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INOVANCE

MD580S-INT Series

High-Performance Engineering AC Drive



Industrial Automation · New Energy Vehicle · Intelligent Elevator · Industrial Robot · Digital Energy · Rail Transit

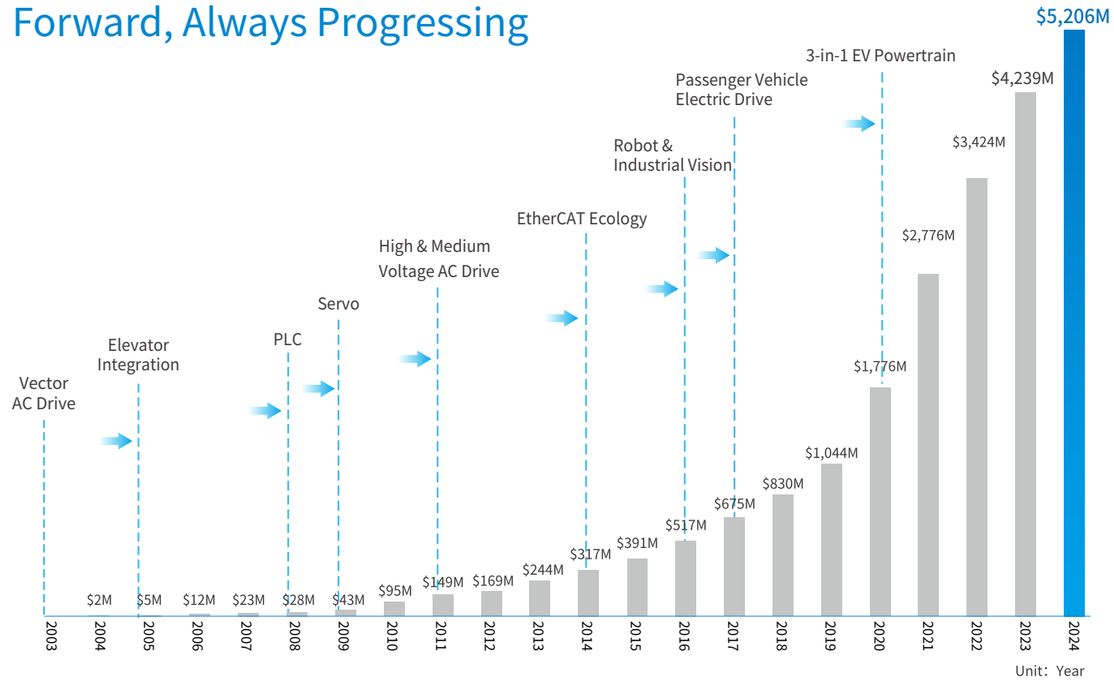
Advancing industrial technology, for a better world



About Inovance

The Inovance Group, founded in 2003, is a global industrial automation company with revenues of 5.2bn for 2024. The company is headquartered in Shenzhen, China, and has built a global operation with offices and facilities in Germany, France, Italy, Spain, Turkey, Hungary, India, South Korea, Thailand, and Vietnam. Additionally, the company has a strong network of distribution partners around the world. 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.

Forward, Always Progressing



2003
founded

IPO:2010
Shenzhen, China

30,000
employees

Global
network of offices and distributors

$5.2+bn
revenues in 2024

5 R&D Centers
Shenzhen, Suzhou, Xi'an, Nanjing,Stuttgart (Germany)

2886 Patents and software copyrights
Invention450 / Utility model 1443 / Industrial design 511 / Software copyright 482

5538 R&D Employees
Account for 23% of total employees

USD **442+** Million
Account for 8.5% of revenue 2024

MD580S-INT

New Generation High-Performance Engineering AC Drive

Applicable industries: Metallurgy, non-ferrous metal, building material, paper making, chemical engineering, municipal engineering, vehicle equipment, stage machinery, electricity, and rubber

Safety

Certified by TUV SIL3 and CE

Fault monitoring by the black box

Authoritative type test certification in China

Stable and reliable

Conformal coating to meet 3C3 and 3S3 requirements

Built-in dual DC reactors as standard for 690 V models

Powerful functions

Supports 300-meter cable between the drive and motor without reactor

Drives asynchronous/synchronous motors

Multi-channel motor temperature detection

Supports programming through connectors

Easy to use

Redundant 24 V power supply for commissioning

Connected to the commissioning software through Type-C port

Operating panel for convenient commissioning



Low-Voltage AC Drive for Process Industry Portfolio

MD480

General engineering AC drive

MD580S-INT

High-performance engineering AC drive

MD880

Engineering AC drive (multidrive system)



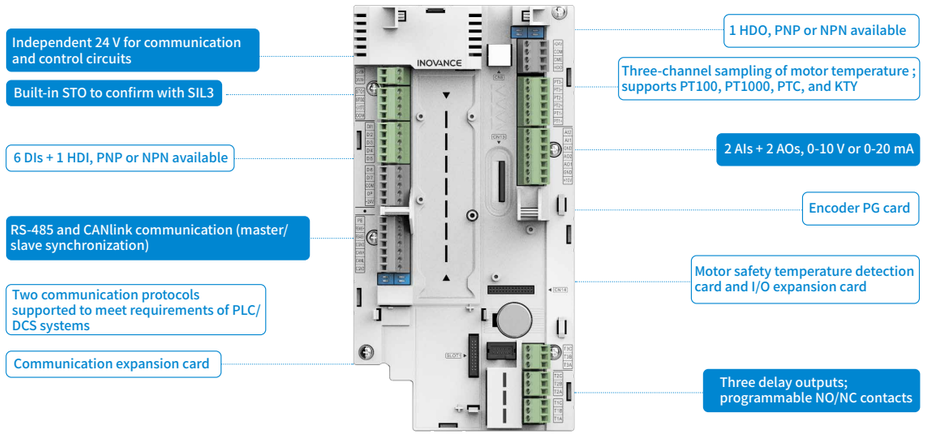




Function & Features

01. Easy to Use

Control board



Commissioning panel and software

Screen enlarged by **120%** to display more information

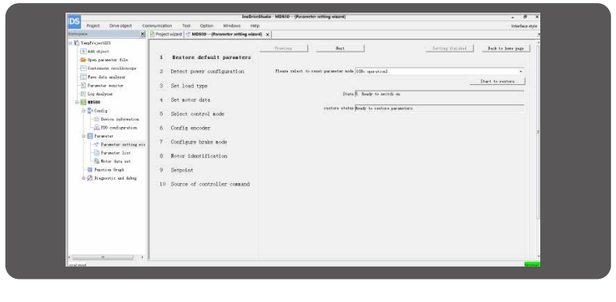
Improved silicone button to fit your hand for commissioning

