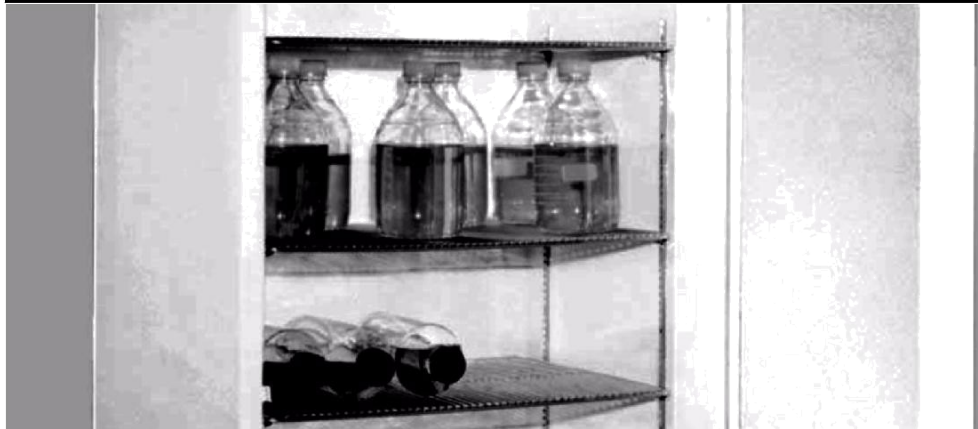


Installation and Operation Manual

Thermo Scientific
General Purpose and Flammable Storage
Laboratory Refrigerators and Freezers



© 2014 Thermo Fisher Scientific. All rights reserved.



General Purpose and Flammable Materials Storage Refrigerators and Freezers

Cool-Lab General Purpose:

20LFEETSA, 20LREETSA, 20LFEETSV

Flammable Material Storage:

20FFEETSA,20FREETSA,20FFEETSV,20FRCETSV ,20FREETSV

Table of Contents

Safety Information.....	1
Alert Signals.....	1
Intended Use.....	3
Unpacking.....	4
Visible Loss or Damage.....	4
Concealed Loss or Damage.....	4
Performance Characteristics.....	5
Temperature Ranges.....	5
Electrical Requirements.....	5
Installation.....	6
Electrical.....	6
Be Advised.....	6
Selecting a Location.....	7
Leveling the Unit.....	7
Shelves.....	8
Electrical Connection.....	7
Operation.....	9
Initial Startup.....	9
Condensate Disposal.....	9
Material Compatibility.....	10
Troubleshooting.....	11
Maintenance.....	12
Cabinet Cleaning.....	12
Condenser.....	12
Warranty.....	13







Safety Information

Your satisfaction and safety are important to Thermo Scientific and a complete understanding of this unit is necessary to attain these objectives.

As the ultimate user of this apparatus, it is your responsibility to understand its proper function and operational characteristics. This instruction manual should be thoroughly read and all operators given adequate training before attempting to place this unit in service. Awareness of the stated cautions and warnings, and compliance with recommended operating parameters – together with maintenance requirements – are important for safe and satisfactory operation. The unit should be used for its intended application; alterations or modifications will void the Warranty.

This product is not intended, nor can it be used, as a sterile or patient connected device. In addition, this apparatus is not designed for use in Class I, II or III locations as defined by the National Electrical Code, unless otherwise noted.

Alert Signals

I	ON	
0	OFF	
	Safety Alert	Important operating instructions. To reduce the risk of injury or poor performance of the unit read the user manual before putting the equipment into operation.
 Danger	DANGER	Indicates an immediately hazardous situation, which if not avoided, will result in death or serious injury.
 Warning	WARNING	Indicates an immediately hazardous situation, which if not avoided, will result in death or serious injury.
 Caution	CAUTION	(Without Safety Alert Symbol) indicates a situation that may result in property damage.
(No Symbol)	CAUTION	(Without Safety Alert Symbol) indicates a situation that may result in property damage.
	Shock Hazard	Use of this equipment involves power supplies which convert line voltage to low voltage power. Do not modify or use power supplies other than OEM equipment. Connection of the power supply may require a properly grounded receptacle. Potential for electrical shock or equipment damage exists if precautions are not followed.
	Frost bite/ Low Temperature	Avoid contact with cold freezer surfaces potential for cold burns or skin sticking to cold surfaces.

