EST by INOVANCE

Hydraulic Servo Control and Drive Integrated Solution

Simplify the Manufacture

Official WeChat

Service and technology support in APP

Shenzhen Inovance Technology Co., Ltd.

Address: Building E, Hongwei Industrial Park, Liuxian 2nd Road,
Baocheng 70th Zone, Bao'an District, Shenzhen 518101, P.R. China
Telephone: (0755)2979 9595
Fax: (0755)2961 9897
Customer service: 400-777-1260
http://www.inovance.com

Ningbo EST Technology Co.,Ltd.

Address: Building 1, No.1177, LingYun road, GaoXin district, Ningbo city,
Zhejiang province.
Telephone: (0574)8791 6851 8791 6852
Fax: (0574)8701 0338
Customer service: 400-080-1890
http://www.esto.cn

V1.0

About INOVANCE and EST


INOVANCE THE SECOND PAHSE FACTORY IN SUZHOU

As a leading industrial automation product and solution provide, Inovance-Technology(Stock code:300124) is specialized in R&D manufacturing and sales of automation control products. Thanks to a massive array of cutting-edge industrial automation control technologies and fast delivery of customized solutions, we are able to maximize value for both Inovance and our customers, mainly mid-to-high end equipment manufacturers.

As a national high-tech company, we have mastered a series of core platform technologies such as high-performance vector converter,PLC,servo and PMSM technologies. Moreover, we have set up a R&D team with numerous R&D professionals experienced in R&D of core platform technologies. Inovance released the IPO on the GEM of the Shenzhen stock Exchange in September 2010.

As a subsidiary of Inovance, located in Lingyun Industry Park, National Hi-Tech Zone, Ningbo, Ningbo EST Technology is a national hi-tech and high-growth company in Ningbo. Specialized in R&D, production and sales of automation and control products for plastic machinery, and master the core technologies of the plastic machinery such as designing, controlling, process, mold and other aspects. Our products mainly include IMM control system, precise hydraulic servo system, HMI configuration and control configuration. Combined with the user' s actual demand and modern communication technology, we try our best to develop iMachine production management system, which initiate a revolution in IMM control and production management.

Service Network

Root in China, Serve the World

We have a strong sales and service team in China to support customer services, but also have set up resident offices and service centers in more than 20 countries and regions to provide global product and solution supports.

- **Shenzhen**
  - Shenzhen Inovance Technology Co., Ltd.
  - Shenzhen Inovance Information Technology Co., Ltd.
  - Shenzhen Inovance Control Technology Co., Ltd.
- **Suzhou**
  - Suzhou Inovance Technology Co., Ltd.
  - Suzhou Monarch Control Technology Co., Ltd.
  - Jiangsu Kingway Rail Transportation Co., Ltd.
- **HK**
  - Inova Automation Co., Limited
- **Changchun**
  - Changchun Huitong Optoelectronic Co., Ltd. (Weton)
- **Shanghai**
  - Shanghai MoBst Elevator Technology Co., Ltd.
- **Nanjing**
  - Nanjing Inovance Industrial Vision Technology Co., Ltd.
- **Ningbo**
  - Ningbo EST Technology Co., Ltd.

Strong Cooperation Between INOVANCE and EST

INOVANCE

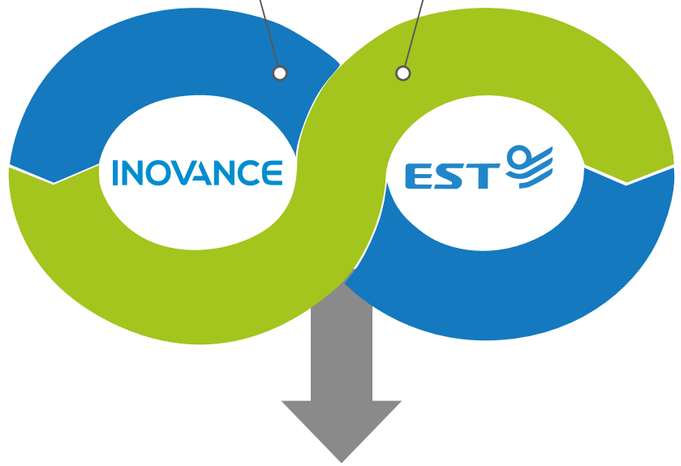
Complete product lines supportedby sufficient resources

As a provider of general products and solutions for industrial automation, Inovance has an experienced R&D team, prominent industry extension experts in the industry, timely delivery, and efficient supply chain management.

EST

Extensive experience in the industry and cutting-edge technologies

Since its establishment, EST has continued focusing on R&D of IMM computer controlling and electro-hydraulic servo systems. Thanks to extensive research, we have gained extensive experience in computers, drives, motors and pumps of IMM electro-hydraulic servo systems.

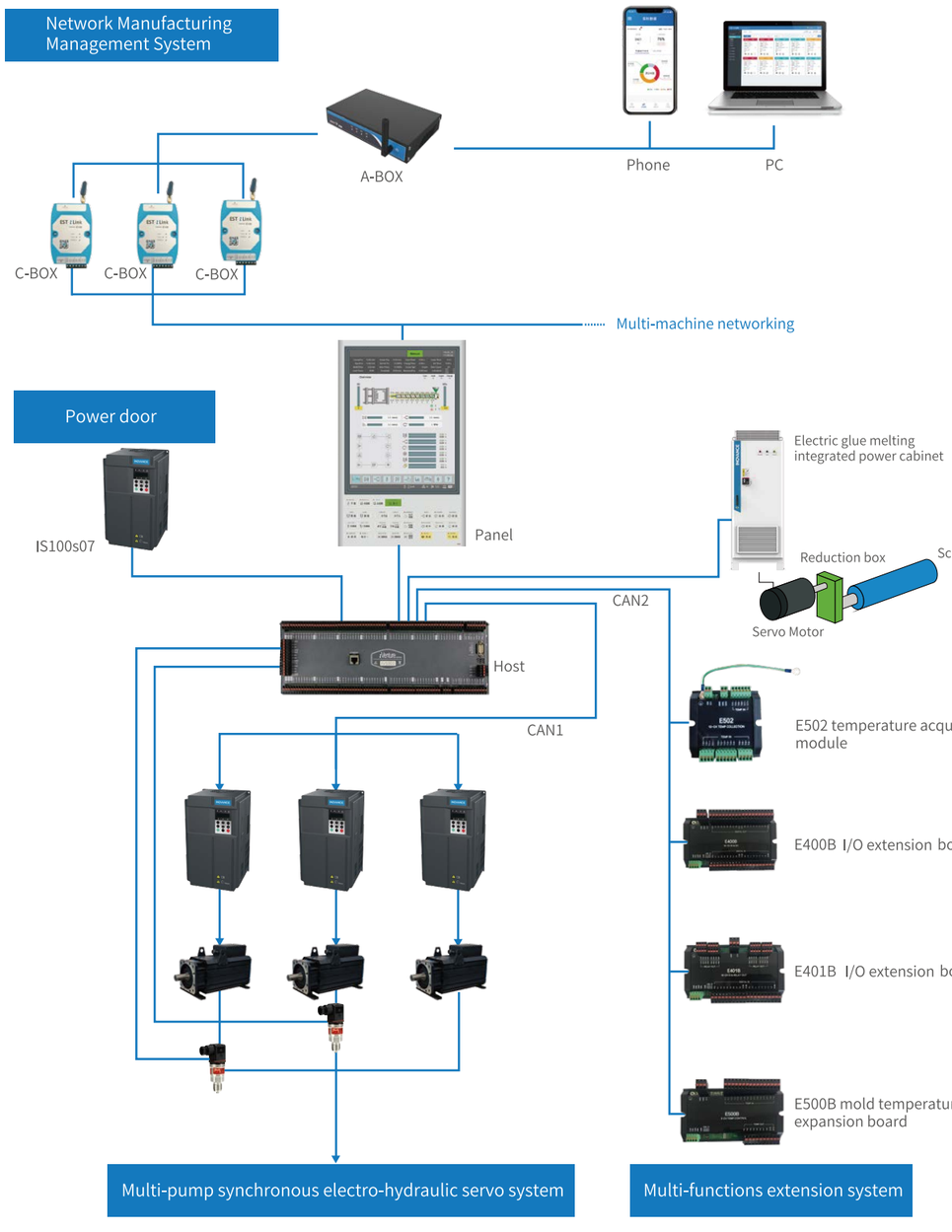


Simplify the Manufacture

Underpinned by the cooperation with Inovance, EST will continue providing competitive integrated electro-hydraulicservo solutions and upgrade our products and services, thus helping our customers improve production efficiency andushering in a new era in the IMM automation and control field.

