



AN EXCHANGE OF TECHNICAL INFORMATION

**Number:** TL005 - 2026  
**Subject:** New Cd 51 ACT Logic

**Released:** June 01, 2026

In PrimeLINE software 6331, a new adaptive auto cold treatment logic was implemented in Code Select Cd 51. This new adaptive logic allows the user to select up to 3 ceiling temperatures and durations in passing the cold treatment criteria along with an adaptive setpoint feature.

**Adaptive Cargo Temperature Setpoint Change** - The adaptive setpoint feature uses a user selectable Lower Setpoint (**LO SP**) and Holding Time (**HOLD**). The **LO SP** is the furthest the unit will lower the setpoint to maintain temperatures within the ceiling limits. Holding Time is the duration between ceiling temperature checks by the adaptive setpoint.



After starting ACT, the unit controls the displayed setpoint and begins a selectable setpoint hold (**HOLD**) timer. After the hold timer elapses, the software checks if:

- The unit is in range
- The evaporator fans have been running for 15 minutes prior to the check
- No shutdown alarms, defrosts, PTIs occurred for 15 minutes prior to the check
- The setpoint is above **LO SP**

If all the above criteria are true, the setpoint will automatically be adjusted as follows:

- Above treatment 1 temperature ( $trt1 - 0.3C$ ), the unit will decrease the setpoint by 0.2 C
- Between treatment 1 temperature ( $trt1 - 0.3C$  and  $trt1 - 0.5C$ ), the unit will decrease the setpoint by 0.1C.
- Below treatment 1 temperature ( $trt1 - 0.5C$ ), the setpoint will not be adjusted.

If the setpoint is lowered by Adaptive Cargo Temperature Setpoint Change, the display will show "AdAPt" on the left screen and "SP" on the right screen for 2.5 seconds, then the current setpoint and cargo temperature for 5 seconds, and then "CoLd trEAt" for 2.5 seconds, on a 10 second loop.

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Adaptive ACT Settings			
Item #	Setting	Setting Acronym	Range
1	ACT Operation Setting		On/Off
2	ACT Lowest Adaptive Setpoint	LAS	-4.9C to 29.3C
3	ACT Adaptive Setpoint Hold Time		1 to 99 Hours
4	ACT # of Treatment Sets		1 to 3
5	ACT Cold Treatment Temperature Limit 1	CTL1	(LAS) + 0.5C to 29.8C
6	ACT Treatment Duration 1	CTD1	1 to 46 Days
7	ACT Cold Treatment Temperature Limit 2	CTL2	(CTL1) + 0.1C to 29.9C
8	ACT Treatment Duration 2	CTD2	(CTD1) + 1 to 47 Days
9	ACT Cold Treatment Temperature Limit 3	CTL3	(CTL2) + 0.1C to 30C
10	ACT Treatment Duration 3	CTD3	(CTD2) + 1 to 48 Days
11	ACT New Cargo Temp Setpoint		-4.9C to 30C

- \* User selects treatment criteria and durations based on cargo manifest.
- \* Each setting needs to be greater than the prior (i.e., if 14 days is selected as a duration, the next duration needs to be at minimum of 15 days)

### Auto Cold Treatment Criteria (Parameter) Selection

1. Enter ACT code select CD 51, 0-0 will display on the right. These are the days and hours left in the calibration.
2. Select enter and arrow to and select “on”. “LO SP” will display on the left screen. An initial default value of “0.0C” (32 F) will display on the right.
3. Arrow to the manifest lower set point and select enter (-4.9C to +29.3C / 23.1F to 84.7F). This is the lowest allowed adaptive setpoint for the cargo. If a lower setpoint is not defined, use the set point entered in the manifest.
4. “HOLD” will display on the left screen. An initial default value of “5” hours will display on the right. This is the time between adaptive set point changes, if required.
5. Arrow to the user selectable time to be used when checking and adjusting to the adaptive setpoint, If required. Settings can range between 1 and 99 hours. After making selection press enter to accept the selection.
6. “nCt” (number of cold treatment options) will display on left and “1” will display on the right.
7. Arrow to the user selectable pass options between 1 and 3 settings and press enter.

The following steps will be based on the selection made in step 7.

8. After pressing enter in step 7, “trt 1” (treatment 1) will display in the left screen. This is the first selectable cold treatment option. The **Lo SP selected in step 1 +0.5C (0.9F)** will display on the right screen. User can arrow to and select temperatures up to 29.8 C or 85.8F and press enter. On making the selection press enter to accept.
9. “dAy 1” will display on the left screen and an initial default setting of “14” (days) will display on the right. This is the treatment duration for the treatment 1 setting. The user can select the duration at treatment 1 by arrowing up to 46 days and pressing the enter to accept.
  - Each successive option must be a higher temperature and duration than the previous Tier.
  - If nCT 1 was selected in step 6 proceed to step 14. If 2 was selected, proceed to step 10.

