USER MANUAL

SCS controller -
Advanced Defrost parameters

Document no: WT9749_i3

Issue date: August 2025

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Introduction

All parameters in this appendix relate to advanced control functionality and are not visible as standard. Any parameter can individually be made visible on a per company basis on request.

Changing any of these parameters should only be done by a qualified person who fully understands the implications of the parameter change.

> **WARNING**
>
> Changing these parameters from their default can have serious effects on the operation of the SCS. WDTL does not take responsibility for any adverse effect on the refrigeration system due to customers modifying of these parameters.

Configuration

Timed Defrost Config*

Defines whether the MAXIMUM TIME BETWEEN DEFROSTS refers to the total time, or only the time the compressor is ON. This prevents unnecessary defrosts when the compressor is operating on a short duty cycle, as ice can only build up on the evaporator while the compressor is on

- Total = MAXIMUM TIME BETWEEN DEFROSTS refers to the total elapsed time
- Comp On = MAXIMUM TIME BETWEEN DEFROSTS refers to only the time the compressor is ON

In FW versions less than 4010, this was called "Defrost Temp Config (dtC)" and had more (unnecessary) options.

"Total" equates to the previous value of 3
"Comp On" equates to the previous value of 11

Digital Display	Increments & Units	Parameter Range	Default
dtC	text	total or comp on	0

* FW Version 1581

Configuration continued

NDT and Manual Defrost Config

Determines the temperature based termination behavior of a No Downwards Tendency (NDT) Defrost and Manual Defrost*. NDT Defrosts and Manual Defrosts generally only occur in the case of a full evaporator freeze-up to aid in recovery. They are not triggered by normal day-to-day operation.

- Safety Temp = NDT Defrosts and Manual Defrosts occur for "Max defrost cycle time (dCt)" or are terminated by SAFETY TERMINATION TEMP. They are blocked when triggered above this temperature.
- Termination Temp = NDT Defrosts and Manual Defrosts occur for "Max defrost cycle time (dCt)" or are terminated by either the DEFROST TERMINATION TEMP or the SAFETY TERMINATION TEMP. They are blocked when triggered above either of thse temperatures.
- 1-10 = The number of times in a row a NDT Defrost can occur above the termination temp before a "NDT Terminal Alarm" will shut the system down (The count is reset whenever a different defrost successfully occurs). NDT Defrosts and Manual Defrosts occur for "Max defrost cycle time (dCt)" or are terminated by the SAFETY TERMINATION TEMP. They are blocked when triggered above this temperature.

The NDT Terminal Alarm can only be reset by cycling power.

In FW versions less than 4010, this parameter was called No Downwards Lockout Count**. When upgrading pre-4010 FW, or using a param file from pre-4010, this value will be automatically migrated to "Termination Temp" to maintain identical NDT Defrost behaviour.

Digital Display	Increments & Units	Parameter Range	Default
nDL	text	Safety Temp, Termination Temp or 1 to 10	Safety Temp

Temperature

Evap Max Run Temperature

The temperature above which the evap fan will NEVER run. This is to prevent hot air from being blown around the cabinet and warming up the product after a hot-gas or electric defrost.

Digital Display	Increments & Units	Parameter Range	Default
-	1 °C	-30 to 10 or disabled	disabled

* FW Version 1581
** FW Version 1582 and above

Timers & Counters

No Downwards Tendency Defrost Time*

The time allowed while the compressor is on for the temperature to drop by the NO DOWNWARDS TENDENCY DIFFERENTIAL to prevent the triggering of a defrost cycle (NDT Defrost). This is to help recover from frozen up evaporator coils.

In FW 1584 to FW 4009, an NDT defrost was always blocked when running an electric or hotgas defrost.

Digital Display	Increments & Units	Parameter Range	Default
ndt	0.1 hours	1.0 to 72.0 or disabled	4.0 hours

Min Time Between Defrosts***

The minimum time expected between the end of one defrost, and the start of the next in normal operation. The number of consecutive occurrences of defrosts occurring in less than this time is recorded and used by the Excessive Defrost Lockout Count (dLC).

Digital Display	Increments & Units	Parameter Range	Default
-	1 min	1 to 60 or disabled	10 mins

Lighting & Display

No Downwards Tendency Differential

The temperature drop required to have occurred within the NO DOWNWARDS TENDENCY DEFROST TIME to prevent the triggering of a defrost cycle (NDT Defrost).

Digital Display	Increments & Units	Parameter Range	Default
-	0.1 °C	0.1 to 5.0	2.0 °C

Alarms

Excessive Defrost Lockout Count***

The number of consecutive defrosts occurring in less than the Min Time Between Defrosts (tbd) that will trigger an Excessive Defrosts Terminal Alarm. The count is reset whenever the time between defrosts exceeds the (tbd). The Excessive Defrosts Terminal Alarm can only be reset by cycling power.

Digital Display	Increments & Units	Parameter Range	Default
dLC	1 min	1 to 10 or disabled	disabled

* FW Version 1581
*** FW Version 4010 and above

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