IMM System Integrated Solution

Topological Graph



iAction Series Control System

iAction Series Host Specifications

Host Model		IA621	IA921
			
Dimensions		430x210x49.5	430x240x47.5
CPU		CORTEX-M3；120MHz	
Control resources	I/O input channels	24	32
	I/O output channels	24	32
	Relay output channels	6	6
	Temperature collection channels	7	8
	Heating control output channels	6	7
	Analog collection channels	4	6
	Proportional valvecontrol output channel	3（0-0.8A） 2（0-10V） 1（-10V - +10V）	3（0-0.8A） 2（0-10V） 1（-10V - +10V）
Communication		Standard RS232 Serial Port*1 Special CAN interface*1	
Program maintenance		Online upgrade via flash disk	
Scalability		Supports E-series Extension boards（I/O、Robot、Temperature、Mold temperature、DA）	Supports E-series Extensionboards and Y-series Extension boards(Electronic ruler/ Hysteresis/ Magnetic grating encode)
Work environment		Temperature: -10°C - +65°C / Humidity: 85%	
		Temperature: -20°C - +85°C / Humidity: 85%	

iAction Series Control System

Horizontal Series Panel Specification

Panel Model	P8DHS1	P10DHS1	P12EHS1
			
Type	8inch horizontal screen	10inch horizontal screen	12inch horizontal screen
Dimensions	470*260*51	470*290*51	470*320*51
Size of display	8” (800*600)	10” (800*600)	12” (1024*768)
CPU	ARM Cortex-A8 1GHz		ARM Cortex-A9 800MHz
Memory	512M 16-bit DDR3		512M 32-bit DDR3
FLASH	256MB		8GB
Communication interface	100M EthernetRJ45 Interface *1 Standard RS232Serial Port *1 Special CAN Interface *1 USB Host 2.0 Interface *1		
Operating system	Linux OS		
Program maintenance	Online upgrade via flash disk		
Data import/export	Flash disk import/export		
Work environment	Temperature：-10℃ - +65℃/ Humidity：85%		
Storage environment	Temperature：-20℃ - +85℃/ Humidity：85%		
Power supply	DC24V ＜800mA		
Language	Chinese,English,Persian,Russian,Spanish,Turkish,French,Korean,Arabic,Vitnamese		

iVenture Series Control System

iVenture Series Host Specifications

Host Model		IV3100
		
Dimensions		425*140*45.5
Control resources	CPU	CORTEX-M4；204MHz
	I/O input channels	32
	I/O output channels	32
	Relay output channels	6
	Temperature collection channels	10
	Heating control output channels	9
	Analog collection channels	4
	Proportional valvecontrol output channels	4（0-10V） 1（-10V - +10V）
	Servo enabled interface	Yes
Communication		Standard RS232 serial port *1 Special CAN Interface *2 High speed industrial bus ETHERCAT main interface *1 RS485 interface *1
Program maintenance		Online upgrade via flash disk
Scalability		Supports E-series extension boards (IO、Robot、Temperature、 Mold Temperature、DA)
Extended function (Optional)		8 position detection input 1 0~0.8A proportional current output 4 0~0.8A proportional current output 4 0~10V proportional voltage output
Work environment		Temperature：-10℃ - +65℃/ Humidity：85%
Storage environment		Temperature：-20℃ - +85℃/ Humidity：85%

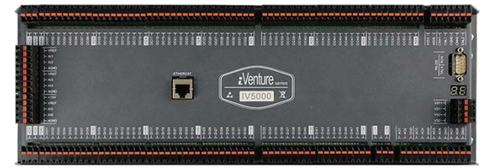
iVenture Series Control System

Vertical Series Panel Specification

Model	P10EHS2	P15EHS4
		
Type	10inch vertical screen	15inch vertical screen
Dimensions	470*260*51	600*310*52.5
Size of display	10” (800*600)	15” (1024*768)
CPU	ARM Cortex-A9 800MHz	
Memory	512M 32-bit DDR3	
FLASH	8GB	
Communication interface	100M Ethernet RJ45interface *1 Standard RS232Serial Port *1 Special CAN interface *1 USB Host 2.0interface *1	
Operating system	Linux OS	
Program maintenance	Online upgrade via flash disk	
Data import/export	Flash disk import/export	
Work environment	Temperature：-10°C - +65°C/ Humidity：85%	
Storage environment	Temperature：-20°C - +85°C/ Humidity：85%	
Power supply	DC24V ＜800mA	
Language	Chinese,English,Farsi,Russian,Spain,Turkish,French,Korean,Arabic,Vitnamese	

iDream Series control system

iDream Series Host Specifications

Host Model		IV5000
		
	Dimensions	425*140*45.5
Control resources	CPU	CORTEX-M4；204MHz
	I/O input channels	48
	I/O output channels	56
	Relay output channels	-
	Temperature collection channels	-
	Heating control output channels	Use concurrently with IO output
	Analog collection channels	4 position transducers + 2 position transducers/sensor8（0-10V）
	Proportional valvecontrol output channels	8（0-10V） 2（-10V - +10V）
	Servo enabled interface	Yes
Communication		Standard RS232 serial port *1 Special CAN Interface *2 High speed industrial bus ETHERCAT main interface *1 RS485 interface *1
Program maintenance		Online upgrade via flash disk
Scalability		Supports E-series extension boards (Temperature、IO、DA) E-series extension module (Temperature、DA、Relay) F-series extension card (Position transducer、DA)
Extended function (Optional)		F508 extension card (8 position detection input) E502 extension module (8 temperature acquisition input) E101 extension module (4 voltage transfer to current output)
Work environment		Temperature：-10°C - +65°C/ Humidity：85%
Storage environment		Temperature：-20°C - +85°C/ Humidity：85%

iDream Series control system

Three-dimensional touch Panel Specification

Model	P15EHS3-T+KB03	P15EHS3-T+KB04	P21EHS2-T
			
Type	15inch vertical keyboard separation screen		21inch vertical screen
Dimensions	370*280 370*110/180*280		530*320
Size of display	15”（1024*768)		21”（1080*1920)
CPU	A9, 800MHz		
Memory	DDR3 RAM 512MB		
FLASH	8GB		
Communication interface	Standard RS232Serial Port *1 USB Host 2.0interface *1 Special CAN interface *1 100M Ethernet RJ45interface *1		
Operating system	Linux OS		
Program maintenance	Online upgrade via flash disk		
Data import/export	Flash disk import/export		
Work environment	Temperature：-10°C - +65°C/ Humidity：85%		
Storage environment	Temperature：-20°C - +85°C/ Humidity：85%		
Power supply	DC24V ＜800mA		

