



We can do it more!

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VFD550I Series Electro-hydraulic Servo System

VFD550I series electro-hydraulic servo drive ◆
MFD series AC permanent magnet synchronous servo motor ◆





VFD550I Series
Electro-hydraulic Servo Drive

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Shenzhen VEIKONG ELECTRIC CO., LTD stands as an industry-leading high-tech enterprise specializing in the innovation, production, and global distribution of high performance low voltage frequency inverters and solar pumping inverters. With over two decades of technical expertise, our pioneering R&D team has established VEIKONG as China's first-mover in independent AC drive technology development.

Our technological edge lies in the innovative integration of:

- ✔ Hybrid SPWM & sensorless vector control systems
- ✔ Precision torque regulation technology



Professional
R&D team

20+

Over 20 years of professional
management experience

Engineered to meet IEC/CE standards, our intelligent drive solutions demonstrate full compatibility with European, American, and Japanese industrial systems, delivering superior technical performance at competitive market value.

Quality excellence forms our operational cornerstone. Through rigorous ISO 9001-certified quality management and continuous technological iteration, we maintain 100% compliance with global industrial certifications while achieving 30% annual efficiency improvements across product lines.

At VEIKONG, customer success drives our innovation. Serving 18+ critical industries including renewable energy, petrochemicals, smart infrastructure, and advanced manufacturing, our solutions have empowered 5,000+ enterprises worldwide to achieve:

40%	25%	0
average energy cost reduction	operational efficiency improvement	Near-zero maintenance system reliability

VEIKONG: Precision in Motion, Powering Tomorrow's Industries – Where Innovation Meets Uncompromised Reliability.

VEIKONG

YOUR TRUSTED SUPPLIER!

COMPANY
PROFILE

VEIKONG

深圳伟堪智能设备有限公司
Shenzhen Veikong Electric Co., Ltd.



Company Qualifications



VEIKONG VFD550I Electro-Hydraulic Servo System

Precision Redefined in Hydraulic Control

Integrating the VFD550I drive inverter and MFDE18/25 AC permanent magnet servo motor, this system delivers ultra-quiet operation, 30%+ energy savings, and millisecond-level pressure response, engineered for injection molding, die-casting, and hydraulic machinery upgrades.

VFD550I Inverter Advantages

- ◆ Dual-motor compatibility: Seamlessly drives PMSM & asynchronous motors
- ◆ Smart pressure control: Patented algorithm ensures $\pm 0.5\%$ pressure stability
- ◆ Flexible encoder integration: Supports incremental/resolver feedback or encoderless vector mode
- ◆ Multi-pump synchronization: Built-in CAN communication protocol for complex hydraulic networks

MFD Servo Motor Innovations

- ◆ High-torque compact design: 20% higher power density vs conventional models
- ◆ Advanced thermal management: Monolithic housing with 50°C max temperature rise
- ◆ Reluctance torque optimization: 15% lower current consumption at peak load
- ◆ Industrial durability: IP54 protection, vibration-resistant construction

Transform your hydraulic systems with VEIKONG's intelligent servo technology – where precision meets productivity.

VFD550I series drive inverter



MFD series AC permanent magnet synchronous servo motor



Tailor-made for hydraulic control applications

Excellent energy saving effect:
20%-60% energy saving rate

Independent duct design

Excellent algorithm, fast, accurate and stable pressure control

All-wheel drive,
supports multiple motors

Supports multiple communication interfaces

Overload performance under extreme loads

Supports multiple mainstream encoders

Supports multi-pump applications

LED digital keyboard as standard, dual-display keyboard and LCD with colorful screen as optional

PRODUCT FEATURES

VFD550I Series Electro-hydraulic Servo System

Superior Performance

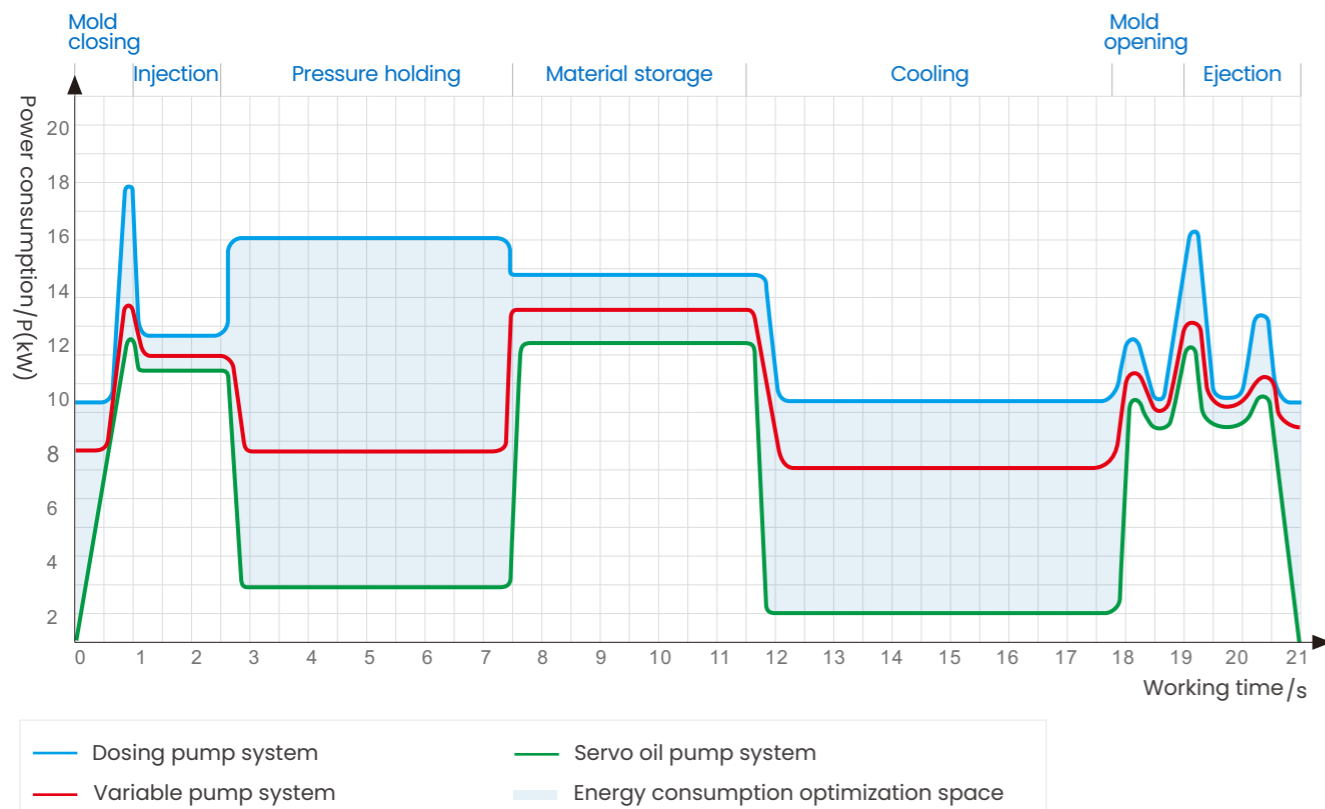
High efficiency and energy saving

VEIKONG Electro-Hydraulic Servo System, Intelligent Efficiency, Unmatched Speed

Harnessing PMSM rapid response (20ms system latency) and VFD550I servo driver algorithms, this system achieves 20%-60% energy savings with 50ms max flow stabilization- redefining hydraulic precision.

