

# Danfoss ERC Wiring Instructions



**STOP! All work detailed in these instructions must be done by a qualified technician.**



**Subject:** Danfoss ETC to Danfoss ERC Wiring Instructions

**Date:** May 11, 2023

**Models / Parts Affected:** Danfoss ERC Universal Kits P#848288 (112D) & P#848244 (113D)

**Voltages:** All Voltages

## Overview

This document describes the wiring procedure when converting an appliance from a Danfoss ETC control to a Danfoss ERC control. See other instructions associated with this kit below.

112D Cover Page

[P#848289](#)



113D Cover Page

[P#848246](#)



Wiring  
 (this document)

Mounting

[P#848284](#)



112D Programming

[P#836831](#)



113D Programming

[P#836832](#)



## Required Tools

Required tools include (but may not be limited to) the following:

- Phillips Screwdriver or Bit Driver
- 1/4" Hex Head Drive
- Wire Stripper/Cutter/Crimper
- Putty Knife
- Tape Measure
- Pliers
- Drill
- Soapy Water\*
- Soft Cloth\*

\*For use with 113D display bracket



**WARNING!** Electrical shock or burn hazard. Powering off an electronic control does not remove power from all components. Unplug the unit or turn off the power supply before proceeding.



**WARNING!** Sharp edges. Take care when installing, cleaning, servicing, and maintaining the equipment.

## Danfoss ERC 112D

Continue to next page



## Danfoss ERC 113D

Continue to page 5



# Danfoss ERC Wiring Instructions

## Danfoss ERC 112D Wiring Instructions

1. Unplug the appliance or turn off the power supply.
2. Access the existing temperature control. Temperature control location varies by model. See table below.

Model	Location
TPP/TUC/TWT (with side condensing units)	Behind front right grill
GDM-07F & TSSU/TUC/TWT (with rear condensing units)	Behind back cover panel
T-24/36/50-GC & TD	Behind front right grill
TFP	Behind back cover panel

3. Remove the existing control mounting brackets from the appliance.
 

**NOTE: Keep any removed strain relief bushings to be reused if not included with the new kit.**

  - a. Disconnect the main power cord and/or receptacle and remove it/them from its/their bracket(s).
  - b. If applicable, disconnect the circuit breaker and remove it from its bracket.
  - c. Remove the mounting brackets from the appliance, but do not remove wires from the control at this time.

**EXCEPTION: GDM-07F & TFP do not require the above steps because the bracket securing the main power cord will not be replaced. Remove the GDM-07F temperature control from the control bracket, but do not remove the wires.**

4. Record the voltage wire color and placement on the existing control module below (or take a picture). See fig. 1.

Color	Location	Function
	C-1	Compressor
	L-2 or L-3	Line voltage
	H-4	Defrost heaters (if applicable)
	N-5	Neutral
	F-6	Evaporator fans (if applicable)

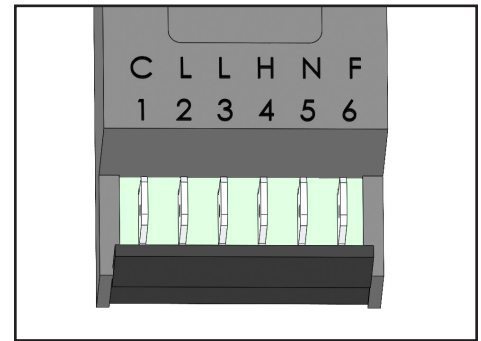


Fig. 1. Danfoss ETC voltage terminals and labels.

