



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Q.2.60 July 2022

Contents:

Product Summary	Pg. 1
Part Numbers - Controllers & Accessories	Pg. 1
Dimensions & Specifications - Main Board	Pg. 2
Dimensions & Specifications - Auxiliary Relay Board	Pg. 3
Application	Pg. 3
Setup Options	Pg. 4
1 - Main Board Only	Pg. 5
Single Suction Group - up to 3 stages	
2 - Main Board + 1 Aux Relay Board	Pg. 6
Single Suction Group - up to 8 stages	
Communication Setup Options	Pg. 7
Initial Setup	Pg. 8
Designating Relay Functions	Pg. 9
Running the System	Pg. 10
Determining Compressor ON/OFF Order	Pg. 11
▪ Fixed Suction Pressure w/Digital Scroll or Variable Speed Compressors	
▪ Fixed Suction Pressure w/Fixed Speed Compressors	
▪ Floating Suction Pressure	
Selectable Inputs	Pg. 12
Descriptions of Selectable Input Mode Options	Pg. 12
KE2 Basic Display	Pg. 13-14
▪ Variables Menu	
▪ Setpoints Menu	
Alarms	Pg. 15-16
▪ Critical & Cautionary Alarms	
▪ Safety Alarms	
Webpage Setpoints	Pg. 17-20
Webpage Screen Shots	Pg. 21-31
Alphabetical List of Abbreviations	Pg. 32-34

Product Summary:

The KE2 Compressor Sequencer OEM allows control of up to 3 stages of loading for a single suction group, or up to 8 stages of loading with the addition of the Aux Relay Board. The 8th stage requires an additional external relay, PN 21032 digital switch relay.

Each stage of loading can be set to: fixed speed compressor, variable speed compressor¹, digital compressor^{1,2} or unloaders. The relays for the stages can alternatively be used to control a Master Liquid Line Solenoid, or as a Hot Gas Defrost Relay.

Communication:

As with other KE2 Therm controllers, the KE2 Compressor Sequencer OEM has the simplest and easiest communication platform in the industry. The controller uses standard communication protocols and cables. No extra software is necessary, only an Ethernet connection to the controller. Email/text alerts can be sent out right from the controller when provided internet. Complete remote access is available during startup with a few simple button presses and access to the internet.

¹ One per Suction Group.

² Controller is designed to operate with a Copeland Scroll Digital Compressor, when Digital Compressor is selected.

Part Numbers - Controllers & Accessories

Part #	Description
Panel Kits	
21961	KE2 Compressor Panel for up to 3 stages. Includes KE2 Compressor Sequencer OEM mounted in UL-508 panel, (1) 40' 0-150 psia pressure transducer, (1) 40' 0-500 psig pressure transducer, (1) 40' black temperature sensor, (1) 15' high temperature sensor & system off/system on switch. Add PN 21304 for digital unloader control.
21962	KE2 Compressor Panel for up to 8 stages. Includes KE2 Compressor Sequencer OEM & Aux Relay Board mounted in UL-508 panel, (1) 40' 0-150 psia pressure transducer, (1) 40' 0-500 psig pressure transducer, (1) 40' black temperature sensor, (1) 15' high temperature sensor & system off/system on switch. Add PN 21304 for digital unloader control. Add PN 21032 for the 8th stage if required.
KE2 Compressor Sequencer OEM	
21768	Controller only
Aux Relay Board	
21323	Auxiliary Relay Board
External Relays	
21304	Solid State Relay - Used to control digital compressor bypass valve
21032	Used to pilot contactor for 8th stage with Aux Relay Board Relay #5.
Pressure Transducers	
20201 ³	Pressure Transducer 0 to 150 psia, 10 ft. lead - for suction pressure.
20204 ³	Pressure Transducer 0 to 150 psia, 40 ft. lead - for suction pressure.
20202	Pressure Transducer 0 to 500 psig, 10 ft. lead - for discharge pressure.
20712	Pressure Transducer 0 to 500 psig, 40 ft. lead - for discharge pressure.
Temperature Sensors	
21230	High temp sensor for measuring discharge temperature
20199	Standard temp sensor for all other temp inputs, 10 ft. (black)
20200	Standard temp sensor for all other temp inputs, 40 ft. (black)
Replacement Relays	
21374	Replacement Form C Relay for Main Board
Replacement Fuses	
21375	Replacement incoming power fuse for Main Board and Aux Relay Board
21628	Replacement fuses for Aux Relay Board relays (5 pack)

³ Use transducers 20208 (10 ft.) or 20711 (40 ft.) for R-410A.

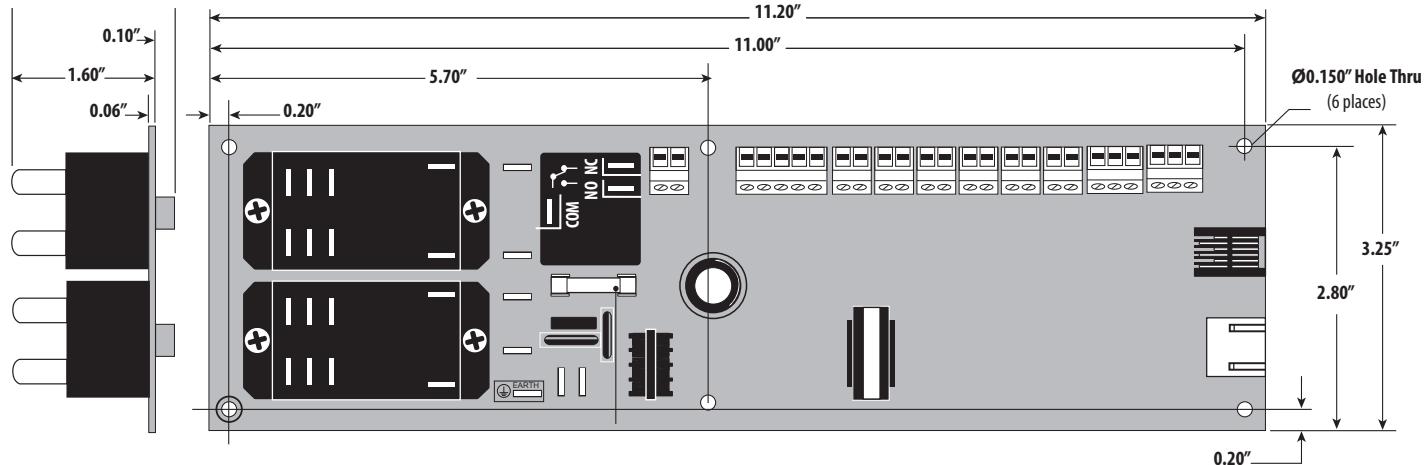


KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Dimensions & Specifications

KE2 Compressor Sequencer OEM - Main Board



KE2 Compressor Sequencer OEM – Main Board PN 21768

Input Voltage:	120/208/230 VAC
Ambient Temp:	-40°F to 140°F (-40°C to 60°C)
Operating Temp:	-40°F to 140°F (-40°C to 60°C)
Inputs:	(2) temperature sensors (2) pressure transducers (3) selectable temperature / digital inputs
Outputs:	(1) 0 to 10 VDC / 0 to 5 VDC - configurable for variable speed or 0V/10V for Digital Compressor Bypass Valve ^{1,2}
Relays:	(3) 10A inductive
Relay Functions:	Disabled, fixed speed, variable speed, digital compressor, hot gas defrost relay, master liquid line solenoid, unloader
Selectable Input Functions:	Disabled, internal compressor temp, room temp, monitor, hot gas defrost request, 2nd pressure, 2nd temperature, external alarm, external alarm system off, external alarm system on (bypass), system off, system on (bypass)
Communication:	Standard TCP/IP, RESTful API, BACnet/IP (w/ KE2-EM)

¹ Digital Compressor Bypass Valve control requires PN 21304.

² Controller is designed to operate with Copeland Scroll Digital Compressor.

Digital Switch Relay - PN 21032

Operating Temp:	-13°F to 131°F (-25°C to 55°C)
Max Load:	10A

Pressure Transducer – Suction Line PN 20201 (10 ft.), 20204 (40 ft.)

Pressure Range:	0 to 150 psia
Proof Pressure	450 psi
Burst Pressure:	1,500 psi
Operating Temperature:	-40°F to 275°F (-40°C to 135°C)

Pressure Transducer – Discharge Line PN 20202 (10 ft.), 20712 (40 ft.)

Operating Range:	0 to 500 psig
Proof Pressure:	1,000 psi
Burst Pressure:	1,500 psi
Operating Temperature:	-40°F to 275°F (-40°C to 135°C)

Standard Temperature Sensor - PN 20199 (10 ft.), 20200 (40 ft.)

Operating Temp: -60°F to 150°F (-51°C to 65°C)

High Temperature Sensor - PN 21230 (15 ft.)

Operating Range: -40°F to 302°F (-40°C to 150°C)

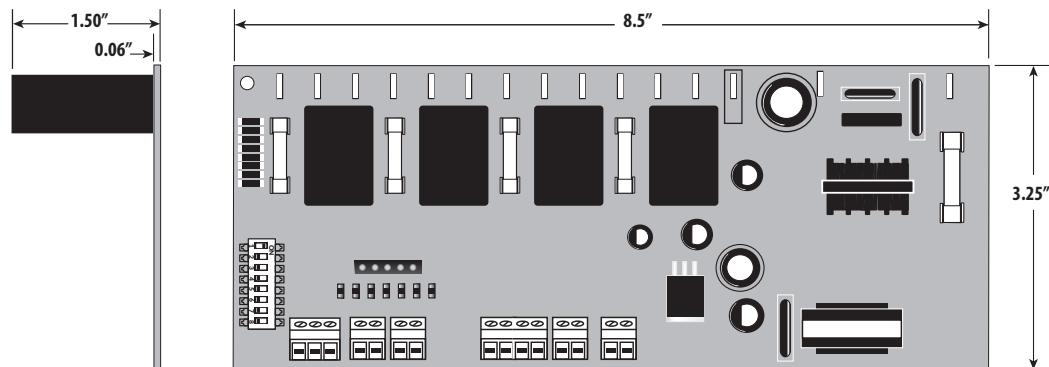


KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Dimensions & Specifications

Auxiliary Relay Board



Auxiliary Relay Board – PN 21323 (When used with KE2 Compressor Sequencer OEM)

Input Voltage:	120/208/230 VAC
Ambient Temp:	-40°F to 140°F (-40°C to 60°C)
Operating Temp:	-40°F to 140°F (-40°C to 60°C)
Inputs:	(2) digital inputs
Relays:	(4) 5A FLA inductive (1) 10A external Digital Switch Relay - requires PN 21032
Relay Functions:	Disabled, fixed speed, variable speed, digital compressor, hot gas defrost relay, master liquid line solenoid, unloader
Digital Input Functions:	Disabled, hot gas defrost request, 2nd pressure, 2nd temperature, external alarm, external alarm system off, external alarm system on (bypass), system off, system on (bypass)

Application:

The KE2 Compressor Sequencer OEM can be used on systems with up to 3 stages with the main board, or up to 8 stages with the main board and Aux Relay Board. The 8th stage, if used, requires PN 21032 Digital Switch Relay.

Total Number of Stages* (Compressor, Unloader)										
1	2	3	4	5	6	7	8**			
KE2 Compressor Sequencer OEM				+1 Aux Relay Board						

*Relays can alternatively be used as a master liquid line solenoid valve relay and/or hot gas bypass relay.

