Controllers, Communication, Parts & Accessories

2023
Condensed Catalog

KE2
therm**solutions**®

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Condensed Catalog Contents

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Alphabetical Product Listing

Product Name	Description	Part Number(s)	Page Number
2-pin Connector	Connectors are standard in many of the controller kits, available separately as a replacement part.	20914	24
3-pin Connector		20915	24
5-pin Connector		20916	24
Aux Valve Driver	Use with KE2 Evap-RE2 Contactor Panel to control the EEV of an additional evaporator.	21612	20
Aux Relay Board	Use with KE2 Evap OEM, KE2 Comp. Seq. OEM, and KE2 Condenser Control.	21323	22
Battery – 9V	9V Rechargeable Battery for KE2 Combo Display.	21781	21
Buzzer/Light	Use with KE2 KE2 Evap Efficiency & KE2 Panels.	120VAC – 20973; 230VAC – 21294	24
Current Sensor Board	Monitors the current draw of fans and defrost heaters when used with the KE2 Evap-RE2.	21613	20
Door Switch	Use with KE2 Low Temp, KE2 Evaporator Efficiency, KE2 Adaptive Control, KE2 Evap-RE2, KE2 Evap OEM & KE2 Combo Display.	20543	24
Electronic Expansion Valves – RSV / EEV Retrofit Kits	Unipolar, stepper motor actuated electric expansion valve, designed for refrigeration applications.	Multiple part numbers. See page 27	27
Ethernet Adaptor Kit	Use with KE2 Evap Efficiency & KE2 Panels.	20938	11
Ethernet Cable	CAT5e Shielded Ethernet Cable with Connectors	50 ft. – 20185 100 ft.– 20167	11
Fan Motor Relays	Protects controller's onboard relays from transient voltages, back EMF, and motor burnouts.	Multiple part numbers.	24
Flag Quick Disconnect	Insulated, 16-14 AWG – 50 pack	20640	24
Fuses – ½ Amp	250V, 0.5A Time Delay Glass; Replacement fuses for the KE2 Evap, KE2 Evap-RE and KE2 Controlled Environment – 5 pack	20699	25
Fuses – 1 Amp	250V, 1.0A Time Delay Ceramic; Replacement fuses for KE2 Evap-OEM, KE2 Compressor Sequencer OEM, KE2 Condenser Fan, KE2 Combo Display, KE2 Humidity Control, and Aux Relay Board– 5 pack	21375	25
Fuses – 3 Amp	250V, 3.0A Fast Acting Ceramic; fuses for the solenoid wiring on the KE2 Terminal Board – 5 pack	21029	25
Fuses – 5 Amp	250V, 5.0A Time Delay Glass, fuses for the relays on the Aux Relay Board – 5 pack	21628	25
Fuses – 12 Amp	250V, 12A Time Delay Ceramic; fuses for the fan wiring on KE2 Terminal Board – 5 pack	21031	25
Fuses – 20 Amp	250V, 20A Fast Acting Ceramic; fuses for the heater wiring on the KE2 Terminal Board – 5 pack	21030	25
Fuse Cap Replacement	Gray fuse cap for KE2 Evap, KE2 Evap-RE, and KE2 Controlled Environment – 2 pack	21406	—
KE2 Adaptive Control	Controller for low & medium temp refrigeration applications with energy saving adaptive defrost and fan management. For new or existing equipment.	21177	17
KE2 Basic Display	Basic Display with Cable – 3 digit LED – for KE2 Evap OEM, KE2 Condenser Fan Control and KE2 Compressor Sequencer OEM.	With18 in. cable – 21232 With 5ft. cable – 21387	23
KE2 Basic Display Cable	Replacement Cable for the KE2 Basic Display – 5 ft.	21878	23
KE2 Combo Display	Provides functions of a temperature display, lighting control, panic alarm, temperature alarm, and door heater controller. Stand-alone, or pair KE2 Evap OEM controller(s).	Multiple part numbers. See page 21	21
KE2 Combo Display – Cable	RJ-12 6P6C straight cable to connect KE2 Combo Display to KE2 Evap OEM controller – 25 ft.	21786	21
KE2 Compressor Panel	Designed for small to mid-sized racks. Eliminates using overly complicated controls designed for large systems. Supports up to 3 or 8 stages of loading through onboard relays. Configure relays as Fixed Speed Compressor, Compressor Unloader, Digital Scroll Compressor, Master Liquid Line Solenoid, or Hot Gas Defrost Relay. Add PN 21304 for digital unloader control. Add PN 21302 if using the 8th stage.	Up to 3 stages - 21961 Up to 8 stages - 21962	22
KE2 Compressor Sequencer OEM	Controller only. See KE2 Compressor Panel PN 21961 & 21962.	21768	22
KE2 Condenser Fan Control	Controller only. See KE2 Condenser Panel PN 21963.	21543	23
KE2 Condenser Panel (3 stages)	Energy efficient control of up to 14 condenser fans. 3 relay outputs for staging of fans or banks of fans. Multiple control options, including floating head pressure. VDC output for a VFD / EC Motors.	21963	23

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Alphabetical Product Listing (continued)

Product Name	Description	Part Number(s)	Page Number
KE2 Controlled Environment	**Replacement controller only**. See KE2 Environment Panel PN 21999 for new installs.	20894	26
KE2 Evap for Rack Efficiency (KE2 Evap-RE)	**Replacement controller only**. See KE2 Evap-RE2 Panels PN 21673 & 21674 for new installs.	21631	26
KE2 Evap-RE2 Contactor Panel	Adaptive defrost, fan management, current monitoring, EEPR & EEV control and more in a pre-wired contactor panel that reduces installation time and possibility of mis-wiring.	21673 21674	20
KE2 Environment Panel	Controls both temperature and humidity with outputs for humidifier, dehumidifier, heat/reheat and more. KE2 Therm's unique algorithm adjusts superheat based on humidity, further aiding in maintaining or removing moisture from the space. Ideal for vegetables, fruits, meats, ripening rooms, curing rooms, clean rooms, tobacco storage, wine and more.	21999	21
KE2 Evap-RE2 Replacement Display	Replacement display for the KE2 Evap-RE2 Contactor Panel.	21806	20
KE2 Evap-RE2 Replacement Board	Replacement main controller for the KE2 Evap-RE2 Contactor Panel.	21610	20
KE2 Evaporator Efficiency	Controller for walk-in freezers and coolers with remote monitoring, diagnostics, email/text alerts, energy savings, frost reduction, and optional EEV control - for new equipment or upgrade of existing refrigeration equipment.	Multiple kit part numbers. See page 18.	18
KE2 Evap Panel (Single)	Provides energy savings, precise temperature control, frost reduction, and communications capability using the KE2 Evap OEM hardware. The panel replaces and performs the function of multiple mechanical components such as the thermostat, defrost time clock, defrost termination, and fan delay. It is able to control an electric expansion valve (EEV) to regulate superheat, but will also function with a mechanical thermostatic expansion valve.	21958	19
KE2 Evap Panel (Double)	Same benefits as the KE2 Evap Panel (Single), but with two controllers mounted inside instead of one. Allows easy setup of lead/lag redundant systems, control of a two evaporator system, or for a combo freezer & cooler walk-in.	21959	19
KE2-EM35	Replaced by KE2-EM Plus PN 21902 & 21920.	Discontinued	26
KE2-EM Cell	Same benefits of the KE2-EM Plus, but can be equipped with a GSM SIM card for internet access or backup access. SIM card not included.	21903	10
KE2-EM Plus	Provides a local dashboard, email/text alerts, and datalogging for up to 35 KE2 Therm wireless sensors & controllers The KE2-EM Plus also serves as a local Wi-Fi access point for devices, and reliably publishes devices to the KE2 SmartAccess portal.	21902 21920 (w/BACnet)	10
KE2 Fan Control	Packaged solution optimizes energy efficiency of air cooled condensers. Incorporates Variable Frequency Drive (VFD) to match fan speed with varying load and ambient conditions.	Custom Product – Contact KE2 Therm.	23
KE2 Humidity Panel	Designed for sites that already have a KE2 Evap OEM installed, or require the humidity control to be mounted separately, the KE2 Humidity Panel provides all of the benefits of the KE2 Environment Panel when paired with an existing KE2 Evap OEM v3.0 or higher.	22006	21
KE2 LDA – Local Area Dashboard & Alarms	Replaced by KE2-EM Plus PN 21902 & 21920.	Discontinued	26
KE2 Low Temp + Defrost	Controller for low & medium temp refrigeration applications. Replaces thermostat, fan delay, defrost time clock & termination device. Ideal for truck stock. For new or existing equipment.	20903	17
KE2 SmartAccess	KE2 SmartAccess provides quick and easy real time access to your refrigeration systems 24/7. No port forwarding or VPN required.	21106	11
KE2 SmartGate	Pre-configured 10-port router.	20695	9
KE2 Temp + Air Defrost	Thermostat and air defrost timeclock in one controller, saving time and wiring. Ideal for truck stock. Easy to read digital display.	20611	16
KE2 Temp + Valve Control	Temperature and air defrost controller that also drives an EEV. Alternate modes available to drive an EEPR or EHGB valve to control pressure or temperature. Additional mode to act as controller for a mechanical subcooler. *R-410A requires 0 to 300 psig pressure transducer.*	21301, 21393	16
KE2 Terminal Board	Simplifies installation of KE2 Evap, KE2 Evap OEM, KE2 Low Temp & KE2 Adaptive.	20996	24
KE2 Service Tool App Kit	Access ethernet controller webpages with your phone or tablet, even if they are not internet connected.	iOS 22041, Android 22042	11
KE2 Wire Harness	9 wire, color coded harness for wiring the KE2 Evap, KE2 Evap OEM, KE2 Low Temp, and KE2 Adaptive.	10 ft. – 20736 25 ft. – 20670 40 ft. – 20737	24
Mounting Box	Simplifies installation and service of the KE2 Evaporator Efficiency controller.	20687	24
Pressure Transducer	0 to 150 psia	10 ft. – 20201 40 ft. – 20204	25

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Alphabetical Product Listing (continued)

