



# **ABU DHABI SEWERAGE SERVICES COMPANY (ADSSC)**

## **GENERAL SPECIFICATION FOR ELECTRICAL WORKS**

### **DIVISION 16 ELECTRICAL**

### **SECTION 16120 LIGHTNING & SURGE PROTECTION SYSTEMS**

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**DOCUMENT CONTROL SHEET**

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## 1. GENERAL REQUIREMENTS

- a) All items described within this section shall comply with the provisions of Section 15001: General M&E Requirements.
- b) The Mains incomers of all Factory Built Assemblies (FBAs) such as Motor Control Centres, LV Distribution Boards and Control Panels etc., as described by Section 16020, fed from "ADWEA-supplied Feeder and/or Transformer, Package Substation and Generator Sets" shall be provided with Lightning and Surge (Over-voltage) protection units to protect the equipment against over-voltage generated by spikes and electrical switching events.
- c) The protection device shall conform to BS EN 60099-1 (IEC 60099-1) and shall be rated for High Exposure Level as defined in the BS EN 62305 (IEC 62305) series of standards.

## 2. DESIGN AND CONSTRUCTION FEATURES

- a) The protector shall be so designed and field proven that it shall neither interfere nor restrict the systems normal operation. It shall not:
  - i. Corrupt the normal mains power supply.
  - ii. Break or shutdown the power supply during operation.
  - iii. Have an executive earth leakage current.
- b) Protection shall be rated for a peak discharge current of no less than 10kA (8/20-microsecond waveform).
- c) The protector shall limit the transient voltage to below equipment susceptibility levels. Unless stated otherwise, the peak transients let-through voltage shall not exceed 600V for protectors with a nominal working voltage of 240V when tested in accordance with the BS EN 62305 (IEC 62305) series of standards.
- d) The peak transient let-through voltage shall not be exceeded for all combinations of conductors:
  - i. Phase to Neutral.
  - ii. Phase to Earth.
  - iii. Neutral to Earth.

## 3. MONITORING

- a) The protector shall have continuous indication of its protection status. The following conditions shall be monitored:
  - i. Full protection present.
  - ii. Reduced protection – replacement required.
  - iii. No protection – failure of protector.

- b) Remote indication of status shall be possible via volt-free contacts.
- c) Status indication shall provide warning of protection failure between all combinations of conductors, including neutral to earth. This shall prevent a potentially dangerous short circuit between the Neutral and Earth going undetected for some time.

**END OF SECTION**