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10. After pressing enter in step 8, “**trt 2**” (treatment 2) will display in the left screen. This is the second selectable cold treatment ceiling option. The **trt 1 + 0.1C or 0.1 F** will display on the right screen. User can arrow to and select temperatures up to 29.9 C or 85.9F and press enter to accept.
11. “**dAy 2**” will display on the left screen and cold treatment duration **dAy 1 selection in step 8 + 1 days** will display on the right. The user can select the duration of the treatment 2 by arrowing up to 47 days and pressing the enter to accept.
  - Each successive option must be a higher temperature and duration than the previous Tier.
  - If nCT 2 was selected in step 6 proceed to step 14. If 3 was selected, proceed to step 12.
12. After pressing enter in step 10, “**trt 3**” (treatment 3) will display in the left screen. This is the third selectable cold treatment ceiling option. The **trt 2 + 0.1C or 0.1 F** will display on the right screen. User can arrow to and select temperatures up to 30.0 C or 86F and press enter to accept.
13. “**dAy 3**” will display on the left screen and **dAy 2 setting + 1 day** will display on the right. The user can select the duration of treatment 3 by arrowing up to 48 days and pressing the enter to accept.
14. “**Probe**” will display on left. Numbers of probes (1, 2, 3) will be displayed on right. This is the numbers of probes calibrated for the trip. Press enter to accept.
15. “**SPnEW**” will display on left and an initial default valve “**0.0 C**” (32 F) will display on the right. This is the final setpoint after passing any of the 3 active treatment options. The user can arrow and select -4.9 C to 30 C (23.1F to 86 F) followed by pressing enter to accept.

**Selection Refence options table:**

Section	Option	Description	Default Setting	Range
Adaptive	<b>LO SP</b>	Minimum setpoint for adaptive ACT	0.0C (32 F)	-4.9C to +29.3C (23.1F to 84.7F)
Adaptive	<b>HOLd</b>	Hours between checks for adaptive ACT	5 hours	1 to 99 hours
Tiered	<b>nCt</b>	Number of cold treatment tiers	1	1 to 3
Tiered	<b>trt 1</b>	Ceiling for first Tier	<b>Lo SP+0.5C (0.9F)</b>	Default to 29.8 C or 85.8F
Tiered	<b>dAy 1</b>	Duration for first Tier	14 days	1 to 46 days
Tiered*	<b>trt 2</b>	Ceiling for second Tier	<b>trt 1 + 0.1C or 0.1 F</b>	Default to 29.9 C or 85.9 F
Tiered*	<b>dAy 2</b>	Duration for second Tier	<b>dAy 1 + 1 days</b>	Default to 47 days
Tiered*	<b>trt 3</b>	Ceiling for third Tier	<b>trt 2 + 0.1C or 0.1 F</b>	Default to 30.0C (86 F)
Tiered*	<b>dAy 3</b>	Duration for third Tier	<b>dAy 2 + 1 days</b>	Default to 48 days
Existing	<b>Probe</b>	Probes monitored in ACT	“1 2 3”	“1 2 3”
Existing	<b>SPnEW</b>	Final setpoint of after passing any active treatment	0.0 C (32 F)	-4.9 C to 30 C (23.1F to 86 F)

Automatic Cold Treatment (ACT) Criteria and configuration notes:

- Complete the Cold Treatment sensor calibration per the unit's manual prior to setting up the adaptive Auto Cold Treatment Criteria settings.
- Power saving modes (Economy, FuelWise, QUEST) will turn off when 3 or more USDA probes are connected. They can be manually turned back on when not controlling under Automatic Cold Treatment.
  - Once the unit passes ACT or if the sensors are removed, the modes will return to default values.
- On completion of the settings, when entering Cd51 the last criteria will display as to hours and time (i.e. 14 days – 1 hour). Once the unit meets the ceiling treatment criteria, Cd51 will display the shortest criteria to completion.
- After setting the values, they can be viewed by selecting Cd51 and pressing enter at each stage. To change any of the settings, ACT needs to be turned off and back on again. From Cd51, use the Arrow keys to display "Off" and press the ENTER key.
- When entering Cd51, if dashes show on the right, not all 3 probes are installed. To check which of the probes are not calibrated go to DataCORDER dC 3-5 to check the current reading of the USDA 1,2,3 probes.
- All Selected treatment protocols run independently and simultaneously. If the warmest probe exceeds the ceiling temperature of a given tier, that tier's duration will be reset and will only begin again when the tier level drops below the ceiling temperature again. Other tiers that are still in range will not be affected.
- When running ACT, going back to any software versions prior to this release, has been locked.
- The adaptive cold treatment setpoint change software, will be added to the next releases of OptimaLINE (ML5 7103) and PrimeLINE (ML5 6331, ML3 5393).