Company Profile

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Epsivo Electric Co., Ltd. is a growing high-tech company with full independent intellectual property rights, focusing on research and development, production, sales and service of high-performance drive products, positioning and serving industrial equipment manufacturers.

We have been committed to the research and development of new energy products, in order to make our environment more energy-saving, environmental protection and sustained efforts to achieve full social responsibility enterprises.

"Customer-centered" is our core value. It is our duty to pursue customers'trust in our products and let customers enjoy our quality and service, so as to break the monopoly of foreign brands and make it our mission to move from domestic to international. The company has always adhered to the concept of "striveroriented", adhering to the spirit of independent innovation, sincere unity in business, adopting modern business philosophy, using modern management tools, so that the business processes of enterprises are standardized and efficient.

Corporate Culture

Spirit: Integrity, Enterprising, Cooperation and Innovation.

Vision: To Become a World-class Supplier of Industrial Automation Products and Solutions.

Mission: Promoting Craftsman Spirit, Pursuing Perfect Quality, Providing Professional Service and Creating Social Value.

Contents

Automation product integration: standard product + non-standard product to optimize the system; standard.
product integration: fast, convenient and comprehensive.
Service and resource integration: one-stop solution.
Mainstream bus communication mode is supported, which can be easily combined with other products.

❑ General Drive ES500 Series

❑ Electro-hydraulic Servo Driver ES600 Series

❑ Spindle Servo Driver ES1000 Series

General Drive ES500 Series

General Drive ES500 **Series**

With high performance current vector technology, ES500 Series drivers can easily drive induction motors (asynchronous and permanent magnet synchronous motors) to meet the working requirements in various environments. While maintaining excellent performance and functions, from the point of view of customer applications, high reliability, ease of use, maintainability, environmental protection, installation space and design standards are obvious Upgrade.

☑ Excellent

☑ Performance

☑ High Reliability

☑ Simple And Easy

❑ Excellent Performance

• Excellent Performance

The latest generation o f dedicated motor control CPU from German company INFINEON is selected. The advanced software and hardware technologies are adopted to integrate into perfect drive output, and the remote online upgrade program service can be provided for high-end customers.

• Available For Multiple Kind Of Motor

Vector control of AC asynchronous motor and vector control of synchronous motor.Support vector control of PMSM without position feedback.

