

Turbines Incorporated's Integrated System for Cryogenic Delivery

By Kenneth Nugent
Source: Turbines, Inc.



Our field-proven turbine flow meters, totalizers, and accessories.

Focusing on simplicity and efficiency proves to be essential for success in the cryogenic gas distribution market. Investing in a truck-integrated delivery system that clearly and simply provides a real-time status of flow parameters can assist with faster delivery times, reduce readout errors, and preserve costly equipment. Systems like these must also provide a quantifiable return on investment.

Turbines Incorporated (turbinesincorporated.com), a manufacturer of such systems, has become the provider of choice for highly accurate delivery solutions to the world's largest gas distribution providers. The CDS1000 offers a simple, fully integrated system for the cryogenic delivery process that includes a turbine meter, monitor, MZ320 portable Bluetooth printer, a 1000 ohm temperature probe, and pressure transducer—all of which operate seamlessly with in-cab solutions for a variety of requirements for cryogenic liquefied gases, such as oxygen, nitrogen, argon, hydrogen, and LNG (liquefied natural gas)

This versatile, compact solution is field programmable, accurately computing and displaying actual flow parameters in both digital and graphic form. The CDS1000 monitor provides temperature, pressure, and flow rate information, ensuring the entire transportation and delivery process stays within industry specifications to enhance safety.

When delivering gases in truck-mounted storage vessels, monitoring the quality of the liquid is of the utmost importance. Cryogenic liquefied gases must be maintained at the appropriate temperature in order to minimize gas loss due to vaporization. Even during the most tenuous routes, liquefied gas must remain stable and transport drivers must have access to the status of their cargo at all times. With the CDS1000, drivers, as well as those in the office, have the ability to monitor these gases with absolute precision.

This high level of monitoring is imperative, as improper cool down or operating a liquefied gas delivery pump without liquid quickly destroys the pump seal, therefore rendering the pump inoperative. Industry statistics note that an average annual pump failure rate is approximately three times higher than a pump that has proper protection and monitoring.

To put this in perspective, the average cost for a pump seal repair is approximately \$5,500. This in addition to taking a delivery vehicle out of service, which, when combined with unscheduled maintenance, can equate to a potential annual loss of \$4.95 million for a fleet of 300 vehicles. The CDS1000 creates not only a safe environment for delivery workers, but it also protects the quality of the cryogenic materials, reduces the need for maintenance, and protects the investment.

The CDS1000 enables the delivery worker to complete the entire business transaction on-site. The monitor is simplistic and the front keypad programmable, allowing for custom ticket setup and linearization for enhanced metering accuracy. This system operates seamlessly with Turbines Incorporated's TMC cryogenic flow meters, delivering proven, integrated results for low-temperature requirements.

The CDS1000 is an intuitive system that is easy to understand, monitors activity, recognizes warning signs, and enables the user to take the appropriate measures to prevent damage. Clearly presented diagnostics allow the user to discover issues and solve them before they become too dangerous or unmanageable, thus protecting the investment as well as the driver.

Our customers depend upon our research and development efforts to design enhanced offerings, such as the CDS1000," said Karen Downing, Executive Director of Turbines Incorporated. "This is just another example of how Turbines Incorporated is spearheading innovation in the industry, to meet and exceed the specific needs of our growing customer base."

The CDS1000 cryogenic monitor is constructed to withstand challenging delivery conditions, handling temperatures from -40°F to +125°F, and can be equipped with an explosion-proof housing for hazardous applications. This system is able to handle materials like nitrogen, LNG, and hydro-gen, with the appropriate software packages. When paired with the company's hand-held, wireless MZ320 Bluetooth Printer, the CDS1000 is a complete reporting solution.

As technology expands, so too does the opportunity to expand into other industries. This means there's a greater demand for cryogenic and liquefied gases, but also that there will be an increased demand for effective measurement. Turbines Incorporated serves a range of industries and applications, from oil and gas, to cryogenic liquids, to custody transfer. Turbines Incorporated's high-quality products, fast and reliable order fulfillment, and commitment to customer and technical support, have made them an industry leader in reliable flow metering.

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