

# Emerson collaborates with SD Biosensor to Safely Deliver 70,000 COVID-19 Test Kits



## Diagnostic kits maintained integrity of formulas despite extended shipping periods and risk of temperature fluctuation

SD Biosensor is a Korean in-vitro diagnostic company with a mission to provide quick and accurate diagnostic services to help improve the quality of life. SD Biosensor, had proven its capabilities in the past by developing quick diagnostic kits for SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome). Now the company has acquired Emergency Use Authorization (EUA) from both the United States of America Food and Drug Administration and the Korean Ministry of Food and Drug Safety for the COVID-19 diagnostic kits that were rapidly developed in the early stage of the COVID-19 pandemic. The SD Biosensor's COVID-19 diagnostic kit helps detect whether a person is infected with COVID-19 through a rapid Fluorescent Immunoassay (Rapid Type) or real time polymerase chain reaction (RT-PCR), and its kits are actively exported to the United States of America and countries in Europe, Asia and the Middle East.

When exporting diagnostic kits to other countries, maintaining consistent quality despite extended shipping periods are critical. Since medical products are sensitive to changes in the surrounding ambient environment, products are highly susceptible to damage from changes in temperature experienced in-transit. SD Biosensor decided to select Emerson cargo monitoring solutions to ensure the safe delivery of its vital diagnostic kits. With the help from Emerson's XpressPDF™ product, which is a temperature monitoring data logger and the GO Real-Time LUX Tracker, a real-time location tracking and temperature monitoring solution, SD Biosensor had successfully delivered 70,000 diagnostic kits to the US. The adoption of Emerson's solutions helped reduce the loss rate due to product damage during shipment, while also opening doors to expand kit exports to around 126 countries around the world, including countries like Bangladesh, Thailand, and Germany, contributing to the prevention efforts on the global spread of the COVID-19 virus.

## Project Background

SD Biosensor needed to export 70,000 COVID-19 diagnostic kits in response to the rapidly rising demand in the US, while maintaining optimal product quality during the transportation process. Furthermore, the company needed a solution that could help monitor any changes in atmosphere during the shipping process. It also needed the capability to check data on the surrounding climate and product locations in real-time to ensure strong security and immediate support when needed, because the diagnostic kits could impact the lives of thousands and their families. In order to meet these needs, Emerson offered XpressPDF, a temperature monitoring data logger to monitor the temperature of products in transit, and GO Real-Time LUX Tracker that allows the user to check the temperature, location and security conditions in real-time via Emerson's Oversight, a real-time temperature monitoring portal. SD Biosensor highly rated the performance of the monitoring function of Emerson's solutions and decided to adopt and utilize it to deliver about 70,000 COVID-19 diagnostic kits to the US safely.

## Challenges

SD Biosensor was seeking a way to safely provide customers in the US with a large number of diagnostic kits that are environment sensitive and prone to quality deterioration when the environment changes. Especially when shipments pass through arctic climate, protective containers may be subject to malfunctions or errors causing interior temperature fluctuations and placing the products at risk. It was critical to address potential problems that could lead to product damage or breach the integrity of the kits. Particularly given the export items were valuable goods that could hamper response efforts to the global pandemic when found damaged during shipment. SD Biosensor needed a solution that could guarantee advanced security levels, as well as the capability to prevent product damage caused by sudden changes in temperature when products are moving through the polar region enroute to the US. SD Biosensor's largest priority was to deliver its diagnostic products without damage so that more people could prevent spreading contagion with the quick and accurate diagnosis of COVID-19.



Emerson's solutions have been extremely helpful to us in monitoring the temperature of our products during the shipping process in real-time to protect the products integrity and to improve the security for our products.

We are pleased to say that with Emerson's expert support, we have been able to expand the export of our products and offer them to 126 countries around the world.



## Solutions

SD Biosensor adopted Emerson's solutions that provides complete temperature monitoring, based on the cold chain expertise containing Emerson's core technologies. With the solution SD Biosensor used the XpressPDF™ Data Logger is a lightweight logger that can be plugged directly into the USB port to automatically create PDF files that show change in temperature over time, in the forms of graphs and data summaries. Additional use of the GO Real-Time LUX Tracker, enabled SD Biosensor to track data of the cargo's temperature and location in real-time, while also detecting any unauthorized access to its valuable shipment during transit. These elements provided a secure foundation for SD Biosensor to expand exports to other countries with reliability and trust of maintaining product integrity.

## Benefits



Emerson's complete temperature monitoring solution helped secure the safe shipment of cargo comprised of 70,000 diagnostic kits to the US without compromising the integrity of the products.



With Emerson's GO Real-Time LUXTracker, SD Biosensor has been able to check the temperature and location of in-transit products, as well as the security status, and it has improved the visibility tracking of product security and safety.



SD Biosensor has allowed customers to access data on in-transit products via the Oversight mobile app's functionality which is easily enabled by inserting the serial number of GO Real-Time LUX Tracker. As a result, it has not only improved management efficiency, but also helped earn customer trust, which can be the foundation for long-lasting business relationships.



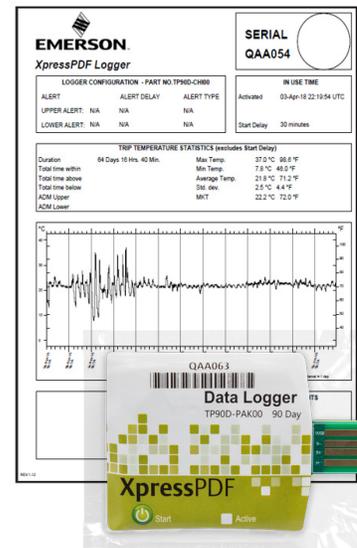
With a real-time tracking system of GO Real-Time LUX, SD Biosensor has been able to measure the temperature and position of products every six minutes, and to receive data corresponding measurement results at an interval of 18 minutes, so the company can secure highly accurate data for monitoring purposes, foresee any potential issues, and enable quick response to any undesired situations.



XpressPDF™ Data Logger digitally monitors the temperature of perishable products during shipment and storage over time, SD Biosensor can monitor the retention of -20 , which is the optimal temperature for RT-PCR diagnostic kits.



XpressPDF™ Data Logger can be used by directly plugging it into a USB port, allowing SD Biosensor to easily and quickly monitor the temperature of products any time anywhere without the need of a separate reader or dedicated software.



## Future Plans

SD Biosensor is now currently using Emerson's solutions to export COVID-19 diagnostic kits to about 126 countries. The company is consistently seeking opportunities to expand export to other countries.