SCS Connect
Electronic Controller

SKOPE®
Refrigeration

SCS Connect Electronic Controller
Technicians' Manual

MAN80199
Rev. 1.3 Mar. 2024

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SKOPE INDUSTRIES LIMITED
Head Office
PO Box 1091, Christchurch
New Zealand
A.B.N. 73 374 418 306
AU: 1800 121 535
NZ: 0800 947 5673
E-mail: skope@skope.com
Website: www.skope.com

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Contents

1 Controller

Overview

The cabinet is fitted with an SCS Connect electronic controller, which is pre-programmed. SKOPE does not recommend changing the settings unless it is absolutely necessary. To ensure efficient operation, the controller automatically forces a defrost cycle when required.

Controller Faceplate

Buttons and Display

The faceplate includes the front display panel and interface buttons.
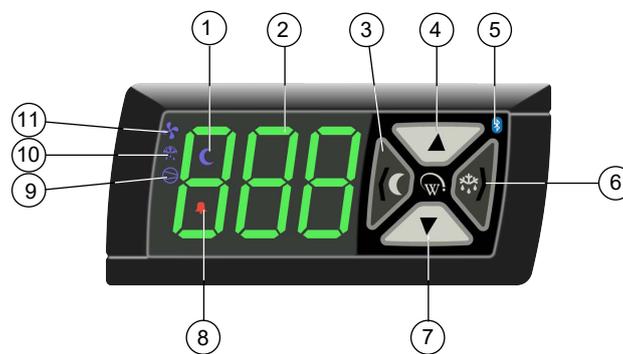
Table 1: Controller faceplate

No.	Description		Use
1	**Night Mode**	Indicator	On during Night mode.	
2	**Display**	Indicator	Digital display of: • the cabinet's air (not product) temperature. • alarm messages.	
3	**Light Switch - Night Mode (back/abort)**	Button	Used during programming.	• Press to switch the lights on or off. • Press and hold to switch the cabinet between Day and Night modes.
4	**Up**	Button	Used during programming.	
5	**Bluetooth**	Indicator	Off when ready to connect to a device. On and flashing when connected to a device.	
6	**Defrost Cycle (next/enter)**	Button	Used during programming.	Press and hold to start a manual defrost.
7	**Down**	Button	Used during programming.	
8	**Fault - Alarm**	Indicator	On during a fault or alarm.	
9	**Compressor**	Indicator	On when the compressor is running.	
10	**Defrost Cycle**	Indicator	On during the defrost cycle.	
11	**Evaporator Fan**	Indicator	On when the fan is running.	

Service Mode

The service mode can be run using the controller faceplate, but SKOPE strongly recommends using the SCS Connect Field app. You will need a 9-digit PIN to enter the service mode via the controller. If you don't have one, contact your User Manager (Corporate) or SKOPE Customer Services (General Market) to request a PIN.

Service mode includes:

Parameters
Allows you to access and edit individual controller parameters.

Reset
Returns the controller back to factory or default settings.

Manual test
Allows you to see the input values from the sensors, check the effects of output adjustments to peripherals, and run pre-set test routines.

Statistics
Displays logged values and event counts for diagnostics and fine tuning.

About
Lists the properties of the refrigeration system and the controller, including fridge model codes, and firmware, hardware and software versions.

Refer to [AoFrio documentation](#) for further information.

2 Application Procedures

App Access

Procedure 1: To access an app

1. Download and install the Connect Field app:
   - SCS Connect Field App

     For SCS Connect Field app installation, see Quick Start Guide PRN80176.
   - SCS Connect Track App

   For SCS Connect Track app installation, see Quick Start Guide PRN80177.

2. Open the required app on your smart device.

Field App

The SCS Connect Field app gives authorised service technicians wireless access to the controller from mobile devices with Bluetooth capability. The app provides data logging, alarm notification, and control over inputs (e.g. probes and switches) and outputs (e.g. relays).

App Categories Various options in the app menu provide information about the connected controller and its cabinet. Depending on user access level, some menu options may not be available.

