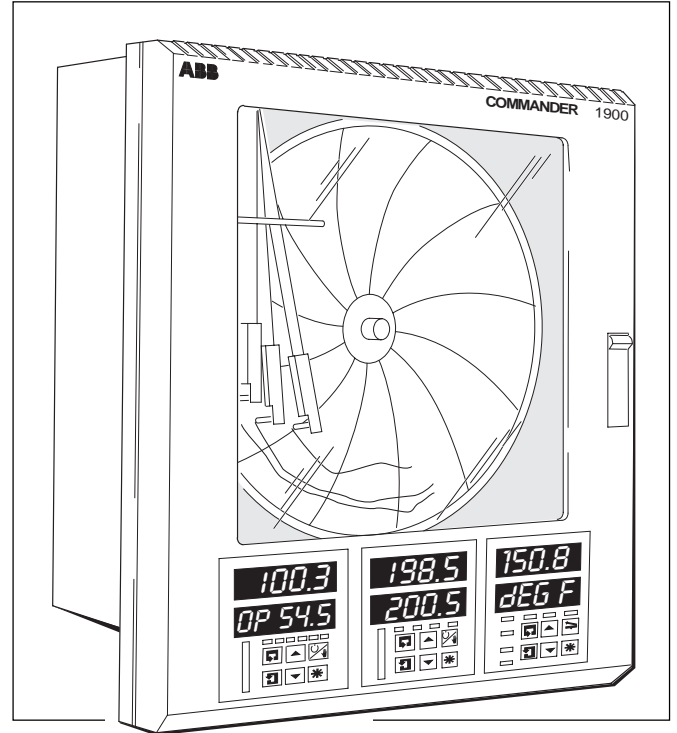


Pasteurizer Recorder and Recorder Controller (S.T.L.R. & H.T.S.T.)

- **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**
 - L.E.D. 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



The complete recording and control solution for pasteurization processes

INTRODUCTION

The COMMANDER 1951 recorder and COMMANDER 1952 and 1953 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 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 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.

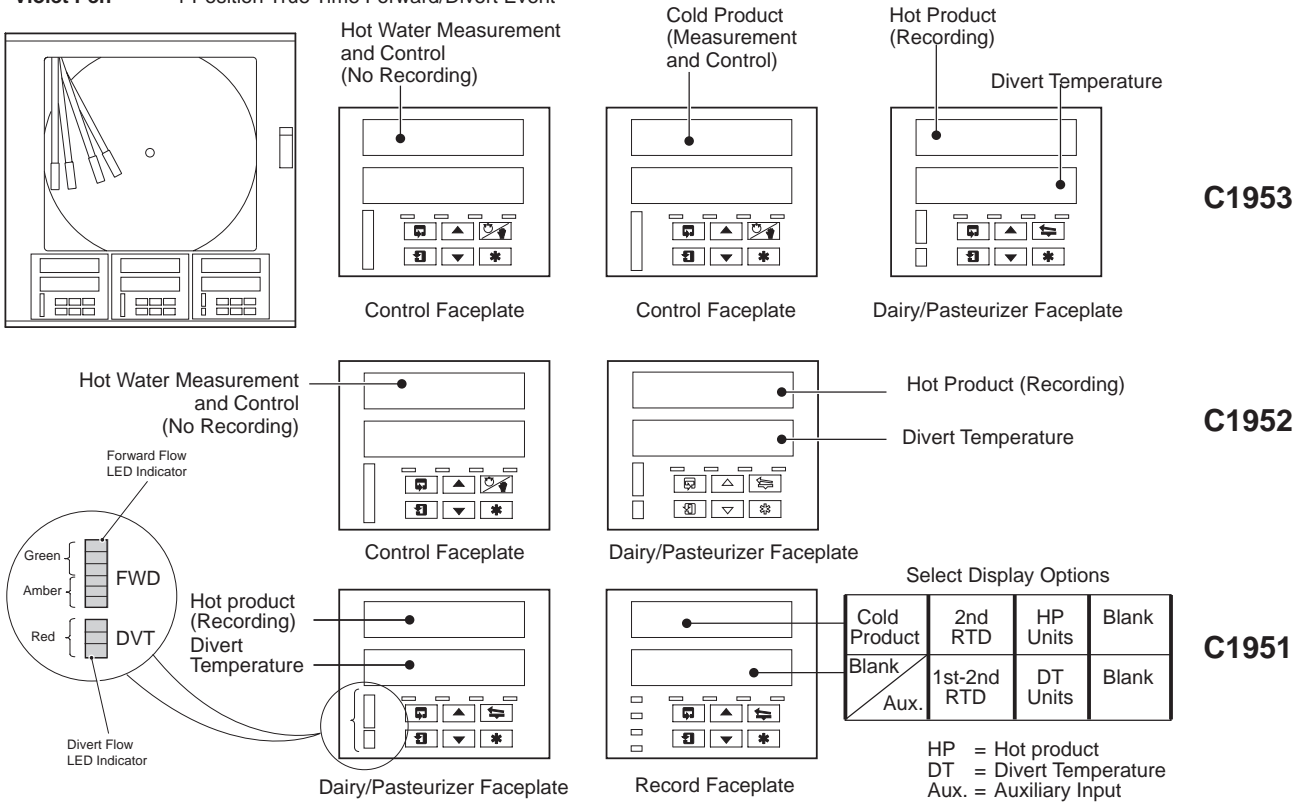
The **COMMANDER 1950** series recorder is a totally self-contained unit suitable for panel, wall or post mounting. As standard, the case is rated NEMA4X (IP66), making it suitable for use in almost any location in a modern dairy where cleaning of all surfaces takes place.

