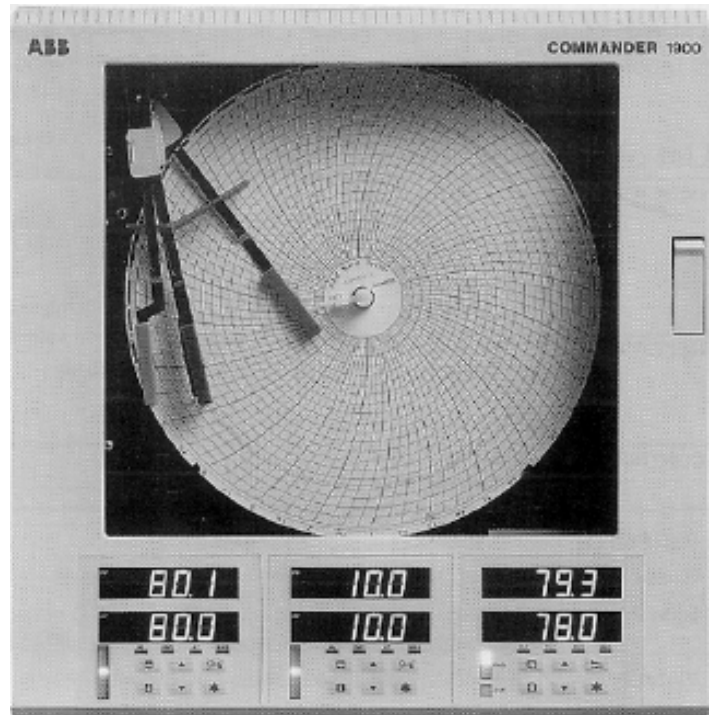


- **Dedicated Pasteurizer Recorder/Controller** – designed to meet requirements of pasteurizer processes
- **High clarity digital displays** – continuous indication of hot product and divert temperature
- **FDA acceptance** – meets PMO guidelines
- **Pasteurizer status indicator – L.E.D. indication to show flow or divert**
- **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 comparison between a duplex temperature sensor to check for sensor error
- **STLR, HTST and Meter-based Timing Recorder/Controller configurations** – Meets Pasteurized Milk Ordinance requirements as part of Meter-based Timing System



COMMANDER 1950
Pasteurizer Recording Controller

INTRODUCTION

The COMMANDER 1951 recorder and COMMANDER 1952, 1953 and 1954 recorder/controllers have been specifically designed for pasteurization applications.

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

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

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

Model **C1954** combines all the capabilities of the **C1951** to record the hot product temperature and the **C1952** with flow loop control to ensure the minimum necessary pasteurization time in the holding tube.

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

The **C1951** model has eight diversion set points to activate the event pen. The **C1952/1953** models have eight pairs of diversion and hot water set points for the controller and event pen.

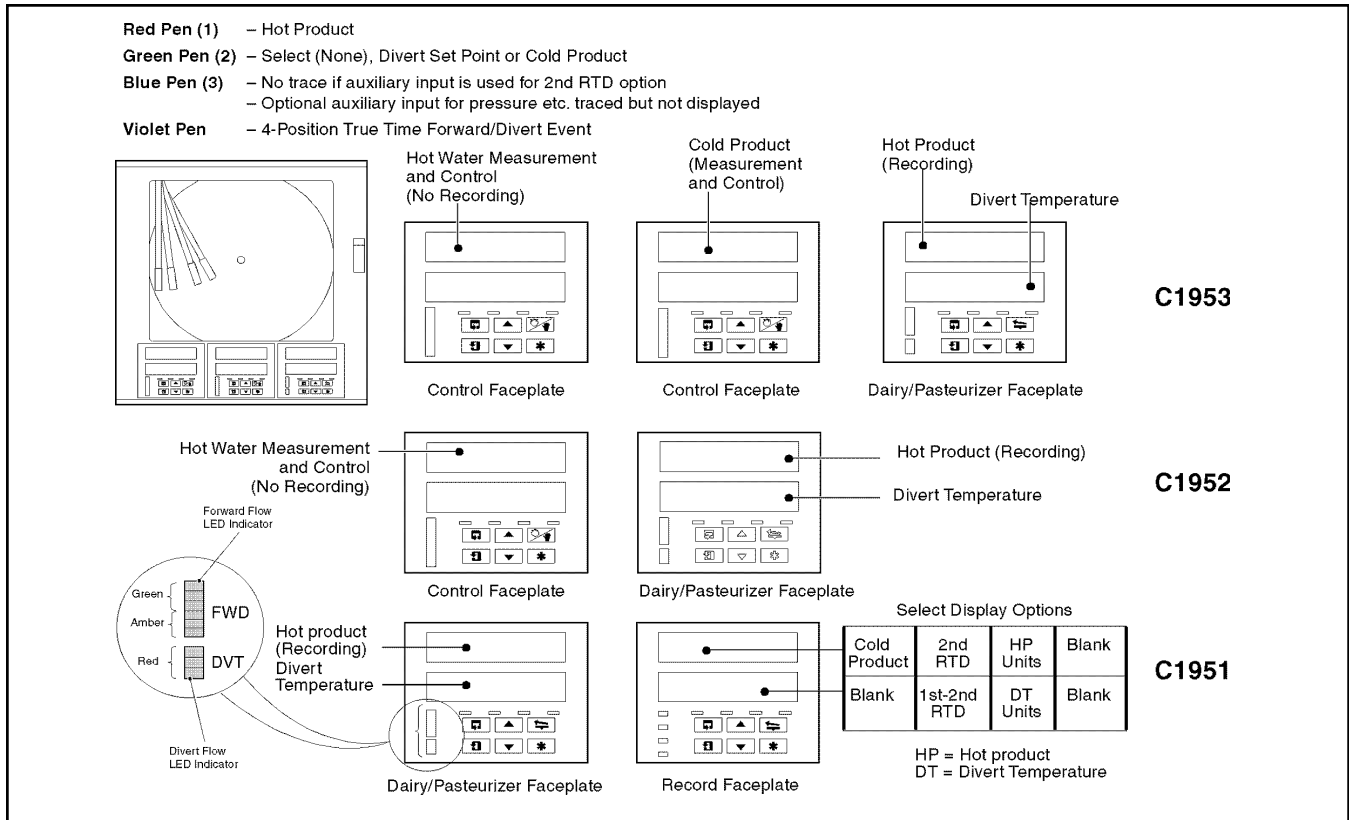
On the **C1952/1953** versions the multiple divert/hot water set points can be used to preset sterilizing and CIP temperature to enable remote selection of these functions from the customer's control panel.