Home Screen The home screen shows a graphic representation of the current state of the cabinet being controlled.
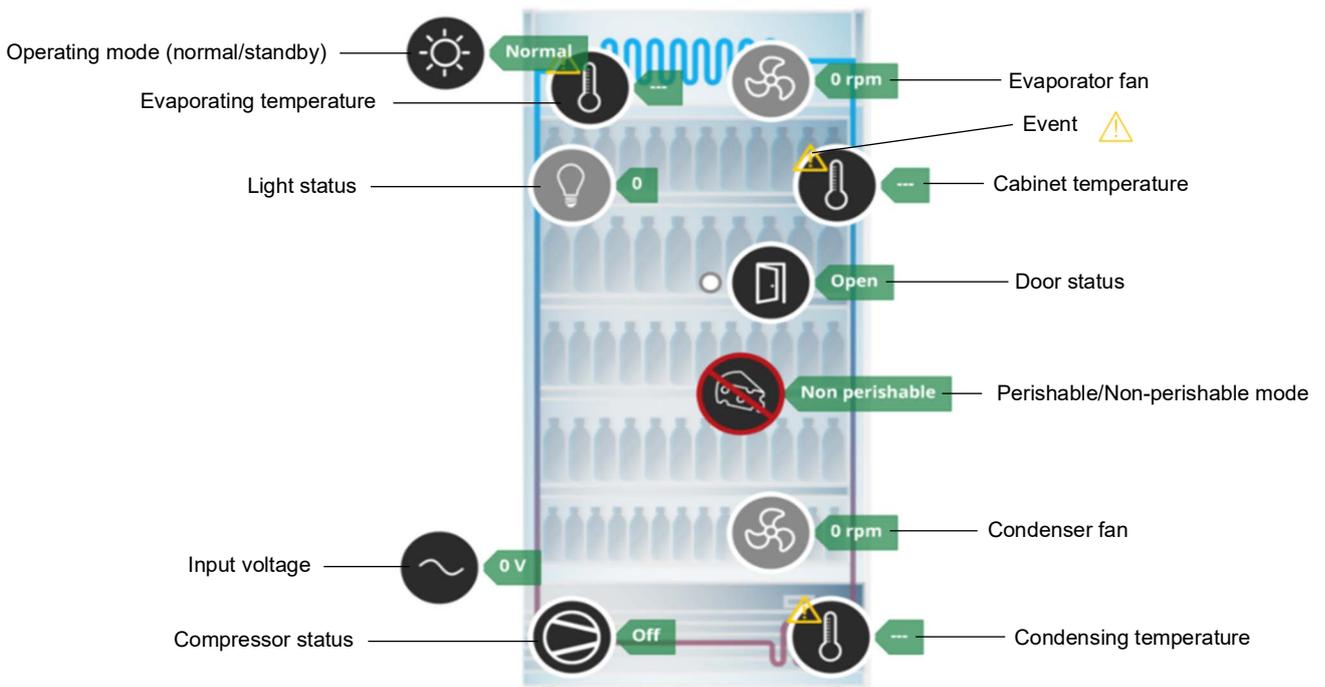
Note: Only inputs connected to, or components directly controlled by, the SCS Connect controller will be displayed upon the Home Screen. For example, if the condenser fan is directly driven from the compressor then the condenser fan icon will not be displayed on the home screen.

Events (Alarms or Faults) can be accessed directly from the home screen. This allows you to view details about the fault, as well as the history of the recorded faults.

Tap on any component showing the small yellow triangle symbol to view the current event.

From the details screen you can see the possible cause, along with a current reading and any parameters that may be related to the fault.

You can view the event history for that component by tapping the yellow triangle beside Event History.
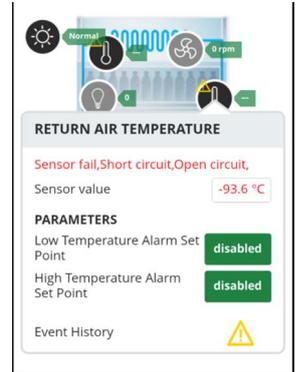
App Menu The menu (three horizontal bars on the top right hand side) provides access to the first level of the app's functions.

App menu

Table 2: App menu items

Menu item	Description
Home	Returns to the home screen
Output control	Output control screen
Edit parameters	Access the parameters for editing
Load parameter file	Select a parameters file from local or cloud storage
Statistics	Review the controller's statistics
SCS info	Details of the SCS controller
SCS setup	Set up and change asset information
Disconnect	Disconnect the app from the controller
Settings	App settings
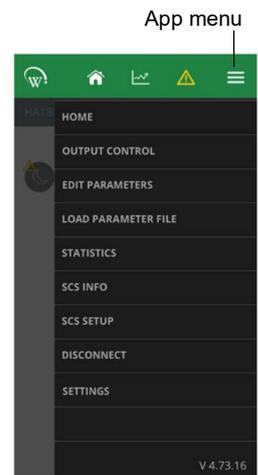
IMPORTANT

After connecting to or modifying any controller, always **disconnect** your device from the controller to confirm all changes.

IMPORTANT

Always power cycle the cabinet if:
- changing time-based parameters.
- updating a significant number of parameters.
- updating the firmware.

Output Control   Displays real time data when connected to the cabinet by allowing real time interaction with both inputs (probes, switches) and outputs (relays, pulse width modulation (PWM)).

Note: Any selected output changes override any priorities in the controller, but are limited to 2 minutes before resetting to their previous status.

You can add or remove inputs or outputs via the + button. This will add or remove a trace line from the live chart.
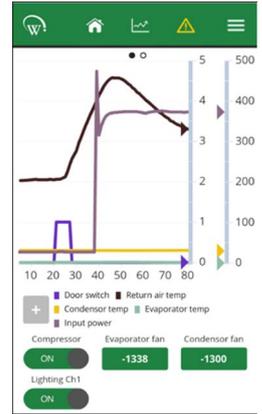


Only relays that are being used can be switched.

If the fan motor is a controlled speed motor, operating speeds are shown. A negative number shows anti-clockwise rotation.

CAUTION

Do **NOT** switch the compressor on and off without allowing pressure to equalise in between. Switching on and off may cause permanent damage to the compressor, leading to failure.

Edit Parameters   Parameters are arranged in categories to help with navigation. Drop-down boxes give lists of available parameters – scroll up and down for the complete list.

Only parameters needed to operate the cabinet will be visible. These may differ between cabinet types.

Each category contains the parameters associated with that mode.

