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PRODUCT PORTFOLIO

INOVANCE 2023



Industrial
Automation



Smart
Elevator



EV



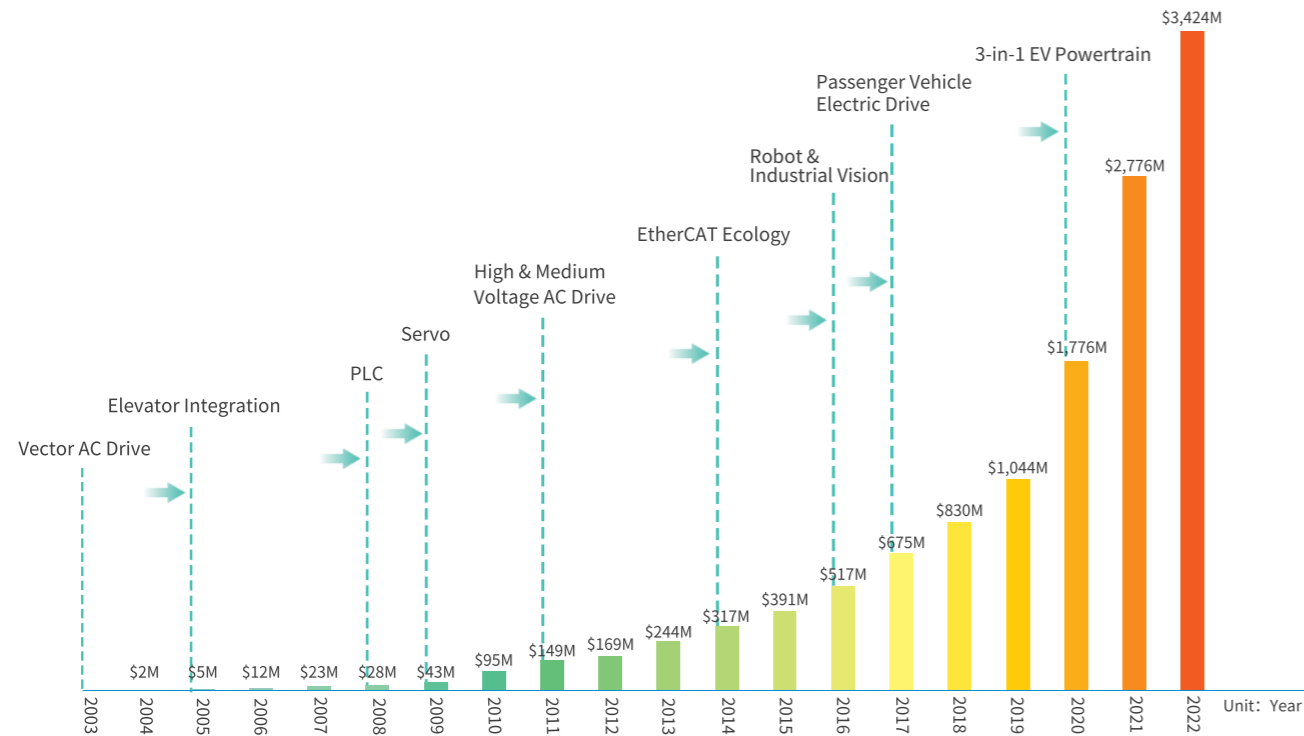
Industrial
Robot



Railway
Transit

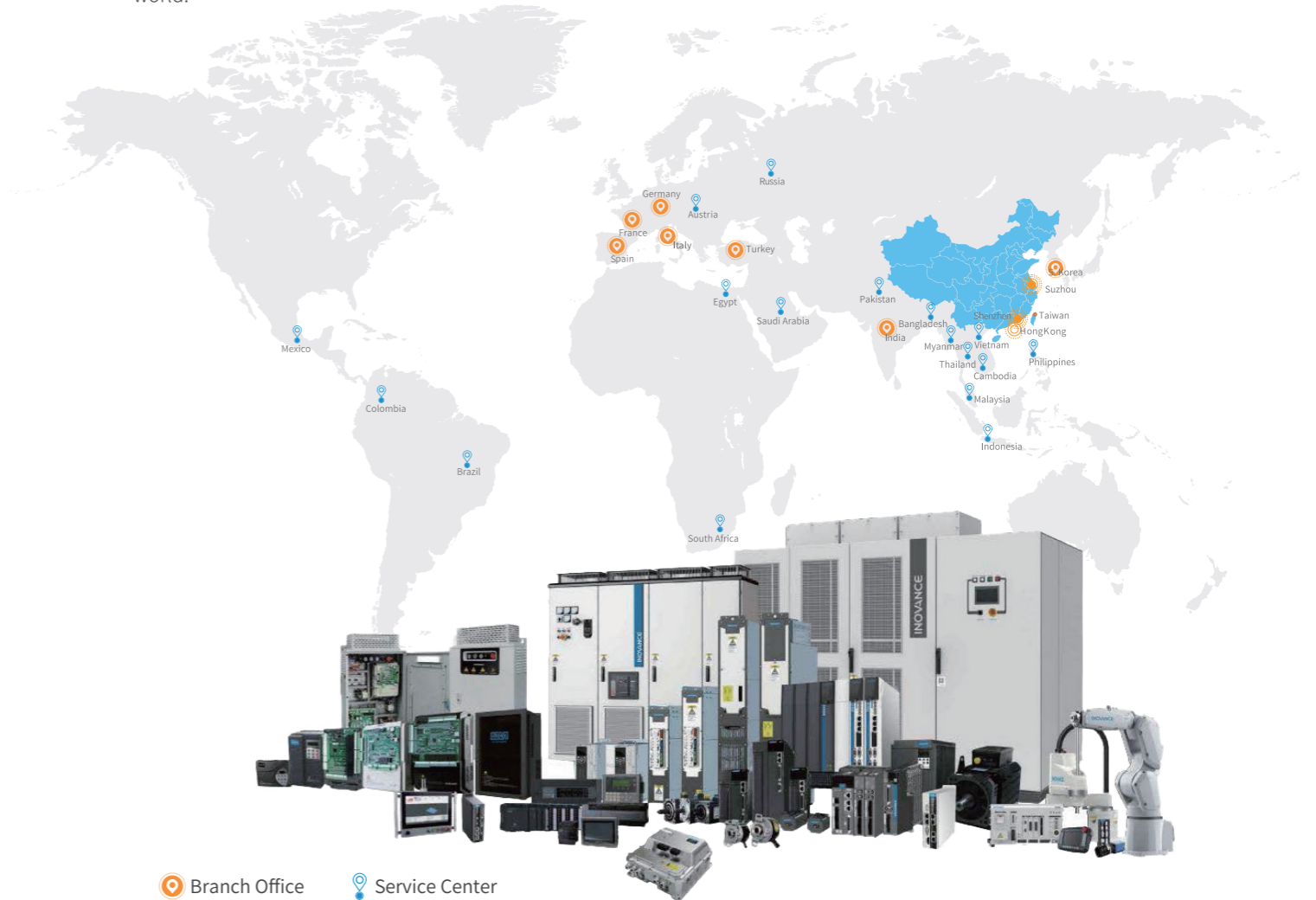
About Inovance

The Inovance Group, founded in 2003, is a rising star in the global industrial automation business and has revenues of \$3.4bn in 2022. The company's flexible production techniques and expert understanding of all industry sectors – from plastics to printing to packaging to iron & steel production – have allowed it to establish globally leading industry-specific business units. Over the years, Inovance has built an engineering team with specialist expertise in industrial automation. This knowledge allows it to form strong partnerships with OEMs and end users, providing ongoing advice about how to get the most out of their automation solutions today, and how to stay prepared for the market and technology changes that are coming in future.



A global business

Inovance is headquartered in Shenzhen, China, and has built a global operation with offices and facilities in Germany, France, Italy, Spain, Turkey, India, and South Korea. Additionally, the company has a strong network of distribution partners around the world.



Branch Office Service Center

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INOVANCE
www.inovance.eu

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2003
founded



IPO:2010
Shenzhen, China



20k+
20,000+
employees

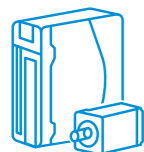


Global
network of offices
and distributors



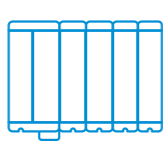
\$3.4+bn
revenues in 2022

Servo System



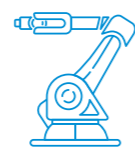
3,360,000+
sets delivered in 2022

AC Drive



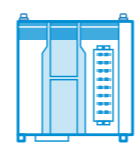
4,350,000+
sets delivered in 2022

Industrial Robot



17,000+
sets delivered in 2022

Controller



3,560,000+
sets delivered in 2022

Global Factories

Inovance has built digital factories around the world, including one in India that has been in operation for a decade. In 2022, we started to build the Hungary factory for localized manufacturing in Europe.

Suzhou



Super manufacturing base

Yueyang



Servo system

Changzhou



Automotive power system

Nanjing



Industrial robotics



Changchun Weton Optoelectronic Technology

Founded in: Apr. 1992
Area covered: 3,800 m²



BST Electric

Founded in: Mar. 1998
Area covered: 35,753 m²



Guangdong MJB factory

Founded in: Dec. 2003
Area covered: 7,500 m²



Jiashan manufacturing base

Put into operation in: May 2019
Area covered: 66,000 m²



BST factory in Tianjin

Founded in: June 2002
Area covered: 10,000 m²



BNK Cable

Founded in: Dec. 2003
Area covered: 18,000 m²



Factory in India

Founded in: 2012



Factory in Hungary

Founded in: 2022



Jiangsu Demonstration Intelligent Workshop:
Intelligent and Lean New Energy Powertrain and
Component Manufacturing Platform

Automated Line for EV Powertrain

Production Line of Automation Products

Take the lead in realizing the automation of the whole process of SMT, plug-in and spraying in China.



Worldwide R&D network

Inovance invests heavily in R&D, enabling the company to continuously release a steady stream of new and innovative products. To ensure that all products meet all key global standards wherever possible, Inovance's R&D teams in Europe, India, and China, all work together seamlessly and virtually on engineering projects. Inovance calls this co-development, and the practice ensures that the best technology knowledge and solutions can be gathered from all around the business; and that they are always implemented and adapted in a way that meets the needs of local markets. The company's commitment to innovation is demonstrated through its headcount: over 20% of Inovance's entire global workforce is in R&D.



Semi-anechoic chamber



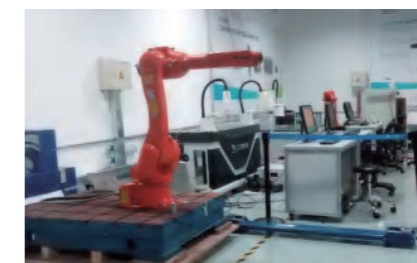
EMC surge testing



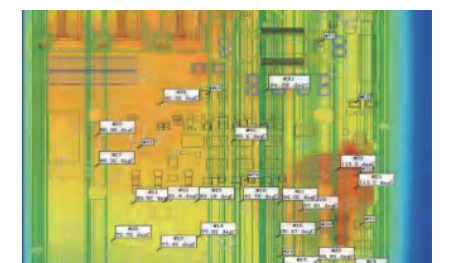
Highly accelerated life testing



Vibration & shock testing



Motion servo testing



Thermal simulation



6 R&D Centers

Shenzhen, Suzhou, Xi'an, Nanjing,
Milan (Italy), Stuttgart (Germany)



USD 320+ Million

Account for 9.7% of revenue in 2022



4700+ R&D Employees

Account for 24% of total employees



2923 Patents And Software Copyrights

Invention 464 / Utility model 1662 /
Industrial design 446 /
Software copyright 351

MISSION & VISION

Advancing Industrial Technology
For A Better Life

CORE VALUES

Creating Value For Clients
Driven By Results
Open Collaborative Company Culture
Striving For Excellence

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CONTROLLERS



○ Small-Size PLC

○ Motion Controller

○ HMI

○ I/O Module

○ Software

EASY Series

Compact PLC

Expandable CAN bus, RS485, RS232, RTC, digital terminal, and analog terminal

Expandable communication, Expandable digital/analog terminals, RTC

Program download and monitoring; EtherNet/IP, Modbus TCP, and Socket command

Supports following devices through routing: information collection and management system, PC, HMI, robot, PLC, and other Ethernet devices

EASY module: Five high-speed pulse outputs of 200 kHz, four for Easy301

Controls 5/4 servo or step motors

Access of up to 16 local modules, eight for Easy301

RS485, free protocol, MODBUS RTU, master/slave mode

Access of the slave through serial ports, and access of the HMI, instrument, apparatus, and sensor



AutoShop



TCP



EtherNet/IP™






Up to 72 EtherCAT slaves, including 32 servo axes

EtherCAT™



SV670 SV680 STD60 SCARA MD800 GL20 series GS20 series



Model	Easy301	Easy302	Easy320		EASY502	Easy523
Product appearance						
General specifications				General specifications		
Program data capacity	128 k-step user program; 1 MB user-defined variables, in which 128 KB variables, after No. 1000, are retentive at a power failure and 150 KB variables are soft elements				200 k-step user program; 1 MB user-defined variables, in which 128 KB variables, after No. 1000, are retentive at a power failure and 150 KB variables are soft elements	
Ethernet	/	Supports EtherNet/IP, available for models with the firmware version of 5.66.0.0 or later and with the AutoShop version of 4.8.0.0 or later, Modbus TCP, Socket, program upload and download, and firmware upgrade			/	Supports EtherNet/IP, available for models with the firmware version of 5.66.0.0 or later and with the AutoShop version of 4.8.0.0 or later, Modbus TCP, Socket, program upload and download, and firmware upgrade.
Number of axes (pulse + bus)	4	5			16	32
Serial communication	Supports one RS485 channel and one RS232 channel.	Supports up to four channels, one RS485 channel and one RS232 channel supported by the product and two channels supported by the expansion card.	Supports up to three channels, one supported by the product and two supported by the expansion card.		Supports up to three channels, one supported by the product and two supported by the expansion card.	
CAN communication	/	With the expansion card, one master and up to 63 slaves, available for models with the firmware version of 5.65.2.0 or later and with the AutoShop version of 4.6.5.0 or later, are supported.			With the expansion card, one master and up to 63 slaves, available for models with the firmware version of 5.65.2.0 or later and with the AutoShop version of 4.6.5.0 or later, are supported.	With the expansion card, one master and up to 63 slaves are supported. This is available for models with the firmware version of 5.66.0.0 or later and with the AutoShop version of 4.6.4.0 or later.
EtherCAT communication	Not supported				Supports one channel and up to 72 slaves	
High-speed input	Eight-channel with the frequency of 200 kHz				Eight-channel with the frequency of 200 kHz	
High-speed output	4-axis with the frequency of 200 kHz; PWM pulse width modulation supported	5-axis with the frequency of 200 kHz; PWM pulse width modulation supported			5-axis with the frequency of 200 kHz; PWM pulse width modulation supported	
Expansion module	Supports up to eight local expansion modules.	Supports up to 16 local expansion modules.			Supports up to 16 local expansion modules.	
Expansion card	/	Supports up to two expansion cards.			Supports up to two expansion cards.	
Program language	LD, SFC, FB/FC function (LD), and ST, available for models with the firmware version of 5.67.0.0 or later and AutoShop version of 4.8.1.0 or later.				LD, SFC, FB/FC function (LD), and ST, available for models with the firmware version of 5.67.0.0 or later and AutoShop version of 4.8.1.0 or later.	
Type-C	Supports user program upload and download and firmware upgrade.	Supports user program upload and download and firmware upgrade through the type-C port, or GE20-TF expansion card.			Supports user program upload and download and firmware upgrade through the type-C port, or GE20-TF expansion card.	
Instruction speed	20 k-step user program executed in 2 m				20 k-step user program executed in 2 m	20 k-step user program executed in 1.6ms
Other descriptions	Cam, gear, and interpolation not supported	Cam, gear, and interpolation supported			Cam, gear, and interpolation supported	
Power supply specifications				Power supply specifications		
Input power supply rated voltage of the terminal	24 VDC ± 10%, 21.6 VDC to 26.4 VDC.				24 VDC ± 10%, 21.6 VDC to 26.4 VDC	
Input power supply rated current of the terminal	1 A, maximum value at 24 V voltage.				1 A, maximum value at 24 V voltage	
24 V input power supply protection	Supports protection against short circuit and reverse wiring				Supports protection against short circuit and reverse wiring	
Input specifications				Input specifications		
Input type and mode	Digital input, sink/source mode				Digital input, sink/source mode	
Number of input channels	8				8	
Voltage upon power-on	≥ 15VDC				≥ 15VDC	
Voltage upon power-off	≤ 5 VDC				≤ 5 VDC	
Software filter time	Low speed: 2 ms to 1000 ms High speed: 2 us to 1000 us				Low speed: 2 ms to 1000 ms High speed: 2 us to 1000 us	
Output specifications				Output specifications		
Output type	Transistor NPN output				Transistor NPN output	
Number of output channels	8				8	

GE20 SERIES EXPANSION CARD

GE20 series expansion cards support nine types, including digital input/output, analog input/output, serial communication, clock, and TF expansion cards. Used together with Easy series compact PLCs, the GE20 can meet specific requirements and save space. At most two GE20 series expansion cards are supported by the Easy series PLC.

GE20 Model



Product Model	Description	Supported Slot	Certification
GE20-4DO-TN	Supports four sink transistor outputs.	A/B	CE
GE20-4DI	Supports four digital inputs.	A/B	CE
GE20-2AD1DA-V	Supports two analog inputs (current/voltage) and one analog voltage output.	A/B	CE
GE20-2AD1DA-I	Supports two analog inputs (current/voltage) and one analog current output.	A/B	CE
GE20-232/485-RTC	Supports RTC clock and one RS485 or RS232 channel.	B	CE
GE20-232/485	Supports one RS485 or RS232 channel.	A/B	CE
GE20-RTC	Supports RTC clock.	B	CE
GE20-TF	Supports user program and firmware upgrade.	B	CE
GE20-CAN-485	Supports CAN and RS485 communications.	A	CE

GE20 Appearance



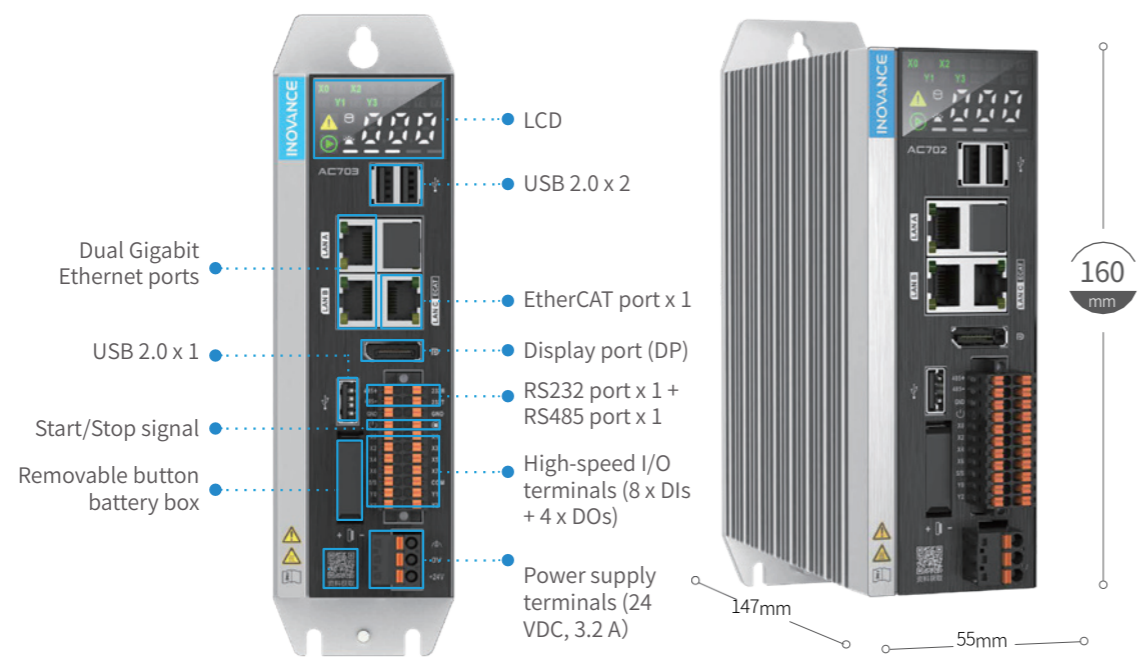
DIGITAL EXPANSION CARD

GE20-4DO-TN & GE20-4DI

Item	GE20-4DO-TN	Item	GE20-4DI
Appearance		Appearance	
Material code	01480033	Material code	01480032
Description	Supports four sink transistor outputs.	Description	Supports four digital inputs.
Supported slot	A/B	Supported slot	A/B
IP rating	IP20	IP rating	IP20
Operating temperature	-20 °C to +55 °C	Operating temperature	-20 °C to +55 °C
Output type	Digital transistor output	Input type	Digital input
Output mode	Sink mode	Input mode	Sink/Source mode
Number of channels	4	Number of channels	4
Output voltage class (resistive load)	24 VDC (20.4 VDC to 26.4 VDC)	Input voltage class	24 VDC ± 10% (21.6 VDC to 26.4 VDC)
Output voltage class (inductive load)	0.5 A/point; 1 A/common terminal	Input current upon power-on	Input current > 3.5 mA
Output voltage class (light load)	6 W/24 VDC (total)	Input current upon power-off	Input current < 1.5 mA
Hardware response time upon power-on/power-off	1 W/24 VDC (total)	Input response time	≈ 15 ms (hardware RC filter time)
Leakage current upon power-off	< 10 uA	Voltage upon power-on	≥ 15 VDC
Switch frequency	Resistive load: 100 Hz; inductive load: 0.5 Hz; light load: 10 Hz	Voltage upon power-off	≤ 5 VDC
Isolation	Photocoupler isolation	Software filter time	Not supported
Protection function	Supports the surge protection device.	Isolation	Photocoupler isolation

AC700 Series

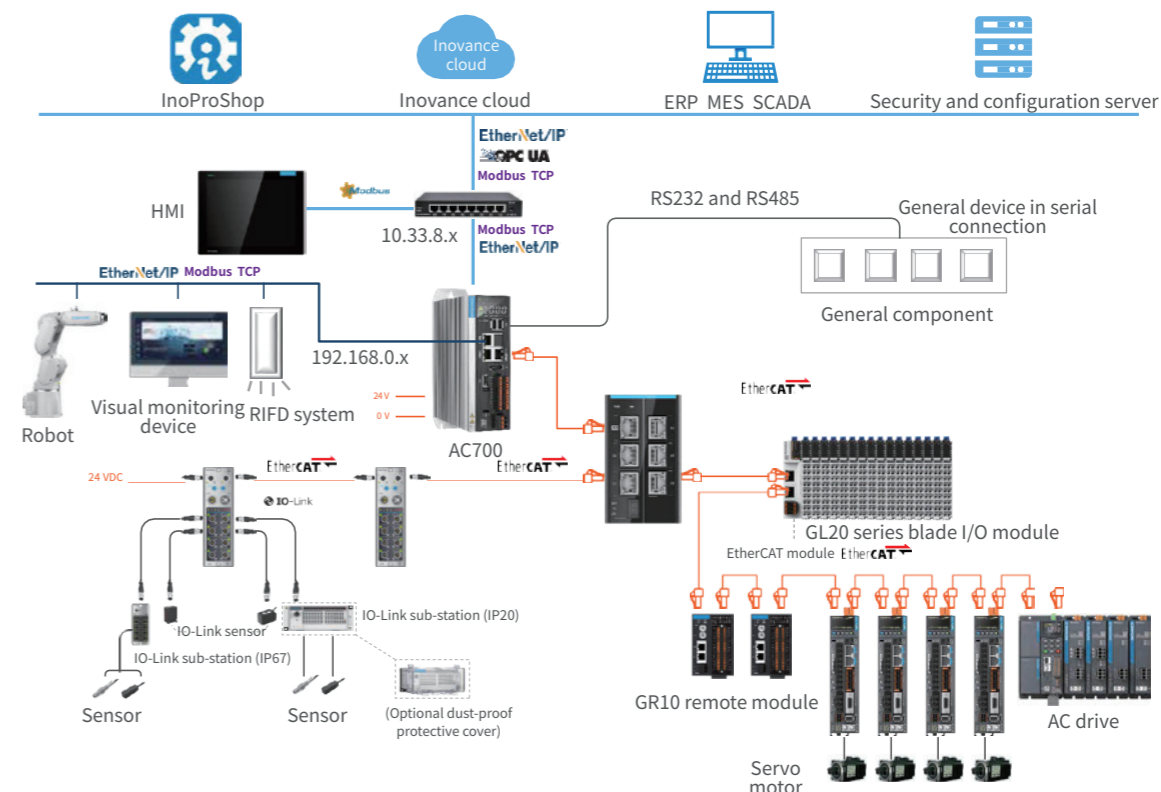
Book-Sized Intelligent Controller



- Three network ports**
 EtherCAT port x 1 + Ethernet port x 2; different IP addresses for two Ethernet ports to meet requirements of internal and external network isolation
- Data storage upon a power failure**
 UPS integrated to store data upon a power failure for cost saving
- Serial port connection**
 One RS232/RS485 serial port, support Modbus master/slave mode and free protocol
- High-speed I/O terminal of 200 kHz**
 DI x 8 (4 for encoder counting) and DO x 4 (2 for PWM output) to reduce wiring
- Real-time information displayed on the high-definition LCD**
 Check DI/DO status, running fault code, PLC running/faulty status, data read/write status, and current CPU load rate
- PLC start/stop by external input signal**
 Start or stop the PLC by external input signal without software

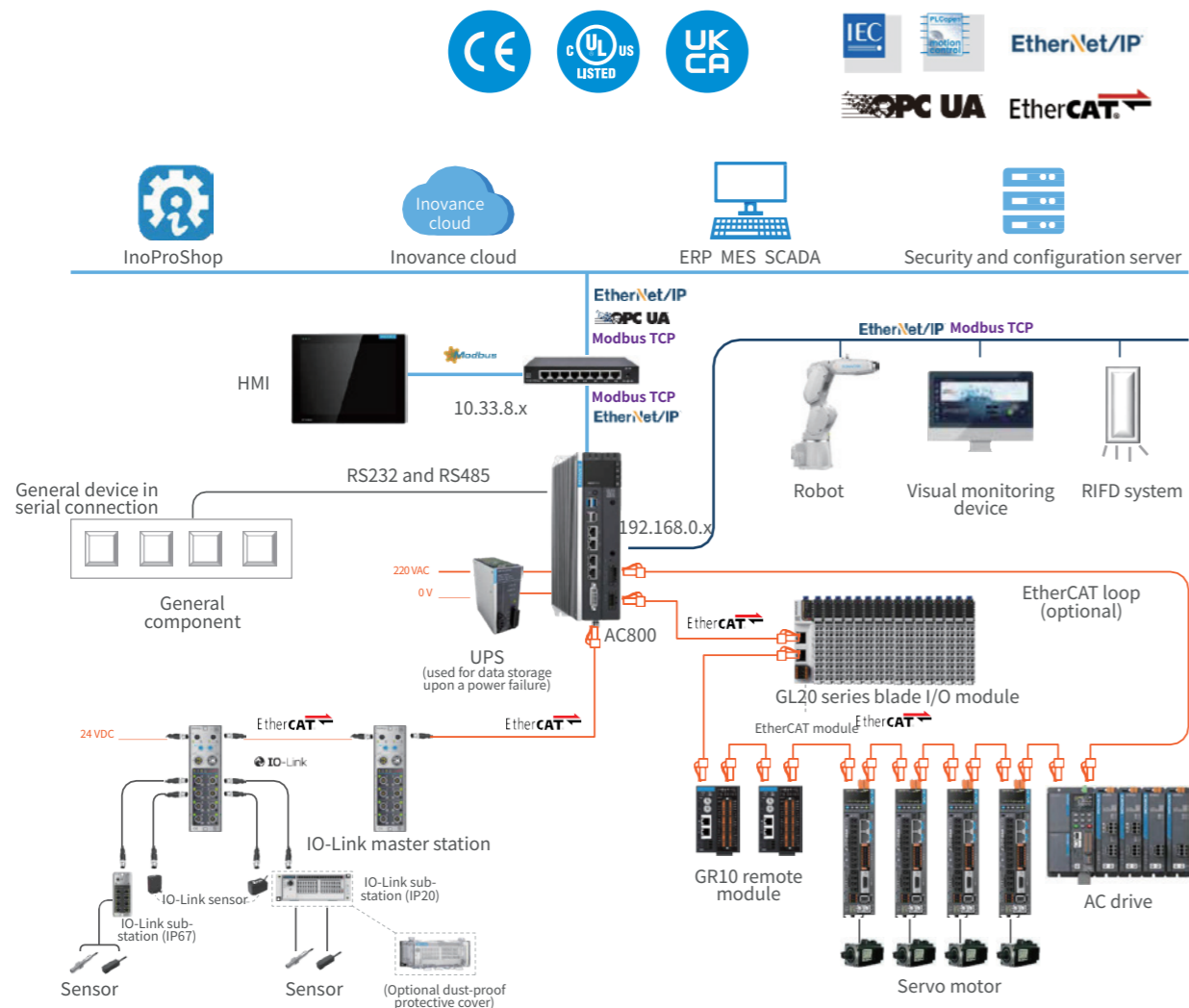
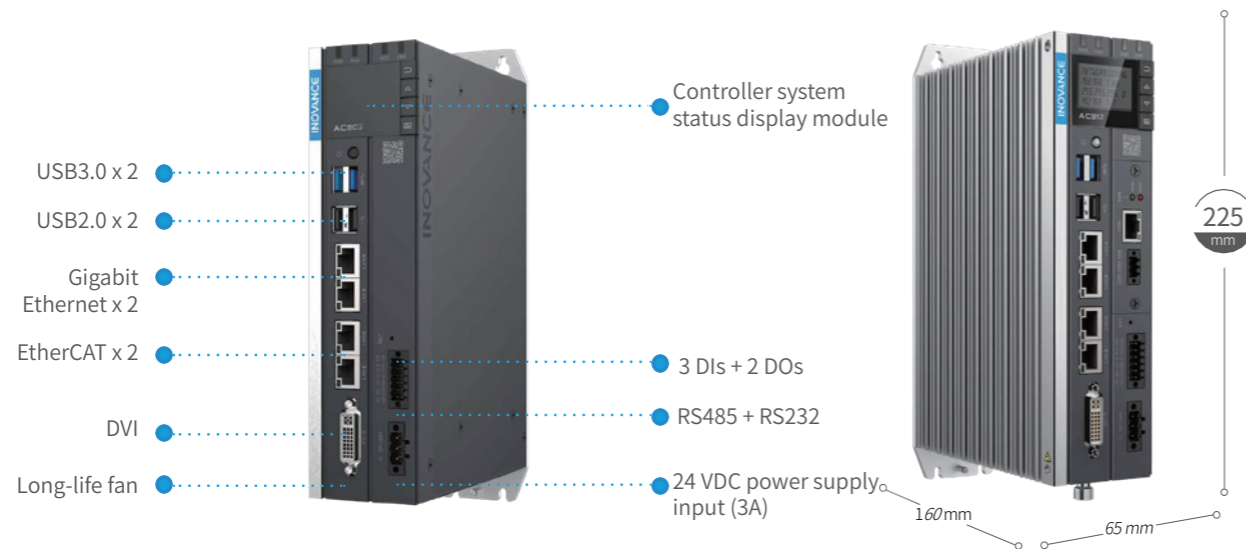
SPECIFICATIONS

Model	AC702	AC703
Basic information		
Processor	Intel Celeron	
Operating system	Linux	
Programming mode	IEC 61131-3 programming language (LD, ST, SFC, CFC)	
Dimension (H x W x D)	160 mm x 55 mm x 147 mm	
Memory		
Memory	128 MB	
Memory for data storage upon a power failure	5MB; data storage upon a power failure supported and no external UPS required	
Memory capacity	4 GB, DDR3L, interface speed of 1600 MT/s	
Hardware capacity	64 GB SSD	
Bit memory	5 MB	
CPU performance		
Bit/Word instruction execution time	Basic LD contact: 4.6 ns; four operations: 4.7 ns	
Number of motion axes	16	32
I/O		
DI	Eight high-speed DIs; 200 kHz; four DIs for encoder counting, single-ended input supported and differential input not supported	
DO	Four high-speed DOs; 200 kHz; two PWM outputs supporting sink mode	
Number of EtherCAT slaves	128 (single channel)	128 (single channel)
Communication configuration		
RS232/RS485	RS232 channel x 1, RS485 channel x 1 (supports up to 31 slaves); isolation	
Ethernet (LAN A/LAN B)	1 Gbps; supports TCP/IP, UDP, OPC UA, Socket, Modbus TCP, up to 64 slaves supported, and EtherNet/IP, 64 clients and 32 servers supported; can be used as the master and slave simultaneously	
EtherCAT (100 Mbps)	EtherCAT channel x 1 (LAN C)	
USB	USB 2.0 x 3	



AC800 Series

High-Performance Intelligent Controller



PRODUCT FEATURES

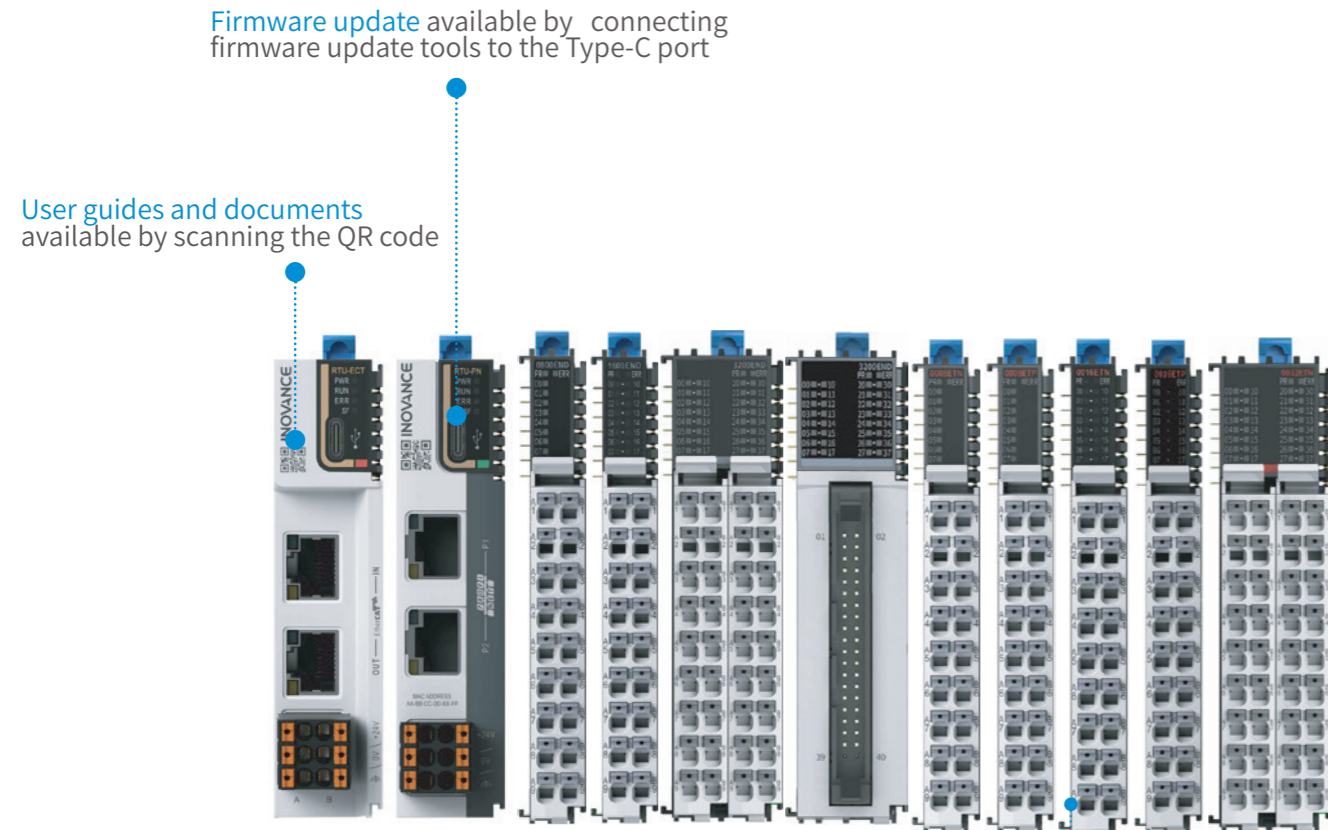
- Built-in Intel Core i7, Core i5, Celeron and other series x86 high-performance processors
- Support six PLCopen programming languages.
- Including PLCopen+CAM+CNC+ROBOT motion control components.
- Dual EtherCAT master networks; 32 axes supported at the EtherCAT cycle of 500 us; 256 axes supported at the EtherCAT cycle of 4 ms
- EtherCAT bus I/O module supported to provide high-speed I/O terminals, ordinary DI/DO terminals, and up to 32,000 points.
- Supports EtherNet/IP, OPC UA, Modbus TCP and other communication protocols to facilitate the construction of multi-level networks.
- Built-in Modbus RTU master/slave protocol; two independent RS485 and RS232 communication ports to work with traditional equipment.

SPECIFICATIONS

Item	AC812	AC810	AC802	AC801
Processor	Intel i7, 2.7 GHz	Intel i5, 2.5 GHz	Intel Celeron, 1.6 GHz	Intel Celeron, 1.6 GHz
Memory	DDR4-4G	DDR4-4G	DDR4-4G	DDR4-4G
Hardware	SSD 128 GB	SSD 128 GB	SSD 128 GB	SSD 64 GB
Display and interface	Reserved DVI-D Built-in dot-matrix system status display module; supports dot matrix of 128 x 64 and 4 keys			
LAN Ethernet	LAN x 2; supports Modbus TCP, UDP, and OPC UA			
EtherCAT bus	EtherCAT master x 2	EtherCAT master x 2	EtherCAT master x 2	EtherCAT master x 1
Number of axes	128 + 128	128 + 128	64 + 64	48 (32 axes supported simultaneously in 1 ms)
USB port	USB2.0 x 2; USB3.0 x 2			
Serial communication	RS485 x 1; RS232 x 1			
DI	Three DIs for signal input of specific functions			
DO	Two DOs for signal output of system status indications			
Number of long-life fans	2	2	/	/
User program memory	128 MB	128 MB	128 MB	128 MB
User data memory	128 MB	128 MB	128 MB	128 MB
Memory for data storage upon a power failure	5 MB (UPS required)	5 MB (UPS required)	5 MB (UPS required)	5 MB (UPS required)

GL20 Series I/O Module

Powerful, Stable, and Efficient Distributed I/O System



Communication interface module

Digital input module

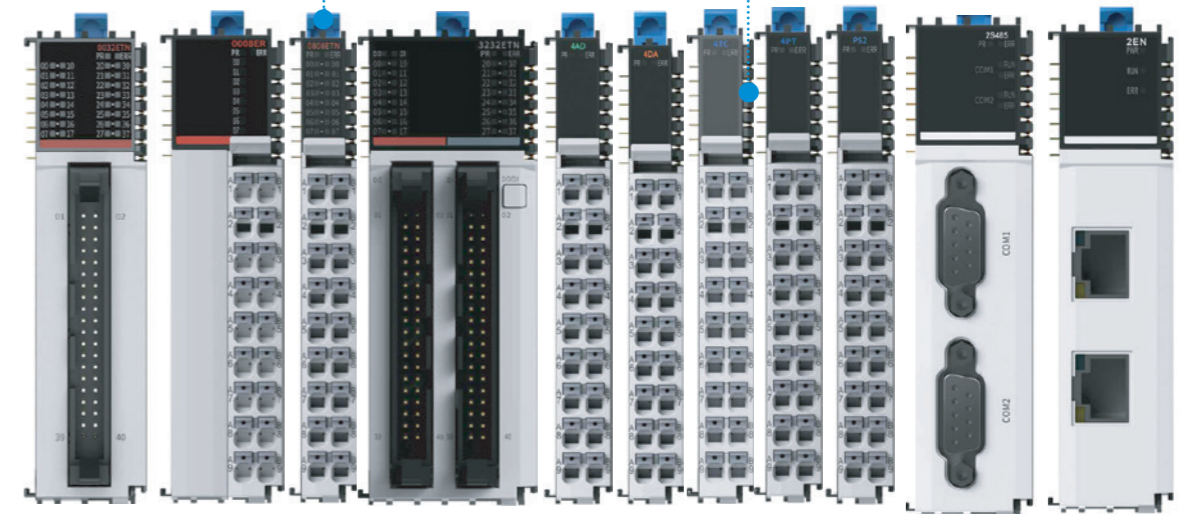
Digital output module

Removable terminals to allow quick module replacement without disconnecting cables

Push-in terminals with large aperture to fit various types of cables and allow easy wiring without tools

Independent status diagnosis and LED indicators;
Colored letters for quick identification of I/O functions;
Clear codes for easy wiring

D-BUS connector design with high reliability, protecting the connector from sweat corrosion



Digital I/O module

Analog module

Temperature detection module

Delay power supply module

Communication expansion module



Colored coding for modules

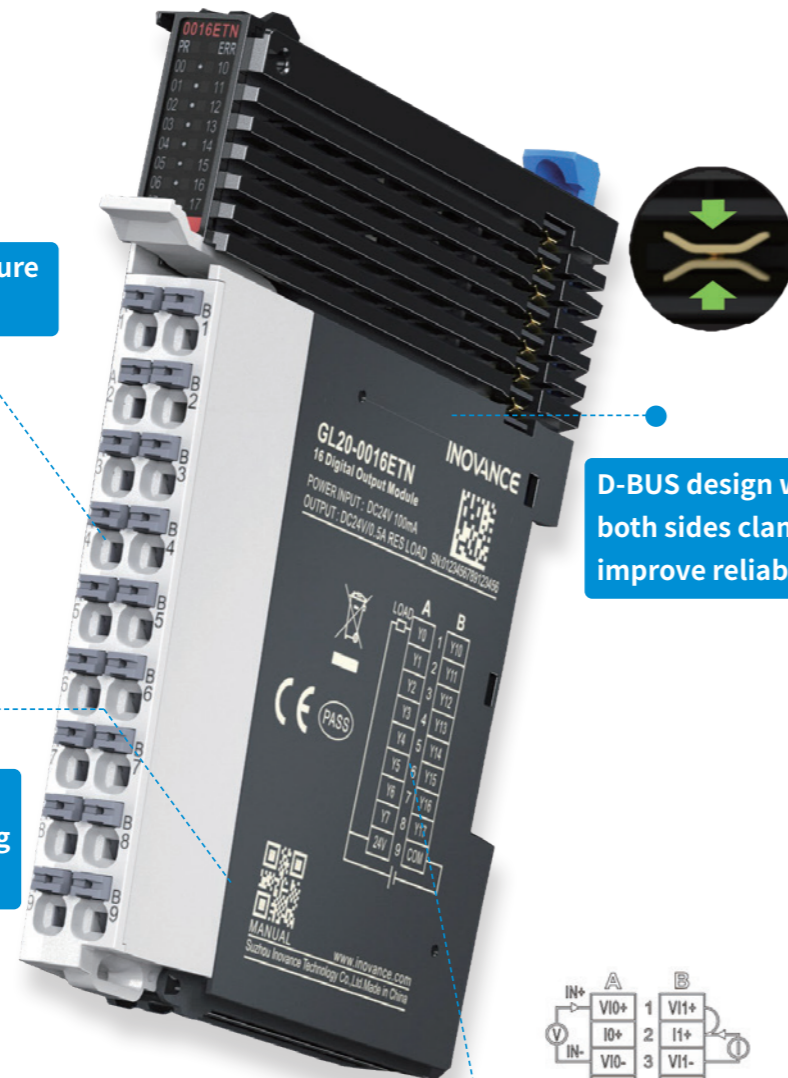
■ DO	■ AO	■ DI	■ AI	■ Communication	■ Others
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RELIABLE STRUCTURE

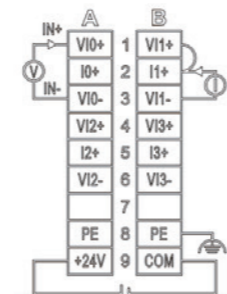
Design lifetime up to ten years to guard long-term stable operation of the product

Terminals with large aperture to allow forcible wiring

Related documents available through scanning the QR code

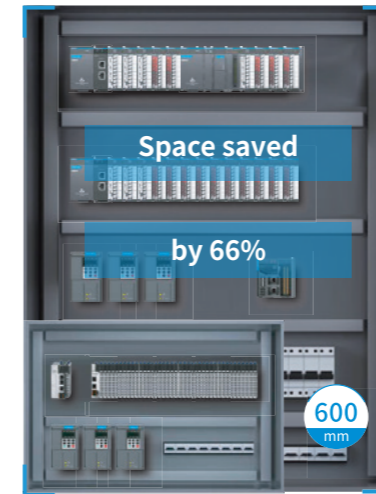


D-BUS design with both sides clamped to improve reliability



Wiring diagram printed on the module

COMPACT DESIGN AND SCREW-FREE WIRING



Thickness reduced to 12 mm 2/3 cabinet space saved Space utilization maximized



Groove-type mounting terminals to allow tool-free installation



Push-in terminals to allow easy wiring with a gentle push

Terminals with large aperture, 1.5 mm³ cable, to support forcible wiring

FLEXIBLE SYSTEM INTEGRATION

AC700

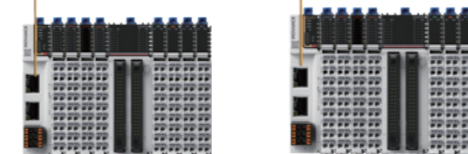


Easy+GL20

EASY series PLC can be coupled with GL 20 modules directly

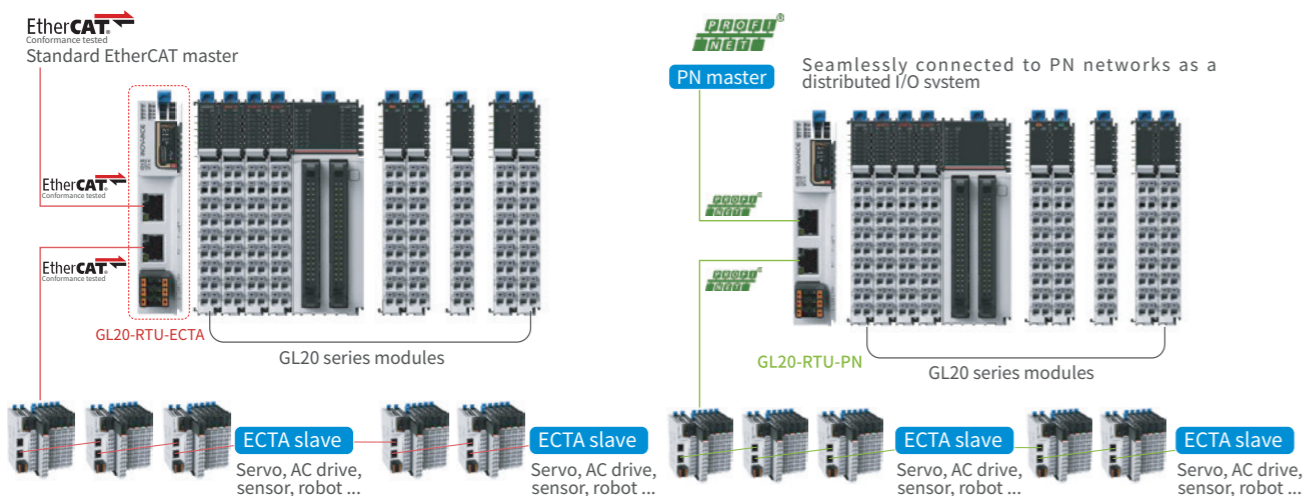


GL20 series modules



SYSTEM TOPOLOGY

The GL20 series modules can be directly coupled with the Easy series PLCs, or connected to the standard EtherCAT master through the EtherCAT coupler module. Suitable master includes AC series, AM series, Easy500 series, H5U series, PAC series, MTC series of Inovance, as well as any standard EtherCAT masters of other vendors. The GL20 series modules can also be connected to the PN network as a distributed I/O system through the PROFINET coupler module.



EtherCAT Coupler Specifications	
Model	GL20-RTU-ECT
IP rating	IP20
Certification	CE
Rated terminal input voltage	24 VDC (20.4 VDC to 28.8 VDC)
Rated terminal input current	0.6 A (typical@24 V)
Rated bus output voltage	5 VDC (4.75 VDC to 5.25 VDC)
Rated bus output current	2A (typical@5 V)
Power supply protection	Overcurrent protection, anti-reverse connection protection, surge absorption
Ambient operating temperature	-20° C to 55° C
Ambient operating humidity	< 95%RH, without condensation
Atmosphere	No corrosive gas
Ambient storage temperature	-20° C to 60° C (< 90%RH, without condensation)
Altitude	≤ 2000 m (80 kPa)
Pollution degree	2 or less
Immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)
Overvoltage category	II
EMC immunity level	Zone B, IEC61131-2
Vibration resistance	IEC 60068-2-6
Shock resistance	IEC 60068-2-27
Minimum communication cycle	125 us
Scalability	16 modules supported

PROFINET Coupler Specifications	
Model	GL20-RTU-PN
IP rating	IP20
Certification	CE
Rated terminal input voltage	24 VDC (20.4 VDC to 28.8 VDC)
Rated terminal input current	0.6 A (typical@24 V)
Rated bus output voltage	5 VDC (4.75 VDC to 5.25 VDC)
Rated bus output current	2A (typical@5 V)
Power supply protection	Overcurrent protection, anti-reverse connection protection, surge absorption
Ambient operating temperature	-20° C to 55° C
Ambient operating humidity	< 95%RH, without condensation
Atmosphere	No corrosive gas
Ambient storage temperature	-20° C to 60° C (< 90%RH, without condensation)
Altitude	≤ 2000 m (80 kPa)
Pollution degree	2 or less
Immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)
Overvoltage category	II
EMC immunity level	Zone B, IEC61131-2
Vibration resistance	IEC 60068-2-6
Shock resistance	IEC 60068-2-27
Minimum communication cycle	1 ms
Scalability	16 modules supported

ORDER INFORMATION

Model	Description	Terminal Type
GL20 series blade I/Os can be expanded through the RTU-ECT module.		
GL20-RTU-ECT	EtherCAT communication interface module, supports any devices under EtherCAT master	Plug-in
GL20-RTU-PN	PROFINET communication interface module, supports any devices under PROFINET master	Plug-in
GL20-1600END	16-channel digital input module	Plug-in
GL20-0016ETN	16-channel digital output module (NPN)	Plug-in
GL20-0016ETP	16-channel digital output module (PNP)	Plug-in
GL20-0808ETN	8-channel input 8-channel output module (NPN)	Plug-in
GL20-0008ETN	8-channel digital output module (NPN)	Plug-in
GL20-0008ETP	8-channel digital output module (PNP)	Plug-in
GL20-0800END	8-channel digital input module	Plug-in
GL20-0008ER	8-channel relay output module	Plug-in
GL20-4AD	4-channel analog input module	Plug-in
GL20-4DA	4-channel analog output module	Plug-in
GL20-4PT	4-channel thermal resistor input temperature detection module	Plug-in
GL20-4TC	4-channel thermocouple input temperature detection module	Plug-in
GL20-0032ETN*	32-channel digital output module (NPN, push-in design)	Plug-in
GL20-3200END*	32-channel digital input module (push-in terminal)	Plug-in
GL20-0032ETN-M	32-channel digital output module (NPN, one set of MIL connector and connecting cable required)	Plug-in
GL20-3200END-M	32-channel digital input module (one set of MIL connector and connecting cable required)	Plug-in
GL20-3232ETN-M	32-channel digital output module (NPN, two sets of MIL connector and connecting cable required)	Plug-in
GL20-PS2*	Relay power module (one PS2 module can power additional 16 expansion modules)	Plug-in
GL20-2S485*	2-channel RS485 communication expansion module (DB9 interface)	Plug-in
GL20-2EN*	Ethernet module (IP expansion)	Plug-in
GL20-2SSI*	2-channel SSI encoder module	Plug-in
GL20-2COM*	2-channel COM module (support for 2 x RS232 / 2 x RS485 / 1 x RS422, push-in design)	Plug-in
* Please contact Inovance for the launch time of this product.		
GL20 Accessories		
Terminal block	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M	Cross screw
Terminal block cable	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M, cable length 0.5 m	-
Terminal block cable	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M, cable length 2 m	-

IT7000 Series

High-Performance HMI

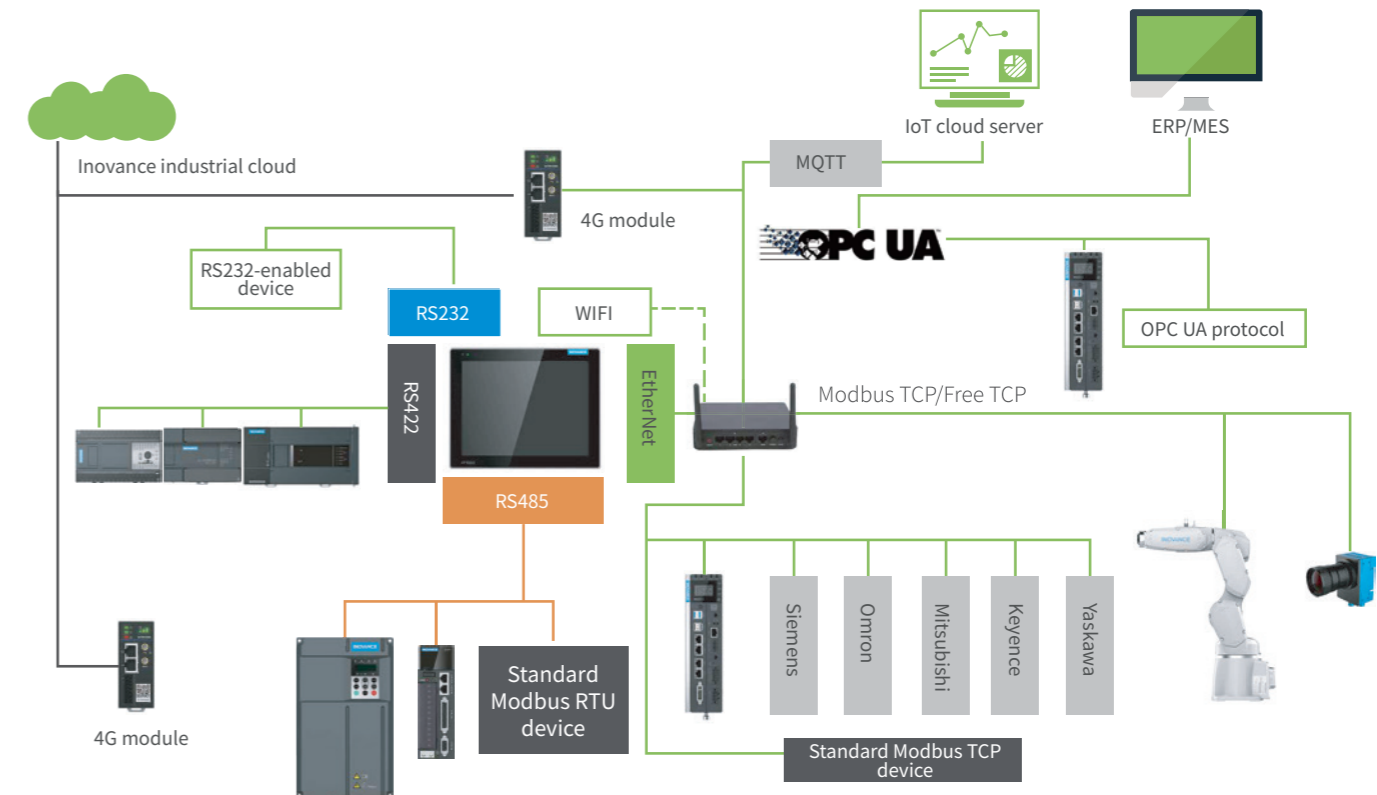


HARDWARE CONFIGURATION

Model	IT7070E	IT7070T	IT7070S	IT7100E	IT7100S	IT7150E
Display size	7.0"			10.1"		15.0"
Resolution	800*480			1024*600		1024*768
Dimensions L*W*D (mm)	200*146*35			271*213*36		367.8*294.8*53
CPU	Cortex A8 600MHz			Cortex A8 1GHz		Cortex A8 1GHz
RTC	✓	✓	✓	✓	✓	✓
DRAM	128 MB			256 MB DDR3	128 MB DDR3	256 MB DDR3
Flash memory	128 MB			256 MB	128 MB	256 MB
Brightness (cd/㎡)	350			350		300
Display color	24-bit true color			24-bit true color		24-bit true color
Backlight	LED			LED		LED
Backlight service life	35,000 hrs			30,000 hrs		50,000 hrs
SD card slot	✓	×	×	✓	×	✓
USB port	1 x USB 2.0					
USB download port	1 x Mini USB					
Ethernet port	✓	×	×	✓	✓	✓
Serial port	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)	COM1 (RS422/RS485) COM2 (RS232)	COM1 (RS422/RS485)	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)	COM1 (RS422/RS485)	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)
IP rating	Front panel IP65, rear cover IP20			Front panel IP65, rear cover IP20		Front panel IP65, rear cover IP20

- Highly expandable, meet the customized control needs in different industries with APIs
- Support single-unit and multi-unit network communication through serial port, Ethernet, and WIFI
- Support mainstream PLCs, AC drives, and servo communication protocols from Inovance and other manufacturers, as well as standard Modbus and ModbusTCP protocols
- Support VNC, project HMI anytime, anywhere on mobile devices
- Industrial-grade manufacturing process
- Built-in InoTouchPad configuration software, ensure flexible configuration functions and ease of use
- Rich gallery resources and customizable interface style settings, perfect for creating your own user interface

FLEXIBLE NETWORKING SOLUTIONS



Protocol	INOVANCE products
Modbus	Standard Modbus device
OPC UA	Supports OPC UA Client; Server not supported
MQTT	Supports standard MQTT protocol
Free protocol	Supports connection between Inovance PLCs (H1U/H2U/H3U/H5U) and other third-party devices that support the free protocol, can serve as Master or Slave

AM300/500 Series

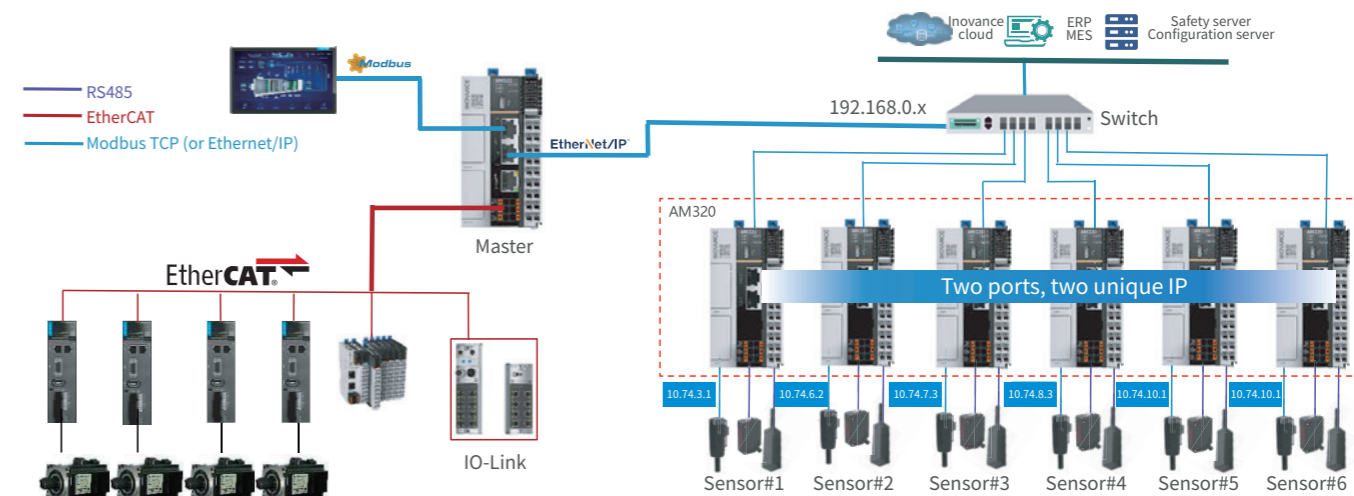
Motion Controller



COMING SOON...

PRODUCT CONFIGURATION

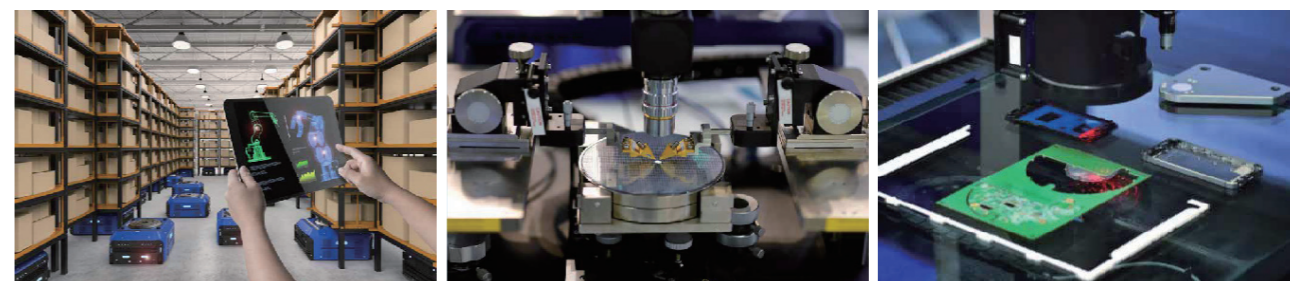
		AM500 Series (With EtherCAT motion control)		AM300 Series (Without EtherCAT motion control)
		AM521	AM522	AM320
CPU		AM521	AM522	AM320
Input power		24 VDC ± 10%, 1A, short-circuit / reverse connection protection		
I/O		8-input (source/sink), 8-output (sink)		
Data/program storage capacity		10 MB for program, 20 MB for data (512 KB retentive memory)		
Instruction processing speed	Bit processing instruction	0.143 μs		
	Word processing instruction	0.416 μs		
Communication specifications	RJ45	EtherNet	2 x Ethernet (built-in switch)	2 x Ethernet (2 independent IP addresses)
		EtherCAT	1 x EtherCAT	Not supported
	Number of serial ports	3 x RS485 (1 built-in RS485 port, 2 RS485 ports offered via expansion card)		
	CAN communication	Support for expansion of one communication channel via expansion card (max. 63 slaves)		
EtherCATbus specifications	Number of EtherCAT axes	8	16	Not supported
	Number of EtherCAT slaves	Max. 127 EtherCAT slaves		
	Typical communication cycle	1 ms for synchronization of 4 axes		
Local pulse axis		4 x pulse axes		
Local encoder axis		8 x encoder axes, supports single-phase CW/CCW		
Scalability	Expansion module	Supports local expansion of full range of GL20 series modules (max. 16), and remote expansion of IO-Link and GL10-GR10 series modules		
	Expansion card	Supports expansion of GE20 series modules (COM/CAN, digital, analog, TF card, RTC card) via two card slots		
Other interfaces		Type-C (power supply to PLC, upload and download of program)		
Configuration software		InoProShop (conforms to IEC 61131-3)		



INDUSTRY APPLICATIONS



Packaging: Sanitary products Printing: Flexographic & Gravure printing Food & Beverage: Filling & Capping



Warehousing: Palletizing Semiconductor silicon wafer: CVD Mobile phone: Labeling



Medical: Filling machine SMT Sewage treatment

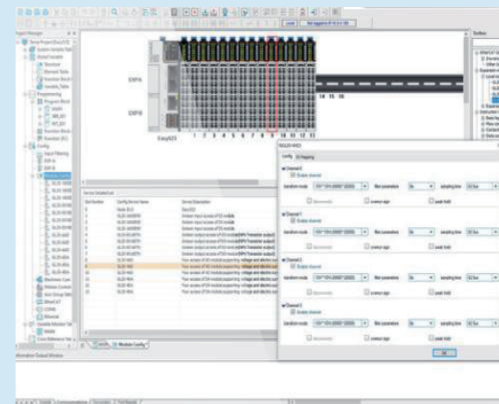
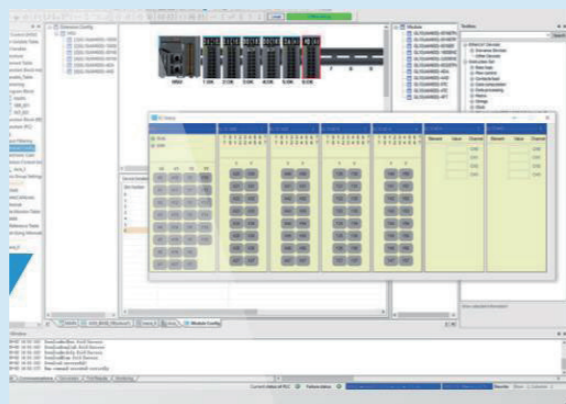
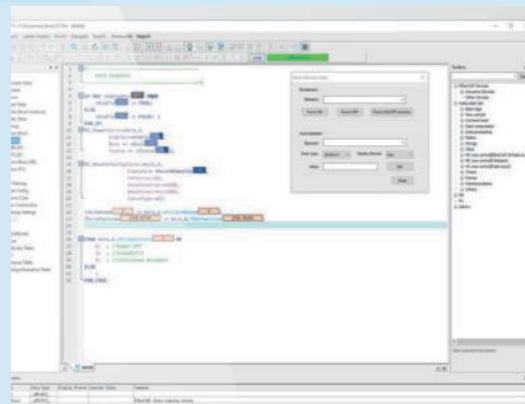
SOFTWARE

For INOVANCE Controllers



AutoShop

For HXU/Easy Series small-sized PLCs



EtherNet/IP™
EtherCAT®

Non-standard

Simulation with HMI (H5U,Easy)

Within 32 axes

EtherNet/IP
Up to 72 EtherCAT slaves, including 32 axes

EC-61131 & PLC Open

Simulation & Debugging

Performance

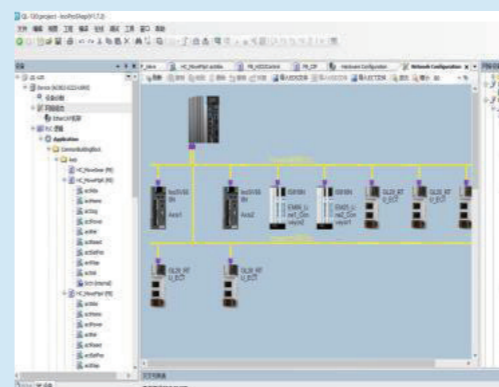
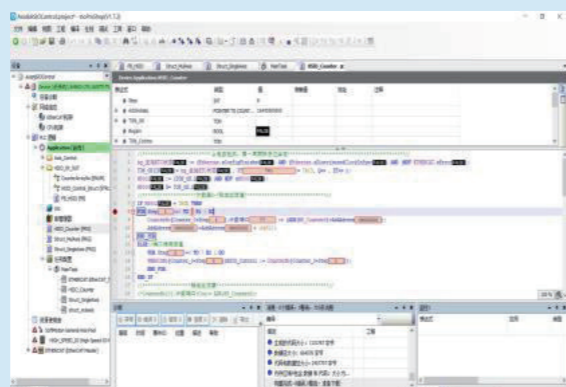
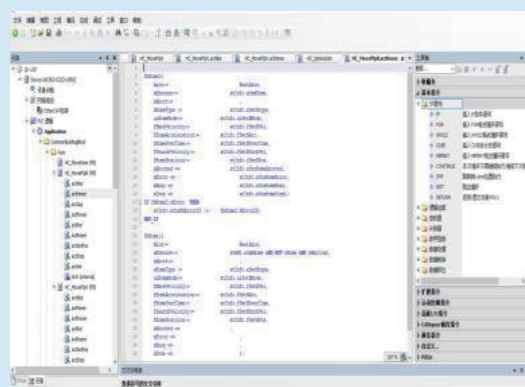
Communication & Motion Control

Standard

Breakpoint debugging

Within 256 axes

EtherNet/IP & OPC UA
Up to 256 EtherCAT slaves



OPC UA
EtherNet/IP™
EtherCAT®



InoProShop

For INOVANCE AM Series medium-sized PLCs & AC Series intelligent controllers

AC DRIVES & SERVO DRIVES



○ General Servo Drive

○ Low-Voltage AC Drive

○ Multi Drive

○ Medium Voltage Drive

MD520 - Universal AC Drive

High Performance for Wide-Range Application



PRODUCT FEATURES

- Unified AC asynchronous and PM synchronous motor control
- Wide operating voltage and product range:
 - 3 ph 380-480 Vac: 0.4 to 500 kW
 - 3 ph 200-240 Vac: 0.4 to 75 kW
 - 1 ph 200-240 Vac: 0.4 to 2.2 kW
- STO SIL 3 PL e
- Built-in DC reactor (400 V: 18.5 kW and above;
- 200 V: 11 kW and above)
- Enhanced reliability: conformal coated PCBs compliant to 3S2 and 3C3 environments
- Complies to efficiency level IE2 as defined in IEC 61800-9-2
- Through-hole mounting options (0.4 to 160 kW)

MD520- FEATURES & FUNCTIONS

- Induction motor and PM synchronous motor control:
 - Open loop V/F (induction motors only) and SVC
 - Closed loop FVC
- Dual rated: heavy duty (overload: 150%/ 1 min) and normal duty (overload: 110%/ 1 min)
- Starting torque
 - 150% at 0.25 Hz for SVC
 - 180% at 0 Hz for FVC
- Communication options:
 - Modbus-RTU • CANlink
 - Modbus-TCP • PROFINET
 - PROFIBUS-DP • EtherCAT
 - CANopen • Ethernet/IP
- Category C2 compliance with external RFI filter. Ratings with built-in filter comply with Category C3*1
- Built-in dynamic braking unit, up to/including 75 kW (400 V) or 37kW (200 V)
- Bipolar analog input as standard (-10 to +10 V) PTC input as standard
- Flexible programmable I/Os
- User programmable logic
- Variable DC-injection braking
- Comprehensive trip diagnostics
- Output frequency: 599 Hz
- Application dedicated functions:
 - Master-slave function (torque, speed)
 - Textile wobble control
- Brake control logic
- 4 motor parameter sets
- Automatic torque boost
- PC-based software: simplified start up & backup*2
- Simplified parameters for easy start up
- 4 independent S-ramps

*1 For detailed EMC compliance information, consult your local
 *2 USB to RS485 adapter required. MDKE-10 or SOP-20 keypads Inovance representative can be used for this purpose



NEW: built-in colour LED keypad

The clearest possible information display
 Displays multiple pieces of information simultaneously (e.g. drive status and operating information)
 The clearest possible information display

SPECIFICATIONS

Heavy duty ratings, 150% overload

Voltage class		Three phase 380 to 480 Vac										
Drive model: MD520-4Txxx(B)(S)-INT		0.4B(S)	0.7B(S)	1.1B(S)	1.5B(S)	2.2B(S)	3.0B(S)	3.7B(S)	5.5B(S)	7.5B(S)	11B(S)	15B(S)
Drive input	Frame size	T1*1			T2			T3		T4		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	1.8	2.4	3.7	4.6	6.3	9.0	11.4	16.7	21.9	32.2	41.3
	Power capacity [kVA]	2	2.8	4.1	5.0	6.7	9.5	12	17.5	22.8	33.4	42.8
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	0.4	0.75	1.1	1.5	2.2	3.0	3.7	5.5	7.5	11	15
	Output current [A]*2	1.5	2.1	3.1	3.8	5.1	7.2	9.0	13.0	17.0	25.0	32.0
	Default carrier frequency [kHz]	6	6	6	6	6	6	6	6	6	6	6
	Overload capacity	150% for 60 s										
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)										
Braking resistor	Max. output frequency	599 Hz										
	Recommended power [kW]	0.08	0.14	0.22	0.3	0.44	0.6	0.74	1.1	1.5	2.2	3
	Minimum resistance [Ω]	96	96	96	96	64	64	32	32	32	24	24
	Braking unit	Built-in										
	Enclosure	IP 20										

Normal duty ratings, 110% overload

Voltage class		Three phase 380 to 480 Vac										
Drive model: MD520-4Txxx(B)(S)-INT		0.4B(S)	0.7B(S)	1.1B(S)	1.5B(S)	2.2B(S)	3.0B(S)	3.7B(S)	5.5B(S)	7.5B(S)	11B(S)	15B(S)
Drive input	Frame size	T1*1			T2			T3		T4		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	1.8	2.4	3.7	4.6	6.3	9.0	11.4	16.7	21.9	32.2	41.3
	Power capacity [kVA]	2	2.8	4.1	5.0	6.7	9.5	12	17.5	22.8	33.4	42.8
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	0.4	0.75	1.1	1.5	2.2	3.0	3.7	5.5	7.5	11	15
	Output current [A]*2	1.5	2.1	3.1	3.8	5.1	7.2	9.0	13.0	17.0	25.0	32.0
	Default carrier frequency [kHz]	6	6	6	6	6	6	6	6	6	6	6
	Overload capacity	110% for 60 s										
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)										
Braking resistor	Max. output frequency	599 Hz										
	Recommended power [kW]	0.08	0.14	0.22	0.3	0.44	0.6	0.74	1.1	1.5	2.2	3
	Minimum resistance [Ω]	96	96	96	96	64	64	32	32	32	24	24
	Braking unit	Built-in										
	Enclosure	IP 20										

- 1 0.75/1.5/2.2 kW are the preferred stocking ratings. To learn more, please get in touch with your local Inovance representative.
- 2 Rated output current at default carrier frequency.

