

Follett Performance Plus

touchscreen user guide



The next level of control in undercounter refrigeration

FOLLETT[®]

Controller Operation - Performance Plus touchscreen

Use and care of the LCD Performance Plus touchscreen


















The LCD touchscreen utilizes capacitive touch technology. This will allow you to engage the functionality by touching the screen with your fingers, even while you are wearing latex or cotton gloves. Functionality will not engage by touching with an inanimate object, such as a pen.

- To preserve optimal touch sensitivity, keep the screen clean by using a clean, dry cotton cloth.
- Do not expose the screen to liquids or excessive dust, heat or humidity.

Control function icons and navigation buttons engage functionality of the user interface. Status indicators alert the user to a change of status.

Home screen

The Home Screen consists of three primary information areas: the temperature display, control function display zone and system status display.

Control Functions	System Status	Functions and Settings
 Settings	 Compressor is running	 USB download available (downloading when blinking)
 Alarming	 Evaporator fan is running	 Refrigeration set points
 Light	 Door is open	 Sleep functions
 Information log	 Defrost cycle is in process	 Centigrade to Fahrenheit
 Help		 Probe set points
		 Alarming functions
		 Alarm mute
		 Reset

- Product temperature is displayed in the upper right corner.
- Primary control function icons are displayed in the lower left corner.
- System status icons will display in lower right corner to indicate a condition has been activated.

Fig. 1






Fig. 2



High and low temperature display

From the home screen touch the temperature display in the upper right corner. The high/low temperatures will appear below the temperature display. To the left of the high/ low temperature a time and date stamp will be displayed.




Reset the high and low temperatures

Touch the temperature display a second time and the reset function  will appear under the high and low temperature. Touch the reset icon and a yellow message box will appear. Press  to confirm reset or  to cancel.

Alarm set point display

From the home screen touch the temperature display three times. The High and low alarm set point will appear under the temperature.

Help

- Help is available at any time by touching the  icon at the bottom of the screen.
- Help is screen-specific; touching the  icon will display an explanation of the functionality and use of the screen you are currently viewing.
- Touch  to exit help screen.

Settings











- Refrigeration Set Point 
 - Touch the number displayed in the box to the right of the Set point label and use the keypad or **UP** and **DOWN** arrows to select product temperature. Press  to accept or  to cancel.
- Sleep Temperature Display 
 - Toggle **ON** to hide the temperature reading immediately on the home screen.
- Set the Sleep Delay 
 - To automatically hide the temperature after 0-600 seconds of inactivity, touch the box to the right of the delay (0-600) box. Use keypad or **UP** and **DOWN** arrows to select from 0-600.
- Temperature 
 - Toggle between **F** and **C** to select Fahrenheit or Celsius.
- Brightness 
 - Touch the number displayed in the box to the right of the Brightness  icon and use the keypad or **UP** and **DOWN** arrows to select from 1-10. Press  to accept or  to cancel.

Fig. 3



Fig. 4



Fig. 5

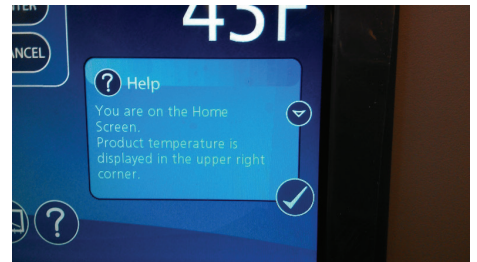


Fig. 6



Fig. 7



System Information



- Touch the System Info icon  to display the model number, unit serial number and software version. Touch the checkbox icon  in the lower right corner of the box to clear.

Fig. 8



Alarm or Alert Notifications





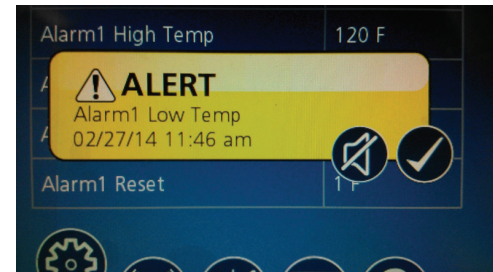
- If an alarm or event condition is detected and an alarm is engaged, an alert notification will appear in the left center of the screen with an explanation of the alert condition and a checkbox  at the bottom right of the alert box.
- No further action can be taken on the User Interface until the alert condition is acknowledged and cleared by touching the checkbox .
- Mute 
 - Touch the  icon to mute audible alarm for 15 minutes.