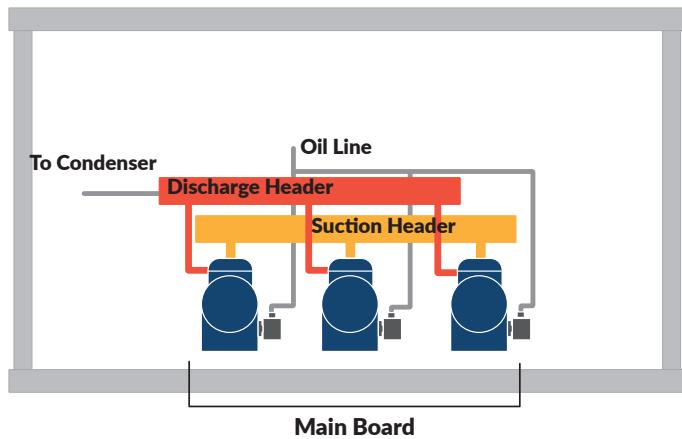
**8th stage requires PN 21032 Digital Switch Relay.



Setup Options

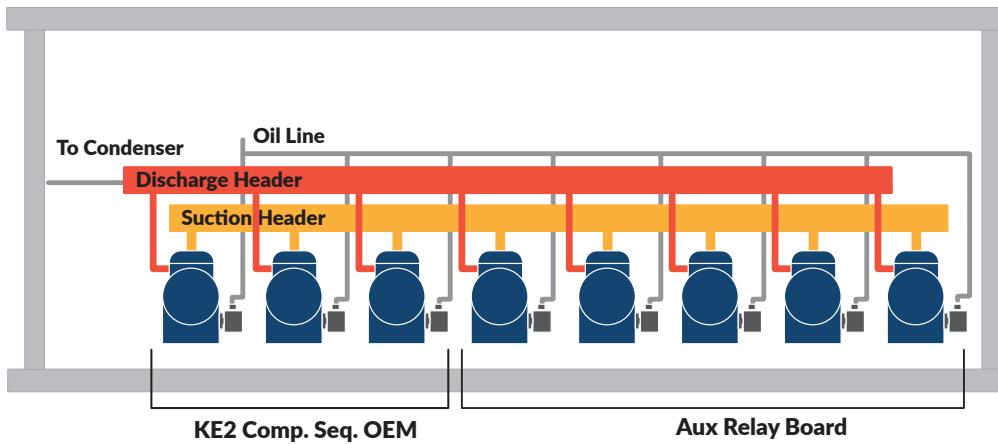
Option 1:

KE2 Compressor Sequencer OEM
Up to 3 stages



Option 2:

KE2 Compressor Sequencer OEM + Aux Relay Board
4 to 8 stages



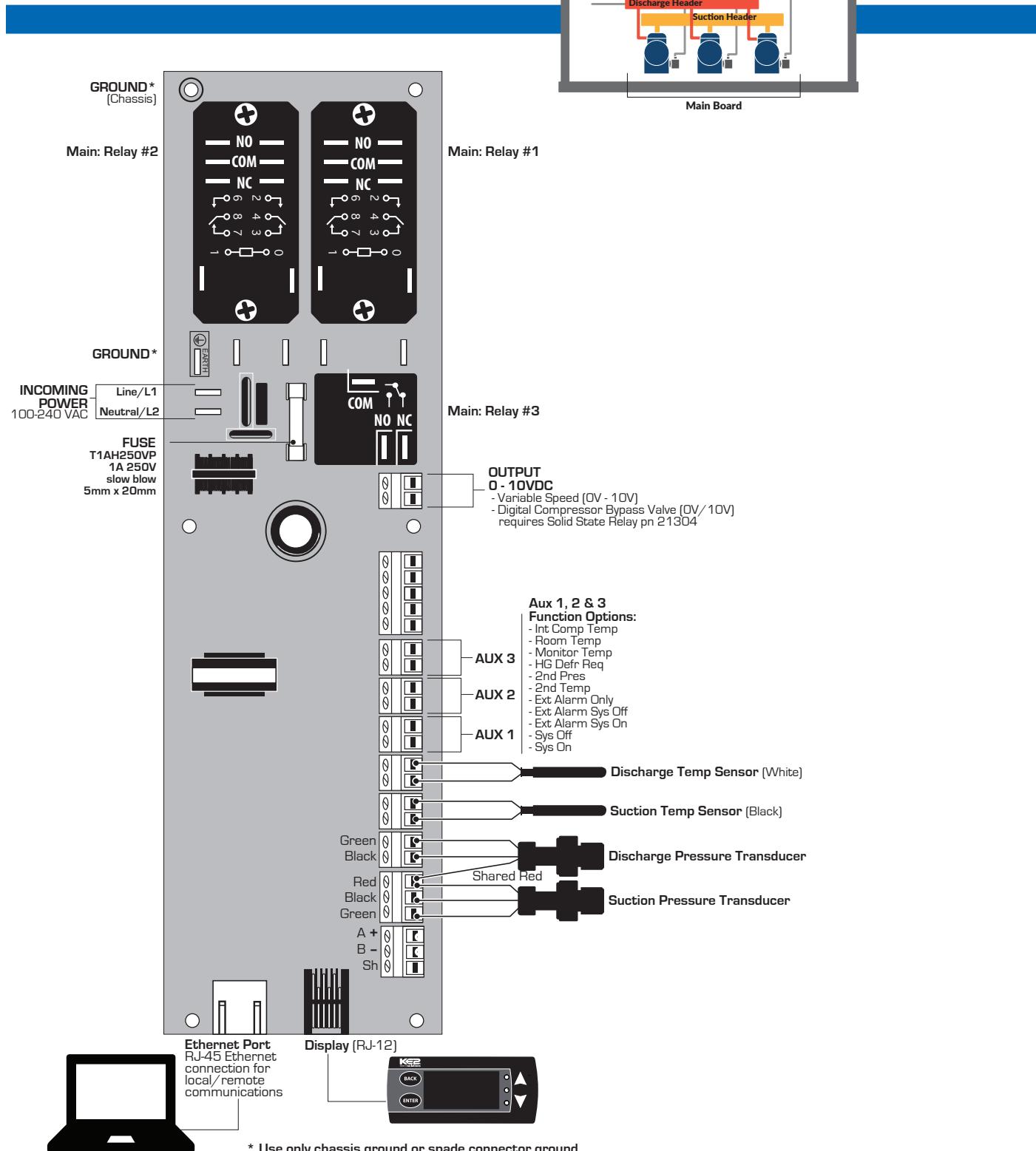


KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Option 1:

KE2 Compressor Sequencer OEM only
Up to 3 stages





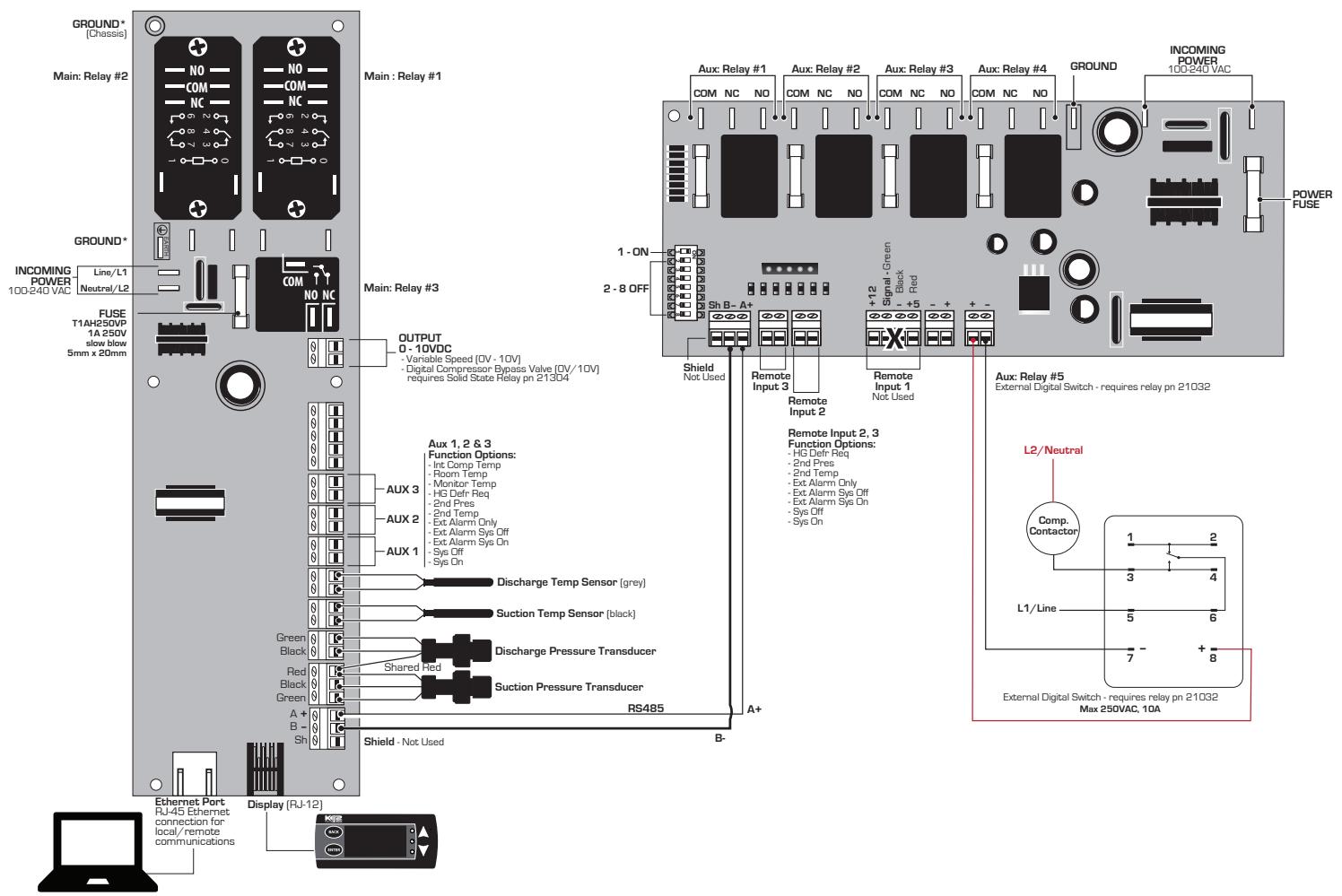
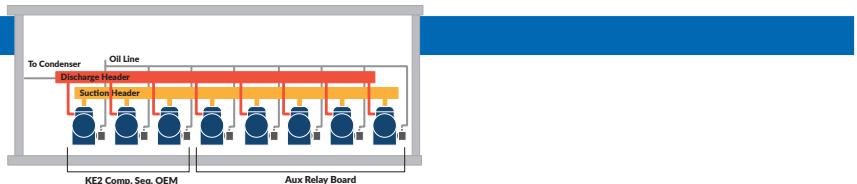
KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Option 2:

KE2 Compressor Sequencer OEM + Aux Relay Board

4 to 8 stages





KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Communication Setup

Due to the number of setpoints available, accessing the controller's webpage is **required** to do the initial setup of the KE2 Compressor Sequencer OEM.

If using a KE2-Edge Manager, please follow the KE2-Edge Manager instructions to view controllers with your smart device.

To enable KE2 SmartAccess on the controller without a KE2-Edge Manager, from the default display press and hold **ENTER** until **PSP** is displayed. Press **▼** several times until **SA** (KE2 SmartAccess) is displayed. Press **ENTER**. **DIS (disabled)** will be displayed. Press **▲** or **▼** to **EnA (enabled)**, then press and hold **ENTER** to save.

If connecting directly to customer network without a KE2-Edge

Manager, **dHC (DHCP mode)** must also be enabled to allow the controller to access the internet. From **SA**, press **▼** once to **dHC**. Press **ENTER**. **DIS (disabled)** will be displayed. Press **▲** or **▼** to **EnA (enabled)**, then press and hold **ENTER** to save.