• Excellent Performance Of Pmsm Motor

Stable and efficient drive permanent magnet synchronous motor (open and closed loop),ac-hieve higher energy efficiency. In addition, dir-ect drive can be realized on low-speed control industrial equipment to achieve higher energy efficiency and better control performance.
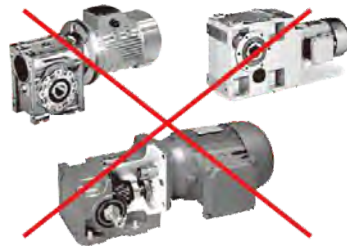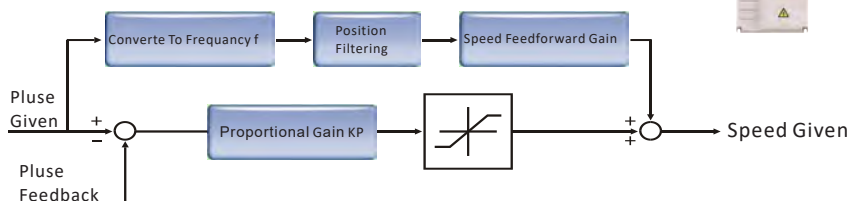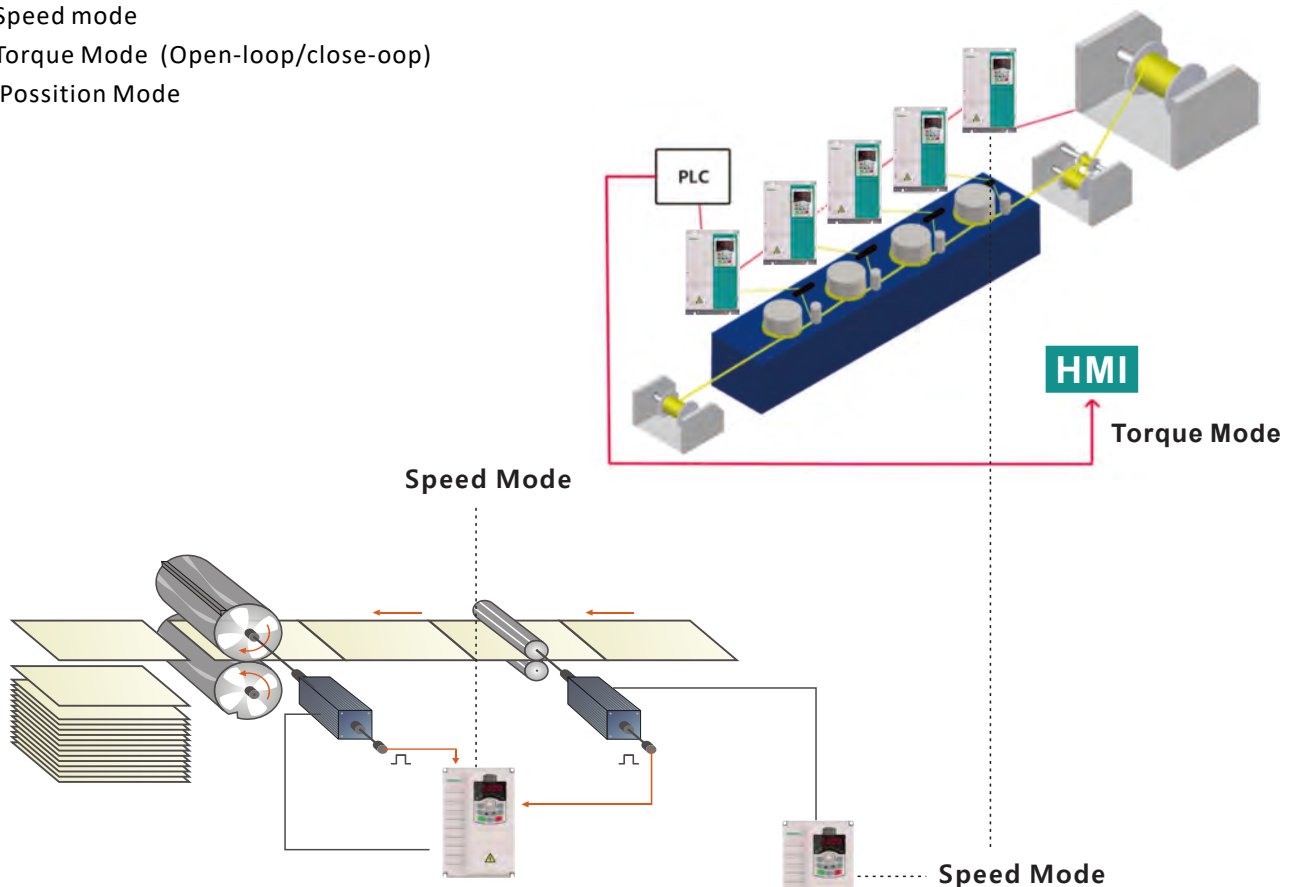
• Multiple control modes

Multiple control modes
Speed mode
Torque Mode (Open-loop/close-oop)
 Possition Mode

HMI

Torque Mode

Speed Mode

Speed Mode

| Converte To Frequancy f | Position Filtering | Speed Feedforward Gain |

Pluse Given

+
−

Proportional Gain KP

+
+
+

Speed Given

Pluse Feedback

General Drive ES500 Series

• **Rich Extended Function Cards**

The cards blow are all Supported

DeviceNet   EtherNet/IP   ETHERNET POWERLINK   Modbus   BUS

EtherCAT. Conformance tested   CANopen   CC-Link   PROFINET   WLAN   GPRS

Picture	Model	Description
	ES50-IO1	4 digital inputs and 1 digital output can be added.
	ES50-GPRS1	GPRS MODULE
	ES50-CAN1	CAN open Communication adapter card
	ES50-DP1	PROFIBUS-DP Communication adapter card
	ES50-EtherCAT	Ether CAT Communication adapter card
	ES50-PROFINET	PROFINET Communication adapter card
	ES50-DeviceNet	DeviceNet Communication adapter card
	ES50-POWERLINK	Powerlink Communication adapter card
	ES50-CC-link	CC -link Communication adapter card
	ES50-EtherNet/IP	EtherNet/IP Communication adapter card
	ES50-WLAN	WLAN Communication adapter card
	ES50-PG1	Differential rotary encoder interface card adapted to 5V power supply
	ES50-PG2	Open-circuit collector encoder interface card, adapted to 15V power supply
	ES50-PG3	Applicable to resolver, excitation frequency 10 kHz, DB9 port
	ES50-RT1	Real-time clock input card