SPECIFICATIONS

Heavy duty ratings, 150% overload

Voltage class		Three phase 380 to 480 Vac										
Drive model: MD520-4Txxx(B)(S)(-T)-INT*3		18.5 (B)(S)(-T)	22 (B)(S)(-T)	30 (B)(S)	37 (B)(S)	45 (B)(S)	55 (B)(S)	75 (B)(S)	90 (S)	110 (S)	132 (S)	160 (S)
Drive input	Frame size	T5		T6		T7		T8		T9		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	43.4	51.3	57	69	89	106	139	164	196	240	287
	Power capacity [kVA]	45	54	52	63	81	97	127	150	179	220	263
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	18.5	22	30	37	45	55	75	90	110	132	160
	Output current [A]*2	37	45	60	75	91	112	150	176	210	253	304
	Default carrier frequency [kHz]	6	6	6	5	5	4	3	3	3	3	3
	Overload capacity	150% for 60 s										
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)										
Braking resistor	Max. output frequency	599 Hz										
	Recommended power [kW]	4.5	4.5	6	7	9	11	15	18	22	26	32
	Minimum resistance [Ω]	24	24	19.2	14.8	12.8	9.6	6.8	11.4x2*4	7.7 x2*4	7.7 x2*4	2.8 x2*4
	Braking unit	Built-in							MDBUN-60-5T x2	MDBUN-90-5T x2	MDBUN-200-5T x2	
	Enclosure	IP 20										

Normal duty ratings, 110% overload

Voltage class		Three phase 380 to 480 Vac										
Drive model: MD520-4Txxx(B)(S)(-T)-INT*3		18.5 (B)(S)(-T)	22 (B)(S)(-T)	30 (B)(S)	37 (B)(S)	45 (B)(S)	55 (B)(S)	75 (B)(S)	90 (S)	110 (S)	132 (S)	160 (S)
Drive input	Frame size	T5		T6		T7		T8		T9		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	43.4	51.3	57	69	89	106	139	164	196	240	287
	Power capacity [kVA]	45	54	52	63	81	97	127	150	179	220	263
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	18.5	22	30	37	45	55	75	90	110	132	160
	Output current [A]*2	37	45	60	75	91	112	150	176	210	253	304
	Default carrier frequency [kHz]	6	6	6	5	5	4	3	3	3	3	3
	Overload capacity	150% for 60 s										
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)										
Braking resistor	Max. output frequency	599 Hz										
	Recommended power [kW]	4.5	4.5	6	7	9	11	15	18	22	26	32
	Minimum resistance [Ω]	24	24	19.2	14.8	12.8	9.6	6.8	11.4x2*4	7.7 x2*4	7.7 x2*4	2.8 x2*4
	Braking unit	Built-in							MDBUN-60-5T x2	MDBUN-90-5T x2	MDBUN-200-5T x2	
	Enclosure	IP 20										

- 2 Rated output current at default carrier frequency.
- 3 -T in the type code of 18.5B and 22B models indicates built-in DC reactor
- 4 Minimum value of the resistance for each braking unit.

SPECIFICATIONS

Heavy duty ratings, 150% overload

Voltage class		Three phase 380 to 480 Vac						
Drive model: MD520-4Txxx(S)-INT*5		200(S)	220(S)	250(S)	280(S)	315(S)	355(S)	400(S)
Drive input	Frame size	T10		T11		T12		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%						
	Rated input current [A]	365	410	441	495	565	617	687
	Power capacity [kVA]	334	375	404	453	517	565	629
	Rated input frequency	50/60 Hz ±5%						
Drive output	Applicable motor [kW]	200	220	250	280	315	355	400
	Output current [A]*2 Default	377	426	465	520	585	650	725
	carrier frequency [kHz]	3	3	3	3	3	3	3
	Overload capacity	150% for 60 s						
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)						
Braking resistor	Max. output frequency	599 Hz						
	Recommended power [kW]	42	54	60	69	78	87	87
	Minimum resistance [Ω]	2.8 x2*4	2.8 x2*4	2.8 x3*4	2.8 x3*4	2.8 x3*4	2.8 x3*4	2.8 x3*4
Braking unit	MDBUN-200-5T x2		MDBUN-200-5T x3					
Enclosure	IP 00							

Normal duty ratings, 110% overload

Voltage class		Three phase 380 to 480 Vac						
Drive model: MD520-4Txxx(S)-INT*5		200(S)	220(S)	250(S)	280(S)	315(S)	355(S)	400(S)
Drive input	Frame size	T10		T11		T12		
	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%						
	Rated input current [A]	456	507	559	624	708	782	840
	Power capacity [kVA]	417	464	511	571	647	715	768
	Rated input frequency	50/60 Hz ±5%						
Drive output	Applicable motor [kW]	250	280	315	355	400	450	500
	Output current [A]*2 Default	4655	520	585	650	725	820	880
	carrier frequency [kHz]	3	3	3	3	3	3	3
	Overload capacity	110% for 60 s						
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)						
Braking resistor	Max. output frequency	599 Hz						
	Recommended power [kW]	42	54	60	69	78	87	87
	Minimum resistance [Ω]	2.8 x2*4	2.8 x2*4	2.8 x3*4	2.8 x3*4	2.8 x3*4	2.8 x3*4	2.8 x3*4
Braking unit	MDBUN-200-5T x2		MDBUN-200-5T x3					
Enclosure	IP 00							

- 2 Rated output current at default carrier frequency.
- 4 Minimum value of the resistance for each braking unit.
- 5 For the standard AC drive, we recommend motor cable lengths to be <100 m. Where your installation exceeds 100 m, the "L" version is an option with a built-in AC output reactor (1% voltage drop) which can help to overcome the effects of long cable installations. To discuss your application, contact your local Inovance representative.

SPECIFICATIONS

Heavy duty ratings, 150% overload

Voltage class		Three phase 200 - 240 Vac															
Drive model: MD520-2Txxx(B)(S)-INT		0.4 B(S)	0.7 B(S)	1.1 B(S)	1.5 B(S)	2.2 B(S)	3.7 B(S)	5.5 B(S)	7.5 B(S)	11 B(S)	15 B(S)	18.5 B(S)	22 B(S)	30 B(S)	37 B(S)	45 (S)	55 (S)
Frame size		T1				T2		T3	T4	T5	T6		T7		T8		
Drive input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%															
	Rated input current [A]	2.4	4.6	6.3	9	11.4	16.7	32.2	41.3	51.3	57	69	89	106	139	164	196
	Power capacity [kVA]	1.1	2.1	2.9	4.1	5.2	7.6	14.7	18.9	27	26.1	31.6	40.7	48.5	63.6	75	89.6
	Rated input frequency	50/60 Hz ±5%															
	Applicable motor [kW]	0.4	0.75	1.1	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
Drive output	Output current [A]*2 Default	2.1	3.8	5.1	7.2	9	13	25	32	45	60	75	91	112	150	176	210
	carrier frequency [kHz]	6	6	6	6	6	6	6	6	6	6	5	5	4	3	3	3
	Overload capacity	150% for 60 s															
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)															
	Max. output frequency	599 Hz															
Braking resistor	Recommended power [kW]	0.09	0.16	0.25	0.34	0.5	0.8	1.3	1.7	2.3	3	3.9	4.6	5.5	6.8	5.0 x2	6.0 x2
	Minimum resistance [Ω]	48	48	32	32	16	16	12	12	12	9	7	6	5	4	5.5 x2*4	3.7 x2*4
Braking unit	Built-in														MDBUN-60-2T x2	MDBUN-90-2T x2	
Enclosure	IP 20																

Heavy duty ratings, 110% overload

Voltage class		Three phase 200 - 240 Vac															
Drive model: MD520-2Txxx (B)(S)-INT		0.4 B(S)	0.7 B(S)	1.1 B(S)	1.5 B(S)	2.2 B(S)	3.7 B(S)	5.5 B(S)	7.5 B(S)	11 B(S)	15 B(S)	18.5 B(S)	22 B(S)	30 B(S)	37 B(S)	45 (S)	55 (S)
Frame size		T1		T2		T3	T4	T5	T6		T7		T8				
Rated input voltage		Three phase 200 to 240 Vac -15% to +10%															
Rated input current [A]		3.7	6.4	9.1	11.3	15.9	22.4	39.7	44	65.8	71	86	111	143	167	198	239
Power capacity [kVA]		1.7	2.9	4.2	5.2	7.3	10.2	18.2	20.1	30.1	32.5	39.3	50.8	65.4	76.4	90.5	109.3
Rated input frequency		50/60 Hz ±5%															
Applicable motor [kW]		0.75	1.1	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
Output current [A]*2 Default		3.1	5.1	7.2	9.0	13	17	32	37	60	75	91	112	150	176	210	253
carrier frequency [kHz]		6	6	6	6	6	6	6	6	6	5	5	4	3	3	3	3
Overload capacity		110% for 60 s															
Max. output voltage		Three phase 200 to 240 Vac (proportional to input voltage)															
Max. output frequency		599 Hz															
Recommended power [kW]		0.09	0.16	0.25	0.34	0.5	0.8	1.3	1.7	2.3	3	3.9	4.6	5.5	6.8	5.0 x2	6.0 x2
Minimum resistance [Ω]		48	48	32	32	16	16	12	12	12	9	7	6	5	4	5.5 x2*4	3.7 x2*4
Braking unit		Built-in															
Enclosure		IP 20															

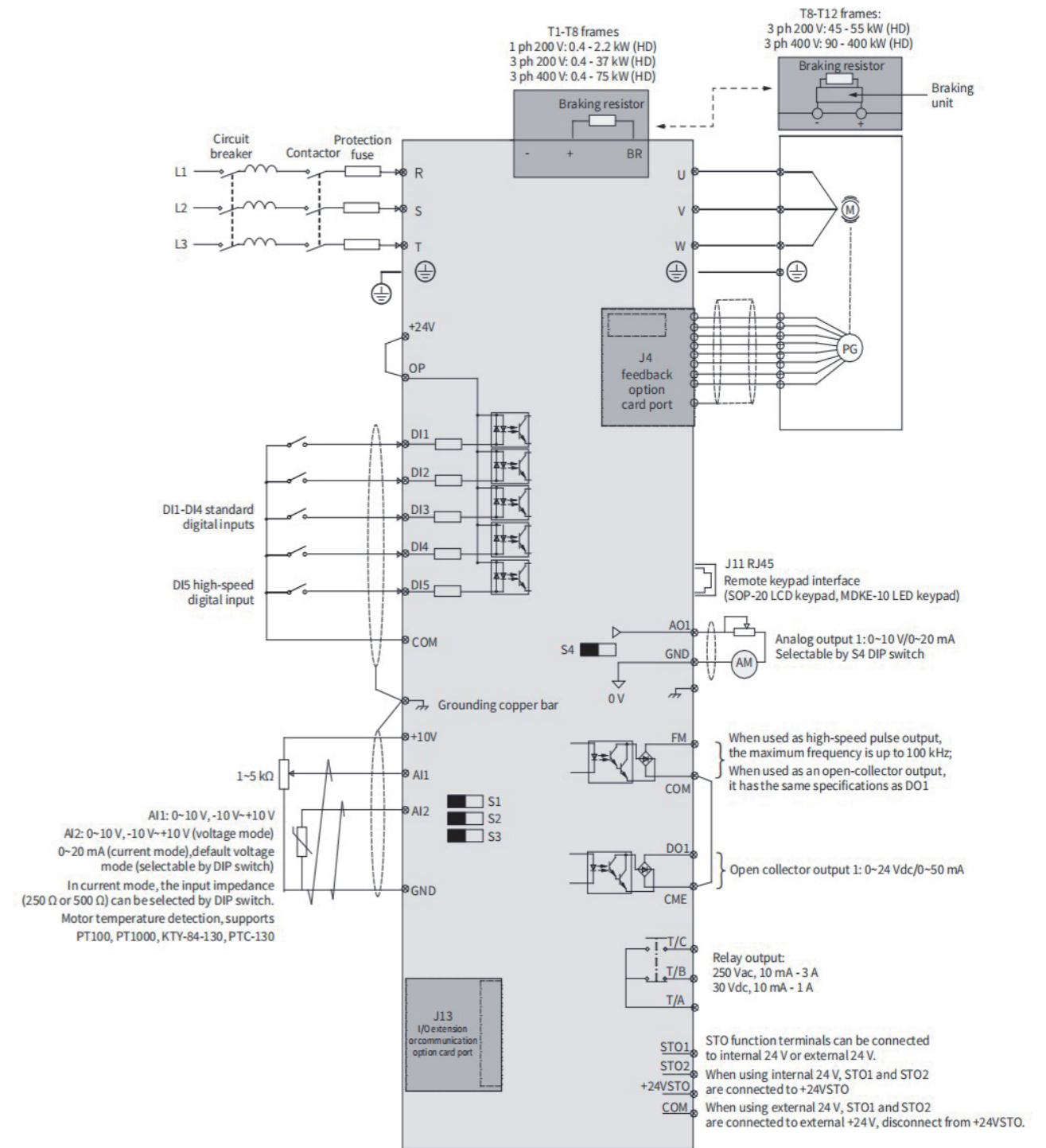
- 2 Rated output current at default carrier frequency.
- 4 Minimum value of the resistance for each braking unit.

Heavy duty ratings, 150% overload

Voltage class		One phase 200 - 240 Vac							
Drive model: MD520-4Txxx(B)(S)-INT		0.4B(S)		0.7B(S)		1.5B(S)		2.2B(S)	
Frame size		T2							
Rated input voltage		One phase 200 to 240 Vac -15% to +10%							
Rated input current [A]		5.4		8.2		14		20	
Power capacity [kVA]		1.4		2.2		3.7		6	
Rated input frequency		50/60 Hz ±5%							
Applicable motor [kW]		0.4		0.75		1.5		2.2	
Output current [A]*2		2.3		4.0		7.0		9.6	
Default carrier frequency [kHz]		6		6		6		6	
Overload capacity		150% for 60 s							
Max. output voltage		Three phase 200 to 240 Vac (proportional to input voltage)							
Max. output frequency		599 Hz							
Recommended power [kW]		0.08		0.08		0.1		0.1	
Minimum resistance [Ω]		64		64		32		32	
Recommended power [kW]		Built-in							
Minimum resistance [Ω]		IP 20							

- 2 Rated output current at default carrier frequency.

GENERAL WIRING DIAGRAM



DIMENSIONS

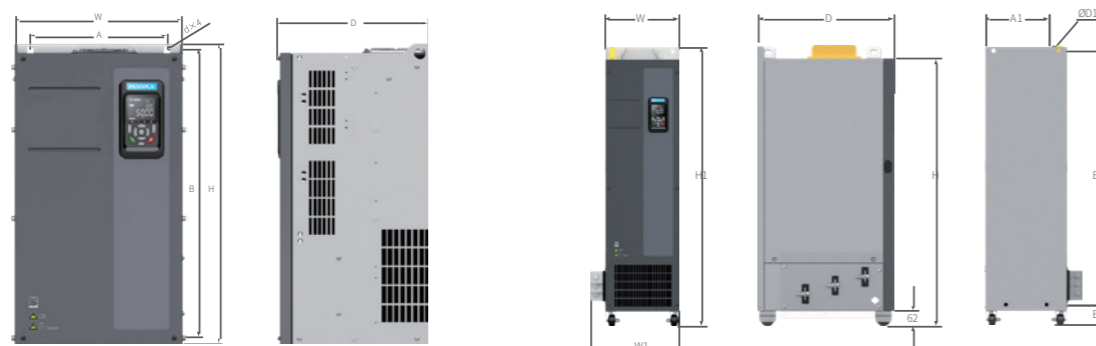
MD520-4T0.4B(S)-INT to MD520-4T15B(S)-INT
MD520-2T0.4B(S)-INT to MD520-2T7.5B(S)-INT
MD520-2S0.4B(S)-INT to MD520-2S2.2B(S)-INT

MD520-4T18.5B(S)-INT to MD520-4T37B(S)-INT
MD520-2T11B(S)-INT to MD520-2T18.5B(S)-INT



MD520-4T45B(S)-INT to MD520-4T160(S)-INT
MD520-2T22B(S)-INT to MD520-2T55(S)-INT

MD520-4T200(S)-INT to MD520-4T400(S)-INT

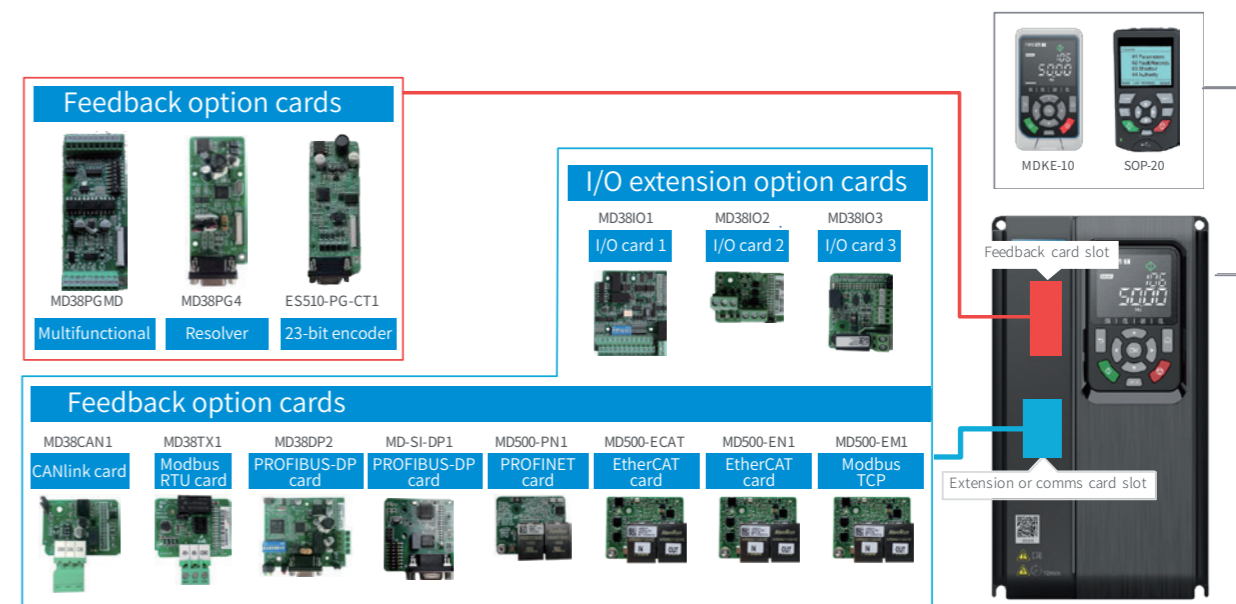


MD520-4T200(S)-L-INT to MD520-4T400(S)-L-INT



MD520 Model	Frame size	Dimensions (mm)										Mass (kg)
		A	A1	B	B1	H	H1	W	W1	D	D1	
MD520-4T1.1B(S)-INT, MD520-4T1.5B(S)-INT, MD520-4T2.2B(S)-INT, MD520-4T3.0B(S)-INT, MD520-2T0.4B(S)-INT, MD520-2T0.7B(S)-INT, MD520-2T1.1B(S)-INT, MD520-2T1.5B(S)-INT	T1	119	/	189	/	200	/	130	/	152	Ø5	1.6
MD520-4T3.7B(S)-INT, MD520-4T5.5B(S)-INT, MD520-2S0.4B(S)-INT to MD520-2S2.2B(S)-INT, MD520-2T2.2B(S)-INT, MD520-2T3.7B(S)-INT	T2	119	/	189	/	200	/	130	/	152	Ø5	2.0
MD520-4T15B(S)-INT, MD520-2T7.5B(S)-INT	T3	128	/	238	/	250	/	140	/	170	Ø6	3.3
MD520-4T18.5B(S)-INT, MD520-4T22B(S)-INT, MD520-2T11B(S)-INT	T4	166	/	266	/	280	/	180	/	170	Ø6	4.3
MD520-4T30B(S)-INT, MD520-4T37B(S)-INT	T5	195	/	335	/	350	/	210	/	192	Ø6	10
MD520-4T30B(S)-INT, MD520-4T37B(S)-INT, MD520-2T15B(S)-INT, MD520-2T18.5B(S)-INT	T6	230	/	380	/	400	/	250	/	220	Ø7	17.5
MD520-4T45B(S)-INT, MD520-4T55B(S)-INT, MD520-2T22B(S)-INT, MD520-2T30B(S)-INT	T7	245	/	523	/	525	524	300	/	275	Ø10	35
MD520-4T75B(S)-INT, MD520-4T90(S)-INT, MD520-4T110(S)-INT, MD520-2T37B(S)-INT, MD520-2T45(S)-INT, MD520-2T55(S)-INT	T8	270	/	560	/	554	580	388	/	315	Ø10	51.5
MD520-4T132(S)-INT, MD520-4T160(S)-INT	T9	320	/	890	/	874	915	400	/	320	Ø10	85
MD520-4T200(S)-INT, MD520-4T220(S)-INT, MD520-4T200(S)-L-INT, MD520-4T220(S)-L-INT	T10	240 240	150 150	1035 1035	86 424	1086 1424	1134 1472	300 300	360 360	500 500	Ø13 Ø13	110 160
MD520-4T250(S)-INT, MD520-4T280(S)-INT, MD520-4T250(S)-L-INT, MD520-4T280(S)-L-INT	T11	225 225	185 185	1175 1175	97 435	1248 1586	1248 1622	330 330	390 390	545 545	Ø13 Ø13	155 215
MD520-4T315(S)-INT, MD520-4T355(S)-INT, MD520-4T400(S)-INT, MD520-4T315(S)-L-INT, MD520-4T355(S)-L-INT, MD520-4T400(S)-L-INT	T12	240 240	200 200	1280 1280	101 432	1355 1683	1405 1733	340 340	400 400	545 545	Ø16 Ø16	185 245

OPTION CARDS AND MOUNTING POSITION

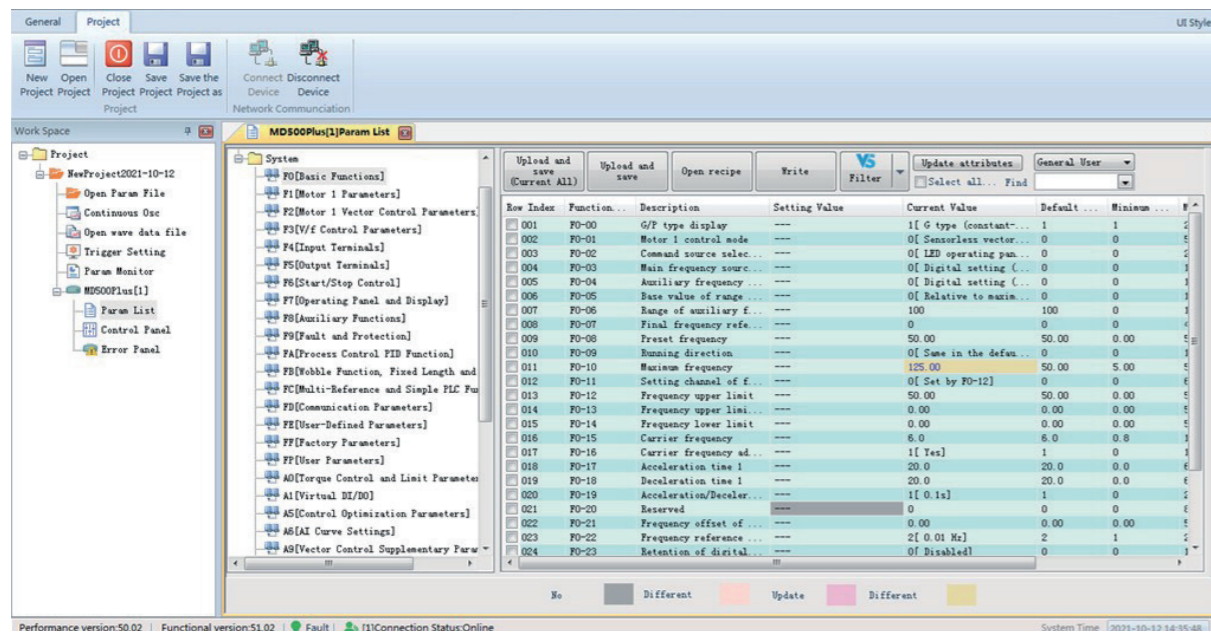


PC SOFTWARE TOOLS

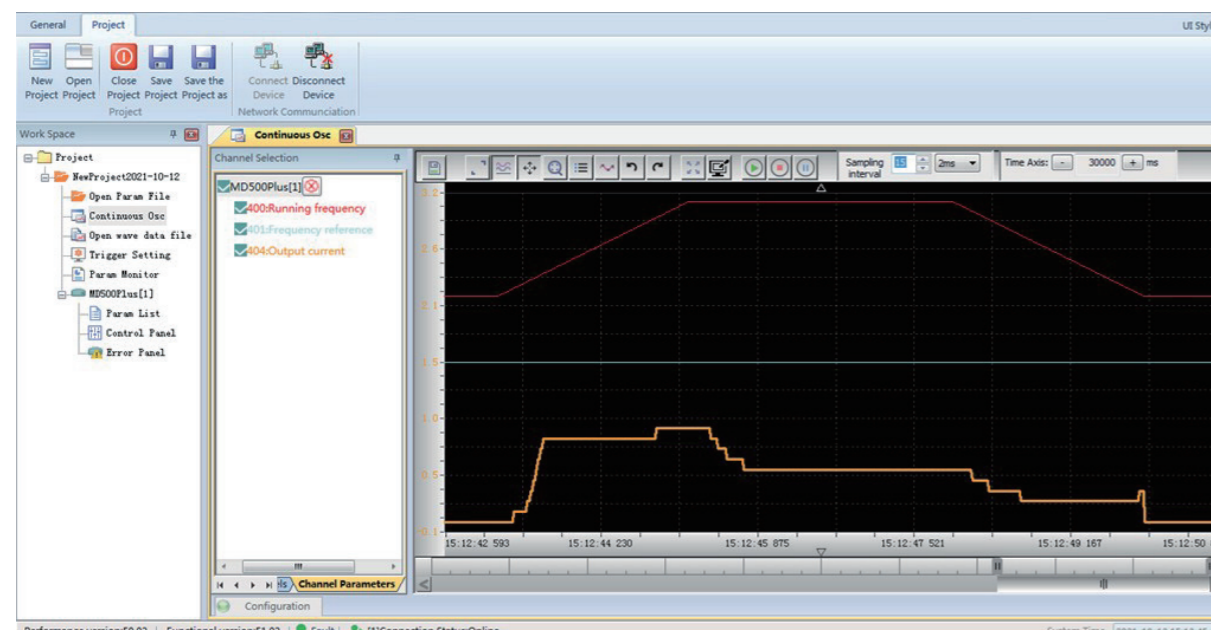
InoDriverShop

InoDriverShop is Inovance's free of charge PC-based software offering. It is based on a familiar Windows interface. InoDriverShop can upload and download drive parameters, and features a variety of other functions, such as a real-time oscilloscope.

For the connection with the PC a standard USB to RS485 adapter can be used. MDKE-10 or SOP-20 keypads can also be used for this purpose.



Parameter uploading/downloading



Multi channel oscilloscope

ACCESSORIES LIST

Category	Model	Function description	Suitable for
External braking	MDBUN-60-5T	External braking unit, rated current 60 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 90G
	MDBUN-90-5T	External braking unit, rated current 90 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 110G - 132G
	MDBUN-200-5T	External braking unit, rated current 200 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 160G - 450G
units	MDBUN-60-2T	External braking unit, rated current 60 A, for supply input voltage 200 to 240 Vac AC drives.	2T models: 45G
	MDBUN-90-2T	External braking unit, rated current 90 A, for supply input voltage 200 to 240 VAC AC drives.	2T models: 55G
	MDKE-10	Remote LED keypad. Can be used as USB to RS485 adapter for the connection to the PC. Includes MDCAB cable.	All
	SOP-20	Remote multi-language LCD keypad. For parameter programming and monitoring, data copy. Keypad can be used as USB to RS485 adapter for the connection to the PC. Includes MDCAB cable.	All
	MDCAB	3 meter connection cable for remote keypad.	All
	MDCAB-1.5	1.5 meter connection cable for remote keypad.	All
Keypads	CP600-BASE1	Panel mounting base (only) for SOP-20 keypad. IP20 rating.	All
	SOP20-MP-IP20	Panel mounting base for SOP-20 keypad, including adapting metal plate and PCB protection plate. IP20 rating.	All
	SOP20-MP-IP54	Panel mounting base for SOP-20 keypad, including PCB protection plate and rubber seals. IP54 rating.	All
	MD580-AZJ1	Panel mounting base for MDKE-10. IP20 rating.	All
	I/O extension	MD38IO1	I/O extension card 1, provides: 5x DI, 1x AI, 1x relay output, 1x DO, 1x AO, Modbus-RTU and CANlink.
MD38IO2		I/O extension card 2, provides 3x extra DI terminals.	All
cards	MD38IO3	I/O extension card 3, provides 3x DI, 1x relay output, Modbus-RTU interface.	All
	MD500-ECAT	EtherCAT option card.	All
	MD500-EN1	Ethernet option card.	All
Fieldbus	MD38CAN1	CANlink/CANopen option card.	All
	MD38TX1	Modbus-RTU option card.	All
	MD38DP2	PROFIBUS-DP option card.	Frame sizes T4-T12
cards	MD500-EM1	Modbus TCP option card.	All
	MD-SI-DP1	PROFIBUS-DP option card (designed for smaller frames).	All
	MD500-PN1	PROFINET option card.	All
PG cards	MD38PG4	Option card for resolver (10 kHz excitation) with DB9 connector.	All
	MD38PGMD	Multifunctional encoder option card, compatible with differential, open-collector and push-pull encoder types. Supports differential output and open-collector output.	All
	ES510-PG-CT1	23-bit encoder card.	All
Mounting	MD500-AZJ-A1T1	Through hole mounting bracket for frame T1.	Frame size T1
	MD500-AZJ-A1T2	Through hole mounting bracket for frame T2.	Frame size T2
	MD500-AZJ-A1T3	Through hole mounting bracket for frame T3.	Frame size T3
brackets	MD500-AZJ-A1T4	Through hole mounting bracket for frame T4.	Frame size T4
	MD500-AZJ-A1T5	Through hole mounting bracket for frame T5.	Frame size T5
	MD500-AZJ-A1T6	Through hole mounting bracket for frame T6.	Frame size T6
	MD500-AZJ-A1T7	Through hole mounting bracket for frame T7.	Frame size T7
	MD500-AZJ-A1T8	Through hole mounting bracket for frame T8.	Frame size T8
	MD500-AZJ-A1T9	Through hole mounting bracket for frame T9.	Frame size T9
Guide rails	MD500-AZJ-A1T10	Guide rails for inserting in/ extracting from the cabinet - frame sizes T10 to T12.	Frame size T10-T12

MD600-Compact AC Drive

Simple Application, Easy to Use



COMING SOON...

- **Communication**
RS485, CANLINK
- **Power**
Single-phase 220 V: 0.4 kW to 2.2 kW
Three-phase 380 V to 480 V: 0.4 kW to 5.5 kW
- **Reliability**
Conformal coating, labyrinth air duct

HIGHLIGHTS



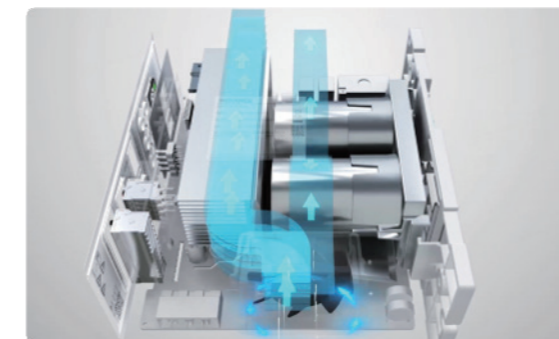
Compact

- Equipped with core heat dissipation technology, the overall volume is reduced by 58%



Easy to use

- Tool free wiring, needle type wire ear directly inserted into the terminal, without the need for fastening screws, assembly efficiency increased by 60%



Reliability

- Labyrinth air duct, completely independent of the drive plate, ensuring reliable operation in harsh environments
- The 100% three proof paint coating on the drive board ensures moisture resistance, corrosion resistance, and dust prevention
- The intelligent fan supports forward and reverse rotation, with a customized working system, effectively preventing foreign objects such as cotton lint blocking the air duct

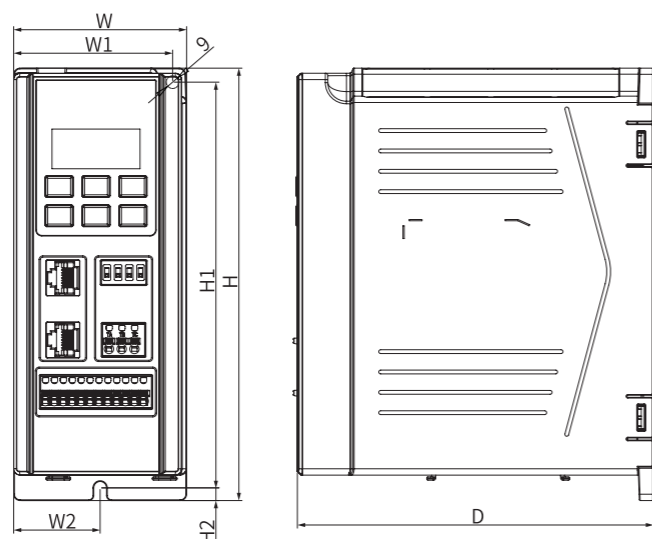
TYPICAL APPLICATIONS

Application Scenario	Equipment Type	Application Scenario	Equipment Type
<p>Fluid flow</p>	Pumping fan application	<p>Mechanical drive</p>	Belt conveyor Roller conveyor
<p>Machine tools</p>	Precision engraving machine Cutting machine Drilling machine Grinding machine	<p>Processing</p>	Sealing machine Winding and unwinding machine

SPECIFICATIONS

Item	Specifications
Output frequency	V/f control: 0 to 599 Hz
Max. carrier frequency	16 kHz, adjusted automatically based on the heatsink temperature, synchronization frequency and overload characteristics
Input frequency resolution	Digital setting: 0.01 Hz Analog setting: maximum frequency x 0.025%
Power capacity	Single-phase 220 VAC 0.4 kW to 2.2 kW Three-phase 380 VAC: 0.4 kW to 5.5 kW
Input voltage	Single-phase: 200 VAC to 240 VAC (-15% to +10%); 50/60 Hz±5% (47 Hz to 63 Hz) Three-phase: 380 VAC to 480 VAC (-15% to +10%); 50/60 Hz±5% (47 Hz to 63 Hz)
Motor type and control mode	Three-phase asynchronous motor: V/f control
Speed regulation range	1: 100 (V/f control of asynchronous motor, with slip compensation and automatic torque boost, static auto-tuning)
Speed fluctuation	±1.0% (V/f control)
Speed accuracy	±1.0% (V/f control)
Overload capacity	Heavy-duty model: 1 minute for 150% of rated current, 3 seconds for 180% of rated current; Light-duty model: 1 minute for 110% of rated current, 3 seconds for 150% of rated current
Torque boost	Automatic torque boost; manual torque boost: 0.1% to 50.0%
V/f curve	Three modes: straight-line V/f, multi-point V/f (3 points), and complete V/f separation
Analog input	AI1: -10 to 10 V/0 to 10 V/0 to 20 mA input, 12-bit resolution, correction accuracy 0.3%, response time of less than 2 ms
Analog output	MD600S: 1 x AO, AO1: 0 to 10 V, correction accuracy 100 mV, 12-bit resolution, correction accuracy 0.5% MD600A: No AOs
Digital input	MD600S: 3 x Dis, 1 x high speed input, supporting PNP and NPN modes, with DI4 being high-speed pulse input, 20 kHz; MD600A: 4 x common input, 1 x high-speed input, supporting NPN/PNP modes, with DI4 being high-speed pulse input, 20 kHz
Digital output	Two relay outputs, 3 A/250 AC 3 A/30 VDC, programmable normally open/closed contact CAN version: 2 x DOs, 100 Hz, output voltage 0 V to 24 V, output current 0 mA to 50 mA
Operating panel display	Standard configuration: 5-digit LED segment code display, 6 buttons
Optional	LCD operating panel, mobile APP
Software tool	Supports AC drive parameter operation, and virtual oscilloscope that enables graphical monitoring of the internal status of the drive; and mobile APP

DIMENSIONS



Frame Size	Mounting Hole Spacing mm (in.)		Dimensions mm (in.)			Mounting Hole Diameter mm (in.)	Weight kg (lb)
	W1	H1	H	W	D		
T1	54.5T2.2Y	159.5T6.3Y	170T6.7Y	60T2.4Y	115T4.5Y	∅ 5T0.2Y	0.85T1.9Y
T2	62.5T2.5Y	159.5T6.3Y	170T6.7Y	68T2.7Y	140T5.5Y	∅ 5T0.2Y	1T2.2Y

SELECTION CHART

Type	Model	Voltage Class	Frame Size	Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Code	Function	Cooling Method	Brake
RS485 type	MD600S-4T1R6	Three-phase 380 V to 480 V	T1	0.37	1.9	1.6	0101C431	RS485 communication	Naturally ventilated	No
	MD600S-4T2R3	Three-phase 380 V to 480 V	T1	0.75	2.8	2.3	0101C432		No	
	MD600S-4T4R8	Three-phase 380 V to 480 V	T1	1.5	5.9	4.8	0101C522		No	
	MD600S-4T5R5B	Three-phase 380 V to 480 V	T1	2.2	6.7	5.5	0101C428		Fan-cooled	Yes
	MD600S-4T9R5B	Three-phase 380 V to 480 V	T2	4	11.6	9.5	0101C520		Yes	
	MD600S-2S2R8	Single-phase 200 V to 240 V	T1	0.37	6.2	2.8	0101C427		Naturally ventilated	No
	MD600S-2S4R6	Single-phase 200 V to 240 V	T1	0.75	10.2	4.6	0101C523		No	
	MD600S-2S7R5B	Single-phase 200 V to 240 V	T1	1.5	16.6	7.5	0101C524		Fan-cooled	Yes
	MD600S-2S010B	Single-phase 200 V to 240 V	T2	2.2	22.2	10	0101C521		Yes	
	CAN type	MD600A-4T1R6	Three-phase 380 V to 480 V	T1	0.37	1.9	1.6		0101C552	CAN communication
MD600A-4T2R3		Three-phase 380 V to 480 V	T1	0.75	2.8	2.3	0101C554	No		
MD600A-4T4R8		Three-phase 380 V to 480 V	T1	1.5	5.9	4.8	0101C557	No		
MD600A-4T5R5B		Three-phase 380 V to 480 V	T1	2.2	6.7	5.5	0101C558	Fan-cooled	Yes	
MD600A-4T9R5B		Three-phase 380 V to 480 V	T2	4	11.6	9.5	0101C560	Yes		
MD600A-2S2R8		Single-phase 200 V to 240 V	T1	0.37	6.2	2.8	0101C551	Naturally ventilated	No	
MD600A-2S4R6		Single-phase 200 V to 240 V	T1	0.75	10.2	4.6	0101C555	No		
MD600A-2S7R5B		Single-phase 200 V to 240 V	T1	1.5	16.6	7.5	0101C556	Fan-cooled	Yes	
MD600A-2S010B		Single-phase 200 V to 240 V	T2	2.2	22.2	10	0101C559	Yes		

MD800 - Compact AC MultiDrive

Comprehensive Functionality in a Compact Footprint



- Modular design (from 1 to 8 drives)
- 1 ph 200 V and 3 ph 220V/400 V supply
- Drive ratings: 200 W to 7.5 kW
- STO SIL3
- Choice of fieldbus protocols available



reddot award 2019 winner



DESIGNED FOR CABINET SPACE SAVING - REDUCED INSTALLATION COSTS

Eight Inovance MD200 drives, each module's footprint is: W 75 mm x H 180 mm



Footprint reduction
-50%

15 kW rectifier (2 option slots) Dual 3.7 kW Dual 2.2 kW Dual 0.75 kW Dual 0.75 kW



ACCESSORIES

Model	Description
IO-M1	I/O expansion card: 8 DI, 8 DO, 2 AI
IO-R1	Relay expansion card: 8 relays with normally open contact
IO-R2	Relay expansion card: 4 relays with changeover contact
SI-PN1	PROFINET communication card
SI-ECAT1	EtherCAT communication card
SI-EN	Ethernet IP communication card
SI-EM	Modbus TCP communication card
SOP-20	Remote LCD keypad (inc. 3 m cable)
MD800-PBJ100M-W1	Rectifier unit cable support bracket
MD800-PBJ50M-W1	Single or dual drive unit cable support bracket
MD800-AZB1	Mounting plate for easy assembly of an MD800 set in the electrical panel

• 3 ph 400 V input reactors available on request (3% impedance) For more information, please contact our local offices.

SINGLE DRIVE UNITS

Power (kW)		Model	Output AC current (A)		STO function
HD	ND		HD	ND	
400 V, DC supply voltage: 510-720 VDC					
0.4	0.75	MD800-1-4T1R8	1.8	2.1	No
0.75	1.5	MD800-1-4T3R4	3.4	4.6	
1.5	2.2	MD800-1-4T4R8	4.8	5.4	
2.2	3.7	MD800-1-4T5R5	5.5	9	
3.7	5.5	MD800-1-4T9R5	9.5	13	
5.5	7.5	MD800-1-4T13	13	17	
7.5	11	MD800-1-4T17	17	21	
0.4	0.75	MD800-1-4T1R8S	1.8	2.1	Yes
0.75	1.5	MD800-1-4T3R4S	3.4	4.6	
1.5	2.2	MD800-1-4T4R8S	4.8	5.4	
2.2	3.7	MD800-1-4T5R5S	5.5	9	
3.7	5.5	MD800-1-4T9R5S	9.5	13	
5.5	7.5	MD800-1-4T13S	13	17	
7.5	11	MD800-1-4T17S	17	21	
200 V, DC supply voltage: 270-360 VDC					
0.2	0.4	MD800-1-2T1R7	1.7	1.9	No
0.4	0.75	MD800-1-2T3	3	3.5	
0.75	1.5	MD800-1-2T5	5	8	
1.5	2.2	MD800-1-2T8	8	9.6	
2.2	3.7	MD800-1-2T11	11	17.6	Yes
0.2	0.4	MD800-1-2T1R7S	1.7	1.9	
0.4	0.75	MD800-1-2T3S	3	3.5	
0.75	1.5	MD800-1-2T5S	5	8	
1.5	2.2	MD800-1-2T8S	8	9.6	
2.2	3.7	MD800-1-2T11S	11	17.6	
3.7	5.5	MD800-1-2T17S	17	21	

DUAL DRIVE UNITS

Power (kW)		Model	Output AC current (A)		STO function
HD	ND		HD	ND	
400 V, DC supply voltage: 510-720 VDC					
0.4	0.75	MD800-2-4T1R8	1.8	2.1	No
0.75	1.5	MD800-2-4T3R4	3.4	4.6	
1.5	2.2	MD800-2-4T4R8	4.8	5.4	
2.2	3.7	MD800-2-4T5R5	5.5	9	
3.7	5.5	MD800-2-4T9R5	9.5	13	
0.4	0.75	MD800-2-4T1R8S	1.8	2.1	Yes
0.75	1.5	MD800-2-4T3R4S	3.4	4.6	
1.5	2.2	MD800-2-4T4R8S	4.8	5.4	
2.2	3.7	MD800-2-4T5R5S	5.5	9	
3.7	5.5	MD800-2-4T9R5S	9.5	13	
200 V, DC supply voltage: 270-360 VDC					
0.2	0.4	MD800-2-2T1R7	1.7	1.9	No
0.4	0.75	MD800-2-2T3	3	3.5	
0.75	1.5	MD800-2-2T5	5	8	
1.5	2.2	MD800-2-2T8	8	9.6	
2.2	3.7	MD800-2-2T11	11	17.6	
0.2	0.4	MD800-2-2T1R7S	1.7	1.9	Yes
0.4	0.75	MD800-2-2T3S	3	3.5	
0.75	1.5	MD800-2-2T5S	5	8	
1.5	2.2	MD800-2-2T8S	8	9.6	
2.2	3.7	MD800-2-2T11S	11	17.6	

RECTIFIER UNITS

Power (kW)		Model	Built-in dynamic braking
HD	ND		
3 ph 400 VAC input			
3.7	5.5	MD800-0-4T12	No
7.5	11	MD800-0-4T22	
15	18.5	MD800-0-4T41	
3.7	5.5	MD800-0-4T12B	Yes
7.5	11	MD800-0-4T22B	
15	18.5	MD800-0-4T41B	
1 ph 200 VAC input			
2.2	3	MD800-0-2S24	No
3.7	4.4	MD800-0-2S40	
2.2	3	MD800-0-2S24B	Yes
3.7	4.4	MD800-0-2S40B	
3 ph 220 VAC input			
7.5	11	MD800-0-2T41B	Yes

EMC FILTERS

Category	Filter model	Matched rectifier model
EMC filters (To achieve C2 level)	FIL800-4T-045	MD800-0-4T12*
		MD800-0-4T22*
		MD800-0-4T41*
	FIL800-2S-045	MD800-0-2S24*
		MD800-0-2S40*

MD800 – FEATURES & FUNCTIONS

size: W 300 mm x H 182 mm

Comprehensive functionality:

- Individual STO SIL 3 for each drive
- Suitable for open loop asynchronous & PM synchronous motors
- +24 VDC control backup supply
- IP40 rated
- Remote LCD keypad (optional)
- Commissioning PC software available
- Dual rated: heavy duty (HD, G rating): 150% overload; normal duty (ND, P rating): 110% overload

High level, flexible connectivity:

- Built-in I/Os: 4 DI, 4 DI/DO, 2 AI, 1 RO
- Standard onboard communications: USB commissioning port, CAN, RS485



CANlink is an Inovance proprietary fieldbu

- Two expansion slots
 - I/O expansion cards
 - Fieldbus option cards:



Compact footprint for smaller cabinets

- Common height and depth: 182 mm x 160 mm
- Rectifier width: 99.5 mm
- Drive width: 49.5 mm

Designed for durability:

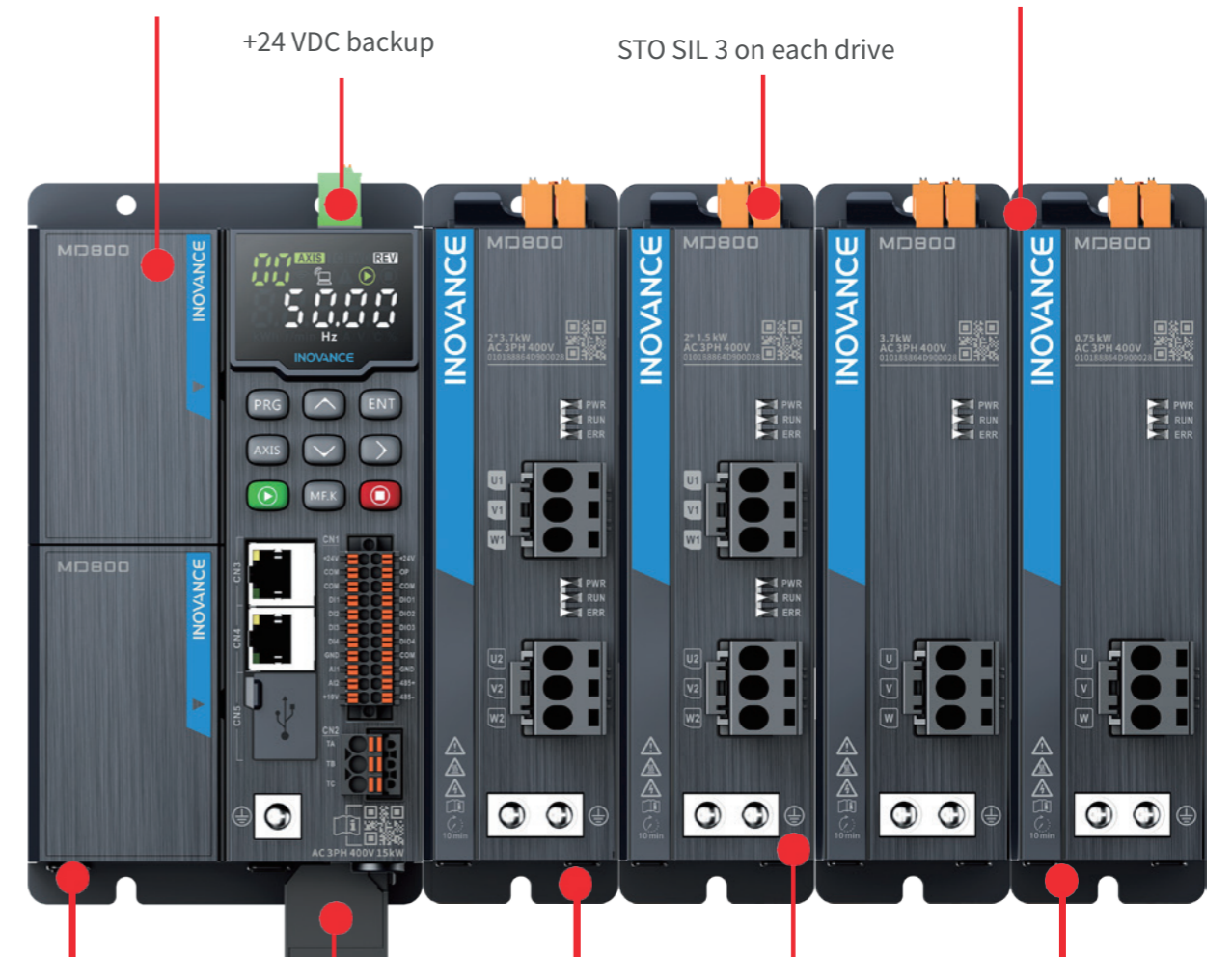
- High level conformal coating (3C3 & 3S2)
- Operating temp range: -20 to +60° C (de-rating > 50° C)
- Operating altitude: up to 4,000 m (de-rating > 1,000 m)
- Separate cooling channel for heatsink

Reduced installation costs

- User-friendly pluggable connectors (spring type)
- Faster build time
- Reduced wiring
- User-friendly pluggable connectors (spring type)
- Fewer external components:
 - Common EMC filter (C2 compliant)
 - Input reactor
 - Fuses/MCCBs
 - Common built-in dynamic braking (variant)

Reduced running costs via energy saving common DC bus

Two option slots



Common DC bus rectifier -
 400 V (HD): 3.7 - 15 kW
 400 V (ND): 5.5 - 18.5 kW
 200 V (HD): 2.2 - 3.7 kW
 200 V (ND): 3 - 4.4 kW

Dual drive modules -
 400 V (HD): 0.4 - 3.7 kW
 400 V (ND): 0.75 - 5.5 kW
 200 V (HD): 0.2 - 2.2 kW
 200 V (ND): 0.4 - 3.7 kW

Single drive modules -
 400 V (HD): 0.4 - 7.5 kW
 400 V (ND): 0.75 - 11 kW
 200 V (HD): 0.2 - 2.2 kW
 200 V (ND): 0.4 - 3.7 kW

MD810 - Compact AC MultiDrive

For Multi-Sectional Drives Applications



Energy saving

- Common DC bus configuration for regenerated energy sharing
- Centralized braking design for braking energy reuse

Fast and easy installation and commissioning

- Simple, plug & play module installation
- One-click network connection with InoDriveShop
- Fewer external components: built-in mini bus bars and common DC bus configuration
- Compatible with open communication fieldbuses like PROFINET, PROFIBUS DP and CANopen

Easy maintenance

- Software integrates all steps for commissioning, diagnostics & maintenance.
- PLC/HMI/drive software configured through the same network for simple maintenance and lower maintenance costs.
- DC soft charge module enables drive to be independently powered on or off.
- Built-in redundancy: if one rectifier fails, the system can continue operation with reduced capacity (reduced speed and/or load)

Durability in harsh environment








- Separate cooling channel for heatsink prevents dust contamination of internal PCBs.
- Class 3C2 & 3S2 conformal coating.
- Applicable ambient temperature range:
 - Operation: -10 - 50° C
 - Storage: -25 - 70° C
- Humidity range of 5%-95% (60% in case of corrosive gas).
- built-in DC reactors for smooth current flow and reduced harmonic distortion.
- Built-in C3 filter, optional external C2 filter, meeting the EU EN 61800-3 standard requirements.






INDUSTRY APPLICATIONS

Suitable for industries such as metal products, printing and packaging, textile printing and dyeing, chemical fibers and plastics, paper making, cranes, wind power generation, logistics and warehousing, etc. that require continuous automation, or single equipment applications that require multi-point drives.



MD810 SERIES PRODUCT LIST

MD810 Series	AC Drive						
Appearance							
	Dual-axis	Dual-axis	Single-axis	Single-axis	Single-axis	Single-axis	Single-axis
Power rating	537 to 679 VDC D1.5 to D5.5 kW	537 to 679 VDC D7.5 to D18.5 kW	537 to 679 VDC 1.5 to 7.5 kW	537 to 679 VDC 11 to 37 kW	537 to 679 VDC 45 to 75 kW	537 to 679 VDC 90 to 160 kW	537 to 679 VDC 200 to 355 kW
Dimension (WxDxH) mm	50x305x350	100x305x350	50x305x350	100x305x350	200x305x350	300x305x350	230x633x1395

MD810 Series	AC Drive				
Appearance					
	Rectifier				
Power rating	380 to 415 V 22 kW	380 to 415 V 45 kW	380 to 415 V 110 kW	380 to 415 V 160 kW	380 to 415 V 355 kW
Dimension (WxDxH) mm	50x305x350	50x305x350	200x305x350	300x305x35	180x445x800

SPECIFICATIONS

Single Drives

Drive unit model	Rated power (kW)	Input DC current (A)	Output AC current (A)
537–679 VDC (working range: 350–800 VDC) Output voltage: 0–480 VAC			
MD810-50M4T1.5GXXX	1.5	4.9	3.8
MD810-50M4T2.2GXXX	2.2	7	5.1
MD810-50M4T3.7GXXX	3.7	12	9
MD810-50M4T5.5GXXX	5.5	17	13
MD810-50M4T7.5GXXX	7.5	22	17
MD810-50M4T11GXXX	11	31	25
MD810-50M4T15GXXX	15	40	32
MD810-50M4T18.5GXXX	18.5	46	37
MD810-50M4T22GXXX	22	55	45
MD810-50M4T30GXXX	30	73	60
MD810-50M4T37GXXX	37	90	75
MD810-50M4T45GXXX	45	105	91
MD810-50M4T55GXXX	55	129	112
MD810-50M4T75GXXX	75	172	150
MD810-50M4T90GXXX	90	294	184
MD810-50M4T110GXXX	110	358	224
MD810-50M4T132GXXX	132	420	262
MD810-50M4T160GXXX	160	474	296

Dual Drives

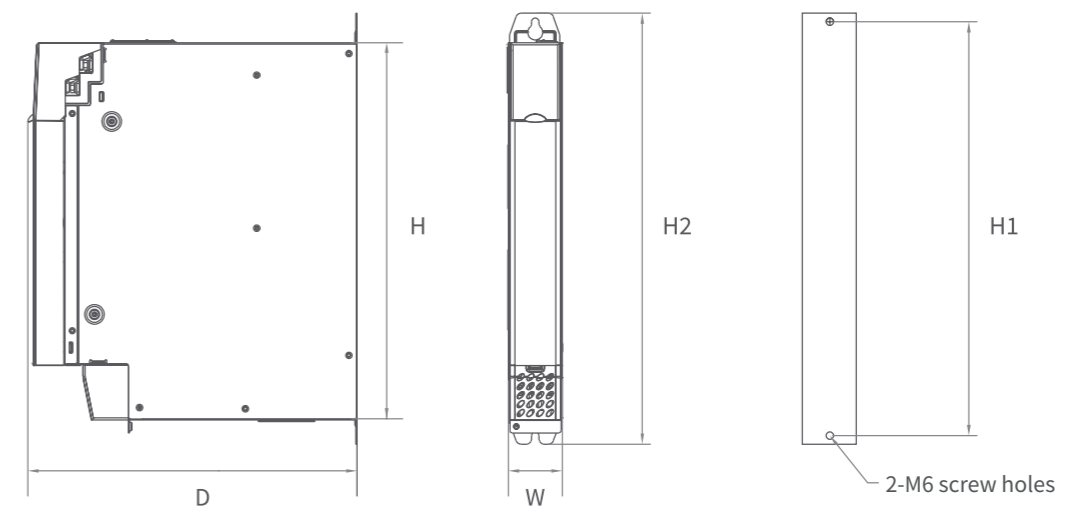
Drive unit model	Rated power (kW)	Input DC current (A)	Output AC current (A)
537–679 VDC (working range: 350–800 VDC) Output voltage: 0–480 VAC			
MD810-50M4TD1.5GXXX	1.5	10	3.8
MD810-50M4TD2.2GXXX	2.2	14	5.1
MD810-50M4TD3.7GXXX	3.7	24	9
MD810-50M4TD5.5GXXX	5.5	34	13
MD810-50M4TD7.5GXXX	7.5	44	17
MD810-50M4TD11GXXX	11	62	25
MD810-50M4TD15GXXX	15	80	32
MD810-50M4TD18.5GXXX	18.5	92	37

Rectifiers

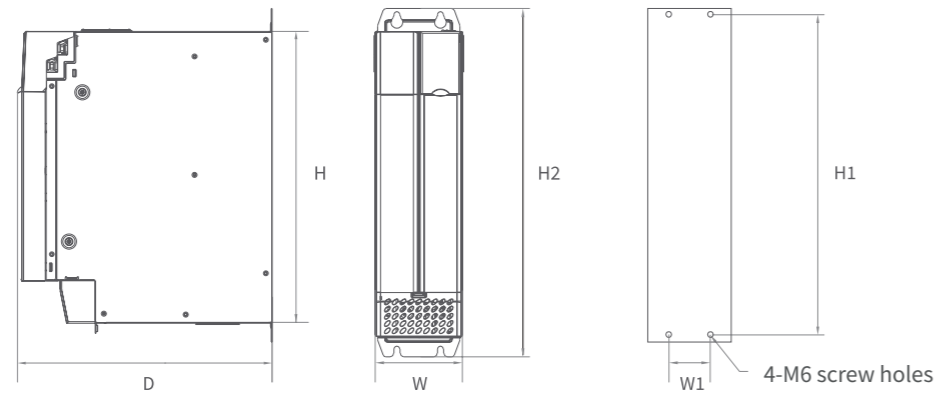
Rectifier unit model	Rated power (kW)	Input AC current (A)	Output DC current (A)	Braking unit
380–480 VAC (working range: 323–528 VAC) Output voltage: 537–679 VDC				
MD810-20M4T22GXXX	22	59	56	Built-in
MD810-20M4T45GXXX	45	112	110	Built-in
MD810-20M4T110GXXX	110	196	240	MDBUN-60-(5)T*2
MD810-20M4T160GXXX	160	292	358	MDBUN-90-(5)T*2
MD810-20M4T355GXXX	355	619	759	MDBUN-200-C/B*3

DIMENSIONS OF SINGLE DRIVE UNITS

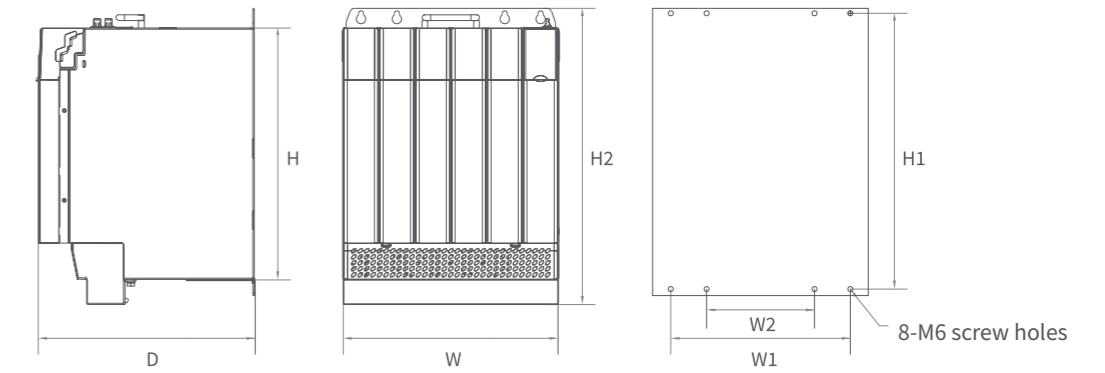
Dimensions of single drive units



Single drive units model (SIZE-S1)	Dimensions (mm)				Mounting Hole Spacing (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T1.5GXXX	400	350	50	305	-	-	384	∅ 7	3.8
MD810-50M4T2.2GXXX	400	350	50	305	-	-	384	∅ 7	3.8
MD810-50M4T3.7GXXX	400	350	50	305	-	-	384	∅ 7	3.8
MD810-50M4T5.5GXXX	400	350	50	305	-	-	384	∅ 7	4
MD810-50M4T7.5GXXX	400	350	50	305	-	-	384	∅ 7	4

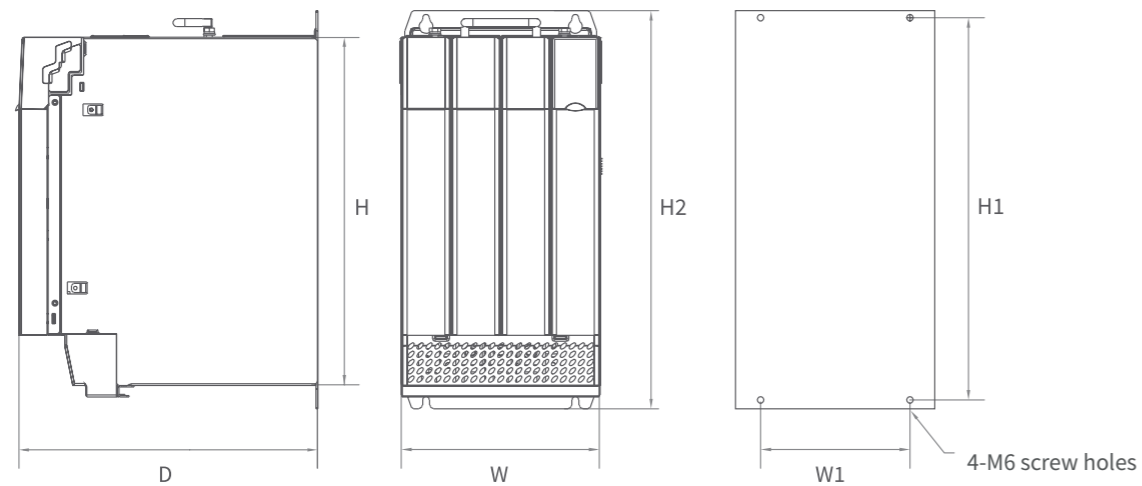


Single drive units model (SIZE-S2)	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter(mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T11GXXX	400	350	100	305	50	-	384	∅ 7	7.5
MD810-50M4T15GXXX	400	350	100	305	50	-	384	∅ 7	7.5
MD810-50M4T18.5GXXX	400	350	100	305	50	-	384	∅ 7	8
MD810-50M4T22GXXX	400	350	100	305	50	-	384	∅ 7	8.5
MD810-50M4T30GXXX	400	350	100	305	50	-	384	∅ 7	9.4
MD810-50M4T37GXXX	400	350	100	305	50	-	384	∅ 7	9.4

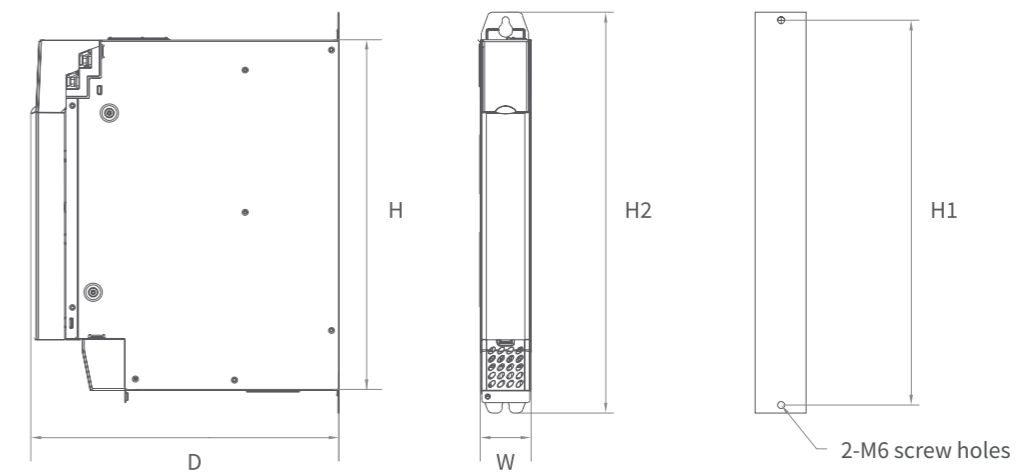


Single drive units model (SIZE-S4)	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T90GXXX	400	350	300	305	250	150	384	∅ 7	24.2
MD810-50M4T110GXXX									
MD810-50M4T132GXXX									
MD810-50M4T160GXXX									25.2

