

# GLOBECOMP

## SCREW AIR COMPRESSOR

ZLS 10i – 200i / 7.5Kw – 160Kw

## Permanent-Magnet Variable-Frequency Air Compressor

### Energy-Saving Effect of Power **50%**

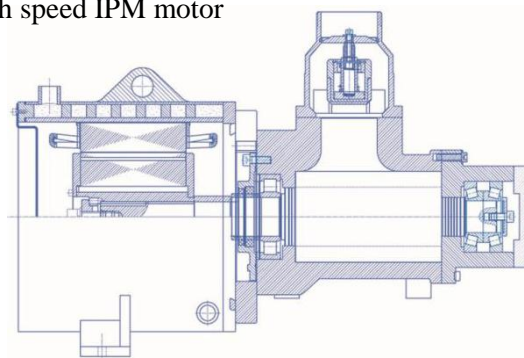


ZLS 10i – 200i / 7.5 Kw-160Kw

- ✓ Energy efficiency level one (China Energy Label)
- ✓ Save as much as 50% of the energy
- ✓ Protection grade IP65, the highest protection level in the industry

### Oil-Cooling Pendulous Coaxial Structure With No Bearings (ZLS 10i-ZLS 100i)

- Fully sealed oil-cooling case
- Pendulous coaxial structure without bearing
- High speed IPM motor

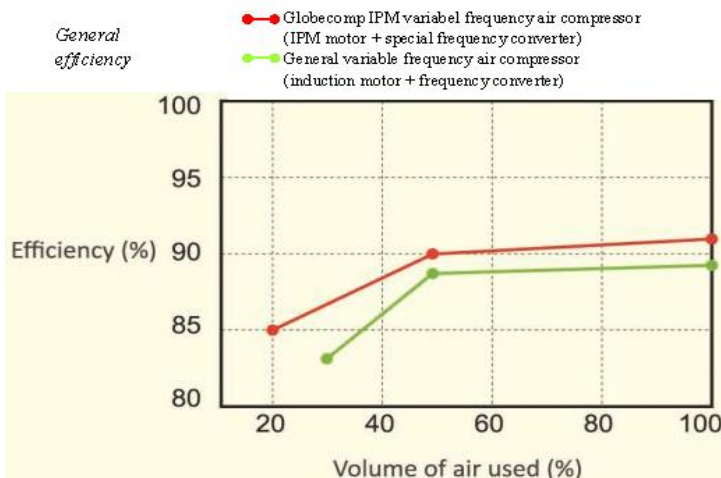
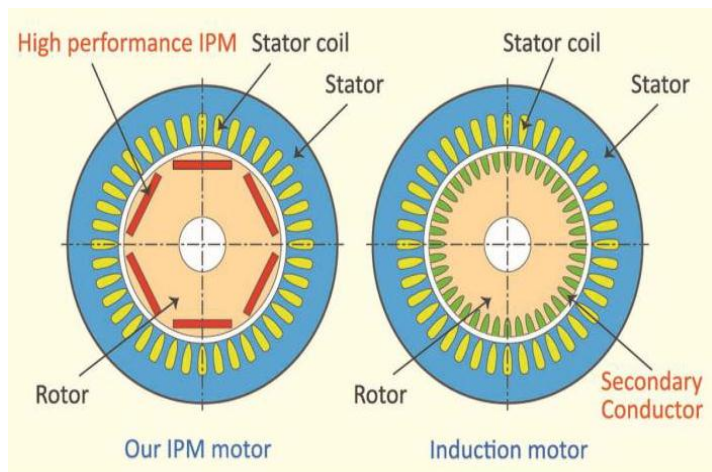


It uses fully sealed oil-cooling case, with highest protection standard of IP65, to totally prevent dust from entering and guarantee that water flushing will cause no harm or damage, maximizing the protection to the permanent magnet's service life. Besides, the motor's cooling oil way is designed with one-way enclosed helix to make sure that cooling accesses to everywhere. Pendulous coaxial structure with no bearings minimizes its transmission loss, improving its transmission efficiency by 2%~5% comparing to belt conveyors and couplers. The application of fully-sealed oil-resistant interior permanent magnet (IPM) high speed motor reduces mechanical wearing greatly.

