the installer do if, after installation, the indicator light and audible alarm were activated?

The installer should disconnect the battery connector and AC power source, and consult the Trouble Shooting Guide found in the Installation Instructions before continuing installation. Also, check to see if the unit has been wired correctly.

Troubleshooting

What happens when REDiTEST® indicates a problem and the unit is not serviced by the next scheduled test?

In the event that a test failure is not serviced prior to the next test cycle and the unit passes the subsequent test, then the failure indicator is automatically reset. Failure of a 90-minute test will cause the next scheduled test to also be a 90-minute test, so that failure due to low battery capacity will not be reset by a short functional test.

Will REDiTEST® substitute a manual test for a scheduled test?

No. To ensure that a unit will adhere to Code, REDiTEST® will not substitute a manual test or test of shorter duration to fulfill testing requirements. A REDiTEST® unit must pass the next scheduled test.

For example: If the unit indicates failure as a result of conducting a 90-minute test, the next scheduled test will also be a 90-minute test. REDiTEST® will continue to schedule the 90-minute test until the problem has been corrected, or the unit passes the next 90-minute test.

Real power failures do not take the place of scheduled tests either, though they may delay them. The battery must be fully recharged to initiate a scheduled test.

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I am concerned that after REDiTEST® completes its 90-minute discharge test, the battery will not have enough time to recharge, and the emergency ballast will not operate should a power failure occur shortly afterwards. What should I do?

The National Electrical Code requires that emergency lighting be tested annually for 90 minutes, so this possibility exists whether emergency lighting is tested manually or automatically. REDiTEST® attempts to schedule tests during unoccupied times. This minimizes disruption and allows recharging before the space is occupied again.

Code also states that "any required illumination shall be arranged so that the failure of any single lighting unit... will not leave any area in darkness." This requirement is commonly met by providing emergency lighting with overlapping patterns. Since each REDiTEST® ballast operates independently, the chance of two adjacent units testing simultaneously is extremely small. On the other hand, manual tests are usually performed on entire building emergency systems at once, leaving open a wider window of vulnerability.

How do I reset the indicator light and audible alarm once the unit has been serviced?

To reset the indicator light, push and hold the manual test switch for a minimum of 10 seconds.

What do I do if the unit continues to indicate failure? How will I know what to do if the audible alarm is not selected?

Follow all steps of the Trouble Shooting Guide found in the Installation Instructions.

Any Questions? Call 800-223-5728, Fax 901-853-5009 or E-mail info@bodine.com

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