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Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.

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PM VSD

Rotary Screw Air Compressors

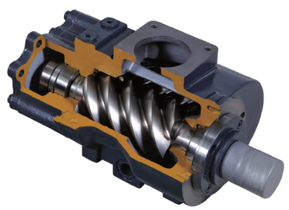
Installed motor power 5.5 - 250 kW/7.5 - 340 hp
Free air delivery from 0.23 to 56.02 m³/min, Pressure 5 - 13 bar

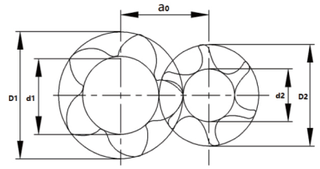
CONTENTS

PM VSD Screw Air Compressor (5.5-75 kW)

Features and advantages

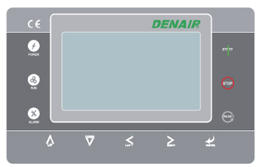
01 Air End Design Analysis





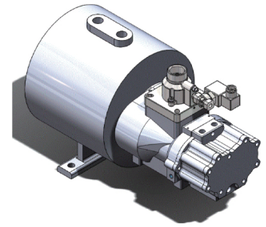
· Profile design patent: ZL201720301123.8
· Design pressure: 5-13 bar
· Volume efficiency: ≥95%
· Transmission ratio: 1:1
· Noise level: lower
· Sweden SKF bearing
· Power consumption: ultra-low
· Rotor diameter and center distance: large
· Max. operating temperature: 110℃ continuous running
· Profile design: the third generation α model asymmetrical 5:6 tooth profile. Best energy efficiency profile

02 Control Module



· RS485 communication mode transmission control signal
· Intelligent PID flow adjustment mode
· Closed-loop control, with ideal dynamic characteristics and control accuracy
· Accurately control the torque
· Fast response speed
· Constant pressure control to avoid excess energy loss

03 High Efficiency Permanent Magnetic Motor



· Cooling method: oil cooling
· No bearing design, 100% transmission efficiency
· UH series magnets, can withstand temperature up to 180 °C
· Up to 5 years durability test; 40,000 hours of durable operation without failure
· Appearance design patent: ZL 201330085626.3
· IP65, F class insulation, B grade temperature rise
· PM motor cooling structure design patent :ZL201320216379.0
· Perfectly linear output torque, low speed still retains high torque output

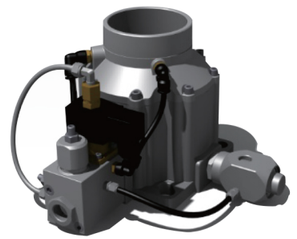
04 Vector Inverter

· High utilization rate, removable panel, switch using, memory function
· Protection: can realize phase loss, phase-to-phase short circuit, short-circuit to ground, over-current, over-voltage, under-voltage, overload, over-heat, motor thermal protection circuit board, reinforced coating, dust and corrosion protection
· Independent cooling design, suspended installation, dust proof, corrosion proof, small heat, powerful overload and unique current limiting technology
· Proprietary and efficient control procedures
· Ultra-wide frequency design, wider control range

05 Cooling fan

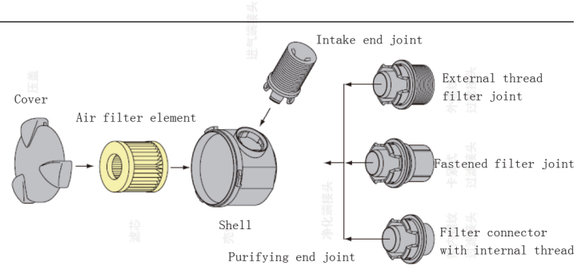
· Low noise
· Big capacity
· Maintenance free

06 Inlet Valve



· Petent design: ZL201720513212.9
· High vacuum degree: 700mmHg
· Large suction area
· Low load energy consumption in unloaded operation
· Fast check: prevent unloading and shutdown oil injection
· The solenoid valve adopts the Italy ODE brand
· Valve seal adopts fluoro rubber
· Integrated design, failure and low maintenance rate
· Cast aluminum to avoid rust and temperature change

07 Moulded Air Filter



- Patent: ZL201720513111.1
- Picolino module system
- Less pressure drop
- Multi-stage seal design
- High-tech, good flexibility, good resilience (polyurethane foam)
- Performance well along with the temperature changes
- Precision fit of filter element size and air filter assembly

08 Oil Filter

- Patent: ZL201520816110.5
- Seal material: PTFE
- Working pressure up to 20 bar
- Element material: German resin wood fiber
- Working temperature can withstand 120 ℃
- Separation efficiency: 50% impurity separation at 10 μm and 99% impurity separation at 30 μm

