Veris Application Note

Step-Down Technique for Monitoring High Currents

VN34

⚠ DANGER ⚡

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Read, understand and follow the instructions before installing this product.
- Turn off all power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm power is off.
  DO NOT DEPEND ON THIS PRODUCT FOR VOLTAGE INDICATION
- Only install this product on insulated conductors.

Failure to follow these instructions will result in death or serious injury.

The information provided herein is intended to supplement the knowledge required of an electrician trained in high voltage installations. There is no intent to foresee all possible variables in individual situations, nor to provide all training needed to perform these tasks. The installer is ultimately responsible to assure that a particular installation will be and remain safe and operable under the specific conditions encountered.

Introduction

Many conductors carry currents that are above the range of standard current sensors. To monitor these currents, employ a 5A current transformer (CT) to proportionally reduce the current for the sensor.

Wiring Example

Install the CT directly to the conductor, Then install a current sensor so that the CT secondary wire passes through the current sensor iris. Wire the current sensor to the control panel. The signal that the control panel receives will be proportional to the current in the monitored conductor. The control panel must be programmed with the ratio of the CT. The sensor output multiplied by the CT ratio will equal the current on the conductor.

In the example below, a CT with a ratio of 300:5 is used to step down a high amp current. The current sensor output is 4A. The control panel must calculate the original current:

*sensor output * CT ratio = conductor current*

*4A * 300/5 = 240A*

Current sensor, 50A max. rating

Control Panel

240A

4A

300A - 5A CT
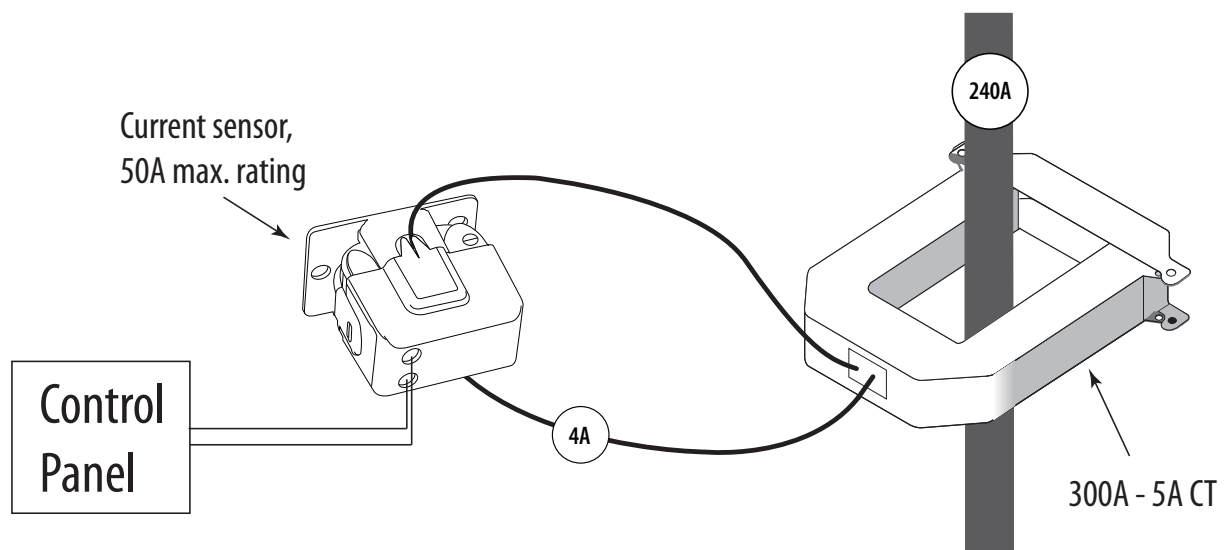
DANGER: Five Amp output Current Transformers (CTs) can generate hazardous voltages if their secondary winding is not properly and continuously shorted.