



MINIATURE ROTARY COMPRESSOR

ARCTIC Technology transformed the refrigeration industry with the creation of a miniature rotary compressor that is **10 times** smaller and lighter than standard models with similar capacity. This innovative design enables powerful cooling solutions to be delivered in a much more compact and unobtrusive form.

Your Product Will Stand Out, Your Compressor Will Go Unnoticed!



MINI DC COMPRESSOR

ARCTIC Miniature Rotary Compressors –
The Pinnacle of Compact Refrigeration Technology!



Compressor Chills Out, Your Device Stand Out.

ARCTIC Miniature Compressor models are designed to meet the diverse needs of various applications, offering unparalleled performance in a small package.

The product lineup includes:

- **Micro Compressors:** Renowned for their ultra-compact size, these models are ideal for applications where space is at a premium, without compromising on cooling capacity.
- **Quiet Operation and Higher Cooling:** These mini DC compressors are celebrated for their quieter performance and ability to manage higher cooling demands, making them a preferred choice for environments where noise and efficiency are critical.
- **R290 Series:** Featuring a twin-cylinder design, these compressors reduce vibration and increase cooling capacity, making them perfect for height-restricted systems requiring horizontal operation.

Compact & Lightweight Refrigeration Systems

ARCTIC Miniature Compressors are engineered to provide exceptional power density in a remarkably compact form.

Available in single-cylinder and twin-cylinder configurations, these compressors support refrigerants R134a and R290, and come with voltage input options of 12V, 24V, and 48V.

Compatible with various current&low-GWP refrigerants, they are adaptable to a wide range of evaporator conditions across LBP, MBP, and HBP systems.

Equipped with an advanced motor drive controller, these compressors offer variable speed and load-following capabilities, ensuring precise temperature control and high efficiency.

With a wide range of sizes and specifications, ARCTIC ensures a perfect solution for every technical requirement.

INTRODUCTION

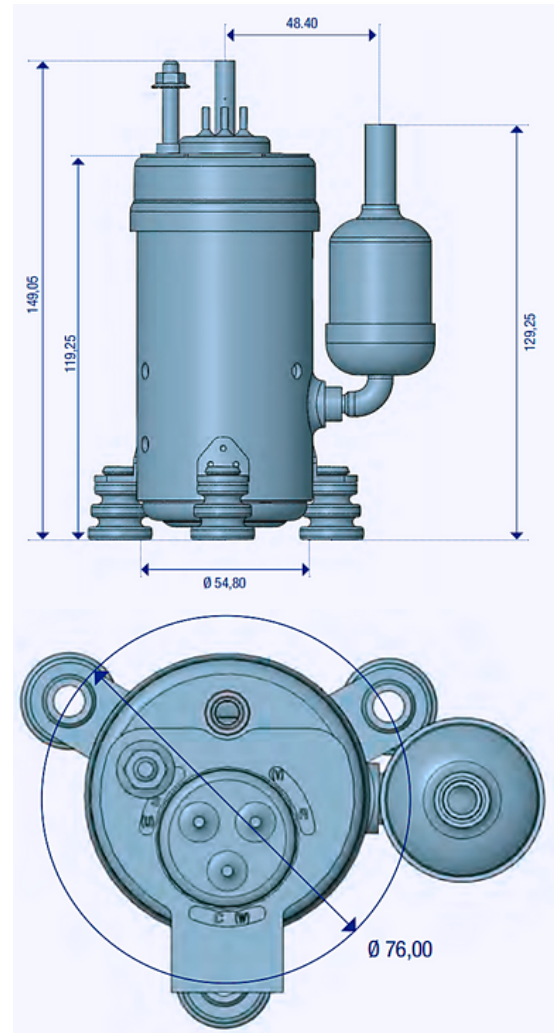
Applications of Miniature Rotary Compressor

ARCTIC mini DC refrigeration compressors are perfect for mobile refrigeration, electronics cooling, medical & Lab equipment, and various commercial uses where space and weight are key factors.

