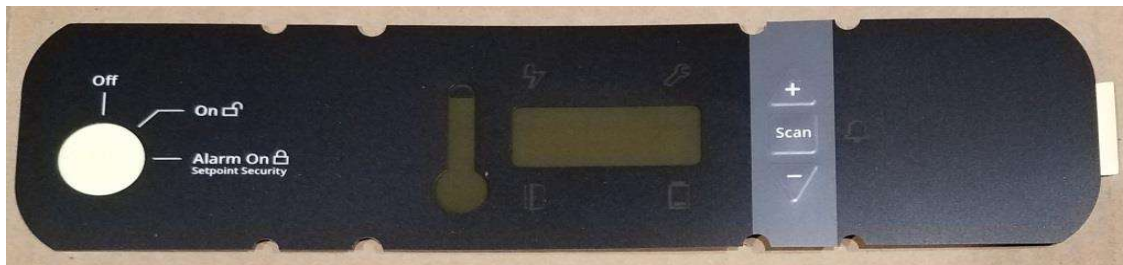
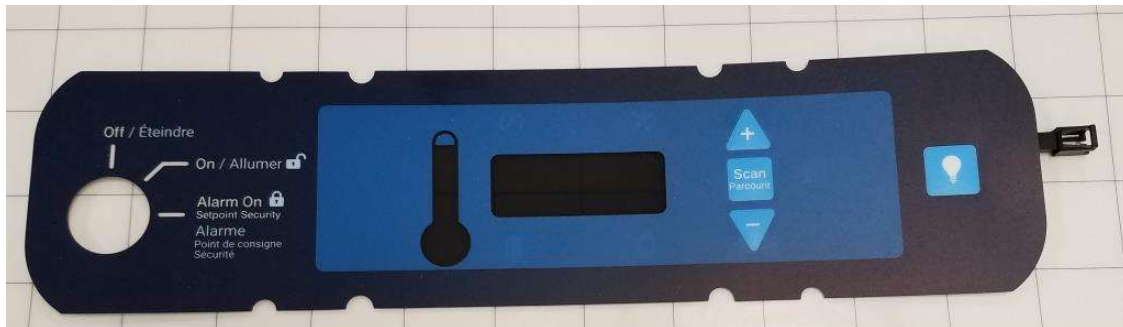


How to adjust the control offset on +4° / +5°C refrigerators and -20°C / -30°C freezers with TSX Controls (includes CAX models) containing May 2019 or newer software.



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|---|
| +4, +5, -20 & -30 units with TSX Controls |
| Revision Date: July 21, 2021 |
| Wayne Smith |

Due to the introduction of a new parameter in the Service Menu of TSX units shipped since May 2019 along with those units in the field which have been updated to the newest firmware, we can now adjust the performance of a unit by adjusting the control offset. This will allow the unit to run colder or warmer so that center air matches design temperature without making adjustments to the Set Point in the program menu.

Adjusting the control offset

Step 1: Install an NIST thermometer or T-type thermocouple into a 100ml solution bottle, filled with a 50/50 mixture of distilled water and glycerin, located in the geometric center of the cabinet. Allow the unit to reach set point, or as close as it will get, and then allow it to stabilize for at least 2-3 hours with no door openings.

Step 2: Once the unit / added bottle has stabilized without any door openings, check the temperature of the T-type thermocouple. If the thermocouple temperature is different than the set point, you can adjust the control offset so that the reading from the T-type thermocouple in the geometric center of the cabinet is within 0.5 degree C of the set point.

Step 3: To adjust the control offset, press and hold the center button for ~5 seconds until “PRG” (program mode) is shown. Once in program mode, release the button and press the center button and hold for ~10 seconds again until “SER” (service mode) is displayed. The initial readout will be the temperature program that is running, typically 4, 5, 20 or 30. Continue to use the center button to scroll through the service menu with a single press and release. The next parameters will be the check sums, program configurations and offsets. Scroll until you get to the parameter “Cnt ofSt”. The number flashing will be the control offset. Adjust this number to make the cabinet temperature change to the desired operation temperature. (See example below on how you should adjust the control offset.) Once changes have been made, press and release the center button to save. If no buttons have been pressed in 30 seconds, the unit will time out of service mode and go back to the normal display. After adjusting the offset, the temperature display will slowly change over a period of 5 to 10 minutes. Allow the display some time to remain constant before checking again. Adjust the control offset again if need be. Once the unit is operating at the desired temperature, check and or adjust the display offset as needed so that the display matches the geometric center air temperature per the instruction sheet on the Knowledge Base article # 345318.

Example: If the desired operation temperature is 5.0°C and the weighted T-type thermocouple is reading 5.9°C the control offset will need to be -0.9°C lower than the existing offset.

If the control offset is -0.2°C, use the down arrow to change -0.2°C to -1.1°C.

If the control offset is -2.0°C, use the down arrow to change -2.0°C to -2.9°C.

Once changes have been made, press the center button again to save.

Works the same as set point, more negative number results in a colder cabinet, more positive number results in a warmer cabinet.