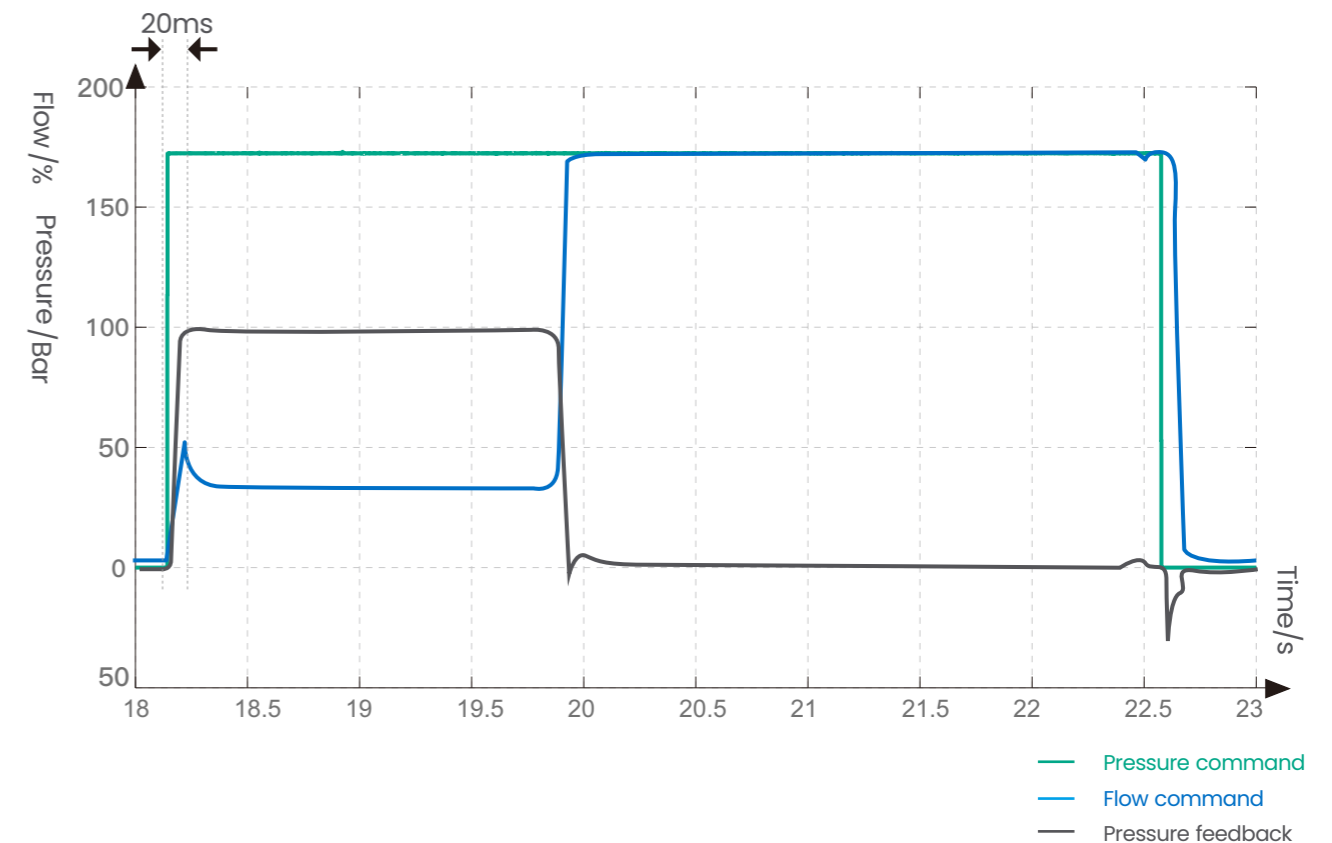
- ◆ Ultra-fast dynamics: 30% shorter production cycles via 0.02s pressure/flow synchronization
- ◆ Adaptive energy optimization: Auto-adjusts torque-speed ratios for minimal power waste
- ◆ Industrial-grade reliability: Seamless stepless speed regulation under extreme loads

Where milliseconds define margins – VEIKONG delivers performance without compromise.



Excellent algorithm, precise control

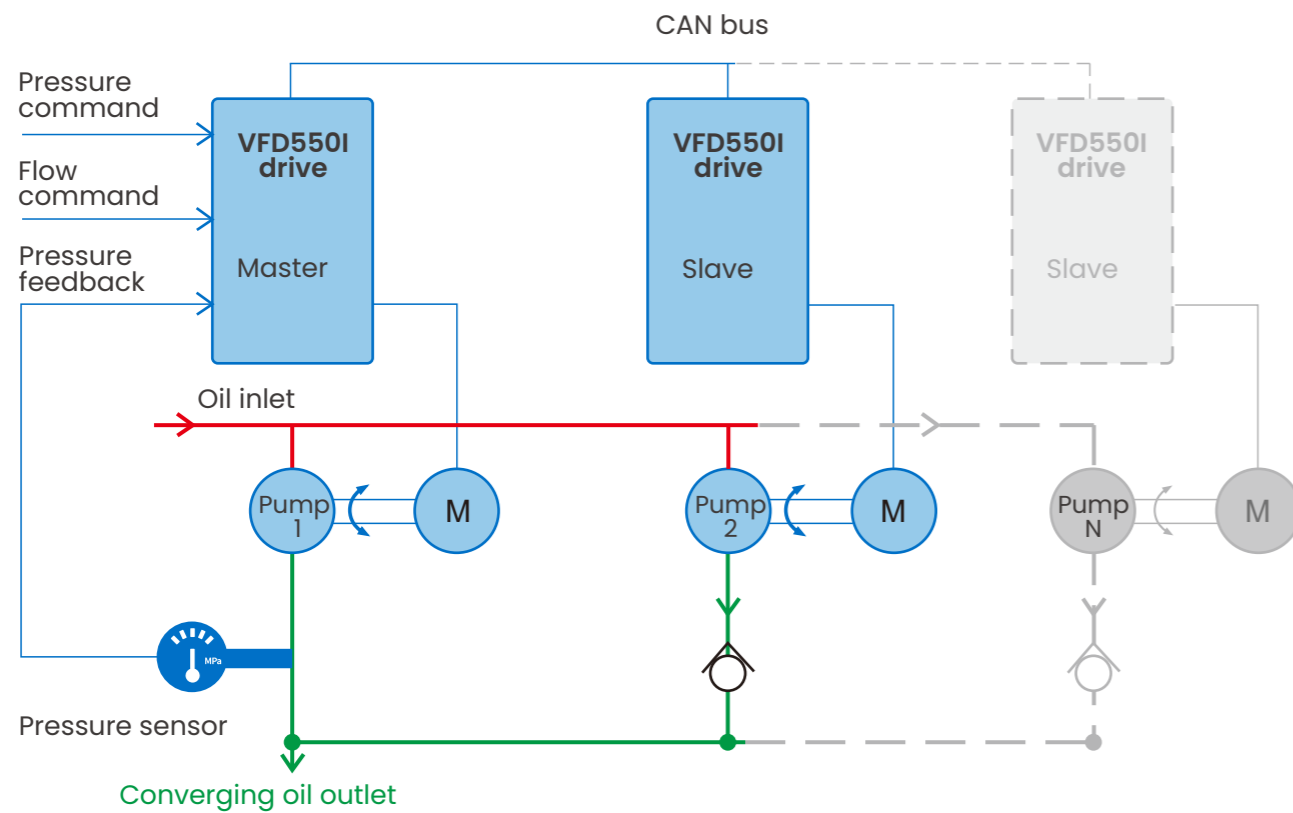
The excellent pressure control algorithm makes the pressure control of VFD550I fast, accurate and stable, and the pressure response can be achieved in 20ms. The pressure closed-loop algorithm ensures that the speed and pressure of the injection molding machine system follow the response quickly and stably, the pressure control overshoot is $\leq +1\%$, and the steady-state fluctuation is $\leq \pm 0.5\text{Bar}$.



