

# **Section 16620**

## JCOMM® Specification

### **1 General Requirements**

#### **1.1 Scope**

- 1.1.1 Furnish factory assembled JCOMM® in accordance with the contract documents and the following specification with all elements to conform to all relevant standards of manufacturing and construction, including but not limited to, NFPA70, NFPA 75, IEC/ANSI/UL60950-1, CSA-C22.2, FIPS Pub, OSHA and all relevant local codes.
- 1.1.2 Work of this section, as shown or specified shall be in accordance with the requirements of the contract documents.
- 1.1.3 The bidder shall participate in determining the means available for receiving and handling the equipment.
- 1.1.4 Off-loading, installation, conduit, wire, and fittings and all associated costs are the responsibility of the contractor. Installation shall be in accordance with the manufacturer's recommendations, documentations, and both National / Local Electrical Codes.

#### **1.2 Work Included**

- 1.2.1 Furnish components for JCOMM® units as herein specified for installation under another contract.
- 1.2.2 Provide all materials and services for manufacturing, testing, and delivery to a designated jobsite. The work required under this contract shall include the following:
  - 1.2.2.1 Furnishing JCOMM® as herein specified.
  - 1.2.2.2 Complete configuration drawings and recommended installation guidelines.
  - 1.2.2.3 Factory tests as herein specified.

### **1.3 Submittal Requirements**

- 1.3.1 The information with the bid shall include, at a minimum, the following items:
  - 1.3.1.1 Technical proposal, including specifications and description of all components, terminal sizes, and operation.
  - 1.3.1.2 Outline and installation drawings showing dimensions and weight of the equipment, external power cable connections, recommended wire/cable entrances, and exits.
  - 1.3.1.3 Proposed fabrication schedule, factory test dates, and delivery date per contract documents.
  - 1.3.1.4 Warranty schedule
- 1.3.2 Bidders shall provide a compliance review of all specifications and addenda. The review will be a paragraph-by-paragraph review designating Compliance (“C”), Deviation (“D”), Exception (“E”) with numbered footnotes explaining reasons for the proposed deviations or exceptions and how the intent of the specification will be satisfied.

### **1.4 Shop Drawings**

- 1.4.1 The Seller shall submit a minimum of four (4) sets of shop drawings within two weeks of receipt and acceptance of purchase order and prior to proceeding with any fabrication or assembly of equipment.
- 1.4.2 All submittals shall be a complete package properly indexed and cross referenced. Submittals shall contain all required and detailed information.

### **1.5 Operating and Maintenance Instructions and Manuals**

- 1.5.1 The seller shall submit a minimum of one (1) set of operating and maintenance instructions and manual, covering the complete operation and maintenance of the equipment furnished hereunder to the owner.
- 1.5.2 The Seller shall provide sufficient operation and maintenance instruction for building operators, with on-the-job factory trained engineers representing the manufacturers. The instruction shall be scheduled at time(s) convenient to the Owner’s personnel.

## 1.6 **Installation**

Installation shall be in compliance with all of the manufacturer's recommendations and local codes. All start up and warranty troubleshooting shall be performed by the manufacturer or an authorized representative. Initial startup and site testing shall be done by an authorized representative of the manufacturer.

## 1.7 **Guarantee**

The JCOMM® shall be warranted by the manufacturer to be free from defects in workmanship and material for a period of eighteen (18) months from initial shipment or one (1) year from start-up, whichever occurs first. This warranty is contingent upon having a factory authorized representative perform the start-up. Warranty shall include all costs of repair, parts, labor, travel and living expenses for the service personnel.

## 1.8 **Standards**

The complete System shall be in accordance with the standards previously listed and in compliance with the applicable portions of Underwriters Laboratories UL 508, IEC/ANSI/UL60950-1, CSA-C22.2. All equipment is to be listed and labeled prior to shipment by UL, ETL, or CSA.

# **2 Product Specification**

## 2.1 **General**

The JCOMM® is an enclosed information system device that is used to monitor panel board(s) Branch Circuits via, BCMS Data Acquisition Board(s), Split-Core Current Transformer(s), and monitoring device (s), with optional main or feeder input voltage and/or current monitoring. The robust enclosure houses up to two (2) 84 circuit BCMS Data Acquisition Boards. Each BCMS Data Acquisition Boards circuit can monitor up to two (2) 42 circuit panel boards and two voltage sources. Each JCOMM® allows for the installation of up to two BCMS Data Acquisition Boards. The JCOMM® Unit will monitor and communicate through Modbus RTU (Standard), Modbus TCP/IP, or SNMP (optional) with a PDI Monitor or any building management system to allow monitoring of the entire distribution system downstream to load level connection(s) locally or remotely.

- 2.1.1 Each JCOMM® is designed for a data center environment.
- 2.1.2 The JCOMM® shall be provided separately for existing PDI equipment or for monitoring Branch Circuit/ (optional) main current/feeder or voltage for existing equipment from other manufacturer.
- 2.1.3 All wires shall be rated as per National Electric Code and size per 75 degrees C column. However, the JCOMM is primarily design for 40 degree C ambient temperature environment.
- 2.1.4 The JCOMM® shall include a computer grade single point ground in accordance with FIPS Pub 94 and the requirements of the NEC.
- 2.1.5 The JCOMM® shall have one USB Programming port mounting on the external of the enclosure for each BCMS Data Acquisition Board installed.

