



Application note

Oxygen measurement in hospitals

Benefits:

- Quick and easy set up
- No supply disruption
- No contamination
- Accurate monitoring



Summary

The National Health System in the United Kingdom was looking to equip hospitals with flow measurement for the main oxygen supply to assess the capacity for emergency response. Currently the system uses a pressure method from the cryogenic oxygen tanks. This method feeds a notification to the supplier to schedule supplies. With the COVID-19 pandemic the oxygen consumption significantly increased posing a risk of shortages.

Application

Medium: pure Oxygen coming from the cryogenic tanks

Pipe: Medical copper DN28, thickness 0.9mm

Pressure: 10 – 14 bar (145 – 203 psig)

Temp: ambient

Challenge

To keep up with oxygen consumption hospitals began taking manual calculations to estimate the remaining capacity. This method can be inaccurate and prone to error. To solve this challenge many hospitals have begun to look for a way to monitor oxygen levels with flow meters. Flow measurements can provide a live and accurate reading to operate a full capacity during the outbreak.

Another challenge came from the increased demand that could pull liquid oxygen and block the evaporators. Accurate monitoring can ensure the demand never exceeds the system capacity and cause failures.

Solution

A gas TransPort PT878GC clamp-on flow meter was installed in several UK hospitals, along with a permanent gas clamp-on GC868 flow meter with CRS 402 in response to the increased oxygen demand. They also added a telemetry module for each flowmeter to have real time data logged at 1-minute interval and uploaded every 1-60 minutes.

The Panametrics PT878GC is a very flexible portable transit time gas flow meter which can be installed within minutes to measure a whole range of gases but in this case, we typically installed them on 1-2" copper pipework. Although the PT878GC is battery powered it can be installed indefinitely using a temporary power supply.

The hospitals can now understand better the oxygen capacity, and rate in which the supplies are needed. They can also make a solid contingency plan around the data provided.

Estates managers are alerted the instant a threshold has been exceeded providing peace of mind and to allow them to concentrate on other issues.