Support multi-pump application

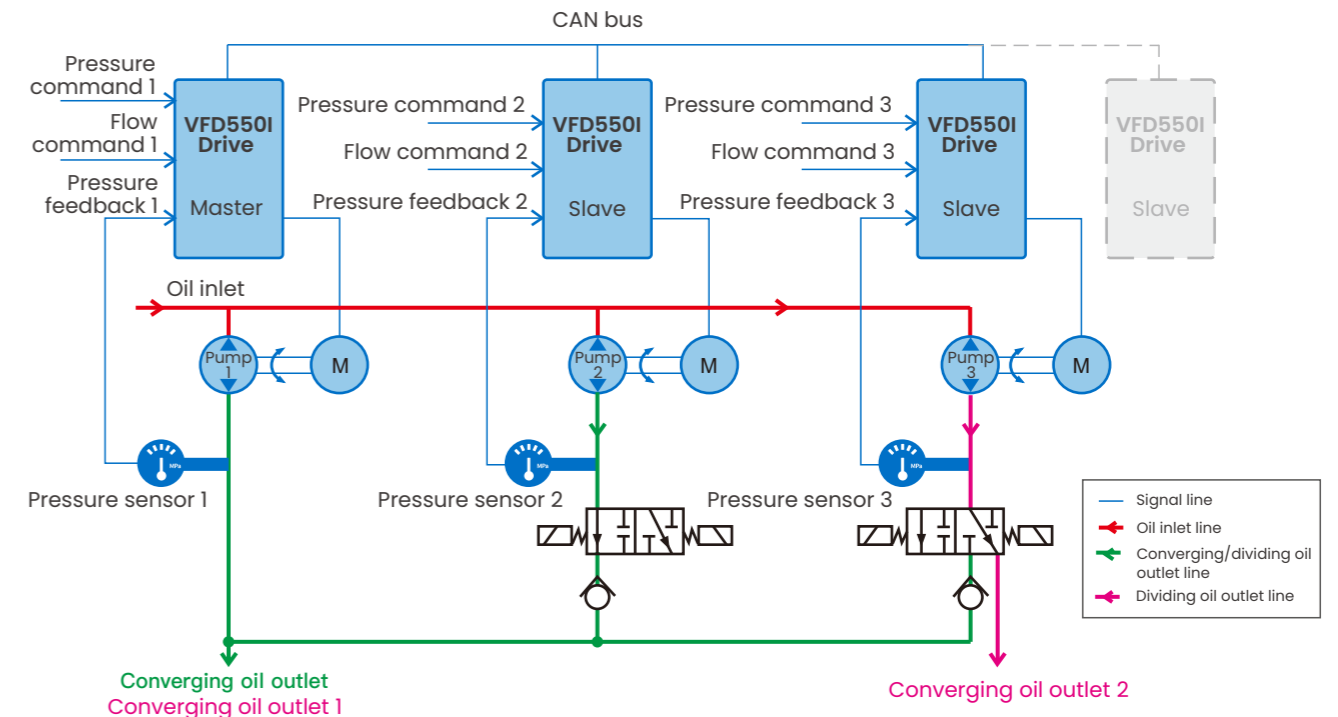
The VFD550I series can realize the switching function of multi-pump confluence and diversion, which can confluence to perform the same action or divert to complete different actions, greatly saving production time and improving production efficiency.

Multi-pump confluence system



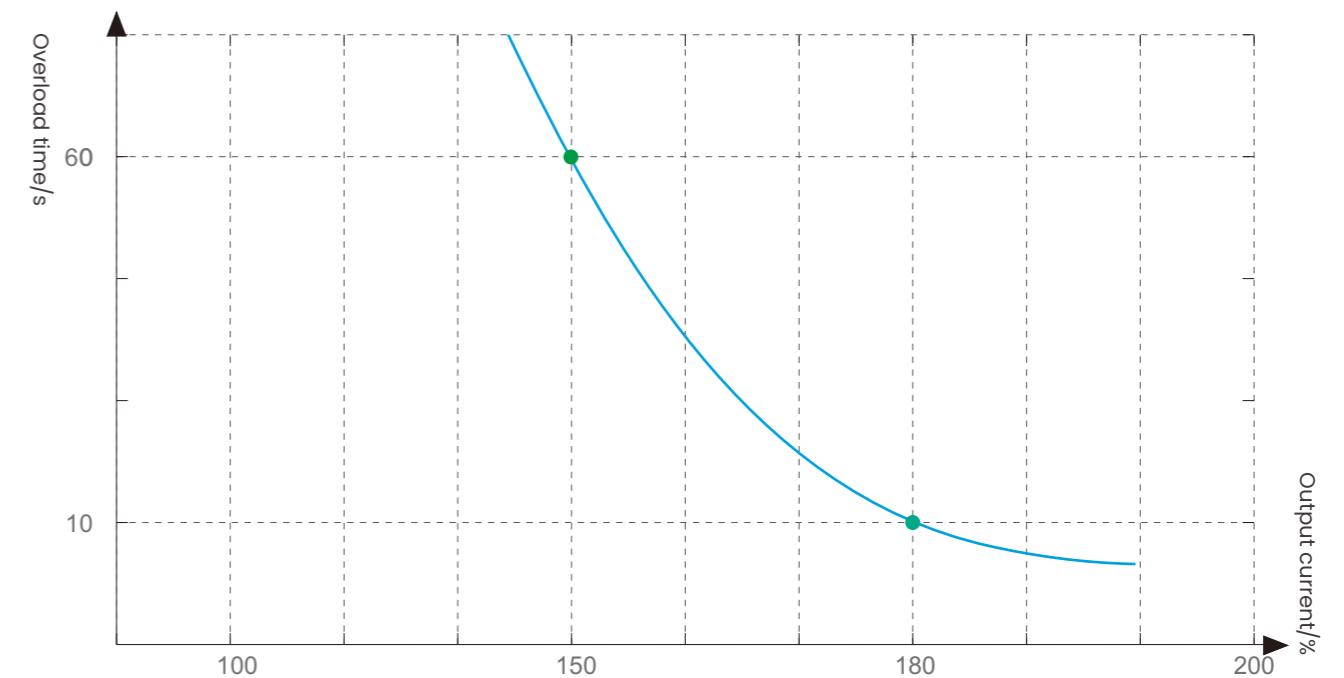
Multi-pump confluence and diversion compound system

The multi-pump diversion and confluence compound control system can automatically switch the working state according to the process requirements of the injection molding machine products. Compared with the simple multi-pump confluence system, it has a faster response and can complete more than two independent action processes at the same time. The injection molding product cycle can be greatly shortened, and some actions can also be completed separately, which is more energy-saving.



