

screw air compressor with single stage permanent magnet VFD

Permanent magnet frequency conversion single-stage screw air compressor has the advantages of high efficiency and energy saving, intelligent adjustment, stability and reliability. Through frequency conversion control, it can accurately match the demand of different working conditions, reduce energy waste, and at the same time reduce maintenance costs.

The permanent magnet frequency conversion single-stage screw air compressor is an advanced, energy-efficient solution designed to deliver high-quality compressed air for modern industry. By combining permanent magnet frequency conversion technology with a high-efficiency single-stage screw system, it ensures stable air output and reduced energy consumption. Its intelligent adjustment capabilities enable it to match real-time air demand, optimizing efficiency and lowering operating costs compared to traditional industrial frequency compressors.



Features of Screw Air Compressor

1. **Strong air output capacity:** Delivers up to 15.0 m³/min, providing ample compressed air for high-intensity environments.
2. **Stable working pressure:** Rated at 0.8 MPa, suitable for diverse industrial applications and reliable continuous operation.
3. **High-efficiency screw mainframe:** Optimized tooth shape and precision-machined clearances boost compression efficiency, reduce leakage, and ensure constant efficiency across 0–100% load for high reliability and longevity.
4. **Advanced Permanent Magnet Synchronous Motor (IPM):** Features no-slip, no electric excitation design for lower iron and copper losses. UH-class high-performance permanent magnets resist demagnetization in harsh, high-temperature, and high-humidity conditions, ensuring durable, high performance.
5. **Intelligent permanent magnet frequency conversion control:** Built-in vector heavy-duty frequency control allows stepless speed adjustment, enabling the compressor to automatically match air volume demand, stabilize pressure, and minimize energy waste.
6. **100% direct connection transmission:** The motor and screw rotor share an integrated shaft, eliminating gearboxes and belts for zero mechanical loss, 100% transmission efficiency, compact structure, reduced maintenance, and enhanced reliability.

Working Principle

1. **Air intake:** Ambient air passes through the intake filter into the screw rotor cavity.
2. **Screw compression:** Male and female rotors mesh precisely, compressing the air in the spiral groove, decreasing volume and increasing pressure.
3. **Permanent magnet frequency conversion adjustment:** The frequency control system adjusts motor speed in real time to precisely match air volume and pressure needs, cutting energy waste.
4. **Cooling and exhaust:** High-temperature compressed air is cooled and then delivered to downstream equipment or storage, ensuring a stable, efficient air supply.

The compressor can intelligently adjust from 0–100% load to minimize no-load energy consumption and maintain high energy efficiency at all times.

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Model	Motor power	work pressure	Air flow	Specific power	Machine Cooling	Motor Cooling	Dimensions(Lxwxh)	Weight	Outlet pipe diameter
SV90	90kw	0.7mpa	16.2m ³ /min	6.3	air cooling	air cooling	2000x1350x1880mm	890kg	DN80
		0.8mpa	15.0m ³ /min	6.7					
		1mpa	13.8m ³ /min	7.9					

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