U-GEN

Diesel Generator Performance Monitoring System

End User Manual

Utthunga Technologies

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1 Introduction

Diesel Generator Performance Monitoring System monitors and analyzes the Diesel Generator health and & performance in real time. It determines the current condition of the Diesel Generator and gives insights, which helps plant operators to manage and optimize it. The solution provides visibility to key operating parameters and performance KPI's. It determines the KPI deviation from design & alert the customer about deviation. Customer can proactively plan maintenance and reduce unplanned downtime. This user manual is intended to provide all the necessary information to use application.

2 System Architecture

Monitoring Parameters will be collected from the Diesel Generator Control system itself.

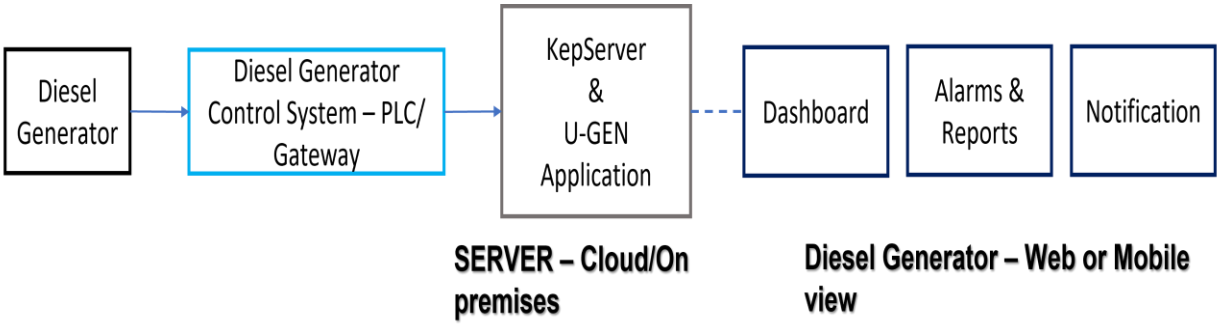

Figure 1: System Architecture

3 Main Page

The Main page of the Diesel Generator Performance Monitoring dashboard displays the Diesel Generator Parameters, KPI Values, Running Status, Alarm, Trend & Report. Refer to Figure 2: Home Page

