Auto Vs. Manual Defrost: Understanding the Difference

Not understanding the difference could potentially cost your time, money, and your research

This document will teach you the difference between Auto & Manual Defrost in a brief explanation in order to make sure you are using the correct type of unit

Please, let us know if we can answer any additional questions

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Freezer Defrost Cycles: In regards to freezers, as mentioned above,units will utilize two types of defrost methods. The first is commonly called Auto-Defrost sometimes referred as Frost-Free and the second is called Manual Defrost.

Auto-Defrost / Frost -Free (See Chart #3):

As with Auto-Defrost refrigerators, Auto-Defrost freezers also incorporate a timer and many times a heater to assist in defrosting the evaporator. These defrost cycles will also typically occur 2-3 times within a 24 hour period. When the cycle begins the compressor is turned off and the heater kicks on. The melting ice is captured within a tray or trough and channeled out of the unit to a condensate evaporator tray typically found under the unit by the compressor. The water is then evaporated to the air. Once the timed defrost cycle ends the compressor resumes its normal cycling. There are numerous designs for auto-defrost units and the cycle duration and how warm the interior air temperatures reach can differ. Some cycles will rise above 0°C. All too often a customer will purchase an Auto-Defrost lab freezer believing it will always be at or below-20°C. This will not be the case. In addition, if the unit is equipped with a high temp alarm or the customer adds one later, they will often call claiming the freezer is malfunctioning. Most customers do not realize that defrost cycles can warm the air temp above freezing temperatures.

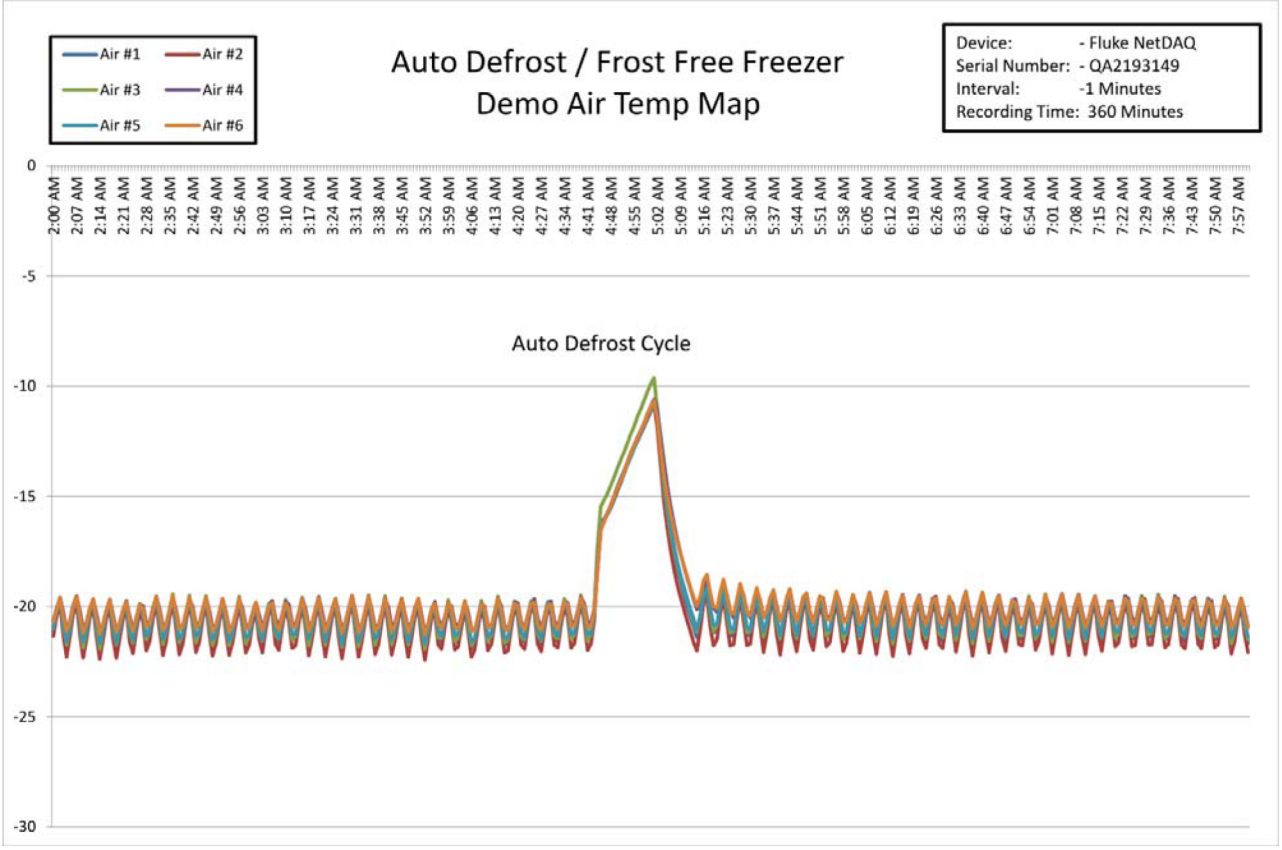

Chart #3 – Auto Defrost / Frost Free Freezer Demonstration in AIR TEMP.

