



Enriching Lives

## KirloSmart IoT Solution for Yamuna HVAC Pumps



### Pump Specifications

- Model = CE  
100/20, Kirloskar  
Make
- Flow – 150 m<sup>3</sup>/hr,  
Head – 12 Mtr
- Motor Power – 7.5  
kW

### Introduction

The Yamuna building, located in Pune, Maharashtra, is the corporate office and headquarters of Kirloskar Brothers Limited. The HVAC (Heating, Ventilation and Air Conditioning) pumps installed in the facility are crucial for the operation of the HVAC system that enables air conditioning throughout the building. These pumps operate 10-12 hours a day. Any problem with these pumps could hamper the building air conditioning & increase the electricity bills (running expenses).





## Challenge

Since these pumps are crucial, they need to be in operation at all times. Also, they need to be efficient so that the running expenses are minimum. There is no separate manpower in the office to check/maintain the pumps on a regular basis. Traditional Supervisory Control and Data Acquisition (SCADA) software system are not helpful as there is no one to monitor the screen and, accordingly, control and manage the system. There is no mechanism to evaluate the issues prior to the breakdown of the pumps. Moreover, there is no system to gauge the spare life of the pump in order to understand when it will expire and accordingly manage the spares.

## Solution

In 2014, KBL introduced KirloSmart – an IoT (Internet of things)-based remote pump monitoring solution, which can address all the above issues. 'KirloSmart' is an IoT product with the unique ability to measure and remotely monitor the field parameters and existing condition of the pumping solution and accordingly transmit the results on KBL's web-based portal/cloud/mobile app for analytics and generating alerts for the probable factors that could lead to the failure of the pump.

Thus, KBL deployed KirloSmart solution for monitoring these pumps so that the KBL Admin could manage the pumps and remotely monitor their condition right from his mobile. With KirloSmart, the admin is now able to monitor pump health and its operational behaviour irrespective of

wherever he is located. More importantly, he gets early notification related to the issues and spare requirements, which helps avoid unplanned costly breakdowns. Besides, the KirloSmart software also provides daily updates related to the energy and water consumption by the pumps.

**The KirloSmart software is capable of remotely monitoring the following pump parameters:**

- Flow
- Pressure
- Power
- Voltage
- Current
- Frequency
- Power Factor
- Pump & Motor Bearing Vibrations
- Pump & Motor Bearing Temperature
- Motor Winding Temperature
- Pump Run Hours



## Learning

For KBL, the benefits of this technological solution are as follows:

- Flexibility to monitor the pumps from any place through mobile, tab or laptop
- Reduced operational cost, repair cost and labour
- Reduced unplanned breakdown and improved process/plant safety & reliability
- Increased equipment life and less downtime

- Reduced cost of assets like servers, modems, computers, etc.
- Improved equipment efficiency

**Also due to the following features, effective management of the pumps is possible:**

- User-friendly web portal & mobile App
- Predictive maintenance alerts with probable causes (SMS & email)
- 24 x 7 real time monitoring, historical data & trend monitoring
- Diagnostic of the issues at an early stage
- Pump spares management – estimation of remaining life
- Storage of data in event of communication failure
- User configurable sensors
- Communication mode selection (GPRS/Ethernet)
- Simple, plug & play mechanism
- Facilitates integration with existing energy meter/VFD/PLC /sensors

## Conclusion

KirloSmart is the right solution for effective remote management of pumps. KirloSmart can be deployed for any type & make of pump. The indigenously developed solution is very flexible in catering to all the customer requirements in all the segments. The KBL engineering team has all the necessary expertise required for the after-sales service of the solution in almost all the major cities.

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