

SINGLE-DECK MERCHANDISER

INSTALLATION & OPERATIONS MANUAL

BMD-H/DELI



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To ensure proper functionality and optimum performance, it is STRONGLY recommended that Hillphoenix specialty cases be installed/serviced by qualified technicians who have experience working with commercial refrigerated display merchandisers and storage cabinets. For a list of Hillphoenix-authorized installation/service contractors, please visit our website at www.hillphoenix.com.

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LIABILITY NOTICE

For Cases with Shelf Lighting Systems

Hillphoenix does NOT design any of its shelf lighting systems or any of its display cases with shelf lighting systems for direct or indirect exposure to water or other liquids. The use of a misting system or water hose on a display case with a shelf lighting system, resulting in the direct or indirect exposure of the lighting system to water, can lead to a number of serious issues (including, without limitation, electrical failures, fire, electric shock, and mold) in turn resulting in personal injury, death, sickness, and/or serious property damage (including, without limitation, to the display itself, to the location where the display is situated [e.g., store] and to any surrounding property). DO NOT use misting systems, water hoses or other devices that spray liquids in Hillphoenix display cases with lighted shelves.

If a misting system or water hose is installed or used on a display case with a shelf lighting system, then Hillphoenix shall not be subject to any obligations or liabilities (whether arising out of breach of contract, warranty, tort [including negligence], strict liability or other theories of law) directly or indirectly resulting from, arising out of or related to such installation or use, including, without limitation, any personal injury, death or property damage resulting from an electrical failure, fire, electric shock, or mold.

P079211M, REVO

Important

At Hillphoenix[®], the safety of our customers and employees, as well as the ongoing performance of our products, are top priorities. To that end, we include important warning messages in all Hillphoenix installation and operations handbooks, accompanied by an alert symbol paired with the word "DANGER", "WARNING", or "CAUTION".

All warning messages will inform you of the potential hazard; how to reduce the risk of case damage, personal injury or death; and what may happen if the instructions are not properly followed.



DANGER

Indicates an immediate threat of death or serious injury if all instructions are not followed carefully.



WARNING

Indicates a potential threat of death or serious injury if all instructions are not followed carefully.



CAUTION

Indicates that failure to properly follow instructions may result in case damage.

Revision History

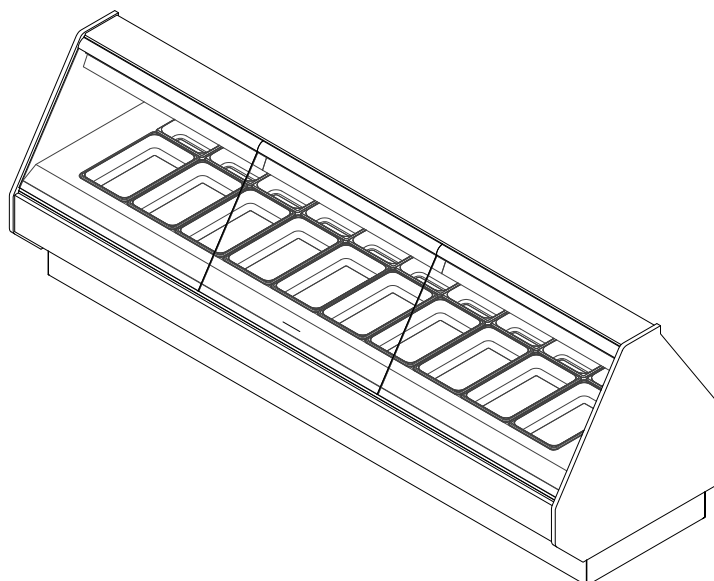
- new manual format_05/19
- warranty_10/19
- technical reference, shipping braces, seismic anchoring, service parts contacts and T-8 connectors notice after shipping_09/21
- technical reference_01/23
- controller update_03/24

BMD-H

Service Single-Deck Hot Merchandiser w/ Flat or Curved Lift Glass
4', 6', 8', 10' & 12' (Deli)

GENERAL NOTES:

- "----" Indicates that the feature is not an option on this case model and/or the data is not yet available at this time.
- Curved glass (optional)



SHIPPING WEIGHT	
Case	Weight
BMD-H	---



ENGINEERED FOR STORES WITH AMBIENT CONDITIONS NOT TO EXCEED 75° AND 55% RELATIVE HUMIDITY. DUE TO ENGINEERING IMPROVEMENTS SPECIFICATIONS MAY CHANGE WITHOUT NOTICE. ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. NUMBERS ARE BASED ON STANDARD CASE SIZES. CONSULT ENGINEERING.

BMD-H

Rev. Date	Rev. #	Rev. Title
03-15-22	4	DATA UPDATE
03-10-21	3	LOGO UPDATE



BMD-H

Service Single-Deck Hot Merchandiser w/ Flat or Curved Lift Glass
4', 6', 8', 10' & 12' (Deli)

SERVICE DATA											
Case Length	Top Heaters		Bottom Heaters		Lights		Shelves		Total Amps (120/208-3-60)		
	Qty	Watts (Each)	Qty	Watts (Each)	Qty	Watts (Each)	Qty	Watts (Each)	L1	L2	L3
4'	3	250	2	600	2	100	---	---	9.38	4.70	5.76
6'	4	250	3	600	3	100	---	---	9.13	11.19	8.56
8'	6	250	4	600	4	100	---	---	12.98	13.10	13.46
10'	7	250	5	600	5	100	---	---	17.01	17.76	13.44
12'	8	250	6	600	6	100	---	---	21.12	19.20	19.50

ELECTRICAL DATA			
Case Length	Fans Per Case	Convection Fans	
		120 Volts	
		Amps	Watts
4'	2	0.06	14
6'	3	0.09	21
8'	4	0.12	28
10'	4	0.12	28
12'	5	0.15	35

LIGHTING DATA				
Case Length	Lights Per Row	Light Length	Incandescent Lighting (Per Light Row)	
			Amps	Watts
4'	2	---	0.96	200
6'	3	---	1.44	300
8'	4	---	1.92	400
10'	5	---	2.40	500
12'	6	---	2.88	600

NOTES:

- "----" Indicates that the feature is not an option on this case model and/or the data is not yet available at this time.



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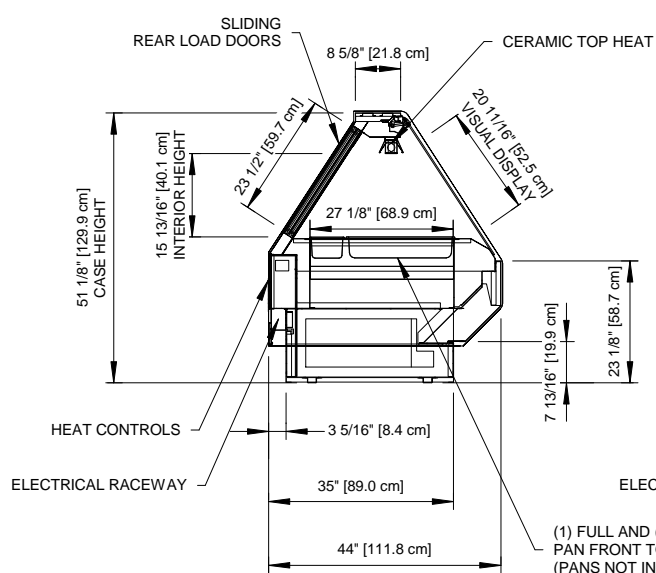
BMD-H

Rev. Date	Rev. #	Rev. Title
03-15-22	4	DATA UPDATE
03-10-21	3	LOGO UPDATE

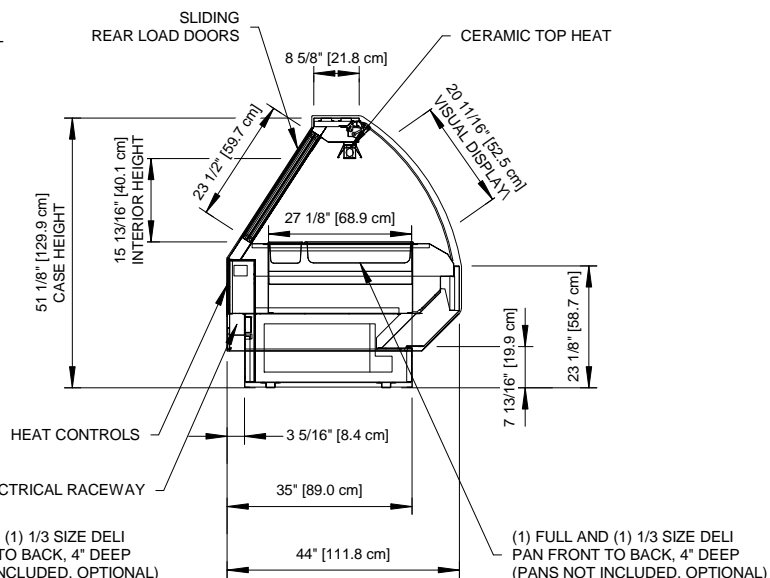


BMD-H

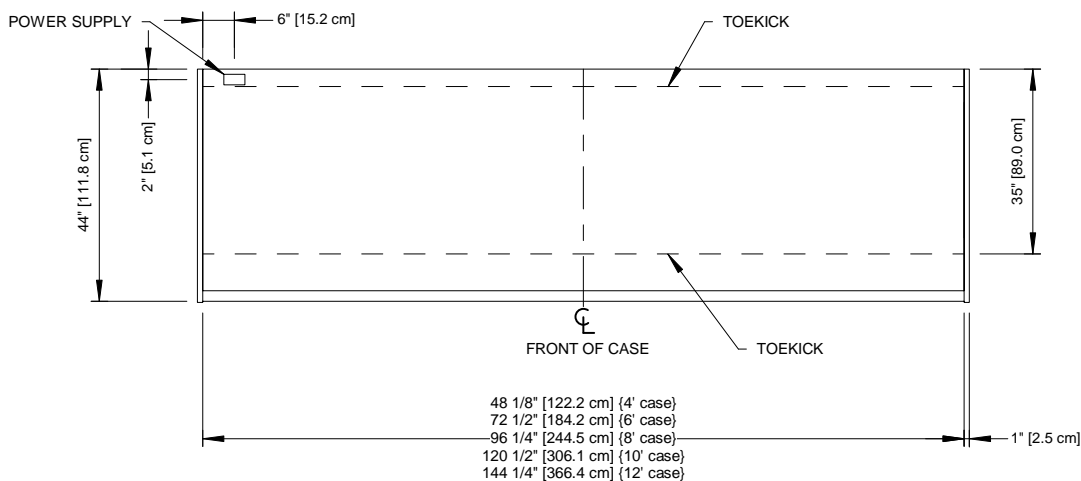
Service Single-Deck Hot Merchandiser w/ Flat or Curved Lift Glass
4', 6', 8', 10' & 12' (Deli)