Excellent overload performance

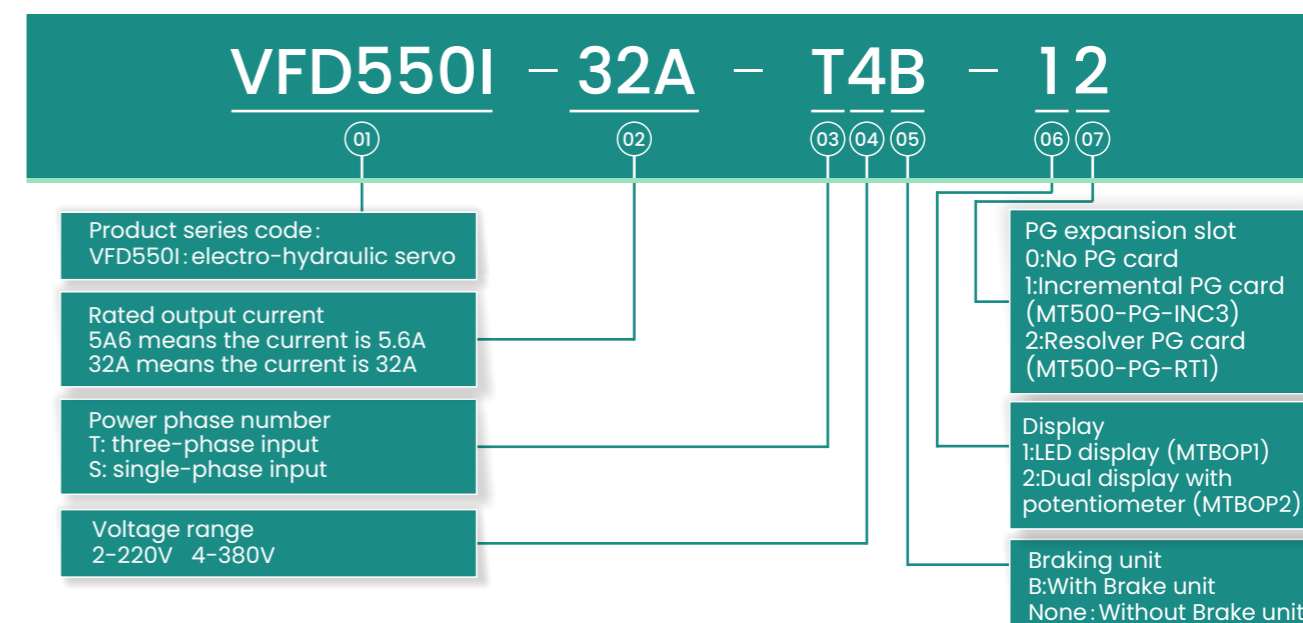
150% rated output current overload for 60 seconds, 180% rated output current overload for 10 seconds, ensuring safe and stable operation under extreme load conditions.



Rich optional accessories

Accessory type	Model	Actual picture	Description
PG card	Incremental PG card MT500-PG-INC3		Differential or open collector input is optional, supporting up to 500kHz for differential input and 150kHz for open collector input; does not support UVW differential input; does not have frequency division output.
	Revolver PG card MT500-PG-RT1		Rotary transformer PG card, supports 7Vrms, 10kHz excitation signal, DB9 female connector wiring method.
Display	LED operation panel MTBOP1		Used for parameter setting, status monitoring and operation control.
	Dual display keyboard MTBOP2		Used for parameter setting, status monitoring and operation control, with digital potentiometer: LED digital display first line is used for monitoring and auxiliary display; second line is used for switching monitoring/menu mode, function code selection, parameter editing/viewing.
	LCD display MTSOP1		It has the functions of parameter setting, backup,copy, macro editing, status monitoring, start-stopcontrol, fault query, program upgrade, etc.

Model Description



Series Description

VFD model	Rated output current	Rated power range	Structure Size	Drive unit
Three-phase voltage:380V, 50/60Hz				
VFD550I-5A6-T4B	5.6	2.2KW	SIZE A	Inbuilt
VFD550I-9A4-T4B	9.4	4KW		
VFD550I-13A-T4B	13.0	5.5KW	SIZE B	
VFD550I-17A-T4B	17.0	7.5KW		
VFD550I-25A-T4B	25.0	11KW	SIZE C	
VFD550I-32A-T4B	32.0	15KW		
VFD550I-37A-T4B	37.0	18.5KW	SIZE D	
VFD550I-45A-T4B	45.0	22KW		
VFD550I-60A-T4B	60.0	30KW	SIZE E	
VFD550I-75A-T4B	75.0	37KW		
VFD550I-90A-T4B	90.0	45KW	SIZE F	
VFD550I-110A-T4B	110.0	55KW		
VFD550I-152A-T4B	152.0	75KW	SIZE G	
VFD550I-176A-T4B	176.0	90KW		