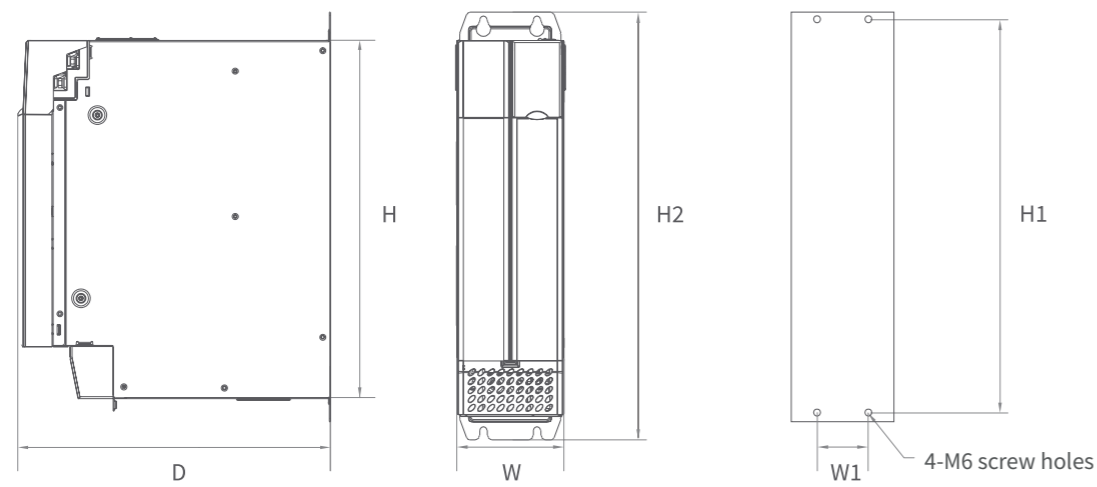
DIMENSIONS OF DUAL DRIVE UNITS



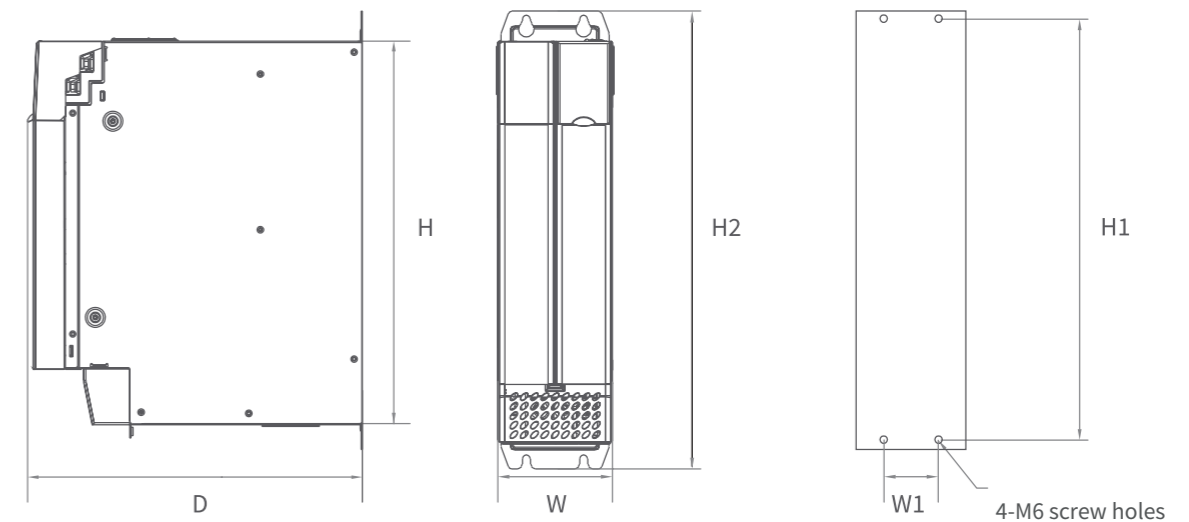
Single drive units model (SIZE-S3)	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter(mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T45GXXX	400	350	200	305	150	-	384	∅ 7	18.4
MD810-50M4T55GXXX	400	350	200	305	150	-	384	∅ 7	18.4
MD810-50M4T75GXXX	400	350	200	305	150	-	384	∅ 7	19.5



Dual drive units model (SIZE-S1)	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4TD1.5GXXX	400	350	50	305	-	-	384	∅ 7	4.5
MD810-50M4TD2.2GXXX	400	350	50	305	-	-	384	∅ 7	4.5
MD810-50M4TD3.7GXXX	400	350	50	305	-	-	384	∅ 7	4.5
MD810-50M4TD5.5GXXX	400	350	50	305	-	-	384	∅ 7	4.5
MD810-50M4TD7.5GXXX	400	350	50	305	-	-	384	∅ 7	4.5

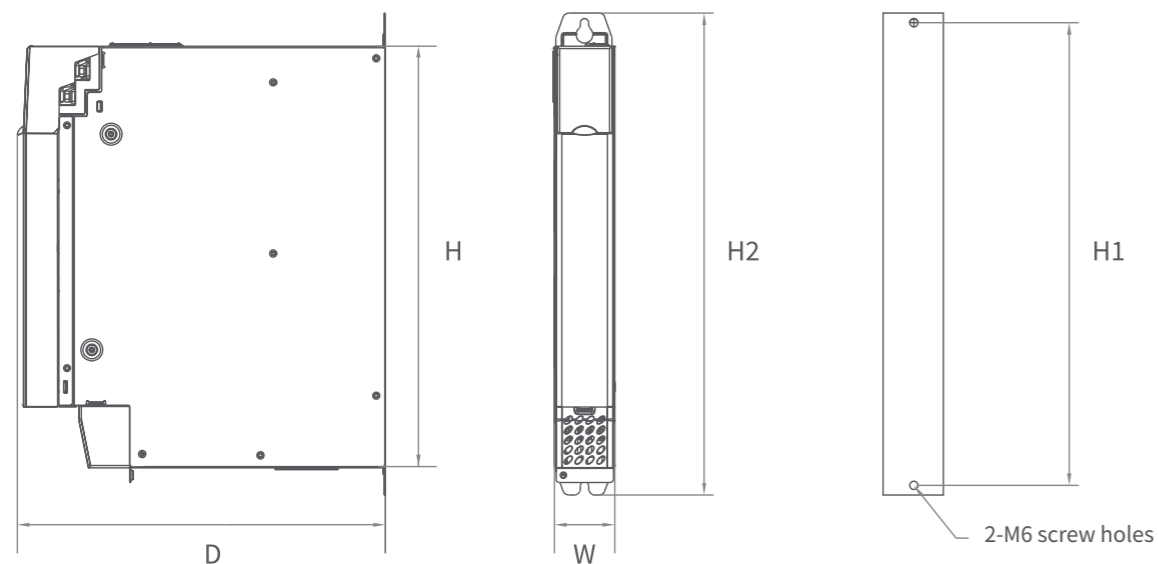


Dual drive units model (SIZE-S2)	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4TD7.5GXXX	400	350	100	305	50	-	384	∅ 7	9.5
MD810-50M4TD11GXXX	400	350	100	305	50	-	384	∅ 7	9.5
MD810-50M4TD15GXXX	400	350	100	305	50	-	384	∅ 7	9.5
MD810-50M4TD18.5GXXX	400	350	100	305	50	-	384	∅ 7	9.5

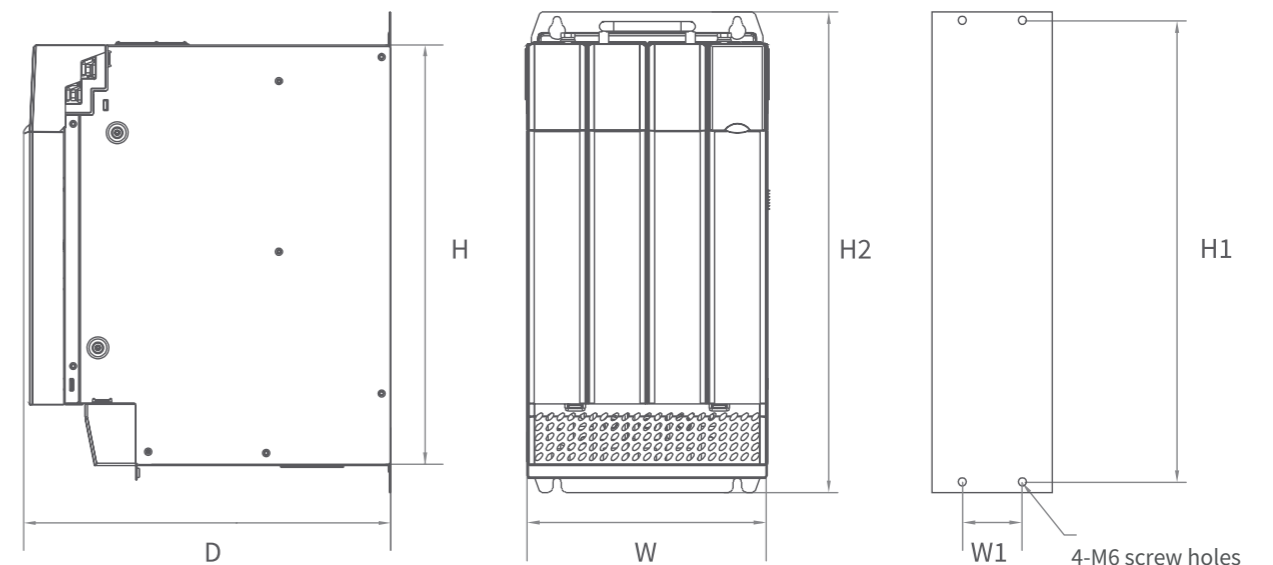


Rectifier units mode	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-20M4T45GXXX	400	350	50	305	50	-	384	∅ 7	8

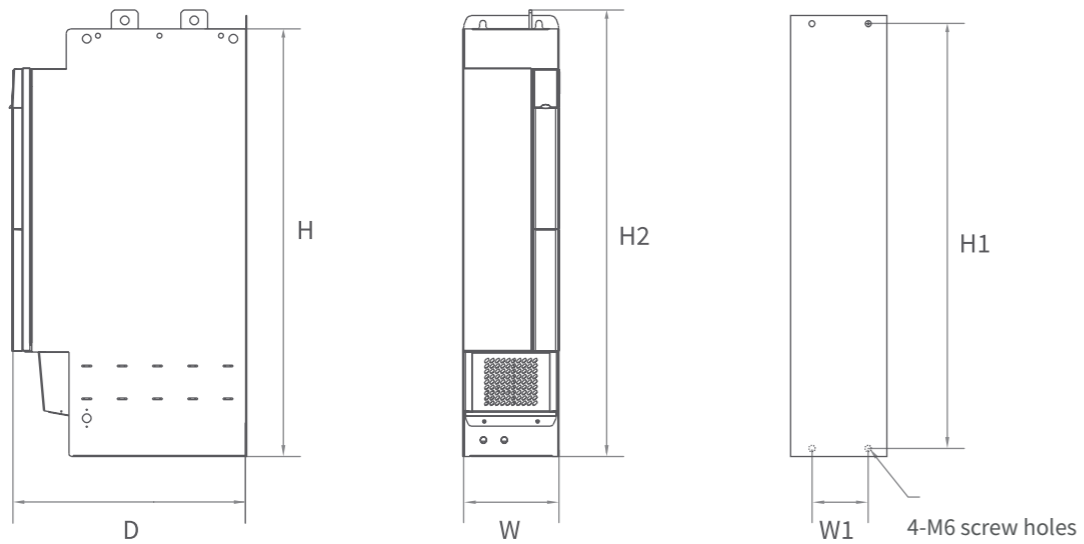
DIMENSIONS OF RECTIFIER UNITS



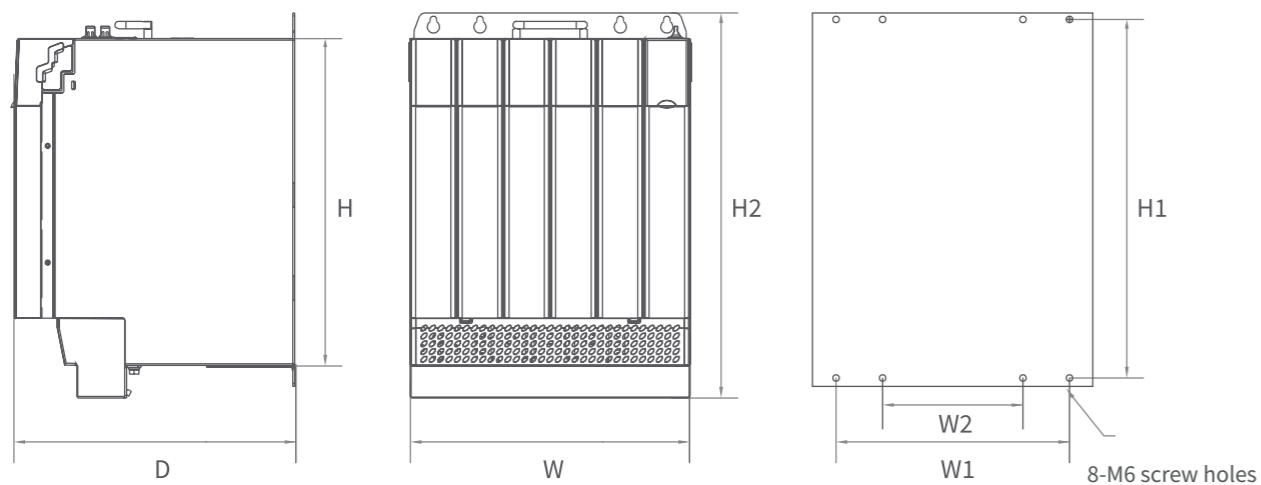
Rectifier units mode	Dimensions(mm)				Mounting Hole Spacing(mm)			Mountin Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-20M4T22GXXX	400	350	50	305	-	-	384	∅ 7	3.8



Rectifier units mode	Dimensions(mm)				Mounting Hole Spacing(mm)			Mountin Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-20M4T110GXXX	400	350	200	305	150	-	384	∅ 7	18.4



Rectifier units mode	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-20M4T355GXXX	835	800	130	445	105	-	795	∅ 12	65



Rectifier units mode	Dimensions(mm)				Mounting Hole Spacing(mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-20M4T160GXXX	400	350	300	305	250	150	384	∅ 7	38

ACCESSORIES

Applicable model	MD810 accessory	
	Type code	Description
Size 1 (W: 50 mm)	MD810-AZJ50M-W1	Through-hole mounting brackets for PSU and Drives
Size 2 (W: 100 mm)	MD810-AZJ50M-W2	
Size 3 (W: 200 mm)	MD810-AZJ50M-W3	
Size 4 (W: 300 mm)	MD810-AZJ50M-W4	
Size 1 (W: 50 mm)	MD810-PBJ50M-W1	Cable support bracket for PSU and Drives
Size 2 (W: 100 mm)	MD810-PBJ50M-W2	
Size 3 (W: 200 mm)	MD810-PBJ50M-W3	
Size 4 (W: 300 mm)	MD810-PBJ50M-W4	
Size 1 (W: 50 mm)	MD810-DLB-W1	Air guide plate for PSU and Drives
Size 2 (W: 100 mm)	MD810-DLB-W2	
Size 3 (W: 200 mm)	MD810-DLB-W3	
Size 4 (W: 300 mm)	MD810-DLB-W4	
PSU (sizes 1-2). Drives (size 1)	MD810-CON1	Additional DC bus terminals for PSU and Drives
PSU (sizes 3-4). Drives (sizes 2-4)	MD810-CON2	
Size 1 (W: 50 mm)	C45590-GNCN-C2500024	Communication (Modbus-RTU, CANopen) cable (RJ45 connectors) between modules
Size 2 (W: 100 mm)	C45590-GNCN-C2500025	
Size 3 (W: 200 mm)	C45590-GNCN-C2500035	
Size 4 (W: 300 mm)	C45590-GNCN-C2500055	
Size 5 (355 kW PSU)	C45590-GNCN-C2500080	
Single: 1.5-7.5 kW. Dual: 1.5-5.5 kW	INOV-SU-30	Soft-charging unit for drive modules (single: 1.5-7.5 kW; dual: 1.5-5.5 kW).
Single: 11-22 kW. Dual: 7.5-11 kW	INOV-SU-60	
Single: 30-37 kW. Dual: 15-18.5 kW	INOV-SU-100	
Single: 45-75 kW	INOV-SU-170	
Single: 90-160 kW	-	Soft-charging unit is not available.
All	SOP-20-810	Remote LCD keypad (including 3 m cable)
All	C45590-GNCN-C25003	Remote LCD keypad spare cable (3 m)
All	SOP-20-MP-IP20	LCD keypad mounting base for installation on cabinet door

MD580 - High Performance AC Drive

Dedicated To Process Industry



Planning to get the certification of UL,waiting soon...

PRODUCT FEATURES

Fully upgraded hardware and software Sheet

- Sheet metal structure,delivering unified appearance and aging-resistance
- Five control algorithms, supporting synchronous and asynchronous motors

IO resource for controlling

- RS485 and CAN communication ports, compatible with five mainstream communication protocols
- Parameter interconnection, meeting personalized control requirements
- Supporting debugging via Type-C
- Seven DIs and three relay outputs
- A maximum of 4-channel motor temperature sampling

Five safety guarantees

- Protection against motor stall and runaway
- User programmable limp mode
- Automatic restart upon faults, resuming production quickly
- Motor temperature sensor, implementing real-time motor protection

Easy debugging and diagnosis

- Parameter interconnection, meeting personalized control requirements
- Debugging with an external operating panel and batch parameter downloading
- Easy remote debugging with PC
- Black box for quick fault diagnosis
- Self-diagnosis and guided troubleshooting

SPECIFICATIONS

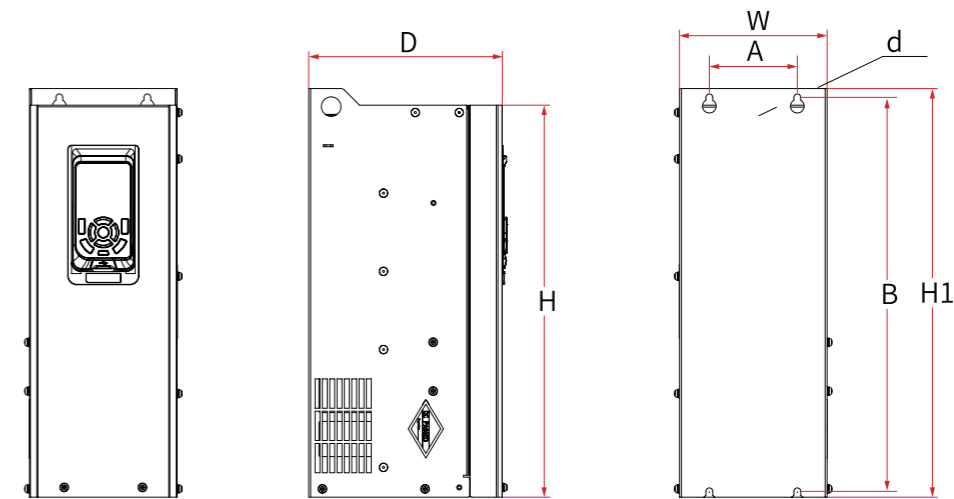
Item	Specifications	
Basic parameters	Output frequency	V/f control: 0-599 Hz Vector control: 0-599 Hz
	Carrier frequency	0.8-12 kHz, adjusted automatically based on the heatsink temperature
	Input frequency resolution	Digital setting: 0.01 Hz Analog setting: maximum frequency x 0.025 %
	AC drive capacity	G type: 0.4-400 kW; P model: 0.7-450 kW
	Input voltage	Three-phase 380-480 VAC: 323-528 V (-15% to +10%)
	Motor type and control mode	Three-phase asynchronous motor: V/f, SVC, and FVC PMSM: SVC and FVC
	Speed regulation range	1:50 (V/f control of asynchronous motor)
		1:200 (SVC of asynchronous motor)
		1:1000 (FVC of asynchronous motor)
	Speed control accuracy	±1.0% (V/f control)
		±0.5% (SVC)
		±0.02% (FVC)
	Speed fluctuation	±0.5% (SVC)
		±0.2% (FVC)
	Torque response	< 20 ms (SVC) < 5 ms (FVC)
Torque control mode	SVC and FVC	
Torque control accuracy	±5% (SVC) ±3% (FVC)	
Overload capacity	G type: 1 hour for 115% of the rated current, 1 minute for 150% of the rated current, and 2 seconds per 5 minutes for 178% of the rated current	
	P type: 1 hour for 105% of the rated current, 1 minute for 110% of the rated current, and 1 second per 5 minutes for 137% of the rated current	
	Automatic torque boost; manual torque boost: 0.1%-30.0%	
V/f curve	Five modes: straight-line V/f, multi-point V/f, square V/f, complete V/f separation, and half V/f separation	
Customized functions	Acceleration/Deceleration curve	Straight-line acceleration/deceleration and arc acceleration/deceleration
	Built-in PID	One set of PID parameters, facilitating implementation of the closed-loop process control system
	Communication/ Bus	RS485 adapter: supporting the Modbus RTU protocol
		Modbus TCP adapter: supporting Modbus TCP industrial Ethernet DP adapter: supporting PROFIBUS DP
		PROFINET IO adapter: supporting PROFINET IO industrial Ethernet CANopen adapter: supporting the CANopen protocol
	Running command source	Start and stop are controlled by using SOP-20, InoDriveStudio, LED operating panel, control channels, and terminals.
Reference source	Two sources: electric potentiometer and multi-segment setting Each group includes the main speed, additional speed, and auxiliary speed. Switchover between the two groups is supported.	
HMI	Analog input	AI1: 0-10 V/0-20 mA input, 12-bit resolution, correction accuracy 0.5%, supporting PT100, PT1000, PTC130, and KTY84
		AI2: 0-10 V/0-20 mA input, 12-bit resolution, correction accuracy 0.5%
	Analog output	Two AOs: 0-10 V/0-20 mA output, switchover implemented using the jumper, 12-bit resolution, correction accuracy 1%
	Digital input	Six common DIs, supporting PNP and NPN modes, user programmable One high-speed input, supporting PNP and NPN modes, input frequency < 100 kHz
Digital output	One output, supporting common and high-speed output. The common output can use PNP or NPN mode, while the high-speed output supports a maximum frequency of 100 kHz. Three relay outputs, programmable normally open/closed contact	
Operating panel display	Standard configuration: LED segment code display; optional: external LCD operating panel	

SPECIFICATIONS

Structure	Model	LD Light Duty Application			HD Light Duty Application			Accessory Model	
		Rated Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Optional AC Input Reactor	AC Output Reactor
T1	MD580-4T2R1B	0.7	2.5	2.1	0.4	1.8	1.5	MD-ACL-10-5-4T	MD-OCL-5-1.4-4T-1%
	MD580-4T3R1B	1.1	3.7	3.1	0.8	2.4	2.1	MD-ACL-10-5-4T	MD-OCL-5-1.4-4T-1%
	MD580-4T3R8B	1.5	4.6	3.8	1.1	3.7	3.1	MD-ACL-10-5-4T	MD-OCL-5-1.4-4T-1%
	MD580-4T5R1B	2.2	6.4	5.1	1.5	4.6	3.8	MD-ACL-10-5-4T	MD-OCL-7-1.0-4T-1%
	MD580-4T7R2B	3	9.1	7.2	2.2	6.3	5.1	MD-ACL-10-5-4T	MD-OCL-10-0.7-4T-1%
	MD580-4T9B	3.7	11.3	9	3	9	7.2	MD-ACL-10-3-4T	MD-OCL-10-0.7-4T-1%
T2	MD580-4T13B	5.5	15.9	13	3.7	11.4	9	MD-ACL-15-1.45-4T	MD-OCL-15-0.47-4T-1%
	MD580-4T17B	7.5	22.4	17	5.5	16.7	13	MD-ACL-15-1.45-4T	MD-OCL-20-0.35-4T-1%
T3	MD580-4T25B	11	32.9	25	7.5	21.9	17	MD-ACL-40-1.45-4T	MD-OCL-30-0.23-4T-1%
	MD580-4T32B	15	39.7	32	11	32.2	25	MD-ACL-40-1.45-4T	MD-OCL-40-0.18-4T-1%
T4	MD580-4T37B	18.5	48.6	37	15	41.3	32	MD-ACL-50-0.28-4T	MD-OCL-40-0.18-4T-1%
T5	MD580-4T45(B)	22	59	45	18.5	49.5	37	MD-ACL-60-0.24-4T	MD-OCL-50-0.14-4T-1%
	MD580-4T60(B)	30	65.8	60	22	59	45	MD-ACL-80-0.17-4T	MD-OCL-60-0.12-4T-1%
T6	MD580-4T75(B)	37	71	75	30	57	60	MD-ACL-80-0.17-4T	MD-OCL-80-0.087-4T-1%
	MD580-4T91(B)	45	86	91	37	69	75	MD-ACL-90-0.16-4T	MD-OCL-120-0.058-4T-1%
T7	MD580-4T112(B)	55	111	112	45	89	91	MD-ACL-120-0.12-4T	MD-OCL-120-0.058-4T-1%
	MD580-4T150(B)	75	143	150	55	106	112	MD-ACL-150-0.095-4T	MD-OCL-150-0.047-4T-1%
T8	MD580-4T176(B)	90	167	176	75	139	150	MD-ACL-200-0.07-4T	MD-OCL-200-0.035-4T-1%
	MD580-4T210	110	198	210	90	164	176	MD-ACL-250-0.07-4T	MD-OCL-250-0.028-4T-1%
	MD580-4T253	132	239	253	110	196	210	MD-ACL-250-0.056-4T	MD-OCL-330-0.021-4T-1%
T9	MD580-4T304	160	295	304	132	240	253	MD-ACL-330-0.042-4T	MD-OCL-330-0.021-4T-1%
	MD580-4T377	200	359	377	160	287	304	MD-ACL-330-0.028-4T	MD-OCL-490-0.014-4T-1%
T10	MD580-4T426	220	410	426	200	365	377	MD-ACL-490-0.028-4T	MD-OCL-490-0.014-4T-1%
	MD580-4T426-L	220	410	426	200	365	377	MD-ACL-490-0.028-4T	MD-OCL-490-0.014-4T-1%(built-in)
	MD580-4T465	250	456	465	220	410	426	MD-ACL-660-0.028-4T	MD-OCL-490-0.014-4T-1%
	MD580-4T465-L	250	456	465	220	410	426	MD-ACL-660-0.028-4T	MD-OCL-490-0.014-4T-1%(built-in)
T11	MD580-4T520	280	507	520	250	441	465	MD-ACL-660-0.021-4T	MD-OCL-660-0.011-4T-1%
	MD580-4T520-L	280	507	520	250	441	465	MD-ACL-660-0.021-4T	MD-OCL-660-0.011-4T-1%(built-in)
	MD580-4T585	315	559	585	280	495	520	MD-ACL-660-0.021-4T	MD-OCL-660-0.011-4T-1%
T12	MD580-4T585-L	315	559	585	280	495	520	MD-ACL-660-0.021-4T	MD-OCL-660-0.011-4T-1%(built-in)
	MD580-4T650	355	624	650	315	565	585	MD-ACL-800-0.021-4T	MD-OCL-660-0.011-4T-1%
	MD580-4T650-L	355	624	650	315	565	585	MD-ACL-800-0.021-4T	MD-OCL-660-0.011-4T-1%(built-in)
	MD580-4T725	400	708	725	355	617	650	MD-ACL-800-0.017-4T	OCL-1000-0.007-4T
	MD580-4T725-L	400	708	725	355	617	650	MD-ACL-800-0.017-4T	MD-OCL-880-0.009-4T-10%(built-in)
	MD580-4T820	450	782	820	400	687	725	MD-ACL-1000-0.017-4T	OCL-1000-0.007-4T
MD580-4T820-L	450	782	820	400	687	725	MD-ACL-1000-0.017-4T	MD-OCL-880-0.009-4T-10%(built-in)	

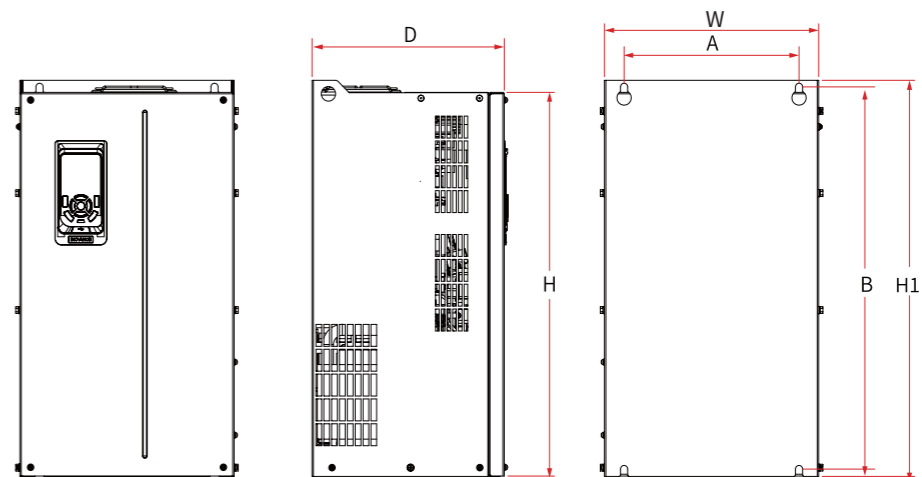
DIMENSIONS

T1-T6 size



Structure	Mounting Hole Spacing mm (in.)		Dimensions mm(in.)				Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A	B	H	H1	W	D		
T1	90(3.5)	380(15.0)	381(15.0)	395(15.6)	151(5.9)	175(6.9)	Ø7(0.3)	6.2(13.6)
T2	90(3.5)	380(15.0)	381(15.0)	395(15.6)	151(5.9)	181.5(7.2)	Ø7(0.3)	7(15.4)
T3	90(3.5)	403(15.9)	404(15.9)	418(16.5)	151(5.9)	198(7.8)	Ø7(0.3)	8.2(18.0)
T4	120(4.7)	427(16.8)	427(16.8)	442(17.4)	185(7.3)	203(8.0)	Ø7(0.3)	9.9(21.8)
T5	170(6.7)	468.5(18.5)	460(18.1)	486(19.1)	210(8.3)	224(8.8)	Ø7(0.3)	14.9(32.8)
T6	200(7.9)	438(17.3)	429(16.9)	455(17.9)	250(9.9)	252.5(9.9)	Ø7(0.3)	23.7(51.9)

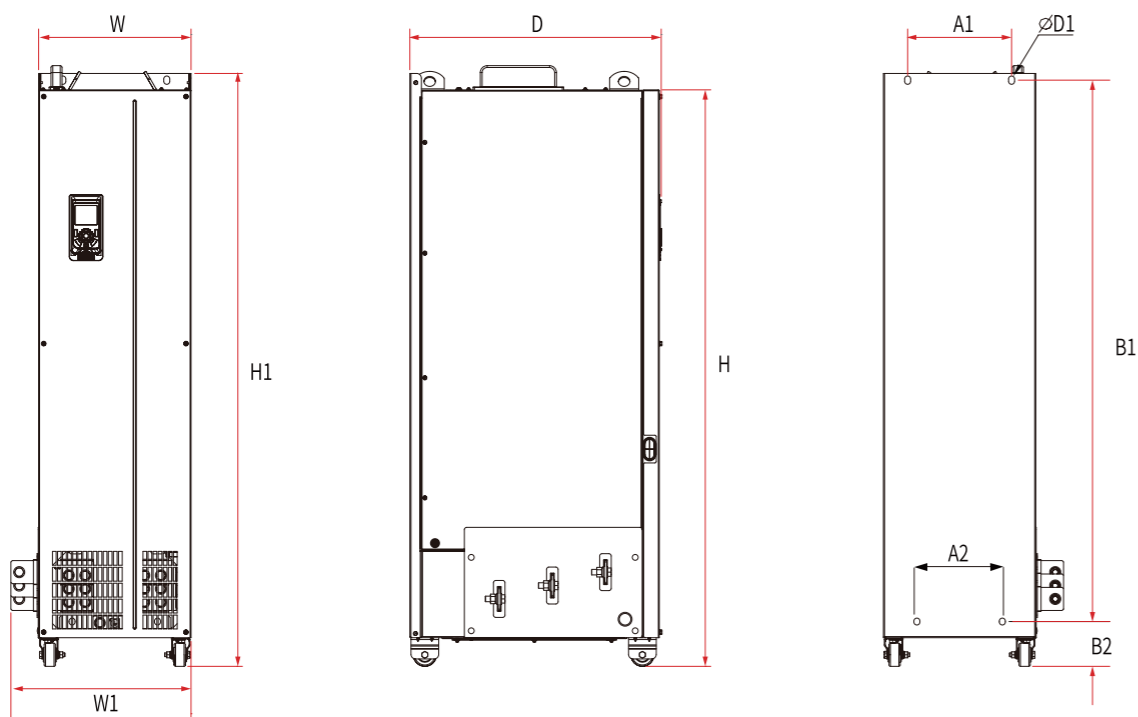
T7-T9 size



T7-T9

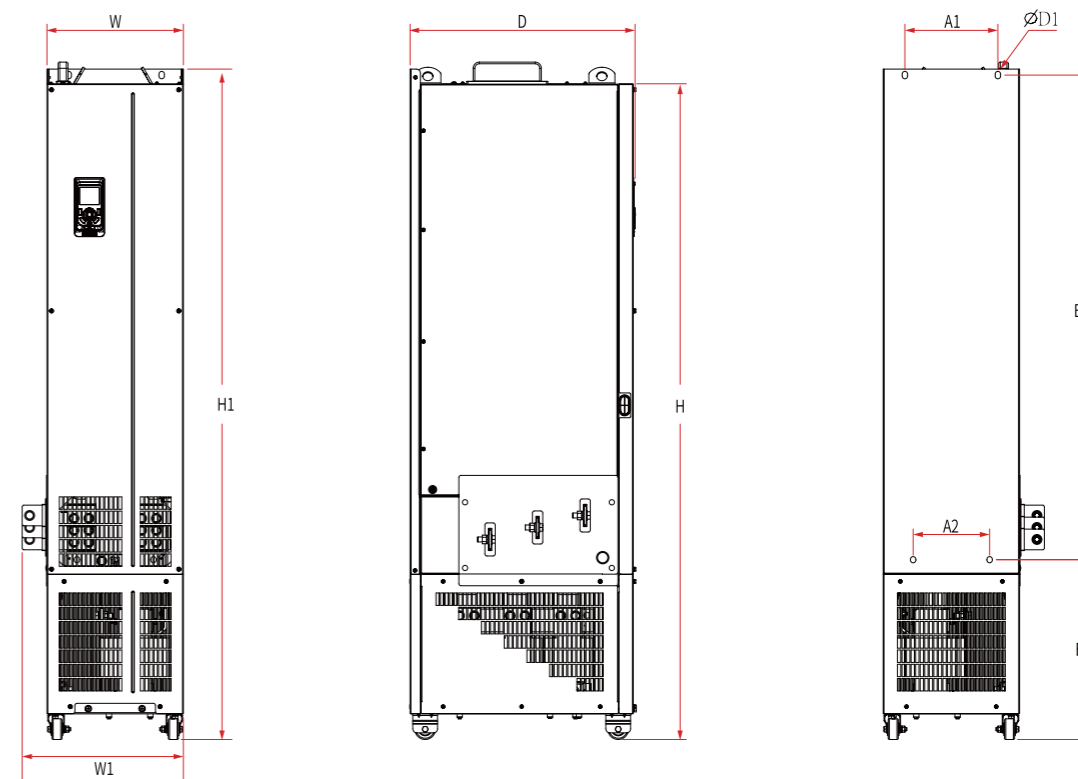
Structure	Mounting Hole Spacing mm (in.)		Dimensions mm (in.)				Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A	B	H	H1	W	D		
T7	245 (9.7)	523 (20.6)	525 (20.7)	542 (21.4)	300 (11.8)	269 (10.6)	∅10 (0.4)	35 (77.2)
T8	270 (10.6)	560 (22.1)	554 (21.8)	580 (22.9)	338 (13.3)	309.4 (12.2)	∅10 (0.4)	51.5 (113.5)
T9	320 (12.6)	890 (35.1)	874 (34.4)	915 (36.1)	400 (15.8)	314.6 (12.4)	∅10 (0.4)	85 (187.4)

T10-T12 size, without AC output reactor



Structure	Mounting Hole mm (in.)				Outline Dimensions mm (in.)					Mounting Hole Diameter mm(in.)	Weight kg (lb)
	A1	A2	B1	B2	H	H1	W	W1	D		
T10	240 (9.5)	150 (5.9)	1035 (40.8)	86 (3.4)	1086 (42.8)	1134 (44.7)	300 (11.8)	360 (14.2)	500 (19.7)	∅13 (0.5)	110 (242.5)
T11	225 (8.9)	185 (7.3)	1175 (46.3)	97 (3.8)	1248 (49.2)	1284 (50.6)	330 (13)	390 (15.4)	545 (21.5)	∅13 (0.5)	155 (341.7)
T12	240 (9.5)	200 (7.9)	1280 (50.4)	101 (4)	1355 (53.4)	1405 (55.4)	340 (13.4)	400 (15.8)	545 (21.5)	∅16 (0.6)	185 (407.9)

T10-T12 size, with AC output reactor



Structure	Mounting Hole mm (in.)				Outline Dimensions mm (in.)					Mounting Hole Diameter mm(in.)	Weight kg (lb)
	A1	A2	B1	B2	H	H1	W	W1	D		
T10	240 (9.5)	150 (5.9)	1035 (40.8)	424 (16.7)	1424 (56.1)	1472 (58.0)	300 (11.8)	360 (14.2)	500 (19.7)	∅13 (0.5)	160 (352.7)
T11	225 (8.9)	185 (7.3)	1175 (46.3)	435 (17.1)	1586 (62.5)	1622 (63.9)	330 (13.0)	390 (15.4)	545 (21.5)	∅13 (0.5)	215 (474.0)
T12	240 (9.5)	200 (7.9)	1280 (50.4)	432 (17.0)	1683 (66.3)	1733 (68.3)	340 (13.4)	400 (15.8)	545 (21.5)	∅16 (0.6)	245 (540.1)

MD290 - Universal AC Drive

For Fan & Pump Application



FEATURES & FUNCTIONS

- Open loop control
- Communication options :
Modbus-RTU
PROFIBUS-DP
Canopen
CANLink
PROFINET
- Rotational speed tracking startup
- Intelligent energy conservation
- PID control function
- Multi-point voltage and magnetic flux setting
- Long service life
- Independent air duct design to resist all kinds of harsh polluted environment



SPECIFICATIONS

Single-phase 200~240 V

Voltage class		Single-phase 200~240 VAC				
Drive model: MD290-2SxxxB-INT		0.4GB	0.7GB	1.5GB	2.2GB	3.0GB
Input	Rated input voltage	Single-phase 200~240 VAC -15% to +10%				
	Rated input current [A]	5.4	8.2	14	23	27
	Power capacity [kVA]	1.4	2.2	3.7	6	7.2
	Rated input frequency	50/60 Hz ±5%				
Output	Applicable motor [kW]	0.4	0.75	1.5	2.2	3
	Output current [A]*2	2.3	4	7	9.6	12
	Max. output voltage Max.	Single-phase 200~240 VAC(proportional to input voltage)				
Braking resistor	Recommended power [kW]	0.043	0.065	0.097	0.121	0.152

Three phase 200V~240V P type

Voltage class		Three phase 200 to 240 Vac								
Drive model: MD290-2TxxxB-INT		0.7P	1.1P	1.5P	2.2P	3.7P	5.5P	7.5P	11P	15P
Input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%								
	Rated input current [A]	3.7	6.4	9.1	11.3	15.9	22.4	39.7	44	65.8
	Power capacity [kVA]	1.7	2.9	4.2	5.2	7.3	10.2	18.2	20.1	30.1
	Rated input frequency	50/60 Hz ±5%								
Output	Applicable motor [kW]	0.75	1.1	1.5	2.2	3.7	5.5	7.5	11	15
	Output current [A]*2	3.1	5.1	7.2	9	13	17	32	37	60
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)								
Braking resistor	Recommended power [kW]	0.06	0.088	0.112	0.14	0.207	0.273	0.491	0.561	0.76

Voltage class		Three phase 200 to 240 Vac							
Drive model: MD290-2Txxx(B)-INT		15P-T	18.5P	22P	30P	37P	45P	55P	75P
Input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%							
	Rated input current [A]	65.8	71	86	111	143	167	198	239
	Power capacity [kVA]	30.1	32.5	39.3	50.8	65.4	76.4	90.5	109.3
	Rated input frequency	50/60 Hz ±5%							
Output	Applicable motor [kW]	15	18.5	22	30	37	45	55	75
	Output current [A]*2	60	75	91	112	150	176	210	253
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)							
Braking resistor	Recommended power [kW]	0.76	0.85	1.04	1.22	1.61	1.91	2.22	2.67

Three phase 200V~240V G type

Voltage class		Three phase 200 to 240 Vac					
Drive model: MD290-2TxxxB-INT		0.4G	0.7G	1.1G	1.5G	2.2G	3.7G
Input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%					
	Rated input current [A]	2.4	4.6	6.3	9	11.4	16.7
	Power capacity [kVA]	1.1	2.1	2.9	4.1	5.2	7.6
	Rated input frequency	50/60 Hz ±5%					
Output	Applicable motor [kW]	0.4	0.75	1.1	1.5	2.2	3.7
	Output current [A]*2	2.1	3.8	5.1	7.2	9	13
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.046	0.068	0.081	0.109	0.138	0.201

Voltage class		Three phase 200 to 240 Vac					
Drive model: MD290-2TxxxB-INT		5.5G	7.5G	11G	11G-T	15G	18.5G
Input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%					
	Rated input current [A]	32.2	41.3	59	51.3	57	69
	Power capacity [kVA]	14.7	18.9	27	27	26.1	31.6
	Rated input frequency	50/60 Hz ±5%					
Output	Applicable motor [kW]	5.5	7.5	11	11	15	18.5
	Output current [A]*2	25	32	45	45	60	75
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.355	0.454	0.551	0.551	0.694	0.815

Voltage class		Three phase 200 to 240 Vac				
Drive model: MD290-2Txxx(B)-INT		22G	30G	37G	45G	55G
Input	Rated input voltage	Three phase 200 to 240 Vac -15% to +10%				
	Rated input current [A]	89	106	139	164	196
	Power capacity [kVA]	40.7	48.5	63.6	75	89.6
	Rated input frequency	50/60 Hz ±5%				
Output	Applicable motor [kW]	22	30	37	45	55
	Output current [A]*2	91	112	150	176	210
	Max. output voltage	Three phase 200 to 240 Vac (proportional to input voltage)				
Braking resistor	Recommended power [kW]	1.01	1.21	1.57	1.81	2.14

Three phase 380V~480V G type

Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		0.4G	0.7G	1.1G	1.5G	2.2G	3.0G
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	1.8	2.4	3.7	4.6	6.3	9
	Power capacity [kVA]	2	2.8	4.1	5	6.7	9.5
	Rated input frequency	50/60 Hz ±5%					
Output	Applicable motor [kW]	0.4	0.75	1.1	1.5	2.2	3
	Applicable motor[HP]	0.5	1	1.5	2	3	4
	Output current [A]*2	1.5	2.1	3.1	3.8	5.1	7.2
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.039	0.046	0.057	0.068	0.081	0.109

Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		3.7G	5.5G	7.5G	11G	15G	18.5G
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	11.4	16.7	21.9	32.2	41.3	49.5
	Power capacity [kVA]	12	17.5	22.8	33.4	42.8	45
	Rated input frequency	50/60 Hz ±5%					
Output	Applicable motor [kW]	3.7	5.5	7.5	11	15	18.5
	Applicable motor[HP]	5	7.5	10	15	20	-
	Output current [A]*2	9	13	17	25	32	37
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.138	0.201	0.24	0.355	0.454	0.478

Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		18.5G-T	22G	22G-T	30G	37G	45G
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	43.4	59	51.3	57	69	89
	Power capacity [kVA]	45	54	54	52	63	81
	Rated input frequency	50/60 Hz ±5%					
Output	Applicable motor [kW]	18.5	22	22	30	37	45
	Applicable motor[HP]	-	-	-	-	-	-
	Output current [A]*2	37	45	45	60	75	91
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.478	0.551	0.551	0.694	0.815	1.01

Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		55G	75G	90G	110G	132G	160G
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	106	139	164	196	240	287
	Power capacity [kVA]	97	127	150	179	220	263
	Rated input frequency	50/60 Hz \pm 5%					
Output	Applicable motor [kW]	55	75	90	110	132	160
	Applicable motor [HP]	-	-	-	-	-	-
	Output current [A]*2	112	150	176	210	253	304
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	1.21	1.57	1.81	2.14	2.85	3.56

Three phase 380V~480V P type

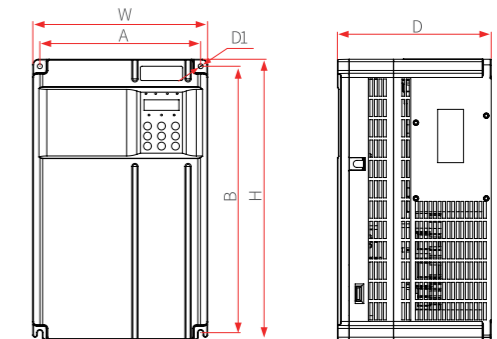
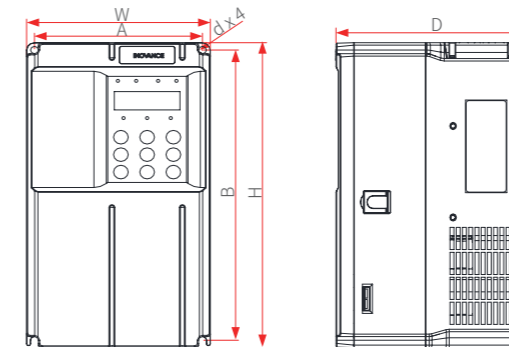
Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		0.7P	1.1P	1.5P	2.2P	3.0P	3.7P
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	2.5	3.7	4.6	6.4	9.1	11.3
	Power capacity [kVA]	2.3	3.4	4.2	5.9	8.3	10.4
	Rated input frequency	50/60 Hz \pm 5%					
Output	Applicable motor [kW]	0.75	1.1	1.5	2.2	3.0	3.7
	Applicable motor [HP]	1	1.5	2	3	4	5
	Output current [A]*2	2.1	3.1	3.8	5.1	7.2	9.0
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.048	0.06	0.068	0.088	0.112	0.14

Voltage class		Three phase 380 to 480 Vac					
Drive model: MD290-2Txxx(B)-INT		5.5P	7.5P	11P	15P	18.5P	22P
Input	Rated input voltage	Three phase 380 to 480 Vac -15% to +10%					
	Rated input current [A]	15.9	22.4	32.9	39.7	44	59
	Power capacity [kVA]	15.5	20.5	30.2	38.2	44.4	54
	Rated input frequency	50/60 Hz \pm 5%					
Output	Applicable motor [kW]	5.5	7.5	11	15	18.5	22
	Applicable motor [HP]	7.5	10	15	20	25	-
	Output current [A]*2	13	17	25	32	37	45
	Max. output voltage	Three phase 380 to 480 Vac (proportional to input voltage)					
Braking resistor	Recommended power [kW]	0.207	0.273	0.388	0.491	0.561	0.616

DIMENSIONS

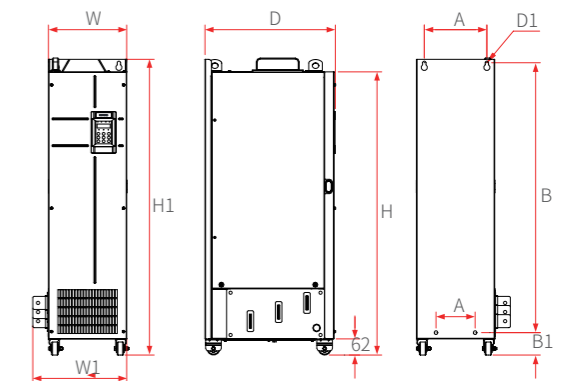
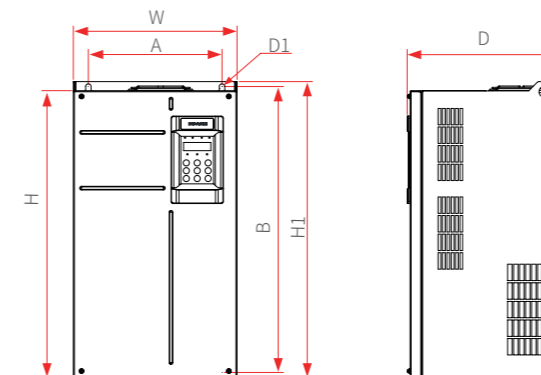
MD290T0.4G/0.7PB-INT to MD290T18G/18.5PB-INT
MD290-2T0.4G/0.7PB-INT to MD290-2T7.5G/11PB-INT

MD290T18.5G/22P(B)-INT to MD290T37G/45P(B)-INT
MD290-2T11G/15P(B)-INT to MD290-2T18.5G/22P(B)-INT

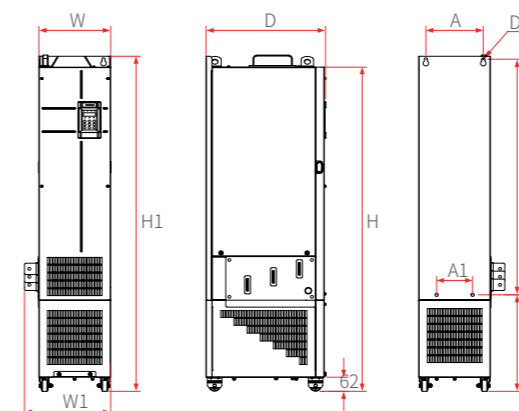


MD290T45G/55P(B)-INT to MD290T160G/200P-INT
MD290-2T22G/30P(B)-INT to MD290-2T55G/75P-INT

MD290T200G-INT to MD290T450G-INT
MD290-2T220P-INT to MD290T500P-INT



MD290T200G-L-INT to MD290T450G-L-INT
MD290-220P-L-INT to MD290T500P-L-INT



MD290 model	Frame size	Dimensions(mm)										Mass (kg)
		A	A1	B	B1	H	H1	W	W1	D	D1	
MD290T0.4G/0.7PB-INT, MD290T0.7G/1.1PB-INT MD290T1.1G/1.5PB-INT, MD290T1.5G/2.2PB-INT MD290T2.2G/3.0PB-NT, MD290T3.0G/3.7PB-INT MD290-2T0.4G/0.7PB-INT, MD290-2T0.7G/1.1PB-INT MD290-2T1.1G/1.5PB-INT, MD290-2T1.5G/2.2PB-INT	T1	119	/	189	/	200	/	130	/	152	φ5	1.6
MD290T3.7G/5.5PB-INT, MD290T5.5G/7.5PB-INT MD290-2T2.2G/3.7PB-INT, MD290-2T3.7G/5.5PB-INT	T2	119	/	189	/	200	/	130	/	162	φ5	2.0
MD290T7.5G/11PB-INT, MD290T11G/15PB-INT MD290-2T5.5G/7.5PB-INT	T3	128	/	238	/	250	/	140	/	170	φ6	3.3
MD290T15G/18.5PB-NT, MD290-2T7.5G/11PB-INT	T4	166	/	266	/	280	/	180	/	170	φ6	4.3
MD290T18.5G/22P(B)-INT, MD290T22G/30P(B)-NT MD290-2T11G/15P(B)-NT	T5	195	/	335	/	350	/	210	/	192	φ6	10
MD290T30G/37P(B)-INT, MD290T37G/45P(B)-INT MD290-2T15G/18.5P(B)-INT, MD290-2T18.5G/22P(B)-INT	T6	230	/	380	/	400	/	250	/	220	φ7	17.5
MD290T45G/55P(B)-INT, MD290T55G/75P(B)-INT MD290-2T22G/30P(B)-INT, MD290-2T30G/37P(B)-INT	T7	245	/	523	/	525	542	300	/	275	φ10	35
MD290T75G/90P(B)-INT, MD290T90G/110P-NT MD290T110G/132P-INT, MD290-2T37G/45P(B)-INT MD290-2T45G/55P-NT, MD290-2T55G/75P-INT	T8	270	/	560	/	554	580	338	/	315	φ10	51.5
MD290T132G/160P-INT, MD290T160G/200P-INT	T9	320	/	890	/	874	915	400	/	320	φ10	85
MD290T200G-INT, MD290T220P-INT MD290T220G-INT, MD290T250P-INT MD290T280P-INT	T10	240	150	1035	86	1086	1134	300	360	500	φ13	110
MD290T200G-L-INT, MD290T220P-L-INT MD290T220G-L-INT, MD290T250P-L-INT MD290T280P-L-INT		240	150	1035	424	1424	1472	300	360	500	φ13	160
MD290T250G-NT, MD290T280G-INT, MD290T315P-NT	T11	225	185	1175	97	1248	1284	330	390	545	φ13	155
MD290T250G-L-INT, MD290T280G-L-INT MD290T315P-L-INT, MD290T355P-L-INT MD290T315G-INT, MD290T355G-NT		225	185	1175	435	1586	1622	330	390	545	φ13	215
MD290T315G-INT, MD290T355G-NT, MD290T400P-INT MD290T400G-INT, MD290T450P-NT, MD290T450G-INT, MD290T500P-INT	T12	200	200	1280	101	1355	1405	340	400	545	φ16	185
MD290T315G-L-INT, MD290T355G-L-INT MD290T400P-L-INT, MD290T400G-L-INT MD290T450P-L-INT, MD290T450G-L-INT MD290T500P-L-INT		200	200	1280	432	1683	1733	340	400	545	φ16	245

MD880-High Performance MultiDrive

Dedicated to Process Industry



Planning to get the certification of UL, waiting soon...

Industry applications

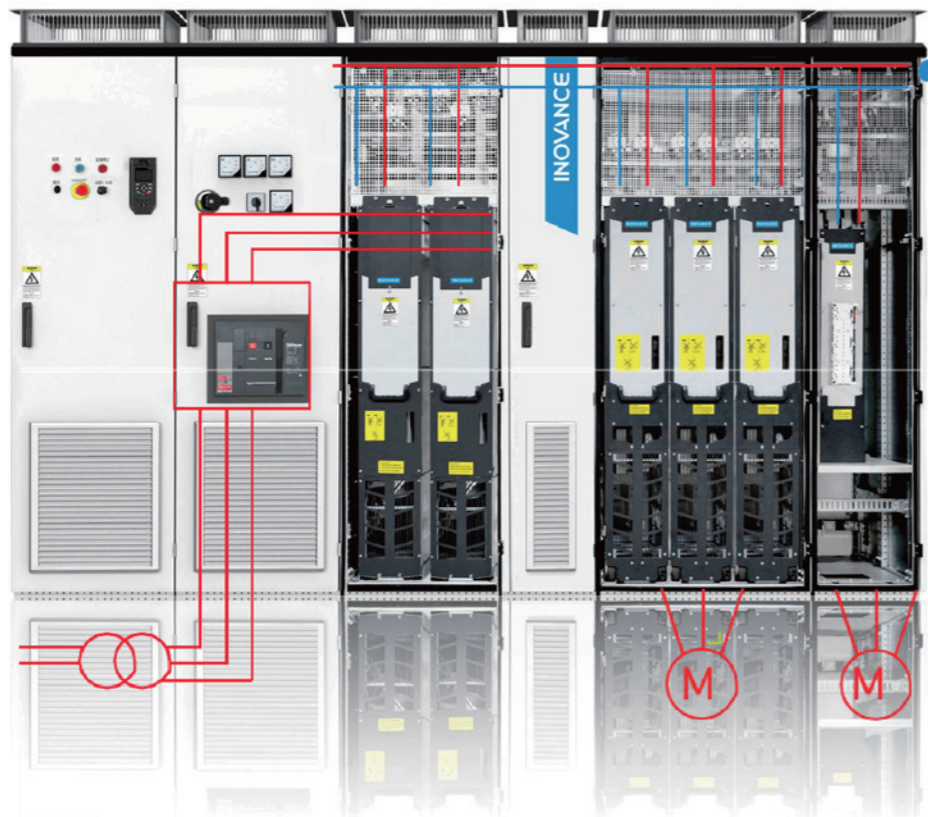


PRODUCT FEATURES

- Compatibility with permanent magnet synchronous dynamometer and asynchronous induction dynamometer applications
- Full-power regeneration capability(AFE power supply unit)
- Maximum output frequency of 1000 Hz and carrier frequency of 12 kHz Closed-loop control of speed and torque
- Modular design for easy extension, drive current even greater than 2000 A
- Support for various common communication modes (such as CAN, EtherCAT, and PROFINET)
- Integrated output reactor in the cabinet

Common DC bus

- Reduces current of rectifier module and braking module, and capacity requirements
- Supports direct exchange of regenerative energy and motoring energy via the common DC bus in applications such as lowering of the gravitational load or winding and unwinding
- Adopts book-sized design for rectifier module, drive module, braking module, and active rectification and filtering module for flexible selection and combination, maximized cabinet space utilization, and easy installation and maintenance, reducing the number of cabinets used and saving the footprint by 30% to 60%
- Supports in-cabinet installation of power modules and options to ensure overall quality of the drive system.Fulfills diversified demands from integrators and end users by providing individual units or integrated cabinet



SV660 Series - Servo Drive

High Dynamic Performance with a Compact Footprint

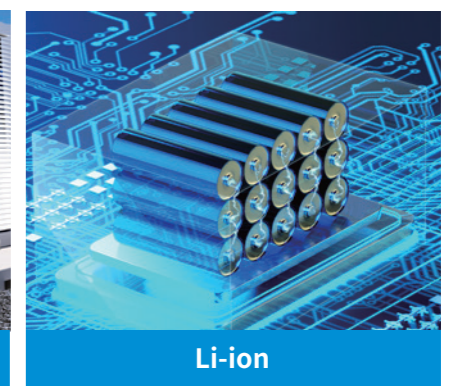
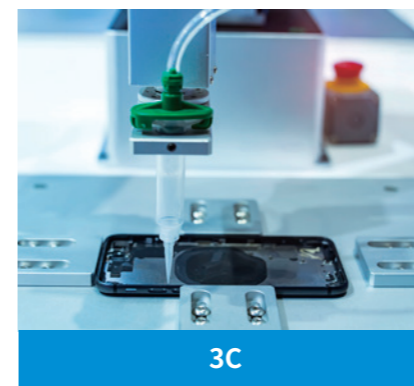
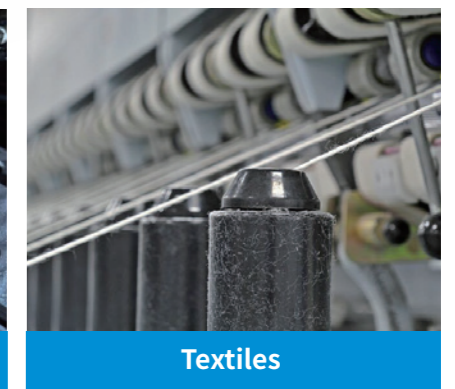


EtherCAT

CANopen

CANlink

PROFINET



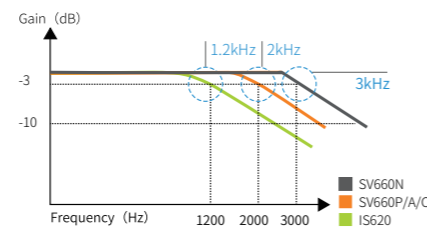
PRODUCT FEATURES

High response
3 kHz
bandwidth

Control Performance

Compared with the previous IS620 series, the SV660 series has a much higher response bandwidth and faster command following, and effectively shortens the setting time for accurate positioning. The servo drive performance featuring ultra-high speed and ultra-precision control will give greater play to the mechanical equipment performance and empower the R&D personnel to tackle their research subjects.

	SV660	IS620
Frequency lower limit	12kHz	8kHz
Current loop sampling	625kHz	16kHz
Speed loop sampling	16kHz	8kHz
Position loop sampling	8kHz	4kHz

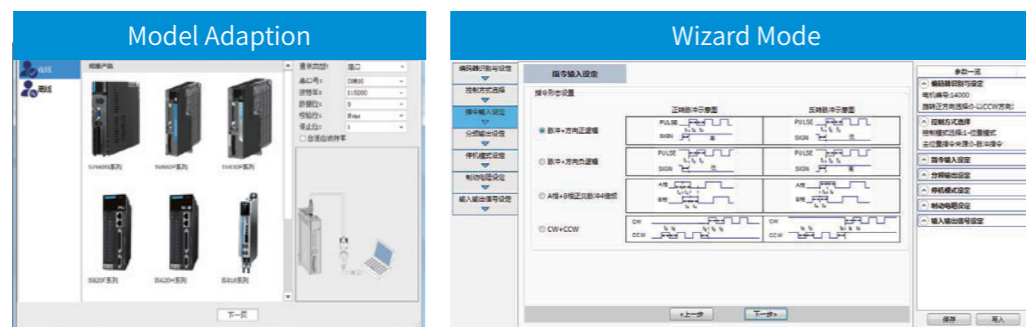


Note: Speed loop bandwidth - The frequency at which the servo drive can respond to the fastest speed command.

Guided
commissioning
software

Graphic, Configurable, and Easy to use

The newly designed background software further simplifies the use of the servo drive by providing wizard guides and a graphical interface for parameter configurations. Even green hands can easily set servo drive parameters.



Stune for easy
commissioning

Auto-tuning with One Parameter

The servo drive can be set by configuring a single parameter. The load inertia ratio is self-adapted and identified, and the resonance suppression parameters are automatically set, which greatly reduces the tuning difficulty and improves the efficiency.



Application Mode	Description
H09-00=3 Interpolation mode + automatic inertia identification	The gain is maintained when the set stiffness is maintained regardless of inertia change to ensure the interpolation synchronization effect
H09-00=4 Normal mode + automatic inertia identification	The gain changes when the stiffness is maintained, and the actual gain at the same stiffness level decreases when the inertia is greater than 1
H09-00=6 Quick positioning + automatic inertia identification	The model tracking function is added in normal mode to realize high-speed positioning

CATALOG NUMBER EXPLANATION

SV660 P S 5R5 I - **
① ② ③ ④ ⑤ ⑥

① Serial number servo drive	③ Voltage class S: 220V T: 380V	⑤ Installation method I: Substrate installation
② Product category P: Pulse type A: CANlink bus type C: CANopen bus type N: EtherCAT bus type	④ Rated output current 1R6: 1.6A □□□ 021: 21A 026: 26A	⑥ Customized specifications Vacancy: Standard model -FH: Model with high IP -FS: STO functional safety

Note: -FS is only supported by the SV660N series

SPECIFICATIONS

Single-phase/three-phase 220 V servo drive

Physical Dimensions	SIZE-A	SIZE-B	SIZE-C	SIZE-D
SV660N drive	S1R6	S2R8	S5R5	S7R6
Continuous output current Arms	1.6	2.8	5.5	7.6
Maximum output current Arms	5.8	10.1	16.9	23.0
Power supply of main circuit	Single-phase AC200V - 240V, -10 - +10%, 50/60Hz		Single-phase/three-phase AC200V - 240V, -10 - +10%, 50/60Hz	
Power supply of control circuit	Bus-powered, shared power input and rectifier		Single-phase AC220V - 240V, -10 - +10%, 50/60Hz	
Brake release function	External braking resistor		Built-in regenerative resistor	

Three-phase 380 V Servo Drive

Physical Dimensions	SIZE-C	SIZE-C	SIZE-E
SV660N drive	T3R5	T5R4	T8R4
Continuous output current Arms	3.5	5.4	8.4
Max. output current Arms	11	14	20
Power supply of main circuit	Three-phase AC380V - 440V, -10 - +10%, 50/60Hz		
Power supply of control circuit	Single-phase AC380V - 440V, -10 - +10%, 50/60Hz		
Brake release function	Built-in regenerative resistor		

Note: The main power supply of S7R6 and S012 drives can be connected to either single-phase or three-phase power supply, depending on the power supply available on site. When single-phase input is used for models S7R6 and S012, derating is not required.

