APV
AN SPX BRAND

The APV CSD - Continuous Sugar Dissolver

Optimum flexibility - great cost saving potential

The APV CSD is a fully automatic sugar syrup blending system, which can readily be integrated with any of the APV beverage process units. When designing the APV CSD, great emphasis has been placed on the production of a flexible unit with a wide capacity range and high accuracy of the final Brix value. The APV CSD is capable of producing sugar syrup up to 72° Brix. The combination of using only high quality instruments with specially developed control software gives a Brix value accuracy in the sugar syrup of ± 0.1°Brix.

The standard capacity range spans 5,000 to 50,000 l/h.

Product uniformity

- An accuracy of ± 0.1° Brix in the final product
- Blending control takes place via Brix analyses done by an inline mass flow meter placed in the ready mixed product line
- The jet mix principle is used for optimum dissolving in the dissolver tank
- The APV CSD system will give a more precise and consistent product, resulting in savings in raw ingredient consumption as well as satisfied customers

Economical production

- The APV CSD is fully automatic, which results in a reduction in manpower requirements
- The APV CSD is designed for fast settling time. When starting up the unit with an empty tank the settling time is 20 minutes in order to reach a steady state at, for example, 60° Brix
- The high accuracy level means that analysis of the syrup in a buffer tank is unnecessary. The product can go directly to the pasteuriser or to another process
- The APV CSD is designed for low maintenance and energy costs

Flexible production

- A flexible unit with a capacity turn down ratio of up to 1/5 of the final product
- The very compact design minimises the space required. As large batch mixing tanks are eliminated, additional space will be saved
- The APV CSD is skid mounted, which allows easy relocation in the event of production restructuring

Proven security

- Every unit leaving the APV work-shop is fully tested
- Proven functionality and reduced commissioning time

SPX®

Functional description

The sugar dissolving in the APV CSD is performed by means of a jet mix recirculation of either water or low Brix syrup from a recovery tank together with sugar in the dissolving tank. In this way optimum sugar dissolving and utilisation is achieved.

Built-in filters in the system trap any non-dissolved sugar crystals and return them to the dissolver tank.

The dry sugar is metered into the sugar dissolving system via a screw feeder. The motor for the conveyor is equipped with a frequency converter for capacity regulation.

The speed of the dry sugar conveyer is adjusted during the commissioning and is then kept constant.

High performance and highly accurate mass flow meters are the key to the strength of the final syrup. A built-in temperature transmitter compensates for temperature variations of the syrup ensuring that the right Brix value is temperature independent.

The final syrup Brix value is continuously monitored and adjusted as necessary. If the Brix value is out of range, the outlet valve of the APV CSD is closed and the syrup is returned to the dissolving tank. This circulation continues until the Brix value is again within range. This control philosophy ensures the correct Brix value and avoids starting and stopping the unit.

This control principle ensures a fast and reliable Brix control. It also ensures that a Brix equilibrium of the APV CSD system can be obtained in 20 minutes starting from a completely empty dissolver tank. The accuracy obtained is ± 0.1° Brix in the final product.

If the APV CSD feeds a balance tank, the capacity of the APV CSD will be adjusted according to the level in the balance tank.

All signal exchanges are digital, which improves precision and gives more possibilities for data transfer to the control room than traditional analogue (4-20 mA) signal exchange.

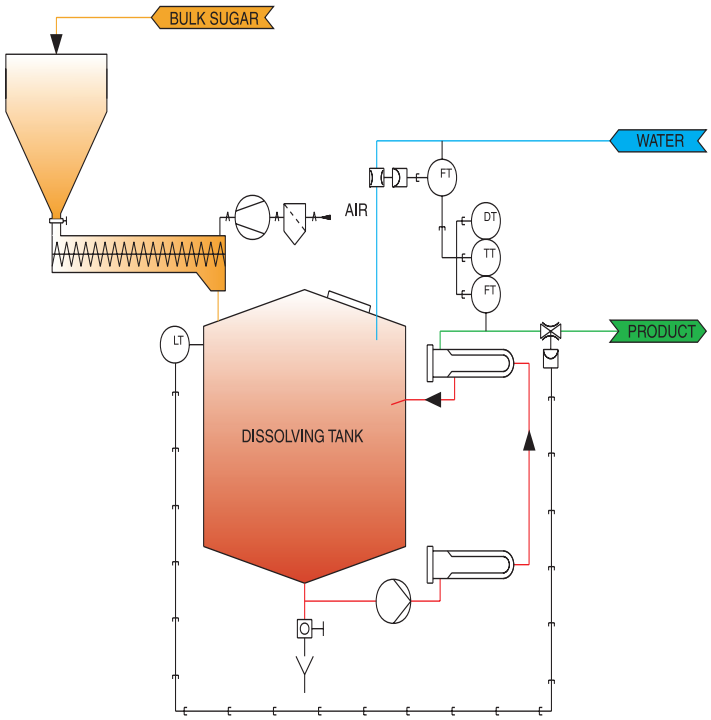
The standard APV control consists of a controller with an operator panel. The signal exchange between the instruments/controller/control room is performed using a bus system.

The operator panel contains the following features:

- Totalization of the sugar syrup over time
- Storage of 15 alarms based on the first in/first out principle
- Status of alarms

Options

- Extended capacity turndown ratio
- Cold, warm or hot dissolving depending on the required syrup Brix value
- Total solution, complete with sugar hopper and screw conveyer
- De-coloration of sugar syrup with active carbon.
- Fine mesh filters
- 3A design
- Product testing in our Customer Test Centre
- Customer specific equipment/instrumentation



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For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.apv.com.

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