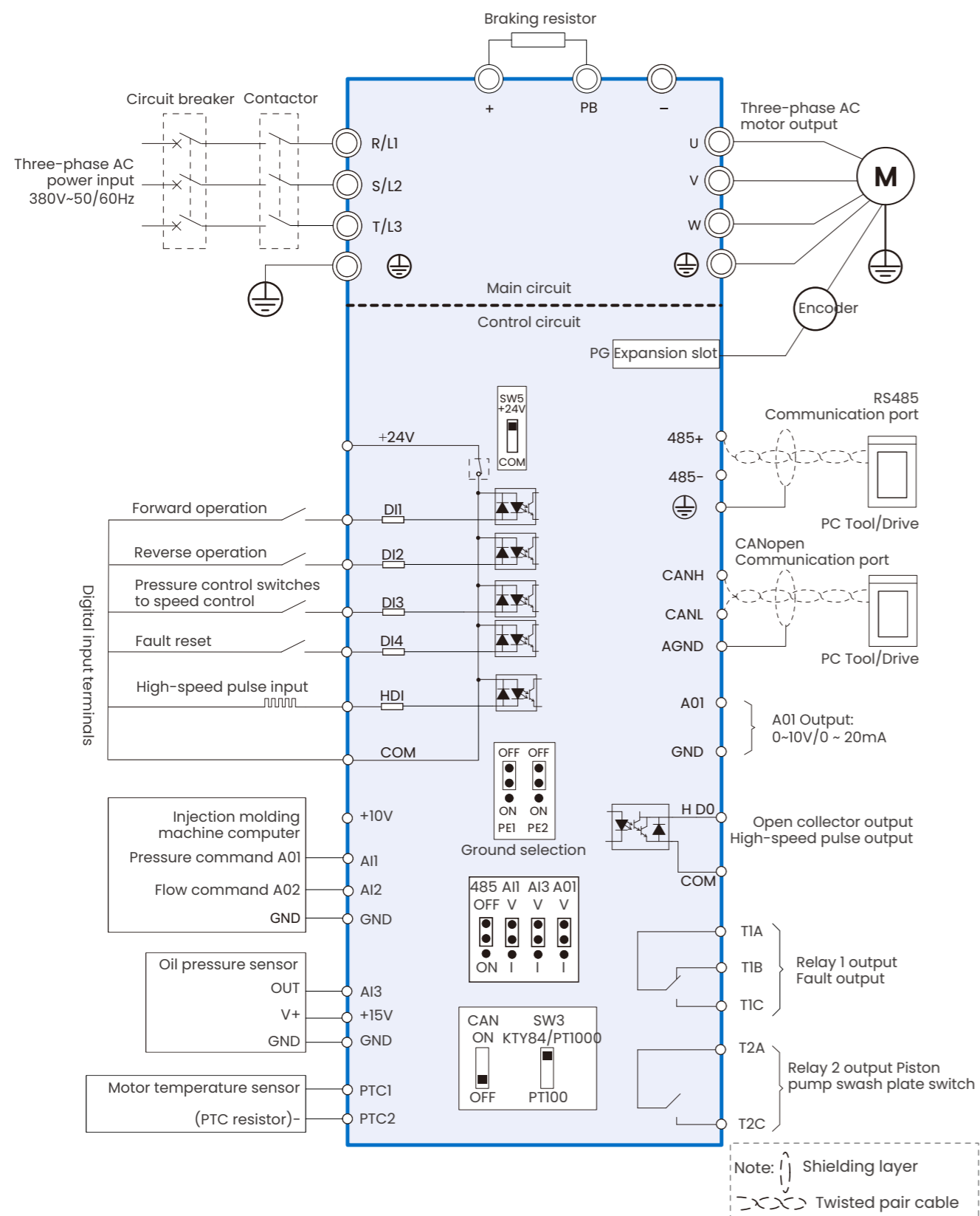


Technical Specifications

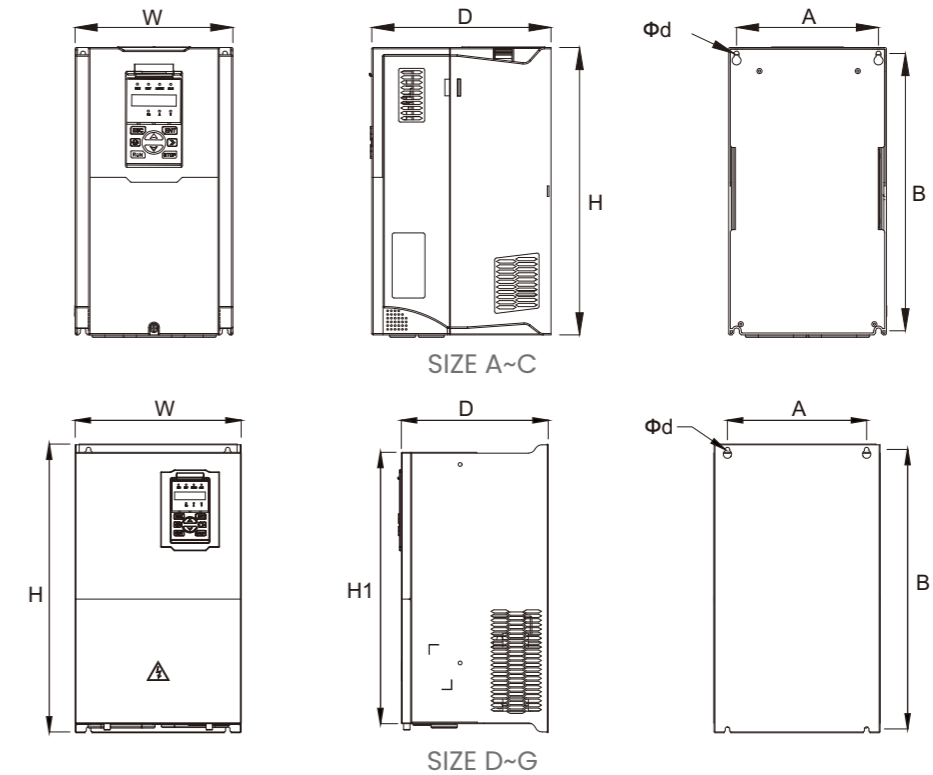
Project		Specification
Current	Input voltage	Three phase 380V model: 380~480V
	Allowed Voltage fluctuation range	-15%~10%
	Input frequency	50Hz or 60Hz, fluctuation less than 5%
Output	Maximum output voltage	Three-phase: 0~ input voltage
	Overload Capacity	Standard application: 150% rated output current for 60 seconds
Control	Control mode	V/f control Sensorless flux vector control without PG card(SVC) Sensor speed flux vector control with PG card (VC)
	Operation mode	Speed control
	Speed range	1:100 (V/f) ; 1:200(SVC) ; 1:1000(VC)
	Speed control accuracy	±0.5% (V/f) ; ±0.2% (SVC) ; ±0.02%(VC)
	Speed response	5Hz (V/f) ; 20Hz(SVC) ; 50Hz(VC)
	Frequency control range	0.00~600.00Hz(V/f) ; 0.00~200.00Hz(SVC) ; 0.00~400.00Hz(VC)
	Input frequency resolution	Digital setting: 0.01 Hz Analog setting: maximum frequency x 0.1%
	V/f characteristics	V/f curve type: linear, multi-point, power function, V/f separation
	Frequency setting ramp	Support linear and S-curve acceleration and deceleration:4 groups of acceleration and deceleration time, setting range 0.00s~60000s
	DC bus voltage control	Overvoltage stall control: limit the motor's power generation by adjusting the output frequency to avoid skipping voltage faults Undervoltage stall control: control the motor's power consumption by adjusting the output frequency to avoid skipping undervoltage faults

Project		Specification
Control	Carrier frequency	1kHz~12kHz(Varies depending on the type)
	Start mode	Direct start (DC braking can be superimposed): speed tracking start
	Stop mode	Deceleration stop (DC braking can be superimposed); free stop
	Main control functions	Pressure control, inching control, support up to 16 Environment speeds, dangerous speed and overexcitation braking, sleep and wake-updeceleration time switching, VF separation, avoidance, acceleration functions, virtual input and output terminals, parameter backup and recovery, complete fault records, fault retry, software exchange output wiring, etc.
Function	Display	LED digital keyboard as standard, double-line display LED and LCD as optional
	Communication	MODBUS,CANopen
	Encoder Interface card	Incremental encoder interface card (differential output type and open collector type), resolver interface card
	Input terminals	5 digital input terminals, 1 of which supports high-speed pulse input up to 100kHz; 3 analog input terminals, 2 of which support 0~10V; voltage input or 0~20mA current input;
	Output terminals	1 digital output terminal, which can support high-speed pulse output up to 100kHz (open collector type)
		2 relay output terminals, 1 of which supports normally open/normally closed, and 1 only supports normally open; 1 analog output terminal, which supports 0~20mA current output or 0~10V voltage output

