

VRF INDOOR UNIT TECHNOLOGY

Hisense FrostClean™

Sequence of Operation and Functional Understanding

A field-ready guide for sales teams, engineers, contractors, technicians, and building owners.

	Purpose Explain what FrostClean does, how the indoor-unit cleaning cycle progresses, what the user should expect, and where the feature fits within normal preventive maintenance.
	Core concept With the indoor unit stopped, the cleaning command directs the unit to frost the indoor heat exchanger. The frost is then melted so loosened contamination can be carried away with condensate through the unit drain.

AT A GLANCE

START CONDITION	ACTION	RESULT
Indoor unit off / stopped	Frost, then thaw the coil	Debris-laden water exits by drain

Prepared for Hisense Comfort VRF applications

Technical content should be verified against the specific indoor-unit model, controller, and current Hisense service documentation before field use.

1. Technology Overview

What FrostClean is

FrostClean is a built-in indoor heat exchanger cleaning function. It uses a controlled refrigeration cycle to create frost on the indoor coil and then melt that frost. The thaw water helps carry loosened dust and debris from the coil toward the condensate drain.

Important distinction

FrostClean acts on the indoor heat exchanger. It does not eliminate the need to inspect and clean the return-air filter, drain pan, condensate piping, blower wheel, louvers, or surrounding cabinet.

Why the frost-and-thaw process helps

- Frost forms across the indoor heat-exchanger surface.
- The freeze-and-thaw action helps release material that has accumulated on the coil surface.
- When the frost melts, water carries the released material into the drain pan and out through the condensate drain.
- The cycle supports cleanliness between scheduled service visits but should be treated as a maintenance aid rather than a substitute for preventive maintenance.

Expected user experience

What may be noticed	Normal interpretation
Indoor unit is not providing normal comfort operation	The unit is performing a maintenance cycle rather than responding to a heating or cooling call.
Temporary change in refrigerant-flow or coil sounds	Refrigerant is being directed to create and then melt frost on the indoor heat exchanger.
Water flows through the condensate drain	Meltwater and loosened material are being conveyed from the drain pan.
The cycle completes and the unit remains stopped or becomes available	Normal operation can resume according to the controller and model logic.

2. Sequence of Operation

The following sequence provides a functional explanation of the cycle without assigning model-specific temperatures, pressures, or time limits. Those values and the available control commands can vary by indoor-unit family and controller.

1	Ready / stopped condition CONTROL / PHYSICAL ACTION: Place the indoor unit in the off or stopped position. Confirm that the condensate path is installed and capable of draining before starting a cleaning cycle. FUNCTIONAL OUTCOME: The comfort call is stopped, and the unit is ready to accept the cleaning command.
2	Cleaning command CONTROL / PHYSICAL ACTION: Initiate the CLEAN or FrostClean function from a compatible controller or interface for the specific indoor unit. FUNCTIONAL OUTCOME: The control system accepts the request and starts the self-cleaning sequence.
3	Indoor coil frosting CONTROL / PHYSICAL ACTION: The refrigeration circuit directs operation, so the indoor heat exchanger becomes cold enough for frost to form on the coil surface. FUNCTIONAL OUTCOME: Frost develops on the heat exchanger and helps separate accumulated dust and debris from the surface.
4	Thaw and wash CONTROL / PHYSICAL ACTION: The coil transitions out of the frosting portion of the cycle. The frost melts and produces wash water across the heat-exchanger surface. FUNCTIONAL OUTCOME: Meltwater captures loosened contamination and moves it toward the drain pan.
5	Drain and completion CONTROL / PHYSICAL ACTION: Water leaves the indoor unit through the condensate drain. The control sequence then ends, and the indoor unit returns to its normal stopped or available state, according to the product logic.

FUNCTIONAL OUTCOME: The cleaning cycle is complete. Normal HVAC operation may resume when commanded.

Process summary

UNIT OFF	CLEAN COMMAND	COIL FROSTS	FROST MELTS	WATER DRAINS
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3. Field Guidance and Limitations

Pre-cycle checks

- Confirm that the indoor unit and controller support the function.
- Verify that the unit is stopped before initiating the cycle.
- Confirm that the condensate drain, trap, pump, and termination are installed as required for the application.
- Check that the drain pan and piping are not blocked, disconnected, frozen, or leaking.
- Protect furnishings and finishes if there is any history of condensate leakage.

Post-cycle observations

- Confirm positive drainage and inspect for leakage around the drain pan and piping.
- If accessible, inspect the coil face and drain pan for remaining heavy contamination.
- Investigate abnormal noise, odor, water carryover, repeated interruption, or fault indication.
- Return the indoor unit to the desired operating mode after the cleaning cycle has ended.

Applicability

Model and controller verification required

Internal Hisense references identify FrostClean as standard on current R32 indoor-unit offerings, while older internal discussions describe availability by indoor-unit type. Always confirm the exact model, firmware, and controller instructions before promising or activating the feature.

What FrostClean does not replace

Maintenance item	Still required?	Reason
Filter inspection / cleaning	Yes	FrostClean targets the heat exchanger, not the complete air-filtration system.
Drain pan and piping service	Yes	The wash water depends on a clear, properly installed condensate path.
Blower wheel and cabinet cleaning	Yes	These components may collect material outside the coil surface.

Periodic professional inspection

Yes

Electrical, refrigeration, airflow, controls, and drainage conditions still require normal service review.

Troubleshooting triggers

- Cleaning command is not accepted: verify model compatibility, controller support, operating state, and active alarms.
- No drainage is observed: do not assume the drain is clear; inspect the pan, pump, trap, and piping as applicable.
- Water leaks from the unit: stop operation and correct the condensate problem before repeating the cycle.
- If heavy soil remains, perform manufacturer-approved manual cleaning and service procedures.

4. Training Summary

Recommended explanation to a customer

“FrostClean is an indoor-coil maintenance feature. With the unit stopped, it briefly creates frost on the heat exchanger and then melts it. The resulting water helps lift and carry dust and debris into the drain. It helps keep the coil cleaner between service visits, but it does not replace filter care, drain maintenance, or scheduled professional service.”

Key takeaways

- FrostClean is initiated while the indoor unit is off or stopped.
- The indoor heat exchanger is intentionally frosted.
- The frost is melted to wash loosened material from the coil.
- Meltwater and debris leave through the condensate drain.
- A clear drain path is essential.
- Product availability and command method must be verified by model and controller.
- The function supplements, but does not replace, preventive maintenance.

Technical use note

This document is an explanatory sequence of operation, not a commissioning specification or service manual. Do not use it to override current Hisense installation, operation, controller, safety, or service instructions. Model-specific documentation governs whenever a conflict exists.

Source basis

- Hisense internal VRF quick-reference materials: FrostClean is described as an indoor-unit feature in which the indoor coil frosts to help eliminate debris buildup.
- Hisense internal training presentation “Virtual Pro Xperience”: unit off, CLEAN command, indoor coil frosting, thawing, and drainage through the condensate hose.
- Hisense internal VRF Teams discussion: availability has varied by indoor-unit type in earlier product generations; model verification remains necessary.
- Hisense Comfort public resource pages: VRF indoor-unit families and current product-document resources.

Document control

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Intended use	Sales, training, engineering discussion, and field orientation
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