Updates are not applied until you **disconnect** from the controller.

When a parameter is selected, a new screen opens allowing you to modify the parameter.
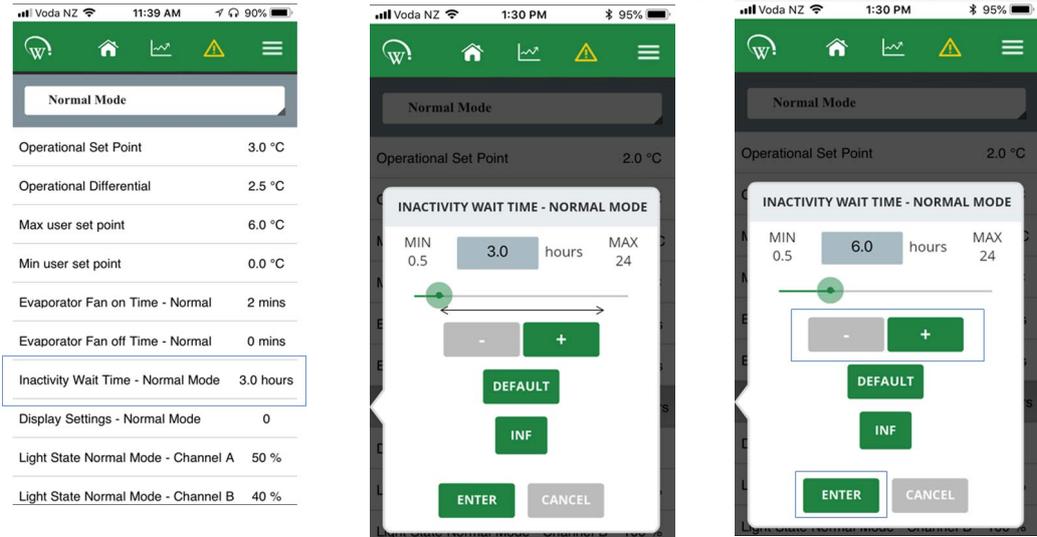
Procedure 2: To change a parameter

1. Select the parameter.

2. Make the adjustments, using the slider, or the - and + buttons.

3. Save the using the Enter button within the newly opened screen.
   The maximum and minimum allowances for each parameter are shown, along with a Default button.

4. Note the details of your changes on the warranty and/or service documentation, including:
   - the original setting.
   - the new setting.
   - reasons why the change was made.

5. To apply the updates, **disconnect** from the controller.

> **IMPORTANT**
> Do **NOT** press the Default button.
> The Default button sets the parameter back to AoFrio defaults, not SKOPE defaults.

Load Parameters

You can download the SKOPE factory parameters files stored in the cloud using the Field App when you are:

- installing a new controller.
- trying to diagnose a fault and you think that the parameters may have been corrupted or modified.

To ensure that you have the most recent parameters file SKOPE recommends you always download the latest release from the cloud.

If you are going to a location without a data connection, follow Procedure 3 before you travel.

Procedure 3: To download a parameters file

**Before you start**

Ensure you have a data connection.

1. Select Load Parameter File.

The Select Configuration File page shows the status of the currently selected file and gives the option of selecting a new file.
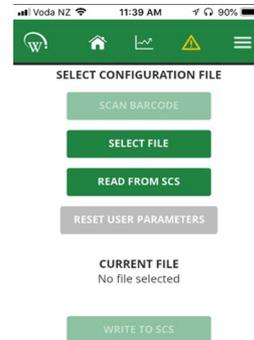
2. Press Select File.

3. Select the Server radio button. A list of files will load.
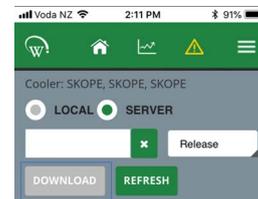
4. Select the relevant file, and press Download.
   You must only use released files.

5. Click Local to check that the file has downloaded.

Procedure 4: To load a parameters file

Before you start

Ensure you either have a data connection, or have downloaded the most recent parameters file from the cloud.

1. Select Load Parameter File.

The Select Configuration File page shows the status of the currently selected file and gives the option of selecting a new file.
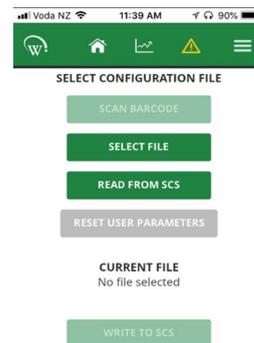
2. Press Select File.

3. Select either Local or Server, depending on your data connection, and make sure you have the most recent parameters file.
   You must only use released files.
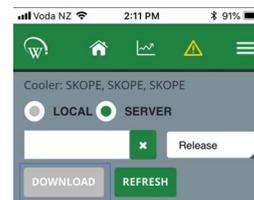
Procedure 4: To load a parameters file (continued)

4. From the Local list choose the file to upload to the SCS controller.

5. Check the "Current File" field to ensure the correct parameters file has been selected.

6. Press Write to SCS.

7. To apply the updates, **disconnect** from the controller.
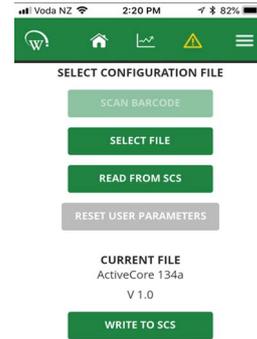
**Procedure 5: To delete a parameters file from your device**

1. Select Load Parameter File.

The Select Configuration File page shows the status of the currently selected file and gives the option of selecting a new file.