IS580 Series Servo Drive

Naming Rules

IS580 T 035- XX
① ② ③ ④

① Series
IS580:Servo drive

② Voltage class
T：380V～480V

③ Rated output current (approximate)
035：37
040：45
⋮
140：152

④ Encoder type
R1:Rotary encoder with PTC/KTY
R2:Rotary encoder without PTC/KTY
D:Differential encoder
O:OC-type encoder
U:UVW-type encoder
S:Sine-cosine type encoder

Capacity Specifications

Servo Drive Model	Power Capacity (kVA)	Input Current (A)	Rated Output Current (A)	Applicable Motor (kW)	Applicable Motor (HP)	Power of Recommended Braking Resistor	Resistance of Recommended Braking Resistor	Braking Unit		
	Three phase AC power supply： 440V，50/60Hz									
IS580T020-XX	30	36.3	25	11	15	800W	⩾43Ω	Standard, build-in		
IS580T030-XX	39	45.1	32	15	20	1000W	⩾32Ω			
IS580T035-XX	45	49.5	37	18.5	25	1.3kW	⩾25Ω			
IS580T040-XX	54	59	45	22	30	1.5kW	⩾22Ω			
IS580T050-XX	52	57	60	30	40	2.5kW	⩾16Ω			
IS580T070-XX	63	69	75	37	50	3.7kW	⩾16Ω			
IS580T080-XX	81	89	91	45	60	4.5kW	⩾16Ω			
IS580T100-XX	97	106	112	55	75	5.5kW	⩾16Ω			
IS580T140-XX	127	139	150	75	100	7.5kW	⩾12Ω			
IS580T170-XX	150	164	176	90	125	9.0kW	⩾8Ω	External	Input volt⩽440VAC	MDBUN-90-T
						9.0kW	⩾8Ω	External	Input volt⩾440VAC	MDBUN-90-5T
IS580T210-XX	179	196	210	110	150	5.5kW×2	⩾12Ω×2	External	Input volt⩽440VAC	MDBUN-60-T×2
						5.5kW×2	⩾12Ω×2	External	Input volt⩾440VAC	MDBUN-90-5T
IS580T250-XX	220	240	253	132	180	8.0kW×2	⩾6.5Ω×2	External	Input volt⩽440VAC	MDBUN-90-T×2
						8.0kW×2	⩾7.5Ω×2	External	Input volt⩾440VAC	MDBUN-90-5T×2
IS580T300-XX	263	287	304	160	220	9.6kW×2	⩾6.5Ω×2	External	Input volt⩽440VAC	MDBUN-90-T×2
						9.6kW×2	⩾7.5Ω×2	External	Input volt⩾440VAC	MDBUN-90-5T×2

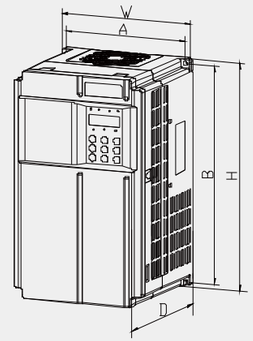
IS580 Series Servo Drive

Capacity Specifications

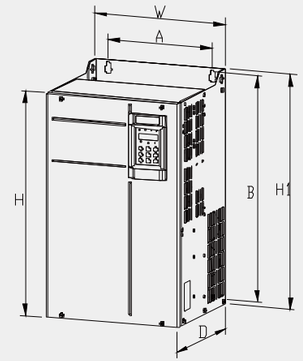
Servo Drive Model	Power Capacity (kVA)	Input Current (A)	Rated Output Current (A)	Applicable Motor (kW)	Applicable Motor (HP)	Power of Recommended Braking Resistor	Resistance of Recommended Braking Resistor		Braking Unit	
Three phase AC power supply：440V，50/60Hz										
IS580T370-XX	334	365	377	200	275	10kW×2	5Ω×2	External	Input volt≤440V	MDBU-200-B×2
						10kW×2	6Ω×2		Input volt≥440V	MDBU-200-C×2
IS580T420-XX	375	410	426	220	300	10kW×2	4.5Ω×2	External	Input volt≤440V	MDBU-200-B×2
						10kW×2	5.5Ω×2		Input volt≥440V	MDBU-200-C×2
IS580T460-XX	404	441	465	250	340	12kW×2	4Ω×2	External	Input volt≤440V	MDBU-200-B×2
						12kW×2	5Ω×2		Input volt≥440V	MDBU-200-C×2
IS580T520-XX	453	495	520	280	380	12kW×2	3.5Ω×2	External	Input volt≤440V	MDBU-200-B×2
						12kW×2	4.5Ω×2		Input volt≥440V	MDBU-200-C×2
IS580T580-XX	517	565	585	315	430	10kW×3	4.5Ω×3	External	Input volt≤440V	MDBU-200-B×2
						10kW×3	6Ω×3		Input volt≥440V	MDBU-200-C×2
IS580T650-XX	565	617	650	355	485	12kW×3	4Ω×3	External	Input volt≤440V	MDBU-200-B×2
						12kW×3	5Ω×3		Input volt≥440V	MDBU-200-C×2
IS580T720-XX	629	687	725	400	545	15kW×3	3.5Ω×3	External	Input volt≤440V	MDBU-200-B×2
						15kW×3	4.5Ω×3		Input volt≥440V	MDBU-200-C×2

Mounting Dimensions

Size：IS580T035～IS580T070
Plastic housing



Size：IS580T080～IS580T300
Metal plate housing



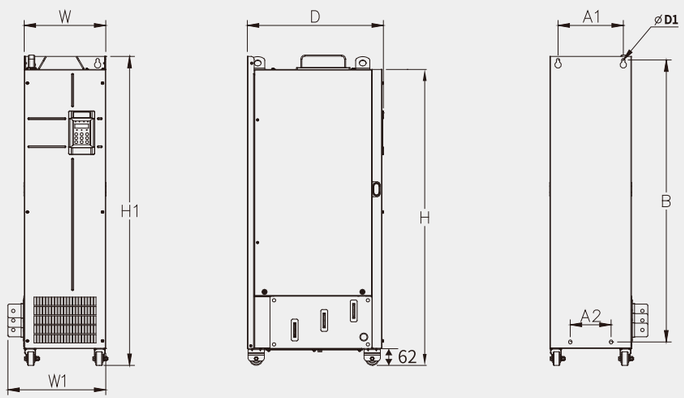
Model	Mounting Hole（mm） A	Mounting Hole（mm） B	Dimensions（mm） H	Dimensions（mm） H1	Dimensions（mm） W	Dimensions（mm） D	Diameter of Mounting Hole（mm）	Weight (kg)
Three phase AC power supply：380~480V								
IS580T020-XX IS580T030-XX IS580T035-XX IS580T040-XX	195	335	350	/	210	192	Ø 6.0	9.1
IS580T050-XX IS580T070-XX	230	380	400	/	250	220	Ø 7.0	17
IS580T080-XX IS580T100-XX	245	523	525	542	300	275	Ø 10.0	35
IS580T140-XX IS580T170-XX IS580T210-XX	270	560	554	580	338	315	Ø 10.0	51.5
IS580T250-XX IS580T300-XX	320	890	874	915	400	320	Ø 10.0	85

※：If you need to order water-cooled drive or drive with a current of 20A or below, please contact Inovance sales representatives.
If you need specifications of braking resistors and braking units for multi-pump confluence application, please contact Inovance sales representatives.