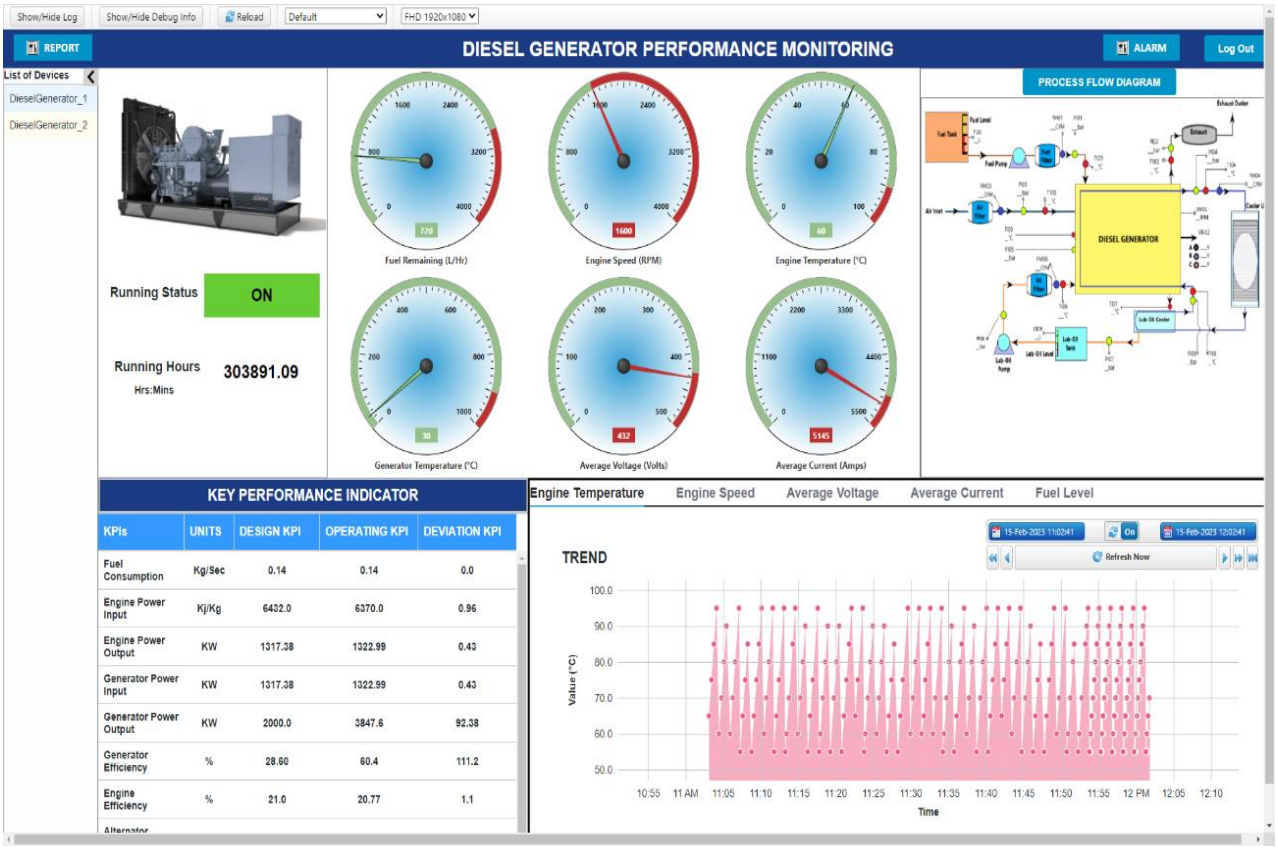

Figure 2: Home Page

The following add on pages are shown in the Homepage:

- Report
- Alarm

3.1 Main Dashboard – Diesel Generator Status

Diesel Generator Running status indicates whether Diesel Generator is ON or OFF.

Figure 3: Diesel Generator Running Status

3.2 Main Dashboard – Diesel Generator Parameter

The Diesel Generator parameters are coming from the Diesel Generator Device. The values are shown with Units in Gauges.

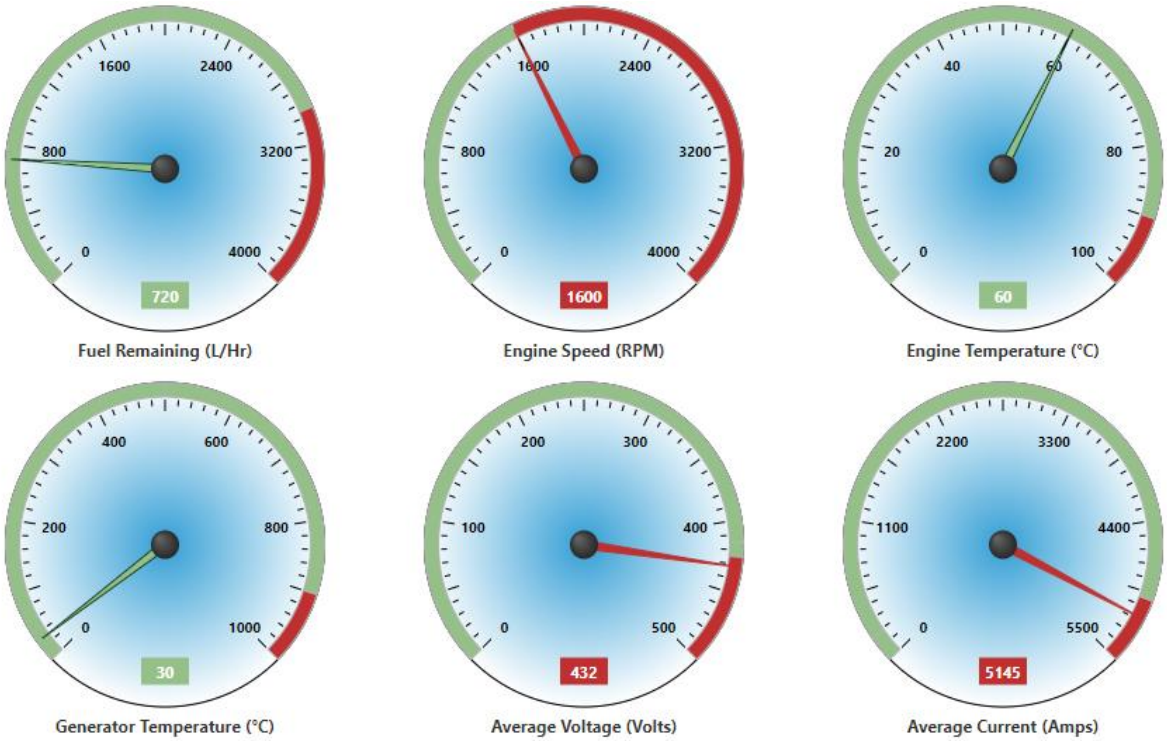

Figure 4: Parameter

3.3 Main Dashboard – Diesel Generator Process Flow Diagram

Process Flow Diagram indicates the process of the Diesel Generator system. Click the PROCESS FLOW DIAGRAM title to see the enlarged diagram.