The TSX models cover are in the following table

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|-----------|-----------|-----------|-----------|-----------|
| TSX1204BA | TSX2304BA | TSX3004BA | TSX5004BA | TSX4505CA |
| TSX1204BD | TSX2304BD | TSX3004BD | TSX5004BD | TSX4505CD |
| TSX1204BV | TSX2304BV | TSX3004BV | TSX5004BV | TSX4505CV |
| TSX1204BY | TSX2304BY | TSX3004BY | TSX5004BY | TSX4505CY |
| TSX1204BZ | TSX2304BZ | TSX3004BZ | TSX5004BZ | TSX4505CZ |
| | TSX2305CA | TSX3005CA | TSX5005CA | TSX4505GA |
| | TSX2305CD | TSX3005CD | TSX5005CD | TSX4505GD |
| | TSX2305CV | TSX3005CV | TSX5005CV | TSX4505GV |
| | TSX2305CY | TSX3005CY | TSX5005CY | TSX4505GY |
| | TSX2305CZ | TSX3005CZ | TSX5005CZ | TSX4505GZ |
| TSX1205GA | TSX2305GA | TSX3005GA | TSX5005GA | |
| TSX1205GD | TSX2305GD | TSX3005GD | TSX5005GD | |
| TSX1205GV | TSX2305GV | TSX3005GV | TSX5005GV | |
| TSX1205GY | TSX2305GY | TSX3005GY | TSX5005GY | |
| TSX1205GZ | TSX2305GZ | TSX3005GZ | TSX5005GZ | TSX2320HA |
| TSX1205PA | TSX2305PA | TSX3005PA | TSX5005PA | TSX2320EA |
| TSX1205PD | TSX2305PD | TSX3005PD | TSX5005PD | TSX2320ED |
| TSX1205PV | TSX2305PV | TSX3005PV | TSX5005PV | TSX2320EV |
| TSX1205PY | TSX2305PY | TSX3005PY | TSX5005PY | TSX2320EY |
| TSX1205PZ | TSX2305PZ | TSX3005PZ | TSX5005PZ | TSX2320EZ |
| TSX1205SA | TSX2305SA | TSX3005SA | TSX5005SA | TSX2320FA |
| TSX1205SD | TSX2305SD | TSX3005SD | TSX5005SD | TSX2320FD |
| TSX1205SV | TSX2305SV | TSX3005SV | TSX5005SV | TSX2320FV |
| TSX1205SY | TSX2305SY | TSX3005SY | TSX5005SY | TSX2320FY |
| TSX1205SZ | TSX2305SZ | TSX3005SZ | TSX5005SZ | TSX2320FZ |
| TSX1230FA | TSX2330FA | TSX3030FA | TSX5030FA | TSX3020EA |
| TSX1230FD | TSX2330FD | TSX3030FD | TSX5030FD | TSX3020ED |
| TSX1230FV | TSX2330FV | TSX3030FV | TSX5030FV | TSX3020EV |
| TSX1230FY | TSX2330FY | TSX3030FY | TSX5030FY | TSX3020EY |
| TSX1230FZ | TSX2330FZ | TSX3030FZ | TSX5030FZ | TSX3020EZ |
| TSX1230LA | TSX2330LA | TSX3030LA | TSX5030LA | TSX3020FA |
| TSX1230LD | TSX2330LD | TSX3030LD | TSX5030LD | TSX3020FD |
| TSX1230LV | TSX2330LV | TSX3030LV | TSX5030LV | TSX3020FV |
| TSX1230LY | TSX2330LY | TSX3030LY | TSX5030LY | TSX3020FY |
| TSX1230LZ | TSX2330LZ | TSX3030LZ | TSX5030LZ | TSX3020FZ |

The CAX models cover are in the following table

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|----------|----------|----------|----------|
| CH1204BA | CH2304BA | CH3004BA | CH5004BA |
| CH1204BD | CH2304BD | CH3004BD | CH5004BD |
| | | | |
| | CH2305CA | CH3005CA | CH5005CA |
| | CH2305CD | CH3005CD | CH5005CD |
| | | | |
| CH1205GA | CH2305GA | CH3005GA | CH5004GA |
| CH1205GD | CH2305GD | CH3005GD | CH5004GD |
| | | | |
| CH1205PA | CH2305PA | CH3005PA | CH5004PA |
| CH1205PD | CH2305PD | CH3005PD | CH5004PD |
| | | | |
| CH1205SA | CH2305SA | CH3005SA | CH5004SA |
| CH1205SD | CH2305SD | CH3005SD | CH5004SD |
| | | | |
| CH1230FA | CH2330FA | CH3030FA | CH5030FA |
| CH1230FD | CH2330FD | CH3030FD | CH5030FD |
| | | | |
| CH1230LA | CH2330LA | CH3030LA | CH5030LA |
| CH1230LD | CH2330LD | CH3030LD | CH5030LD |
| | | | |
| | | | |
| | CH2320EA | CH3020EA | CH4505CA |
| | CH2320ED | CH3020ED | CH4505CD |
| | | | |
| | CH2320FA | CH3020FA | CH4505GA |
| | CH2320FD | CH3020FD | CH4505GD |
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