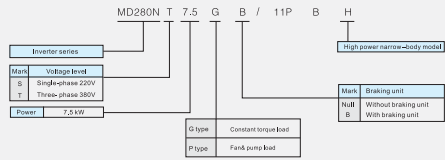


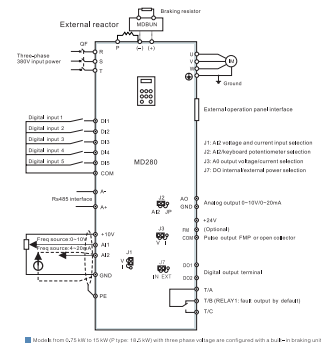
Product Information



MD280 Inverter Model and Technical Data

Model	Input Voltage	Power Capacity (kW)	Input Current (A)	Rated Output Current (A)	Rated Output Power (kW)
MD280N0.4GB	Single phase 220V	1.0	5.4	2.3	0.4
MD280N0.5GB	220V	1.5	8.2	4.0	0.75
MD280N1.0GB	Range +15%~20%	3.0	14.0	7.0	1.5
MD280N1.5GB		4.5	23.0	9.8	2.2
MD280N1.7GB		1.5	3.4	3.1	0.75
MD280N1.2GB		3.0	5.0	3.8	1.5
MD280N2.0GB		4.0	5.8	5.1	2.2
MD280N2.2GB		8.0	14.8	14.0	3.75
MD280N2.7GB/3.0P		11.0	20.5	13.0/17.0	5.4/7.5
MD280N2.7GB/11P		17.0	36.0	17.0/25.0	7.5/11
MD280N1.5GB/11P		21.0	39.0	25.0/32.0	11.1/15
MD280N1.5GB/18.2P		24.0	38.5	32.0/37.0	15.1/18.2
MD280N1.8GB/22P		30.0	46.5	37.0/44.0	15.0/22
MD280N2.2GB/22P		40.0	62.0	45.0/50.0	22/28
MD280N1.8GB/37P		57.0	76.0	60.0/70.0	30/37
MD280N2.7GB/45P		69.0	92.0	75.0/85.0	37/45
MD280N4.0GB/55P	Three phase 380V Range +15%~20%	85.0	115.0	81.0/115.0	45/55
MD280N5.5GB/75P		114.0	157.0	112.0/150.0	55/75
MD280N7.5GB/95P		154.0	180.0	150.0/170.0	75/95
MD280N9.0GB/115P		180.0	214.0	178.0/210.0	90/110
MD280N11.0GB/135P		192.0	256.0	210.0/253.0	110/132
MD280N13.0GB/165P		231.0	307.0	293.0/300.0	130/160
MD280N16.0GB/200P		250.0	385.0	354.0/377.0	160/200
MD280N22.0GB/260P		285.0	430.0	377.0/426.0	220/260
MD280N27.0GB/320P		305.0	490.0	450.0/490.0	270/320
MD280N33.0GB/400P		386.0	525.0	485.0/500.0	250/280
MD280N40.0GB/500P		445.0	590.0	520.0/580.0	280/315
MD280N55.0GB/630P		500.0	665.0	585.0/660.0	315/360
MD280N75.0GB/800P		565.0	785.0	650.0/720.0	355/400
MD280N100.0GB/1000P		630.0	885.0	752.0/800.0	400/450

MD280 Wiring Diagram



MD280 Physical Appearance and Mounting Dimension



Model	A	B	H	H1	W	D	Mounting Hole Pitch	Weight (kg)
MD280N0.4GB	113	172	186	125	164	65.0	1.1	
MD280N0.5GB								
MD280N1.0GB								
MD280N1.5GB								
MD280N1.7GB								
MD280N1.2GB								
MD280N2.0GB								
MD280N2.2GB/3.0P	148	236	245	160	183	65.0	2.5	
MD280N2.2GB/11P								
MD280N1.5GB/11P	190	305	322	208	192	66	6.3	
MD280N1.5GB/18.2P								

Model	A	B	H	H1	W	D	Mounting Hole Pitch	Weight (kg)
MD280N18.0GB/22P	235	447	432	463	285	238	65.5	20
MD280N22.0GB/22P								
MD280N27.0GB/22P								
MD280N40.0GB/22P								
MD280N45.0GB/22P	260	580	549	600	385	265	61.0	32
MD280N55.0GB/22P								
MD280N75.0GB/22P	343	678	660	700	473	307	61.0	47
MD280N90.0GB/22P								
MD280N110.0GB/22P	449	803	890	930	579	300	61.0	90
MD280N130.0GB/22P								
MD280N150.0GB/22P	530	1165	1094	1192	440	334	61.0	98
MD280N180.0GB/22P								
MD280N220.0GB/22P	420	1030	983	1060	600	377	61.2	130
MD280N270.0GB/22P								
MD280N330.0GB/22P								
MD280N400.0GB/22P								
MD280N500.0GB/22P	530	1300	1203	1358	800	400	61.6	200

