



Set and Enable TRUE TIME-OF-FLIGHT® (TOF) Sensor

Subject: Set and Enable Time-of-Flight (TOF) Sensor

Date: September 21, 2026

Models / Parts Affected: TCIM

Voltages: All Voltages

Overview

This document describes how to correctly set up and enable the TRUE TIME-OF-FLIGHT® (TOF) sensor.

NOTE: The TRUE-TIME-OF-FLIGHT® (TOF) Ice Level Sensor detects the current ice level in the ice storage. The TCIM ships with the TOF disabled; the TOF must be enabled during the installation/setup process.

Required Tools

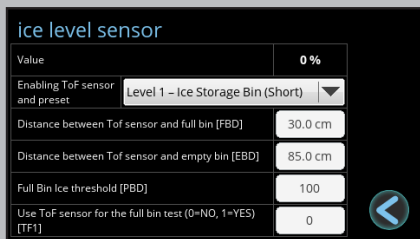
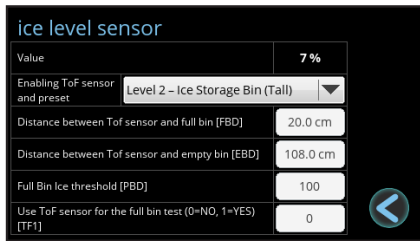
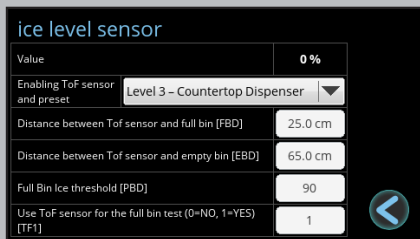
Required tools include (but may not be limited to) the following:

- Gloves
- Eye Protection
- Tape Measure
- Phillips Screwdriver

Options Available

IMPORTANT! The TOF sensor will not control ice level at level 1 and 2. The unit will automatically fill the bin completely and cycle the unit off when the harvest flapper below the evaporator plate is held down by ice, preventing it from returning to the up position.

IMPORTANT! The TOF sensor will automatically control ice level at levels 3-7. The sensor will automatically cycle the machine off on full bin when the ice level reaches the preset level. No additional adjustments are needed.

Options Available		
	Screen	Example
Level 1 - Ice Storage Bin (Short)		
Level 2 - Ice Storage Bin (Tall)		
Level 3 - Countertop Dispenser		



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Options Available (cont.)

Options Available		
Level 4 - Hotel Dispensers	ice level sensor Value 0 % Enabling ToF sensor and preset Level 4 - Hotel Dispensers Distance between ToF sensor and full bin [FBD] 25.0 cm Distance between ToF sensor and empty bin [EBD] 75.0 cm Full Bin Ice threshold [PBD] 90 Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1] 1	
Level 5 - Freestyle 9100	ice level sensor Value 0 % Enabling ToF sensor and preset Level 5 - Freestyle 9100 Distance between ToF sensor and full bin [FBD] 30.0 cm Distance between ToF sensor and empty bin [EBD] 82.0 cm Full Bin Ice threshold [PBD] 90 Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1] 1	
Level 6 - Freestyle 7100	ice level sensor Value 0 % Enabling ToF sensor and preset Level 6 - Freestyle 7100 Distance between ToF sensor and full bin [FBD] 30.0 cm Distance between ToF sensor and empty bin [EBD] 97.0 cm Full Bin Ice threshold [PBD] 90 Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1] 1	
Level 7 - Freestyle 4000	ice level sensor Value 0 % Enabling ToF sensor and preset Level 7 - Freestyle 4000 Distance between ToF sensor and full bin [FBD] 30.0 cm Distance between ToF sensor and empty bin [EBD] 79.0 cm Full Bin Ice threshold [PBD] 90 Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1] 1	
Level 8 - Custom Setup (default)	ice level sensor Value 0 % Enabling ToF sensor and preset Level 8 - Custom Setup (default) Distance between ToF sensor and full bin [FBD] 30.0 cm Distance between ToF sensor and empty bin [EBD] 80.0 cm Full Bin Ice threshold [PBD] 100 Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1] 0	