5. Identify the probe placement on the existing temperature control. See fig. 2.

Location	Function
1.1/1.2/1.3	Remote display (113D only)
2.1/2.2	Defrost (two blue stripes)
3.1/3.2/3.3	Thermostat

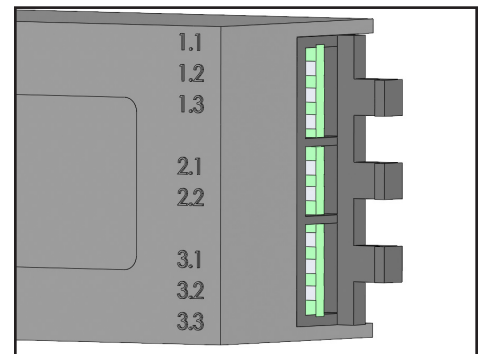
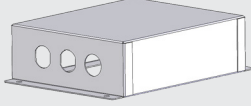
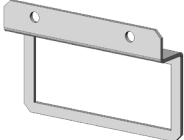

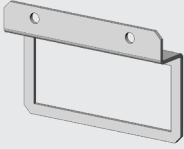
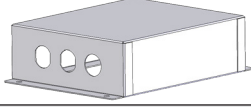
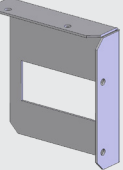


Fig. 2. Danfoss ETC probe connections.

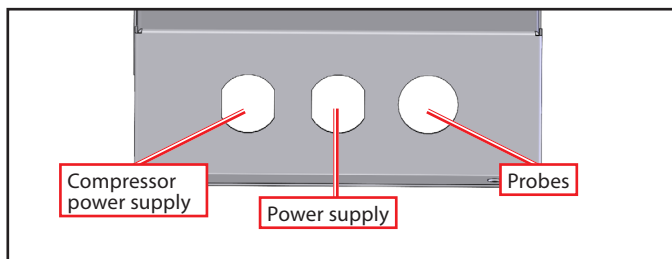
6. Remove the wires from the existing control. Keep any strain relief bushings; these are to be reused with new components. Spares are sent with the kit if needed as the required bushing may have changed.
7. Discard the existing control and any mounting brackets.

## Danfoss ERC Wiring Instructions

8. Identify the required control bracket and, if applicable, the required new main power cord bracket.

Model	Required Bracket
TPP/TUC/TWT (side condensing unit)	Control bracket 
TSSU/TUC/TWT (rear condensing units)	Control bracket  Power cord bracket 
GDM-07F (rear condensing units)	Control bracket 
T-24/36/50-GC & TD	Control bracket 
TFP	Control bracket 

9. Route the control wire harness through the new control bracket only. See fig. 3. Do not mount the new control to the new control bracket at this time. Do not mount the control bracket at this time.



**Fig. 3.** Control bracket opening identification.

## Danfoss ERC Wiring Instructions

10. Reinstall the main power cord, circuit breaker, and/or receptacle at this time:
  - a. **TSSU/TUC/TWT (rear condensing units) only:** Route the main power cord through or secure the receptacle to the new power cord bracket. If applicable, secure the circuit breaker to the new power cord bracket. Do not mount the power cord bracket.
  - b. Reconnect the main power cord or receptacle to the appliance. Do not mount the power cord bracket.
  - c. Reconnect the circuit breaker to the appliance. Do not mount the power cord bracket.
11. Connect the replacement temperature control to the appliance per the table below. See fig. 4. Reference the recorded voltage wire colors in step 4.

Color	Old Location	Function	New Location
	C-1	Compressor	1
	L-2 or L-3	Line voltage	2
	H-4	Defrost heaters (if applicable)	4
	N-5	Neutral	3
	F-6	Evaporator fans (if applicable)	5

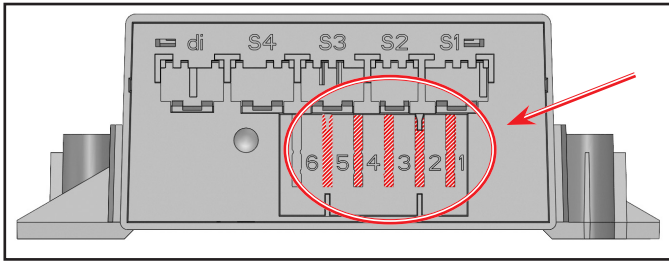


Fig. 4. Danfoss ERC terminals 1-5.