09 Oil Gas Separator

- Patent: ZL201720512855.1
- Maximum working pressure can reach 20 bar
- Use up to 4,000Hr
- Maximum withstand pressure drop: 1.2 bar
- Efficient separation, oil content less than 3ppm
- External oil separator design, maintenance time is only take 2min

10 Stainless Steel Pipe

- Maintenance free
- 100 years service life
- Excellent corrosion resistance
- Excellent mechanical properties, superior wear resistance
- Wide range of use, long service life and low overall cost
- Can work safely for a long time at a temperature of -270℃-400℃. The material properties are quite stable.
- 304 stainless steel has a tensile strength of more than 530 N/mm, which is twice stronger of galvanized pipe, 3-4 times stronger of copper pipe, 8-10 times stronger of PPR pipe, and it has good ductility and toughness

11 Oil Gas Tank

- Air line and oil line are separated.
- The separation effect is good: the air oil content of less than 3ppm.

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Technical Parameters

Model	Working Pressure (bar)	Capacity FAD*		Power		Voltage and IP Grade	Noise Level**	Dimensions (mm)			Weight (kg)	Air Outlet Pipe Diameter	Starting Method	EEI
		(m^3/min)	(cfm)	(kW)	(hp)			(L)	(W)	(H)				
DAV-5	7.5	0.29-0.95	10.25-33.54	5.5	7.5	380V IP65	60	900	660	960	225	G3/4"	Direct Driven Air Cooling	EEI1
	8.5	0.27-0.9	9.53-31.78											
	10.5	0.23-0.75	8.12-26.48											
DAV-7	7.5	0.38-1.26	13.42-44.49	7.5	10	380V IP65	60	900	660	960	245	G3/4"		
	8.5	0.36-1.21	12.71-42.73											
	10.5	0.30-1.00	10.59-35.31											
DAV-11	7.5	0.59-1.96	20.83-69.21	11	15	380V IP65	62	900	660	960	255	G3/4"		
	8.5	0.57-1.91	20.13-67.44											
	10.5	0.44-1.45	15.54-51.20											
	13.0	0.40-1.20	14.12-42.37											
DAV-15	7.5	0.78-2.61	27.54-92.16	15	20	380V IP65	64	1330	840	1030	315	G1-1/4"		
	8.5	0.75-2.51	26.48-88.63											
	10.5	0.62-2.05	21.89-72.39											
	13.0	0.57-1.90	20.13-67.09											
DAV-18	7.5	0.84-3.20	29.66-112.99	18.5	25	380V IP65	64	1330	840	1030	325	G1-1/4"		
	8.5	0.84-3.00	29.66-105.93											
	10.5	0.77-2.85	27.19-100.63											
	13.0	0.60-2.30	21.19-81.21											
DAV-22	7.5	1.11-3.80	39.19-134.18	22	30	380V IP65	66	1330	840	1030	400	G1-1/4"		
	8.5	1.08-3.60	38.13-127.12											
	10.5	1.05-3.50	37.08-123.59											
	13.0	0.80-2.80	28.25-98.87											
DAV-30	7.5	1.56-5.20	55.08-183.61	30	40	380V IP65	66	1600	1000	1400	450	G1-1/2"		
	8.5	1.53-5.10	54.02-180.08											
	10.5	1.28-4.33	45.20-152.76											
	13.0	1.05-3.78	37.08-133.43											
DAV-37	7.5	2.41-6.87	84.95-242.71	37	50	380V IP65	66	1600	1000	1400	480	G1-1/2"		
	8.5	2.40-6.85	84.69-241.97											
	10.5	2.06-5.89	72.85-208.14											
	13.0	1.68-4.80	59.32-169.49											
DAV-45	7.5	2.80-8.01	99.00-282.85	46	60	380V IP65	68	1600	1000	1400	520	G1-1/2"		
	8.5	2.79-7.98	98.61-281.74											
	10.5	2.54-7.25	89.63-256.09											
	13.0	2.20-6.29	77.79-222.27											
DAV-55	7.5	3.60-10.28	127.10-363.14	55	75	380V IP65	69	1800	1200	1400	850	G2"		
	8.5	3.57-10.20	126.06-360.16											
	10.5	3.38-9.66	119.42-341.21											
	13.0	2.76-7.87	97.31-278.02											
DAV-75	7.5	4.54-12.97	160.27-457.91	75	100	380V IP65	69	1800	1200	1400	1000	G2"		
	8.5	4.51-12.87	159.10-454.57											
	10.5	4.00-11.42	141.15-403.28											
	13.0	3.28-9.37	115.78-330.80											

