

ABB MEASUREMENT & ANALYTICS | DATA SHEET

C1950 (STLR & HTST)

Pasteurizer recorder and recorder/controller



Measurement made easy

The complete recording and control solution for pasteurization processes

Dedicated pasteurizer recorder/controller

- designed to meet requirements of the pasteurization processes

High clarity digital displays

- continuous indication of hot product and divert temperature

Compliance review

- meets PMO requirements

Pasteurizer status indicator

- LED indication to show forward or diverted flow

True time event pen

- 4-position event, records divert and forward flow plus optional CIP (clean in process) and secondary divert

Up to eight diversion set points

- local or remote selection of hot product divert temperature settings

Hot product pen calibration

- optimization of pen reading to independent thermometer

Second resistance thermometer option

- allows checking for sensor error and gives additional alarm/divert protection

Introduction

The C1951 recorder and C1952/C1953 recorder/controllers have been designed specifically for pasteurization applications.

The C1951 records the hot product temperature and either divert set point or cold product temperature.

The C1952 is a recorder/controller, recording hot product and either divert set point or cold product temperature and controlling hot water temperature.

The C1953 is the top-of-the-range recorder/controller, combining all the capabilities of the C1952 with cold water temperature control from the cold product temperature probe.

All versions are fitted with a 4-position true time event pen that indicates forward flow, divert, CIP and secondary divert (if required) via a digital input from valves etc.

The C1951 model has 8 diversion set points to activate the event pen. The C1952 and C1953 have 8 pairs of diversion and hot water set points for the controller and event pen.

On the C1952 and C1953 versions, the multiple divert/hot water set points can be used to preset sterilizing and CIP temperature to enable remote selection of these functions from the customer's control panel.

All models are fully password protected and can be sealed, as required by the FDA.

The C1950 series recorder is a totally self-contained unit suitable for panel, wall or post mounting. As standard, the case is rated NEMA4X (IP66), making it suitable for use in almost any location in a modern dairy where cleaning of all surfaces takes place.

