



## IloT based Remote Monitoring of Cryogenic Tanks



### Ogauge for cryogenic tanks

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#### Overview:

Cryogenic tanks are increasingly being used for bulk delivery of cryogenic liquid gas, as it eliminates the need for costly cylinders. Industrial gas companies use tankers to deliver cryogenic liquid gas to customer tanks, and efficient tank monitoring is crucial for customer operational status and sustainability. However, the current manual tank monitoring process is not consistently followed, leading to emergency calls and potential damage to the customer's business.

Manual records are insufficient, as they may not be maintained on a timely basis. This can result in inability

to analyze leakage or gas levels below critical points. This is where Ogauge comes in the picture. It has features of a digital pressure gauge, pressure switch, pressure transmitter, and datalogger that offers a cloud-based dashboard for remote monitoring of gas tank pressure and liquid levels. With a wifi connection, telemetry data is transmitted to a host server. Ogauge simplifies tank management by providing access to readings from anywhere, and storing liquid/gas pressure and level readings on the cloud. Real-time alerts based on relay outputs reduce emergency calls and help manage disruptions effectively.

## Challenges faced with the traditional method:

- Human Resources needed for costly and inefficient manual data collection. Highly probable that the process for periodic daily reading is not followed consistently.
- Major training and supervision required to manage manual data collection process and records.
- Human error in reading and writing data and typical issues with number transposition errors.
- Accuracy of maintaining timely manual records hinders in analyzing data or its effective use.
- Leads to potential out of stock issues and ordering on an emergency basis. High delivery cost and business sustainability is at stake.
- Ability to produce and deliver gas to meet emergent requirements cost effectively, and downtime may result in irreparable damage.
- Underutilized production and storage assets due to inefficient and inaccurate monitoring methods currently in use.
- Time inefficiencies and misunderstanding of verbal delivery requests.
- Tank asset management, audit, and periodic gas inventory is time consuming and difficult.



## The solution with Ogaug:

- With Ogaug you can not only monitor the pressure and level of the fluid in the cryogenic tank but also control it and set interlocks/alerts/alerts based on the relay outputs.
- Four hard relays make it very easy to set alarms/alerts as the level and pressure of the fluid in the tank varies.
- Storage of liquid/ gas pressure and level readings on the cloud automatically protects against data loss and allows for limitless information storage.
- You can view, manage, and optimize multiple assets (cryogenic tanks in the field) and access their data from one single dashboard.
- Ogaug is a stand alone solution for control and monitoring of your cryogenic tanks in the field.

## Key Features of Ogaug



### A digital OLED display

Makes it possible to view the readings from a significant distance



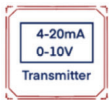
### IP66 certified

Protects the gauge from harsh industrial environments including dust, fumes and water, etc.



### 4 relay outputs

Control the fluid pressure and level; and send alerts based on the variation of the level (through the web-based dashboard)



### Two configurable analogue outputs

One current and one voltage outputs can be used to link the Ogaug with the existing SCADA system



### Inbuilt data logger

Log process data up to 8 years approx.



### A mobile application

Makes the Ogaug easy to use and install



### Access from anywhere

24/7 online access to critical tank level information through our web based dashboard allows users to control and monitor the Ogaug remotely



### Geolocation

The exact location (w/latitude and longitude) of the Ogaug can be viewed on the dashboard



### Predictive analysis

Optimise maintenance calls and delivery by managing cryogenic tank locations and quantities through a dashboard



### Actionable Data and Accurate Decisions

Online timely data gives you the power to make data driven decisions to improve customer relationships



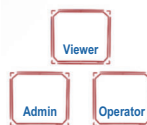
### Automated Alerts in real-time

Email alerts notify users of increased or decreased usage, reducing emergency calls and disruptions



### Maximum Data Protection

Ogaug securely stores data on the cloud, ensuring limitless storage capacity and easy access to the telemetry and event data



### Role based access

A password protected access makes the Ogaug potentially tamper proof. You can set alpha-numeric passwords for maximum security

# Manufacturer's dashboard with geolocation

🚨 Critical Level  
1

⚠️ Low Level  
1

✅ Normal Level  
2

📶 Offline  
0

Tank	Organization	Distribution Unit	LiquidType	Connection	Pressure (bar)	Level (mmWg)	Capacity
Tank-01	Customer-01	Navi Mumbai	LOX	Online	10	3430 <span style="font-size: small;">34%</span>	9993
Tank-02	Customer-01	Navi Mumbai	LIN	Online	10	1999 <span style="font-size: small;">22%</span>	9993
Tank-03	Customer-02	Navi Mumbai	LAR	Online	10	890 <span style="font-size: small;">9%</span>	9993
Tank-04	Customer-03	Navi Mumbai	LIN	Online	10	5096 <span style="font-size: small;">51%</span>	9993

**Alarms**

🕒 Realtime - last 7 days

Originator	Created time ↓	Type	Details
A240400001	2024-08-14 16:00:00	normal level	

## Customer's dashboard

Tank-04

Customer-03

Tank-03

Customer-02

Tank-01

Customer-01

P : 10 Bar

**34 % Full**

ΔP : 3433

mmWg

### Benefits of Dashboard :

- Monitor and control fluid level and pressure of multiple tanks
- Give role based access of the data of respective tanks to clients
- Automate refilling process
- Real time alerts for decreasing fluid level
- Improve bottom lines by having access to historical data

*Note : As efforts are made constantly to improve both design and method of manufacture, the apparatus supplied may differ in detail from illustration and data printed. Please check the specifications while ordering*



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