Innovation + Advance

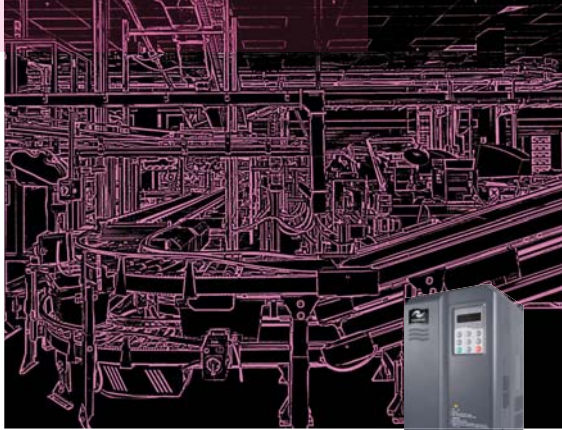
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Inoflex
 MD280 Series General Purpose Inverter





ABOUT INOVANCE

ABOUT INOVANCE

Shenzhen Inovance Technology Co., Ltd. (Stock code: 300124) is a leading industrial automation product and solution provider, dedicated to R&D, manufacturing and sales of automation control products. Targeting at high-end equipment manufacturers, we are committed to achieving a win-win situation with customers based on our solid automation control technologies with IPBs. We have maintained a mature business model through which customized solutions have been constantly and rapidly delivered to customers.

Our offering provides low-voltage AC drives, PLCs, HMI, servo drives, PMSMs, photoelectric encoders, integrated special drives, and EV/TPV drives, etc. We are now taking up the largest market share in domestic low-voltage section and have obtained a leading position in various segmentation markets with our all-round integrated and special drives.

As a national high-tech enterprise, we have obtained 63 authorized patents till the end of June 2012, including 10 invention patents, 36 utility model patents and 17 design patents. Besides, we have mastered various core platform technologies covering the fields of high-performance vector control inverter, PLC, servo, and PMSM. Attracting and cultivating talents is our constant pursuit. Till now, Inovance has already owned a large group of professional R&D experts dedicated to development of core platform technologies, application technologies and new products.

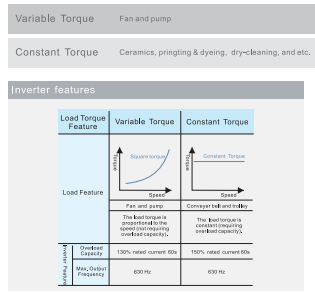
Completes Service Network: Large Network, Fast Response



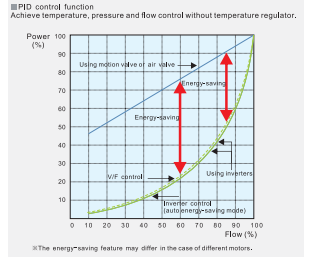
MD Series VC Inverter

Type	Performance	Series	Target Market	Physical Appearance
Construction modular	1) Supporting decentralized control system mode 2) 0.5Hz to 100Hz speed range 3) Supporting multi-speed motor 4) 48VDC control power supply 5) 100% duty cycle 6) Complete background monitoring functions, real-time update of function parameters, parameters recording in the before error occurs, etc.	MD001 Max: 2 MW	Oil Refining, Pulp, paper-making, metallurgy	
High-performance VC	1) Powerful current vector control 2) Variable speed ratio 3) Powerful functions supporting multiple field modes 4) Supporting control of synchronous and asynchronous motors 5) Embedded PLC control programming mode is completely compatible with M1U series PLC	MD380 Max: 400 kW	CNC manufacturing center, printing and packaging, textile	
Compact VC	1) Excellent operating VC performance; 2) Compact structure; 3) Built-in RS485 interface; 4) Complete background monitoring functions, real-time update of function parameters, parameters recording in the before error occurs, etc.	MD310 Max: 30 kW	Textile, ceramic, wood-working, glass machinery, washing machine, grinder, medicine machine, medical equipment, foodstuff, small machine	
Economic	1) High reliability; 2) Easy to use; 3) Built-in RS485 interface; 4) Simple operation and maintenance	MD280 Max: 450 kW	Ceramics equipment, glass and printing equipment, oil-refining machine, textile, fan & pump	
Compact & simple	1) Compact structure; 2) Simple packaging; 3) Built-in RS485 interface and PID function; 4) Built-in simple PLC function	MD210 Max: 2.2 kW	Small pump, food packaging, air blower, medical centrifuge, printing machine	