2. Press Select File.
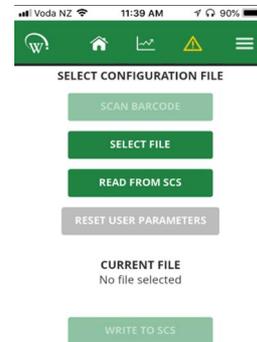
3. Select Local.
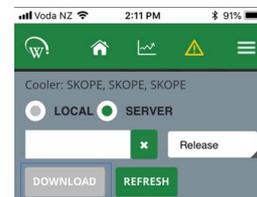
4. From the Local list choose the file to remove, and press Delete.

Statistics The statistics section allows you to view the last 7 days' data from within the SCS Connect controller.

To see the data better, turn your device into landscape mode (on its side). You can add data points to review multiple points at once. Seeing operational trends or intermittent faults may help to diagnose problems.

Press the + button, then select the data points you wish to add to your chart.

SCS Info The SCS Info section contains information about the controller, including the firmware versions and key data about the cabinet:

- SKOPE Asset #
- SKOPE Serial # (the asset and serial numbers will be the same in most instances)
- Model of the cabinet
- Brand of the cabinet – the brand will vary if the cabinet belongs to a Corporate customer

If your role includes setting up cabinets for Corporate or Fleet customers, you may have access to Reset IDs (see "Reset Cabinet IDs (Corporate only)" on page 14 for further details).

SCS Setup (Corporate only) Linking an SCS controller to a refrigeration cabinet is a key part of allowing accurate data to be gathered for review and service assistance.

Note: General Market cabinets need to be set up via the SKOPE-connect app, which the store owner or manager will have access to. Check to see if they have it on their device.

Procedure 6: To fill in the SCS Setup information

Before you start

SCS Setup is only available in certain roles. If your role requires regular access to this procedure and you do not have access, contact SKOPE.

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1. Select the appropriate owner. This should:
   - always be set to SKOPE.
   - come pre-set by the factory.

Important: Always select SKOPE as the cabinet owner from the drop-down box if not already set.

The list of available brands will appear once the cabinet owner has been set.

Important: If you select the incorrect brand at this step a reset process will be required to fix it.

2. Select the appropriate brand. This is the corporate customer who is using the cabinet.
   - It is not set at the factory before delivery.
   - It must be set before placing the cabinet into the market.
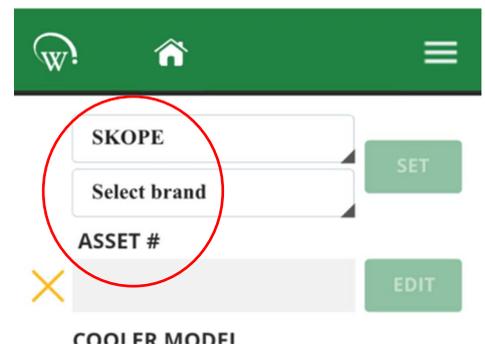
Procedure 6: To fill in the SCS Setup information (continued)

There are 6 sections in the SCS Setup page. The first 4 **must** be completed; the corporate owner may require all 6 to be completed.

3. **SKOPE Asset #**
   This may be either the Corporate Asset # or the SKOPE Serial #. You can enter this:
   - manually (Corporate #).
   - by scanning the bar-code on the serial label inside the cabinet with the camera on your device (SKOPE #).

Serial number

Bar-code

4. **Cabinet Model**
   - Select from the drop-down menu once the SKOPE Asset # has been entered.
   - Check it against the serial label inside the cabinet.

5. **Manufacturer Serial #**
   Add by pressing the Edit button and using the camera on your device to scan the bar-code on the serial label inside the cabinet (the same process as for step 3, the SKOPE Asset #).

6. **Install Address**
   - Manually type in the physical address of the location for the installed cabinet.
     - Select Show on Map to see the actual location.
     - If the shown Google Address is correct, press the Use Google Address button. This is recommended, as it ensures a consistent address format.
   - Select the Outlet/Unit tab and enter any available data.
   - Press the Save button.
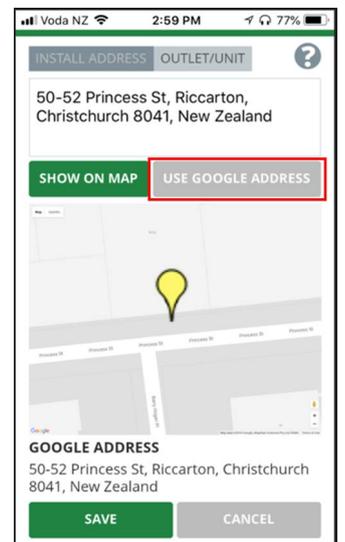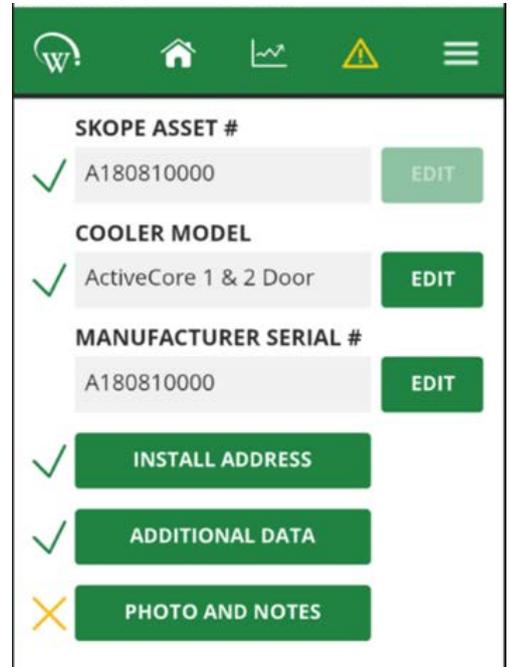
Procedure 6: To fill in the SCS Setup information (continued)

