Consolidated Sterilizer Systems
Designed to Transform Your Laboratory

Advantage Series™ Sterilizer Control Suite
Programmable Logic Controllers (PLC)

Pass-Thru Model PT-SR-24A-ADV-PRO
Shown with optional stainless steel loading cart
and interior chamber tracks to simplify loading and unloading.

CONSOLIDATED
STERILIZER SYSTEMS

Made in the U.S.A.

Featuring Green Technology 🌢 for Energy Savings and Minimal Environmental Impact

About Consolidated

Consolidated Sterilizer Systems was founded by William A. Barnstead in 1946. For more than 70 years we have enjoyed a reputation for excellence in the field of sterilization and distillation products. Today, Consolidated has a long-standing reputation for high-performance within the sterilization industry and as one of the most reliable sterilizer and water still manufacturers in the world.

Our office and factory are located in Boston, Massachusetts, a city rich with universities, hospitals, research laboratories and biotechnology enterprises. Customers worldwide come to Consolidated because we manufacture a product line with the best price, functionality and predictable quality in the industry. Consolidated markets and sells its products all over the world through qualified sales teams and manufacturer sales representatives. All of our units are **100% manufactured in the USA.**
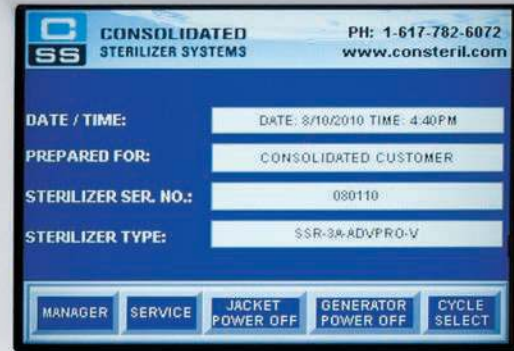
The Consolidated Advantage

Our reputation for reliability, quality and safety is built into every sterilizer so your operation will enjoy maximum uptime. All Consolidated sterilizers incorporate a solid silicone door gasket that can be easily replaced without tools or adhesives. We also utilize **non-proprietary** valves that are often available from local suppliers. These features, plus Consolidated's industry renowned quality, help our network of local dealers ensure the lowest cost of ownership in the industry while maintaining the highest standards of sterilization.

Consolidated's Advantage Series™ Programmable Logic Controllers are built using proven industry-standard components that provide dependable performance, solid reliability and international parts availability.

- Choose from ADV-PRO™, ADV-PLUS™ or ADV-PB™ controllers
- All Advantage Series™ controllers are based on the proven Allen-Bradley® PLC platform configured specifically for Consolidated Sterilizers
- Intuitive Rockwell touchscreens and real-time operating system
- UL/CSA listed
- Cloud-enabled

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The ADV-PRO™ Controller is configured for Consolidated products. It utilizes the proven Allen-Bradley® PLC which is an open source controller with worldwide support.

ADV-PRO™ Features and Options

Consolidated's ADV-PRO™ sterilizers provide you with our top-of-the-line and most advanced control system. These sterilizers are completely menu driven and allow you to program and monitor sterilizer functions with a degree of sophistication that is unsurpassed. Our ADV-PRO™ sterilizers are an excellent choice for biotechnology, animal and life science, commercial and pharmaceutical applications.

Industry Standard and Custom Sterilizer Cycles

The ADV-PRO™ controller comes with many pre-programmed common sterilizer cycles, each tuned to best sterilize a specific type of load. Additionally, users may program custom cycles tailored to specific applications. Available factory configured cycles are listed here:

- Gravity
- Liquids
- Vacuum
- Bowie-Dick (daily air removal test)
- Vacuum leak test
- Low temperature (isothermal)
- Air-over-pressure
- Effluent decontamination
- F_0 Cycle
- Rapid cooling (water-spray)
- Rapid cooling (water-jacket)
- Pressure ramping
- Other programmable cycles

Controller Models	Display	Key Features
ADV-PRO™		6" or 10" Color Touchscreen 22+ Cycles Pre-Vac Capability Password Protection BSL-3 Compatible
ADV-PLUS™		6" Monochrome Touchscreen 12 Cycles Pre-Vac Capability
ADV-PB™		3" Monochrome Touchscreen 2 Cycles

