FAQ's of Patented BOLA Device

Technical Hardware

1. **What parameters can the remote monitoring system measure?**

The system can measure various Electrical & Physical parameters of the transformer, like oil temperature, winding temperature, oil level, lug temperature, OLTC tap position, and all electrical parameters like energy parameters, Basic Parameters, Power Parameters, THD.

2. **How does the system transmit data?**

Data can be transmitted via wired connections, wireless networks (Wi-Fi, cellular networks), or satellite communication, depending on the installation location and infrastructure availability.

3. **Is the system compatible with existing transformers?**

Yes, our system is retrofitted and designed to be compatible with most transformers. We offer a range of sensors and interfaces to ensure seamless integration with existing equipment.

4. **What are the power requirements for the monitoring system?**

Our systems are designed to operate with minimal power consumption and can be powered via the transformer's auxiliary power supply, batteries, or solar panels.

5. **How reliable is the monitoring system?**

Our system uses high-quality components and has undergone rigorous testing to ensure reliability. We offer a robust warranty and support package to address any issues that may arise.

6. **What maintenance is required for the monitoring system?**

The system requires minimal maintenance, primarily periodic calibration, and software updates. We provide detailed maintenance schedules and offer support services.

7. **What is the lifespan of the monitoring equipment?**

The typical lifespan of our monitoring equipment is 10-15 years, with proper maintenance and care.

8. **How long does it take to install the system?**

We will do the installation of the device. Even a semi-skilled technician can do the installation easily. Installation time depends on the number of transformers and site conditions. On average, installation can be completed within 1 or 2 hrs. per site.

9. **Do you provide training for our staff?**

Yes, we offer comprehensive training programs for your staff to ensure they can effectively use and maintain the monitoring system.

10. **What kind of support do you offer post-installation?**

We offer 24/7 technical support, regular software updates, and maintenance services to ensure the system operates smoothly.

11. **What environmental conditions can the system withstand?**

The system is designed to operate in harsh environments, including extreme temperatures, humidity, and exposure to dust and moisture. As it has a IP65 protected enclosure.

12. **Can the system be customized to our specific needs?**

Yes, we work closely with our clients to tailor the monitoring solution to meet their specific requirements, including custom reporting and alert configurations. We have our own Hardware and Software team so we will do necessary customization within time frames in house only.

13. **What kind of alerts and notifications can the system provide?**

Email alerts, SMS notifications, mobile app notifications, and dashboard alerts.

14. **Which instrument transformers and current transformers for voltage and current assumption should be used?**

We are reading energy meters to monitor voltage and current with an accuracy class of 1.0 for both current transformers (CT) and potential transformers (PT). No assumptions are made in this process.

15. **If there are only transformers and no switchboards, how should the voltage and current values be obtained?**

We are placing the current transformer on the LT bus bar or distribution cable box to measure current. For voltage measurement, we are directly taking parallel voltage output from each phase on the LT side of the transformer.

16. **What is THD in THD for Current and Voltage?**

THD (Total Harmonic Distortion) for current and voltage refers to the measurement of harmonic components present in the waveforms of electrical current and voltage. It serves as a crucial metric for assessing power supply quality.

17. **What are the specifics of the Health Index?**

The parameters we monitor from the transformer align with the specific requirements outlined in the Indian standards IS 6600 for loading standards and IS 1180/2026 for design and manufacturing standards.

18. **Can BOLA detect power theft (surreptitious use of electricity)?**

We can indeed detect theft by monitoring the actual loading (sanctioned load) on each transformer. By comparing the actual loading with the sanctioned load, we can ascertain the overloading percentage of the transformer.

19. **While measuring the efficiency, how does Bola get the current and voltage values?**

Bola measures current and voltage using CT (Current Transformer) and PT (Potential Transformer). Typically, CT is placed by us on the LV (Low Voltage) side. However, for comprehensive efficiency analysis of the transformer, the placement of CT and PT on the HV (High Voltage) side is recommended. We require the utility to ensure that CT and PT on the HV side are accessible and compatible with our monitoring system.