• Stable Precision,Speed Range Widely

stable precision:±0.5%(SVC), ±0.02%(FVC)

speed range: 1:200(VC), 1:1000(FVC)

torque response: 20ms(SVC), 5ms(FVC)

overload capacity: stable running at 110% of rated current

150% rated current 1min,

180% rated current 3s,

• Fast Current Limiting Function

When the current exceeds the current protection point, the current can be quickly limited to the current protection point to avoid overcurrent alarm caused by sudden load or interference.
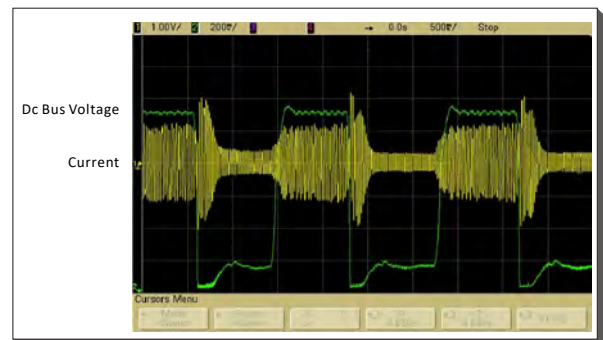
• Unique Speed Tracking Function

It can track the speed and direction of motor quickly without any impact without additional hardware detection. Especially suitable for the equipment that needs to track the speed, such as fans and pumps. There are three kinds of speed tracking modes to choose from.

• Overexcitation Function

Overexcitation Function Is Effective
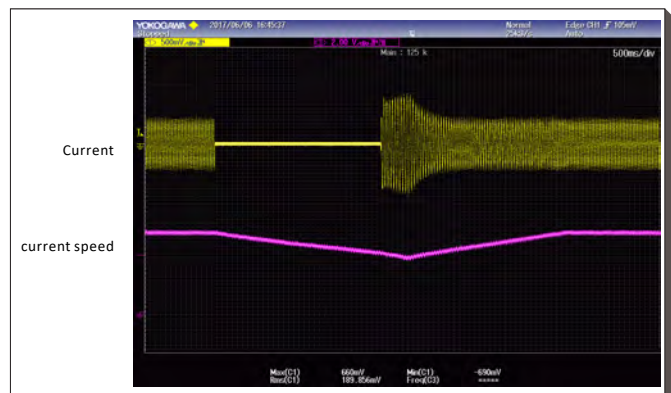
Overexcitation Function Is Valid
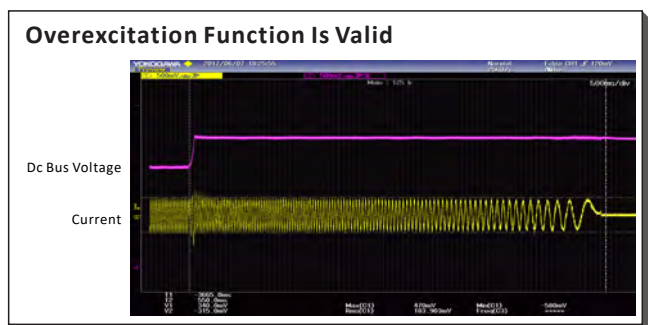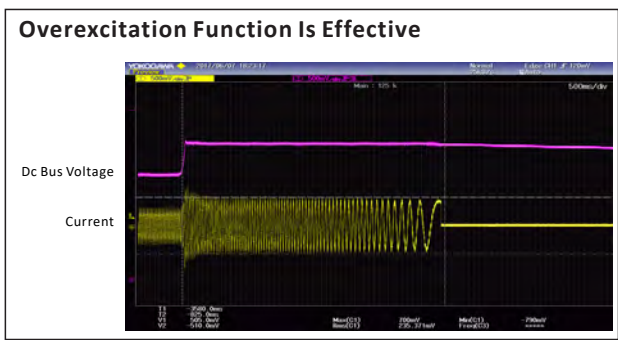
No additional accessories such as brake resistance are needed to realize fast braking and improve product usability.It can restrain bus voltage rising during deceleration process, avoid frequent overvoltage fault reporting, and brake quickly to meet fast shutdown.

General Drive ES500 Series

❑ High Reliability

• Long-Life Technology

Temperature rise of key components and PCB sheets is comprehensively monitored, optimized configuration, long design life and redundant waste heat design.

• Large capacity design

Using infineon's fourth generation IGBT module, combined with its 175. maximum junction temperature characteristics, innovative PWM modulatio6n mode is used to further reduce switching losses.

• Automatic Spraying Technology Of Three-Proof Paint

Special equipment of automatic spraying line for three-proof paint can design different spraying strategies according to different circuit boards, so that uniformity of thickness and batch consistency of three-proof paint coating can be reliably guaranteed.