Intuitive Operator Interfaces

The ADV-PRO™ controller features a robust, durable and convenient color touchscreen interface with several mounting options:

- Standard: 6" (15.24 cm) color active matrix TFT touchscreen resolution: 320 × 240 pixels, 18-bit color graphics
- Optional: 10" (25.4 cm) color active matrix TFT touchscreen resolution: 640 × 480 pixels, 18-bit color graphics
- Optional: Available with swing-arm, front and remote panel mounting
- Optional: Dual-control display available for pass-thru models (full control column on operating end, touchscreen interface only on non-operating end)
- Optional: Dual-control remote cycle start switch available for pass-thru models (full control column on one end, remote start and abort buttons on the other end)
- Standard: Chamber process gauges display pressure (psig, kg/cm^2) and vacuum (inHg and mmHg)
- Controller mounting available on left or right side

Sterilizer Control and Process Integrity

The ADV-PRO controller consists of an advanced software, and hardware-based monitoring system that allows unattended operation of Consolidated sterilizers without sacrificing reliability. Standard security features prevent inadvertent or unauthorized process changes.

- Touchscreen configurable cycle parameters
- Incorrect or out-of-tolerance parameter rejection
- Three-point software calibration of sensors
- Multi-layered password security for configuration protection
- Cycle start interlock requires sterilizer doors to be closed and locked
- Automatic condensate exhaust management for all sterilizer cycles
- Memory backup preserves configuration in event of power failure/outage
- Double door alarm for pass-thru models
- Energy-saving EcoCalendar™ with auto-idle shut-off (sleep mode)
- Optional dry contacts connection to building system

Sterilizer Cycle Quality Reporting

Users can easily view and electronically download all sterilizer operating parameters, cycle progress and cycle data for a single load or batch of loads.

- Data downloadable from the cloud via ethernet or Wi-Fi
- Data downloadable via Ethernet, RS-232 or RS-485 interfaces
- Ongoing graphical display of cycle progress on touchscreen display
- Hard copy report from thermal or impact printer

Audible and Visual Alarms

At the end of each cycle or upon the occurrence of abnormal sterilization conditions, the Advantage Series™ controller displays a visual notification, prints a record and sounds an audible alarm. A sampling of sterilizer alarms include:

- Cycle completed
- Recycle alarm; proper sterilization temperature not maintained
- Over temperature alarm; sterilization temperature exceeded limit
- Over pressure alarm; sterilization pressure exceeded limit

Model SR-24B-ADV-PRO
Shown with optional swing-out
controller mounting and optional 10" display.

Printed Documentation of Sterilizer Cycles

A printed record of each sterilizer cycle provides nonvolatile documentation demonstrating compliance within specification suitable for process recording and auditing and in compliance with 21 CFR requirements.

- User-defined cycle name
- Start time and date
- Cycle type
- Time, chamber temperature and pressure are printed at cycle start, end, transition points and periodically during cycle phases
- Cycle summary, including sterilize time and exhaust time

Touchscreen Menu System

The ADV-PRO™ touchscreen layout and menu system is intuitive, easy to use and requires little operator training. In addition, diagnostic and help resources are available throughout the menu structure.

- Intuitive menu trees and screens
- Multi-layered password security for configuration protection
- Built-in service and diagnostic routines
- Optional remote troubleshooting feature available

```
9:31:16AM       CYCLE    OVER
9:30:30AM       169F     30inHG
9:29:30AM       163F     29inHG
9:28:30AM       161F     24inHG
9:27:30AM       201F     7inHG
9:26:30AM       234F     11PSI
9:25:16AM       EXHAUSTING/ DRYING
9:25:30AM       251F     17PSI
9:24:30AM       252F     17PSI
9:23:30AM       251F     17PSI
9:22:30AM       252F     17PSI
9:21:30AM       251F     17PSI
9:20:30AM       252F     18PSI
9:19:30AM       252F     17PSI
9:18:30AM       251F     17PSI

8:58:30AM       251F     21PSI
8:57:30AM       251F     21PSI
8:56:30AM       250F     20PSI
8:56:16AM       STERILIZING
8:55:30AM       247F     18PSI
8:54:30AM       244F     17PSI
8:53:30AM       237F     14PSI
8:52:30AM       226F     10PSI
8:51:32AM       WAIT FOR CH. TEMP
8:51:30AM       200F     10PSI
8:50:32AM       CONDITIONING
DRY TIME        5 MIN
CYCLE TIME      30 MIN
CYCLE TEMP      250 F
CYCLE NAME      GRAVITY 1
OPERATOR        222
DATE            6/18/2010 TIME 8:50AM
```

Sample print-out from ADV-PRO controller.

