

EXPECTED IMPLEMENTATION (FY 2023-24)

685 TRAFFIC CONTROL SYSTEM AUXILIARIES (REV 10-24-22) (FA 10-24-22) (FY 2023-24)

SECTION 685 is deleted and the following substituted:

685-1 Description.

Furnish and install traffic control system auxiliaries as shown in the Plans.

685-2 Materials.

685-2.1: General: Use traffic control system auxiliaries listed on the Department's Approved Product List (APL).

685-2.2 Uninterruptible Power Supply (UPS): Use a line interactive or online/double-conversion UPS as shown in the Plans. UPS assemblies must be designed for installation in a roadside NEMA 3R enclosure to provide battery backup functionality for traffic control systems, including traffic signal and intelligent transportation system (ITS) devices. UPS assemblies must include batteries provided by the UPS manufacturer or in accordance with manufacturer's requirements. Batteries must be sealed and require no maintenance, cause no corrosion, and be capable of maintaining 80% of original capacity and performance for a minimum of five years.

Loss of utility power, transfer from utility power to battery power, and transfer back to utility power must not interfere with normal operation of connected equipment. In the event of UPS failure or battery depletion, connected equipment must be energized automatically upon restoration of utility power.

Removal and replacement of the UPS must not disrupt the operation of the equipment being protected.

All harnesses necessary to connect and operate the system must be included.

685-2.2.1 Electrical: UPS assemblies used to provide backup power in an ITS cabinet must provide a minimum of 350 watts (at 120 V_{AC}) of continuous backup power for a minimum of two hours unless otherwise shown in the Plans.

UPS assemblies used to provide backup power in a traffic signal controller cabinet must provide a minimum 400 watts (at 120 V_{AC}) of continuous power for a minimum of 6.5 hours unless otherwise shown in the Plans.

685-2.2.2 Traffic Signal UPS Cabinet: Cabinets used to house traffic signal UPS assemblies must be designed to be mounted to the side of a traffic cabinet or base mounted. Cabinets must meet the requirements of Section 676 and must include shelves and rack rails to house all UPS system components including the UPS, batteries, harnesses, switches, surge protective device, power terminal block and a generator hookup with transfer switch. The UPS cabinet must allow a maintenance technician to safely insert power for traffic signal operation while the UPS or associated equipment is serviced or replaced.

A surge protective device must be installed where the supply circuit enters the cabinet in accordance with 620-2.7.1.

685-2.2.2.1 Transfer Switch and Generator Access Panel: The cabinet must include an automatic transfer switch and generator access panel in accordance with Section 676. The generator access door must not protrude more than 1 inch when

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closed. **685-2.3 Remote Power Management Unit (RPMU):** Use a RPMU as shown in the Plans. The RPMU must be designed for installation in a roadside Traffic Cabinet to provide remote control of electrical receptacles.

685-3 Installation.

Install UPS assemblies in accordance with the manufacturer's recommendations. All equipment used to keep the intersection signalized must be backed up and protected by the UPS. Include a UPS operation and maintenance manual in the cabinet where the UPS is installed that includes cabinet wiring schematics, electrical interconnection drawings, parts layout and parts lists.

Install the RPMU in accordance with the manufacturer's recommendations. Include a RPMU operation and maintenance manual in the cabinet where the RPMU is installed that includes cabinet wiring schematics, electrical interconnection drawings, parts layout and parts lists.

685-4 Testing.

Provide a field acceptance test plan to the Engineer for approval at least 14 days prior to commencement of testing. After approval of the acceptance test plan, perform testing of the installed UPS and RPMU equipment. Furnish all equipment, software, and supplies necessary for conducting the test.

685-5 Warranty.

Ensure the UPS includes a manufacturer's warranty covering defects for a minimum of three years (5 years for the batteries in accordance with 685-2.2) from the date of final acceptance in accordance with 5-11 and Section 608. The warranty must include provisions for providing a replacement UPS within 10 calendar days of notification for any UPS found to be defective during the warranty period at no cost to the FDOT or the maintaining agency.

Ensure the RPMU includes a manufacturer's warranty covering defects for a minimum of three years from the date of final acceptance in accordance with 5-11 and Section 608.

685-6 Method of Measurement.

The Contract unit price for each UPS or RPMU, will include furnishing, placement, and testing of all equipment and materials as specified in the Contract Documents, and all tools, labor, operational software packages and firmware, supplies, support, documentation (including the field acceptance test plan), and incidentals necessary for a complete and accepted installation.

685-7 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section. Payment will be made under:

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| Item No. 685- 1- | Uninterruptible Power Supply - each |
| Item No. 685- 2- | Remote Power Management Unit - each |