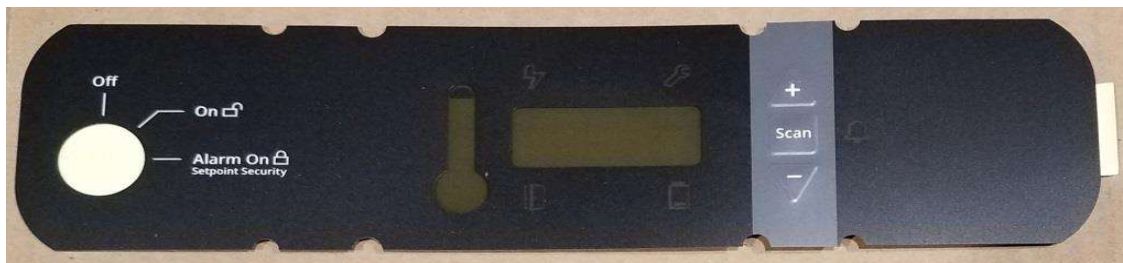
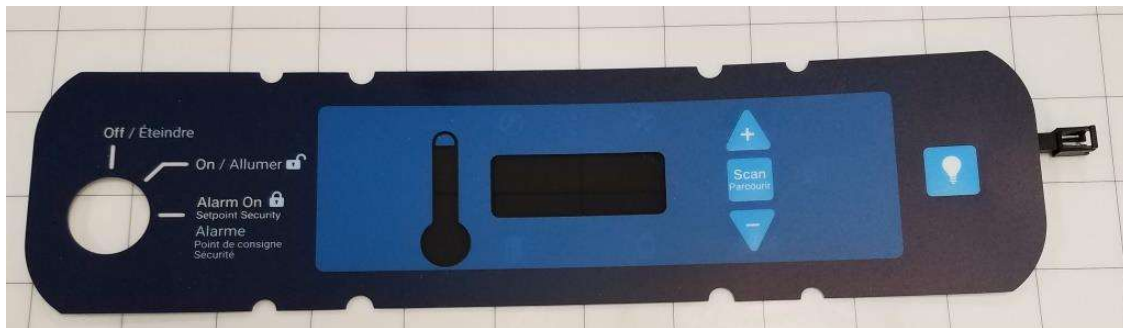


How to calibrate the display reading on +4° / +5°C refrigerators and -20°C / -30°C freezers with TSX Controls (includes CAX models)



+4, +5, -20 & -30 units with TSX Controls
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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 and then stabilize for at least 2-3 hours with no door openings.

Step 2: Once the unit is at cycle temp and the bottle has stabilized for at least 2 to 3 hours without any door openings, check the temperature of the T-type thermocouple. If the display temperature is different than the center air reading from the T-type thermocouple, the display will need to be calibrated. Refrigerators should be checked for stable temperature at their normal operating temperature range. For -20 & -30 freezers, it is better to calibrate their temperature at bottom out temperature of an empty cabinet as opposed to their normal set point / cycle temperature. Check calibration on freezers once the freezer reaches bottom out and is stable for at least 2 to 3 hours.

Step 3: To calibrate the display, 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, no hold necessary. The next parameters will be the check sums, program configurations and control offsets. Scroll until you get to the parameter "diS oFSt". The number flashing will be the temperature offset / display calibration offset. When this number is changed the reading on the display will match the actual temperature of the unit. (See example below on how you should adjust the temperature 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.

Example: If the display is reading 4.6°C and the weighted T-type thermocouple is reading 3.9°C the offset will need to be -0.7°C. If the temperature offset is 0.0°C, use the down arrow to change 0.0°C to -0.7°C. If there have already been offset adjustments programmed, adjust it accordingly. If the offset is set at +0.5° C from previous calibrations then use the arrows change the offset to -0.2°C. Once changes have been made, press the center button again to save.

The TSX models cover are in the following table

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	
TSX1205PA	TSX2305PA	TSX3005PA	TSX5005PA	TXS2320EA
TSX1205PD	TSX2305PD	TSX3005PD	TSX5005PD	TXS2320ED
TSX1205PV	TSX2305PV	TSX3005PV	TSX5005PV	TXS2320EV
TSX1205PY	TSX2305PY	TSX3005PY	TSX5005PY	TXS2320EY
TSX1205PZ	TSX2305PZ	TSX3005PZ	TSX5005PZ	TXS2320EZ
TSX1205SA	TSX2305SA	TSX3005SA	TSX5005SA	TXS2320FA
TSX1205SD	TSX2305SD	TSX3005SD	TSX5005SD	TXS2320FD
TSX1205SV	TSX2305SV	TSX3005SV	TSX5005SV	TXS2320FV
TSX1205SY	TSX2305SY	TSX3005SY	TSX5005SY	TXS2320FY
TSX1205SZ	TSX2305SZ	TSX3005SZ	TSX5005SZ	TXS2320FZ
TSX1230FA	TSX2330FA	TSX3030FA	TSX5030FA	TXS3020EA
TSX1230FD	TSX2330FD	TSX3030FD	TSX5030FD	TXS3020ED
TSX1230FV	TSX2330FV	TSX3030FV	TSX5030FV	TXS3020EV
TSX1230FY	TSX2330FY	TSX3030FY	TSX5030FY	TXS3020EY
TSX1230FZ	TSX2330FZ	TSX3030FZ	TSX5030FZ	TXS3020EZ
TSX1230LA	TSX2330LA	TSX3030LA	TSX5030LA	TXS3020FA
TSX1230LD	TSX2330LD	TSX3030LD	TSX5030LD	TXS3020FD
TSX1230LV	TSX2330LV	TSX3030LV	TSX5030LV	TXS3020FV
TSX1230LY	TSX2330LY	TSX3030LY	TSX5030LY	TXS3020FY
TSX1230LZ	TSX2330LZ	TSX3030LZ	TSX5030LZ	TXS3020FZ

The CAX models cover are in the following table

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