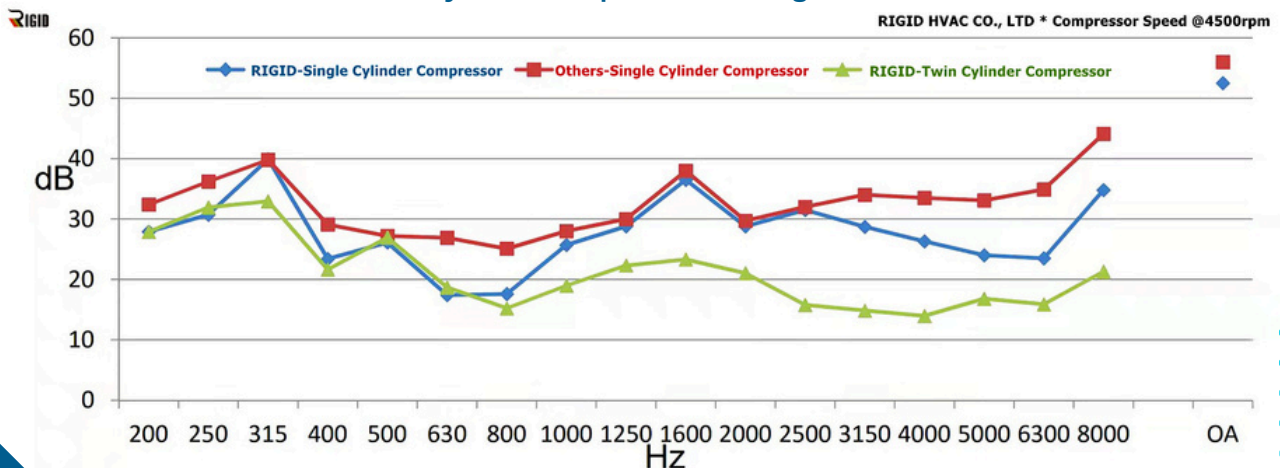
Main Applications:

- **Laboratory:** Provide cooling for small lab devices.
- **Food Delivery:** Keeps food cold during transit.
- **Beverage:** Great for drink coolers and mini-fridges.
- **Medical:** Keeps medications cold on the move.
- **Drones:** Cools electronics in high-performance drones.
- **Telecom:** Manage heat in outdoor telecom equipment.
- **Portable Air Conditioners:** Ideal for cooling small spaces like tents and vehicles.
- **Mobile Fridges:** Perfect for refrigeration in RVs, trucks, and boats.
- **Electronics:** Prevents gadgets like laptops and servers from overheating.
- **Wearable Tech:** Integrates into clothing to cool athletes or workers.
- **HVAC Systems:** Designed for cooling small spaces like control panels.
- **Lithium Batteries:** Regulates temperature in electric vehicle batteries.

These examples highlight how mini compressors can be seamlessly integrated into everyday products, from portable fridges to wearable cooling gear.