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

The **COMMANDER 1950** 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.

List of Features

		C1951	C1952	C1953	C1954
DISPLAY	Flow/Divert Status	✓	✓	✓	✓
	Hot Product Temperature	✓	✓	✓	✓
	Divert Temperature	✓	✓	✓	✓
	Cold Product Temperature	○		✓	✓
	Heating Loop PV & SP		✓	✓	✓
	Cooling Loop PV			✓	✓
RECORDING	Hot Product	Red	Red	Red	Red
	Divert Set Point or Cold Product (option on 1952)	Green	Green	Green	Green
	Auxiliary Input (option on 1953)			Blue	Blue
	Flow/Divert/CIP Status (True Time event pen)	Violet	Violet	Violet	Violet
	Flow Rate				Green
CONTROL	Heating Loop		✓	✓	
	Cooling Loop			✓	
	Flow Loop Control				✓



Model Number Designation

	C19	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
Safety Thermal Limit Recorder (STLR)																	
Two pens (Red and Green) plus true time line event pen (Violet). STLR includes up to eight divert temperature points, digital pen calibration, reference thermometer input or cold product recording input and divert temperature recording pen.																	
																	51
High Temperature Short Time (HTST) Recording Controllers																	
One controller for hot water. Two pens (Red and Green) plus true time event pen (Violet). Red is hot product recording, Green is either cold product or divert setpoint recording.																	
																	52
Two controllers for hot water and cold product. Three pens (Red, Green & Blue) plus true time event pen (Violet). Red is hot product recording, Green is either cold product or divert setpoint recording, and Blue can be pressure or flow. Multiple divert temperatures are standard along with digital pen adjustment.																	
																	53
STLR Meter Based timing Recorder/Controller. Combination of C1951 and C1952 plus flow loop control.																	54
Chart Type																	
To use existing 500P 1900 ER/C charts																	J
To use KPC105 PX and PXR charts																	K
To use existing 500P 1900 ER/C charts																	B
To use KPC105 PX and PXR charts																	S
Electrical Code																	
Standard Version																	A
CSA Approval Version																	B
UL pending																	C
Additional Modules																	
Divert Relay required. (All I/O boards are fitted with two digital inputs, relay output, retransmission, transmitter power supply and fully isolated inputs and outputs as standard.)																	A
Door																	
Without Door Lock (NEMA 4X front and rear protection standard)																	01
With Door Lock (NEMA 4X front and rear protection standard)																	02
Chart Illumination Without Door Lock (115Vac power only) (Not available with UL or CSA versions)																	03
Chart Illumination With Door Lock (115Vac power only) (Not available with UL or CSA versions)																	04
Power Supply																	
115 Vac																	1
230 Vac																	2
24 Vac																	3
Module Position 2																	
For the C1951 and C1953: Not available, Not fitted.																	0
For the C1952: I/O board fitted may be used for Cold product recording, multiple divert tracking or a second RTD input used as a reference thermometer.																	1
Module Position 3																	
Not available, Not fitted																	0
Additional channel I/O board (Standard for C1953 and C1954, _Optional for C1951 and C1952)																	1
Module Position 4																	
Not fitted																	0
Additional channel I/O board																	1
Four additional relay outputs																	3
Eight Digital (logic) inputs																	4
Eight Digital (logic) outputs																	5
Module Position 5 & 6 (uses both positions)																	
115V ac Divert Relay Card																	90
230V ac Divert Relay Card																	A0
24V ac Divert Relay Card																	B0
Special Settings																	
Company Standard																	STD
Instruction Bulletin																	IM/C1900-PAS & IM/C1900-CON PAK
<i>(One copy is supplied with order)</i>																	

PRINCIPLE OF OPERATION

Raw product is pumped from the storage tank through the pasteurizer where it is heated to the required temperature.