Optional

7. Additional Data

- If the corporate owner permits access via the SKOPE-connect app, then the Customer ID field must remain blank.

- If the corporate owner wishes to restrict this access, the SKOPE-connect access can be deactivated. See "Deactivate SKOPE-connect" on page 14.

- Information stored in the Customer ID field may be hidden from view.
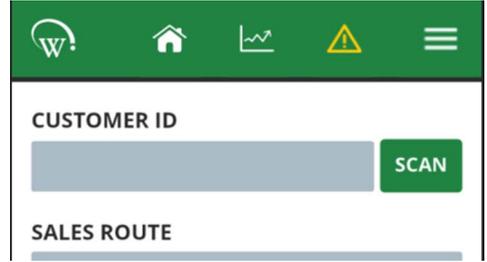
Optional

8. Photo and Notes

- These may be required by the corporate owner. If they need to be added:

  - Take a picture of the store from the outside, and one of the entire cabinet once installed.

  - These photos will be found in the photos app on your device and can be added one at a time.

> **IMPORTANT**
> Photos can't be removed once saved. Choose appropriate photos, as they will be visible to everyone who has access to the reporting application.

- Use the Notes for both the Cabinet and the Outlet for:

  - relevant information to help identify location of the cabinet.

  - things that may affect the cabinet's performance or operation.

9. When you have finished, disconnect from the controller to use the Track App to capture all relevant data.

Deactivate SKOPE-connect

You will only need to enter information in this tab if the corporate owner does not permit access to the cabinet via the SKOPE-connect application that the store owner may have. If the corporate owner wishes to restrict this access, you need to add a Customer ID.

> **IMPORTANT**
> The customer ID field must be blank if SKOPE-connect access is required.

Reset Cabinet IDs (Corporate only)

General Market cabinets do not require an ID reset. Follow this process to change the brand attributed to a cabinet after it has initially been set.

Open the SCS Info section from the menu. If you have the required level of access you will see the option to Reset IDs. Resetting the IDs will clear all manufacturer and owner information, and you will need to re-enter it.
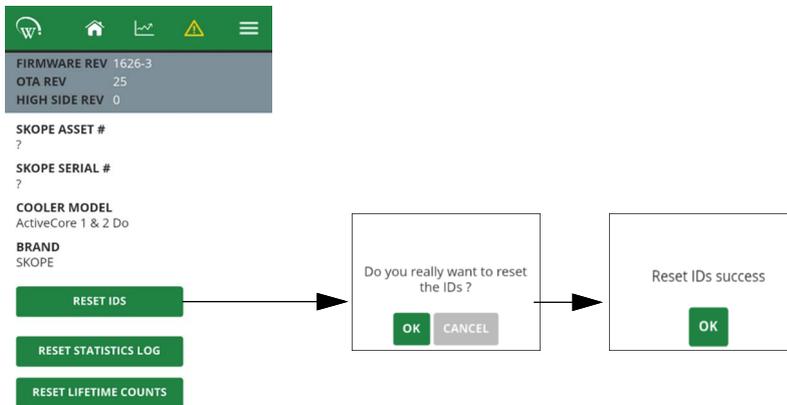
After a successful ID Reset you will need to follow the SCS Setup process which will include an additional step to enter the Manufacturer information. Select the Menu.

The Menu screen will differ from normal. Select SCS Setup from the list.

IMPORTANT

You must select SKOPE from the drop-down list.
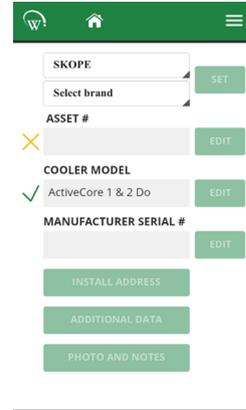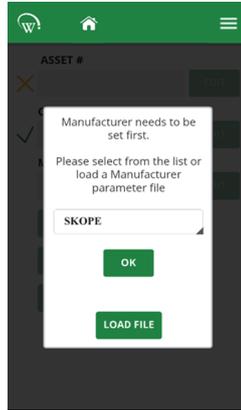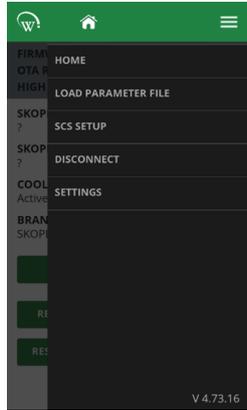
Once you have successfully set the manufacturer, you can continue setting up brand and asset information. See "SCS Setup (Corporate only)" on page 12.