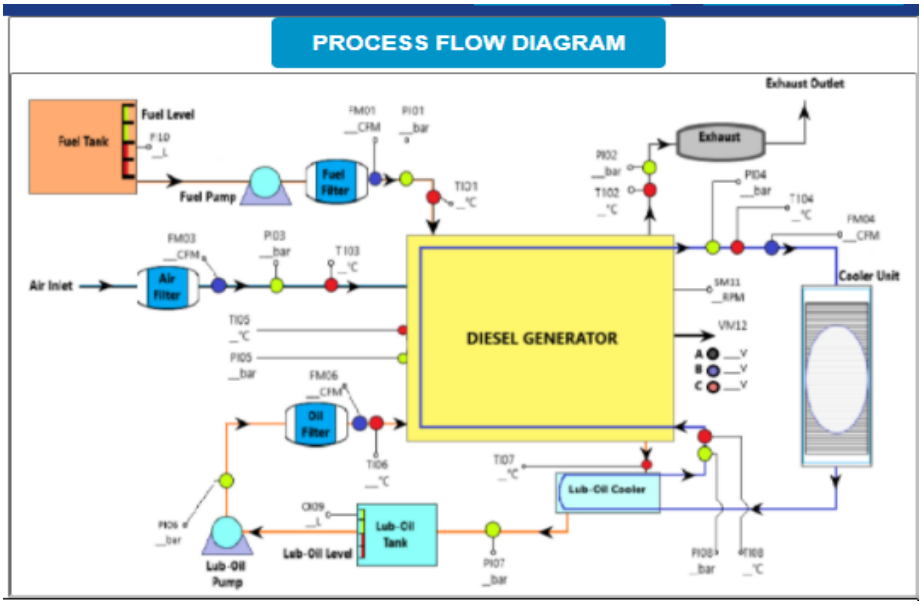

Figure 5: PFD

3.4 Main Dashboard – Diesel Generator KPI

Key Performance Indicators are the calculated values which is calculated from the Diesel Generator parameters.

KEY PERFORMANCE INDICATOR

Search: Reset

KPIs	UNITS	DESIGN_KPIs	OPERATING_KPIs	DEVIATION_KPIs
Fuel Consumption	Kg/Sec	0.14	0.14	0.0
Engine Power Input	Kj/Kg	6432.0	6370.0	0.96
Engine Power Output	KW	1317.38	1088.53	17.37
Generator Power Input	KW	1317.38	1088.53	17.37
Generator Power Output	KW	2000.0	564.05	71.8
Generator Efficiency	%	28.60	8.85	69.05
Engine Efficiency	%	21.0	17.09	18.62
Alternator Efficiency	%	91.09	8.85	8.85
Total Losses	KW	1200	1388.1	15.67

Figure 6: KPI

3.5 Main Dashboard – Diesel Generator Alarm

Click ALARM button to see the Latest alarm & historical alarm in the home page. It will open ALARM MONITORING page. The parameter current value, alarm limits, description of the alarm, timestamp will be displayed in the ALARM MONITORING PAGE for all devices.