Fig. 9



Door Switch

- The Performance Plus touchscreen units have a door switch that is located on the kick plate. The door switch will turn on the LED light and turn off the evaporator fan. If the door is open for more than one minute it will also cycle off the compressor. When the door is closed the evaporator fan and compressor will return to service.

Door Alarm

- The Performance Plus touchscreen units have a door alarm that is factory set for one minute. The alarm will clear when the door is closed. The door alarm activation time can be changed from 0-600 seconds in advanced setting under Door Open Alarm Delay.










Power Alarm

- The Performance Plus touchscreen units have a Power Alarm that will sound if the unit loses power for more than five minutes. The Power Loss Alarm box will display every five minutes, then the screen will sleep. An audible alarm will sound every 30 seconds during the power failure. An alarm box will be displayed when power is restored. The event log will record the exact time and date of the power loss and when the power was restored.

Start-up alarm delay

The Performance Plus unit has a 120 minute time delay between when the unit is energized to when the temperature alarms become active. This delay can be changed in parameters in the controller under **Alarm Startup Delay**.

Setting Alarms

- Alarming Settings control the conditions and timing of event and alarm conditions that result in audible and/or visual alerts.
- To change the high alarm set point, touch the number displayed in the box to the right of the  icon and use the keypad or **UP** and **DOWN** arrows to select an alarm value. Press  to accept or  to cancel.
- To change the low alarm set point, touch the number displayed in the box to the right of the  icon and use the keypad or **UP** and **DOWN** arrows to select alarm value. Press  to accept or  to cancel.
- Audible Alarm 
 - Toggle between **ON** and **OFF** to engage and disengage the audible alarm function.
- Mute 
 - Touch the  icon to mute audible alarm for 15 minutes.

Alarming Contacts

This unit is equipped with dry contacts that may be connected to a 3rd party monitoring system. The contacts are located on the back of the unit. Performance Plus touchscreen units utilize Alarm 1 and Alarm 2 set (all 6). Each set of dry contacts has a Common, a Normally Open and a Normally Closed connection point. By default, Alarm Relay 1 is set to activate with any of the following alarms: Alarm 1 High temp, Alarm 1 Low temp, Door Open Alarm, and Power Loss Alarm.

Probe calibration

The temperature probes can be calibrated from **-9.9 to +9.9** in the advanced setting on the touchscreen models (**P1**) Control and (**P3**) Alarm

Screen saver

The screen saver will replace the home screen and display a blank screen, time and date, or the temperature. When the screen is touched or the unit has an alarm or event, it will return to the home screen. The screen saver can be changed in the advanced setting.

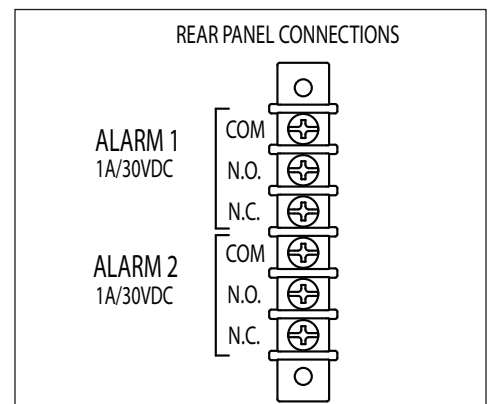
Screen saver function: blank, time and date, or temperature.

Screen saver time (sec): 0—600 seconds between the last touch of the screen to the activation of the screen saver.

Fig. 10



Fig. 11



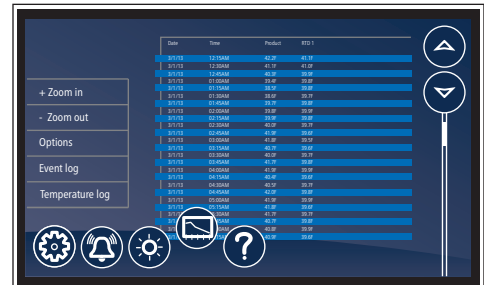
Information Logs

- All available graphs, data logs and event logs are accessed through the Information Logs function. The home screen in the Information Logs section displays the product (P3) temperature graph with one week's data. Date and time information is displayed on the horizontal axis.
- The Performance Plus units come factory set to display only the product temperature (P3) on the graph. All of the probes on the Performance Plus unit can be viewed on the graph if desired. Probes can be added to the graph through the advanced setting under P1 to P8 by selecting the probe and changing the parameter from No to Yes. The selected probe will now display on the graph.
 - P1 control, P2 defrost, P3 Alarm, P7 Suction, P8 Discharge
- Zoom in (+) or Zoom out (-) on an event/temperature on the home screen will change the time scale.
- Using the left and right arrows below the graph will scroll the graph. All the stored temperature data on the graph is viewable.
- Temperature Log – to display a chronological listing of logged temperatures (latest logged temperature will display first), touch the **Temperature Log** label to the left of the screen. Use the **UP** and **DOWN** arrows to the right of the screen to scroll through the logged temperatures.