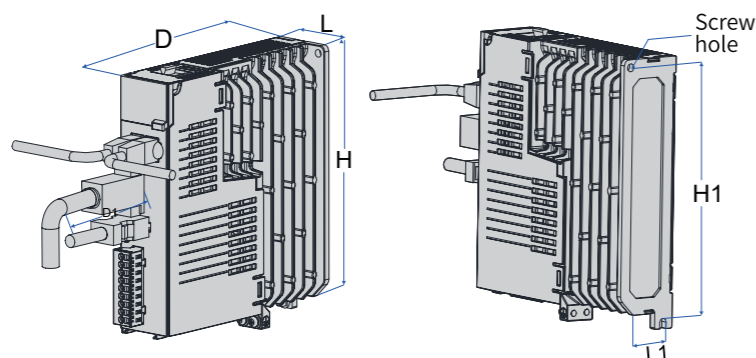
SELECTION CHART

OVERVIEW

	SIZE A		SIZE B		SIZE C		SIZE D	
Servo drive (AC200V)								
	SV660 □ S1R6I	SV660 □ S2R8I	SV660 □ S5R5I		SV660 □ S7R6I		SV660 □ S012I	
	Single-phase 220V		Single-phase 220V		Single-phase/three-phase 220V		Single-phase/three-phase 220V	
Servo drive (AC400V)	SIZE C		SIZE D		SIZE E			
	SV660 □ T3R5I	SV660 □ T5R4I	SV660 □ T8R4I	SV660 □ T012I	SV660 □ T017I	SV660 □ T021I	SV660 □ T026I	
Three-phase 380V		Three-phase 380V		Three-phase 380V				

Power supply voltage	Motor base speed (RPM)	Motor maximum speed (RPM)	Motor power (W)	Motor rated torque (N·m)	Motor peak torque (N·m)	Motor frame size (mm)	Rotor inertia (0.0001x kg·m ²)	MS1 motor type	SV660X type	SV660X rated current (A)	SV660X peak current (A)	Size	Dimensions H x W x D (mm)	Connector kit	
1PH 220 V	3000	6000	50	0.16	0.56	40X40	0.026	MS1H1-05B30CB-A330*	SV660XS1R6I-INT	1.6	5.8	A	170X40X150	S6-C22	
	3000	6000	100	0.32	1.12	40X40	0.041	MS1H1-10B30CB-A330*	SV660XS1R6I-INT	1.6	5.8	A	170X40X150	S6-C22	
	3000	6000	200	0.64	2.24	60X60	0.207	MS1H1-20B30CB-A331*	SV660XS1R6I-INT	1.6	5.8	A	170X40X150	S6-C22	
	3000	6000	400	1.27	4.46	60X60	0.376	MS1H1-40B30CB-A331*	SV660XS2R8I-INT	2.8	10.1	A	170X40X150	S6-C22	
	3000	6000	400	1.27	4.46	60X60	0.657	MS1H4-40B30CB-A331*	SV660XS2R8I-INT	2.8	10.1	A	170X40X150	S6-C22	
	3000	6000	550	1.75	6.13	80X80	1.06	MS1H1-55B30CB-A331*	SV660XS5R5I-INT	5.5	16.9	B	170X50X173	S6-C22	
	3000	6000	750	2.39	8.36	80X80	1.38	MS1H1-75B30CB-A331*	SV660XS5R5I-INT	5.5	16.9	B	170X50X173	S6-C22	
	3000	6000	750	2.39	8.36	80X80	2	MS1H4-75B30CB-A331*	SV660XS5R5I-INT	5.5	16.9	B	170X50X173	S6-C22	
	1/3 PH 220 V	1500	3000	850	5.39	13.5	130X130	13.3	MS1H3-85B15CB-A331*	SV660XS7R6I-INT	7.6	23	C	170X55X173	S6-C29
3000		6000	1000	3.18	9.12	80X80	1.75	MS1H1-10C30CB-A331*	SV660XS7R6I-INT	7.6	23	C	170X55X173	S6-C22	
3000		6000	1000	3.18	11.1	80X80	1.75	MS1H1-10C30CBA331*	SV660XS012I-INT	11.6	32	D	170X80X183	S6-C22	
3000		6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CB-A331*	SV660XS7R6I-INT	7.6	23	C	170X55X173	S6-C29	
1500		3000	1300	8.34	20.85	130X130	17.8	MS1H3-13C15CB-A331*	SV660XS012I-INT	11.6	32	D	170X80X183	S6-C29	
3000		5000	1500	4.9	14.7	100X100	2.46	MS1H2-15C30CB-A331*	SV660XS012I-INT	11.6	32	D	170X80X183	S6-C29	
3 PH 400 V		3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CD-A331*	SV660XT5R4I-INT	5.4	14	C	170X55X173	S6-C29
		3000	5000	1500	4.9	14.7	100X100	2.46	MS1H2-15C30CD-A331*	SV660XT5R4I-INT	5.4	14	C	170X55X173	S6-C29
		3000	5000	2000	6.36	19.1	100X100	3.06	MS1H2-20C30CD-A331*	SV660XT8R4I-INT	8.4	20	D	170X80X183	S6-C29
	3000	5000	2500	7.96	19.12	100X100	3.65	MS1H2-25C30CD-A331*	SV660XT8R4I-INT	8.4	20	D	170X80X183	S6-C29	
	3000	5000	2500	7.96	23.9	100X100	3.65	MS1H2-25C30CD-A331*	SV660XT012I-INT	11.9	29.75	D	170X80X183	S6-C29	
	3000	5000	3000	9.8	29.16	130X130	7.72	MS1H2-30C30CD-A331*	SV660XT012I-INT	11.9	29.75	D	170X80X183	S6-C29	
	3000	5000	3000	9.8	29.4	130X130	7.72	MS1H2-30C30CD-A331*	SV660XT017I-INT	16.5	41.25	E	250X90X230	S6-C29	
	3000	5000	4000	12.6	37.8	130X130	12.1	MS1H2-40C30CD-A331*	SV660XT017I-INT	16.5	41.25	E	250X90X230	S6-C29	
	3000	5000	5000	15.8	40.91	130X130	15.4	MS1H2-50C30CD-A331*	SV660XT017I-INT	16.5	41.25	E	250X90X230	S6-C29	
	3000	5000	5000	15.8	47.6	130X130	15.4	MS1H2-50C30CD-A331*	SV660XT021I-INT	20.8	52.12	E	250X90X230	S6-C29	
	1500	3000	850	5.39	13.5	130X130	13.3	MS1H3-85B15CD-A331*	SV660XT3R5I-INT	3.5	11	C	170X55X173	S6-C29	
	1500	3000	1300	8.34	20.85	130X130	17.8	MS1H3-13C15CD-A331*	SV660XT5R4I-INT	5.4	14	C	170X55X173	S6-C29	
	1500	3000	1800	11.5	28.75	130X130	25	MS1H3-18C15CD-A331*	SV660XT8R4I-INT	8.4	20	D	170X80X183	S6-C29	
	1500	3000	2900	18.6	37.2	180X180	55	MS1H3-29C15CD-A331*	SV660XT012I-INT	11.9	29.75	D	170X80X183	S6-C39	
	1500	3000	4400	28.4	71.1	180X180	88.9	MS1H3-44C15CD-A331*	SV660XT017I-INT	16.5	41.25	E	250X90X230	S6-C39	
1500	3000	5500	35	87.6	180X180	107	MS1H3-55C15CD-A331*	SV660XT021I-INT	20.8	52.12	E	250X90X230	S6-C39		
1500	3000	7500	48	117.63	180X180	141	MS1H3-75C15CD-A331*	SV660XT026I-INT	25.7	64.25	E	250X90X230	S6-C39		

DEMENSIONS



Structure	L mm(in.)	H mm(in.)	D mm(in.)	L1 mm(in.)	H1 mm(in.)	D1 mm(in.)	Screw Hole (ØLA)	Tightening Torque (N·m)	Weight (kg)
SIZE A	40 (1.57)	170 (6.69)	150 (5.91)	28 (1.10)	161 (6.34)	75 (2.95)	2-M4	0.6~1.2	0.8 (1.76)
SIZE B	50 (1.97)	170 (6.69)	173 (6.81)	37 (1.46)	161 (6.34)	75 (2.95)	2-M4	0.6~1.2	1.0 (2.20)
SIZE C	55±1 (2.17±0.04)	170 (6.69)	173±1 (6.81±0.04)	44 (1.37)	160 (6.30)	75 (2.95)	2-M4	0.6~1.2	1.3 (2.87)
SIZE D	80±1 (3.15±0.04)	170 (6.69)	183 (7.20)	71 (2.80)	160 (6.30)	75 (2.95)	3-M4	0.6~1.2	1.8 (3.97)
SIZE E	90 (3.54)	250 (9.84)	230 (9.06)	78 (3.07)	240.5 (9.47)	75 (2.95)	4-M4	0.6~1.2	3.6 (7.94)

SV670 Series – Servo Drive

Performance, Enhanced Functionality, and Flexibility



EtherCAT CANopen CANlink

PRODUCT FEATURES

- **Built-in USB-C port (for PC connection) and RS485 port (Modbus RTU communication protocol)**
 - 23 bit feedback encoder
 - Multi-position control
 - IP20 rating
 - All 200 V models can be supplied from single phase 200 V
- **High resolution feedback encoder**
23 bit serial single/multi-turn absolute encoder provides 8,388,608 pulses within one mechanical turn. Multi-turn absolute information can be also saved at power down, avoiding the need to perform machine homing at every power-up.
- **Functional safety - STO SIL3 EN/IEC 61800-5-2 compliant**
The STO function guarantees safe machine stop without using additional contactors.
- **Short output winding**
Standard, built-in, short output winding ensures safe braking if the drive is unexpectedly disabled - even in the case of a failure in the motor holding brake.

SPECIFICATIONS

Single-phase 220 V servo drive

Item	Size A		Size C		Size D
	S1R6	S2R8	S5R5	S7R6	S012
SV670P***I/SV670N***I	S1R6	S2R8	S5R5	S7R6	S012
Continuous output current (Arms)	1.6	2.8	5.5	7.6	12
Max. output current (Arms)	5.8	10.1	16.9	23	32
Main circuit power supply	Single-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz				
Control circuit power supply	Single-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz				
Braking function	Built-in and external braking resistors are supported by all series of models, except models in size A, which do not equipped with the built-in braking resistor.				

Three-phase 220 V servo drive

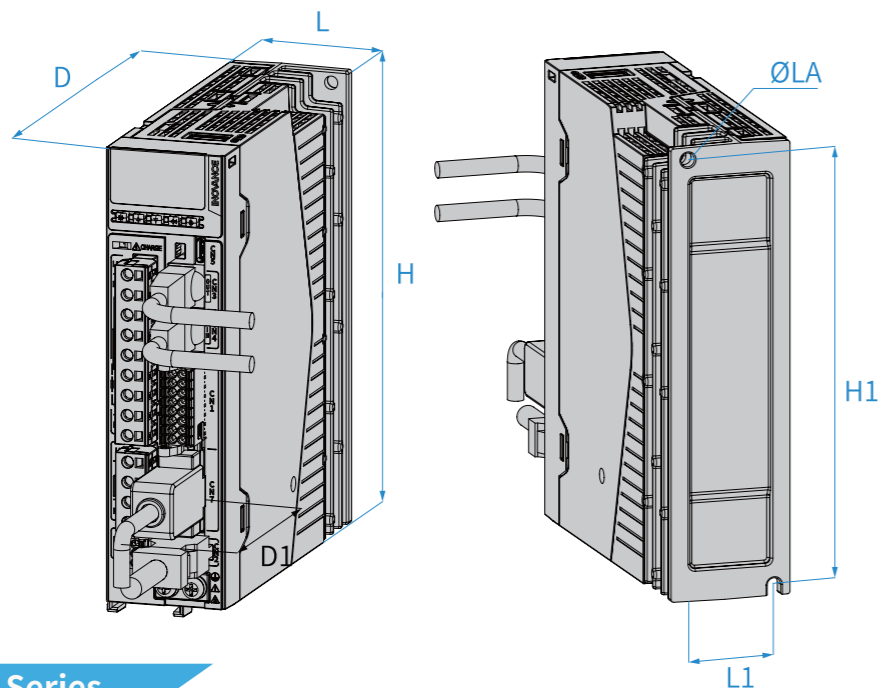
Item	Size A		Size C		Size D		Size E	
	S1R6	S2R8	S5R5	S7R6	S012	S018	S022	S027
SV670P***I/SV670N***I	S1R6	S2R8	S5R5	S7R6	S012	S018	S022	S027
Continuous output current (Arms)	1.6	2.8	5.5	7.6	12	18	22	27
Max. output current (Arms)	5.8	10.1	16.9	23	32	45	55	67.5
Main circuit power supply	Single-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz							
Control circuit power supply	Single-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz							
Braking function	Built-in and external braking resistors are supported by all series of models, except models in size A, which do not equipped with the built-in braking resistor.							

Three-phase 380 V servo drive

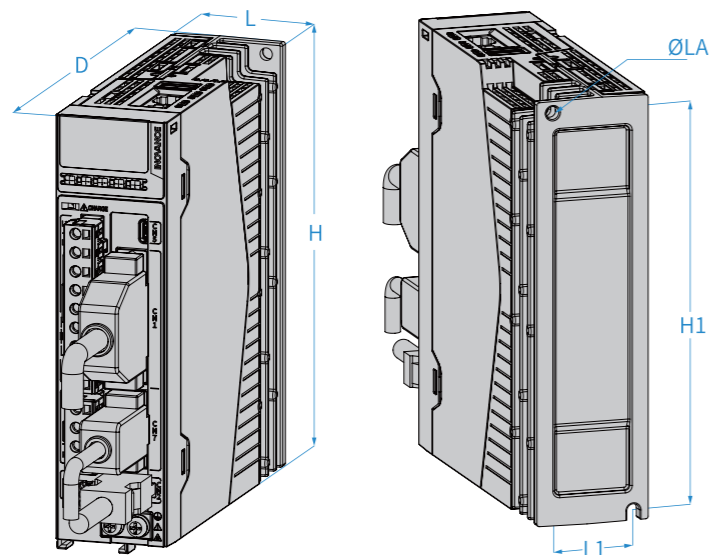
Item	Size C		Size D		Size E		
	T3R5	T5R4	T8R4	T012	T017	T021	T026
SV670P***I/SV670N***I	T3R5	T5R4	T8R4	T012	T017	T021	T026
Continuous output current (Arms)	3.5	5.4	8.4	12	17	21	26
Max. output current (Arms)	11	14	20	30	42.5	52.5	65
Main circuit power supply	Single-phase 380 VAC to 440 VAC, -10% to +10%, 50 Hz/60 Hz						
Control circuit power supply	Single-phase 380 VAC to 440 VAC, -10% to +10%, 50 Hz/60 Hz						
Braking function	Built-in and external braking resistors are supported by all series of models, except models in size A, which do not equipped with the built-in braking resistor.						

DIMENSIONS

SV670N Series



SV670P Series







Structure	L (mm)	H (mm)	D (mm)	L1 (mm)	H1 (mm)	D1 (mm)	Screw Hole	Tightening (Nm)	Weight (kg)
SIZE A	45.5 (1.79)	170 (6.69)	150 (5.91)	33 (1.30)	161 (6.34)	75 (2.95)	2-M4	1.2	0.96
SIZE C	55±1 (2.17±0.04)	170 (6.69)	173±1 (6.81±0.04)	44 (1.73)	160 (6.30)	75 (2.95)	2-M4	1.2	1.3
SIZE D	80±1 (3.15±0.04)	170 (6.69)	183 (7.20)	71 (2.80)	160 (6.30)	75 (2.95)	3-M4	1.2	1.8
SIZE E	90 (3.54)	250 (9.84)	230 (9.06)	78 (3.07)	241 (9.47)	75 (2.95)	4-M4	1.2	3.6

SELECTION CHART

List of MS1 Series Motor Models

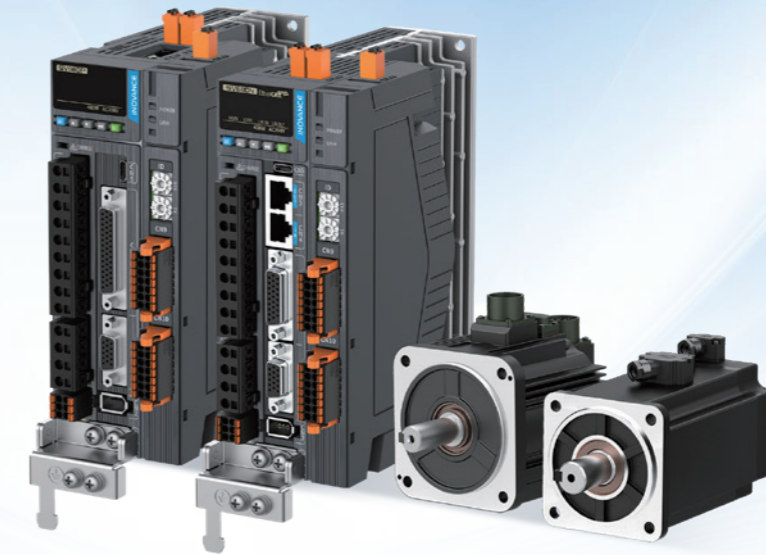
Item	Appearance	Drive Model	Applicable Motor Power	Applicable Motor Model
Size A		SV670*S1R6I-INT	50W 100W 200W	MS1H1-05B30CB-A33* MS1H1-10B30CB-A33* MS1H1-20B30CB-A33* MS1H4-10B30CB-A33* MS1H4-20B30CB-A33*
		SV670*S2R8I-INT	400W	MS1H1-40B30CB-A33* MS1H1-40B30CB-A33*
Size C Single phase 220 V models		SV670*S5R5I-INT	550W 750W	MS1H1-55B30CB- A33* MS1H1-75B30CB- A33* MS1H4-55B30CB-A33* MS1H4-75B30CB-A33*
		SV670*S7R6I-INT	850W 1KW	MS1H1-10C30CB- A33* MS1H2-10C30CB-A33* MS1H3-85B15CB-A33* MS1H4-10C30CB-A33*
Size D		SV670*S012I-INT	1.3KW 1.5KW	MS1H2-15C30CB- A33* MS1H2-20C30CB- A33* MS1H3-13C15CB- A33* MS1H3-18C15CB- A33*

Item	Appearance	Drive Model	Applicable Motor Power	Applicable Motor Model
Size A		SV670*S1R6I-INT	50W 100W 200W	MS1H1-05B30CB-A33* MS1H1-10B30CB-A33* MS1H1-20B30CB-A33* MS1H4-10B30CB-A33* MS1H4-20B30CB-A33*
		SV670*S2R8I-INT	400W	MS1H1-40B30CB-A33* MS1H4-40B30CB-A33*
Size C Three-phase 220 V models		SV670*S5R5I-INT	550W 750W	MS1H1-55B30CB- A33* MS1H1-75B30CB- A33* MS1H4-55B30CB-A33* MS1H4-75B30CB-A33*
		SV670*S7R6I-INT	850W 1KW	MS1H1-10C30CB- A33* MS1H2-10C30CB-A33* MS1H3-85B15CB-A33* MS1H4-10C30CB-A33*
Size D		SV670*S012I-INT	1.3KW 1.5KW	MS1H2-15C30CB- A33* MS1H2-20C30CB- A33* MS1H3-13C15CB- A33* MS1H3-18C15CB- A33*

Item	Appearance	Drive Model	Applicable Motor Power	Applicable Motor Model
Size E Three-phase 220 V model		SV670*S018I-INT	2KW	MS1H2-20C30CB-A33*
		SV670*S022I-INT	2.5KW 2.9KW 3.0KW	MS1H2-25C30CB-A33* MS1H2-30C30CB-A33* MS1H3-29C15CB-A33*
		SV670*S027I-INT	4.0KW 4.4KW 5.0KW	MS1H2-40C30CB-A33* MS1H3-44C15CB-A33* MS1H2-50C30CB-A33*
Size C		SV670*T3R5I-INT	850W 1KW	MS1H2-10C30CD-A33* MS1H3-85B15CD-A33*
		SV670*T5R4I-INT	1.3KW 1.5W	MS1H2-15C30CD-A33* MS1H3-13C15CD-A33*
Size D Three-phase 380 V model		SV670*T8R4I-INT	1.8KW 2KW 2.5KW	MS1H2-20C30CD-A33* MS1H2-25C30CD-A33* MS1H3-18C15CD-A33*
		SV670*T012I-INT	2.9KW 3KW	MS1H2-25C30CD-A33* MS1H2-30C30CD-A33* MS1H3-29C15CD-A33*
Size E		SV670*T017I-INT	4KW 4.4KW	MS1H2-40C30CD-A33* MS1H3-44C15CD-A33*
		SV670*T021I-INT	5KW 5.5KW	MS1H2-50C30CD-A33* MS1H3-55C15CD-A33*
		SV670*T026I-INT	7.5KW	MS1H3-75C15CD-A33*

SV680 Series-Servo Drives

Born for High-End Market



PRODUCT FEATURES

- Adopts advanced motion control algorithms to implement 3.5 kHz velocity loop bandwidth response, leading in the industry.
- Implements more precise positioning and is equipped with a 26-bit multi-turn absolute encoder. Seeks for smoother operations and supports a maximum pulse command frequency of 8 Mpps.
- Seeks for faster operations and supports a maximum rotation speed of 7000 RPM.
- Supports standard STO and built-in dynamic braking to build the equipment security system.
- Implements the SS1, SS2, SLS, SBC, SOS, SSM, and SDI functions through the security module, improving the safety level.
- Implements automatic suppression of mechanical resonance and automatic adjustment of loop gain through one-click adjustment of single STune parameter, maximizing mechanical performance and reducing the manual debugging time.
- Uses the Type-C debugging cable for data monitoring, parameter modification, and debugging, ensuring easy connection and use.

SPECIFICATIONS

Single-phase 220 V servo drive

Item	Size-A		Size-C		Size-D
Drive model SV680P	S1R6	S2R8	S5R5	S7R6	S012
Continuous output current (Arms)	1.6	2.8	5.5	7.6	12
Maximum output current (Arms)	5.8	10.1	16.9	23	32
Main circuit power supply	Single-phase 200-240 VAC, -10% to +10%, 50/60 Hz				
Control circuit power supply	Single-phase 200-240 VAC, -10% to +10%, 50/60 Hz				
Braking capability	Built-in and external braking resistors are supported by the whole SV680 family except servo drives in size A, which support external braking resistors only.				

Three-phase 220 V servo drive

Item	Size-A		Size-C		Size-D		Size-E	
Drive model SV680P	S1R6	S2R8	S5R5	S7R6	S012	S018	S022	S027
Continuous output current (Arms)	1.6	2.8	5.5	7.6	12	18	22	27
Maximum output current (Arms)	5.8	10.1	16.9	23	32	45	55	67.5
Main circuit power supply	Three-phase 200-240 VAC, -10% to +10%, 50/60 Hz							
Control circuit power supply	Three-phase 200-240 VAC, -10% to +10%, 50/60 Hz							
Braking capability	Built - in and external braking resistors are supported by the whole SV680 family except servo drives in size A, which support external braking resistors only.				Built - in braking resistor by default, external braking resistor supported			

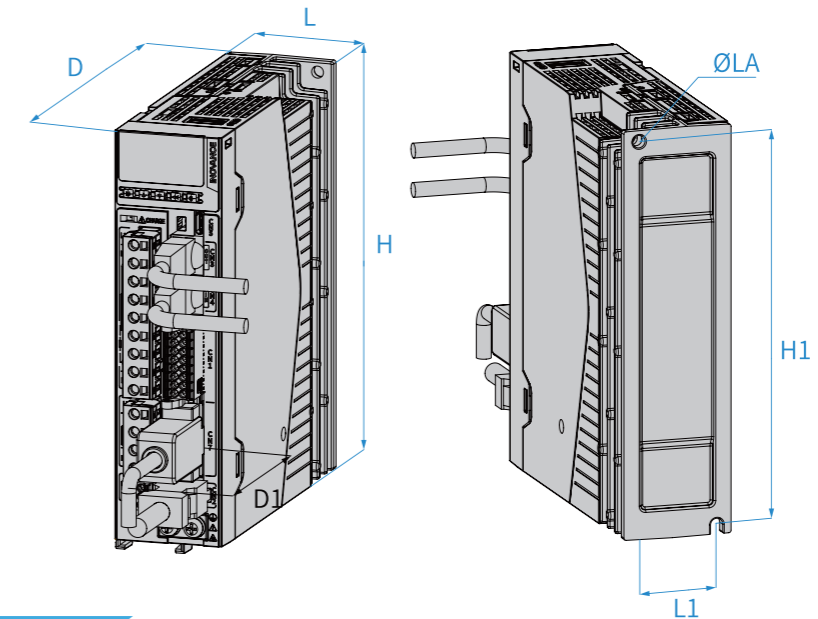
Three-phase 380 V servo drive

Item	Size-C		Size-D		Size-E		
Drive model SV680P	T3R5	T5R4	T8R4	T012	T017	T021	T026
Continuous output current (Arms)	3.5	5.4	8.4	12	17	21	26
Maximum output current (Arms)	11	14	20	30	42.5	52.5	65
Main circuit power supply	Three-phase 380-480 VAC, -10% to +10%, 50/60 Hz						
Control circuit power supply	Single-phase 380-480 VAC, -10% to +10%, 50/60 Hz						
Braking capability	Built-in braking resistor						

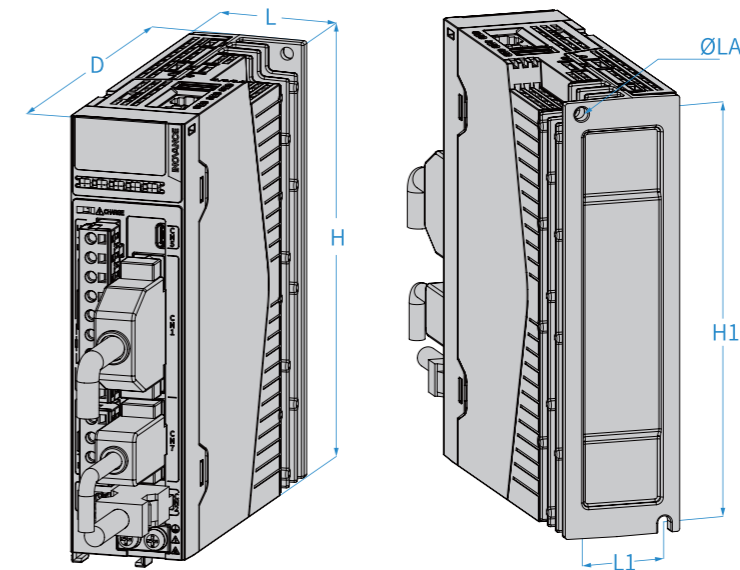
Note: The power of the full SV680 series is in the range of 0.05 kW to 7.5 kW. The power of the models released before February 2022 is 1 kW or below.

DIMENSIONS

SV680N Series



SV680P Series




Structure	L mm(in.)	H mm(in.)	D mm(in.)	L1 mm(in.)	H1 mm(in.)	D1 mm(in.)	Screw Hole (ØLA)	Tightening Torque (N·m)	Weight (kg)
SIZE A	45.5 (1.79)	170 (6.69)	150 (5.91)	33 (1.10)	161 (6.34)	75 (2.95)	2-M4	1.2	0.96
SIZE B	55±1 (2.17±0.04)	170 (6.69)	173±1 (6.81±0.04)	44 (1.37)	160 (6.30)	75 (2.95)	2-M4	1.2	1.3
SIZE C	80±1 (3.15±0.04)	170 (6.69)	183 (7.20)	71 (2.80)	160 (6.30)	75 (2.95)	3-M4	1.2	1.8
SIZE D	90 (3.54)	250 (9.84)	230 (9.06)	78 (3.07)	241 (9.47)	75 (2.95)	4-M4	1.2	3.6

SELECTION CHART

Item	Model	Appearance	Servo Drive Model	Applicable motor power	Applicable motor model		
Single-phase 200 V models	Size A		SV680*S1R6I-GINT	 50W 100W 200W	MS1H1-05B30CB-A63*R-INT MS1H1-10B30CB-A63*R-INT MS1H1-20B30CB-A63*R-INT MS1H4-05B30CB-A63*R-INT MS1H4-10B30CB-A63*R-INT MS1H4-20B30CB-A63*R-INT		
					MS1H1-20B30CB-V63*R-INT MS1H4-20B30CB-V63*R-INT		
					SV680*S2R8I-GINT	 400W	MS1H1-40B30CB-A63*R-INT MS1H4-40B30CB-A63*R-INT
							MS1H1-40B30CB-V63*R-INT MS1H4-40B30CB-V63*R-INT
	Size C		SV680*S5R5I-GINT	 550W 750W	MS1H1-55B30CB-A630R-INT MS1H1-75B30CB-A63*R-INT MS1H4-55B30CB-A630R-INT MS1H4-75B30CB-A63*R-INT		
					MS1H1-55B30CB-V63*R-INT MS1H1-75B30CB-V63*R-INT MS1H4-55B30CB-V63*R-INT MS1H4-75B30CB-V63*R-INT		
					SV680*S7R6I-GINT	 850W 1KW	MS1H1-10C30CB-A63*R-INT MS1H2-10C30CB-A63*R-INT MS1H3-85B15CB-A63*R-INT MS1H4-10C30CB-A63*R-INT
							MS1H1-10C30CB-V63*R-INT MS1H2-10C30CB-V63*R-INT MS1H3-85B15CB-V63*R-INT MS1H4-10C30CB-V63*R-INT
	Size D		SV680*S012I-GINT	 1.3KW 1.5KW	MS1H2-15C30CB-A63*R-INT MS1H3-13C15CB-A63*R-INT		
					MS1H2-15C30CB-V63*R-INT MS1H3-13C15CB-V63*R-INT		

SELECTION CHART

Item	Model	Appearance	Servo Drive Model	Applicable motor power	Applicable motor model				
Three-phase 200 V models	Size A		SV680*S1R6I-GINT	 50W 100W 200W	MS1H1-05B30CB-A63*R-INT MS1H1-10B30CB-A63*R-INT MS1H1-20B30CB-A63*R-INT MS1H4-05B30CB-A63*R-INT MS1H4-10B30CB-A63*R-INT MS1H4-20B30CB-A63*R-INT				
					MS1H1-20B30CB-V63*R-INT MS1H4-20B30CB-V63*R-INT				
					SV680*S2R8I-GINT	 400W	MS1H1-40B30CB-A63*R-INT MS1H4-40B30CB-A63*R-INT		
							MS1H1-40B30CB-V63*R-INT MS1H4-40B30CB-V63*R-INT		
	Size C		SV680*S5R5I-GINT	 550W 750W	MS1H1-55B30CB-A630R-INT MS1H1-75B30CB-A63*R-INT MS1H4-55B30CB-A630R-INT MS1H4-75B30CB-A63*R-INT				
					MS1H1-55B30CB-V63*R-INT MS1H1-75B30CB-V63*R-INT MS1H4-55B30CB-V63*R-INT MS1H4-75B30CB-V63*R-INT				
					SV680*S7R6I-GINT	 850W 1KW	MS1H1-10C30CB-A63*R-INT MS1H2-10C30CB-A63*R-INT MS1H3-85B15CB-A63*R-INT MS1H4-10C30CB-A63*R-INT		
							MS1H1-10C30CB-V63*R-INT MS1H2-10C30CB-V63*R-INT MS1H3-85B15CB-V63*R-INT MS1H4-10C30CB-V63*R-INT		
	Size D		SV680*S012I-GINT	 1.3KW 1.5KW	MS1H2-15C30CB-A63*R-INT MS1H3-13C15CB-A63*R-INT				
					MS1H2-15C30CB-V63*R-INT MS1H3-13C15CB-V63*R-INT				
					Size E		SV680*S018I-GINT	 1.8KW 2KW	MS1H2-20C30CB-A63*R-INT MS1H3-18C15CB-A63*R-INT
									MS1H2-20C30CB-V63*R-INT MS1H3-18C15CB-V63*R-INT
SV680*S022I-GINT	 2.5KW 2.9KW 3KW	MS1H2-25C30CB-A63*R-INT MS1H2-30C30CB-A63*R-INT MS1H3-29C15CB-A63*R-INT							
		MS1H2-25C30CB-V63*R-INT MS1H2-30C30CB-V63*R-INT MS1H3-29C15CB-V63*R-INT							
SV680*S027I-GINT	 4KW 4.4KW 5KW	MS1H2-40C30CB-A63*R-INT MS1H2-50C30CB-A63*R-INT MS1H3-44C15CB-A63*R-INT							
		MS1H2-40C30CB-V63*R-INT MS1H2-50C30CB-V63*R-INT MS1H3-44C15CB-V63*R-INT							

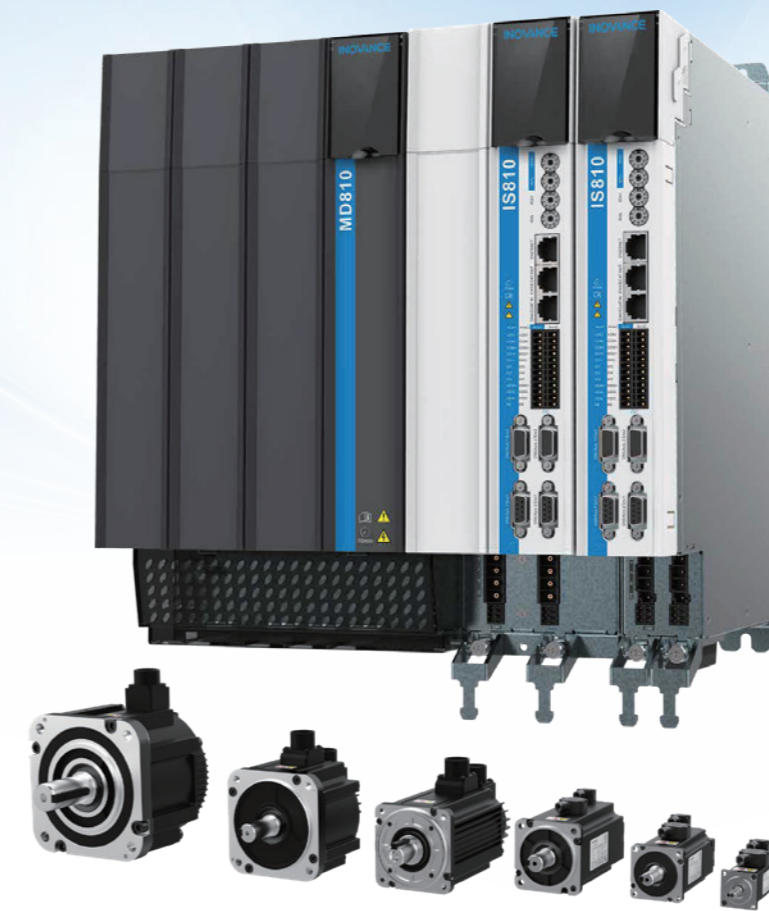
SELECTION CHART

Item	Model	Appearance	Servo Drive Model	Applicable motor power	Applicable motor model
Threephase 400V models	Size C		SV680*T3R5I-GINT	 850W 1KW	MS1H2-10C30CD-A63*R-INT MS1H2-10C30CD-V63*R-INT MS1H3-85B15CD-A63*R-INT MS1H3-85B15CD-V63*R-INT
			SV680*T5R4I-GINT	 1.3KW 1.5KW	MS1H2-15C30CD-A63*R-INT MS1H2-15C30CD-V63*R-INT MS1H3-13C15CD-A63*R-INT MS1H3-13C15CD-V63*R-INT
	Size D		SV680*T8R4I-GINT	 1.8KW 2KW 2.5KW	MS1H2-20C30CD-A63*R-INT MS1H2-20C30CD-V63*R-INT MS1H2-25C30CD-A63*R-INT MS1H2-25C30CD-V63*R-INT MS1H3-18C15CD-A63*R-INT MS1H3-18C15CD-V63*R-INT
			SV680*T012I-GINT	 2.9KW 3KW	MS1H2-30C30CD-A63*R-INT MS1H2-30C30CD-V63*R-INT MS1H3-29C15CD-A63*R-INT MS1H3-29C15CD-V63*R-INT
	Size E		SV680*T017I-GINT	 4KW 4.4KW	MS1H2-40C30CD-A63*R-INT MS1H2-40C30CD-V63*R-INT MS1H3-44C15CD-A63*R-INT MS1H3-44C15CD-V63*R-INT
			SV680*T021I-GINT	 5KW 5.5KW	MS1H2-50C30CD-A63*R-INT MS1H2-50C30CD-V63*R-INT MS1H3-55C15CD-A63*R-INT MS1H3-55C15CD-V63*R-INT
			SV680*T026I-GINT	 7.5KW	MS1H3-75C15CD-A63*R-INT MS1H3-75C15CD-V63*R-INT

[1] The expansion functional safety module is not included in standard models.

IS810N- Multi-Axes Servo Drive Platform

For Maximum Performance in the Most Demanding

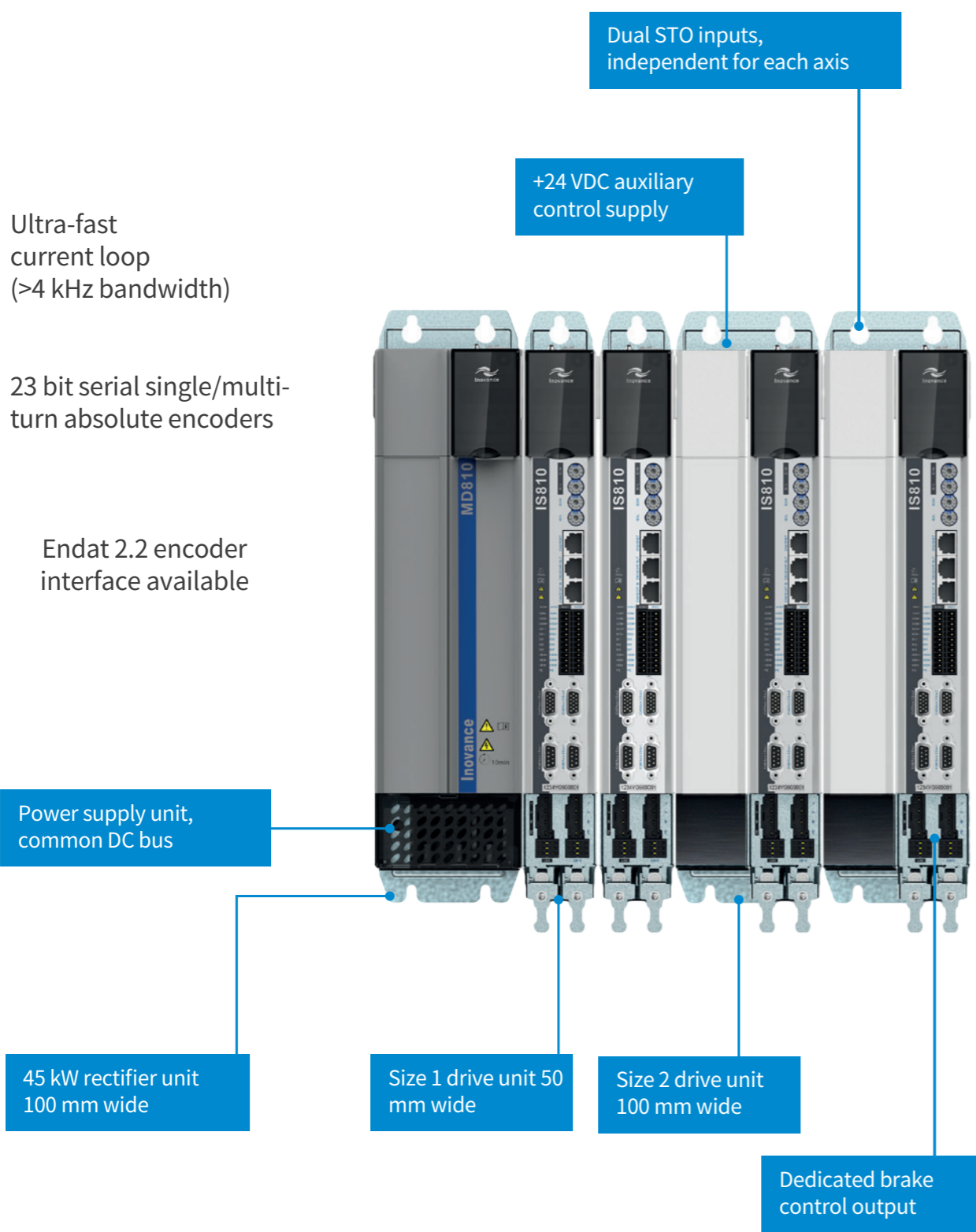


PRODUCT FEATURES

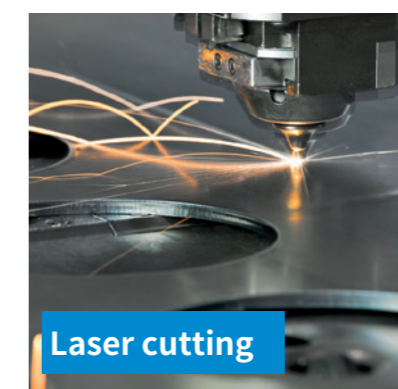
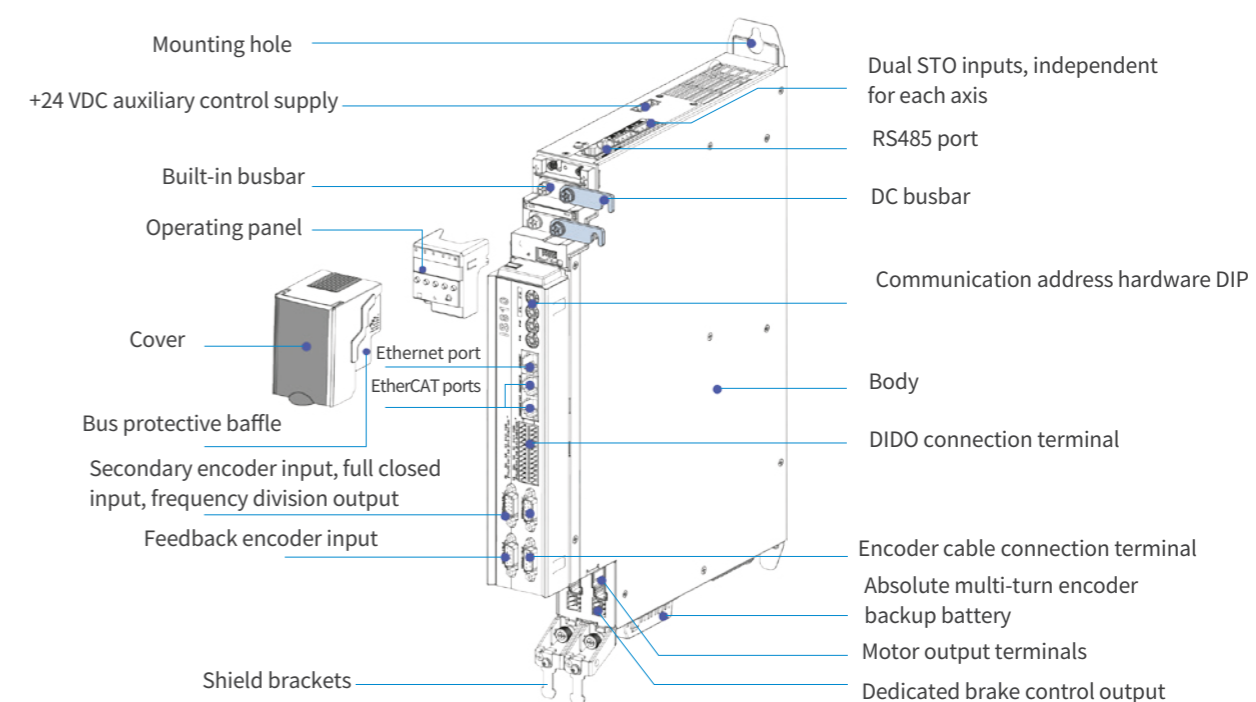
- High performance**
 - Current loop bandwidth >4kHz ^[1]
 - Speed loop bandwidth >2kHz ^[1]
- Power supply voltage range**
 - Three phase AC 380 V ~ 480 V,+10~-15%,-50/60 Hz
- Easy to use**
 - Fine tuning with PC software (InoDriverShop)
- Safety on board**
 - Dual input for STO function (SIL 3)
- Digital I/O**
 - 6 DI (2 fast inputs) + 2 DO
- Smart tuning**
 - Inertia auto-tuning (on-line/off-line)
 - Automatic loop gains tuning
 - Adaptive notch filter (4 filters available)
 - Automatic/manual damping filter for low frequency resonance
 - Biquad filter
- Network**
 - EtherCAT® - CIA 402 motion profiles: PP, PV, PT, HM, CSP, CSV, CST
 - Ethernet Modbus TCP/IP

[1] - Maximum theoretical performance achievable by the drive

PRODUCT OVERVIEW



IS810N - 2 AXES IN 1 MODULE



IS810N-INT RATINGS

Single drives

Model	Size	Rated power (kW)	Rated input DC current (A)	Rated output AC current (A)	Peak output AC current for 3 s (A)
Input voltage: 537-679 VDC (operating range: 350-800 VDC); output voltage: 0-480 VAC					
IS810N50M4TS3R5INT	1 (50 mm)	0.85	5	3.5	8.5
IS810N50M4TS5R4INT		1.3	7	5.4	14
IS810N50M4TS8R4INT		1.8	12	8.4	20
IS810N50M4TS012INT		2.9	17	12	28
IS810N50M4TS017INT	2 (100 mm)	4.4	22	16.5	42
IS810N50M4TS021INT		5.5	27	20.8	55
IS810N50M4TS026INT		7.5	31	25.7	65
IS810N50M4TS032INT		15	40	32	80
IS810N50M4TS037INT	3 (200 mm)	18.5	46	37	92.5
IS810N50M4TS075INT-P		37	90	75	187.5
IS810N50M4TS090INT		45	105	91	227.5
S810N50M4TS112INT		55	129	112	280
IS810N50M4TS152INT		75	172	152	380

Dual drives

Model	Size	Rated power (kW)	Rated input DC current (A)	Rated output AC current (A)	Peak output AC current for 3 s (A)
Input voltage: 537-679 VDC (operating range: 350-800 VDC); output voltage: 0-480 VAC					
IS810N50M4TD3R5INT	1 (50 mm)	0.85	10	3.5	8.5
IS810N50M4TD5R4INT		1.3	14	5.4	14
IS810N50M4TD8R4INT		1.8	24	8.4	20
IS810N50M4TD012INT		2.9	34	12	28
IS810N50M4TD017INT	2 (100 mm)	4.4	44	16.5	42
IS810N50M4TD021INT		5.5	54	20.8	55
IS810N50M4TD026INT		7.5	62	25.7	65
IS810N50M4TD032INT		15	80	32	80
IS810N50M4TD037INT		18.5	92	37	92.5

Rectifiers

Model	Size	Rated power (kW)	Rated input AC current (A)	Rated output DC current (A)	Braking unit
MD810-20M4T22G1XX-INT	1 (50 mm)	22	59	56	Built-in
MD810-20M4T45G1XX-INT	2 (100 mm)	45	112	110	Built-in
MD810-20M4T110G0XX-INT	3 (200 mm)	110	196	240	MDBUN-60-(5)T x 2
MD810-20M4T160G0XX-INT	4 (300 mm)	160	292	358	MDBUN-90-(5)T x 2
MD810-20M4T355G0XX-INT	5 (180 mm)	355	619	759	MDBUN-200-(5)T x 3

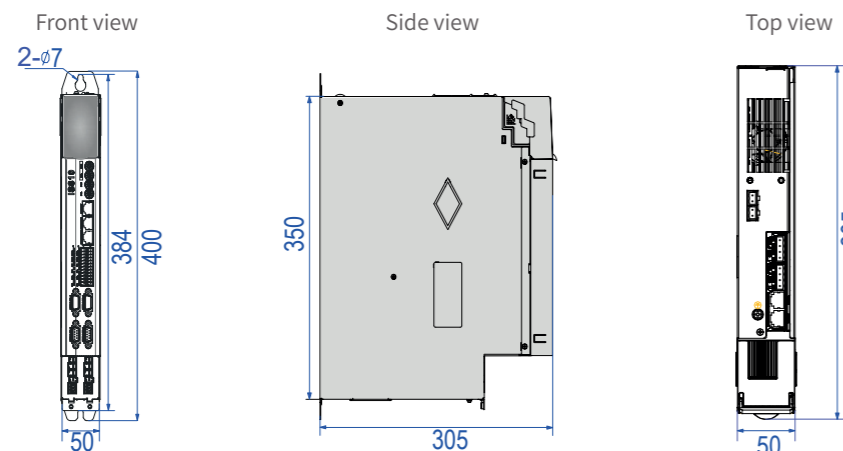
SELECTION CHART

Motor base speed (RPM)	Motor maximum speed (RPM)	Motor power(kW)	MS1 motor type	Motor frame size (mm)	IS810N type (IS810N50M4 *****)	Drive size	Drive code (H01-10)	
3000	6000	0.05	MS1H1-05B30CB-****Z	40	T □ 3R5INT	1	10001	
		0.1	MS1H1-10B30CB-****Z	60				
		0.2	MS1H1-20B30CB-****Z					
		0.4	MS1H1-40B30CB-****Z	80				
		0.55	MS1H1-55B30CB-****Z					
		0.75	MS1H1-75B30CB-****Z					
	1	MS1H2-10C30CD-****Z	5000	100	T □ 5R4INT	10002		
	1.5	MS1H2-15C30CD-****Z						
	2	MS1H2-20C30CD-****Z						
	2.5	MS1H2-25C30CD-****Z						
	3	MS1H2-30C30CD-****Z		130	T □ 8R4INT	2	10003	
	4	MS1H2-40C30CD-****Z						
	5	MS1H2-50C30CD-****Z						
	0.85	MS1H3-85B15CD-****Z						180
1.3	MS1H3-13C15CD-****Z							
1.8	MS1H3-18C15CD-****Z							
2.9	MS1H3-29C15CD-****Z	180	T □ 017INT	1	10005			
4.4	MS1H3-44C15CD-****Z							
5.5	MS1H3-55C15CD-****Z							
7.5	MS1H3-75C15CD-****Z							
3000	6000	0.4	MS1H4-40B30CB-****Z	60	T □ 3R5INT	1	10001	
		0.75	MS1H4-75B30CB-****Z	80	T □ 5R4INT			
		0.05	MS1H1-05B30CB-****Z-S	40	T □ 3R5INT			
		0.1	MS1H1-10B30CB-****Z-S					
		0.2	MS1H1-20B30CB-****Z-S	60				
		0.4	MS1H1-40B30CB-****Z-S					
		0.55	MS1H1-55B30CB-****Z-S	80	T □ 5R4INT			10002
		0.75	MS1H1-75B30CB-****Z-S					
		1	MS1H1-10C30CB-****Z-S	60	T □ 8R4INT			10003
		0.4	MS1H4-40B30CB-****Z-S					
		0.75	MS1H4-75B30CB-****Z-S					
		0.05	MS1H1-05B30CB-****Z-S		40			
		0.1	MS1H1-10B30CB-****Z-S					
		0.2	MS1H1-20B30CB-****Z-S	60	T □ 5R4INT			10002
0.4	MS1H1-40B30CB-****Z-S							

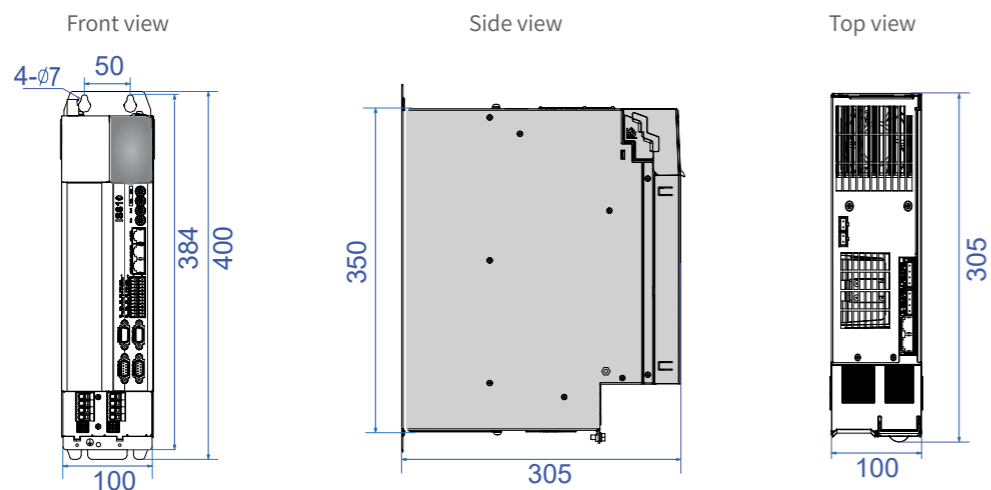
NOTE: □ represents both "S (single-axis)" and "D (Dual-axis)" can be ordered.

DIMENSIONS

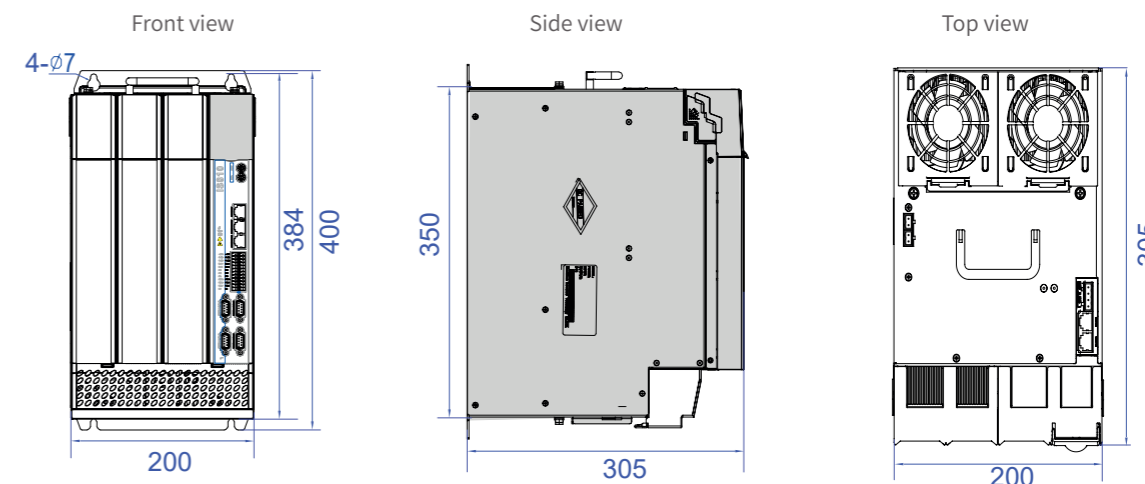
Single drive units



Drive unit model (size 1)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
IS810N50M4TS3R5INT	400	350	50	305	-	-	384	φ7	4.1
IS810N50M4TS5R4INT	400	350	50	305	-	-	384	φ7	4.1
IS810N50M4TS8R4INT	400	350	50	305	-	-	384	φ7	4.1
IS810N50M4TS012INT	400	350	50	305	-	-	384	φ7	4.1

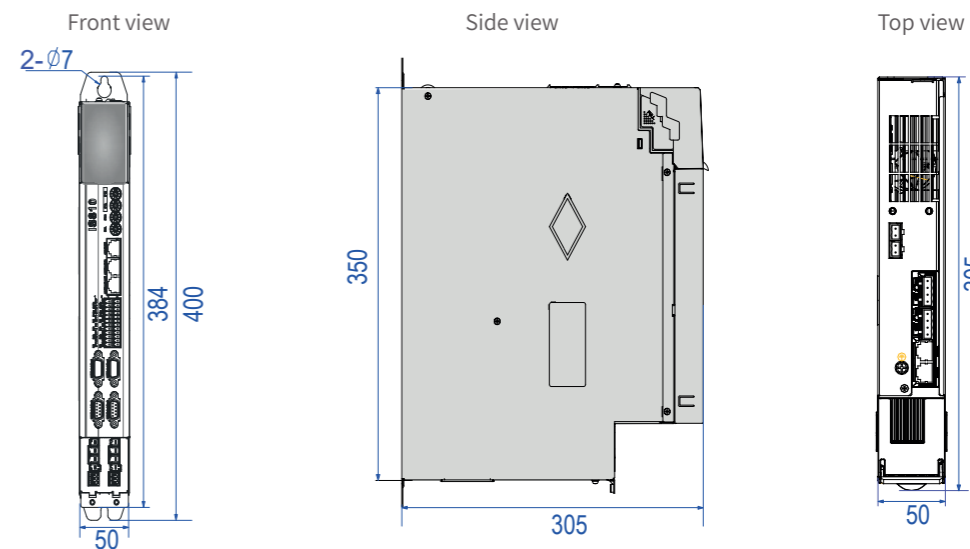


Drive unit model (size 2)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
IS810N50M4TS017INT	400	350	100	50	-	-	384	φ7	6.8
IS810N50M4TS021INT	400	350	100	50	-	-	384	φ7	6.8
IS810N50M4TS026INT	400	350	100	50	-	-	384	φ7	6.8
IS810N50M4TS032INT	400	350	100	50	-	-	384	φ7	6.8
IS810N50M4TS037INT	400	350	100	50	-	-	384	φ7	7.4

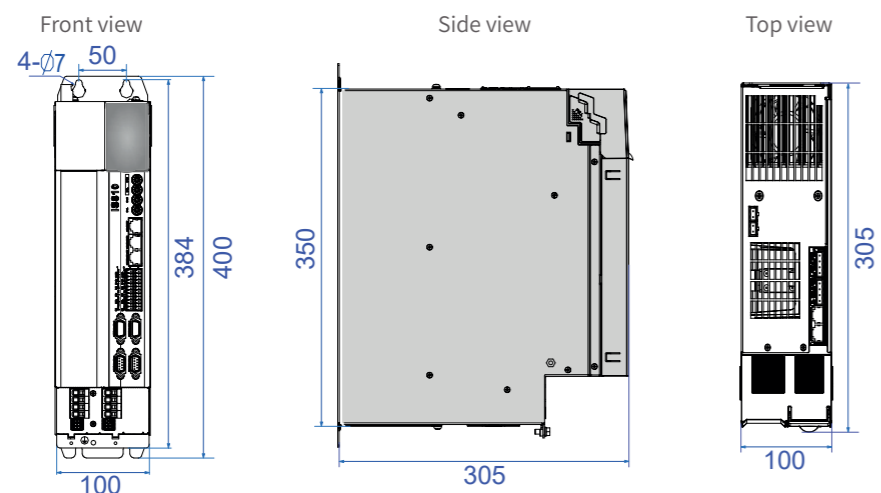


Drive unit model (size 3)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
IS810N50M4TS075INT-P	400	350	200	305	150	-	384	φ7	16.4
IS810N50M4TS090INT	400	350	200	305	150	-	384	φ7	16.4
IS810N50M4TS112INT	400	350	200	305	150	-	384	φ7	17.8
IS810N50M4TS152INT	400	350	200	305	150	-	384	φ7	18.8

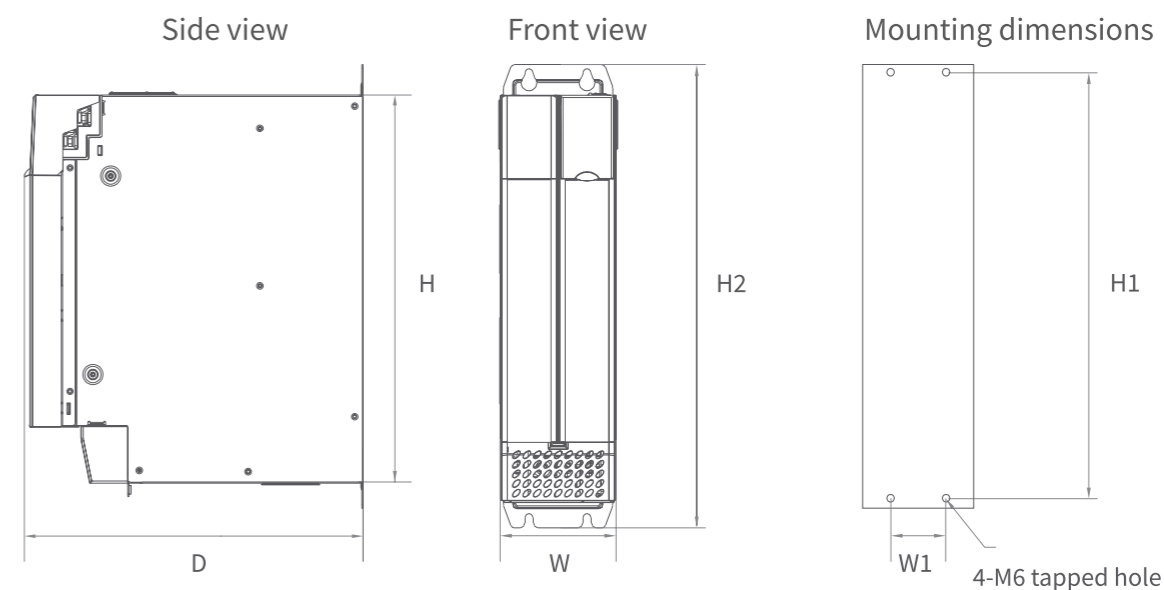
Dual drive units



Drive unit model (size 1)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
IS810N50M4TD3R5INT	400	350	50	305	-	-	384	φ7	4.4
IS810N50M4TD5R4INT	400	350	50	305	-	-	384	φ7	4.4
IS810N50M4TD8R4INT	400	350	50	305	-	-	384	φ7	4.4
IS810N50M4TD012INT	400	350	50	305	-	-	384	φ7	4.4

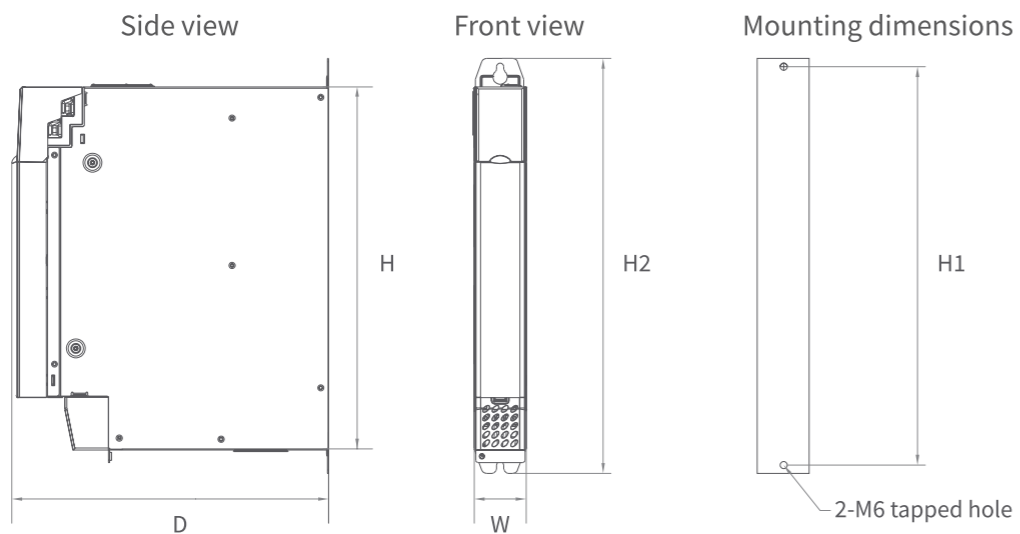


Drive unit model (size 2)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
IS810N50M4TD017INT	400	350	100	305	50	-	384	φ7	7.2
IS810N50M4TDO21INT	400	350	100	305	50	-	384	φ7	7.2
IS810N50M4TD026INT	400	350	100	305	50	-	384	φ7	7.2
IS810N50M4TD032INT	400	350	100	305	50	-	384	φ7	7.2
IS810N50M4TD037INT	400	350	100	305	50	-	384	φ7	7.8

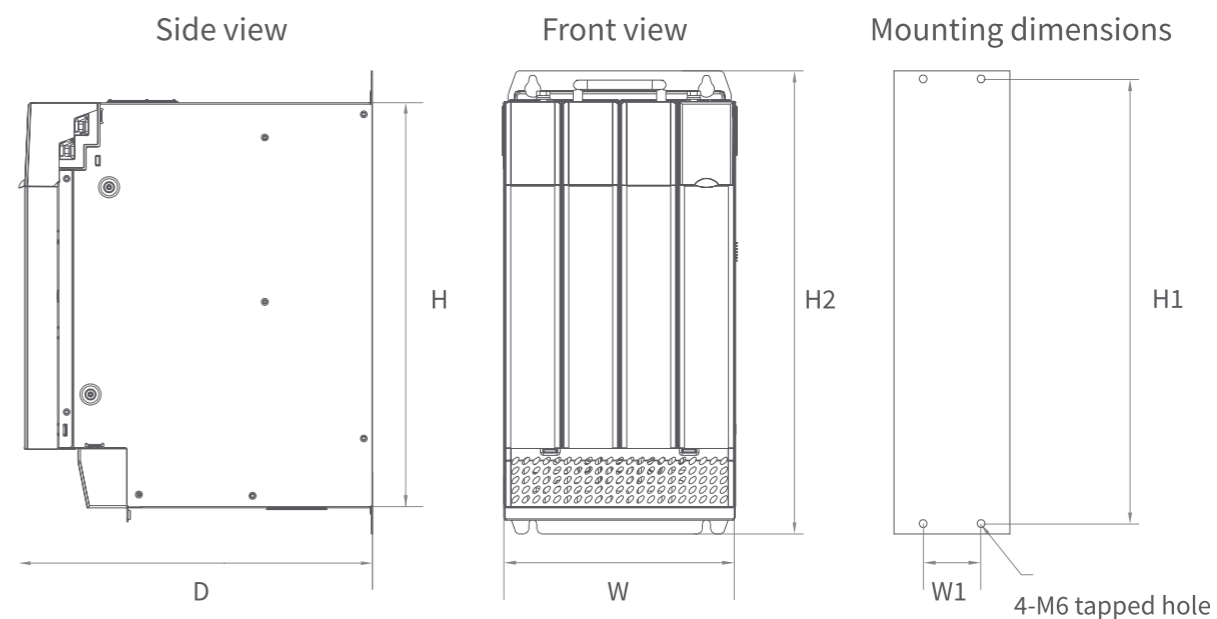


Rectifier unit model (size 2)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
MD810-20M4T45GXXX	400	350	100	305	50	-	384	φ7	8

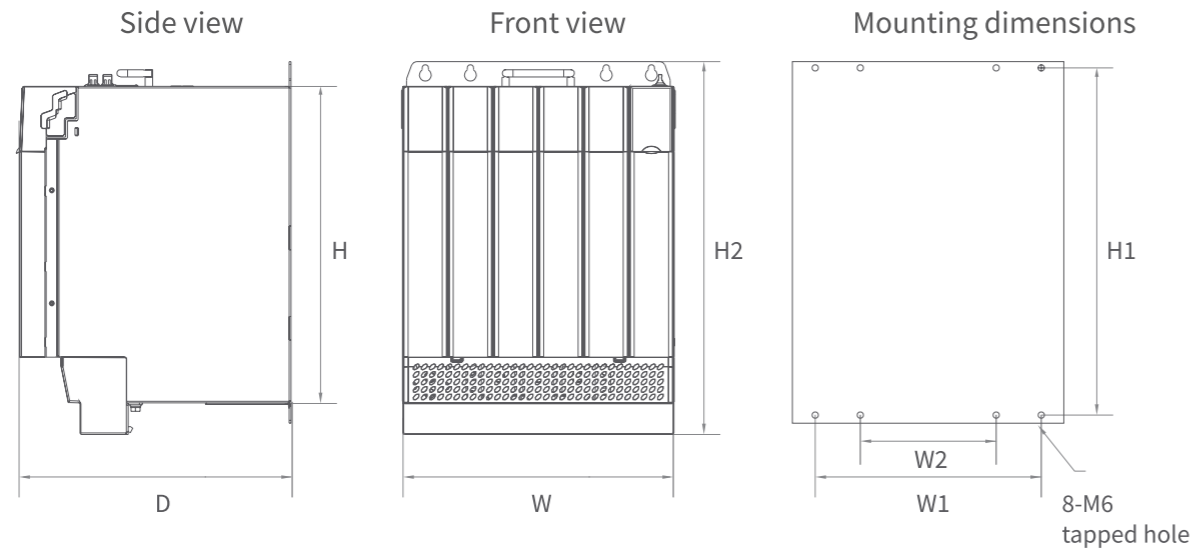
Rectifier units



Rectifier unit model (size 1)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
MD810-20M4T22GXXX	400	350	50	305	-	-	384	φ7	3.8



Rectifier unit model (size 3)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
MD810-20M4T110GXXX	400	350	200	305	150	-	384	φ7	18.4



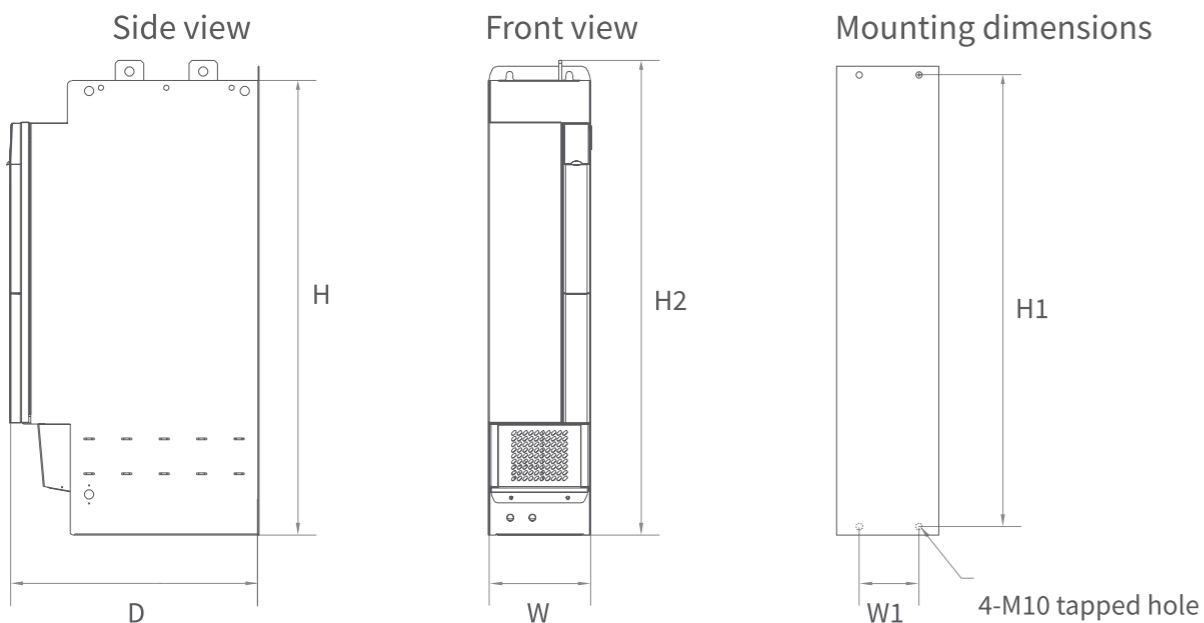
Rectifier unit model (size 4)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
MD810-20M4T160GXXX	400	350	300	305	250	150	384	φ7	38

SV660ND Series - Servo Drive

Two-Axis Universal Servo Drive



EtherCAT



Rectifier unit model (size 5)	Physical dimensions (mm)				Mounting hole (mm)			Mounting hole diameter (mm)	Mass (kg)
	(H2)	(H)	(W)	(D)	(w1)	(w2)	(H1)		
MD810-20M4T355GXXX	835	800	180	445	105	-	795	φ12	65

PRODUCT FEATURES

- Ease of use: Equipped with STO (SIL3), one-key tuning, and adaptive notch functions to simplify the operation process
- Space-saving: Front dimensions reduced by 39%, with compact installation supported by 0.4 kW to 0.75 kW models without the need for derating, saving the installation space by 25%
- All-in-one network: EtherCAT bus communication supported
- Accurate positioning control: Stable and quiet operation with accurate positioning control by working together with MS1 series high-response servo motor (23-bit absolute encoder)

SPECIFICATIONS

Item		Description	
Basic data	Control mode	IGBT PWM control, sine wave current drive mode 220 V/380 V: single-phase or three-phase full-bridge rectification	
	Encoder feedback	23-bit multturn absolute encoder (which can be used as an incremental encoder without the battery)	
	Conditions for use	Ambient/Storage temp.	0°C to 55°C (Derate 10% for every additional 5°C above 45°C)/-20°C to +70°C
		Ambient/Storage RH	90% RH below (without condensation)
		Vibration resistance	4.9 m/s ²
		Shock resistance	19.6 m/s ²
		IP rating	IP20 (Terminals excluded, which have a IP rating of IP00)
		Pollution degree	PD2
	Altitude	Max altitude: 2000 m Derating is not required for altitudes not higher than 1000 m . Derate 1%for every additional 100 m above 1000 m. Contact Inovance for altitudes above 2000 m.	
	Speed/Torque control	Performance	Speed control range
Speed loop bandwidth			3kHz
Torquecontrol precisionf(repeatability)			±2%
Soft start time			0s to 65s (Acceleration and deceleration can be set separately.)
Input signal performance		Speed reference input	Source of network-type references: EtherCAT communication ; Local mode and local multi-speed mode supported
		Torque reference input	Local mode and local multi-speed mode supported
Position control	Inputsignal	Positioning time	1 ms to 10 ms
		Positionreference	Source of network-type references: EtherCAT communication;Local mode supported
Position control	Digital inputsignal	DI function	8 DIs DI1 to DI8: Fast DI (rising edge (24 V input changed from high to low) input delay: 30 us;falling edge (24 V input changed from low to high) input delay: 5 us; voltage range: 12 V to 24 V) P-OT (Positive limit switch) N-OT (Negative limit switch) HomeSwitch (Home switch) TouchProbe1 (Touch probe 1) TouchProbe2 (Touch probe 2)
	Digital outputsignal	DO function	4 DOs (load capacity: 50 mA; voltage range: 5 V to 30 V) S-RDY: Servo ready Brake output
Built-in function	Overtravel prevention		Stops the drive immediately when P-OT or N-OT signal is triggered.
	Protective function		Overcurrent, overvoltage, undervoltage, overload, main circuit detection error, heatsink overtemperature, overspeed, encoder error, CPU error, parameter error
	LED display		CHARGE indicator for the main power supply (5-bit LED display)
	Vibration suppression		Four notches in total (50 Hz to 5000 Hz), including two adaptive notches
	Communication function	Software tool	RS232
		Communication protocol	EtherCAT
		Multi-slave communication	Max number of slaves: 255
		Axis address setting	Set to 0--255 through software, without physical knob
		Function	Status display, user parameter setting, monitoring display, alarm trackingdisplay, jog and auto-tuning, and speed/torque reference signal processing
	Others		Gain tuning, alarm record, jog

SPECIFICATIONS

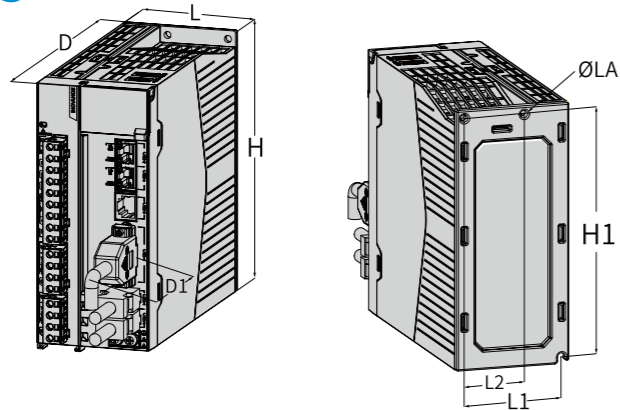
Single-phase/Three-phase 220 V Servo Drives			
Item		Size A	Size B
Drive model SV660ND***I		S2R8	S5R5
Drive power (kW)		0.4 x 2	0.75 x 2
Max. applicable motor capacity (kW)		0.4 x 2	0.75 x 2
Power supply capacity (kVA)		6	8
Continuous output current (Arms)		2.8	5.5
Max. output current (Arms)		10.1	16.9
Main circuit	Continuous input current (Arms)	7.2 for 1ph, 4.2 for 3ph	12.4 for 1ph, 7.5 for 3ph
	Main circuit power supply	Single-phase / Three-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz	
	Energy loss (W) ^[1]	21.26	46.52
Control circuit	Control circuit power supply	Single-phase 200 VAC to 240 VAC, -10% to +10%, 50 Hz/60 Hz	
	Energy loss (W) ^[1]	7	
Braking resistor	Resistance (Ω)	-	25
	Power (W)	-	80
	Min. permissible resistance of external braking resistor (Ω)	20	20
	Max. absorbable braking energy of the capacitor (J)	54.6	80.3
	Braking resistor function	Built-in braking resistor not supported	Built-in or external braking resistor not supported
Cooling mode	Fan-cooled		
Overvoltage category	III		

Note: [1]: The main circuit energy loss refers to the energy loss under rated output current. Select the external braking resistor based on actual operating conditions.