20. **What are the specifics of the Health Index?**

The Health Index comprises parameters that align with the Indian standards for transformer loading and manufacturing (IS 6600, IS 1180, IS 2026).

Technical Software

21. **How often is data collected and reported?**

Data collection frequency can be customized based on your needs, ranging from real-time monitoring to periodic reporting (e.g., 15min, hourly, daily).

22. **How is the collected data stored and accessed?**

Data is securely stored in cloud servers or on-premises, depending on your preference. Access is provided through a secure web interface or mobile app.

23. **Can the system integrate with our existing data management systems?**

Yes, our system is designed to integrate with various data management systems through APIs and standard communication protocols (e.g. Modbus TCP/RTU).

24. **Can the monitoring system be integrated with existing SCADA systems?**

Yes, the monitoring system can be integrated with existing SCADA systems.

Security

25. **How is data security ensured?**

Data security is a top priority. We use encryption, secure communication protocols (https), and access controls to protect your data from unauthorized access.

26. **What is the security of the data if we go for a cloud-based solution?**

We have put our database and application on AWS (Azure) cloud and it is one of the most secured cloud servers in the world. We shall provide you with the necessary certificates for your reference.

Compliance

27. **Is the system compliant with industry standards?**

Our monitoring solutions comply with relevant industry standards, including EMI/EMC and ISO certifications.

28. **Are there any external certifications from an official third party?**

Yes, our device is certified by EQDC (Electronic Quality Development Center). If needed, we can provide the certification.

Others

29. **How long have you been providing remote monitoring solutions?**

We have been providing remote monitoring solutions for over last 4 years, with a proven track record of successful implementations.

30. **Can you explain the benefits of using your monitoring system?**

Our monitoring system enhances transformer reliability, reduces maintenance costs, improves operational efficiency, and provides early warning of potential issues.

31. **What is the ROI for implementing your monitoring solution?**

The ROI depends on various factors, including the number of transformers, existing maintenance costs, and the criticality of the monitored assets. Typically, clients see a return on investment within 1-2 years.

32. **How does the monitoring system help in predictive maintenance?**

By continuously monitoring key parameters and analysing trends, our system can predict potential failures and recommend maintenance actions before issues become critical.

33. **What is the calculation formula in Bola for load factor?**

The calculation formula for load factor in Bola is based on the ratio of average load to peak load over a specific period. We utilize data from our integrated monitoring system to compute this accurately.

34. **Why do we need BOLA device when we have installed a new transformer and the manufacturer has given the warranty period?**

BOLA is not just a monitoring solution but is also an analytic and smart solution that monitors parameters like PF, harmonics, load percentage, temperatures, over voltages, etc., and showcases the power quality at the load level. BOLA will be effective for new transformers because you will have the historical data sheet of all parameters from the day one of the transformer installation.

35. **Can BOLA device monitor No Load and Full Load losses of the transformer?**

It is difficult to monitor the actual no-load and full load losses of the transformer. But we can judge the total losses of the transformer with the condition that there should be an MFM (Multifunction meter) available on the HV side also. On the LV side, we can install the energy meter and show the All-day efficiency of the transformer by analyzing the difference between input KW and output KW WRT to change in transformer load.

36. Which is the most economical solution, cloud-based or local server?

It depends on how many transformers you have or want to monitor. If you have multiple transformers (more than 10 transformers), then local server integration is the most economical solution as there is only one-time cost (software and hardware cost). Below 10 transformers, then cloud server is the economical solution. In the cloud server, there are annual maintenance charges per device.

37. Can BOLA device inform by when we can do the Oil filtration?

BOLA solution gives you the insight graphical trend of the oil temperature and winding temperature WRT to change in the load percentage. There is a provision according to which we have to put the threshold values of the temperatures as per IS 1180 or IS 2026.

38. How does Bola show the temperature variation?

With the help of temperature analytic graphs and trends, one can understand the efficient working of the transformer.