Cloud Enabled Autoclaves - Real-Time Monitoring and Data Collection

Thanks to a unique partnership with TetraScience, an Internet-of-Things company, Consolidated autoclaves are now able to connect to the internet—allowing scientists, lab managers, and facilities personnel to monitor their autoclaves and download their sterilization data from any internet-ready device. This feature is now included on all Consolidated models* — simply connect the autoclave via Ethernet or Wi-Fi to enjoy the benefits (cloud-based data storage, real time monitoring, and cycle alerts & reminders).

In addition to this cloud system, Consolidated autoclaves can be configured to include remote troubleshooting with live factory support (SteriNET® Connex); ideal for facilities that cannot afford any down-time or that are located in remote areas where service assistance is hours or days away.

This cloud feature may also be retrofit on existing Consolidated autoclaves with Advantage-Series controls.

Cloud Benefits	
Cycle Alerts & Reminders	No more waiting around for the autoclave to finish running. Focus on your research – not on the equipment – by getting notified via text or email when the cycle is completed.
Data Storage	No need to save paper print-outs from the autoclave. Conveniently access cycle data from the cloud where it is automatically stored. Download the data to your local computer or import data directly into Electronic Lab Notebook.
Real-Time Monitoring	Avoid having to walk down the hall to check the status of the autoclave. See when the autoclave is in use, from any device, to better schedule your experiment and better utilize the autoclave.

ADV-PLUS™ Features and Options

Consolidated's ADV-PLUS™ sterilizers blend a perfect combination of form and function. The ADV-PLUS™ control system incorporates many of the advanced features and the intuitive graphical interface of the ADV-PRO™, at a lower cost. Like the other control systems in the Advantage-Series Suite, the ADV-PLUS™ is based on the Allen-Bradley® PLC platform configured specifically for Consolidated Sterilizers. Chamber temperature, chamber pressure, and jacket temperature values are all measured and displayed on the touch screen in real time.

- The ADV-PLUS™ includes a 6" monochrome touchscreen display and impact printer for detailed cycle documentation. (A thermal printer is available upon request.)
- Multi-layered password security for configuration protection
- This control system is ideal for BSL-1 and BSL-2 laboratories and facilities that require pre-vacuum operation, as well as other common sterilization cycles (Gravity and Liquids).
- The ADV-PLUS™ can store up to 9 commonly used cycles (3 each for Gravity, Liquids, and Vacuum) and 3 optional cycles (Low-Temperature [Isothermal], Air Removal Test, and Vacuum Leak Test) for a total of 12 cycles.
- A load probe is available for temperature control during a Liquids cycle.
- All control components are contained within the hinged control column for easy servicing using locally available open-source parts.

A. *Allen-Bradley® touchscreen controller*

B. *Optional thermal printer*

Model SSR-3AV-ADV-PLUS
Shown with vertical sliding door.

ADV-PB™ Features and Options

Consolidated's ADV-PB™ sterilizers offer the highest reliability as well as simplicity by design. Ideal for high-volume facilities with multi-tasking scientists and busy graduate students; these sterilizers utilize industry-standard cycles: gravity and liquid (post-vacuum drying optional). All cycles include an initial conditioning or purge phase for air removal.

Consolidated offers state-of-the-art technology to assure dependable and economic performance. As our entry-level control system, the ADV-PB™ is designed for fast-paced, high-volume facilities. Available for all Consolidated sterilizers, the user-friendly ADV-PB™ configuration allows technicians to operate the unit without advanced knowledge of sterilization.

- The ADV-PB™ features the proven Allen-Bradley® MicroLogix™ PLC with push-button controls and a 6" monochrome touch-screen that allows users to easily view cycle status, time remaining and chamber temperature.
- Although cycle parameters can be easily changed through touchscreen data entry, the controller automatically stores the last gravity and liquid cycles, making it easy to run repeat cycles without re-entering parameters.
- An alphanumeric impact printer provides cycle documentation.
- A post-vacuum option is available for enhanced drying.
- All control components are contained within the hinged control column for easy servicing using locally available open-source parts.

