Menus and Settings for the CCS2

Main Menu

Menu Name	Description
Setup	Adjusts the time, date, temperature, setback, LCD backlight, and temperature units. Also assign names to coolers.
Info	Scrolls through a series of screens that display details about the system setup and status: Local probes, Control probes, 4-20mA inputs, Digital inputs, Pilot relays, Onboard relays, and Version info.
Test	Tests the solenoid, evaporator fan, defrost, economizer, and coil. Also view the relay outputs, coil temperature, and onboard relay outputs. Tests start with all of the equipment shut off, and all short cycle safeties are disabled.
Network	Adjusts the network settings for the system.
Advanced	Adjusts settings related to the cooler system, such as fan delay times, defrost, destratification cycles, shutdown, shutoff, bypass, alarms, and economizer enable and disable.
Defrost	Starts a defrost cycle.
Restart	Restarts the system.

Setup Menu

Menu Item	Description	Default Setting
Time	Sets the time.	
Date	Sets the date.	
Daylight Savings	Sets or disables daylight savings time. The default is to enable March – November as used in the US since 2007.	Enabled / US Mar-Nov
Time Zone	Sets the time zone.	Eastern
Setpoint	Adjusts the temperature of the cooler.	38° F
Differential	Adjusts the temperature differential value.	3° F
Setback Diff	The additional degrees that the cooler is set back. If the setting is set to OFF, the cooler is shut off.	5° F
Setback – Monday (separate setting for each day)	Sets up the daily schedule for the setback for the cooler's temperature and the Novelty Shutoff.	
Copy Setback Sched.	Copies the Monday setback schedule and enables/disables to the rest of the week.	
Setback Date 1-7	Configures the seven date range setback schedules. Each setting has a starting day/month, ending day/month, an enable, and an option to turn the cooler off instead of setting the temperature back.	
Cooler Name	A list of names for the controlled cooler.	Default
Custom Name	Creates a name for the cooler using up to 20 characters.	CCS-2
LCD Backlight	Sets the behavior of the display backlight to either On, Off, or Timed. The Timed option turns the on backlight for two minutes.	Timed
Temperature Units	Sets the unit of temperature to either Fahrenheit or Celsius with or without decimal points.	Fahrenheit
Remote Settings	Limits the ability to make changes via the web interface. Options are "Allowed", "Not Allowed", "For 60 Minutes"	Allowed

Info Menu (view only)

Menu Item	Description
Control Probes	View the space, coil, and outside temperatures used for control. If there are multiple space temperatures, the average of the temperatures is displayed. For multiple coil temperatures, the lowest temperature is displayed.
Equipment Status	View if the evaporator fans, cooling, defrost heat, and economizer are on or off.
Local Probes	View the temperatures for the physical probes connected to the controller: P1—Space temperature 1, P2—Space temperature 2, P3—Coil temperature 1, P4—Coil temperature 2, and P5—Outside temperature.
Digital Inputs	Shows the state of each digital input, either open or closed. Five inputs are displayed: Input 1—Shutdown button, Input 2—Bypass switch, Input 3—Door sensor, and Inputs 4 and 5—Not used at this point but recorded, so these can be used for testing or monitoring if needed.
Pilot Relays	View the state of the MAIN, SOL, EFAN, DFRST, and ECON pilot relays. The actual state of the relays is displayed, not the state of what is being controlled.
Onboard Relays	OBR1 (alarm) and OBR2 (night shutoff)
4-20mA Inputs	The top line for each input shows the milliamp signal transmitted from the transducer. The bottom line shows the engineering units if set up. Two inputs are displayed.
Door Heat Control	Shows all Door Heat Control input and output info, if enabled.
Version Info	Firmware version and MAC address. The MAC address is also used as the serial number for the CCS2.
RSM Status	Shows status info related to the Remote Site Manager cloud based data service.**
Statistics	Shows the daily, weekly, and monthly runtime percentages on separate screens. The number of statistics available depends on the device configuration.

