

Controlled Environment  
Equipment Solutions  
for the Lab

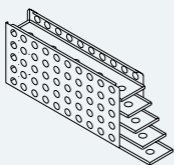


Forma® -40C and -86C Freezer Accessories

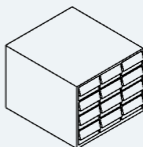
Analyze • Detect • Measure • Control™

**Thermo**  
ELECTRON CORPORATION

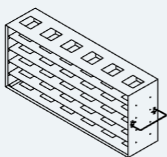
# INVENTORY CONTROL SYSTEMS



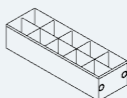
**Rack with Sliding Drawers**



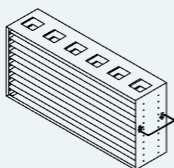
**Multi-Drawer Rack**



**Deepwell Microplate Rack**



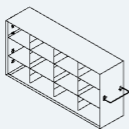
**Storage Container**



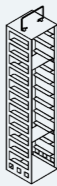
**Microplate Rack**



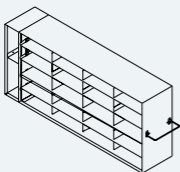
**Microplate Rack**



**Rack with Handle and Adjustable Shelves**



**Rack with Handle**



**Rack with Handle, Adjustable Shelves, and Extension**



**Wire Basket**

# Broad Range of Accessories

## Fully Equip Your Forma -40C and -86C Freezers!

We offer a complete line of accessories to complement our Forma low and ultra-low temperature freezers. Temperature recorders, back-up systems, temperature/power monitors, remote alarms, inventory control systems, shelf kits, and other options allow you to tailor each freezer to your requirements.

**Reliability for peace of mind.** For added peace of mind, we offer safety CO<sub>2</sub> and LN<sub>2</sub> back-up systems and temperature recorders, providing the reassurance required for your critical storage applications. With a telephone dialing system, you or a coworker can receive an automatic call at home should a freezer alarm condition occur. Temperature/power monitors and remote alarms are also available for added protection.

**High performance for optimum use.** Our accessories allow you to make the best use of your freezer. We offer inventory control systems that will help organize your samples for quicker retrieval. Numerous rack styles are designed to meet a variety of applications and maximize the use of your available freezer space.



**Easy to use.** Accessories are designed for convenience and ease of use. For example, do you have difficulty handling certain rack styles or removing them from the freezer? Consider our racks with sliding drawers for upright freezers. The rack remains stationary and the drawers are light. It's easier to retrieve samples, and you expose fewer of them to ambient conditions.

Not sure what you need? We'll work with you to define the accessories that will satisfy your requirements.

### ACCESSORIES

Inventory Control Systems . . . . .	3
Boxes, Dividers, Markers . . . . .	6
Temperature Recorders . . . . .	7
Dataloggers, Back-Ups, Sensaphones® . . . . .	8
Temperature/Power Monitors, Remote Alarms . . . . .	9
Data Outputs, Gloves, Water-Cooled Condenser . . . . .	10
Inner Door Kits, Shelving, Filters, Sample Probes, Freezerworks, IQ/OQs, Miscellaneous . . . . .	11



All accessories are customer installed unless indicated otherwise.

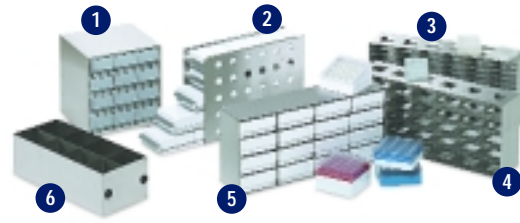
## Inventory Control Systems

Racks with sliding drawers, standard racks, and wire baskets are available for product storage. Contact our Custom Products Department for custom inventory control system needs.

Racks can be ordered with or without 2.0"H and 3.0"H (5.1cm and 7.6cm) water-repellent cardboard boxes, complete with 81-cell dividers. Refer to page 6 for a description of polycarbonate boxes and available dividers.

The tables included for single door uprights, double door uprights, and chests specify the **number of racks required to achieve a freezer's maximum capacity.**

## Inventory Control Systems for Upright Freezers



Numbers in the photo correlate to specific items in the tables on pages 3-5.