FLAT GLASS



CURVED GLASS (OPTIONAL)



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BMD-H

Rev. Date	Rev. #	Rev. Title
03-15-22	4	DATA UPDATE
03-10-21	3	LOGO UPDATE

Clearvoyant

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a DOVER company

Thank you for choosing Hillphoenix for your food merchandising needs. This handbook contains important technical information and will assist you with the installation and operation of your new Hillphoenix specialty cases. By closely following the instructions, you can expect peak performance; attractive fit and finish; and long case life.

We are always interested in your suggestions for improvements (e.g. case design, technical documents, etc.). Please feel free to contact our Marketing Services group at the number listed below. Thank you for choosing Hillphoenix, and we wish you the very best in outstanding food merchandising.

CASE DESCRIPTION

This manual specifically covers the BMD-H deli application service single-deck hot merchandiser with flat or curved lift glass.

STORE CONDITIONS

Hillphoenix cases are designed to operate in an air-conditioned store that maintains a 75°F (24°C) store temperature and 55% (max) relative humidity (ASHRAE conditions). Case operation will be adversely affected by exposure to excessively high ambient temperatures and/or humidity.

SHIPPING CASES

Transportation companies assume all liability from the time a shipment is received by them until the time it is delivered to the consumer. Our liability ceases at the time of shipment.

RECEIVING CASES

Examine fixtures carefully and in the event of shipping damage and/or shortages, please contact the Service Parts Department at the number listed below.

CASE DAMAGE

Claims for obvious damage must be 1) noted on either the freight bill or the express receipt and 2) signed by the carrier's agent; otherwise, the carrier may refuse the claim. If damage becomes apparent after the equipment is unpacked, retain all packing materials and submit a written request to the carrier for inspection within 14 days of receipt of the equipment.

Failure to follow this procedure will result in refusal by the carrier to honor any claims with a consequent loss to the consumer.

If a UPS shipment has been damaged, retain the damaged material, the carton and notify us at once. We will file a claim.

LOST/MISSING ITEMS

Equipment has been carefully inspected to insure the highest level of quality. Any claim for lost/missing items must be made to Hillphoenix within 48 hours of receipt of the equipment. When making a claim please use the number listed below.

SERVICE PARTS & TECHNICAL SUPPORT

For service parts questions regarding our cases, please contact our Service Parts Department at 1-844-HPX-PART (1-844-479-7278) or dfr-ia-parts@doverfoodretail.com

For technical questions regarding our cases, please contact our Technical Support Department at 1-833-280-5714.

CONTACTING THE FACTORY

If you need to contact Hillphoenix regarding a specific fixture, be certain that you have both the case model number and serial number. (This information can be found on the data tag, located at the top-left interior, rear exterior panel or interior rear lower storage of the case. *Location may vary based on case design.*)

Hillphoenix Specialty Products
703 Franklin Street, PO Box 478
Keosauqua, IA 52565
Website: www.hillphoenix.com

CASE INSTALLATION

LOCATION

This hot display case has been designed for displaying and storing perishable food product. It is engineered for air-conditioned stores with a maximum ambient of 75 °F and 55% relative humidity.

When selecting the location for placement of this case, avoid the following conditions:

Excessive Air Movement

1. Doors
2. Air-conditioned vents
3. Other air sources

FLOOR PREP

1. Ask the general contractor if your current copy of the building dimensions are the most recently issued. Also, ask for the points of reference from which you should take dimensions to locate the cases.
2. Using chalk lines or a laser transit, mark the floor where the cases are to be located for the entire lineup. The lines should coincide with the outside edges of the case feet.
3. Move case as close as possible to its permanent location. Remove all crating and shipping braces above the shipping pallet. Loosen the plastic dust cover from the pallet, but leave cover over the case to protect it while removing the case from the pallet.
4. Shipping braces with a sled runner construction can either have metal brackets that can be removed with a screw gun, or wood blocks that can be removed with a J-bar.
Note: Shipping braces are normally located at each corner of the case. (Shipping braces used vary and are based on case design for best transport.)
5. Carefully, if horizontal supports, lift case up and off the pallet. Remove dust cover. Installation hardware ships in a marked packet located inside the case.
6. Leveling is necessary to ensure proper operation. Locate the highest point on the positioning lines as a reference for determining the proper height of the shim-pack levelers. A laser transit is recommended for precision and requires just one person. Level adjustable feet by twisting, if applicable, or shim as necessary under horizontal supports as this will help ensure that the case is not settling over time.

7. Locate horizontal support positions along the chalk line (Fig. 1). Spot properly leveled shim packs at each support location.
8. If necessary, drill a hole in each end of every horizontal support (Fig. 2) and fasten to the floor with concrete anchors. **Note: The holes do not need to be in the exact locations specified here. Be sure that the anchors are close to the end of the horizontal supports and at each corner of the case.**

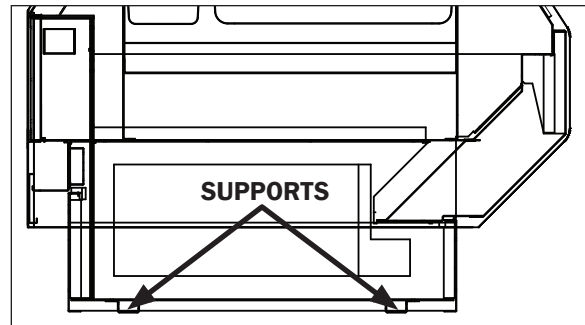


Fig. 1 Horizontal supports

CAUTION

Locate the horizontal supports under unit before removing from pallet. Failure to do so will damage the finished metal if correct lift points are not identified prior to removal.

CAUTION

These cases are not designed for excessive external weight. Do not walk on top or inside of cases. Doing so may result in case damage and/or personal injury.

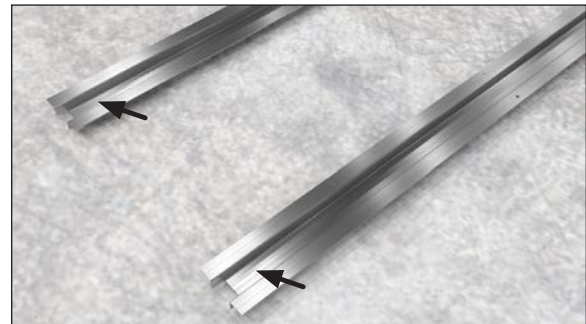


Fig. 2 Seismic anchoring locations

LINE-UP & INSTALLATION

Single Case

1. Move the case into position. Using a "J" bar, raise the end of the case (under cross support), and lower the horizontal support on to the shim packs. Repeat on the other end of the case.
- ### WARNING
- Be certain that your hands and feet are out of the way before lowering the case. Failure to do so may result in serious injury.
2. Once the case is properly placed on the shim packs, check the horizontal level of the case by placing a bubble level on the front sill. Add/remove shim packs as needed.

3. Install the bumper, if applicable, into pre-attached bumper track and snap into place.
4. After sufficient time has passed to allow for bumper shrinkage, cut away the excess bumper for final fit and finish. Be certain to use an appropriate cutting tool (tubing- or PVC-cutter) to ensure a smooth cut.
5. Install case shelves and reconnect lights with the white power cord(s) and the heat with the black power cord(s). Color matching white/black receptacles can be found at opposite ends of the inside back of the case. Be aware that differing shelf configurations will affect energy consumption and case performance.
6. Install toekick back onto the base of case.
7. Install the bumper into pre-attached bumper track and snap into place.
8. After sufficient time has passed to allow for bumper shrinkage, cut away the excess bumper for final fit and finish. Be certain to use an appropriate cutting tool (tubing- or PVC-cutter) to ensure a smooth cut.
9. Install case shelves and reconnect lights. Be aware that differing shelf configurations will affect energy consumption and case performance.
10. Install toekick back onto the base of case.

Multi-Case

1. Remove any shelves (discard the shelf clips) and/or loose items from the cases that may interfere with case joining. Keep all loose items as they will be used later in the installation process.
2. Follow the single-case installation instructions for the first case, excluding #6, then position the next case in the line-up approximately 3' away.
3. Move the second case to a position that is approximately 6" from the first case, then position case on the shim packs.
4. Push the cases tightly together, then lightly bolt them together through the holes provided (Fig. 3). Tighten all the joining bolts until all margins are equal. Be careful not to over tighten.