IS580 Series Servo Drive

Mounting Dimensions

Size：IS580T370～IS580T720
Metal plate housing



Model	Mounting Hole（mm）			Dimensions（mm）					Diameter of Mounting Hole（mm）	Weight (kg)
	A1	A2	B	H	H1	W	W1	D		
IS580T370-XX	240	150	1035	1086	1134	300	360	500	Ø13	110
IS580T420-XX										
IS580T460-XX	225	185	1175	1248	1284	330	390	545	Ø13	155
IS580T520-XX										
IS580T580-XX	240	200	1280	1355	1405	340	400	545	Ø16	185
IS580T650-XX										
IS580T720-XX										

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If you need specifications of braking resistors and braking units for multi-pump confluence application, please contact Inovance sales representatives.

Advantages of IS580 Series Servo Drive

Stronger adaptability

Resistance to power grid impact

- IS580 adopts KT4 module and capacitors with high-temperature resistance and longer service life to improve the adaptability to power grid impacts and voltage drop

Temperature adaptability

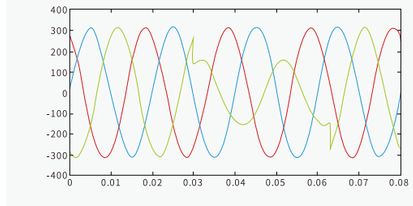
- Key components in the high-temperature area are upgraded to ensure high stability and service life of the servo drive under high power density

Meet the wide voltage-range of international standard

- Rated voltage range: there phase 380V~480V 50Hz/60Hz
- Allowable voltage fluctuation range: 325~528V 50Hz/60Hz

Better EMC solution

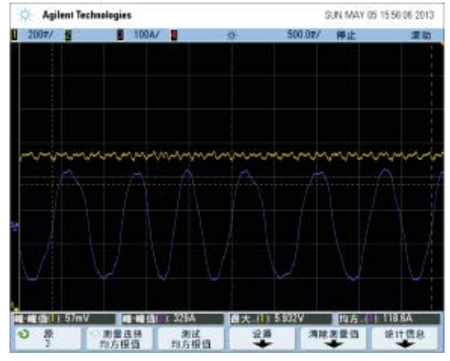
- Current leakage jumper is provided to solve the current leakage problem
  It is a more adaptable solution compared with similar products



Better performance

Performance improvement

- The field-weakening control capacity is 10% higher than other brands. Its software algorithm can deliver a higher response speed and impact suppression, helping OEM customers improve product quality
- The low-speed pressure holding capacity is in a leading position. The response speed at the starting pressing period under the pressure of 20Mpa is 50ms.The pressure overshoot is 105kgf. The pressure release time is 60ms. The pressure fluctuation is 0.5kgf.



IS580 Series Servo Drive

Advantages of IS580 Series Servo Drive

Higher stability

Rectifier

- IS580 adopts rectifier with higher technical specifications to meet application needs of IMMS under a high temperature

IGBT

- The fourth generation IGBT KT4 enjoys a service life that is 2.5-3 times as long as those with the third generation KT3
- KT4 is featured by higher stability, lower hot allowance, and higher junction temperature, thus improving stability of the servo drive

Monitoring protection

- Temperature rise of all key components and PCB components can be monitored
- Effective protection measures are taken for ground short circuit and pick-up fault of the pre-charge relays and contactors
- IS580 is compatible with KTY and PTC, which facilitates monitoring the motor’ s temperature
- Protection are also provided for short circuit of braking resistors, braking circuit over-current, over-load and shoot-through of the brake tubes

Longer service life

- Key components used in IS580 provide adequate allowance to withstand strong impact, heavy load and high temperature
- The bus capacitors are upgraded to provide greater temperature adaptability and quadruple the service life theoretically
- Key components in the high-temperature areas are upgraded to ensure high stability and service life of the servo drive under high power density
- The service life of all key components is calculated and analyzed. The service life of the servo drive is largely extended from the previous-generation drives

Bus capacitance　　hest sink device

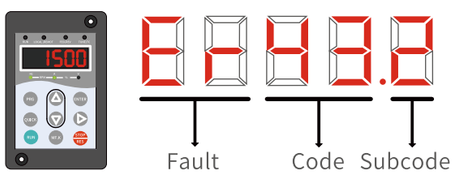
Greater usability

Easy commissioning

- The consistency of parameters is improved, simplifying the commissioning process
- It is plug-and-play when working with an Inovance motor
- The multi-pump communication mode is optimized to simplify the commissioning process

Accurate failure positioning

- The new failure alarm logic improves the failure positioning accuracy
- A specific troubleshooting manual is prepared to help users troubleshoot



IMM Special High-speed respond servo motor --ESMG

Naming rules

ESM G1-30D 17C D-XX X X X X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Series
ISM:IS series servo motor　ESM: ES series servo motor

② Characteristic
G1: 200*200 motor frame size
G2：266*266 motor frame size

③ Rated power
Consisting a letter and a number
A：×1
B：×10
C：×100
D：×1000
E：×10000
For example：
15C：1500W
30D：30000W

④ Rated rotational speed
Consisting a letter and a number
A：×1
B：×10
C：×100
D：×1000
E：×10000
For example：
15C：1500rpm
20C：2000rpm

⑤ Voltage class
D：400V

⑥ Encoder type
R1: One –pole – pare resolver
U1: 2500-line wire-saving incremental encoder
A3：Inovance special tune-free encoder

⑦ Shaft connection method
1: Shaft without key
3: Solid, with shaft key and threaded hole
A: Salient motor

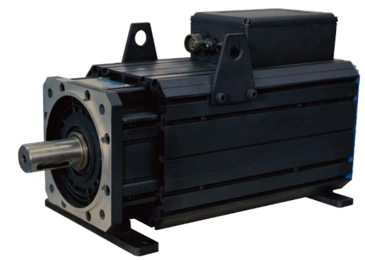
⑧ Brake, reduction, seal
1: With seal

⑨ Customization
X: Natural cooling
F: Forced air cooling

⑩ Version

Characteristics

- Use new salient pole structure to improve performance of flux weakening overspeed and anti-demagnetization, which more meet the working requirements of hydraulic press industry
- Use rotary encoder as speed feedback component, which improves the capacity of anti-knock and anti-oil pollution and satisfy the applications under severe conditions.
- Standard torque range is 35Nm~600Nm. Power range reach up to 110KW
- Use Ansoft for simulation design, which brings excellent magnetic performance
- Use high-performance Nd-Fe-N materials for excitation, with less iron and copper losses, higher efficiency and less heating
- Support dual protection of PTC and KTY
- Satisfy customization