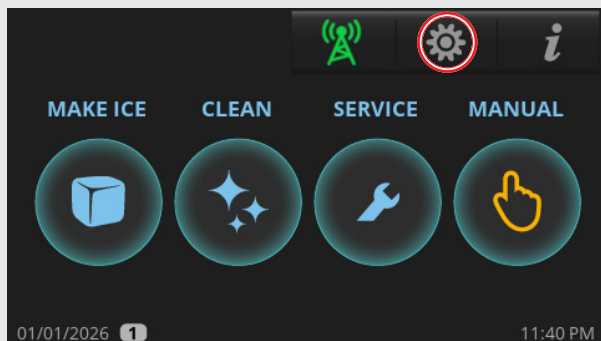


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Procedure

Enable TRUE TIME-OF-FLIGHT® (TOF) Sensor

1. Power the TCIM.
2. In the home screen, press the menu gear icon.



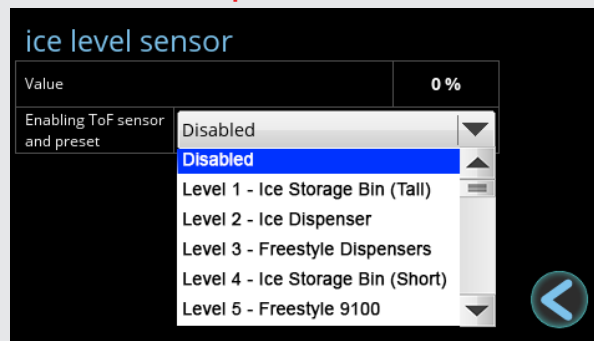
3. In the menu screen, press TOF.



4. In the ice level sensor screen, use the drop down menu to select the appropriate preset value for your ice storage unit. See preset values in "Ice Level Sensor Presets". Select **Level 8 - Custom Setup** if none of the preset values fit your application needs.

- If **Level 8** is selected, proceed to "TOF Custom Setup" (pg. 4).

NOTE: Example of display based on Firmware 6.0. Depending on the firmware version installed, your display may appear different from the examples shown. Use the scroll bar to see all options.



Ice Level Sensor Presets

This table shows the preset **Full Bin Distance (FBD)**, **Empty Bin Distance (EBD)**, **Full Bin Ice Threshold (PBD)**, and **Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]** for each ice level. See "Additional TOF Adjustments" (pg. 5) and "TOF & Full Bin State" (pg. 6).

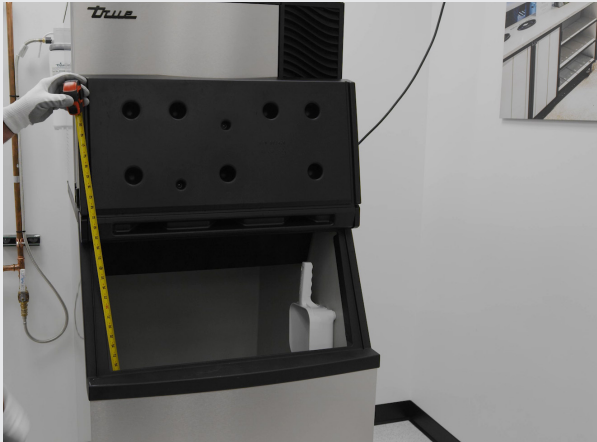
Ice Level Sensor Presets				
	Full Bin Distance (FBD)	Empty Bin Distance (EBD)	Full Bin Ice Threshold (PBD)	Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]
Level 1 - Ice Storage Bin (Short)	30 cm	85 cm	100	0
Level 2 - Ice Storage Bin (Tall)	20 cm	108 cm	100	0
Level 3 - Countertop Dispenser	25 cm	65 cm	90	1
Level 4 - Hotel Dispensers	25 cm	85 cm	90	1
Level 5 - Freestyle 9100	30 cm	82 cm	90	1
Level 6 - Freestyle 7100	30 cm	97 cm	90	1
Level 7 - Freestyle 4000	30 cm	79 cm	90	1
Level 8 - Custom Setup (default)	20 cm	120 cm	100	0



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TOF Custom Setup

1. If no option for the bin or dispenser you are using is available, select **Level 8 - Custom Setup**.
2. Using a tape measure, measure the distance from the bottom of the bin interior to the bottom of the ice machine.