** The Remote Site Manager subscription service enables end users to review real-time or historical HVAC/R data and modify control parameters remotely over cloud based servers. *An optional paid subscription is required in order to use this service.*

Advanced Menu

Menu Item	Description	Default Setting
Short Cycle	The time the compressor must remain off before it can be restarted.	2 minutes
Min Runtime	The minimum time that the compressor must run before it can be turned off.	2 minutes
Auto Diff Adjust	Automatically increases the Differential (up to 3°F) if compressor runtimes are too short.	Enabled
Off Cycle Adjust	Automatically increases the Differential (up to 3°F) if the cooling off cycles are too short.	Enabled
Sol Fan Delay	The minimum time that the evaporator fans must continue running after a cooling cycle stops.	30 seconds
Sol PreDelay	Time that the evaporator fans must run before cooling is started, at the start of a cooling cycle.	0 seconds
ED Max Fan Delay	The maximum time that the evaporator fans are kept off at the start of a cooling cycle in an electric defrost application (also known as refreeze time).	75 seconds
Dstrat Off Time	Sets the time between destratification cycles.	7 minutes
Dstrat On Time	Sets the amount of time that the evaporator fans are run during a destratification cycle.	1 minute
Dstrat Cycling	Enables or disables the evaporator fan destratification cycles.	Enabled
Fan Cycling	Enables or disables the off cycle evaporator fan control. If disabled, the fans run continuously during the off cycle.	Enabled
Gravity Mode	Enables or disables the ability to cycle off the cooling when the evaporator reaches very cold temperatures. This can occur when the evaporator fans are turned off, or the evaporator encased in ice.	Enabled
Stuck Sol Detect	Enables or disables the detection of a solenoid valve that is stuck open. If detected, the solenoid valve is cycled 3 times to attempt to close it.	Enabled
Timed Efan - Door	When enabled, the evaporator fans are run for 7 minutes after the door is opened. Requires a door switch on digital input 3.	Disabled
Timed Efan - Occ	When enabled, the evaporator fans are run for 7 minutes after occupancy is sensed. Requires an occupancy sensor on digital input 5.	Disabled
Defrost Enable	Enables or disables defrost.	Enabled
Defrost Type	Sets either an air or electric defrost. This should be set to the correct type of defrost, whether or not the defrost is being controlled.	Air
Interval Type	Controls the timing between defrosts. Select from dynamic (runtime), fixed interval, or Real Time Clock (RTC). The runtime interval is based on the compressor runtime. RTC allows up to 8 start times per day to be set.	Runtime
Thermostatic Dfrst	Applies only to an electric defrost. If enabled, regulates the heating elements to the terminate temperature.	Disabled
Defrost Interval	Sets the time between defrosts.	2.6 hours
Dfrst Min Interval	Sets the minimum time between defrosts, if the Interval Type is set to Runtime.	4.5 hours
Defrost Times 1 - 8	If the defrost interval is set to RTC, these set the defrost start times. Up to 8 defrosts can be set per day.	
Defrost Min Time	Sets the minimum defrost time.	13 minutes
Defrost Max Time	Sets an overall maximum time that the defrost cycle can last.	60 minutes
Dfrst End Temp	Sets the electric defrost terminate temperature.	60° F
Dfrst Drip Time	Sets the amount of extra time to allow water to drip off after ending the heating cycle. Applies to only the electric defrost.	2 minutes
Dfrst Boil Time	Sets the amount of time to allow refrigerant to boil off before starting a heating cycle. Applies to only the electric defrost.	2 minutes