List of Features

		C1951	C1952	C1953
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		✓	✓
	Cooling Loop			✓

✓ = Standard ○ = Optional

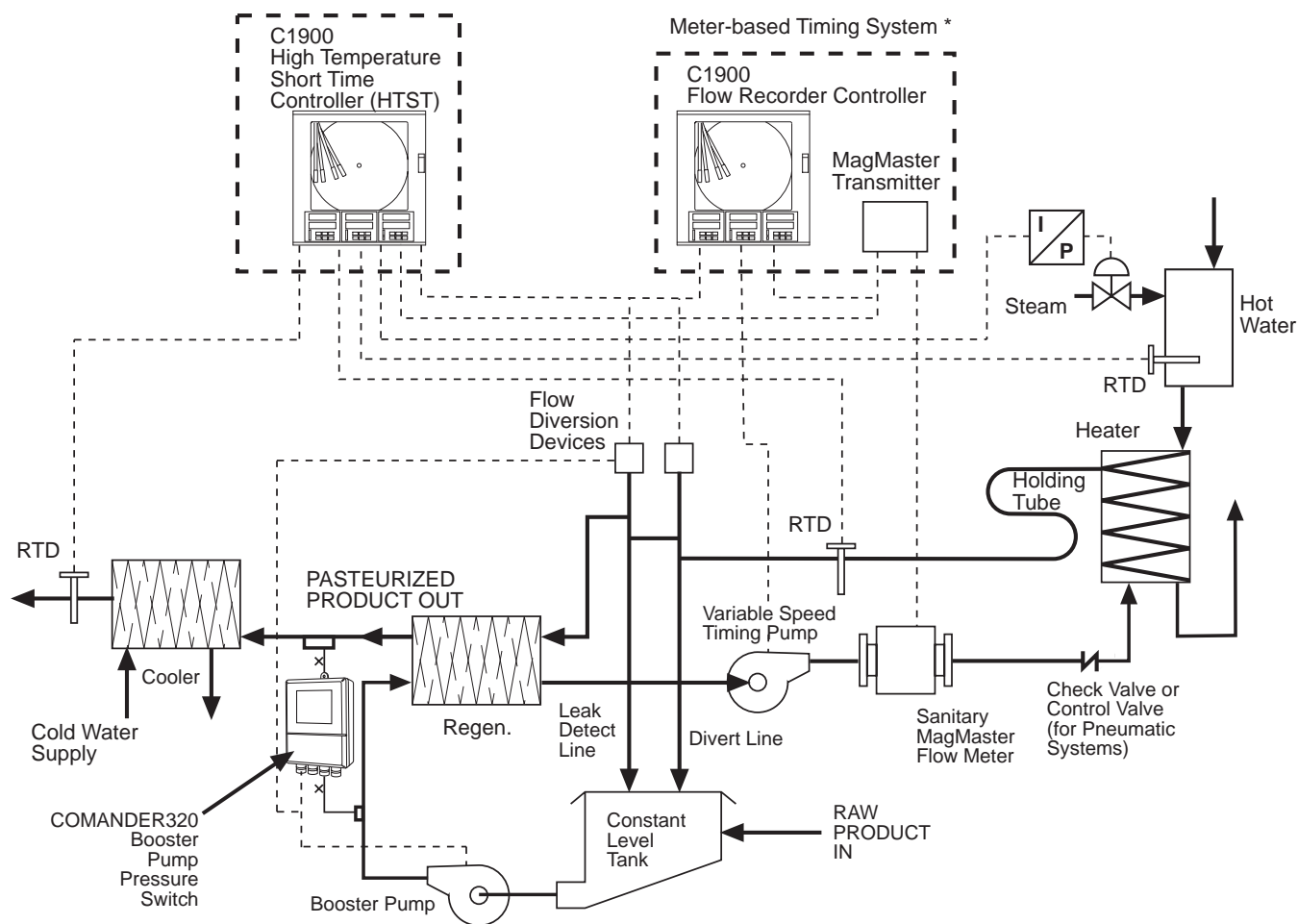
- Red Pen (1)** – Hot Product
- Green Pen (2)** – Select (None), Divert Set Point or Cold Product
- Blue Pen (3)** – Trace for auxiliary input only (display available on C1951)
– Optional auxiliary input for pressure, second RTD, Flow etc. traced but not displayed (C1952/C1953)
- Violet Pen** – 4-Position 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 COMMANDER 1900 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 COMMANDER 1900'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 COMMANDER 1900 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.

