

Example of Pasteurization Control System

Why use a Pasteurization Control System ?

Pasteurization is necessary in the milk/dairy/juice industry, where products must be processed to recognized international hygiene standards before being passed for human consumption.

In the USA, the Food and Drug Administration (FDA) has extensive regulations that spell out the legal requirements for this process.

In Europe, it is a legal requirement to record the pasteurization of all dairy products.

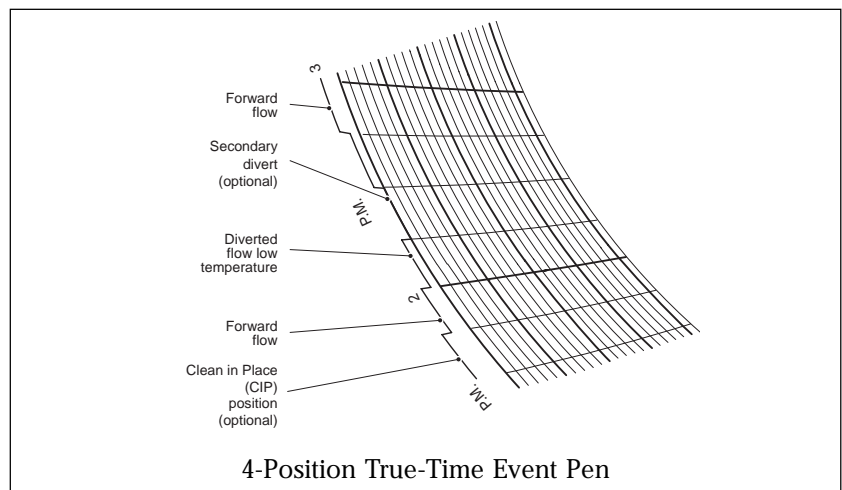
Why use ABB Instrumentation ?

Choice of dedicated pasteurizer recorder or recorder/controllers.

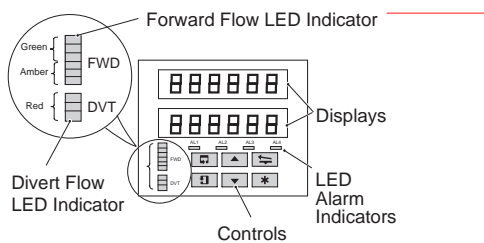
FDA acceptance.

Password protected – all units satisfy PMO guidelines.

4-Position true-time event pen – indicates forward flow, divert flow, Clean-in-Place (C.I.P) and secondary divert.



4-Position True-Time Event Pen



LED indicators to show if unit is in forward flow or divert flow.

Hot product pen calibration – allows the hot product pen reading to be calibrated to an independent thermometer

All units are self-contained suitable for panel, wall or post mounting.

Cases are rated NEMA 4X (IP66) as standard, making them suitable for use in almost any location in a modern dairy where cleaning of all surfaces takes place.

Up to eight independent divert set points can be selected from the front facia, or from external digital signals. These set points are used to select the correct temperature for the batch being processed. If the product does not pass at the right temperature and is diverted an event is marked on the chart to indicate 'divert'. This event mark is on the same timeline as the hot product temperature and thus the two lines can be directly related on the chart.

The event marker also indicates when the process is in C.I.P. (clean in place) and secondary divert.

Continuous L.E.D. indication of hot product temperature and divert set point/ cold product temperature.

Minimal system maintenance requirements

Proven reliability – over 100 years of process instrumentation experience.

What ABB Products are Suitable ?

COMMANDER 1951 Recorder

The COMMANDER 1951 records the hot product temperature and either divert set point or cold product temperature. It has eight diversion set points to activate the event pen.

COMMANDER 1952 Recorder

A recorder/controller, recording hot product and either divert set point or cold product temperature and controlling hot water temperature. It has eight pairs of diversion and hot water set points for the controller and event pen. Multiple divert/hot water set points can be used to preset sterilizing and CIP temperatures. This enables remote selection of these functions from customer control panel.

COMMANDER 1953 Recorder

The top of the range recorder/controller, combining all that the COMMANDER 1952 can do and also controlling the cold water temperature from the cold product temperature probe. It has eight pairs of diversion and hot water set points for the controller and event pen. Multiple divert/hot water set points can be used to preset sterilizing and CIP temperatures, this enables remote selection of these functions from customer control panel.

COMMANDER 320 Booster Pump Controller

Specifically designed for use in the regeneration section within pasteurization process plant. Fitted in conjunction with two Hygienic pressure transmitters, the C320 measures both pasteurized and untreated product pressures. If the difference falls below a preset level the C320 stops the booster pump and/or activates the divert valve to prevent any possible supply of untreated product.

The Pasteurization Process

Continuous pasteurization involves the pumping of raw material from a storage tank through a pasteurizer/heat exchanger, where it is heated to a specific temperature to kill micro-organisms.

When that temperature is reached, the 'hot' product is pumped from the pasteurizer unit through a holding tube which has 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 recycling.

The hot product temperature is recorded on a chart by the red pen of a COMMANDER pasteurizer unit. If the 'hot' product temperature is acceptable, it is cooled by passing it through the pasteurizer/heat exchanger, then passed out for packaging and distribution. The cold product temperature is recorded by the green pen of a COMMANDER C195X.

All system functions are sequenced and controlled automatically by the COMMANDER pasteurizer.

Other Pasteurization Plant Applications

Analytical applications

Clean in Place control systems

On effluent treatment plant – pH and dissolved oxygen equipment

In the boiler house – Zirconia O₂ measuring equipment and conductivity monitoring in the condensate return.

Clean in Place (CIP) – Conductivity 4621/26 plus cells.

Detergent strength – conductivity 4621/26 plus cells.

Other C1900's for base recording.

Other ABB Opportunities on Site



ABB Kent-Taylor Ltd.

St. Neots
Cambs.
England, PE19 3EU
Tel: +44 (0) 1480 475321
Fax: +44 (0) 1480 217948

ABB Instrumentation Inc.

PO Box 20550, Rochester
New York 14602-0550
USA
Tel: +1 716 292 6050
Fax: +1 716 273 6207

ABB Kent-Taylor SpA

22016 Lenno
Como
Italy
Tel: +39 (0) 344 58111
Fax: +39 (0) 344 56278

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