12. Connect the probes to the replacement temperature control. See fig. 5.

**NOTE: Probes do not need to be replaced unless they have been confirmed faulty. If the probe being replaced is foamed into the appliance, splice both ends (the probe tip and the connector) with the replacement probe.**

Old Location	Function	New Location
1.1/1.2/1.3	Remote display (113D only)	d1
2.1/2.2	Defrost (two blue stripes)	S2
3.1/3.2/3.3	Thermostat	S1

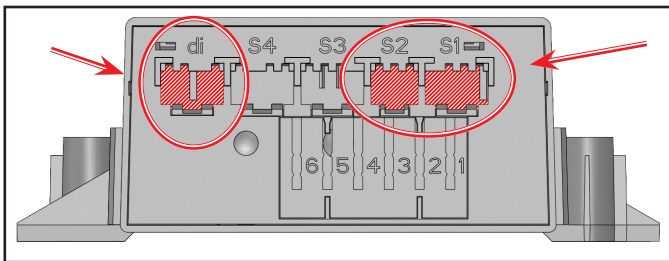


Fig. 5. Danfoss ERC remote display (n/a) and probe connections.

13. Install strain relief bushings to any new bracket/cover securing main power cord wires, display cables, or temperature control wiring. Allow slack in the wires for potential future repairs.
14. Proceed to mounting instruction [P#848284](#).



# Danfoss ERC Wiring Instructions

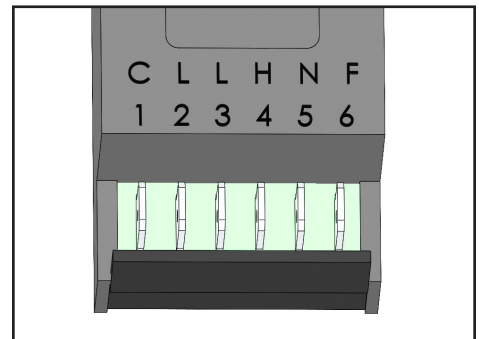
## Danfoss ERC 113D Wiring Instructions

1. Unplug the appliance or turn off the power supply.
2. Access the existing temperature control. Temperature control location varies by model. See table below.

Model	Location
TPP/TUC/TWT (with side condensing units)	Behind front right grill
GDM-07F & TSSU/TUC/TWT (with rear condensing units)	Behind back cover panel
T-23DT	Top louvered panel

3. Remove the remote display from the countertop, front right grill, or top louvered panel.
4. Remove the existing display cable from the remote display.
5. Discard the existing display.
6. Remove the existing control brackets from the appliance, but do not remove wires from the control at this time.
7. Record the voltage wire color and placement on the control module below (or take a picture). See fig. 1.

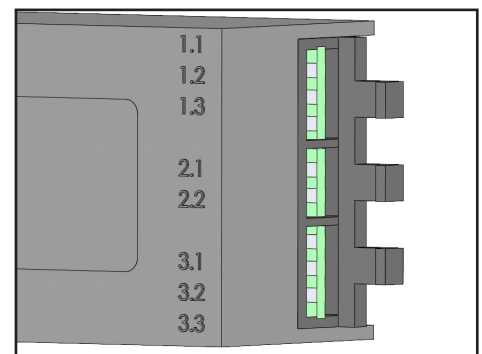
Color	Location	Function
	C-1	Compressor
	L-2 or L-3	Line voltage
	H-4	Defrost heaters (if applicable)
	N-5	Neutral
	F-6	Evaporator fans (if applicable)



**Fig. 1.** Danfoss ETC voltage terminals and labels.

8. Identify the probe placement on the existing temperature control. See fig. 2.

Location	Function
1.1/1.2/1.3	Remote display
2.1/2.2	Defrost (two blue stripes)
3.1/3.2/3.3	Thermostat

