

New Device Allows Safe Disconnection of Fluorescent Luminaires

Thomas & Betts has introduced the Sta-Kon Luminaire Disconnect, a device enabling fluorescent lighting fixtures to be disconnected without exposure to live wires, according to the company.

The Luminaire Disconnect was developed in response to a new National Electrical code requirement that will go into effect on January 1, 2008. A similar industry requirement is currently in effect via the Canadian Electrical Code, Part 1, Canada, 2006 Edition.

The Luminaire Disconnect is UL listed and CSA certified for this application. It complies with NEC 410.73 (G), 2005 edition, and CEC part 1, rule 30-308(4).

The International Brotherhood of Electrical Workers has stated that 277-volt lighting circuits are the most lethal to electricians. Connected between a fluorescent lighting fixture or ballast and incoming power, the Luminaire Disconnect is a cost-effective solution that enables the electrician to service the luminaire without exposure to dangerous voltage.

The Luminaire Disconnect consists of a male and female disconnect body with pre-stripped wire connected to the male and female contacts. The contacts, similar to Sta-Kon's male and female terminal disconnects, are made of tin-plated brass. The disconnect terminals are housed in crack-, abrasion- and impact-resistant polycarbonate.

Among the Luminaire Disconnects features is a finger-safe female line side with wire connectors that prevent the installer from touching hot contacts, eliminating the need to disconnect power to service the fluorescent luminaire. The male side is connected to the fluorescent luminaire ballast ? not to active power.

Other features include No. 18 GA AWG solid copper-insulated integral wire leads that are compatible with multiple sizes of copper or aluminum wire to simplify installation, as well as an integral latch in the polycarbonate housing, providing a visible and audible verification that the contacts are secured and preventing nuisance outages by not disengaging under small amounts of tension on the wires. An additional benefit of the integral leads is the ability to provide a safe disconnect for a single luminaire that includes multiple ballasts. One disconnect removes the voltage from all the ballasts within the luminaire.

Beginning in 2008, all new luminaires must be installed with a luminaire disconnect.

"When a servicing electrician replaces a fluorescent luminaire in a commercial building, for example, the code will require the installation of a luminaire disconnect between the power line and the ballast. Once the new disconnect is installed, the servicing electrician will be able to disconnect power to the ballast without handling live wires," says Dan Vega, product manager for Thomas & Betts.

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National Electrical Code 2005: Safeguarding Ballast Servicing

By Ken Seaton, P.E., President, The Seaton Group, Chicago -- Consulting-Specifying Engineer, 8/4/2005

Fluorescent luminaires (fixtures) are often serviced while energized to avoid removing illumination from an area, including the replacement of ballasts. This often requires individuals to work while on ladders, allowing only limited movement and ability to react to shock incidents where the worker accidentally comes in contact with energized parts. In fact, a leading cause of fatalities for electricians is electrocution while working on 277-volt lighting systems. When the electrician gets to the wire nut with three white wires (neutral), the thought is that these are grounded conductors, and therefore, are not hazardous.

In fact, these white wires carry the unbalanced load current from all phases of the white wires. So when the electrician opens the wire nut and gets between two of the white wires, shock or electrocution can result.

In an effort to provide safer working conditions for those who perform this type of service, a new requirement—Article 410.73(G) *Disconnecting Means for Electric-Discharge Lighting Systems*—has been added. This article requires a disconnecting means to be installed either inside or outside the luminaire that can disconnect all conductors of the ballasts. The type of lighting equipment included in this requirement involves fluorescent luminaires that utilize double-ended lamps and contain ballasts.

Five exceptions to this rule are included to cover installations or conditions where variations of the rule are needed or it is not considered practical to apply this requirement, such as in hazardous locations, and in emergency lighting.

The article reads as follows:

410.73 (G) Disconnecting Means. In indoor locations, other than dwellings and associated accessory structures, fluorescent luminaires (fixtures) that utilize double-ended lamps and contain ballast(s) that can be serviced in place or reballasted luminaires that are supplied from multiwire branch circuits and contain ballast(s) that can be serviced in place shall have a disconnecting means either internal or external to each luminaire (fixture), to disconnect simultaneously from the source of supply all conductors of the ballast, including the grounded conductor if any. The line side terminals of the disconnecting means shall be guarded. The disconnecting means shall be located so as to be accessible to qualified persons before servicing or maintaining the ballast. This requirement shall become effective January 1, 2008.

Exception 1: A disconnecting means shall not be required for luminaires (fixtures) installed in hazardous (classified) location(s).

Exception 2: A disconnecting means shall not be required for emergency illumination required in 700.16.

Exception 3: For cord-and-plug-connected luminaires, an accessible separable connector or an accessible plug and receptacle shall be permitted to serve as the disconnecting means.

Exception 4: A disconnecting means shall not be required in industrial establishments with restricted public access where conditions of maintenance and supervision ensure that only qualified persons service the installation by written procedures.

Exception 5: Where more than one luminaire is installed and supplied by other than a multiwire branch circuit, a disconnecting means shall not be required for every luminaire when the design of the installation includes locally accessible disconnects, such that the illuminated space cannot be left in total darkness.

For example, by installing a disconnecting means for each ballast allows the building owner a definite safeguard in preventing accidental shocks when servicing ballasts. Cost may become an issue. For a small office building, this scenario would not affect the budget. But for a high-rise or commercial building, installing a disconnect at each ballast becomes very costly. This is when the exceptions have their merit. For example, Exceptions 3 and 5 can keep the area safe for servicing while staying within budget. Exception 3 allows the installation of a plug type disconnect, so that the individual ballast can be unplugged and serviced safely. Exception 5 allows multiple luminaires to share one disconnect or plug. Now, a design with 50 luminaires can perhaps have two disconnects means or plugs, having every other luminaire on one branch, and the others on a separate branch. This way only one branch would be disconnected at a time to service the illuminated space and not be left in total darkness when doing so.

Keep in mind, this new requirement will allow electricians to de-energize ballasted luminaries without removing illumination to an entire area. Then they can safely change out the ballast without being exposed to a shock hazard. This change has been given an effective date of Jan. 1, 2008, to allow manufacturers time to develop products for this application and allow sufficient time for the industry to prepare to include switches for this type of lighting.

Light Fixture Line Features Luminaire Disconnects To Comply With 2008 Code Change

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TWINSBURG, OH -- The Accessmount LLC light fixture line is one of the first on the market to feature luminaire disconnects in every product. The 2008 National Electric Code will require that every fixture must be installed with a luminaire disconnect. A similar provision is in the Canadian Electrical Code, Part 1, Canada, 2006 Edition.

A luminaire disconnect allows the electrician to service the luminaire without exposure to dangerous voltage. This is helpful when, commonly, shutting off the circuit wouldn't be feasible. According to the International Brotherhood of Electrical Workers, 277-volt lighting circuits are the most lethal to electricians.

Accessmount's original product, a retrofittable fixture mounting system, allowed workers to completely remove the fixture, physically and electrically, from the physical mount and electrical connection. This product has been enhancing worker and electrician safety since 2002, when it won the "Technical Innovation Award" at Lightfair.

All the company's products can be serviced without getting on a ladder. This revolutionary concept enhances worker safety by eliminating ladder falls, and significantly reduces the time required for fixture maintenance. This time savings also increases the likelihood of correct, prompt maintenance, and correctly lit areas.

For product photos and more information, visit www.accessmount.com