FOR ELECTRIC VEHICLE PROGRAMS · HEAT PUMP AND CONTROLLER

Range that holds in the cold.

A heat pump designed to heat through frost, and one controller for cabin and battery.

U.S. Patent 12,768,557
controller, granted Oct. 20, 2026

Patent pending
air–water heat exchanger, U.S. provisional 63/989,941

Hardware test published
US 2024/0295337 A1, FIGS. 4–7

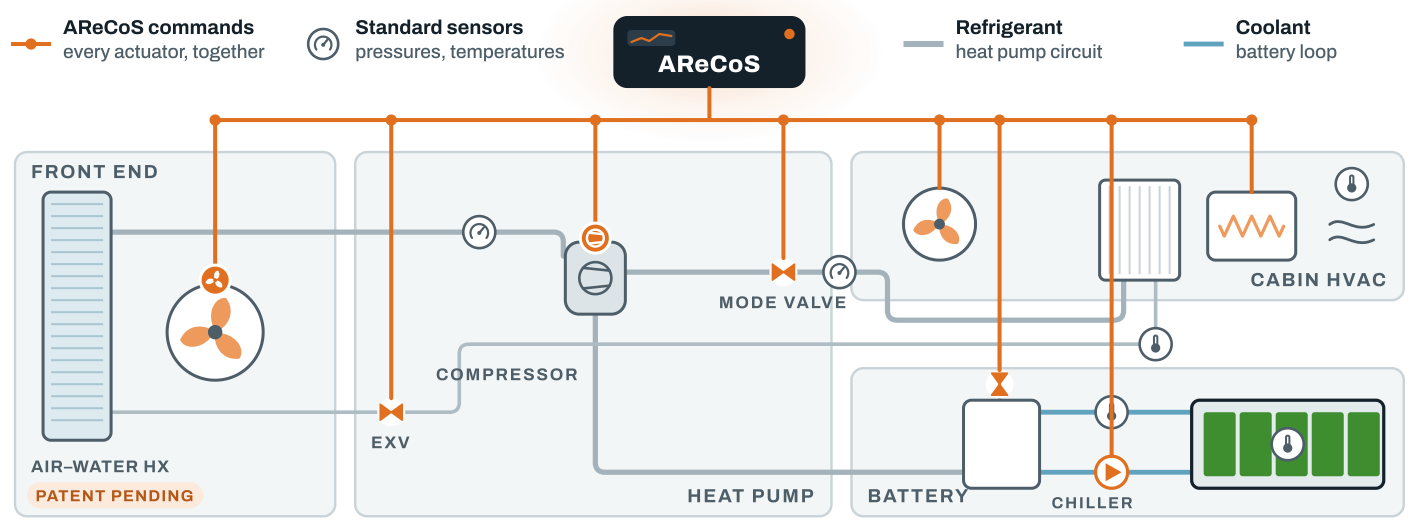
Physics model
of the vehicle's thermal system

Controller hardware test, on a cooling bench.

Frost stops the heat pump

The heater draws on the battery

One controller: cabin and battery together



New electromechanical frost removal

Designed to hold frost to a thin layer and clear it while heating, with no reverse-cycle defrost in normal operation.

Run it all as one

Compressor, valves, pumps, front-end fan, blower and heater set together from one physics model.

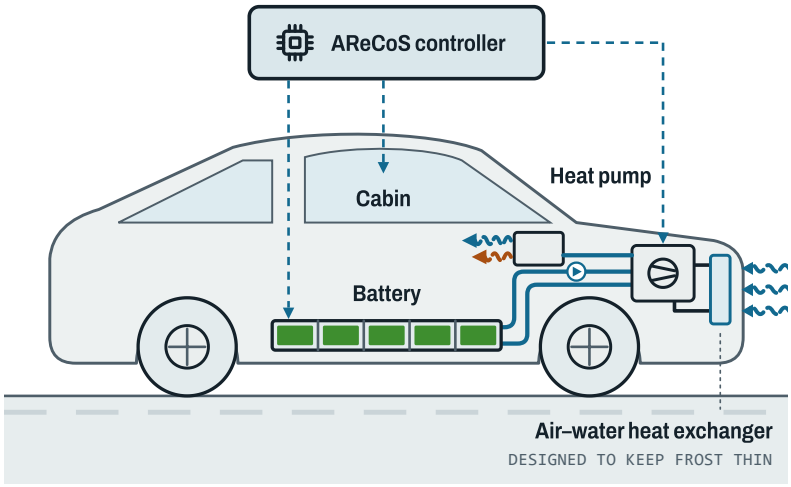
Carry it across your lineup

Each new program is designed to start from the architecture you have: a calibration, not a new design.

What it reads, what it drives



Two ways to work with vehicle programs.



Never left without heat

If the frost-clearing system faults, the heat pump is designed to fall back to standard defrost and say so.

Built on a shared design

The same control architecture and frost handling as the AReCoS rooftop unit.

Pilot it: heat pump and controller

- The AReCoS heat pump and its controller, one package for pilot vehicles.
- Pilots with vehicle programs; **current dates at arecos.net/ev/**.

Produce it: the control software, licensed

- Have a heat pump, or A/C with a heater? AReCoS fits the software to your cabin and battery systems.
- Planned to run on your own thermal controller or your supplier's heat pump module. Licensed per vehicle.

The first step: a 20-minute call about your vehicle program.

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