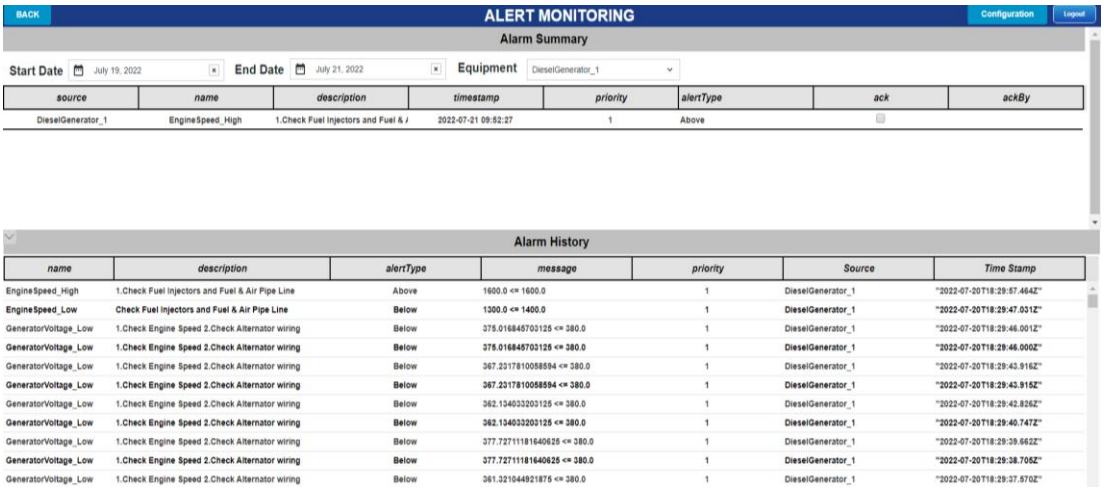

Figure 7: Alarm Main Page

Alarm Summary shows current alarms & Alarm History shows the history of the selected Diesel Generator equipment alarms for the selected date. The start date & end date can be selected for individual Diesel Generator equipment to see the current alarms & historical alarms. Click the back button to go to the home page & Click Logout button to exit from the dashboard.

Configuration of the Alarm:

Click the "Configuration" button (Right top side) to create new alarm.

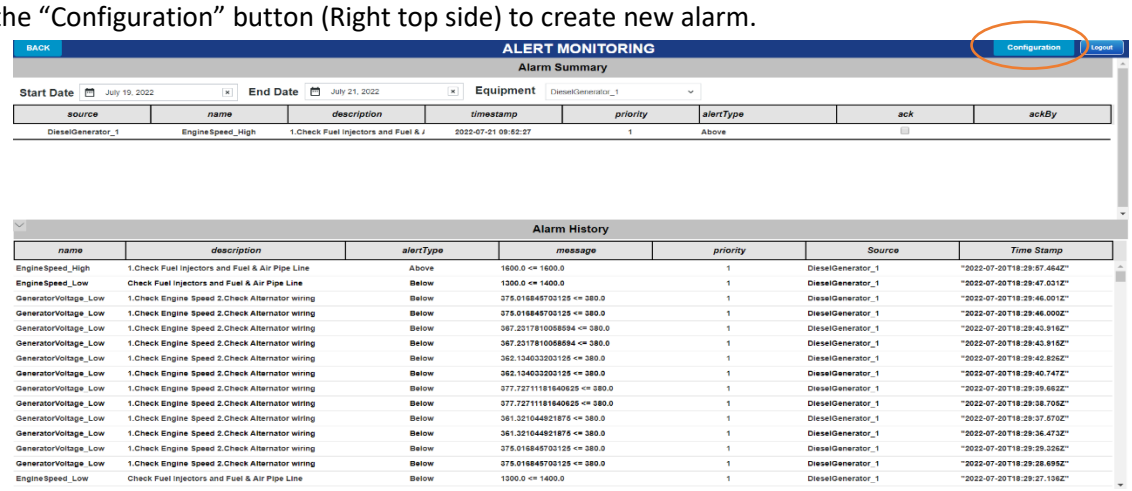

Figure 8: Alarm Configuration Link

The configuration pop up will open after clicking the configuration button. New alarm can be created here by adding all the information required. Once add all the information, click the add button. The new alarm will be added in the background. When the alarm limits (High or Low) reach, you can see the alarm in Alarm Summary table.