Product Name	Description	Part Number(s)	Page Number
Pressure Transducer	0 to 300 psig	10 ft. – 20208 40 ft. – 20711	25
Pressure Transducer	0 to 500 psig	10 ft. – 20202 40 ft. – 20712	25
Pressure Transducer	0 to 750 psig	10 ft. – 21872 40 ft. – 21873	25
Relay – 8th Compressor Stage / Digital Switch	For the KE2 Compressor Sequencer OEM, used to pilot contactor for 8th compressor stage, control master liquid line solenoid, hot gas solenoid or unloader valve with Aux Relay Board. Used to control reheat, humidifier, or de-humidifier with the KE2 Controlled Environment.	21032	25
Relay – Fan Motor Relay Kit	External Fan Relay Kit – Mechanical: (1)120V Coil Relay; (1) 240V Coil Relay; wire harness, 4 spades, 2 screws – for KE2 Evap, KE2 Low Temp & KE2 Adaptive. Protects on-board fan relay from motor burnouts and motors without proper switching protection.	120V & 240V Coils – 21409	24
Relay – Fan Motor Relay (relay only)	For KE2 Evap, KE2 Low Temp & KE2 Adaptive. Protects on-board fan relay from motor burnouts and motors without proper switching protection.	120VAC – 21469 240VAC – 21470	24
Relay – Form A	Replacement for the KE2 Evap OEM fan relay.	21373	—
Relay – Form C	Replacement for the KE2 Evap OEM LLS relay, as well as relays 1 & 2 on the KE2 Condenser Fan Control / KE2 Comp. Seq. OEM.	21374	—
Relay – Solid State (N.O.)	Used with KE2 Compressor Sequencer OEM to pilot the bypass valve for a digital scroll compressor. Also used with KE2 Evap, KE2 Evap OEM, and KE2 Evap-RE2 to pilot PWM valves.	21304	25
Relay – Solid State (N.C.)	Used with KE2 Evap OEM as an alarm output for a buzzer, siren, strobe etc. Can be used to pilot a mechanical relay to signal a BMS or security system via a dry contact.	22005	25
Sensor Clip – Coil - 3/8 in.	Coil sensor mount for 3/8 in. circuit tube	20963	24
Sensor Clip – Coil - 1/2 in.	Coil sensor mount for 1/2 in. circuit tube	20964	24
Sensor Clip – Coil - 5/8 in.	Coil sensor mount for 5/8 in. circuit tube	20965	24
Sensor Clip – Suction Line - ½ in.	100-pk. of clips to securely fasten temp sensor to ½ in. suction line	21225	25
Sensor Clip – Suction Line - ⅝ in.	100-pk. of clips to securely fasten temp sensor to ⅝ in. suction line	21226	25
Sensor Clip – Suction Line - ⅞ in.	100-pk. of clips to securely fasten temp sensor to ⅞ in. suction line	21227	25
Sensor Clip – Suction Line - 1-⅛ in	100-pk. of clips to securely fasten temp sensor to 1-⅛ in. suction line	21228	25
Sensor Clip – Suction Line Kit	(1) each of ½, ⅝, ⅞ & 1-⅛ inch suction line sensor clips	21229	25
Sensor – Current	Replacement CTs for the Current Sensor Board.	21614	20
Sensor – Humidity	For use with the KE2 Humidity Control & KE2 Controlled Environment, 40 ft. leads.	20651	25
Sensor – Temperature	Temperature sensor – NTC Thermistor Assembly. Operating Range -60°F to 150°F (-51°C to 65°C)	Multiple kit part numbers. See page 25.	25
Sensor – Temperature – Color	Set of blue, yellow, and green sensors, NTC Thermistor Assembly. Operating Range -60°F to 150°F (-51°C to 65°C)	15 ft. – 21151; 40 ft. – 21066	25
Sensor – High Temperature	For measuring discharge temperature – 15 ft. Operating Range -40°F to 302°F (-40°C to 150°C)	21230	25
Sensor Mount for Air Sensor	Used to position the air sensor in the return air the evaporator, pack of 20.	20606	25
Sensor – Wireless Temp & Humidity w/Remote Probe	KE2 Wireless Sensor for monitoring temperature and humidity. Use with the KE2-EM Plus.	(1) – 21633; (10) pack – 21688	10
Snaptrack	Snaptrack for use with the KE2 Evap OEM, KE2 Compressor Sequencer OEM, and KE2 Condenser Fan Control.	11 in. – 21324; (2) 3 in. pieces – 21415	—
System Off Switch	Utilize controller digital input to turn the **System Off**, without power cycling the system.	21934	25
Switch 8-port	8-port Ethernet switch	20166	9
Switch 16-port	16-port Ethernet switch	21011	9
USB to RS 485 Adaptor	Replacement USB to RS 485 adaptor for the KE2-EM Plus.	21354	—

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Video Listing

Connect to training, installation, and general information videos on many of our products at:
https://www.youtube.com/ke2therm or use the QR code below.

Controller Videos

KE2 Temp & KE2 Temp + Valve

Video 091	How to Wire the KE2 Temp
Video 096	Configure Your Network When Multiple KE2 Temps are Being Monitored
Video 093	Publish Your KE2 Temps on KE2 SmartAccess
Video 098	What is on the Temp's Webpage
Video 083	Set a Custom Defrost Schedule for the KE2 Temp or KE2 Temp + Valve
Video 119	Troubleshooting a KE2 Temp that is Not Cooling

KE2 Low Temp & KE2 Adaptive Control

Video 042	Wiring the KE2 Low Temp or KE2 Adaptive for a Door Switch
Video 043	Configure the KE2 Low Temp or KE2 Adaptive Control for a Door Switch

KE2 Evaporator Efficiency

Video 046	How to Wire the KE2 Evap
Video 030	Setup the KE2 Evap Controller for a Walk- in Freezer
Video 031	Setup the KE2 Evap for a Walk-in Cooler
Video 033	Confirm the KE2 Evap is Wired Correctly
Video 045	What to do: If the KE2 Evap Display is Blank
Video 048	KE2 Evap HOME Page
Video 049	KE2 Evap SETTINGS Page
Video 050	KE2 Evap NETWORK Page
Video 051	KE2 Evap SETPOINTS Page

Communication Videos

KE2-EMs

Video 123	Quickly Access Your KE2-EM35 and Wireless Sensors
Video 125	Best Practices for Deploying a Wireless Monitoring Solution
Video 118	Assigning Meaningful Names to Your KE2 Wireless Sensors
Video 117	Benefits of Affordable Temperature Monitoring

KE2 LDA

Video 053	The KE2 LDA: Communication Device for KE2 Therm Serial-ModBus and Ethernet Controllers
Video 061	What Information is on the KE2 LDA Dashboard & Management Console
Video 060	Setup Alarm Notifications on the KE2 LDA
Video 055	Using a KE2 LDA to Setup Controllers w/Older Firmware on KE2 SmartAccess
Video 059	The KE2 LDA: Connecting the KE2 LDA to KE2 SmartAccess

KE2 SmartAccess

Video 062	Communication Made Easy with KE2 SmartAccess
Video 063	How to: Setup KE2 SmartAccess on a New KE2 Evap Installation
Video 064	How to: Setup KE2 SmartAccess on a Previously Installed KE2 Evap
Video 065	How to: Enable KE2 SmartAccess from a Web Browser
Video 066	How to: Assign Controllers to your KE2 SmartAccess Site
Video 093	How to Publish Your KE2 Temps on KE2 SmartAccess
Video 059	The KE2 LDA: Connecting the KE2 LDA to KE2 SmartAccess

Miscellaneous Videos

Accessories

Video 070	Accessories to Make Your Controller Installs & Return Service Visits Easier & More Efficient.
Video 035	Why Use the KE2 Wire Harness
Video 037	What are the Benefits of Installing a Door Switch
Video 038	How to Install a Door Switch
Video 040	How to Wire a Door Switch
Video 115	Benefits of using an EEV vs. TEV

Troubleshooting

Video 034	Iced Evaporator Coil on a Walk-in Freezer
Video 044	Iced Evaporator Coil on a Walk-in Cooler
Video 068	How to Determine Proper Coil Sensor Location
Video 069	How to Install a Coil Sensor
Video 106	Troubleshooting a Pressure Transducer
Video 107	Troubleshooting a Temperature Sensor

KE2 Therm YouTube videos

KE2 CondensedCatalog - 411
Controllers, Communication, Parts & Accessories

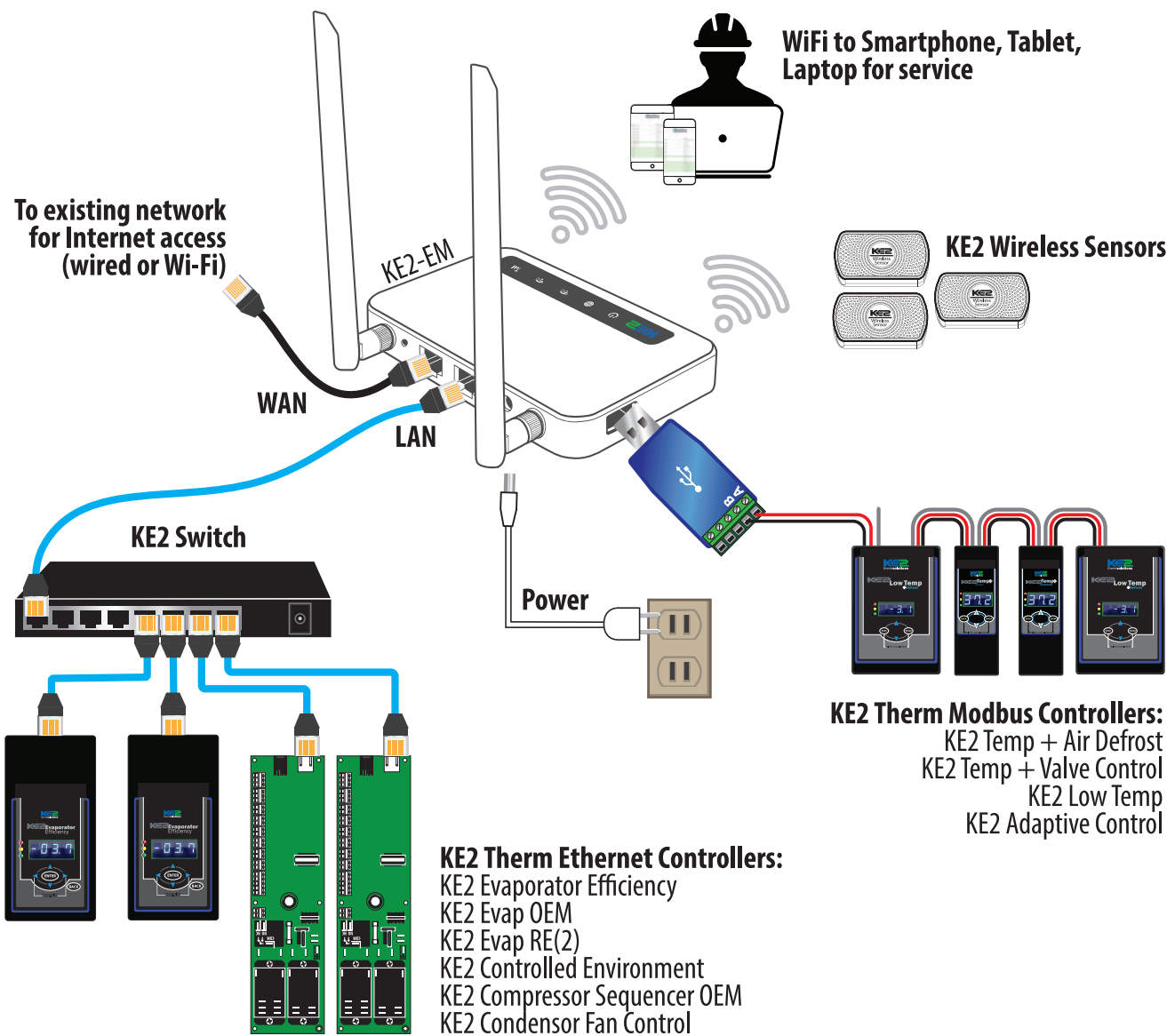## Communications

IN THIS SECTION

- Feature comparison chart
- KE2 Switch
- KE2 SmartGate
- KE2-EM Plus
- KE2-EM Wireless Sensors
- KE2 Service Tool App
- Ethernet Cable
- Ethernet Adaptor Kit
- KE2 SmartAccess

Controller Features	KE2 Switch	KE2-EM Plus	KE2-EM Cell	KE2 SmartGate
Part Number	20166 – 8 port 21011 – 16 port	21902	21903	20695
Use with KE2 Wireless Sensors	—	●	●	—
Use with Modbus controllers: KE2 Temp, KE2 Temp + Valve, KE2 Low Temp, KE2 Adaptive	—	●	●	—
Use with Ethernet controllers: KE2 Evap, KE2 Evap OEM, KE2 Evap-RE2, KE2 Compressor Sequencer OEM, KE2 Condenser Fan Control	●	●	●	●
Number of Ethernet ports	8 or 16	2 (1 WAN, 1 LAN)	2 (1 WAN, 1 LAN)	10 (1 WAN, 9 LAN)
Dashboard for easy access and management of devices	—	●	●	—
Wireless Access to Controllers	—	●	●	●
Bridge to Wireless Network for Internet	—	●	●	▲
4G LTE for Internet/Backup Internet*	—	—	●	—
Data Logging	—	●	●	—
Acts as BACnet/IP gateway for KE2 Therm devices	—	● Use PN 21920 (*does not support BBMD*)	● Use PN 21926 (*does not support BBMD*)	—

*GSM Sim Card required.

