

Press Release



For your business and technology editors

January 2006



. . . from Dusk to Dawn Aircraft Safety, ABB Reliability at Work

Did you know ABB provides aircraft anti-collision protection for two of the tallest structures in the world? Located in Fargo, North Dakota, the KVLV tower is 2,063 feet tall and the KXJB tower is 2,060 feet tall. They are the two tallest towers in the world. By comparison the Sears Tower Skyscraper in Chicago is 1,451 feet and the twin Petronas Towers in Kuala Lumpur are 1,483 feet tall.

ABB, a leader in technology development, designs products and systems for a wide assortment of industrial users, OEMs and custom panel builders. The products are manufactured in numerous factories around the world. The Baldwinsville, NY factory, makes an assortment of electronic control relays which include obstruction lighting controls for radio towers, cooling towers, chimneys, tall buildings, and bridges. "We design and manufacture electronic controls for steady and flashing red lamp obstruction lighting systems", reports Product Unit Manager, Dan Carroll.

In the USA, these safety lighting systems are mandated and regulated by the Federal Aviation Administration (FAA). Most countries of the world measure their obstruction lighting requirements against these FAA guidelines. The FAA specifications determine which structures require obstruction lighting to promote air traffic safety.

The original design plan was to improve the reliability of these control system by constructing totally solid-state control modules, with no moving parts. These modules combined an industry proven electronic flasher design with a solid-state relay to replace the electromechanical motor driven tilt switches commonly used. "Those motor driven tilt switches need regular inspection and maintenance", explains Account Development Manager, Don Martell. "When installed on a microwave repeater tower, located on a mountain road, 50 miles from the nearest town, these can be a big maintenance headache." The FAA regulation requires reporting a flashing lamp failure within 30 minutes. The associated fines can be as much as \$10,000 per occurrence. A failed lamp flasher requires immediate attention. A more reliable lamp flasher is an economically wise solution for operators of tall structures.

This new design leveraged the advantages of high speed digital switching by adding zero voltage detection circuitry to the traditional solid-state relay design. This circuitry evaluates the AC voltage at all times. According to Dave Eastwood, Product Marketing, "As the voltage progresses from zero to the peak voltage every 0.004 seconds, this circuitry prevents the lamp from being switched ON when the voltage is high." This eliminates a momentary surge of current that can break the lamp's fragile filament. Mechanical switches typically close when the voltage is above zero. "Have you ever noticed that the lights in your house usually blow as you turn the switch ON?" This zero voltage switching circuitry can provide a further benefit important for this application. "The voltage tracking circuitry added to these control modules can extend the lamp life up to 10 times its normal life span", reports Dan Carroll. "Our customers enjoy the benefits of this extended lamp life since one of the major expenses of operating an obstruction lighting system is the high cost and danger associated with replacing the lamps," But, the reliability of these modules; the encapsulated construction that allows ABB to offer a 10 year warranty, may be the biggest overall customer benefit.

Most air travelers and flight crews are not aware that ABB controls are hard at work providing them with safer air space to work and play in. For those that travel in the air, the measure of safety provided by reliable ABB controls is priceless.

The engineers at ABB are hard at work, applying technology to provide grid reliability, energy efficiency and performance safety in the towns and cities where we all work and play.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 115,000 people. The company's U.S. operations employ about 9,000 in manufacturing and other facilities in 40 states.

For more information please contact:

Low Voltage Products & Systems

ABB SSAC is an ISO 9001 company.

Editor: Gary Weeks (315) 638-1300

Technical Assistance (800) 377-7722

E-mail info@ssac.com

Visit the online catalog at www.ssac.com

Send leads to: P.O. Box 1000, Baldwinsville, N.Y. 13027