

## **SECTION 262713**

### **ELECTRICITY METERING**

#### **PART 1 - GENERAL**

##### **1.1 STIPULATIONS**

- A. The specification sections "General Conditions of the Construction Contract", "Special Conditions", and "Division 1 - General Requirements" form a part of this section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

##### **1.2 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### **1.3 SUMMARY**

- A. Section includes equipment for electricity metering by utility company and electricity metering requested by Owner.

##### **1.4 DEFINITIONS**

- A. KY Pulse: Term used by the metering industry to describe a method of measuring consumption of electricity that is based on a relay opening and closing in response to the rotation of the disk in the meter.
- B. PC: Personal computer.

##### **1.5 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For electricity-metering equipment.
  - 1. Dimensioned plans and sections or elevation layouts.
  - 2. Wiring Diagrams: For power, signal, and control wiring. Identify terminals and wiring designations and color-codes to facilitate installation, operation, and maintenance. Indicate recommended types, wire sizes, and circuiting arrangements for field-installed wiring, and show circuit protection features.
- C. Operation and Maintenance Data. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
  - 1. Application and operating software documentation.
  - 2. Software licenses.
  - 3. Software service agreement.

4. Hard copies of manufacturer's operating specifications, design user's guides for software and hardware, and PDF files on CD-ROM of the hard-copy Submittal.

#### 1.6 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, store, and handle modular meter center according to NECA 400.

#### 1.8 COORDINATION

- A. Electrical Service Connections: Coordinate with utility companies and components they furnish as follows:
  1. Comply with requirements of utilities providing electrical power services.
  2. Coordinate installation and connection of utilities and services, including provision for electricity-metering components.

#### 1.9 SOFTWARE SERVICE AGREEMENT

- A. Technical Support: Beginning with Substantial Completion, provide software support for two years.
- B. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.
  1. Provide 30 days' notice to Owner to allow scheduling and access to system and to allow Owner to upgrade his computer equipment if necessary.
  2. All licenses shall be at no additional cost to the owner and shall be open ended and unrestricted use.
  3. Any and all passwords shall be given to the owner prior to final payment.

### PART 2 - PRODUCTS

#### 2.1 EQUIPMENT FOR ELECTRICITY METERING REQUESTED BY OWNER

- A. Manufacturers: Provide the following:
  1. Square D Power Logic Model PM5563 with display option (no substitutions).
- B. General Requirements for Owner's Meters:
  1. Comply with UL 1244.
  2. Meters used for data collection shall have an accuracy of 0.2 percent of reading, complying with requirements in ANSI C12.20.
  3. Enclosure: NEMA 250, Type 1 minimum, with hasp for padlocking or sealing.

4. Identification: Comply with requirements in Division 26 Section "Identification for Electrical Systems."
  5. Memory Backup: Self-contained to maintain memory throughout power outages of 72 hours, minimum.
  6. Sensors: Current-sensing type, with current or voltage output, selected for optimum range and accuracy for meters indicated for this application.
    - a. Type: Split core.
  7. Current-Transformer Cabinet: Listed or recommended by metering equipment manufacturer for use with sensors indicated.
  8. Building Automation System (BAS) Interface: One digital KY pulse to a user-definable increment of energy measurement. Match signal to BAS input and arrange to convey the instantaneous, integrated, demand level measured by meter to provide data for processing and possible programmed demand control action by destination system.
  9. The system must be capable of reporting data to the Automated Logic head end at FTIG, Bldg 0-13 (ATTN: Kevin Perhach 717-861-6967). Provide all software and hardware for proper data transmission. Coordinate points and data prior to shop drawing submittal.
  10. The meter MUST be configurable in the field without the use of a laptop. It must have a menu driven system with appropriate buttons for selection and navigation built into the meter.
- C. Kilowatt-hour/Demand Meter: Electronic three-phase meters, measuring electricity use and demand. Demand shall be integrated over a 15-minute interval.
1. Voltage and Phase Configuration: Meter shall be designed for use on circuits with voltage rating and phase configuration indicated for its application.
  2. Display: LCD with characters not less than 0.25 inch (6 mm) high, indicating accumulative kilowatt-hours, current time and date, current demand, and historic peak demand, and time and date of historic peak demand. Retain accumulated kilowatt-hour and historic peak demand in a nonvolatile memory, until reset.
- D. Software: Preloaded, loaded by means as a product of meter manufacturer.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with equipment installation requirements in NECA 1.
- B. Install meters as required for proper operation. Provide all programming/configuration for proper operation.

#### 3.2 IDENTIFICATION

- A. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
  1. Equipment Identification Labels: See "Identification for Electrical Systems".

**END OF SECTION 262713**