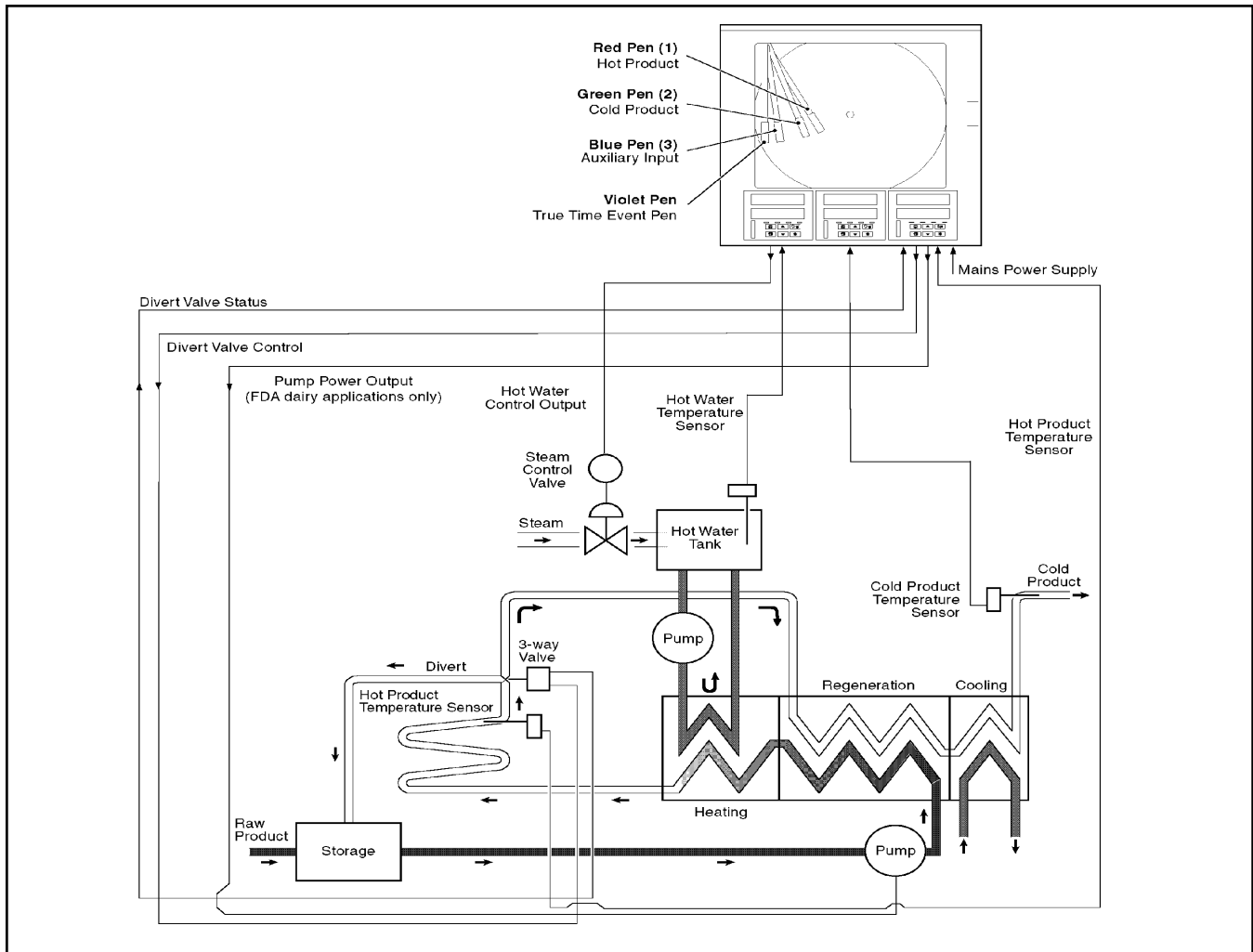
Once heated the product is pumped from the pasteurizer, where the 'hot product' temperature is measured and recorded by the red pen. If the product temperature is too low a 3-way valve, controlled via a relay, is used to divert product flow back into the storage tank for recycling. If the product temperature is correct it is pumped through the cooling section of the pasteurizer to complete the process. The cold product temperature, which is measured at this stage, can be recorded on the green pen.

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 can also indicate when the process is in CIP (clean in process) or secondary divert.



The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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