A. Optional WaterEco™ system (available on all models)

B. Allen-Bradley® touchscreen controller

C. Manual power ON/OFF switch

D. Manual abort cycle button

E. Manual start button

F. Impact printer

Pass-Thru Model
PT-SR-24A-ADV-PB

Consolidated Sterilizer Systems Controller Options—The Advantage Series™ Programmable Logic Controllers

Controllers	ADV-PRO™		ADV-PLUS™	ADV-PB™
Description	Color Touchscreen Display		Monochrome Touchscreen Display	Monochrome Touchscreen Display w/ Push Buttons

Operator Interfaces

Display	6" 18 bit color	10" 18 bit color	7" Monochrome	3" Monochrome
Resolution	320 x 240 pixels	640 x 480 pixels	800 x 400 pixels	128 x 64 pixels
Mounting Options	Front and Remote Panel		Front and Remote Panel	Top, Front and Remote Panel
Chamber Process Gauges	Pressure (psig, kg/cm^2) Vacuum (inHg, mmHg)		Pressure (psig, kg/cm^2) Vacuum (inHg, mmHg)	Pressure (psig, kg/cm^2) Vacuum (inHg, mmHg)

Industry Standard and Custom Sterilizer Cycles

Gravity	Standard	Standard	Standard
Liquids w/Auto Jacket Blowdown	Standard	Standard	Standard
Liquids w/Controlling Load Probe	Optional	Optional	
Pre-Vacuum	Optional	Optional	
Post-Vacuum Drying	Optional	Optional	Optional
Low Temperature (Isothermal)	Optional	Optional	
Bowie-Dick (Air Removal Test)	Optional	Optional	
Vacuum Leak Test	Optional	Optional	
Air-Over-Pressure	Optional		
Effluent Decontamination	Optional		
F_0 w/ Controlling Load Probe	Optional		
Total Programmable Cycles	Up to 22	Up to 12	2

🟢 Green Features

Energy Saver Eco Calendar for Scheduled ON/OFF Steam Supply	Standard	Standard	
WaterEco™ System for Reduced Water Consumption	Optional	Optional	Optional

Sterilizer Control and Process Integrity

Configurable Cycle Parameters	Standard	Standard	Standard
Improper Parameter Rejection	Standard	Standard	Standard
Multi-layered Password Security for Configuration Protection	Standard	Standard	
Two-Point Calibration of Sensors	Standard	Standard	Standard
Automatic Condensate Exhaust Management for all Cycles	Standard	Standard	Standard
Memory Backup of Configuration	Standard	Standard	Standard

Sterilizer Cycle Quality Reporting

Graphic Display of Cycle Progress	Standard	Standard	Standard
Thermal Printer (48 characters/line)	Standard		
Impact Printer (48 characters/line)	Optional	Standard	Standard

Printed Documentation of Sterilizer Cycles

|			
User Defined Cycle Name	Standard		
Start Time and Date	Standard	Standard	Standard
Cycle Type	Standard	Standard	Standard
Chamber Temperature/Pressures	Standard	Standard	Temperature Only
Cycle Summary	Standard	Standard	Standard

Audible Alarms (Also Displayed on Touchscreen)

Cycle Completed, Recycle, Over Temperature, Over Pressure, Time Limit, Chamber Drain, Jacket/Chamber Flow Failure	Standard	Standard	Standard

Connectivity

Cloud-Based Monitoring & Data Collection	Standard	Standard	Standard
SteriNET® Connex (Remote Troubleshooting)	Optional	Optional	Optional
SteriNET® Dataport	Standard Ethernet, Optional RS-232	Standard Ethernet, Optional RS-232	Standard Ethernet

CONSOLIDATED STERILIZER SYSTEMS | Advantage Series Sterilizer Control Suite
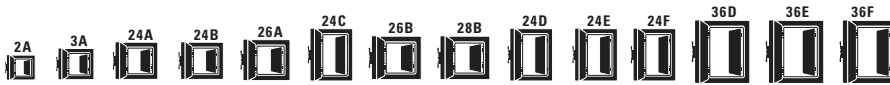
Consolidated Sterilizer Selection Chart
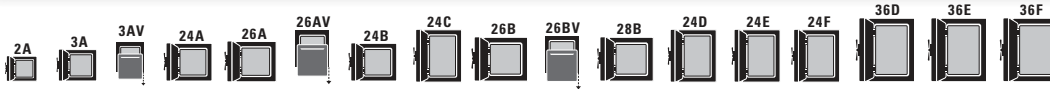
Single Door Models