*)FAD in accordance with ISO 1217:2009, Annex C: Absolute intake pressure 1 bar (a), cooling and air intake temperature 20 ℃
**) Noise level as per ISO 2151 and the basic standard ISO 9614-2, operation at maximum operating pressure and maximum speed; tolerance: ±3 dB(A)
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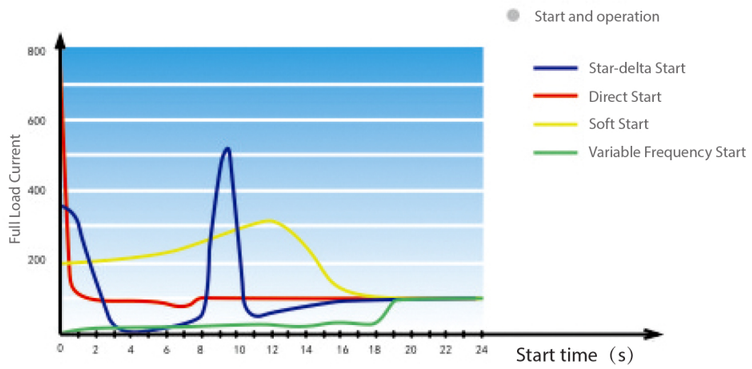
PM VSD Two-stage Screw Air Compressor (90-250 kW)

Features and advantages

01 Features Of permanent Magnet Variable Frequency Air Compressor

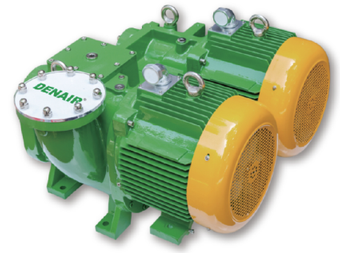
· Ultra-low temperature rise design, which allows the compressor running at ultra-low frequency for a long time.
· Closed-loop vector control system for faster control and more precise speed control.
· The compressor unit can still operate efficiently when the frequency is reduced by more than 50%.
· The pressure is stable and the pressure fluctuation is accurately controlled within 0.1 bar.

· The figure shows a comparison of several starting methods. It can be seen that the frequency converter is slowly accelerated to start, the starting is more stable, and the current peak is completely avoided.

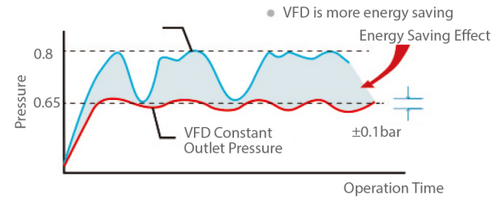


02 Air End

· More stable, no mechanical transmission failure: high-efficiency permanent magnet synchronous motor and screw male rotor adopt embedded-integrated shaft direct connection structure, no gear transmission, completely eliminate gear pitting or broken teeth; Two independent permanent magnet motors are integrated directly drive two air ends, no coupling failures.
· More energy efficient, the air end is always running at energy-saving speed.
· More efficient and efficient permanent magnet motor + no transmission efficiency loss.
· More comfortable, low running noise, eliminating three sources of noise: no-click bearing noise, no gear meshing noise, no coupling drive noise.
· More compact: The permanent magnet motor is small in size and the integrated structure saves space.

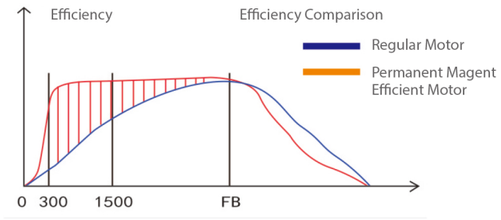


· Under the set frequency conversion pressure, the unit will automatically adjust to keep the output pressure within ±0.1 bar, reducing unnecessary waste (the power consumption increases by 7% for every 1 bar of pressure increase)



03 Advantages of Permanent Magnet Motors Compared to General Asynchronous Motors

· High efficiency: Eliminates excitation system losses and improves efficiency.
· It is still efficient under low load conditions: the energy efficiency of a permanent magnet motor is more than 9% higher than that of a conventional asynchronous motor at full load operation, and its energy efficiency remains unchanged as the speed decreases.
· Large overdrive torque: The ratio of the maximum starting torque of the permanent magnet synchronous motor to the rated torque can be more than 3 times, while the general asynchronous motor is only 1.6 times.