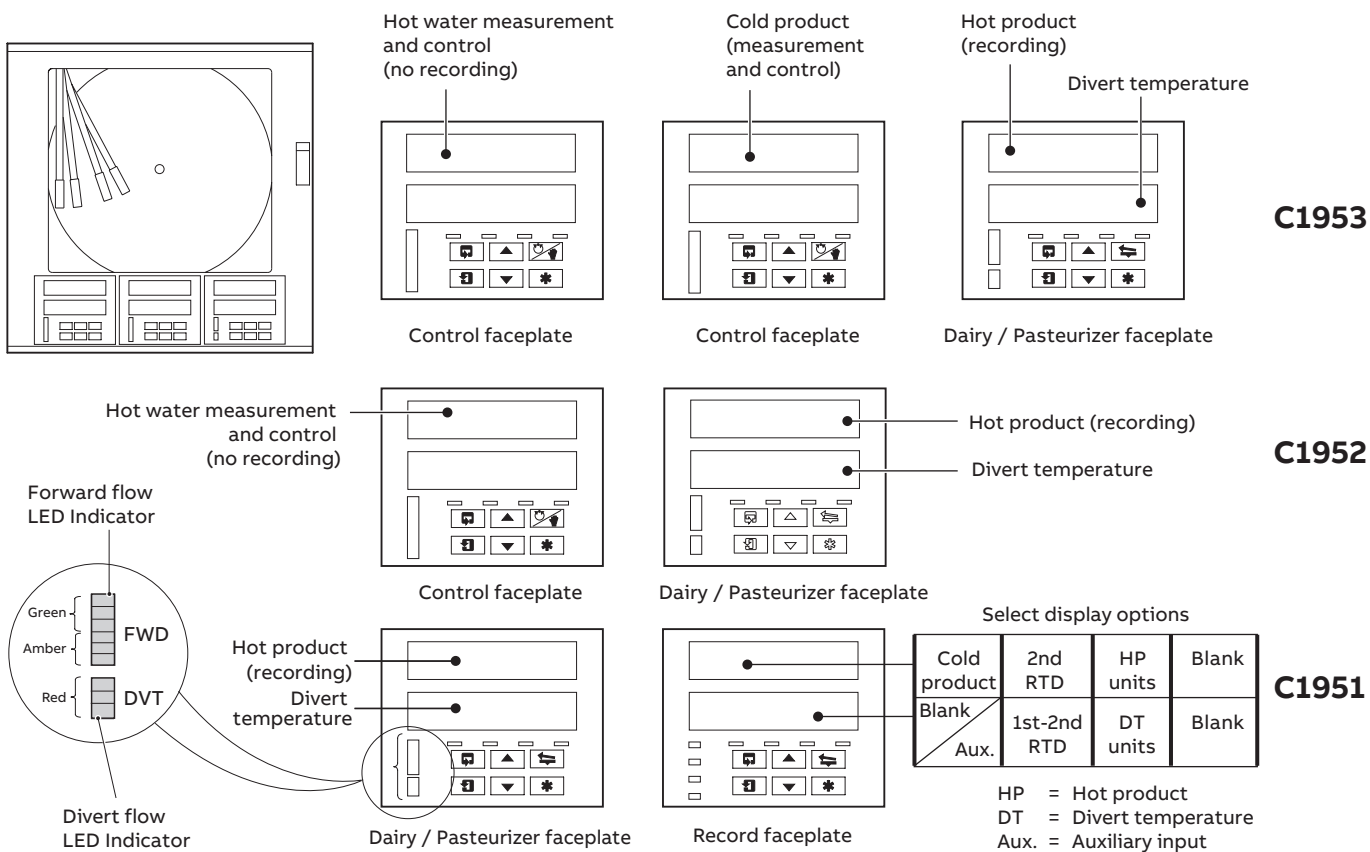


Benefits

| | | C1951 | C1952 | C1953 |
|------------------|---|--------|--------|--------|
| Display | Flow/Divert status | ✓ | ✓ | ✓ |
| | Hot product temperature | ✓ | ✓ | ✓ |
| | Divert temperature | ✓ | ✓ | ✓ |
| | Cold product temperature | ○ | ✓ | ✓ |
| | Heating loop PV & SP | | ✓ | ✓ |
| | Cooling loop PV | | | ✓ |
| | Auxiliary input | ○ | | |
| Recording | Hot product | Red | Red | Red |
| | Divert set point or cold product (option on 1952) | Green | Green | Green |
| | Auxiliary input (optional) | (Blue) | (Blue) | Blue |
| | Flow/Divert/CIP status (true time event pen) | Violet | Violet | Violet |
| Control | Heating loop | | 3 | ✓ |
| | Cooling loop | | | ✓ |