Multilingual display



Improved operating panel





Commissioning wizard for beginners

Operating panel

Parameter display by group
Customized **quick** commissioning

Parameter copy and import **with one key**

Several languages switchover and screen brightness adjustment at your will



Commissioning without the user guide

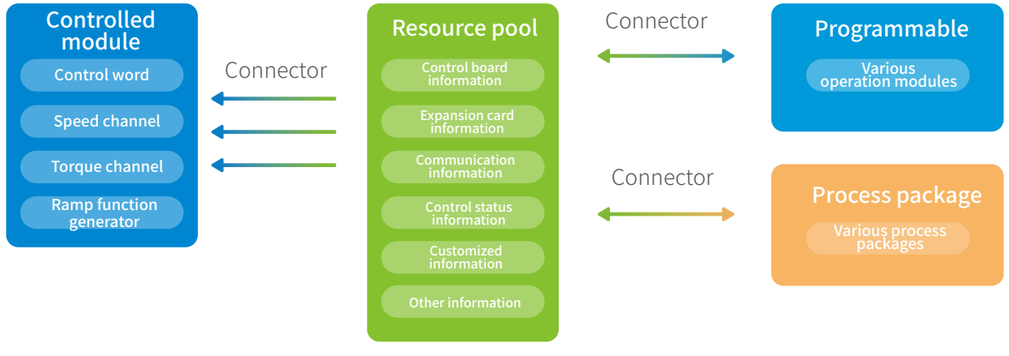




Data reconfiguration by connector

With the connector, customized requirements can be met without changing the software.

- Configuration of data in the controlled module and resource pool (virtual B connector), including the control word, input terminal status of the expansion card, input terminal status of the control board, driver status word, and driver running status data
- Modular software configuration (virtual K connector) of data in the resource pool, including the software variable, bus process data, speed channel, torque channel, and ramp function generator



02. Powerful Functions

Drive algorithm of synchronous and asynchronous motors

Supports both synchronous motors and asynchronous motors.
Supports three-channel temperature sampling by PTC, KTY, PT100, and PT1000.



Synchronous motor



Asynchronous motor



Motor Type	Supported Algorithm
Synchronous motor	SVC, FVC
Asynchronous motor	V/f, SVC, FVC

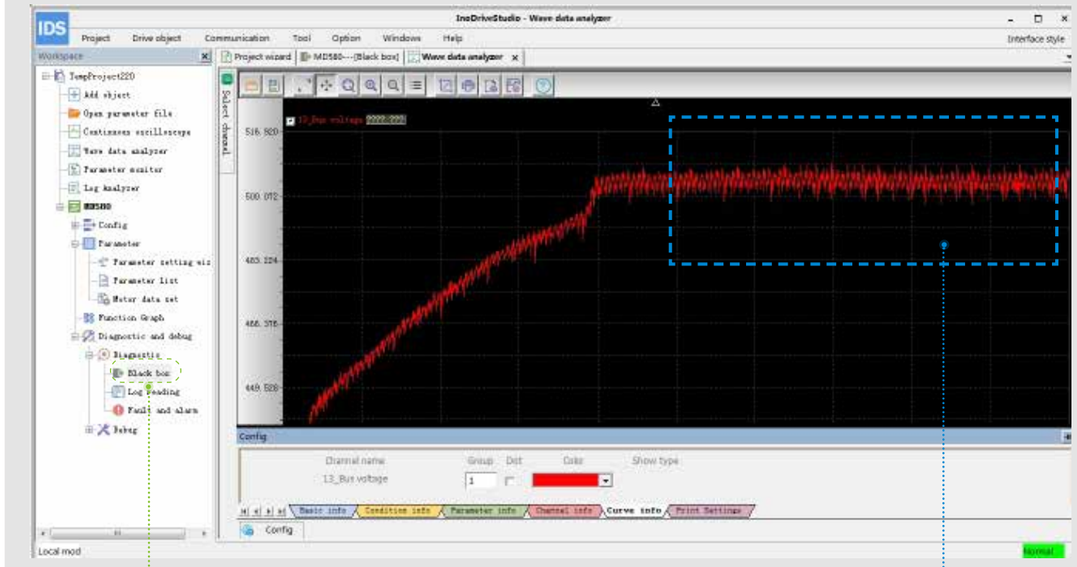
Type	Model	Function
PG card	MD38PG4	Applicable to the resolver; excitation frequency: 10 kHz; DB9 interface
	MD38PGMD	The card supports differential input, collector input, push-pull input, as well as differential output and collector output; therefore, it can be used to connect to different encoders and supports A/B phase input of the host controller.
	MD580-PG-AS1	Supports sin-cos and SSI encoders; full closed-loop
	MD580-PG-AU1	Supports ABZ (TTL level) and SSI encoders; full closed-loop

Performance

Item	Specification
Speed regulation range	1:50 (V/f control for asynchronous motors)
	1:200 (SVC for asynchronous motors)
	1:1000 (FVC for asynchronous motors)
Speed control accuracy	±1.0% (V/f control)
	±0.5% (SVC)
	±0.02% (FVC)
Speed fluctuation	0.5% (SVC)
	± 0.2% (FVC)
Torque response	< 5 ms (SVC)
	< 3 ms (FVC)

Fault monitoring by the black box

With the black box, you can analyze the fault immediately without waiting for reoccurrence of the fault.

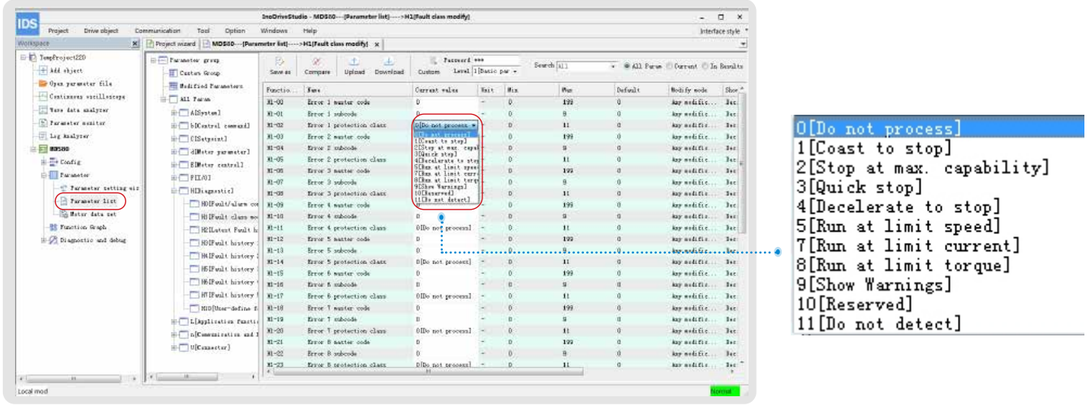


- Wave data within 50 specified periods
- Collection of 8 pieces of carrier periodic data
- Storage of the newest 80 groups of data by overwriting the old ones

- Collection of 4 pieces of internal data every 0.5 ms
- Collection of 48 pieces of internal data every 2 ms
- Collection of 16 pieces of customized data every 2 ms
- Collection of 5 pieces of internal data every 16 ms

Fault level selection

Eleven fault levels and all fault types can be selected.