### Racks with Sliding Drawers for Single Door Uprights

This convenient style minimizes rack handling and specimen exposure to ambient temperatures. Durable stainless steel racks remain in the freezer, ensuring **quicker temperature recovery.** Lightweight aluminum drawers allow **easy sliding and convenient access to your samples.**

Stock No.	Description	Maximum Rack Capacity Per Chamber			
		13.0 Cu. Ft.	17.3 Cu. Ft.	23.0 Cu. Ft.	28.0 Cu. Ft.
<b>4 INNER DOORS (STANDARD)</b>					
<b>Rack with Sliding Drawers</b>					
5.5"W x 11.9"H x 16.6"F-B (14.0cm x 30.2cm x 42.2cm)					
820094	with 15 - 2.0" boxes	16			
920094*	without 2.0" boxes	16			
820095	with 9 - 3.0" boxes	16			
920095	without 3.0" boxes	16			
5.5"W x 11.9"H x 22.0"F-B (14.0cm x 30.2cm x 55.9cm)					
820096	with 20 - 2.0" boxes		16	20	
920096*	without 2.0" boxes		16	20	
820097	with 12 - 3.0" boxes		16	20	
920097	without 3.0" boxes		16	20	
5.6"W x 11.8"H x 26.3"F-B (14.2cm x 30.0cm x 66.8cm)					
2 820090	with 25 - 2.0" boxes				24**
920090*	without 2.0" boxes				24**
820091	with 15 - 3.0" boxes				24**
920091	without 3.0" boxes				24**
<b>5 INNER DOORS (OPTIONAL)</b>					
<b>Rack with Sliding Drawers</b>					
5.5"W x 9.6"H x 16.6"F-B (14.0cm x 24.4cm x 42.2cm)					
820098	with 12 - 2.0" boxes	20			
920098***	without 2.0" boxes	20			
820099	with 9 - 3.0" boxes	20			
920099	without 3.0" boxes	20			
5.5"W x 9.6"H x 22.0"F-B (14.0cm x 24.4cm x 55.9cm)					
820101	with 16 - 2.0" boxes		20	25	
920101***	without 2.0" boxes		20	25	
820102	with 12 - 3.0" boxes		20	25	
920102	without 3.0" boxes		20	25	

\*Rack capacity: 60 standard or 20 Deepwell microplates in 13.0 cu. ft. (368.1 liters) uprights, 90 standard or 30 Deepwell microplates in 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights, and 105 standard or 35 Deepwell microplates in 28.0 cu. ft. (792.8 liters) uprights.

\*\*For maximum freezer capacity of 60,000 vials (2.0ml) in our 28.0 cu. ft. (792.8 liters) upright, order No. 820010 2.0" polycarbonate boxes (25 required to fill a rack) and No. 920090 sliding drawer racks.

\*\*\*Rack capacity: 48 standard or 16 Deepwell microplates in 13.0 cu. ft. (368.1 liters) uprights and 72 standard and 24 Deepwell microplates in 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights.

Racks with Compartments for Single Door Uprights

Stock No.	Description	Maximum Rack Capacity Per Chamber		
		13.0 Cu. Ft.	17.3 Cu. Ft.	23.0 Cu. Ft.
<b>4 INNER DOORS (STANDARD)</b>				
<b>Rack with Handle and Adjustable Shelves*</b>				
	5.5"W x 10.9"H x 16.5"F-B (14.0cm x 27.7cm x 41.9cm)			
820015	with 15 - 2.0" boxes	16		
920015	without 2.0" boxes	16		
820009	with 9 - 3.0" boxes	16		
920009	without 3.0" boxes	16		
	5.5"W x 10.9"H x 22.0"F-B (14.0cm x 27.7cm x 55.9cm)			
820018	with 20 - 2.0" boxes		16	20
920018	without 2.0" boxes		16	20
820017	with 12 - 3.0" boxes		16	20
920017	without 3.0" boxes		16	20
<b>Rack with Handle, Adjustable Shelves, and Extension*</b>				
	5.5"W x 10.9"H x 24.6"F-B (14.0cm x 27.7cm x 62.5cm)			
820022	with 22 - 2.0" boxes		16	20
920022	without 2.0" boxes		16	20
<b>Multi-Drawer Rack</b>				
	11.2"W x 11.5"H x 11.1"F-B** (28.4cm x 29.2cm x 28.2cm)			
1 830012	with 12 drawers	4	8	16
<b>Storage Container</b>				
	7.0"W x 5.3"H x 18.1"F-B (17.8cm x 13.5cm x 46.0cm)			
6 830030	without boxes	24		
	7.0"W x 5.3"H x 22.6"F-B (17.8cm x 13.5cm x 57.4cm)			
830032	without boxes		24	32
<b>Deepwell Microplate Rack with Handle</b>				
	5.5"W x 9.6"H x 22.0"F-B (14.0cm x 24.4cm x 55.9cm)			
4 820030	30 position		16	20
	5.5"W x 12.0"H x 22.0"F-B (14.0cm x 30.5cm x 55.9cm)			
820036	36 position		16	20
<b>5 INNER DOORS (OPTIONAL)</b>				
<b>Rack with Handle</b>				
	5.4"W x 9.6"H x 16.1"F-B (13.7cm x 24.4cm x 40.9cm)			
189795	with 12 - 2.0" boxes	20		
989795	without 2.0" boxes	20		
189771	with 9 - 3.0" boxes	20		
989771	without 3.0" boxes	20		
	5.4"W x 9.6"H x 22.1"F-B (13.7cm x 24.4cm x 56.1cm)			
189495	with 16 - 2.0" boxes		20	25
989495	without 2.0" boxes		20	25
189471	with 12 - 3.0" boxes		20	25
989471	without 3.0" boxes		20	25
<b>Microplate Rack with Handle</b>				
	5.5"W x 9.6"H x 22.0"F-B (14.0cm x 24.4cm x 55.9cm)			
3 820066	66 position		20	25