Standard Wiring Map



Appearance Dimension

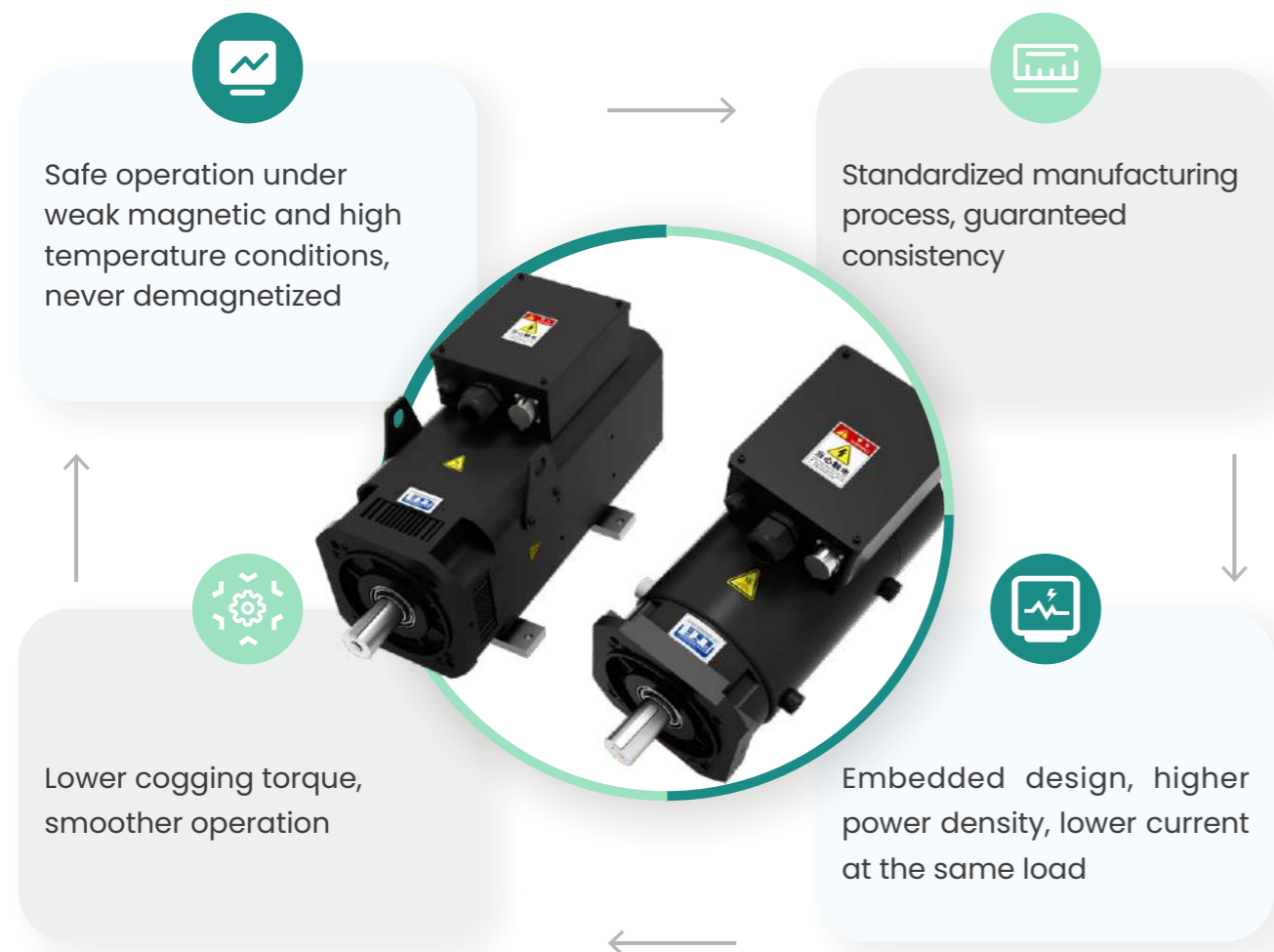


Appearance number	Covered models	Appearance and installation dimensions(mm)							
		A	B	H	H1	W	D	Φd	Mounting screw
SIZE A	VFD550I-5A6-T4B	87	206.5	215	/	100	Φ5.0	170	M4×16
	VFD550I-9A4-T4B								
SIZE B	VFD550I-13A-T4B	113	239.5	250	/	130	Φ5.0	180	M4×16
	VFD550I-17A-T4B								
SIZE C	VFD550I-25A-T4B	153	299	310	/	170	Φ6.0	193	M5×16
	VFD550I-32A-T4B								
SIZE D	VFD550I-37A-T4B	165	350	370	335	210	Φ6.0	205	M5×16
	VFD550I-45A-T4B								
SIZE E	VFD550I-60A-T4B	218	438	452.5	424	260	Φ7.0	230	M6×16
	VFD550I-75A-T4B								
SIZE F	VFD550I-90A-T4B	250	535	555	520	320	Φ10	275	M8×20
	VFD550I-110A-T4B								
SIZE G	VFD550I-152A-T4B	280	620	640	605	350	Φ10	290	M8×20
	VFD550I-176A-T4B								

MFD series AC permanent magnet synchronous servo motor

Product introduction

The MFD series AC permanent magnet synchronous motor is specially developed for hydraulic control applications. The motor has stable performance, one-piece molded housing, small size, good heat dissipation, low temperature rise, and beautiful structure. Advanced electromagnetic design technology achieves higher power density, smaller stator-rotor air gap, fast response, and good controllability. The effective use of reluctance torque makes the motor run with less current at the same torque, the motor and controller loss is small, and the system efficiency is significantly improved. When used with the VFD550I series, it is particularly suitable for supporting and energy-saving transformation of hydraulic equipment.