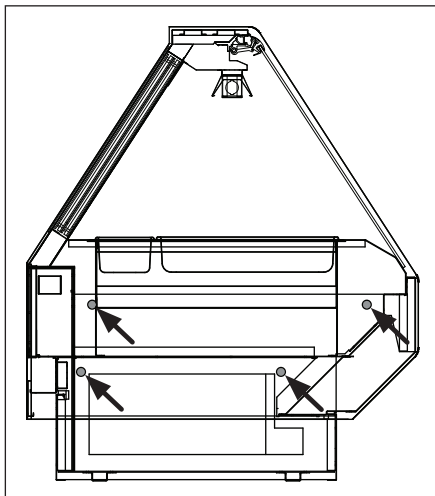


Fig. 3 Bolt locations

5. Repeat steps 3 and 4 of this sequence for all remaining cases. Be certain to properly level all cases.
6. Properly align the front panels as needed, then install, if applicable, front panel trim (supplied).

CAUTION

Be sure that the LED light holders are still positively engaged. During shipping it is possible for these to loosen. Prior to install check all light connection points prior to installation and supplying power.

CAUTION

Installation of 3rd-party materials may result in diminished case performance.

ELECTRICAL

Electrical hookups are made through the electrical raceway that can be accessed by removing the rear raceway panel.

For case-to-case wiring, run conduit between the power supply boxes or run wiring through the raceway. When connecting to the power supply on the case, field wiring should exit box from the side furthest away from case wiring to allow more room inside for wiring connections. Always check the data tag located on left end exterior panel or top interior of the case. The case must be grounded. *For more detailed electrical wiring information (see Appendix A1).*

CAUTION

Be certain that all electrical connections are compliant with local codes.

PRE-POWER CHECKLIST

Before powering-up the case, be certain that all of the steps listed below have been completed to ensure proper case functionality, safety and compliance with warranty terms.

- ☐ **Have you thoroughly examined the case for shipping damage? (see pg. 5)**
- ☐ **Have you checked the horizontal level of the case?
(see pg. 6)**
- ☐ **Have you applied the sealant to the end breakers of adjoining cases?
(see pg. 7)**
- ☐ **Have you sealed the case-to-case joints by applying caulk and acrylic tape to the end frame seam? (see pg. 7)**
- ☐ **Have you installed the toekick? (see pg. 7)**

After powering-up the case, be certain that all of the steps listed below have been completed to ensure proper case functionality, safety and compliance with warranty terms.

- 1. Check all lights and heating elements to ensure they are all functioning properly.**
- 2. Check case temperature and adjust controller as needed.**

HEAT CONTROLS

Hillphoenix hot cases are equipped with digital controls (Fig. 4). There are separate controls for bottom and top heat.



Fig. 4 Digital heat controls & hinged cornice access panel

BLUETOOTH® FUNCTIONALITY

Follow the steps below (modify parameters):

1. Download the CAREL "Applica" or "Control Ia" app from Apple Store or Google Play.
2. (On the mobile device) enable NFC and/or Bluetooth® communication and mobile data.
3. Open Applica (or Control Ia).
4. Select NFC or Bluetooth® communication, depending on the model of iJF model.
5. Move the mobile device near to the user terminal, maximum distance 10 mm (for NFC only), so as to recognise the configuration.
6. Select the access profile and enter the required password (*); set the parameters as needed.
7. Move the mobile device near to the user terminal again to upload the configuration parameters (for NFC only).

The terminal features wireless connectivity and an NFC (Near Field Communication) or Bluetooth® interface (depending on the model) for interaction with mobile devices (on which the CAREL "Applica" app has been installed, available on Google Play for the Android operating system and on the Apple Store for iOS devices (Bluetooth® only).

Bluetooth® connection has been made when the image below is shown.



PREHEATING

Let unit operate with empty shelves for 60 minutes before loading with product. Adjust controls to desired levels before loading case with product. Putting hot food in a case that has not reached full temperature will cause product temperature to drop quickly. All product must be preheated to 175°F. It is essential that product be fully cooked and heated prior to stocking the case, and that it meets in accordance to FDA Food Code for food safety. Check product temperature of larger pieces when cooking different size items. It takes longer for larger pieces to reach desired temperature.

PRODUCT DISPLAY & SETTINGS

Load Limits

1. Product must be 6" below the top heater in self-service cases and contained in the tile or well area.
2. The well must be completely covered with tiles or pans whether filled with product or empty.

⚠ WARNING

Always keep product within the designated heated areas. Failure to do so may result in case malfunction and product losing proper temperature, resulting in sub-standard operation and increased chances of food contamination.

⚠ WARNING

All product must be fully cooked prior to being stocked in the case. Failure to do so may result in serious illness or death.



CAUTION

DO NOT RELY ON THERMOMETERS OR THERMOSTATS FOR PRODUCT (FOOD) TEMPERATURES.

- Thermometers and thermostats reflect air temperature only.
- For ACTUAL product (food) temperatures, use a calibrated food probe thermometer ONLY.
- For accurate readings, DO NOT use infrared food thermometers.

Common Settings

Product that is immersed in liquid is easier to keep hot. Products like fried foods are the hardest to maintain temperature.

Allow 1-2 hours for the case temperature to even out before continuing. The settings will need to be adjusted to your specific product and store conditions.

Once the correct setting is found, the controls may be left at

that setting, and turned ON and OFF using the power switch on the main control. The case must be turned on 1 hour before placing the product. Be sure that all wells are covered with pans or tiles all times whether filled with product or empty. **Note: For more detailed settings; see the PARAMETER SETTINGS table below.**

CASE AIR TEMPERATURE

The case air temperature may not be as high as the desired product temperature. This case is designed to produce long wave radiant heat. This type of heat penetrates the food and keeps it warm from the inside out. Therefore, the air temperature may not be the same as the product temperature. Measure product interior temperature to determine the correct settings, not the air temperature for the best results.

UNIT SHUTDOWN

Turn case power to OFF. It is not necessary to adjust well or overhead heat controls. Remove product, turn off case lights and allow the case to cool completely before cleaning.

PARAMETER SETTINGS		
/5	Temperature Unit	°F
/P1	Configuration of probes S1, S2, S3, S4, B5	NTC-HT
/P5	Assign Analog Output for Generic Modulating Function	Y1
GFM_1	Configuration of Analog Output Y1	PWM
GFM_CD	Generic Modulating Function, Control Probe 1	Outlet Temperature (Sm)
GFM_D	Generic Modulating Function, Differential	0.1
GFM_E	Generic Modulating Function, Enable	1
GFM_H	Generic Modulating Function, Hysteresis	0.1
GFM_kp	Generic Modulating Function, Proportional gain	1
GFM_max	Generic Modulating Function, Max Output Value	100
GFM_min	Generic Modulating Function, Min Uutput Value	0
GFM_SF	Generic Modulating Function, Set Point	As needed
GFM_T	Generic Modulating Function, Type	reverse
GFM_Td	Generic Modulating Function, Derivative Time	0
GFM_Ti	Generic Modulating Function, Integral Time	1

CASE CLEANING

A periodic cleaning schedule should be established to maintain proper sanitation, insure maximum operating efficiency, and avoid the corrosive action of food fluids on metal parts that are left on for long periods of time. We recommend that all heated surfaces be kept clear of excess food daily and a complete cleaning take place once a week. Further suggestions for case cleaning include the following:

- To avoid shock hazard, be sure all electrical power is turned off before cleaning. In some installations, more than one disconnect switch may have to be turned off to completely de-energize the case.
- Allow cases to be turned off long enough to cool before starting the cleaning process.
- Clean from top to bottom when cleaning the display case to avoid cross contamination.
- If any potentially harmful cleaners are used, be certain to provide a temporary separator (e.g., cardboard, plastic wrap, etc.) between those cases that are being cleaned and those that may still contain product.
- Avoid spraying any cleaning liquids directly on the electrical connections, steam cleaning or using excessive amounts of water.
- If the case is equipped with doors be sure to leave them open until the case is completely dry.
- Remove toekick and clean underneath the case with a broom and a long-handled mop. Use warm water and a disinfecting cleaning solution when cleaning underneath the cases.



DANGER

SHOCK HAZARD

Always disconnect power to case when servicing or cleaning. Failure to do so may result in serious injury or death.



WARNING

Always let the case cool before cleaning. Failure to do so may result in sub-standard operation and increased chances of safety issues/injury.

ly clean all areas of the case.

4. Wipe down doors with a clean, disposable cloth (approved item)
5. Place the cleaned doors on a clean sanitized surface until they are dry.



Fig. 5 Rear load door removal

Rear Load Doors

1. Remove the rear sliding doors on the back of the case and clean. To remove: push up and pull out (Fig. 5).
2. Use a spray bottle filled with an approved mild detergent and warm water.
3. Use a clean, disposable cloth (approved item) to thorough-

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Contact the Service Parts Department at:

1-844-HPX-PART (1-844-479-7278)

or

dfr-ia-parts@doverfoodretail.com

Provide the following information about the part you are ordering:

- **Model number and serial number*** of the case for which the part is intended.
- **Length of the part** (if applicable).
- **Color of part** (if painted) or color of polymer part.
- **Whether part is for left or right-hand application.**
- **Quantity**

***Data tag is located on the left end exterior panel or top interior of the case.**

If the parts are to be returned for credit, contact the Parts Department. Do not send parts without authorization.