Fig. 12



Fig. 13



- Event Log – to display a chronological listing of events (including errors, alarms and alerts), touch the **Event Log** label to the left of the screen. Use the **UP** and **DOWN** arrows to the right of the screen to scroll through the logged temperatures.

Fig. 14



Data logging

- The Performance Plus controller is capable of storing up to 50,000 readings per probe. The factory setting for the sample rate is every 15 minutes, which will provide enough storage for 520 days. The sample rate can be change to provide data logging for a longer or shorter time interval by changing the **Sample Rate (Min)** in the advanced settings menu. **0 = off and 360 minutes maximum.**

Data Storage

- Data can be captured different ways. The factory default is for the data to overwrite itself when the memory is full. This can be changed in the advanced setting under **Data storage overwrite**. When this parameter is set to **No**, the system will display an alert when the memory is 75% full. To clear the alert the data must be downloaded.

Data duration alarm

- A reminder can be set to download the data in the **Data duration alarm** in the advanced setting. The data duration can be set from **1 to 180 days**. If the data duration alarm is used, then the **Alarm on data full** parameter in the advanced setting must also be set to **Yes**.

Downloading data

- The touchscreen has the capability of downloading the temperature data and event log via a USB port on the left side of the user interface. The file is a CSV format and is suitable for import directly into Microsoft Excel.

1. Insert the storage device in the USB slot located to the left of the Touchscreen.
2. Select the Graph icon along the bottom of the Touchscreen.
3. Select the USB icon in the lower right hand corner.
4. A yellow alert box with **downloading data** will appear.
5. Press to accept or to cancel.
6. After the unit is done downloading a second yellow alert box will appear asking if you want to **Erase log**.
7. Press to accept or to cancel.

Note: If you chose to erase the data, the data duration timer and the data full alarm will reset. It will also erase the information that is stored on the graph.

One of the two files below will be downloaded depending on which screen is being viewed:

EL XXXX YY - Event Log

TL XXX YY - Temperature Log

XXXX = last 4 digits of serial number

YY = 0-99 number of downloaded file

Data download reminder and data full alarm

- If you plan or are required to download data for a certain time period, you can set a **download data reminder** on the Performance Plus unit. Download data reminder can be found in the advanced setting under **Data duration** and can be set from **1 to 180 days**.

Follett Keypad Lock

For units enabled with keypad and electronic lock feature, keypad will be displayed on left side of screen.

Default user passcode for first-time users

- Master User Code 01 is factory set by default to **1 2 3 4 5 6**.
- User Codes 01 to 40 are available for user-programming.
- Each time a button is pressed, a chirp will be heard.
- See full Installation, Operation and Service manual Page 14 for detailed Follett Keypad Lock instructions.

Fig. 15



Fig. 16



Fig. 17



Changing and Adding the User Codes







1. Touch Settings  icon.
1. Touch **Advanced Settings**, enter your 4-digit user access code (factory default is 1 1 1 1) in the keypad that appears, and touch the checkmark icon  to access advanced settings screens.
2. Time and date will be displayed. Scroll using the **UP** and **DOWN** arrows until **Change Access Code** is displayed in the Display Setup screen.
3. Touch **Change Access Code** and enter the master code [ENTER]. (By default, the master code is 1 2 3 4 5 6.)
4. Touch the screen to the right of the user code 1 to 40 to overwrite or add the user code.
5. Enter the new code. Press  to accept or  to cancel.
6. Enter the new code again. Press  to accept or  to cancel.
7. Press **DONE** when finished entering access codes.