\*Individual shelves are available. Order shelf No. 195038 for 13.0 cu. ft. (368.1 liters) uprights and No. 195039 for 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights.

\*\*Add 0.75" (1.9cm) to F-B dimension for drawer handle.

## Racks with Sliding Drawers for Double Door Uprights

Stock No.	Description	Maximum Rack Capacity Per Chamber		
		13.0 Cu. Ft.	17.3 Cu. Ft.	23.0 Cu. Ft.
<b>TOP CHAMBER</b>				
<b>Rack with Sliding Drawers</b>				
	5.5"W x 9.6"H x 16.6"F-B (14.0cm x 24.4cm x 42.2cm)			
820098	with 12 - 2.0" boxes	8		
920098*	without 2.0" boxes	8		
820099	with 9 - 3.0" boxes	8		
920099	without 3.0" boxes	8		
	5.5"W x 9.6"H x 22.0"F-B (14.0cm x 24.4cm x 55.9cm)			
820101	with 16 - 2.0" boxes		8	10
920101*	without 2.0" boxes		8	10
820102	with 12 - 3.0" boxes		8	10
920102	without 3.0" boxes		8	10
<b>BOTTOM CHAMBER</b>				
<b>Rack with Sliding Drawers</b>				
	5.5"W x 11.9"H x 16.6"F-B (14.0cm x 30.2cm x 42.2cm)			
820094	with 15 - 2.0" boxes	8		
920094*	without 2.0" boxes	8		
820095	with 9 - 3.0" boxes	8		
920095	without 3.0" boxes	8		
	5.5"W x 11.9"H x 22.0"F-B (14.0cm x 30.2cm x 55.9cm)			
820096	with 20 - 2.0" boxes		8	10
920096*	without 2.0" boxes		8	10
820097	with 12 - 3.0" boxes		8	10
920097	without 3.0" boxes		8	10

\*Rack capacity, top chamber: 48 standard or 16 Deepwell microplates in 13.0 cu. ft. (368.1 liters) uprights and 72 standard or 24 Deepwell microplates in 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights

Rack capacity, bottom chamber: 60 standard or 20 Deepwell microplates in 13.0 cu. ft. (368.1 liters) uprights and 90 standard or 30 Deepwell microplates in 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights

## Racks with Compartments for Double Door Uprights

Stock No.	Description	Maximum Rack Capacity Per Chamber		
		13.0 Cu. Ft.	17.3 Cu. Ft.	23.0 Cu. Ft.
<b>TOP CHAMBER</b>				
<b>Rack with Handle</b>				
	5.4"W x 9.6"H x 16.1"F-B (13.7cm x 24.4cm x 40.9cm)			
189795	with 12 - 2.0" boxes	8		
989795	without 2.0" boxes	8		
189771	with 9 - 3.0" boxes	8		
989771	without 3.0" boxes	8		
	5.4"W x 9.6"H x 22.1"F-B (13.7cm x 24.4cm x 56.1cm)			
5 189495	with 16 - 2.0" boxes		8	10
989495	without 2.0" boxes		8	10
189471	with 12 - 3.0" boxes		8	10
989471	without 3.0" boxes		8	10

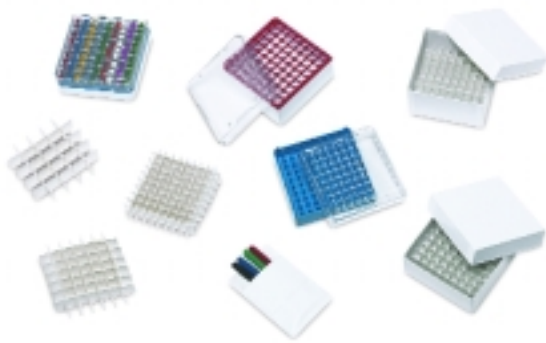
(continued)