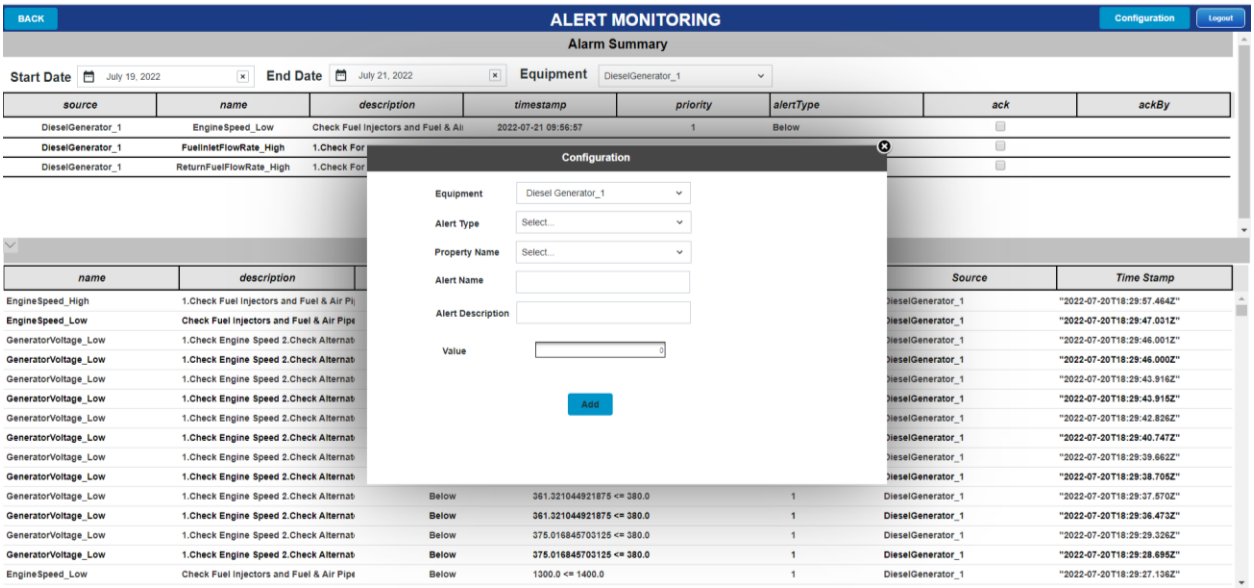

Figure 9: Alarm Popup

3.6 Main Dashboard – Diesel Generator Trend

The TREND can be seen in the Home Page. Separate Trend for different parameters is available here.

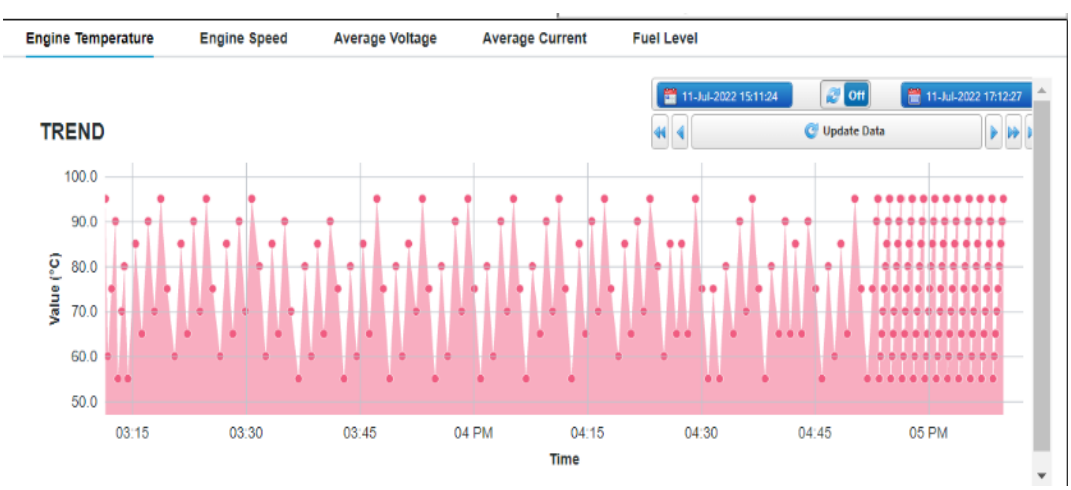

Figure 10: TREND

3.7 Main Dashboard – Diesel Generator Report

Diesel Generator report is available by clicking the REPORT button.

Figure 11: Report Link

"From" & "To" date has to be given to get the report of the parameters. Customer can download excel sheet by clicking the "EXPORT" Button. Click the back button to go to the home page. Click the Logout to Figure 19: REPORT in Separate Page

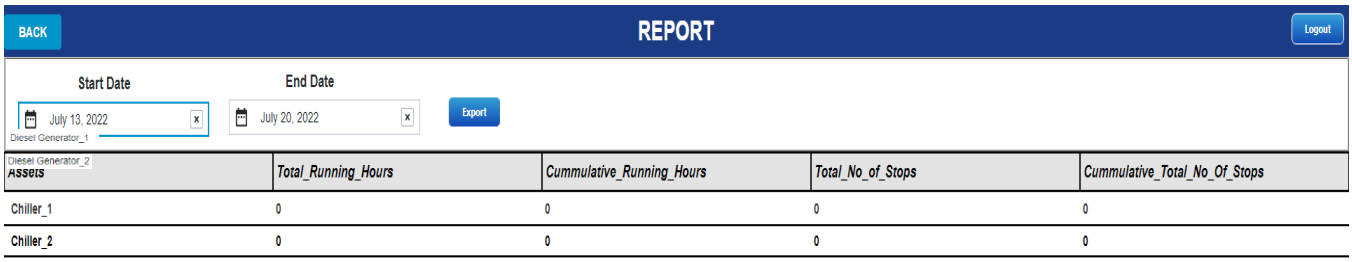

Figure 12: Report in Separate Page

4 Support

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THANK YOU