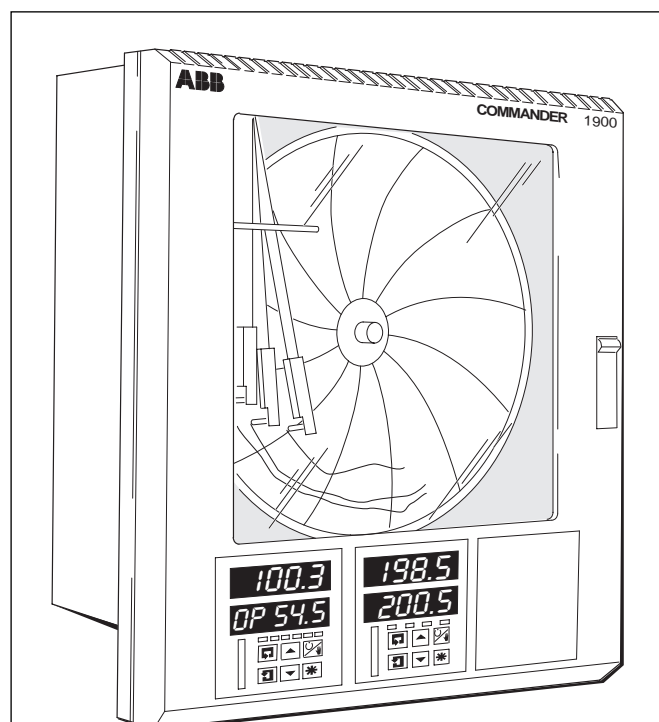


Specification Datafile

- **Ideal for Autoclaves/Retort control**
 - suitable for cooking many products
- **Designed for the control of Tire Presses and Dyebeck process**
 - adjustment of the soak time is a fingertip operation
- **Easy selections of multi-segment profiles**
 - 99 segments and 10 profiles to suit the most complex process
- **Dedicated operator display of segment status**
 - clearly shows current segment running, cook temperature and time
- **Automatic operation with manual override**
 - dedicated switches, warning lights and status LED's – intelligent power failure recovery
- **Guaranteed ramp/soak with individual hysteresis**
 - two hysteresis (deadband) settings per program
- **Faster start up with self-seeking set point**
 - to save you process time
- **Easy-clean NEMA 4X/IP66 enclosure**
 - hosedown and harsh applications



COMMANDER 1960 – for universal ramp/soak applications

- Autoclaves
- Retort Control
- Pneumatic upgrades
- Tire Presses
- Dyebeck
- Smokehouses
- Kilns

Introduction

The **COMMANDER 1960** Multi-Recipe Profile recorder/controller has advanced ramp/soak profiling designed specifically for the food processing, canning, tire and dyebeck industries.

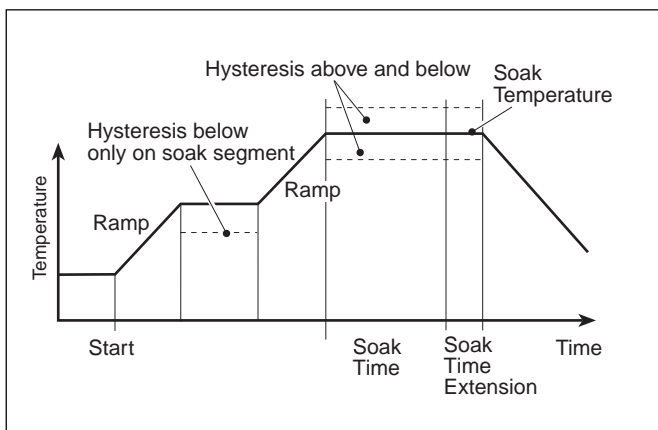
The range of products available gives you the ability to use the C1960 not only for control but to also record other process variables.

Specialized features include **guaranteed ramp/soak**, a **dedicated operator display** and time events to assign relays/outputs to individual or multiple segments.

The C1960 is a totally self-contained unit suitable for panel-, wall- or pipe-mounting with **NEMA4X/IP66** enclosure protection as standard.