Racks with Compartments for Double Door Uprights (continued)

Stock No.	Description	Maximum Rack Capacity Per Chamber		
		13.0 Cu. Ft.	17.3 Cu. Ft.	23.0 Cu. Ft.
<b>BOTTOM CHAMBER</b>				
<b>Rack with Handle and Adjustable Shelves*</b>				
	5.5"W x 10.9"H x 16.5"F-B (14.0cm x 27.7cm x 41.9cm)			
820015	with 15 - 2.0" boxes	8		
920015	without 2.0" boxes	8		
820009	with 9 - 3.0" boxes	8		
920009	without 3.0" boxes	8		
	5.5"W x 10.9"H x 22.0"F-B (14.0cm x 27.7cm x 55.9cm)			
820018	with 20 - 2.0" boxes		8	10
920018	without 2.0" boxes		8	10
820017	with 12 - 3.0" boxes		8	10
920017	without 3.0" boxes		8	10
<b>Rack with Handle, Adjustable Shelves, and Extension*</b>				
	5.5"W x 10.9"H x 24.6"F-B (14.0cm x 27.7cm x 62.5cm)			
820022	with 22 - 2.0" boxes			10
920022	without 2.0" boxes			10
<b>Microplate Rack with Handle</b>				
	5.5"W x 9.6"H x 22.0"F-B (14.0cm x 24.4cm x 55.9cm)			
820030	30 position		8	10
	5.5"W x 12.0"H x 22.0"F-B (14.0cm x 30.5cm x 55.9cm)			
820036	36 position		8	10

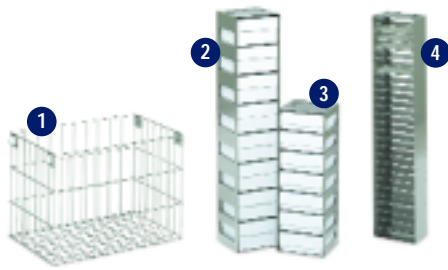
\*Individual shelves are available. Order shelf No. 195038 for 13.0 cu. ft. (368.1 liters) uprights and No. 195039 for 17.3 and 23.0 cu. ft. (489.9 and 651.3 liters) uprights.

Storage Boxes, Dividers, and Markers for All Freezers



Stock No.	Description
	<b>Water-Repellent Cardboard Box with 81-Cell Divider, 5.3" x 5.3" (13.5cm x 13.5cm) –</b>
820002	2.0" (5.1cm) High Box
820003	3.0" (7.6cm) High Box
820010	2.0" (5.1cm) High Polycarbonate Box, includes 100-cell divider with 0.5" (1.3cm) openings, 5.3" x 5.3" x 2.0"H (13.5cm x 13.5cm x 5.1cm), holds 1.0, 1.5, and 2.0ml vials and features a numerical grid system printed on the cover for inventory purposes
	<b>Cell Dividers –</b>
820016	16-Cell, 1.22" (3.0cm) nominal opening
820025	25-Cell, 0.98" (2.5cm) nominal opening
820049	49-Cell, 0.70" (1.7cm) nominal opening
820064	64-Cell, 0.61" (1.5cm) nominal opening
820081	81-Cell, 0.54" (1.3cm) nominal opening
820100	100-Cell, 0.49" (1.1cm) nominal opening
4000221	Cryo Marker Pens, four fine tip pens (black, blue, green, and red) with fast-drying, non-smearing, permanent ink

## Inventory Control Systems for Chest Freezers



Stock No.	Description	Maximum Rack Capacity Per Chamber				
		3.0 Cu. Ft.	6.7 Cu. Ft.	12.7 Cu. Ft.	17.0 Cu. Ft.	20.0 Cu. Ft.
3	<b>Rack with Handle</b> 5.5"W x 16.0"H x 5.5"F-B (14.0cm x 40.6cm x 14.0cm)					
	820007 with 7 - 2.0" boxes	9	18			
	920007 without 2.0" boxes	9	18			
	820005 with 5 - 3.0" boxes	9	18			
2	920005 without 3.0" boxes	9	18			
	5.5"W x 26.5"H x 5.5"F-B (14.0cm x 67.3cm x 14.0cm)					
	820012 with 12 - 2.0" boxes			21	29	33
	920012 without 2.0" boxes			21	29	33
	820008 with 8 - 3.0" boxes			21	29	33
920008 without 3.0" boxes			21	29	33	
4	<b>Microplate Rack with Handle</b> 5.3"W x 25.8"H x 3.6"F-B (13.5cm x 65.5cm x 9.1cm)					
	820027 27 position			33	48	51
1	<b>Wire Basket and Rail Sets</b> 11.8"W x 12.3"H x 16.5"F-B (24.8cm x 31.1cm x 41.9cm)					
	114048 wire basket with roller			5		9
	189001 rail set for 12.7 cu. ft. chests					
189000 rail set for 20.0 cu. ft. chests						