3. Convert the measurement to cm.

4. Press the value next to **Distance between Tof sensor and empty bin [EBD]**.

ice level sensor

Value	0 %
Enabling ToF sensor and preset	Level 8 - Custom Setup (default)
Distance between Tof sensor and full bin [FBD]	20.0 cm
Distance between Tof sensor and empty bin [EBD]	120.0 cm
Full Bin Ice threshold [PBD]	60
Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]	0

5. In the **Distance between Tof sensor and empty bin [EBD]** screen, press **CLR** to clear the current setting. Then, change the value to the correct measurement and press okay ✓ to save your selection.

Distance between Tof sensor and empty bin [EBD]

min: 0.0 max: 200.0

120 cm

1 CLR

2

1	2	3
4	5	6
7	8	9
+/-	0	.

3 ✓



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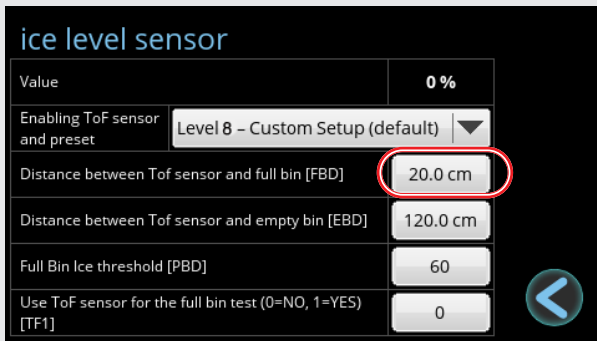
Additional TOF Adjustments

IMPORTANT! Additional TOF adjustments can be made but are often unnecessary. See more details on additional adjustment options below

A. The open space between the top of the ice bin and the bottom of the ice machine (FBD) can be adjusted. The factory default is 25 cm.

NOTE: The machine cycles off on full bin when the ice level reaches 25 cm below the bottom of the machine.

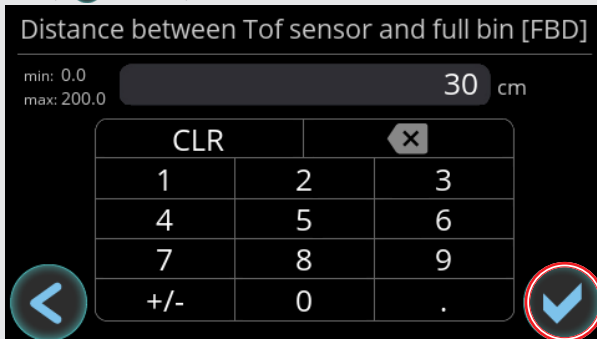
a. Press the value next to **Distance between ToF sensor and full bin [FBD]**.



ice level sensor

Value	0 %
Enabling ToF sensor and preset	Level 8 - Custom Setup (default)
Distance between ToF sensor and full bin [FBD]	20.0 cm
Distance between ToF sensor and empty bin [EBD]	120.0 cm
Full Bin Ice threshold [PBD]	60
Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]	0

b. In the **Distance between ToF sensor and full bin [FBD]** screen, change the value to the correct measurement. Press okay  to save your selection.



Distance between ToF sensor and full bin [FBD]

min: 0.0 max: 200.0

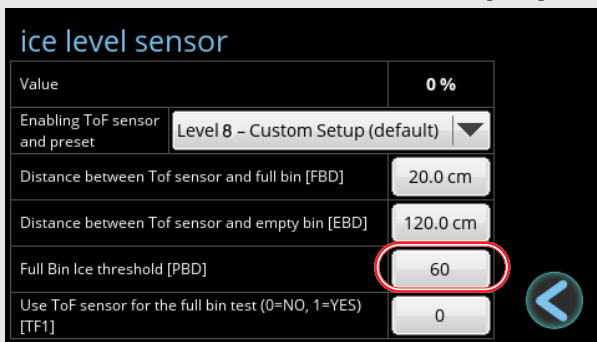
30 cm

CLR		
1	2	3
4	5	6
7	8	9
+/-	0	.