Track App

The AoFrio Track app for mobile devices transfers data from SKOPE equipment to a cloud-based server using the SCS Connect controller.

The app works automatically in the background. When the app detects a controller, it connects via Bluetooth to receive data from the controller and send data to the cloud. If no mobile data connection is available, the app stores data until a connection becomes available.

SKOPE recommends that all technicians who service SKOPE equipment fitted with the AoFrio SCS Connect electronic controller have the AoFrio Track app installed on their Bluetooth-enabled mobile device. All technicians are also required to have the AoFrio Field app installed on their Bluetooth-enabled mobile device.

The app is passive and runs in the background (it can track automatically). When servicing a cabinet, open the app to ensure tracking has finished before you start servicing.

Bluetooth must be on to perform a manual scan with the Track App. Open the App and press the Scan or Connect Now button.

Data from the cabinet will be downloaded into your device and then uploaded to the cloud for future analysis.

Note: "Download completed" does not mean that the data has been uploaded to the cloud. The upload process requires data, and will be automatically completed when data coverage is available.
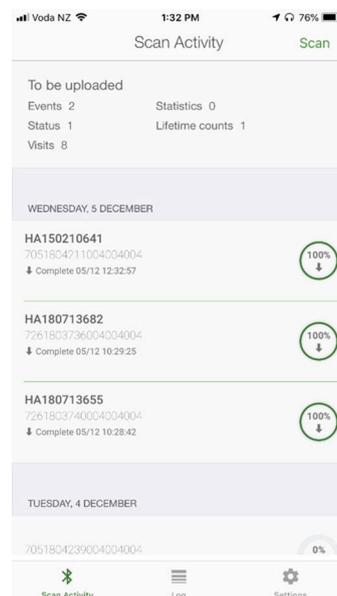
3 Faults and Alarms

ALr and the corresponding alarm number will alternate on the display

Alarm symbol

If a fault occurs, it is logged, the Fault - Alarm indicator is lit on the controller faceplate, and a message may be displayed. Faults do not affect product temperature, and do not require action from the shop owner, unless they turn into an alarm.

If an alarm occurs, it is logged, the Fault - Alarm indicator is lit, and the alarm message is displayed on the controller faceplate. Alarms may result in abnormal product temperature.

Some faults and alarms can be cleared by the shop owner, and others can only be cleared by a service technician. Faults and alarms can be cleared by the shop owner by power-cycling the cabinet. However the fault or alarm will only clear if the problem has been fixed. If the problem still exists after a power-cycle, a service technician will need to fix the problem.

Faults

Table 3: Faults

Description	Possible root cause	Actions
Over-voltage protection The maximum allowable mains supply voltage has been exceeded. The cabinet has temporarily shut down to prevent damage and will restart once the supply voltage decreases.	Should be a one-off. If it continues, consider: • poor line voltage	Test the incoming voltage to ensure it is correct. The test voltage needs to be between 198 and 264 volts. • If outside this, the controller will shut the system down until the voltage returns to between these measurements. • If the voltage is correct and the controller is still showing a fault, replace the controller.
	• rural location	
	• voltage setting parameter	• Check the voltage parameter settings are between 198 and 264 volts. If this parameter is outside the correct voltage, changing it may damage the controller.
	• controller	• The controller may be reading incorrectly and need replacing.

Table 3: Faults (continued)

Description	Possible root cause	Actions
Under-voltage protection The mains supply voltage has dropped below the minimum allowable level. The cabinet has temporarily shut down to prevent damage and will restart once the supply voltage increases.	Should be a one-off. If continues, consider: • power supply overloaded	Test the incoming voltage to ensure it is correct. The test voltage needs to be between 198 and 264 volts. • If outside this, the controller will shut the system down until the voltage returns to between these measurements. • If the voltage is correct and the controller is still showing a fault, replace the controller.
	• poor line voltage	
	• multi-box use	• Check that there are not too many plugs using the same multi-box adaptor causing the voltage to drop.
	• rural location	
	• voltage setting parameter	• Check the voltage parameter settings are between 198 and 264 volts. If this parameter is outside the correct voltage, changing it may damage the controller.
	• controller	• The controller may be reading incorrectly and need replacing.
High condensing temperature protection The system was operating at an elevated temperature and has temporarily shut down to prevent damage. Extended operation in this condition may result in ALARM 15, increased energy consumption and a reduction in cabinet life.	• Condenser not clean	Cartridge swap is not required. • Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
	• Poor installation or ventilation	• Check the installation guidelines. • If fitted, check the rear stand-offs are extended.
	• Condenser fan motor or blade	• Check that the condenser fan blades are in place and all condenser fans are operating correctly.
	• Controller	The controller may be reading incorrectly and need replacing. • Confirm the temperature reading with an independent thermometer.
	• Very high ambient temperature	• Check if the probes are faulty and reading incorrectly.