Safety Information



Danger

DANGER RISK OF CHILD ENTRAPMENT Before you throw away your old refrigerator or freezer:

- Take off doors
- Leave the shelves in the place so that children may not easily climb inside.



Warning

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Intended Use

The Refrigerators/Freezers described in this manual are for professional use only. These products are intended for use in research for the storage of samples or inventory in the following temperature ranges:

Refrigerators +1°C to +12°C
Freezers -12°C to -20°C



Warning

Warning

Only Explosion Proof Units or Flammable Material Storage Units are to be used for the storage of flammable inventory/samples.

These are not considered medical devices and have therefore not been registered with a medical device regulatory body (e.g. FDA); that is, it has not been evaluated for the storage of samples for diagnostic use or for samples to be re-introduced to the body.

Unpacking

Save all packing material if apparatus is received damaged. This merchandise was carefully packed and thoroughly inspected before leaving our factory.

Responsibility for its safe delivery was assumed by the carrier upon acceptance of the shipment; therefore, claims for loss or damage sustained in transit must be made upon the carrier by the recipient as follows:

Visible Loss or Damage

Note any external evidence of loss or damage on the freight bill, or express receipt, and have it signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier's refusing to honor your damage claim. The form required to file such a claim will be supplied by the carrier.

Concealed Loss or Damage

Concealed loss or damage refers to loss or damage, which does not become apparent until the merchandise has been unpacked and inspected. Should either occur, make a written request for the carrier's agent within 15 days of the delivery date; then file a claim with the carrier since the damage is the carrier's responsibility.

If you follow the above instructions carefully, we will guarantee our full support of your claim to be compensated for loss from concealed damage.

DO NOT – FOR ANY REASON – RETURN THIS UNIT WITHOUT FIRST OBTAINING AUTHORIZATION

Performance Characteristics

Temperature Ranges

Refrigerator: 1° to 12°C (34° to 54°F)
Freezer: -20° to -12°C (-4° to 10°F)

Electrical Requirements

For 20LFEETSA and 20FFEETSA

115 Volts \pm 10%, 60 Hz, 3.0 Amps

For 20LFEETSV,20FFEETSV,20FRCETSV ,20FREETSV

230 +/- 10% ,50 Hz, 6.22 Amps

For 20LREETSA

115 Volts \pm 10%, 60 Hz, 4.0 Amps

Installation

**Caution**

DO NOT REMOVE, under any circumstance, the grounding prongs from the 3-prong power cord supplied with all units.

**Caution**

DO NOT USE electrical extension cords that may result in voltage loss and possible hazardous operation.

**Warning**

Explosion-proof units do not come with line cords. They require rigid conduit to be run directly in order to seal off the fitting on thermostat housing. This should be done by a licensed electrician and follow all local electrical codes. If any questions pertaining to electrical safety arise, please refer to article 501 of the National Electrical Code.

Electrical

Flammable Material Storage and General Purpose units must be connected to a grounded outlet matching the nameplate and/or the information furnished in this manual. If you are not sure about the outlet, you should contact a qualified electrician for assistance. Explosion-Proof units must be hardwired by a qualified electrician.

Explosion-Proof unit should always be connected to a dedicated power source.

Be Advised

**Warning**

UNLESS UNIT IS SPECIFICALLY DESIGNED FOR COMBUSTIBLE OR FLAMMABLE ATMOSPHERES DO NOT USE IN THE PRESENCE OF FLAMMABLE OR COMBUSTIBLE MATERIALS OR EXPLOSIVE GASES. DO NOT USE IN THE PRESENCE OF PRESSURIZED OR SEALED CONTAINERS— FIRE OR EXPLOSION MAY RESULT CAUSING DEATH.