IMM Special High-speed respond servo motor --ESMG

Performance specification

ESMG 1700rpm Series Host

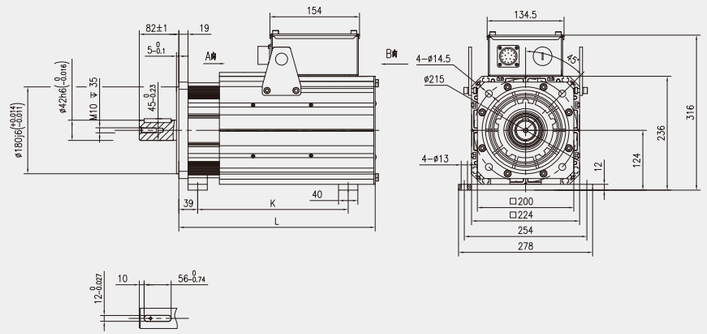
Motor Model	Rated Power (KW)	Rated Voltage (V)	Rated Current (A)	Rated Torque (Nm)	Rated Frequency (Hz)	Rated Speed (rpm)	Cold State Torque Constant (Nm/A)	Counter electromotive force at rated speed (V)	Max. Torque at Rated speed (Nm)	Max. Speed (rpm)	Weight (kg)
ESMG1-67C17CD-XXXXX	6.7	380	11.5	37.5	113.33	1700	3.51	360.6	90	2500	37.2
ESMG1-89C17CD-XXXXX	8.9	380	15.3	50	113.33	1700	3.51	360.6	123	2500	45.2
ESMG1-13D17CD-XXXXX	13.4	380	24.1	75	113.33	1700	3.34	343.4	170	2500	51.9
ESMG1-17D17CD-XXXXX	16.4	380	29.5	92	113.33	1700	3.34	343.4	225	2500	59
ESMG1-21D17CD-XXXXX	20.5	380	35.1	115	113.33	1700	3.51	360.6	263	2500	66
ESMG1-27D17CD-XXXXX	26.7	380	48.2	150	113.33	1700	3.34	343.4	345	2500	79.8
ESMG2-30D17CD-XXXXX	30.2	380	51.9	170	113.33	1700	3.51	360.6	289	2500	122
ESMG2-42D17CD-XXXXX	40.9	380	73.9	230	113.33	1700	3.34	343.4	391	2500	141.3
ESMG2-50D17CD-XXXXX	50.7	380	91.5	285	113.33	1700	3.34	343.4	484	2500	158.4
ESMG2-62D17CD-XXXXX	60.5	380	103.8	340	113.33	1700	3.51	360.6	578	2500	175.4
ESMG2-80D17CD-XXXXX	78.3	380	145	440	113.33	1700	3.34	343.4	726	2500	217

ESMG2000rpm Series Host

Motor Model	Rated Power (KW)	Rated Voltage (V)	Rated Current (A)	Rated Torque (Nm)	Rated Frequency (Hz)	Rated Speed (rpm)	Cold State Torque Constant (Nm/A)	Counter electromotive force at rated speed (V)	Max. Torque at Rated speed (Nm)	Max. Speed (rpm)	Weight (kg)
ESMG1-79C20CD-XXXXX	7.9	380	13.8	37.5	133.33	2000	2.92	353.5	90	2500	37.2
ESMG1-11D20CD-XXXXX	10.5	380	17.5	50	133.33	2000	3.01	363.6	122	2500	45.2
ESMG1-15D20CD-XXXXX	15.7	380	26.2	75	133.33	2000	3.01	363.6	170	2500	51.9
ESMG1-19D20CD-XXXXX	19.3	380	33	92	133.33	2000	2.92	353.3	225	2500	59
ESMG1-25D20CD-XXXXX	24.1	380	40.2	115	133.33	2000	3.01	363.6	250	2500	66
ESMG1-31D20CD-XXXXX	31.4	380	52.4	150	133.33	2000	3.01	363.6	373	2500	79.8
ESMG2-36D20CD-XXXXX	35.6	380	67.8	170	133.33	2000	3.01	363.6	289	2500	122
ESMG2-48D20CD-XXXXX	48.2	380	89.1	230	133.33	2000	3.01	363.6	391	2500	141.3
ESMG2-60D20CD-XXXXX	59.7	380	115.3	285	133.33	2000	2.92	353.5	484	2500	158.4
ESMG2-72D20CD-XXXXX	71.2	380	135.5	340	133.33	2000	3.01	363.6	578	2500	175.4
ESMG2-92D20CD-XXXXX	92.1	380	181.3	440	133.33	2000	3.34	404	726	2500	217

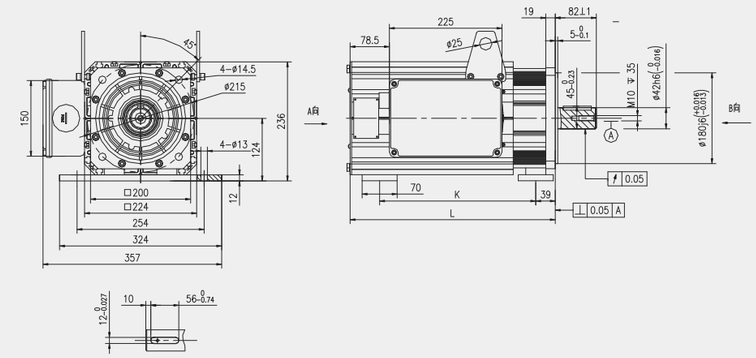
Mounting dimensions

ESMG1 servo motor



The standard accessories: A type round end flat key 12*8*56 .
Refer to GB/T 1096

Model	L(mm)	K(mm)	Weight(kg)
ESMG1-67D17CD-XXXXX-K ESMG1-79C20CD-XXXXX-K	341	258	38

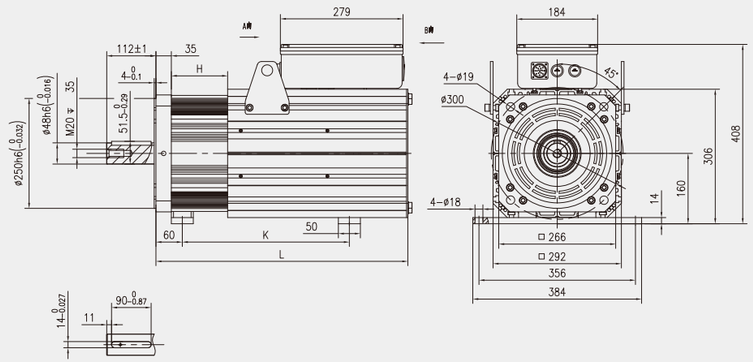


Model	L(mm)	K(mm)	Weight(kg)
ESMG1-89C17CD-XXXXX-K ESMG1-11D20CD-XXXXX-K	375	285	45.2
ESMG1-13D17CD-XXXXX-K ESMG1-15D20CD-XXXXX-K	409	312	51.9
ESMG1-17D17CD-XXXXX-K ESMG1-19D20CD-XXXXX-K	444	354	59
ESMG1-21D17CD-XXXXX-K ESMG1-25D20CD-XXXXX-K	481	396	66
ESMG1-27D17CD-XXXXX-K ESMG1-31D20CD-XXXXX-K	552	471	79.8

IMM Special High-speed respond servo motor --ESMG

Mounting dimensions

ESMG2 servo motor

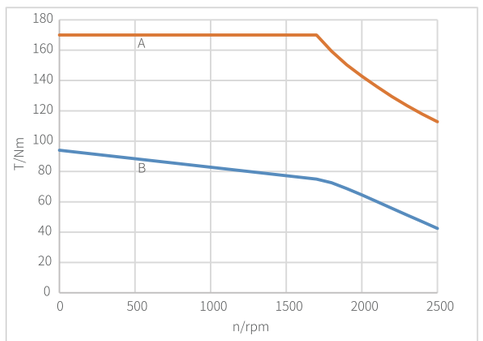


The standard accessories: A type round end flat key 14*9*90 .
Refer to GB/T 1096

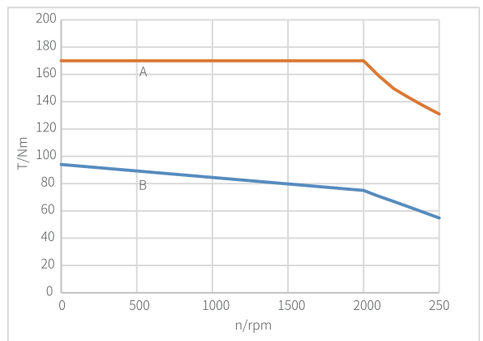
Model	L(mm)	K(mm)	H(mm)	Weight(kg)
ESMG2-30D17CD-XXXXX-K ESMG2-36D20CD-XXXXX-K	525	360	88	122
ESMG2-42D17CD-XXXXX-K ESMG2-48D20CD-XXXXX-K	577	370	128	141.3
ESMG2-50D17CD-XXXXX-K ESMG2-60D20CD-XXXXX-K	629	476	128	158.4
ESMG2-62D17CD-XXXXX-K ESMG2-72D17CD-XXXXX-K	680	476	128	175.4
ESMG2-80D17CD-XXXXX-K ESMG2-92D20CD-XXXXX-K	783	583	128	217