Table 3: Faults (continued)

Description	Possible root cause	Actions
Excessive compressor cycling protection The system has been turning on and off too frequently.	• Door not self-closing	• Open the door and let it go. If it does not close on its own, repair the self-closing mechanism.
	• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
	• Poor installation or ventilation	• Check the installation guidelines.
	• Cartridge or cabinet gasket seals leaking	• Remove the cartridge and check the integrity of the gaskets and seals. • If required, replace the door gasket.
	• Hot product	• Check if the product has been recently loaded, and is causing the extra heat.
	• Product blocking cabinet airflow	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
	• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
	• Condenser or evaporator fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.
	• Controller	• The controller may be reading incorrectly and need replacing.
	• Compressor or gas leak	• Swap the cartridge.

Alarms

Table 4: Alarms

Code	Description	Possible root cause	Action
8	Estimated product temperature below allowable range The estimated product temperature has been below the allowable range for longer than the permissible time.	• Low ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• App settings	• Check all app settings, and reinstall the parameters if required.
		• Controller	• Check the probe calibration to make sure that the controller is reading the temperature correctly.

Table 4: Alarms (continued)

Code	Description	Possible root cause	Action
		• Disrupted air curtain	• Check that the fridge is not near an air conditioning grille which is blowing onto it, causing airflow problems.
		• Excessive door openings	• Make sure the door is not opened unnecessarily.
		• Door being left open	• Ensure the door is closed.
		• Door leaking air (bad gasket or door not self-closing)	• Open the door and let it go. If it does not close on its own, repair the self-closing mechanism. • If required, replace the door gasket.
		• Sealed refrigeration system	• Consider a cartridge swap.
		• Incorrect setpoint	• Reload the correct parameters using the SCS Connect Field app.
		• Too much product	• If the cabinet is overloaded, remove the excess product.
		• Blocked return air grille	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
		• Warm product loaded into cabinet	• Wait for the product to cool down.
		• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
9	Estimated product temperature above allowable range The estimated product temperature has been above the allowable range for longer than the permissible time.	• Poor installation or ventilation	• Check the installation guidelines.
		• Frozen or blocked evaporator coil	• De-ice the coil and check the that evaporator fan motor is working. • Check the defrost cycle and that the defrost probe are working correctly. • Check that the drain is clear.
		• Cartridge gasket leaking (to cabinet seal or lid seal)	• Check that the gasket is intact and not broken and leaking. • Ensure the installation levers are lifting the cartridge up onto the case correctly.
		• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• Condenser or evaporator fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.
		• Incorrect parameter settings	• Use the SCS Field app to check that the correct setpoint and parameters have been selected.
		• Controller	• Check the probe calibration to make sure that the controller is reading the temperature correctly.
		• Compressor or gas leak	• Swap the cartridge.

Table 4: Alarms (continued)

Code	Description	Possible root cause	Action
15	Excessive condensing temperature protection The system was operating at an excessive temperature and has shut down to prevent permanent damage.	• Very high ambient temperature	Cartridge swap is not required. • Ensure that the cabinet is operating in its climate class.
		• Condenser is not clean	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
		• Poor installation or ventilation	• Check the installation guidelines.
		• Condenser fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.

		• Incorrectly placed condenser probe	• Either:
			  • Measure the probe resistance to make sure it is within the range.
			  • Compare the probe's temperature with the known temperature, using an external trusted thermometer.
			• Replace the probe if required.

17	Control probe failure
	A critical system sensor has failed and the cabinet can no longer operate.
		• Control probe or circuit	Cartridge swap is not required.
			• Either:
			  • Measure the probe resistance to make sure it is within the range.
			  • Compare the probe's temperature with the known temperature, using an external trusted thermometer.
			• Replace the probe if required.

		• Controller	• If you have replaced the probe and it is still reading incorrectly, replace the controller.
18	Electrical over-current protection activated The compressor was drawing too much current and has shut down to prevent permanent damage.	• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
		• Product blocking cabinet airflow	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
		• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• Compressor or gas leak	• Swap the cartridge.

Table 4: Alarms (continued)

Code	Description	Possible root cause	Action
19	Failed to reach set temperature The refrigeration system has been operating continuously for a long period without reaching the set temperature.	• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
		• Poor installation or ventilation	• Check the installation guidelines.
		• Frozen or blocked evaporator coil	• De-ice the coil and check the that evaporator fan motor is working. • Check the defrost cycle and that the defrost probe is working correctly.
		• Cartridge, cabinet, or door gasket leaking	• Check that the gasket is intact and not broken and leaking. If required, replace the door gasket. • Ensure the installation levers are lifting the cartridge up onto the case correctly.
		• Product blocking cabinet airflow	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
		• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• Condenser or evaporator fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.
		• Controller	• The controller may be reading incorrectly and need replacing.
		• Compressor or gas leak	• Swap the cartridge.
20	Over-cooling product The internal temperature is too low. The system has temporarily shut down until the temperature has returned to normal.	• Set temperature has been raised by a large amount	1. Confirm if really too cold. 2. Change parameters accordingly.
		• Controller	• The controller may be reading incorrectly and need replacing.
22	Evaporator fan over-current protection The current supplied to the evaporator fan motor is too high.	• Faulty fan motor	• Replace the fan motor.
		• Fan blade fault (imbalance, debris, blockage)	• Visually inspect the fan blades and replace if faulty.
23	Condenser fan over-current protection The current supplied to the condenser fan motor is too high.	• Faulty fan motor	• Replace fan motor.
		• Fan blade fault (imbalance, debris, blockage)	• If the fan motor is working correctly, update the controller firmware to the latest version.
		• Controller	• The controller may be reading incorrectly and need replacing.
24	Controller communication error Controller has lost communication channels.	• Parameters	• Load the correct parameter settings.
		• Controller or circuit	• The controller may be reading incorrectly and need replacing.
25	Controller update failed Controller update could not be completed.	• Parameters	• Load the correct parameter settings.
		• Controller or circuit	• The controller may be reading incorrectly and need replacing.
26	Controller hardware failure Controller hardware has failed.	• Parameters	• Load the correct parameter settings.
		• Controller or circuit	• Replace the controller.