**Caution**

BEFORE CONNECTING THE FINAL POWER SUPPLY, CHECK THE ELECTRICAL CHARACTERISTICS OF THE UNIT NAMEPLATE TO SEE THAT IT IS IN AGREEMENT WITH THE POWER SUPPLIED. IN ADDITION, POWER SHOULD BE WIRED TO THE UNIT ACCORDING TO THE ELECTRICAL SCHEMATIC AND ALL APPLICABLE CODES. ONLY QUALIFIED ELECTRICIANS SHOULD WORK ON THE ELECTRICAL PORTION OF ANY UNIT INSTALLATION.

**Caution**

STORAGE BY USER OF ANY MATERIALS IN THE PRODUCT THAT MAY CAUSE A DETERIORATION OF THE PRODUCT SHALL BE DEEMED TO CONSTITUTE ABNORMAL AND IMPROPER USAGE OF THE PRODUCT FOR PURPOSES OF THIS WARRANTY.

**Warning**

RISK OF CHILD ENTRAPMENT! Before you discard your old refrigerator or freezer:

Warning

- Remove door(s),
- Leave the shelves in place so that children may not easily climb inside.

Selecting a Location

Choose a location for the refrigerator freezer that will provide at least three inches of clearance between the cabinet and any adjacent vertical surface at the sides, one inch at the bottom, 3 inches at the rear and top of the unit. Appropriate electrical power must be available. Locate the refrigerator within eight feet of the power outlet so that no extension cord is required.

Leveling the Unit

The refrigerator and freezer must be level in order to provide adequate condensate drainage as well as proper door alignment and operation. The refrigerator and freezer should be in its final operating location and set so that it is firmly positioned on the floor.

After discarding crating screws and wood base, level the freezer side-to-side and front to back by adjusting the supplied leveling feet.

Shelves

20LF & FF models : Shipped inside each cabinet are four fixed wire shelves which also serve as part of evaporator coils

20LR models : Shipped inside each cabinet are four adjustable wire shelves

20FR models : Shipped inside each cabinet are four shelves, one shelf is a sheet metal shelf & others are wired shelves that are fixed.

Electrical Connection



Caution

Be sure that the power supply is the same voltage that is specified on the unit's data plate.

Caution



Warning

For personal safety this unit must be properly grounded.

Warning



Caution

Do not use an extension cord. Use of an ungrounded cord or an overloaded circuit **VOIDS** the compressor warranty.

Caution



Warning

DO NOT under any circumstances cut or remove the third (ground) prong from the power cord. **DO NOT** use a two-prong adapter plug. Where a two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the user to have it replaced with a properly grounded three-prong receptacle.

Warning

Determine the total amount of current presently being used by other apparatus connected to the circuit that will be used by this refrigerator. It is critical that this added current demand and other equipment on this circuit not exceed the rating of the fuse or circuit breaker in use. The frequency and nominal voltage requirements for the unit are specified on the data plate, which is located on the interior's upper left side. Only plug the unit into a power source that meets these requirements. Low line voltage is often the cause of service complaints. With the unit running, check that the line voltage is within $\pm 10\%$ of that specified on the data plate.

The power cord on this product is equipped with a three-prong (grounding) plug appropriate for the voltage, current, and location for which it was designed. The plug will mate with a standard grounding outlet of the corresponding configuration to minimize the potential of an electrical shock hazard. It is the customer's responsibility to have the wall receptacle and supply circuit checked by a qualified electrician to verify that they are appropriate for the power requirements of the product, that they match the supplied plug, and that they are properly grounded and have over-current protection.

Operation



Warning

Warning

If the unit is tilted in excess of 30 degrees, do not apply electrical power for a minimum of 12 hours.

Initial Startup

Turn power on and verify that the condenser fan is running. This model has a condenser fan located on the condensing unit on top of the cabinet.

Condensate Disposal

20LF & FF models : The condensate drain is at the center rear of the interior floor. The condensate drain tube is connected to this drain and is attached to the left front bottom of the unit behind the front sheet metal. Unhook and place the drain tube into a suitable pan and remove the drain plug. Turn the power to the unit to the off position (O) and allow the unit to defrost.

20LR models : Equipped with a compressor-mounted drain pan that collects condensate during each defrost cycle. This compressor-mounted drain pan takes advantage of the heat generated by the compressor to evaporate condensate water, so there is no need to empty the pan during each defrost cycle.