Fig. 18

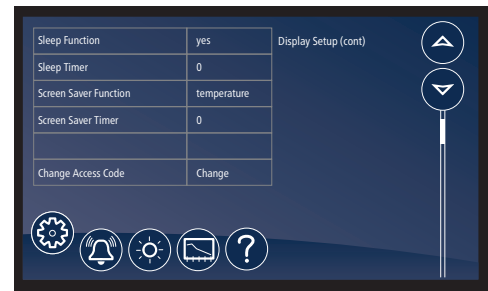


Fig. 19



Light

- To turn the interior light on (or off), touch the Light icon or the Light Off icon.
- Light timer is in advanced settings.
- The light will also come on when the door is open

Time and Date











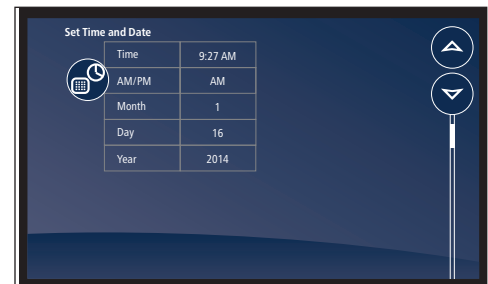

- To set time and date, press the Settings  icon.
- To display options, touch **Advanced Settings**, enter your 4-digit user access code in the keypad that appears, and touch the checkmark icon  to access advanced settings screens (factory default is 1111).
- Time: touch displayed time and use the keypad to enter the time. Press  to accept or  to cancel.
- AM/PM: touch displayed value to toggle between AM and PM.
- Month: touch number displayed and use the keypad to enter the month. Press  to accept or  to cancel.
- Day: touch number displayed and use the keypad to enter the day. Press  to accept or  to cancel.
- Year: touch number displayed and use the keypad to enter the year. Press  to accept or  to cancel.

Fig. 20



Advanced Settings

- Touch **Advanced Settings**, enter your 4-digit user access code in the keypad that appears, and touch the checkmark icon  to access advanced settings screens (factory default is 1111).

Advanced Setting - touchscreen

Parameter	Default Value	Range	Description
Set Time and Date			
Time	7:45	0-12	Holds Hour
AM/PM	AM	AM, PM	Holds AM/PM
Month	12	1-12	Month
Day	16	1-31	Day
Year	2013	2010-2099	Year
System Information			
Serial Number	E12345	—	—
MC Version	33	—	MC version
EMC version	2	—	EMC version
Performance Plus UI version	17	—	Performance Plus UI version
Keypad version	2	—	Keypad version
Display Setup			
Beeper Function	ALL	Off, All, dr, Alr, Err	Controls the audible beeper function on the controller. Off (all off), All (all on), Door (dr), Alarm (Alr), Error (Err).
Beeper Volume	5	0-10	Beeper.
Button Clicks	Yes	Yes, No	Sets if a beep should sound each time a button is pressed.
Display Probe	Alarm (P3)	Control (P1), Defrost (P2), Alarm (P3), P4, P5	The probe to display on controller.
Resolution	Int	Int, Dec	Integer or decimal
Sleep Function	Yes	Yes, No	Sleep function will blank the screen after 0-600 seconds of non-use.
Sleep Timer	0 seconds	0-600 seconds	Amount of time before the screen blanks automatically.
Screen Saver Function	Temperature	Blank, temperature, date/time	Screen saver function will hide the home screen. It will display a blank screen, temperature, or time and date.
Screen Saver Timer	0 seconds	0-600 seconds	Amount of Time before the screen saver initiates.
Change Keypad Access Code	Change	—	Allows entry/editing of keypad access codes. Password required.
Control Setup (REF/FZR)			
User Set Point	3 C (40 F) / -24 C (-11 F)	LSP-USP	The temperature setpoint that the user adjusts.
Differential	2 C (4 F)	1-60 degrees	Defines the difference between the cut-in and cut-out temperatures.
Upper Setpoint	10 C (50 F) / -18 C (0 F)	—	Upper range of user-adjustable setpoint.
Lower Setpoint	2 C (36 F) / -37 C (-35 F)	—	Lower range of user-adjustable setpoint.
Lock Setpoint Adjustment	Unlocked	Unlocked, locked	Locks the setpoint C/F, and alarm high/alarm low against accidental changes.
Import Parameters	No USB drive	No USB, import parameters	Import parameters from a USB port.
Export Parameters	No USB drive	No USB, export parameters	Export parameters from a USB port.
Alarm Setup			
Alarm 1 Delay	1 minute	0-60 minutes	Alarm1 delay before sounding.
Alarm 1 Function	R1	No, R1, R2, disable	Defines the action when Alarm 1 is activated. None (No), Relay 1 (R1), Relay 2 (R2), Display (disable).
Alarm 1 High Temp	49 C (120 F)	User Set Point 250	High temperature to activate Alarm 1.