Motor selection

MFDE 18 02 150 4 R E B 1 R A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Product series code MFDE, MFDH, MFDZ	⑤ Voltage level 2:200V, 4:400V, 6:600V	⑨ Installation method 1: Flange Mounting 2: Base Foot Mounting 3: Vertical Downward Mounting 4: Vertical Upward Mounting 5: Combined Flange and Base Foot Mounting
② Motor stops specifications 18:180mm, 25:250mm 35:350mm, 45:450mm	⑥ Feedback element R:Resolver, F:Photoelectric E:bsolute value,N:Encoderless	⑩ Cooling method F: Air cooling W: Liquid cooling X: Self-cooling
③ Specifications 01, 02, 03	⑦ Whether with brake E: Without brake B: With brake	⑪ Special mark
④ Motor speed 050:500rpm, 150:1500rpm 170:1700rpm, 200:2000rpm	⑧ Installation method B: With key Y: Optical axis S: Spline	

MFDE18 Series Motor Specifications

Model Specifications	Rated Torque (N·m)	Rated Speed (rpm)	Rated Current (A)	Rated Power (kW)	KT (NM)	Counter Emf (V/krpm)	Power Level (V)	Rated Frequency (Hz)	Moment of Inertia (kg·m ² ·10 ⁻³)	Number of poles
DE180210	46	1000	9.1	4.8	5.05	316	380	66.67	5.4	8
DE180215	46	1500	13.6	7.2	3.37	321	380	100	5.4	8
DE180217	46	1700	15.4	8.2	2.98	317	380	113.3	5.4	8
DE180220	46	2000	18.0	9.6	2.55	321	380	133.3	5.4	8
DE180310	69	1000	13.5	7.3	5.11	321	380	66.67	7.7	8
DE180315	69	1500	20.4	10.8	3.38	318	380	100	7.7	8
DE180317	69	1700	23.0	12.3	3	319	380	113.3	7.7	8

Model Specifications	L1(mm)	L(mm)
DEI802-F	94	380.5
DEI803-F	129	415.5
DEI804-F	164	450.5
DEI805-F	199	485.5
DEI806-F	234	520.5
DEI807-F	269	555.5
DEI808-F	304	590.5
DEI809-F	339	625.5
DEI810-F	374	660.5

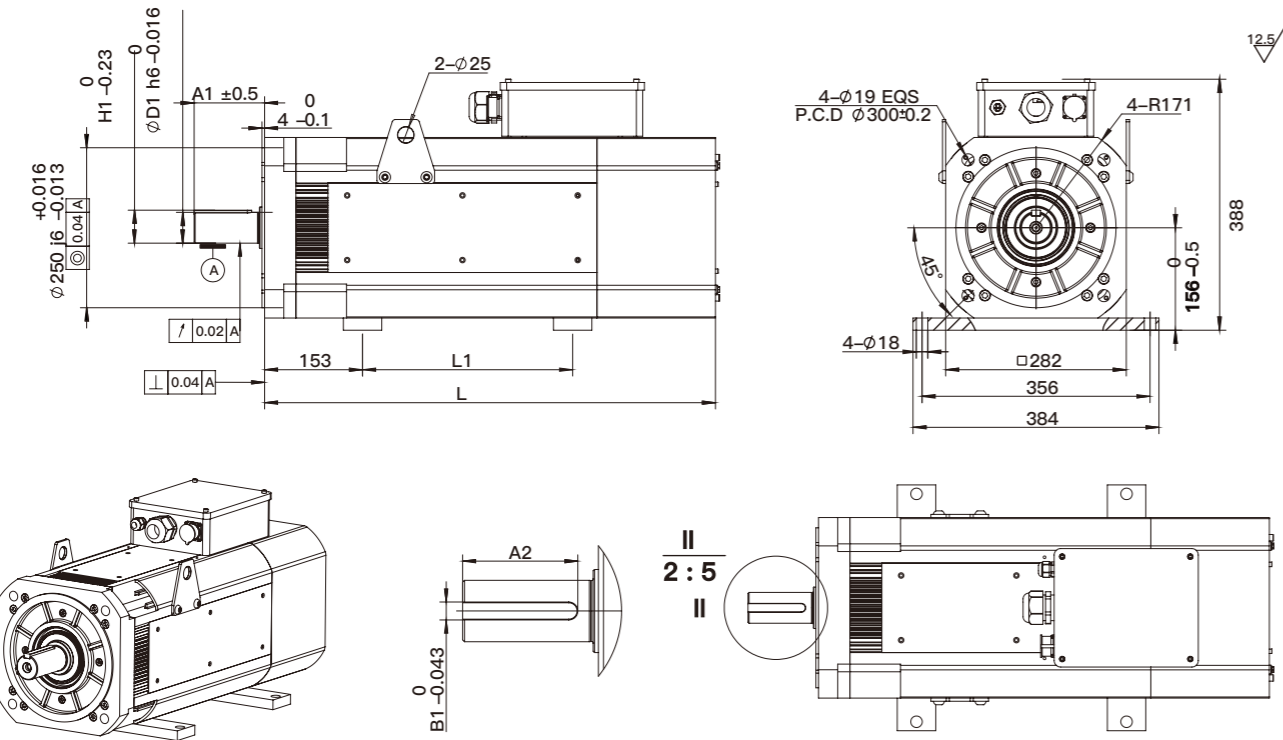


MFDE25 Series Motor Specifications

Model Specifications	Rated Torque (N·m)	Rated Speed (rpm)	Rated Current (A)	Rated Power (kW)	KT (NM)	Counter Emf (V/krpm)	Power Level (V)	Rated Frequency (Hz)	Moment of Inertia (kg·m ² ·10 ⁻³)	Number of poles
DE250310	225	1000	43.2	23.6	5.21	344	380	66.67	33.2	8
DE250315	225	1500	62.5	35.3	3.6	339.9	380	100	33.2	8
DE250317	225	1700	69.7	40.1	3.23	344.9	380	113.3	33.2	8
DE250320	225	2000	82.4	47.1	2.73	344	380	133.3	33.2	8
DE250410	300	1000	59.2	31.4	5.07	333.5	380	66.67	43.1	8
DE250415	300	1500	83.6	47.1	3.59	343.5	380	100	43.1	8
DE250417	300	1700	96.8	53.4	3.1	336.9	380	113.3	43.1	8
DE250420	300	2000	106.8	62.8	2.81	354	380	133.3	43.1	8
DE250510	375	1000	72.8	39.3	5.15	338.5	380	66.67	53	8
DE250515	375	1500	100.5	58.9	3.73	351	380	100	53	8
DE250517	375	1700	118.3	66.8	3.17	353.9	380	113.3	53	8
DE250520	375	2000	138.9	78.5	2.7	338	380	133.3	53	8
DE250610	450	1000	86	47.2	5.23	343.9	380	66.67	62.1	8
DE250615	450	1500	120.6	70.7	3.73	351	380	100	62.1	8
DE250617	450	1700	140.6	80.1	3.2	345.4	380	113.3	62.1	8
DE250620	450	2000	164.8	94.2	2.73	343	380	133.3	62.1	8

Model Specifications	Rated Torque (N·m)	Rated Speed (rpm)	Rated Current (A)	Rated Power (kW)	KT (NM)	Counter Emf (V/krpm)	Power Level (V)	Rated Frequency (Hz)	Moment of Inertia (kg·m ² ·10 ⁻³)	Number of poles
DE250710	525	1000	104.5	55	5.03	328.3	380	66.67	71.2	8
DE250715	525	1500	139.3	82.5	3.77	354.9	380	100	71.2	8
DE250717	525	1700	153.5	93.5	3.42	373	380	113.3	71.2	8
DE250720	525	2000	181.7	109.9	2.89	364	380	133.3	71.2	8
DE250810	600	1000	117.5	62.9	5.11	333.4	380	66.67	80.3	8
DE250815	600	1500	164.8	94.2	3.64	342.9	380	100	80.3	8
DE250817	600	1700	183.5	106.8	3.27	355	380	113.3	80.3	8
DE250820	600	2000	226.4	125.7	2.65	333.2	380	133.3	80.3	8
DE250910	675	1000	135.1	70.7	5	328.2	380	66.67	89.4	8
DE250915	675	1500	181.0	106.0	3.73	351	380	100	89.4	8
DE250917	675	1700	202.1	120.2	3.34	357.9	380	113.3	89.4	8
DE250920	675	2000	259.6	141.4	2.6	328	380	133.3	89.4	8
DE251010	750	1000	157.3	78.6	4.77	312.6	380	66.67	98.5	8
DE251015	750	1500	201.1	117.8	3.73	351	380	100	98.5	8
DE251017	750	1700	227.3	133.5	3.3	353.9	380	113.3	98.5	8
DE251020	750	2000	259.5	157.1	2.89	364	380	133.3	98.5	8