• Automatic Spraying Technology Of Three-Proof Paint

Independent cooling passage design can effectively prevent dust from entering the driver, resulting in short-circuit and other faults, and improve reliability. Selection of long-life and large air volume cooling fan can effectively reduce the temperature rise of the driver and ensure the reliable and stable operation of the driver.
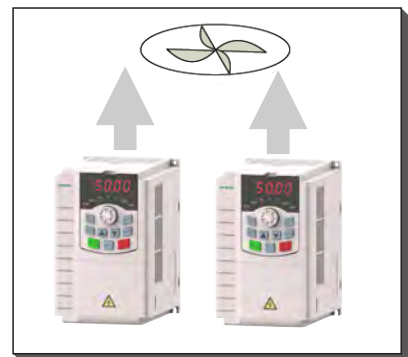
• Independent Cooling Passage

By means of computer thermal simulation, the temperature of each monitoring point is analyzed, and the maximum temperature rise in the product is estimated through the air flow velocity and temperature field diagrams, which provides a quantitative basis for the reasonable structure of the product.
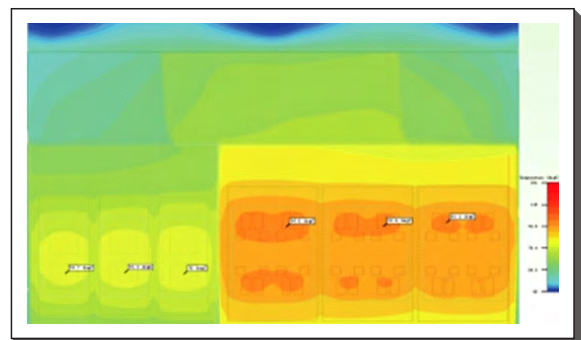
• CE Certification&ISO9000 Certification

The product meets the requirements of EU <<New Method for Technical Coordination and Standardization>> The product management process is strictly implemented in accordance with ISO9000 system. The product quality is reliable and the product consistency is good.

❑ Usable

• Instantaneous power failure and non-stop Function

This function means that in the case of instantaneous power failure or sudden voltage reduction, the frequency converter reduces the output speed, and compensates for the voltage reduction by feeding back the energy of the load, so as to maintain the driver running in a short time.
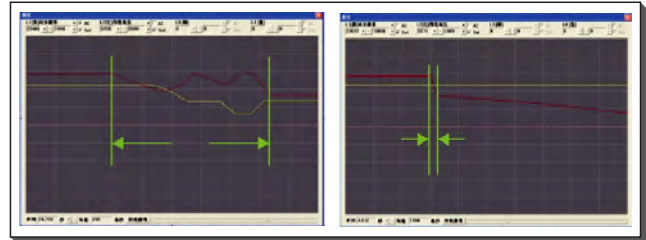
• Marco Function

Macro function is aimed at the special requirement of performance function in industry application. It realizes one key initialization function and reduces the workload and technical requirement of debuggers on the first line.

• ESDriverMS Monitoring Platform

Rich monitoring functions, convenient for field data acquisition and debugging; online oscilloscope function; support parameter batch upload and download; real-time display of U0 group parameters, with monitoring and diagnostic functions; can automatically generate debugging document records.
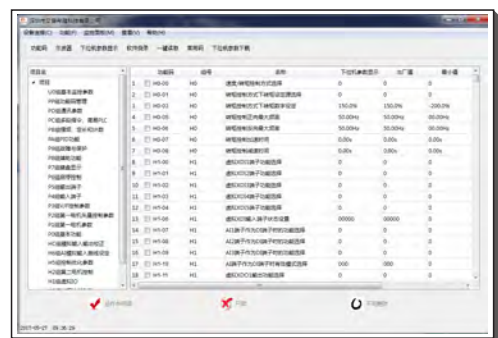
• Terminal Function Programmable

Multifunctional terminal DI has 51 kinds, DO has 42 kinds, AO has 16 kinds of logic function selection, which meets the general driver's normal control function requirements.

• Build-In PID Module

Built-in 2 of PID parameter channel, can automatically switch according to deviation, DI terminal, frequency conditions, given and feedback source selection is diverse, rich in types, practical;
PID Feedback detection function,judge faults easily.
For specific industries, a set of PID factory value parameters can meet the requirements of the equipment. It is suitable for printing package, wire drawing machine, cable and other occasions of winding diameter change. It simplifies the debugging process and facilitates maintenance.

General Drive ES500 Series

Name Rules & Data

Model Explaining

ES500-4 T 15 G B /18.5PB

Series	Driver type
ES500	Gereral
ES300	Simple
ES200	Mini

Symbol	Reted voltage
2	220V
4	380V

Symbol	Phase
S	Single phase
T	Three phase

Brake Unit	
None	Without
B	Build-in

Symbol	Motor type
G	Constant load
P	Fan and Pump

Symbol	Power
1.5	1.5Kw
...	...