ORDERING CODE

PART 1 – General Details

C1900 Recorder, Recorder/Controller Dairy/Pasteurization Variants		XXXXX	X	X	0	X	X	X	0	X	X	X	XXX
Safety Thermal Limit Recorder (STLR)	Two pens (Red and Green) plus True Time Event Pen (Violet) for Taylor ER/C charts for Kent PX105 charts	1951J 1951K											
High Temperature Short Time (HTST) Recording Controllers	One Control Unit, Two Pens (Red and Green), plus True Time Event (Violet) for Taylor ER/C charts for Kent PX105 charts	1952R 1952S											
	Two Control Units, Three Pens (Red, Green and Blue), plus True Time Event (Violet) for Taylor ER/C charts for Kent PX105 charts	1953R 1953S											
			A										
Electrical Code	Standard CSA approval		B										
Additional Modules	None Additional Modules – Part 2 below			0									
Options	None			A									
Door Lock	Not Fitted Fitted				0								
Power Supply	115V A.C. 230V A.C. 24V A.C.					1 2 3							

PART 2 Additional Modules

		Module Type											
Module Position 2	1952 optional cold product input 1951 and 1953	1 0											
Module Position 3	No option permitted	0											
Module Position 4	Optional auxiliary input module (for Blue pen) For other options see key below	1 0	2	3	4	5							
Module Position 5	FDA dairy applications (115V only) For other options see key below	9 0	2	3	4								
Module Position 6	If FDA is selected, no other option For other options see key below	0 0	2	4	5	8							
Special Settings	Company Standard Customer Setting											STD CUS	

Key to Module Types

0	No module fitted / Pen input channel*	4	Eight digital inputs
1	Standard Input/Output	5	Eight Digital Outputs
2	Analog Input (Remote set point) + Relay	8	MODBUS RS485 Communications
3	Four Relays	9	Dairy Module (FDA) (takes up module positions 5,6)



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