INSTALLATION DATA

F25-107/114 EVAPORATOR DEFROST TERMINATION AND FAN DELAY CONTROL

DESCRIPTION

The Ranco® F25 Control terminates defrost and delays evaporator fan operation following a defrost cycle. The coil temperature rises during the defrost cycle to the control cut-out setting. At this setting the defrost cycle terminates and refrigeration starts. The fan(s) remains off during the initial start-up of the refrigeration cycle. When the coil temperature drops to the control cut-in setting, the fan(s) is turned on. The delayed fan operation prevents warm moist air from being circulated into the controlled space and danger of increased vapor pressure and product damage is eliminated.

SPECIFICATIONS

Part Number	Switch Action	Fan "On" Temperature (°F)	Defrost Termination (°F)	Sensing Element Style
F25-107	SPDT	20 Fixed	40 to 75 Adjustable	60" Capillary with 3/8" x 4" Cross Ambient Bulb
F25-114		24 Fixed	44 to 79 Adjustable	

ELECTRICAL RATINGS

Voltage	Maximum Motor Ampere Rating		
	Full Load	Locked Rotor	Noninductive
Terms. 2 & 1 240 VAC Pilot Duty: Terms. 2 & 3 360 VA at 240 VAC	20	80	—

OPERATION

Normal Refrigeration Cycle

1. Power is supplied through the defrost timer control.
2. The F25 Control switch is closed in the fan delay position and open in the defrost termination position
3. The defrost heater is off.
4. The compressor operates in accordance with the demands of the refrigeration system control.
5. The evaporator fan(s) operates continuously.
6. Frost slowly builds up on evaporator.

Defrost Cycle

1. Defrost of the evaporator starts automatically by the timer control at predetermined intervals. A typical timing interval would be 2 to 4 defrost periods every 24 hours. As many as 12 defrost periods per 24 hours may be required, depending on evaporator fin spacing and severity of service.
2. The timer mechanically opens a switch which breaks the circuit to the compressor and evaporator fan motor(s) and closes a switch to the defrost heater.
3. The defrost heater dissipates heat directly to the fins of the evaporator. The heat raises the coil and refrigerant temperature causing the frost to melt (40°F to 75°F).
4. The defrosted water drips into a heated drain pan and flows down the drain.

Evaporator Re-cooling Cycle

1. When the evaporator coil warms up to the F25 Control set-point, the control switch closes the circuit to the solenoid in the timer, which in turn energizes and trips the timer switch back to the normal refrigeration position. The fan delay circuit of the F25 Control is now open and remains open until the evaporator cools down to the cut-in setting of the control (+20°F to +30°F). A heater safety thermostat or timer override, if used, would function only if the F25 Defrost Termination and Fan Delay Control fails to operate.
2. The compressor starts.
3. The F25 Control keeps the evaporator fan motor(s) off until the evaporator is sufficiently cooled. This prevents warm moist air from being blown into the refrigerated space. On the initial "start-up" of a warm fixture, the fan motor(s) will not start until the coil reaches the F25 Control cut-in setting.

INSTALLATION

1. Mount control on evaporator panel at a location where moisture or condensation cannot damage control.
2. Mount the control bulb on the evaporator coil where frost is last to clear. Bulb must be mounted with word "TOP" in an upright position.

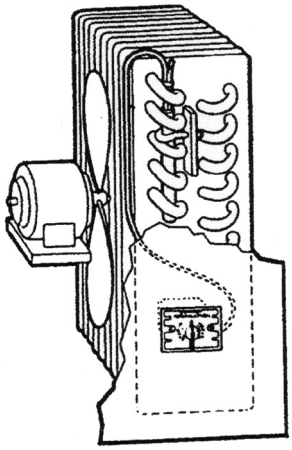

Figure 1

3. Wire control is recommended by the evaporator manufacturer.
4. Set control dial to desired defrost termination temperature. Fan ON temperature remains constant and is not changed by dial adjustment.

NOTE: Setting must be high enough to insure coil clears of frost and defrost water exits drain pan.

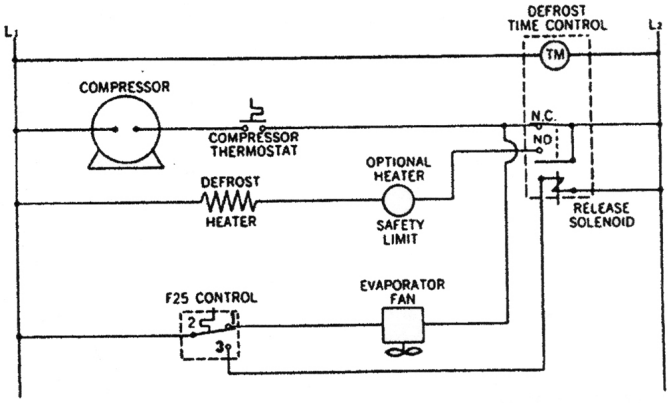

Figure 2 Defrost Timer Shown In Refrigeration

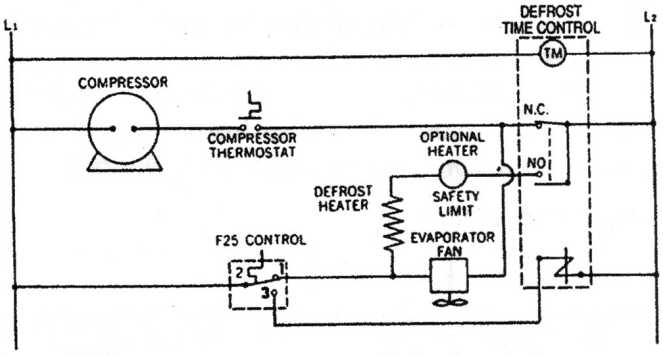

Figure 3 Defrost Timer Shown In Refrigeration

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