B. You can set the TOF to cycle the machine off when the ice level reaches a specific full percentage, also known as full bin ice threshold (PBD).

NOTE: The TOF can be set to cycle the machine off when the bin reaches 50% capacity from custom entries.

a. Press the value next to **Full Bin Ice threshold [PBD]**.



ice level sensor

Value	0 %
Enabling ToF sensor and preset	Level 8 - Custom Setup (default)
Distance between ToF sensor and full bin [FBD]	20.0 cm
Distance between ToF sensor and empty bin [EBD]	120.0 cm
Full Bin Ice threshold [PBD]	60
Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]	0

b. In the **Full Bin Ice threshold [PBD]** screen, enter the full bin percentage value you want the machine to cycle off on. Press okay  to save your selection.



Full Bin Ice threshold [PBD]

min: 20 max: 100

100

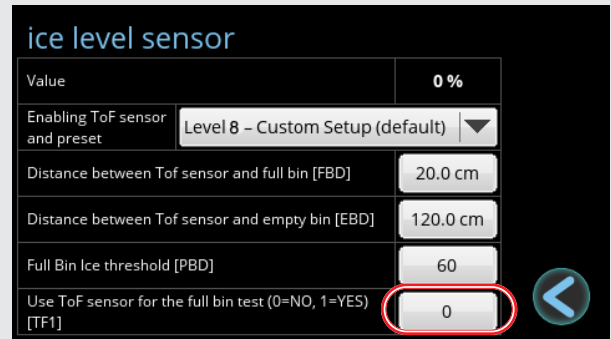
CLR		
1	2	3
4	5	6
7	8	9
+/-	0	.

C. You can program the machine to cycle off/on the TOF sensor setting or allow it to fill up completely.

NOTE: Using the custom setup, the factory default enables the TOF sensor to control when the ice machine cycle off on a full bin.

NOTE: This feature can only be modified using the custom setup.

a. Press the value next to **Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]**.

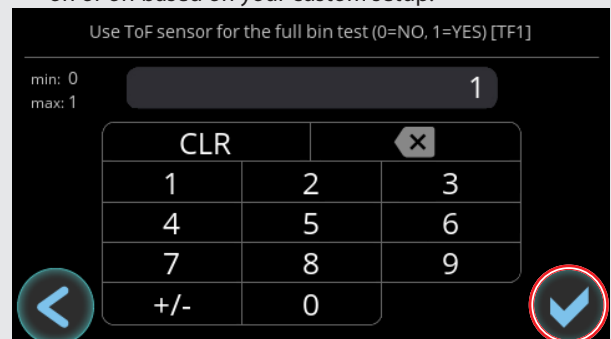


ice level sensor

Value	0 %
Enabling ToF sensor and preset	Level 8 - Custom Setup (default)
Distance between ToF sensor and full bin [FBD]	20.0 cm
Distance between ToF sensor and empty bin [EBD]	120.0 cm
Full Bin Ice threshold [PBD]	60
Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]	0

b. In the **Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]** screen, change the value from 0 to 1 or from 1 to 0. Press okay  to save your selection.

- Selecting **0** disables the TOF sensor. The machine will fill with ice until it prevents the harvest flapper from returning to the up position under the evaporator plate.
- Selecting **1** enables the TOF sensor to cycle the machine on or off based on your custom setup.



Use ToF sensor for the full bin test (0=NO, 1=YES) [TF1]

min: 0 max: 1

1

CLR		
1	2	3
4	5	6
7	8	9
+/-	0	.



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TOF & Full Bin State

If the bin test (TF1) is set to 1, then the TOF sensor determines when the TCIM is in the Full Bin state. The TCIM enters the full bin state when the TOF sensor reads a value greater than the Full Bin Ice Threshold (PBD), which is a percentage.

If PBD is set to 50, the TCIM enters the full bin state when the TOF sensor detects the bin is $\geq 50\%$ full. See fig. 2.

IMPORTANT! The TCIM still enters a full bin state if the harvest flap is held down.