## 6", 7 Day Temperature Recorders

Chart recorders are installed within easy view (e.g., eye level on uprights) and reach on our 8600 and 900 -86C Series Freezers for **easy monitoring and paper changes**, and in the base of the 700 Series.

These chart recorders are for current 120V and 230V Forma freezer models. Recorders for discontinued models are available. Contact us for details.



Stock No.	Description
	<b>Built-In 6", 7 Day Circular Chart Recorders, -100C to 38C (-148F to 100.4F), single pen, includes felt tip pen and box of chart paper –</b>
201240	Recorder, customer installed*
201241	Recorder, factory installed
17020	Chart Paper, 50 charts per box
245231	Red Felt-Tip Replacement Pen
245232	Blue Felt-Tip Replacement Pen

Stock No.	Description
	<b>Built-In 6", 7 Day Inkless Circular Chart Recorders, -115C to 50C (-175F to 122F), single pressure-sensitive pen, includes inkless pen and box of chart paper –</b>
201248	Inkless Recorder, customer installed*
201249	Inkless Recorder, factory Installed
180000	Chart Paper, 50 charts per box

\*Must be installed by qualified personnel

## Dataloggers

Dataloggers are located within easy view (e.g., eye level on uprights) and reach on our 8600 and 900 -86C Series Freezers for **easy monitoring**, and in the base of the 700 Series.

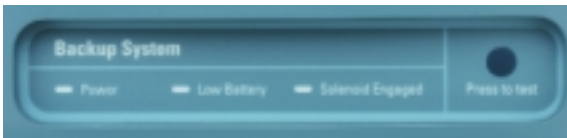


Dataloggers are designed to meet U.S. FDA guidelines cGLP 21 CFR Part 58, Software Validation 21 CFR Part 820, and Electronic Records 21 CFR Part 11. Full compliance requires user training. Contact our Services Department (888-213-1790) for an implementation quotation.

Stock No.	Description
	<b>Built-In Dataloggers, -90C to 140C (-130F to 284F), with evaluation software and PC data cable –</b>
201246	Datalogger, customer installed*
201247	Datalogger, factory installed

## Safety Back-Up Systems, Wall Clamp, and Hoses

Back-up systems provide the **convenience, reassurance, and reliability** you need in the event of a power or mechanical failure. A CO<sub>2</sub> or LN<sub>2</sub> safety back-up system is a must for your critical storage applications.



Stock No.	Description
	<b>Back-Up Systems for Uprights and 3.0 and 6.7 Cu. Ft. Chests –</b>
195875	Deluxe CO <sub>2</sub> Back-Up, factory installed
195876	Deluxe CO <sub>2</sub> Back-Up, customer installed*
195877	LN <sub>2</sub> Back-Up, factory installed
195878	LN <sub>2</sub> Back-Up, customer installed*
	<b>Back-Up Systems for 12.7, 17.0, and 20.0 Cu. Ft. Chests –</b>
195943	Deluxe CO <sub>2</sub> Back-Up, factory installed
195944	Deluxe CO <sub>2</sub> Back-Up, customer installed*
195945	LN <sub>2</sub> Back-Up, factory installed
195946	LN <sub>2</sub> Back-Up, customer installed*
950316	Wall Clamp, CO <sub>2</sub> cylinder holder for securing tank to wall in accordance with OSHA regulations
991505	High Pressure Liquid CO <sub>2</sub> Hose, kink resistant Type 316 stainless steel with stainless steel liner covered with double-braided stainless steel sheath, 1/4" NPT Type 316 stainless steel female fitting, maximum working pressure 2500 psig in 6 ft. (1.8m) lengths
4000401	LN <sub>2</sub> Transfer Hose, flexible 6 ft. (1.8m) metal hose, 0.5" (1.3cm) diameter, 45 degree flare with swivel ends

\*Must be installed by qualified personnel

## Sensaphone Telephone Dialing Systems

Do you want to be notified of an alarm condition even if you are at home? A Sensaphone Telephone Dialing System is your answer.



The system interfaces with any standard touch tone phone. It monitors the electrical power, ambient temperature where the telephone dialing system is located, and time.