SELECTION CHART

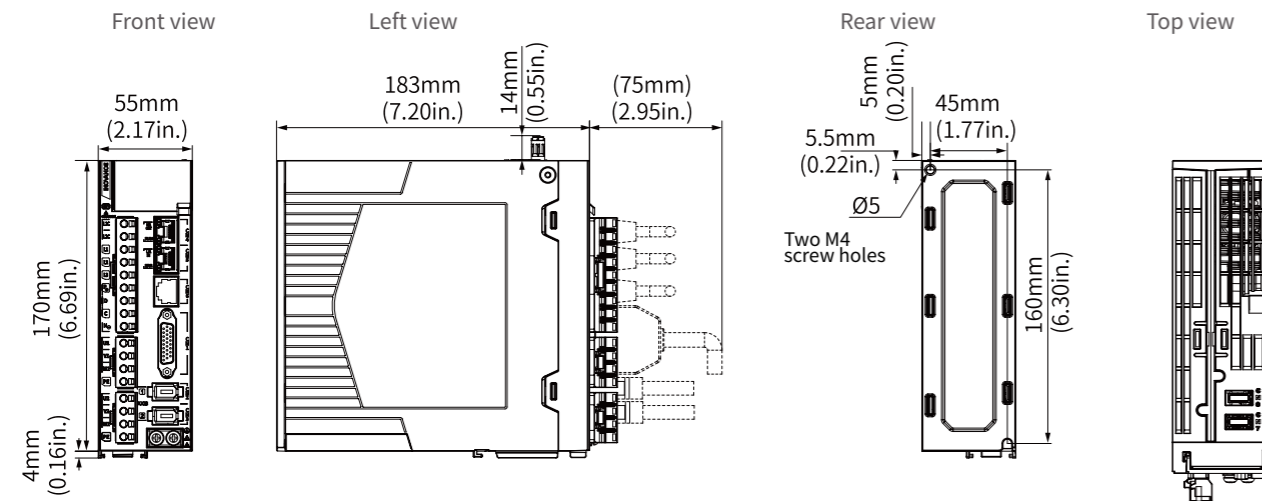
Servo Drive (SV660ND***I-INT)				Servo Motor						
Model	Voltage Class	Size	Drive Code (H01.10)	Model of Motor Without Brake	Model of Motor With Brake	Model	Capacity (kW)	Rated Torque (N·m)	Rated Current (Arms)	Rotor Moment of Inertia (kg·cm ²)
Ratings of MS1H1 (n _N =3000 rpm, n _{max} =6000 rpm) series motors										
S2R8	Single-phase/ Three-phase 220 V	A	00003	MS1H1-40B30CB- A331R	MS1H1-40B30CB- A334R	60	0.4	1.27	2.5	0.145 (0.157)
S5R5		B	00005	MS1H1-55B30CB- A331R	-	80	0.55	1.75	3.9	0.55
S5R5			00005	MS1H1-75B30CB- A331R	MS1H1-75B30CB- A334R	80	0.75	2.39	4.4	0.68 (0.71)
Ratings of MS1H4 (n _N =3000 rpm, n _{max} =6000 rpm) series motors										
S2R8	Single-phase/ Three-phase 220 V	A	00003	MS1H4-40B30CB-A331R	MS1H4-40B30CB-A334R	60	0.4	1.27	2.4	0.43 (0.44)
S5R5		B	00005	MS1H4-55B30CB-A331R	-	80	0.55	1.75	3.3	1.12
S5R5			00005	MS1H4-75B30CB-A331R	MS1H4-75B30CB-A334R	80	0.75	2.39	4.4	1.46 (1.51)

DIMENSIONS

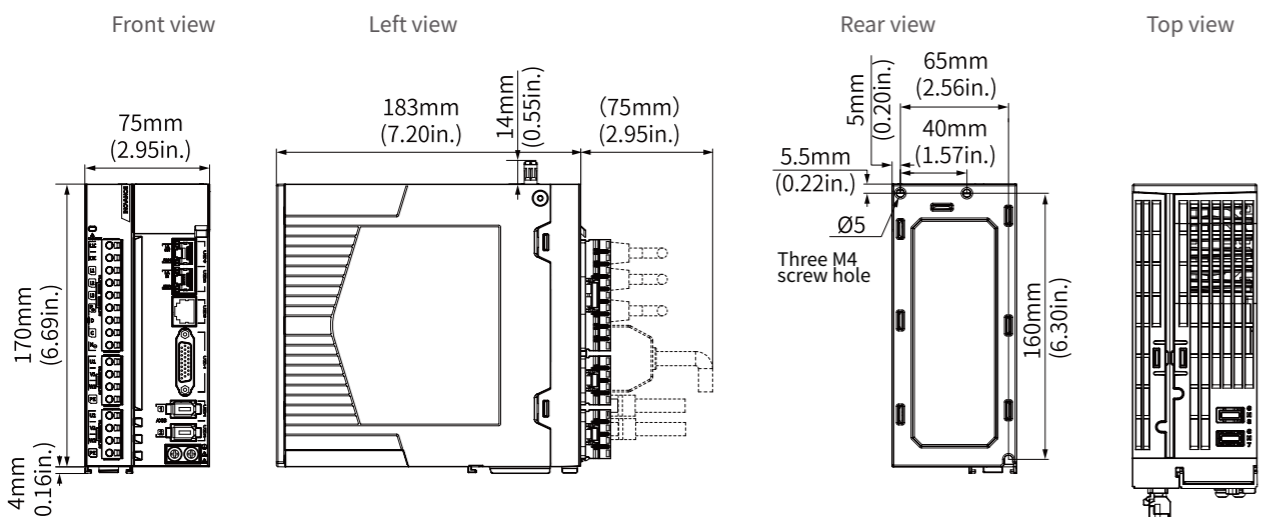


Struc-ture	L (mm)	H (mm)	D (mm)	L1 (mm)	L2 (mm)	H1 (mm)	D1 (mm)	Screw Hole	Tightening Torque (Nm)	Weight (kg)
SIZE A	55 (2.17)	170 (6.69)	183 (7.20)	45 (1.77)	-	160 (6.30)	75 (2.95)	2-M4	1.2	1.4
SIZE B	75 (2.95)	170 (6.69)	183 (7.20)	65 (2.56)	40 (1.57)	160 (6.30)	75 (2.95)	3-M4	1.2	1.8

Dimension drawing of servo drives in size A



Dimension drawing of servo drives in size B



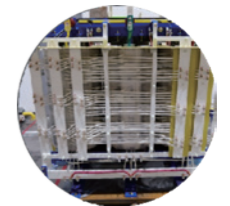
HD9XS Series - Medium Voltage Drive

New Generation General Medium Voltage Drive

Applicable capacity range: 6kV: 230kVA - 8000kVA 10kV: 280kVA - 13750kVA

① Transformer cabinet

- The input side adopts a phase-shifting transformer to form multi-pulse rectification, increasing the input power factor and improving the grid side current waveform. The input harmonics meet IEEE requirements, with no harmonic pollution to the power grid.



② Cabinet top fans

- Adopts international famous brand fans, with large air volume, sufficient margin, long life and high stability, to ensure heat dissipation of the drive and improve product stability

③ Power cabinet and power units

- Each phase consisting of 3 to 9 power units to form 4N+1 staircase PWM, three-phase Y connection for 3 to 11 kV direct output



④ Control system

- Intelligent controller equipped with high-speed ARM, DSP, FPGA
- Adopts magnetic flux closed-loop vector control technology and optimized carrier disposition PWM control technology to achieve high-quality sinusoidal voltage and current output

⑤ HMI

- Inovance InoTouch series touchscreen HMI supports guided commissioning, fault recording, oscilloscope functions, etc., to facilitate connection to the user system



High adaptability to environments allowing products to run stably in any industries and conditions

The HD9XS series medium voltage drive are designed to be used in various harsh environments, no matter on sea or land, on plains or plateaus, in corrosive or high dust conditions.

Application at high altitude: 4650 meters in Nagqu, Tibet, the highest altitude in the industry.

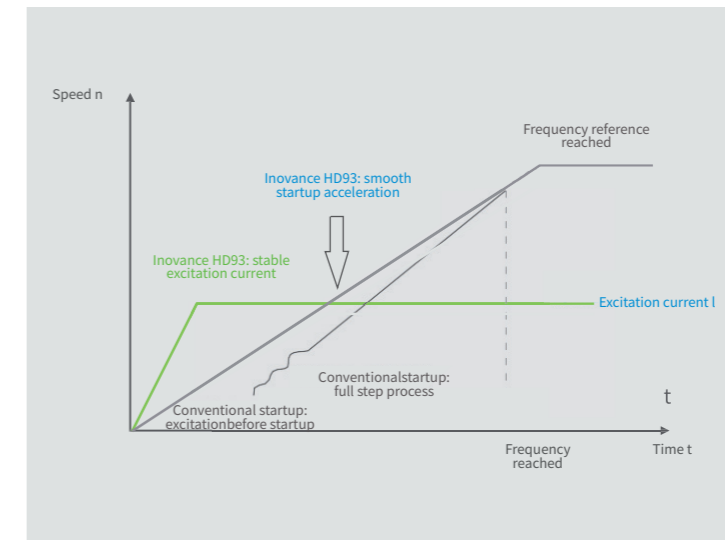
Application in extremely cold and high dust environments: A copper mine in Karabash, Russia.

Application in environments with high humidity and salt mist: Shore power supply system, belt conveyor in ports, offshore platforms, etc.



Strong grid adaptability, preventing production interruption due to grid failures

The HD9XS series supports low-voltage ride through technology and has been tested by the Electric Power Research Institute of the State Grid Corporation of China. It is suitable for applications with poor power grid performance and high reliability requirements. Inovance is one of the drafters of State Grid Corporation of China DL/T1648-2016 standard.



Master of synchronous motor control with various core algorithms

HD9XS medium voltage drive is specifically designed for synchronous motors, including brushed ESM, brushless ESM, low-speed PMSM, and high-speed PMSM. It supports vector control with speed sensors and vector control without speed sensors.

Industry-leading 100% one-time startup success rate, SVC control to ensure startup without reverse rotation

High driving torque, smooth operation

Application in high-power ESM: 8000 kW main sintering exhaust fan at a steel plant in Asia

Application in low-speed ESM: Ball mill in a cement factory, belt conveyor in a port, and internal mixer in a rubber factory in Asia

Application in high-speed PMSM: 720 Hz motor test bench

Advanced master/slave control: load distribution technology

The HD9XS series boosts cutting-edge master-slave control technology and is widely used in multi-drive belt conveyors and other applications with multiple parallel machines, achieving a power distribution imbalance of less than 2%.

Rotational speed tracking startup technology reducing unnecessary downtime

Whether the motor is in reverse, forward, or stationary state, the HD9XS series can quickly identify the motor speed and drive the motor to the target frequency. The HD9XS series is especially suitable for applications such as water pumps, herringbone ducts, etc. The drives support fast startup in 250 ms, 80% to 90% shorter than regular startup, enabling more complete protection against misoperation.

Fast cut back (FCB) technology

The advanced FCB technology can quickly reduce the load to decrease the load speed from 100% to the target speed in a short time.

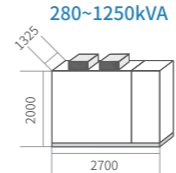
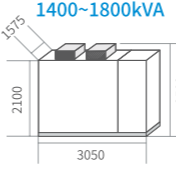
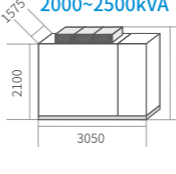
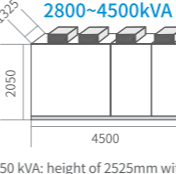
Application of 350 MW units at the largest self-generating power plant in metallurgy: six sets of 2900 kW induced draft fans.

SPECIFICATIONS

Voltage	6 kV Series 10 kV Series	10 kV Series
Input		
Rated input voltage	Three-phase 50/60 Hz, 6 kV	Three-phase 50/60 Hz, 10 kV
Voltage fluctuation range	6kV/10kV±10% allowing full current operation; -35% to -10% allowing long-term operation with derating	
Frequency range	50Hz/60Hz ±5%	
Input voltage of power cell	690V	
Input power factor	≥ 0.95 (20% to 100% load)	
Input current harmonics	Conforms to IEEE519-2014	
Output		
Output voltage range	0 to 6 kV	0 to 10 kV
Output capacity range[1]	230 to 8000 kVA	280 to 13750 kVA
Output frequency range[2]	Normal range: 0 Hz to 50/60 Hz; maximum frequency: 120 Hz; customized range: 120 Hz to 700 Hz	
Control mode	Voltage type open-loop vector control, SVC/FVC	
Speed regulation range	40:1 (voltage type open-loop vector); 100:1 (open-loop vector); 1000:1 (closed-loop vector)	
Speed control accuracy	SVC: ±0.5% (open-loop vector); FVC: ±0.02% (closed-loop vector)	
Acceleration/Deceleration time	0.1s to 6500.0s; over 6500.0s: customization required	
Control system	ARM, DSP, FPGA, HMI	
Operating panel display	Touchscreen, displayed in simplified Chinese/English	
Overload capacity	10 kV 8000-13750 kVA / 6 kV 4500-8000 kVA, 110%/1 min; other models, 120%/1min	
System protection	Protection against motor overload, output overload, output short circuit, output grounding, output overcurrent, input overvoltage, fan alarm, door lock protection, transformer overheat alarm, transformer overheat trip, etc	
MTBF	80000 hours	
Communication interface	Modbus-RTU or Modbus-TCP (optional), PROFIBUS-DP (optional), ProfiNet-IO (optional)	
Digital input	10 x DI, relay dry contact	
Digital output	16 x DO, relay dry contact	
Analog input	4 x AI, 4 to 20 mA	
Analog output	5 x AO, 4 to 20 mA	
Ambient temperature	-10°C to +40°C , derating required for +40°C to +50°C ; preheating may be required before startup when below 0°C	
Ambient humidity	5% to 95% RH (no condensation)	
Altitude	≤ 1000 m, derating required for altitudes above 1000 m (please specify when placing an order)	
Total noise	< 85 dB	
Cooling method	Forced air cooling	
IP rating	IP30, customizable	
Cable routing	Bottom inlet and outlet, customizable	
Control power supply[3]	380 VAC±10%, three-phase four-wire	
Supported encoder[4]	15 VDC OC and 5 VDC differential encoder, optional	

DIMENSIONS

10 kV

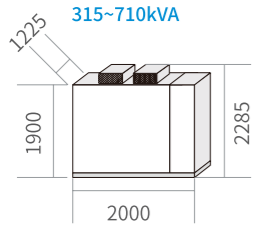
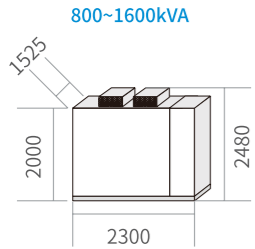
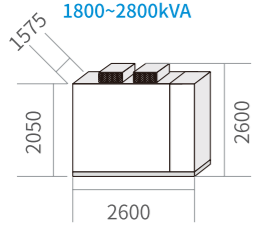
Annotation	Applicable Motor Power (kW)	Model	Nominal Capacity (kVA)	Overall Dimensions (W x D x H, mm)	Weight (kg)
 <p>280~1250kVA</p> <p>280 to 560 kVA: height of 2386mm with 2 fan units 630 to 800 kVA: height of 2386mm with 3 fan units 900 to 1250 kVA: height of 2482mm with 2 fan units</p>	220	HD9XS-J100/280-DN	280	2700x1325x2000	2520
	250	HD9XS-J100/315-DN	315		2540
	280	HD9XS-J100/355-DN	355		2560
	315	HD9XS-J100/400-DN	400		2580
	355	HD9XS-J100/450-DN	450		2600
	400	HD9XS-J100/500-DN	500		2620
	500	HD9XS-J100/630-DN	630		2760
	560	HD9XS-J100/710-DN	710		2860
	630	HD9XS-J100/800-DN	800		2960
	710	HD9XS-J100/900-DN	900		3170
 <p>1400~1800kVA</p>	800	HD9XS-J100/1000-DN	1000	3050X1575X2100	3370
	900	HD9XS-J100/1120-DN	1120		3570
	1000	HD9XS-J100/1250-DN	1250		3770
	1120	HD9XS-J100/1400-DN	1400		4680
	1250	HD9XS-J100/1600-DN	1600		4880
	1400	HD9XS-J100/1800-DN	1800		5080
	1600	HD9XS-J100/2000-DN	2000		5280
	1800	HD9XS-J100/2250-DN	2250		5480
	2000	HD9XS-J100/2500-DN	2500		5680
	2240	HD9XS-J100/2800-DN	2800		7430
 <p>2000~2500kVA</p>	2400	HD9XS-J100/3000-DN	3000	4500X1325X2050	7720
	2500	HD9XS-J100/3150-DN	3150		7760
	2800	HD9XS-J100/3500-DN	3500		7870
	3000	HD9XS-J100/3750-DN	3750		7950
	3150	HD9XS-J100/4000-DN	4000		8470
	3550	HD9XS-J100/4500-DN	4500		8500
	4000	HD9XS-J100/5000-DN	5000		11890
	4500	HD9XS-J100/5600-DN	5600		12400
	5000	HD9XS-J100/6300-DN	6300		13200
	5600	HD9XS-J100/7000-DN	7000		13700
 <p>2800~4500kVA</p> <p>2800 to 3150 kVA: height of 2525mm with fan units 3500 to 4500 kVA: height of 2600mm with fan units</p>	6300	HD9XS-J100/8000-DN	8000	6295*1500*2455	18533
	7100	HD9XS-J100/9000-DN	9000		19128
	8000	HD9XS-J100/10000-DN	10000		21357
	9000	HD9XS-J100/11250-DN	11250		23272
	10000	HD9XS-J100/12500-DN	12500		24730
	11000	HD9XS-J100/13750-DN	13750		25191

Note:

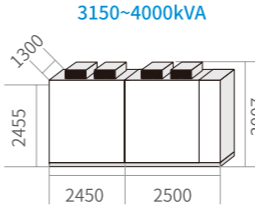
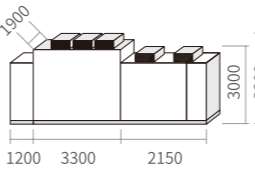
- The transformer capacity can be adjusted appropriately according to user requirements and on-site requirements.
- The above dimensions and weights are for reference only.
- The input voltage and output voltage of the standard series are the same.
- The height in the dimensions does not include the fan height (300 to 600 mm).
- For models with a capacity of 2800 kVA and above, the overall dimensions and weights refer to the sum of the control cabinet, power unit cabinet and transformer unit, excluding the bypass cabinet. For models with a capacity of less than 2800 kVA, the overall dimensions and weights include the bypass cabinet.
- The distance from the front of the equipment to the wall shall not be less than 1500 mm, the distance from the back to the wall shall not be less than 1000 mm, the distance from the side to the wall shall not be less than 800 mm, and the distance from the top to the roof shall not be less than 1000 mm.
- For models with a capacity of above 8000 kVA, the overall dimensions include the pre-charge cabinet.

DIMENSIONS

6 kV

Annotation	Applicable Motor Power(kW)	Model	Nominal Capacity(kVA)	Overall Dimensions (WxDxH, mm)	Weight (kg)
 <p>315~710kVA</p> <p>630 kVA and less: height of 2285mm with fan units 710 kVA: height of 2385mm with fan units</p>	250	HD9XS-F060/315-DN	315	2000X1225X1900	1230
	280	HD9XS-F060/355-DN	355		1360
	315	HD9XS-F060/400-DN	400		1490
	355	HD9XS-F060/450-DN	450		1620
	400	HD9XS-F060/500-DN	500		1750
	450	HD9XS-F060/560-DN	560		1880
	500	HD9XS-F060/630-DN	630		2010
	560	HD9XS-F060/710-DN	710		2140
	630	HD9XS-F060/800-DN	800		2500
	710	HD9XS-F060/900-DN	900		2700
 <p>800~1600kVA</p>	800	HD9XS-F060/1000-DN	1000	2300x1525x2000	2900
	900	HD9XS-F060/1120-DN	1120		3100
	1000	HD9XS-F060/1250-DN	1250		3300
	1120	HD9XS-F060/1400-DN	1400		3500
	1250	HD9XS-F060/1600-DN	1600		3700
	1400	HD9XS-F060/1800-DN	1800		3945
	1600	HD9XS-F060/2000-DN	2000		4515
 <p>1800~2800kVA</p>	1800	HD9XS-F060/2250-DN	2250	2600x1575x2050	4835
	2000	HD9XS-F060/2500-DN	2500		5135
	2250	HD9XS-F060/2800-DN	2800		5500

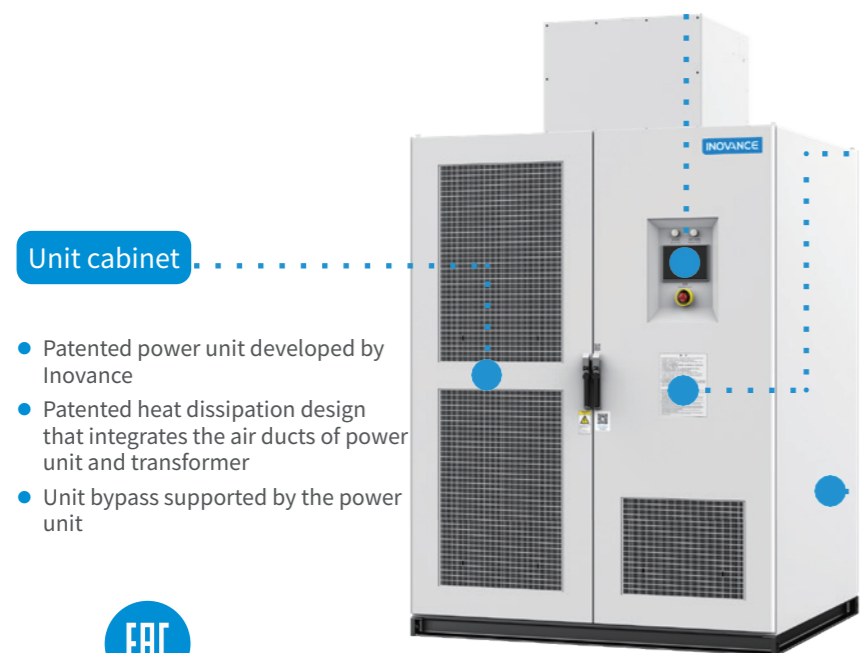
6 kV

Annotation Power	Applicable Motor Power (kW)	Model	Nominal Capacity(kVA)	Overall Dimensions (WxDxH, mm)	Weight (kg)
 <p>3150~4000kVA</p>	2500	HD9XS-F060/3150-DN	3150	4950X1300X2455	7955
	2800	HD9XS-F060/3550-DN	3550		8460
	3150	HD9XS-F060/4000-DN	4000		8930
	3600	HD9XS-F060/4500-DN	4500		12200
	4000	HD9XS-F060/5000-DN	5000		12750
	4480	HD9XS-F060/5600-DN	5600		13460
	5040	HD9XS-F060/6300-DN	6300		14230
	5600	HD9XS-F060/7000-DN	7000		15320
	6400	HD9XS-F060/8000-DN	8000		16360
	 <p>4500~8000kVA</p>				

HD9XT Series - Medium Voltage Drive

High Reliability General Medium Voltage Drive

Applicable capacity range: 10 kV: 280 kVA to 1000 kVA



Unit cabinet

- Patented power unit developed by Inovance
- Patented heat dissipation design that integrates the air ducts of power unit and transformer
- Unit bypass supported by the power unit

Operation display

- Simple and friendly HMI
- Convex-concave structure which is collision-proof, dust-proof, and mistouch-proof

Control cabinet

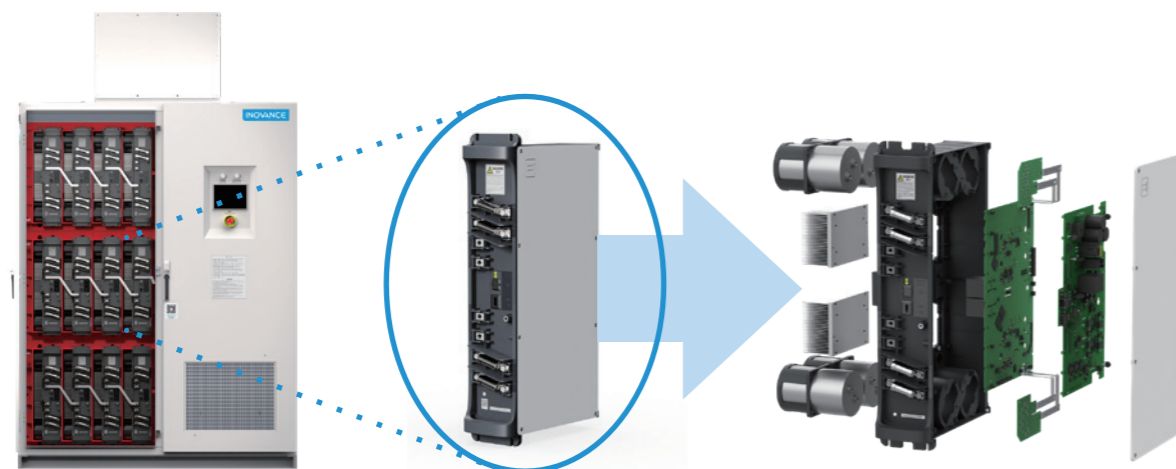
- One-to-one control via optical fibers to deliver optimal synchronization, instantaneity, and stability
- Optimal control performance (DSP+ARM+FPGA) with powerful computing power
- Abundant communication interfaces
- Convenient local and remote control

Transformer cabinet

- Built-in phase-shift transformer to eliminate power supply harmonics on the power grid side through multi-pulse rectification technology
- Patented technology for secondary short-circuit protection of the transformer to guarantee a safe and reliable operation



High reliability design



- Ultra-long service life: service life of core components increased by 100%
- Integrated design: Econodual encapsulation, All-in-one module, Two-in-one unit, and Integrated-PCBA design
- High IP rating: IP50
- Comprehensive protections: Automatic fault reset and overtemperature, overvoltage, and overcurrent protections

Smaller footprint



Size saved by ↓40%

Width narrowed by ↓1100mm

Highest power density in industry

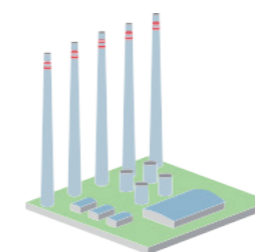
Smallest overall dimensions in industry

Optional bypass cabinet



- Flexible configuration

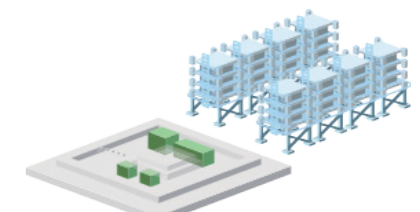
High adaptability to power grid



Conventional power grid



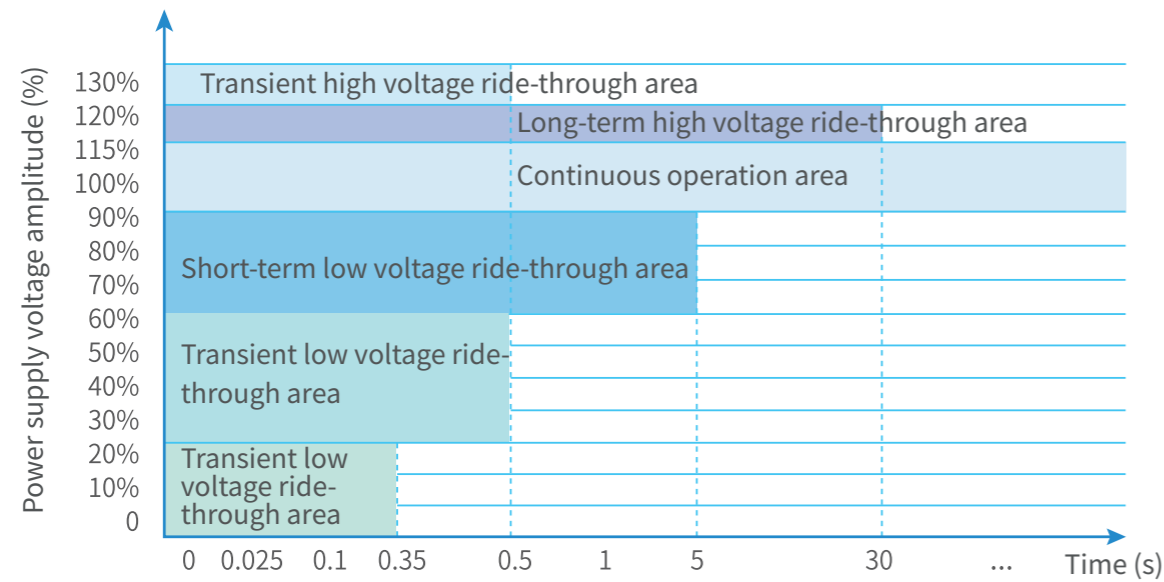
Clean power



New type of energy storage

New challenges for power grid under new types of power systems

Fluctuation range of power grid: 0%to130%



- Drafting party of Electric power industry standards of China DL/T1648-2016 (high and low voltage ride through)
- Providing solutions for voltage dip and voltage sap of the power grid

SPECIFICATIONS

Technical Data	10 KV Series
input	
Rated input voltage	Three-phase 50/60 Hz, 10 kV
Voltage fluctuation range	Derating is not needed for operations at 10 kV ± 10%. Long-term derated operation is allowed at 65% to 90% of 10 kV.
Frequency range	50 Hz/60 Hz ± 5%
Unit input voltage	690V
Input power factor	>0.95 (Load 20% to 100%)
Input current harmonics	Compliant with standards IEEE519-2014
output	
Output voltage range	0 kV to 10 kV
Output capacity range	280 kVA to 1000 kVA
Output frequency range	0-50/60 Hz, 120 Hz max, (customizable from 120 Hz to 700Hz)
Control mode	FOC/SVC (open-loop/closed-loop vector); voltage-type open-loop vector control
Speed regulation ratio	100:1 (without encoder): 1000:1 (with encoder)
Speed precision	+0.5% (open-loop vector): +0.02% (closed-loop vector)
Deceleration/acceleration time	0.1s to 6500.0s
Start/Stop control	Local or remote
Control system	ARM, DSP, FPGA, HMI
Panel display	Touchscreen (CN/EN)
Overload capacity	10 kV 280 kVA to 1000 kVA: overload capacity: 110%/1 min
System protection	Providing protections against motor overload, output overload, output short circuit, output grounding, output overcurrent, input overvoltage, fan warning, door switch interlock, transformer overtemperature, and tripping due to transformer overtemperature
MTBF	100,000 hours
Communication interface	Modbus-RTU or Modbus-TCP (optional), PROFIBUS-DP (optional), ProfiNet I/O (optional)
Digital input	7 DI, relay dry contact (standard configuration)
Digital output	8 DO, relay dry contact (standard configuration)
Analog input	4 AI, 4 mA to 20 mA (standard configuration)
Analog output	5 AO, 4 mA to 20 mA
Operating environment	Indoors
Ambient temperature	-10° C to +40° C, Preheating may be needed before start for temperatures below 0° C, Derated operation is needed for temperatures above 40° C
Ambient humidity	5% to 95%, without condensation
Altitude	≥ 1000 m (Derating is needed for altitudes higher than 1000 m.)
Total noise	<85 dB
Cooling mode	Forced air cooling (standard configuration)
IP rating	P30 (standard configuration)
Cable inlet/outlet mode [3]	Bottom in and bottom out by default (compatible with multiple cable inlet/outlet modes)
Control power supply	380 VAC ± 10% (three-phase 4-wire power grid)
Encoder types [4]	15 VDC OC and 5 VDC differential encoders (optional)

[1-4] Note: Contact Inovance for special needs.

DIMENSIONS

Dimensions	Applicable Motor Power (kW)	Model	Normal Capacity (kVA)	Overall Dimensions (Width x Depth x Height in mm)	Overall Weight (kg)
	220	HD9XT-J100/280-DN	280	1600X1300X2100	1880
	250	HD9XT-J100/315-DN	315		1890
	280	HD9XT-J100/355-DN	355		1900
	315	HD9XT-J100/400-DN	400		1930
	355	HD9XT-J100/450-DN	450		1950
	400	HD9XT-J100/500-DN	500		1990
	450	HD9XT-J100/560-DN	560		2000
	500	HD9XT-J100/630-DN	630		2100
	560	HD9XT-J100/710-DN	710		2200
	630	HD9XT-J100/800-DN	800		2300
	710	HD9XT-J100/900-DN	900	2500	
	800	HD9XT-J100/1000-DN	1000	2700	

Note:

- The capacity of the transformer can be adjusted based on user requirements and field conditions.
- The input voltage and output voltage are consistent for standard drives.
- The height in overall dimensions does not contain the height of the fan. The height of the fan for models of 800 kVA to 1000 kVA is about 552 mm. The height of the fan for models of 710 kVA and below is about 473 mm.
- Dimensions in the preceding table are for reference only. The actual dimensions may vary.

HD3X Series - Medium Voltage Drive

High-Performance Three-Level Medium Voltage Drive

Capacity range: 3.3 kV: 2.5 MVA to 30 MVA

① Water cooling cabinet

- The HD3X series high-performance three-level medium voltage drive is equipped with a dedicated water cooling cabinet that uses the water-in water-out cooling mode for heat dissipation. Heat is exchanged between the internal water and external water through the plate heat exchanger. The water cooling cabinet has the following characteristics:
 - Two pumps are used to back up each other, which lower the probability of faults.
 - The cabinet has a built-in filtering device and has low requirements on external water. The internal water operation status is monitored automatically. The cabinet has a self-service purification device to guarantee water quality and cleanness without manual operations

② Control cabinet for the power supply unit

- 15-inch TFT HD display, on which you can view faults, start/stop the local equipment, and commission the equipment remotely
- IP65 for the controller panel, enabling the cabinet to be used in harsh environments
- Quick configuration to meet diversified and customized engineering requirements of customers

③ Control cabinet for the drive unit

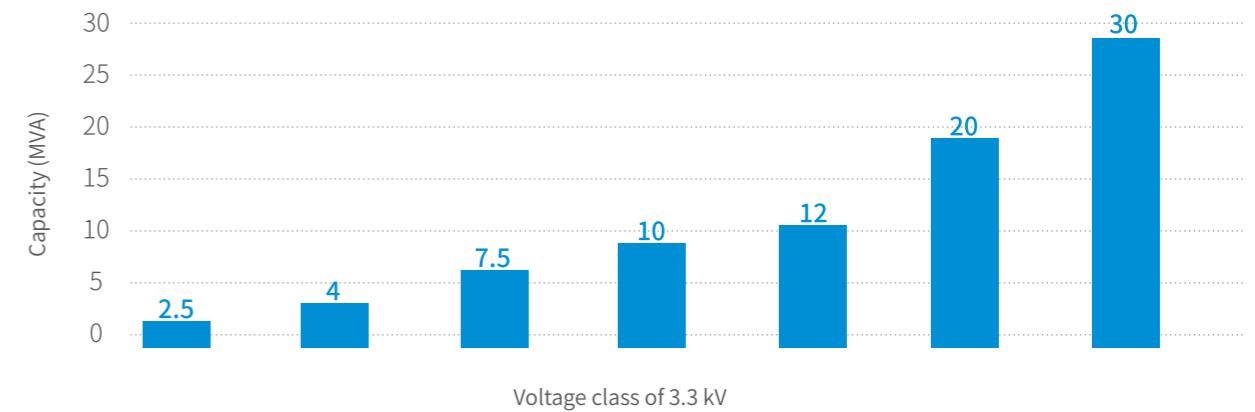
- HECU controller, connecting units and implementing complex processes
- Definite layout of main control boards, facilitating user maintenance and operations

④ Power supply unit cabinet & 5. Drive unit cabinet

- Power module and I/O terminals, with terminals integrated in the power cabinet, saving the space in the width of the whole machine
- Water leakage prevention device, protecting the power valve block and preventing equipment damage caused by short circuit
- IP43 for the whole cabinet



HD3X CAPACITY RANGE



APPLICATION INDUSTRIES



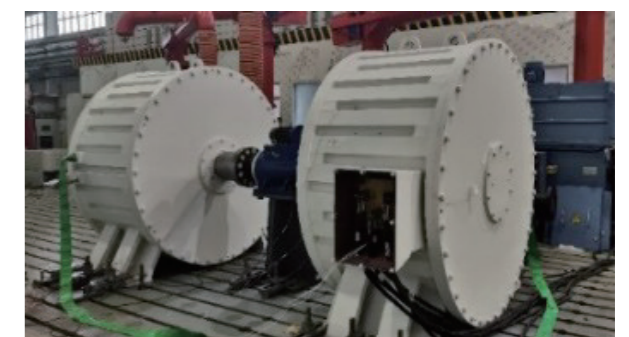
Metallurgy



Mining



Vessels



Test benches

HIGH PRECISION

Speed control accuracy Torque control accuracy

FVC $\pm 0.01\%$	$\pm 2\%$ (Synchronous)
SVC $\pm 10\%Fsl$	$\pm 5\%$ (Asynchronous)

HIGH DYNAMIC RESPONSE

Torque response	<5ms
Speed step response	<60ms
Dynamic speed drop	0.25%*s

High precision

Actual measurement

90% rated RPM **0.003%** 300% rated RPM **0.008%**

High response

Actual measurement

Torque response

RPM/%	Step torque/%	Torque response/ms
50%	10	3.75ms
80%	10	3.85ms

DIMENSIONS

Transmission Type	Rated Output Current (A)	Overall Dimensions (mm)	Rated Capacity (MVA)	Part No.
Single motor transmission	2550(W) x 2250(H) x 1000(D)	440	2.5	HD30-DA1A2-1A2S
	2550(W) x 2250(H) x 1000(D)	700	4	HD30-DA1A4-1A4S
	4150(W) x 2250(H) x 1000(D)	1300	7.5	HD30-DA2A4-2A4S
Multidrive system	3350(W) x 2250(H) x 1000(D)	2*440	5	HD30-DA1A2-1A2S-1A2S
	3350(W) x 2250(H) x 1000(D)	2*700	8	HD30-DA1A4-1A4S-1A4S

Transmission Type	Overall Dimensions (mm)	Rated Output Current (A)	Rated Capacity (MVA)	Part No.
Single motor transmission	5600(W) x 2450(H) x 1550(D)	1750	10	HD33-DA1AA-1AAS
	5600(W) x 2450(H) x 1550(D)	2100	12	HD33-DA1AB-1ABS
	10900(W) x 2450(H) x 1550(D)	2*1750	20	HD33-DA2AA-2AAD
	15500(W) x 2450(H) x 1550(D)	3*1750	30	HD33-DA3AA-3AAT
Multi-drive system	8600(W) x 2450(H) x 1550(D)	2*1750	20	HD33-DA1AA-1SAS-1SAS
	10900(W) x 2450(H) x 1550(D)	3*1750	30	HD33-DA1AA-1SAS-1SAS-1SAS
	10900(W) x 2450(H) x 1550(D)	2*1750	20	HD33-DA2AA-1SAS-1SAS
	13200(W) x 2450(H) x 1550(D)	3*1750	30	HD33-DA2AA-1SAS-1SAS-1SAS

Note: 1. The dimensions in the preceding tables include the size of the water cooling cabinet.
2. For details on parameters of uncontrolled rectification models, contact the Inovance's sales personnel.

SPECIFICATIONS

	Item	Description
Uncontrolled Rectification Parameters	Rated input voltage	2 x 1800 V $\pm 10\%$
	Frequency	50/60 Hz
	Power factor	≥ 0.95 (above 20% of the load)
	Rectification topology	12-pulse rectification
Parameters AFE Unit	Rated input voltage	3300 V $\pm 10\%$
	Frequency	50/60 Hz
	Power factor	The default value is 1. It can be adjusted as required.
	Rectification topology	NPC three-level
parameter SInverter	Rated output current	3300 V
	Rated output capacity	4 MVA, 10 MVA, or 12 MVA Note: The value is the capacity of a single motor.
	Rated output frequency	75 Hz
	Back EMF capability	≤ 5600 V
	Output frequency resolution	0.01 Hz
	Motor type	Asynchronous motor, External-excitation synchronous motor, and PMSM
Parameters Inverter	Control mode	FVC and SVC
	Speed accuracy in the steady state	$\pm 0.01\%$ (with encoder)
	speed step response	≤ 50 ms (without mechanical connection); ≤ 80 ms to 120 ms (with mechanical connection)
	Speed drop recovery	0.25%S (with encoder)
	Torque response	< 5 ms
	Torque accuracy in the steady state	$\pm 5\%$ (asynchronous motor); $\pm 2\%$ (synchronous motor)
	Torque ripple	< 1%
	Efficiency	98.50%
Parameters System	Cooling mode	Water-in water-out cooling
	Temperature	External water temperature of 5° C to 35° C
	Altitude	≤ 1000 m; 1000 m to 4000 m: derating required
	IP rating	Standard: IP43 Optional: IP54
	Cabling mode	Bottom in and bottom out (customization supported for special cases)
	Communication port	PROFIBUS DP, PROFINET IO, and Modbus RTU (If you have special needs, contact Inovance for technical support.)
	System protection	Protection against overvoltage, undervoltage, overcurrent, short circuit, over-temperature and for water cooling system

MOTORS



- General Low-Power Servo Motor
- General High-Power Servo Motor
- Linear Motor
- Precision Direct Drive Motor
- Permanent Magnet Motor

MS1-Z Series Servo Motor

Highly Dynamic Motors with a Wide Range of Brake Options



Power range: 0.03 kW to 7.5 kW, flange size 25 mm to 180 mm
Applied in automation equipment such as semiconductors, SMT machines, handling machineries, machine tools, and conveyer machineries

PRODUCT FEATURES

- Support for 23bit multi-turn optical encoder
- Built-in torque ripple compensation function (torque ripple < 0.5%)
- Enhanced overload capacity
- IP67 protection for the entire machine (except the oil seal) and high shock resistance, ensuring safety and durability under various working conditions

MECHANICAL CHARACTERISTICS

Item	Description
Duty type	Continuous
Vibration level	V15
Insulation resistance	Above 10 MΩ at 500 VDC
Ambient temperature	0°C to 40°C
Storage temperature	-20°C to +60°C (peak temperature assurance: 72 hours at 80°C)
Excitation mode	Permanent magnet
Installation mode	Flange
Insulation class	155(F)
Insulation voltage	1 min at 1500 VAC (220 V level) 1 min at 1800 VAC (380 V level)
IP rating of enclosure	IP67 (shaft extension and cable ends excluded)
Ambient humidity	20% to 80% RH (without condensation)
Direction of rotation	Rotating counterclockwise (CCW) when viewed from the load side with a forward rotation command
Vibration resistance	Below 49 m/s ²
Shock resistance	Below 490 m/s ²
Altitude	Below 1000 m (Derating is required for altitudes above 1000 m)

MS1 H1 - 75B 30C B - A3 3 1 Z - INT

① Series MS1 series servo motor	④ Rated speed A: x 1 B: x 10 C: x 100 D: x 1,000 E: x 10,000 E.g. 30C : 3,000 RPM	⑦ Motor shaft 1: plain 2: keyed 3: keyed + tapped hole 5: tapped hole
② Inertia H1: low inertia, 40/60/80 mm flange, 3,000 RPM H2: low inertia, 100/130 mm flange, 3,000 RPM H3: medium inertia 130/180 mm flange, 1,500 RPM H4: medium inertia 60/80 mm flange, 3,000 RPM	⑤ Voltage class B: 220 V D: 400 V	⑧ Brake and oil seal options 0: no brake, no oil seal 1: oil seal 2: brake 4: brake + oil seal
③ Rated power A: x 1 B: x 10 C: x 100 D: x 1,000 E: x 10,000 E.g. 75B: 750 W; 15C: 1,500 W	⑥ Encoder type A3: 23-bit single & multi-turn absolute A6: 26-bit	⑨ Stator pole Y: 8 pole Z: 10 pole
		⑩ INT: international version

SPECIFICATIONS

MS1H1

Servo motor model	Rated output [kW]	Rated torque [Nm]	Peak torque [Nm]	Rated current [Arms]	Peak current [Arms]	Rated speed [RPM]	Max speed [RPM]	Torque constant [Nm/Arms]	Rotor inertia [10-4 x kgm ²]		Voltage [V]
									Without brake	With brake	
MS1H1 (Nrated = 3,000 RPM, Nmax = 6,000 RPM)											
MS1H1-05B30CB-XXXXZ-INT	0.05	0.16	0.56	1.3	4.7	3,000	6,000	0.15	0.026	0.028	220
MS1H1-10B30CB-XXXXZ-INT	0.1	0.32	1.12	1.3	4.7			0.26	0.041	0.043	
MS1H1-20B30CB-XXXXZ-INT	0.2	0.64	2.24	1.5	5.8			0.46	0.207	0.220	
MS1H1-40B30CB-XXXXZ-INT	0.4	1.27	4.46	2.8	10.1			0.53	0.376	0.390	
MS1H1-55B30CB-XXXXZ-INT	0.55	1.75	6.13	3.8	15.0			0.49	1.06	1.06	
MS1H1-75B30CB-XXXXZ-INT	0.75	2.39	8.36	4.8	16.9			0.58	1.38	1.43	
MS1H1-10C30CB-XXXXZ-INT	1.0	3.18	11.1	7.6	28			0.46	1.75	1.75	

MS1H3

Servo motor model	Rated output [kW]	Rated torque [Nm]	Peak torque [Nm]	Rated current [Arms]	Peak current [Arms]	Rated speed [RPM]	Max speed [RPM]	Torque constant [Nm/Arms]	Rotor inertia [10-4 x kgm ²]		Voltage [V]
									Without brake	With brake	
MS1H3 (Nrated = 1,500 RPM, Nmax = 3,000 RPM)											
MS1H3-85B15CB-XXXXZ-INT	0.85	5.39	13.5	6.6	16.5	1,500	3,000	0.9	13.3	14	220
MS1H3-13C15CB-XXXXZ-INT	1.3	8.34	20.85	10	25			0.9	17.8	18.5	
MS1H3-85B15CD-XXXXZ-INT	0.85	5.39	13.5	3.3	8.25			1.75	13.3	14	400
MS1H3-13C15CD-XXXXZ-INT	1.3	8.34	20.85	5	12.5			1.78	17.8	18.5	
MS1H3-18C15CD-XXXXZ-INT	1.8	11.5	28.75	6.6	16.5			1.8	25	25.7	
MS1H3-29C15CD-XXXXZ-INT	2.9	18.6	37.2	11.9	28			1.7	55	57.2	
MS1H3-44C15CD-XXXXZ-INT	4.4	28.4	71.1	16.5	40.5			1.93	88.9	90.8	
MS1H3-55C15CD-XXXXZ-INT	5.5	35	87.6	20.85	52			1.8	107	109.5	
MS1H3-75C15CD-XXXXZ-INT	7.5	48	119	25.7	65			1.92	141	143.1	

MS1H2

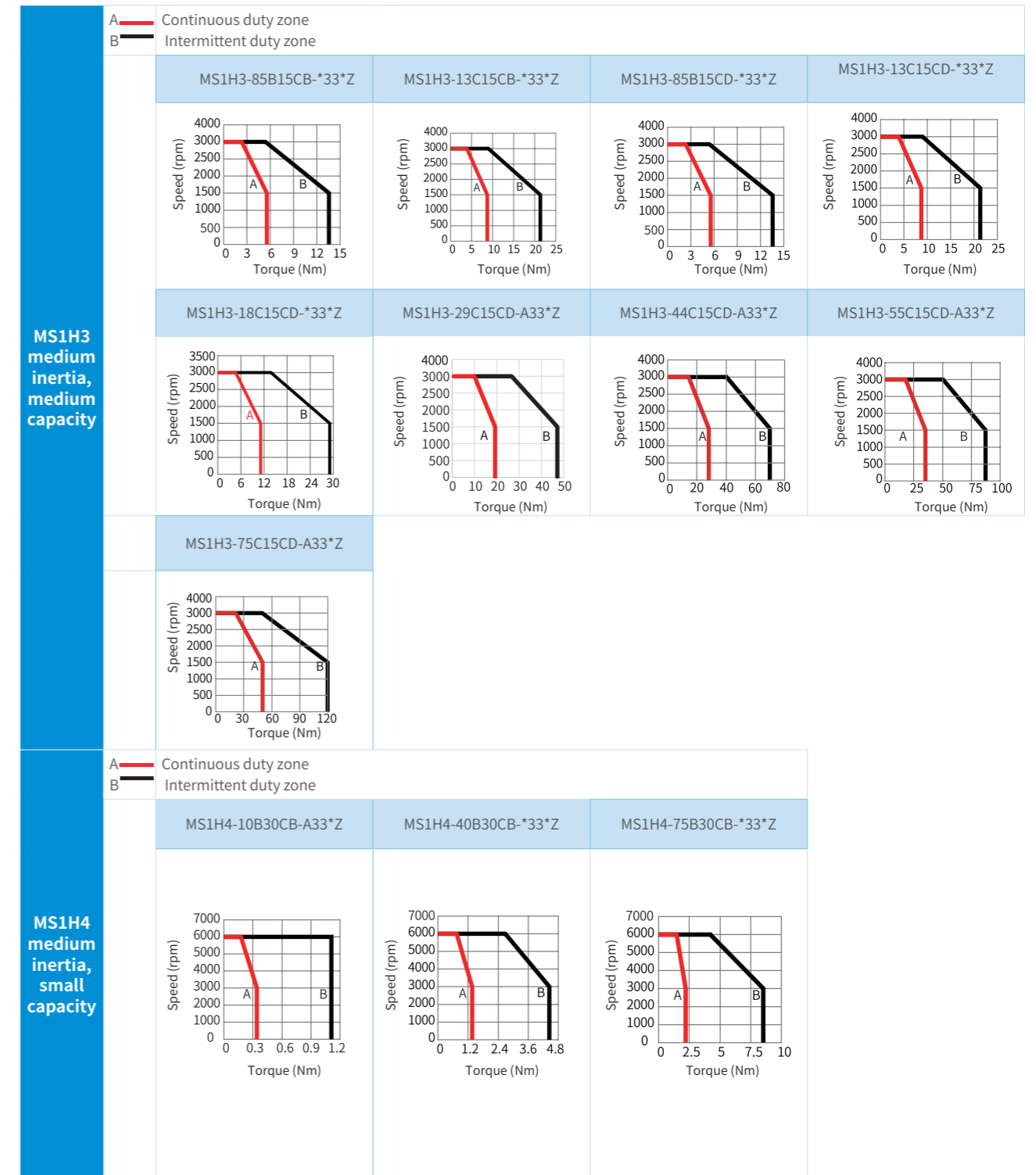
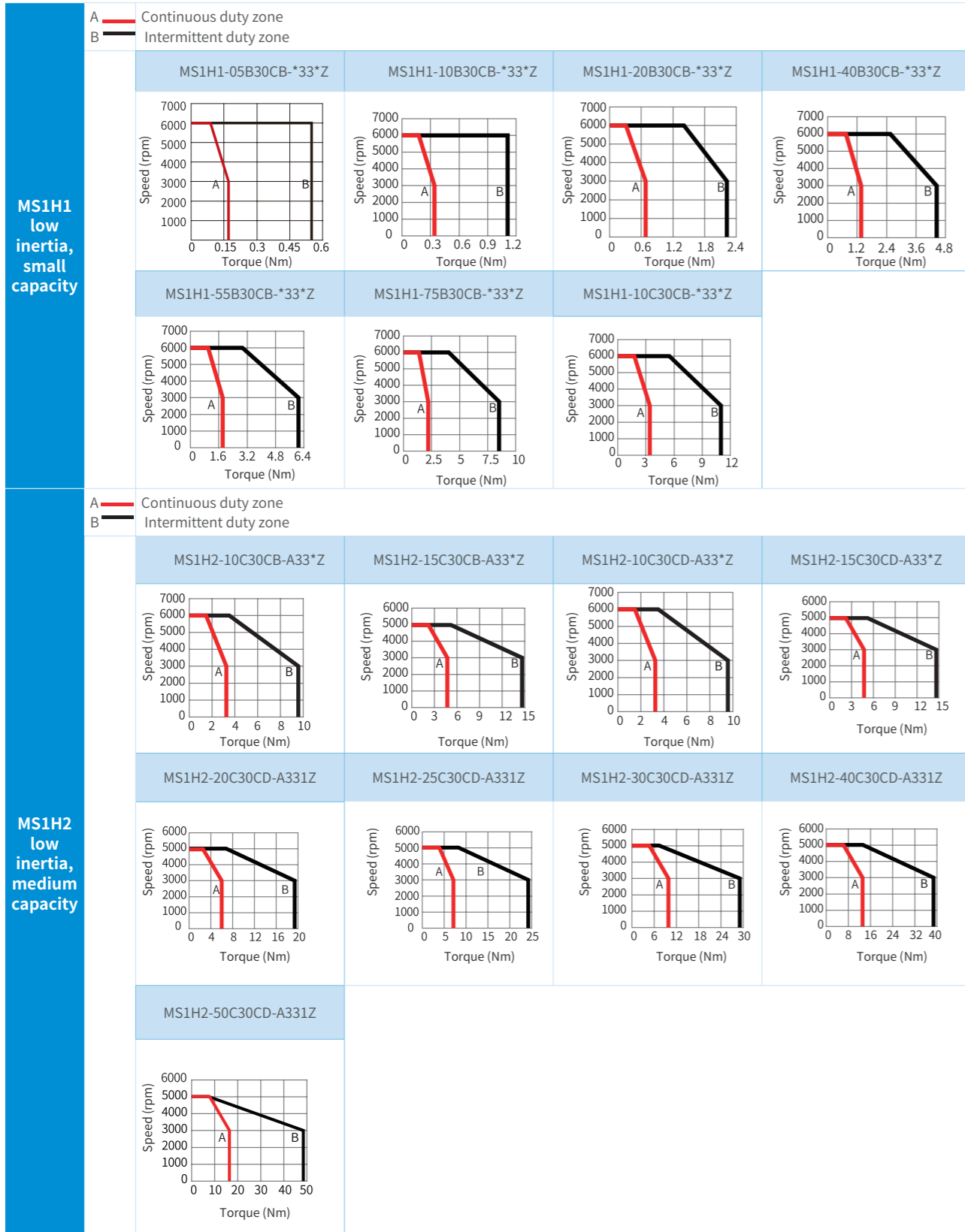
Servo motor model	Rated output [kW]	Rated torque [Nm]	Peak torque [Nm]	Rated current [Arms]	Peak current [Arms]	Rated speed [RPM]	Max speed [RPM]	Torque constant [Nm/Arms]	Rotor inertia [10-4 x kgm ²]		Voltage [V]
									Without brake	With brake	
MS1H2 (Nrated = 3,000 RPM, Nmax = 5,000/6,000 RPM)											
MS1H2-10C30CB-XXXXZ-INT	1.0	3.18	9.54	7.5	23	3,000	6,000	0.43	1.87	3.12	220
MS1H2-15C30CB-XXXXZ-INT	1.5	4.9	14.7	10.8	32		5,000	0.45	2.46	3.71	
MS1H2-10C30CD-XXXXZ-INT	1.0	3.18	9.54	3.65	11		6,000	0.87	1.87	3.12	400
MS1H2-15C30CD-XXXXZ-INT	1.5	4.9	14.7	4.5	14		5,000	1.09	2.46	3.71	
MS1H2-20C30CD-XXXXZ(-S4)-INT	2.0	6.36	19.1	5.89	20			1.08	3.06	4.31	
MS1H2-25C30CD-XXXXZ(-S4)-INT	2.5	7.96	23.9	7.56	25			1.05	3.65	4.9	
MS1H2-30C30CD-XXXXZ(-S4)-INT	3.0	9.8	29.4	10	30			0.98	7.72	7.72	
MS1H2-40C30CD-XXXXZ(-S4)-INT	4.0	12.6	37.8	13.6	40.8		0.93	12.1	14.6		
MS1H2-50C30CD-XXXXZ(-S4)-INT	5.0	15.8	47.6	16	48	1.07	15.4	17.9			

MS1H4

Servo motor model	Rated output [kW]	Rated torque [Nm]	Peak torque [Nm]	Rated current [Arms]	Peak current [Arms]	Rated speed [RPM]	Max speed [RPM]	Torque constant [Nm/Arms]	Rotor inertia [10-4 x kgm ²]		Voltage [V]
									Without brake	With brake	
MS1H4 (Nrated = 3,000 RPM, Nmax = 6,000 RPM)											
MS1H4-40B30CB-XXXXZ-INT	0.4	1.27	4.46	2.8	10.1	3,000	6,000	0.53	0.657	0.667	220
MS1H4-75B30CB-XXXXZ-INT	0.75	2.39	8.36	4.8	16.9			0.58	2	2.012	

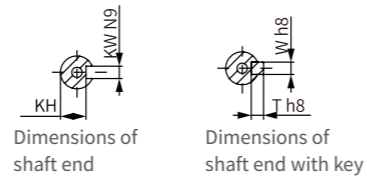
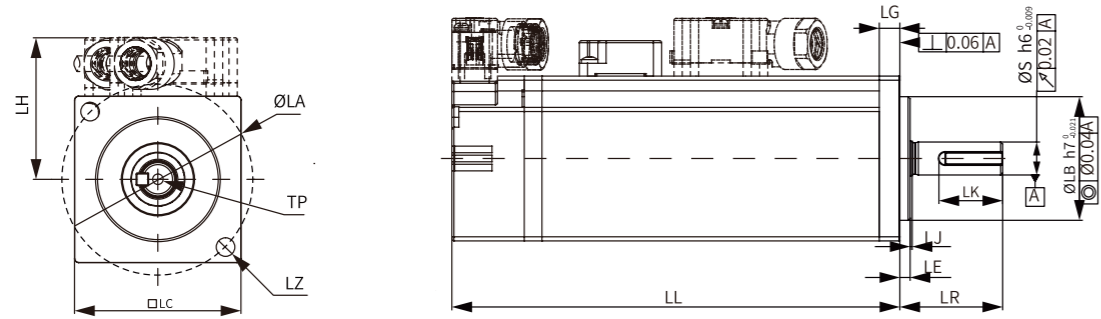
Notes: Type codes with S4 indicate motors with brakes that can be applied on a discontinuous cycle or an RMS load with 70% of the rated torque

TORQUE-SPEED CHARACTERISTICS OF MS1-Z SERIES MOTORS WITH 23-BIT ENCODER

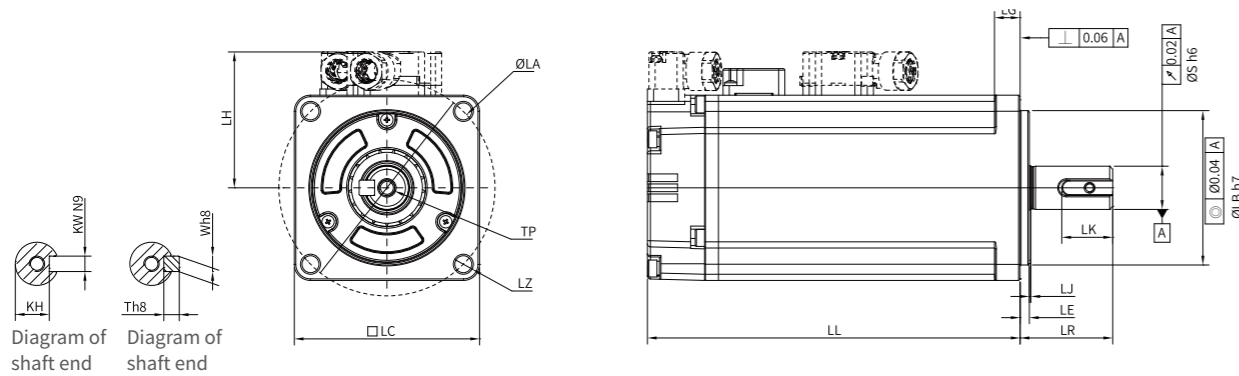


DIMENSIONS OF MS1-Z SERIES H1/H4 MOTORS

Flange size 40



Flange size 60 and 80



Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	LH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)	
Flange size 40	MS1H1-05B30CB-□□3□Z	40	65.4 (96)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}
	MS1H1-10B30CB-□□3□Z	40	78.4 (110)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}
	MS1H4-10B30CB-□□3□Z	40	91 (121.5)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}

Motor Model	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 40	MS1H1-05B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	0.39 (0.50)
	MS1H1-10B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	0.45 (0.50)
	MS1H4-10B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	0.45 (0.50)

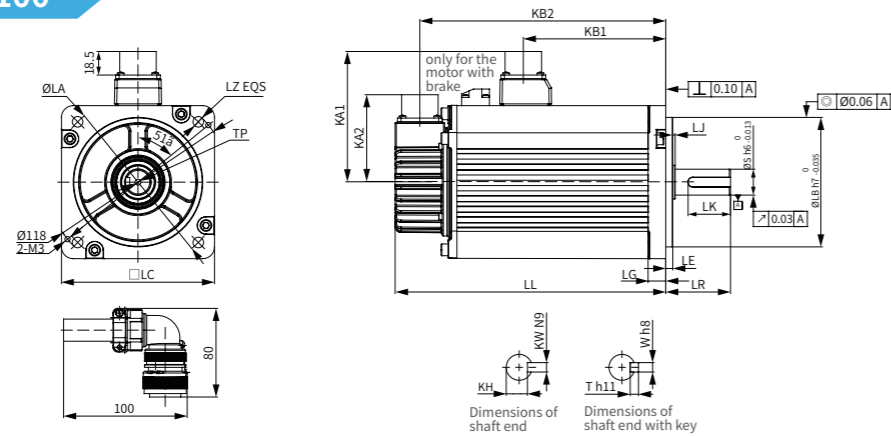
Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	LH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)	
Flange size 60 And 80	MS1H1-20B30CB-□□3□Z	60	75.5 (100)	30±0.5	70	4 - Ø5.5	44	7.5	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
	MS1H1-40B30CB-□□3□Z	60	91 (119)	30±0.5	70	4 - Ø5.5	44	7.5	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
	MS1H1-55B30CB-□□3□Z	80	96.2 (/)	35±0.5	90	4 - Ø7	54	7.7	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H1-75B30CB-□□3□Z	80	107 (140)	35±0.5	90	4 - Ø7	54	7.7	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H1-10C30CB-□□3□Z	80	118.2 (/)	35±0.5	90	4 - Ø7	54	7.7	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
	MS1H4-40B30CB-□□3□Z	60	105 (128)	30±0.5	70	4 - Ø5.5	44	7.5	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
	MS1H4-75B30CB-□□3□Z	80	117.5 (147.5)	35±0.5	90	4 - Ø7	54	7.7	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}

Motor Model	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 60 And 80	MS1H1-20B30CB-□□3□Z	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	0.78 (1.16)
	MS1H1-40B30CB-□□3□Z	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	1.11 (1.48)
	MS1H1-55B30CB-□□3□Z	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	1.85 (/)
	MS1H1-75B30CB-□□3□Z	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	2.18 (2.82)
	MS1H1-10C30CB-□□3□Z	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	2.55 (/)
	MS1H4-40B30CB-□□3□Z	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	1.27 (1.62)
	MS1H4-75B30CB-□□3□Z	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	2.40 (3.04)

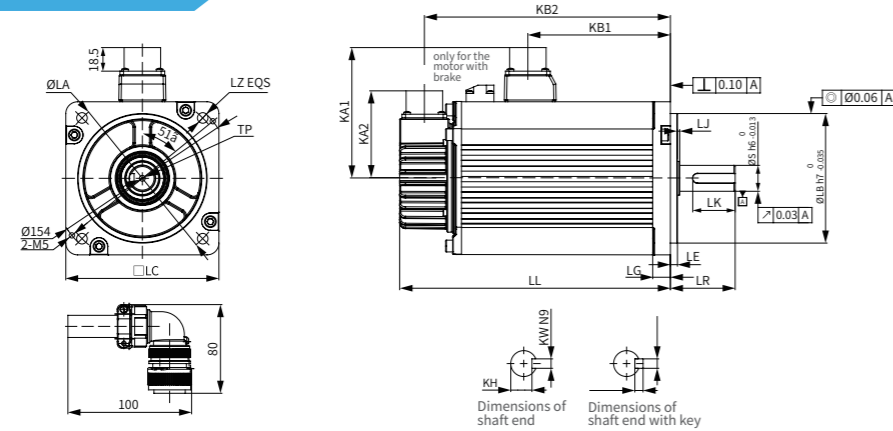
Note: [1] Values in the parentheses are for the motor with brake.