Supported buses

- Modbus TCP bus
- Modbus RTU bus
- CANopen bus
- PROFIBUS DP bus
- PROFINET bus
- EtherNet/IP bus
- EtherCAT bus

Type	Model	Description
Communication card	MD580-SI-EM1	Modbus TCP communication card
	MD580-SI-RS1	Modbus RTU communication card
	MD580-SI-CAN1	CANopen communication card
	MD580-SI-DP1	PROFIBUS DP communication card
	MD580-SI-PN1	PROFINET communication card
	MD580-SI-EN1	EtherNet/IP communication card
	MD580-SI-ECAT1	EtherCAT communication card

03. Stable and Reliable

Hardware upgrade

Sheet metal structure covering all series

Brand new look



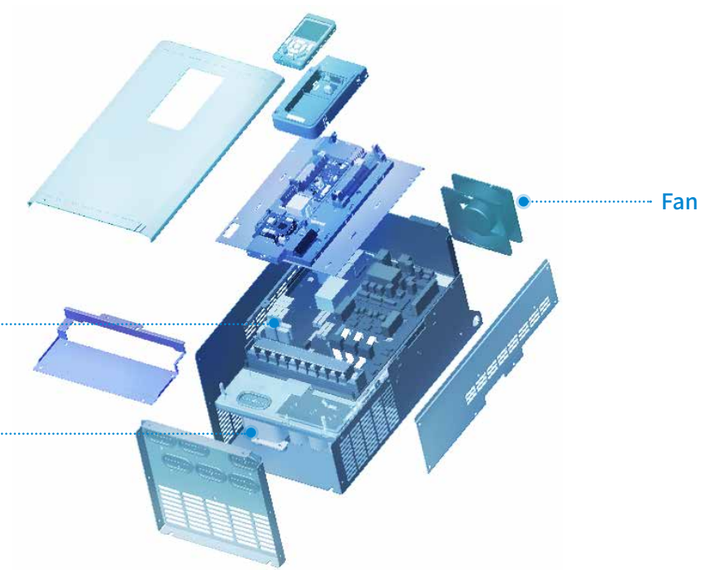
Anti-harmonic interference

Independent air duct of the power module heatsink to reduce pollution to electronic devices

Meeting various electromagnetic environment requirements

Standard built-in DC reactor, which improves power factors and reduces harmonic distortion

Built-in C3 filter as standard, and external C2 filter as optional, meeting EU EN 61800-3 requirements



Operation in harsh conditions

- Conformal coating
- Meets the environmental requirements of IEC 60721-3-3 standard 3C3 (chemical gas)
- Meets the environmental requirements of IEC 60721-3-3 standard 3S3 (solid particles)
- Modular design to facilitate quick replacement of faulty components on the site





04. Safety

STO function

Built-in STO confirms with the following:

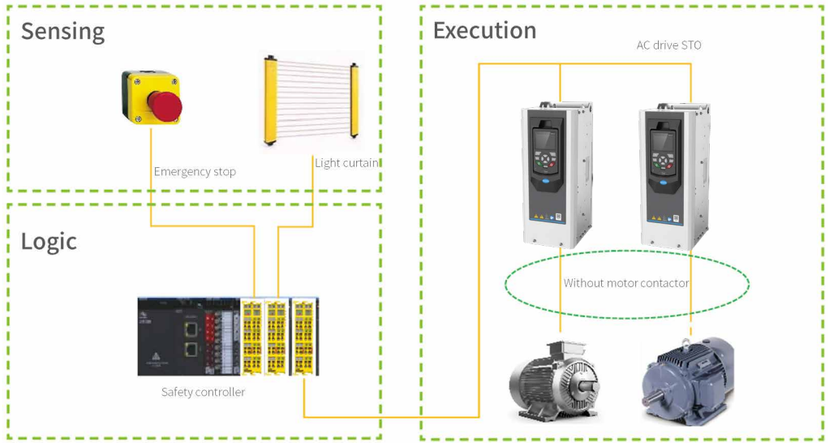
- EN/IEC61800-5-2
- IEC 61508 ed2:SIL 3
- EN/IEC62061:SIL CL3
- EN ISO 13849-1:PL e

Certified by TÜV SÜD



Simplified safety circuit

- Saves space and cables.
- Removes components that easily wear out such as contactors.
- Keeps the power on after the emergency stop to ensure quick production recovery.



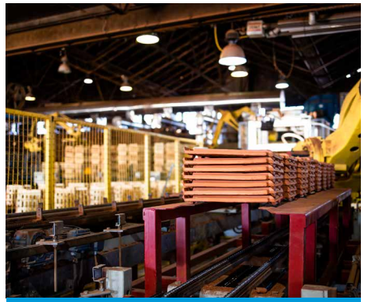
Applicable Industries



Metallurgy



Non-ferrous metal



Architectural material



Paper making



Municipal engineering



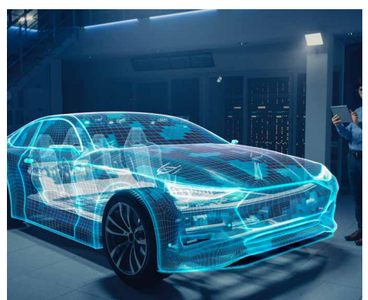
Chemical engineering



Electricity



Rubber



Automobile

Naming Rules

MD580 - 4T 75 B - LCD - S - INT
① ② ③ ④ ⑤ ⑥ ⑦

① **Product Name** MD580: AC drive series	③ **Output Current (A)** 2R1:2.1 820:820	⑤ **LCD** LCD: LCD operating panel
② **Power Rating** 4T: Three-phase 380-480 V 7T: Three-phase 525-690 V	④ **Braking Unit** Null: Without braking unit B: With braking unit	⑥ **S** S: Updated version
⑦ Variant INT: International variant	-	-

