APPLICATION NOTE

Sensata Technologies

COMMERCIAL APPLICATION
BEVERAGE DISPENSING

What is a Beverage Dispensors?

Beverage-dispensing machines are commonly used in convenience stores, fast-food franchise stores, theaters, amusement parks, restaurants and other similar locations.
Typically, a beverage dispensing machine can serve multiple beverages, including carbonated drinks and non-carbonated drinks. Also, there are beverage-dispensing machines that have a refrigeration capability and dispense carbonated or noncarbonated frozen beverages, such as a "Slurpee®", a smoothie, frozen cocktail or a milk shake. These machines quickly dispense a beverage into a container by actuating a switch, such as a lever located near a nozzle for the beverage.

How does it work?

In general, the frozen carbonated beverage-dispensing machines have a water supply and containers for syrup and carbon dioxide (CO2), and mix them at a desired ratio to fill a freezing cylinder used to produce a frozen carbonated beverage.
Similarly, a non-carbonated beverage machine has a reservoir for holding mix or syrup that may or may not be mixed with water as an ingredient.

The carbonated beverage machine may have a solenoid valve, a pump, or other device to control the flow of the syrup, water and CO2 from the water supply and containers, while the non-carbonated machine may have a solenoid valve, a pump, or other device to control the flow of the mix or syrup, or may rely on gravity to fill a freezing cylinder

The carbonated beverage machine may have a solenoid valve, a pump, or other device to control the flow of the syrup, water and CO2

Frozen Beverage Machine

Typically, a frozen beverage dispensing machine has a freezing cylinder or "chamber" connected to a water supply and containers for syrup and CO2 or any other ingredients supply. The ingredients are mixed and frozen in the chamber to a desired consistency for consumption. The supply of the water and ingredients is controlled by solenoid valves located between the water supply/ingredient container and the chamber. The machine also controls and monitors temperature and consistency of the frozen beverage in the chamber as well as pressure within the chamber.

How to control the ratio of the mixture?

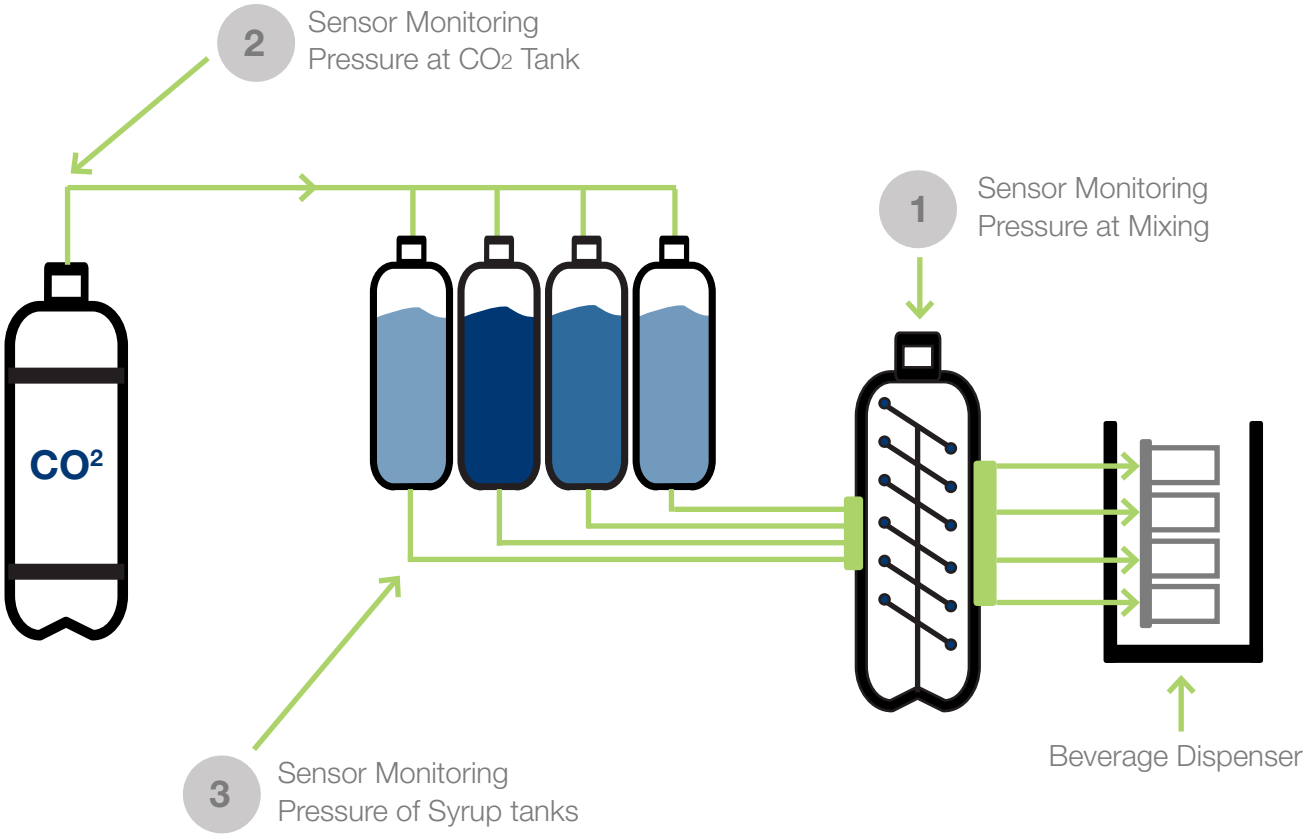
The ratio of the mixture of the syrup, CO2 and water is carefully controlled.
These machines generally utilize a pressure transducer that senses low pressure in the mixing chamber and opens solenoid valves to supply the desired amount of water and ingredients to the chamber. The beverage-dispensing machine provides consumers with beverages in a short period of time.

Where are pressure sensors used on beverage dispensers?

Based on the many different types of beverage dispensers and machines the pressure transducer is located in the chamber where the syrup, CO2 and water is mixed.

RECOMMENDED PRODUCTS

Sensor Location	Product Series Recommendations
1, 2 and 3	P500 - recommended for applications with fluid compatibility (UL and CE Certified) P528 - recommended for applications with refrigerants (UL and CE Certified)



Please note that these are just recommendations based on current applications. A thorough review by the end customer must be performed to determine the suitability of the product within their application.
One common requirement from beverage dispenser manufacturers is that pressure sensors must be UL and CE certified.

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