

ELECTRIC SERVICE MANUAL

Duke Energy Ohio and Kentucky

Information &
Requirements for
Electric Service

INFORMATION & REQUIREMENTS FOR ELECTRIC SERVICE

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Duke Energy

139 East Fourth Street, P.O. Box 960

Phone 513-421-9500 or 1-800-262-3000

606. 120/240 Volt, Single-phase, Three-wire Metering Outdoor Installation (300 amps maximum with service disconnect indoors)
607. 120/240 Volt, Single-phase, Three-wire Indoor Installation (200 amps maximum)
608. 120/240 Volt, Single-phase, Three-wire Overhead Installation (200 amps or greater, not exceeding 320 - 400 amps with service disconnect indoors)
609. 120/240 Volts, Single-phase, Three-wire (200 amps or greater, not exceeding 320 - 400 amps with service disconnect indoors)
610. 120/240 Volt, Single-phase, Three-wire Indoor Installation (200 amps or greater, not over 320 - 400 amps)
611. 120/240 Volt Single-phase Metering Pole (320 amp max)
612. 120/240 Volt, Single-phase, Three-wire, Pole-Type Metering Installation (maximum service ampacity of 200 amps)
614. 120/240 Volt, Single-phase, Three-wire, Pole-type Installation (400 amps or greater, not over 1200 amps)
615. Terminating Underground Service Lateral Conductors (600 volts or less)
616. Terminating Underground Service Lateral Conductor (600 volts or less)
617. 120/240 Volt, Single-phase, Three-wire Underground (not exceeding 200 amperes)
618. 120/240 Volt, Single-phase, Three-wire underground (200 amperes or greater, not over 400 amperes)
619. 120/240 Volt, Single-phase, Three-wire Indoor Installation (over 320 amps, not over 1200 amps)
620. 120/240 Volt, Single-phase, Three-wire Current Transformer Wiring Diagram (over 400 amperes, not over 1200 amps)
621. 120/240 Volt, Single-phase, Three-wire (typical multiple metering installation)
622. 120/240 Volt, Single-Phase, Three-wire (typical multiple metering installation where main service disconnect is required on supply side of metering equipment)
623. 120/240 Volt, Single-phase, Three-wire (pre-assembled modular multiple metering installation)
624. 208/120* Volt, Single-phase, Three-wire (from three-phase, four-wire system)
625. 208Y/120 Volt or 240/120* Volt, Three-phase, Four-wire Outdoor (not exceeding 200 amps)
626. 208Y/120 Volt or 240/120* Volt, Three-phase, Four-wire Indoor (not exceeding 200 amps)
627. 208Y/120 Volt or 480Y/277 Volt, Three-phase, Four-wire Padmount Metering Serving a Single Customer Only (greater than 200 amps. not over 3000 amps)
628. 208Y/120 Volt, 240/120* Volt & 480Y/277 Volt Three-phase, Four-wire Indoor (greater than 200 amps, not over 1200 amps. Note 240/120 Volt services are limited to 300 amps)
629. 208Y/120 Volt, 240/120* Volt or 480Y/277 Volt, Three-phase, Four-wire Wiring Diagram
630. 208Y/120* Volt, Single-phase, Three-wire Typical Multiple Metering Installation (from three-phase, four-wire system)
631. 208Y/120 Volt or 240/120* Volt, Three-phase, Four-wire Typical Multiple Metering Installation
632. 208Y/120 Volt Three-wire & Four-wire Pre-assembled Modular Metering Installation Where Main Disconnecting Means is Required on Supply Side of Metering Equipment (200 amps max)
633. 208Y/120, 240/120* Volt or 480/277 Volt, Three-phase, Four-wire Pole-Type Metering (not exceeding 1200 amps. Note: 240/120 Volt services cannot exceed 300 amps)
634. Method for Mounting Current Transformers & Metering on the Side of Building
635. Method for Mounting Current Transformers and Metering on a Service Mast
636. Preferred Grounding Configuration When a Building has Metallic Water Pipe Service
637. Support for 120/240V-1Ø or 120/208V-1Ø Three-wire Temporary Service from an Overhead Supply for use during Building Construction (200 amps or smaller)
638. Support for 120/240V or 120/208V-1Ø Single-phase, Three-wire Temporary Service from an Underground Supply for Use During Building Construction (200 amps or smaller)
670. Service Requirements for Single Phase Underground Primary Electric Service from an overhead distribution line.
671. Installation Requirements for single phase padmount transformer foundations.
672. Service Requirements for underground primary electric service from an overhead distribution line.
673. Installation Requirements for Three phase padmount transformer foundations.
674. Construction details for customer installed electric facilities.
675. Construction details for customer installed electric facilities padmount equipment protection.
676. Construction details for customer installed electric underground services from poles.
677. Customer installed precast concrete manhole and lid.
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- 678b. Customer installed precast concrete cable pit for 15kv class padmounted switching equipment.