MD580S-INT (400 V/690 V Models) - Option List

Name		Order Number	Option Model	Supported AC Drive Model	Function
Braking component	Built-in braking unit	/	Model with "B"	/	For T1 to T4 models (0.37G/0.75P to 15G/18.5P), the built-in braking unit is standard; for T5 to T8 models (18.5G/22P to 75G/90P), the built-in braking unit is optional. For S4 model (4.0G/5.5P to 18.5G/22.0P), the built-in braking unit is standard.
	External braking unit (T1 to T12)	01013133	MDBUN-60-T	90G/110P and above. Multiple external braking units are connected in parallel.	External braking unit for 90G/110P models and above.
		0101AR57	MDBUN-60-5T		
		01013126	MDBUN-90-T		
		0101AR58	MDBUN-90-5T		
		01040104	MDBUN-200-T		
		01040160	MDBUN-200-5T		
	External braking unit (S5 to S9)	01040103	MDBUN-200-7T	S5~S9 (22.0G/30P to 200G/250.0P)	-
Expansion card	CANopen communication card	01040188	MD580–SI-CAN1	Applicable to all models	CANopen bus adaption card
	Modbus RTU communication card	01040189	MD580–SI-RS1		Modbus RTU bus adaption card
	PROFIBUS DP communication card	01040190	MD580–SI-DP1		PROFIBUS DP bus adaption card
	PROFINET IO communication card	01040191	MD580–SI-PN1		PROFINET IO industrial Ethernet card
Expansion card	Modbus TCP communication card	01040192	MD580–SI-EM1	Applicable to all models	Modbus TCP industrial Ethernet card
	EtherCAT communication card	01040259	MD580-SI-ECAT1		EtherCAT industrial Ethernet
	EtherNet/IP communication card	01040246	MD580-SI-EN1		EtherNet/IP industrial Ethernet
I/O expansion card	Motor safety temperature detection card	01040258	MD580-HSMT-ATEX1	T1 to T3 (0.37G/0.75P to 11G/15P)	When the PTC in the motor is overheated, the detection card will disable the DO and activate the STO.
		01621338	HSMT-10	T4 to T12 (15G/18.5P to 400G/450P)	
	I/O expansion card	01040255	MD580-IO-RD1	Applicable to all models	It provides two AIs, two AOs, four DIs, and two ROs.
Encoder signal collection card	ABZ and SSI dual-encoder card	01040256	MD580-PG-AU1	Applicable to all models	Supports full closed-loop control; supports TTL level ABZ encoder and SSI encoder; provides the dB15 interface.
	Sin-cos and SSI dual-encoder expansion card	01040254	MD580-PG-AS1		Supports full closed-loop control; supports ±1 Vpp sin-cos encoder and SSI encoder; provides the dB15 interface.
	Resolver interface card	01013081	MD38PG4		For resolver, excitation frequency: 10kHz ,DB9 interface
		01040343	MD58PG4D		For resolver(support frequency division), excitation frequency: 10kHz ,DB9 interface， transformation ratio: 0.5
		01040353	MD58PG5D		For resolver(support frequency division), excitation frequency: 10kHz ,DB9 interface， transformation ratio: 0.286
	MD38PGMD multi-function encoder card	01013147	MD38PGMD		Supports differential input, collector input, push-pull input, as well as differential output and collector output; therefore, it can be used to connect to different encoders and supports A/B phase input of the host controller.
Operating keypad	Standard LCD operating keypad	01610168	SOP-20-880	Applicable to all models	The standard LCD operationg keypad is used for parameter copy and download.
	External LED operating keypad	01040182	MDKE-10		The external LED operating keypad is connected through the RJ45 port, with IP40 protection rating.
	SOP-20-880 mounting keypad	01040022	CP600-BASE1		The SOP-20-880 can be installed to the cabinet door by using the mounting base.
	MDKE-10 mounting base	01040202	MD580-AZJ1		The MDKE-10 can be installed to the cabinet door by using the mounting base.
Cable	Extension cable	01013008	MDCAB	The standard length is 3 m.	The standard 8-conductor cable can connect to the external LED and external LCD operating panel.
	Main circuit cable	/	Lugs manufactured by Suzhou Yuanli are recommended. For details of recommended lugs, see the product user guide.		It is recommended that the input and output main circuit cables, and power cables use symmetrical shielded cables. Compared with four-conductor cables, symmetrical shielded cables can reduce electromagnetic radiation in the whole transmission system.
	Control circuit cable	/	All control circuit cables must be shielded cables. Use a separate shielded cable for each type of analog signal, and use shielded twisted pair cables for digital signal.		
Other expansion modules	Inobus optical fiber expansion module	01620249	HOFM-10	Applicable to all models	One pair of optical fiber expansion module
	Inobus optical fiber expansion module	01620040	HOFM-30		Three pairs of optical fiber expansion module
	Function expansion mudule	01620163	HESD-10		One expansion slot The slot number of the MD580 series drive can be expanded to three by using the three HESD-10 modules and one HOFM-30 module.

