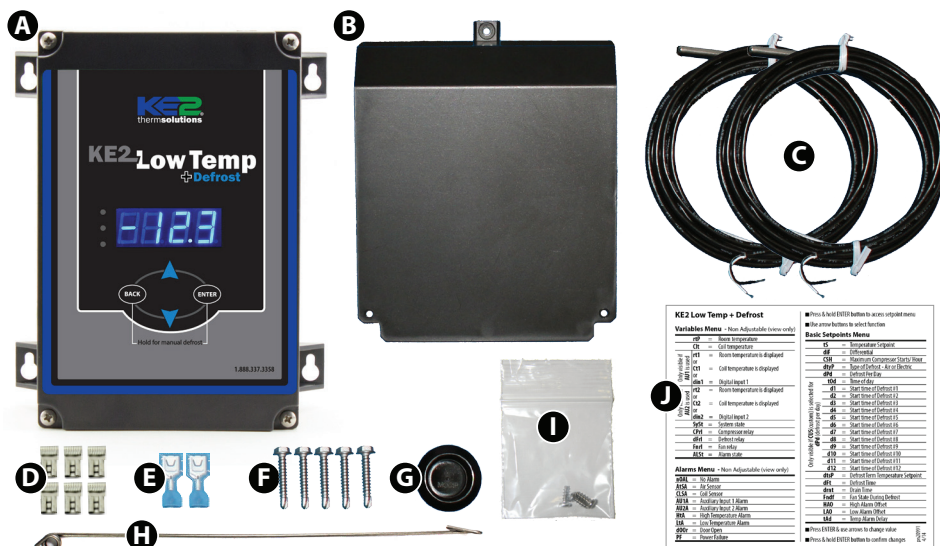




KE2 Low Temp+Defrost (pn 20903)

thermsolutions Condensed Quick Start Guide



Parts List

Included in KE2 Low Temp kit 20903

- A** (1) KE2 Low Temp controller
- B** (1) high voltage safety shield
- C** (2) temperature sensors
- D** (6) 90° spade connectors
- E** (2) straight spade connectors
- F** (5) self-tapping screws
- G** (1) 1/2" plastic knockout plug
- H** (1) air sensor mount
- I** (3) coarse thread screws
- J** (1) controller programming sticker
- (1) Warranty card (not shown)

Complete Instructions

Please visit: <http://ke2therm.com/product/ke2-low-temp-defrost/>
and click the **Link to Literature** button

— OR —

use this QR code.
KE2 Low Temp Literature



You Tube
KE2 Low Temp Videos



Indicator Lights

- Red light**
Basic Menu - not used;
Advanced Menu - heater pulsing enabled
- Yellow light**
non-critical alarm
(system running)
- Green light**
compressor on
- Green flashing**
compressor waiting on
timer to start/stop

Navigation

- Access Setpoints by pressing & holding **ENTER** until tS (temp setpoint) is displayed
- Use the **▲** & **▼** arrows to scroll through the available setpoints.
- Press **ENTER** to view the current setting.
- Use **▲** & **▼** to change the setpoint.
Press **ENTER** to move between digits to accelerate the changes.
- Press **ENTER** and hold to confirm each setpoint change
- Press **BACK** to escape.

Accessing the Menus

ADVANCED MENU

BACK Press and hold for 3 seconds

tS
dIF
CSH
FrEF
AU1
StA1
AU2
StA2
tS2
dtyP
dPd (Defrost per day)
Only visible if CUS (custom) is selected for dPd

tOd
d1
d2
d3
d4
d5
d6
d7
d8
d9
d10
d11
d12

dtSP
dFt
drnt
dntSP
Fndt
FndF
Pdt
HAO
LAO
tAd
Adr
Unt

Default menu - Non Adjustable (view only) VARIABLES MENU

rtP
Clt

One of the following is visible ONLY if 1st Auxiliary input (AU1) is used

trdF or
indF or
dFLo or
dFin or
t2nd or
dOOr or
SYOF or
COiL or
rtP

One of the following is visible ONLY if 2nd Auxiliary input (AU2) is used

trdF or
indF or
dFLo or
dFin or
t2nd or
dOOr or
SYOF or
COiL or
rtP

SySt
CPrl
dFrl
Fnrl
ALSt

BASIC MENU

ENTER Press and hold for 3 seconds

tS
dIF
CSH
dtyP
dPd (Defrost per day)
Only visible if CUS (custom) is selected for dPd