The C1960 is available in four versions:

- C1961** One controller and one recording pen with control and ramp/soak faceplates
- C1962** One controller and two recording pens with control, record and ramp/soak faceplates
- C1963** One controller and three recording pens with control, record and ramp/soak faceplates
- C1964** Two controllers and two recording pens with two control and one ramp/soak faceplates for Channel 1



Guaranteed Ramp/Soak

Guaranteed Ramp/Soak

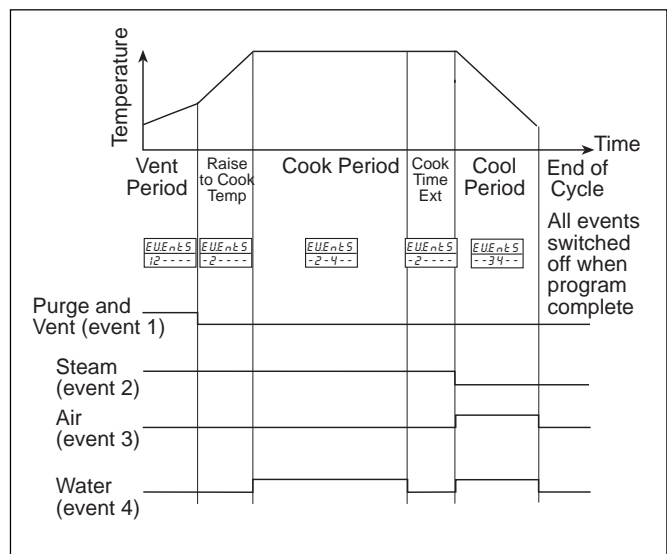
This feature has been designed to make operation as flexible as possible. There are two hysteresis settings; one applicable to soak segments, the other to ramp segments.

The guaranteed hysteresis value can be applied to individual segments above set point, below set point, both or none. This gives the user the option to HOLD a cycle only if it falls outside a preset value, i.e. where regulations state a minimum (but no maximum) temperature or where the ramping segment is allowed to reach temperature as quickly as possible, so saving process time and money.

Programmable Power Failure Recovery

The power failure recovery function allows pre-selection of the restart position within the profile. If the power is restored within the programmable power down time, the C1960 **resumes** from the point in the profile that the power failed. If, however, the power down time has expired, the C1960 holds the program and can **restart** in three different ways:

- a) the current program from the beginning;
- b) the current segment;
- c) or the segment from the position at the time of failure.



Event States

Event States

The C1960 has six common events which can be allocated to relay or digital outputs and each segment can be configured to enable any event. This enables an event to be triggered from multiple segments, or for one segment to trigger multiple events, providing a flexible and powerful control strategy.

Ideal Replacement for Pneumatic Products

Profile cycle can be controlled automatically or, at the touch of a button, switched to manual control. Dedicated switches to increase or decrease cook/soak times give manual control of the process when required.

All front panel switches can be replicated on an external panel using digital signals.

Self-seeking Set Point

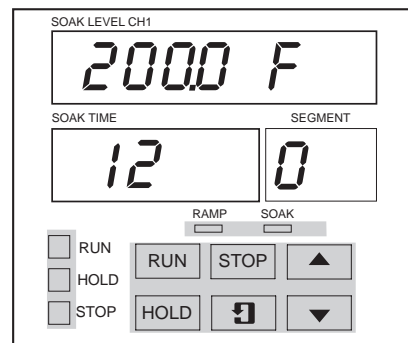
To reduce process time the C1960 has a self-seeking set point setting which enables a profile to start from the current process temperature. This eliminates the wasted time normally taken to drive the process temperature down to the actual start temperature for the profile.

Dedicated Ramp/Soak Display

Status LEDs give a clear indication of the current state of the profile, showing whether a ramp or soak is being performed. A dedicated display indicates the segment which is currently running, together with the standard controller display which shows the current set point and actual process value.

The highest cook temperature and time is also indicated on the dedicated display on the Retort Control version. The segment temperature and time is displayed on the Advanced Control version. Dependent upon the process, these values can be increased or decreased via the front switches or digital inputs.

The profile can be started, stopped or put on hold via the dedicated switches on the front face or by external digital input.



Retort Control 'K' Software

Operation

The Retort Control software has been designed for control of basic cooking functions. The dedicated display on the custom face indicates the 'Cook' time and temperature. This is assumed to be the highest 'Soak' level in the profile. These are normally simple profiles, having only a 'Ramp' and 'Soak' segment, then 'Off'.

The Retort Control software, through dedicated front panel keys, enables continuous adjustment of the 'Cook' temperature and time at any point during the profile, to suit the product being processed.