The Tn curve is as follows: A — A- continues working area
B — B-Short time working area

ESMG-XXX17CD



ESMG-XXX20CD



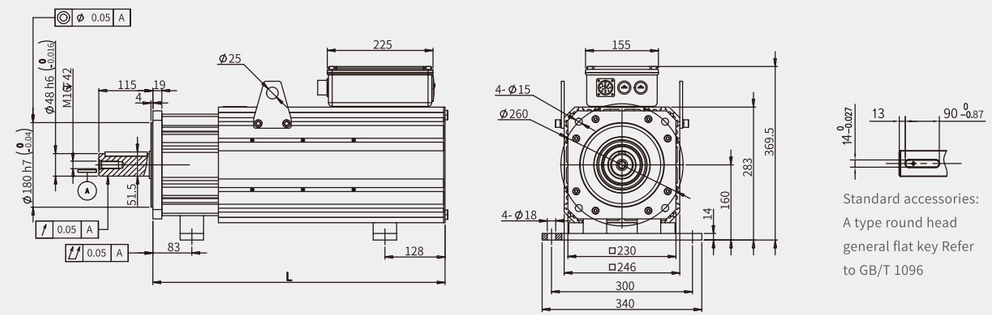
IMM Special High-speed respond servo motor --ISMQ

Performance specification

ISMQ2 servo motor

Motor Model	Rated Power/kW	Rated Torque/Nm	Rated Current/A	Rated Speed /rpm	Cold State Torque Constant /(Nm/A)	Max. Torque at Rated speed /Nm	Max. Speed /rpm
	S1	S1	S1				
ISMQ2-34D17CD-R131F	34	191	57.6	1700	3.48	478	2300
ISMQ2-40D17CD-R131F	39.9	224	68.8	1700	3.42	560	2300
ISMQ2-51D17CD-R131F	51	286	91.2	1700	3.3	716	2300

ISMQ2 Servo motor install dimensions

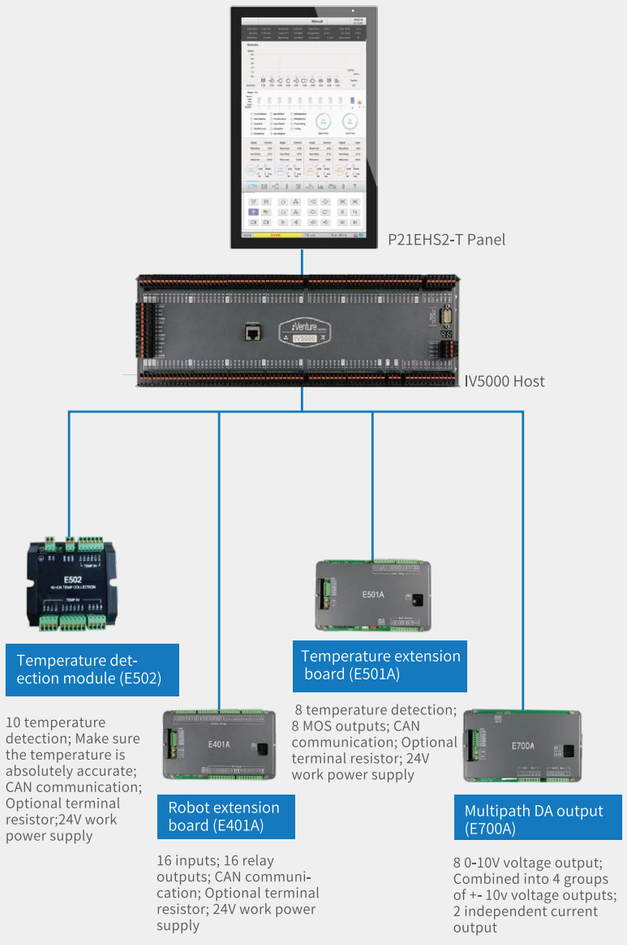


Standard accessories:
A type round head general flat key Refer to GB/T 1096

Model	L(mm)	Weight(kg)
ISMQ2-34D17CD-R131F	578.5	109
ISMQ2-40D17CD-R131F	622	120
ISMQ2-51D17CD-R131F	709	142

System Solution

Large-sized and Special Machine Solution

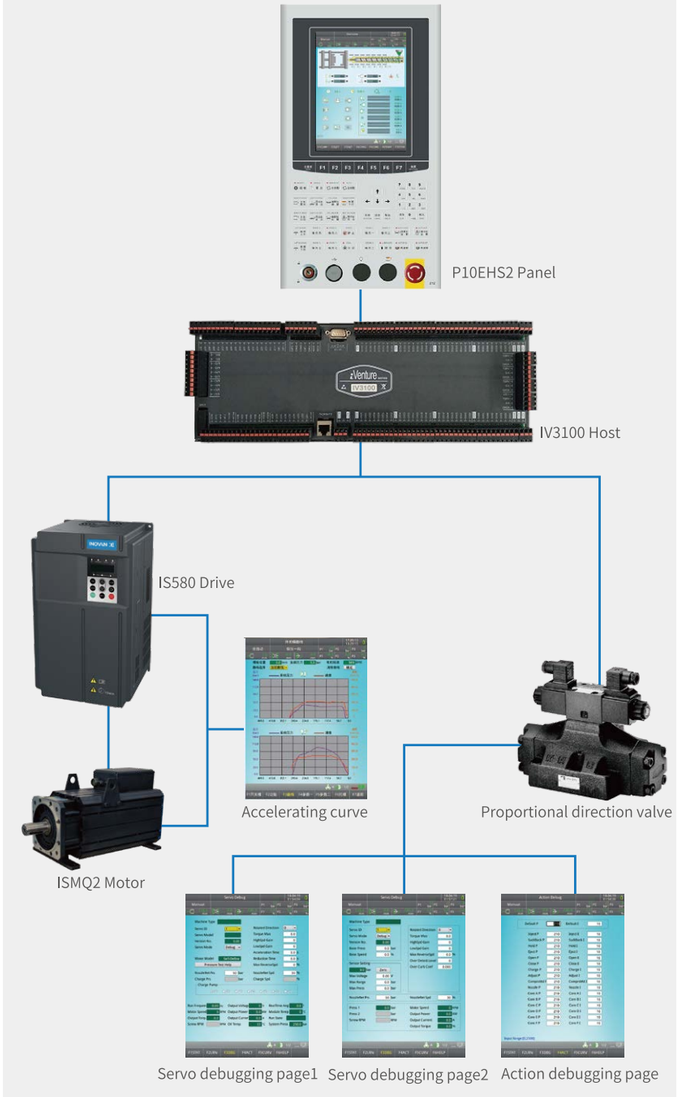


As the increase of large-scale machine yield ratio and the continuous develop-ment of special injection molding machines, the control technology for this kind IMM has received extensive attention. EST large-size and special machine take the dream series control-ler as the basic control platform, at the same time, it can be optional to config-ure the expansion boards of all kinds of functions, so as to solve the application problems such as compound actions, multi-pump control, robot and mold temperature control .