Typical Refrigeration Network Diagram

WiFi to Smartphone, Tablet, Laptop for service

To existing network for Internet access (wired or Wi-Fi)

KE2-EM

KE2 Wireless Sensors

WAN

LAN

KE2 Switch

Power

KE2 Therm Modbus Controllers:
KE2 Temp + Air Defrost
KE2 Temp + Valve Control
KE2 Low Temp
KE2 Adaptive Control

KE2 Therm Ethernet Controllers:
KE2 Evaporator Efficiency
KE2 Evap OEM
KE2 Evap RE(2)
KE2 Controlled Environment
KE2 Compressor Sequencer OEM
KE2 Condensor Fan Control

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Switch

The KE2 Switch forms the foundation of the local refrigeration network, and facilitates communications between controllers. Each controller is linked via an Ethernet cable to the KE2 Switch.

In addition to communication between controllers, connecting the switch to a KE2-Edge Manager (KE2-EM) will provide a local dashboard of controllers, local Wi-Fi access to controllers, and data logging. Providing internet access to the switch/KE2-EM allows further features such as email/text alerts and remote monitoring & control via KE2 SmartAccess.

BENEFITS SUMMARY

- Allows networked controllers to communicate with each other to coordinate defrost, refrigeration, lead/lag etc.

- Use as a connection point for multiple controllers to a KE2-EM, or to the local network for internet access, providing remote monitoring and control.

Additional Literature

Network Switch: 8 port *pn 20166* ; **16 port** *pn 21011*

Specifications	
Construction	Sturdy Metal Case
Operating Temperature	-22℉ to 150℉ (-30℃ to 66℃)
Interface	16 x 10/100/1000 Mbps Auto-MDIX RJ-45 ports
Standards	IEEE 802.3 10Base-T; IEEE 802.3u 100Base-TX; IEEE 802.3ab 1000Base-T; IEEE 802.3x Flow Control; IEEE 802.3az Energy Efficient Ethernet (16 port)
Network Media	Gigabit Ethernet: Cat 5e and 6 up to 328 ft. (100 m)
Diagnostic LEDS	Power, Link/AST, Speed

KE2 SmartGate

The KE2 SmartGate is pre-configured for plug and play setup of the refrigeration network. Simply plug an Ethernet based controller into one of the LAN ports, connect your device to the Wi-Fi, and open your KE2 Service Tool App. Any connected controllers will be discovered and accessible right from your phone or tablet.

The KE2 SmartGate is also a powerful piece of network equipment. It allows speedy communication to and between controllers for small or larger installs.

BENEFITS SUMMARY

- Pre-configured – eliminates the need to configure the network

- Industrial grade – increased speed and durability

- Provides 9 LAN ports – reduces the need for a switch

- Not an IT guy...Not a problem!

Additional Literature

KE2 SmartGate *pn 20695*

General Features	
Industrial Grade	✔
LAN Ports	9
Gigabit Support	✔
Serial Console	✔
POE (Power Over Ethernet)	✔
Shielded Ports	✔
Fiber	✔
Wired and Wireless Models	✔
Supports > 20 Devices	✔
Enterprise Ready	✔
Temp Range	-30℉(-35℃) to 150℉ (+65℃)
Humidity Range	Max. 90% (non-condensing)

Specifications		
CPU		600MHz
Memory		128MB
Ethernet	**Gigabit Ports**	5
	10/100 Ports	5
Wireless		802.11 B/G/N
Expansion		Fixed Gigabit Ethernet SFP cage
USB		Micro USB (powered)
POE		ETH1 (8 - 28v DC)
Antenna Gain		4dbi
TX Power		30dBmDH

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Controllers, Communication, Parts & Accessories

KE2-EM Plus
for use with KE2 Wireless Sensors and KE2 Therm controllers

The KE2-Edge Manager Plus (KE2-EM Plus) automatically finds and dashboards up to 35 KE2 Therm controllers and KE2 Wireless Sensors.

The KE2-Edge Manager creates a common dashboard that integrates KE2 sensor data with in-depth system operational information from KE2 Therm controllers.

The local dashboard can be accessed via the on-board Wi-Fi, or through the local network. The Wi-Fi provides a convenient access point to controllers while working on the refrigeration system, while graphs and datalogs can be accessed from a PC on the local network.

When provided internet access either via the on-site network or from cellular, the KE2-EM can send email or text alerts. The controllers or sensors can also be published to the KE2 SmartAccess portal for remote access & control.

PN 21902 – KE2-EM Plus
PN 21920 – KE2-EM Plus (w/ BACnet)*
PN 21903 – KE2-EM Cell
PN 21926 – KE2-EM Cell (w/ BACnet)*
PN 21924 – KE2-EM Plus/Cell Mounting Bracket

*Does not support BBMD.

KE2-EM Plus Kit – pn 21902, 21920, 21903, 21926
KE2-EM Plus Manager - Communication Device
(1) 5 ft. Ethernet Cable
(1) RS-485 USB Adapter - for KE2 Therm Modbus controllers
Power Cord

BENEFITS SUMMARY
- Detailed graphs with time stamps
- Bridge to existing Wi-Fi networks
- Provides a wireless access point
- Serves as a BACnet/IP Gateway (with license)
- Remote access for all connected KE2 Therm devices via KE2 SmartAccess
- High-accuracy temp & humidity readings
- Send email or text alerts for all connected KE2 Therm devices, to multiple recipients
- Connect Ethernet controllers with older firmware to KE2 SmartAccess without requiring controller upgrades

Additional Literature

[QR Code]

KE2-Wireless Sensors
for use with KE2-EM Plus, KE2-EM Cell

(pn 21633)

Water resistant and portable, the KE2-Wireless Sensor is a high-precision digital temperature and humidity indicator. The wireless signal and light-weight design mean installation takes just seconds. And, the sensor's 1.5-year battery life ensures low maintenance and extended performance. The 3 foot probe lead allows the transmitter to be positioned outside of the monitored space for better reception at the KE2-EM.

Common applications are: laboratory, agricultural, communications, storage facilities, warehouses, refrigerated spaces, medical, and hospitality.

KE2-Wireless Sensors	
KE2 Wireless Sensor w. Remote Probe	pn 21633
(10) pack KE2 Wireless Sensor w. Remote Probe	pn 21688

Additional Literature

[QR Code]

BENEFITS SUMMARY
- High-accuracy digital temperature and humidity sensor
- Configurable location name
- Wireless signal - using BLE 4.1 (Bluetooth Low Energy device)
- Email/text alerts (see list below)
- IP66 water resistance level
- 300 ft. (91 m) line of sight broadcasting range
- 1.5-year battery life (two AAA batteries)
- Low battery indicator
- 12-month free KE2 SmartAccess portal license
- Very fast start-up and measurement time
- Real-time data tracking, storing, & uploading
- KE2-EM Cell version can be equipped with a GSM SIM card for internet access or backup access. SIM card not included.

ALARMS
- High/low temp w/adjustable time delay
- High/low humidity w/adjustable time delay
- Disconnect alarm – KE2 Edge Manager loses contact with sensor
- Device loss alarm – KE2-Wireless Sensor loses contact for an extended period
- Portal Disconnect Alarm (optional)
- Low battery indicator

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Service Tool App

The KE2 Service Tool App turns your phone temporarily into a KE2-Edge Manager and Wi-Fi service tool, providing hundreds of dollars in features to you for FREE.

Access controller webpages with your phone or tablet, even if they are not internet connected. Simply connect to the same network that the controllers are plugged into and the KE2 Service Tool App will quickly discover and display all KE2 Therm controllers on the network. Or, use a tested Apple or Android Ethernet dongle to plug your phone directly into a controller with an Ethernet cable.

The KE2 Service Tool App will display a dashboard of all available controllers from which you can change setpoints, initiate defrosts, and view historic data. The tool also allows you to backup and restore setpoints, as well as update controllers using your smart device.

The app can also use your phone's mobile internet connection to publish controllers to KE2 SmartAccess, meaning your home office or KE2 Therm technical support can watch the system in real time with you, making it easier to troubleshoot system issues over the phone.

KE2 Service Tool App Kits – Apple pn 22041, Android pn 22042
(1) 20 ft. Ethernet Cable
(1) Apple (lightning) or Android (USB-C) to Ethernet dongle
(1) Polyweave water resistant bag

BENEFITS SUMMARY

- Accessing your controllers is easier than ever, automatically finds and dashboards any controllers it can see.
- Connect to the controller network or plug into the controller directly.
- View real time status of controller temperatures, pressures, relay status etc.
- Access the 30 days of built-in graphs and datalogs on controllers.
- Setpoints can be viewed and changed
- Allow others to view the controller with you in real time.
- Update controllers from your smart device.

Additional Literature

KE2 SmartAccess

KE2 SmartAccess is your personal secure portal for remote access and monitoring of KE2 Therm devices. Simply provide the controller or KE2-Edge Manager with internet access, enable KE2 SmartAccess, and start accessing your systems from anywhere internet is available for a nominal monthly fee.

Whether managing one location or one hundred locations, KE2 SmartAccess will present your KE2 Therm devices to you in an easy to understand dashboard. Change setpoints, initiate defrosts, setup email/text alerts, view datalogs, generate reports and more, all from your KE2 SmartAccess portal.
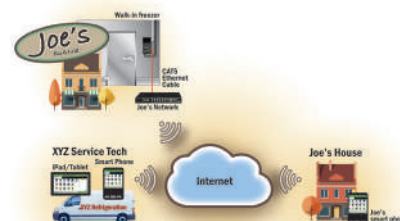
Ethernet Cable

CAT5e shielded Ethernet cable for commercial/industrial temperature range. Shielding helps prevent noise interference with communications. Shielded RJ-45 connections are attached.