DIMENSIONS OF MS1-Z SERIES H2/H3 MOTORS

Flange size 100



Flange size 130 and 180



Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
MS1H2-10C30CB-A33*Z	100	164	45±1	115	4 - Ø7	88	94.5 (101)	74	143.5 (192.5)	10	5±0.3
MS1H2-10C30CD-A33*Z		(213.5)									
MS1H2-15C30CB-A33*Z	100	189	45±1	115	4 - Ø7	88	119.5 (128)	74	168.5 (219.5)	10	5±0.3
MS1H2-15C30CD-A33*Z		(239)									
MS1H2-20C30CD-A331Z	100	214	45±1	115	4 - Ø7	88	144.5	74	193.5	10	5±0.3
MS1H2-25C30CD-A331Z	100	240.5	45±1	115	4 - Ø7	88	169.5	74	218.5	10	5±0.3

Motor Model	LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
MS1H2-10C30CB-A33*Z	2.5±0.75	Ø95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	5.11 (6.41)
MS1H2-10C30CD-A33*Z										
MS1H2-15C30CB-A33*Z	2.5±0.75	Ø95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	6.22 (7.52)
MS1H2-15C30CD-A33*Z										
MS1H2-20C30CD-A331Z	2.5±0.75	Ø95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	7.39
MS1H2-25C30CD-A331Z	2.5±0.75	Ø95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	8.55

Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
MS1H2-30C30CD-A331Z	130	209.5	63±1	145	4 - Ø9	103	136	74	188.5	14	6±0.3
MS1H2-40C30CD-A331Z	130	252	63±1	145	4 - Ø9	103	178.5	74	231	14	6±0.3
MS1H2-50C30CD-A331Z	130	294.5	63±1	145	4 - Ø9	103	221	74	273.5	14	6±0.3
MS1H3-85B15CB-*33*Z	130	146	55±1	145	4 - Ø9	103	72.5	74	125	14	4
MS1H3-85B15CD-*33*Z		(182)							(161)		
MS1H3-13C15CB-*33*Z	130	163	55±1	145	4 - Ø9	103	89.5	74	142	14	4
MS1H3-13C15CD-*33*Z		(199)							(178)		
MS1H3-18C15CD-*33*Z	130	181 (217)	55±1	145	4 - Ø9	103	107.5	74	160 (196)	14	4

Motor Model	LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
MS1H2-30C30CD-A331Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	10.73
MS1H2-40C30CD-A331Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	15.43
MS1H2-50C30CD-A331Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	16.2
MS1H3-85B15CB-*33*Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	7
MS1H3-85B15CD-*33*Z										(8)
MS1H3-13C15CB-*33*Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	8
MS1H3-13C15CD-*33*Z										(9.5)
MS1H3-18C15CD-*33*Z	0.5±0.75	Ø110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	9.5 (11)

Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
MS1H3-29C15CD-A33*Z	180	197 (273)	79±1	200	4 - Ø13.5	138	136 (134)	74	177 (253)	18	3.2±0.3
MS1H3-44C15CD-A33*Z	180	230 (307)	79±1	200	4 - Ø13.5	138	169 (167)	74	210 (286)	18	3.2±0.3
MS1H3-55C15CD-A33*Z	180	274 (350)	79±1	200	4 - Ø13.5	138	213 (211)	74	254 (330)	18	3.2±0.3
MS1H3-75C15CD-A33*Z	180	330 (407)	113±1	200	4 - Ø13.5	138	269 (267)	74	310 (386)	18	3.2±0.3

Motor Model	LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
MS1H3-29C15CD-A33*Z	0.3±0.75	Ø114.3h7 ⁰ _{-0.035}	35	M12x25	65	30 ⁰ _{-0.2}	10	10	8	15 (25)
MS1H3-44C15CD-A33*Z	0.3±0.75	Ø114.3h7 ⁰ _{-0.035}	35	M12x25	65	30 ⁰ _{-0.2}	10	10	8	19.5 (30)
MS1H3-55C15CD-A33*Z	0.3±0.75	Ø114.3h7 ⁰ _{-0.035}	42	M12x25	97	37 ⁰ _{-0.2}	10	10	8	28 (38)
MS1H3-75C15CD-A33*Z	0.3±0.75	Ø114.3h7 ⁰ _{-0.035}	42	M16x32	97	37 ⁰ _{-0.2}	12	12	8	32 (42)

Note: [1] Values in the parentheses are for the motor with brake.

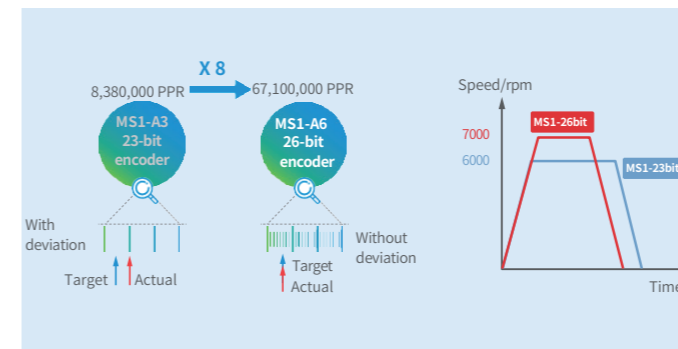
MS1-R Series Servo Motor

High Performance Universal Servo Motor

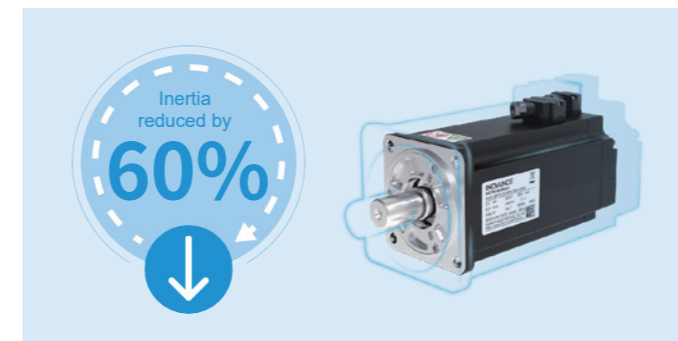


- High performance three phase permanent magnet servo motor, new generation
- Naturally cooled motor without fan
- Big Flange Size:
 - Flange size 100, 130, 180mm
 - Power range 0.85~7.5kW
 - Rated Speed 1500rpm, 3000rpm
 - Max. Speed 3000rpm, 4500rpm
- Small Flange Size:
 - Flange size 40, 60, 80mm
 - Power range 0.05~1.0kW
 - Rated Speed 3000rpm
 - Max. Speed 7000rpm
- Options: 26bit or 23bit encoder, brake

HIGH-SPEED AND HIGH-PRECISION MOTOR

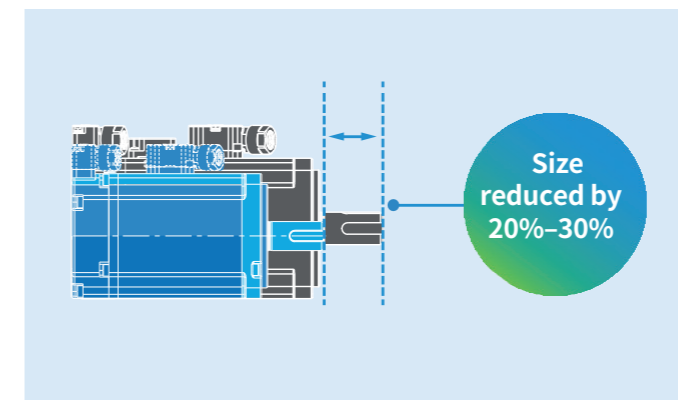


- Born for applications requiring high speed and high precision
- Encoder resolution improved from 23-bit to 26-bit, with max. speed increased from 6000 rpm to 7000 rpm



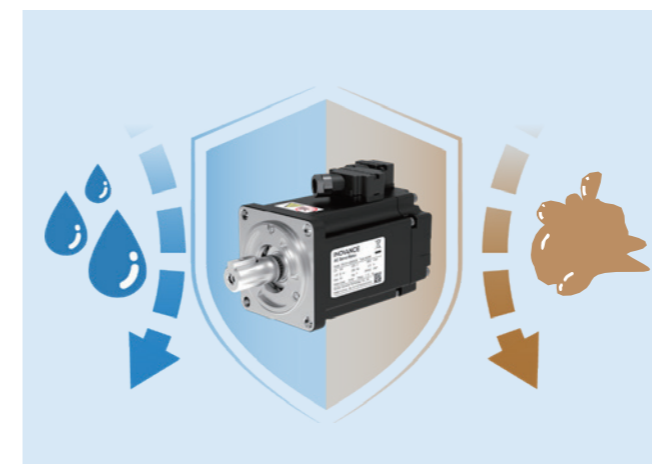
- Motors with ultra-low inertia
- Inertia reduced by more than 60% to fit motion control applications with high cycle, low temperature rise, and light load, such as bonding arms

ENERGY-SAVING AND SPACE-SAVING




- Equipped with 26-bit encoder and compliant with energy efficiency class IE5 to achieve cost reduction and efficiency increase
- Motor length reduced by 20% to 30% to save footprint of the motor

DEGREE OF PROTECTION



- Compliant with the requirements of IP67
- Suitable for extreme environments with vapors, greasy dirt, and vibration

SPECIFICATIONS

Item	Description
Duty type	S1 (Continuous duty)
Vibration level	V15 ^[1]
Insulation resistance	Above 10 mΩ at 500 VDC
Ambient temperature	0° C to +40° C (non-frozen) (See the derating curve for temperatures above 40° C)
Ambient humidity	20% to 80% (without condensation)
Storage environment	Store a de-energized motor in environment that meets the following requirements: · Storage temperature: -20° C to +60° C (non-frozen) · Storage humidity: 20% to 80% RH (without condensation)
Excitation mode	Permanent magnet
Installation mode	Flange
Insulation class	155(F)
Insulation voltage	1 min at 1500 VAC (220 V level); 1 min at 1800 VAC (380 V level)
IP rating of enclosure	IP67 (shaft opening and connectors of flying leads type motors excluded)
Ambient humidity	20% to 80% RH (without condensation)
Direction of rotation	Rotating counterclockwise when viewed from the shaft extension side with the default forward run command 
Vibration resistance ^[2]	49 m/s ² (flange face as standard)
Shock resistance ^[3]	490 m/s ² (flange face as standard); Number of shocks: 2 times
Altitude	Below 1000 m (Derating is required for altitudes above 1000m)

Note:
 [1] Vibration level V15 represents the vibration amplitude of the servo motor is lower than 15 μm during operation at rated speed.
 [2] The vertical, side-to-side, and front-to-back vibration resistance in three directions when the motor is mounted with the shaft in a horizontal position is given in the above table.
 [3] The shock resistance for shock in the vertical direction when the motor is mounted with the shaft in a horizontal position is given in the above table.
 [4] Do not operate the system at a fixed frequency because exceeding the allowable vibration value can damage the system.

ELECTRICAL SPECIFICATIONS OF THE MOTOR WITH BRAKE

Motor Model	Holding Torque (N·m)	Supply Voltage (VDC) ±10%	Rated power (W)	Coil Resistance (Ω) ±7%	Exciting Current (A)	Release Time (ms)	Apply Time (ms)	Backlash (°)
MS1H1-05B/10B MS1H4-10B	0.32	24	6.1	94.4	0.25	≤ 20	≤ 40	≤ 1.5
MS1H1/4-20B/40B	1.5	24	7.6	75.79	0.32	≤ 20	≤ 60	≤ 1.5
MS1H1/4-75B/10C	3.2	24	10	57.6	0.42	≤ 40	≤ 60	≤ 1
MS1H2-10C/15C/20C/25C	8	24	17.6	32.73	0.73	≤ 40	≤ 100	≤ 1
MS1H2-30C/40C/50C	16	24	24	24	1	≤ 60	≤ 120	≤ 1
MS1H3-85B/13C/18C	16	24	24	24	1	≤ 60	≤ 120	≤ 1
MS1H3-29C/44C/55C/75C	50	24	31	18.58	1.29	≤ 100	≤ 200	≤ 1

Note:
 [1] The holding brake cannot be used for braking purpose.
 [2] The brake release time and apply time vary with the discharging circuit. Check the actual action delay of the product during use.
 [3] 24 VDC power supplies need to be prepared by users.

SPECIFICATIONS

MS1H1 motors with low inertia and small capacity (flange size 40/60/80)

Model MS1H1-	05B30CB	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	40	60	60	80	80	80
Rated power (kW)	0.05	0.1	0.2	0.4	0.55	0.75	1
Rated voltage (V)	220	220	220	220	220	220	220
Rated torque (N·m)	0.16	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	0.56	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	1.5	2.5	3.9	4.4	6.2
Max. current (A)	4.7	4.7	5.8	9.8	15	16.9	24
Rated speed n _n (rpm)	3000	3000	3000	3000	3000	3000	3000
Max. speed n _{max} (rpm)	7000	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.15	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.026 (0.028)	0.041 (0.043)	0.094 (0.106)	0.145 (0.157)	0.55 (/)	0.68 (0.071)	0.82 (0.87)
Applicable drive SV660/670/680	S1R6	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

MS1H2 motors with low inertia and medium capacity (flange size 100)

Model MS1H2-	10C30CB	10C30CD	15C30CB	15C30CD	20C30CB	20C30CD	25C30CB	25C30CD
Flange size (mm)	100	100	100	100	100	100	100	100
Rated power (kW)	1	1	1.5	1.5	2	2	2.5	2.5
Rated voltage (V)	220	380	220	380	220	380	220	380
Rated torque (N·m)	3.18	3.18	4.9	4.9	6.36	6.36	7.96	7.96
Max. torque (N·m)	9.54	9.54	14.7	14.7	19.1	19.1	23.9	23.9
Rated current (A)	6.4	3.3	8.6	4.2	11.3	5.6	14.7	7.2
Max. current (A)	23	11	32	14	42	20	53	26
Rated speed n _n (rpm)	3000	3000	3000	3000	3000	3000	3000	3000
Max. speed n _{max} (rpm)	6000	6000	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.54	1.07	0.62	1.28	0.6	1.19	0.6	1.18
Rotor moment of inertia (kg·cm ²)	1.78 (2.6)	1.78 (2.6)	2.35 (3.17)	2.35 (3.17)	2.92 (3.74)	2.92 (3.74)	3.49 (4.3)	3.49 (4.3)
Applicable drive SV660/670/680	S7R6	T3R5	S012	T5R4	S018	T8R4	S022	T8R4/T012

MS1H2 motors with low inertia and medium capacity (flange size 130)

Model MS1H2-	30C30CB	30C30CD	40C30CB	40C30CD	50C30CB	50C30CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	3	3	4	4	5	5
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	9.8	9.8	12.6	12.6	15.8	15.8
Max. torque (N·m)	24.5	29.4	31.5	37.8	39.5	47.4
Rated current (A)	16.6	8.9	22	13.5	22	17
Max. current (A)	55	29	67.5	42.5	67.5	52.5
Rated speed n _n (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n _{max} (rpm)	6000	6000	6000	6000	6000	6000
Torque coefficient (N·m/A)	0.67	1.25	0.65	1.06	0.81	1.04
Rotor moment of inertia (kg·cm ²)	6.4 (9.38) ^[1]	6.4 (9.38)	9 (11.98)	9 (11.98)	11.6 (14.58)	11.6 (14.58)
Applicable drive SV660/670/680 ^[2]	S022	T012	S027	T017	S027	T021

Note:
 [1] Values in the parentheses are the rotor moment of inertia for the motor with brake.
 [2] Drive model description: S-220 V voltage class; T-380 V voltage class; 1R6-Rated output current 1.6 A..., 027-Rated output current 27 A

MS1H2 motors with low inertia and medium capacity (flange size 130)

Model MS1H3-	85B15CB	85B15CD	13C15CB	13C15CD	18C15CB	18C15CD
Flange size (mm)	130	130	130	130	130	130
Rated power (kW)	0.85	0.85	1.3	1.3	1.8	1.8
Rated voltage (V)	220	380	220	380	220	380
Rated torque (N·m)	5.39	5.39	8.34	8.34	11.5	11.5
Max. torque (N·m)	13.5	13.5	20.85	20.85	28.75	28.75
Rated current (A)	6.6	3.5	10.5	5.1	11.9	6.75
Max. current (A)	17.2	8.5	27.3	12.6	32.2	17.7
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	0.93	1.84	0.89	1.85	1.05	1.87
Rotor moment of inertia (kg·cm ²)	13.56 (15.8)	13.56 (15.8)	19.25 (21.5)	19.25 (21.5)	24.9 (27.2)	24.9 (27.2)
Applicable drive SV660/670/680	S7R6	T3R5	S012	T5R4	S018	T8R4

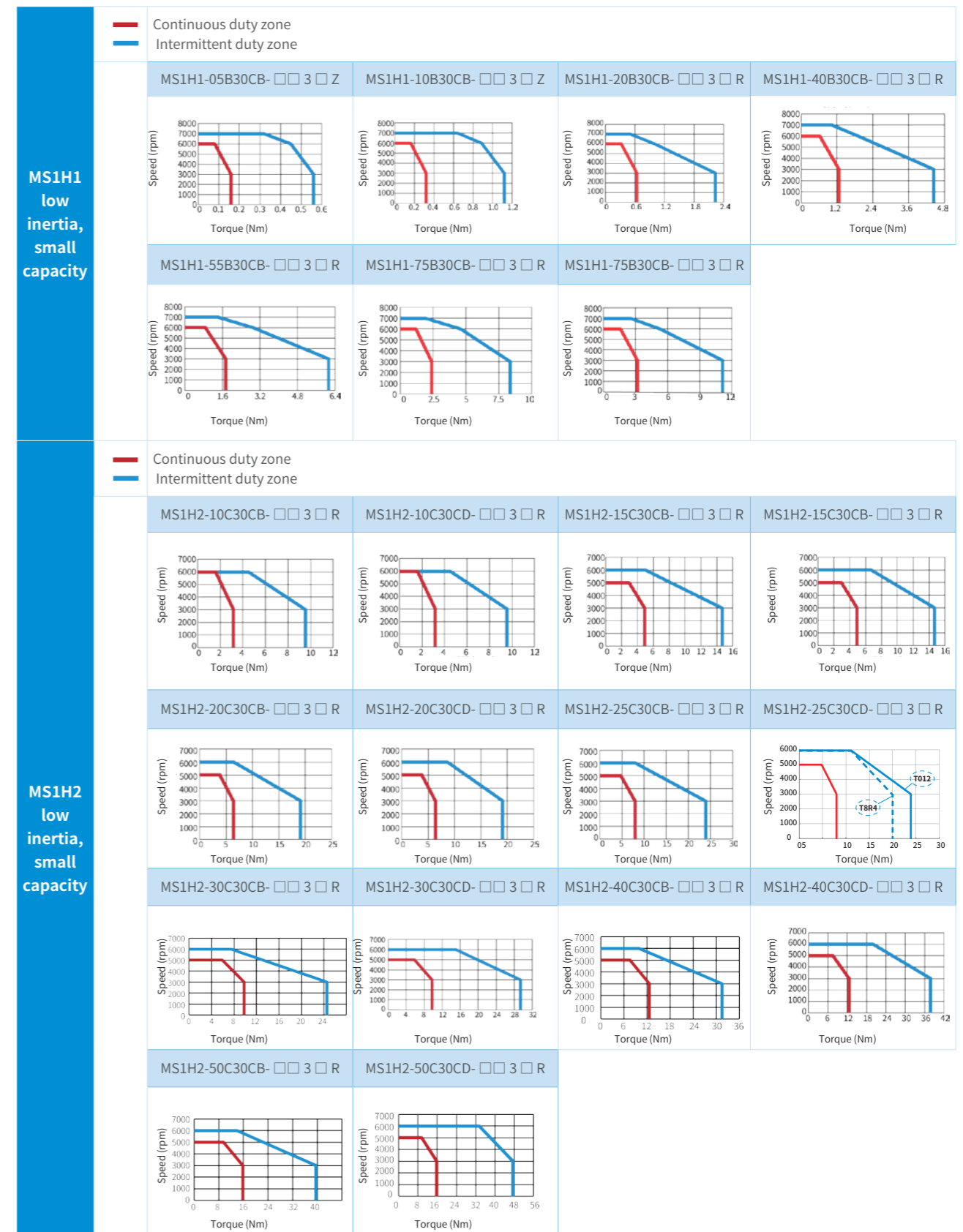
MS1H3 motors with medium inertia and medium capacity (flange size 180)

Model MS1H3-	29C15CB	29C15CD	44C15CB	44C15CD	55C15CD	75C15CD
Flange size (mm)	180	180	180	180	180	180
Rated power (kW)	2.9	2.9	4.4	4.4	5.5	7.5
Rated voltage (V)	220	380	220	380	380	380
Rated torque (N·m)	18.6	18.6	28.4	28.4	35	48
Max. torque (N·m)	46.5	46.5	71.1	71.1	87.6	119
Rated current (A)	18	10.5	25.5	16	20.7	25
Max. current (A)	52.5	29.75	67	42	52	65
Rated speed n_N (rpm)	1500	1500	1500	1500	1500	1500
Max. speed n_{max} (rpm)	4500	4500	4500	4500	4500	4500
Torque coefficient (N·m/A)	1.16	1.94	1.25	1.96	1.92	2.13
Rotor moment of inertia (kg·cm ²)	44.7 (52.35)	44.7 (52.35)	64.9 (72.55)	64.9 (72.55)	86.9 (94.55)	127.5 (135.15)
Applicable drive SV660/670/680	S022	T012	S027	T017	T021	T026

MS1H4 motors with medium inertia and small capacity (flange size 40/60/80)

Model MS1H4-	10B30CB	20B30CB	40B30CB	55B30CB	75B30CB	10C30CB
Flange size (mm)	40	60	60	80	80	80
Rated power (kW)	0.1	0.2	0.4	0.55	0.75	1
Rated voltage (V)	220	220	220	220	220	220
Rated torque (N·m)	0.32	0.64	1.27	1.75	2.39	3.18
Max. torque (N·m)	1.12	2.24	4.45	6.13	8.37	11.13
Rated current (A)	1.3	1.3	2.4	3.3	4.4	6.5
Max. current (A)	4.7	5.3	9.2	13.2	16.9	24
Rated speed n_N (rpm)	3000	3000	3000	3000	3000	3000
Max. speed n_{max} (rpm)	7000	7000	7000	7000	7000	7000
Torque coefficient (N·m/A)	0.26	0.46	0.53	0.49	0.58	0.46
Rotor moment of inertia (kg·cm ²)	0.102 (0.104)	0.22 (0.23)	0.43 (0.44)	1.12 (/)	1.46 (1.51)	1.87 (1.97)
Applicable drive SV660/670/680	S1R6	S1R6	S2R8	S5R5	S5R5	S7R6

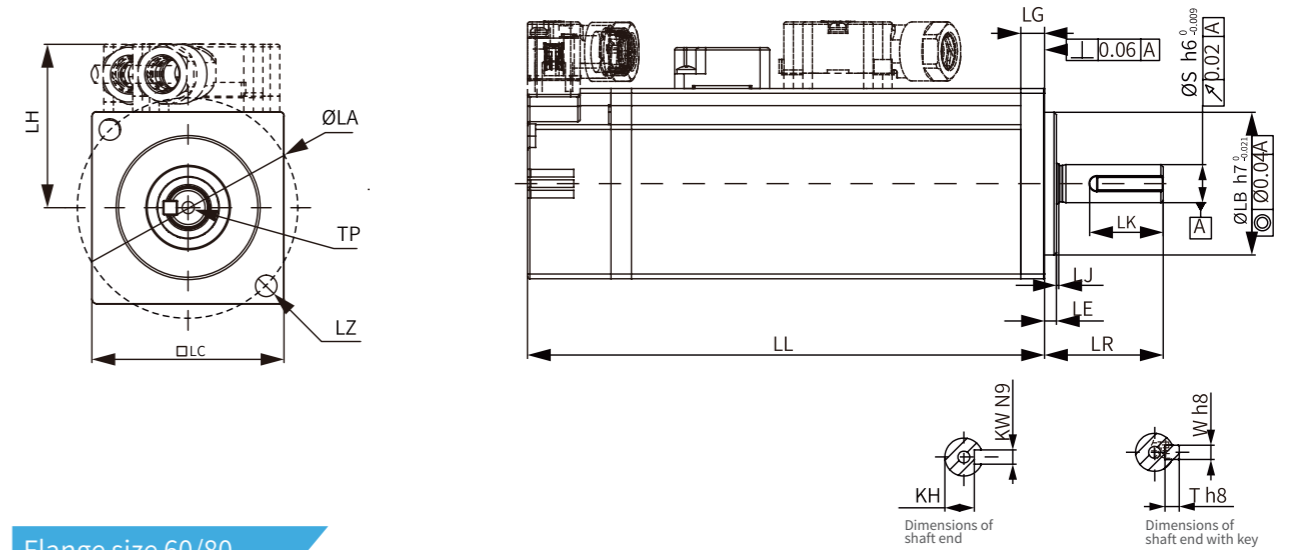
TORQUE-SPEED CHARACTERISTICS



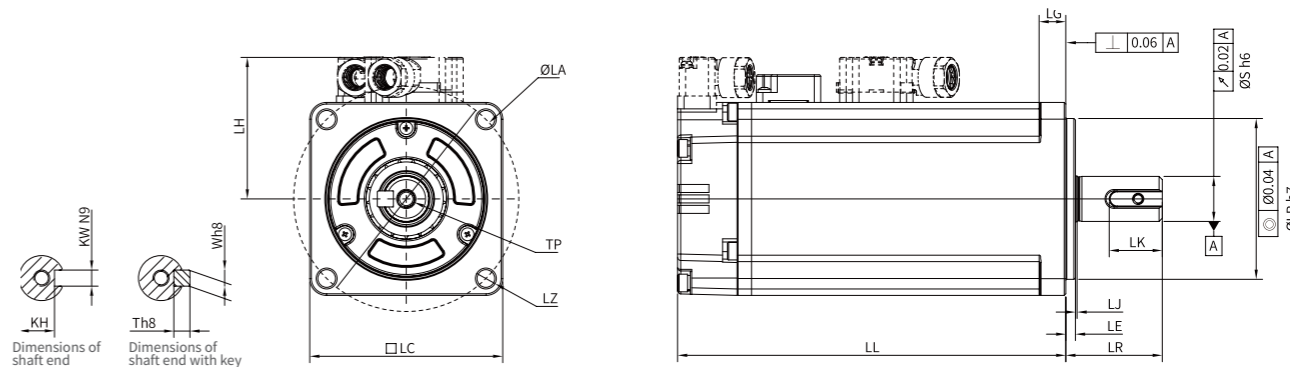
DIMENSIONS OF MS1-R SERIES H1/H4 MOTORS



Flange size 40



Flange size 60/80



Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)
MS1H1-05B30CB-□□3□Z	40	65.4 (96)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}
MS1H1-10B30CB-□□3□Z	40	78.4 (110)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}
MS1H4-10B30CB-□□3□Z	40	91 (121.5)	25±0.3	46	2 - Ø4.5	34.3	5	2.5±0.5	0.5±0.35	Ø30h7 ⁰ _{-0.021}

Motor Model	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
MS1H1-05B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	3	0.39 (0.50)
MS1H1-10B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	3	0.45 (0.64)
MS1H4-10B30CB-□□3□Z	8	M3x6	16	6.2 ⁰ _{-0.1}	3	3	3	0.45 (0.64)

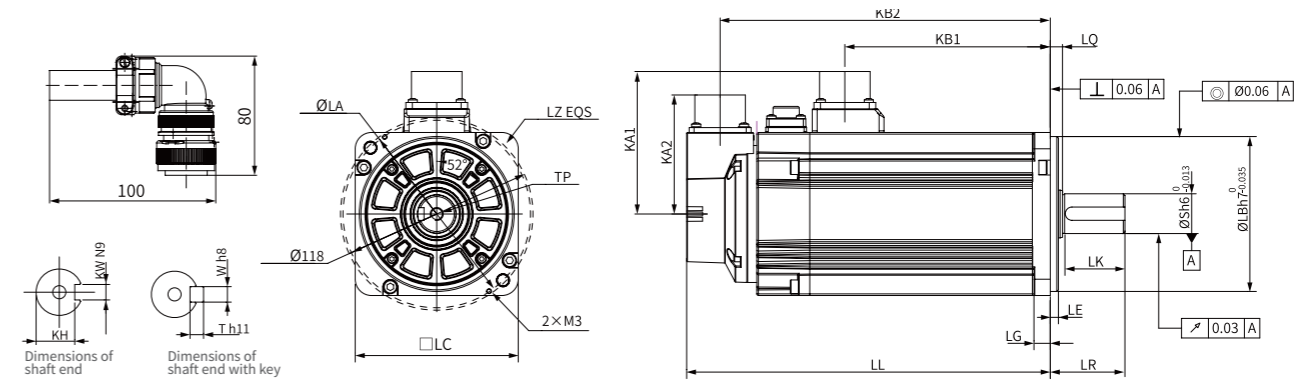
DIMENSIONS OF MS1-R SERIES H2/H3 MOTORS

Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	LH (mm)	LG (mm)	LE (mm)	LJ (mm)	LB (mm)
MS1H1-20B30CB-□□3□R	60	75.5 (103)	30±0.5	70	4 - Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
MS1H1-40B30CB-□□3□R	60	93 (121)	30±0.5	70	4 - Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.021}
MS1H1-55B30CB-□□3□R	80	96.7 (/)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
MS1H1-75B30CB-□□3□R	80	107.3 (141.5)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
MS1H1-10C30CB-□□3□R	80	119.2 (153.4)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
MS1H4-20B30CB-□□3□R	60	73.5 (101.1)	30±0.5	70	4 - Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.025}
MS1H4-40B30CB-□□3□R	60	92 (119.8)	30±0.5	70	4 - Ø5.5	44	8	3±0.5	0.5±0.35	Ø50h7 ⁰ _{-0.021}
MS1H4-55B30CB-□□3□R	80	96.7 (/)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
MS1H4-75B30CB-□□3□R	80	107.3 (140.5)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}
MS1H4-10C30CB-□□3□R	80	118.7 (153.2)	35±0.5	90	4 - Ø7	54	7.5	3±0.5	0.5±0.35	Ø70h7 ⁰ _{-0.03}

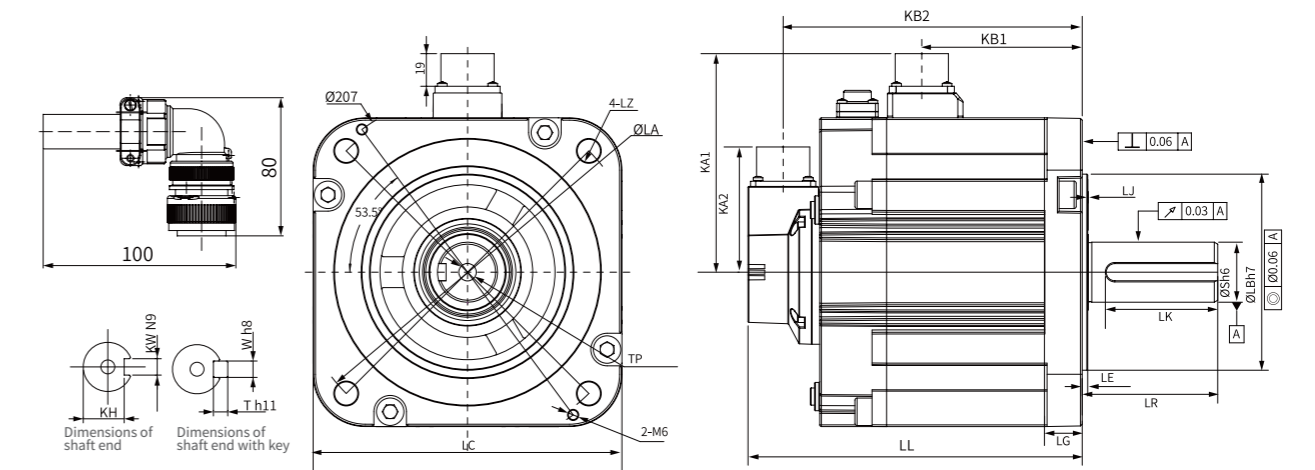
Motor Model	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
MS1H1-20B30CB-□□3□R	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	5	0.8 (1.17)
MS1H1-40B30CB-□□3□R	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	5	1.11 (1.48)
MS1H1-55B30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	1.88 (/)
MS1H1-75B30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	2.22 (2.88)
MS1H1-10C30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	2.61 (3.27)
MS1H4-20B30CB-□□3□R	14	M5x8	17.5	11 ⁰ _{-0.1}	5	5	5	0.78 (1.16)
MS1H4-40B30CB-□□3□R	14	M5x8	26	11 ⁰ _{-0.1}	5	5	5	1.11 (1.48)
MS1H4-55B30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	1.85 (/)
MS1H4-75B30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	2.18 (2.82)
MS1H4-10C30CB-□□3□R	19	M6x20	26	15.5 ⁰ _{-0.1}	6	6	6	2.55 (2.9)

Note:
[1] Values in the parentheses are for the motor with brake.

Flange size 100



Flange size 130/180



Motor Model	LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
MS1H2-10C30CB-□□3□R MS1H2-10C30CD-□□3□R	100	144 (172)	45±1	115	4 - Ø7	88	75	73	123.5 (151.5)	10	5±0.3
MS1H2-15C30CB-□□3□R MS1H2-15C30CD-□□3□R	100	161 (189)	45±1	115	4 - Ø7	88	92	73	140.5 (168.5)	10	5±0.3
MS1H2-20C30CB-□□3□R MS1H2-20C30CD-□□3□R	100	177 (205)	45±1	115	4 - Ø7	88	108	73	156.5 (184.5)	10	5±0.3
MS1H2-25C30CB-□□3□R MS1H2-25C30CD-□□3□R	100	195 -223	45±1	115	4 - Ø7	88	126	73	174.5 (202.5)	10	5±0.3

Motor Model		LQ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 100	MS1H2-10C30CB- □□ 3 □ R MS1H2-10C30CD- □□ 3 □ R	7.5±0.75	∅95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	3.85 (4.9)
	MS1H2-15C30CB- □□ 3 □ R MS1H2-15C30CD- □□ 3 □ R	7.5±0.75	∅95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	4.65 (5.75)
	MS1H2-20C30CB- □□ 3 □ R MS1H2-20C30CD- □□ 3 □ R	7.5±0.75	∅95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	5.5 (6.55)
	MS1H2-25C30CB- □□ 3 □ R MS1H2-25C30CD- □□ 3 □ R	7.5±0.75	∅95h7 ⁰ _{-0.035}	24	M8x16	36	20 ⁰ _{-0.2}	8	8	7	6.3 (7.35)

Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
Flange size 130	MS1H2-30C30CB- □□ 3 □ R MS1H2-30C30CD- □□ 3 □ R	130	198 (223)	63±1	145	4 – ∅9	102.4	127.5	73	177.5 (202.5)	12	6±0.3
	MS1H2-40C30CB- □□ 3 □ R MS1H2-40C30CD- □□ 3 □ R	130	236 (261)	63±1	145	4 – ∅9	102.4	165.5	73	215.5 (240.5)	12	6±0.3
	MS1H2-50C30CB- □□ 3 □ R MS1H2-50C30CD- □□ 3 □ R	130	274 (299)	63±1	145	4 – ∅9	102.4	203.5	73	253.5 (278.5)	12	6±0.3
	MS1H3-85B15CB- □□ 3 □ R MS1H3-85B15CD- □□ 3 □ R	130	142 (167)	55±1	145	4 – ∅9	103	70	73	121.5 (146.5)	14	4
	MS1H3-13C15CB- □□ 3 □ R MS1H3-13C15CD- □□ 3 □ R	130	157 (182)	55±1	145	4 – ∅9	103	85	73	136.5 (161.5)	14	4
	MS1H3-18C15CB- □□ 3 □ R MS1H3-18C15CD- □□ 3 □ R	130	172 (197)	55±1	145	4 – ∅9	103	100	73	151.5 (176.5)	14	4

Motor Model		LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	We (kg)
Flange size 130	MS1H2-30C30CB- □□ 3 □ R MS1H2-30C30CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	10 (11.9)
	MS1H2-40C30CB- □□ 3 □ R MS1H2-40C30CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	13.2 (15.1)
	MS1H2-50C30CB- □□ 3 □ R MS1H2-50C30CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	28	M8x20	54	24 ⁰ _{-0.2}	8	8	7	16.5 (18.25)
	MS1H3-85B15CB- □□ 3 □ R MS1H3-85B15CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	5.8 (7.7)
	MS1H3-13C15CB- □□ 3 □ R MS1H3-13C15CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	7.1 (8.9)
	MS1H3-18C15CB- □□ 3 □ R MS1H3-18C15CD- □□ 3 □ R	0.5±0.75	∅110h7 ⁰ _{-0.035}	22	M6x20	36	18 ⁰ _{-0.2}	8	8	7	8.5 (10.3)

Motor Model		LC (mm)	LL (mm)	LR (mm)	LA (mm)	LZ (mm)	KA1 (mm)	KB1 (mm)	KA2 (mm)	KB2 (mm)	LG (mm)	LE (mm)
Flange size 180	MS1H3-29C15CB- □□ 3 □ R MS1H3-29C15CD- □□ 3 □ R	180	161 (194.8)	79±1	200	4 – ∅13.5	127.4	93.5	73	140.5 (174.3)	22	3.2±0.3
	MS1H3-44C15CB- □□ 3 □ R MS1H3-44C15CD- □□ 3 □ R	180	184.5 (218.3)	79±1	200	4 – ∅13.5	127.4	117	73	164 (197.8)	22	3.2±0.3
	MS1H3-55C15CD- □□ 3 □ R	180	208 241.8	113±1	200	4 – ∅13.5	127.4	140.5	73	187.5 (221.3)	22	3.2±0.3
	MS1H3-75C15CD- □□ 3 □ R	180	255 (288.8)	113±1	200	4 – ∅13.5	127.4	187.5	73	234.5 (234.5)	22	3.2±0.3

Motor Model		LJ (mm)	LB (mm)	S (mm)	TP (mm)	LK (mm)	KH (mm)	KW (mm)	W (mm)	T (mm)	Weight (kg)
Flange size 180	MS1H3-29C15CB- □□ 3 □ R MS1H3-29C15CD- □□ 3 □ R	0.5±0.75	∅114.3h7 ⁰ _{-0.035}	35	M12x25	65	30 ⁰ _{-0.2}	10	10	8	13.8 (17.9)
	MS1H3-44C15CB- □□ 3 □ R MS1H3-44C15CD- □□ 3 □ R	0.5±0.75	∅114.3h7 ⁰ _{-0.035}	35	M12x25	65	30 ⁰ _{-0.2}	10	10	8	17.4 (21.9)
	MS1H3-55C15CD- □□ 3 □ R	0.5±0.75	∅114.3h7 ⁰ _{-0.035}	42	M16x32	97	37 ⁰ _{-0.2}	12	12	8	21.7 (25.9)
	MS1H3-75C15CD- □□ 3 □ R	0.5±0.75	∅114.3h7 ⁰ _{-0.035}	42	M16x32	97	37 ⁰ _{-0.2}	12	12	8	29 (33.2)

Note:
[1] Values in the parentheses are for the motor with brake.

LMC Series Linear Motor

Fast Response and High Thrust Density



- Rated thrust: 51 N to 1235 N
- Peak thrust: 99 N to 2717 N
- Max. speed: 1.2m/s to 4.5m/s
- Repeatability: ± 2 μm (optical grating)

Higher
20%
Excellent performance

Thrust density 20% higher than the top one in the industry

- Adopting DDL process
- Adopting electromagnetic solution
- Adopting DDL structure that designed especially for the linear module

Wide
80%
Wide applicability

Applicable to more than 80% of linear module application conditions

- Rated thrust: 51–1235 N; Peak thrust: 99–2717 N
- Acceleration up to 3 G to 5 G, 3 m/s to 5 m/s speed
- Repeatability reaching ±2 μm together with grating encoder
- Max. load capacity reaching 200 kg
- CE certification as standard

Shorter
90%
Tuning with One key

Saving commissioning time by more than 90%

- Adopting integrated structure to simplify the design process
- Tuning with one key through SV680L + ELOI grating encoder
- Removing the risk of abrasion and maintenance work

Stable
4
Safety guarantee

Promoting safety production through continuous improvement on safety function

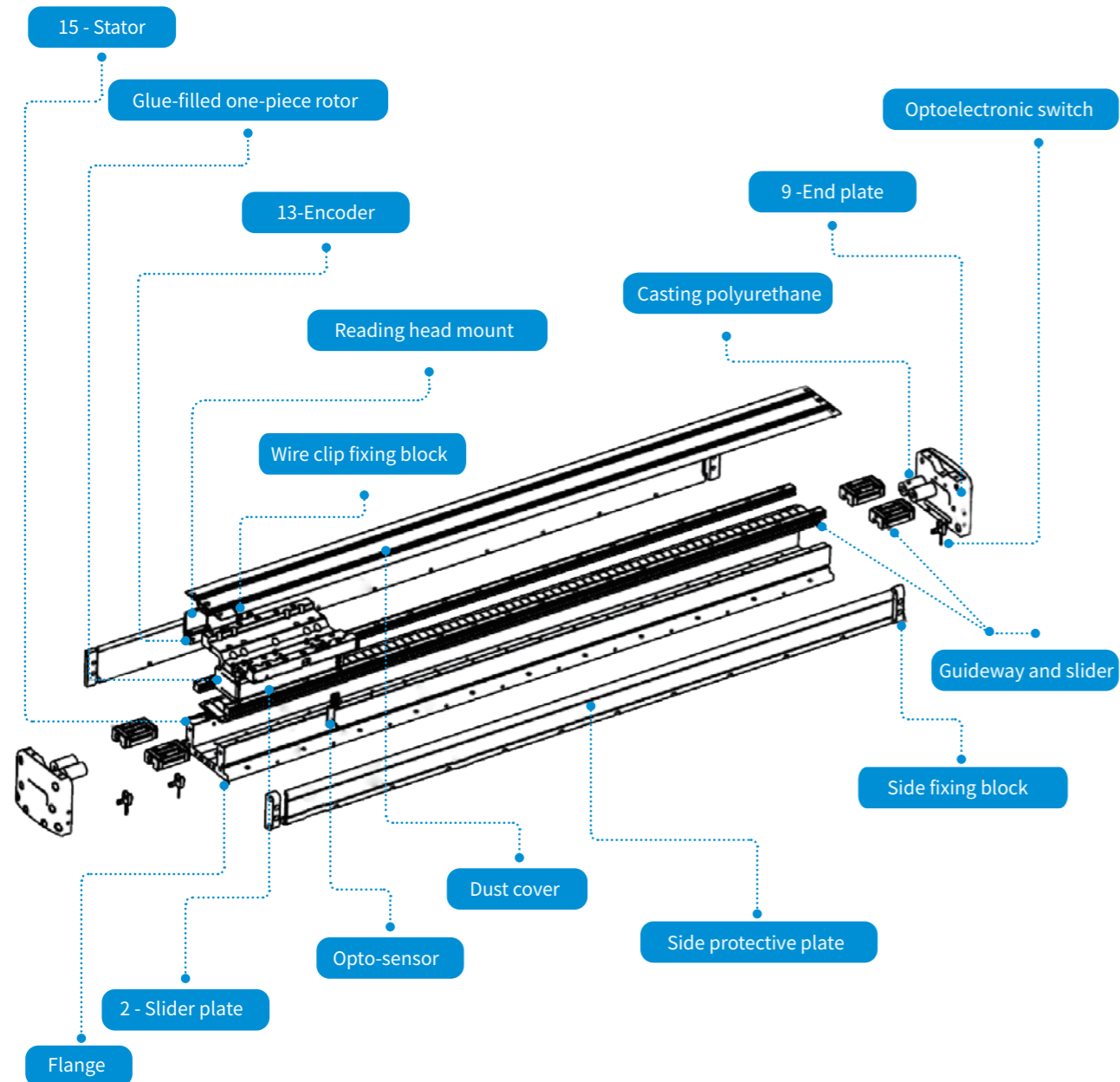
- Built-in dynamic braking function as standard to allow quick stop
- STO function as standard
- Fully-closed design in the front panel to prevent unwanted intrusion
- Lateral protective plate as standard to prevent the grating scale from being scratched

NAMING RULES OF STANDARD LINEAR MODULE

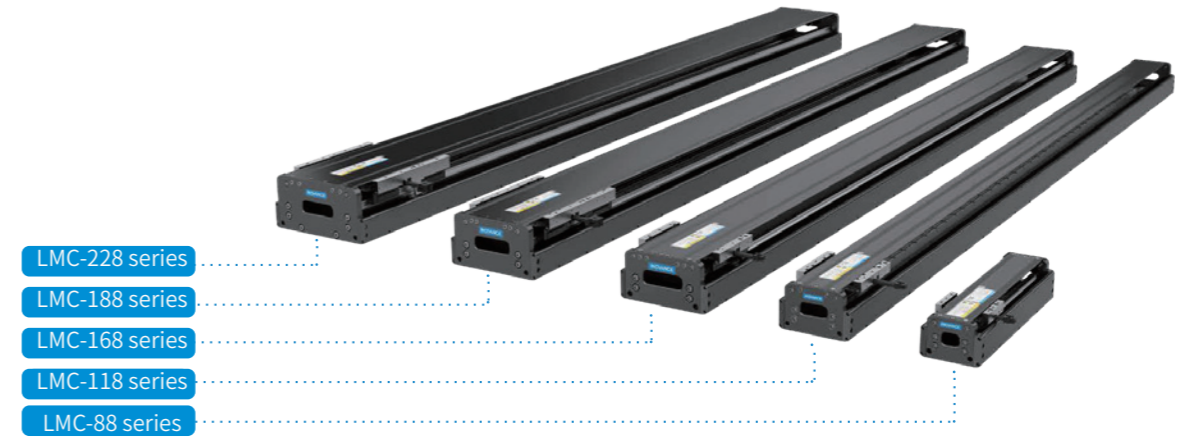
LM C 1 - F 1 2 - 0500 DXX X - 6 003 1 N 1 0
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

① Product family LM: Linear module	② Product type C: Compact	③ Product generation 1: 1st generation	④ Baseplate dimension E-088 mm, F-118 mm G-168 mm, H-188 mm K-228 mm	⑤ Number of rotors 1: 1 rotor	⑥ Color 2: Black
⑦ Travel 0500: For single rotor, 0500 indicates the effective travel is 500 mm.		⑧ Motor type Please refer to the table: Types of motor mover	⑨ Motor connection mode 1: Y1 5: Y5 2: Y2 6: Y6 3: Y3 4: Y4	⑩ Feedback system: 2: 0.5μm optical grating 6: 1.0μm magnetic grating	
⑪ Leading wires length 003:0.3m		⑬ Photoelectric switch Q: Without photoelectric switch N: With NPN photoelectric switch P: With PNP photoelectric switch (Notes: For optical grating ruler can not select since it has the function of position limitation and zero pointing. For magnetic grating ruler must select. 3pcs as one package, two for position limitation, one for zero pointing.)		⑭ Brand of guide rail 1: THK 2: HIWIN (Code2 to only for LMC88)	
⑫ Hall sensor 3: Without hall sensor and with SV680N-INT drive (220V) 4: Without hall sensor and with SV680P-INT drive (220V) 7: With hall sensor and with SV680N-INT drive (220V) 8: With hall sensor and with SV680P-INT drive (220V) B: Without hall sensor and with SV680N-INT drive (380V) C: Without hall sensor and with SV680P-INT drive (380V) D: With hall sensor and with SV680N-INT drive (380V) E: With hall sensor and with SV680P-INT drive (380V)					
⑮ Towline cable and Flank protection plate 0: Without towline cable and without flank protection plate 2: Without towline cable and with flank protection plate					

MOTOR STRUCTURE



SPECIFICATIONS



Series No.	Model	Continuous thrust (N)	Peak thrust (N)	Repeatability um/m (grating)	Load capacity (kg)	Max. speed m/s ^[1]	Max. length mm ^[2]	Moving Mass kg ^[4]
LMC88 series	LMC88-100	51	99	±2	About 15	1.2	1500	1
	LMC88-130	96	187	±2	About 15	1.2	1500	1.4
	LMC88-185	141	275	±2	About 15	1.2	1500	1.9
	LMC88-240	186	363	±2	About 15	1.2	1500	2.5
LMC118 series	LMC118-130	170	374	±2	10 to 50	4.5	6000	2.8
	LMC118-185	250	550	±2	10 to 50	4.5	6000	3.7
	LMC118-240	345	759	±2	10 to 50	4.5	6000	4.6
	LMC118-355	490	1078	±2	10 to 50	4.5	6000	6.7
LMC168 series	LMC168-130	330	726	±2	30 to 70	4.5	5000	4.4
	LMC168-185	495	1089	±2	30 to 70	4.5	5000	6.6
	LMC168-240	660	1452	±2	30 to 70	4.5	5000	8.2
LMC188 series	LMC188-240	660	1452	±2	50 to 150	4	5000	9.6
	LMC188-355	990	2178	±2	50 to 150	4	5000	13.5
LMC228 series	LMC228-240	1000	2200	±2	70 to 200	3	5000	14
	LMC228-290	1235	2717	±2	70 to 200	3	5000	17.4

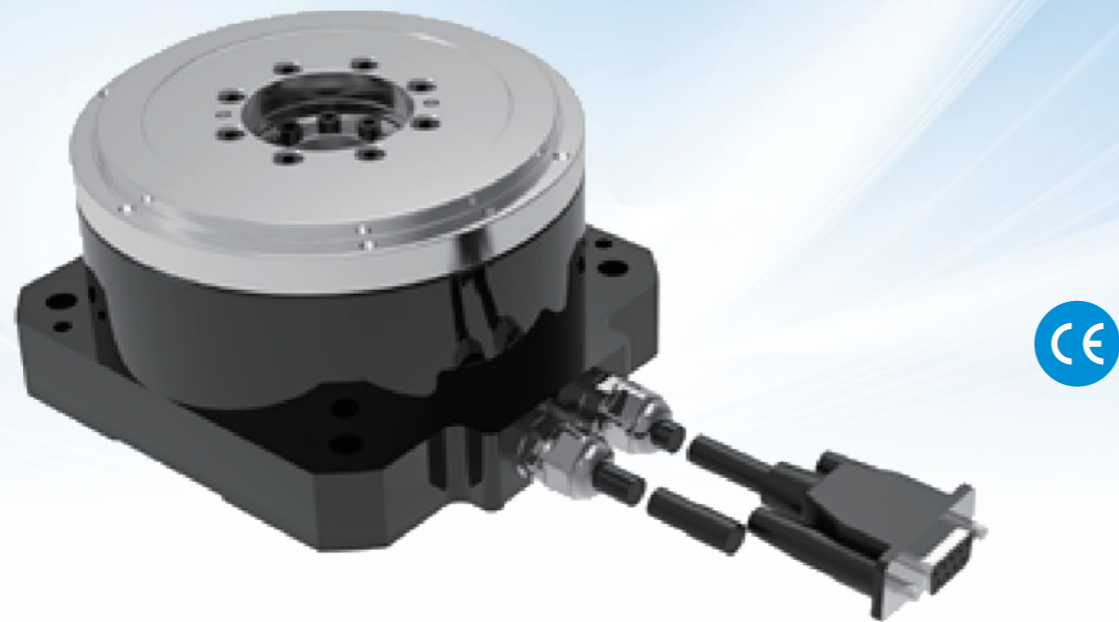
Note:
 [1] The load capacity varies under different speeds and load conditions. For special mounting mode, contact Inovance.
 [2] Contact Inovance for standard travel.
 [3] Perform maintenance on the guide rail every three months or every 100 km operation of the module.
 [4] The moving mass includes the mass of the slider plate, rotor, slider, and screws.

TYPES OF MOTOR MOVER

LM88 Series		LMC118 Series		LM168 Series		LM188 Series		LM228 Series	
Motor type	Code	Motor type	Code	Motor type	Code	Motor type	Code	Motor type	Code
LMC88-100Y1	D111	LMC118-130Y1	D221	LMC168-130Y2	D322	LMC188-240Y2	D442	LMC228-240Y4	D544
LMC88-130Y1	D121	LMC118-185Y1	D231	LMC168-185Y3	D333	LMC188-240Y4	D444		
LMC88-185Y1	D131	LMC118-185Y3	D233	LMC168-240Y2	D342	LMC188-355Y3	D463	LMC228-290Y5	D555
LMC88-240Y1	D141	LMC118-240Y2	D242	LMC168-240Y4	D344	LMC188-355Y6	D466		
		LMC118-355Y3	D263						

ISMT1&MP1 Series DDR Servo Motor

Excellent Stability Direct Drive Rotary



- Models: ISMT1 series and MP1 series
- Flange size: 112 mm to 208 mm Continuous torque: 4 Nm to 45 Nm
- Repeatability: ± 3 arcsec
- Standard configuration: 23-bit high resolution encoder

High load capacity and wide application

- Adopting cross roller bearing as support to achieve high load capacity
- Supporting positioning at any angles for easy flexible design of the machineries
- Compliant with CE certification

Low maintenance cost

- Allowing long-term operation without maintenance or additional grease lubricant
- Supporting contactless transmission without the risk of abrasion

Accurate control with high precision

- Repeatability reaching $\leq \pm 4$ arcsec for 23-bit single-turn absolute encoder
- Max. run-out accuracy of the end face reaching 5 μ m
- Direct drive without backlash

Tuning with one key

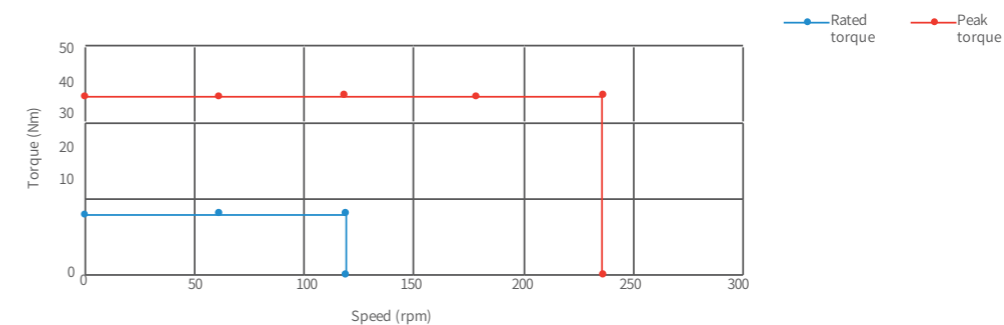
- Integrated structure to simplify the design work on the user side
- Applicable to S680L series servo drives to allow tuning with one key
- Hollow design for easy wiring

ISMT1 DDR MOTOR TECHNICAL DATASHEET

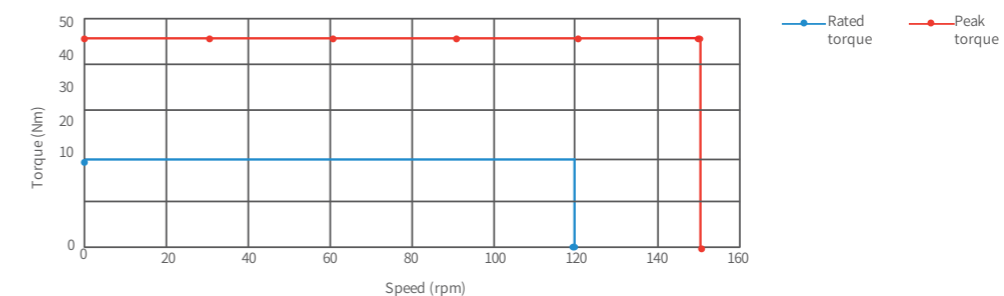
Motor Model ISMT1-XXXXXXXX-XXXXX	160F12AB-A113X 160F12AB-A133X	160F45AB-A133X
Continuous operating torque N·m	4	15
Max. torque N·m	12	45
Continuous operating speed rpm	120	120
Max. speed rpm	240	150
Motor resolution pulses	8388608	8388608
Repeatability arcsec	± 3	± 3
Absolute positioning accuracy/arcsec	± 30	± 30
Torque constant N·m/Arms	12	28.66
Linear back EMF constant Vrms/rpm	0.208	0.653
Phase-to-phase resistance Ω	32	17
Phase-to-phase inductance mH	60.31	60.7
Continuous current Arms	1	1.57
Peak current Arms	3	4.72
Number of poles	28	28
Moment of inertia $10^{(-4)}\text{kgm}^2$	92	223
Axial load (pressure) N	5400	5100
Axial load (stress) N	1800	1700
Torque load N·m	40	40
Mounting precision on the load side μm	5/10/30	30
Weight kg	5.6	14

ISMT1 DDR MOTOR TORQUE-SPEED CURVE

ISMT1-160F12AB-A113X & ISMT1-160F12AB-A133X



ISMT1-160F45AB-A133X



DIMENSIONS OF ISMT DDR MOTOR

Type	ISMT1-160F12AB-A113X & ISMT1-160F12AB-A133X
Picture	
Unit	mm
Dimension	

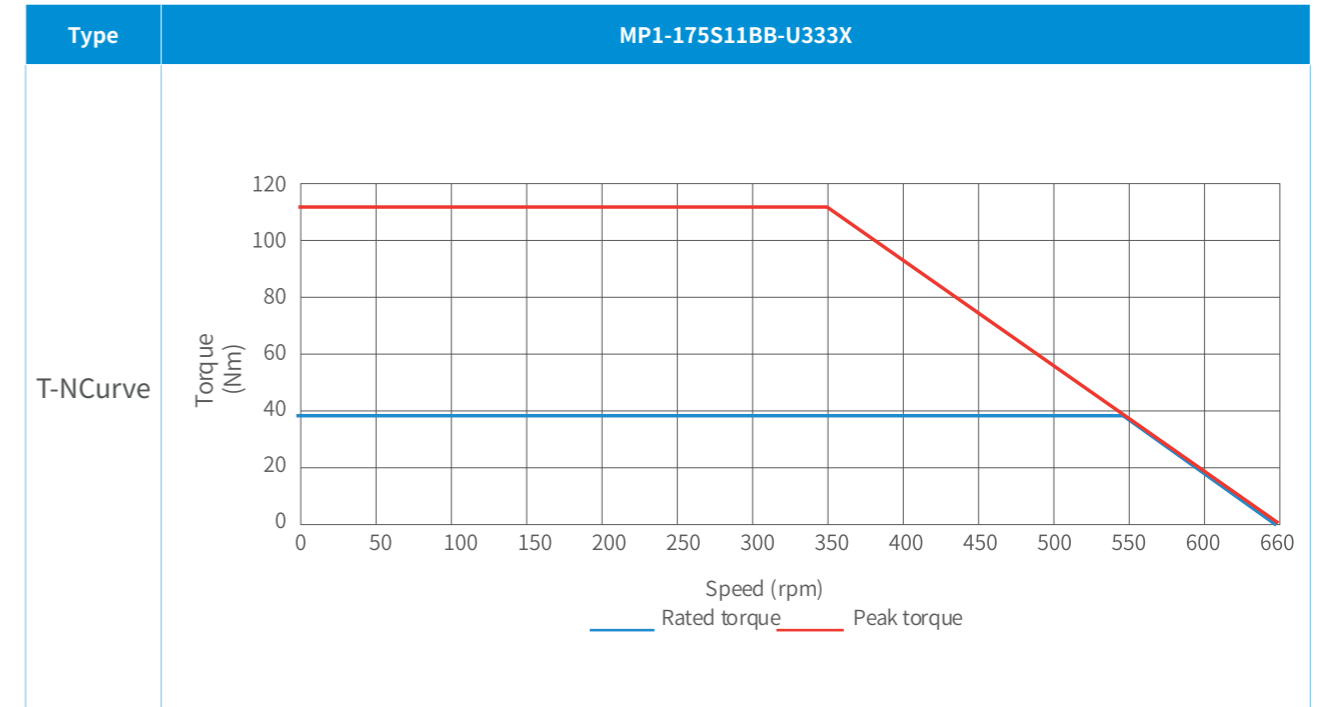
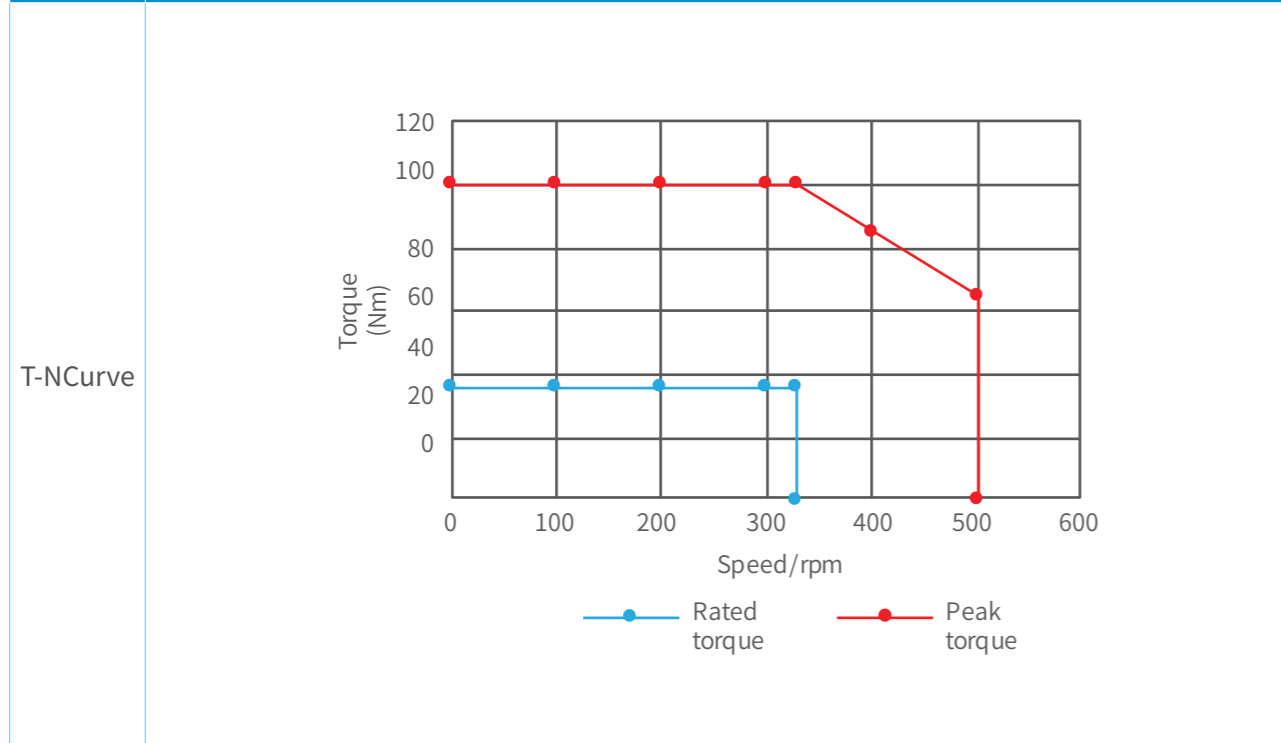
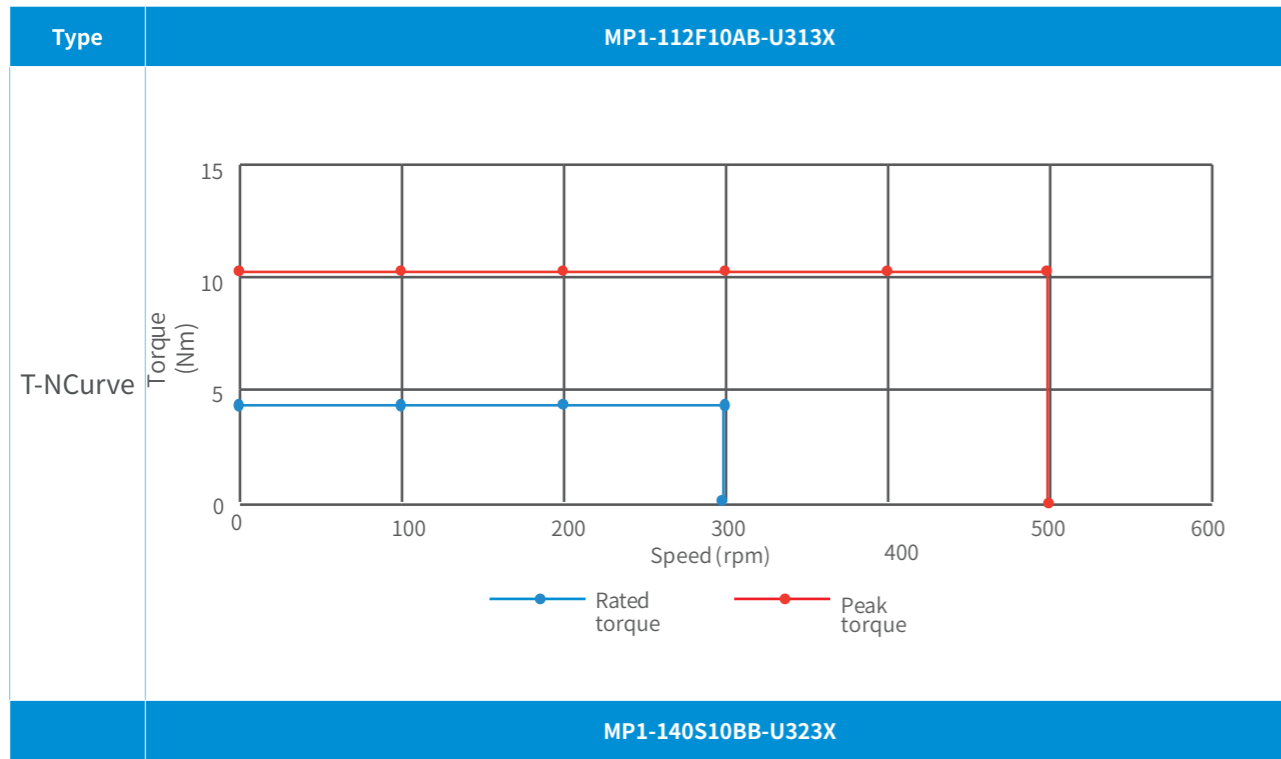
Type	ISMT1-160F45AB-A133X
Picture	
Unit	mm
Dimension	

SPECIFICATIONS OF MP1 DDR

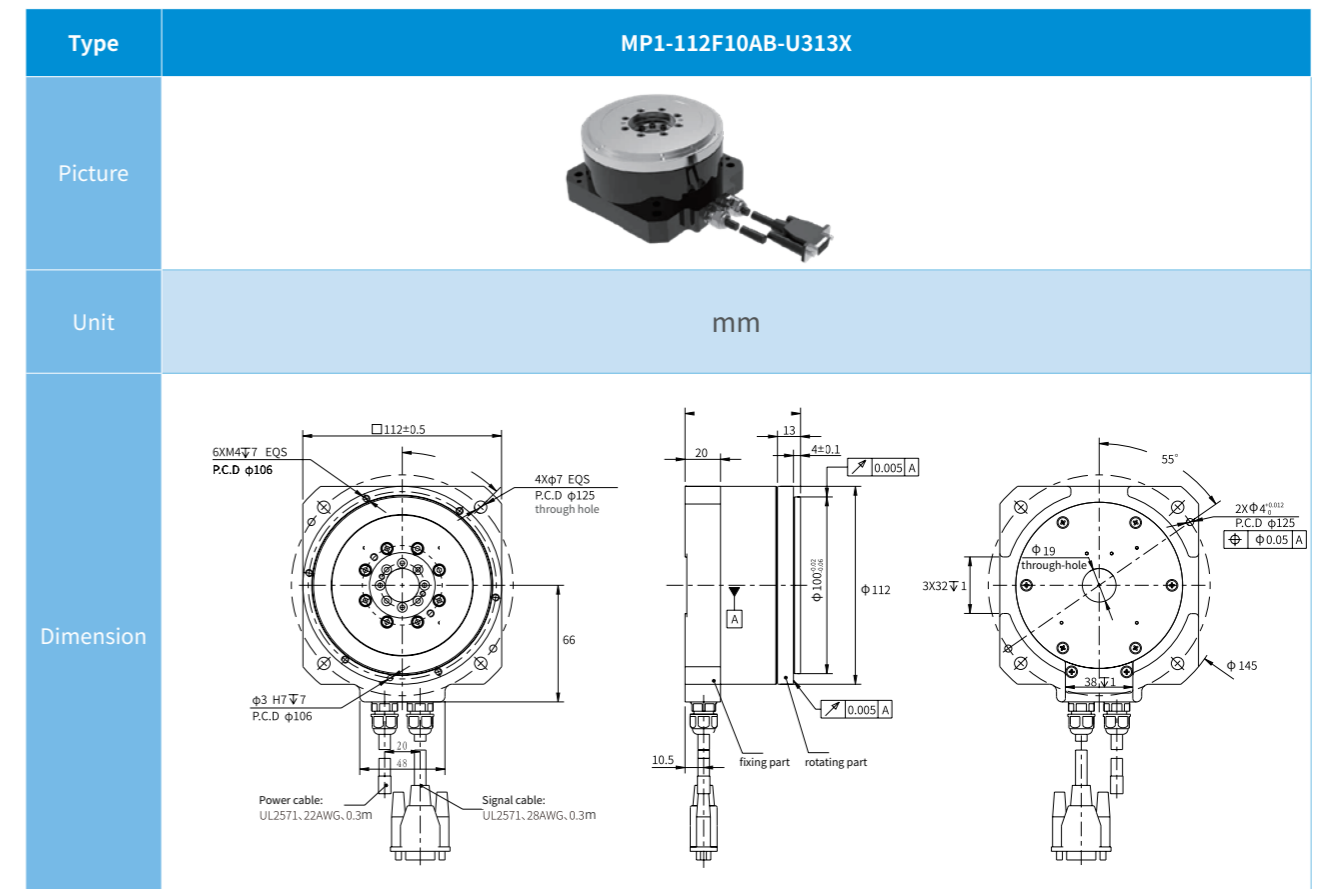
Motor Model	MP1-112F10AB-U313X	MP1-140S10BB-U323X	MP1-175S11BB-U333X
Continuous operating torque N·m	4.2	36	36
Max. torque N·m	10.5	108	108
Continuous operating speed rpm	300	330	350
Max. speed rpm	500	500	500
Motor resolution pulses	8388608	8388608	8388608
Repeatability arcsec	±1.2	±2	±2
Absolute positioning accuracy/arcsec	±18	±20	±20
Torque constant N·m/Arms	2	3.75	3.91
Linear back EMF constant Vrms/rpm	0.139	0.256	0.27
Phase-to-phase resistance Ω	12.48	7.33	1.28
Phase-to-phase inductance mH	21.82	9.8	22.74
Continuous current Arms	2.1	9.6	9.2
Peak current Arms	5.3	28.8	27.6
Number of poles	28	20	16
Moment of inertia 10 ⁻⁴ (-4)kgm ²	13.96	33.8	76.45
Axial load (pressure) N	1100	3200	3000
Axial load (stress) N	360	1050	1000
Torque load N·m	6.1	108	58
Mounting precision on the load side um	5	10	30
Weight kg	2.55	12.8	15.95


