

Recording and Control of the pasteurization process

Pasteurization in the Dairy and Food Processing industries



Ensures compliance with the legal requirements

Measurement made easy

Food industry

Introduction

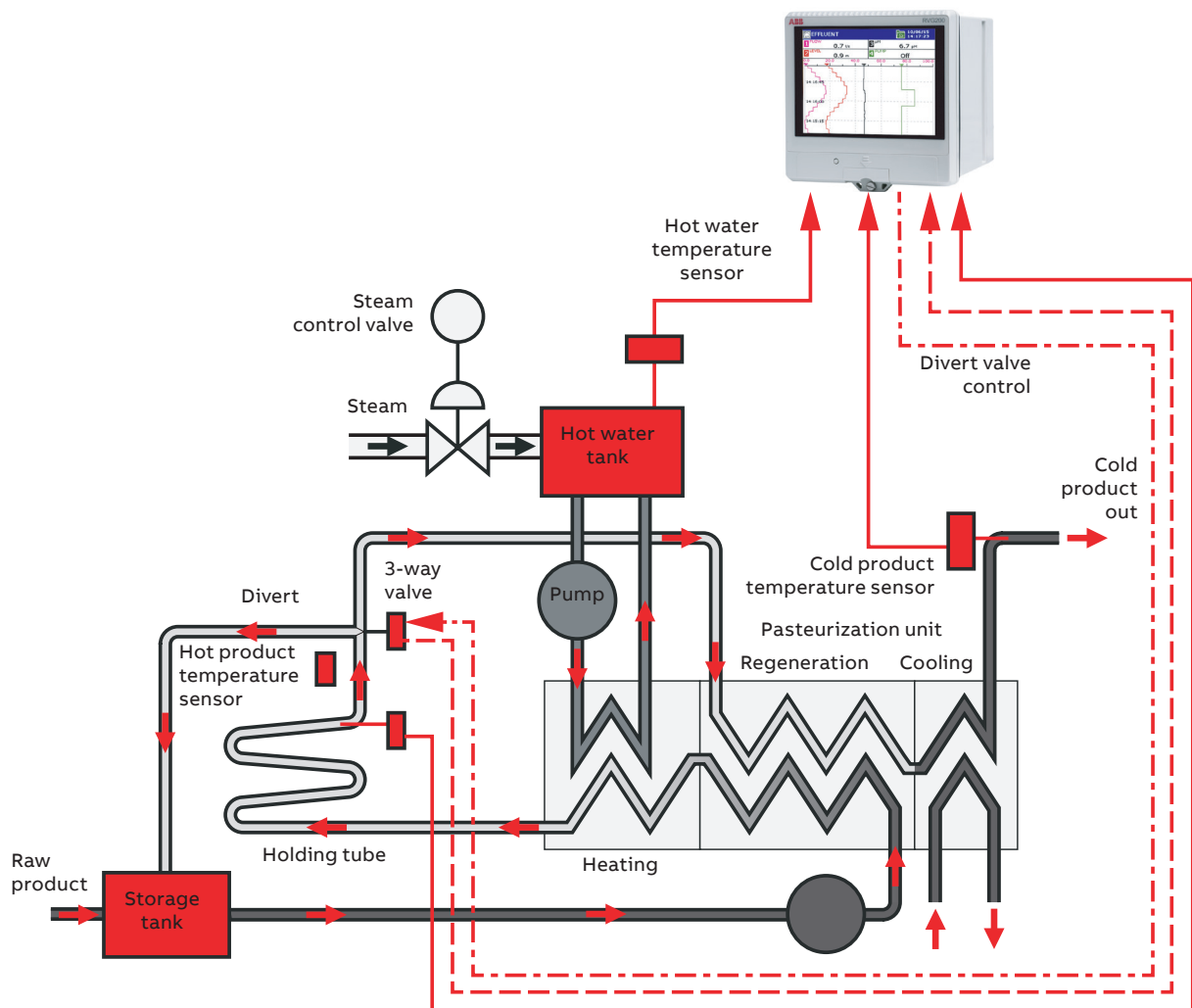
Pasteurization is the process of heat processing dairy and food products to kill microbes in order to make them safe to consume. The Pasteurisation process helps reduce the transmission of diseases and keeps food safer for longer periods (provided they are stored at the right temperature) by killing harmful bacteria.

There are different processes used to pasteurize food. Flash Pasteurization, Stem Pasteurization, Irradiation Pasteurization are a few of the most commonly used processes. Also the processes used to pasteurize food depends up on the food item and the final result required, such as retaining a food's nutrients, colour, texture, and flavor.

The process

The figure below shows the setup of a flash pasteurization process. Flash pasteurization involves the pumping of raw product from a storage tank through a heat exchanger, where it is heated to the specific temperature required to kill harmful bacteria.

The hot product is then pumped from the pasteurizer unit through a holding tube. At the end of the holding tube is a 3-way divert valve and temperature probe, fitted at the end of it. If the temperature is too low, the 3-way divert valve is switched to divert the hot product back into the storage tank for reprocessing. If the temperature is acceptable, the product continues to the cooling section of the process and onwards to packaging.



A typical Flash pasteurization process

What ABB products are suitable?

ScreenMaster RVG200

The RVG200 is ideal for recording the pasteurization process parameters. Such as hot product temperature, the cold product temperature, divert valve status, hot water temperature etc. can be reordered. Also the RVG200 is capable of activating the 3 way divert valve if the temperature of the hot product is too low.

RVG200 features includes:

- High specification 21CFR Part 11 complaint data security
- High visibility process displays
- Remote access and operation via Ethernet
- Hosedown protection to IP66 and NEMA 4X
- Automated process data management
- Flexible recording capability including alarms, totalizers, math and batch recording
- A Batch recording option enables simple recording and reviewing of batch processes

ABB also have other paperless recorders suitable for this application

- SM500F (Panel/Field Mountable 7 channel recorder)



ScreenMaster RVG200 paperless recorder

Commander C1950 Recorder/ Controller

The Commander C1950 is a circular chart recorder dedicated to pasteurization applications and meets the PMO requirements. The C1950 recorder/ controller offers a complete recording and control solution for the pasteurization process.

The C1950 is available in 3 variants:

- Commander C1951 - Records the hot product temperature, divert valve status and either the divert set point, or cold product temperature. This variant doesn't have the control capability.
- Commander C1952 - Records the hot product temperature while controlling the temperature of the hot water in the heat cycle of the plant. It also records either the divert set point or the cold product temperature and the divert valve status.
- Commander C1953 - Combines all of the functionality of the 1952 plus it has the capability to control cold water temperature from the cold product temperature probe.



Commander C1950 circular chart recorder

To learn more about the use of C1950 in pasteurization processes please refer [TD/RandC/019-EN](#).

ABB Limited**Measurement & Analytics**

Howard Road, St. Neots
Cambridgeshire, PE19 8EU
UK

Tel: +44 (0)1480 475 321

Fax: +44 (0)1480 217 948

Mail: instrumentation@gb.abb.com

abb.com/measurement



We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

© ABB 2018