The Sensaphone **automatically calls** you and states, in English, any abnormal conditions and then hangs up. All messages are pre-programmed. Parties are called in sequence until the warning message is received and acknowledged.

You are also **able to call the lab or office from anywhere**, and the **system will state the status** of every monitored condition. The built-in microphone allows you to listen to the office or lab.

Battery back-up is standard (six D-size alkaline batteries are required). Battery life is up to 15 hours after the AC power has failed, and up to 18 months with AC power on.

Stock No.	Description
	<b>Sensaphone Telephone Dialing Systems, 120V, 60 Hz; 7.8"W x 2.0"H x 8.6"F-B (19.8cm x 5.1cm x 21.8cm); 8.0 lbs. (4.0 kg) –</b>
400047	Monitors up to four inputs (channels) and dials up to four different numbers
400134	Monitors up to eight inputs (channels) and dials up to eight numbers

The Sensaphone can be used with our Model 1535 Monitor/Alarm System that features programmable audible/visual alarms and updates/displays equipment conditions on an LCD readout. Request a copy of our *Forma Monitor/Alarm System* brochure, or visit [www.thermo.com](http://www.thermo.com) for details.

## Temperature/Power Monitors

Digital and audible/visual alarms are **ideal for monitoring the temperature and power supply** of Forma freezers, lab refrigerators, and incubators, or other equipment within the specified temperature ranges.

### Digital Temperature/Power Monitor with Alarm Silence

The Digital Temperature/Power Monitor, which **can be mounted to your equipment**, includes one temperature probe encased in a stainless steel sheath with a 20 ft. (6.1m) lead wire. Monitoring range is -135C to 99C (-211F to 210.2F).



#### Digital temperature readout is easy to view.

Indicator lights exist for power, normal operation, and alarm. Audible alarm also sounds if a power failure or alarm condition occurs.

Adjustable high/low alarms can be set digitally. Alarm silence is momentary-timed. Key switch allows standby mode until temperature is fully recovered and then rings back to remind you to switch to normal operation. Alarm test system (high alarm only) is standard.

The unit also features a recharging nickel cadmium battery back-up system, remote alarm contacts, millivolt output signal (for use with our Model 1535 Monitor/Alarm System), and an 8 ft. (2.4m) electrical line cord.

Stock No.	Description
	<b>Digital Temp/Power Monitors, 10.0"W x 10.0"H x 4.0"F-B (25.4cm x 25.4cm x 10.2cm) –</b>
400048	120V, 60 Hz
400049	230V, 50 Hz

### Audible/Visual Temperature/Power Monitor

**Compact** Temperature/Power Monitor, which operates on a 120V power source, **attaches to a wall or equipment for convenient single unit monitoring.**

The monitoring range is -90C to 40C (-130F to 104F).



Audible/visual alarms alert you of over and undertemperature conditions and power loss (alarm can be reset when cabinet temperature returns to normal). Battery back-up power keeps the monitor operational, even during a power failure.

Ringback system provides additional protection. The self-contained probe avoids reliance on equipment remote alarm contacts, providing an additional level of safety. Unit includes remote alarm contacts for connection to a Forma Remote Alarm.

Stock No.	Description
290003	Temp/Power Monitor, 120V, 60 Hz; 4.3"W x 6.3"H x 2.0"F-B (10.9cm x 16.0cm x 5.1cm)

## Remote Alarms

Forma Remote Alarms are designed for areas where an alarm may not be readily heard. These alarms **extend your existing alarm system to a remote location in the facility.**

The lightweight units **attach to a wall or cabinet for convenience.** The alarms operate on line voltage and switch to battery back-up if a power failure occurs. The remote alarms can be connected easily to a temperature/power monitor and remote alarm contacts on our products.

Units come complete with an audible **alarm silence switch and alarm ringback** feature. You can temporarily defeat any alarm, but the **system rings back as a reminder to reset** when normal conditions are restored.

No. 400040 (shown left) and No. 400011 (shown right) include audible and/or visual alarms to indicate an alarm condition on monitored equipment.



Stock No.	Description
	<b>Remote Alarms, 4.3"W x 6.3"H (10.9cm x 16.0cm) –</b>
400011	120V, 60 Hz; audible signal; 2.0" (5.1cm) F-B
400040	120V, 60 Hz; audible and visual signal; 1.5" (3.8cm) F-B
400041	230V, 50 Hz; audible and visual signal; 1.5" (3.8cm) F-B

Do you need a specific accessory, such as a back-up system, recorder, or filter, for a discontinued Forma freezer model?

Contact us—we can help!

## Data Outputs

Although RS-232 and 4-40 milliamp analog outputs are standard on the 8600 Series, we also offer the following options to meet your specific needs.