Item		Power Capacity (kVA)	Rated Input Current(A)	Rated Output Current(A)	Suitable Motor	
					kW	HP
Single Pahse: 220V(-15%～+20%)50/60Hz						
ES500-2S 0.4GB		1.0	5.4	2.3	0.4	0.75
ES500-2S 0.75GB		1.5	8.2	4	0.75	1
ES500-2S 1.5GB		3	14	7	1.5	2
ES500-2S 2.2GB		4	23	9.6	2.2	3
Three Pahse: 380V(-15%～+20%)50/60Hz						
ES500-4T 0.4GB		1.0	2.4	1.2	0.4	0.75
ES500-4T 0.75GB		1.5	3.4	2.1	0.75	1
ES500-4T 1.5GB		3	5	3.8	1.5	2
ES500-4T 2.2GB		4	5.8	5.1	2.2	3
ES500-4T 3.7GB		5.9	10.5	9	3.7	5
ES500-4T 5.5GB	ES500-4T 5.5PB	8.9	14.6	13	5.5	7.5
ES500-4T 7.5GB	ES500-4T 7.5PB	11	20.5	17	7.5	10
ES500-4T 11GB	ES500-4T 11PB	17	26	25	11	15
ES500-4T 15GB	ES500-4T 15PB	21	35	32	15	20
ES500-4T 18.5GB	ES500-4T 18.5PB	24	38.5	37	18.5	25
ES500-4T 22GB	ES500-4T 22PB	30	46.5	45	22	30
ES500-4T 30G	ES500-4T 30PB	40	62.5	60	30	40
ES500-4T 37G	ES500-4T 37P	57	76.0	75	37	50
ES500-4T 45G	ES500-4T 45P	69	92.0	91	45	60
ES500-4T 55G	ES500-4T 55P	85	113	112	55	75
ES500-4T 75G	ES500-4T 75P	114	157	150	75	100
ES500-4T 90G	ES500-4T 90P	134	180	176	90	125
ES500-4T 110G	ES500-4T 110P	160	214	210	110	150
ES500-4T 132G	ES500-4T 132P	192	256	253	132	200
ES500-4T 160G	ES500-4T 160P	231	307	304	160	250
ES500-4T 185G	ES500-4T 185P	242	350	340	185	275
ES500-4T 200G	ES500 4T 200P	250	385	377	200	300
ES500-4T 220G	ES500 4T 220P	280	430	426	220	300
ES500-4T 250G	ES500 4T 250P	355	468	465	250	400
ES500-4T 280G	ES500 4T 280P	396	525	520	280	370
ES500-4T 315G	ES500 4T 315P	445	590	585	315	500
ES500-4T 350G	ES500 4T 350P	500	665	650	350	420
ES500-4T 400G	ES500 4T 400P	565	785	725	400	530

Technical Specifications

	ITEM	Specification
BASIC	Maximum Frequency	Vector Control:0.00～500.00Hz V/F Control:0.00～500.00Hz;Maximum Frequency
	Carrier Frequency	0.8kHz-16kHz Adjust carrier frequency from 0.8kHz-16KHz in depend on the type of the load freely.
	Digital Setting:0.01Hz	Analog Setting:Maximum Frequency×0.025% ;Input Frequency resolution
	Control Mode	Open-loop Vector Control;Close-loop Vector Control;V/F Control
	Start Torque	G mode:0.25Hz/150%(SVC); 0Hz/180%(FVC)
	Speed Range	1:200(SVC);1:1000(FVC)
	Steady Speed Accuracy	±0.5%(SVC); ±0.02%(FVC)
	Torque Control Accuracy	±5%(SVC); ±3%(FVC)
	Overload Capacity	G mode 150% of rated current 60s
	Torque Lifting	Automatical Torque Lifting ;Manual Torque Lifting0.1%～30.0%
	V/F curve	5 Mode:Line Mode,Multipoint ModeSquare V/F Mode,V/F Separating Mode and Incompleted V/F Separeting Mode.
	Acceleration-Deceleration Curve	0.0 s～6500.0s—line or S curve acceleration-deceleration mode, 4 kinds of acceleration-deceleration time, acceleration-deceleration time range 0.0s~6500.0s
	DC braking	The frequency of DC braking:0Hz~maxmum frequency; 0%~100%—Braking acted current 0~100%;0~36s—Braking time:0~36s
	Jog Control	0.0s~6500.0s—Jog acceleration-deceleration time 0Hz~50.00Hz——Jog frequency range 0Hz~50.00Hz
	Simple PLC and Multi-velocity	maximum get 16-segment of speed by build in PLC or digital terminals
	Build in PID	process control and close-loop control
	Automatic Voltage Regulation	Steady output voltage automatically when the grid no stable.
	Fast Current Managing Protection	Over Current,Over Voltage And Stall Protection; Control output voltage and current,preventing frequent over current and over voltageMinimizing overcurrent and protecting drive.
Special fuction	Speed Limitation And COntrol	Controlling torque automatically,preventing frequent trip, Torque control is available at vector mode
	Instantaneous blackout without shutdown	Compensating DC BUS voltage by braking when momentary outages, to keep the drive continue to running for a short time.
	Virtual IO	5 virtual DI/DO;multiple logic control
	Timing control	Timer:The range of setting time:0.0min~6500.0min
	Multi-motor switching	2 group of motor paramaters,Arbitrary switching between 2 motors
RUNING	Command Source	Keyboard control,terminal control and RS485 control.
	Frequency Source	11 kinds of frequency source:keyboard number,keyboard potentionmeter,0~10V,4~20mA,pulse signal,communication.
	Auxiliary Source	11 kinds of auxiliary frequency source, Strong frequency fine tuning and synthesis.
	Input Terminals	3 analog inputs,AI1,AI2 for 0~10V input;7 digtal inputs,DI7 also can be 100kHz pulse input channal;AI3 for both 0~10V and 0~20mA
	Output Terminals	2 Analog output (AO1/AO2),AO1 available for 0-20mA,4-20mA and 0-10V output.AO2 available for 0-10V output. 1 high-speed 100kHz pulse output (NPN and PNP);2 relays
	Protection	Motor Short-circuit.output loss phase,over current,over voltage,low voltage,over heat,over load etc.Brake circuit protection:over load,short circuit,brake resistor protection.;