Once connected to the internet, the controller can be accessed at <http://smartaccess.ke2therm.net>

The initial credentials for remote access are:

Site = "installer" **Password** = controller's MAC address
(ex. 04:91:62:66:1C:61)

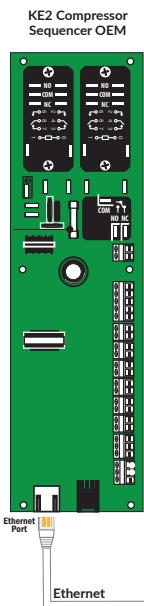
The remainder of setup is done via the controller webpage. Please refer to the summary of communications options below, and chose the method that best suits the site and application.

Options

Ways to connect:

- Option 1:** Directly Connected
- Option 2:** Using a KE2-EM Plus
- Option 3:** KE2 SmartAccess Portal with Local Dashboard
- Option 4:** KE2 SmartAccess Portal

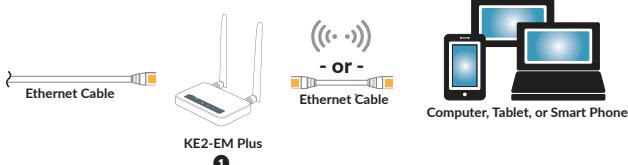
Access your controllers:



Option 1: Directly Connected - Single Controller



Option 2: Using a KE2-EM Plus (pn 21902)



Option 3: KE2 SmartAccess Portal with Local Dashboard



Option 4: KE2 SmartAccess Portal



① Add KE2 Switch 8-port (pn 20166) or KE2 Switch 16-port (pn 21011) when connecting more than one controller.

② Typically DHCP should be enabled on the controllers when connecting directly to the customer network, unless directed by the customer's IT department to set a static IP address.

On Site - Locally

Remote Access



KE2 Compressor Sequencer OEM

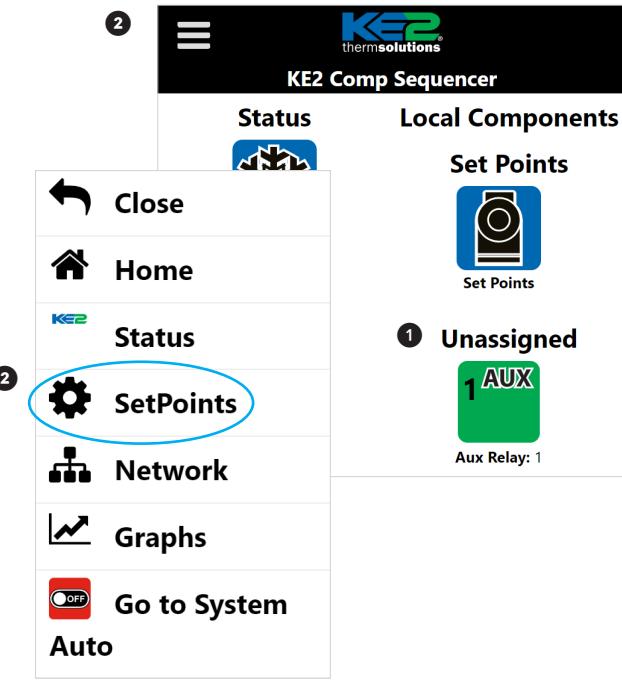
Quick Start Guide PN 21768, 21961, 21962

Initial Setup

Once connected to the controller either locally using a KE2-Edge Manager, directly via the IP address of the controller, or remotely through KE2 SmartAccess, the home page will be displayed.

- ① If an Aux Relay Board is connected to the main controller, an Unassigned Aux Relay Board will also appear on the screen.

- ② Click on the three horizontal bars in the top left of the screen to open the navigation menu. Click on **SetPoints** to load the setpoints page for the controller.



- ③ Users must **Login** to make changes to the controller. Click on the **Login** button on the bottom right of the screen. Enter the default credentials:

Username = ke2admin **Password** = ke2admin

Changing the password is required for security purposes. Enter a new password, at least 9 characters long.* Confirm password. Entering a **Password Reset Email** is recommended if the controller is connected to the internet. This allows you to reset the password remotely via email. Login using the new password.

Username = ke2admin **Password** = your password

The **Login** button should now say **Logout**.

*Allowed characters for passwords are spaces, A-Z, a-z, 0-9 and the following special characters: -_.@!#();:;+/? Invalid special characters are: (<>"~) If invalid characters are entered for the password then an error will be displayed, and the password will not be saved.

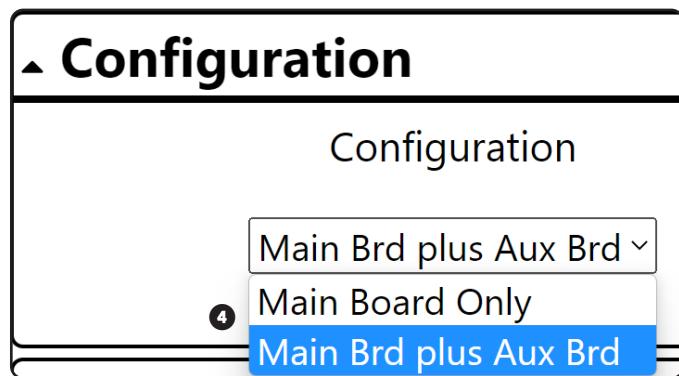
The screenshots illustrate the login process. The first image shows the main menu with 'Configuration' selected. The second image shows the 'Login' dialog box with 'Username' and 'Password' fields. The third image shows the 'Change Password' dialog box with 'New Password', 'Retype New Password', and 'Password Reset Email' fields.



KE2 Compressor Sequencer OEM

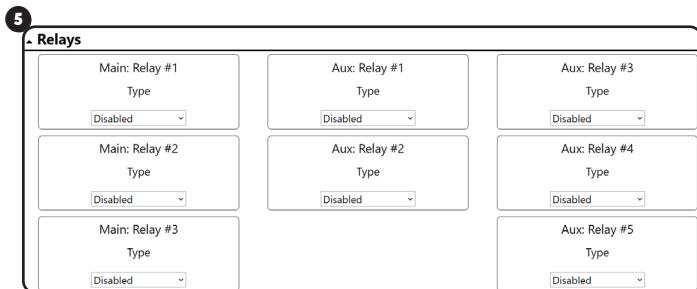
Quick Start Guide PN 21768, 21961, 21962

- 4 If using an Aux Relay Board in addition to the main controller, click **Configuration**. Select **Main Brd plus Aux Brd**, then click **Save**.



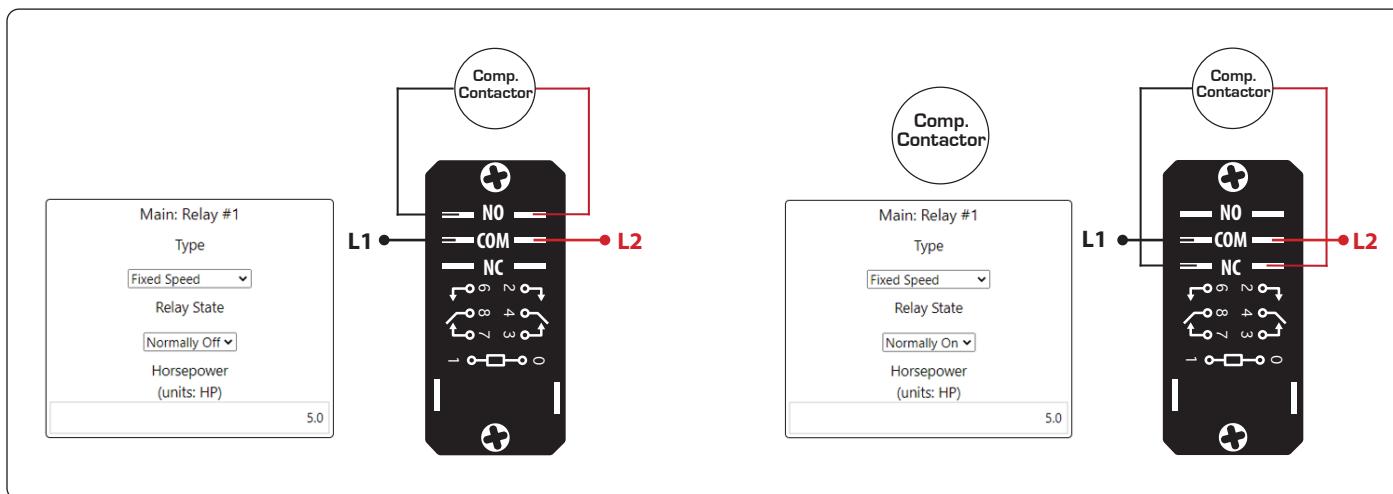
- 5 Click **Relays** to allow configuration of the controller relays. Select the correct function for each relay, then click **Save**. Once saved, you will have the option to input the horsepower of compressors, and whether the relay should act as a Normally Off (wire to NC) or Normally On (wire to NO) relay. See **Figure 1**.

Note: Only one Digital or Variable Speed compressor can be assigned per controller.



- 6 Review the rest of the setpoints. See **Webpage Setpoints** for a detailed list of available setpoints.

Figure 1





Running the System

IMPORTANT: All of the settings on the SetPoints page should be reviewed before beginning operation (See pages 17-20 for a detailed explanation of each setpoint).

When the KE2 Compressor Sequencer OEM is started for the first time, or anytime a critical setpoint is changed, the controller enters System Off mode.

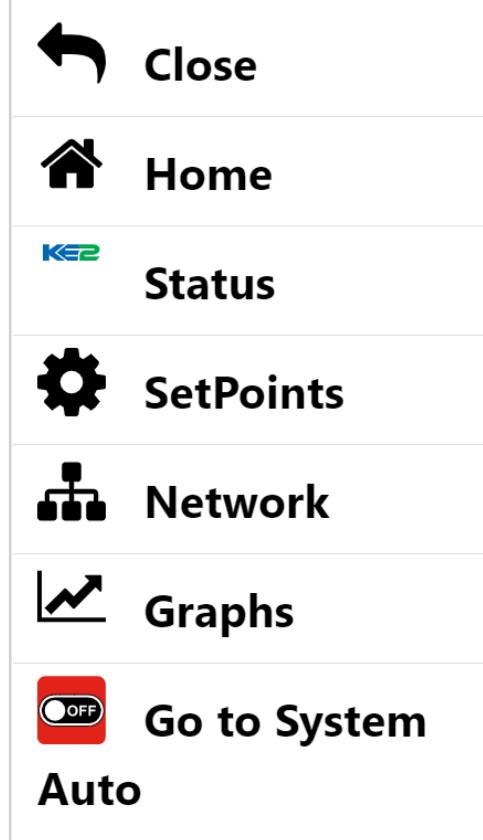
In System Off mode, the controller will not energize any relays until the user manually takes the controller out of System Off.

Once all setpoints have been reviewed, and the system is ready to begin operation, click the drop down menu and select Go to System Auto.

The button will change to **Turn System Off** and begin operation.

Clicking this button again will put the system back into System Off.

Please make sure to review all setpoints before beginning operation.



The KE2 Basic Display can also be used to put the controller into and take it out of System Off mode.

Press and hold until **PSP** is shown. Press several times until **SYS (System On/Off)** is displayed.

Press and the current status will be shown: **oN** or **oFF**.

Press or to change the status.

Press and hold until the screen goes back to **SYS**.

The suction group will now be in System Off, or running, depending on what was selected.



Determining Compressor ON/OFF Order

Mode of Control: Fixed Suction Pressure with Digital Scroll or Variable Speed Compressors

When applying the controller to a system consisting of fixed speed compressors with or without unloading capabilities and one digital scroll or variable speed compressor, the controller requires the user to assign a relay output for each compressor stage available using the controller's browser interface.

The Digital Scroll or variable speed compressor will serve as the primary stage to provide the most consistent suction pressure possible. Initially, the Digital Scroll will start unloaded, or the variable speed compressor will run at the **Min Speed** setpoint.

