

# TECH CORNER

**Q.** Are transformers with copper windings actually better than those with aluminum windings?

**A.** During World War II, copper was needed for the war effort and aluminum was used as an “acceptable” replacement in transformer windings. At the time aluminum was thought to be inferior... but time has proven it to be better than copper in the following ways:

- Copper oxidizes completely over time. Aluminum, however, oxidizes only until all exposed surfaces are covered with an oxide layer.
- Copper acts as a mild catalyst, hastening the decay of wire insulation. Aluminum does not.
- Although the conductivity of copper is better than that of aluminum, on a per pound basis, aluminum is over twice as good a conductor as copper.
- Aluminum wound transformers can withstand more surge and overload currents than copper units (normally exhibited when a motor starts).

So why do some applications still call for copper wound units? Sometimes it's due to space limitations (since copper wound transformers tend to be smaller than comparable aluminum ones). Also, copper wound transformers make sense in environments which are corrosive to aluminum (especially near salt water).

One of Winkle Electric's valued suppliers, Sola/Hevi-Duty, manufactures aluminum wound transformers... but can manufacture copper wound transformers through special orders. For pricing and manufacturing lead times, contact your Winkle sales representative.



## Join Winkle Electric in Charlotte, for the 2002 Busch Grand National 300 & the NASCAR UAW-GM 500

Winkle Electric has planned another great “road trip” for qualifying customers. Trip participants will spend October 10-13, 2002 in Charlotte, NC for an awesome NASCAR experience. Highlights of the adventure will include...

- Roundtrip transportation on a private motorcoach, which includes food/beverages.
- Depart (Youngstown) Thursday, Oct 10th, 4:30pm
- Return (Youngstown) late Sunday, Oct 13th
- 3 Nights private room at Holiday Inn Express, in Concord, NC
- All ground transportation
- Private tour of Childress Racing Headquarters
- Welcome dinner/party Friday night at Jillians in the Concord Mall
- Fourth turn terrace box seats for both races (featuring covered, outdoor chairback seats with kneebars, closed circuit TV's, prerace pit access, and an all day, unlimited open buffet)

Participation in this world-class experience is limited to the first 30 “race-ready” VIP customers.

If you're a Winkle customer, and did not receive an opportunity to participate in this program, ask your sales representative how you can qualify for next year's trip.

## Winkle's Custom Control Division...

### Control Panels Made Right

When the mission involves making a variety of electrical components work together to control a process, a machine, or an assembly... chances are that control panels play a vital role in your operation. When it comes to top-quality control panels, no one builds them better than Winkle Electric's Custom Control Division. With nearly a half century of experience, state-of-the-art equipment, and the best components, Winkle has what it takes to get it done right... right from the start.

**From Concept To Installation** Our experienced Custom Control team works with your technical staff every step of the way... from the initial design to the final installation and testing. Winkle Electric's Custom Control



Division is able to “partner” with your own organization's design team, or with any third-party systems integration specialist you choose. Our experienced team is also able to provide custom design services for a variety of applications.



### Winkle Electric & Allen-Bradley host PowerFlex® Drives Seminars

In August of 2002, Winkle Electric and Allen-Bradley joined forces to host two seminars focusing on the new PowerFlex® family of AC drive units.

The first event (see photo below), was held at Winkle's new Erie Training Center, on August 19th. Winkle's Youngstown Training Center was the site of the second seminar (see photo above) on August 21st.



## Night at the Ballgame



On Tuesday, August 27th, Winkle Electric celebrated the “official” opening of their new sales office and distribution center in Erie, PA. The celebration began with a reception at the new, state-of-the-art facility.

After the reception, attendees headed off to the ballpark to see the Erie Seawolves (a Class A affiliate of the Pirates) play the Altoona Curve (the Pirate's Class AA affiliate).

The evening of ceremony, baseball, hot dogs, peanuts, and cold beverages was one those in attendance will never forget.

## contact us!

A summary of addresses, phone numbers, and fax numbers for our existing and “soon-to-open” locations:

**Erie** • 4727 Pittsburgh Avenue • Erie, Pennsylvania 16509  
Phone: 814-838-1900 • Fax: 814-838-1975

**Meadville** • Phone: 814-724-5177 • Fax: 814-724-5186

**Seneca** • PO Box 505 • 224 S. Main Street, Suite 207B  
Seneca, Pennsylvania 16346  
Phone: 814-678-5303 • Fax: 814-678-5304

**Youngstown** • PO Box 6014 • 1900 Hubbard Road  
Youngstown, Ohio 44503-6014  
Phone: 330-744-5303 • Fax: 330-744-1635

# Winkle

WINKLE ELECTRIC COMPANY INC.

# Current Events

September/October 2002

*In this issue...*

• Featured Products from... Allen-Bradley, Sola/Hevi-Duty, Raychem Rayvolve, and Ferraz Shawmut

• Complete the crossword inside to win a **ROCKWELL RACING SHIRT!**

• Manufacturer Profile:  
*Cooper Crouse-Hinds*

• *Winkle's Fab 5...* Product Specialists