Installation Dimensions

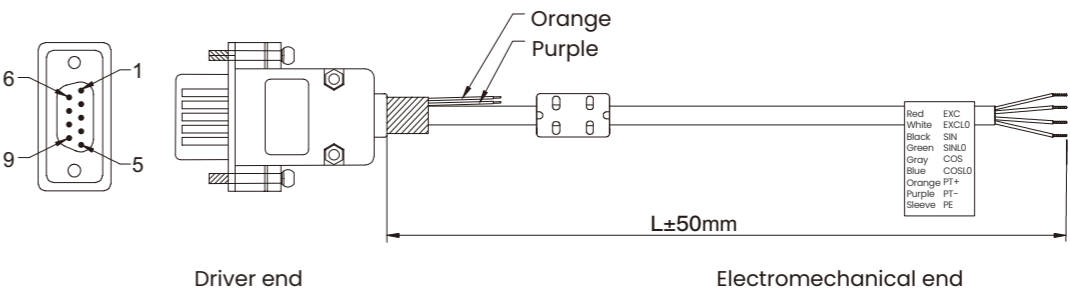


Series Description

Model Specifications	A1 (mm)	D1 (mm)	H1 (mm)	B1 (mm)	A2 (mm)	L1 (mm)	L (mm)
DE2503-F	110	48	51.5	14	90	178	554
DE2504-F	110	48	51.5	14	90	228	604
DE2505-F	110	48	51.5	14	90	278	654
DE2506-F	110	48	51.5	14	90	328	704
DE2507-F	140	60	64	18	110	378	754
DE2508-F	140	60	64	18	110	428	804
DE2509-F	140	60	64	18	110	478	854
DE2510-F	140	60	64	18	110	528	904

Optional Accessories

Encoder cable



Cable definition

Cable options	Electromechanical end (shielded braided cable)	Signal definition	Core color
1	EXC	(EXC rotary transformer excitation positive)	Red
2	EXCLO	(EXCLO rotary transformer excitation negative)	White
3	SIN	(SIN rotary transformer feedback SIN positive)	Black
4	SINLO	(SINLO rotary transformer feedback SIN negative)	Green
5	COS	(COS rotary transformer feedback COS positive)	Gray
9	COSLO	(COSLO rotary transformer feedback COS negative)	Blue
/	PT+	Motor temperature sensor positive	Orange
/	PT-	Motor temperature sensor negative	Purple
Male iron shell	Thick sleeve shield	Ground	Shield (braided)

Note: The wire sequence and wire label correspond to each other. The wire color is used as a reference for the wire sequence. Please refer to the actual situation.

Cable definition Cable options

Encoder cable model	Description
MIC019-RT-L4.0	Multi-core shielded cable, L=4m, one side DB9 male connector, with magnetic ring
MIC019-RT-L6.0	Multi-core shielded cable, L=6m, one side DB9 male connector, with magnetic ring
MIC019-RT-L10.0	Multi-core shielded cable, L=10m, one side DB9 male connector, with magnetic ring

VFD550I Series Electro-hydraulic Servo Drive



Application Cases of Injection Molding Machines

Customer Demand

Supporting the project to achieve energy-saving effects

Application Effects:

Replacing the hardware with excellent electro-hydraulic servo control software, fast response speed: ensuring the accuracy of mold opening and closing, and the accuracy of the injection end position can reach 0.1mm;

The high-precision and high-response PID algorithm module makes the system pressure very stable, the pressure control overshoot $\leq \pm 1\%$, the steady-state fluctuation $\leq \pm 0.5\text{Bar}$, and improves the molding quality of plastic products:

High-speed weak magnetic control and high response speed increase the efficiency of the whole machine by 10%, and the year-on-year power saving rate reaches 35%.

Application case of multi-pump confluence and diversion of die-casting machine

Customer Demand

It can realize confluence and diversion control of die-casting machine

Application Effects:

It realizes the customer's demand for confluence and diversion control, that is, it can confluence to do the same action or divert to complete different actions: Compared with the simple multi-pump confluence system, it has faster response, can complete more than two independent action processes at the same time, the product molding cycle can be greatly shortened, and some actions can be completed separately, which greatly saves production time, improves production efficiency, and is more energy-saving.



APPLICATION CASES



Hydraulic station application plan

Customer Demand

Support the project to achieve energy-saving effect

◆ Application Effects:

Comparison of actual measurements of hanging meters before and after the transformation, the power saving rate reached 51.2% after the transformation was completed.

After the transformation of 29 hydraulic stations in the first phase was completed, two subsequent phases of transformation were carried out.



Metal Hydraulic Baler Application Solution

Customer Demand

Support the project to achieve energy-saving effect

◆ Application Effects:

Energy-saving: Compared with the traditional hydraulic baler control solution, the solution using VFD550I electro-hydraulic servo drive with permanent magnet synchronous servo motor can save 20-60% of electricity;

High Efficiency: The excellent control algorithm of VFD550I hydraulic servo drive ensures that the system speed follows the response quickly and stably, and ensures the accuracy of the system oil pressure change and the fast and efficient single cycle during the operation of the hydraulic baler. The system single cycle time is reduced to 96 seconds. **Stability:** Excellent overload performance ensures that the hydraulic baler can still operate safely and stably under extreme load conditions.

Metal Hydraulic Baler Application Solution

Customer Demand

Support the project to achieve energy-saving effect

◆ Application Effects:

Energy-saving: Compared with the traditional hydraulic baler control solution, the solution using VFD550I electro-hydraulic servo drive with permanent magnet synchronous servo motor can save 20-60% of electricity;

High Efficiency: The excellent control algorithm of VFD550I hydraulic servo drive ensures that the system speed follows the response quickly and stably, and ensures the accuracy of the system oil pressure change and the fast and efficient single cycle during the operation of the hydraulic baler. The system single cycle time is reduced to 96 seconds. **Stability:** Excellent overload performance ensures that the hydraulic baler can still operate safely and stably under extreme load conditions.



Press application solution

Customer Demand

The press is required to respond quickly, and the pressure is stable to ensure the stability of product quality, and it also has high efficiency and energy saving effects.

◆ Application Effects:

The pressure flow response time is as fast as 20ms, and the displacement accuracy is $\leq 0.1\text{mm}$, which enables the press to move when it is said to move, stop when it is said to stop, and go wherever it wants.

At the same time, the products produced have high consistency, which greatly reduces the defective rate.