If suction pressure rises above the **Suction Pressure Setpoint**, the Digital Scroll will be loaded by de-energizing the bypass solenoid or the variable speed compressor will be loaded by increasing the 0-10VDC output (0-5VDC also available). The rate at which the Digital Scroll or variable speed is loaded is determined by the controller's algorithm, and will improve as the controller learns the system. If the Digital Scroll or variable speed compressor is fully loaded, the next stage will be loaded based on the smallest capacity step available. If all available stages are equal, the controller will automatically select the option with the least amount of runtime. The compressors will continue to be loaded until all compressors are running at full load.

If suction pressure falls below the **Suction Pressure Setpoint**, the Digital Scroll will be unloaded by energizing the bypass solenoid, or the variable speed compressor will be unloaded by decreasing the 0-10VDC output. If the Digital Scroll or variable speed compressor is fully unloaded, the next stage will be unloaded based on the smallest step available. If all available stages are equal, the controller will automatically select the option with the most amount of runtime. Suction pressure will primarily be controlled by loading and unloading the Digital Scroll or variable speed compressor. If suction pressure is still low, and all other stages have been unloaded, the Digital Scroll's compressor relay will be de-energized if minimum run, off and switch times have been met. For variable speed compressors, the 0-10VDC output will unload down to the **Min Speed** setpoint①.

① The Digital Scroll and variable speed compressor's requirements for unloading follow their own rule sets and are not adjustable. It has been designed to be within the limits of the compressor manufacturer, and to ensure that specification is maintained the minimum times for transitioning are not adjustable.

Mode of Control: Fixed Suction Pressure & Fixed Speed Compressors

When applying the controller to a system consisting of fixed speed compressors with or without unloading capabilities, the controller requires the user to assign a relay output for each compressor stage available using the controller's browser interface.

When **Fixed Suction Pressure** and only **Fixed Speed Compressors** are selected the controller will stage the compressors by capacity in HP as defined on the SetPoints page. Stages will be loaded and unloaded based on the smallest capacity step available. If all available stages are equal, the controller will automatically select the option with the least amount of runtime.

The **Suction Pressure Setpoint** is the target pressure the controller works to achieve while running. The **Suction Pressure Differential** determines the pressure above and below the **Suction Pressure Setpoint** the controller will allow the suction pressure to vary before it makes an adjustment to capacity.

Once a stage has been loaded or unloaded, that stage must remain on or off as determined by the **Min Comp Runtime** and **Min Comp Offtime**. The controller will not load or unload more often than the time defined in the **Min Compressor Switch Time**.

If the system is maintaining the suction pressure within the normal operating range, which is defined as the Suction Pressure Setpoint +/- the **Suction Pressure Differential**, it will maintain the current capacity.

Mode of Control: Floating Suction Control

The KE2 Compressor Sequencer OEM has the ability to float the target suction pressure for maximum efficiency. When the **Fixed/Float Suction** setpoint is set to **Float Suction**, all Room Temperature sensors connected to the controller will be compared to the **Room Temp** setpoint on the controller. When the average of the Room Temperature sensors is below the Room Temp setpoint and above saturation temperature, the controller will raise the target suction pressure. When the average of the Room Temperature sensors is above the **Room Temp** setpoint, the controller will lower the target suction pressure.

While floating suction is enabled, the **Suction Pressure** setpoint becomes the minimum suction pressure that the controller will work to maintain.



Selectable Inputs

The number of selectable inputs available depends on whether only the Main Board or Main Board + Aux Relay Board is used.
Please refer to the table below:

Hardware	Number of Selectable Inputs Available
Main Board	3
Main Board + Aux Relay Board	5

Selectable Input Mode: Sets the function of the Selectable Input (*Full descriptions in the table below*)

- Disabled
- In Cmp Temp
- Room Temp
- Monitor
- HG Defr Req
- 2nd Pres
- 2nd Temp
- Ext Alarm Only
- Ext Alarm Sys Off
- Ext Alarm Sys On
- Sys Off
- Sys On

Temperature Input Modes

Digital Input Modes

Input Active State: When an input is set to one of the Digital Input Modes listed above, the **State** determines whether the input performs the selected function when the circuit is open, or when the circuit is closed (shorted). **State** does not apply when an input is selected as a temperature sensor, instead an option to offset the sensor for calibration will be shown.

Descriptions of Selectable Input Mode Options

Input Mode	Designation
Disabled	Input performs no function.
In Cmp Temp Internal Compressor Temperature	Monitors internal compressor temperature for Copeland Digital Scroll compressors. Triggers High Internal Compressor Temperature Alarm, which turns off digital compressor until temperature lowers.
Room Temp	Used for floating suction pressure control.
Monitor	Used for monitoring a temperature. Does not affect control or alarming.
HG Defr Req Hot Gas Defrost Request	When active, energizes Hot Gas Defrost Relay. De-energizes relay when inactive.
2nd Pres 2nd Suction Pressure Setpoint	When active, controller will operate using 2 nd Suction Pressure setpoint as target suction pressure.
2nd Temp 2nd Room Temp Setpoint	When active, the controller will operate using 2 nd Room Temp setpoint as target room temperature for suction float.
Ext Alarm Only External Alarm Only	Used for receiving an alarm from a 3 rd party device via dry contact. When active, controller displays External Alarm, and sends email/text alert if setup.
Ext Alarm Sys Off External Alarm System Off	Used for receiving an alarm from a 3 rd party device via dry contact. When active, controller goes into System Off and safely unloads the suction group for pump down. Simultaneously displays External Alarm, and sends email/text alert if setup.
Ext Alarm Sys On External Alarm System On	Used for receiving an alarm from a 3rd party device via dry contact. When active, controller goes into System Bypass and will load all stages. Simultaneously displays External Alarm, and sends email/text alert if setup.
Sys Off System Off	When active, begins to safely unload the suction group for pump down, and puts the group into System Off mode. In System Off mode, no relays will be energized, and the controller must be taken out of System Off to resume operation.
Sys On System On (System Bypass)	When active, bypasses controller logic and loads all stages.



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

KE2 Basic Display - Menus and Parameters

When not in alarm, system off, or system on (bypass) the KE2 Basic Display shows **Suction Pressure**.



Abbreviation	Full Name	Description
SoF	System Off	The controller is in System Off mode.
bYP	System Bypass	The controller is in bypass (System On), all stages will be loaded.

Basic Display - Variables Menu

When not in a menu, press **▲** or **▼** to go through the Variables abbreviations.

Press **ENTER** to view a Variable in real time.

Press **BACK** to return to the previous screen.

Abbr.	Full Name	Description
Prs	SUCTION PRESSURE	Suction Pressure as read by the controller.
SUt	SUCTION TEMPERATURE	Suction Temperature as read by the controller.
SAt	SATURATION TEMPERATURE	Saturated Suction Temperature as calculated by the controller.
SHt	SUPERHEAT	Suction Superheat as calculated by the controller.
dPr	DISCHARGE PRESSURE	Discharge Pressure as read by the controller.
dSt	DISCHARGE TEMPERATURE	Discharge Temperature as read by the controller.
dSA	DISCHARGE SATURATION TEMPERATURE	Discharge Saturation Temperature as calculated by the controller.
dSH	DISCHARGE SUPERHEAT	Discharge Superheat as calculated by the controller.
iP1	IP OCTET 1	First three digits of the IP address.
iP2	IP OCTET 2	Second three digits of the IP address.
iP3	IP OCTET 3	Third three digits of the IP address.
iP4	IP OCTET 4	Fourth three digits of the IP address.
PnH	FIRMWARE PART NUMBER 1	First three digits of firmware PN.
PnL	FIRMWARE PART NUMBER 2	Last three digits of firmware PN.
Fir	FIRMWARE VERSION	Current firmware version on the controller.



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Basic Display - SetPoints Menu

When not in a menu, press and hold **ENTER** until **PSP** is shown.

Press **▲** or **▼** to go through the setpoint abbreviations.

Press **ENTER** to view the current setpoint value. Press **▲** or **▼** to change the setpoint.

Press and hold **ENTER** to save.

For numerical setpoints, pressing **ENTER** once will change the digit that is being modified.

Press **BACK** to return to the previous screen. When viewing a setpoint value, press **BACK** to return to the previous screen without saving.

Abbr.	Full Name	Min	Max	Default	Description
PSP	TARGET SUCTION PRESSURE	0.0 psig	150.0 psig①	25.0 psig	Suction pressure the controller will work to maintain.
Lpt	MAX PUMP OUT TIME	0 min	240 min	2 min	Sets maximum time to reach cut-out pressure.
LPC	CUTOUT PRESSURE	-5.0 psig	150 psig* *Max for R410A: 300 psig	5.0 psig	System turns completely off when suction pressure drops below this pressure.
rFG	REFRIGERANT	See list of refrigerant abbreviations below.			Refrigerant used in the system.
SPd	SUCTION PRESSURE DIFF	0.1 psig	50.0 psig	2.0 psig	Suction pressure differential used for control.
CLA	CLEAR ALARMS				Press and hold ENTER to clear all active alarms.
PAS	WEB PASSWORD RESET				Press and hold ENTER to reset the web username and password to the factory default.
FAC	FACTORY RESET				Press and hold ENTER to reset setpoints to factory defaults.
SA	KE2 SMARTACCESS	diS	EnA	diS	Turn KE2 SmartAccess on or off: EnA to enable / diS to disable KE2 SmartAccess.
dHC	DHCP MODE	diS	EnA	diS	Turn DHCP mode on or off: EnA to enable / diS to disable DHCP mode.
SyS	SYSTEM ON/OFF	oFF	on	oFF	Allow rack to run or put into system off: on to run / oFF to pump down rack and put into system off. Press and hold ENTER to change state.
rL1	MAIN RELAY 1	oFF	on		Allows manual control of relays for diagnostics. oFF = relay is de-energized. on = relay is energized. on/oFF does not represent compressor state since relay can be programmed to be normally off or normally on from the webpage. Press ENTER to change state.
rL2	MAIN RELAY 2	oFF	on		
rL3	MAIN RELAY 3	oFF	on		
rA1	AUX RELAY 1	oFF	on		
rA2	AUX RELAY 2	oFF	on		
rA3	AUX RELAY 3	oFF	on		
rA4	AUX RELAY 4	oFF	on		
rA5	AUX RELAY 5	oFF	on		

① R-410A = 300.0 psig

Refrigerants

Abbreviation	Full Name
404	R-404A
513	R-513A
458	R-458A
452	R-452A
450	R-450A

Abbreviation	Full Name
449	R-449A
448	R-448A
410	R-410A
407	R-407F
409	R-409A

Abbreviation	Full Name
408	R-408A
438	R-438A
717	R-717
r22	R-22
134	R-134a

Abbreviation	Full Name
42D	R-422A
42A	R-422A
40C	R-407C
40A	R-407A
507	R-507



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Alarms

Alarm Severity

Red LED - Critical Alarm: Most critical alarms will cause the controller to attempt to safely pump down the suction group. It is unable to run safely with a critical alarm, and the controller will cease refrigeration. The controller is attempting to prevent a catastrophic system failure, such as damage to the compressors. **Ext Alarm Sys On** is also a critical alarm; however, this alarm will bypass the controller logic and attempt to load all stages. The **System On/Off Sensor Alarm** setpoint also allows the user to force the controller into bypass and load all stages during a critical sensor alarm instead of pumping down. **Critical alarms should be addressed immediately.**

Yellow LED - Cautionary Alarm: The controller will continue to function to the best extent possible given the system conditions, but the alarm should be addressed as soon as possible.