*Limited Availability - Contact Power Delivery for Approval

INTRODUCTION

This publication is a guide to the Company's requirements and does not cover all rules and regulations. It is intended to promote uniformity throughout the Company's system and to provide a satisfactory interface guide for the customer's electric service equipment at the service point.

The Duke Energy Company and its subsidiary companies (referred to as the "Company") provides this publication to assist all customers in planning for and obtaining prompt and satisfactory electric service.

Any references to Power Delivery in this publication include the Regulated Business Unit of Duke Energy.

The format of this manual allows for updating of information and drawings. Additions and revisions will be forwarded to individuals listed on the master-mailing roster. Please remember it is the customer's responsibility to obtain and maintain a current version of this publication.

If you would like future updates and want to be included on the master-mailing roster please call Power Delivery at (513) 651-0444 or 1-800-262-3000 ext. 3866, or complete an Electric Service Manual Request Form from Duke Energy's web page. Also, this manual can be referenced and printed along with the drawings on Duke Energy's web site. The web address for this manual on Duke Energy's web site is: <http://www.duke-energy.com/ohio/service.asp>

DISCLAIMER

This publication is for informational purposes only and in no way shall this publication be construed to impose any liability upon the Duke Energy Company or its subsidiary or affiliated companies (collectively referred to as the “Company”). The Company makes no warranties or representations in this publication expressed or implied, including but not limited to merchantability and fitness for a particular purpose.

The company is required to comply with the rules and regulations in National Electrical Safety Code (NESC) and Occupational Safety & Health Administration (OSHA) in the construction and operation of its facilities. All requirements in this document are intended to meet or exceed those requirements.

Duke Energy Ohio
Duke Energy Kentucky

Meter Base Guidelines

Customer Owned Equipment Specifications

Minimum Requirements for Meter Sockets Installed on the Duke Energy Ohio/Kentucky System

Residential Single Phase

- Must be U.L. Listed and Labeled.
- Meter socket jaws must be tin plated copper.
- Sockets must be 5th terminal adapt-able.
- Sockets must be ringless type.
- All sockets rated for 200 or fewer amps must be equipped with horn or lever type meter bypass.
- All sockets rated for greater than 200 amps must be equipped with lever operated jaw release and bypass.
- All sockets must have a swing style latch or other appropriate latch, which will prevent unauthorized access and accept a utility padlock or wire style seal.

Commercial Single and Three Phase

- Must be U.L. Listed and Labeled.
- Meter socket jaws must be tin plated copper.
- Single-phase sockets must be 5th terminal adaptable.
- Sockets must be ringless type.
- Single-phase sockets rated for 200 or fewer amps must be equipped with horn or lever type meter bypass.
- All single-phase sockets rated for greater than 200 amps and all three phase sockets must be equipped with lever operated jaw release and bypass. The bypass must be rated to carry the full load capacity of the socket. These sockets are also required to have the Landis & Gyr HQ series, or the Milbank HD series, or similar block assembly.
- Maximum service size for a three-phase service is 200 amps.
- All sockets must have a swing style latch or other appropriate latch system, which will prevent unauthorized access and accept a utility padlock or wire style seal.

Notice:

These meter sockets can be purchased from local electrical supply companies.

Contact the local Duke Energy Ohio/Kentucky office to discuss the location of this meter socket on your building.

GENERAL INFORMATION

100. General

- A. Customers should give particular attention to sizing the ampacity of the service entrance equipment when determining present and future electrical needs.
- B. Customers must provide a certificate of approval from a certified electrical inspector serving the customer's geographical area before the Company will permanently connect or reconnect service. Also, the Company determines if the customer's installed electric service equipment complies with the all Company's requirements.

The Company's representative has no authority to inspect a customer's electric service equipment, wiring system, other equipment, or appliances for compliance with state, local, or any other codes. Any inspection and other action by the Company's representatives to determine compliance with service requirements are for the Company's purpose only and will not impose any liability upon the Company.

The Company by its action in no way warrants or represents that any element of the customer's electrical system is safe or conforms to any code. Governmental authorities and the customer are responsible for assuring that the customer's electric service equipment, wiring system, other equipment, and appliances are installed and maintained safely and in compliance with applicable codes.