### Interior Permanent Magnet (IPM) Motor

IPM motor, which is a standard equipment, provides much higher efficiency than that of regular and/or high efficient induction motors and meets IE4 Standard. Meanwhile, by using high efficient frequency converter, it achieves better energy saving effect than the old ones. Since the bearing temperature of IPM motor is relatively low, its lubricating grease serves a longer time while the workload of motor maintenance is also reduced.

### Comparison of Structures of IPM Motor and Induction Motor



## Why choose Globecomp ZLS-i IPM variable-frequency air compressor?

### Highly energy saving

- Comparing to non-variable speed screw air compressor, its average energy saving rate can be up to 50%.
- Super air displacement, its frequency is variable from 0Hz to 300Hz and the air displacement can be increased by as much as 28%.
- High efficient motor (IPM), its efficiency is up to 94.5%, reaching the rating of IE4.

### Brandy new revolution

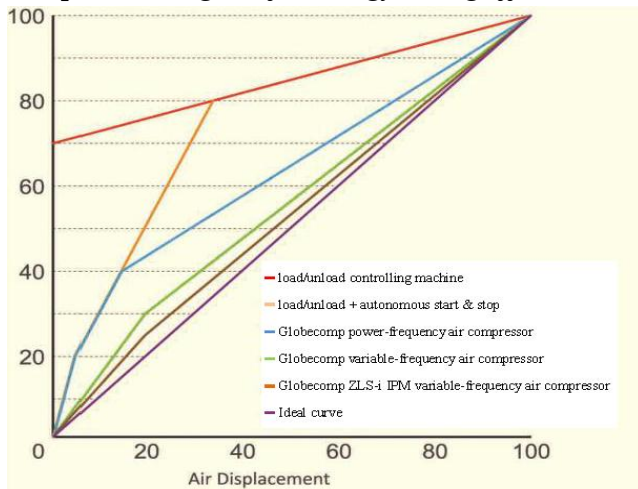
- A brand new revolutionary concept for variable-frequency air compressor; sift out regular ones; best energy saving effect in the industry;
- More compact design, better enclosed body, less noise and smaller;
- Lead to a totally new direction for future air compressors; establish new industrial standards and provide clients with best energy saving solutions.

### IPM variable-frequency controlling, better energy saving

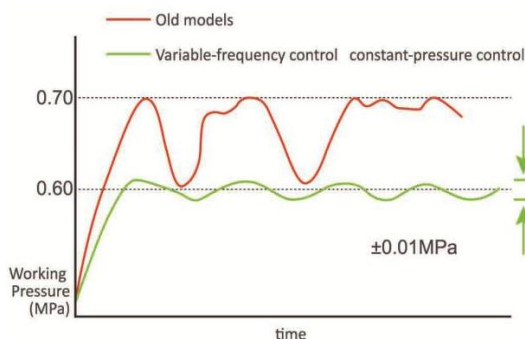
It's able to automatically adjust to optimized and most adequate air volumes during loading in accordance with user's exact air consumption situation.

- Constant control of pressure makes the precision of target pressure controlled within  $\pm 0.01\text{MPa}$ , and it's able to save 7% of energy with regular variable frequency air compressor and save 50% energy with upload/download controlling machine.
- The motor will stop automatically when air consumption is really low.

### Comparison diagram for energy saving effect



### Realize energy saving with constant pressure control



### Highly reliable

- Years of continuous tests guarantee extreme reliabilities of IPM variable frequency compressors.
- Protection grade IP65, fully-sealed oil-cooling case to completely prevent dust and/or liquid from entering.
- Optimal configuration allows customers to purchase cheapest maintenance parts.



- Control principle: Regular power-frequency air compressor use intake valves to adjust air displacement needs while variable frequency air compressors and IPM variable frequency air compressors adjust air displacement needs via motors with variable frequency, and the comparison between their differences on energy saving is as follows.

### Assumptions:

Taking 37KW for example, with working time of 6,600 hours annually and average load of 50% and electricity fee of Rp1.115/Kw/h, power-frequency air compressors use general settings while variable frequency and/or IPM air compressors can be set to run at the lowest frequency and be set to be in standby mode after 0 minute.

- Calculation of energy conservation: Energy consumption while idling + energy consumption during operation.