General Drive ES500 Series

Dirgram

Declaration:
⬭ — Barrier Cable

22Kw And Below Build-In Bake Unit
30 Kw~75 Kw Brake Unit For Option
90 Kw And Above External Brake Unit
All Types Of Dc Reactor Are Option

90KW And Above

Brake Resistor

Brake Unit

(-)   (+)   PB

75KW And Above

DC Reactor

Brake Resistor

P   (+)   PB

Breaker   Contactor   Fuses

L1 ——○—— R
L2 ——○—— S
L3 ——○—— T

U
V
W

M

PG Card
(Opition)

A+
A -
B+
B -
Z+
Z -
+5V
COM
PE

PG

J10

OP   OP1 24V

(P4-00=1)   DI1
Forward

(P4-01=4)   DI2
Jog(Forward)

(P4-02=9)   DI3
Fault Reset

(P4-03=12)   DI4
Multispeed
Terminal 1

(P4-04=13)   DI5
Multispeed
Terminal 2

DI6

DI7
Availabel For
100kHz Input

COM

PE

Extra Keypad Port RJ45

PE

J2
I   v

AO1

GND

Analog Output:
0~10V
0~20mA

AM

+10V

Frequency Source:0~10V
1~5kΩ
AI1/AI2

GND

AO2

GND

Analog Output:
0~10V

AM

+10V

Frequency Source:0~10V
1~5kΩ
AI3   J3
I   v

Frequency Source:0~20mA

GND

FM

COM

NPN Output
Pulse Output: 0 ~ 100kHz
Default Setting:
Pusle:P5.00=0

Modbus-RTU
485A

485B

PE

T1/C
T1/B
T1/A

Default Settng:
Fault output P5.02=2

PTCA

Motor PTC

PTCB

T2/C

T2/A

Relay:
Less Than 250V AC 3A
Less Than 30V DC 1A

Electro-hydraulic Servo Driver FD900 Series

• **Princible**

pressure order

flow order

0~25MPa--0~10V related by 0~25MPa

Pressure sensor

Synchronous motor

Pump

Hydraulic action system of injection moulding machine realizes directional action of hydraulic components through external tee valve.