Specifciations-400V Models

Structure	Model	Light Duty			Heavy Duty			Option Selection	
	MD580S-4T x (see this column for x)	Rated Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Rated Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Optional AC Input Reactor	AC Output Reactor
T1	2R1B -LCD-S-INT	0.7	2.5	2.1	0.4	1.8	1.5	ACL-0003-EISC-9561A	OCL-0005-EISC-E1M4DNC-N
	3R1B -LCD-S-INT	1.1	3.7	3.1	0.8	2.4	2.1	ACL-0004-EISC-9561A	
	3R8B -LCD-S-INT	1.5	4.6	3.8	1.1	3.7	3.1	ACL-0005-EISC-9561A	
	5R1B -LCD-S-INT	2.2	6.4	5.1	1.5	4.6	3.8	ACL-0007-EISC-9561A	
	7R2B -LCD-S-INT	3	9.1	7.2	2.2	6.3	5.1	ACL-0009-EISC-9561A	OCL-0007-EISC-E1M0DNC-N
	9B -LCD-S-INT	3.7	11.3	9	3	9	7.2	ACL-0013-EISC-9561A	OCL-0010-EISC-EM70DNC-N
T2	13B -LCD-S-INT	5.5	15.9	13	3.7	11.4	9	ACL-0017-EISHL-9561A	OCL-0015-EISCL-EM47DNC
	17B -LCD-S-INT	7.5	22.4	17	5.5	16.7	13	ACL-0025-EISHL-9561A	OCL-0020-EISCL-EM35DNC
T3	25B -LCD-S-INT	11	32.9	25	7.5	21.9	17	ACL-0037-EISHL-9561A	OCL-0030-EISCL-EM23DNC
	32B -LCD-S-INT	15	39.7	32	11	32.2	25	ACL-0045-EISHL-9561A	OCL-0040-EISCL-EM18DNC
T4	37B -LCD-S-INT	18.5	48.6	37	15	41.3	32	ACL-0060-EISHL-9561A	
T5	45 -LCD-S-INT	22	59	45	18.5	49.5	37	ACL-0060-EISHL-9561A	OCL-0050-EISCL-EM14DNC
	45B -LCD-S-INT								
	60-LCD-S-INT	30	65.8	60	22	59	45	ACL-0090-EISCL-EM16DNC	OCL-0060-EISCL-EM12DNC
	60B-LCD-S-INT								
T6	75 -LCD-S-INT	37	71	75	30	57	60		OCL-0080-EISCL-E87UDNC
	75B -LCD-S-INT								
	91-LCD-S-INT	45	86	91	37	69	75		OCL-0090-EISCL-E78UDNC
	91B-LCD-S-INT								
T7	112-LCD-S-INT	55	111	112	45	89	91	ACL-0120-EISCL-EM12DNC	OCL-0120-EISCL-E58UDNC
	112B-LCD-S-INT								
	150 -LCD-S-INT	75	143	150	55	106	112	ACL-0150-EISCL-E95UDNC	OCL-0150-EISCL-E47UDNC
	150B -LCD-S-INT								
T8	176-LCD-S-INT	90	167	176	75	139	150	ACL-0200-EISCL-E70UDNC	OCL-0200-EISCL-E35UDNC
	176B-LCD-S-INT								
	210 -LCD-S-INT	110	198	210	90	164	176		OCL-0250-EISH-E28UDNC
	253 -LCD-S-INT	132	239	253	110	196	210	ACL-0250-EISH-E56UDNC	OCL-0290-EISH-E24UDNC
T9	304 -LCD-S-INT	160	295	304	132	240	253	ACL-0330-EISH-E42UDNC	OCL-0330-EISH-E21UDNC
	377 -LCD-S-INT	200	359	377	160	287	304	ACL-0390-EISH-E36UDNC	OCL-0390-EISH-E18UDNC
T10	426 -LCD-S-INT	220	410	426	200	365	377	ACL-0490-EISH-E28UDNC	OCL-0490-EISH-E14UDNC
	426-L -LCD-S-INT	220	410	426	200	365	377		Standard
	465 -LCD-S-INT	250	456	465	220	410	426		OCL-0490-EISH-E14UDNC
	465-L -LCD-S-INT	250	456	465	220	410	426		Standard
T11	520 -LCD-S-INT	280	507	520	250	441	465	ACL-0530-EISH-E26UDNC	OCL-0530-EISH-E13UDNC
	520-L -LCD-S-INT	280	507	520	250	441	465		Standard
	585 -LCD-S-INT	315	559	585	280	495	520	ACL-0600-EISH-E23UDNC	OCL-0600-EISH-E12UDNC
	585-L -LCD-S-INT	315	559	585	280	495	520		Standard
T12	650 -LCD-S-INT	355	624	650	315	565	585	ACL-0660-EISH-E21UDNC	OCL-0660-EISH-E11UDNC
	650-L -LCD-S-INT	355	624	650	315	565	585		Standard
	725 -LCD-S-INT	400	708	725	355	617	650	ACL-0800-EISH-E17UDNC	OCL-0800-EISH-E8U7DNC
	725-L -LCD-S-INT	400	708	725	355	617	650		Standard
	820 -LCD-S-INT	450	782	820	400	687	725		-
	820-L -LCD-S-INT	450	782	820	400	687	725		Standard

* For details, contact Inovance technical engineers.

Specifciations-690V Models

Structure	Model	No Overload		Light Overload		Heavy Overload		Option Selection	
	MD580S-7T x (see this column for x)	Rated Current A	Rated Power kW	Rated Current A	Rated Power kW	Rated Current A	Rated Power kW	Optional AC Input Reactor	AC Output Reactor
S4	7R4B-LCD-S-INT	7.4	5.5	7	5.5	5.6	4	ACL-0007-EISC-9561ANC	OCL-0007-EISC-9561ANC
	9R9B-LCD-S-INT	9.9	7.5	9.4	7.5	7.4	5.5	ACL-0010-EISC-9561ANC	OCL-0010-EISC-9561ANC
	14R3B-LCD-S-INT	14.3	11	13.6	11	9.9	7.5	ACL-0015-EISH-E1M9NC	OCL-0015-EISC-EM93NC
	19B-LCD-S-INT	19	15	18.1	15	14.3	11	ACL-0020-EISH-E1M4NC	OCL-0020-EISH-EM70NC
	23B-LCD-S-INT	23	18.5	21.9	18.5	19	15	ACL-0030-EISH-EM93NC	OCL-0030-EISH-EM47NC
	27B-LCD-S-INT	27	22	25.7	22	23	18.5	ACL-0030-EISH-EM93NC	OCL-0030-EISH-EM47NC
S5	35-LCD-S-INT	35	30	33	30	26	22	ACL-0040-EISH-EM70NC	OCL-0040-EISH-EM35NC
	42-LCD-S-INT	42	37	40	37	35	30	ACL-0050-EISH-EM56NC	OCL-0050-EISH-EM28NC
	49-LCD-S-INT	49	45	47	45	42	37	ACL-0050-EISH-EM56NC	OCL-0050-EISH-EM28NC
S6	61-LCD-S-INT	61	55	58	55	49	45	ACL-0060-EISH-EM47NC	OCL-0060-EISH-EM23NC
	84-LCD-S-INT	84	75	80	75	61	55	ACL-0090-EISH-EM31NC	OCL-0090-EISH-EM17NC
S7	98-LCD-S-INT	98	90	93	90	84	75	ACL-0120-EISH-EM23NC	OCL-0120-EISH-EM11NC
	119-LCD-S-INT	119	110	113	110	98	90	ACL-0120-EISH-EM23NC	OCL-0120-EISH-EM11NC
S8	142-LCD-S-INT	142	132	135	132	119	110	ACL-0150-EISH-EM19ANC	OCL-0150-EISH-EM09ANC
	174-LCD-S-INT	174	160	165	160	142	132	ACL-0200-EISH-EM14ANC	OCL-0200-EISH-EM07ANC
S9	210-LCD-S-INT	210	200	200	200	174	160	ACL-0250-EISH-EM11ANC	OCL-0250-EISH-E55UANC
	271-LCD-S-INT	271	250	257	250	210	200	ACL-0330-EISH-E85UANC	OCL-0330-EISH-9561ANC

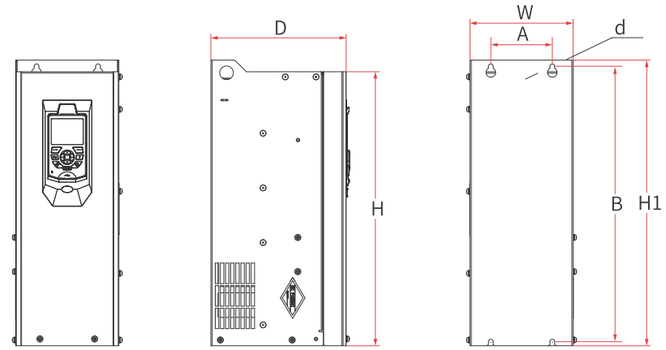
* For details, contact Inovance technical engineers.