Critical Alarms & Cautionary Alarms

Abbr.	Alarm	Description	Critical
A01	Suction Pres Sensor	Suction pressure sensor is shorted, open, or pressure is out of range.	■
A02	Disch Pres Sensor	Discharge pressure sensor is shorted, open, or pressure is out of range.	■
A03	Suction Temp Sensor	Suction temperature sensor is shorted or open.	■
A04	Disch Temp Sensor	Discharge temperature sensor is shorted or open.	■
A05	High Superheat	Suction superheat is higher than Max Suction SH for longer than Suction Superheat Delay .	
A06	Low Superheat	Suction superheat is lower than Min Suction SH for longer than Suction Superheat Delay .	■
A07	High Disch Temp	Discharge temperature is higher than Max Disch Temp for longer than Max Disch Temperature Delay .	■
A08	High In Comp Temp	Digital compressor internal temp high. Will turn off digital compressor until temp lowers.	
A09	High Disch Pres	Discharge pressure is higher than Max Disch Pres for longer than Max Disch Pressure Delay .	■
A10	Ext Alarm Only 1	Aux 1 Input is set to Ext Alarm Only and input is active.	
A11	Ext Alarm Only 2	Aux 2 Input is set to Ext Alarm Only and input is active.	
A12	Ext Alarm Only 3	Aux 3 Input is set to Ext Alarm Only and input is active.	
A13	Ext Alarm Sys Off 1	Aux 1 Input is set to Ext Alarm Sys Off and input is active.	■
A14	Ext Alarm Sys Off 2	Aux 2 Input is set to Ext Alarm Sys Off and input is active.	■
A15	Ext Alarm Sys Off 3	Aux 3 Input is set to Ext Alarm Sys Off and input is active.	■
A16	Ext Alarm Sys Off 4	Remote Input 2 is set to Ext Alarm Sys Off and input is active.	■
A17	Ext Alarm Sys Off 5	Remote Input 3 is set to Ext Alarm Sys Off and input is active.	■
A18	Ext Alarm Sys On 1	Aux 1 Input is set to Ext Alarm Sys On and input is active.	■
A19	Ext Alarm Sys On 2	Aux 2 Input is set to Ext Alarm Sys On and input is active.	■
A20	Ext Alarm Sys On 3	Aux 3 Input is set to Ext Alarm Sys On and input is active.	■
A21	Ext Alarm Sys On 4	Remote Input 2 is set to Ext Alarm Sys On and input is active.	■
A22	Ext Alarm Sys On 5	Remote Input 3 is set to Ext Alarm Sys On and input is active.	■
A23	Aux Brd Comms	Main Board unable to communicate with Aux Relay Board.	■
A24	Alarm Watchdog	Contact KE2 Therm.	
A25	Email Failure	Email alert was not confirmed by email server provided after seven consecutive attempts.	
A26	SNTP Error	Controller cannot communicate with external time of day server (SNTP server).	
A27	Evap Comms Alarms	Cannot communicate with one or more evaporator controllers for Siteview.	
A28	Main: Aux Input 1 Sensor	Main Board, Aux Input 1 temp sensor is shorted or open.	
A29	Main: Aux Input 2 Sensor	Main Board, Aux Input 2 temp sensor is shorted or open.	
A30	Main: Aux Input 3 Sensor	Main Board, Aux Input 3 temp sensor is shorted or open.	
A31	Aux Addr 1: Input 2 Sensor	Aux Board 1, Input 2 Temp Sensor is shorted or open (not currently implemented).	
A32	Aux Addr 1: Input 3 Sensor	Aux Board 1, Input 3 Temp Sensor is shorted or open (not currently implemented).	
A33	Ext Alarm Only 4	Aux Board 1, Input 2 is set to Ext Alarm Only and input is active.	
A34	Ext Alarm Only 5	Aux Board 1, Input 3 is set to Ext Alarm Only and input is active.	



Safety Alarms (Preemptive Alarms)

Safety alarm S01-03 are preemptive alarms and trigger before their respective critical alarms are triggered.

Abbr.	Alarm	Description	Critical
S01	Low Safety SH Alarm	Suction superheat is below Min Suction Superheat for more than 5 minutes.	
S02	High Safety Suc Temp Alarm	Suction temperature is above Max Suction Temperature for more than 5 minutes.	
S03	High Safety Dis Pres Alarm	Discharge pressure is above Max Disch Pressure . Controller will attempt to unload stages and not load anymore stages until pressure is well below Max Disch Pressure .	



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Webpage Setpoints

The following setpoints are available on the controller webpage.

Setpoint		Description	Range / Options	Default
Configuration	Configuration	Select whether the application uses only the main KE2 Compressor Sequencer OEM board (up to 3 stages) or KE2 Comp. Seq. OEM with an Aux Relay Board (up to 8 stages).	Main Board Only, Main Brd plus Aux Brd	Main Board Only
Email/Alarm Notification	Clear Alarms	Clears any active alarms. Some alarms will return immediately if alarm condition still exists.	N/A	
	Email Address for Alerts	Select recipient for email alerts. Only setpoint required in this section for email alerts when using the KE2 Therm Default Server.	N/A	
	Email Subject	Subject line of the alert email. Example: Store 1 Low Temp Rack	N/A	
Communications	Web Page Login	Username	Username used to make changes on the controller. Must be at least 8 characters.	ke2admin
		Password Reset Email	Email used to reset the username and password for the controller. Requires internet access.	N/A
		Change Password	Password used to make changes on the controller. Must be changed from default upon first login for security. New password must be at least 9 characters. Invalid characters are (<>`~)	ke2admin
	KE2 Smart Access	Portal Host	Server used by the controller to connect to KE2 SmartAccess. Should only be changed if directed to by KE2 Therm technical support.	smartaccess.ke2therm.net
		Site	"Site" is used as part of the credentials to access your controllers remotely via KE2 SmartAccess. Generally controllers at the same physical location are set to the same "Site".	Installer
		Change SA Password	The SA Password is the 2nd part of the credentials used to access your controllers remotely via KE2 SmartAccess. Generally controllers at the same physical location are set to the same SA password.	Controller MAC address
		KE2 Smart Access Enabled	Enables or disables KE2 SmartAccess. Must be enabled to access the controller remotely via KE2 SmartAccess (unless a device such as the KE2-Edge Manager is publishing controllers instead).	Disabled
		Business Name	Optional, add name of your business for those viewing the controller webpage.	KE2 Therm Solutions
General Information	Phone Number	Optional, add a contact phone number for those viewing the controller webpage.	(888) 337 3358	
	Location	The location appears on all dashboards, email alerts, etc., and is the primary way to identify the controller.	(Set Location)	
	Date and Time	Time Reference Options (SNTP)	Select method of updating controller time. Disabled = set manually. Internet = uses online time server. Local Device = update automatically when smart devices access the webpage. Custom = set custom SNTP server.	Disabled, Internet, Local Device, Custom
		Set Date	Manually set the date.	N/A
		Set Time	Manually set the time.	N/A
		Time Zone	Set the time zone.	N/A
		Time Reference (SNTP)	Set a custom SNTP server.	N/A
	Bootloader	Used to put controller into bootloader mode, part of the firmware update process.	N/A	
	Reboot	Restarts the controller.	N/A	
	Clear Logs	Clears the saved datalog and graph on the controller.	N/A	



Webpage Setpoints (continued)

The following setpoints are available on the browser interface of the Main Board.

Setpoint		Description	Range / Options	Default
Relays	Main: Relay #1	Controls one stage or component.	Disabled, Fixed Speed, Variable Speed①, Digital①, HG Defr Relay, LLS, Unldr for Mn Rel1, Unldr for Mn Rel2, Unldr for Mn Rel3, Unldr for Aux Rel1, Unldr for Aux Rel2, Unldr for Aux Rel3, Unldr for Aux Rel4, Unldr for Aux Rel5	Disabled
	Main: Relay #2	Controls one stage or component.		
	Main: Relay #3	Controls one stage or component.		
	Aux: Relay #1	Controls one stage or component.		
	Aux: Relay #2	Controls one stage or component.		
	Aux: Relay #3	Controls one stage or component.		
	Aux: Relay #4	Controls one stage or component.		
	Aux: Relay #5	Controls one stage or component.		
	Relay State	Relay logic can be set as Normally Off (energize relay to run - wire contactor to NO) or Normally On (de-energize relay to run - wire contactor to NC).	Normally Off, Normally On	Normally Off
	Horsepower	Once compressor type is saved, set the HP of each stage for proper loading/unloading.	0.1 HP to 50.0 HP	5.0 HP
Refrigeration	Var Speed	Min Speed	Minimum speed for variable speed compressors.	6.0 Hz to 60.0 Hz
		Voltage	Select output for variable speed compressors.	0 to 10VDC or 0 to 5VDC
	Min Load	Min % Loaded	Minimum load for digital compressor control.	10.0 % to 50.0 %
	Refrigerant	Refrigerant used in the system.	R-404A, R-507, R-407A, R-407C, R-422A, R-422D, R-134A, R-22, R-717, R-438A, R-408A, R-409A, R-407F, R-410A, R-448A, R-449A, R-450A, R-452A, R-458A, R-513A	R-404A
	Temp Units	Temperature Units	Fahrenheit, Celsius	Fahrenheit
	Fixed/Float Suction	Select whether target suction pressure can float according to room temperature.	Fixed Suction, Float Suction	Fixed Suction
	Suction Pressure	Target suction pressure to maintain.	0 to 150 psig* *Max for R-410A: 300 psig	25 psig
	Suction Pressure Diff	Suction Pressure Differential – when all compressors are fixed speed, controller will load and unload stages outside of suction pressure +/- the differential. For digital and variable speed compressors, determines ideal range for suction pressure (target suction pressure ± the differential).	0.1 psi to 5.0 psi	2.0 psi
	2nd Suction Pressure	When 2nd Pres Digital Input is active, this value becomes the new target suction pressure.	0 to 150 psig* *Max for R410A: 300 psig	50.0 psig
	Min Time between Stages	Minimum time between switching stages.	2 sec to 240 sec	15 sec
	Min Comp Runtime	Minimum time compressor must run before turning off.	0 sec to 240 sec	60 seconds
	Min Comp Off Time	Minimum time compressor must be off before turning on.	0 sec to 240 sec	60 seconds
	CutOut Pressure	System turns completely off when suction pressure drops below this pressure.	0 to 150 psig* *Max for R410A: 300 psig	5.0 psig
	Max Pump Out Time	Sets maximum time to reach cut-out pressure.	0 min to 240 min	2 minutes
	Room Temp	Room temperature setpoint for suction float when Room Temp Sensor is connected to controller.	-50.0°F to 90.0°F (-45.5°C to 32.2°C)	-10.0°F
	2nd Room Temp	When 2nd Temp Digital Input is active, this value becomes the new room temperature setpoint for suction float.	-50.0°F to 90.0°F (-45.5°C to 32.2°C)	-50.0°F (-45.5°C)

① Only one variable speed or digital scroll compressor can be selected per group.



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Webpage Setpoints (*continued*)

The following setpoints are available on the browser interface of the Main Board.

