

Wellington Drive Controller Retrofit – GDM Elstat EMS-55

These are instructions to retrofit a SKOPE-supplied Wellington Drive Electronic Controller in place of an Elstat EMS-55 Advanced electronic controller on a bottom mount SKOPE glass door merchandiser (GDM) cooler.

Retrofit Kits

A GDM kit is available to complete the retrofit. See the kit part number in the table below:

Item	Description	SKOPE Part No.	Quantity
0	Kit part	WDTL-GDM-KIT1	1
1	Instruction sheet	PRN80303	1
2	Evaporator probe flex – connector end	B60BV/E49B	1
3	Evaporator probe flex – probe end	B60BV/E49A	1
4	Controller assembly (including faceplate and PIR sensor)		1
5	Red probe identification sleeve	B2102/219	1
6	Blue probe identification sleeve	UB90EA/K30	1
7	Stocko connectors	ELZ11490	4
8	Cable flex ties	PLM4849	5
9	Barrel crimp	ELT9243	1
10	Blue wire	W-BU100-0150DI/ELT9243	1
11	Probe flex 1 connector end	UW0100095A	1
12	Probe flex 1 probe end	UW0100095B	1
13	Probe flex 2 connector end	UW0100096A	1
14	Probe flex 2 probe end	UW0100096B	1
15	EMS door switch replacement flex	UW0100097	1
16	EMS door switch controller flex	UW0100098	1

Tools required

The following tools may be required to complete the retrofit.

Phillips #2 screwdriver
1.8 mm screwdriver, or Stocko/WDC retrofit edge connector tool
Wire cutter or side cutter
Wire stripper
Wire crimping tool
Drill with 8 mm bit
Cord grip

Procedure

Overview

1. Remove the existing Elstat EMS electronic controller and Elstat transformer.
2. Modify the controller power wiring.
3. Re-terminate or refit the existing probe wiring.
4. Fit supplied evaporator probe.
5. Fit the supplied Wellington Drive electronic controller.
6. Reassemble parts and perform the standard safety test.

To remove the EMS controller and Elstat transformer

1. Isolate the chiller from the power supply and if required partially remove the unit from the cabinet to allow access to the unit electrics box (see instructions on the back of the front kick panel, or the product Service Manual).
2. Gain access to the electrics box wiring and the rear of the EMS controller
 - a. Unscrew the electrics box from the unit.
 - b. Unscrew the electrics box cover to gain access to the electrics box wiring.
 - c. Unscrew the four corner screws from the controller faceplate and pull the controller from the box to access the rear of the EMS controller.
3. Unplug all plugs from the back of the existing EMS controller and remove the controller (it may be useful to take note of wire usage before unplugging).
4. Disconnect and remove the Elstat transformer.
 - a. The Elstat transformer is located on the bottom of the electronic controller housing assembly. Unscrew and detach the transformer, and disconnect the transformer wires from the terminal block inside the electrics box.



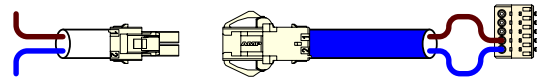
Replacing or re-terminating the existing probe wiring

The kit includes parts to re-terminate the probe wiring with the appropriate connector, and extra probe wires to replace them if needed. If the termination tool is available, then re-terminating the probe wires is the easier option. If the tool is not available, then replace the probes described below

Replacing the wiring

The Kit comes with several probes to replace the unit wiring. These are:

- The door switch flex pair, which are the door switch controller flex (blue flex to white Tyco socket) and door switch replacement flex (White Tyco plug to stripped wires)
- The condenser probe pair, which are the condenser controller flex (red Tyco socket with a blue sleeve) and the condenser probe flex (red Tyco plug with blue sleeve)
- The appliance (control) probe pair, which are the appliance controller flex (white Tyco socket with no sleeve) and the appliance probe flex (white Tyco plug with no sleeve)



Door switch flexes



Condenser probe flexes



Appliance probe flexes

Replace the wiring as required.