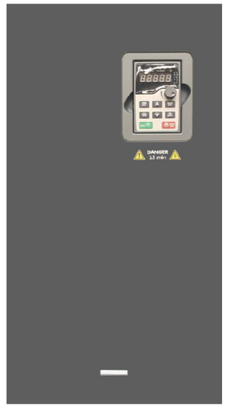
· The control is more stable: the corresponding time of the permanent magnet motor is <50ms, and the gas production can be adjusted in a large range in an instant, so that the gas pressure is truly stable.

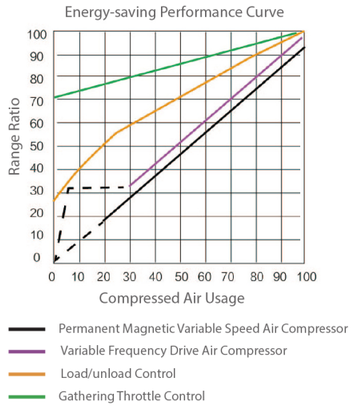
04 Stainless Steel Piping Design

· The piping arrangement is simple and beautiful. Stainless steel piping design to effectively prevent rust in the pipeline, and avoid safety accidents caused by leakage of the pipeline.

05 More Advanced Technology. More Powerful Inverter

- The standard equipment is equipped with a high-frequency reactor to reduce the high frequency generated by the inverter.
- The soft start of the inverter reduces the peak current at startup, resulting in a smooth start and greatly reduced power costs.
- Forced cooling of the inverter to prevent high temperature shutdown in Summer.
- Standard equipment dust screen, circuit board surface coating treatment, high efficiency and durability against dirt, dust, moisture.
- The special design of the heat dissipation area of the inverter ensures stable operation of the inverter under high temperature environment.
- No idling occurs under any load conditions to achieve the desired power saving effect.





- Quickly track changes in pressure, control pressure fluctuations within ±0.1 bar, and optimize the use of the power to accurately provide the right amount of air as needed.

06 Oil Filter

- The imported brand is used to reliably filter the dirt particles in the lubricating oil to ensure the smoothness and lubrication of the oil system at 0.1 micron.

07 Air Filter

- The imported brand is used to reliably remove dirt from the air. The dust particles in the air are controlled below 0.3 microns and the filtration accuracy is as high as 99.99%.

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Technical Parameters

Model	Working Pressure (bar)	Capacity FAD*		Power		Voltage and IP Grade	Noise Level**	Dimensions (mm)			Weight (kg)	Air Outlet Pipe Diameter	Starting Method	EEI
		(m^3/min)	(cfm)	(kW)	(hp)			(L)	(W)	(H)				
DAV-90+	5	7.02-23.40	248-826	90	125	380V IP54	78	2650	1800	1750	2600	DN80	Direct Driven Air Cooling	EEI1
	6	6.94-23.14	245-817											
	7	6.43-21.45	227-757											
	8	6.06-20.21	214-714											
	9	5.89-19.63	208-693											
	10	5.53-18.45	195-651											
DAV-110+	5	7.9-26.34	279-930	110	150	380V IP54	78	2650	1800	1750	3650	DN80		
	6	7.74-25.81	273-911											
	7	7.63-25.43	269-898											
	8	7.35-24.50	260-865											
	9	6.85-22.85	242-807											
	10	6.22-20.72	220-732											
DAV-132+	5	9.65-32.17	341-1136	132	175	380V IP54	78	2650	1800	1750	4100	DN80		
	6	9.38-31.28	331-1104											
	7	8.96-29.88	316-1055											
	8	8.45-28.17	298-995											
	9	8.00-26.66	282-941											
	10	7.51-25.03	265-884											
DAV-160+	5	11.69-38.98	413-1376	160	215	380V IP54	80	3000	1950	2000	5200	DN100		
	6	11.39-37.96	402-1340											
	7	10.79-35.97	381-1270											
	8	10.35-34.51	365-1219											
	9	9.86-32.87	348-1161											
	10	9.36-31.21	331-1102											
DAV-200+	5	13.92-46.42	492-1639	200	270	380V IP54	80	3500	2200	2300	6700	DN125		
	6	13.44-44.79	475-1582											
	7	12.73-42.44	449-1499											
	8	12.25-40.85	433-1422											
	9	11.15-37.17	394-1312											
	10	10.55-35.17	373-1242											
DAV-250+	5	16.80-56.02	593-1978	250	350	380V IP54	82	3500	2200	2300	7000	DN125		
	6	16.50-55.00	583-1942											
	7	16.25-54.15	574-1912											
	8	15.90-53.00	561-1871											
	9	15.30-51.00	540-1801											
	10	14.70-49.00	519-1730											

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