

# SHENZHEN KEWO ELECTRIC TECHNOLOGY CO., LTD



# **KEWO AC DRIVES,**

# VARIABLE FREQUENCY DRIVE,

### **FREQUENCY INVERTER**



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### **Company introduction:**

KEWO ELECTRIC TECHNOLOGY CO., LTD. (hereinafter called KEWO) is a professional manufacturer of kinds of AC drives, variable frequency inverter, soft start, and solar pump inverter, etc. We are not only focus on designing, manufacturing, sales and after sales service for above mentioned products, but also providing custom made automation solution and renewable energy technologies.

There are more than 150 staffs working in our factor, 60% of them are engineers. Thanks to our great R&D team hardworking and innovation, we mastered core and leading vector control technology for PMSM and IM. We also introduced and absorbed latest servo motor control and motor control technology from abroad, that help us keep top position among Chinese manufactures. We have established 2 modernization production lines, digital quality control system, and bar tracking system and EPP management system, atc. And every piece of KEWO.

quality control system, code bar tracking system and EPR management system, etc. And every piece of KEWO products have been tested with full load to ensure 100% good quality. Quality begins and ends with each person in our company.

KEWO products is comprised of high level AC drives, variable speed drive, frequency inverter, solar pump drive with DC and AC input, etc. These products are widely using in industrial automation, cement, textile, metallurgy, HVAC, oil &gas, water treatment, chemical, machine tools, hoisting, agriculture, farming, irrigation...



KEWO Products Range: (VSD, Frequency Inverter, Servo drive, soft starter, solar pump Inverter)





Sealed VFD AD850Z/T( Servo Drive) Solar Pump Inverter Soft Starters



# **KEWO AD DRIVES BRIEF INTRODUCTION**

PRODUCTS SPECIFICATION PICTURES	BRIEF INTRODUCTION			
AD800 Series 1Ph, 220V, 0.4kw to 2.2kw.	Drive for PMSM and IM			
High 3Ph, 220V, 0.75kw to 75kw	Accuracy speed and torque control for			
Performance 3Ph, 380V/660V/1140V,	motor, multiple functions, good protection;			
Vector Control 0.75 to 630kw.	Sensorless vector control, sensor vector			
Drive/Variable	control with PG, VF control,			
Speed Drive	180% rated starting torque,			
	big allowance IGBT module ,			
AD100 Mini 1Phase, 220V, 0.4 to 1.5kw	Adopt software platform as same as			
Economic AC	AD800, easy using and powerful function			
Drive	Mini and Economic type,			
A AMERICAN	Using IPM of iGBT			
AD350 Mini 1 Ph 220V,0.4 to 2.2kw,	Mini drive with compact design			
Vector Control 3 Ph,380V, 0.75 to 3.7kw	Vector control and VF using the same			
Drive	software platform as AD800;			
Anno	IGBT module to ensure good quality, rich			
	functions			
Ad800S 1Ph, 220V, 0.4kw to 2.2kw.	Enhanced AD800 version, special for			
Frequency 3Ph, 220V, 0.75kw to 75kw	PMSM servo motor with sensorless or			
Inverter For 3Ph, 380V/660V/1140V,	sensor control, Multiple protection			
PMSM (servo 0.75 to 630kw.	function			
drive)	Rich functions, and flexible using			
	PG card built in controller board			
AS850 Z Servo 3 phase, 380V±15%, 5.5kw to	Driving f or permanent magnet			
Drive For PMSM 110kw	synchronous motor (PMSM) for energy			
Of IMM.	saving. High energy saving, high power			
	factor, quick response and high accuracy			
	control, etc.			
AS850T Spindle 3 phase, 380V±15%, 2.2kw to	Spindle servo drive for CNC, machining			
Servo Drive For 55kw	center, packing, textile, etc. high accuracy			
PMSM And IM	speed, torque and position control			
A ANTE-	through close loop servo control			
SD800 Seal 220V (single-phase power)	sealed frequency inverter is enhanced			
Frequency 0.4-2.2kW	version of AD800 series frequency			
Inverter (IP54) 380V (three-phase power)	inverter, built in with IP54 protection			
0.75-30kW	grade. With excellent in anti-dust, water			
v. jumms  v. jum	proof, anti-grease and anti-corrosion			
S 4	properties			



# AS850-Z Hybrid Servo Drive For PMSM Of Injection Molding Machine

AS850Z series servo drive for permanent magnet synchronous motor (PMSM), is KEWO own developed hydraulic electric servo drive system for injection molding machine energy saving. It has following advantage, high energy saving, high power factor, quick response and high accuracy control, etc. AS850Z has powerful overload capability even under low speed, 180% rated torque for 30s under 0 speed is possible to ensure good pressure keeping ability.

Output frequency range: 0 to 400Hz.

Input voltage: 3 phase 380V±15%, 2.2kw to 90kw

Pressure signal reference: external analog 0-10V, 0-1A.

