EMBEDDED CONTROLLER · TWO-STAGE AMMONIA · INDUSTRIAL COLD STORAGE

On two-stage ammonia, the interstage pressure sets how hot the compressors run. Designed to choose it from a model of the plant.

Interstage pressure, compressor staging, liquid feed and condenser fans, set in one decision.

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

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

Physics model
of your machine, on the machine

Not yet run
on a an ammonia machine

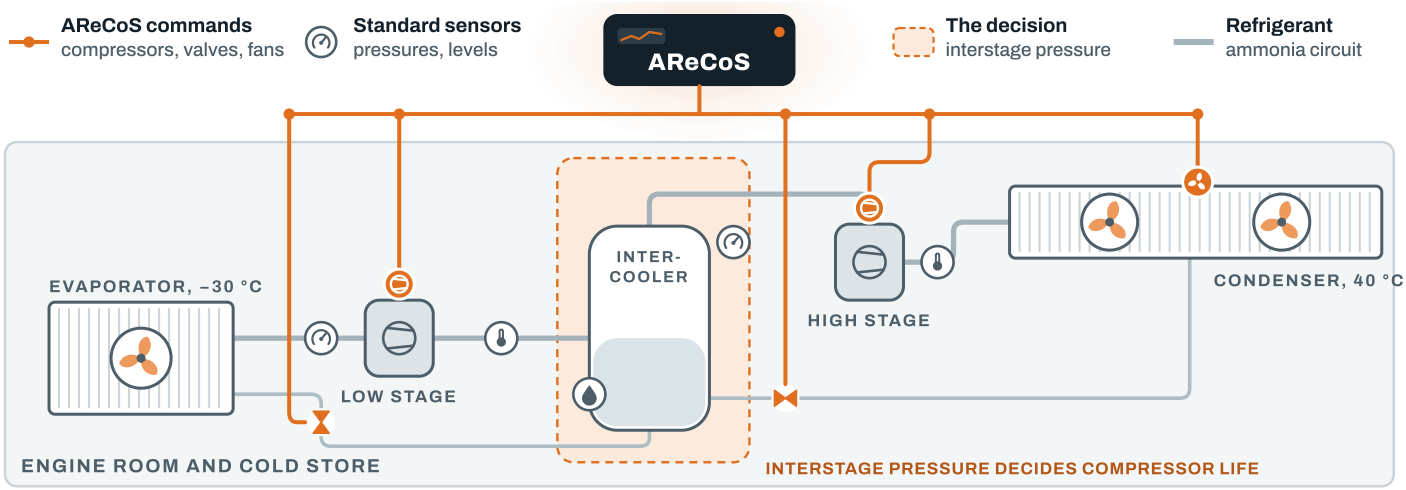
11.6 °C

(20.9 °F) off two-stage ammonia's hottest point, for a sixth of a percent.

≈0.17%

of efficiency given up for that cooler split, in the AReCoS model: about a sixth of a percent.

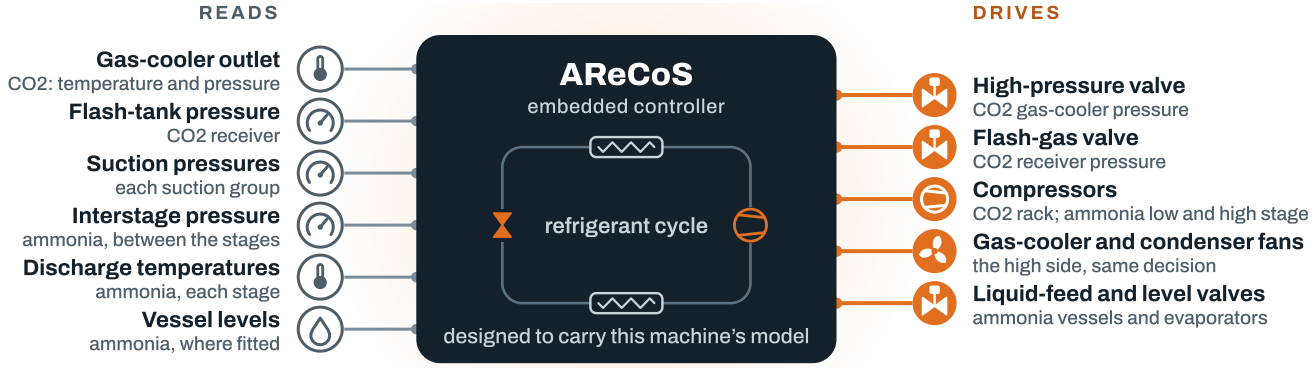
AMMONIA **Nearly twelve degrees off the compressor, for a sixth of a percent**



Cooler discharge, to be validated: on piston machines, a cooler hottest point is a possible gain in oil and valve life.

Find it without hunting: both stages' temperatures worked out from the pressures, their difference driven to zero.

What it reads, what it drives



Ammonia: air in, water in, charge out

- Air from excess high-side pressure; water from the coldest vessel boiling warmer.
- A drifting sensor told apart from wet ammonia.

Grid response

- **Shed on ammonia** with the frozen product as the store, following the coolest split.

The first step: an evaluation on your machine. AReCoS fits a model to your plant and checks it against your own test data, with a baseline agreed first.
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