Model	Volume (per chamber)	Interior Dimensions (per chamber) w × h × f-b	Ship Weight (lbs/kg)	Ship Dimensions w × h × f-b
SSR-2A	3.9 cu.ft. 109 liters	16" × 16" × 26" 40.6 × 40.6 × 66 cm	1,150 lbs 523 kg	37" × 77" × 54" 94 × 196.5 × 137.2 cm
SSR-3A	8.8 cu.ft. 249 liters	20" × 20" × 38" 50.8 × 50.8 × 96.5 cm	1,650 lbs 750 kg	37" × 77" × 65" 94 × 196.5 × 165.1 cm
3AV	8.8 cu.ft. 249 liters	20" × 20" × 38" 50.8 × 50.8 × 96.5 cm	1,650 lbs 750 kg	37" × 77" × 65" 94 × 196.5 × 165.1 cm
SR-24A	12 cu.ft. 340 liters	24" × 24" × 36" 61 × 61 × 91.4 cm	2,300 lbs 1,045 kg	46" × 77" × 66" 116.8 × 195.6 × 167.6 cm
SR-26A	15.25 cu.ft. 430 liters	26" × 26" × 39" 66 × 66 × 99 cm	2,450 lbs 1,113 kg	46" × 77" × 69" 116.8 × 195.6 × 175.3 cm
26AV	15.25 cu. ft. 430 liters	26" × 26" × 39" 66 × 66 × 99 cm	2600 lbs 1182 kg	46.375" x 77.25" x 54" 118 × 196 x 138 cm
SR-24B	16 cu.ft. 453 liters	24" × 24" × 48" 61 × 61 × 122 cm	2,500 lbs 1,136 kg	46" × 78" × 77" 116.8 × 198.1 × 195.6 cm
SR-24C	18 cu.ft. 510 liters	24" × 36" × 36" 61 × 91.4 × 91.4 cm	2,700 lbs 1,228 kg	46" × 78" × 65" 116.8 × 198.1 × 165.1 cm
SR-26B	19.2 cu.ft. 544 liters	26" × 26" × 49" 66 × 66 × 124.5 cm	2,700 lbs 1,228 kg	46" × 77" × 79" 116.8 × 195.6 × 201 cm
26BV	19.2 cu.ft 544 liters	26" × 26" x 49" 66 x 66 × 124.5 cm	2,850 lbs 1296 kg	46.375" x 77.25" x 64" 118 × 196 x 163 cm
SR-28B	21.8 cu.ft. 617 liters	28" × 28" × 48" 71 × 71 × 122 cm	2,980 lbs 1,355 kg	48" × 78" × 78" 122 × 198.1 × 198.1 cm
SR-24D	24 cu.ft. 680 liters	24" × 36" × 48" 61 × 91.4 × 122 cm	3,150 lbs 1,432 kg	46" × 78" × 78" 116.8 × 198.1 × 198.1 cm
SR-24E	30 cu.ft. 850 liters	24" × 36" × 60" 61 × 91.4 × 152 cm	3,600 lbs 1,637 kg	46" × 78" × 89" 116.8 × 198.1 × 226.1 cm
SR-24F	36 cu.ft. 1019 liters	24" × 36" × 72" 61 × 91.4 × 183 cm	4,300 lbs 1,955 kg	46" × 78" × 98" 116.8 × 198.1 × 248.9 cm
LR-36D	48 cu.ft. 1359 liters	36" × 48" × 48" 91.4 × 121.9 ×121.9 cm	7,700 lbs 3493 kg	62" × 92" × 86" 157.4 × 233.6 × 218.4 cm
LR-36E	60 cu.ft. 1699 liters	36" × 48" × 60" 91.4 × 121.9 ×152.4 cm	8,400 lbs 3,810 kg	62" × 92" × 98" 157.4 × 233.6 × 248.9 cm
LR-36F	72 cu.ft. 2038 liters	36" × 48" × 72" 91.4 × 121.9 ×182.8 cm	9,100 lbs 4,128 kg	62" × 92" × 110" 157.4 × 233.6 × 279.4 cm