Filter

Structure	Model	EMC filter (Class C2)		10% passive filter		5% passive filter	
	MD580S-4T x (see this column for x)	Model	Order Number	Model	Order Number	Model	Order Number
T1	2R1B -LCD-S	DL32580-7-44	11090211	MD-HF-0004-4-10	11090271	MD-HF-0004-4-5	11090365
	3R1B -LCD-S	DL32580-7-44	11090211	MD-HF-0004-4-10	11090271		
	3R8B -LCD-S	DL32580-7-44	11090211	MD-HF-0004-4-10	11090271		
	5R1B -LCD-S	DL32580-7-44	11090211	MD-HF-0007-4-10	11090282	MD-HF-0008-4-5	11090364
	7R2B -LCD-S	DL32580-16-44	11090212	MD-HF-0007-4-10	11090282		
	9B -LCD-S	DL32580-16-44	11090212	MD-HF-0012-4-10	11090272	MD-HF-0012-4-5	11090366
T2	13B -LCD-S	DL32580-16-44	11090212	MD-HF-0012-4-10	11090272		
	17B -LCD-S	DL32580-30-33	11090213	MD-HF-0015-4-10	11090273	MD-HF-0015-4-5	11090367
T3	25B -LCD-S	DL32580-42-33	11090214	MD-HF-0030-4-10	11090274	MD-HF-0030-4-5	11090345
	32B -LCD-S	DL32580-42-33	11090214	MD-HF-0030-4-10	11090274		
T4	37B -LCD-S	DL32580-55-34	11090215	MD-HF-0045-4-10	11090275	MD-HF-0039-4-5	11090377
T5	45 -LCD-S	DL32580-75-34	11090216	MD-HF-0045-4-10	11090275		
	45B -LCD-S	DL32580-75-34	11090216		11090275		
	60-LCD-S	DL32580-75-34	11090216	MD-HF-0075-4-10	11090276	MD-HF-0075-4-5	11090343
	60B-LCD-S	DL32580-75-34	11090216				
T6	75 -LCD-S	DL32580-75-34	11090216				
	75B -LCD-S	DL32580-75-34	11090216				
	91-LCD-S	DL32580-100-35	11090219	MD-HF-0090-4-10	11090277	MD-HF-0105-4-5	11090342
	91B-LCD-S	DL32580-100-35	11090219				
T7	112-LCD-S	DL32580-130-35	11090220	MD-HF-0160-4-10	11090278		
	112B-LCD-S	DL32580-130-35	11090220				
	150 -LCD-S	DL33590-150-28	11090224			MD-HF-0160-4-5	11090344
	150B -LCD-S	DL33590-150-28	11090224				
T8	176-LCD-S	DL32580-180-40	11090218	MD-HF-0205-4-10	11090279		
	176B-LCD-S	DL32580-180-40	11090218				
	210 -LCD-S	DL33590-250-28	11090226			MD-HF-0205-4-5	11090368
	253 -LCD-S	DL33590-250-28	11090226	MD-HF-0290-4-10	11090280	MD-HF-0290-4-5	11090369
T9	304 -LCD-S	DL33590-320-99	11090227				
	377 -LCD-S	DL33590-400-99	11090228	MD-HF-0430-4-10	11090281	MD-HF-0430-4-5	11090361
T10	426 -LCD-S	DL33590-600-99	11090229				
	426-L -LCD-S	DL33590-600-99	11090229				
	465 -LCD-S	DL33590-600-99	11090229				
	465-L -LCD-S	DL33590-600-99	11090229				
T11	520 -LCD-S	DL33590-600-99	11090229	MD-HF-0290-4-10 *2 in parallel	11090280*2	MD-HF-0290-4-5*2 in parallel	11090369*2
	520-L -LCD-S	DL33590-600-99	11090229				
	585 -LCD-S	DL33590-600-99	11090229				
	585-L -LCD-S	DL33590-600-99	11090229				
T12	650 -LCD-S	DL33590-800-99	11090230	MD-HF-0290-4-10 and MD-HF-0430-4-10 in parallel	11090280, 11090281	MD-HF-0205-4-5 and MD-HF-0430-4-5 in parallel	11090368, 11090361
	650-L -LCD-S	DL33590-800-99	11090230				
	725 -LCD-S	DL33590-800-99	11090230			MD-HF-0290-4-5 and MD-HF-0430-4-5 in parallel	11090369, 11090361
	725-L -LCD-S	DL33590-800-99	11090230				
	820 -LCD-S	DL33590-800-99	11090230	MD-HF-0430-4-10 *2 in parallel	11090281*2	MD-HF-0430-4-5*2 in parallel	11090361*2
	820-L -LCD-S	DL33590-800-99	11090230				

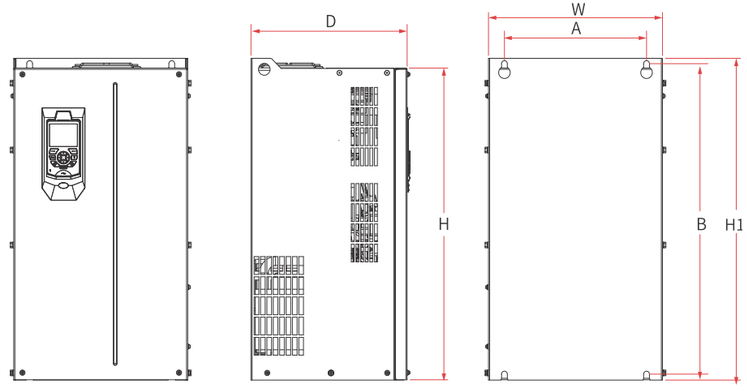
Dimensions-400V Models

Frame size T1 to T6



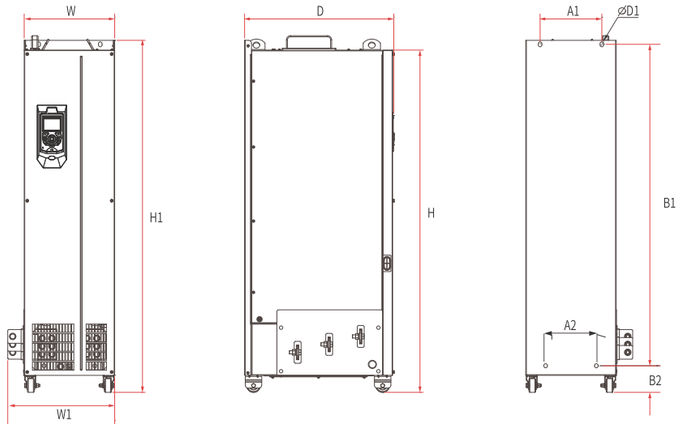
Structure	Mounting Hole Dimension mm (in.)		Outline Dimension mm (in.)				Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A	B	H	H1	W	D		
T1	90(3.5)	380(15.0)	381(15.0)	395(15.6)	151(5.9)	175(6.9)	Ø7(0.3)	6.2(13.6)
T2	90(3.5)	380(15.0)	381(15.0)	395(15.6)	151(5.9)	181.5(7.2)	Ø7(0.3)	7(15.4)
T3	90(3.5)	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)