A1	Wiring Information
B1-B8	Controller Information
C1	Parts List

A1: WIRING DIAGRAM

TBD

B1: CONTROLLER INFORMATION

+0500160ML - rel. 2.1 - 30.03.2022



ijf ADVANCED HMI VERSION
Food Storage & Catering Display



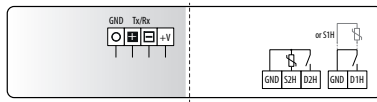
Modello LARGE (IJFHL*) / LARGE model (IJFHL*)

JST ZH connector



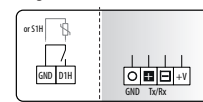
COLLEGAMENTI ELETTRICI / ELECTRICAL CONNECTIONS

Plug-in male-female/ Screw connector



Modello SMALL (IJFHS*) / Model SMALL (IJFHS*)

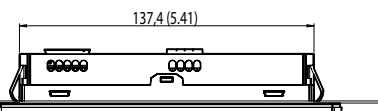
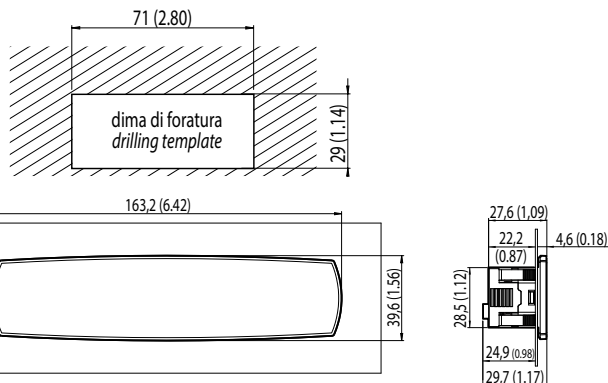
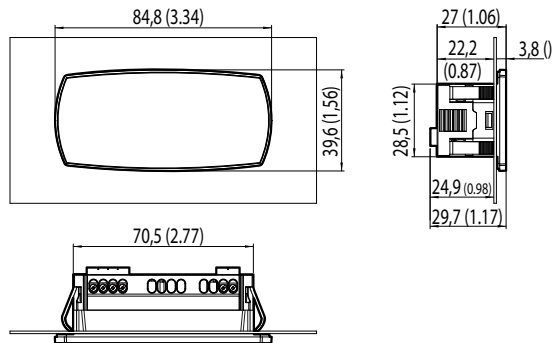
Plug-in male-female/ Screw connector



JST ZH connector



DIMENSIONI / DIMENSIONS [mm (in)]



MODELLI E OPZIONI / MODELS AND OPTIONS

IJFSA0 / IJFHLA0	*	00	*	****
1-7	8	9-10	(packaging) 11	(progressive) 12-15

Pos.	Significato / Meaning	Valori / Values	Descrizione / Description
8	Connettività / Connectivity	0	NFC
		B	NFC, Bluetooth



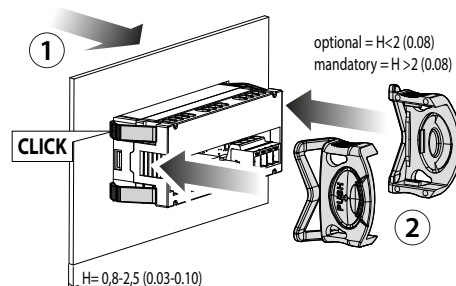
Smaltimento del prodotto: Il prodotto deve essere oggetto di raccolta differenziata in conformità alle normative locali vigenti in materia di smaltimento. / **Disposal of the product:** the appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.

Modello per certificazione/
Certification model

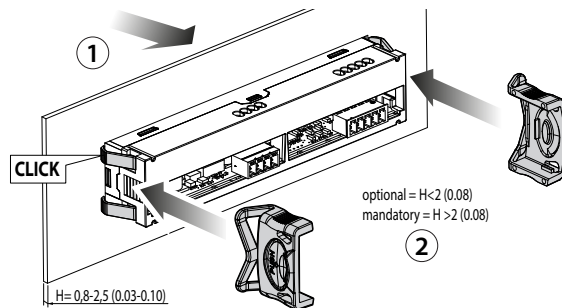
BCU1	Small Panel	BCU4	Large Panel
BCU2	Small HMI	BCU5	Large HMI
BCU3	Small Split	BCU6	Large Split

MONTAGGIO / MOUNTING

Montaggio a pannello modello SMALL (IJFHS*) / Model SMALL (IJFHS*) panel mounting

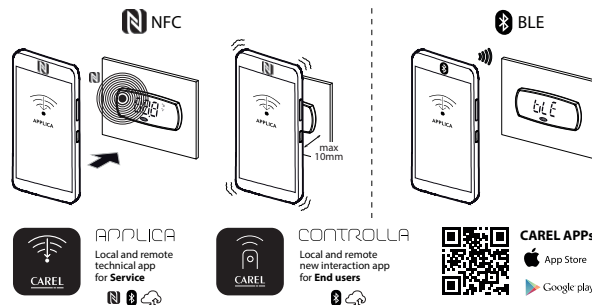


Montaggio a pannello modello LARGE (IJFHL*) / LARGE model (IJFHL*) panel mounting



DISPOSITIVO MOBILE / MOBILE DEVICE

Le app Carel permettono di configurare il controllo da dispositivo mobile (Smartphone, Tablet), tramite NFC (Near Field Communication) e tramite BLE (Bluetooth Low Energy). Dispositivi supportati: Android 6, iOS 11, Bluetooth® 4.0, e seguenti. / The Carel app can be used to configure the controller from a mobile device (smartphone, tablet), via NFC (Near Field Communication) or BLE (Bluetooth Low Energy). Supported devices: Android 6, iOS 11, Bluetooth® 4.0, and following.



ITA

ENG

AVVERTENZE IMPORTANTI



Il prodotto CAREL è un prodotto avanzato, il cui funzionamento è specificato nella documentazione tecnica fornita col prodotto o scaricabile, anche anteriormente all'acquisto, dal sito internet www.carel.com. Il cliente (costruttore, progettista o installatore dell'equipaggiamento finale) si assume ogni responsabilità e rischio in relazione alla fase di configurazione del prodotto per il raggiungimento dei risultati previsti in relazione all'installazione e/o equipaggiamento finale specifico. La mancanza di tale fase di studio, la quale è richiesta/indicata nel manuale d'uso, può generare malfunzionamenti nei prodotti finali di cui CAREL non potrà essere ritenuta responsabile. Il cliente finale deve usare il prodotto solo nelle modalità descritte nella documentazione relativa al prodotto stesso. La responsabilità di CAREL in relazione al proprio prodotto è regolata dalle condizioni generali di contratto CAREL editate nel sito www.carel.com e/o da specifici accordi con i clienti.

B2: CONTROLLER INFORMATION

PERICOLO

- Questo foglio è parte del prodotto e deve essere conservato insieme al controllo per una rapida consultazione.
- Il controllo non deve essere usato per scopi diversi da quelli per cui è stato progettato, ovvero il controllo di unità frigorifere stand alone, in particolare non può essere usato come dispositivo di sicurezza.
- In caso di guasto contattare un centro assistenza autorizzato.
- Il controllo non deve essere aperto.
- Verificare la tensione di alimentazione prima dell'installazione.
- Utilizzare il controllo all'interno delle condizioni di funzionamento. Non esporre a liquidi o vapori ed evitare bruschi sbalzi di temperatura che potrebbero causare la formazione di condensa.
- Scollegare la tensione di alimentazione prima di effettuare qualsiasi operazione di manutenzione.
- Prestare attenzione alle correnti massime erogabili dai relè (vedere la sezione "Caratteristiche tecniche").
- Non applicare tensioni pericolose ai morsetti SELV (vedere la sezione "Caratteristiche tecniche").
- Utilizzare solamente cavi di sezione appropriata (vedere la sezione "Caratteristiche tecniche").
- Separare i cavi delle sonde e degli ingressi digitali dai cavi delle uscite e dai cavi di alimentazione. Non inserire mai cavi di potenza e cavi di segnale nella stessa condotta.



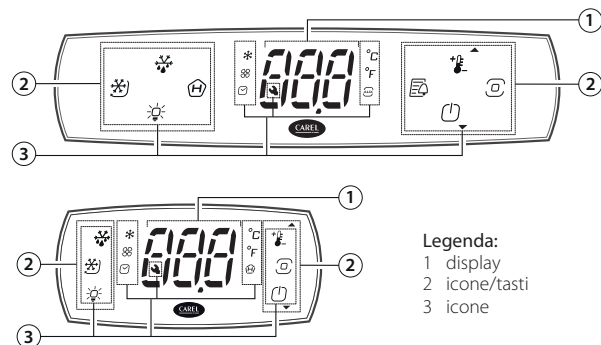
ATTENZIONE: le apparecchiature elettriche devono essere installate, usate e riparate solo da personale qualificato.

