

# ESC3 Field Replacement

## Overview

The XR75CX controller (P/N 850-3520) is the replacement for the ESC3 controller (P/N 850-3500), which has been discontinued. Like the ESC3 controller, the XR75CX provides control of the compressor, fan, and defrost management. Defrost termination, fan, supply voltage, condenser temperature, and ambient case temperature relays are all pre-wired to the terminal strip.

The XR75CX controller can be configured using special parameters that can be programmed through the Hot Key programming keyboard.

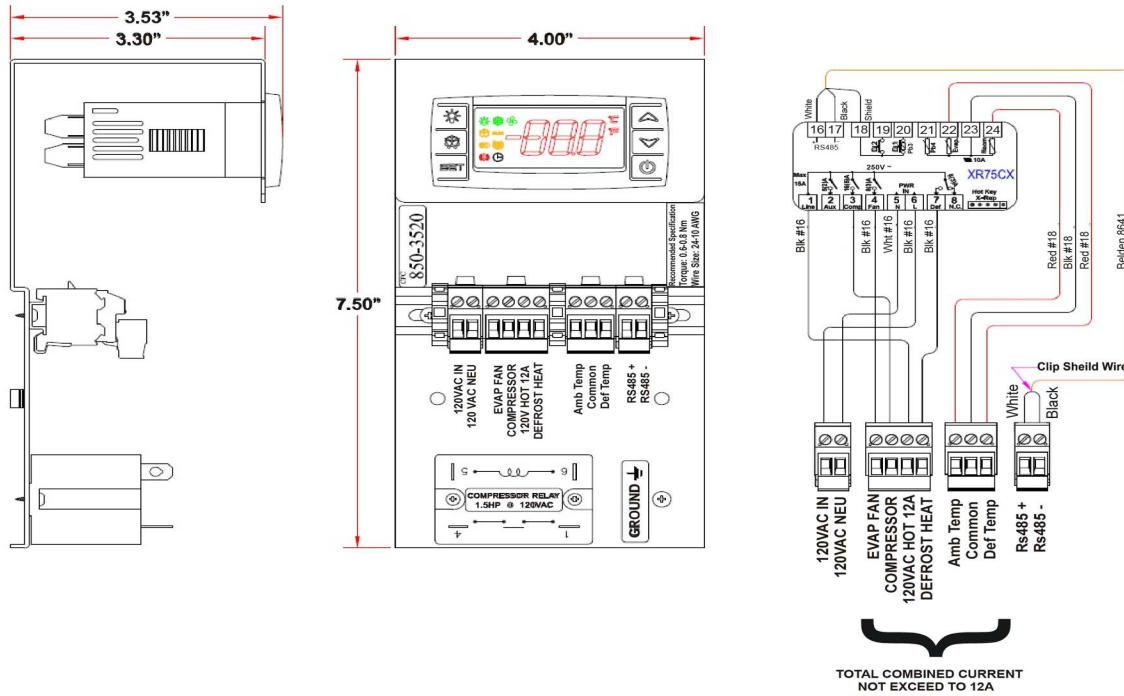


Figure 1 - XR75CX Layout

# Retrofit Steps

1. Turn the power OFF to the ESC3 controller (unplug/disconnect).
2. Pull the three plug-in connectors on the ESC3 controller, (P1,P2, and P3) which you disconnect from the old unit and plug into the XR75CX replacement terminal strip.
3. Remove the compressor relay connections. (Make note of the placement of the connections).
4. Unscrew the ESC3 assembly and remove the unit.
5. Mount XR75CX assembly.
6. Reconnect the compressor relay connections on the new XR75CX compressor relay. (Note that the placement of the connections will be in the same order as the original layout).
7. Reconnect the plug-in connectors P1, P2, and P3 to the XR75CX pre-wired terminal strips. (Note that the placement of the connections will be in the same order as the original layout). See [Figure 2 - Retrofit Diagram Model](#).
8. Power ON the XR75CX.
9. Program the XR75CX (refer to the Programming the XR75CX section of this bulletin for more information).