Frame size T7 to T9



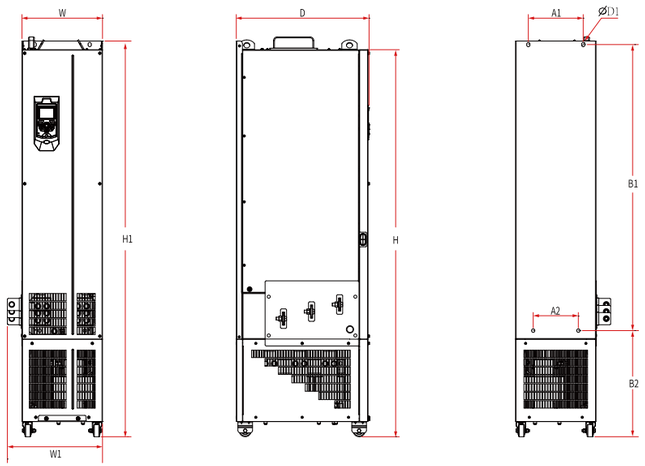
Structure	Mounting Hole Dimension mm (in.)		Outline Dimension mm (in.)				Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A	B	H	H1	W	D		
T7	245 (9.7)	523 (20.6)	525 (20.7)	542 (21.4)	300 (11.8)	269 (10.6)	Ø10 (0.4)	35 (77.2)
T8	270 (10.6)	560 (22.1)	554 (21.8)	580 (22.9)	338 (13.3)	309.4 (12.2)	Ø10 (0.4)	51.5 (113.5)
T9	320 (12.6)	890 (35.1)	874 (34.4)	915 (36.1)	400 (15.8)	314.6 (12.4)	Ø10 (0.4)	85 (187.4)

Frame size T10 to T12 (without AC output reactors)



Structure	Mounting Hole Dimension mm (in.)				Outline Dimension mm (in.)					Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A 1	A2	B1	B2	H	H1	W	W1	D	D1	
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)	ϕ13(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 (13.0)	390 (15.4)	545 (21.5)	ϕ13(0.5)	155(341.7)
T12	240 (9.5)	200 (7.9)	1280 (50.4)	101 (4.0)	1355 (53.4)	1405 (55.4)	340 (13.4)	400 (15.8)	545 (21.5)	ϕ16(0.6)	185(407.9)

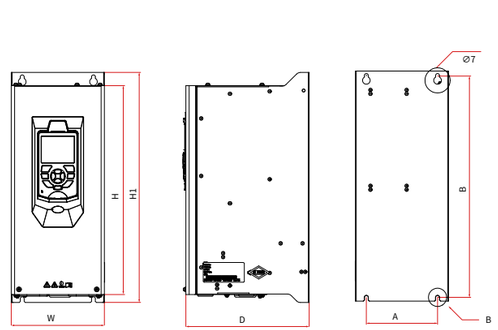
Frame size T10 to T12 models (with AC output reactors)



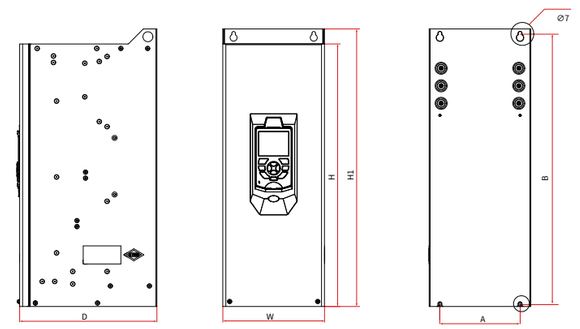
Structure	Mounting Hole Dimension mm (in.)				Outline Dimension mm (in.)					Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A 1	A2	B1	B2	H	H1	W	W1	D	D1	
T10	240 (9.5)	150 (5.9)	1035 (40.8)	424 (16.7)	1424 (56.1)	1472 (58.0)	300 (11.8)	360 (14.2)	500 (19.7)	ϕ13(0.5)	160(352.7)
T11	225 (8.9)	185 (7.3)	1175 (46.3)	435 (17.1)	1586 (62.5)	1622 (63.9)	330 (13.0)	390 (15.4)	545 (21.5)	ϕ13(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)	ϕ13(0.5)	245(540.1)

Dimensions-690V Models

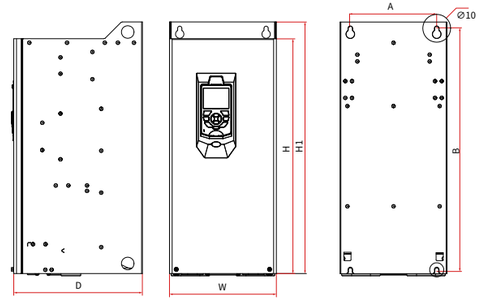
Frame size S4 to S9



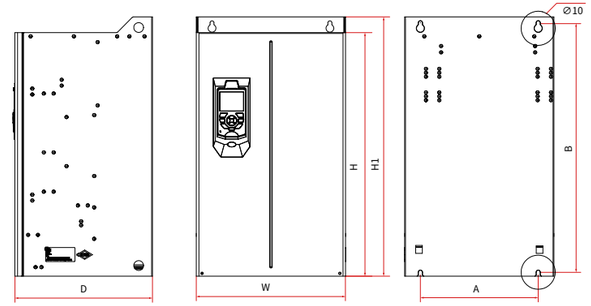
MD580-690V-22kW（S4）



MD580-690V-45kW（S5）



MD580-690V-110kW（S6~S7）



MD580-690V-250kW（S8~S9）

Structure	Mounting Hole Dimension mm (in.)		Outline Dimension mm (in.)				Mounting Hole Diameter mm (in.)	Weight kg (lb)
	A	B	H	H1	W	D		
S4	130	405	381.5	420	170	225	Ø7	11
S5	160	540	524	554	203	274	Ø7	20
S6~S7	206	576	560	600	255	307	∅ 10	35
S8~S9	300	635	620	660	380	350	∅ 10	65