## 2.2 **Electrical Characteristics**

- 2.2.1.1 Input Current rating: 1.0 A @ 115 VAC and 0.5V @ 230V
- 2.2.1.2 Input Frequency: 60 Hz. 50Hz (optional)

### 2.2.2 **Communications Board**

- 2.2.2.1 Type: Modbus RTU via RS422/485 interface
- 2.2.2.2 Connection: 2-wire or 4-wire (jumper select)
- 2.2.2.3 Address: 1 to 247 32 STD, 255 optional
- 2.2.2.4 Baud Rate: 9600
- 2.2.2.5 Modbus TCP/IP (Optional) or SNMP (Optional)
- 2.2.2.6 The performance and operation of the JCOMM® may be controlled and monitored locally through an Operator Interface Module, or can be configured via computer(s) and monitored remotely

### 2.2.3 **System Options**

The JCOMM® shall be offered standard with a base enclosure, one BCMS Data Acquisition Board, and no display.

The following options will be available:

1. PDU/RPP Display or Color Touchscreen Display
2. 2<sup>nd</sup> BCMS Data Acquisition Board (US or IEC version)
3. Branch Circuit Cable(s) with 0-60A Split-Core CT's
4. Main and Feeder Cable(s) with 0-250A Split-Core CT's
5. Voltage Sensing Cable(s) - 10 inches (254 mm) standard, but additional lengths are available

#### **2.2.4 Environmental Requirements**

- 2.2.5 Storage temperature shall be between -36°C to +70°C (-33°F to 158°F).
- 2.2.6 Operating temperature shall be between 0°C to +60°C (32°F to 140°F).
- 2.2.7 Relative humidity ranges from 0% to 95% non-condensing.
- 2.2.8 Maximum Operating Altitude 3000 Meters

#### **2.3 Construction**

Enclosure for the JCOMM® shall be designed and constructed to NEMA Type-1 standards. The enclosure shall be primed and painted with suitable semi-gloss enamel both inside and out. Color shall be manufacturer's standard: IBM Pearl White (or "computer hardware off-white"). Optional colors are available upon request. The entire system shall be housed within a cabinet with the following dimensions as outlined in Appendix A

- 2.3.1 Each JCOMM® cabinet shall be designed for installation on top, side, or wall mount Power Distribution Equipment as a convenient retrofit monitoring solution
- 2.3.2 The cabinet enclosure shall be pre-engineered with pre-punch input/output cable landing locations at the top, bottom, and sides to facilitate external connection(s) for either immediate or future cabling requirements.
- 2.3.3 All operator controls and instrumentation shall be visible through the front door/hinge cover. The front door hinged cover/door is design for ease of access to internal circuitry by qualified maintenance or authorized personnel only.

### **3 Execution**

#### **3.1 Factory Tests**

- 3.1.1 Standard factory tests shall be performed on the equipment under this section. All test shall be in accordance with the latest version of NEMA, UL and CSA standards
- 3.1.2 The JCOMM® shall be factory calibrated or may be calibrated in the field to improve accuracy.

## 3.2 **Packaging and Shipping**

- 3.2.1 The manufacturer shall provide adequate packaging to ensure there is no damage to the unit(s) while in transport.
- 3.2.2 The manufacturer shall provide adequate notice to the contractor of shipping and arrival times.
- 3.2.3 The contractor shall arrange for receiving and provide storage for any units prior to installation. Unit storage should be provided in accordance with the environmental conditions outlined in this specification.

## 3.3 **Field Service**

- 3.3.1 All field service work shall be performed by the manufacturer's trained and certified personnel.
- 3.3.2 A 24 hour telephone service organization shall be provided and the phone numbers displayed on the door of each enclosure.
- 3.3.3 The manufacturer shall provide on-site training for the customer's personnel in the operation of the equipment.

## 3.4 **Installation**

- 3.4.1 The contractor shall provide labor for the installation of the new equipment in accordance with the manufacturer. All rigging for unloading and installation shall be the responsibility of the contractor. The manufacturer shall assist the contractor as required in interpreting the installation instructions.
- 3.4.2 The manufacturer shall provide an Operation and Installation manual, a one-line diagram, and outline diagram, and/or wiring diagram with each JCOMM®.
- 3.4.3 The contractor shall install the equipment as shown on the drawings and ensure all required working clearances are maintained.
- 3.4.4 Following installation, the manufacturer shall verify the correct installation of the equipment.

### 3.5 **Start-Up Commissioning**

- 3.5.1 The manufacturer shall provide the services of a qualified technician to perform the manufacturer recommended start-up procedures. Upon completion, the manufacturer shall provide a commissioning report to the owner.
- 3.5.2 The contractor shall notify manufacturer at least ten (10) days in advance of the date when start-up will be required. The contractor shall coordinate with the manufacturer and the engineer to establish an agreeable start-up and testing schedule
- 3.5.3 Required load banks for testing and acceptance are the sole responsibility of the contractor.
- 3.5.4 The manufacturer shall provide the services of a field service engineer for site testing and installation supervision as required to complete the check out.

### 3.6 **Acceptance**

Final Acceptance shall occur when the certified start-up reports are submitted to the owner.