**Technical Specification of ultrasonic level sensor for SILO**

1. **Level Sensor unit :**

* Radar type level sensor suitable for coal storage silos having storage bin height of 25m and diameter 18m.
* Level sensor unit must be a self-contained complete functional unit consisting of all necessary functional units such as :
  + Sensing unit with wave transmitter, receiver, wave guide and mounting.
  + Digital controller with LCD display and relay output with NO and NC contact, 220V, 5A.
  + Sensor cable connecting sensor to the controller.
* Unit must operate with nominal 220V 50Hz AC mains supply.
* Controller unit must have DIN or Panel mounting options.
* Sensing unit must have at least IP67 rated dust and water proof metallic enclosure.
* Unit must support MODBUS RTU communication protocol for interfacing with PLC and external display unit.
* The performance of the sensor must not be affected by coal deposition on sensing unit.
* The performance of the sensor must not be affected by coal dust inside the storage bin.
* The sensing unit will be mounted on the roof of Silo storage tank and the tank status must be available in the Silo control room. The silo control room is at ground height while silo roof is at 50m height from the ground. Sensing unit must include interconnecting cables for this arrangement.
* Level sensor unit must update tank level at least once per 5 second.
* Level sensor unit must store setting and calibration data internally and must not require re-configuration after power outage.

1. **LCD display unit.**

* Panel mounted LCD display unit for displaying Silo storage tank level.
* LCD display unit must be compatible with any level sensor with MODBUS RTU protocol.
* LCD display unit must have large Numeric and Bar Graph display of silo tank level.
* LCD unit must operate with nominal 220V, 50Hz AC mains supply.
* LCD unit must have backlit for visibility in dark.