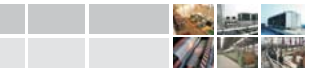
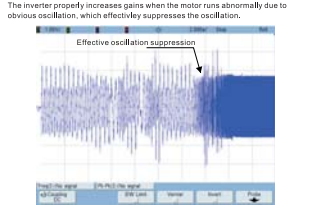
Function and Performance Features



PID: most suitable for fan and pump applications

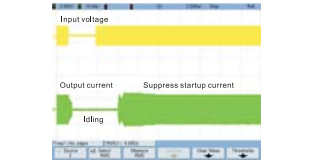


Oscillation suppression



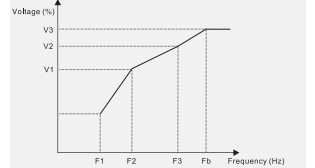
Speed tracking and restart

The inverter judges the rotational speed and direction of the motor when transient power failure occurs, and then re-starts at the frequency of the tracked speed of the motor. In this way, the rotating motor can be started smoothly without surge.



Multiple-point V/F curve

- Three ways of setting V/F curve:
 - Straight V/F curve — suitable for applications with constant torque load.
 - Multi-point V/F curve — suitable for dehydrator and centrifugal applications.
 - Square V/F curve — suitable for fan and pump applications.
- 3 points of V/F curve can be adjusted.
- Set the most suitable V/F curve according to torque features.
- Achieve best energy-saving effect by using excitation control.



RS485 communication

- The RS485 communication interface enables users to carry out centralized monitoring through PLC/PC. If the external device is configured with RS232 interface, a RS232/RS485 conversion device is needed.
- Support standard Modbus protocol, which allows setting up a single-master/multi-slave RS485 bus control network.

Quick current limit

- Minimize over-current faults so as to ensure normal running of the inverter.
- This function is recommended for common applications except those with hot loads.

Quick start/stop

- This function enables fast start and stop within a very short time, suppressing potential over-voltage-current errors. It is suitable for applications such as bag making and second ceramic material feeding.

Optional Parts

Appearance	Name	Model	Function	Remarks
	External braking unit	MD8UN	Consumes the regenerative braking energy generated by the motor into the form of heat energy via the connected braking resistor.	60A, 90A
	Regenerative feedback unit	MD8FB	Returns the electrical energy generated from the inverter to the AC mains.	1. Input voltage level: same as the voltage level of the inverter. 2. Feedback power: same as or higher than the electricity generating power of the inverter.
	External LED operation panel	MDKE2	External LED display and operation panel	RS45 interface
	External LED operation panel (with potentiometer)	MD3KE2		
	Cable	MD8AB	Standard 8-core cable used to connect the external operation panel.	Length: 3 m

External Electrical Devices

Purpose	Name	Description
Protect wiring of the inverter	Circuit breaker or leakage circuit breaker for wiring	A circuit breaker or leakage circuit breaker must be configured at the input power side in order to protect the inverter's wiring. It is recommended to use leakage for prevent high-order harmonics.
Prevent burning the braking resistor	Magnetic contactor	MC is required when there is a braking resistor, used to prevent the reactor from burning. Beside, surge absorber must be configured on the coil.
Prevent switching surge from flowing to outside	Surge absorber	Absorb surges of the magnetic contactor and relays switches. Surge absorber must be installed near relays and magnetic contactor.
Insulate I/O signals	Isolator	Insulate I/O signals of the inverter, thus effectively reduce inductive interference.
Improve input power of the inverter	DC reactor AC reactor	Improve the input power of the inverter. MD280N series models from and below 55 kW has built-in DC reactor.
Reduce noise interference	Noise filter at input side Noise filter at output side	Reduce the noise flowing into the input power system at the input side. Install it as close to the inverter as possible. Reduce the noise at the output side wiring. Install it as close to the inverter as possible.
Stop the machine within a preset time	Braking resistor Braking unit	Shorten the motor's deceleration time by consuming the regenerative energy of produced the motor. Reduce the motor's deceleration time by co-working with the braking resistor.
Set the frequency and voltage	Frequency meter Knob of the frequency meter	Set and monitor the frequency.
	Output voltmeter	Check the output voltage.