CARATTERISTICHE TECNICHE

Caratteristiche meccaniche	Contenitore	Policarbonato autoestinguente
	Temperatura di prova con la sfera	125 °C
	Grado di protezione	IEC Retro: IP20 Frontale (JFHS*): <ul style="list-style-type: none">• IP65 (JFHL*): <ul style="list-style-type: none">• Type 1• Type 1 from -5°C to 60 °C• IP65 with clips• IP43 without clips• Open type from -20°C to 60°C
	Pulizia frontale	Utilizzare panno morbido non abrasivo, detergenti neutri o acqua
Condizioni ambientali	Temperatura di funzionamento	-20/60 °C, <90% U.R. non condensante
	Temperatura di immagazzinamento	-40/80 °C, <90% U.R. non condensante
Caratteristiche elettriche	Tensione di alimentazione nominale	12 Vdc, fornita da controllo Carel SELV/Classe 2
	Tensione di alimentazione operativa	12 Vdc, fornita da controllo Carel SELV/Classe 2
	Corrente di ingresso massima	200 mA, alimentazione fornita da controllo Carel SELV/Classe 2
	Potenza assorbita min	700 mW
	Classe e struttura del software	A
	Grado di inquinamento ambientale	3
	Classificazione secondo la protezione da scosse elettriche	Incorporabile in apparecchi di classe I o II
	Tensione di impulso nominale	0,5 kV
	Costruzione del dispositivo di comando	Dispositivo da incorporare
	Morsettiera	S1H, S2H, D1H, D2H, GND: <ul style="list-style-type: none">• Maschio-femmina estraibili 30÷17 AWG / 0,05÷1 mm²• Morsetti a vite 30÷17 AWG / 0,05÷1 mm² Alimentazione e comunicazione con controllo Carel: <ul style="list-style-type: none">• connettore JST ZH 32÷26 AWG / 0,03÷0,13 mm²• Maschio-femmina estraibili 30÷17 AWG / 0,05÷1 mm²• Morsetti a vite 30÷17 AWG / 0,05÷1 mm²
Interfaccia utente	Scopo del controllo	Dispositivo di comando elettrico
	Buzzer	Integrato
	Display	3 digit, punto decimale e icone polifunzionali
	Tastiera	JFHS*: max 6 tasti; JFHL*: max 8 tasti
Connettività	NFC	Max distanza 10 mm, variabile secondo il dispositivo mobile utilizzato
	Bluetooth Low Energy (opz.)	Max distanza 10 m, variabile secondo il dispositivo mobile utilizzato
	Controllo Carel	RS485, non optoisolata
	Ingressi analogici	S1H: D1H configurabile come NTC S2H: NTC (modelli JFHL*) NTC: risoluzione 0.1 °C; 10 kΩ@25 °C; beta 3435; errore: ±1 °C nell'intervallo -50/50 °C, ±3 °C nell'intervallo 50/90 °C

Ingressi digitali	D1H, D2H	Contatto pulito: non optoisolato corrente di chiusura 5 mA tipica tensione contatto aperto 12 V resistenza contatto max 50 Ω.
Lunghezze cavi	Ingressi analogici, ingressi digitali	< 10 m
	Controllo Carel	< 10 m NOTA: in ambiente domestico, per lunghezze superiori a 2 m e applicazioni con controllo e HMI non integrati nello stesso chassis, si consiglia l'utilizzo di cavo schermato
Conformità	Conformità sicurezza elettrica - direttiva LVD e certificazione UL	IEC/EN/UL 60730-1, CSA E60730-1, IEC 60335-1 (sezioni 29 e 30)
	Compatibilità elettromagnetica - Direttiva EMC	IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4
<p>Per l'uso con gas refrigeranti infiammabili, i controlli descritti in questo documento sono stati valutati e giudicati conformi ai seguenti requisiti degli standard della serie IEC 60335:</p> <ul style="list-style-type: none">- Allegato CC della IEC 60335-2-24: 2010 a cui fa riferimento la clausola 22.109 e Allegato BB della IEC 60335-2-89: 2010 a cui fa riferimento la clausola 22.108; i componenti che producono archi o scintille durante il normale funzionamento sono stati testati e ritenuti conformi ai requisiti della UL/ IEC 60079-15;- IEC/ EN/ UL 60335-2-24 (clausole 22.109, 22.110) per frigoriferi e congelatori domestici;- IEC/ EN/ UL 60335-2-40 (clausole 22.116, 22.117) per pompe di calore elettriche, condizionatori d'aria e deumidificatori;- IEC/ EN/ UL 60335-2-89 (clausole 22.108, 22.109) per apparecchi refrigerari commerciali. <p>I controlli sono stati verificati per le temperature massime di tutti i componenti, i quali durante i test previsti dalla IEC 60335 cl. 11 e 19 non superano i 272°C.</p> <p>L'accettabilità di questi controlli nell'applicazione per uso finale in cui sono utilizzati gas refrigeranti infiammabili deve essere rivista e valutata a seconda dell'applicazione finale.</p>		
Conformità wireless		Direttiva RED (EN 301489-1), FCC (sez. 15, sottosez. B), IC.

TERMINALE UTENTE



Legenda:
1 display
2 icone/tasti
3 icone

Icone/ Tasti retroilluminati

Icona/Tasto	Descrizione	Accesso	Lampeggiante
	Setpoint/ Freccia su	<ul style="list-style-type: none">Incremento valore/ Scorrimento menuAccesso diretto impostazione setpoint	-
	Program	Pressione breve: <ul style="list-style-type: none">ingresso ramo menusalvataggio valore e ritorno al codice del parametro Pressione lunga (3 s): <ul style="list-style-type: none">ingresso modo programmazioneritorno al livello precedente	-
	On-Off/ Freccia giù	<ul style="list-style-type: none">Unità ONDecremento valore/Scorrimento menuAccensione/ spegnimento unità	-
	Sbrinamento	Attivo/ Disattivazione	In attesa/ Attivazione
	Ciclo continuo	Attivo/ Disattivazione	In attesa/ Attivazione
	Luci	Attive/ Disattivazione	Attivazione
	Haccp	<ul style="list-style-type: none">Presenza allarmi HaccpAccesso diretto menu Haccp	-
	Log allarmi	<ul style="list-style-type: none">Presenza allarmi storiciAccesso diretto menu storico allarmi	-
	Uscita ausiliaria	Attiva	-
	Compressore	Attivo	In attesa
	Ventilatore evaporatore	Attivo	-
	Orologio	Programmazione oraria attiva	-
	°C	Unità di misura °C	-
	°F	Unità di misura °F	-
	Assistenza Manutenzione	Presenza allarmi	-

La tabella si riferisce alla configurazione standard di prodotto con tasti retroilluminati.

B3: CONTROLLER INFORMATION

Schermate

Terminale	Stato	Descrizione
	A riposo	Il display mostra la grandezza principale alternata ad eventuali allarmi e segnalazioni
	Visualizzazione carichi attivi	Il terminale mostra gli eventuali carichi attivi, la tastiera è bloccata
	Attivazione diretta carichi e funzioni da tastiera	Da tastiera è possibile attivare o disattivare i carichi ed accedere alle funzionalità dirette
	Menu programmazione	Scorrimento del menu di programmazione mediante i tasti freccia
	Programmazione parametri/visualiz. valori	Modifica dei parametri mediante i tasti freccia o visualizzazione dei valori di sola lettura
	Connessione Bluetooth	Il display è disabilitato in quanto il controllo è collegato ad una APP tramite Bluetooth Low Energy

Navigazione

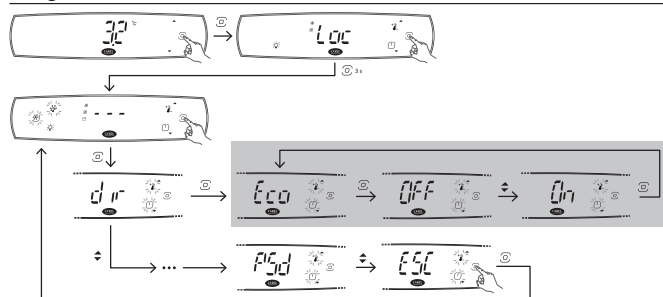


Fig.1

PARAMETRI DI PRIMA CONFIGURAZIONE

Par.	Menu	Descrizione	Def.	Min	Max	U.M.	Vis. (*)
St	Ctl	Setpoint di regolazione temperatura	50/122	r1	r2	°C/°F	U
/5	Pro	Unità di misura: 0 = °C; 1 = °F.	0	0	1	-	U
/6	Pro	Visualizzazione punto decimale (solo maschera principale): 0 = visibile; 1 = non visibile.	0	0	1	-	S
/t1	Pro	Visualizzazione su terminale utente: 0 = non configurato; 1 = valore S1; 2 = valore S2; 3 = valore S3; 4 = valore S4; 5 = valore S1H; 6...8 = non disponibile; 9 = sonda regolazione; 10 = sonda virtuale; 11...14 = non disponibile; 15 = setpoint effettivo di regolazione.	9	0	15	-	S
d6	dEF	Visualizzazione display durante defrost: 0 = temperatura alternata a 'dEF'; 1 = blocco visualizzazione; 2 = 'dEF'.	1	0	2	-	S
dl	dEF	Intervallo massimo tra sbrinamenti consecutivi	8	0	240	h	S
dP1	dEF	Durata massima sbrinamento	45	1	240	min	S
AH	ALM	Soglia di allarme relativa alta temperatura	0	0	555/999	°C/°F	S
AL	ALM	Soglia di allarme relativa bassa temperatura	0	0	200/360	°C/°F	S
Hb	CnF	Abilitazione buzzer: 0 = disabilitato; 1 = abilitato.	1	0	1	-	U

(*): U/S = User/Service

ALLARMI

	Descrizione	Descrizione
Afr	Antigelo	GLO Allarme generico soglia inferiore
AtS	Ripartenza in pump down	HA Allarme HACCP di tipo HA (alta temp. in funzionamento)
CE	Errore scrittura configurazione	HF Allarme HACCP di tipo HF (alta temp. dopo blackout)
CHt	Allarme alta temperatura condensatore	HI Alta temperatura
cht	Preallarme alta temperatura condensatore	IA Allarme immediato da contatto esterno
COM	Errore comunicazione VCC	LO Bassa temperatura
dA	Allarme ritardato da contatto esterno	LP Bassa pressione
dor	Porta aperta	MAn Stato uscite forzato in modalità manuale
E*	Sonda * guasta o scollegata	Pd Massimo tempo di pump down
Ed1	Defrost terminato per tempo massimo	rEF Sonda di regolazione guasta o scollegata
Ed2	Defrost su secondo evaporatore terminato per tempo massimo	rSF Allarme perdita refrigerante
EHI	Allarme alta tensione di alimentazione	SF Configuraz. non terminata correttamente
ELO	Allarme bassa tensione di alimentazione	SrC Richiesta manutenzione
Etc	Errore orologio	UCF Errore funzionamento VCC
GHI	Allarme generico soglia superiore	

ITA ENG

IMPORTANT WARNINGS



The CAREL product is a state-of-the-art product, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.carel.com. The customer (manufacturer, developer or installer of the final equipment) accepts all liability and risk relating to the configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment. Failure to complete such operations, which are required/indicated in the user manual, may cause the final product to malfunction; CAREL accepts no liability in such cases. The customer must only use the product in the manner described in the documentation relating to the product. The liability of CAREL in relation to its products is specified in the CAREL general contract conditions, available on the website www.CAREL.com and/or by specific agreements with customers.

