Thermal Instrument White Paper

CO2 Gas Measurement

The use of Carbon Dioxide Gas (CO2) in industrial applications requires a flow measurement instrument that can provide accurate and repeatable results. Thermal Instrument Company (TIC), with more than 60 years of experience, measuring both liquid and gas applications, has hundreds of instruments successfully installed around the globe measuring CO2 gas. TIC specializes in, and only uses mass flow meter technology which is renowned for its high degree of accuracy and repeatability.

Carbon Dioxide Gas may be incorporated into the production process or may be the by-product of that process. Either way, organizations are looking for a way to accurately measure usage of CO2 gas. Having good data is useful in helping organizations better manage their usage, evaluate emissions, and possibly re-capture the CO2 gas, instead of emitting it into the atmosphere.

Thermal Instrument Company was approached several years ago about using its Model# 600-9 mass flow meter (pictured below) to measure CO2 gas being used in the bottling and canning process for a world leading beverage manufacturer. This

manufacturer has installed over 500 TIC mass flow meters across several production plants in the United States. The beverage manufacturer needed a reliable and accurate way to measure the CO2 gas involved in their bottling process. In addition to measuring the gas being used during the bottling process, one facility uses the thermal mass flow meters in their in-house CO2 re-capture process to reduce emissions and maximize their use of the production gas.

In addition to accuracy and repeatability of the measuring device, several other factors were used on ultimately deciding on the Thermal Instrument Mass Flow Meter. Design factors weighed heavily in the customer selection process. The beverage manufacturer required both a piping and a sanitary

process connection for the instruments, so they could be utilized in various areas of their process. TIC meters are available with a wide selection of process connections, including a flanged and sanitary tri-clamp (pictured in this write-up), that were necessary in this instance.

They also required an un-obstructed flow path for their Clean-In-Place (CIP) process. Thermal Instrument flow meters utilize a proprietary unobstructed flow path design that allow for accurate measurement while keeping the flow sensors from coming into direct contact with the passing fluid.

Additionally, the manufacturer required the flexibility to have the transmitter either mounted integrally (as shown on left) or remotely, to transmit the flow data via a 4-20mA output back to a control center. TIC offers several transmitters that can provide multiple outputs, relays, and even alarms to help aid in the management of this process. Our Model# 9500P Integral mounted transmitter (pictured to left) provides multiple output options, with either local or remote display.

If interested, please contact Thermal Instrument or one of our Sales Partners, to find out more information on this application.

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