Twin-cylinder compressor working noise level

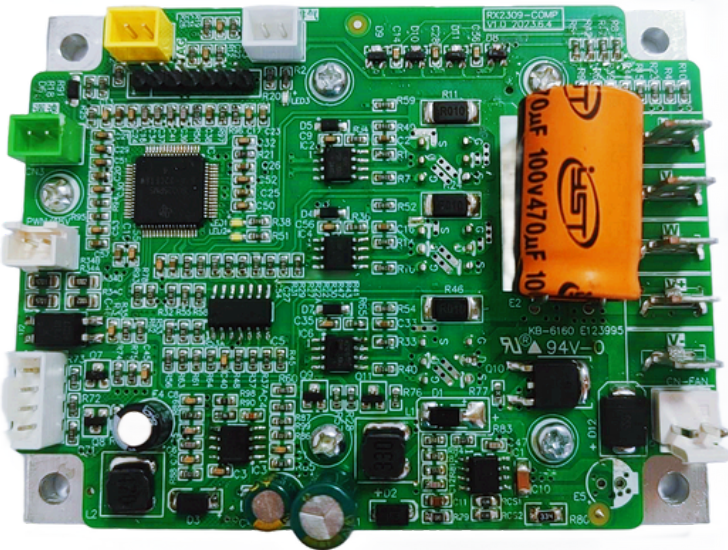


PCB BOARD

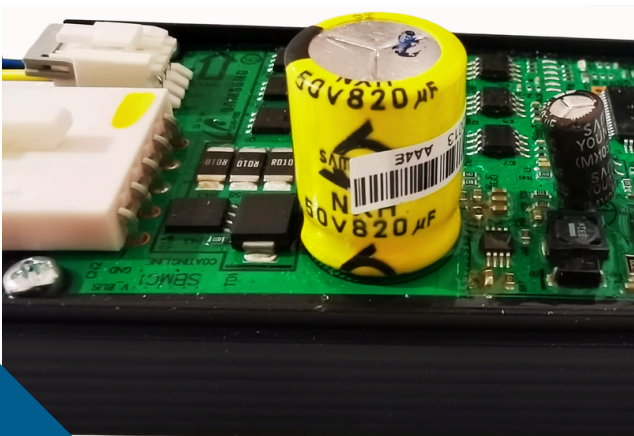
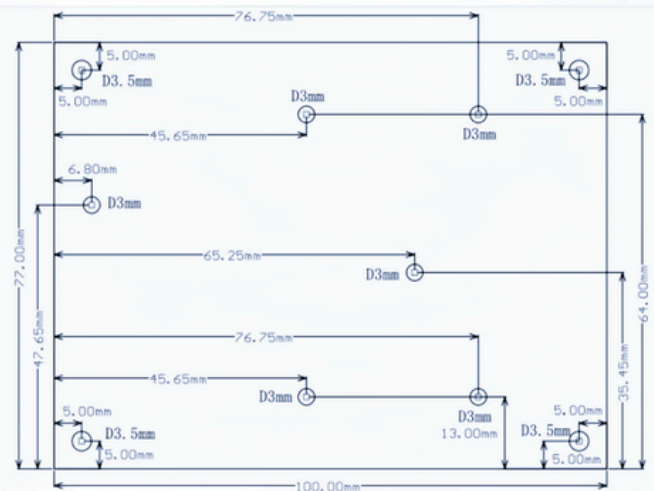
The PCB drive board in ARCTIC's miniature DC compressor plays a crucial role in managing and enhancing the compressor's performance.

Functions & Features:

- **Speed Control:** Modulates the compressor's speed to match cooling needs, boosting energy efficiency and minimizing wear.
- **Power Management:** Keeps the power supply steady and regulated, ensuring the compressor runs smoothly, even with fluctuating inputs.
- **Overload Protection:** Protects the compressor from electrical overloads, short circuits, and overheating, which helps extend its lifespan.
- **Temperature Monitoring:** Tracks system temperature to prevent overheating and maintain optimal performance.
- **Fault Detection:** Identifies and alerts you to any operational problems for fast troubleshooting.

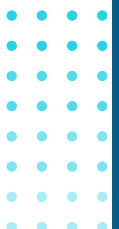


PCB Controller Dimensions in mm



Features

1. **Compact Design:** Small form factor, ideal for integration into space-limited applications.
2. **High Efficiency:** Optimized for low power consumption, making it suitable for battery-powered devices.
3. **Quiet Operation:** Minimizes noise and vibration through advanced control algorithms.
4. **Easy Integration:** Designed for seamless integration with A compressors and other cooling systems.
5. **Durability:** Built with high-quality components to ensure long-term reliability in various environments.



THANK YOU

At ARCTIC, we specialize in crafting advanced, space-saving cooling solutions designed to meet the unique demands of industries like aerospace, medical devices, laboratories, and electronics. Our signature Micro DC Aircon, powered by an ultra-efficient miniature rotary compressor, is the best choice for environments where space and power are at a premium.

Our products are celebrated for compact design, quiet operation, and superior energy efficiency. We pride ourselves on offering tailored cooling solutions that ensure peak performance in even the most challenging conditions.

What sets ARCTIC apart is our innovative approach and unwavering commitment to quality. We provide comprehensive customer support from the initial concept through to production, ensuring that our solutions not only meet but exceed industry standards. Partner with ARCTIC, and you'll have a dedicated team to deliver the cutting-edge cooling technology your applications need to succeed.



TÜVRheinland®



- Air Cooling Solution
- Liquid Cooling Solution
- Direct Cooling Solution
- Sterling Cryocooler (-160°C)



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