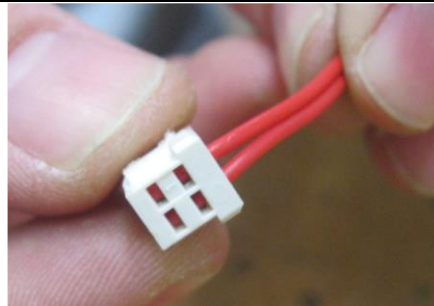
Re-terminating the wiring

This is offered as an alternative to replacing the existing wiring as described above.

1. Cut the existing plug connectors off the probe wires as close to the plugs as possible. Keep the probe wires as long as possible



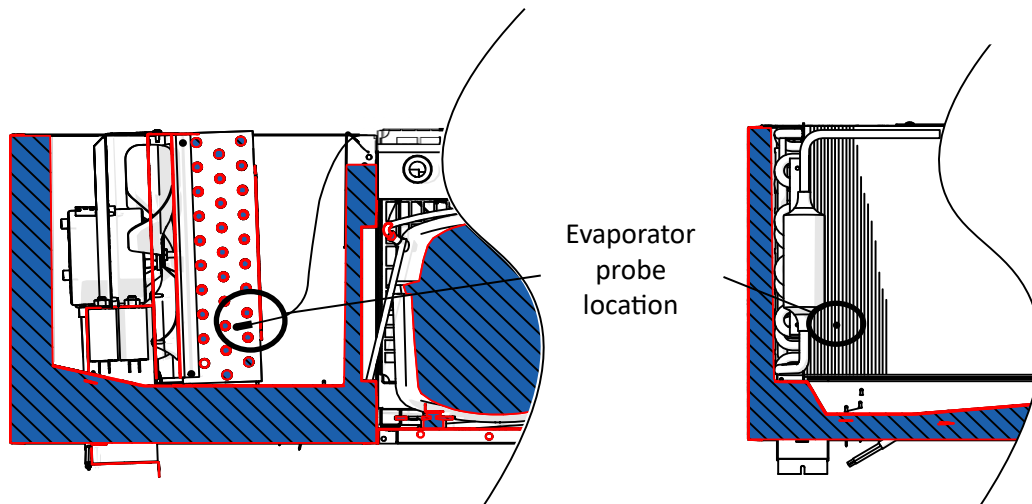
2. Use a Stocko tool to fit the supplied WDC retrofit edge connectors to the probe wires



To fit the supplied evaporator probe

1. Remove the refrigeration unit from the cabinet.
2. Use a blunt tool (Philips head screwdriver or similar) to carefully open a space between the ninth and tenth fins (from the inlet/outlet tube end), between the second and third tubes (from the bottom), on the return air side of the evaporator coil. Insert the probe so that the flat bottom end of the probe aligns with the edge of the tube, as shown in the diagram below.





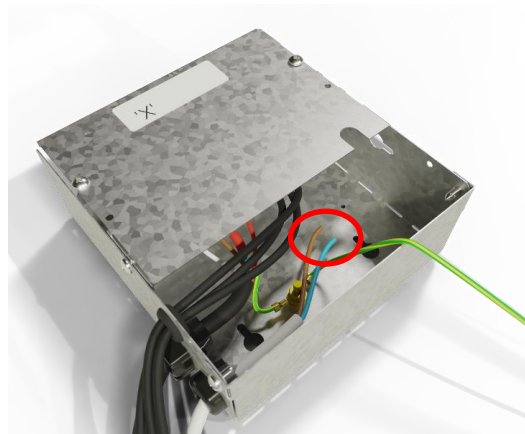
3. Pinch the fins back together to hold the probe in place. Run the probe wire up and follow the path of existing pipes and cables out of the evaporator box.
4. Route the probe wire back to the electronic controller box, and feed through the grommet hole into the box. Cable-tie the probe wire to existing bunched probe wires and flexes while routing back.
5. Reassemble the evaporator assembly.