CAT5e Shielded Ethernet Cable – 50 ft.
pn 20185

CAT5e Shielded Ethernet Cable – 100 ft.
pn 20167

Ethernet Adaptor Kit
pn 20938

Provides easy access to the Ethernet port on the backside of the KE2 Evaporator Efficiency controller. Once the adaptor is connected, there is no need to remove the controller from the mounting screws to reach the Ethernet connection.
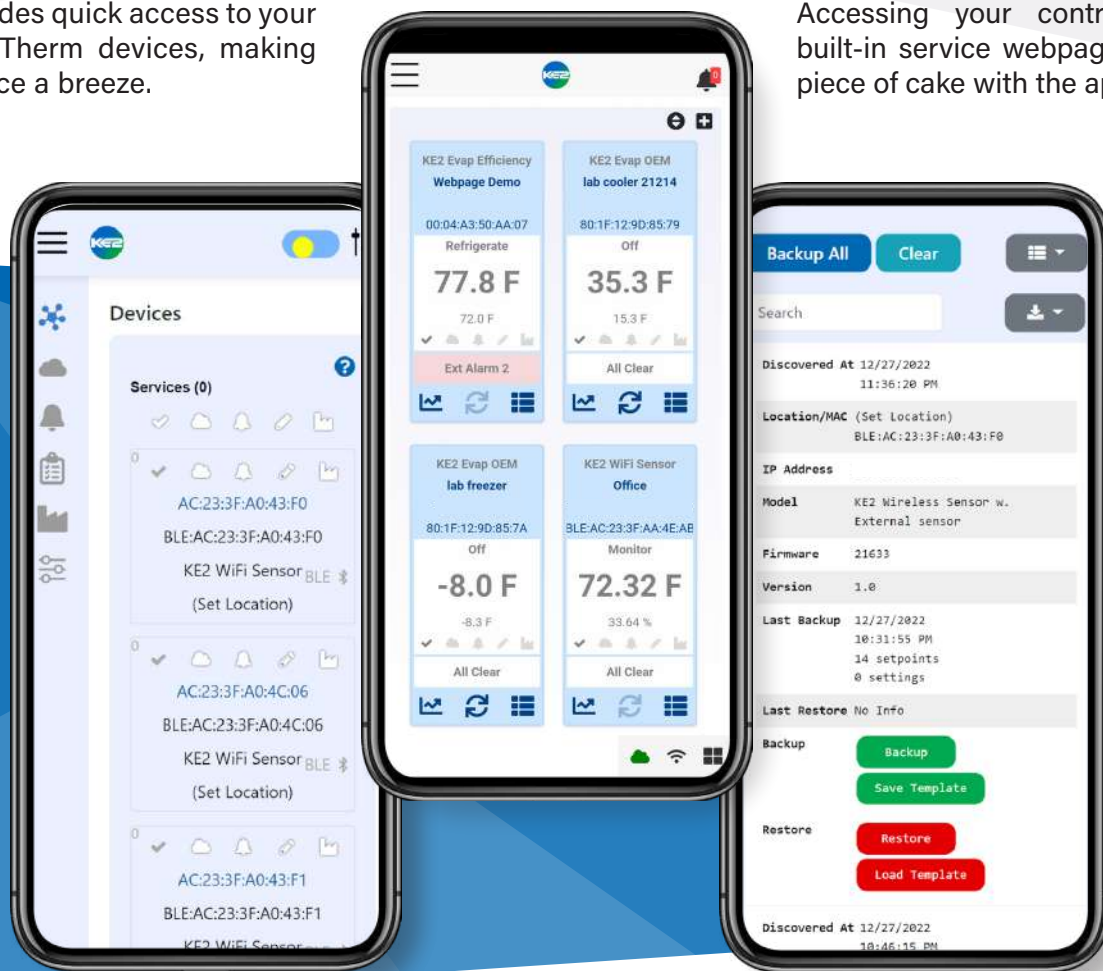
SERVICE TOOL
WITH KE2 SMARTACCESS

Quick access

The KE2 Service Tool App provides quick access to your KE2 Therm devices, making service a breeze.

Easier than ever

Not an IT guy? Not a problem! Accessing your controller's built-in service webpage is a piece of cake with the app.
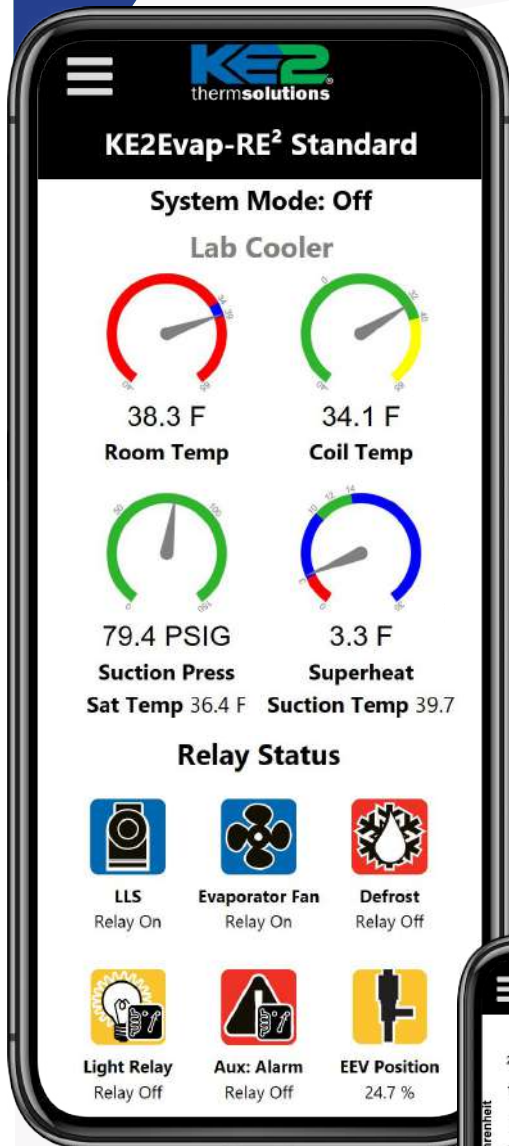
The KE2 Service Tool App will find any connected controllers and automatically create a dashboard on your phone or tablet. Tap any controller on the dashboard to pull it up - it's that easy.

1 → Connect to the controller network or plug in directly with an ethernet dongle*.

2 → Open the app.

3 → Start accessing your controllers!

*KE2 Service Tool App Kits – Apple PN 22041, Android PN 22042

KE2THERM.COM

Troubleshooting

Your refrigeration system has never been easier to troubleshoot. View real time status of the controller temperatures, pressures, valve positions, relay status, alarms & more.

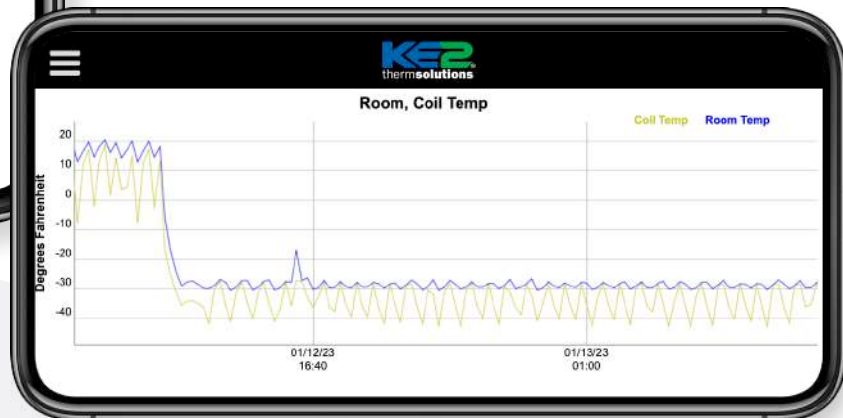### Your controller has something to tell you!

Many controllers have 30 days of built-in graphs and datalogs. See exactly what happened and eliminate guess work.

You're in control.

All setpoints can be viewed and changed via the app. Backup and restore setpoints as well, speeding up setup of multiple controllers. Initiate defrosts or pumpdown the system from the app.

You're not alone!

Allow others to view the controller with you in real time via KE2 SmartAccess. While connected, the app will use your smart device's internet connection to allow your home office, equipment manufacturer, or KE2 Therm tech support to troubleshoot with you.

KE2THERM.COM

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Refrigeration Controllers

Controller Features	KE2 Temp + Air Defrost	KE2 Temp + Valve Control	KE2 Low Temp + Defrost	KE2 Adaptive Control	KE2 Evaporator Efficiency	KE2 Evap OEM *(KE2 Evap Panels)*
Part Number	20611	21301	20903	21177	20178, 20844	21231, 21958, 21959, 21999
Defrost Type	Air (off time)	Air (off time)	Air, Electric	Air, Electric	Air, Electric, Hot Gas	Air, Electric, Hot Gas
Initiate Defrost	Time	Time	Time	Demand, Time	Demand, Time, or Run-Time	Demand, Time, or Run-Time
Terminate Defrost	Time	Time	Temperature/Time External Signal	Temperature/Time External Signal	Temperature w/Time Backup	Temperature w/Time Backup
Evaporator Fan Management Options	—	—	●	●	●	●
Defrost Heater Management Options	N/A	N/A	●	●	●	●
Alarm Options	Display, email/text with KE2-EM	Display, email/text with KE2-EM	Display, Buzzer, or email/text with KE2-EM	Display, Buzzer, or email/text with KE2-EM	Display, Alarm Relay, Buzzer/Light kit, email/text	Display, email/text, Buzzer & Alarm relay w/KE2 Combo Display
Eliminates T-Stat, Time Clock	●	●	●	●	●	●
Eliminates Fan Delay, Defrost Termination Device	N/A	N/A	●	●	●	●
Valve Control	TEV	TEV, EEV, EEPR, EHGB	TEV	TEV	TEV or EEV	TEV or EEV
Humidity Control/ Monitor	—	—	—	—	—	Control & Monitoring with KE2 Humidity Control auxiliary board**
Lead/Lag Control	—	—	Requires external signal	Requires external signal	Requires external signal	Built into the firmware with multiple control options**
Communication	Modbus, BACnet/IP*	Modbus, BACnet/IP*	Modbus, BACnet/IP*	Modbus, BACnet/IP*	TCP/IP, API, BACnet/IP*	TCP/IP, API, BACnet/IP*
Data Logging	365+ days with KE2-EM	365+ days with KE2-EM	365+ days with KE2-EM	365+ days with KE2-EM	30 days built-in, or 365+ days with KE2-EM	30 days built-in, or 365+ days with KE2-EM

Low Side Controllers

*Requires a KE2-EM w/ BACnet license (does not support BBMD)   **See KE2 Panels section for panel part numbers

KE2 CondensedCatalog - 411
Controllers, Communication, Parts & Accessories

High Side Controls

KE2 Evap-RE2 Contactor Panel	Controller Features	KE2 Compressor Sequencer – OEM	Controller Features	KE2 Condenser Fan Control
21673, 21674	Part Number	21768, 21961, 21962	Part Number	21543, 21963
Air, Electric, Hot Gas	Number of Compressor Stages	3 (8 with Aux Relay Board)	Number of Fan Stages	3
			Number of Fan	1–14
Demand, Time, or Run-Time	Control Type	Fixed Pressure or Floating Suction Pressure	Control Type	Fixed Pressure Saturation Temp – Ambient Air Subcool Liquid Temp – Ambient Air Inlet Temp – Outlet Temp
Temperature w/Time Backup	Rack Setup	Single Suction & Discharge Group		
●	Digital Compressor Control	● *(requires external relay PN 21304)*	Motor Control	ECM, VFD, Fixed Speed, ECM with Fixed Speed
●	VFD Control	●		
Display, Alarm Relay, Buzzer/Light kit, email/text	Alarm Options	Display, email/text	Alarm Options	Display, email/text
●	Limits Defrost Load for Circuit Current	●	Split Condenser Control	●
●	Rack Size	Small / Mid	Hold Back Valve Control	●
TEV, EEV, EEPR, EHGB	Installation Type	New or Retrofit	Installation Type	New or Retrofit
—	—	—	—	—
Requires external signal				
TCP/IP, API, BACnet/IP*	Communication	TCP/IP, API, BACnet/IP*	Communication	TCP/IP, API, BACnet/IP*
365+ days with KE2-EM	Data Logging	30 days built-in, or 365+ days with KE2-EM	Data Logging	30 days built-in, or 365+ days with KE2-EM

KE2 CondensedCatalog - 411
Controllers, Communication, Parts & Accessories

KE2 Temp + Air Defrost

The KE2 Temp + Air Defrost simplifies refrigeration controls by combining the functions of a thermostat and air defrost time clock — increasing functionality and reducing wiring. This also makes it ideal for truck stock. Customers also appreciate the large display and blue LEDs, allowing the temperature to be read from a distance.