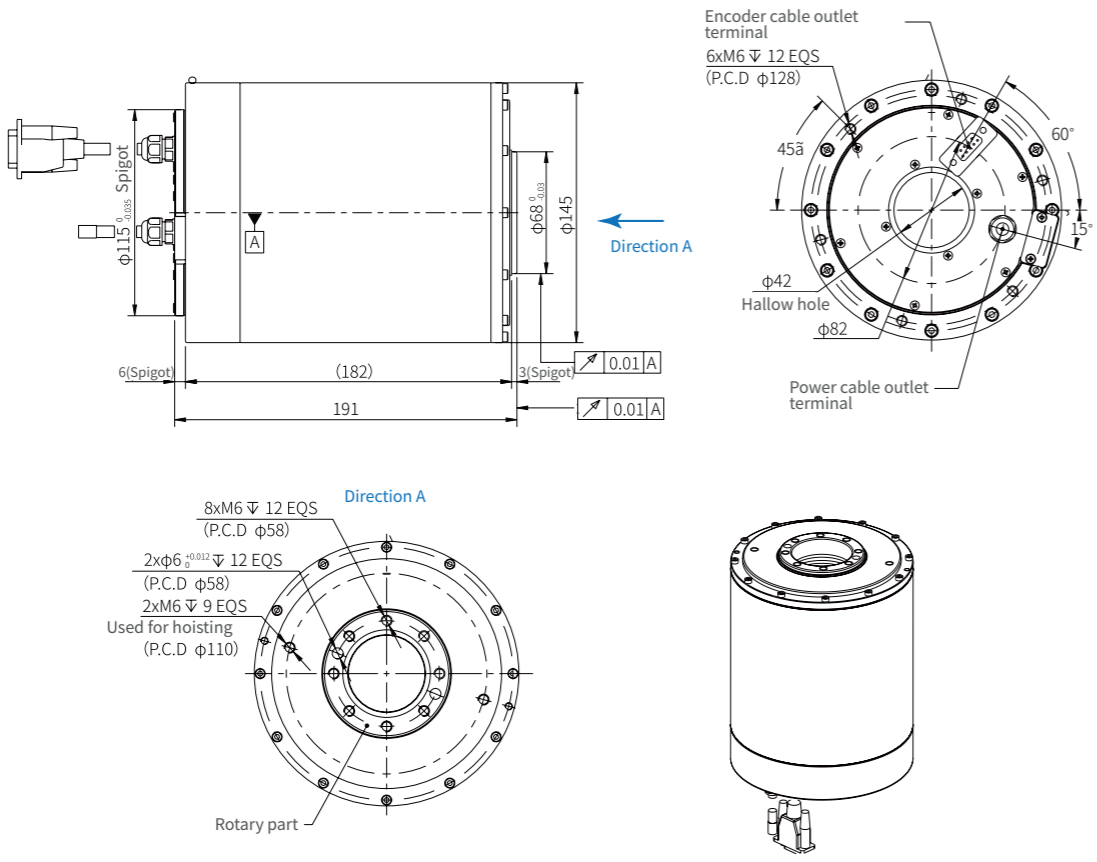
Name	Description																			
Pin hole on the rotary table	Pin hole for mounting the rotary table																			
Mounting flange	Mounting flange on the load end																			
Pin hole	Pin hole for mounting the stator																			
Signal cable	<table border="1"> <tr> <td>1</td> <td>SIN+</td> <td rowspan="9"> </td> </tr> <tr> <td>2</td> <td>SIN-</td> </tr> <tr> <td>3</td> <td>COS+</td> </tr> <tr> <td>4</td> <td>COS-</td> </tr> <tr> <td>5</td> <td>/</td> </tr> <tr> <td>6</td> <td>DATA+/Z+</td> </tr> <tr> <td>7</td> <td>DATA-/Z-</td> </tr> <tr> <td>8</td> <td>GND</td> </tr> <tr> <td>9</td> <td>+Vcc</td> </tr> </table>	1	SIN+		2	SIN-	3	COS+	4	COS-	5	/	6	DATA+/Z+	7	DATA-/Z-	8	GND	9	+Vcc
1	SIN+																			
2	SIN-																			
3	COS+																			
4	COS-																			
5	/																			
6	DATA+/Z+																			
7	DATA-/Z-																			
8	GND																			
9	+Vcc																			
Power cable	<table border="1"> <tr> <th>Conductor color</th> <th>White</th> <th>Black</th> <th>Red</th> <th>Yellow-green</th> </tr> <tr> <td>Wiring</td> <td>U</td> <td>V</td> <td>W</td> <td>GND</td> </tr> </table>	Conductor color	White	Black	Red	Yellow-green	Wiring	U	V	W	GND									
Conductor color	White	Black	Red	Yellow-green																
Wiring	U	V	W	GND																
Nameplate	Showing motor specifications																			
Stator	DDR motor stator																			
Rotor disc	DDR motor rotor																			


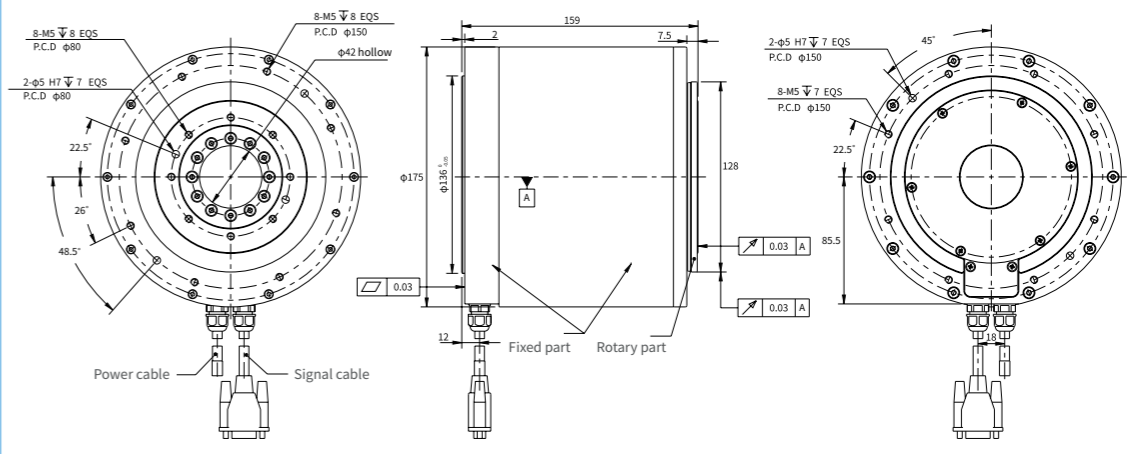
MP1 DDR MOTOR TORQUE-SPEED CURVE



MP1 DDR MOTOR DIMENSION

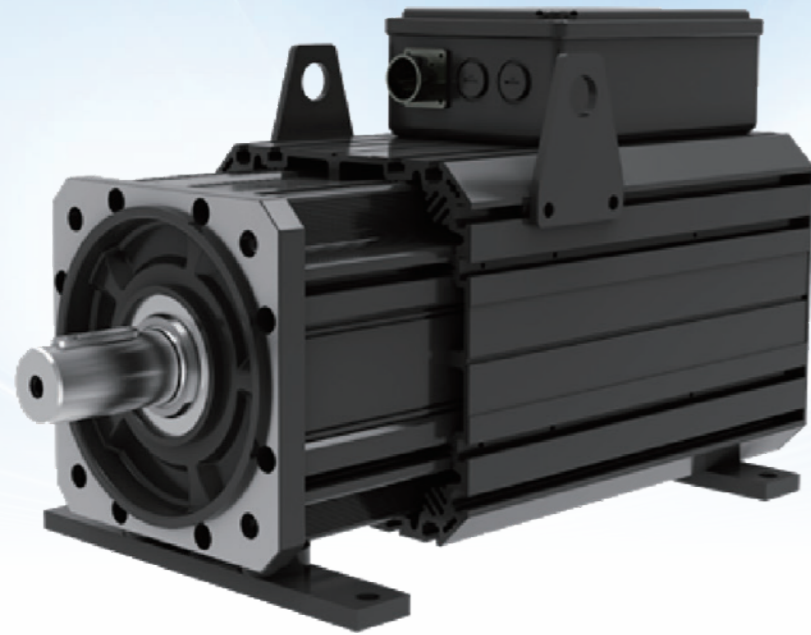


Type	MP1-140S10BB-U323X
Picture	
Unit	mm
Dimension	 <p>Encoder cable outlet terminal 6xM6 ∇ 12 EQS (P.C.D ϕ128)</p> <p>45\bar{a}</p> <p>60°</p> <p>15°</p> <p>ϕ42</p> <p>Hallow hole</p> <p>ϕ82</p> <p>Power cable outlet terminal</p> <p>Direction A</p> <p>ϕ115$_{-0.008}^{0}$ Spigot</p> <p>ϕ68$_{-0.03}^{0}$</p> <p>ϕ145</p> <p>0.01 A</p> <p>6(Spigot)</p> <p>(182)</p> <p>3(Spigot)</p> <p>0.01 A</p> <p>191</p> <p>Direction A</p> <p>8xM6 ∇ 12 EQS (P.C.D ϕ58)</p> <p>2xϕ6$_{-0.012}^{0}$ ∇ 12 EQS (P.C.D ϕ58)</p> <p>2xM6 ∇ 9 EQS Used for hoisting (P.C.D ϕ110)</p> <p>Rotary part</p>

Type	MP1-175S11BB-U333X
Picture	
Unit	mm
Dimension	 <p>8-M5 ∇ 8 EQS P.C.D ϕ80</p> <p>2-ϕ5 H7 ∇ 7 EQS P.C.D ϕ80</p> <p>22.5°</p> <p>26°</p> <p>48.5°</p> <p>8-M5 ∇ 8 EQS P.C.D ϕ150</p> <p>ϕ42 hollow</p> <p>159</p> <p>7.5</p> <p>128</p> <p>85.5</p> <p>45°</p> <p>2-ϕ5 H7 ∇ 7 EQS P.C.D ϕ150</p> <p>8-M5 ∇ 7 EQS P.C.D ϕ150</p> <p>22.5°</p> <p>0.03 A</p> <p>0.03 A</p> <p>12</p> <p>Fixed part</p> <p>Rotary part</p> <p>Power cable</p> <p>Signal cable</p> <p>Direction A</p>

ISMG Series Servo Motor

High Efficiency Servo Motor



High safety

- Equipped with PTC and KTY temperature protection functions as standard to allow reliable operation within the life cycle
- IP54-compliant for the whole motor and IP67 for the encoder to ensure durability under all kinds of operating conditions
- Flexible structure of the encoder to allow an vibration resistance capacity of 5 G
- Brake supported by ISMG1 series models

High precision for precision control

- 23-bit multi-turn absolute encoder with absolute positioning precision $\leq \pm 100$ arcsec and repeatability $\leq \pm 30$ arcsec

High production efficiency with quick response

- Optimized topology with MTPA control algorithm to maximize the overload capacity, supporting 250% of max. output torque with mainstream configurations
- Two types of inertia to meet various application needs

Complete certifications

- Compliant with CE, EAC, and UKCA certifications
- Compliant with energy efficiency class I in China.

- Two flange size for G1-200 mm and G2-266 mm
- Power ranging from 9.5 kW to 60.5 kW with S4 duty cycle
- Rate speed: 1500 rpm to 2000 rpm
- Cooling with separate fan
- 23-bit encoder as standard Options: with or without brake for G1 type

TECHNICAL FEATURES

Item	Specification
Duty	Continuous S1
Insulation resistance	Above 50 mΩ at 500 VDC
Ambient temperature	-20°C to +40°C (non-frozen)
Ambient humidity	20% to 90% RH (without condensation)
Storage temperature	-20°C to +60°C (non-frozen)
Storage humidity	20% to 90% RH (without condensation)
Installation mode	IM B35
Insulation class	155(F)
Insulation voltage	1 min at 1800 VAC (380 V class)
IP rating of enclosure	IP54
Cooling mode	IC416 (cooled by independent fan)
Shock	Below 200 m/s ²
Max. radial vibration	Below 200 m/s ²
Max. axial vibration	Below 45 m/s ²
Fan type	Capacitor-operated single-phase centrifugal fan
Fan power	ISMG1: 41 W; ISMG2: 134 W
Fan voltage	220/230 VAC
Fan frequency	50/60 Hz
Built-in PTC limit ^[1]	130°C
KTY resistance at 10°C to 30°C ^[1]	514 Ω to 652 Ω
Number of motor pole pairs 2p	8
Winding connection mode	Y
Excitation mode	Permanent magnet
Direction of rotation	Rotating counterclockwise when viewed from load side with forward run command

Note:

[1]: The PTC and KTY drain wires for motors without brake are in the aviation connector of the encoder.

SPECIFICATIONS OF ISMG1

Motor Model	ISMG1-*****-A33*FA									
	95C15CD	12D20CD	14D15CD	17D15CD	18D20CD	22D15CD	23D20CD	28D20CD	30D15CD	41D20CD
Rated power ^[1] (S1) (kW)	7.9	10.5	11.8	14.5	15.7	18.1	19.3	24.1	23.6	31.4
Rated power ^[2] (S4) (kW)	9.5	12.6	14.1	17.3	18.8	22	23	28.3	30.6	41
Rated current ^[1] (S1) (A)	14.5	20.3	22.9	28.1	28.6	33.4	37.4	46.7	45.9	57.3
Rated current ^[2] (S4) (A)	18.5	26	29.2	35.7	36.4	41.7	47.6	58.4	63.3	78.9
Rated torque ^[1] (S1) (Nm)	50	50	75	92	75	115	92	115	150	150
Rated torque ^[2] (S4) (Nm)	60	60	90	110	90	135	110	135	195	195
Rated speed (rpm)	1500	2000	1500	1500	2000	1500	2000	2000	1500	2000
Rated voltage (V)	380	380	380	380	380	380	380	380	380	380
Rated frequency (Hz)	100	133.33	100	100	133.33	100	133.33	133.33	100	133.33
Torque coefficient (Nm/A)	3.44	2.46	3.27	3.27	2.62	3.44	2.46	2.46	3.27	2.62
Max. speed (rpm)	2500	3000	2500	2500	3000	2500	3000	3000	2500	3000
Max. torque (Nm)	135	135	203	248	203	311	248	311	405	405
Max. current (A)	43.2	60.4	68.3	83.4	85.2	99.4	110.9	139.1	136.2	170
Rotor moment of inertia (kg·cm ²)	75	75	90	105	90	120	105	120	150	150
Weight (kg)	45.2	45.2	51.9	59	51.9	66	59	66	79.8	79.8
Brake option	Supported (model code: 4)									

Note:

Motor models in the preceding table are named based on S4 duty.

[1] Values in S1 duty

[2] Values in S4 duty

For other models and specification, contact the sales personnel of Inovance.

SPECIFICATIONS OF G1 MOTOR WITH BRAKE

Motor Model	Holding Torque (N·m)	Supply Voltage (VDC) ±10%	Rated Power (W)	Coil Resistance at 20°C (Ω) ±5%	Exciting Current at 20°C (A) ±10%	Apply Time (ms)	Release Time (ms)	Backlash (°)
ISMG1-95C15CD-A334FA	150	24	70	8.2	2.9	225	301	0.3~0.5
ISMG1-12D20CD-A334FA								
ISMG1-14D15CD-A334FA								
ISMG1-17D15CD-A334FA								
ISMG1-18D20CD-A334FA								
ISMG1-22D15CD-A334FA	150	DC 24	70	8.2	2.9	225	301	0.3~0.5
ISMG1-23D20CD-A334FA								
ISMG1-28D20CD-A334FA								
ISMG1-30D15CD-A334FA								
ISMG1-41D20CD-A334FA								

Note:

[1] The 24 VDC power supply needs to be prepared by users.




[2] The holding brake cannot be used for braking purpose.

[3] The release time and action time of the brake vary with the discharging circuit. Check the actual action delay of the product during use.

[4] Take the voltage drop caused by cable resistance into account when selecting the motor brake cable length. The input voltage for an operating brake must be at least 21.6 V.

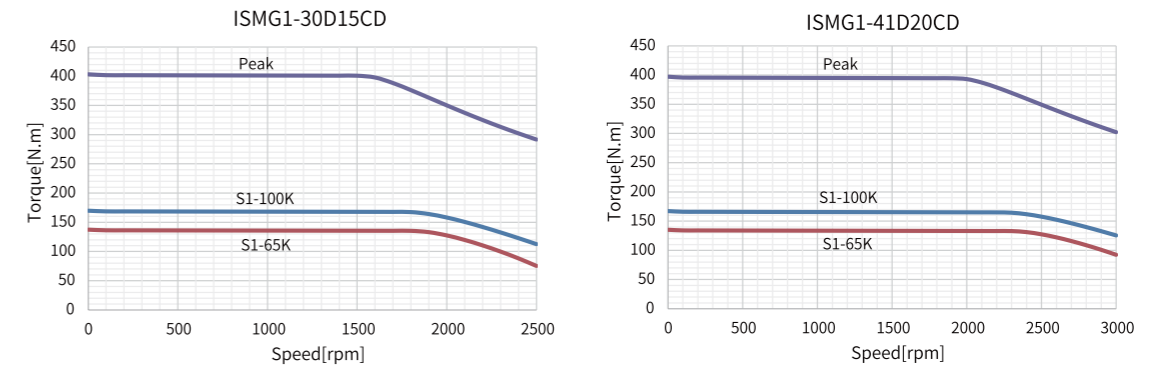
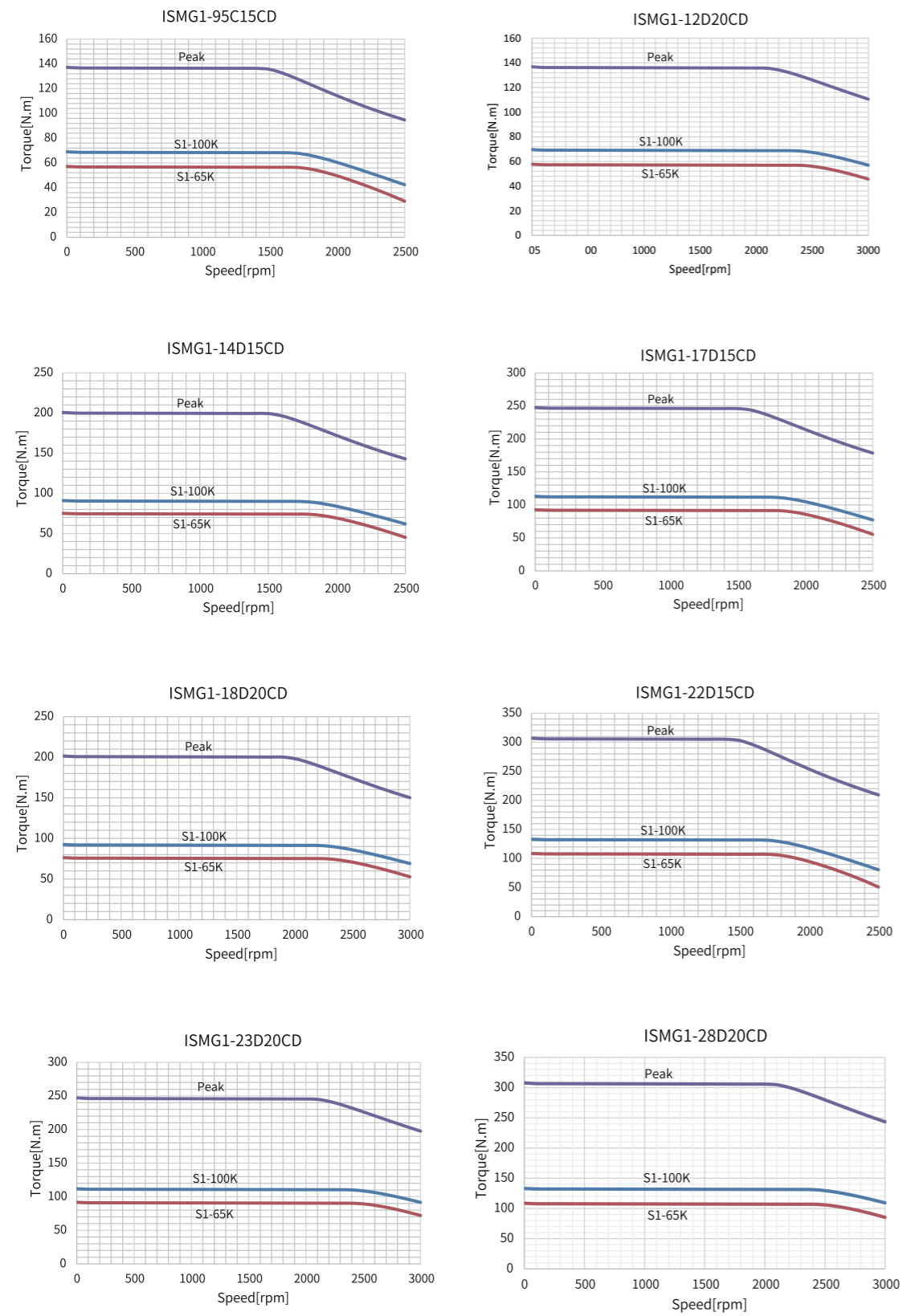
[5] The cross sectional area of the cable between the DC power supply and the motor brake must be higher than 0.5 mm². Use a separate power supply for the brake to prevent malfunction of the brake caused by current/voltage drop.

TORQUE-SPEED CHARACTERISTICS OF THE MOTOR

Color	Assignment	Description	Remark
	peak	Indicates the max. torque-speed relationship of the motor, which demonstrates the short-term overload capacity of the motor.	The rated operating point of the motor should be between S1-65 K and S1-100 K curves.
	S1-100 K	Indicates the torque-speed relationship of the motor under S1 duty in 100 K temperature rise.	
	S1-65 K	Indicates the torque-speed relationship of the motor under S1 duty in 65 K temperature rise.	

Note: The torque output of the motor may drop in the range above the rated speed when the bus voltage is low. Consult with Inovance technical support during model selection.

TORQUE-SPEED CHARACTERISTICS OF ISMG1






SPECIFICATIONS OF ISMG2

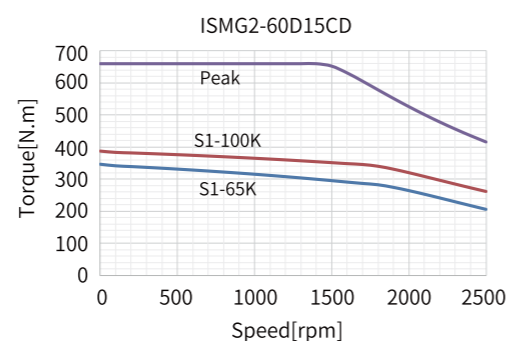
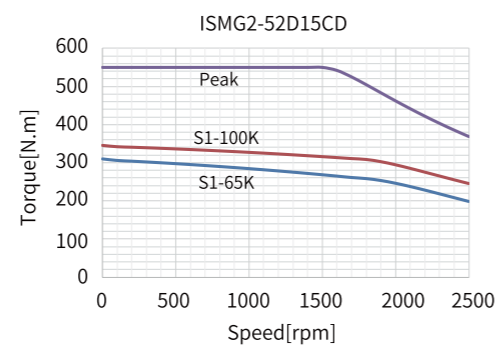
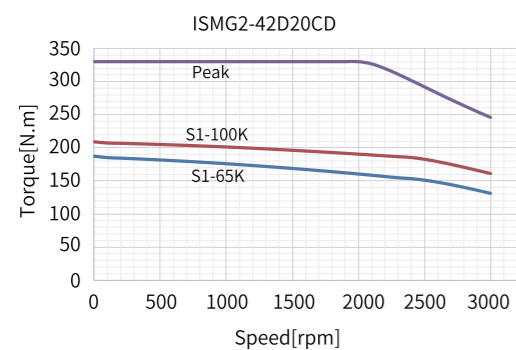
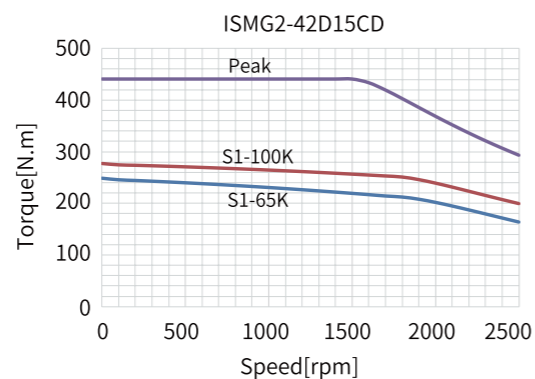
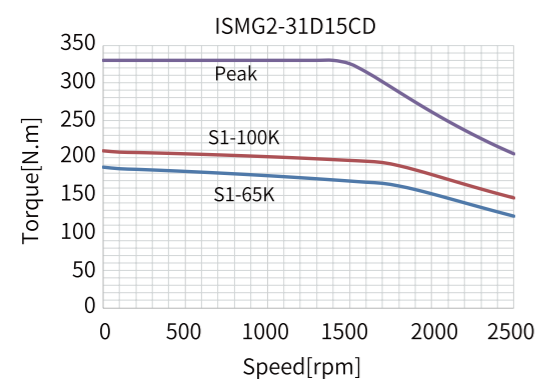
Motor Model	ISMG2-*****-A33*FA					
	31D15CD	42D20CD	42D15CD	52D15CD	57D20CD	60D15CD
Rated power (S1) ^[1] (kW)	26.7	35.6	36.1	44.8	48.2	53.4
Rated power (S4) ^[2] (kW)	31.4	41.9	42.4	52.6	56.5	60.5
Rated current (S1) ^[1] (A)	49.4	69.1	70.3	87.2	87.8	98.8
Rated current (S4) ^[2] (A)	61.7	86.6	87.7	104.4	109.3	118.8
Rated torque (S1) ^[1] (N·m)	170	170	230	285	230	340
Rated torque (S4) ^[2] (N·m)	200	200	270	335	270	385
Rated speed (rpm)	1500	2000	1500	1500	2000	1500
Rated voltage (V)	380	380	380	380	380	380
Rated frequency (Hz)	100	133.33	100	100	133.33	100
Torque coefficient (N·m/A)	3.44	2.46	3.27	3.27	2.62	3.44
Max. speed (rpm)	2500	3000	2500	2500	3000	2500
Max. torque (N·m)	330	330	440	550	440	660
Max. current (A)	117	163.7	166.5	206.2	207.8	233.8
Rotor moment of inertia (kg·cm ²)	296	296	368	434	368	500
Weight (kg)	122	122	141.3	158.4	141.3	175.4
Brake option	Not supported					

Note:
 Motor models in the preceding table are named based on S4 duty.
 [1] Values in S1 duty
 [2] Values in S4 duty
 For other models and specification, contact the sales personnel of Inovance.

TORQUE-SPEED CHARACTERISTICS OF ISMG2 SERIES MOTORS

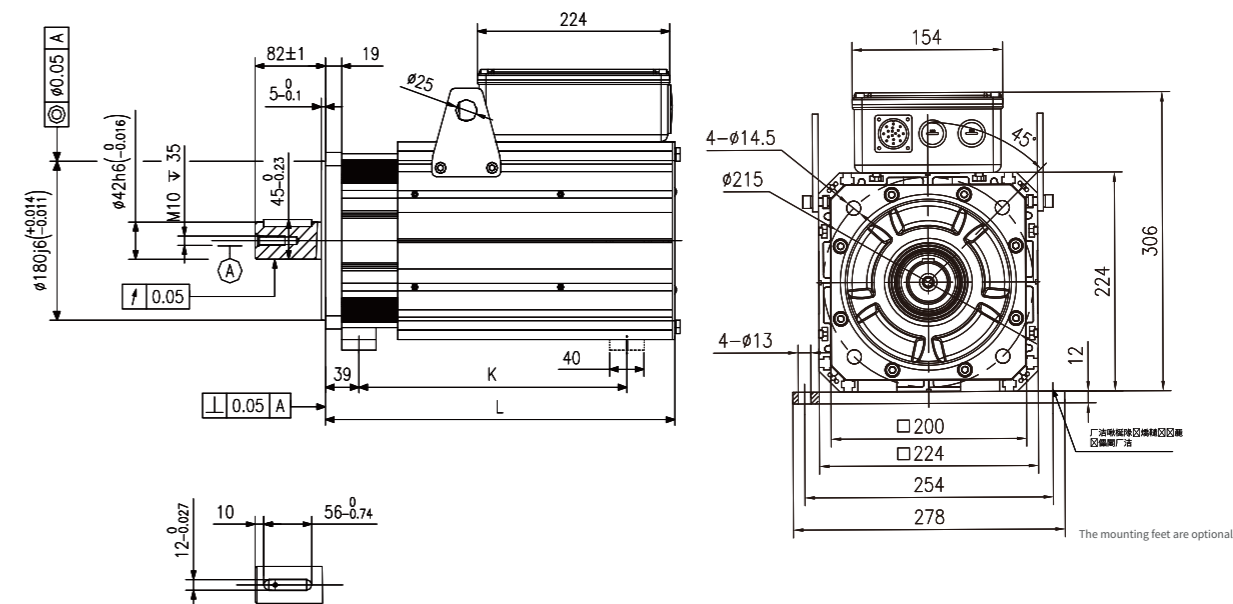
Color	Assignment	Description	Remark
	peak	Indicates the max. torque-speed relationship of the motor, which demonstrates the short-term overload capacity of the motor.	The rated operating point of the motor should be between S1-65 K and S1-100 K curves.
	S1-100 K	Indicates the torque-speed relationship of the motor under S1 duty in 100 K temperature rise.	
	S1-65 K	Indicates the torque-speed relationship of the motor under S1 duty in 65 K temperature rise.	

Note: The torque output of the motor may drop in the range above the rated speed when the bus voltage is low. Consult with Inovance technical support during model selection.



DIMENSIONS

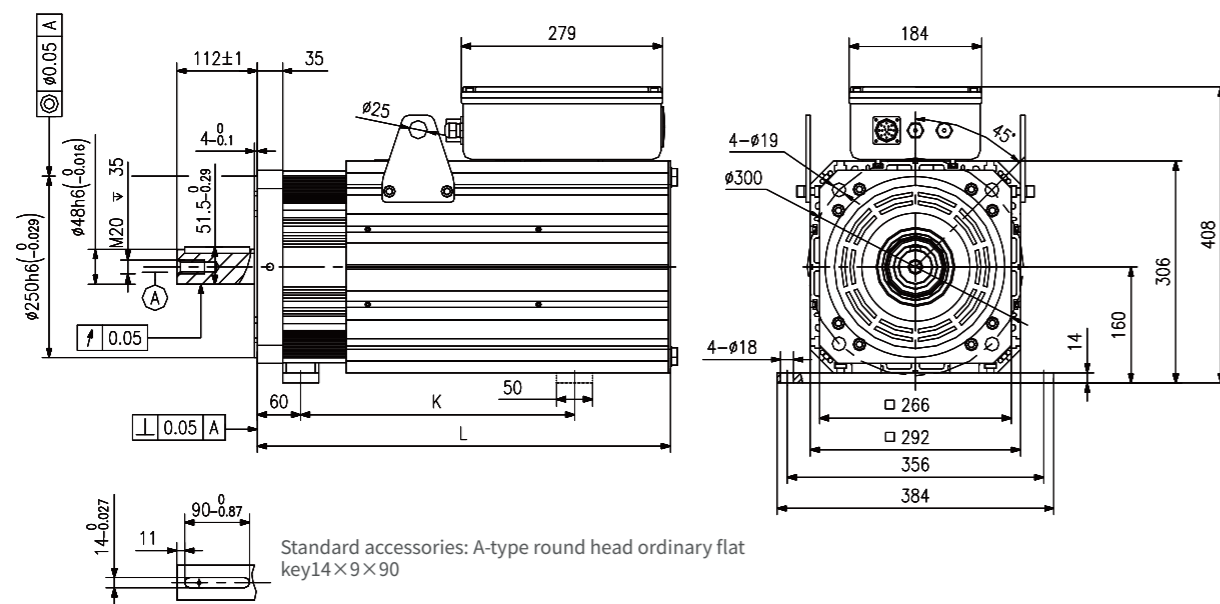
Dimensions of standard G1 motors (unit: mm)



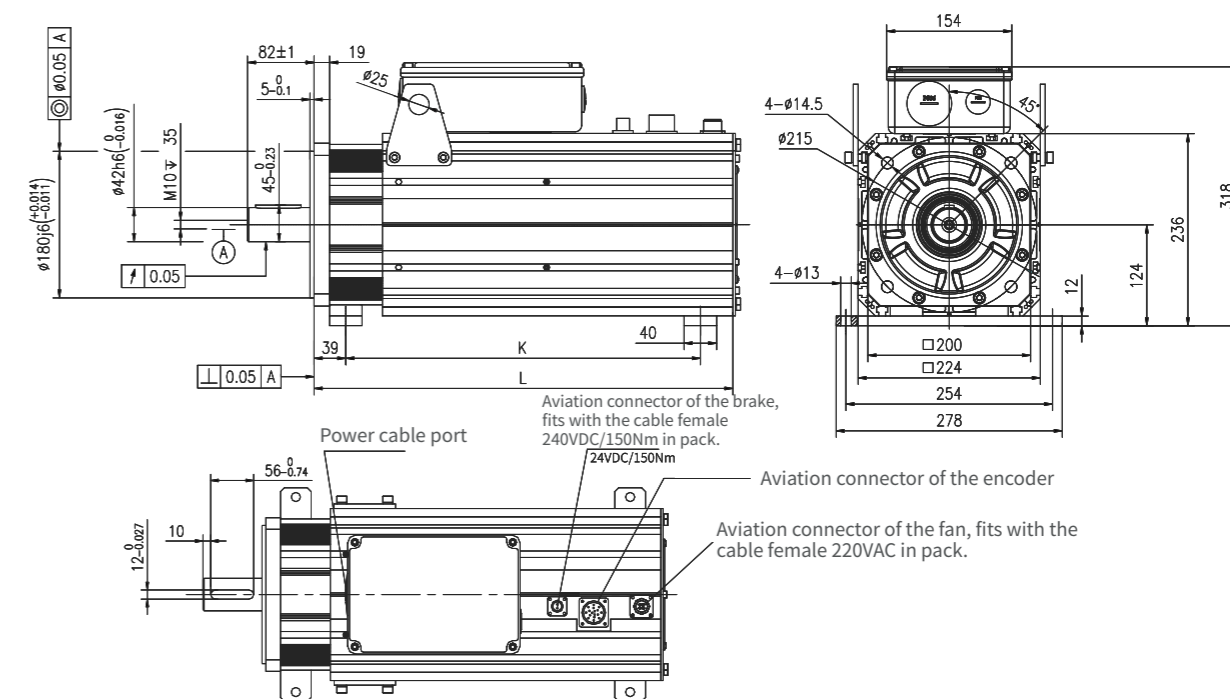
Motor Model	L (mm)	K ^[1] (mm)	Foot	Weight (kg)
ISMG1-95C15CD-A331FA	376	285	Not equipped	45.2
ISMG1-12D20CD-A331FA			Not equipped	
ISMG1-14D15CD-A331FA	410	312	Not equipped	51.9
ISMG1-18D20CD-A331FA			Not equipped	
ISMG1-17D15CD-A331FA	445	354	Not equipped	59
ISMG1-23D20CD-A331FA			Not equipped	
ISMG1-22D15CD-A331FA	482	396	Equipped as standard	66
ISMG1-28D20CD-A331FA			Equipped as standard	
ISMG1-30D15CD-A331FA	553	471	Equipped as standard	79.8
ISMG1-41D20CD-A331FA			Equipped as standard	

[1] K is the clearance among the mounting feet.

Dimensions of standard G2 models (unit: mm)



Dimensions of the G1 motor with brake (unit: mm)



Motor Model	L (mm)	K ^[1] (mm)	Foot	Weight (kg)
ISMG2-31D15CD-A331FA	575	360	Equipped as standard	122
ISMG2-42D20CD-A331FA			Equipped as standard	
ISMG2-42D15CD-A331FA	577	370	Equipped as standard	141.3
ISMG2-57D20CD-A331FA			Equipped as standard	
ISMG2-52D15CD-A331FA	629	476	Equipped as standard	158.4
ISMG2-60D15CD-A331FA	680	476	Equipped as standard	175.4

[1] K is the clearance of the mounting feet.

Motor Model	L (mm)	K ^[1] (mm)	Foot	Weight (kg)
ISMG1-95C15CD-A334FA	484	396	Equipped as standard	53.2
ISMG1-12D20CD-A334FA			Equipped as standard	
ISMG1-14D15CD-A334FA	518	436	Equipped as standard	59.9
ISMG1-18D20CD-A334FA			Equipped as standard	
ISMG1-17D15CD-A334FA	553	471	Equipped as standard	67
ISMG1-23D20CD-A334FA			Equipped as standard	
ISMG1-22D15CD-A334FA	590	506	Equipped as standard	74
ISMG1-28D20CD-A334FA			Equipped as standard	
ISMG1-30D15CD-A334FA	661	576	Equipped as standard	87.8
ISMG1-41D20CD-A334FA			Equipped as standard	

[1] K is the clearance among the mounting feet.

[2] The L-type aviation connector accessories that connected to the motor brake and the fan are included in the standard configuration, which will be delivered in the packing box together with the motor.

MV21 Series Servo Motor

High Stability Servo Motor



- Shaft height: Sh124, Sh160 mm
- Power and Speed Range
 - 5.5-90 kW Rated/Max 2000/2400 rpm
 - 5.5-75 kW Rated/Max 1500/1800 rpm
 - 4-45 kW Rated/Max 1000/1200 rpm
- Cooling with separate fan
- 23bit encoder as standard



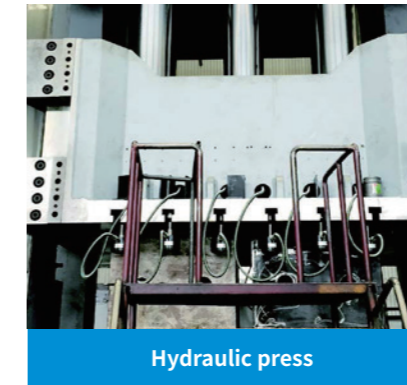
Plastic extruder



Wire drawing machine



Extruding machineries



Hydraulic press



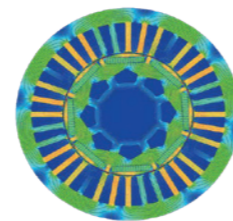
Packing machineries

Note: MV21 series low-voltage three-phase permanent magnet motor is intended to be used with MD520 series drives. For details, contact Inovance.

PRODUCT FEATURES

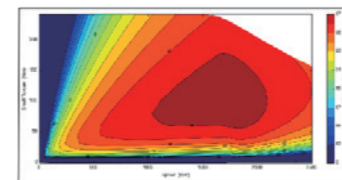
High reliability

- High-reliability IPM built-in structure solution for rotor
- Rare-earth magnet to provide accurate temperature protection, ensuring reliable operation within the life cycle of the motor
- Mature variable-frequency insulation system and mechanical structure with high strength



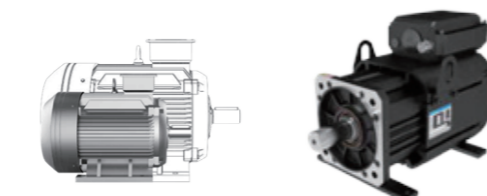
Efficient and energy-saving

- Cost-effective owing to high power factor, low current, and low temperature rise



Space-saving

- Three models in total
- Light and small with aluminium alloy enclosure for easy transportation
- Space-saving to leave more room for customers



Other asynchronous motor

MV21

SPECIFICATIONS

Item	Specification
Duty type	S1
Shaft height	124, 160
Insulation class	155(F)
Cooling mode	IC416
Protection degree	IP54
Rated speed	1000 rpm, 1500 rpm, 2000 rpm
Voltage (AC)	380 VAC
Standard configuration for thermal protection	PT1000
Ambient temperature	-15°C to +40°C
Ambient humidity	20% to 80% RH (without condensation)
Storage temperature	-20°C to +60°C (peak temperature assurance: 72 hours at 80°C)
Storage humidity	20% to 90% RH (without condensation)
Altitude	< 1000 m (Derating required for altitudes above 1000 m)
Installation location	Install the motor in a place free from corrosive and inflammable gases and combustible materials, such as the hydrogen sulfide, chlorine, ammonia, sulphur gas, chloridize gas, acid, soda and salt. Use the motor with oil seal in places with grinding fluid, oil mist, iron powders or cuttings. Install the motor away from heating sources such as a heating stove. Running in an enclosed environment can lead to motor over-temperature, which shortens its service life.

SPECIFICATIONS

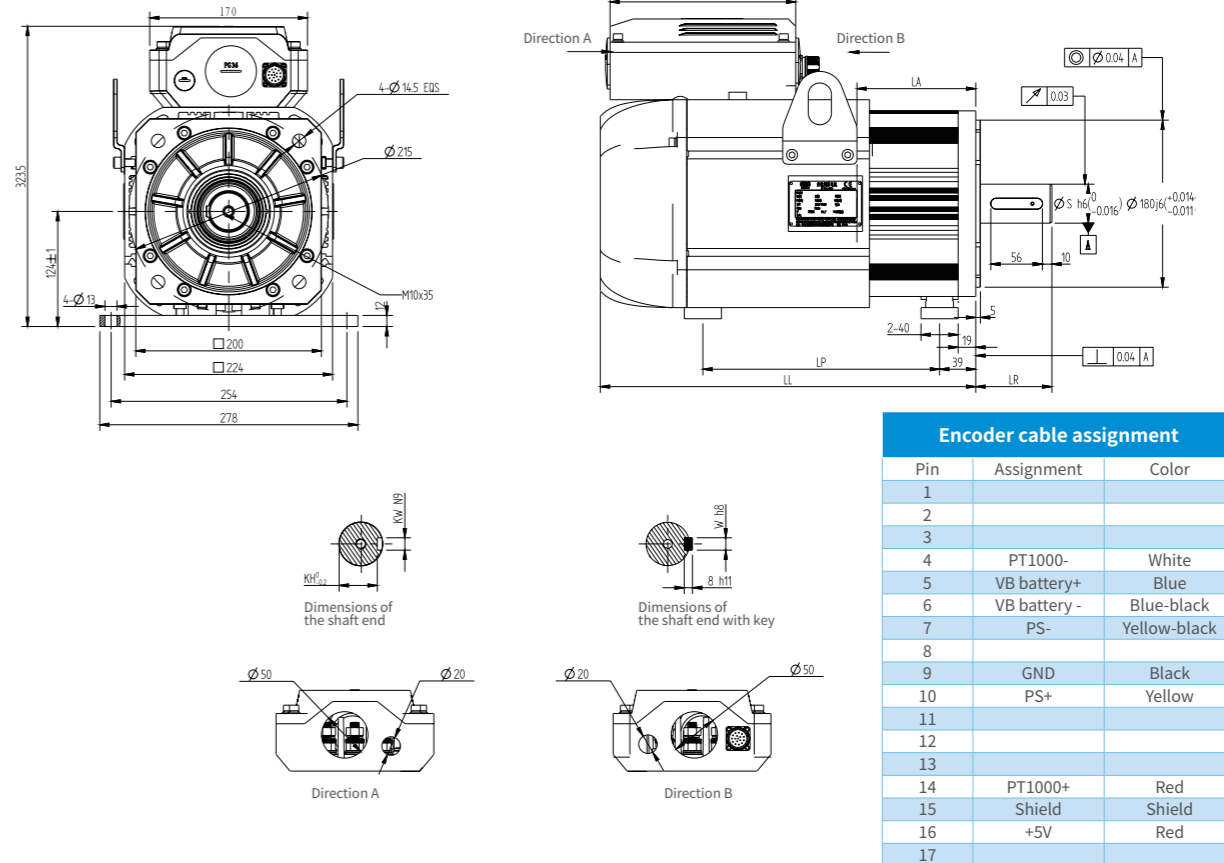
Model	Rated Power (kW)	Voltage (VAC)	Speed		Torque		Current		Moment of Inertia (kgcm ²)	Efficiency (%)	Rated Frequency (Hz)	Insulation Class	IP Rating
			Rated Speed (rpm)	Peak Speed (rpm)	Rated Torque (N.m)	Peak Torque (N.m)	Rated Current (A)	Peak Current (A)					
RATED SPEED 1000 RPM													
MV21-20A40C10CD-A3A1F	4	380	1000	1200	38	60	7.8	13	69	88.8	66.7	F	IP54
MV21-20B55C10CD-A3A1F	5.5	380	1000	1200	53	80	10.2	17	89	89.7	66.7	F	IP54
MV21-20C75C10CD-A3A1F	7.5	380	1000	1200	72	110	14.5	24	112	90.6	66.7	F	IP54
MV21-20E11D10CD-A3A1F	11	380	1000	1200	105	160	20.3	33	153	91.4	66.7	F	IP54
MV21-20G15D10CD-A3A1F	15	380	1000	1200	143	250	29	48	195	92	66.7	F	IP54
MV21-23D18D10CD-A3A1F	18.5	380	1000	1200	177	300	34.5	57	378	92.6	66.7	F	IP54
MV21-23E22D10CD-A3A1F	22	380	1000	1200	210	350	43	71	430	93.2	66.7	F	IP54
MV21-23G30D10CD-A3A1F	30	380	1000	1200	287	460	55	91	534	93.6	66.7	F	IP54
MV21-26E37D10CD-A3A1F	37	380	1000	1200	353	515	70	116	509	94	66.7	F	IP54
MV21-26G45D10CD-A3A1F	45	380	1000	1200	430	640	85	140	649	94.4	66.7	F	IP54

Model	Rated Power (kW)	Voltage (VAC)	Speed		Torque		Current		Moment of Inertia (kgcm ²)	Efficiency (%)	Rated Frequency (Hz)	Insulation Class	IP Rating
			Rated Speed (rpm)	Peak Speed (rpm)	Rated Torque (N.m)	Peak Torque (N.m)	Rated Current (A)	Peak Current (A)					
RATED SPEED 1500 RPM													
MV21-20A55C15CD-A3A1F	5.5	380	1500	1800	35	55	11.4	19	69	89.6	100	F	IP54
MV21-20B75C15CD-A3A1F	7.5	380	1500	1800	48	75	14.5	24	89	90.4	100	F	IP54
MV21-20C11D15CD-A3A1F	11	380	1500	1800	70	110	21.2	35	112	91.4	100	F	IP54
MV21-20E15D15CD-A3A1F	15	380	1500	1800	96	185	29.4	49	153	92.1	100	F	IP54
MV21-20F18D15CD-A3A1F	18.5	380	1500	1800	118	195	35	58	194	92.6	100	F	IP54
MV21-20H22D15CD-A3A1F	22	380	1500	1800	140	230	41	68	216	93	100	F	IP54
MV21-23E30D15CD-A3A1F	30	380	1500	1800	191	345	61.5	101	430	93.6	100	F	IP54
MV21-23F37D15CD-A3A1F	37	380	1500	1800	236	390	67	111	482	93.9	100	F	IP54
MV21-23G45D15CD-A3A1F	45	380	1500	1800	287	470	86	142	534	94.2	100	F	IP54
MV21-26E55D15CD-A3A1F	55	380	1500	1800	350	515	105	173	509	94.6	100	F	IP54
MV21-26G75D15CD-A3A1F	75	380	1500	1800	478	690	135	223	649	95	100	F	IP54

Model	Rated Power (kW)	Voltage (VAC)	Speed		Torque		Current		Moment of Inertia (kgcm ²)	Efficiency (%)	Rated Frequency (Hz)	Insulation Class	IP Rating
			Rated Speed (rpm)	Peak Speed (rpm)	Rated Torque (N.m)	Peak Torque (N.m)	Rated Current (A)	Peak Current (A)					
RATED SPEED 2000 RPM													
MV21-20A55C20CD-A3A1F	5.5	380	2000	2400	26	45	10.8	18	69	89.6	133.3	F	IP54
MV21-20B75C20CD-A3A1F	7.5	380	2000	2400	36	60	13.8	23	89	90.1	133.3	F	IP54
MV21-20C11D20CD-A3A1F	11	380	2000	2400	53	90	21.6	36	112	91.6	133.3	F	IP54
MV21-20D15D20CD-A3A1F	15	380	2000	2400	72	135	30	50	133	92.2	133.3	F	IP54
MV21-20E18D20CD-A3A1F	18.5	380	2000	2400	88	140	36	59	153	92.8	133.3	F	IP54
MV21-20F22D20CD-A3A1F	22	380	2000	2400	105	170	44.2	73	174	93.2	133.3	F	IP54
MV21-23D30D20CD-A3A1F	30	380	2000	2400	143	240	57	94	378	93.7	133.3	F	IP54
MV21-23E37D20CD-A3A1F	37	380	2000	2400	177	290	66.5	110	430	94.1	133.3	F	IP54
MV21-23F45D20CD-A3A1F	45	380	2000	2400	215	360	86.5	143	482	94.4	133.3	F	IP54
MV21-23G55D20CD-A3A1F	55	380	2000	2400	263	420	100	165	534	94.7	133.3	F	IP54
MV21-26E75D20CD-A3A1F	75	380	2000	2400	358	510	135	223	509	95	133.3	F	IP54
MV21-26G90D20CD-A3A1F	90	380	2000	2400	430	640	168	277	649	95.3	133.3	F	IP54

DIMENSIONS

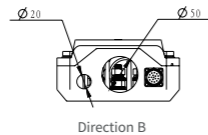
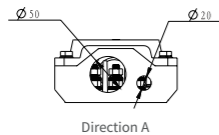
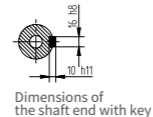
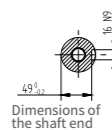
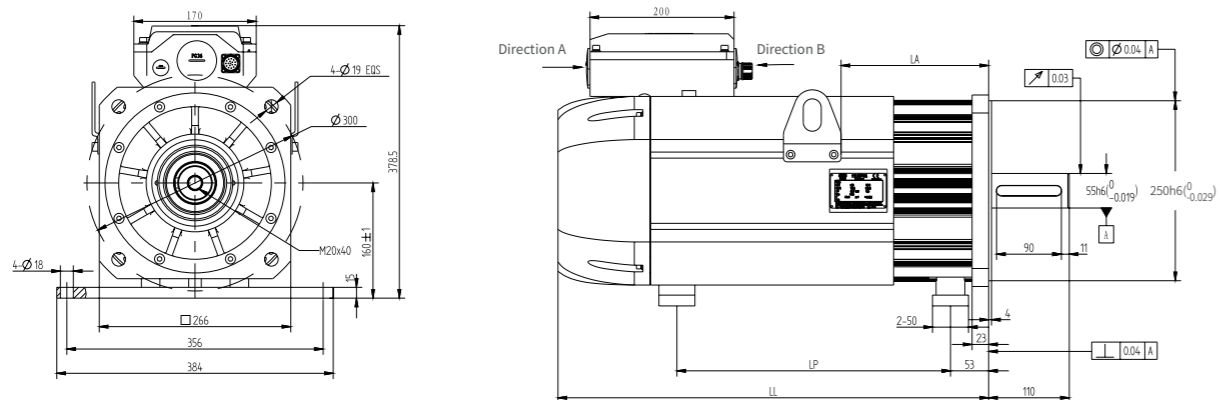
Series 1



Encoder cable assignment		
Pin	Assignment	Color
1		
2		
3		
4	PT1000-	White
5	VB battery+	Blue
6	VB battery -	Blue-black
7	PS-	Yellow-black
8		
9	GND	Black
10	PS+	Yellow
11		
12		
13		
14	PT1000+	Red
15	Shield	Shield
16	+5V	Red
17		

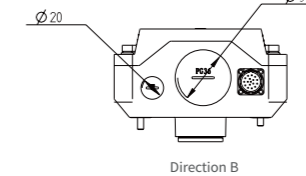
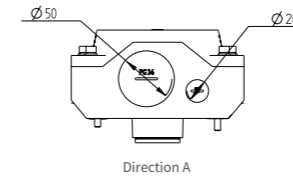
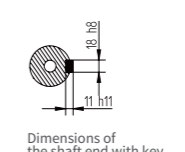
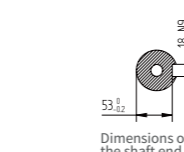
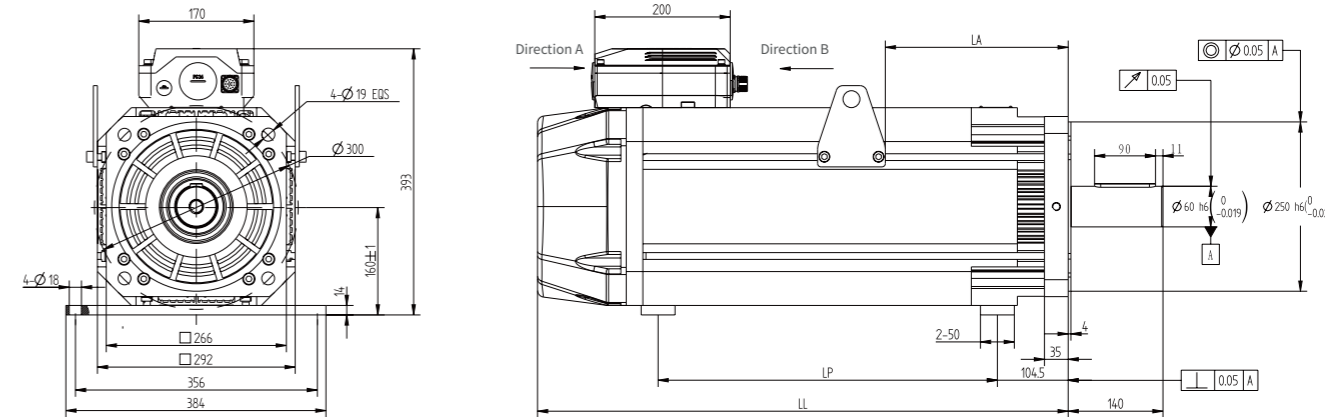
Model	LL	LR	LP	LA	S	KH	KW	W
MV21-20A40C10CD-A3A1F								
MV21-20A55C15CD-A3A1F	319	80	151	115	38	33	12	10
MV21-20A55C20CD-A3A1F								
MV21-20B55C10CD-A3A1F								
MV21-20B75C15CD-A3A1F	347.5	80	180	115	38	33	12	10
MV21-20B75C20CD-A3A1F								
MV21-20C75C10CD-A3A1F								
MV21-20C11D15CD-A3A1F	376	110	208	120	42	37	12	12
MMV21-20C11D20CD-A3A1								
MV21-20D15D20CD-A3A1F	404.5	110	237	128	42	37	12	12
MV21-20E11D10CD-A3A1F								
MV21-20E15D15CD-A3A1F	433	110	265	135	42	37	12	12
MV21-20E18D20CD-A3A1F								
MV21-20F18D15CD-A3A1F	461.5	110	294	148	42	37	12	12
MV21-20F22D20CD-A3A1F								
MV21-20G15D10CD-A3A1F	490	110	322	162	42	37	12	12
MV21-20H22D15CD-A3A1F	518.5	110	351	180	42	37	12	12

Series 2



Encoder cable assignment		
Pin	Assignment	Color
1		
2		
3		
4	PT1000-	White
5	VB battery+	Blue
6	VB battery -	Blue-black
7	PS-	Yellow-black
8		
9	GND	Black
10	PS+	Yellow
11		
12		
13		
14	PT1000+	
15	Shield	Shield
16	+5V	
17		

Series 3



Encoder cable assignment		
Pin	Assignment	Color
1		
2		
3		
4	PT1000-	White
5	VB battery+	Blue
6	VB battery -	Blue-black
7	PS-	Yellow-black
8		
9	GND	Black
10	PS+	Yellow
11		
12		
13		
14	PT1000+	Red
15	Shield	Shield
16	+5V	Red
17		

Model	LL	LP	LA
MV21-23D18D10CD-A3A1F	553.7	337	188
MV21-23D30D20CD-A3A1F			
MV21-23E22D10CD-A3A1F	597.2	380	205
MV21-23E30D15CD-A3A1F			
MV21-23E37D20CD-A3A1F			
MV21-23F37D15CD-A3A1F			
MV21-23F45D20CD-A3A1F	642.7	426	223
MV21-23G30D10CD-A3A1F			
MV21-23G45D15CD-A3A1F	687.2	470	240
MV21-23G55D20CD-A3A1F			

Model	LL	LP	LA
MV21-26E37D10CD-A3A1F	684	401	220
MV21-26E55D15CD-A3A1F			
MV21-23E37D20CD-A3A1F			
MV21-26E75D20CD-A3A1F	783.5	501	270
MV21-26G45D10CD-A3A1F			
MV21-26G75D15CD-A3A1F			

MDD Series Permanent Magnet Motor

Low-Speed Direct Drive Permanent Magnet Motor



Item	Low-speed Direct Drive PM Motor	Industrial Reduction Motor	Low-speed Direct Drive Integrated Motor	High-voltage PMSM
Appearance				
Voltage Class (V)	Low voltage: 380, 690 High voltage :6000, 10000	Low voltage: 380,660 High voltage: 1140,3300,6000,10000	6000,10000	6000,10000
Power Rating (kW)	Low voltage: 40 to 750 High voltage: 200 to 2000	Low voltage: 40 to 355 High voltage: 160 to 2400	315-1000	315-5300
Speed Range (r/min)	≤ 300	≤ 500	≤ 300	750-3000
Cooling Mode	Water-cooled/Fan-cooled	Water-cooled/Air-cooled	Water-cooled	Air-air heat exchanger/ Air-water heat exchanger
Basic Features	Efficient and energy-saving; High starting torque and strong overload capacity; IP rating: IP55; Intelligent drive system Small footprint; Low temperature rise, low noise, and low vibration	Efficient and energy-saving; High starting torque and strong overload capacity; IP rating: IP55; Intelligent drive system Small size, light weight, and easy installation; Low temperature rise, low noise, and low vibration	Efficient and energy-saving; High starting torque and strong overload capacity; IP rating: IP55; Intelligent drive system Small footprint and easy construction; Flexible layout; Low temperature rise, low noise, and low vibration	Efficient and energy-saving; High starting torque and strong overload capacity; IP rating: IP55; Intelligent drive system Flange size of asynchronous and synchronous motors replaceable; Small footprint and easy construction; Low temperature rise, low noise, and low vibration
Application Filed	Metallurgy, petrochemical, power, mine, construction material, chemical industry, etc. Conveyor, hoister, mixer, crusher, ball mill, powder collector, cooling tower fan, etc.	Metallurgy, petrochemical, power, mine, construction material, chemical industry, rubber, etc. Conveyor, hoister, roller press, mixer, internal mixer, ball mill, etc.	Metallurgy, mine, etc. Conveyor, scrapper, etc.	Metallurgy, petrochemical, power, mine, construction material, chemical industry, rubber, papermaking, etc. Fan, compressor, water pump, ball mill, internal mixer, etc.

PRODUCT FEATURES

EFFICIENT AND ENERGY-SAVING

- Power factor up to 0.95 owing to zero copper loss and high efficiency
- Efficiency improved by 10% to 20% compared with motors with conventional drive system

SMALL AND LIGHT

- High power density, small size, and light weight

MAINTENANCE-FREE

- Soft start to eliminate the transmission process, removing the need for maintenance

HIGH STARTING TORQUE AND EXCELLENT PERFORMANCE VARIABLE-FREQUENCY START, WITH STARTING

- Variable-frequency start, with starting torque being 200% to 300% of the rated torque
- High overload capacity to allow short-term overload at 200% to 300% of rated load

NAMING RULES



M DD 5 1 - 63 L 50E 090 X
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Product family M: Motor	⑤ Center height 40: 400 45: 450 50: 500 56: 560 63: 630 71: 710	80: 800 90: 900 1A: 1000 1B: 1120 1C: 1250 1D: 1400	⑦ Rated power kW D: x 1 E: x 10 F: x 100 G: x 1000	Special 18E: 185 kW 31E: 315 kW 35E: 355 kW
② Product type DD: Direct-drive motor			⑧ Speed r/min 1—999 (based on actual condition) Example: 90 rpm, 090	
③ Product sub-type 3: Low voltage 5: High voltage	⑥ Mounting feet hole clearance type S: S type M: M type L: L type		⑨ Rated voltage D: 380 S: 660 T: 690 V: 1140	
④ Product generation	X: L1 type Y: L2 type		W: 3300 X: 6000 Z: 10000	

SELECTION GUIDE

MDD series low-speed direct drive permanent magnet motor should be selected based on rated torque instead of rated power because gear reducer is not needed. The total rated torque of the motor selected must be higher than or equal to the driving torque needed by the load device.

SELECTION CHART OF MDD31 (380V/690V)

Rated Torque Nm	Flange size	Operating Power in Different Speeds (kW)											
		50 (r/min)	75 (r/min)	90 (r/min)	105 (r/min)	110 (r/min)	120 (r/min)	150 (r/min)	180 (r/min)	200 (r/min)	200 (r/min)	240 (r/min)	300 (r/min)
2829	400L	15	22	27	31	33	36	44	53	59	65	71	89
3635		19	29	34	40	42	46	57	69	76	84	91	114
4244		22	33	40	46	49	53	66	80	88	97	106	133
4951		26	39	47	54	57	62	78	93	104	114	124	156
5868	450L	31	46	55	65	68	74	92	111	123	135	147	184
6600		35	52	62	73	76	83	104	124	138	152	166	207
7958		42	62	75	87	92	100	125	150	167	183	200	250
8800		46	69	83	97	101	111	138	166	184	203	221	276
9550	560S	50	75	90	105	110	120	150	180	200	220	240	300
11672		61	92	110	128	134	147	183	220	244	269	293	367
16978	560M	89	133	160	187	196	213	267	320	356	391	427	533
19100	560L	100	150	180	210	220	240	300	360	400	440	480	600
21222	630L	111	167	200	233	244	267	333	400	444	-	-	-
26528		139	208	250	292	306	333	417	500	556	-	-	-
33425		175	263	315	368	385	420	525	630	700	-	-	-
37669	800S	197	296	355	414	434	473	592	710	789	-	-	-
42444		222	333	400	467	489	533	667	800	889	-	-	-
47750		250	375	450	525	550	600	750	900	-	-	-	-
53056	800M	278	417	500	583	611	667	833	-	-	-	-	-
59422		311	467	560	653	684	747	-	-	-	-	-	-
66850		350	525	630	735	770	-	-	-	-	-	-	-
75339	800L	394	592	710	828	-	-	-	-	-	-	-	-
81706		428	642	770	-	-	-	-	-	-	-	-	-
84889		444	667	-	-	-	-	-	-	-	-	-	-

Note:

1. "-" in the preceding table indicates N/A.

2. The preceding table only lists common internal speed values that can be reached. Speeds between the max. and min. speed limits are Available. You can calculate the corresponding power based on the speed Needed. For technical data not listed, contact Inovance technical support.

