The rated Prospected Short Circuit Current (kA rating) of MCCBs shall be as per specified in the drawings, BOQ, Technical Schedule.

4.1.5. Earth leakage relay

The core balance transformer and the earth leakage relay shall be properly matched. The VA rating of the core balance Transformer shall be at least 5% above the connected load. The data sheets shall be provided for approval.
The time and current settings shall be adjustable.
Current Setting: 0.03A – 10A
Trip time Setting: 0.05s – 10.0s (0.1 sec step)
Earth leakage relay shall indicate the leakage at a time. Zero CT fault indication and trip indication LED shall be available. CE mark shall be appeared in the housing.

4.1.6. Voltage Monitoring Relay

The voltage level shall be ± 10% to operate the Voltage Monitoring Relay. If under voltage trip is activated, the motorized type MCCB shall be tripped off. If the voltage is returned available/ healthy, the motorized MCCB shall be on automatically. The relays shall monitor frequency and phase sequence. Data sheets of the under-voltage relay shall be provided for approval.

4.1.7. Fuses

All fuses shall be HRC cartridge type conforming to BS 88 category of duty 400V A2 minimum, complete with fuse carriers and bases, etc. of approved manufacturer. The fuse shall have a fault level equal to the fault level of connected bus bar.

4.1.8. Current transformers

Separate current transformers shall be installed for measurement and protection systems. Current transformers shall comply with BS EN 61869. Following accuracy classes shall be applicable for CTs.

Class 1M : Metering
Class 2M : Maximum demand metering
Class 2.5P : Protection
The CTs shall be made of the resin encapsulated types which have 5A secondary windings. They shall be suitable to withstand the maximum fault current as specified in the BOQ and drawings. CT current ratio, VA rating and use shall be properly mentioned in the label. They shall be capable of operating the load of the related device with an additional capacity of 5%.

4.1.1. Power Analyser

The following minimum measurements shall be possible with the energy meter.

- Active power (kW) of total and per phase
- Reactive power (kVAr) of total and per phase
- Current (A) of 3 phases and neutral
- Voltage (V) of phase to phase and phase to neutral
- Power factor
- Communication protocol: RS 485

Accuracy of the energy meter shall be not less than the following.

- Energy and power accuracy : +/- 1%

The energy meter shall comply with the relevant BS/ IEC standard