To fit the Wellington Drive Controller

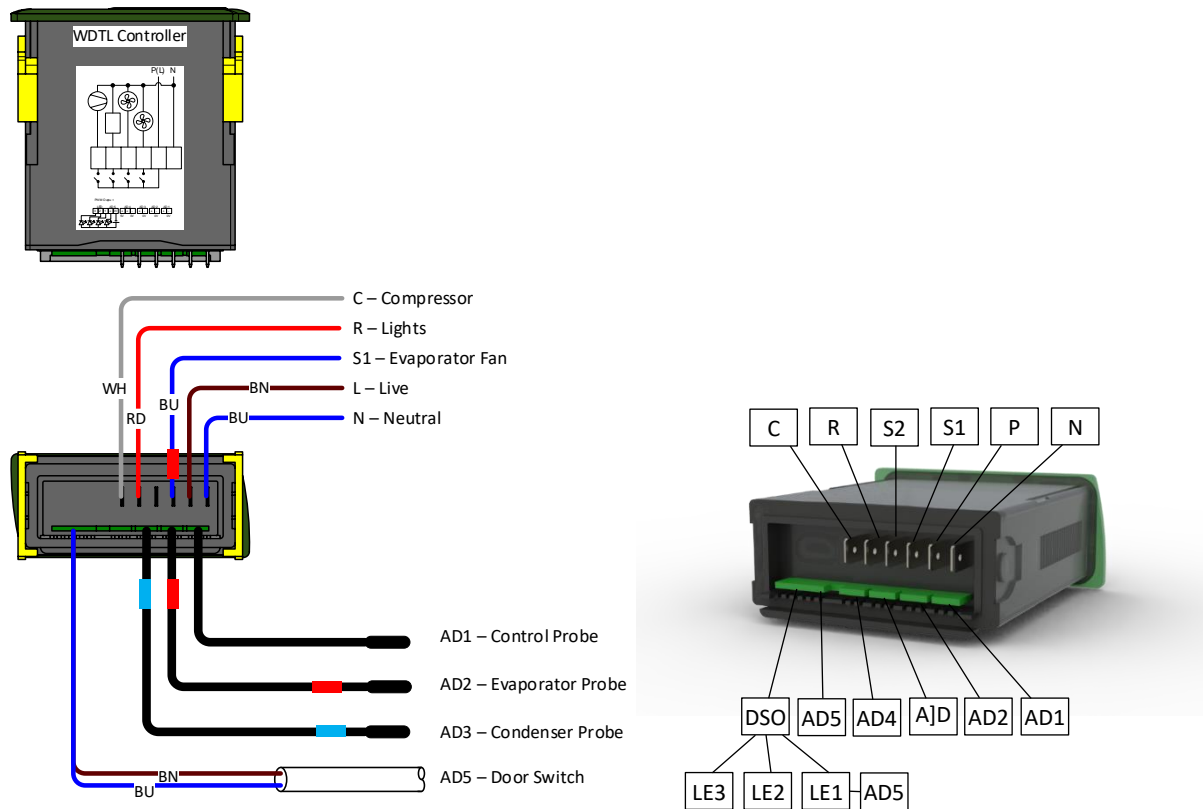
Connect the power and probe wires, and existing original EMS controller plugs to the back of the Wellington Drive controller.

Note: The probes are tagged with a coloured sleeve. Red = evaporator, blue = condenser and untagged = control.

1. The flex that was connected to the transformer will be used. Use the supplied blue wire (barrel crimp attached) to lengthen the connection on the neutral (blue) wire of the flex. Attach the supplied loose barrel crimp to the brown wire to make this electrically safe, as this will not be used.



2. Connect the other wires according to the diagram below.



3. Clip the rear cover to the back of the Wellington Drive controller
4. Fit the controller into the electrics box and screw in place.
5. Reassemble and refit the cassette/unit back into the cabinet.
6. Perform electrical safety test as per the standard procedure.
7. Test run the chiller to ensure correct operation.
8. Refit the front kick panel. Ensure the controller aligns with the controller cut-out in the front kick panel.