⚠ DANGER

- This leaflet is part of the product and should be kept near the control for quick reference.
- The control shall not be used for purposes other than those for which it was designed, in particular it can't be used as a safety device.
- In case of failure contact an authorized service center.
- The control must not be opened.
- Check the power supply voltage before installing.
- Use the control inside the operating conditions limits. Do not expose to liquids or steam and avoid sudden temperature changes that might cause condensation.
- Disconnect the power supply before any kind of maintenance.
- Observe the maximum current output value for each relay (see "Technical specifications" section).
- Do not apply dangerous voltage to the SELV connection terminals (see "Technical specifications" section).
- Only use cables with a suitable cross-section (see "Technical specifications" section).
- Separate the probe and digital input cables from output and power cables. Never run power cable and signal cables in the same conduct.



ATTENTION: electrical equipment must be installed, used and repaired only by qualified technicians



Disposal of the product: the appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.

TECHNICAL SPECIFICATIONS

Physical specifications	Case	Self-extinguish polycarbonate	
	Dimensions	See figures	
	Ball pressure test temperature	125 °C	
	Ingress protection	IEC Rear: IP20 Front (UFHS*): • IP65 Front (UFHL*): • IP65 with clips • IP43 without clips	UL (UFHS*): • Type 1 (UFHL*): • Type 1 from -5°C to 60 °C • Open type from -20°C to 60°C
Environm. conditions	Operating temperature	-20/60 °C, <90% RH non-condensing	
	Storage temperature	-40/80 °C, <90% RH non-condensing	
	Nominal power supply	12 Vdc, supplied by Carel control SELV/Class 2	
	Operating power supply voltage	12 Vdc, supplied by Carel control SELV/Class 2	
Electrical specifications	Maximum current draw	200 mA, power supply furnished by Carel control SELV/Class 2	
	Min power consumption	700 mW	
	Software class and structure	A	
	Environmental pollution class	3	
Electrical specifications	Class of protection against electric shock	To be incorporated in class I or II appliances	
	Rated impulse voltage	0.5 kV	
	Control device construction	Device to be incorporated	
	Terminal block	S1H, S2H, D1H, D2H, GND: • Plug-in male-female 30÷17 AWG / 0,05÷1 mm ² • Screw terminals 30÷17 AWG / 0,05÷1 mm ² Power supply and communication with Carel control: • JST ZH connector 32÷26 AWG / 0,03÷0,13 mm ² • Plug-in male-female 30÷17 AWG / 0,05÷1 mm ² • Screw terminals 30÷17 AWG / 0,05÷1 mm ²	
User interface	Purpose of the controller	Electrical operating control	
	Buzzer	Built-in	
	Display	3 digits, decimal point and multi-function icons	
Keyboard		UFHS*: max 6 keys	
		UFHL*: max 8 keys	

CAREL

CAREL INDUSTRIES SpA

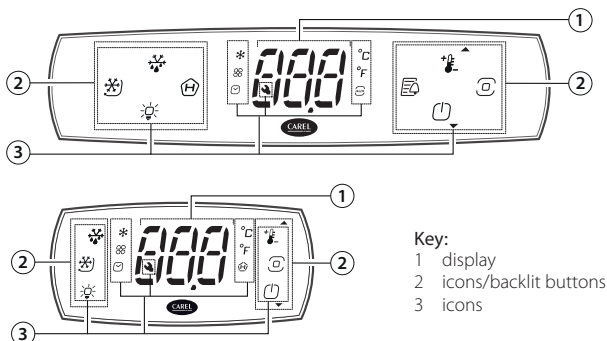
Via dell'Industria, 11 – 35020 Brugine – Padova (Italy)

Tel. (+39) 0499716611 – Fax (+39) 0499716600 – e-mail: carel@carel.com – www.carel.com

B4: CONTROLLER INFORMATION

Connectivity	NFC	Max distance 10 mm, variable according to the mobile device used
	Bluetooth Low Energy (opt.)	Max distance 10 m, variable according to the mobile device used
Analogue inputs	Carel control	RS485, not opto-isolated
	S1H: D1H configurable as NTC S2H: NTC (UJFHL* models)	NTC: resolution 0.1 °C; 10kΩ@25°C; beta 3435; error: ±1°C in the range -50T50°C, ±3°C in the range 50T90°C
Digital inputs	D1H, D2H	Voltage-free contact, not optically-isolated, typical closing current 5mA, voltage with contact open 12V, max contact resistance 50Ω
Cable lengths	Analogue inputs, digital inputs	< 10 m
	Carel control	< 10 m NOTE: in domestic environments, for lengths greater than 2 m and applications with control and HMI not integrated in the same chassis, we recommend the use of shielded cable
Conformity	Electrical safety compliance - LVD directive and UL certification	IEC/EN/UL 60730-1, CSA E60730-1, IEC 60335-1 (sections 29 & 30)
	Electromagnetic compatibility - EMC directive	IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4
For use with flammable refrigerant gases, the controllers described in this document have been evaluated and judged compliant with the following requirements of IEC 60335 series standards:		
- Annex CC of IEC 60335-2-24:2010 referenced by clause 22.109 and Annex BB of IEC 60335-2-89:2010 referenced by clause 22.108; components that produce arcs or sparks during normal operation have been tested and found to comply with the requirements in UL/IEC 60079-15;		
- IEC/EN/UL 60335-2-24 (clauses 22.109, 22.110) for household refrigerators and freezers;		
- IEC/EN/UL 60335-2-40 (clauses 22.116, 22.117) for electrical heat pumps, air-conditioners and dehumidifiers;		
- IEC/EN/UL 60335-2-89 (clauses 22.108, 22.109) for commercial refrigerated appliances.		
The controllers have been verified for the maximum temperatures of all components, which during the tests required by IEC 60335 cl. 11 and 19 do not exceed 272 °C.		
Acceptability of these controllers in end use application where flammable refrigerant gases are used shall be reviewed and judged in the end use application.		
Wireless compliance		RED directive (EN 301489-1), FCC (section 15, subsection B), IC

USER TERMINAL



Terminal	Status	Description
	Standby	The display shows the main value alternated with alarms and signalling
	Active loads visualization	The terminal shows active loads and the keyboard is disabled
	Direct activation of loads and functions from keyboard	It is possible to activate/deactivate loads and to enter direct functionalities from keyboard
	Programming menu	Menu scrolling by arrow keys
	Parameters programming / visualization	Parameters modification by arrow keys or read only values visualization
	Bluetooth connection	The display is disabled since the control is connected to an APP by Bluetooth Low Energy

Backlit buttons/Icons

Button Icon	Description	On	Flashing
	Set point/Up arrow	<ul style="list-style-type: none"> Increase value/ Scroll menu Direct access to change set point 	-
	Program	Pressed briefly: <ul style="list-style-type: none"> enter menu branch Save value and return to the parameter code Pressed and held (3 s): <ul style="list-style-type: none"> enter programming mode return to the previous level 	-
	On-Off/Down arrow	<ul style="list-style-type: none"> Unit On Decrease value / Scroll menu Switch unit on and off 	-
	Defrost	Active/ Can be deactivated from the keypad	Waiting/ Can be activated from the keypad
	Continuous cycle	Active/ Can be deactivated from the keypad	Waiting/ Can be activated from the keypad
	Lights	Active/ Can be deactivated from the keypad	Can be activated from the keypad
	HACCP	<ul style="list-style-type: none"> Active HACCP alarms Direct access to HACCP menu 	-
	Alarms log	<ul style="list-style-type: none"> Alarms logged Direct access to alarms log 	-
	Auxiliary output	Active	-
	Compressor	Active	Waiting
	Evaporator fan	Active	-
	Clock	Scheduler active	-
	°C	Unit of measure °C	-
	°F	Unit of measure °F	-
	Service Maintenance	Active alarms	-

Standard product configuration, see the user manual for other configurations.