Setpoint		Description	Range / Options	Default
Inputs	Auxiliary Input 1,2,3	Mode	Select function for Input 1, 2, 3 on the Main Board. Disabled, Int Comp Temp, Room Temp, Monitor, HG Defr Req, 2nd Pres, 2nd Temp, Ext Alarm Only, Ext Alarm Sys Off, Ext Alarm Sys On, Sys Off, Sys On	Disabled
		State	Selects active state of the input.	Closed, Open
		Offset	Offset added or subtracted from the sensor, if needed.	-5.0°F to 5.0°F 0.0°F
		Suction Pres Type	Select the suction pressure transducer installed.	0-150 PSIA, 0-500 PSIG 0-150 PSIA
Sensor Offsets	SUCT PRESS OFFSET	An offset added or subtracted from the suction pressure transducer reading, if needed.	-5.0 psi to 5.0 psi	0 psi
	SUCT TEMP OFFSET	An offset added or subtracted from the suction temperature sensor reading, if needed.	-5.0 to 5.0	0
	DISCH PRESS OFFSET	An offset added or subtracted from the discharge pressure transducer reading, if needed.	-5.0 psi to 5.0 psi	0 psi
	DISCH TEMP OFFSET	An offset added or subtracted from the discharge temperature sensor reading, if needed.	-5.0 to 5.0	0
PID	PROPORTIONAL	Should not be adjusted unless instructed to by KE2 Therm technical support.	0 to 255	1
	INTEGRAL		0 to 255	1
	DERIVATIVE		0 to 255	0
	PID TIME CMP		0 second to 255 seconds	1 second



Webpage Setpoints (*continued*)

The following setpoints are available on the browser interface of the Main Board.

Setpoint	Description	Range / Options	Default
Alarms	SAFETY: MIN SUCTION SUPERHEAT	Minimum Safety Suction Superheat. Provides a warning that suction line is low SH before triggering a critical low SH alarm.	0.0°F to 50.0°F (0.0°C to 27.8°C)
	SAFETY: MAX SUCTION TEMPERATURE	Max Safety Suction Temp. Provides a warning that suction line temp is high.	5.0°F to 90.0°F (-15.0°C to 32.2°C)
	SAFETY: MAX DISCH PRESSURE	Max Safety Discharge Pressure. Discharge pressure above this value triggers High Safety Discharge Pressure alarm. Group will stop loading stages, and begin to unload.	0.0 psig to 500.0 psig
	SYSTEM ON/OFF SENSOR ALARM	Determines whether controller should go to System Off and unload all stages during critical sensor alarm, or go to System On (Bypass) and load all stages.	Off on Sensor Alarm, Bypass on Sensor Alarm
	MIN SUCTION SUPERHEAT	The lowest acceptable superheat for the suction line. Turns system off when exceeded longer than Suction Superheat Delay.	5.0°F to 50.0°F (2.8°C to 27.8°C)
	MAX SUCTION SUPERHEAT	Provides a warning that suction SH is high when exceeded longer than Suction Superheat Delay.	25.0°F to 200.0°F (13.9°C to 111.1°C)
	SUCTION SUPERHEAT DELAY	Amount of time before a Min Suction SH or Max Suction SH alarm is triggered after exceeding the threshold.	0 to 254 minutes *Type 255 or 'dis' and save to disable.
	MAX DISCH PRESSURE	Maximum Discharge Pressure. Triggers alarm and turns system off when discharge pressure exceeds this value longer than Max Disch Pressure Delay.	100.0 to 500.0 psig
	MAX DISCH PRESSURE DELAY	Max Discharge Pressure Delay. The amount of time before an alarm is initiated when Max Disch Pres is exceeded.	0 to 254 minutes *Type 255 or 'dis' and save to disable.
	MAX DISCH TEMPERATURE	Maximum Discharge Temp. Triggers alarm and turns system off when discharge temp exceeds this value longer than Max Disch Temperature Delay.	25.0°F to 300.0°F (-3.9°C to 148.9°C)
	MAX DISCH TEMPERATURE DELAY	Max Discharge Temp Delay. The amount of time before an alarm is initiated when Max Disch Temp is exceeded.	0 to 254 minutes *Type 255 or 'dis' and save to disable.



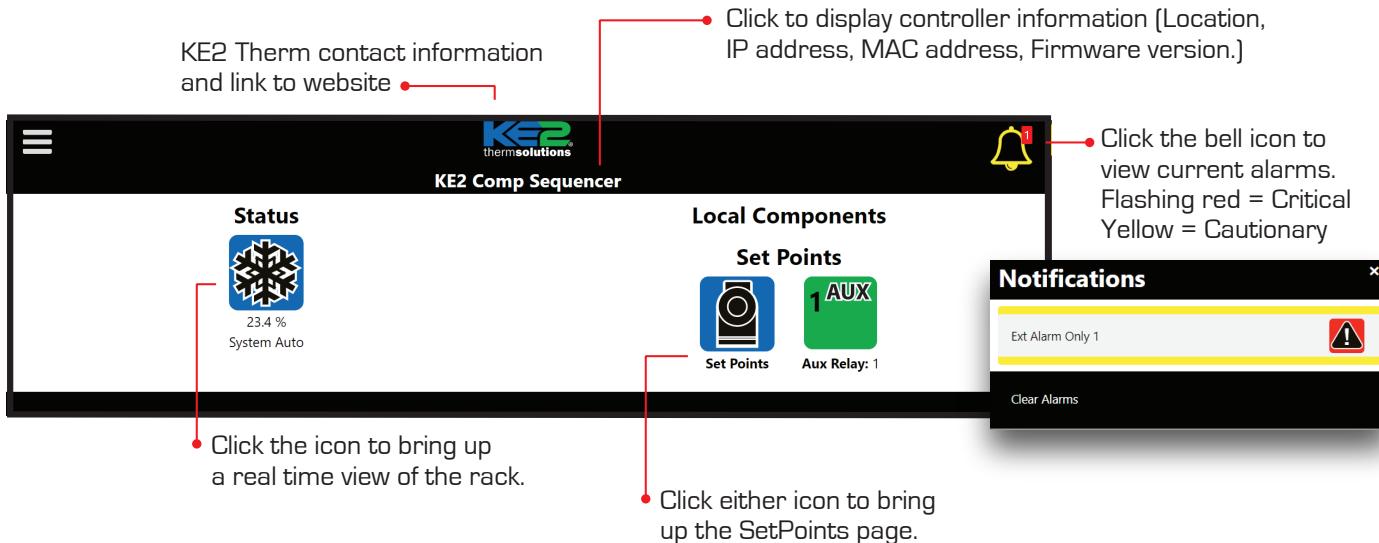
KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

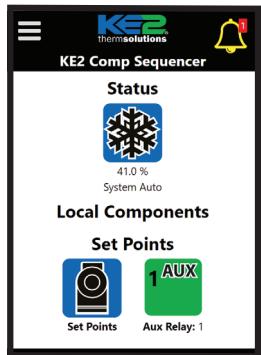
Home Page

Description:

The Home page shows the percentage of compressor capacity used as well as system status. From this page navigate to other pages.



Example of Mobile View





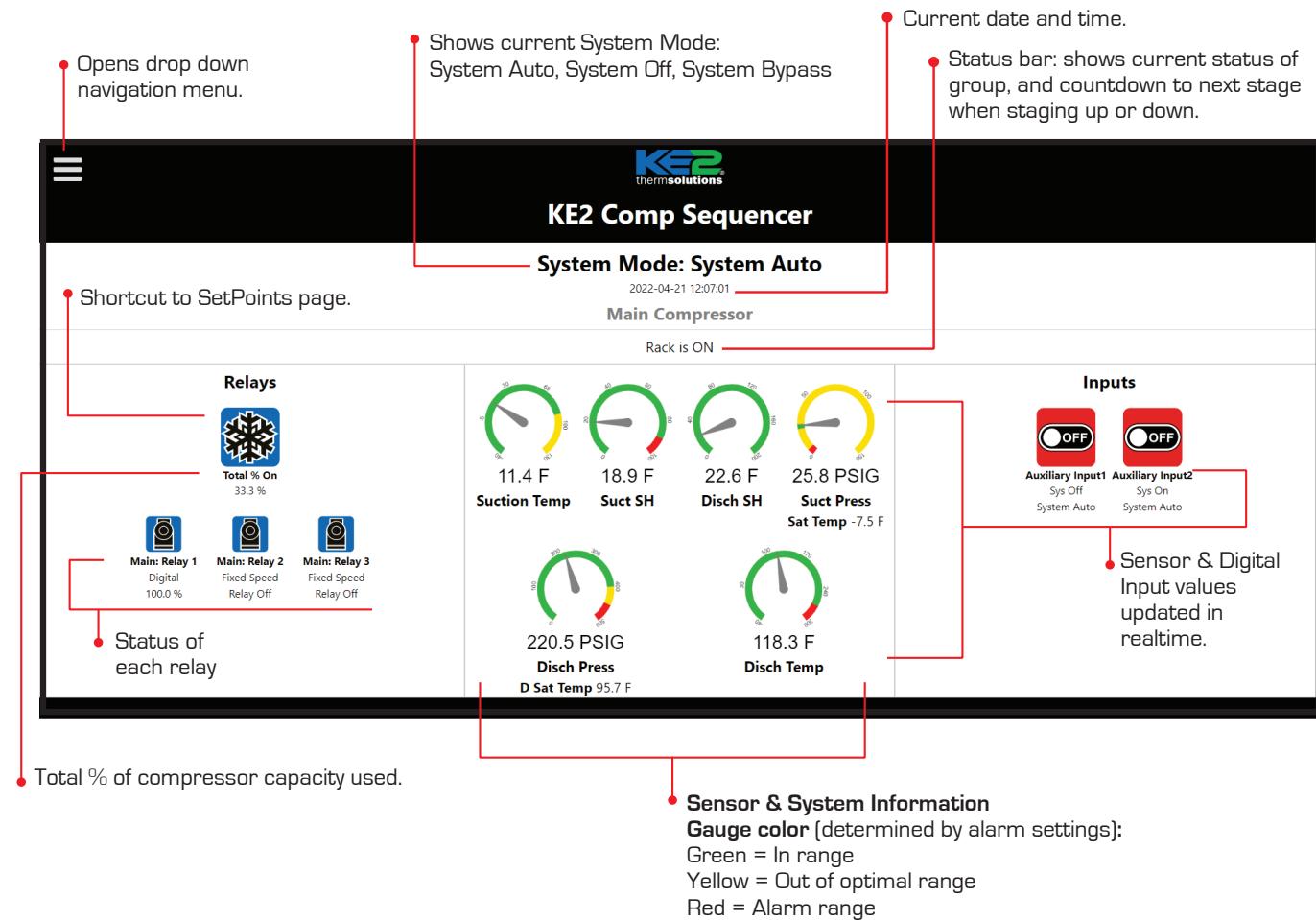
KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Status Page

Description:

Real time system performance, including temperatures, pressures, relay states, and auxiliary input states.





KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

SetPoints Page

- Configuration

Configuration	Main Board Only
Main Brd plus Aux Brd	Main Brd plus Aux Brd

- Email/Alarm Notification

Clear Alarms	Email Server
Clear Alarms	*****
User Name	Server Port
*****	KE2 Therm Default Server
Password	Test Email
*****	Test Email
Email Address For Alerts (Required)	
Email Subject	

- Clears any active alarms.
- Note:** Certain alarms, such as sensor alarms, will return immediately until resolved.
- KE2 Therm Default Server
- 587
- 25
- Email address to receive alerts. This is the only email setting required to receive alerts when using the KE2 Therm Default Server.
- Subject for alert emails.

SetPoints Page

Communications

- Standard (dropdown): Standard, Enabled, Redirect
- Network for Evaps
- Username for making changes to the controller. Must be at least 8 characters.
- Used to reset password with email code, requires internet access.
- Web Page Log In:
 - Username: ke2admin
 - Password Reset Email
 - Change Password
 - Change Password
- Insecure HTTP Access:
 - Redirect (dropdown): Disabled, Enabled, Redirect
 - Update Server Certificate
 - Update Email CA Certificate
- API Key
- KE2 Smart Access:
 - Portal Host: smartaccess.ke2therm.net
 - Site: installer
 - Change SA Password
 - KE2 Smart Access Enabled (dropdown): Disabled, Enabled

General Information

- Business Name: KE2 Therm Solutions
- Phone Number: (888) 337 3358
- Location: Location (Set Location)
- Date and Time:
 - Time Reference Options (SNTP): Local Device, Internet, Local Device, Custom
 - Current Date: 04/21/2022
 - Current Time: 12:36:17 PM
- Bootloader:
 - Bootloader
 - Reboot
 - Reboot
 - Clear Logs
 - Clear Logs

Optional, add name of your business for those viewing the controller webpage.