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Manual Defrost (See Chart #4):

Manual Defrost freezers as the name suggest have to be manually defrosted by turning the freezer off or unplugging the unit. Manual Defrost Freezers have been around since the beginning of mechanical refrigeration. Even a ULT freezer is in reality a Manual Defrost. Although, the defrosting of MD freezers is inconvenient due to the necessity to empty the freezer and clean up after the melted ice, they do offer advantages. The key advantage is the absence of warm temperature spikes that are present with Auto-Defrost units. These temperature spikes do in fact damage some medical and scientific products.. The products that you will receive the most request to be stored in a manual defrost freezer are enzymes. In fact, many customers will even request to purchase an enzyme freezer.

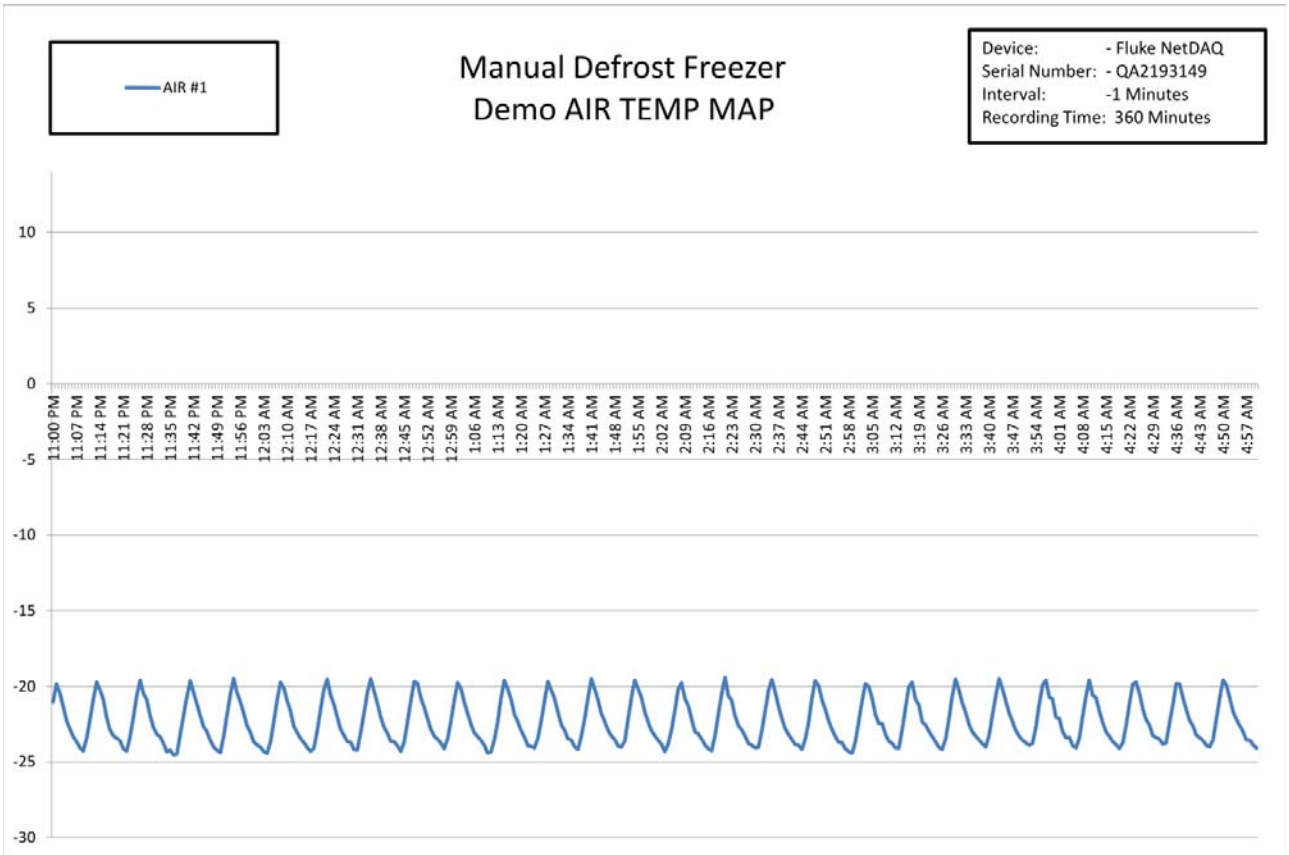

Chart #4 – Manual Defrost Freezer Demonstration in AIR TEMP.

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