Protection function: Input phase missing, input under voltage, over voltage, over current, over load, over heat,

external disturbing.

Cooling method: force cooling

Mount: Wall mount

#### **Function features**

**Energy saving**: up to 60% energy saving compare to traditional fixed pump system. 75% is possible be achieved according to difference injection condition.

Lower oil temperature: reduce 5-10 degrees

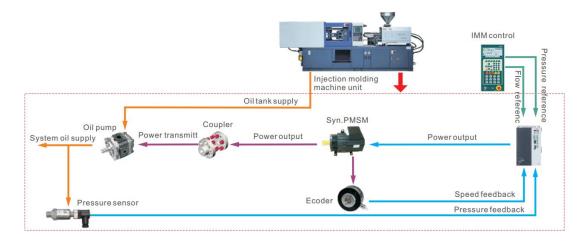
**High repeated accuracy:** To achieve high accuracy flow and pressure control

**Long pressure holding time:** It is favorable for big wall thickness.

Quick response: frequency response up to 50ms.

#### **Enhanced features:**

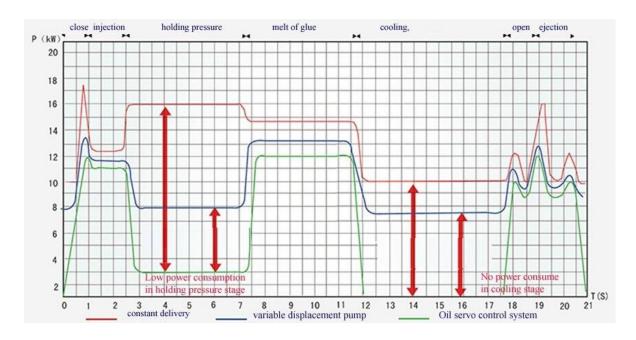
- 1. Design the signal correction algorithm and match to work high performance under low speed characteristic to solve the creep problem of IMM. Because his given signal reference is nonlinearity characteristic.
- 2. Due to switching frequently in flow control mode, so we adopt fuzzy control to realize smooth switch of flow and pressure control.
- 3. Adopt flow control with pressure compensation to eliminate effect of flow estimate accuracy.
- 4. Adopt noise control method to reduce the fluctuation of output pressure of oil pump.
- 5. Monitoring temperature of motor and drive in whole journey, parameters adjusting in real time



System connection for energy saving with hybrid servo drive

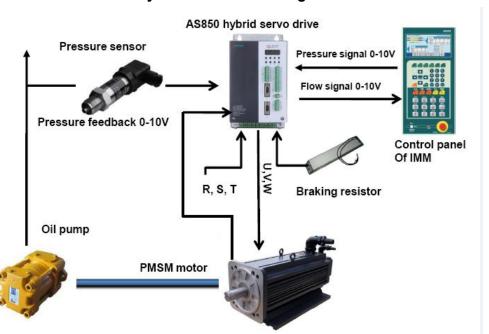


### **Energy saving comparison diagram**



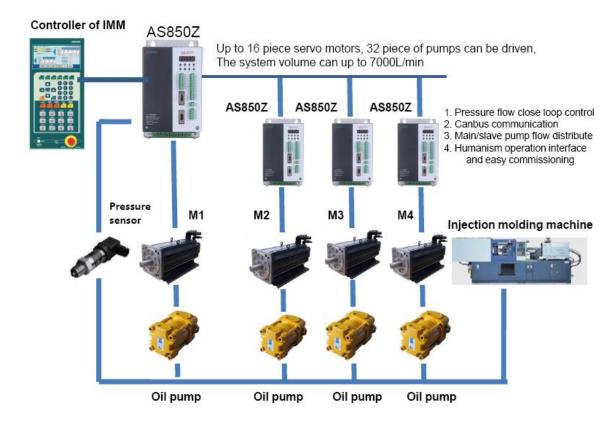
The injection molding machine power consume take up 75% of system total in traditional constant flow of IMM. It need difference flow and pressure during difference working stage of IMM such as mold close, injection, pressure holding, molding open. When the required over the setting pressure and flow, the flow and pressure will be adjusted by relief valve or proportional valve. this process call high pressure throttling. Up to 40-75% energy wasting during this stage.