Optional, add phone number of your business for those viewing the controller webpage.

The location appears on all dashboards, email alerts etc... And is the primary way to identify the controller.

Disabled
Enabled
Redirect

Site credentials used for accessing the controller remotely via KE2 SmartAccess.

Disabled
Enabled

Disabled
Internet
Local Device
Custom

Puts controller in Bootloader mode. Part of the firmware update process.

Restarts the controller.

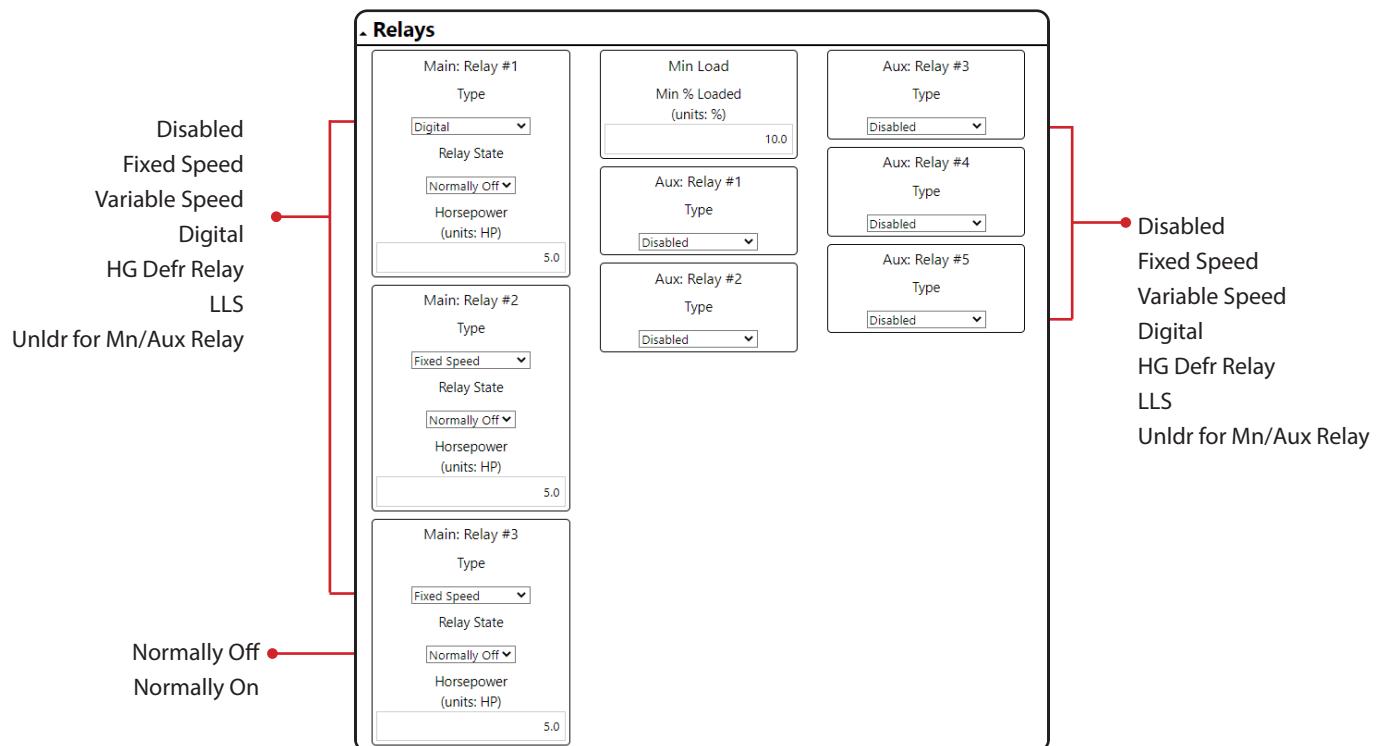
Clears stored data from the controller.



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

SetPoints Page





SetPoints Page

R-404A
R-507
R-407A
R-407C
R-422A
R-422D
R-134a
R-22
R-717
R-438A
R-408A
R-409A
R-407F
R-410A
R-448A
R-449A
R-450A
R-452A
R-458A
R-513A

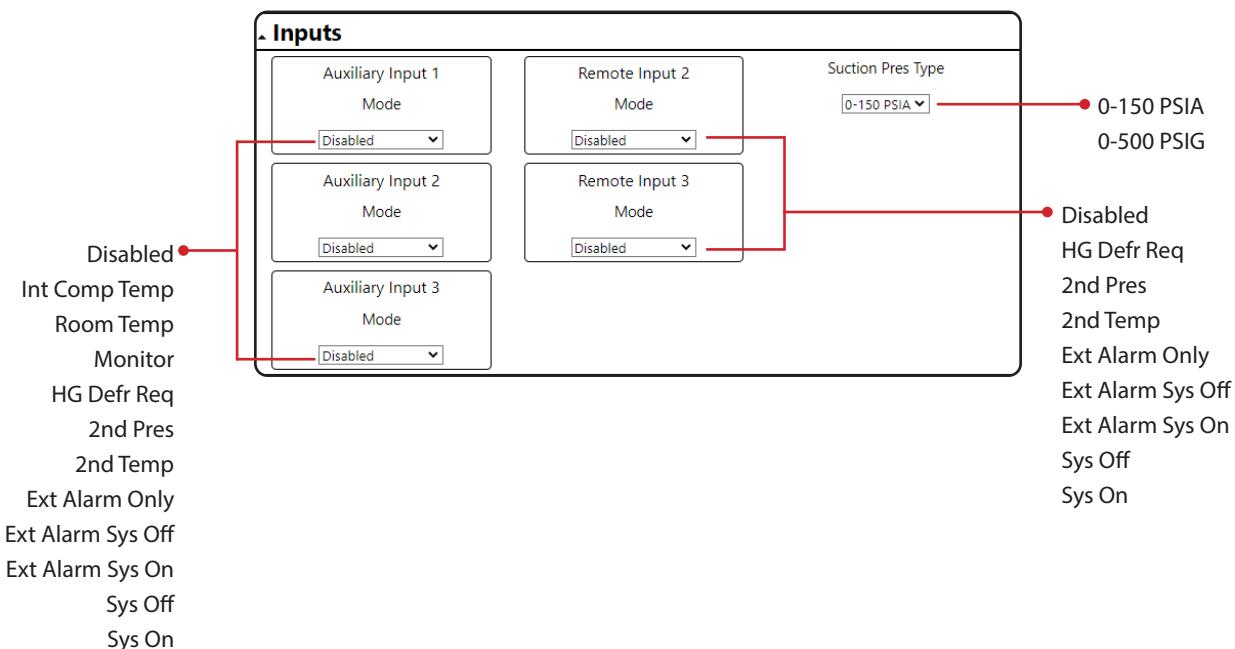
Refrigeration		
Refrigerant	Suction Pressure Diff (units: PSI)	CutOut Pressure (units: PSIG)
R-404A	2.0	5.0
Temp Units	2nd Suction Pressure (units: PSIG)	Max Pump Out Time (units: MIN)
Fahrenheit	50.0	2
Fixed/Float Suction	Min Time between Stages (units: SEC)	Room Temp (units: F)
Fixed Suction	15	-10.0
Suction Pressure (units: PSIG)	Min Comp Runtime (units: SEC)	2nd Room Temp (units: F)
25.0	60	-50.0
	Min Comp Off Time (units: SEC)	
	60	



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

SetPoints Page



Sensor Calibration Offsets

Suct Pressure Offset (units: PSI)	0.0
Suction Temp Offset (units: F)	0.0
Disch Pressure Offset (units: PSI)	0.0
Disch Temp Offset (units: F)	0.0



SetPoints Page

Off on Sensor Alarm
Bypass on Sensor Alarm

Alarms	
Safety Settings	System On/Off Sensor Alarm
Min Suction Superheat (units: F)	<input type="button" value="Off on Sensor Alarm"/>
Max Suction Temperature (units: F)	<input type="text" value="0.0"/>
Max Disch Pressure (units: PSIG)	<input type="text" value="400.0"/>
Critical Alarm Settings	
Min Suction Superheat (units: F)	<input type="text" value="0.0"/>
Max Suction Superheat (units: F)	<input type="text" value="90.0"/>
Suction Superheat Delay	<input type="text" value="Disabled"/>
Max Disch Pressure (units: PSIG)	<input type="text" value="450.0"/>
Max Disch Pressure Delay	<input type="text" value="Disabled"/>
Max Disch Temperature (units: F)	<input type="text" value="268.0"/>
Max Disch Temperature Delay	<input type="text" value="Disabled"/>

Compressor PID

Proportional	<input type="text" value="1"/>
Integral	<input type="text" value="1"/>
Derivative	<input type="text" value="0"/>
PID Time (units: SEC)	<input type="text" value="1"/>



Login Page

Description:

The Login feature prevents unauthorized access to the controller.

The user must enter the User Name and Password to make changes to the Settings page, Network page, Setpoints page, and Aux Relay Boards.

Login

Username

Password

Login Cancel Forgot Password

Users must **Login** to make changes to the controller. Click on the **Login** button on the bottom right of the screen. Enter the default credentials:

Username = ke2admin **Password** = ke2admin

Changing the password is required for security purposes. Enter a new password, at least 9 characters long.* Confirm password. Entering a **Password Reset Email** is recommended if the controller is connected to the internet. This allows you to reset the password remotely via an email. Login using the new password.

Username = ke2admin **Password** = your password

The **Login** button should now say **Logout**.

* Allowed characters for passwords are spaces, A-Z, a-z, 0-9 and the following special characters: -_.@!#();[]+/? Invalid special characters are: (<>"~) If invalid characters are entered for the password then an error will be displayed, and the password will not be saved.

Reset Password

Password Reset Code

Reset Password Cancel

Change Password

New Password

Retype New Password

Password Reset Email

Change Password Cancel

• Displays 3 digit code on display and simultaneously sends it to the Password Reset Email address. Entering the code resets the login credentials to the default "ke2admin". The password still must be changed from default on logging in.



Network Page

Description:

Change the controller's network settings, in order to add controllers to an existing customer network.

IP Address: 192.168.50.134

Gateway Address: 192.168.50.1

MAC Address: 04:91:62:66:1C:61

DNS Address: 192.168.50.1

Subnet Mask: 255.255.255.0

DHCP Enable: Enabled

Save/Group **Reset Typed Entry** **Login**

Saves changes to the controller's network.

DHCP Client Mode allows the network to automatically overwrite the controller's default network settings.

Note: If **Enabled** the controller's IP address and other network settings will change when connected to a network.

Prevents unauthorized access to the controller. Enter the User Name and Password to make changes to the Network page.