Pass-Thru Models

PT-SSR-2A	3.9 cu.ft. 109 liters	16" × 16" × 26" 40.6 × 40.6 × 66 cm	1,300 lbs 591 kg	37" × 79" × 57" 94 × 200.7 × 144.8 cm
PT-SSR-3A	8.8 cu.ft. 249 liters	20" × 20" × 38" 50.8 × 50.8 × 96.5 cm	1,800 lbs 819 kg	37" × 79" × 68" 94 × 200.7 × 172.8 cm
PT-SR-24A	12 cu.ft. 340 liters	24" × 24" × 36" 61 × 61 × 91.4 cm	2,650 lbs 1,205 kg	44" × 78" × 66" 182.9 × 198.1 × 167.6 cm
PT-SR-26A	15.25 cu.ft. 430 liters	26" × 26" × 39" 66 × 66 × 99 cm	2,800 lbs 1,273 kg	46" × 77" × 69" 116.8 × 195.6 × 175.3 cm
PT-SR-24B	16 cu.ft. 453 liters	24" × 24" × 48" 61 × 61 × 122 cm	2,850 lbs 1,295 kg	44" × 78" × 78" 182.9 × 198.1 × 198.1 cm
PT-SR-24C	18 cu.ft. 510 liters	24" × 36" × 36" 61 × 91.4 × 91.4 cm	3,150 lbs 1,432 kg	46" × 78" × 74" 116.8 × 198.1 × 188 cm
PT-SR-26B	19.2 cu.ft. 544 liters	26" × 26" × 49" 66 × 66 × 124.5 cm	3,050 lbs 1,386 kg	46" × 77" × 79" 116.8 × 195.6 × 201 cm
PT-SR-28B	21.8 cu.ft. 617 liters	28" × 28" × 48" 71 × 71 × 122 cm	3,350 lbs 1,523 kg	48" × 78" × 87" 122 × 198.1 × 221 cm
PT-SR-24D	24 cu.ft. 680 liters	24" × 36" × 48" 61 × 91.4 × 122 cm	3,600 lbs 1,637 kg	48" × 78" × 87" 122 × 198.1 × 221 cm
PT-SR-24E	30 cu.ft. 850 liters	24" × 36" × 60" 61 × 91.4 × 152 cm	4,050 lbs 1,841 kg	48" × 81" × 98" 122 × 205.7 × 248.9 cm
PT-SR-24F	36 cu.ft. 1019 liters	24" × 36" × 72" 61 × 91.4 × 183 cm	4,750 lbs 2,160 kg	48" × 81" × 104" 122 × 205.7 × 264.2 cm
PT-LR-36D	48 cu.ft. 1359 liters	36" × 48" × 48" 91.4 × 121.9 ×121.9 cm	9,200 lbs 4,173 kg	62" × 92" × 86" 157.4 × 233.6 × 218.4 cm
PT-LR-36E	60 cu.ft. 1699 liters	36" × 48" × 60" 91.4 × 121.9 ×152.4 cm	9,900 lbs 4,490 kg	62" × 92" × 98" 157.4 × 233.6 × 248.9 cm
PT-LR-36F	72 cu.ft. 2038 liters	36" × 48" × 72" 91.4 × 121.9 ×182.8 cm	10,600 lbs 4,808 kg	62" × 92" × 110" 157.4 × 233.6 × 279.4 cm

Exclusive Dual Chamber Tower Models
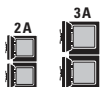
	Per Chamber		Total	
	Volume	Interior	Ship Weight	Ship Dimensions
2SSR-2A	3.9 cu.ft. 109 liters	16" × 16" × 26" 40.6 × 40.6 × 66 cm	2,250 lbs 1,125 kg	43" × 87" × 61" 109.2 × 221 × 154.9 cm
2SSR-3A	8.8 cu.ft. 249 liters	20" × 20" × 38" 50.8 × 50.8 × 96.5 cm	3,250 lbs 1,477 kg	43" × 87" × 61" 109.2 × 221 × 154.9 cm

All control systems in the Advantage Series™ Suite are available to retrofit your existing autoclave. Please contact Consolidated to upgrade your existing control system with one of Consolidated's state-of-the-art Advantage Series Controllers.