20FR models : Equipped with a drain pan that collects condensate during manual defrost. This drain pan takes advantage of the heat generated by the compressor to evaporate condensate water, so there is no need to empty the pan during each defrost cycle.



Warning

Warning

Do not heat any substance above a temperature which will cause it to emit toxic fumes death or severe injury may result

Material Compatibility

The interior cabinet of this unit is constructed of HIPS(High Impact Polystyrene) steel. Care must be exercised when determining which chemicals may be stored in the refrigerator and freezer sections and which type of storage materials should be employed.

HIPS(High Impact Poly styrene) Plastic deteriorates when exposed to, but not limited to the following:

Amines(Aromatic), Aldehydes(Aromatic, Aliphatic), Ketones (Aromatic, Aliphatic), esters(Aromatic, Aliphatic), Ethers (Aromatic, Aliphatic), Hydrocarbons(Aromatic, Halogenated)

This information is taken from Plastics Edition 8 Thermoplastics and Thermosets published by D.A.T.A. and The International Plastics Selector, Inc. Cordura Companies

9889 Willow Creek Road P.O. Box 26637

San Diego, California 92126

Troubleshooting

This table is intended to assist in resolving user-correctable refrigerator problems by relating symptoms to their likely causes. If service beyond the scope of this table is required, contact Customer Service at 1-800-438-4851.

<u>Symptom</u>	<u>Probable Cause</u>	<u>Action</u>
Does Not Run	Unit Unplugged Blown fuse or tripped circuit Breaker	Plug in Check fuse or circuit breaker at breaker box
Runs Continuously	Frost buildup on refrigeration coils	Defrost unit
Clicking Sound	The compressor is equipped with a thermal protector. This device shuts off the compressor when it becomes too hot. A clicking sound occurring about every 30 seconds indicates this protector is working	Unplug unit for 1 hr. Plug in and try running again. If the unit doesn't begin to run, call for service.
Insufficient Cooling	Thermostat set too high Unit frosted	Reduce thermostat setting Defrost unit

Maintenance



Warning

Warning

When servicing the unit, disconnect from the electrical power source



Caution

Caution

Do not use any type of abrasive such as steel wool, or fluids such as gasoline, Naphtha, and thinner. These materials could be harmful to aluminum, plastic materials, door gasket, and painted surfaces.

Cabinet Cleaning

The cabinet interior should be cleaned frequently. Any spilled liquid should be wiped off immediately. Stains resulting from some spills can be permanent if not quickly removed. The most convenient time to clean the interior is after defrosting. The cabinet exterior should be cleaned occasionally. A mild detergent and lukewarm water or a solution of bicarbonate of soda (1 tablespoon per gallon of water) is recommended for cleaning the interior and exterior of the cabinet. All surfaces should be rinsed and thoroughly dried.

Condenser

The condenser coil is located behind the sides and rear exterior panel. These surfaces may be warm to the touch. This is necessary to the operation of the refrigeration equipment and is normal.

One Year Limited Warranty

This Thermo Scientific product is warranted to be free of defects in materials and workmanship for one (1) year from the first to occur of (i) the date the product is sold by the manufacturer or (ii) the date the product is purchased by the original retail customer (the "Commencement Date"). Except as expressly stated above, the MANUFACTURER MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS AND EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF DESIGN, MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

An authorized representative of the manufacturer must perform all warranty inspections. In the event of a defect covered by the warranty, we shall, as our sole obligation and exclusive remedy, provide free replacement parts to remedy the defective product. In addition, for products sold within the continental United States or Canada, the manufacturer shall provide free labor to repair the products with the replacement parts, but only for a period of ninety (90) days from the Commencement Date.

The warranty provided hereunder shall be null and void and without further force or effect if there is any (i) repair made to the product by a party other than the manufacturer or its duly authorized service representative, (ii) misuse (including use inconsistent with written operating instructions for the product), mishandling, contamination, overheating, modification or alteration of the product by any customer or third party or (iii) use of replacement parts that are obtained from a party who is not an authorized dealer of Thermo Scientific products.