Dual Defrost	Enables the independent termination of a 2nd electric defrost heater. Both defrosts need to terminate before cooling is resumed. Requires a 2nd defrost relay to be installed. Coil Probe #1 will control the 1st heater, and Coil Probe #2 will control the 2nd heater.	Disabled
Est Dfrst Display	Estimated Defrost Display enable.	Enabled
Display @ Defrost	Display during Defrost. Options are Temperature or Defrost (no temperature shown).	Defrost
Defrost Cancel	Cancels defrost starts if the evaporator temperature has been high for extended periods. This does not affect manual defrosts.	Enabled
Air Dfrst Relay	Enables turning on the Defrost Relay during an Air Defrost.	Disabled
DH Enable	Enables or disables the door heater control functionality.	Disabled
DH #1 Setting	0-6 if the control type is auto, or 0 – 100% if the control type is fixed %.	3
DH #2 Setting	0-6 if the control type is auto, or 0 – 100% if the control type is fixed %.	3
DH #1 Xtra Heat	Enables Xtra Heat defrost cycles. Settings are Enabled, Disabled, and Default. If set to Default, it is enabled if the DH #1 Type is set to Freezer, and disabled if the DH #1 Type is set to Cooler.	Default
DH #2 Xtra Heat	Enables Xtra Heat defrost cycles. Settings are Enabled, Disabled, and Default. If set to Default, it is enabled if the DH #2 Type is set to Freezer, and disabled if the DH #2 Type is set to Cooler.	Default
DH PWM1	Enables or disables the PWM1 output to control door heaters.	Enabled
DH PWM2	Enables or disables the PWM2 output to control door heaters.	Enabled
DH #1 Type	Sets the PWM1 output door heaters to be Cooler or Freezer type.	Cooler
DH #2 Type	Sets the PWM2 output door heaters to be Cooler or Freezer type.	Freezer
DH #1 Control	Auto, Fixed %, On, Off	Auto
DH #2 Control	Auto, Fixed %, On, Off	Auto
DH #1 Map	Normal, Lowest, Low, High, Pass-through (Pass-through is used for Freezer type doors, where the door is located in a cooler.)	Normal
DH #2 Map	Normal, Lowest, Low, High, Pass-through	Normal
Economizer Enable	Enables or disables the economizer.	Disabled
Econ Differential	Sets the temperature differential used for the economizer.	2° F
Thermal Storage	Sets the cooler to run at a lower temperature using the Economizer so that the cooler can coast through periods of warmer weather. Please note that if Thermal Storage is enabled, the economizer will run if the cooler is turned off via the setback schedule.	36° F
TS Follows Setback	If enabled, Thermal Storage will only run during a cooler setback.	Disabled
Heat Control	Enables or disables the control of a heater to maintain the controlled space temperature above a temperature based on the Setpoint, Deadband, and Heat Diff. This uses the Defrost Output to control the heating. If the Defrost Output is used for a defrost function, Heat Control cannot be enabled.	Disabled
Heat Diff	The differential below the Deadband at which the heat will be turned on.	3° F
Deadband	The Deadband is the differential below the Setpoint at which the heat is turned off.	1° F
Freeze Protection	If enabled, heat control is used to keep the space temperature above freezing.	Disabled
Efans ON with Heat	If enabled, the evaporator fans will run when the heat is turned on.	Disabled
Shutdown Enable	Enables or disables the cooler shutdown button (external and internal).	Enabled
Shutdown Length	Sets the cooler shutdown time.	20 minutes
Shutdown Limit	Overrides the maximum shutdown time limit. Options are Normal, and Unlimited.	Normal
Shutdown Delay	Enables or disables a slower Shutdown start sequence.	Disabled
Setback Enable	A global setting that either enables or disables the cooler temperature setback.	Enabled

