

10-3. BATTERY BACKUP SYSTEM

DESCRIPTION

The battery back up system (BBS) components, including an external cabinet, an inverter/charger, a power transfer relay, a separate manually operated non-electric bypass switch, a temperature probe, hardware, a battery harness, and interconnect wiring will be State-furnished as provided under "Materials" of these special provisions. The Contractor shall furnish the batteries and the material for the external cabinet foundation.

The Contractor shall construct the external cabinet foundation in accordance with Section 86-2.03, "Foundation" of the Standard Specifications. The Contractor shall attach the external cabinet, install the temperature probe, install the BBS in the controller external cabinet, install the batteries, connect the battery wiring harness, and make field wiring connections.

A completely wired BBS and assembled cabinet will be State-furnished as provided under "Materials" of these special provisions. The Contractor shall construct the external cabinet foundation in accordance with Section 86-2.03, "Foundation" of the Standard Specifications. The Contractor shall attach the external cabinet, install the batteries, and connect the battery wiring harness.

MATERIAL

Details for the State-furnished BBS and external cabinet are provided in an information handout described in "Project Information" of these special provisions.

The Contractor shall furnish batteries compatible with the State-furnished BBS and suitable for outdoor applications.

Batteries shall:

- A. have voltage rating 12 V,
- B. be group size 24,
- C. be 75 to 80 amp-hour at 20 hour rate,
- D. be commercially available and stocked locally,
- E. have a carrying handle,
- F. be marked with date code and maximum recharge data and recharge cycles,
- G. have 2 top mounted terminal posts with recessed thread lugs for 1/4-inch diameter, 20 thread count per inch bolts,
- H. have terminals covered and insulated with molded boots to prevent accidental shorting,
- I. be fully charged when furnished, and
- J. be free from damage or deformities.

There shall be 4 batteries per installation.

The batteries shall be deep cycle, sealed prismatic lead-calcium based absorbed glass mat/valve regulated lead acid (AGM/VRLA).

The batteries shall be certified by the manufacturer to operate over a temperature range of -25°C to 74°C.

9The batteries shall include a manufacturer's prorated 5-year replacement warranty for parts from the time of delivery and submittal of warranty documents to the Engineer at the jobsite. The warranty shall cover the total bid price of the batteries.

The Contractor shall submit the battery data sheet to the Engineer when the batteries are delivered to the jobsite. The data sheet shall include the following features:

- A. model number,
- B. serial number,
- C. dimensions,
- D. charts,
- E. table of discharge rating,
- F. product information,
- G. battery specifications, and
- H. conductivity reading per battery (in Siemens).

WARRANTEE

The Contractor shall provide the Engineer a written warranty for the batteries, prorated for a period of 60 months after installation. Replacement batteries shall be delivered to Department Maintenance Electrical Shop at _____ within 5 days after receipt of failed battery.

MOUNTING AND CONFIGURATION

The Contractor shall mount the external cabinet to the controller cabinet on the side opposite the police panel, and as shown on the plans or in the information handout.

The Contractor shall apply a pliable seal composed of caulking compound or mastic around the gap between the external cabinet and the controller cabinet.

The Contractor shall mount the BBS inverter/charger unit, power transfer relay, and the manual bypass switch inside the controller external cabinet. The inverter/charger unit shall be shelf-mounted or rack-mounted on the standard EIA 19-inch rack. The power transfer relay and the manual bypass switch shall be mounted on EIA rail.

The Contractor shall attach wiring conductors as shown on the wiring diagram for the supplied BBS equipment manufacturer in the information handout.

The Contractor shall connect the wiring harness to the batteries.

Functional Testing

The BBS functional test shall include at least 30 minutes of continuous, satisfactory operation with utility power turned off. Testing will be performed in the presence of the Engineer.

MEASUREMENT AND PAYMENT

The contract unit price paid for battery backup system shall include full compensation for furnishing all labor, materials (including batteries, but excluding the State-furnished BBS with wiring and external cabinet with hardware), tools, equipment, and incidentals and for doing all the work involved in installing the BBS, batteries, and external cabinet, complete in place, including the temperature probe, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract unit price paid for battery backup system shall include full compensation for furnishing all labor, materials (including batteries, but excluding the State-furnished BBS with wiring and external cabinet with hardware), tools, equipment, and incidentals and for doing all the work involved in installing the batteries and external cabinet, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.