The KE2 Temp is accessible remotely using the KE2-Edge Manager (KE2-EM), a simple, multi-functional, communication device. The KE2-EM will automatically find any connected KE2 Temp + Air Defrost controllers and provide immediate local network communication.

KE2 Temp + (Air) Defrost

Kit 1 – pn 20611		Kit 2 – pn 21322	
KE2 Temp controller		KE2 Temp controller	
(1) 45 in. temperature sensor	pn 20715	(1) 10 ft. blue, black or green temperature sensor	pn 20199
Installation hardware		Installation hardware	

KE2 Temp +Defrost

Temp sensor (1)

BENEFITS SUMMARY

- Ideal for truck stock – Eliminates an air defrost time clock and a thermostat.
- Simplifies wiring, saves installation time.
- When used with the KE2-Edge Manager, displays a local dashboard showing connected controllers.
- Visual alarms on the display, and alarm notifications via text or email when used with the KE2-Edge Manager.
- Over a year of temperature data logging when used with the KE2-Edge Manager.
- Off time defrost on a predefined, or custom schedule.
- Compressor protection – adjustable maximum compressor starts per hour.
- 1st defrost 2 hrs after start up.
- 120V / 208-240V
- Keypad lock feature.

Additional Literature

KE2 Temp + Valve Control

Like the KE2 Temp + Air Defrost, the KE2 Temp + Valve Control replaces the thermostat and defrost time clock for air defrost applications, simplifying the installation. In addition, the KE2 Temp + Valve Control has to ability to drive an electric expansion valve (EEV) to control superheat, or an electric evaporator pressure regulator (EEPR) or electric hot gas bypass (EHGB) valve to control to a specific temperature or pressure. Further, Subcool mode allows the KE2 Temp + Valve to be applied to a mechanical subcooler, modulating an EEV to control the liquid temperature of the refrigerant leaving the brazed plate heat exchanger.

KE2 Temp + Valve Control

Kit – pn 21301	
KE2 Temp + Valve controller	pn 21393 controller only
(1) 10 ft. 0-150 psia pressure transducer	pn 20201*
(1) 45 in. temperature sensor	pn 20715
(1) 10 ft. temperature sensor	pn 20199
Installation hardware	

*R-410A requires a 0-300 psig transducer (pn 20711).

KE2 Temp + Valve | **45 inch temp sensor (1)** **10 ft. temp sensor (1)** | **10 ft. pressure transducer (1)**

BENEFITS SUMMARY

- Controls an EEV, EEPR, or EHGBP providing much tighter system control than possible with mechanical controls.
- Great for truck stock - can be used as thermostat and defrost clock on air defrost applications, or as thermostat only for electric defrost. Compatible with TEVs and most common EEVs & refrigerants.
- Simplifies wiring, saves installation time.
- When used with the KE2-Edge Manager, displays a local dashboard showing connected controllers.
- Visual alarms on the display, and alarm notifications via text or email when used with the KE2-Edge Manager.
- 366 days of temperature data logging when used with the KE2-Edge Manager.
- Off time defrost on a predefined, or custom schedule.
- The subcool control mode allows the KE2 Temp + Valve to be applied to mechanical subcoolers.
- Compressor protection – adjustable maximum compressor starts per hour.
- Manual defrost.
- Keypad lock feature.

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Low Temp + Defrost

Controller for low & medium temp refrigeration applications. For new or existing equipment. Serves the function of multiple components: replaces thermostat, fan delay, defrost time clock & termination device. Versatile controller ideal for truck stock.

KE2 Therm fan management allows tighter temperature control and saves energy. California Title 24 compliant evaporator fan management option available when used with a single fixed speed compressor.

KE2 Low Temp + Defrost

Kit – pn 20903	
KE2 Low Temp controller	
(2) 10 ft. temperature sensors	pn 21794 & 21795
Air sensor wire mount	pn 20606
Installation hardware	

KE2 Low Temp +Defrost

10 ft. temp sensors (2)

BENEFITS SUMMARY

- Off time or electric defrost on pre-defined schedule or custom defrost interval.
- Ideal for truck stock – Replaces defrost time clock, thermostat, defrost termination, and fan delay.
- Simplifies wiring, saves installation time
- KE2 Therm fan management allows tighter temperature control and saves energy. Title 24 compliant option available.
- Regulates the amount of defrost heat to prevent steaming.
- Optional Door Switch with all the necessary time delays.
- Controllers can connect to KE2 SmartAccess portal with the KE2-Edge Manager.
- Visual alarms on the display, built-in buzzer, and alarm notifications via text or email when used with the KE2-Edge Manager.
- Over a year of temperature data logging when used with the KE2-Edge Manager.
- Compressor protection – adjustable maximum compressor starts per hour.
- Keypad lock feature.

Additional Literature

KE2 Adaptive Control

Energy saving controller for low & medium temp refrigeration applications. For new or existing equipment. Serves the function of multiple components: replaces thermostat, fan delay, defrost time clock & termination device.

Includes unique energy saving demand defrost algorithm based on the efficiency of the evaporator, third party verified to provide 20%+ energy savings.

KE2 Therm fan management allows tighter temperature control and saves energy. California Title 24 compliant evaporator fan management option available when used with a single fixed speed compressor.

KE2 Adaptive Control

Kit – pn 21177	
KE2 Adaptive Control controller	
(3) colored, 15 ft. temperature sensors	pn 21151
Air sensor wire mount	pn 20606
Terminal board	pn 20996
Installation hardware	

KE2 Adaptive Control

15 ft. colored temp sensors (3)

KE2 Terminal Board

BENEFITS SUMMARY

- Unique defrost initiation based on evaporator efficiency, third-party verified to provide 20%+ energy savings.
- KE2 Therm fan management allows tighter temperature control and saves energy. Title 24 compliant setting available.
- Controllers can connect to KE2 SmartAccess portal with the KE2-Edge Manager
- When used with the KE2-Edge Manager, displays a local dashboard showing controllers connected to the KE2-EM.
- Visual alarms on the display, built-in buzzer, and alarm notifications via text or email when used with the KE2-Edge Manager.
- Over a year of temperature data logging when used with the KE2-Edge Manager.
- Regulates the amount of defrost heat to prevent steaming.
- Optional Door Switch with all the necessary time delays.
- Off time or electric defrost on demand, pre-defined schedule, or custom interval.
- Keypad lock feature.

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Evaporator Efficiency

Flagship energy saving controller for low & medium temp refrigeration applications with built-in remote monitoring & diagnostics capability. For new or existing equipment. Serves the function of multiple components: replaces thermostat, fan delay, defrost time clock & termination device.

Able to drive an electric expansion valve (EEV) for increased energy efficiency, temperature control, and monitoring, however, works with mechanical TEV as well. Order additional temperature sensor and pressure transducer for EEV control.

Includes unique energy saving demand defrost algorithm based on the efficiency of the evaporator, third party verified to provide 20%+ energy savings.

KE2 Therm fan management allows tighter temperature control and saves energy. California Title 24 compliant evaporator fan management options available for single or multiple compressor applications.

BENEFITS SUMMARY

- Improved product integrity and reduced spoilage – elimination of unnecessary defrost cycles reduces freezer burn, and temperature spikes, which degrade product quality.
- Energy savings through identification of system performance issues using graphing and data logging feature.
- Maximizes energy efficiency with less compressor run time resulting from precise evaporator fan management and reduced defrost time.
- Improved evaporator performance due to utilization of frost on the evaporator.
- Reduces liability by eliminating ice buildup on floors.
- Alarm notification text/email.
- Remote monitoring & system control.
- 30 day graph of room and coil temperature. Built-in data log provides 30 days of system operation history.
- Over a year of temperature data logging when used with the KE2-Edge Manager.
- For new equipment or upgrade of existing equipment.
- Integrate with Building Management Systems. BACnet/IP available with KE2-Edge Managers (does not support BBMD).

KE2 Evaporator Efficiency

Controller Only pn 20631	
KE2 Evaporator Efficiency controller	
Installation hardware (sensors NOT included)	

Basic Kit pn 20178	
KE2 Evaporator Efficiency controller	
(3) colored 15 ft. temperature sensors	pn 21151
Air sensor wire mount	pn 20606
Terminal board	pn 20996
Installation hardware	

KE2 Evaporator Efficiency | **15 ft. colored temp sensors (3)** | **KE2 Terminal Board**

Ultimate Install Kit pn 20844	
KE2 Evaporator Efficiency controller	
(3-pack) colored 40 ft. temperature sensors	pn 21066
Mounting box	pn 20687
Air sensor wire mount	pn 20606
Terminal board	pn 20996
Installation hardware	

KE2 Evaporator Efficiency | **40 ft. colored temp sensors (3)** | **Mounting Box** | **KE2 Terminal Board**

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Evap OEM

Provides the same energy saving control for low & medium temp refrigeration applications with built-in remote monitoring & diagnostics capability as the KE2 Evaporator Efficiency. For new or existing equipment. Serves the function of multiple components: replaces thermostat, fan delay, defrost time clock & termination device.

Able to drive an electric expansion valve (EEV) for increased energy efficiency, temperature control, and monitoring, however, works with mechanical TEV as well. Order additional temperature sensor and pressure transducer for EEV control.

Includes unique energy saving demand defrost algorithm based on the efficiency of the evaporator, third party verified to provide 20%+ energy savings.

KE2 Therm fan management allows tighter temperature control and saves energy. California Title 24 compliant evaporator fan management options available for single or multiple compressor applications.

Built-in lead/lag control over Ethernet allows switchover between two KE2 Evap OEM controllers based on time or every run cycle without any external timers or additional controls.

Humidity control options available with the addition of the KE2 Humidity Control auxiliary board.

Controller only option available for OEM applications or replacement. Panel options available for retrofit of existing systems or field install of evaporators without controls.

BENEFITS SUMMARY

- Built-in lead/lag control over Ethernet allows switchover between two KE2 Evap OEM controllers without external timers or additional controls.

