



SuperPanther Thermal Management System

SuperPanther's Thermal Management System intelligently coordinates the thermal needs of the battery, e-Motor, power electronics and cabin, keeping the vehicle within its optimal operating range for reliable performance, energy efficiency and year-round operation.

KEY TECHNOLOGY HIGHLIGHTS

- **Built for Extreme Temperatures:** engineered for a wide operating temperature range of -40°C to +55°C. The high-efficiency ultra-low-temperature heat pump supports heating in extreme cold, with a dual-compressor and dual-PTC architecture for battery and cabin thermal management.
- **R290 Natural Refrigerant:** SuperPanther adopts R290 (propane) as a natural refrigerant, combining efficient thermal management with a more sustainable refrigerant solution. With zero ozone-depletion potential and a global-warming potential of approximately three, R290 offers a future-ready refrigerant solution aligned with the long-term development direction of sustainable thermal management.
- **Safe by Design:** the system is designed with safety embedded at the architectural level. A dual-module design delivers the required thermal performance while keeping the total refrigerant charge to 460 g. Redundant sensing continuously monitors system conditions and supports real-time detection of abnormal operating states. Dedicated airflow paths optimize thermal management while contributing to system-level protection. When an abnormal condition is detected, the system automatically responds according to its protection strategy—without requiring manual intervention.
- **Highly Integrated, Compact by Design:** multiple thermal management functions are integrated into a compact architecture, reducing system footprint while supporting efficiency and reliability.