Advantages

- Solve multiple inputs/outputs, multi-ple groups pressure/flow control and multiple direction proportional valves control for large-scale machine;
- Solve the problem of multi-stage and accurate temperature acquisition;
- The whole extension system is connected by CAN bus;
- All extension configuration can be set on panel page.

Fast machine solution



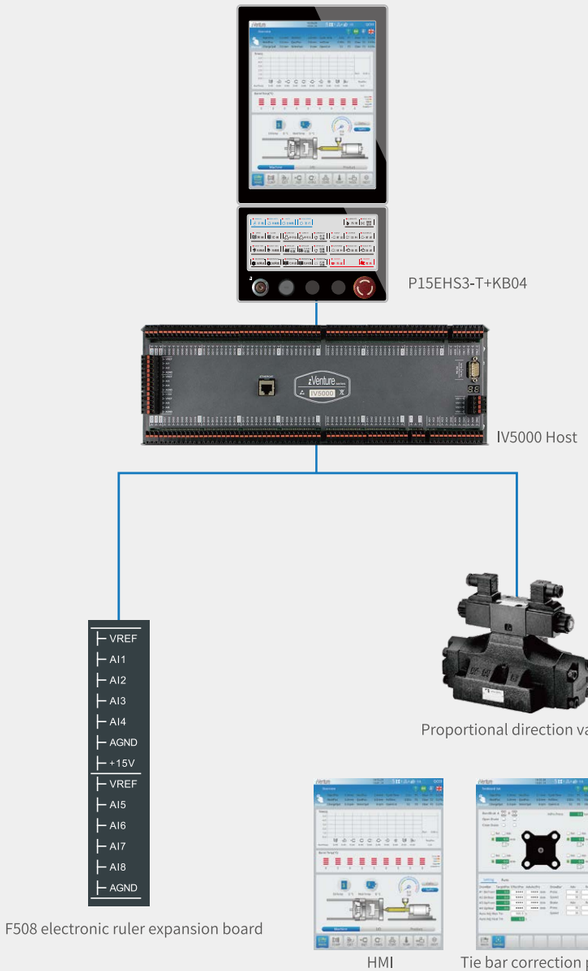
With the improvement of living standards and lifestyle changes, the increasing demand for fast packaging products makes that the fast machine is one of the most successful subdivisions in the injection molding machine indus-try in recent years. INOVANCE&EST provides different solutions for different customers

Advantages

- Combine the characteristics of the product with the oil circuit of the fast machine to optimize on the process;
- By using direction proportional valve and combining the positioning control algorithm of proportional valve in the control system, the faster and more accurate opening and closing effect is achieved;
- INOVANCE motor adopts the technical solution of all-electric quick injection motor, the response of machine is improved, so that the products can be more produced more quickly and easily.

System Solution

Two-plate machine solution



As a subdivision of injection molding machine, two-plate machine has been more and more pursued by terminal customers in the recent years. In particular, its long opening stroke gives substantial value to customers, but itself also has certain technical barriers. As a core product supplier, INOVANCE&EST must provide a complete set of solutions to customers.

Advantages

- iDream series control system not only guarantees the performance of the machine, but also improves the appearance of the whole machine;
- The quick correction scheme of tie bar can ensure that four tie bars are under uniform force and can complete the action quickly at the same time, so as to ensure the quick and stable operation;
- The multiple groups of extension boards perfectly solves the requirement of control resource;
- The high performance Inovance servo system is an important guarantee for the stability and reliability of the machine.

Multi-component machine solution

Through accurate control on the speed and position of the servo motor(with encoder feedback), positioning speed and angle can be set freely based on servo drive parameters,thus realizing fast, smooth and accurate revolving movements with the simplest external logics.

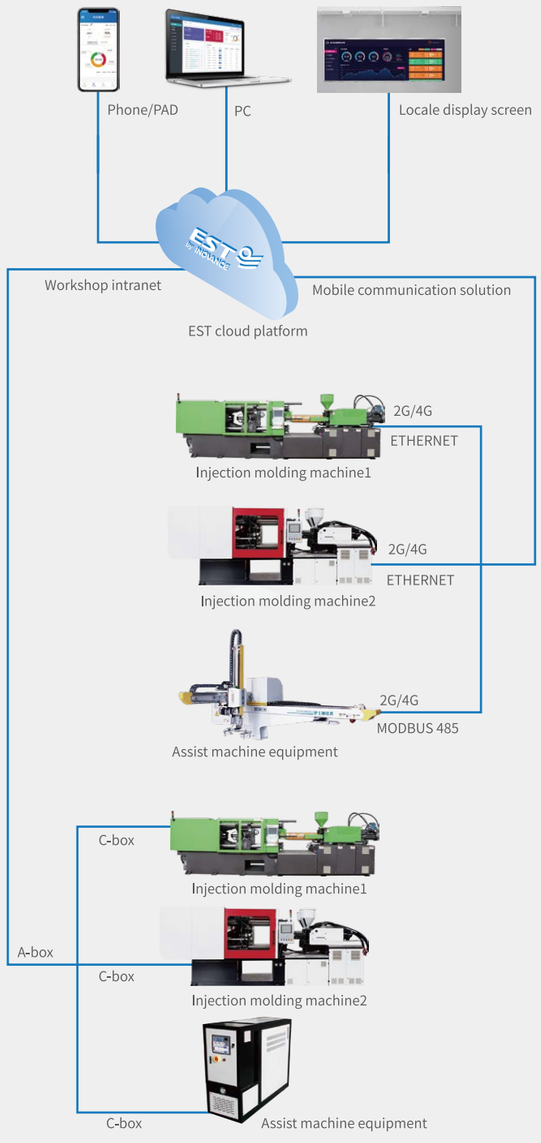
With the improvement of living standards, people' s demand for products has gradually shifted from necessary demand to the demand for performance and aesthetics, and the multi-groups machine is a good realization of this demand. For this kind machine, especially two-color machine, INOVANCE&EST has a mature solution.

Advantages

- Our products are not only control system, but also servo system, which can provide the whole system solution ;
- IDream series control system ensure the machine running performance, at the same time is more consistent with the operation habits;
- For two-colors(clear) turntable system, INOVANCE&EST provides the whole set turntable system.

System Solution

iLink IOT intelligent management system

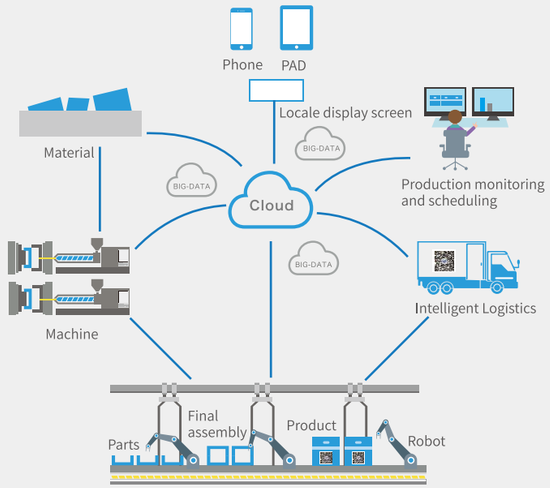


In the future, industrial data analysis will play an increasingly important role in production. Traditional industrial data collection is basically done by hand, which on the one hand increases the cost of labor and time, on the other hand, the data collected by hand will be greatly reduced in terms of immediacy and accuracy.