- Humidity control & monitoring options when used with the KE2 Humidity Control auxiliary board.

- Improved product integrity and reduced spoilage – elimination of unnecessary defrost cycles reduces freezer burn, and temperature spikes, which degrade product quality.

- Energy savings through identification of system performance issues using graphing and data logging feature.

- Maximizes energy efficiency with less compressor run time resulting from precise evaporator fan management and reduced defrost time.

- Improved evaporator performance due to utilization of frost on the evaporator.

- Reduces liability by eliminating ice buildup on floors.

- Alarm notification text/email.

- Remote monitoring & system control.

- 30 day graph of room and coil temperature. Built-in data log provides 30 days of system operation history.

- Over a year of temperature data logging when used with the KE2-Edge Manager.

- For new equipment or upgrade of existing equipment.

- Integrate with Building Management Systems. BACnet/IP available with KE2-Edge Managers (does not support BBMD).

KE2 Evap OEM

Controller Only   pn 21231
KE2 Evap OEM Controller

KE2 Evap Panel (Single)   pn 21958
Includes a single KE2 Evap OEM controller mounted in UL-508 panel, (3) 40' color temperature sensors & terminal board.

KE2 Evap OEM Board	40 ft. colored temp sensors (3)	KE2 Basic Display	KE2 Terminal Board

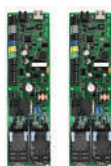| **KE2 Evap Panel (Double)**   pn 21959 |
| --- |
| Includes two KE2 Evap OEM controllers mounted in UL-508 panel, (6) 40' color temperature sensors & (2) terminal boards. For Lead/Lag control or control of two evaporators. |

KE2 Evap OEM Boards (2)	40 ft. colored temp sensors (6)	KE2 Basic Displays (2)	KE2 Terminal Boards (2)

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Evap-RE2 Contactor Panel

Saves time and eliminates the potential for on site errors. Ideal for refrigeration applications that require fan and/or defrost contactors. Pre-wired to make installation easy. Provides energy savings, precise temperature control, frost reduction, and advanced communications capability. Able to control up to (3) EEVs with additional Aux Valve Drivers. Able to drive electric evaporator pressure regulator (EEPR) or electric hot gas bypass (EHGBP) valve to control room temperature. Programming specific to control evaporators on rack systems.

On-site wiring of controller related components is simplified. Plus the contractor panel provides consistent setup across locations, making return service visits more productive, reducing both installation time and system downtime. Built-in Wi-Fi allows easy access to controller webpages while in front of the panel with smartphone, tablet, or laptop.

BENEFITS SUMMARY

- Reduces potential for on site errors in wiring & significantly reduces installation time.
- Provides consistent setup across locations, especially important for multi-site businesses.
- Pre-programmed options with carefully selected default settings for evaporators on rack systems.
- Pre-installed current sensors to monitor fan and defrost current.
- Drive an EEPR or EHGBV, and up to three EEVs with Valve Driver boards.
- Improved product integrity and reduced spoilage – elimination of unnecessary defrost cycles reduces freezer burn, and temperature spikes, which degrade product quality.
- Energy savings through identification of system performance issues using graphing and data logging feature.
- Maximizes energy efficiency with less compressor run time resulting from precise evaporator fan management and reduced defrost time.
- Improved evaporator performance due to utilization of frost on the evaporator.
- Reduces liability by eliminating ice buildup on floors.
- Alarm notification text/email. Remote monitoring & system control.
- 30 day graph of room and coil temperature. Built-in data log provides 30 days of system operation history.
- Over a year of temperature data logging when used with the KE2-Edge Manager.
- For new equipment or upgrade of existing equipment.
- Integrate with Building Management Systems. BACnet/IP available with KE2-Edge Managers (does not support BBMD).

KE2 Evap-RE2 Contactor Panel Kits

120V/208-240V Contactor Panel, 20A Fans, 40A Defrost	**pn 21673**
120V/208-240V Contactor Panel, 20A Fans, 40A Defrost w/Aux Valve Driver	**pn 21674**
120V/208-240V Contactor Panel, 20A Fans, 80A Defrost w/Aux Valve Driver	**pn 21675**
480V Contactor Panel, 20A Fans, 32A Defrost	**pn 22021**
480V Contactor Panel, 20A Fans, 32A Defrost w/Aux Valve Driver	**pn 22022**
480V Contactor Panel, 20A Fans, 64A Defrost w/Aux Valve Driver	**pn 22023**

Kit Contents

KE2 Evap-RE2 Contactor Panel	
Ethernet adaptor – already installed in panel	
(3-pack) colored 40 ft. temperature sensors	pn 21066
(1) black 40 ft. temperature sensor	pn 20200
(1) door switch	pn 20543
(1) 40 ft. pressure transducer	pn 20204
(1) Current Sensor Board – already installed in panel	pn 21613
(1) Aux Valve Driver *pn 21612* – already installed in panel – kit *pns 21674, 21675, 22022, 22023 only*	

Accessories

Auxiliary Boards	
Aux Valve Driver	pn 21612
Current Sensor Board	pn 21613
Pressure Transducers	
Pressure Transducer – 0 to 150 psia, 40 ft. lead	pn 20204
Pressure Transducer – 0 to 750 psig, 40 ft. lead - For R-744 applications	pn 21873
Sensors - Temperature or Current Sensor	
Standard for all other temp inputs, 40 ft. (black)	pn 20200
Current sensor	pn 21614
Replacement Controller or Display	
Replacement KE2 Evap-RE2	pn 21610
Replacement Display	pn 21806

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Humidity Control

The KE2 Humidity Control is the most energy efficient approach to achieve your humidity goals. As an auxiliary board to the KE2 Evap OEM, it is designed to add humidity control and monitoring to refrigerated spaces with the KE2 Evap OEM. It can also be used in applications where both heat and refrigeration are required.

When added to new or existing KE2 Evap OEM installs (updated to v3.0 or higher), the KE2 Humidity Control provides logic for humidity control & adds outputs for a humidifier, dehumidifier, heat/reheat, and a schedule based output.

If used with an Electric Expansion Valve (EEV), the system will also modulate superheat to increase or decrease runtime, based on the current humidity and humidity target. This unique control aids in providing additional dehumidification or minimizing the amount of dehumidification during refrigeration.

The KE2 Humidity Control is ideal for applications with specific humidity and temperature requirements, such as: Meat curing rooms, Growth chambers, Green houses, Ripening Rooms, Clean rooms, Paper & document storage.

KE2 Environment Panel   pn 21999

For new installs or retrofits
KE2 Evap OEM controller
KE2 Humidity Control auxiliary board
KE2 Basic Display w/ 18" cable
Snaptrack
(3) Color Temperature Sensor, 40' lead
KE2 Terminal Board
Humidity Sensor, 40' lead

KE2 Humidity Panel   pn 22006

Use with existing KE2 Evap OEM install
KE2 Humidity Control auxiliary board
Snaptrack
Humidity Sensor, 40' lead

KE2 Humidity Control   pn 22003

Auxiliary board only

BENEFITS SUMMARY

- Auxiliary board for the KE2 Evap OEM controller (requires KE2 Evap OEM to function).

- Improved product integrity through precise regulation of the conditioned space's humidity and temperature.

- Reduced spoilage and shrinkage by defrosting only when necessary, maintaining desired humidity level, and providing more consistent temperature control.

- Outputs for reheat, dehumidifier, humidifier, and schedule based output for lights etc.

- Remote monitoring & system control with KE2 SmartAccess.

- 30 day built-in graph of room temp, coil temp, and relative humidity. Over a year of data storage available with the KE2-Edge Manager.

- For new or existing equipment. Existing controllers can be updated to KE2 Evap OEM firmware v3.0+ to work with the KE2 Humidity Control.

Additional Literature

KE2 Combo Display

Combines the functionality of a temperature display, lighting control, panic alarm, temperature alarm, and a door heater controller. Three configurations: Stand-alone, Paired with one KE2 Evap OEM controller, or paired with two KE2 Evap OEM controllers.

KE2 Combo Display	
KE2 Combo Display - does not include any accessories pn 21320	

KE2 Combo Display w/ Battery & Cable – pn 21877	
KE2 Combo Display	pn 21320
25 ft. Cable	pn 21786
Junction Box	pn 21782
9V Rechargeable Battery	pn 21781

Accessories	
25 ft. Cable	pn 21786
Junction Box	pn 21782
KE2 Panic Button Kit	pn 21801
9V Rechargeable Battery	pn 21781

BENEFITS SUMMARY

When applied stand-alone:
- Controls door heaters to reduce energy required to maintain frost free door frame.

- Combined with KE2 Therm's panic button, provides safety for anyone in the refrigerated space.

- Lighting control integrates with door switch to automatically turn lights on & off.

- Serves as a temperature display and alarm.

When used with KE2 Evap OEM:
- Email/text alerts can be sent for alarms originating from the KE2 Combo Display, as well as from the KE2 Evap OEM controller(s).

- Information from the KE2 Combo Display is added to KE2 Evap OEM webpages.

- KE2 Combo Display provides the ability to change additional KE2 Evap OEM setpoints not available from the basic display.

Additional Literature

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Compressor Sequencer OEM

Controls up to 3 stages of loading from the main board, and up to 8 stages of loading with the addition of an Auxiliary Relay board.

Suction pressure can be controlled to a fixed setpoint or allowed to float for maximum efficiency.

Each stage of loading can be set to: fixed speed compressor, variable speed compressor[1], digital compressor[1,2] or unloaders. Relays for the stages can alternatively be set to control a Master Liquid Line Solenoid, or as a Hot Gas Defrost Relay.

Complete remote access is available during startup with a few simple button presses and an Internet connection.

Intended for retrofits or new installs, the KE2 Compressor Panel includes the controller pre-mounted in a UL-508 panel. The panel is available for 3 stages or 8 stages, the 8 stage version includes the Auxiliary Relay board also pre-mounted in the panel.

If controlling the digital compressor bypass valve for a digital scroll, include the solid state relay *pn 21304*.

If using the 8th stage, include the digital switch relay, *pn 21032*.

[1] One per suction Group

[2] *Controller is designed to operate with a Copeland Scroll Digital Compressor when Digital Compressor is selected.*

BENEFITS SUMMARY

- Designed for small to mid-sized racks - eliminates complicated controls designed for larger systems.
- Supports up to 3 stages of loading with onboard relays. Up to 8 stages can be controlled with the addition of an Auxiliary Relay board.
- Will automatically equalize runtime of compressors with equal HP.
- 30 day graph of capacity and suction pressure.
- Built-in data log provides 30 days of system operation history.
- Controller webpages allows tech to quickly assess system's operation.
- Works as a stand-alone rack controller or with other KE2 Therm controllers.
- Can limit the amount of defrost load, as dictated by the site's electrical requirements.