KE2 Compressor Sequencer OEM

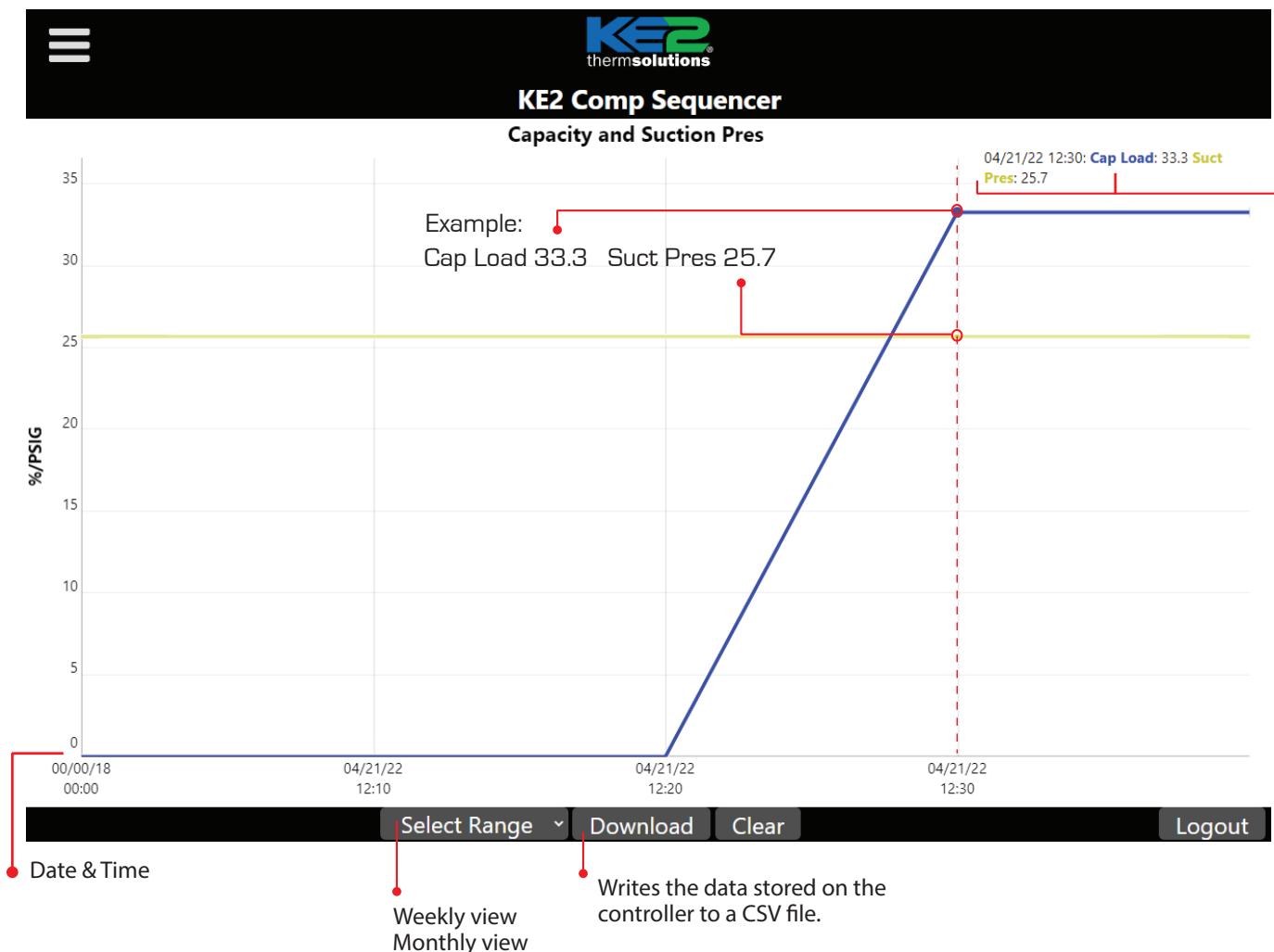
Quick Start Guide PN 21768, 21961, 21962

Graphs Page

Description:

The graph shows the past seven or thirty days of capacity load % and suction pressure. It is essential for system analysis and troubleshooting.

Date & Time, Capacity Load, and Suction Pressure are displayed when moving the mouse over the data.





KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Alphabetical List of Abbreviations

Abbreviation	Full Name	Type	Description
A01	Suction Pres Sensor	Alarm - Critical	Suction pressure sensor is shorted, open or pressure out of range.
A02	Disch Pres Sensor	Alarm - Critical	Discharge pressure sensor is shorted, open or pressure out of range.
A03	Suction Temp Sensor	Alarm - Critical	Suction temperature sensor is shorted or open.
A04	Disch Temp Sensor	Alarm - Critical	Discharge temperature sensor is shorted or open.
A05	High Superheat	Alarm - Cautionary	Suction superheat is higher than Max Suction SH for longer than Suction Superheat Delay.
A06	Low Superheat	Alarm - Critical	Suction superheat is lower than Min Suction SH for longer than Suction Superheat Delay.
A07	High Disch Temp	Alarm - Critical	Discharge temperature is higher than Max Disch Temp for longer than Max Disch Temperature Delay.
A08	High In Comp Temp	Alarm - Cautionary	Digital compressor internal temp high. Will turn off digital compressor until temp lowers.
A09	High Disch Pres	Alarm - Critical	Discharge pressure is higher than Max Disch Pres for longer than Max Disch Pressure Delay.
A10	Ext Alarm Only 1	Alarm - Cautionary	Aux 1 Input is set to Ext Alarm Only and input is active.
A11	Ext Alarm Only 2	Alarm - Cautionary	Aux 2 Input is set to Ext Alarm Only and input is active.
A12	Ext Alarm Only 3	Alarm - Cautionary	Aux 3 Input is set to Ext Alarm Only and input is active.
A13	Ext Alarm Sys Off 1	Alarm - Critical	Aux 1 Input is set to Ext Alarm Sys Off and input is active.
A14	Ext Alarm Sys Off 2	Alarm - Critical	Aux 2 Input is set to Ext Alarm Sys Off and input is active.
A15	Ext Alarm Sys Off 3	Alarm - Critical	Aux 3 Input is set to Ext Alarm Sys Off and input is active.
A16	Ext Alarm Sys Off 4	Alarm - Critical	Remote Input 2 is set to Ext Alarm Sys Off and input is active.
A17	Ext Alarm Sys Off 5	Alarm - Critical	Remote Input 3 is set to Ext Alarm Sys Off and input is active.
A18	Ext Alarm Sys On 1	Alarm - Critical	Aux 1 Input is set to Ext Alarm Sys On and input is active.
A19	Ext Alarm Sys On 2	Alarm - Critical	Aux 2 Input is set to Ext Alarm Sys On and input is active.
A20	Ext Alarm Sys On 3	Alarm - Critical	Aux 3 Input is set to Ext Alarm Sys On and input is active.
A21	Ext Alarm Sys On 4	Alarm - Critical	Remote Input 2 set to Ext Alarm Sys On and input is active.
A22	Ext Alarm Sys On 5	Alarm - Critical	Remote Input 3 set to Ext Alarm Sys On and input is active.
A23	Aux Brd Comms	Alarm - Critical	Main Board unable to communicate with Aux Relay Board.
A24	Alarm Watchdog	Alarm - Cautionary	Contact KE2 Therm.
A25	Email Failure	Alarm - Cautionary	Email alert was not confirmed by email server provided after seven consecutive attempts.
A26	SNTP Error	Alarm - Cautionary	Controller cannot communicate with external time of day server (SNTP server).
A27	Evap Comms Alarm	Alarm - Cautionary	Cannot communicate with one or more evaporator controllers for Siteview.
A28	Main: Aux Input 1 Sensor	Alarm - Cautionary	Main Board, Aux Input 1 temp sensor is shorted or open.
A29	Main: Aux Input 2 Sensor	Alarm - Cautionary	Main Board, Aux Input 2 temp sensor is shorted or open.
A30	Main: Aux Input 3 Sensor	Alarm - Cautionary	Main Board, Aux Input 3 temp sensor is shorted or open.
A31	Aux Addr 1: Input 2 Sensor	Alarm - Cautionary	Aux Board 1, Input 2 Temp Sensor is shorted or open (not currently implemented).
A32	Aux Addr 1: Input 3 Sensor	Alarm - Cautionary	Aux Board 1, Input 3 Temp Sensor is shorted or open (not currently implemented).
A33	Ext Alarm Only 4	Alarm - Cautionary	Aux Board 1, Input 2 is set to Ext Alarm Only and input is active.



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Alphabetical List of Abbreviations (continued)

Abbreviation	Full Name	Type	Description
A34	A34 Ext Alarm Only 5	Alarm - Cautionary	Aux Board 1, Input 3 is set to Ext Alarm Only and input is active.
bYP	bYP System Bypass	Default Display	The controller is in bypass (System On), all stages will be loaded.
CLA	CLA Clear Alarms	Setpoints	Press and hold ENTER to clear all active alarms.
dHC	dHC DHCP Mode	Setpoints	Turn DHCP mode on or off: EnA to enable / diS to disable DHCP mode.
dPr	dPr Discharge Pressure	Variables	Discharge Pressure as read by the controller.
dSA	dSA Discharge Saturation Temperature	Variables	Discharge Saturation Temperature as calculated by the controller.
dSH	dSH Discharge Superheat	Variables	Discharge Superheat as calculated by the controller.
dSt	dSt Discharge Temperature	Variables	Discharge Temperature as read by the controller.
FAC	FAC Factory Reset	Setpoints	Resets setpoints to factory defaults.
Fir	Fir Firmware Version	Variables	Current firmware version on the controller.
iP1	iP1 IP Octet 1	Variables	First three digits of the IP address.
iP2	iP2 IP Octet 2		Second three digits of the IP address.
iP3	iP3 IP Octet 3		Third three digits of the IP address.
iP4	iP4 IP Octet 4		Fourth three digits of the IP address.
LPC	LPC Low Pressure CutOut	Setpoints	System turns completely off when suction pressure drops below this pressure.
LPt	LPt Max Pump Out Time	Setpoints	Sets maximum time to reach cut-out pressure.
PAS	PAS Web Password Reset	Setpoints	Press and hold ENTER to reset browser password.
PnH	PnH Firmware Part Number 1	Variables	First three digits of firmware PN.
PnL	PnL Firmware Part Number 2	Variables	Last three digits of firmware PN.
PrS	PrS Suction Pressure	Variables	Suction Pressure as read by the controller.
PSP	PSP Target Suction Pressure	Setpoints	Target Suction Pressure - Suction pressure the controller will work to maintain.
rFG	rFG Refrigerant	Setpoints	Refrigerant used in the system.
rL1	rL1 Main Relay 1	Setpoints	Allows manual control of relays for diagnostics. oFF = relay is de-energized. on = relay is energized. on/oFF does not represent compressor state since relay can be programmed to be normally off or normally on from the webpage. Press ENTER To change state.
rL2	rL2 Main Relay 2	Setpoints	
rL3	rL3 Main Relay 3	Setpoints	
rA1	rA1 Aux Relay 1	Setpoints	
rA2	rA2 Aux Relay 2	Setpoints	
rA3	rA3 Aux Relay 3	Setpoints	
rA4	rA4 Aux Relay 4	Setpoints	
rA5	rA5 Aux Relay 5	Setpoints	



KE2 Compressor Sequencer OEM

Quick Start Guide PN 21768, 21961, 21962

Alphabetical List of Abbreviations (*continued*)

Abbreviation	Full Name	Type	Description
S01	Low Safety SH Alarm	Alarm - Safety / Preemptive	Suction superheat is below Min Suction Superheat for more than 5 minutes.
S02	High Safety Suc Temp Alarm	Alarm - Safety / Preemptive	Suction temperature is above Max Suction Temperature for more than 5 minutes.
S03	High Safety Dis Pres Alarm	Alarm - Safety / Preemptive	Discharge pressure is above Max Disch Pressure. Controller will attempt to unload stages and not load anymore stages until pressure is well below Max Disch Pressure.
SA	KE2 SmartAccess	Setpoints	Turn KE2 SmartAccess on or off: EnA to enable / diS to disable.
SAt	Saturation Temperature	Variables	Saturated Suction Temperature as calculated by the controller.
SHt	Superheat	Variables	Suction Superheat as calculated by the controller.
SoF	System Off	Default Display	The controller is in System Off mode.
SPd	Suction Pressure Differential	Setpoints	Suction pressure differential used for control.
SUt	Suction Temperature	Variables	Suction Temperature as read by the controller.
SyS	System On/Off	Setpoints	Allow rack to run or put into system off: on to run / oFF to pump down rack and put into system off.