Table 4: Alarms (continued)

Code	Description	Possible root cause	Action
27	**Probe failure** A probe other than the control probe has failed. The cabinet will continue to operate with partial function but requires service.	• Evaporator probe or connections	Cartridge swap is not required. • Either: • Measure the probe resistance to make sure it is within the range. • Compare the probe's temperature with the known temperature, using an external trusted thermometer. • Replace the probe if required.
		• Controller	• The controller may be reading incorrectly and need replacing.
28	**No downward tendency** The temperature is no longer decreasing.	• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush.
		• Poor installation or ventilation	• Check the installation guidelines.
		• Cartridge or cabinet gasket seals leaking	• Check that the gasket is intact and not broken and leaking. If required, replace the door gasket. • Ensure the installation levers are lifting the cartridge up onto the case correctly.
		• Door not self-closing or door gasket leaking	• Open the door and let it go. If it does not close on its own, repair the self-closing mechanism. • If required, replace the door gasket.
		• Product blocking cabinet airflow	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
		• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• Condenser or evaporator fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.
		• Controller	• The controller may be reading incorrectly and need replacing.
		• Compressor or gas leak	• Swap the cartridge.

Table 4: Alarms (continued)

Code	Description	Possible root cause	Action
29	Compressor cutting out The compressor cut out on its internal protection or pressure switch.	• Blocked condenser	• Remove and clean the condenser filter. • Check that the condenser is free of debris. • If the coil is dirty, clean it with a vacuum cleaner or soft brush
		• Poor installation or ventilation	• Check the installation guidelines.
		• Cabinet, door, or cartridge gasket leaking	• Check that the gasket is intact and not broken and leaking. If required, replace the door gasket. • Ensure the installation levers are lifting the cartridge up onto the case correctly.
		• Product blocking cabinet airflow	• Check if the return air grille is covered by product. If so, move the product from the grille and observe.
		• Compressor is overloaded from excess door openings or ambient temperature	• Ensure that the cabinet is operating in its climate class.
		• Condenser or evaporator fan motor or blade	• Inspect the condenser and evaporator fans safely, and replace if faulty.
		• Controller	• The controller may be reading incorrectly and need replacing.
		• Compressor or gas leak	• Swap the cartridge.
30	Excessive automatic defrosting The system is automatically defrosting too frequently.	• Door not self-closing or door gasket leaking	• Open the door and let it go. If it does not close on its own, repair the self-closing mechanism. • If required, replace the door gasket.
		• Evaporator probe	Either: • Measure the probe resistance to make sure it is within the range. • Compare the probe's temperature with the known temperature, using an external trusted thermometer.
		• Evaporator motor or fan	• Check that the fan motors are working and the fan blades are not damaged.
		• Controller	• The controller may be reading incorrectly and need replacing.
		• Blocked drain	• Clear the blockage with a wet vacuum. • Clear the debris to prevent a blockage.
		• Defrost setting too high	• Reload the correct parameters using the SCS Connect Field app.
		• Compressor or gas leak	• Swap the cartridge.

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4 Service Procedures

Exchanging a Refrigeration Cartridge

Open SCS Connect Track App and perform a manual scan on the designated cabinet before disconnecting it from the mains power supply. For manual scan instructions see "Track App" on page 16.

Follow all instructions documented in the appropriate Service Manual to ensure the exchange of the refrigeration cartridge is completed correctly.

Once the replacement refrigeration cartridge has been installed and tested, and is operating correctly, tell the customer that this cabinet is ready to be set up via the SKOPE-connect App.

If the customer is a Corporate customer see "SCS Setup (Corporate only)" on page 12.

Swapping a Faulty Controller

Open SCS Connect Track App and perform a manual scan on the cabinet before disconnecting it from the mains power supply. For manual scan instructions see "Track App" on page 16.

Follow all instructions documented in the appropriate Service Manual to ensure the safe removal and replacement of the faulty controller. Return the faulty controller to SKOPE for analysis.

You will need to use the Field App to download the correct parameters file from the cloud, as replacement controllers are not supplied with SKOPE parameters.

Once the replacement controller has been installed and tested, and is operating correctly, tell the customer that this cabinet is ready to be set up via the SKOPE-connect App.

If the customer is a Corporate customer see "SCS Setup (Corporate only)" on page 12.

SKOPE Contacts

SKOPE Industries Limited

ABN: 73 374 418 306
AU: 1800 121 535
NZ: 0800 947 5673
skope@skope.com
www.skope.com