Advanced Menu Continued…

Menu Item	Description	Default Setting
Novelty Shutoff	A global setting that enables or disables the Novelty Shutoff output.	Enabled
Setback Date	A global setting that either enables or disables date range cooler temperature setback.	Disabled
Bypass Enable	Enables or disables the cooler bypass.	Enabled
Bypass Button	Enables or disables the keypad bypass button. Note that this also disables “Manual Bypass”.	Enabled
Bypass Switch	Enables or disables a bypass switch on digital input 2.	Disabled
Byp Switch Global	When enabled, all CCS2 units with the same cooler ID go into bypass simultaneously.	Disabled
Bypass Door	When enabled, the CCS2 goes into bypass for 10 minutes after the door is opened. Requires a door switch on digital input 3.	Disabled
Bypass Occ	When enabled, the CCS2 goes into bypass for 10 minutes after occupancy is sensed. Requires an occupancy sensor on digital input 5.	Disabled
Probe 1 Type (total 5 types)	Sets the type of thermistor. Options are 5K Z Curve, 10K Z Curve, 10K SB Curve, and 5K Epcos Curve.	5K Z Curve
Probe 1 Cfg.	Sets alternate modes for the Space 1 Temperature Probe. Options are Default, Disabled, and Monitor.	Default
Probe 2 Cfg.	Sets alternate modes for the Space 2 Temperature Probe. Options are Default, Disabled, and Monitor.	Default
Probe 3 Cfg.	Sets alternate modes for the Coil 1 Temperature Probe. Options are Default, Disabled, and Monitor.	Default
Probe 4 Cfg.	Sets alternate modes for the Coil 2 Temperature Probe. Options are Default, Disabled, and Monitor.	Default
Outside Probe Fn.	Sets an alternate function for the outside temperature probe. Options are Outside, Coil 3, Space 3, Monitor, Suction Temp, and Disabled.	Outside Temperature
Out Temp Sharing	Outside Temperature Sharing. Configures the sharing of the outside temperature if Distributed Control is enabled. Options are Enabled, Disabled, Local Priority, Local Only and Remote Only.	Enabled
DP Probe	Enables or Disables the Dewpoint Probe. The “Default” setting enables the probe if DH Enable is set to “Enabled”. Options are Default, Disabled, and Enabled.	Default
4-20mA IN1 Type (total 2 types)	Sets the type and units for the transducers connected to these inputs.	4-20 mA
4-20 mA Calibration	Sets the calibration value for the 4-20mA inputs.	326
Comp. Feedback	Sets the input to use to sense if the compressor is on or off. If a 4-20mA input is selected, a 10% F.S. threshold is used to determine if the compressor is on.	Disabled
Cooler Control	Enables or disables the Cooler Control functionality of the controller. A reboot is required after changing this setting. *	Enabled
Demo Mode	If enabled, simulates the control temperatures so that the unit can be used as a demonstration unit.	Disabled
Alarms Enable	A global setting that disables all alarming.	Enabled
Alarm All Hours	If enabled, non-critical alarms can go off at any time.	Disabled
Alarm Relay Enable	Enables or disables the onboard alarm relay.	Enabled
High Alarm Enable	Enables or disables the high-temperature alarming.	Enabled
High Alarm Type	Allows you to choose among auto, fixed, or relative (differential) high-temperature alarm points.	Auto
High Alarm Adjust	If enabled, the high-temperature alarm adjusts for defrost, shutdowns, and setbacks.	Enabled
High Alarm Mode	Sets the high-temperature alarm to operate in run mode, or run and bypass mode.	Run Only
High Alarm Setpoint	Adjusts the setpoint for a fixed high-temperature alarm.	46° F
High Alarm Diff	Sets the temperature differential for a relative (differential) type high-temperature alarm.	5° F
High Alarm Time	Sets the high-temperature time for a fixed or relative (differential) type high-temperature alarm.	60 minutes
Low Alarm Enable	Enables or disables the low-temperature alarming.	Enabled
Low Alarm Type	Allows you to choose among auto, fixed, or relative (differential) low-temperature alarm points.	Auto
Low Alarm Adjust	If enabled, the low-temperature alarm adjusts for defrost, shutdowns, and setbacks.	Enabled
Low Alarm Mode	Sets the low-temperature alarm to operate in run mode, or run and bypass mode.	Run Only
Low Alarm Setpoint	Adjusts the setpoint for a fixed low-temperature alarm.	34° F
Low Alarm Diff	Sets the temperature differential for a relative (differential) type low-temperature alarm.	3° F
Low Alarm Time	Sets the low-temperature time for a fixed or relative (differential) type low-temperature alarm.	20 minutes
Alarm Silence 1	Sets the alarm silence time when the alarm goes off the first time	1 hour
Alarm Silence 2	Sets the alarm silence time when the alarm goes off for a second time.	24 hours
Backlight Flashing	The display backlight will flash during an alarm condition.	Enabled
Alarm Scheduling	Enables or disables the Alarm Disable Schedule.	Disabled
Alarm – MON (separate setting for each day)	Sets up the daily schedule for disabling the High Temperature Alarm.	
Set Password	Sets a 4 digit pass code that prevents settings form being changed. Set to 0000 to disable.	Disabled
View All Settings	Enable the display of settings that are usually only used when the system is initially configured.	Disabled