Additional Literature

KE2 Compressor Sequencer OEM

Controller Only pn 21768	
KE2 Compressor Sequencer OEM Controller only	pn 21768

KE2 Compressor Panel (3 stages) pn 21961[3]	
KE2 Compressor Sequencer OEM controller	pn 21768
KE2 Basic Display w/ 18" Cable	pn 21232
Snaptrack	pn 21415
0-150 psia Pressure Transducer, 40' lead	pn 20204
0-500 psig Pressure Transducer, 40' lead	pn 20712
Standard Temperature Sensor, black, 40' lead	pn 20200
High Temperature Sensor, white, 15' lead	pn 21230
System off switch & 15" lead	pn 21934

KE2 Compressor Panel (8 stages) pn 21962[3] [4]	
KE2 Compressor Sequencer OEM controller	pn 21768
Auxiliary Relay Board)	pn 21323
KE2 Basic Display w/ 18" Cable	pn 21232
Snaptrack	pn 21415
0-150 psia Pressure Transducer, 40' lead	pn 20204
0-500 psig Pressure Transducer, 40' lead	pn 20712
Standard Temperature Sensor, black, 40' lead	pn 20200
High Temperature Sensor, white, 15' lead	pn 21230
System off switch & 15" lead	pn 21934

[3] Add solid state relay pn 21304 for digital compressor control.

[4] If using 8th stage, add digital switch relay pn 21032.

KE2 Compressor Sequencer OEM

Accessories	
Aux Relay Board	
Auxiliary Relay Board	pn 21323
External Relays	
Solid State Relay - Used to control digital compressor bypass valve; for digital scroll	pn 21304
Digital Switch Relay - Used to control the 8th stage, if used	pn 21302
Pressure Transducers	
0 -150 psia, 10 ft. lead - for suction pressure	pn 20201[5]
0 - 150 psia, 40 ft. lead - for suction pressure	pn 20204[5]
0 - 500 psig, 10 ft. lead - for discharge pressure	pn 20202
0 - 500 psig, 40 ft. lead - for discharge pressure	pn 20712
Temperature Sensors	
High temp sensor for discharge, 15 ft.	pn 21230
Standard temp sensor for all other temp inputs, 10 ft.	pn 20199
Standard temp sensor for all other temp inputs, 40 ft.	pn 20200
Replacement Relays	
Replacement Form C Relay for Main Board	pn 21374
Replacement Fuses	
Replacement incoming power fuse for Main Board and Aux Relay Board	pn 21375
Fuses for Aux Relay Board relays (5-pack)	pn 21628

[5] Use transducers pn 20208 (10 ft.) or pn 20711 (40 ft.) for R-410A.

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

KE2 Basic Display

The Basic Display shows critical system information and uses a simplified menu structure to allow service technicians to change the major setpoints of the KE2 Evap OEM, KE2 Condenser Fan Control, and KE2 Compressor Sequencer OEM. The display has a blue, 3-digit window.

pn 21232
Basic Display with 18 in. Cable - 3 digit LED

pn 21387
Basic Display with 5 ft. Cable - 3 digit LED

pn 21878
Replacement Cable - 5 ft.

KE2 Fan Control

The KE2 Fan Control provides a simple packaged solution to optimize energy efficiency of air cooled condensers. This package incorporates Variable Frequency Drive (VFD) technology to match fan speed with the varying load and ambient conditions. Custom part numbers, contact KE2 Therm for selection.

Options
230V, 460V or 575 V, 3-phase
Available for 2 to 14 fan condensers
Available for split condensers
Motor starters with short circuit and thermal protection
Interlock VFD/constant speed contactors
Optional drop leg or ambient temp control
Optional two drive model for dual circuit condensers

Includes the KE2 Condenser Fan Control, see Q.2.51 for more information.

BENEFITS SUMMARY

- Typically condensers are sized for conditions that are experienced less than 5% of the time. The KE2 Fan Control package contains proprietary algorithms that match system conditions with equipment operation, providing the highest levels of efficiency, improving system operation and saving money.

- Remote monitoring and system control, plus Email/text alerts. 30 day datalog available with the KE2 Condenser Fan Control.

Additional Literature

KE2 Condenser Fan Control

The feature-rich KE2 Condenser Fan Control allows for the control of up to 14 fans, on up to two separate interlaced circuits sharing a common fans. With five control modes, each of which offer four control types the KE2 Condenser Fan control can work in most applications, and the controller is California Title 24 compliant. Several of the control methods allow for floating head pressure.

The KE2 Condenser Panel includes the controller mounted in UL-508 panel, with 0-10VDC output to control a VFD, variable speed **EC motors**, or relays to pilot contactors for 3 fans or 3 banks of fans when staging fixed speed fans.

BENEFITS SUMMARY

- FIVE CONTROL MODES:
  - Fixed (Head) Pressure
  - Saturated Temp to Ambient Air Temp
  - Subcooling (drop leg temperature)
  - Condenser Liquid Temp to Ambient Air Temp
  - Condenser Inlet to Condenser Outlet Temp
- FOUR CONTROL TYPES:
  - Stage Fixed Speed Fans
  - VFD
  - *EC Motors*
  - *EC Motors* w/Fixed Speed Motors
- Alarm notification text/email.
- Remote monitoring & system control.
- Onboard communication-TCP/IP & easily connected KE2 SmartAccess.
- Select from many common refrigerants.
- Automatic split mode based on ambient and load. Manual split mode based on digital input.
- Can control 12VDC bipolar stepper valve to act as holdback valve to maintain minimum head pressure.

Additional Literature

Controller Only   pn 21543
KE2 Condenser Fan Control (board only)

KE2 Condenser Fan Control

KE2 Condenser Panel (3 stages) pn 21963	
KE2 Condenser Fan Control	pn 21543
KE2 Basic Display w/ 18" Cable	pn 21232
Snaptrack	pn 21415
0-500 psig pressure transducer, 40' lead	pn 20200
(2) Standard Temperature Sensors, black, 40' lead	pn 20712
High Temperature Sensor, white, 15' lead	pn 21230
System off/override switch, lead	pn 21934

Accessories	
Pressure Transducers	
0 - 500 psig, 10 ft. lead - for head pressure	pn 20202
0 - 500 psig, 40 ft. lead - for discharge pressure	pn 20712
Temperature Sensors	
High temp sensor for discharge, 15 ft.	pn 21230
Standard temp sensor for all other temp inputs, 10 ft.	pn 20199
Standard temp sensor for all other temp inputs, 40 ft.	pn 20200
Replacement Relays	
Replacement Form C Relay for Main Board	pn 21374
Replacement Fuses	
Replacement incoming power fuse for Main Board	pn 21375

KE2 CondensedCatalog - 411
Controllers, Communication, Parts & Accessories

Accessories & Replacement Parts

10 ft. Wire Harness *pn 20736*
25 ft. Wire Harness *pn 20670*
**40 ft. Wire Harness** *pn 20737*

Color coded wires, with connectors corresponding to the controller's inputs, simplify installation of KE2 Therm controllers. This reduces on site wire preparation time, and eliminates the need to stock multiple wire gauges, colors and connectors. Stranded wires used in the harness are flexible, and easier to pull and route.

Function	Color		Gauge	Wire Ends
Power	black with white stripe	L1	16 AWG	stripped and retained
Power	white with red stripe	L2/neutral	16 AWG	stripped and retained
Ground	green		16 AWG	stripped and retained
Defrost Heat	orange with black stripe		12 AWG	flag connectors
Defrost Heat	black with orange stripe	L1	12 AWG	flag connectors
Fans	blue with black stripe		14 AWG	flag connectors
Fans	black with blue stripe	L1	14 AWG	flag connectors
LLS/Compressor	yellow with black stripe		16 AWG	stripped and retained
LLS/Compressor	black with yellow stripe	L1	16 AWG	stripped and retained
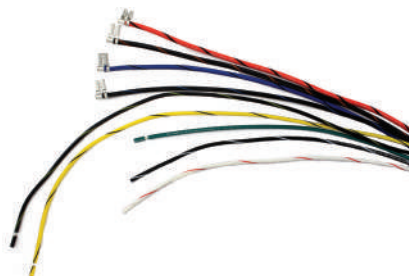
Mounting Box *pn 20687*

40 mil embossed aluminum, box measures 12.3 x 6.4 x 2.0 inches and includes the necessary hardware to mount the box and controller. Provides a stationary location to attach conduit. Sized to accommodate the controller's wiring and service loops. Stamped aluminum blends into the refrigeration environment - clean appearance to the finished install.

Mounting Box with Wire Harness

Use with the KE2 Evaporator Efficiency.

KE2 Terminal Board *pn 20996*

Standardizes the wiring for every install. Board is marked with well known symbols for the fan, heaters, and LLS, making future diagnostics instantly recognizable. Built in fuse on the terminal board protect every relay on the controller from power surges. Board has mounting position for an *EC Motor Relay*. *(Relay sold separately.)*
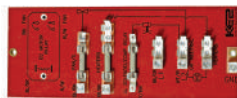
Buzzer & Light 120VAC/DC *pn 20973*
Buzzer & Light 230VAC/DC *pn 21294*

22 mm, 25 mA audible (80dB at 4 in. /10 cm) buzzer annunciator with non-replaceable LED indicator.

Sensor Coil Clips

Sensor sold separately.

⅜ in. circuit tube *pn 20963*
½ in. circuit tube *pn 20964*
⅝ in. circuit tube *pn 20965*

For widely spaced evaporator fins. Rather than pressing fins together to hold the sensor bulb, bulb inserts in the spring, which then clips to the evaporator circuit tube.
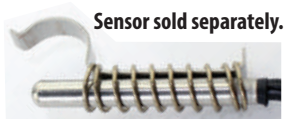
Flag Quick Disconnects – 50 pack *pn 20640*

90° Insulated, 16-14 AWG
Ideal for connections with limited space.

Door Switch *pn 20543*

Designed for high traffic. Reed switch hermetically sealed in PVC shock absorber, enclosed in solid aluminum housing. Wires in 36 inch stainless steel armored cable. Adjustable L-shaped bracket, universal mounting, and greater pulling power.

- Contact - 22AWG 36 in. leads
- Contact Rating 10 VA
- Contact Type - Normally Open
- Max. Carry Current 2 Amp
- Max. Switching Current .5 Amp
- Breakdown Voltage - 250 VDC
- Operating Gap 2 in.
- Temperature Range 32°F to 120°F (0°C to 49°C)

Fan Motor Relays

The Fan Motor Relays are designed to protect the controller's onboard relays from transient voltages, back EMF, and motor burnouts.

120VAC, *Relay Only* *pn 21469*
240VAC, *Relay Only* *pn 21470*

Fan Motor Relay Kits - Mechanical

Includes fan motor relay or relays, wire harness, and screws to easily install on the KE2 Terminal Board.

- 120VAC & 240VAC Relay Kit *pn 21409*
- 120VAC Relay Kit *pn 21824*
- 240VAC Relay Kit *pn 21823*

Use with the KE2 Evaporator Efficiency, KE2 Low Temp, and KE2 Adaptive.

2-pin Connector *pn 20914*
3-pin Connector *pn 20915*
5-pin Connector *pn 20916*

For use with the KE2 Evaporator Efficiency, KE2 Evap-RE, and KE2 Controlled Environment.