- C. The Company's Power Delivery Business Unit is responsible for:
 - Assigning service and meter locations;
 - Assisting in planning the installation for connection to the Company's system; and
 - Determining if the customer is in compliance with the Company's requirements for service
- D. Power Delivery representatives are available for questions relating to this publication. For information regarding Company procedures and service regulations not covered call (513) 421-9500 or 1-800-262-3000 to be connected to the appropriate office.
- E. The Company reserves the right to withhold connection to and disconnect its system from any installation not conforming to the Company requirements.

- F. Customers requesting temporary disconnection of service must contact the Company at least two business days in advance of the requested disconnection date.

Single family residential customers and up to 4-unit apartment building customers should call Power Delivery at (513) 651-0444 or 1-800-262-3000 ext. 3866

All non-residential and multi-family building customers (over 4-units) should call (513) 421-9500 or 1-800-262-3000 to be connected to the appropriate office

101. Requesting New Electric Service

- A. Customers must make requests for new electric service prior to the start of construction. This request can be made by telephone to the appropriate Power Delivery office or by visiting our contractor's web page on Duke Energy's web site (http://www.DukeEnergy.com/Residential_Services/contractor_information/).
- B. The customer or the customer's representative is responsible for supplying complete and accurate information relative to the use of the service and the equipment to be connected. Subsequent changes in the customer's service or plans must be reported immediately to the project representative associated with the customer's project.
- C. Use the following outline to provide correct information which may be needed by the Company to make the necessary arrangements for service:
1. Service address
 2. Legal name of the customer who will be using the service, a copy of the deed, and the correct legal name of the property owner if different than the customer to be served
 3. Date when customer will be ready for permanent electric service
 4. Preferred service voltage and service point

Service ampacity

Total connected load; grouped as to lighting, electric space heating/cooling, process heating or refrigeration, water heating, cooking, motors, and special identified equipment such as:

- size of largest motor, type of motor starter to be used, frequency of motor starting, and locked rotor amps
- rating and operating characteristics of special equipment such as welders, x-ray machines, etc.

Load management equipment

Diagram of the electrical system including switchgear drawings

Plot plan showing location of right-of-way, property lines, and building structures to be served, satellite buildings, driveways and parking areas, existing and proposed underground utilities and facilities, signs and outdoor lighting standards, areas to be graded, and areas of the property most likely to be developed in the future

Temporary electric service for construction: the date wanted and the voltage and ampacity requirements. See article 301 of this Publication for additional information.

102. Meter Equipment Pick-Up Locations

Company provided metering equipment can be picked up Monday through Friday, except holidays, between the hours of 8:30 a.m. and 3:30 p.m. For authorized pick-up please contact Power Delivery. This equipment is usually available within one day at 424 Gest Street. Allow at least one week for delivery prior to pick-up at a satellite location.

103. Installation Of Electric Facilities

Installation of electric facilities will begin when all Company requirements, including the following, have been completed:

- A. The Company, customer, and the property owner to be served have approved the method of service
- B. Arrangements have been made for the billing and collection of charges for the service to be provided
- C. The customer and all parties have completed the required agreements and /or grants of easement to the Company for the installation of facilities on or across private property
- D. Final grades and elevation within those areas where the Company is to install facilities and these areas are accessible and clear of stored materials or other construction activities
- E. The Company has received all required permits to install its facilities
- F. Adequate protection for Company owned equipment has been installed

104. Service Connections

The Company will connect to a customer's newly wired electric service equipment, or reconnect to rewired electric service equipment when all Company requirements, including the following, have been completed:

- A. The Company has received an application and/or contract for service specifying service-billing details. Legal name of the customer, service address and billing address are required.

To make application for *residential* electric service, call Power Delivery (513) 651-0444
or
1-800-262-3000 ext. 3866.

To make application for *non-residential* electric service call (513) 421-9500 or 1-800-262-3000 to be connected to the appropriate office.
- B. The Company has determined that the customer is in compliance with its requirements for electric service.
- C. The Company has received a certificate of approval from the geographical area's certified electrical inspector.

105. Unauthorized Use Of Electricity

Removal or relocation of an electric meter without the Company's permission is prohibited. Tampering with the Company's metering equipment, making an unmetered connection, or making an unauthorized reconnection to the Company's system is prohibited. The penalties for these activities may include fines and imprisonment.

106. Locating The Company's & Other Utilities Underground Facilities

State laws require that before you do any excavation you contact the Utilities "*Call Before You Dig*" service. Call at least two (2) working days prior to any excavating, digging, or breaking ground for information on location of underground utility facilities.

- Ohio locations call:

Ohio Utilities Protection Service (Toll Free) 811

- Kentucky locations call:

Kentucky Underground Protection, Inc. (Toll Free) 811