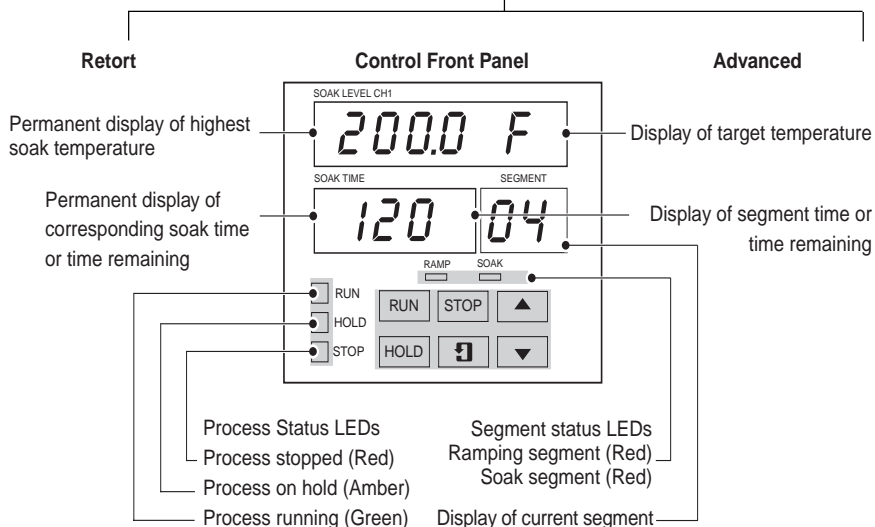
Advanced Control 'L' Software

Operation

The Advanced Control software has been developed specifically for the Tire and Dyebeck industries. A dedicated display indicates the segment currently running, the target temperature for that segment and the time required to reach that temperature.

In 'Soak' segments, the soak temperature and time required to reach the end of the soak is displayed.

The dedicated 'Up/Down' keys on the front panel allow for increase, or decrease, of the soak time in pre-set increments. This change may be made to any soak segment in the profile, but only while that segment is running.



Dedicated key to start profile	<input type="button" value="RUN"/>	Dedicated key to start profile
Dedicated key to set operator hold	<input type="button" value="HOLD"/>	Dedicated key to set operator hold
Dedicated key to stop/reset profile	<input type="button" value="STOP"/>	Dedicated key to stop/reset profile
Scroll key selects between adjustment of soak time and soak level ...	<input type="button" value="↺"/>	Inactive with this software
Increment soak time/soak level	<input type="button" value="▲"/>	Increment soak time
Decrement soak time/soak level	<input type="button" value="▼"/>	Decrement soak time

Ordering Guide

PART 1		19XX	X	X	X	X	X	X	X	X	X	X	X	X	XXX
C1960 Recorder/Controller															
Pens/Controllers**	One Control Unit, One Pen (Red)	61													
	One Control Unit, Two Pens (Red & Green)	62													
	One Control Unit, Three Pens (Red, Green, Blue)	63													
	Two Control Units, Two Pens (Red & Green)	64													
Chart Type	Standard (ER/C)		R												
	KPC 105 PX and PXR		S												
	Chessell Brand		D												
Electrical Code	Standard			A											
	CSA Approved (Pending)			B											
	UL Approved (Pending)			U											
Option Module	None			0											
	Additional I/O Modules			A											
Software Options	Retort Control				K										
	Advanced Control				L										
Door Lock	Not fitted					1									
	Fitted					2									
Power Supply	115V a.c.						1								
	230V a.c.						2								
	24V a.c.						3								
	115V a.c. with On/Off switch						4								
	230V a.c. with On/Off switch						5								
	24V a.c. with On/Off switch						6								
** Each pen fitted has an associated standard Input/output Module comprising Analog Input, Analog output, Relay, Transmitter power supply and Two digital inputs. Additional Input/Output Modules may be fitted in the unused Module Positions as required. These additional modules should be specified in PART 2 of the Ordering Guide.															
PART 2			Module Type												
Additional I/O Modules															
Module Position 2/Channel 2 Input* (selection for C1961 only)			0	1	2										
Module Position 3/Channel 3 Input* (selection for C1961, C1962 and C1964)			0	1	2										
Module Position 4/Channel 4 Input*			0	1	2	3	4	5	6						
Module Position 5			0	3	4	5									
Module Position 6			0	4	5	8									
Special Settings	Company Standard													STD	
	Customer setting													CUS	
	Special													SXX	

Key to Module Types

- *0 No module fitted/Pen input channel
- 1 Standard input/output
- 2 Analog input + relay
- 3 Four relays
- 4 Eight digital inputs
- 5 Eight digital outputs
- 6 True time event pen (violet) (event pen is additional to standard pens)
- 8 MODBUS RS485 communications

For full technical specifications refer to Specification Sheet SS/C1900R/C



Other circular chart recorders also available from ABB:

C1950 Pasteurizer Recorder/Controller

C1900 Recorder/Controllers

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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Printed in UK (8.97)

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