	Load/unload controlling machine	Regular power-frequency air compressor	Regular variable-frequency air compressor	Globecomp ZLS-i IPM variable-frequency air compressor
Total yearly electric charge (Rp1.115)	Rp 272jt	Rp 190jt	Rp 163jt	Rp 136jt

### The load for energy-saving effect of power consumption of 37KW compressor is of 50%

Running time: 6600 hours  
Electric charge: Rp1.115,-

■ Load/unload controlling machine

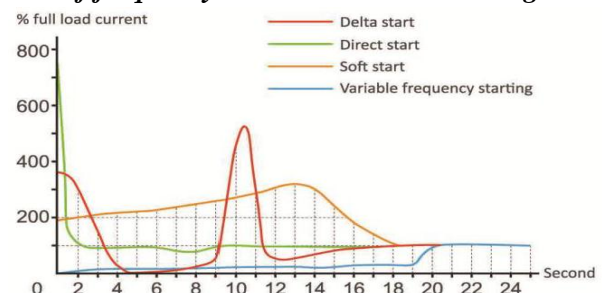
■ Regular power-frequency air compressor

■ Regular variable-frequency air compressor

■ Globecomp ZLS-i IPM variable-frequency air compressor



### Soft start of frequency converter reduces starting current.







- ① Operation Panel
- ② Emergency stop button
- ③ Oil-air separation barrel
- ④ IPM frequency converter
- ⑤ Cooling fan
- ⑥ Oil filter
- ⑦ Screw air end
- ⑧ IPM motor
- ⑨ Air filter
- ⑩ Oil cooler



### Special driver for IPM frequency conversion

- ☐ Modularized design for easy maintenance and extension
- ☐ Built-in Modbus, RS485 and RS232 serial communications to satisfy multiple needs of users.
- ☐ Long service-life design and life detection for important parts.
- ☐ PCB coating to reinforce environmental tolerance.
- ☐ With supreme thermal dissipation design, its operating ambient temperature can be 50℃ and the automatic output rating adjustment based on temperature rise condition can ensure the continuous and highly efficient operation of frequency converter.



### Technical Data Sheet

Model		Mpa	ZLS10i	ZLS15i	ZLS20i	ZLS30i	ZLS40i	ZLS50i	ZLS60i	ZLS75i	ZLS100i	ZLS125i	ZLS150i	ZLS175i	ZLS 200i	
Max air displacement/ discharge pressure m3/min		0.75	1.59	2.37	3.26	4.5	6.1	7.3	8.7	12.1	15.8	19	24.8	26.7	30.1	
		0.85	1.56	2.34	3.01	4	5.6	6.8	7.8	10.5	14.1	16.2	23.2	25.3	29.7	
		1	1.30	1.96	2.6	3.61	5.12	5.8	7.1	8.6	12.3	14.1	20.1	23	26.95	
Working Mode of Cooler		Air cooling/water cooling														
Discharge Temperature		℃	Air cooling < environmental temperature +8℃, water cooling < 40℃													
Volume of lubricating oil		L	10	10	10	11	13	18	25	25	60	60	70	94	94	
Noise		dB(A)	61±2	61±2	62±2	64±2	64±2	64±2	65±2	65±2	66±2	66±2	67±2	67±2	70±2	
Motor	Power	KW/HP	7.5/10	11/15	15/20	22/30	30/40	37/50	45/60	55/75	75/100	90/125	110/150	132/175	160/200HP	
	Start mode	Variable frequency starting														
	Drive mode	Direct-driven, coaxial										Direct driven				
	Voltage	V	220V, 380V, 415V, 440V, 460V													
	Frequency	Hz	50HZ, 60HZ													
Dimension	Length	mm	1000	1200	1200	1350	1400	1500	1550	1700	1850	2050	2260	2750	2750	
	Width	mm	700	800	800	850	850	900	1000	1150	1250	1300	1660	1760	1760	
	Height	mm	1140	1160	1160	1200	1350	1350	1480	1530	1500	1700	1800	1850	1850	
Weight		Kg	300	370	370	410	540	650	800	1000	1300	1450	2100	2400	2890	
Caliber of Air-vent		inch	1"	1"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	3"	3"	
Caliber of cooling nozzle		inch		3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1-1/2"	1-1/2"	1-1/3"	1-1/4"	1-1/2"	
Discharge of cooling water		L/min		60	60	80	80	80	200	200	200	200	200	300	300	

Specification is subject to change without notice due to improvement for excellence