Stock No.	Description
	<b>Optional Data Outputs, factory installed –</b>
195895	RS-232, 0-1V
195896	RS-232, 0-5V
195897	RS-485, 4-20 milliamp
195898	RS-485, 0-1V
195899	RS-485, 0-5V

RS-232 allows connection to a computer, recorder, or independent monitoring device. (RS-232 is not compatible with our Model 1535 Monitor/Alarm System.) RS-485 allows direct connection to the Model 1535 Monitor/Alarm System.

## Cryo Gloves



Stock No.	Description
	<b>Wrist-Length, 12.0" (30.5cm), one pair –</b>
189573	Small
189574	Medium
189575	Large
	<b>Mid-Arm Length, 14.0" to 15.0" (35.6cm to 38.1cm), one pair –</b>
189561	Medium
189562	Large
189563	Extra Large
	<b>Elbow-Length, 18.0" to 30.0" (45.7cm to 50.8cm), one pair –</b>
189564	Medium
189565	Large
189566	Extra Large
	<b>Shoulder-Length, 28.0" (71.1cm), one pair –</b>
189567	Medium
189568	Large
189569	Extra Large

## Water-Cooled Condenser Option

The water-cooled condenser option is available for our -86C uprights and -86C 12.7, 17.0, and 20.0 cu. ft. chests.

Your **work environment stays cooler** because less heat is emitted to your surroundings (i.e., less BTU rejection). A water regulating valve automatically controls the water flow needed to maintain the compressor discharge pressure. Cooler compressor temperatures **enhance compressor stability and reliability**.

Stock No.	Description
	<b>Water-Cooled Condensers –</b>
195964	For 13.0 Cu. Ft. Uprights
195965	For 17.3, 23.0, and 28.0 Cu. Ft. Uprights
195967	For 12.7, 17.0, and 20.0 Cu. Ft. Chests

Like our standard freezers, those with the water-cooled condenser option are also UL Listed to Canadian and United States requirements and bear the CE Mark.

## Specifications

These specifications apply to tower and city water sources.

### Water Pressure and Temperature

Maximum Pressure . . . . . 150 psig  
 Maximum Temperature . . . 29.4C (85F)

### Connections

Inlet . . . . . 0.5" compression  
 Outlet . . . . . 0.5" compression

### Water Flow Rate Required

Tower Water . . . . . 3.0 gallons (11.4 liters) per minute  
 City Water . . . . . 1.0 gallon (3.8 liters) per minute

### Drain Required?

Tower Water . . . . . No (return line is required)  
 City Water . . . . . Yes

Installation requires a qualified technician and should include proper adjustment of the regulating valve, which controls the discharge pressure.

Condenser options for discontinued freezer models are available. Contact us for details.

## Inner Door Kits for Uprights

Interior compartment doors **reduce cold air loss and improve temperature recovery** after door closings. (Four interior doors are already included on our -86C uprights.)



Stock No.	Description
189404	Interior Door Kit for Forma -40C Lab Freezers (Uprights), includes four interior doors with latches, factory installed
	<b>Five Inner Door Option for 8600 and 900 Series, includes five powder coated inner doors and one additional shelf, factory installed –</b>
189405	For 13.0 Cu. Ft. Uprights
189406	For 17.3 Cu. Ft. Uprights
189407	For 23.0 Cu. Ft. Uprights
195652	For 28.0 Cu. Ft. Uprights

## Shelving for Uprights

Stock No.	Description
	<b>Stainless Steel Shelf Kits for 8600 and 900 Series, include mounting hardware –</b>
224134	For 13.0 Cu. Ft. Uprights
224135	For 17.3 Cu. Ft. Uprights
224158	For 23.0 Cu. Ft. Uprights
224180	For 28.0 Cu. Ft. Uprights
	<b>Behind-the-Mullion Shelf for 8600 and 900 Series –</b>
195338	For 13.0 Cu. Ft. Double Door Uprights
195339	For 17.3 Cu. Ft. Double Door Uprights
195340	For 23.0 Cu. Ft. Double Door Uprights

## Air Filter Replacement Kits

Stock No.	Description
	<b>Air Filter Replacement Kits, value pack of five filters –</b>
195890	For 8600, 900, and 700 Series Uprights
195947	For 3.0 and 6.7 Cu. Ft. Chests
195948	For 12.7, 17.0, and 20.0 Cu. Ft. Chests

Air filters for discontinued freezer models are available. Contact us for details.