Navigation

See Fig.1

INITIAL CONFIGURATION PARAMETERS

Par	Menu	Description	Def.	Min	Max	U.M.	Vis. (*)
St	Ctl	Temperature control set point	50/122	r1	r2	°C/°F	U
/5	Pro	Unit of measure: 0 = °C; 1 = °F.	0	0	1	-	U
/6	Pro	Display decimal point (main screen only) 0 = visible; 1 = not visible.	0	0	1	-	S
/t1	Pro	Value shown on the LED display: 0 = not config. (decimal point); 1 = S1 value; 2 = S2 value; 3 = S3 value; 4 = S4 value; 5 = S1H value; 6..8 = reserved; 9 = control probe; 10 = virtual probe (Sv); 11..14 = reserved; 15 = current set point.	9	0	15	-	S
d6	dEF	Display during defrost 0 = temperature alternating with 'dEF' 1 = display locked; 2 = 'dEF'	1	0	2	-	S
dl	dEF	Maximum interval between defrosts	8	0	240	h	S
dP1	dEF	Maximum defrost duration	45	1	240	min	S
AH	ALM	High temperature relative alarm threshold	0	0	555/999	Δ °C/°F	S
AL	ALM	Low temperature relative alarm threshold	0	0	200/360	Δ °C/°F	S
Hb	Cnf	Enable buzzer: 0 = disabled; 1 = enabled.	1	0	1	-	U

(*) U/S = User/Service

ALARMS

Description	Description
AfR Frost protection	GLO Generic alarm low threshold
AtS Restart in pump down	HA Type HA HACCP alarm (high temperature during normal working)
CE Configuration write error	HF Type HF HACCP alarm (high temperature after blackout)
CHt High condenser temperature alarm	HI High temperature
cht High condenser temperature warning	IA Immediate alarm from external contact
COM VCC communication error	LO Low temperature
dA Delayed alarm from external contact	LP Low pressure
dor Door open	MAN Outputs status forced in manual mode
E* Probe * broken or disconnected	Pd Maximum pump down time
Ed1 Defrost terminated after maximum time	rE Control probe broken or disconnected
Ed2 Defrost on second evaporator terminated after maximum time	rSF Refrigerant system failure alarm
EHI High supply voltage alarm	SF Configuration not completed correctly
ELO Low supply voltage alarm	SRc Maintenance request
Etc Clock error	UCF VCC operation error
GHI Generic alarm high threshold	

B5: CONTROLLER INFORMATION

BLUETOOTH® FUNCTIONALITY

Download the CAREL "Applica" app from Apple Store or Google Play

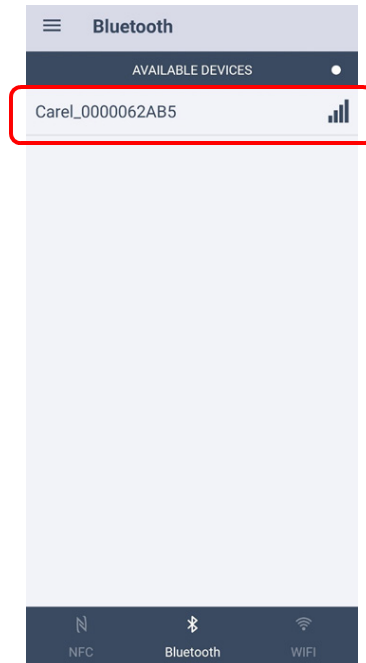


Follow the steps below (modify parameters):

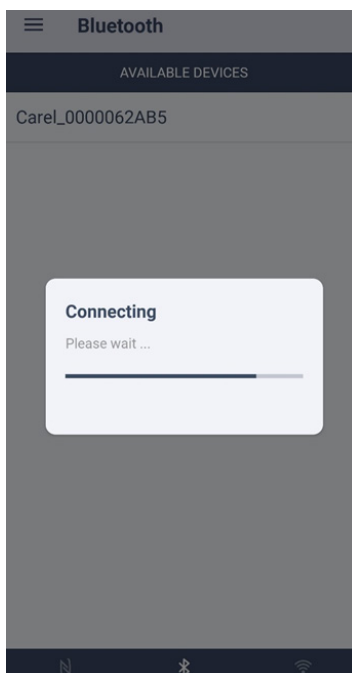
1. Open the Applica app and select Bluetooth for connection type.



2. After the Bluetooth device(s) are found, select the controller that you want to connect to.



3. The Bluetooth connection will be established and the app will prompt for a password. Enter "22" for Service.



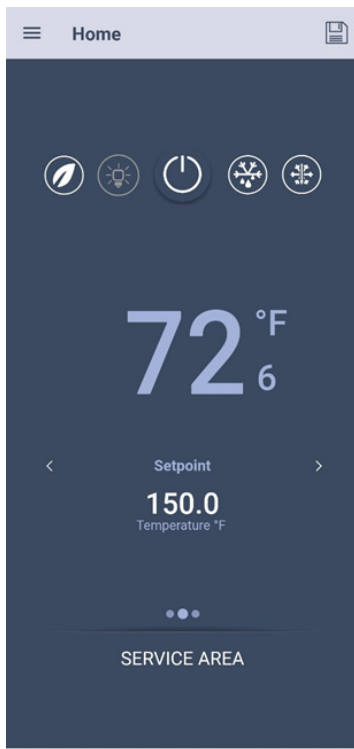
Bluetooth® connection has been made when the image below is shown.



Note that 72.6 is the actual temperature reading.

B6: CONTROLLER INFORMATION

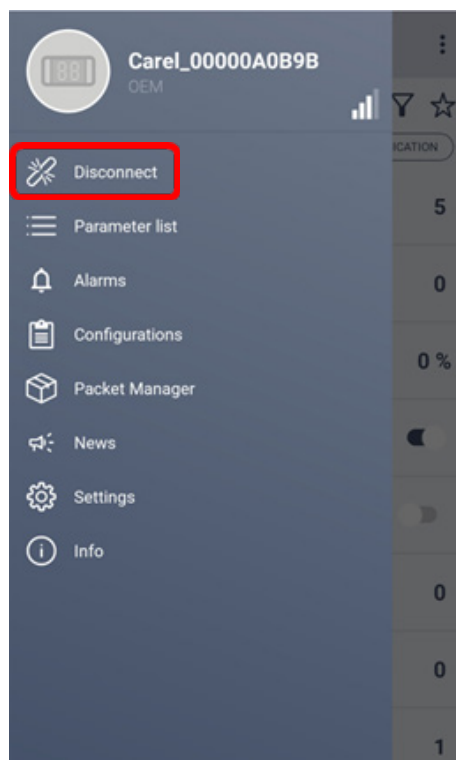
4. Once the Home screen appears, tap on the setpoint.



5. Enter the desired temperature and then hit OK.



6. At this point, the heater temperature setpoint has been effectively changed in the controller. You can now disconnect the Bluetooth communication.



B7: CONTROLLER INFORMATION

Changing the Temperature Setpoint Through the Controller Interface

1. Touch the interface of the controller to activate the display.



5. Press PRG to display the parameter value.



2. Press the program button to enter the display active actuators/ functions mode.



6. Press the UP and DOWN arrows to change the value.



3. Press the program button again for 3 seconds to access the actuator/function direct activation mode.



7. Press the program button to set the value (if you do not press the program button to set the value, the value will revert back to the previous setpoint).



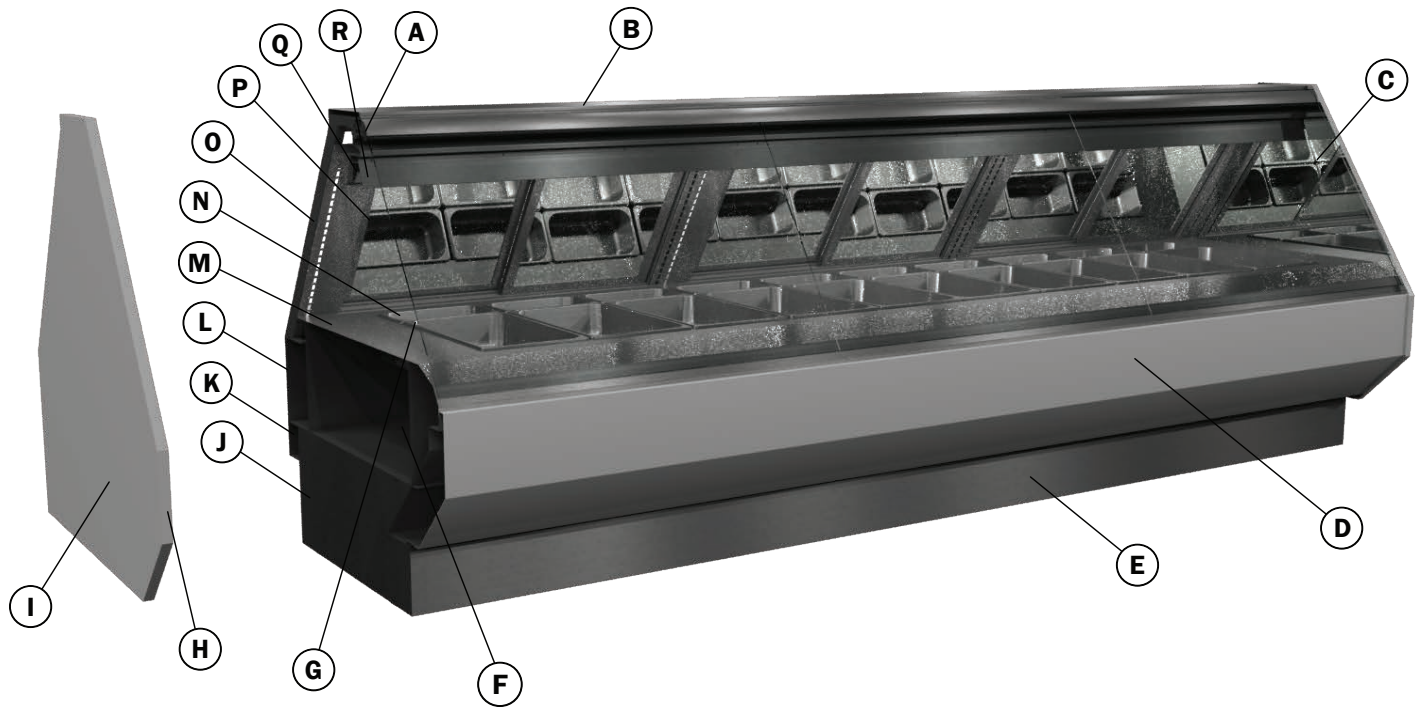
4. You are now in programming mode. The item displayed is St (=set point).