#### System connection diagram

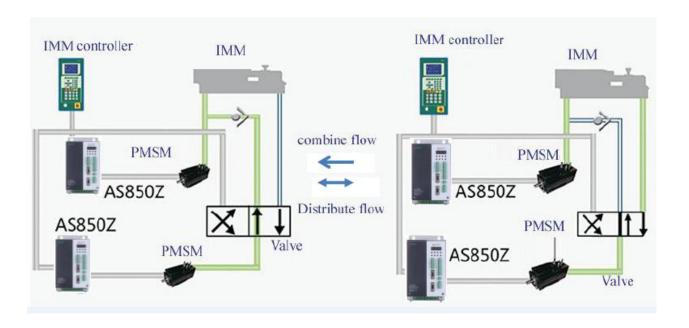




### Multiple pumps combine flow control diagram



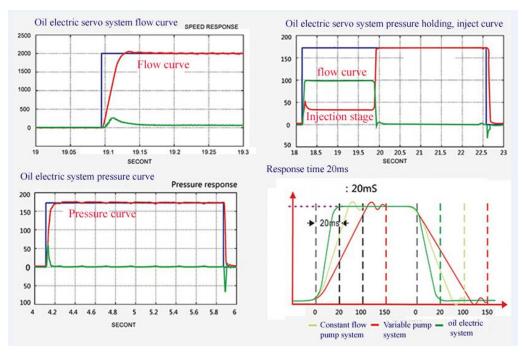
#### Multiple pumps compound control compound control





# Oil servo drive system performance.

# System curve of Kewo AD850Z servo drive in IMM application



#### **Technical data**

	Items	Description				
Input	Rated voltage range	3 phase 380V±15%				
	rated frequency	50/60Hz				
Output	rated voltage range	output 0 to 380V				
	rated frequency	0.00 to 400.00Hz				
mounting	wall mounting with IP20	wall mounting with IP20				
Cooling	force cooling	force cooling				
method						
Encoder	Rotary transformer	Rotary transformer				
	Pressure reference	External analog signal (0-10V)				
	Flow reference	External analog signal (0-10V)				
	pressure feedback External analgo ( 0-10V or 4-20mA)					
	Control input	9 channel insulation input				
	control output	3 channel insulation input				
	analog output	1 channel output				
Protection	Phase missing input, under	Phase missing input, under voltage input, over voltage input, over current,				
function	overload of drive, overheat	overload of drive, overheat of motor, external interference encoder fault.				
Display	current output display, current rotation, current output current, output voltage,					
-	fault alarm, operation paran	fault alarm, operation parameters, running status.				



		WWW.RCWOdilvC.			
	using place	Indoor, no sunlight exposure, no dusty, corrosive atmosphere, no flammable gas, no			
		water dip and not salt.			
	Environment temperature	"-10 ℃ to 50℃			
	Environment humidity	90% below( no condensation)			
	shock intensive	0.5g( acceleration) below			
	altitude	1000 below.			
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Input	Rated voltage range	3 phase 380V±15%			
	rated frequency	50/60Hz			
Output	rated voltafe range	output 0 to 380V			
•	rated frequency	0.00 to 400.00Hz			
mounting	wall mounting with IP20				
Cool method	force cooling, fans control is available				
Encoder	Rotary transformer				
	Pressure reference	External analog signal (0-10V)			
	Flow reference	External analog signal (0-10V)			
	pressure feedback	External analog ( 0-10V or 4-20mA)			
	Control input	9 channel insulation input			
	control output	3 channel insulation input			
	analog output	1 channel output			
Protection function	Phase missing input, under voltage input, over voltage input, over current, overload of drive, overheat of motor, external interference, encoder fault.				
Display	current output display, current rotation, current output current, output voltage, fault alarm, operation parameters, running status.				
	using place	Indoor, no sunlight exposure, no dusty, corrosive atmosphere, no flammable gas, no water dip and not salt.			
	Environment temperature	"-10 ℃ to 50℃			
		90% below( no condensation)			
	Environment humidity	90% below( no condensation)			
	Environment humidity shock intensive	90% below( no condensation) 0.5g( acceleration) below			



### **Model selection**

Servo drive	Input	Rated	rated	Rated	braking	braking	Braking
model	voltage	output	input	output	resistor	resistor (Ω)	unit
		power (KW)	power	current	power		
			(A)	(A)	selecting		
AS850Z4T017	3	7.5	20.5	17	1000	>90	built in
AS850Z4T025	phase	11	26	25	1000	>40	
AS850Z4T032	380V	15	35	32	1000	>32	
AS850Z4T037		18.5	38.5	37	2500	>32	
AS850Z4T45		22	46.5	45	2500	>16	external
AS850Z4T60		30	62	60	2500	>16	connect
AS850Z4T75		37	76	75	5000	>8	
AS850Z4T91		45	92	91	5000	>8	
AS850Z4T112		55	113	110	5000	>8	
AS850Z4T150		75	157	150	5000	>8	
AS850Z4T175		93	180	175	5000*2	>8*2	
AS850Z4T210		110	214	210	5000*2	>8*2	
AS850Z4T250		132	256	250	5000*2	>8*2	
AS850Z4T300		160	307	300	5000*2	>8*2	

# Application:

- 1. Injection molding machine
- 2. pressure die casting machine
- 3 . brick machine
- 4. shoes machinery
- 5. Pressing machine

- 6. Aluminum extrusion machine
- 7. Hydraulic, CNC punching machine
- 8. Civil engineering machine
- 9. Other hydraulic machinery