Technical Specifications

Item		Technical Specification
Basic functions	Output frequency	V/f control: 0-599 Hz Vector control: 0-599 Hz
	Carrier frequency	0.8-12 kHz (varies with different models)
	Input frequency resolution	Digital setting: 0.01 Hz Analog setting: maximum frequency x 0.025%
	AC drive capacity	5.5-250 kW (690 V series); 0.75-450 kW (400 V series)
	Input voltage	690 V models: Three-phase 525-690 VAC (-15% to +10%, namely 446-759 VAC) 400 V models: Three-phase 380-480 VAC (-15% to +10%, namely 323-528 VAC)
	Motor type and control mode	Three-phase asynchronous motors: SVC, FVC, and V/f control
		Permanent magnet synchronous motors: SVC and FVC
	Speed adjustment range	1:50 (V/f control for asynchronous motors) 1:200 (SVC for asynchronous motors) 1:1000 (FVC for asynchronous motors)
	Speed stability accuracy	±1.0% (V/f control) ±0.5% (SVC) ±0.01% (FVC)
	Speed fluctuation	±0.5% (SVC) ±0.2% (FVC)
	Torque response time	< 5 ms (SVC) < 3 ms (FVC)
	Torque control mode	SVC and FVC
	Torque control accuracy	±5% (SVC) ±3% (FVC)
	Overload capability	Light overload: 110% for 1 minute every 5 minutes Heavy overload: 150% for 1 minute every 5 minutes
	Start torque	0.25 Hz/150% (SVC); 0 Hz/180% (FVC)
	Torque boost	Automatic torque boost; manual torque boost: 0.1% to 30.0%
	V/f curve	Straight-line V/f curve, multi-point V/f curve, square V/f curve, N-power V/f curve (N = 1.2/1.4/1.6/1.8) , and V/f separation curve

Item		Technical Specification
Customized functions	Acceleration/Deceleration curve	Straight-line or S-curve acceleration/deceleration; four modes of acceleration/deceleration time ranging from 0.0s to 1000.0s
	Internal PID	One set of proportional-integral-derivative (PID) parameters to implement closed-loop process control
	Communication/Bus	RS485 communication card: Supports the Modbus RTU protocol. PROFIBUS DP communication card: Supports the PROFIBUS DP protocol. EtherCAT communication card: Supports the EtherCAT protocol. CANopen communication card: Supports the CANopen protocol. EtherNet/IP communication card: Supports the EtherNet/IP protocol. PROFINET IO communication card: Supports the PROFINET IO industrial Ethernet protocol. Modbus TCP communication card: Supports the Modbus TCP industrial Ethernet protocol.
	Running command source	You can start or stop the drive through SOP-20 operating panel, InoDriveStudio, LED operating panel, communication, and terminal.
	Frequency reference source	Two groups of set values, motorized potentiometer, and multi-reference
	DC braking	DC braking current at startup: 0.0% to 100.0%; DC braking time at startup: 0.00s to 100.00s; Start speed of DC braking for stop: 0.0 RPM to 6000.0 RPM; DC braking current for stop: 0.0% to 100.0%; DC braking time for stop: 0.00s to 100.00s
	Jog control	Jog frequency range: –600.0% to +600.0%; Jog acceleration/deceleration time: 0.0s to 1000.0s
	Multi-speed running	The drive supports up to 16 speeds by using the control terminals.
	Overvoltage/ Overcurrent stall control	The drive limits the current and voltage automatically during operation to avoid frequent tripping caused by overvoltage/overcurrent.
	Quick current limit	This function minimizes the occurrence of overcurrent faults and guarantees proper operation of the drive.
	Torque limit and control	This function limits the torque during running to avoid frequent tripping caused by overcurrent and realizes torque control in the vector control mode.
	VDC voltage control	Load feedback energy compensates for any voltage reduction, allowing the drive to continue to operate for a short time.
	Multi-thread field buses	Supports five field buses: Modbus RTU, CANopen, PROFIBUS DP, PROFINET IO, Modbus TCP, EtherCAT, and EtherNet/IP
	Multiple encoder types	Supports differential encoder, open-collector encoder, resolver, ABZ and SSI full closed-loop encoder, and sin-cos and SSI full closed-loop encoder
	Advanced software	The software of the AC drive allows users to configure parameters and provides a virtual oscilloscope that can be used to minotor the internal drive status.
	Motor overtemperature protection	The following temperature sensors are supported: PT100, PT1000, KTY-84, and PTC-130.
	Two control channels and two setpoint channels avaliable	

Item		Technical Specification
HMI	AI	Two standard AIs AI1: 0-10 V/0-20 mA input; 12-bit resolution; correction accuracy of 0.5%; PT100/ PT1000/PTC130/KTY84 supported AI2: 0-10 V/0-20 mA input; 12-bit resolution; correction accuracy of 0.5% Two optional AIs (provided by the expansion card) AI3 to AI4 : 0-10 V/0-20 mA input; 12-bit resolution; correction accuracy of 0.5%
	AO	Two standard AOs: 0-10 V or 0-20 mA which is selected via jumper; 12-bit resolution; correction accuracy of 1% Two optional AOs (provided by the expansion card): 0-10 V or 0-20 mA which is selected via parameters; 12-bit resolution; correction accuracy of 1%
	DI	Six standard normal DIs: PNP and NPN input methods available Two optional normal DIs (provided by the expansion card): PNP and NPN input methods available One high-speed DI: PNP and NPN input methods available; input frequency < 100 kHz
	DO	One DO supports normal output and high-speed output. When the DO is used as the normal DO, PNP and NPN output methods are available. When the DO is used as the high-speed DO, a maximum of 100 kHz frequency is supported. Three standard relay output terminals with programmable NO/NC contacts Two optional relay output terminals (provided by the expansion card) with programmable NO/NC contacts
	Operating keypad	LCD operating keypad as standard, external LED operating keypad as optional
Environment requirements	Operating location	Indoor location without direct sunlight, dust, corrosive gas, combustible gas, oil mist, water vapor, drip, or salt
	Altitude	⩽ 1000 m: derating not required; > 1000 m: derate by 1% for every additional 100 m; Maximum altitude: 3000 m;
	Operating temperature	-10° C to +50° C. When the temperature is higher than 40°C , derate by 1.5% for every additional 1° C.
	Storage temperature	-20° C to +60° C
	Overvoltage category	OVCIII
	Pollution degree	PD2
	IP rating	IP20 (open type, applicable to IEC-certified products)
	Power system	TT/TN (VDR and EMC screws required), IT

Electrical Wiring