8. Use the UP/DOWN arrows to navigate to ESC and press the program button to return to the main screen.



C1: PARTS LIST



A	Lift Glass Hardware
B	Case Top
C	Front Lift Glass
D	Die Board
E	Front Toekick
F	Insulated Lower Deck
G	Full Size Deli Pan (Optional)
H	End Panel Trim
I	End Panel
J	End Toekick
K	Electrical Raceway
L	Outside Back
M	Bottom Deck
N	1/3 Size Deli Pan (Optional)
O	Strut
P	Sliding Rear Load Doors
Q	Ceramic Top Heat
R	Ceramic Top Heat Guard



A  DOVER COMPANY

LIMITED & GENERAL WARRANTY TERMS

Hill Phoenix, Inc's. (hereinafter "Hillphoenix") products are warranted to be free from defects in materials and workmanship under normal use and maintenance for a period of 14 months from date and place of shipment from Hillphoenix (the "Base Warranty Period"), provided that the installation and maintenance of such products have been performed strictly in accordance with Hillphoenix's designated specifications.

Anthony products supplied as original equipment on Hillphoenix products receive Hillphoenix warranty.

All warranty repairs must be approved in advance before services are started. In the event of a qualifying warranty claim, the extent of Hillphoenix's liability under the Warranty is limited to the repair or replacement, at Hillphoenix's option, of any non-conforming products without charge. If required, a new or rebuilt part to replace any defective part will be provided without charge and will be shipped via standard ground freight, with shipping charges being covered by Hillphoenix during the base warranty period. The replacement part is covered under this warranty for the remainder of the applicable Base Warranty Period. In order to be eligible for warranty coverage, customer must: (i) notify Hillphoenix in writing within twenty-four hours upon discovery of a warrant defect, and (ii) comply with the warranty claim procedures provided by Hillphoenix from time to time. These warranty terms are incorporated into and governed by the Hill Phoenix Terms and Conditions of Sale.

This equipment warranty does not include labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts.

The warranty shall not apply:

1. To any unit or any part thereof which has been subject to an accident, alteration, negligence, misuse or abuse, or which has not been operated in accordance with the manufacturer's recommendations, or in conditions outside of Manufacturer's specifications, or if the serial number of the unit has been altered, defaced, or removed.
2. When the unit, or any part thereof, is damaged by fire, flood, or other act of God.
3. To products that are impaired or damaged due to improper installation.
4. When installation and startup forms are not properly completed or returned within two weeks after startup.
5. If the defective part is not returned to the Manufacturer.
6. To service, maintenance or wear and tear parts (such as lights, starters and ballasts)
7. To cosmetic damage (e.g., scratches, dents, chips, and other damage to appliance finishes), unless such damage results from defects in materials and workmanship and is reported to Hillphoenix within 30 days from date of purchase.
8. To shipping damage
9. To use in a non-commercial application
10. Corrosion, discoloration, oxidation, or rust due to exposure to predisposed corrosive environments/atmospheres or contact with product damaging material/chemicals
11. To service trips where no problem is diagnosed or found in the discretion of Hillphoenix
12. To Removal/reinstallation of product for repair if installed in an inaccessible location
13. To use of non-OEM parts for warrantable repair unless directed by Hillphoenix
14. To repair/service tools/items
15. To service trips to teach customer how to use product
16. To product pick-up or delivery for repair purposes; repairs should take place on the customer's site unless directed by Hillphoenix
17. To misdiagnosis or misrepair, including subsequent labor/component repair or replacement
18. To stolen components
19. To replacement service parts lost or misplaced on arrival by receiving personnel
20. To service events on non-DFR products
21. To excess repair time
22. To excess required consumables charges, at the discretion of Hillphoenix
23. If a service contractor takes longer than 120 days from the date of repair completion to submit a warranty invoice/claim

Examples of non-warrantable situations include, but are not limited to:

- Non-factory electrical connection or component issues
- Product is operated on low or improper voltages
- Use of extension cords to power the product
- Lack of basic preventative maintenance as outlined by product manuals
- Installation into a mobile application
- Failures or symptoms that result from site mechanical or electrical failures

- Loading of food or other content that prevents the product from operating properly
- 'Yellowing' of lighting products

MODIFICATIONS TO GENERAL WARRANTY

The following sets forth certain modifications to the General Warranty for specific products of Manufacturer:

DISPLAY CASE AND SPECIALTY PRODUCTS CLEARVOYANT® LED LIGHTING

The warranty period for Clearvoyant LED lighting components within the Clearvoyant lighting system is five years from date of shipment.

NO WARRANTY FOR NON-STANDARD PRODUCTS

A " Non-Standard Product" is any product that is different in any manner from any Hillphoenix product that has been previously designed and manufactured by Hillphoenix in accordance with its standard specifications. A Non-Standard Product also includes any standard Hillphoenix product that has been specially designed or modified to meet a particular Buyer specification, or that contains any additional or substituted product, part, accessory, equipment, fixture, component or material, or that has been assembled, manufactured, produced, or installed by any method or process, which is different from Hillphoenix' s standard specifications for such product. Hillphoenix expressly disclaims and makes no warranties, express or implied, as to the condition, design, utility, quality, adequacy, or capacity with respect to any standard or Non-Standard Product, including, without limitation, any warranty of merchantability or fitness of such product for a particular purpose or intended use, whether or not such product has been designated by Hillphoenix as a Non-Standard Product. All Non-Standard Products, whether sold separately, or incorporated and/or attached to standard Hillphoenix products, and all services relating to such products, are sold to and accepted by Buyer " as is" and "with all faults" . Without limiting any other provision of this purchase order, Hillphoenix shall have no liability to Buyer for any claim, loss, damage, consequential damages or expenses associated with any Non-Standard Product and/or its use or operation, or any other equipment or property of Buyer caused by or alleged by to be caused by any such product or its use or operation, whether directly, indirectly, incidentally or consequentially, or by any inadequacy thereof or deficiency or defect therein. The foregoing exclusion of warranty cannot be modified or waived except as expressly set forth in a writing signed by an officer of Hillphoenix authorized to make such modification or waiver.

REMEDY LIMITATION/DAMAGES EXCLUSION

THE REMEDY OF REPAIR OR PROVISION OF A REPLACEMENT PART WITHOUT CHARGE SHALL BE THE EXCLUSIVE REMEDY FOR ANY WARRANTY CLAIM HEREUNDER. WITHOUT LIMITING THE FOREGOING, HILLPHOENIX SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR INCIDENTAL, INDIRECT, LIQUIDATED OR CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF PROFIT, LABOR COST, LOSS OF REFRIGERANT OR FOOD PRODUCTS.

EXCLUSIVE WARRANTY

THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY WITH RESPECT TO THE PRODUCTS. ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED. NO IMPLIED WARRANTY SHALL BE DEEMED CREATED BY COURSE OF DEALING OR USAGE OF TRADE. NO OTHER PERSON IS AUTHORIZED TO EXPAND OR CREATE ANY OBLIGATION GREATER THAN OR MORE EXPANSIVE THAN THE WARRANTY PROVIDED HEREIN.

THE ABOVE WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HILLPHOENIX SHALL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO INJURY TO PERSONS OR PROPERTY. NOTWITHSTANDING ANYTHING TO THE CONTRARY, HILLPHOENIX'S ENTIRE LIABILITY, AND BUYER'S EXCLUSIVE REMEDY, IN LAW AND EQUITY OR OTHERWISE, WITH RESPECT TO ANY PRODUCTS PROVIDED BY HILLPHOENIX IS SOLELY LIMITED TO THE AMOUNT PAID BY BUYER FOR THE PRODUCTS TO WHICH THE APPLICABLE CLAIM RELATES.

THIS DOCUMENT DOES NOT GOVERN EXTENDED WARRANTIES AND ANY EXTENDED WARRANTIES PROVIDED BY HILLPHOENIX SHALL BE GOVERNED BY A SEPARATE DOCUMENT AGREED UPON BY HILLPHOENIX

Submit warranty claims to: hpx-warranty-wa-invoices@doverfoodretail.com

For warranty service, please

contact Hill Phoenix at:

Phone: 1-833-280-5714

Warning

Maintenance & Case Care

When cleaning cases the following must be performed PRIOR to cleaning:

To avoid electrical shock, be sure all electric power is turned off before cleaning. In some installations, more than one switch may have to be turned off to completely de-energize the case.

Do not spray cleaning solution or water directly on fan motors or any electrical connections.

All lighting receptacles must be dried off prior to insertion and re-energizing the lighting circuit.

Please refer to the Use and Maintenance section of this installation manual.

Hillphoenix®

a **DOVER** company

Tel: 319-293-3777

703 Franklin Street, PO Box 478, Keosauqua, IA 52565

Due to our commitment to continuous improvement, all specifications are subject to change without notice.

Hillphoenix is a Sustaining Member of the American Society of Quality.

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