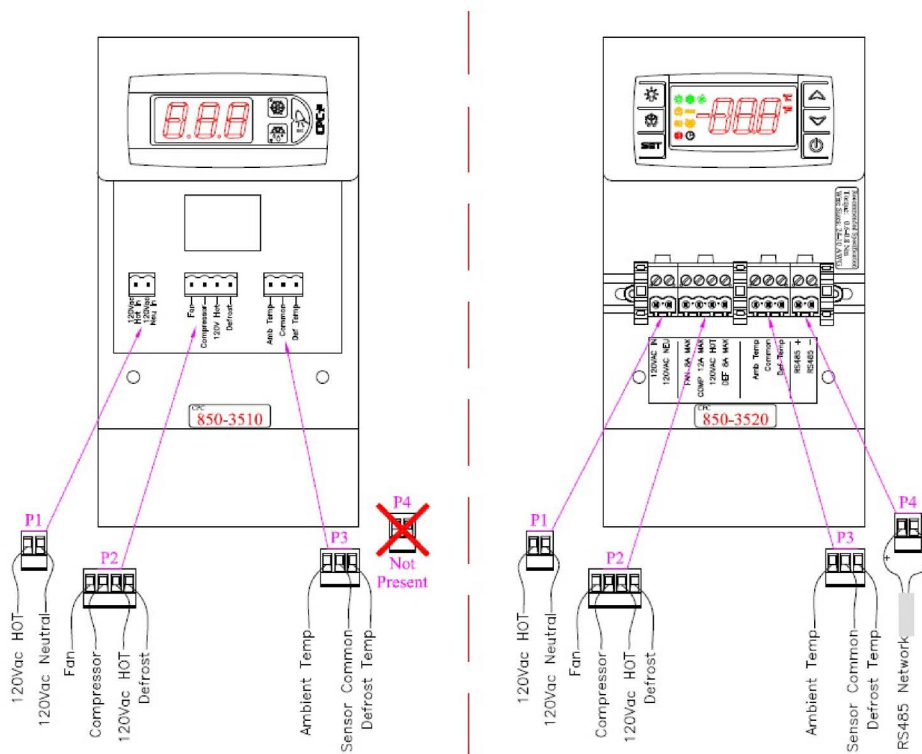


Figure 2 - Retrofit Diagram Model

# ESC3 to XR75CX Parameter Cross-Reference

## User-Level Setpoints

USER-LEVEL SETPOINTS						XR75CX Cross Reference	
Code	Parameter Name	Min	Max	Units	Default Value	Code	Desc
PS	Password	0	199		22	N/A	
/C	Offset for air temp sensor (in tenths of a degree: i.e. a value of "1" adds 0.1° to value)	-127	127	°C/°F	0	ot	Thermostat probe calibration
rd	Regulator differential (superheat) setpoint (a "0" in this field = 0.5°C or 0.5°F)	0	19	°C/°F	2	HY	Differential
dl	Time between defrost cycles (defrost interval)	0	199	hours	8	idF	Interval between defrost cycles
dt	Defrost temperature termination setpoint	-50	127	°C/°F	4	dtE	Defrost termination temperature
dP	Max duration of defrost if using electric or hot gas defrost, or the actual duration of defrost if doing timed defrost	1	199	min	30	MdF	(Maximum) length for defrost
dd	Drip time	0	15	min	2	Fdt	Drip time
d8	Alarm delay after defrost	0	15	hours	1	Ald	Temp Alarm Delay (Affects all alarms)
d/	Defrost probe reading (read-only)			°C/°F		dFP Sets Defrost Probe. dP1, dP2, dP3, dP4 would then display the value.	
AL	Low temperature alarm differential (subtract this value from the temperature setpoint to get low alarm temperature setpoint) (0 = no low temp alarming)	0	127	°C/°F	0	ALL	Minimum temperature alarm
AH	High temperature alarm differential (add this value to the temperature setpoint to get high alarm temperature setpoint) (0 = no high temp alarming)	0	127	°C/°F	0	ALU	MAXIMUM temperature alarm
F1	Fan on at temperature setpoint (used if F0 = 1)	-50	199	°C/°F	5	FnC controls fan operation. Fct and FSt provide temperature settings.	
Fd	Fan delay after defrost drip time for each F0 value	0	15	min	1	Fnd	Fan delay after defrost
H5	ID code for programming key	-99	+			N/A	
T	External parameter programming	-99	199			N/A	

