

Defrost

Many types of control arrangements can be used. In some applications, it may not be necessary to have scheduled defrost periods. The normal "off cycle" of the compressor may be adequate to keep the evaporator coil clear of frost. In other applications, a defrost timer may be necessary to help assure a clear coil. In a medium temperature environment, "air defrost" is initiated by the timer, but the evaporator fans continue to operate to facilitate the melting of frost on the fin surface. Other types of defrost schemes require that the fans on the evaporator shut off

during the defrost period.

For most applications, two to four defrost cycles per day should be adequate. The defrost requirements will vary on each installation so the defrost settings should be determined by observing the system operation.

Defrost Thermostat

Adjustable (F25-209 Series)

The defrost duration is determined by the setting of the defrost termination thermostat. Initially, the thermostat should be set at mid-range. This will terminate the defrost at about a 60°F bulb temperature which will be satisfactory for most applications. A somewhat longer or shorter defrost can be obtained by adjusting the control clockwise for a shorter defrost and counterclockwise for a longer defrost. The fan delay temperature setting of the thermostat is factory set at 25°F. It can be adjusted upward by turning the adjusting screw next to the duration adjustment with a small screwdriver. Each complete clockwise rotation of this screw raises the setting approximately 3°F. This screw should not be adjusted more than four turns. Making this adjustment also raises the defrost termination temperature setting of the thermostat by a similar amount. For example, with the duration setting at mid-range, the termination temperature would be approximately 60°F. Turning the adjusting screw one turn would raise the fan delay temperature to about 28°F as well as changing the termination temperature from 60°F to 63°F. On medium temperature applications it may be necessary to raise the setting to assure that the thermostat will reset after a defrost.

Adjustable (060-100-00 Series)

This control has an adjustable defrost termination setpoint and an adjustable differential for controlling the fan delay. A typical termination setting is 60°F with a 25°F differential. Termination setting may be adjusted to increase/decrease the length of defrost. The differential should be adjusted to turn on the fans at 30 to 35°F (Fan Temperature = Termination Temperature - Differential). Actual coil temperature will be 5 to 10°F below this value. Some unit coolers are preset and labeled at the factory with special settings.

Note: Defrost controls are positioned as determined by engineering test. Job conditions may require the sensing device to be relocated for optimal defrosting.

Bimetal Disc

A bimetal disc type thermostat is wired to the control circuit to terminate the defrost cycle when the coil temperature reaches approximately 55°F. The bimetal disc thermostat provides a fan delay to allow moisture on the coil to freeze after defrost termination.

Note: On systems where the suction temperature is above approximately 25°F, the fans may not start for an extended period of time.

On freezer applications, it may be necessary to apply a jumper to the fan delay on a warm box. This can be corrected by jumping the fan switch contacts. This will allow the fans to start immediately after defrost termination. This will disable the fan delay.

If moisture blow-off is encountered without the fan delay, a higher temperature defrost thermostat can be ordered. This thermostat terminates defrost at 60°F and prevents the fans from running when the coil temperature is above 40°F. Refer to the replacement parts list for the correct number to order.