## Sample Probe Kits for 8600 Series Uprights

Probe kits are useful to measure sample temperature or top chamber temperature, **assuring you of the sample temperature or uniformity between the top and bottom of the freezer.**

Stock No.	Description
	<b>Sample Probe Kits, include probe clip, 0.25" diameter fuse, and probe –</b>
195892	Kit, customer installed*
195893	Kit, factory installed

## Freezerworks® 5 Inventory Management System

Stock No.	Description
195625	Freezerworks 5.3 Software CD, includes documentation
195626	300 DPI Printer Package, includes cables, printer software, and roll holder
195627	Hand Held Bar Code Scanner (for PC systems), includes cables
195628	Labels (1ml wraparound roll of 600 labels)
195630	Desktop Holdster for Scanner
195663	Printer Ribbon
195629	Freezerworks 5 Bar Code Package Sample inventory management system (Windows®, Macintosh®, and NT® based) with functions such as transaction entry, user-defined fields, reporting, sample movement, searching, and an audit trail; package includes No. 195625, 195626, 195627, three 195628, 195630, and 195663



## IQ/OQs

Stock No.	Description
	<b>IQ/OQs, include MS Windows-compatible document disk and detailed checklists to qualify unit setup and operation –</b>
6008602	For 8600 Series -86C Freezers
6000902	For 900 Series -86C Freezers
6000702	For 700 Series -86C Freezers
6000722	For 700 Series -40C Freezers

## Miscellaneous Accessories

Stock No.	Description
189620	Access Port, 1.3" inside diameter, factory installed
195915	Unique Key Lock, factory installed

\*Must be installed by qualified personnel

### A Leader in Controlled Environment Equipment

Whether you are storing, preparing, culturing, or analyzing samples, Thermo has the research tools you depend on to succeed in the lab. We have been providing high quality, reliable controlled environment laboratory products for a wide variety of clinical, educational, biotechnological, pharmaceutical, and industrial applications for more than 50 years.

We offer the following:

- Forma Cell Culture Incubators
- Forma *In Vitro* Fertilization (IVF) Incubators and CryoMed® Controlled Rate Freezers
- Forma Environmental Chambers
- Forma Ultra-Low Temperature Freezers
- Forma Laminar Airflow Equipment
- Forma Biological Safety Cabinets
- Forma Cryopreservation Equipment
- Forma Blood Bank Equipment
- Forma Circulating Baths
- Forma Monitor/Alarm System
- Forma Orbital Shakers
- Forma Programmable Centrifuges
- Forma Lab Washers/Dryers
- Forma Lab Refrigerators
- Forma Lab Freezers
- Forma Chromatography Refrigerators
- Custom-Designed Equipment
- Laboratory Services

#### About Thermo

A world leader in high-tech instruments, Thermo Electron Corporation helps life science, laboratory, and industrial customers advance scientific knowledge, enable drug discovery, improve manufacturing processes, and protect people and the environment with instruments, scientific equipment, and integrated software solutions.

© 2004 Thermo Electron Corporation. All rights reserved. Sensaphone is a registered trademark of Phonetics Corporation. Windows and NT are registered trademarks of Microsoft Corporation. Freezerworks is a registered trademark of Dataworks Development. Macintosh is a registered trademark of Apple Computer, Inc. All other trademarks and registered trademarks are the property of Thermo Electron Corporation and its subsidiaries. Specifications, terms, and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

Rev. 0, 02/04 10M

Controlled Environment Equipment  
P.O. Box 649 • Marietta, OH 45750  
740-373-4763 • Fax: 740-373-6770  
Toll Free USA and Canada 866-984-3766

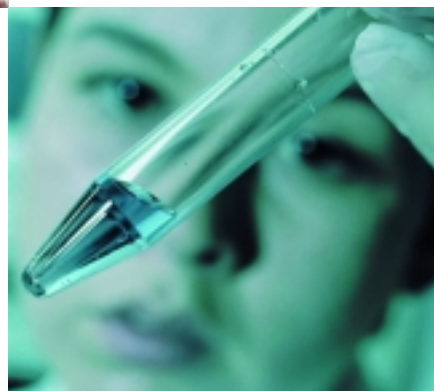
[www.thermo.com](http://www.thermo.com)

### One Convenient Source, Total Solutions

Thermo's **expertise extends beyond controlled environment equipment**. In fact, you may be surprised by the breadth of products and services we offer.

Our **life and laboratory sciences and services, optical technologies, measurement and control, turnkey operations**, and even **capital equipment financing specialists** are eager to share their knowledge and work as your partner...for life.

The benefit? We're people of science working with people of science. And you will quickly discover the value of one convenient source providing total solutions tailored to your specific needs.



**Thermo**  
ELECTRON CORPORATION