Communication Advantages

- Fast transmission speed. Realize the overall perception of human, machine, product and system;
- Strong communication stability. Through data and business logic, the seamless integration of various software and hardware systems in the industrial production process is realized, which is more stable and reliable than the traditional communication;
- Large and medium-sized factories can be covered. Wireless network can cover a wider area, which solves the problem of limited coverage area of network line in traditional communication technology;
- No need to install network cable. In large factories, the number of machine is large and the area is wide. The traditional communication requires cable, waste material and time, but both wireless and mobile networks are free of installation;
- Wireless network data is unlimited. Production information and data volume is very large, so wireless network is suitable.

iLink IOT intelligent management system



Function	Traditional	iLink
Function State	Stand-alone	Networking
View Mode	Stand-alone	Remote check
Monitor Info	User-trace	Full record
Barrel Temperature	Current info	Full record
Mould Info	Stand-alone	Network
Parameter Modify	No record	Full record
Production schedule	paper-based records	Digital

WEB Machines state page

APP Machines state page

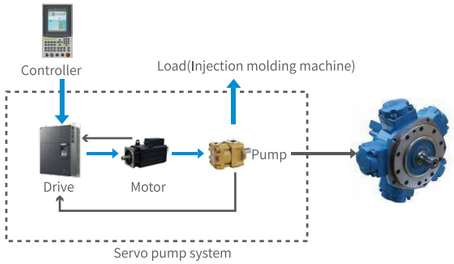
iLink IMM network management system is a complete injection molding machine network management solution. It can be used in enterprise local area network or through the internet, to monitor the machine state and manage the production. Using iLink ,production efficiency can be increased, human resources and mould-adjusting cost can be saved. In this way, product quality and work efficiency can be significantly improved.

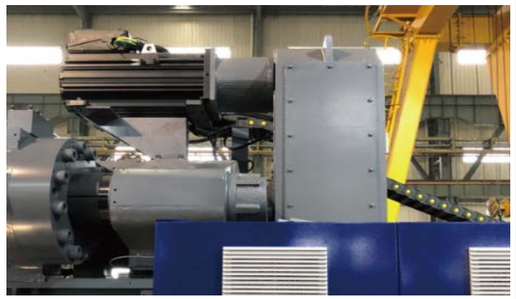
Advantages

- Real time monitoring: Monitor the production of each injection molding machine, fast and accurate detection of anomalies, automatically generate Statistical report;
- Process management: Save molding parameters to form standard process parameters of each product;
- Production process analysis: Record the temperature of each segment of the nozzle, monitor the values and display by numbers and temperature curves;
- Equipment management: Abnormal records provide reference for equipment maintenance;
- System security: Machine operating record includes the modification time and old/new data, to avoid parameters incorrect changing;
- Staff management: Record the production quantity information of employees, so it is easy to use for conduct performance evaluation and adopt piece rate.

System Solution

IMM electric glue melting integrated power cabinet system solution





Solution

Electric glue melting integrated power cabinet

During the production process of Injection molding machine, if the charging time is long, it is often synchronized with other movements to improve production efficiency. However, with the improvement of the requirements of energy- saving and consumption reduction, the disadvantages of the traditional hydraulic control method are increasingly obvious

Solution comparision

Hydraulic motor solution

- Power-intensive : Using a hydraulic motor for melting is power-consuming and inefficient
- Speed Instability： Since the inner leakage of the charging motor is different under different load, the speed of the motor is unstable.
- Loud noise: Under the condition of high speed and high pressure, the noise of hydraulic motor and pump overlaps, which affects the environment

Electric melt solution

- Energy saving: The direct-driven melting reduces mechanical transmi-ssion energy consumption, energy saving 10%
- Efficient: Since it is direct-drive, the actions can performs in same time in long charging time. It is more efficient
- High accuracy: Charging stability; Low speed fluctuation; high charging accuracy
- Integrated structure: Simple structure; no need to use charging oil lines to save cost

Application

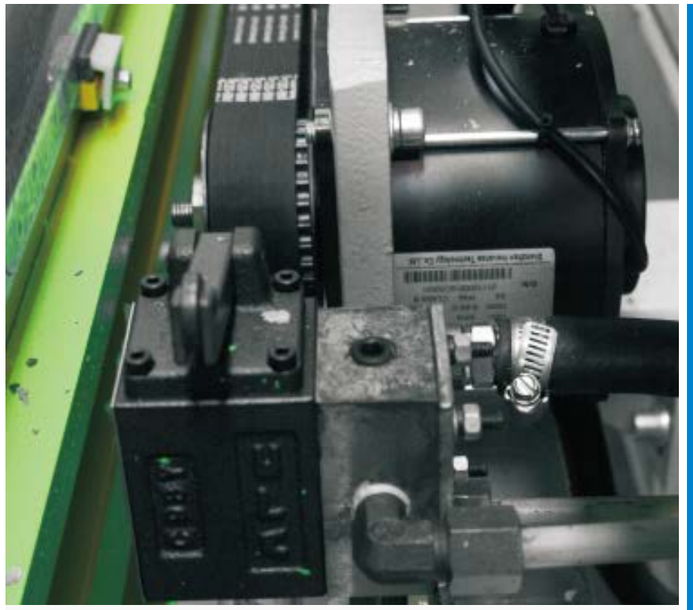
The disadvantages of traditional method

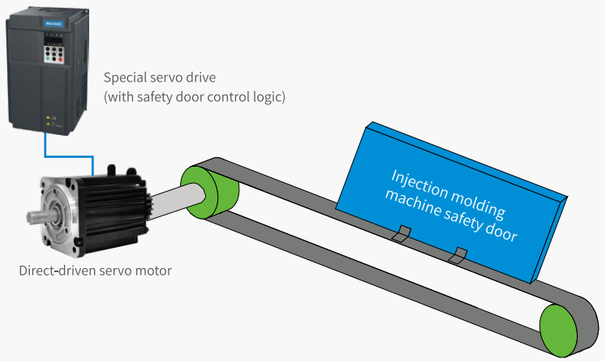
- Complex assembly: Wiring is messy and complicated, which takes time and energy. It needs 2 persons and 2 days to complete.
- Build-in Clutter: The layout of high-power devices is not unified, and there are hidden dangers such as EMC and heat dissipation, which will affect the mechanical life.
- No standard selection: There is no uniform standard for the selection of high-power cabinet, and there is a difference in coupling cost between different accessories

Advantages

- Standard designing criterion: Model selection and wiring standardiz-ation, one-stop accessories, products with high degree of cooperation
- Good delivery: It can solve the delivery problem of high-power oil motor and make the delivery more simple, economical and energy-saving
- High protection: IP54 protection design meets the requirements of national standard, Multidimensional EMC design meet C3 standard
- Fast heat dissipation: high reliability and adaptability to environment.
- Fast installation: The signal terminal is pluggable ,and the power cable is for convenient installation and can support the wiring from side bottom

IMM Safety Autodoor System Solution





Through accurate position, speed and torque control of the direct-driv-en servo motor(with encoder feedback), the door opening and closing curve can be set freely based on servo drive parameters, thus using the simplest external logic to operate the safety door smoothly and ensure proper protection for personal safety

Servo power door system is a solution for IMM safety door control, including IS100 door machine drive and ISMD dedicated servo motor. It integrates opening and closing logic control and motor drive control. External system only needs to give opening and closing instruction, the whole door system can be controlled. There are convenient features of no wiring, no debugging, self-adaption opening and closing fast and stable control.

Advantages

- The direct-driven servo motor with encod er feedback does not need the reduction gear box.
  Direct driven, improving response speed and control accuracy;
  Compact, light, easy to install and maintain.
- The servo drive integrates a programmable door opening and closing curve, which makes the safety door movements smooth.
  The servo drive is equipped with encoders to detect the current position of the safety door
  Four switch points can be set on the door opening and closing curve: opening end point, opening slow-down point, closing slow-down point and closing end point, simplifying the programming process.

NOTES