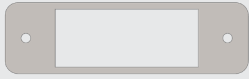
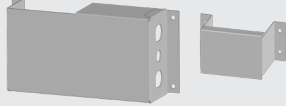


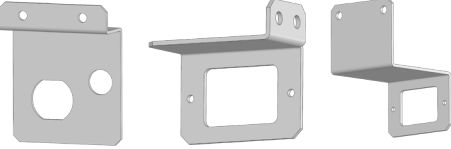


**Fig. 2.** Danfoss ETC probe connections.

9. Remove the wires from the existing control. Keep any strain relief bushings; these are to be reused with new components.
10. Discard the existing control and any mounting brackets.
11. If not foamed into a countertop, discard the existing display cable.

## Danfoss ERC Wiring Instructions

12. Identify the required control bracket and, if applicable, the required wire cover and new main power cord bracket.

Model	Required Brackets	Required Wire Covers
TPP/TUC/TWT (side condensing unit)	Display Bracket 	Wire Covers 
TSSU/TUC/TWT (rear condensing units)	Display Bracket  Control Bracket  Power cord bracket (three (3) provided; required bracket varies by model) 	
T-23DT	No brackets required	No covers required

13. **TPP/TUC/TWT (side condensing unit):** Route the wire harness and new display cable through wire cover #1 only (see figs. 3 and 4). Do not mount the wire cover.

**TSSU/TUC/TWT (rear condensing units):** Route the wire harness, new display cable, and probes through the new control bracket only. Do not mount the control bracket at this time. If applicable, route wires through the new power cord bracket as well. Do not mount the power cord bracket.

**T-23DT:** Remove the existing terminal connectors from the wire harness. Install the provided 1/4" female spade connectors on the wire harness.

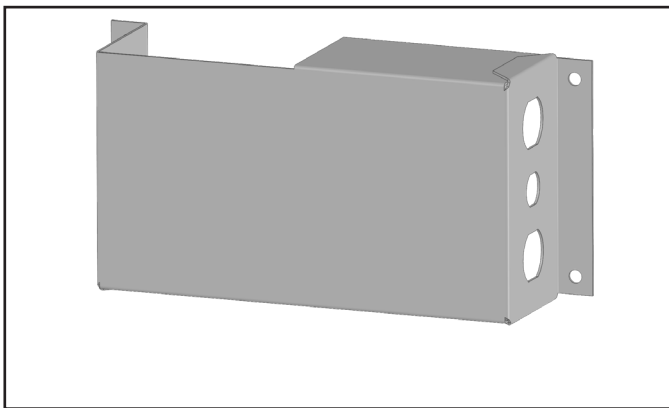


Fig. 3. Wire cover #1.

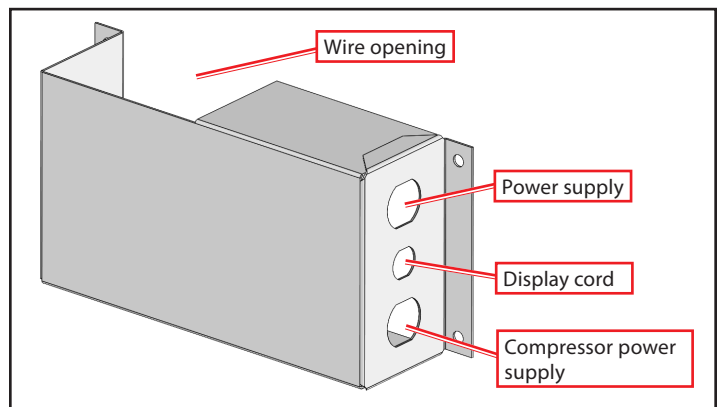


Fig. 4. Wire cover opening identification.

## Danfoss ERC Wiring Instructions

14. Connect the replacement temperature control to the appliance per the table below. See fig. 5. Reference the recorded voltage wire colors in step 4.