3 = Standard ○ = Optional

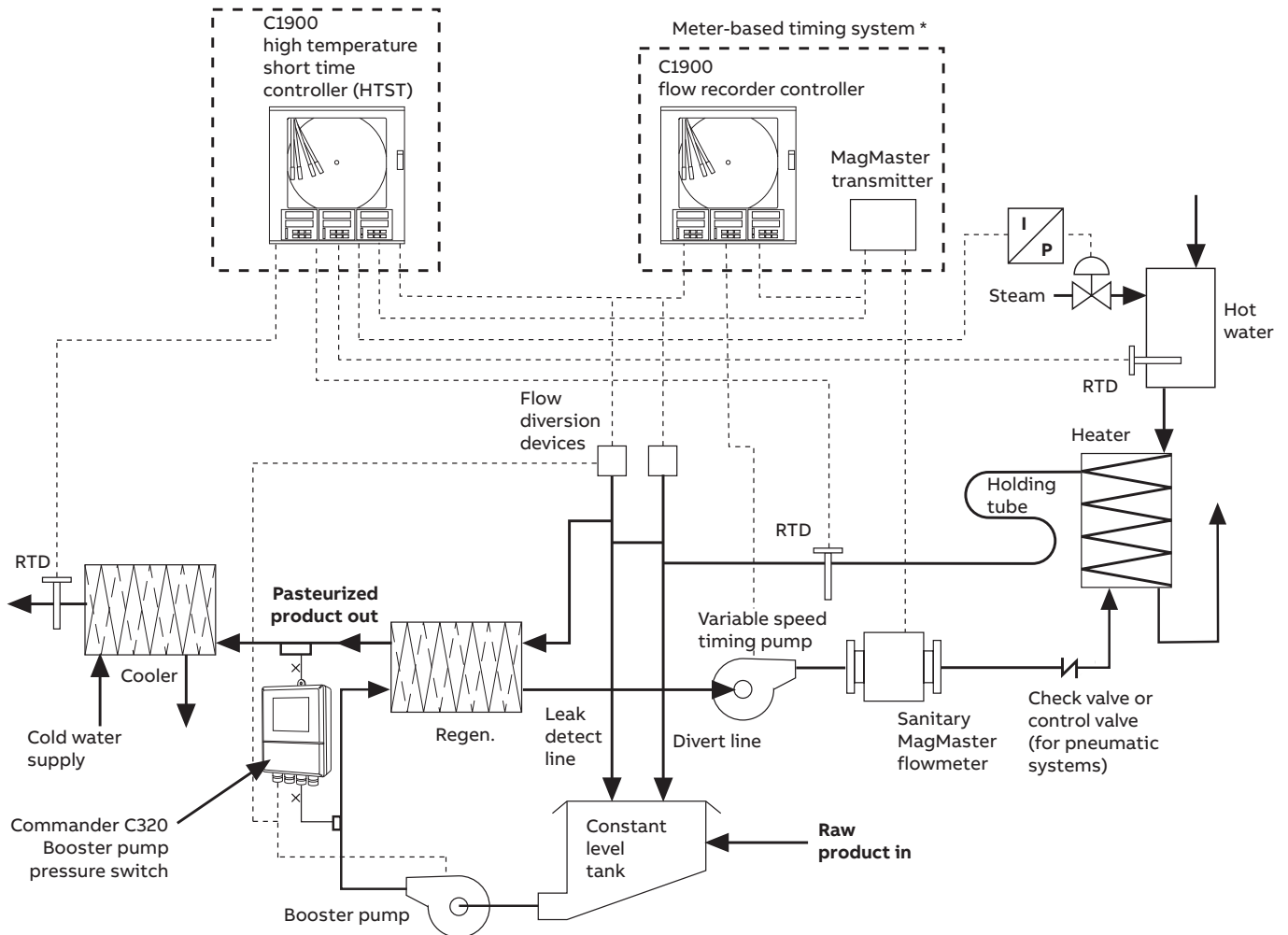
- Red pen (1)** – Hot product
- Green pen (2)** – Select (none), divert set point or cold product
- Blue pen (3)** – Trace for auxiliary input only (display available on C1951)
 - Optional auxiliary input for pressure, second RTD, flow etc. Traced but not displayed (C1952 / C1953)
- Violet pen** – 4-position true time forward / divert event



Principle of operation – pasteurization

Raw product is pumped from the constant level tank to the heating section where the temperature is raised to exceed the pasteurization low limit. The hot product temperature is measured and recorded at the end of the holding tube. Until the pasteurization limit is exceeded, the product is recycled to the constant level tank by the FDD. Once pasteurization temperature is exceeded, the hot product, through the forward flow port, is routed to the regenerator and cooling

sections of the heat exchanger. The red pen records and monitors the hot product pasteurization temperature. The violet pen records the position of the flow diversion valve, FDD. Both of these pens record on the same time line. The green pen records the selected diversion temperature, on multiple divert systems, where up to eight may be selected. The event pen can also indicate when the process is in CIP or secondary divert due to low pressure.



Meter-based timing system *

The MagMaster flowmeter measures flow rate and sends the signal to the C1900 controller. In turn, the C1900 regulates the flow by throttling the variable speed timing pump based on the comparison of product flow rate to the C1900's set point. The maximum set point is the volumetric flow rate that provides the minimum necessary pasteurization time in the holding tube.

As a safeguard in the system setup, the C1900 provides alarms for high and low flow and loss of signal. These alarms notify operators when conditions, such as loss of flow, power failure, damaged cable or similar situations arise. When triggered, the integral alarm relay changes state, causing the flow diversion valve to move to its divert position until the condition is corrected and the time delay has expired.

* For additional information on the meter-based timing system contact your local ABB representative.