3. Formula for calculating the power: Power = (Torque x Speed)/9550 kW

4. Torque selection principle: Motor torque ≥ 1.1 x load torque

DIMENSIONS OF MDD31 (380V/690V)

Rated Torque Nm	Flange size	Mounting dimensions (mm)										Outline dimensions (mm)			Reference Weight (kg)	
		D	E	C	B	A	K	M	F	G	H	L (Length)	AB (Width)	HD (Height)		
2829	400L	110	150	180	570	620	30	M24	80	410	400	1057	760	1040	1300	
3635																1400
4244																1500
4951																1600
5868	450L	110	150	214	450	685	26	M24	70	310	450	1019	835	1070	1700	
6600															1800	
7958															1900	
8800															2000	
9550	560S	150	200	195	490	840	32	M30	100	190	560	1002	1040	1142	3100	
11672															3300	
16978	560M	150	200	195	540	840	32	M30	100	340	560	1152	1040	1142	3800	
19100	560L	150	200	195	650	840	32	M30	100	450	560	1262	1040	1142	4400	
21222	630L	200	170	256	685	1000	42	M36	80	525	630	1381	1170	1592	4400	
26528															4700	
33425															5100	
37669	800S	260	200	250	500	1220	50	M36	100	300	800	1417	1510	1555	5700	
42444															5800	
47750															6000	
53056															6700	
58422	800M	260	200	250	640	1220	50	M36	100	440	800	1557	1510	1555	7000	
66850															7300	
75339	800L	260	200	250	840	1220	50	M36	100	640	800	1947	1510	1555	8200	
81706															8600	
84889															9700	

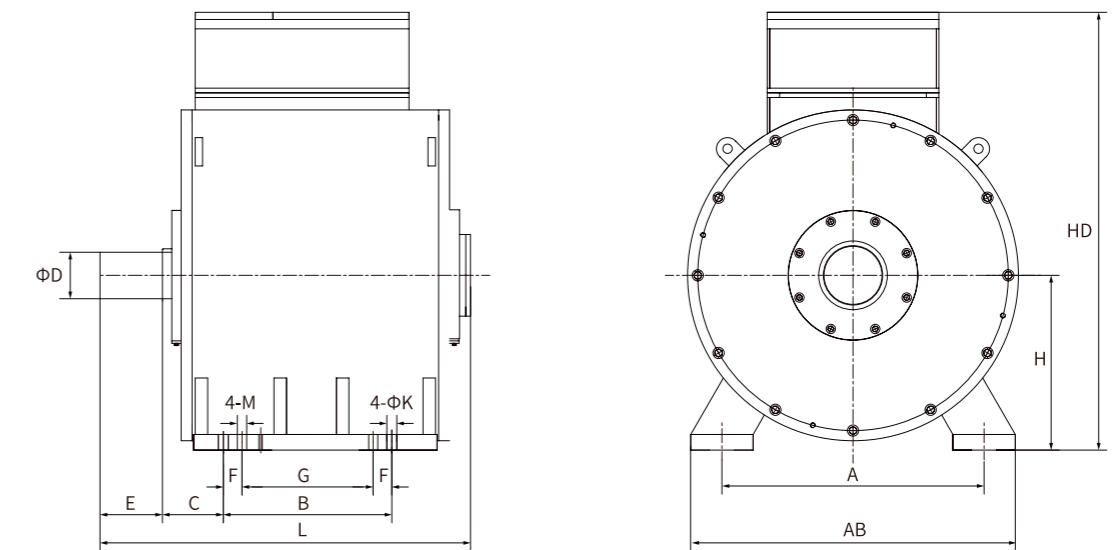


Figure 1

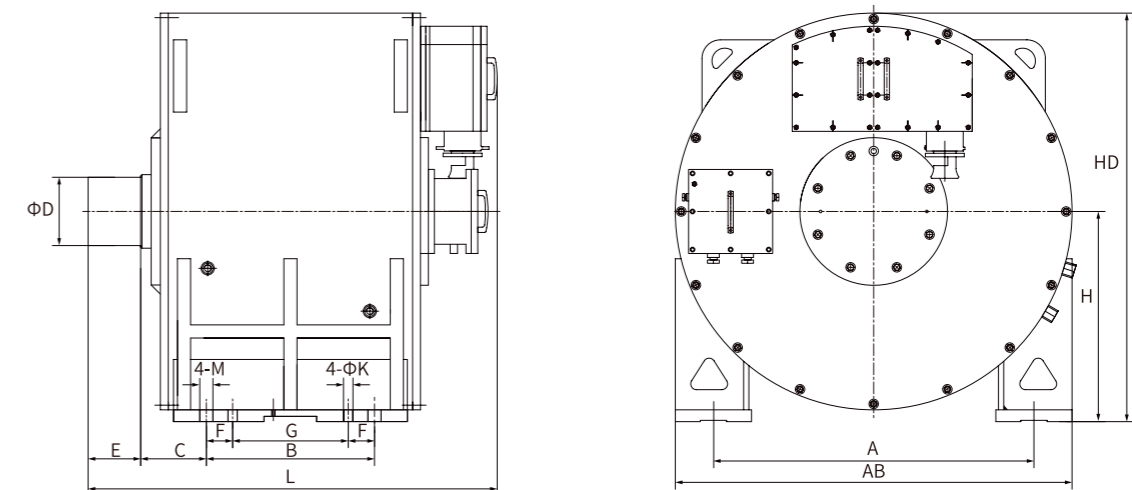


Figure 2

Outline drawing

INTRODUCTION TO THE SYSTEM

- Figure 1 applies to permanent magnet motor with center height 450/560/630 mm. Figure 2 applies to permanent magnet motor with center height 800 mm. The shaft extension of the permanent magnet motor is connected to the coupler with expanding sleeve.
- Cooling mode of permanent magnet motor: IC46W water-cooled, with cooling water compliant with water pressure 0.3 Mpa to 0.8 Mpa IC416 independent fan-cooled
- Oil injection and exhaust holes are set in the external cover of the front/back bearing. Inject the oil as instructed in the user guide.
- Ambient temperature: -10°C to +40°C (motor especially treated can withstand -40°C)
- Ambient humidity: ≤ 95% (at +25°C), with altitude not higher than 2500 m
- IP rating: IP55; Duty type: S1; Insulation class: Class H (180°C)

SPECIFICATIONS OF MDD31 (380V/690V)

No.	Power (Kw)	Rated Torque (N·m)	Speed (r/min)	Efficiency (%)	Power Factor (cosΦ)
1	30	3183	90	93	0.96
2	37	3926	90	93	0.96
3	40	4244	90	93	0.96
4	45	4775	90	93	0.96
5	55	5836	90	93	0.96
6	75	7958	90	93	0.96
7	90	9550	90	94	0.97
8	110	11627	90	94	0.97
9	132	14007	90	94	0.97
10	160	16978	90	94	0.97
11	180	19100	90	94	0.97
12	200	21222	90	94	0.97
13	220	23344	90	94	0.97
14	250	26528	90	94	0.97
15	280	29711	90	94	0.97
16	315	33425	90	94	0.97
17	330	35017	90	94	0.97
18	355	37669	90	95	0.96
19	400	42444	90	95	0.96
20	425	45097	90	95	0.96
21	450	47750	90	95	0.96
22	500	53056	90	96	0.95
23	530	56236	90	96	0.95
24	560	59422	90	96	0.95
25	610	64728	90	96	0.95
26	630	66850	90	96	0.95
27	670	71094	90	96	0.95
28	710	75339	90	96	0.95
29	750	79583	90	96	0.95

SELECTION CHART OF MDD51 (6KV/10KV)

Rated Torque (N·m)	Flange Size	30 (r/min)	40 (r/min)	50 (r/min)	Operating power in different speeds (kW)			110 (r/min)	120 (r/min)	150 (r/min)
					75 (r/min)	90 (r/min)	105 (r/min)			
2122	630L	67	89	111	167	200	233	244	267	333
26528		83	111	139	208	250	292	306	333	417
33425		105	140	175	263	315	368	385	420	525
37669	800S	118	158	197	296	355	414	434	473	582
42444	800M	133	178	222	333	400	467	489	533	667
47750		150	200	250	375	450	525	550	600	750
53056		167	222	278	417	500	583	611	667	833
59422	800L	187	249	311	467	560	653	684	747	933
66850	1000M	210	280	350	525	630	735	770	840	1050
75339		237	316	394	592	710	828	868	947	1183
84889		267	356	444	667	800	933	978	1067	1333
9550	1000L	300	400	500	750	900	1050	1100	1200	1500
10611		333	444	556	833	1100	1167	1222	1333	1667
118844		373	498	622	933	1120	1307	1369	1493	1867
132939	1120M	418	557	696	1044	1253	1462	1531	1670	2088
148555		467	622	778	1167	1400	1633	1711	1867	2333
169777		533	711	889	1333	1600	1867	1956	2133	2667
191000	1120L	600	800	1000	1500	1800	2100	2200	2400	3000
212222		889	889	1111	1667	2000	2333	2444	2667	3333

Note:
 1.The preceding table only lists common internal speed values that can be reached. Speeds between the max. and min. speed limits are Available. You can calculate the corresponding power based on the speed Needed. For technical data not listed, contact Inovance technical support.
 2. Formula for calculating the power: Power = (Torque x Speed)/9550 kW
 3. Torque selection principle: Motor torque ≥ 1.1 x load torque

DIMENSIONS CHART OF MDD51 (6KV/10KV)

Rated Torque Nm	Flange size	Mounting dimensions (mm)										Outline dimensions (mm)			Reference Weight (kg)
		D	E	C	B	A	K	M	F	G	H	L (Length)	AB (Width)	HD (Height)	
21222	630L	200	170	256	685	1000	42	M36	80	525	630	1381	1170	1592	4600
26528															5000
33425															5300
37669	800S	260	200	250	500	1220	50	M36	100	300	800	1417	1510	1555	6000
42444	800M	260	200	250	640	1220	50	M36	100	440	800	1557	1510	1555	6800
47750															7100
53056															7400
59422	800L	150	200	195	540	840	32	M30	100	640	800	1947	1040	1555	8200
66850	1000M	280	250	335	600	1410	58	M36	100	400	1000	1847	1720	1142	9800
75339															10000
84889															10100
95500	1000L	300	300	335	800	1410	58	M36	100	600	1120	2147	1720	1860	11200
106111															11600
118844															12000
132939	1120M	340	350	400	900	1640	58	M36	100	700	1120	2152	1990	2115	15234
148555															17227
169777															18900
191000	1120L	340	350	400	1040	1640	58	M36	100	840	1120	2402	1990	2115	21600
212222															23500

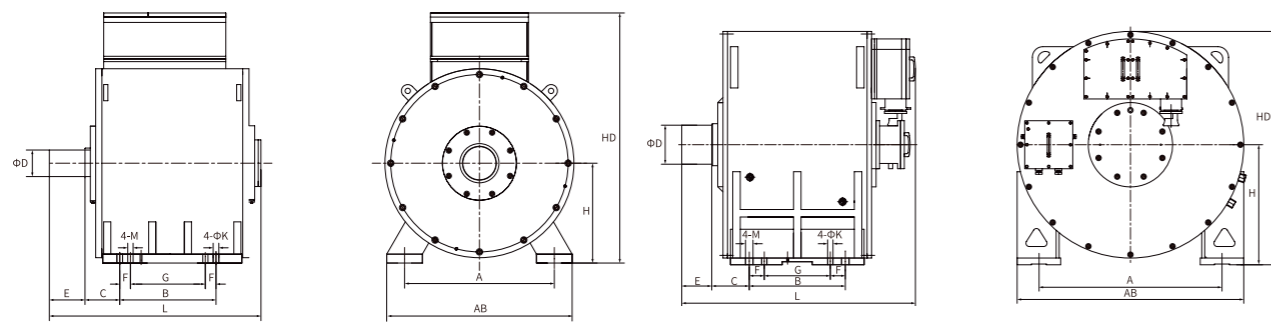


Figure 1

Figure 2

Outline drawing

INTRODUCTION TO THE SYSTEM

- Figure 1 applies to permanent magnet motor with center height 450/560/630 mm. Figure 2 applies to permanent magnet motor with center height 800 mm. The shaft extension of the permanent magnet motor is connected to the coupler with expanding sleeve.
- Cooling mode of permanent magnet motor: IC46W water-cooled, with cooling water compliant with water pressure 0.3 Mpa to 0.8 Mpa
- Oil injection and exhaust holes are set in the external cover of the front/back bearing. Inject the oil as instructed in the user guide.
- Ambient temperature: -10°C to +40°C (motor especially treated can withstand -40°C)
- Ambient humidity: ≤ 95% (at +25°C), with altitude not higher than 2500 m
- IP rating: IP55; Duty type: S1; Insulation class: Class H (180°C)

SPECIFICATIONS OF MDD51 (6KV/10KV)

No.	Rated Power (kW)	Rated Torque (N·m)	Speed (r/min)	Efficiency (%)	Power Factor (cosΦ)
1	200	21222	90	94	0.97
2	220	23344	90	94	0.97
3	250	26528	90	94	0.97
4	280	29711	90	94	0.97
5	315	33425	90	94	0.97
6	355	37669	90	95	0.96
7	400	42444	90	95	0.96
8	425	45097	90	96	0.95
9	450	47750	90	95	0.96
10	500	53056	90	96	0.95
11	560	59422	90	96	0.95
12	610	64728	90	96	0.95
13	630	66850	90	96	0.95
14	670	71094	90	96	0.95
15	710	75399	90	96	0.95
16	800	84889	90	96	0.95
17	900	95500	90	96	0.95
18	1000	106111	90	96	0.95
19	1120	118844	90	96	0.95
20	1250	132639	90	96	0.95
21	1400	148556	90	96	0.95
22	1600	169778	90	96	0.95
23	1800	191000	90	96	0.95
24	2000	212222	90	96	0.95

INDUSTRIAL ROBOTS



○ SCARA Robot

○ Six-Axis Robot

○ Robot Control Cabinet

○ Teaching Pendant

Industrial Robot

For Universal Industrial Applications

APPLICATION SCENARIO



Photovoltaic



Vehicle parts



Welding



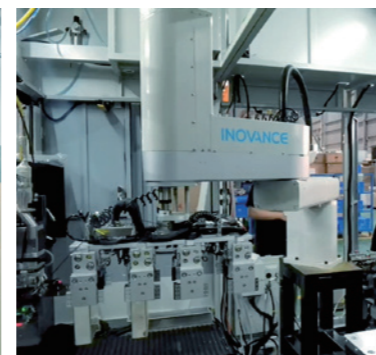
Injection molding



3C



Diecast



Li-ion

ROBOT CONTROL CABINET



Item	IRCB500 Series	IRCB500 Series (High Protection)	IRCB100 Series (High Protection)
Mounting mode	Vertical installation, horizontal installation, standard 19-inch rack installation	Vertical installation, horizontal installation, rack installation	Vertical installation
Standard I/O	Input: 16 inputs; Output: 16 NPN-type outputs		
Communication interface	Ethernet port: Used for TCP/IP, Modbus TCP, Ethernet/IP, and MC communication protocols		
	F-Bus port: Used for industrial fieldbus communication such as EtherCAT		
	EtherCAT port: Used for extending external axes		
	RS232/RS485 interface: Used for serial port and Modbus RTU communication protocol (only RS485)		
Control mode	USB2.0 interface: Used for program backup and loading, and robot status information export		
	PC programming platform control, teaching pendant control, remote I/O control, remote Modbus control, and API control		
Power supply	Input power supply: Single-phase 200 VAC to 240 VAC, 10 A/20 A, 50/60 Hz	Input power supply: Single-phase 200 VAC to 240 VAC, 23 A, 50/60 Hz	Input power supply: Three-phase 380 VAC±10%, 32 A, 50/60 Hz
	Max. power: 3.1 kW (depending on the manipulator model)	Max. power: 4.5 kW (depending on the manipulator model)	Max. power: 25.5 kW (depending on the manipulator model)
IP rating	IP20	IP54+ metal dust-proof	IP54
Operating environment	Temperature: 5°C to 40°C		Temperature: 0°C to 40°C
	Humidity: 20% to 95% RH (30°C) (without condensation)		Humidity: 20% to 95% RH (30°C) (without condensation)
Dimensions	330 mm x 338.5 mm x 130 mm (standard)	445 mm x 575 mm x 276 mm	700 mm x 460 mm x 1100 mm
	330 mm x 400 mm x 130 mm (high power)		
Weight	8 kg/10 kg		30 kg
Applicable robot	Standard	6-axis: IR-S4/7/10 series, IR-TS4/5 series, IRS111 series, IRS112 series 6-axis: IRS311-3/7 series, IR-R4 series Others: IRS11 series	6-axis: IR-R10 series, IR-R20 series SCARA: IR-S50 series (optional)
	High power	6-axis: IR-S20 series, IR-GS20 series, IR-S50 series 6-axis: IR-R11 series Others: IR-C8 series	6-axis: IRS311-3/7 series, IR-R4 series, IR-R11 series (optional)
			6-axis: IR-R50 series, IR-R60/80 series, IR-R220 series

TEACHING PENDANT | EXPANSION CARD



Model	IRTP80 Series	IRCB500-0016ETND-BD	IRCB500-1600END-BD	IRCB500-2ENID-BD
Cable length	L5: 5 m (L10 as option: 10 m)			
Screen	7-inch TFT-LCD, touchscreen with function buttons			
IP rating	IP54			
Specification		General expansion card with 16 NPN-type outputs	General I/O expansion card with 16 inputs	Incremental encoder extension card with two differential inputs
Applicable control cabinet		IRCB500 series, IRCB500 high protection series, IRCB100 high protection series		

SCARA ROBOT



		4 kg SCARA	7 kg SCARA				10 kg SCARA			20 kg SCARA-S20 Series		20 kg SCARA-GS20 Series		50 kg SCARA	Ceiling-mounted SCARA		High-speed SCARA	
Item		IR-S4-40Z15S3	IR-S7-50Z20S3	IR-S7-60Z20S3	IR-S7-70Z20S3	IR-S10-60Z20S3	IR-S10-70Z20S3	IR-S10-80Z20S3		IR-S20-80Z42S5	IR-S20-100Z42S5	IR-GS20-80Z42S5	IR-GS20-100Z42S5	IR-S50-120Z40S5	IR-TS4-35Z15S3	IR-TS5-55Z15S3	IR-C8-62Z20S3-A1	
Arm length	Arm 1 + Arm 2	400mm	500mm	600mm	700mm	600mm	700mm	800mm		800mm	1000mm	800mm	1000mm	1200mm	350mm	550mm	620mm	
	Arm 1	225mm	225mm	325mm	425mm	225mm	325mm	425mm		350mm	550mm	350mm	550mm	600mm	175mm	275mm	370mm	
	Arm 2	175mm	275mm	275mm	275mm	375mm	375mm	375mm		450mm	450mm	450mm	450mm	600mm	175mm	275mm	250mm	
Max. speed*1	J1 + J2	7200mm/s	7120mm/s	7850mm/s	8590mm/s	9100mm/s	9800mm/s	10500mm/s		9550mm/s	10800mm/s	9550mm/s	10800mm/s	7400mm/s	6180mm/s	9712mm/s	6950mm/s	
	J3	1300mm/s	1600mm/s	1600mm/s	1600mm/s	1600mm/s	1600mm/s	1600mm/s		1010mm/s	1010mm/s	1010mm/s	1010mm/s	750mm/s	1300mm/s	1300mm/s	2200mm/s	
	J4	2600°/s	2000°/s	2000°/s	2000°/s	2700°/s	2700°/s	705°/s		705°/s	705°/s	705°/s	705°/s	600°/s	2600°/s	2000°/s	2800°/s	
Repeatability	J1 + J2	±0.01mm	±0.02mm	±0.02mm	±0.02mm	±0.02mm	±0.02mm	±0.025mm		±0.025mm	±0.025mm	±0.025mm	±0.025mm	±0.05mm	±0.01mm	±0.015mm	±0.02mm	
	J3	±0.01mm	±0.01mm	±0.01mm	±0.01mm	±0.01mm	±0.01mm	±0.01mm		±0.01mm	±0.01mm	±0.01mm	±0.01mm	±0.02mm	±0.01mm	±0.01mm	±0.01mm	
	J4	±0.01°	±0.01°	±0.01°	±0.01°	±0.01°	±0.01°	±0.01°		±0.01°	±0.01°	±0.01°	±0.01°	±0.005°	±0.01°	±0.01°	±0.01°	
Handling capacity (LOAD)	Rated	2kg	3kg	3kg	3kg	5kg	5kg	5kg		10kg	10kg	10kg	10kg	—	2kg	2kg	4kg	
	Maximum	4kg	7kg	7kg	7kg	10kg	10kg	10kg		20kg	20kg	20kg	20kg	50kg	4kg	5kg	8kg	
Allowable inertia moment of J4	Handling capacity	0.005kg.m ²	0.01kg.m ²	0.01kg.m ²	0.01kg.m ²	0.02kg.m ²	0.02kg.m ²	0.02kg.m ²		0.5kg.m ²	0.5kg.m ²	0.5kg.m ²	0.5kg.m ²	—	0.005kg.m ²	0.01kg.m ²	0.01kg.m ²	
	Handling capacity	0.05kg.m ²	0.12kg.m ²	0.12kg.m ²	0.12kg.m ²	0.3kg.m ²	0.3kg.m ²	0.3kg.m ²		1.0kg.m ²	1.0kg.m ²	1.0kg.m ²	1.0kg.m ²	2.45kg.m ²	0.05kg.m ²	0.12kg.m ²	0.12kg.m ²	
Mounting hole		120×120mm (4-ø9mm)	150×150mm(4-ø9mm)				150×150mm(4-ø9mm)			200mm×200mm (4-ø16mm)				200mm×200mm (4-ø14mm)	95×95x160mm (6-ø6.6mm)		200mmx200mm (4-ø16mm)	
Manipulator weight (excluding cables)		12kg	17kg	17.5kg	19kg	18.5kg	19kg	20.5kg		53kg	56kg	54kg	57kg	124kg	18.5kg	20kg	50kg	
Press-in force of J3		100N	150N	150N	150N	200N	200N	200N		250N	250N	250N	250N	—	100N	150N	100N	
Customer signal line		15 (15pin: D-sub) CAT5E							9 (9 pin: D-sub), 15 (15 pin: D-sub)				15 (15pin: D-sub) CAT5E		15 (15pin: D-sub)			
Customer air tube		2x φ6 mm, 0.59 Mpa 1x ø4 mm, 0.59 Mpa							2x φ6 mm, 0.59 Mpa 2x φ6 mm, 0.59 Mpa				3x φ6 mm, 0.59 Mpa		2x ø6 mm, 0.59 Mpa 1x ø4 mm, 0.59 Mpa		2x ø6mm, 0.59 Mpa	
Environment	Ambient temperature *1	5° C-40° C (no excessive temperature changes)							5° C-40° C (no excessive temperature changes)									
	Relative humidity	10-80% RH							10%-80% RH									
Airborne noise *2		Laeq=70dB(A)							Laeq=75dB (A)				Laeq=70dB(A)		Laeq=75dB (A)			
Max. motion range	J1	±132°	±132°	±132°	±132°	±132°	±132°	±132°		±132°	±132°	±132°	±132°	±128°	±225°	±225°	±150°	
	J2	±141°	±150°	±150°	±150°	±150°	±150°	±150°		±152°	±152°	±152°	±152°	±150°	±225°	±225°	±150°	
	J3	200mm	200mm	200mm	200mm	200mm	200mm	200mm		420mm	420mm	420mm	420mm	400mm	150mm	150mm	200mm	
	J4	±360°	±360°	±360°	±360°	±360°	±360°	±360°		±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	
Cycle time *3		0.342s	0.351s	0.36s	0.375s	0.361s	0.386s	0.416s		0.36s	0.38s	0.36s	0.38s	0.84s	0.304s	0.340s	0.26s	

Note 1: If this product is used in a low-temperature environment close to the specified lowest temperature, or if it is suspended for a long period of time due to holidays and nighttime, it is recommended to warm it up for 10 minutes before running it.

Note 2: Operating conditions: 4-joint collaborative movement, 100% speed and acceleration, 50% duty cycle; Measurement position: front of robot, 1000 mm from the working area, 50 mm or more above the base mounting surface.

Note 3: Standard cycle time for 3 kg/4 kg SCARA robots: Time required for a robot to move a 1 kg payload between two points 300 mm apart at a height of 25 mm.

Standard cycle time for 7 kg/10 kg SCARA robots: Time required for a robot to move a 2 kg payload between two points 300 mm apart at a height of 25 mm.

Standard cycle time for ceiling-mounted SCARA350/550 robots: Time required for a robot to move a 1 kg payload between two points 300 mm apart at a height of 25 mm .

Standard cycle time for 20 kg SCARA robots: Time required for a robot to move a 2 kg payload between two points 300 mm apart at a height of 25 mm.

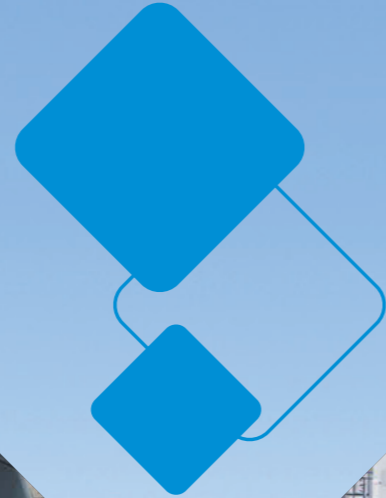
Standard cycle time for 50 kg SCARA robots: Time required for a robot to move a 5 kg payload between two points 300 mm apart at a height of 25 mm.

6-AXIS ROBOT



		3 kg	4 kg	4kg (hollow wrist)	7kg (hollow wrist)	7kg (hollow wrist)	11kg (hollow wrist)	10 kg										10 kg	10 kg	20 kg	50 kg	60 kg	80 k	130 kg	170 kg	220 kg	
Item		IRS311-3-60TS5	IR-R4-56S5	IR-R4H-54S5	IRS311-7-70TS5	IRS311-7-90TS5	IR-R11-90S5	IR-R10-110S5										IR-R10-140S5	IR-R10-200S5	IR-R20-170S5	IR-R50-250S7	IR-R60-210S7	IR-R80-210S7	IR-R130-310S7	IR-R170-270S7	IR-R220-270S7	
Structural style		Vertical axis cascading structure								Vertical axis cascading structure																	
Number of axes		6								6																	
Max. reach		638mm	560.6mm	545.7mm	717mm	911mm	901.9mm	1101.6mm										1422mm	2045mm	1723mm	2509mm	2109mm	2109mm	3096mm	2701mm	2701mm	
Repeatability		±0.02mm	±0.01mm	±0.02mm	±0.02mm	±0.03mm	±0.02mm	±0.02mm										±0.05mm	±0.05mm	±0.05mm	±0.08mm	±0.07mm	±0.07mm	±0.05mm	±0.05mm	±0.05mm	
Payload		3kg	4kg	4kg	7kg	7kg	11kg	10kg										10kg	10kg	20kg	50kg	60kg	80kg	130kg	170kg	220kg	
Payload		IP40 (IP67 optional)	IP40 (IP67 optional)	IP40 (IP67 optional)	IP65	IP65	IP40 (IP67 optional)	IP40 (IP67 optional)										IP65 (wrist IP67)	IP65 (wrist IP67)	IP65 (wrist IP67)	IP65 (wrist IP67)	IP65 (wrist IP67)	IP65 (wrist IP67)	IP54 (wrist IP67)	IP54 (wrist IP67)	IP54 (wrist IP67)	
Max. speed	J1	440°/s	450°/s	450°/s	450°/s	300°/s	300°/s	300°/s										200°/s	190°/s	190°/s	175°/s	175°/s	175°/s	130°/s	130°/s	120°/s	
	J2	420°/s	460°/s	460°/s	380°/s	280°/s	225°/s	225°/s										200°/s	175°/s	175°/s	150°/s	175°/s	140°/s	115°/s	115°/s	105°/s	
	J3	500°/s	520°/s	520°/s	520°/s	360°/s	330°/s	330°/s										200°/s	200°/s	200°/s	175°/s	175°/s	160°/s	115°/s	115°/s	110°/s	
	J4	600°/s	560°/s	560°/s	550°/s	550°/s	450°/s	450°/s										375°/s	400°/s	400°/s	250°/s	250°/s	230°/s	180°/s	180°/s	140°/s	
	J5	600°/s	560°/s	560°/s	550°/s	550°/s	420°/s	420°/s										375°/s	360°/s	360°/s	250°/s	250°/s	230°/s	260°/s	260°/s	140°/s	
	J6	900°/s	900°/s	900°/s	1000°/s	620°/s	720°/s	720°/s										600°/s	610°/s	610°/s	355°/s	355°/s	355°/s	260°/s	260°/s	220°/s	
Max. motion range	J1	±170°	±170°	±170°	±170°	±170°	±170°	±170°										±170°	±170°	±170°	±180°	±180°	±180°	±180°	±180°	±180°	±180°
	J2	-145° ~+78°	-120° ~+110°	-120° ~+110°	-135° ~+80°	-125° ~+80°	-100° ~+135°	-100° ~+135°										-160° ~+60°	-155° ~+80°	-155° ~+80°	-135° ~+90°	-135° ~+90°	-135° ~+90°	-76° ~+60°	-76° ~+60°	-76° ~+60°	
	J3	-71° ~+173°	-69° ~+205°	-65° ~+195°	-70° ~+190°	-70° ~+190°	-66° ~+210°	-66° ~+210°										-80° ~+160°	-75° ~+160°	-75° ~+160°	-80° ~+170°	-80° ~+170°	-80° ~+170°	-79° ~+180°	-79° ~+180°	-79° ~+180°	
	J4	±200°	±190°	±190°	±190°	±190°	±190°	±190°										±180°	±180°	±180°	±190°	±190°	±190°	±360°	±360°	±360°	
	J5	±120°	±120°	±120°	±120°	±120°	±125°	±125°										±140°	±140°	±140°	±125°	±125°	±125°	±125°	±125°	±125°	
	J6	±360°	±360°	±360°	±360°	±360°	±360°	±360°										±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	
Allowed wrist torque	J4	7.36Nm	8.86Nm	8.86Nm	16.6Nm	16.6Nm	20.45Nm	18.59Nm										22Nm	22Nm	42Nm	206Nm	206Nm	380Nm	710Nm	940Nm	1360Nm	
	J5	7.36Nm	8.86Nm	8.86Nm	16.6Nm	16.6Nm	20.45Nm	18.59Nm										22Nm	22Nm	42Nm	206Nm	206Nm	380Nm	710Nm	940Nm	1360Nm	
	J6	4.41Nm	4.9Nm	4.9Nm	9.4Nm	9.4Nm	10.8Nm	9.8Nm										9.8Nm	10Nm	20Nm	127Nm	127Nm	200Nm	355Nm	490Nm	735Nm	
Allowed wrist inertia	J4	0.42kgm ²	0.2kgm ²	0.2kgm ²	0.47kgm ²	0.47kgm ²	0.6kgm ²	0.6kgm ²										0.63kgm ²	1kgm ²	1.18kgm ²	28kgm ²	28kgm ²	30kgm ²	72kgm ²	89kgm ²	147kgm ²	
	J5	0.42kgm ²	0.2kgm ²	0.2kgm ²	0.47kgm ²	0.47kgm ²	0.6kgm ²	0.6kgm ²										0.63kgm ²	1kgm ²	1.18kgm ²	28kgm ²	28kgm ²	30kgm ²	72kgm ²	89kgm ²	147kgm ²	
	J6	0.18kgm ²	0.067kgm ²	0.067kgm ²	0.15kgm ²	0.15kgm ²	0.2kgm ²	0.2kgm ²										0.2kgm ²	0.2kgm ²	0.5kgm ²	11kgm ²	11kgm ²	20kgm ²	40kgm ²	46kgm ²	82kgm ²	
Max. power		1.4kW	1.37kW	1.34kW	1.7kW	1.7kW	2.39kW	2.39kW										3.65kW	6.2kW	6.2kW	19kW	19kW	19kW	25.5kW	25.5kW	25.5kW	
Customer connections	Wiring	12 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A, 8 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A	12 x signal lines 30V 0.5A										18 x signal lines 30V 0.5A	18 x signal lines 30V 0.5A	18 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	24 x signal lines 30V 0.5A	
	Air tube	2 x Φ6mm 0.59Mpa	4 x Φ4mm 0.59Mpa	4 x Φ4mm 0.59Mpa	2 x Φ4mm 0.59Mpa	2 x Φ4mm 0.59Mpa	4 x Φ4mm 0.59Mpa	4 x Φ4mm 0.59Mpa										1x Φ8mm 0.59Mpa	1x Φ8mm 0.59Mpa	1x Φ8mm 0.59Mpa	1x Φ8mm 0.59Mpa	1x Φ12mm 0.59Mpa	1x Φ12mm 0.59Mpa	1x Φ12mm 0.59Mpa	1x Φ12mm 0.59Mpa	1x Φ12mm 0.59Mpa	
Environment	Operating temperature	0-45°C																	0-45°C	0-45°C	0-45°C	0-45°C	0-45°C	0-45°C	0-45°C	0-45°C	
	Humidity	5%-95% RH (no condensation)																	10%-80% RH (no condensation)			5%-95% RH (no condensation)					
	Max. temperature gradient	1.5°C/min																	1.5°C/min								
Manipulator weight		35kg	24kg	24.5kg	38kg	40kg	45kg	47kg										130kg	245kg	240kg	680kg	650kg	650kg	1155kg	1130kg	1130kg	
Matching controller		IRCB500 drive-control integrated controller																	IRCB500 high-protection drive-control integrated controller			IRCB100 high-protection controller					
Installation method		Floor mounted																	Floor mounted								

INDUSTRY-TAILORED MACHINE OVERVIEW



- Air conditioner and refrigerator
- Textile
- Wind Power
- Air Compressor
- Lifting
- Hydraulic Servo
- Vehicle Air Conditioner

Textile

Industry-Tailored Machine



All-Electric Spinning Frame

Roving Frame

Two-for-One Twister



Heat Setting Stenter



Water-jet Looms



MD810

MX3
Electric Spindle for Looms



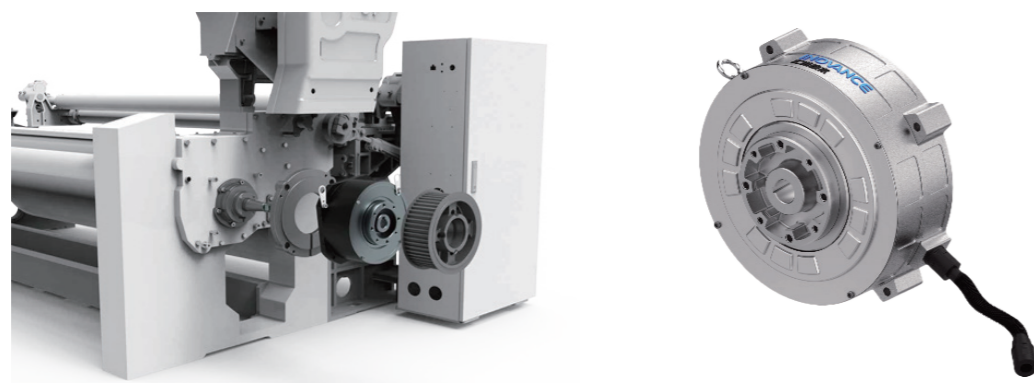
TD510
Cotton Fiber-Proof AC Drive

ITD500
SuperStart AC Drive

- Water-jet electric control
- Air-jet electric control



MX SERIES ELECTRIC SPINDLE FOR LOOMS



Efficient and energy-saving

- IE5 efficiency class to save energy by 10% to 30%

Flexible speed change

- Flexible speed change, jogging at low speed and super start available

Insulation and water-proof

- Integrated potting process and water-proof motor to adapt to environments with high temperature and high humidity

Ultra-long service life

- Automotive grade IPM motor solution based on NdFeB, together with closed-loop vector control technology to eliminate demagnetization within the service life of the motor

Ultra-easy maintenance

- Direct drive by spindle without the need for transmission belt, together with built-in brake process without the need for a physical brake disk, enabling ultra-easy maintenance on spindle transmission mechanism

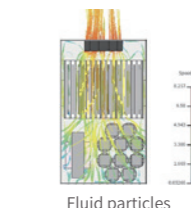
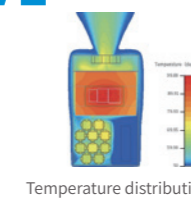
Model	Rated Voltage (V)	Rated Power (kW)	Rated Torque (Nm)	Rated Speed (rpm)	Rated Current (A)	IRTP80 Series
MX3-14D70B	380	14.7	200	700	27	94%

Item	Specifications
Duty type	S1 (IC418)
Excitation mode	Permanent magnet
Energy efficiency class	Energy efficiency class I, IE5
Mounting mode	Built-in
Storage temperature	-40°C to +60°C
Ambient temperature	0 °C to 50°C
Ambient humidity	< 95% RH (without condensation)
Vibration resistance	49 m/s ²
Insulation resistance	500 VDC, 1s, insulation resistance ≥ 50 MΩ
Insulation voltage	2160 VAC, 1s
Stator core protection	Adopting high-strength potting for sealing, featuring high IP rating, shock-proof, corrosion-proof, salty mist resistance, high temperature resistance, and good thermal conductivity
Direction of rotation	Rotating counterclockwise when viewed from load side upon power-on

COTTON FIBER-PROOF AC DRIVE



TD510 series cotton fiber-proof AC drives 0.4 kW -55 kW



Cleaning-free in 6 months

- Automatic cotton fiber cleaning technology to reduce personnel workload and improve working efficiency

Reliable operation

- Less over-temperature warnings caused by blockage due to cotton fibers, reducing yarn waste and prolonging service life of the device

High yarn quality

- Yarn quality improved with less warnings, delivering knotless yarns in a range of 10,000 m

SPECIFICATIONS OF TD510

Item	Specifications							
TD510-4TXXGB	0.4	0.7	1.1	3.7	5.5	7.5	11	
Applicable motor capacity (kW)	0.4	0.75	1.1	3.7	5.5	7.5	11	
Input	Rated input current (A)	1.8	2.4	3.7	11.4	16.7	21.9	32.2
	Rated output current (A)	1.5	2.1	3.1	9.0	13.0	17.0	25.0
Output	Output voltage	Three-phase 380 V to 480 V (dependent on the input voltage)						
	Maximum output frequency	500 Hz (modifiable through parameters)						
	Carrier frequency	0.8 kHz to 8.0 kHz, adjusted automatically based on the load characteristics						
	Overload capacity	150% of rated current for 60s						
Power supply	Rated voltage/ frequency	AC: Three-phase 380 V to 480 V, 50/60 Hz						
	Allowable voltage fluctuation range	-15% to +10%, actual fluctuation range: 323 VAC to 528 VAC						
	Allowable frequency fluctuation range	±5%						
Thermal design	Power capacity (kVA)	2	2.8	4.1	12	17.5	22.8	33.4
	Thermal design power (kW)	0.039	0.046	0.057	0.138	0.201	0.24	0.355
	Exhaust air rate (CFM)	-	-	-	20	24	30	40

Item	Specifications							
TD510-4TXXGB	15	18.5	22	30	37	45	55	
Applicable motor capacity (kW)	15	18.5	22	30	37	45	55	
Input	Rated input current (A)	41.3	49.5	59	57	69	89	106
	Rated output current (A)	32.0	37	45	60	75	91	112
Output	Output voltage	Three-phase 380 V to 480 V (dependent on the input voltage)						
	Maximum output frequency	500 Hz (modifiable through parameters)						
	Carrier frequency	0.8 kHz to 8.0 kHz, adjusted automatically based on the load characteristics						
	Overload capacity	150% of rated current for 60s						
Power supply	Rated voltage/ frequency	AC: Three-phase 380 V to 480 V, 50/60 Hz						
	Allowable voltage fluctuation range	-15% to +10%, actual fluctuation range: 323 VAC to 528 VAC						
	Allowable frequency fluctuation range	±5%						
Thermal design	Power capacity (kVA)	42.8	45	54	52	63	81	97
	Thermal design power (kW)	0.454	0.478	0.551	0.694	0.815	1.01	1.21
	Exhaust air rate (CFM)	42	51.9	57.4	118.5	118.5	122.2	122.2

Hydraulic Servo

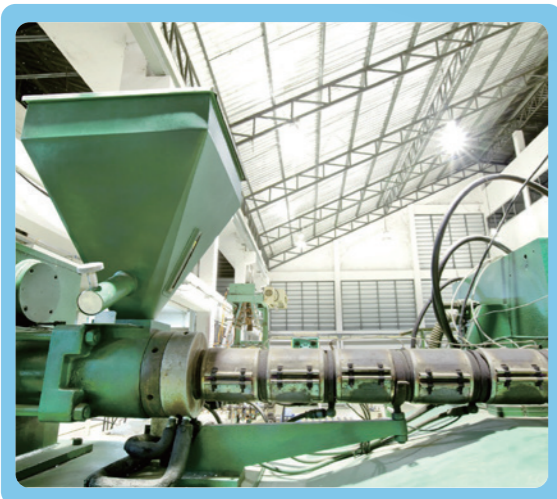
Industry-Tailored Machine



Hydraulic station



Hydraulic press



Injection molding machine

	EP700	P8EPS1	ESMG, ESMQ, ESMH
Upper Computer			
Drive			
Motor			

ES680 SERIES HYDRAULIC SERVO



Less Noise

- Compared with the main competitors, the mechanical noise is reduced by more than 3 dB at 80% load, more than 5 dB at 50% load, and more than 8dB at no load.



SPECIFICATIONS

Item		Specifications								
Model: ES680-4TXXX-C1		025	032	00377	044	060	075	091	112	150
Applicable motor power (kW)		11	15	18.5	22	30	37	45	55	75
Input	Rated input current (A)	29	36	42	48	57	69	89	106	139
	Rated output current (A)	25	32	37	44	60	75	91	112	150
Output	Output voltage	Three-phase 0 to 480 V (≤ input voltage)								
	Max. output frequency	400Hz, modifiable								
	Carrier frequency	2.0 to 8.0 kHz								
Power supply)	Rated voltage and frequency	Three-phase 380 to 480 VAC, 50/60 Hz								
	Allowable voltage fluctuation range	-15% to +10% (323 VAC to 528 VAC)								
	Allowable frequency fluctuation range	±5%								
	Power capacity (kVA)	30	39	45	54	52	63	81	97	127
Thermal design power (kW)		0.45	0.55	0.65	0.81	1.01	1.2	1.51	1.8	1.84

ES680 MODEL DESCRIPTION

ES680 ① N ② - 4T ③ 025 ④ S ⑤ - C1 ⑥

① Product series ES680 series hydraulic servo drive	③ Voltage class 4T: Three-phase 380 V to 480 V	⑤ Functional safety S: With STO Blank: No STO
② Product type N: EtherCAT version Blank: Standard version	④ Rated output current 025: 25 A	⑥ Encoder type C1: : Weton 23-bit encoder



- The front and rear ends of the junction box are designed with power cable and fan cable outlets for easy wiring.
- The encoder interface is upgraded to M23 metal aviation connector for easy wiring and strong compatibility.
- The mounting plate slider slot is reserved on three sides of the motor. The front/rear span of the mounting plate can be adjusted.
- The rear cover of the fan is made of BMC material with high strength for easy cleaning and maintenance of the fan and air duct.

Wind Power

Industry-Tailored Machine

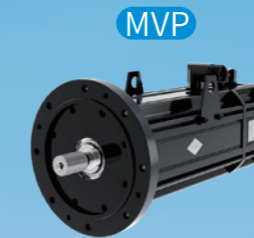
Yaw control solution



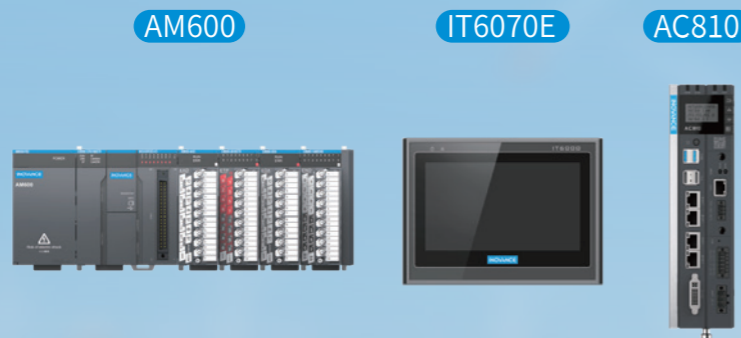
Pitch control solution



Pitch motor solution



Main control solution

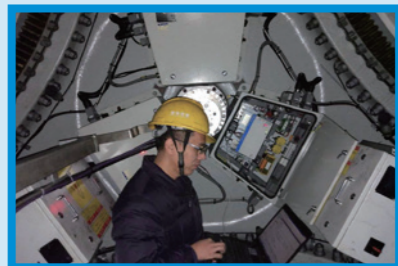


Pitch control solution



WIND POWER PITCH SYSTEM

PD800/802 Series Pitch Drive



Application

The drive adopts an all-metal shell offering good vibration resistance, impact resistance, and EMC performance. With user friendly HMI software, it allows for easy online simulation and monitoring. Ergonomic handle, support for OS and program download via SD card, fault recording (black box), intermediate voltage detection of backup power supply, online health detection of backup power supply, and other functions, all together enables easy installation, wiring, debugging, and operation and maintenance. Inovance pitch drive is suitable for new installations and renovation, and the first batch of prototypes have been continuously operating safely and faultlessly in the wind farm for over 5 years.

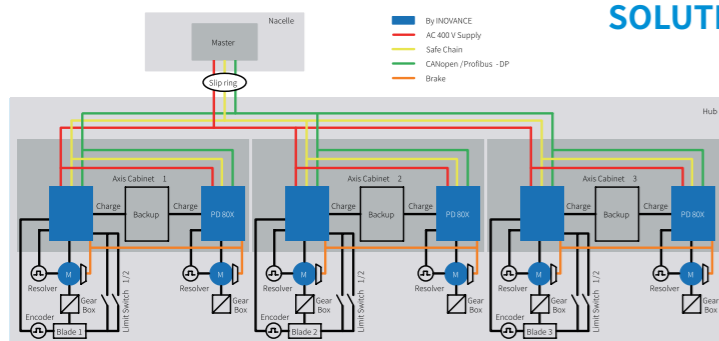


THREE-PHASE 380 TO 480 V, 45/52 A

Features

All-in-one integration: Integrated charger, brake power supply, external I/O power supply, braking resistor, PLC, etc., reducing system components by 40%, wiring by 40%, and cost by 30%
Safety: PLd level functional safety certification

INTELLIGENT DUAL DRIVE PITCH SYSTEM SOLUTION



- Used and purchased by several customers
- Higher safety – Enables feathering in case of single drive failure under normal load conditions
- Higher reliability - Parallel connection of backup power supply for redundant charging, and redundant control of motor brake
- Load reduction – Synchronized control via bus in 1 ms, eliminating gear backlash and reducing loads on pitch bearing and gear.
- Easy Maintenance - Small size and light weight of single drive/motor for easy installation and maintenance

SPECIFICATIONS

Item	Specifications						
	PD800-45A	PD800-52A	PD802-35A	PD802-45A	PD802-52A	PD802-60A	PD802-80A
Rated output current (A AC)	45	52	35	45	52	60	80
Rated output current (A AC)	90(3s)	120(3s)	85(3s)	90(3s)	120(3s)	200(3s)	280(3s)
Input voltage (V AC)	380-480						
Input voltage fluctuation (V AC)	323-528						
Charging output voltage (V DC)	0-450						
Charging output current (A DC)	0-5						
Built-in power output voltage (V DC)	24						
Built-in power output current (A DC)(Note 1)	0-5						
Weight (kg)	14 (air cooled)/10.4 (cold-plate cooled)					20	30
Dimensions (mm)	240x370x277 (air cooled)	240x370x277 (air cooled)	240x370x277 (air cooled)	240x370x277 (air cooled) 240x370x173 (cold-plate cooled)	240x370x277 (air cooled)	250*405*318 (air cooled)	300*555*304.9 (air cooled)
Storage temperature (° C)	-40 to +70						
Operating temperature (° C)	-40 to +60	-40 to +60	-40 to +70	-40 to +70	-40 to +60	-40 to +60	-40 to +60
DI/DO/AI/RelayO/PT100	24/9/2/1/4		20/9/2/1/4			28/16/2/1/6	
Communication bus interface	CANopen/Profibus-DP						
Motor temperature sensor	KTY/PTC						
Encoder	1 (resolver)/1 (SSI/TTL)						
PLC debugging and HMI monitoring interface	EtherNet						

Note 1: When 24 VDC braking is not used.

Air conditioner and refrigerator

Industry-Tailored Machine



Commercial Air Conditioner



Central air conditioner - compressor



Electric control box



CA200 Series AC Drive



CA300 Series AC Drive



CA500 Series AC Drive

CA300 SERIES AC DRIVE & CA500 SERIES AC DRIVE

Features

Wide operating range

The rated input voltage is three-phase 380 V AC to 480 V AC and the wide operating range is 323 V to 528 V.

Fan-driven circuit protection

The fan-driven circuit is effectively protected in the event of unexpected short circuit resulting from stalled or damaged fans.

Enhanced system protection

CA300/CA500 offers effective protection against output short-circuit to ground and pre-charge relay (contactor) fault.



Long lifetime

With improved bus capacitor configuration, CA300/CA500 has a design life of 10 years.

High condensation pressure protection

CA300 enables the Safe Torque Off (STO) function and hardware-based blockage of pulse-width modulation (PWM) output to avoid abnormal stop upon a system failure. CA500 offers effective protection against output short-circuit to ground and pre-charge relay (contactor) fault.

Electromagnetic compatibility (EMC) and certification

CA300 qualifies for Conformance European (CE) Certification and Underwriters Laboratories (UL) Certification. Certification marks on the product nameplate indicate compliance with the corresponding certificates and standards.

CA500 Power range: 200 kW to 800 kW Water cooled

Certification	Directive		Standard
	Directive	Year	
CE	EMC Directive	2014/30/EU	EN 61800-3
	LVD Directive	2014/35/EU	EN 61800-5-1
	RoHS Directive	2011/65/EU	EN 50581
TUV	-	-	EN 61800-5-1
UL	-	-	UL508C/UL61800-5-1 C22.2 No.14-13

- Note :
- The above EMC directives are complied with only when the EMC electric installation requirements are strictly observed.
 - Machines and devices used in combination with this drive must also be CE certified and marked. The integrator who integrates the drive with the CE mark into other devices has the responsibility of ensuring compliance with CE standards and verifying that conditions meet European standards.
 - For more information on certification, consult our distributor or sales representative.

CA300 Power range: 75 kW to 355 kW Air cooled

Certification	Directive		Standard
	Directive	Year	
CE	EMC Directives	2014/30/EU	EN 61800-3
	LVD Directives	2014/35/EU	EN 61800-5-1
	RoHS Directives	2011/65/EU	EN 50581

- Note :
- The above EMC directives are complied with only when the EMC electric installation requirements are strictly observed.
 - Machines and devices used in combination with this drive must also be CE certified and marked. The integrator who integrates the drive with the CE mark into other devices has the responsibility of ensuring compliance with CE standards and verifying that conditions meet European standards.
 - For more information on certification, consult our distributor or sales representative.

Vehicle Air Conditioner

Industry-Tailored Machine



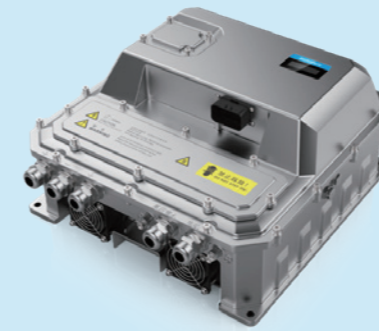
Passenger vehicle air conditioner



Bus air conditioner

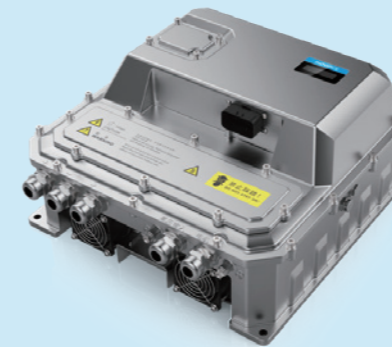


Energy storage thermal management



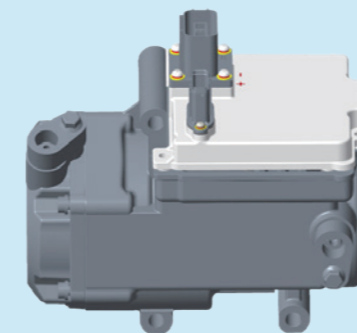
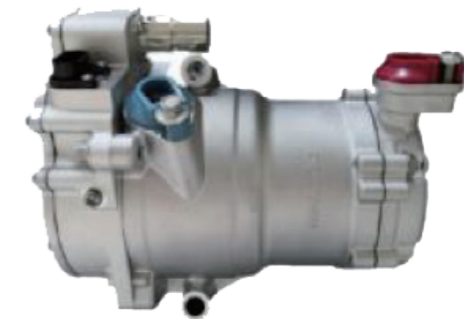
CV800
Two-in-One Drive

CV800
Three-in-One Drive



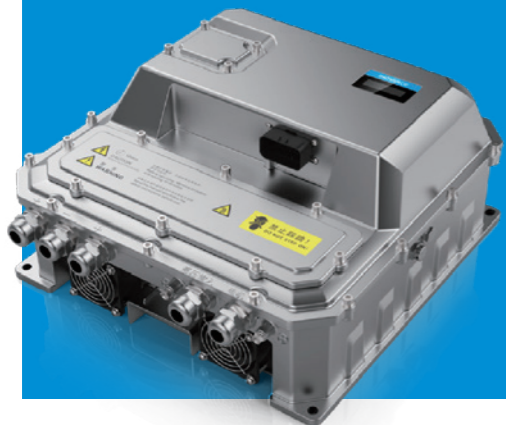
CV801
Five-in-One Drive

CV101
Shaft mounted



CV100
Back mounted

Cv801 Five-In-One Drive For Bus Air Conditioning System



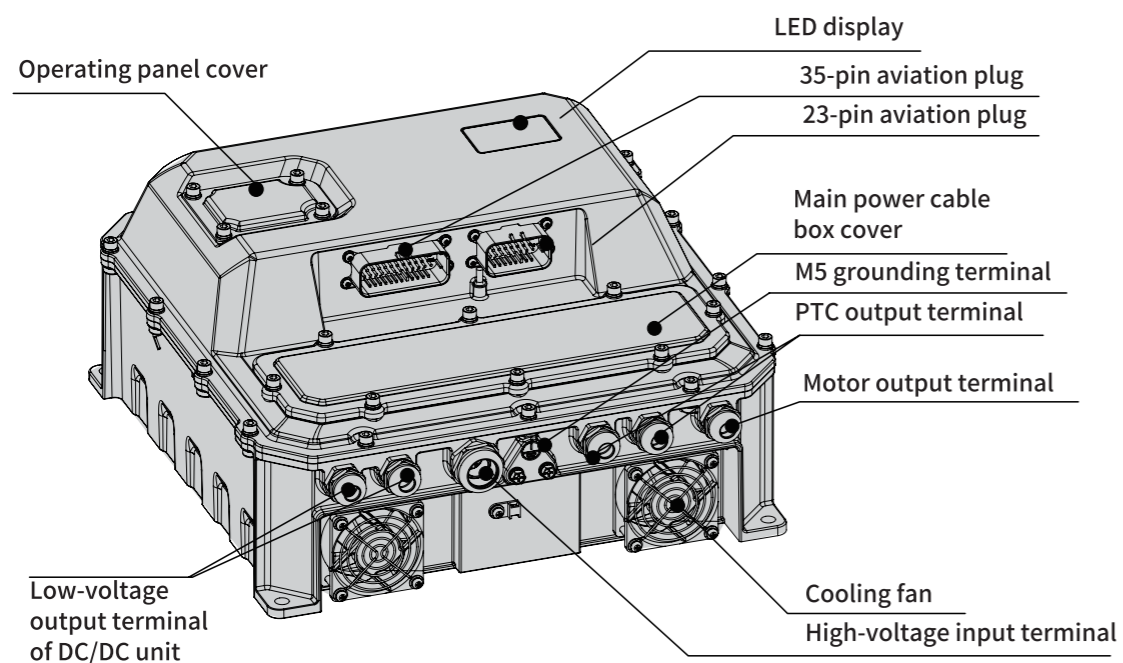
Features

Input voltage: 350-750 VDC
Output voltage: 0-480 VAC
PTC: 350-750 VDC
DC-DC unit: 20-27 VDC (one channel)

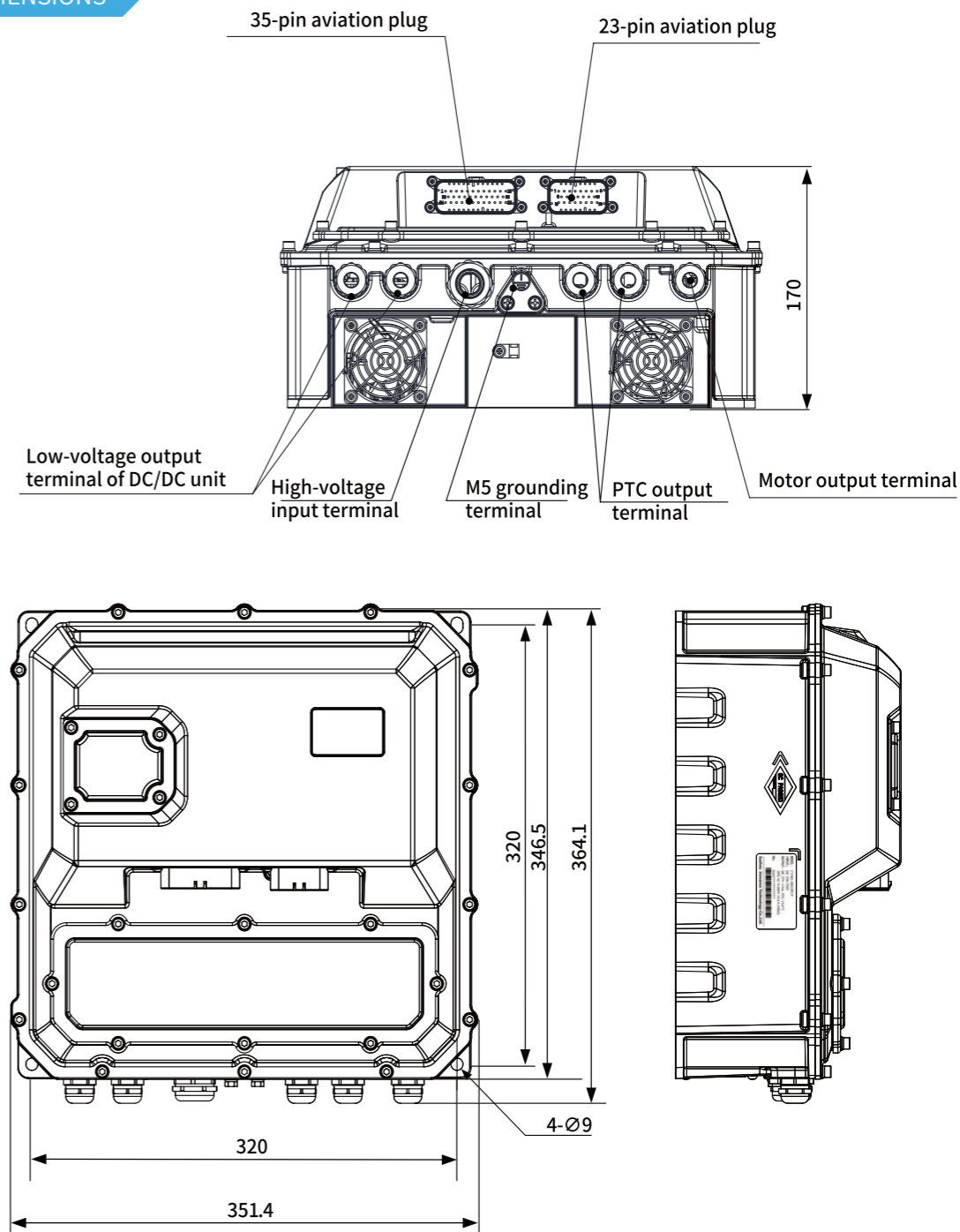
Output current: AC 0-32 A
PTC: 2 x 15 A
DC-DC unit: 0-110 A

Planning to get the certification of CE,waiting soon...

PRODUCT COMPONENTS



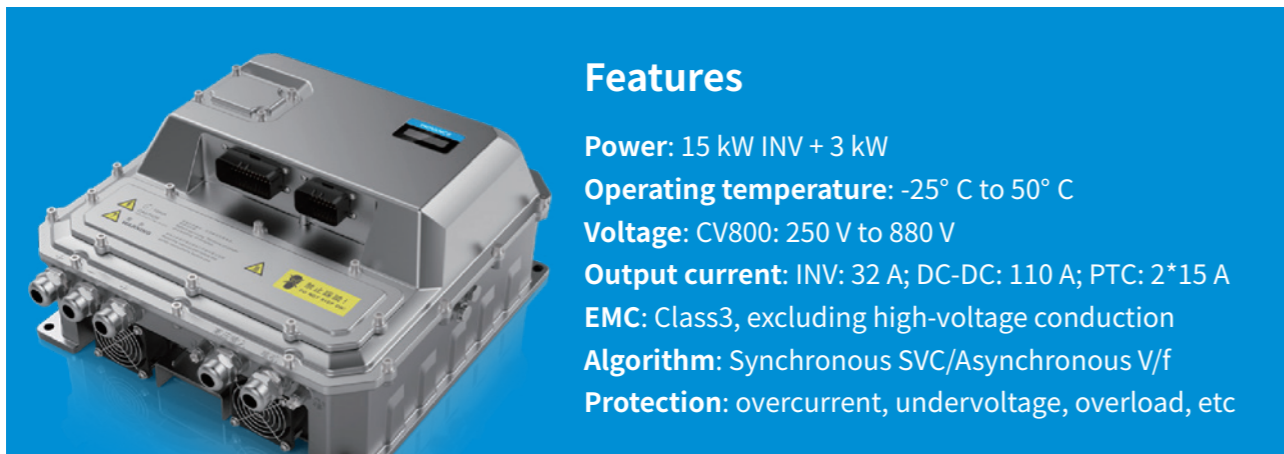
DIMENSIONS



● Mounting dimensions and weight

- Maximum outline dimensions of the whole drive: 351 mm x 364 mm x 170 mm, waterproof connector included
- Baseplate dimensions: 340 mm x 340 mm
- Mounting dimensions: 320 mm x 320 mm, recommended: M8 screw
- Net weight: 10.7 kg

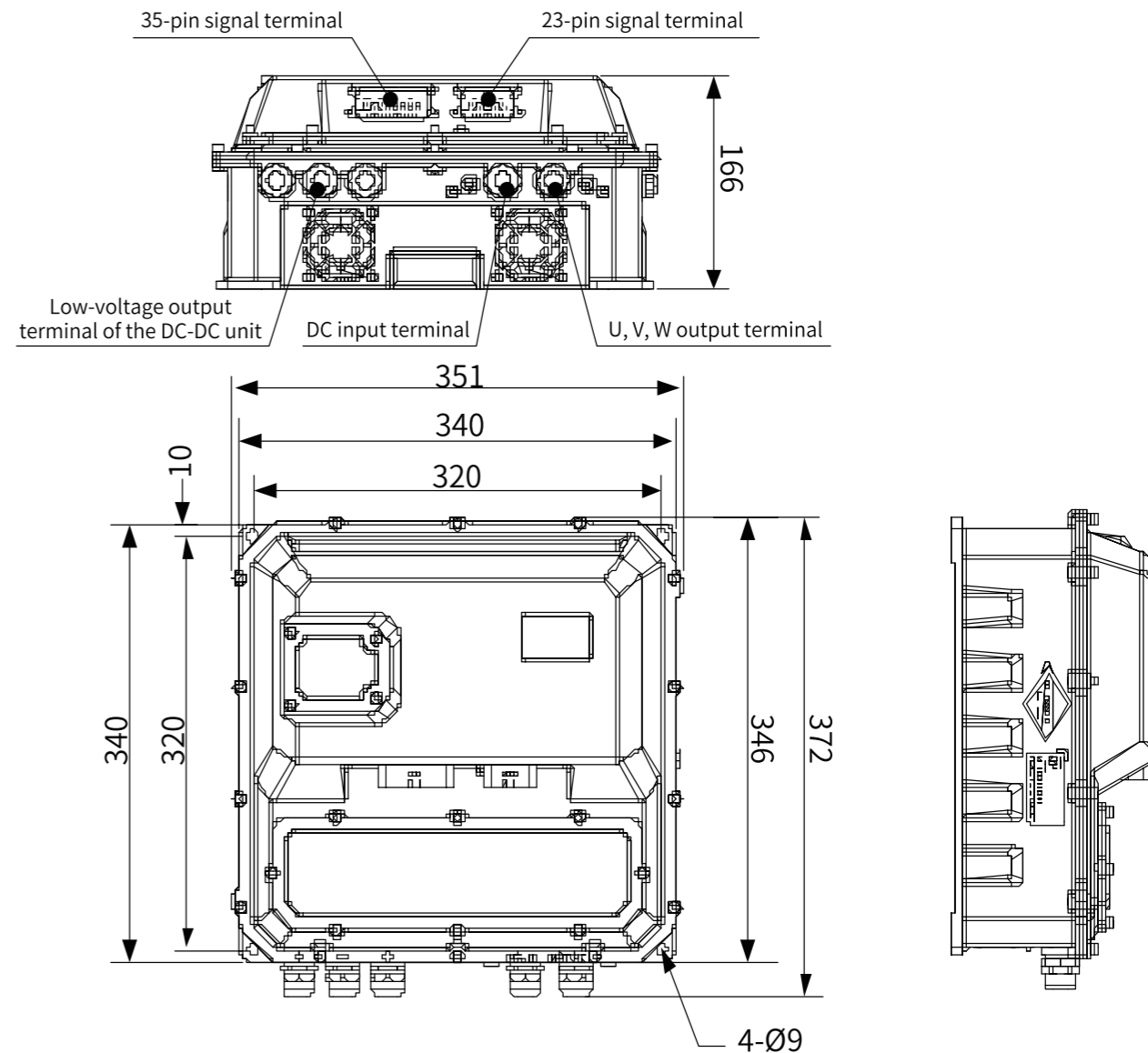
CV800 Three-in-One Drive for Bus Air Conditioners



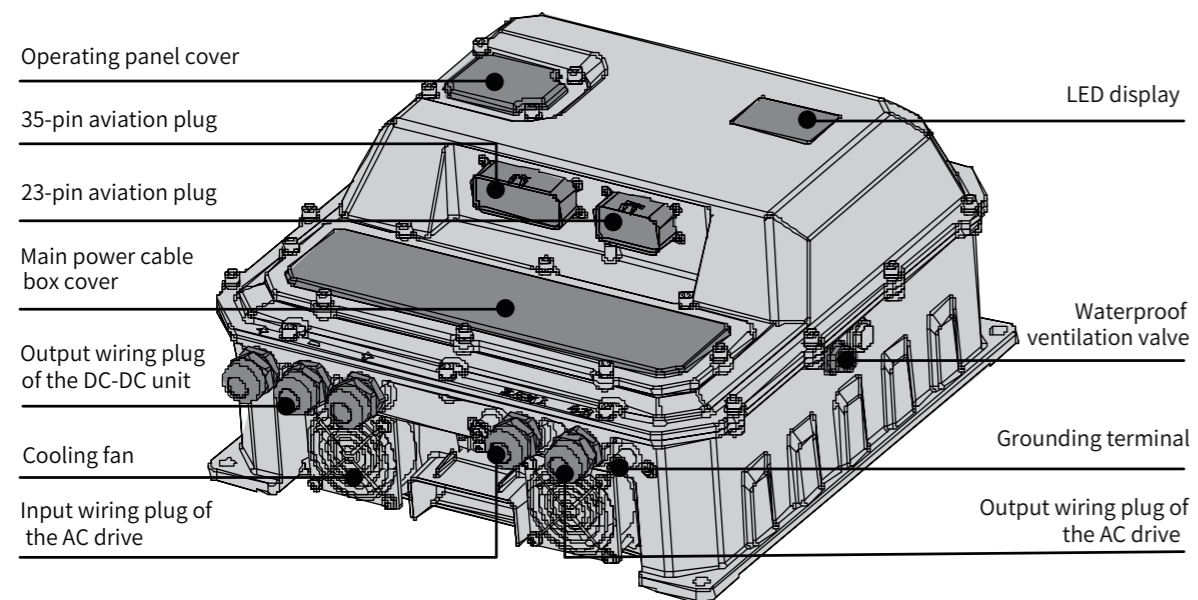
Features

- Power:** 15 kW INV + 3 kW
- Operating temperature:** -25° C to 50° C
- Voltage:** CV800: 250 V to 880 V
- Output current:** INV: 32 A; DC-DC: 110 A; PTC: 2*15 A
- EMC:** Class3, excluding high-voltage conduction
- Algorithm:** Synchronous SVC/Asynchronous V/f
- Protection:** overcurrent, undervoltage, overload, etc

DIMENSIONS



PRODUCT COMPONENTS



● Mounting dimensions and weight

- Maximum physical dimensions of the whole drive: 351 x 372 x 166 mm, waterproof connector included
- Baseplate dimensions: 340 x 340 mm
- Mounting dimensions: 320 x 320 mm, recommended: M8 screw
- Net weight: 12.3 kg

Air Compressor

Industry-Tailored Machine



Permanent magnet variable frequency air compressor



Automatic control system of air compression station



Dual motor two-stage compression solution



Small centrifuge



CP200



CP650



CP700

CP700 SERIES AC DRIVE FOR AIR COMPRESSORS



One-button start: Adopts specialized software to communicate with HMI and IoT devices without commissioning

High integration: Built-in 220 VAC power supply and power frequency contactor, integrated with PTC detection and protection circuits such as PT100

Item	Specifications
Acceleration/Deceleration curve	Linear, S-curve mode 1, S-curve mode 2
Built-in PID	Built-in pressure and temperature PIDs for pressure and temperature control
Communication/Bus	RS485 as standard
Running command source	Control terminal setting, communication setting
Frequency source	Digital setting
Air compressor control logic	Constant pressure value, unloading pressure, sleep wake-up pressure, shutdown preparation time, shutdown block time, constant temperature value, fan startup temperature, fan stop temperature, pre-operation frequency, pre-operation time, PID pressure adjustment, PID temperature adjustment, and electromagnetic valve control

Item	Specifications
Analog input	Two for the pressure sensor: 0–20 mA input, 12-bit resolution, and accuracy of 0.5%
	Two for the temperature sensor: resistance input, 12-bit resolution, and accuracy of 0.5%
Digital input	Four common inputs: NPN input method
	Two PTC protective circuits (compatible with common inputs)
Digital output	Two normally open (NO) relay outputs
LED indicator	Three LED indicators (standard configuration)
Output frequency	Vector control: 0–500 Hz
Carrier frequency	2–8 kHz: The carrier frequency is adjusted automatically according to heatsink temperature.
Input frequency resolution	Digital setting: 0.01 Hz
AC drive capacity	Three phase 220 V: 7.5–45 kW Three phase 380 V: 5.5–75 kW
Input voltage	Three phase 220 V: 220–240 VAC Three phase 380 V: 380–440 VAC
Voltage fluctuation range	–15% to +10%
Control mode	Speed sensorless vector control (SVC)
Speed range	1:50 (SVC, motoring)
Speed control accuracy	±0.1% (SVC)
Speed fluctuation	1.5% (SVC); 3.0% (flux weakening region)
Torque response	< 15 ms (SVC)
Torque fluctuation	< 15% (SVC, regenerating); < 12% (motoring)
Torque control mode	SVC
Overload capacity	The air compressor air end overload current multiple and overload time are automatically estimated based on module temperature.

Lifting

Industry-Tailored Machine



Gantry crane



Tower crane



Construction crane



Port crane

CS740



CS710



CS210



MD880



CS710 AC CRANE DRIVE



Rated voltage: three-phase 380 to 480 V 50/60
 Allowable voltage fluctuation range: 323 to 528 V 50/60 Hz



Multi-motor switchover: Built-in three sets of parameters for driving three different motors, e.g. lifting motor motor, gantry motor, and trolley motor.

Stringent temperature rise test: When the drive is subject to cyclic overloaded operation, it can achieve thermal balance by cycling rated operation and overloaded operation to enable long-term stable operation.

Specifications

Item	Specifications
Max. frequency	150 Hz
Carrier frequency	0.5 kHz to 12 kHz, adjusted automatically based on the load characteristics
Input frequency resolution	Digital setting: 0.01 Hz; analog setting: maximum frequency x 0.025%
Control mode	SVC, FVC, V/f
Starting torque	0.25 Hz/150% (SVC) 0 Hz/180% (FVC)
Speed regulation range	1: 200 (SVC) 1: 1000 (FVC)
Speed control accuracy	±0.5%(SVC) ±0.02%(FVC)
Torque control accuracy	FVC: ±3%, SVC: 10Hz 以上 5%
Overload capacity	60s for 150% of rated current
Torque boost	Automatic torque boost; manual torque boost: 0.1% to 30.0%
Acceleration/Deceleration curve	Linear or S-curve acceleration/deceleration mode
DC braking	DC braking frequency: minimum frequency to rated frequency; DC braking current: 0.0% to 120.0% of rated current
Automatic voltage regulation (AVR)	Keeps constant output voltage automatically when the mains voltage changes
Overvoltage/overcurrent stall control	Automatically limits the current and voltage during running to avoid frequent tripping due to overvoltage/overcurrent
Fast current limit	Minimizes overcurrent faults of the AC drive
Torque limit and control	Automatically limits the torque during running to avoid frequent tripping due to overcurrent and realizes torque control in FVC mode

CS740 INTEGRATED AC DRIVE FOR EUROPEAN-STYLE CRANES



Voltage: 380 Vs
 Application: 3 to 32 t European-style crane



System safety: Built-in brake failure detection and protection, built-in safety monitoring system, anti-overloading, anti-slipping, etc.

Easy installation and wiring: 3-in-1 drive, power distribution, control, and external signal interfaces are integrated into one device, no need for commissioning and only wiring is needed.

Intelligence: Gantry and trolley swing protection, stable lifting function, slack rope protection, microspeed, jogging

Lifting Power	Trolley Power	Gantry Power	Size
37	3.7	15	1
30	3.7	11	1
22	3.0	11	1
11	1.5	5.5	2
5.5	0.75	2.2	2