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Temperature Sensors

- 2K Ω NTC at 77°F
- Operating range -60°F to 150°F (-51°C to 65°C)
- Quick response & precise thermal tracking
- IP67 moisture protection
- 10,000 freeze/thaw thermal cycles

Black Sensors

Black – *45 in. lead*	pn 20715
Black – *10 ft. lead*	pn 20199
Black – *40 ft. lead*	pn 20200

Individual Color Sensors

Yellow – *10 ft. lead*	pn 21795
Green – *10 ft. lead*	pn 21793
Blue – *10 ft. lead*	pn 21794

3-Pack of Color Sensors

Yellow, Green, Blue – *15 ft. lead*	pn 21151
Yellow, Green, Blue – *40 ft. lead*	pn 21066

High Temperature Sensor

- 10K Ω NTC at 77°F
- Operating range -40°F to 300°F (-40°C to 150°C)
- Quick response & precise thermal tracking
- IP67 moisture protection

White – *15 ft. lead*	pn 21230

Additional Literature

Suction Line Temperature Sensor Clips

½ in. suction line - 100 pack *pn 21225*
⅝ in. suction line - 100 pack *pn 21226*
⅞ in. suction line - 100 pack *pn 21227*
1-⅛ in. suction line - 100 pack *pn 21228*
Kit (1) of each ½", ⅝", ⅞", 1-⅛" *pn 21229*
Securely fasten the suction temperature sensor to the suction line.

Humidity Sensor   *pn 20651*

Pre-configured and pre-wired with a 40 ft. lead. For use with the KE2 Humidity Control auxiliary board for the KE2 Evap OEM controller.

If sensor is located more than 40 ft. from the controller, cable can be extended to 100 ft. using 18/3 stranded, shielded cable.

System Off Switch   *pn 21934*

Practice excellence in refrigeration system stewardship by utilizing the digital input to turn the System Off, without power cycling the system. Comes with 15" colored lead wires, and grommet that will fit in controller knockouts. For use with all controllers except KE2 Temp + Air Defrost. Acts as bypass when used with KE2 Condenser Fan Control.

Digital Switch Relay   *pn 21032*

This relay is required for the 8th stage/output on the Aux Relay Board when used with the KE2 Comp. Seq. OEM.

- 15A resistive/ 10A inductive load rated contacts @110V
- 12 VDC coil can be connected directly to the Aux Relay Board
- Used for controlling external compressor contactor, unloader, master LLS or Hot Gas Defrost relay
- Comes with DIN rail mountable base

Solid State Relay

Relay - Solid State (N.O.)   *pn 21304*

Use with KE2 Compressor Sequencer OEM to pilot the bypass valve for a digital scroll compressor. Use with KE2 Evap, KE2 Evap OEM, and KE2 Evap-RE2 to pilot PWM valves. Can also be used to pilot a mechanical relay to signal a BMS or security system via a dry contact.

Relay - Solid State (N.C.)   *pn 22005*

Use with KE2 Evap OEM as an alarm output for a buzzer, siren, strobe etc. Can also be used to pilot a mechanical relay to signal a BMS or security system via a dry contact.

Fuses (Sold in packs of 5 - part number is for 5 pack)

½ Amp *pn 20699* – 250V, 0.5A Time Delay Glass; Replacement fuses for KE2 Evap, KE2 Evap-RE and KE2 Controlled Environment

1 Amp *pn 21375* – 250V, 1.0A Time Delay Ceramic; Replacement fuses for Main Board of KE2 Evap-OEM, KE2 Compressor Sequencer OEM, KE2 Condenser Fan, KE2 Combo Display and Aux Relay Board

3 Amp *pn 21029* – 250V, 3.0A Fast Acting Ceramic; Replacement LLS fuses for the KE2 Terminal Board

5 Amp *pn 21628* – 250V, 5.0A Time Delay Glass, Replacement fuse for the relays on the Aux Relay Board

12 Amp *pn 21031* – 250V, 12A Time Delay Ceramic; Replacement fan fuses for the KE2 Terminal Board

20 Amp *pn 21030* – 250V, 20A Fast Acting Ceramic; Replacement defrost fuses for the KE2 Terminal Board

Pressure Transducer

0 to 150 psia		**0 to 500 psig**	
10 ft. lead	*pn 20201*	10 ft. lead	*pn 20202*
40 ft. lead	*pn 20204*	40 ft. lead	*pn 20712*

0 to 300 psig		**0 to 750 psig**	
10 ft. lead	*pn 20208*	10 ft. lead	*pn 21872*
40 ft. lead	*pn 20711*	40 ft. lead	*pn 21873*

Sensor Mount for Air Sensor

(sold in packs of 20, part number is for one pack of 20 – pn 20606)
Replacement air sensor mounts. Holds sensor 8-12 inches from the evaporator.

KE2 Condensed**Catalog - 411**
Controllers, Communication, Parts & Accessories

Accessories & Replacement Parts (continued)

KE2 LDA, KE2-EM35

For replacement on existing installs and new installs, please see the KE2-EM Plus. The KE2-EM Plus is a drop-in replacement in most applications.

KE2 Wi-Fi Service Tool

Please see the KE2 Service Tool App, which turns your smartphone or tablet into a personal service tool. When used with an approved Ethernet dongle, connect your Apple or Android smart device directly to KE2 Therm Ethernet controllers.

KE2 Controlled Environment

For replacement on existing installs, the controller part number is **20894**. For new installs, please see the KE2 Environment Panel and KE2 Humidity Control auxiliary board.

KE2 Evap-RE

For replacement on existing installs, the controller part number is **21631**. For new installs, please see the KE2 Evap-RE2 Contactor Panel.

KE2 Compressor Sequencer

For retrofit of existing installs and new installs, please see the KE2 Compressor Panel and KE2 Compressor Sequencer OEM.

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Electronic Expansion Valves

KE2 Refrigeration Stepper Valve (KE2 RSV)

For use with R-22, R-134a, R-422D, R-422A, R-407C, R-407A, R-507, R-404A, R-513A, R-450A, R-449A, R-448A, R-744, R-410A, R-407F, R-409A, R-408A, R-438A, R-452A, R-458A, R-290, R-32, 454A, 454C, 455A

The KE2 Therm RSV electric expansion valve is a stepper motor actuated valve, designed for refrigeration applications. The RSV uses a unipolar stepper motor that provides high precision control. Upgrading your system with an RSV and KE2 Therm controller will increase system efficiency, provide the best, most consistent superheat control, and eliminate the headache of adjusting superheat. Nominal capacities from 1 to 19 tons in R-404A.

BENEFITS SUMMARY

- High precision bi-directional control
- 4-phase, unipolar stepper motor
- Neodymium-iron-boron magnet rotor
- 500 steps for high resolution control
- 30 to 90 per second step rate
- External, replaceable coil – 5-wire
- Low power consumption

Valve Body	Part #	Connections – Inches ODF Inlet x Outlet	Lead Length
RSV-100	21667	3/8 x 1/2	5 ft.
RSV-100	21665	3/8 x 1/2	10 ft.
RSV-100	21666	3/8 x 1/2	40 ft.
RSV-130	21169	3/8 x 1/2	5 ft.
RSV-130	21161	3/8 x 1/2	10 ft.
RSV-130	21162	3/8 x 1/2	40 ft.
RSV-220	21170	3/8 x 1/2	5 ft.
RSV-220	21163	3/8 x 1/2	10 ft.
RSV-220	21164	3/8 x 1/2	40 ft.
RSV-320	21171	3/8 x 1/2	5 ft.
RSV-320	21165	3/8 x 1/2	10 ft.
RSV-320	21166	3/8 x 1/2	40 ft.
RSV-320	21172	1/2 x 1/2	5 ft.
RSV-320	21167	1/2 x 1/2	10 ft.
RSV-320	21168	1/2 x 1/2	40 ft.

Valve Body	Part #	Connections - Inches ODF Inlet x Outlet	Lead Length
RSV-400	21529	5/8 x 7/8	15 ft.
RSV-400	21530	5/8 x 7/8	40 ft.
RSV-550	21594	5/8 x 7/8	15 ft.
RSV-550	21595	5/8 x 7/8	40 ft.
RSV-650	21779	5/8 x 7/8	15 ft.
RSV-650	21778	5/8 x 7/8	40 ft.
RSV-C10 Stator	21149	For RSV-100 to 320	10 ft.
RSV-C40 Stator	21150	For RSV-100 to 320	40 ft.
RSV-LC15 Stator	21525	For RSV-400 to 650	15 ft.
RSV-LC40 Stator	21526	For RSV-400 to 650	40 ft.

Additional Literature

Valve Selection Program

KE2 EEV Retrofit Kits

The KE2 Temp + Valve controller in combination with the KE2 RSV handle a much wider range of operating conditions, for optimal control even during low head pressures/low ambient conditions. The KE2 EEV Retrofit Kits include the components you need to easily retrofit an evaporator with an EEV for use with new energy efficient condensing units.

- *No transformer necessary for 120V or 208-240V applications*
- *Replaces timeclock for air defrost*
- *No complicated programming*
- *No complicated selection*
- *Replaces thermostat*

KE2 Temp + Valve

10 ft. temp sensors (2)

RSV

Pressure Transducer with 10 ft. cable

Retrofit Kit	Valve	R-404A	R-448A, R-449A, R-407C, R-407A
PN 21844	RSV-100 3/8" X 1/2" ODF w. 10'	$^1/_{10}$ to $^1/_3$	$^1/_{10}$ to $^1/_2$ ton
PN 21744	RSV-130 3/8" x 1/2" ODF w. 10'	¼ to ¾ ton	¼ to 1 ton
PN 21745	RSV-220 3/8" x 1/2" ODF w. 10'	¾ to 1 ½ ton	¾ to 2 ¼ tons
PN 21746	RSV-320 3/8" x 1/2" ODF w. 10'	1 ½ to 2 tons	1 ½ to 3 ¼ tons
PN 21821	RSV-400 5/8" x 7/8" ODF w. 15'	2 to 4 ½ tons	3 to 7 tons
PN 21845	RSV-550 5/8" x 7/8" ODF w. 15'	4 to 7 $^1/_2$ tons	6$^1/_2$ to 12 tons
PN 21846	RSV-650 5/8" X 7/8" ODF w. 15'	6$^1/_2$ to 11$^1/_2$	10 to 18 tons

PEACE OF MIND REFRIGERATION

DEVICES   NOTES   ALARMS   REPORTS

KE2TEST

KE2 Evap Efficiency	KE2 Evap Efficiency	KE2 Evap Efficiency	KE2 Evap Efficiency	KE2 Evap Efficiency	KE2 Controlled Env	KE2 Controlled Env
KE2 Evap 5.0	C Store Freezer	Old Dutch	Grade School - Fr...	Grade School - C...	Flower Shop	Flower Shop
Refrigerate	Refrigerate	Refrigerate	Refrigerate	Off	Off	Off
0.0	-4.8	-2.5	-2.5	37.0		
72.0F	**-4.2**F	**0.7**F	**0.1**F	**37.6**F	**42.7**F	**44.0**F
72.1F	-13.0F	-1.8F	-16.2F	32.3F	40.4F	44.3F
High Air Temp	Low Superheat	All Clear	All Clear	All Clear	All Clear	All Clear

✓ **Energy usage is reduced with adaptive refrigeration controls**

✓ **Real time monitoring of system operation allows for proactive, actionable alerts**

✓ **Reduction of nuisance service calls and multiple service trips**

✓ **Reduced product loss for equipment owners with real-time alerts**

✓ **Remote access helps to deal with industry shortage of service techs**

✓ **Ability to provide immediate temperature logs to meet regulatory needs**

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