cylinder

return line
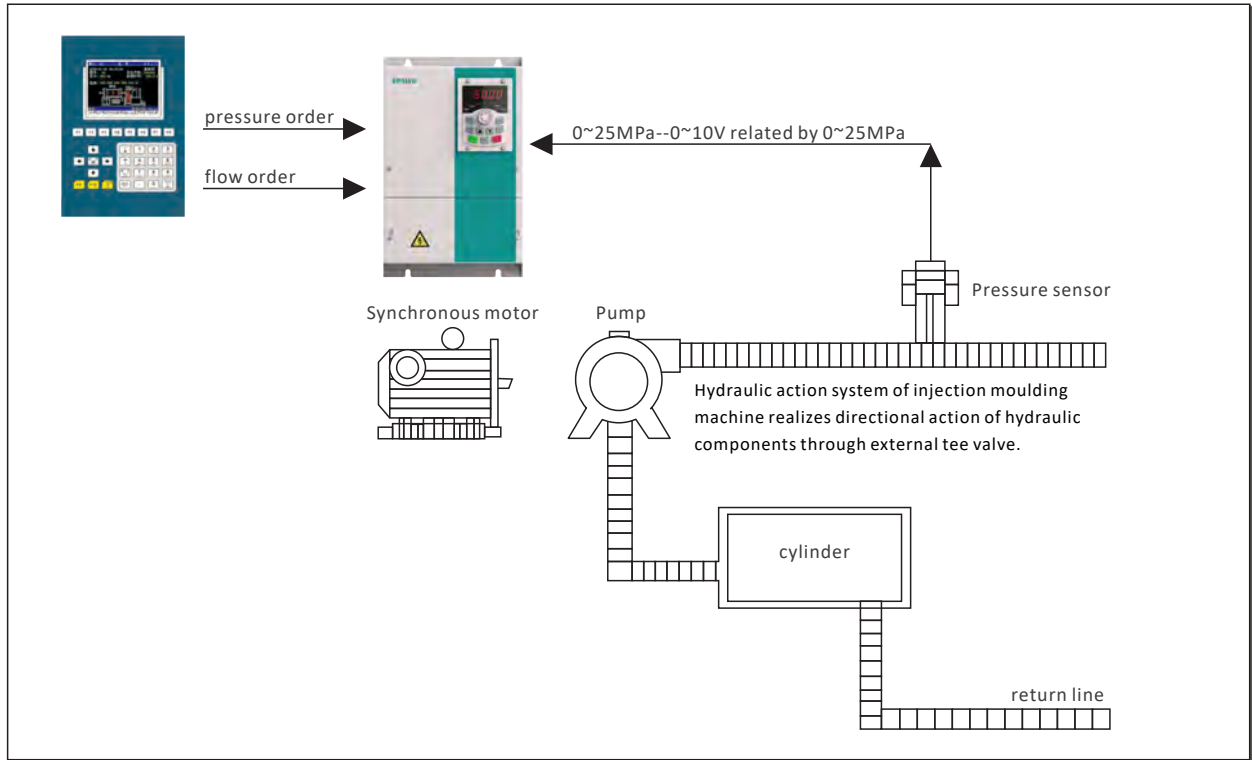
Velocity N controls flow. When the flow establishes pressure, the speed is controlled by PID, and the oil pressure is stabilized (i.e. flow rate and pressure are controlled by speed). When the oil pressure has not been established, there is still room for the pipeline. At this time, the oil pump is operated in the way of proportional flow rate and speed, and the pipeline fills oil quickly. Oil will be limited by the pipeline, and oil pressure will soon be established. When the oil pressure is established, the speed N control adjusted by PID can stabilize the oil pressure at a given value due to the balance principle of PID.

Power

Ration pump system   Ration pump system   Stop   Hydraulic servo system
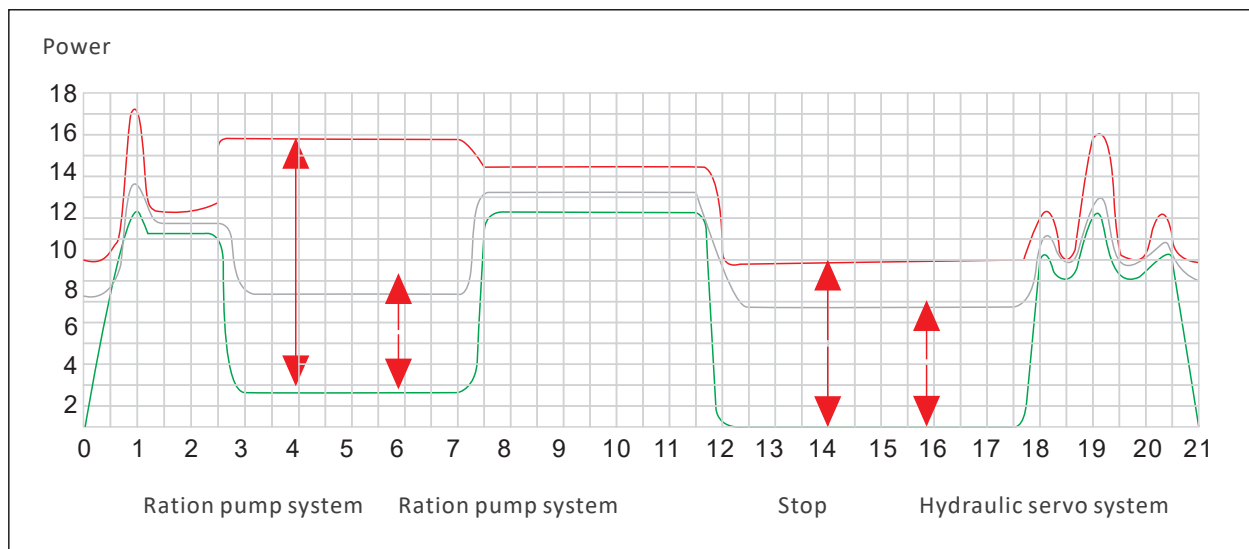
Electro-hydraulic Servo Driver ES600 Series

• **Advantages**

Saving energy

saving energy as far as possible; power saving rate is 40% - 80%.