Parameter	Default Value	Range	Description
Alarm 1 Low Temp	-46 C (-50 F)	-50 - User Set Point	Low temperature to activate Alarm 1.
Alarm 1 Probe	Alarm (P3)	Control (P1), Defrost (P2), Alarm (P3), P4, P5	Probe for Alarm 1.
Alarm 1 Reset	1	0-10	Temperature difference to reset Alarm 1.
Alarm 2 Set up			
Alarm2 Delay	1	0-60 minutes	Alarm2 delay before sounding
Alarm2 Function	Disable	No, R1 relay, R2 relay, Disable	Defines the action when Alarm2 is activated.
Alarm2 High Temp	49 C (120 F)	User Set Point 250	High temperature to activate alarm 2.
Alarm2 Low Temp	-46 C (-50 F)	-50 - User Set Point	Low temperature to activate alarm 2.
Alarm2 Probe	Alarm (P3)	Control (P1), Defrost (P2), Alarm (P3), P4, P5, Suction (P7), Discharge (P8)	Probe for Alarm 2.
Alarm2 Reset	1 degrees	0-10 degrees	Temperature difference to reset alarm 2.
Alarm 3 Set up			
Alarm3 Delay	1	0-60 minutes	Alarm3 delay before sounding
Alarm3 Function	Disable	No, R1 relay, R2 relay, Disable	Defines the action when Alarm3 is activated.
Alarm3 High Temp	49 C (120 F)	User Set Point 250	High temperature to activate alarm 3.
Alarm3 Low Temp	-46 C (-50 F)	-50 - User Set Point	Low temperature to activate alarm 3.
Alarm3 Probe	Alarm (P3)	Control (P1), Defrost (P2), Alarm (P3), P4, P5, Suction (P7), Discharge (P8)	Probe for Alarm 3.
Alarm3 Reset	1 degrees	0-10 degrees	Temperature difference to reset alarm 3.
General Alarm Reset			
Alarm Ringback	10 minutes	0-120 minutes	Defines the time delay until the alarm will resound.
Alarm Remote Reset	No	On, I1, I2, I3, I4	Determines if the alarms can be silenced with a remote input from I1, I2, I3 or I4
Alarm Startup Delay	120 minutes	0-180 minutes	Defines the alarm delay during startup.
Alarm Silencing	Yes	Yes, No	Determines if the alarms can be silenced or not.
Maintain Alarm	Yes	Yes, No	Determines if the alarm(1-3) should be maintained if the temperatures fall back into range.
Door Control			
Door Open Alarm	No	Yes, No	Sound beeper when door alarm activated.
Door Open Alarm Delay	60 seconds	0 - 300 seconds	Door open alarm delay.
Door Open Relay	Disable	No, R1 relay, R2 relay, Disable	Alarm Relay to activate when door open alarm activated.
DoorFan control	No	Yes, No	Defines if the evap fan should shut off when the door is open.
Door compressor time	60 seconds	0-180 Seconds	Defines the time to shut off the compressor after the door is open. 0=ignore
Light control			
Turn light on/off with door	No	Yes, No	Turn light on/off with door openings.
Light off timer	120 seconds	0-600 Seconds	Turn off the light after XX seconds
Power Alarm			
Power Alarm	No	Yes, No	Defines if an alarm should sound if power is lost.