tOd
d1
d2
d3
d4
d5
d6
d7
d8
d9
d10
d11
d12

dtSP
dFt
drnt
Fndf
HAO
LAO
tAd

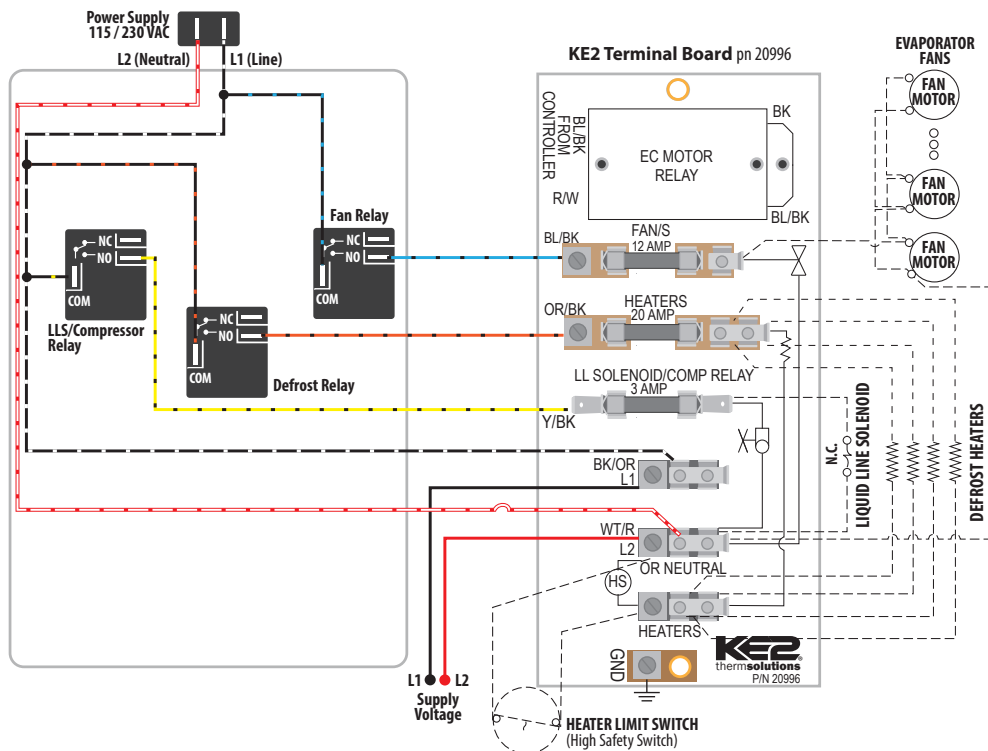
For a complete list of setpoints and descriptions see Q.3.29.



KE2 LowTemp

Condensed Quick Start Guide

Wiring Diagram



Basic Setpoints

Setpoint	Description	Min.	Default	Max.
tS	Temperature Setpoint	-50°F	-10°F	100°F
dIF	Differential	1°	5°	30°
CSH	Max. Compressor Starts/Hour	5 (Off)*	6	10
dtYP	Type of Defrost, Air or Electric	Air	Elec	Elec
dPd	Defrost Per Day	0	4	12, CUS
tOd	Time of day	0:00	12:00	23:59
d1 to d12	Start time of Defrost #1 to #12; Only visible if CUS (custom) is selected for dPd (Defrost per day)	0:00, diS	diS	23:59
dtsP	Defrost Term Temperature	35	50 if Elec; diSA if Air	90
dFt	Defrost Time	0 min	30 min	720 min
drnt	Drain Time	0 min	2 min	15 min
FndF	Fan State During Defrost	OFF	OFF if Elec; On if Air	On
HAO	High Alarm Offset	0°	10°	50°
LAO	Low Alarm Offset	0°	4°	10°
tAd	Temp Alarm Delay	1 min	90 min	180 min

IMPORTANT: Determine the coil sensor location

When arriving on site, **put the system into defrost and observe where the frost on the coil disappears last. Place the sensor where you observed the frost disappearing last - 1.** Monitor the coil's air entering and air exiting side. Often the last place frost disappears is on the air exiting side, near the right or left end. And, it is important to verify all heating elements are working properly.

Generally, sensor location is approximately 1 to 1-1/2" away from the right and left edges of the active coil surface, and typically near the bottom 1/3rd of the evaporator. Ice tends to grow from the edges inward. DO NOT install coil sensor on the U-bends.

The sensor needs to be as far away from the defrost heat sources as possible.

Note: To prevent sensor wire damage from sharp edges, insert plug **G** into coil housing - 2. Plug is inserted in the inner housing to access the coil. Puncture plug to insert sensor wire.

3 the sensor should touch two circuit tubes. When inserting the sensor into the coil, the tip should touch one of the circuit tubes. Don't locate it next to the heating elements - position it half way between the heaters if possible. In 4 the probe is inserted into the fins approximately 1/16" deeper than the stainless shielding. Pinch the fins gently together, securing the sensor. This provides thermal ballast, ensuring a complete defrost

Alternate method - As the defrost termination sensor, it is important the sensor does not terminate defrost before all frost is removed from the coil. In some installations, inserting the sensor into the coil may position it too close to the defrost heat source. An alternate method of positioning places the sensor vertically between the coil fins, see 5. Pinch fins together gently, securing the sensor.

Extending sensor wires

- After the sensors are mounted, route them back to the controller. If the wires must be extended, use 18 gauge twisted shielded pair. Max. recommended length for 18 gauge: 100ft.
- When running the wires back to the controller be careful not to introduce noise into the sensor wires. This occurs when sensor wires are located near high voltage lines (defined by UL as greater than 30V.) Do not run sensor wire in the same conduit as high voltage lines.
- If crossing a high voltage line is necessary, run the sensor wiring at right angles to minimize noise.