Sales



Service



Software



Ordering information

PART 1 – General details

| C1950 (STLR & HTST) pasteurizer recorder and recorder controller | XXXX | X | X | X | X | X | X | 0 | X | X | X | XXX |
|--|-------|---|---|---|---|---|---|---|---|---|---|-----|
| Safety thermal limit recorder (STLR) | | | | | | | | | | | | |
| 2 pens (red and green) plus true time event pen (violet) | | | | | | | | | | | | |
| Taylor (ER/C) charts | 1951J | | | | | | | | | | | |
| KPC 105, Kent PX and Kent PXR type charts | 1951K | | | | | | | | | | | |
| High temperature short time (HTST) recording controllers | | | | | | | | | | | | |
| 1 control unit, 2 pens (red and green), plus true time event (violet) | | | | | | | | | | | | |
| Taylor (ER/C) charts | 1952R | | | | | | | | | | | |
| KPC 105, Kent PX and Kent PXR type charts | 1952S | | | | | | | | | | | |
| 2 control units, 3 pens (red, green and blue), plus true time event pen (violet) | | | | | | | | | | | | |
| Taylor (ER/C) charts | 1953R | | | | | | | | | | | |
| KPC 105, Kent PX and Kent PXR type charts | 1953S | | | | | | | | | | | |
| Electrical code | | | | | | | | | | | | |
| Standard | | A | | | | | | | | | | |
| CSA approved* | | B | | | | | | | | | | |
| UL approved | | U | | | | | | | | | | |
| Additional modules | | | | | | | | | | | | |
| None | | | 0 | | | | | | | | | |
| Additional modules – Part 2 | | | A | | | | | | | | | |
| Options | | | | | | | | | | | | |
| None | | | | | | | 0 | | | | | |
| Door lock | | | | | | | | | | | | |
| Not fitted | | | | | | | | | | 1 | | |
| Fitted | | | | | | | | | | 2 | | |
| Power supply | | | | | | | | | | | | |
| 115 V AC | | | | | | | | | | | 1 | |
| 230 V AC | | | | | | | | | | | 2 | |

* CSA approval is not available on units with module type '9' fitted – see below

Part 2 – Modules

| | XXXX | X | X | X | X | X | X | 0 | X | X | X | XXX | OPT |
|---|------|---|---|---|---|---|---|---|---|---|---|-----|-----|
| Module position 2* | | | | | | | | | | | | | |
| 1952 enter code 1 for optional cold product module | | | | | | | | | | | | | |
| 1951 and 1953 enter code 0 cold product module always fitted | 0 | 1 | | | | | | | | | | | |
| Module position 3* | | | | | | | | | | | | | |
| 1952 and 1953 enter code 0, hot water module always fitted | | | | | | | | | | | | | |
| 1951 No option permitted | 0 | | | | | | | | | | | | |
| Module position 4 | | | | | | | | | | | | | |
| Enter code 1 or 2 for auxiliary input module | 0 | 1 | 2 | 3 | 4 | 5 | | | | | | | |
| For other options see key below | | | | | | | | | | | | | |
| Module position 5 | | | | | | | | | | | | | |
| Enter option 9 for FDA dairy applications (115 V only) | 0 | - | 2 | 3 | 4 | - | | | | 9 | | | |
| For other options see key below | | | | | | | | | | | | | |
| Module position 6 | | | | | | | | | | | | | |
| If option 9 is selected above, no other option is permitted | 0 | - | 2 | - | 4 | 5 | | | | 8 | | | |
| Programming/special features | | | | | | | | | | | | | |
| Configured to factory standard | | | | | | | | | | | | | STD |
| Configured to customer requirements (customer to complete and supply C1950 custom configuration sheet – INF08/031) | | | | | | | | | | | | | CUS |
| Special features | | | | | | | | | | | | | SXX |
| Engineered configuration (customer to supply configuration details required) | | | | | | | | | | | | | ENG |
| Calibration certificate ** | | | | | | | | | | | | | C1 |
| Printed instruction manual | | | | | | | | | | | | | |
| English | | | | | | | | | | | | | M5 |

Key to module types

- | | | | |
|-----|---|---|--|
| * 0 | No module fitted/pen input channel | 4 | 8 digital inputs |
| 1 | Standard input/output | 5 | 8 digital outputs |
| 2 | Analog input (remote set point + relay) | 8 | Modbus RS485 communications |
| 3 | 4 relays | 9 | Dairy module (FDA) (takes up module positions 5 and 6) |

For full technical specifications refer to data sheets [DS/C1900R-EN](#) and [DS/C1900RC-EN](#).

** When a calibration certificate is ordered it is performed according to the specified configuration type:
 CUS/ENG – Inputs and outputs calibrated according to the customer supplied configuration details and ranges.
 STD – Inputs and outputs calibrated according to the instrument factory standard configuration and ranges.

Acknowledgements and trademarks

Modbus™ is a trademark of Modicon, Inc.

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