Parameter	Default Value	Range	Description
Power Alarm Relay	No	Yes, No	Defines if relay should open/close on power alarm.
Power Alarm Timer	5 minutes	0 - 120 minutes	Delay before sounding the power alarm.
Battery Level			Battery Level
Data Storage	Yes	Yes, No	Overwrite circular data?
Data Full Alarm	No	Yes, No	Alarm when data memory is full?
Data log			
Sample Rate	15 minutes	0 - 360 minutes	minutes between data sampling. 0=Off
Data Duration			
Data Storage	Yes	Yes, No	Overwrite circular data?
Data Full Alarm	No	Yes, No	Alarm when data memory is full?
Track Events	Yes	Yes, No	Track events with log
P1 Datalog	No	Yes, No	Log P1 to event log
P2 Datalog	No	Yes, No	Log P2 to event log
P3 Datalog	Yes	Yes, No	Log P3 to event log
P6 Datalog	No	Yes, No	Log P6 to event log
P7 Datalog	No	Yes, No	Log P7 to event log
Defrost			
Manual Defrost	No	Yes, No	Force the unit into a defrost
Defrost Control	Power on	"Power on,manual only,disable,time of day, compressor on time"	Defines tactic for initiating a defrost
Defrost Type	Heater	Heater,Evaporator	Type of defrost (forced heat or fan only)
Defrost Termination Tactic	Temperature	time, temperature	Defrost end routine
Defrost Timer	8 hours/6 hours	0-720 hours	Hours between defrost cycles
Defrost Termination Temp	4 C (38 F) / 5C (41 F)	0 to 66 C (32 to 150 F)	When set to temperature, defines temp.
Defrost Duration (mins)	30 minutes	0-60 minutes	When dtr set to t(time), duration of defrost. Failsafe time when set to temp.
Evap Fan Defrost Delay	30 seconds	0-300 seconds	Time to delay starting of evap fan after restarting system. (ignored if dtp=Fan)
Drip Timer	0 seconds	0-300 seconds	delay at end of defrost cycle before starting system.
Evap Fan Restart	Temperature	Time , Temperature	Defines if the evap fan should restart on time or temp after compressor starts during the defrost routine. T=time, Tp=temp
Evap Fan Temp	-9 C (15 F)	-37 to 13 C (-35 to 55 F)	Temperature to restart evap fan, when EFr= temp.
Graphing			
X Axis Range (hrs)	168 hours	1-384 hours	Time span for x-axis
Y Axis Minimum	-1 C (30 F)	-46 to 121 C (-50 to 250 F)	Minimum temperature shown on graph
Y Axis Maximum	27 C (80 F)	-46 to 121 C (-50 to 250 F)	Maximum temperature shown on graph
Graph Show Alerts	No	Yes, No	Determines whether alerts are displayed on the graph
P1 Graph Display	NO	Yes, No	Determines whether to graph probe 1
P2 Graph Display	No	Yes, No	Determines whether to graph probe 2
P3 Graph Display	Yes	Yes, No	Determines whether to graph probe 3

Parameter	Default Value	Range	Description
P6 Graph Display	No	Yes, No	Determines whether to graph probe 6
P7 Graph Display	No	Yes, No	Determines whether to graph probe 7
P8 Graph Display	No	Yes, No	Determines whether to graph probe 8
Door Heater			
Door Heater	Yes	Yes, No	Controls door heater output
Door Heater Off (mins)	2	0-100	Off time for door heater if dht=on
Door Heater On (mins)	3	0-100	On time for door heater if dht=on
Error control			
Probe Error	BPr	NO, BPr, R1 relay, R2 relay	Action to take when probe error detected
Control On Time (mins)	3 minutes	0.0 - 120.0 minutes	Compressor on time when control probe error (minutes)
Control Off Time (mins)	10 minutes	0.0 - 120.0 minutes	Compressor off time when control probe error
Fail Safe Timer (mins)	0 minutes	0 - 180 minutes	Minimal time the suction or discharge fail safe routines must remain off when triggered.
Discharge Fail Safe	121 C (250 F)	38 to 121 C (100-250 F)	Defines the maximum temperature the discharge inlet temperature is allowed to reach.
Discharge Differential	38 C (100 F)	1 to 56 C (1 - 100 F)	The temperature differential the discharge probe must fall thru before resetting.
Suction Fail Safe	-15 C (5 F)	-73 to 38 C (-100 to 100 F)	Defines the lowest temperature the suction inlet temperature is allowed to reach.
Suction Differential	11 C (20 F)	1 to 56 C (1 - 100 F)	The temperature rise the suction inlet probe must rise thru before resetting.
Calibration			
Calibrate probes			Calibrate probes through a second menu
Viewable			
Cut In			View cut in temperature
Cut Out			View cut out temperature
Probe 1 temp			View temperature of probe 1
Probe 2 temp			View temperature of probe 2
Probe 3 temp			View temperature of probe 3
Probe 4 temp			Not available
Probe 5 temp			Not available
Probe 6 temp			View temperature of probe 6
Probe 7 temp			View temperature of probe 7
Probe 8 temp			View temperature of probe 8
Power On Time (hrs)			View cumulative hours that the unit was in service
Compressor cycles			The number of compressor starts
Compressor run time(hrs)			View cumulative hours that the compressor was energized
Door open Cycles			The number of door opening
Door open time(hrs)			View cumulative hours that the door was open
Factory Reset			
Reset	No	No, Yes	Reset all parameters to factory reset