Heating elements, because of their susceptibility to overheating and contamination, must be returned to the factory and if, upon inspection, it is concluded that failure is due to factors other than excessive high temperature or contamination, the manufacturer will provide warranty replacement. As a condition to the return of any product, or any constituent part thereof, to the factory, it shall be sent prepaid and a prior written authorization from the manufacturer assigning a Return Materials Number to the product or part shall be obtained.

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO ANY PARTY FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR ANY DAMAGES RESULTING FROM LOSS OF USE OR PROFITS, ANTICIPATED OR OTHERWISE, ARISING OUT OF OR IN CONNECTION WITH THE SALE, USE OR PERFORMANCE OF ANY PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), ANY THEORY OF STRICT LIABILITY OR REGULATORY ACTION.

For the name of the authorized Thermo Scientific product dealer nearest you or any additional information, contact us

www.thermofisher.com

1-866-9-THERMO

WEEE Compliance

WEEE Compliance. This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96EC. It is marked with the following symbol. Thermo Fisher Scientific has contracted with one or more recycling/disposal companies in each EU Member State, and this product should be disposed of or recycled through them. Further information on Thermo Fisher Scientific compliance with these Directives, the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive are available at www.thermo.com/

WEEE Konformität. Dieses Produkt muss die EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2002/96EC erfüllen. Das Produkt ist durch folgendes Symbol gekennzeichnet. Thermo Fisher Scientific hat Vereinbarungen getroffen mit Verwertungs/Entsorgungsanlagen in allen EU-Mitgliederstaaten und dieses Produkt muss durch diese Firmen verwertet oder entsorgt werden. Mehr Informationen über die Einhaltung dieser Anweisungen durch Thermo Fisher Scientific, die Verwerter und Hinweise die Ihnen nützlich sein können, die Thermo Scientific Produkte zu identifizieren, die unter diese RoHS. Anweisung fallen, finden Sie unter www.thermo.com/

Conformità WEEE. Questo prodotto deve rispondere alla direttiva dell' Unione Europea 2002/96EC in merito ai Rifiuti degli Apparecchi Elettrici ed Elettronici (WEEE). È marcato col seguente simbolo. Thermo Fisher Scientific ha stipulato contratti con una o diverse società di riciclaggio/smaltimento in ognuno degli Stati Membri Europei. Questo prodotto verrà smaltito o riciclato tramite queste medesime. Ulteriori informazioni sulla conformità di Thermo Fisher Scientific con queste Direttive, l'elenco delle ditte di riciclaggio nel Vostro paese e informazioni sui prodotti Thermo Scientific che possono essere utili alla rilevazione di sostanze soggette alla Direttiva RoHS sono disponibili sul sito www.thermo.com/

Conformité WEEE. Ce produit doit être conforme à la directive européenne (2002/96EC) des Déchets d'Equipements Electriques et Electroniques (DEEE). Il est marqué par le symbole suivant. Thermo Fisher Scientific s'est associé avec une ou plusieurs compagnies de recyclage dans chaque état membre de l'union européenne et ce produit devrait être collecté ou recyclé par celles- ci. Davantage d'informations sur la conformité de Thermo Fisher Scientific à ces directives, les recycleurs dans votre pays et les informations sur les produits Thermo Scientific qui peuvent aider le détection des substances sujettes à la directive RoHS sont disponibles sur www.thermo.com/

Great Britain



Deutschland



Italian



French



Important

For your future reference and when contacting the factory, please have the following information readily available:

Model Number: _____

Serial Number: _____

Date Purchased: _____

The above information can be found on the dataplate attached to the equipment. If available, please provide the date purchased, the source of purchase (manufacturer or specific agent/rep organization), and purchase order number.

IF YOU NEED ASSISTANCE:

SALES DIVISION

Phone: 828/658-2711 800/252-7100

FAX: 828/645-3368

LABORATORY PARTS and SERVICE

Phone: 800/438-4851

FAX: 828/658-2576

TECHNICAL SUPPORT

Phone: 800/438-4851

Thermo Fisher Scientific Inc.

275 Aiken Road
Asheville, NC 28804
United States

www.thermofisher.com

Thermo
SCIENTIFIC

326726H01 Rev. C