Network Menu

Menu Item	Description	Default Setting
IP Address Type	Sets either a static or DHCP address. Select DHCP to automatically set the IP address for the CCS2.*	Static
DHCP Actions	If DHCP is active, these actions can be run. Items are “Renew”, “Release”, “Save to Static”, “Request Static”.	
IP Address	Sets the static IP address for the CCS2.*	None
Netmask	Sets the subnet mask of the IP address.*	None
Default Gateway	Sets the default gateway used with the CCS2.*	None
DNS #1-3	Sets the IP addresses for the domain name servers (DNS).	None
SNTP #1-5	Sets the IP addresses for the TIME servers. These are used as backup if RSM TIME servers can’t be reached.	None
SNTP Client	Enables or disables the RFC868 TIME Client. If enabled, the CCS2 will set the time from internet TIME servers.	Enabled
Ethernet Link	Sets the Ethernet link connection type. Use this setting to change the link speed and duplex type, or to disable Ethernet.*	Auto
Telnet Timeout	Sets the auto logout time of the telnet terminal. (NOTE: Telnet removed in Rev 38 and higher.)	5 minutes
Telnet Enable	Enables or disables the telnet terminal. (NOTE: Telnet removed in Rev 38 and higher.)	Enabled
FTP Enable	Enables or disables the CCS2’s internal FTP Server.	Enabled
FTP Write	Enables or disables the ability to write to the internal micro SD card via the FTP server.	Disabled
Web Server	Enables or disables the CCS2’s internal Web Server.	Enabled
Wireless API	Enables or disables the Wireless Probe API Server.	Enabled
IP Filtering	Enable to limit traffic allowed to reach the CCS2 unit. (NOTE: IP filtering removed in Rev 55 and higher.)	Disabled
Filter Default	Passes or blocks traffic to the CCS2 unit. If the block is enabled, no traffic will be allowed through unless a trusted IP and subnet mask are enabled. You can also allow traffic from your local network.	Allow
Trusted IP #1-3	Sets up to three IP or network addresses to allow traffic to the CCS2 unit.	None
Trusted Mask #1-3	Sets the mask to 255.255.255.255 to limit to only one IP address. You can also set a different mask to allow traffic from a network.	None
Allow Local IPs	Allows traffic from the local network.	Enabled
Allow Private IPs	Allows traffic from any private IP address.	Enabled
RSM Enable	Enables or disables the system from connecting to the RSM service. **	Enabled
RSM Service	Normal or No Data. Normal mode sends data every 10 seconds. No Data mode establishes a connection but doesn’t send data unless requested.	Normal
RSM Units	Sets the temperature units used with RSM only. Options are Fahrenheit, Celsius, Celsius x10, Kelvin, Internal (Kelvin x10).	Fahrenheit
RSM Write Enable	Limits the ability to make remote settings changes via RSM.	Enabled
RSM Server IP #1-4	Sets the IP addresses for the RSM servers.	
RSM Server Port #1-4	Sets the TCP ports for the RSM service. If set to 0, the default of 6102 is used.	6102
Modbus TCP Enable	Enables or disables the Modbus TCP server on the CCS2.	Disabled
Modbus Units	Sets the temperature units used with Modbus TCP only. Options are Fahrenheit, Celsius, Celsius*10, Kelvin, Internal (Kelvin*10).	Fahrenheit
Modbus Write	Limits the ability to make remote settings changes via Modbus TCP.	Enabled
Modbus Port	Sets the TCP port for the Modbus TCP service. If set to 0, the default of 502 is used.*	502
Distributed Control	Enables or disables synchronized operation between CCS2 controllers.	Disabled
Cooler ID	Identifies the Cooler that a controller is part of for Distributed Control.	1
Point ID	Identifies the individual controller within a Cooler for Distributed Control.	1
Zone ID	Identifies the Zone that a controller is part of within a Cooler for Distributed Control.	1
Group ID	Identifies a Group of Coolers for Distributed Control.	1
Out Temp Sharing	Outside Temperature Sharing. Configures the sharing of the outside temperature if Distributed Control is enabled. Options are Enabled, Disabled, Local Priority, Local Only and Remote Only.	Enabled
Comp Sync	Compressor Synchronization. Configures the coordination of compressor starts in a zone. Options are Disabled, Leader, Follower, and Delay. If a Leader starts, all Leaders and Followers Start. Starts between different compressors are delayed by a few seconds.	Disabled
Start Delay	Compressor Start Delay in Seconds. Delays the start of a Leader, Follower or Delay compressor after any compressor in the same zone starts. Range is 0 – 600 Seconds.	0 seconds
Lag Delay	Compressor Lag in Minutes. Delays the start of a Leader or Follower compressor after the 1st start of a Leader in the same zone. Generally used in Multi-Leader applications. Range is 0 – 60 Minutes.	0 minutes
Sol Off w ED-C	If enabled, cooling is turned off if another controller starts an Electric Defrost within the same cooler.	Disabled
Sol Off w ED-Z	If enabled, cooling is turned off if another controller starts an Electric Defrost within the same zone.	Disabled
EDS Wait	If enabled, a pending Runtime or Fixed interval Electric Defrost will wait to start if another controller starts an Electric Defrost within the same cooler. This does not delay a RTC defrost. This requires Distributed Control to be Enabled.	Disabled
EDS Run	If enabled, an Electric Defrost will start if another controller starts an Electric Defrost within the same zone. It will not start a defrost if the defrost interval on this controller is set to RTC or the type is Air Defrost. This requires Distributed Control to be Enabled.	Disabled
Timed Efan - Remote	When enabled, the evaporator fans are run if another controller in the same cooler is in Timed Efan mode.	Disabled

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Test Menu

Menu Item	Description
Test System	Manually tests each output.
Relay Outputs	Displays the relay outputs and the coil temperature. Shows the equipment state. The test starts with all of the equipment shut off.
Onboard Relay Outputs	Displays the onboard relay outputs: OBR1—Alarm output and OBR2—Night shutoff output.

* This setting requires a reboot for a change to take effect.

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