## OEM-Level Setpoints (Login Required)

OEM-LEVEL SETPOINTS (LOGIN REQUIRED)						XR75CX Cross Reference	
Code	Parameter name	Min	Max	Units	Default Value	Code	Desc
/2	Reading stability	1	15		4	N/A	
/4*	Display probe: 0=regulation probe, 1=food probe	0	1		NU*	Lod	Instrument display
/5	Temperature units (0=°C, 1=°F)	0	1		0	CF	Temperature measurement unit
r1	Min allowable setpoint	-60	r2	°C/°F	-50	LS	Minimum setpoint
r2	Max allowable setpoint	r1	27	°C/°F	60	US	Maximum setpoint
r3	Enable "Ed" alarm on display when defrost times out w/o terminating (0=no, 1=yes)	0	1		0	N/A	
r4*	Automatic variation of setpoint when door switch is active	0	20	°C/°F	NU*	N/A	
c0	Delay compressor start up after switch-on	0	15	min	0	odS	Outputs activation delay at start up
c1	Minimum time between two compressor starts	0	15	min	0	AC	Anti-short cycle delay
c2	Minimum OFF time	0	15	min	0	Con	Compressor ON time during continuous cycle
c3	Minimum ON time	0	15	min	0	CoF	Compressor OFF time during continuous cycle
c4	Compressor safety relay (0=always OFF, 100=always ON)	0	100	min	0	N/A	
cc	Continuous cycle duration	0	15	hour s	4	CCT	Compressor ON time during continuous cycle
c6	Alarm delay after continuous cycle	0	15	hour s	2	N/A	
d0	Type of defrost (0=heater, 1=hot gas, 2=water or resistance, 3=hot gas by time)	0	3		0	tdF	Defrost type
d4	Defrost after control switch-on (0=no, 1=yes)	0	1		0	dPo	First defrost after start-up
d5	Delay defrost after control switch-on	0	199	min	0	dSd	Start defrost delay
d6	Block of display during defrost (0=no, 1=yes)	0	1		1	dFd	Temperature displayed during defrost
d9	Priority of the defrost over anti-clogging (0=no, 1=yes)	0	1		0	N/A	
dC	Time selection (0=hours/min, 1=min/s) (used for only dl and dP)	0	1		0	N/A	
A0	Alarms and fan differential (a "0" in this field = 0.5°C or 0.5°F)	0	19	°C/°F	0	AFH	Differential for temperature alarm recovery

OEM-LEVEL SETPOINTS (LOGIN REQUIRED)						XR75CX Cross Reference	
Code	Parameter name	Min	Max	Units	Default Value	Code	Desc
A4*	Configuration of the digital input (#1)	0	4		NU*	i1P, i1F, i2P, i2F, did and doA are associated with digital input configuration	
A7*	External alarm delay	0	199	min	NU*	N/A	
F0	Management of fans (0=fans on with specific phases excluded (F2, F3, Fd), 1=on when temp is above F1 with specific phases excluded (F2, F3, Fd)	0	1		1	FnC	Fans operating mode
F2	Stop fans when compressor is off (0=no, 1=yes)	0	1		1	Covered by FnC	
F3	Fans OFF during defrost (0=no, 1=yes)	0	1		1	Covered by FnC	
H0*	Serial address	0	199		NU*	Adr	Serial Address
H1*	Selection of the alarm relay operation (0= alarm ON, energized relay, 1=alarm OFF, de-energized relay)	0	1		NU*	tbA, oA3 and AoP define the auxiliary relay operation for alarms	
H2	Buttons enabled/disabled (0=disable, 1=enable)	0	1		1	onF	
H4*	Buzzer enable/disable (0=enabled, 1=disabled)	0	1		NU*	tbA	

# Programming the XR75CX

The Hot Key receptacle allows you to upload pre-programmed setpoints into the XR75CX controller and download setpoints from the XR75CX controller.

*Note that accessing the hot key on the XR75CX unit may require removal of the XR75CX unit from the bracket.*

To upload setpoints:

1. Program one controller using the front keypad.
2. When the controller is ON, insert the Hot Key and push the **UP** arrow key (the “uPL” message appears followed by a flashing “End” LED).
3. Press the **SET** key and the “End” message will stop flashing.
4. Turn OFF the controller, remove the Hot Key, then turn it ON again.

**NOTE:** The “Err” message is displayed in case of an error or failure in programming. In this case, push the UP arrow again if you want to restart the upload or remove the Hot Key to abort the operation.

**To download setpoints:**

1. Turn OFF the controller.
2. Insert a programmed Hot Key into the 5-pin receptacle and then turn ON the controller.
3. The parameter list of the Hot Key is downloaded automatically into the controller memory; the “doL” message starts blinking followed a by flashing “End” LED.
4. After 10 seconds, the controller will restart and work with the new parameters.
5. Remove the Hot Key.

**NOTE:** The “Err” message is displayed in case of an error or failure in programming. In this case, turn the controller OFF and then ON if you want to restart the download or remove the Hot Key to abort the operation.

Consult the XR75CX manual (P/N 026-1210) for additional XR75CX setup information.

Visit our website at [copeland.com/en-us/products/controls-monitoring-systems](https://copeland.com/en-us/products/controls-monitoring-systems) for the latest technical documentation and updates.

For Technical Support call **833-409-7505** or email [ColdChain.TechnicalServices@Copeland.com](mailto:ColdChain.TechnicalServices@Copeland.com)