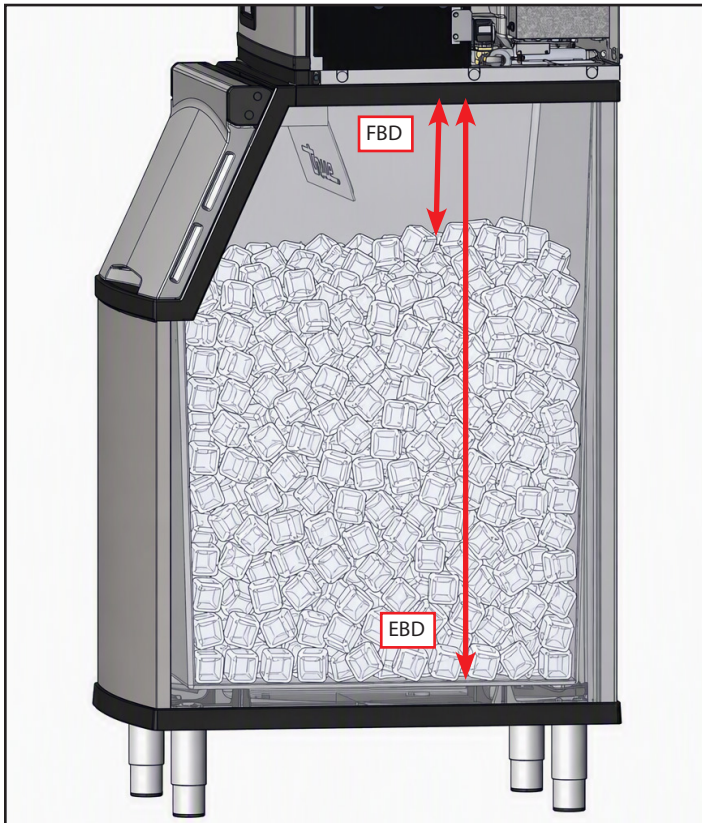


Fig. 1. FBD vs. EBD.

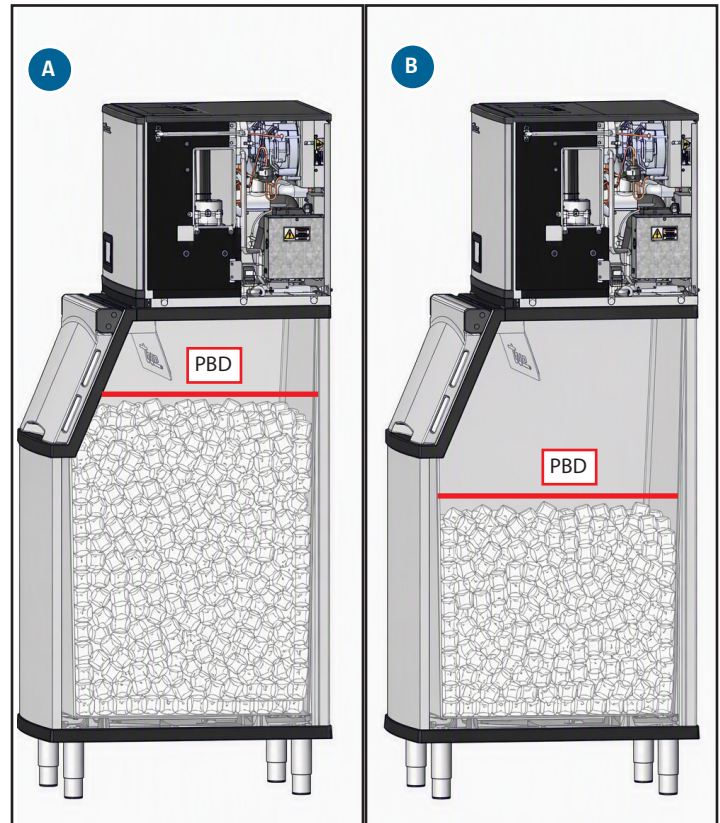


Fig. 2. PBD set at 100 (A) vs. PBD set at 50 (B).

Technical Questions or Concerns

For more information, please contact our Technical Support team.

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