Color	Old Location	Function	New Location
	C-1	Compressor	1
	L-2 or L-3	Line voltage	2
	H-4	Defrost heaters (if applicable)	4
	N-5	Neutral	3
	F-6	Evaporator fans (if applicable)	5

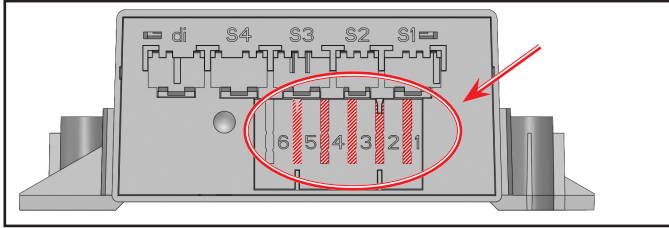


Fig. 5. Danfoss ERC terminals 1-5.

15. Connect the probes and the remote display to the replacement temperature control. See fig. 6. Do not connect the display cable to the remote display at this time.

**NOTE: Probes do not need to be replaced unless they have been confirmed faulty. If the probe being replaced is foamed into the appliance, splice both ends (the probe tip and the connector) with the replacement probe.**

**NOTE: If the display cable is foamed into the countertop, cut and splice new display cable ends and connect to the temperature control only at this time, not to the display. If replacement display cable wire colors differ, connect to the existing display cable as follows:**

- Existing red to replacement red
- Existing blue to replacement blue
- Existing white to replacement black

Old Location	Function	New Location
1.1/1.2/1.3	Remote display	d1
2.1/2.2	Defrost (two blue stripes)	S2
3.1/3.2/3.3	Thermostat	S1

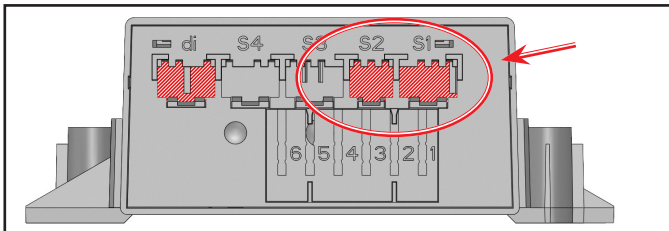


Fig. 6. Danfoss ERC remote display and probe connections.

16. Install strain relief bushings to any new bracket/cover securing main power cord wires, display cables, or temperature control wiring. Allow slack in the wires for potential future repairs.
17. Proceed to mounting instruction [P#848284](#).





## Danfoss ERC Wiring Instructions

### Questions or Concerns

For more information, please contact our Technical Service team. See contact information below.

#### Contact Us

##### North America – USA, Canada & Caribbean

**Warranty Phone:** +1 855 878 9277  
**Warranty Fax:** +1 636 980 8510  
**Warranty Email:** WarrantyInquiries@TrueMfg.com  
**Technical Phone:** +1 855 372 1368  
**Technical Email:** Service@TrueMfg.com  
7:00am-6:00pm CST Monday-Friday;  
8:00am-12:00pm Saturday

##### Mexico

**Phone:** +52 555 804 6343/44  
Service-MexicoCity@TrueMfg.com  
9:00am-5:30pm M-F

##### Latin America

**Phone:** +52 555 804 6343/44  
ServiceLatAm@TrueMfg.com  
9:00am-5:30pm M-F

##### UK, Ireland, Middle East, Africa & India

**Phone:** +44 (0) 800 783 2049  
Service-EMEA@TrueMfg.com  
8:30am-5:00pm M-F

##### Australia

**Phone:** +61 2 9618 9999  
Service-Aus@TrueMfg.com  
8:30am-5:00pm M-F

##### European Union & Commonwealth of Independent States

**Phone:** +49 (0) 7622 6883 0  
Service-EMEA@TrueMfg.com  
8:00am-5:00pm M-F