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## General Rules for Electricians and Contractors for Residential Load Management and Sub-Meter Wiring.

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Electricians and/or builders are responsible for calling and scheduling an inspection once the off-peak equipment (ripple controls and meter sockets) have been installed. The ripples are not preprogrammed and the meter, if applicable, needs to be installed in order to receive the off-peak rate or credit. Off-peak rates will not begin until all components (heat, water heater, etc) are installed, working, and properly wired. If wiring is not done correctly, you will be expected to correct it.

### Location (new construction – after March 16, 2009)

- The socket for the off-peak meter should not be any higher than 6' to center and no lower than 4' to center above grade level.
- In most cases off-peak meter must be mounted next to the main meter. For special applications, such as a detached garage, or main meter at transformer; please call Cass County Electric Energy Management Department.

### 6 – Terminal (CT) meter socket

- Must be wired on outside of building
- Use #12 or larger insulated wire
- 240V center lugs can be powered from the load side of the main meter or dedicated circuit
- Must have neutral conductor terminated to BOTH bottom lugs of 6 jaw socket.

### Pre-wired Current Transformers (CT's) – distance under 25 feet from socket

- Used for distances 25 feet or less from the off-peak meter socket
- For distances between 25 & 100 feet, use terminal block CT's (see next page)
- Must be in an enclosure 8x8x4 or larger, unless used in a dedicated off-peak service panel
- CT's are directional: white dots and leads should be facing the line side (away from loads)
- Terminate the black wires to the neutral bar
- Can put CT's around service entrance or feeder conductors in a DEDICATED off-peak circuit panel
- The white wires go to the top lugs of the meter socket (Phase sensitive)
- The maximum distance from the CT's provided to the socket is 25 feet (wire distance). Use #12 wire minimum, #10 wire is preferred.
- "A" phase loads run through one CT, "B" phase runs through other CT all the same direction

## Terminal Block Current Transformers (CT's) – distance 25-100 feet from socket

- This type of CT's commonly used for distances 25 – 100 feet from off-peak meter socket
- Must be in an enclosure 12x12x4 or larger
- CT's are directional: white dots should be facing the line side (away from loads)
- Can put CT's around service entrance or feeder conductors to a DEDICATED off-peak circuit panel.
- The white dot terminal goes to the top lug of the meter socket (Phase sensitive), the non-white dot terminal goes to the neutral bar
- Use #12 wire minimum, #10 wire is preferred.
- "A" phase loads run through one CT, "B" phase runs through other CT all the same direction

## Ripple Control

- Ripple switches are normally "UP" (if already programmed) and will automatically go into this position within in one minute of power up. The peak or controlled position is down.
- All ripple controls installed outdoors must be in a rain-tight enclosure
- Please mount in an accessible location
- No charge for ripple control
- Switches on ripple control are a "dry" contact
- Preferred configuration for ripple switches:
  - Switch 1: Water heater
  - Switch 2: Heat only
  - Switch 3:Heat and/or ac
- Slave relays are allowed as long as controlled loads are in the same group for each ripple switch:
  - These items may be grouped together on slave relays with one ripple switch: electric boilers, electric furnaces, electric baseboards, electric ceiling heat, electric radiant floor heat, electric wall heaters, and electric garages.
  - These items must be on its own ripple switch: garage heaters, electric water heaters (100 gallons or larger), electric storage heaters, air conditioning (can be slaved with other air conditioners if more than one on site). Central a/c- use low voltage. AC can be slaved with heat on RO ripple models, i.e. Electro plenum heater –blue/blue white will cycle heat and ac.
  - Slave relays can be wired normally closed.

## Diagrams Available

- ROA wiring (off-peak ripple control)
- Current transformer wiring
- Slave relay control

**If you have any questions about wiring for off-peak systems, please call our Energy Management Department at 1.800.248.3292.**