Precision

 Low inertia motor design, more stable speed control; high repetition accuracy of products;

 Efficiency

Servo drive system fully reflects the high performance and superiority, and the production efficiency is significantly improved.

 Convenience

 Debugging and maintenance are very convenient, and the usability of the upper computer signal acquisition is fully considered.

Stability

 large margin design, strong protection ability, oil temperature and noise of the whole machine operation are also significantly reduced; the use of durable resolver as speed feedback components, to adapt to high temperature, vibration, oil pollution environment of injection moulding machine.

• **Performance Indicators**

The control algorithm of weak magnetic field is optimized. Compared with the previous generation products, the range of weak magnetic field is increased by 10%, which has stronger response and shock suppression ability.
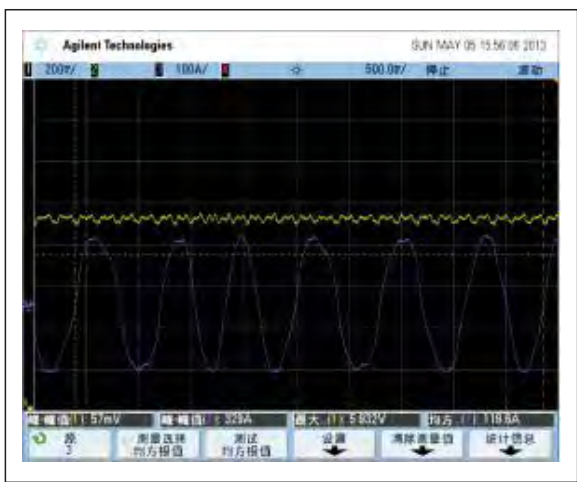
Low-speed pressure-keeping performance is the leading industry. The response of 200 bar is 50 ms, the pressure overshoot is 5 bar, and the pressure fluctuation is 0.5 bar.

Electro-hydraulic Servo Driver ES1000 Series

• Technology Advantages

High torque at low speed

Under open-loop vector control, the starting torque of 0.25Hz has 150% rated torque output, while under closed-loop vector control, the starting torque of 0Hz has 180% rated torque output.

high and smooth acceleration-deceleration

 Accelerate and decelerate the speed to 3 times the fundamental frequency in 1s, and the acceleration and deceleration are smooth.

Fast and accurate positioning

stop time within 0.2s,the positioning error in closed-loop vector control ±1 pulse

Available for many kinds of systems from China and other coutries

It can cooperate with different upper computer systems (CNC system) to realize such functions as spindle quasi-stop and tool change, spindle indexing, rigid tapping and so on.

Available for CAN BUS communication

No protocol conversion,maximum 1Mbps.

• Other Features

Extra and build in pulse order

PLC function build in,Simple operation for multi-speed order.

7 digtal input DI1~DI7

NPN,PNP or pulse output,2 relays

Perfect parameter copy function, parameter backup function, can quickly set parameters in batches, save settings time, improve work efficiency;

Common DC bus, 2 sets of motor parameters are switched freely.

overheat protection for motor,various fan control modes

The spindle servo motors with complete specifications,can be customized to meet customer requirements for non-standard spindle servo motors.

• Applications

Machine Tools

Low speed cutting performance.

Rapid Acceleration and Rapid Deceleration Performance.

Wide speed range and high speed stability

Machining Center and CNC Milling

High Speed Features.

Acceleration and deceleration performance with small quasi-stop error.

Accurate Rigid Attacking

Tapping Center

Low speed high torque output (drilling at low speed, spindle servo driver provides low frequency high torque output);

The spindle servo driver has a wide speed range, and the high speed region can also provide a larger torque.

The function of spindle orientation and rigid tapping is realized by closed-loop method.

It can realize high-speed quasi-stop and tool change.
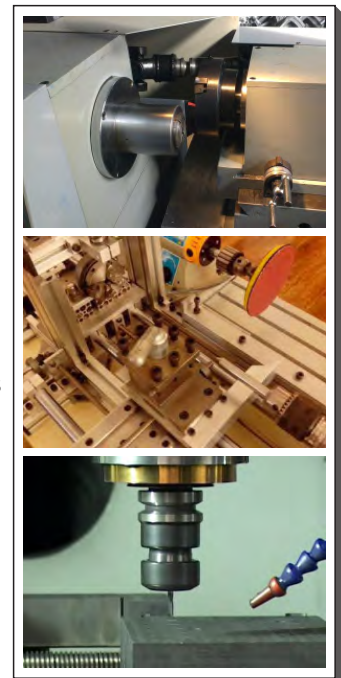
EPSIVO Electric CO. LTD.

Address: Yufeng Industrial Park, Yangguang
Industrial Zone, Xili Town,Nanshan District,
Shenzhen
Tel:0755-84190600
Fax:0755-84165665