Technical Specifications

Item		Specifications
Standard Functions	Maximum frequency	0 to 600 Hz
	Carrier frequency	0.5 kHz to 16 kHz; The carrier frequency is automatically adjusted based on the load features.
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: Maximum frequency × 0.025%
	Control mode	V/F control
	Startup torque	1 Hz/100%
	Speed range	1:50
	Speed stability accuracy	1%
	Overload capacity	60s for 150% of the rated current; 2s for 180% of the rated current
	Torque boost	Automatic boost; Manual boost 0.1%–30.0%
	V/F curve	Straight-line V/F curve; Multi-point V/F curve; N-power V/F curve; (1.2-power, 1.4-power, 1.6-power, 1.8-power, square)
	Ramp mode	Straight-line ramp; S-curve ramp Four kinds of acceleration/deceleration time with the range of 0.0–6500.0s
	DC braking	DC braking frequency: 0.00 Hz to maximum frequency Braking time: 0.0s–36.0s Braking current: 0.0%–100.0%
	JOG control	Jog frequency range: 0.00 Hz–50.00 Hz Jog acceleration/deceleration time: 0.0s–6500.0s
	Simple PLC, onboard multiple preset speeds	Up to 16 speeds operation via the simple PLC function or DI terminal control
	Onboard PID	Realize process-controlled closed loop control system easily.
	Auto voltage regulation	Keep constant output voltage automatically when the mains voltage changes.
	Overvoltage/Overcurrent stall control	The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to overvoltage/overcurrent.
	Power dip ride through	In the case of instant power failure, re-generative energy from the load compensates voltage reduction so that the AC drive continues to run for a short time.
	Rapid current limit	Avoid frequent over-current faults of the AC drive
	Virtual IO	Five groups of virtual DI/DOs can realize simple logic control.
	Timing control	Time range: 0.0-6500.0 Min
	Communication bus	Built-in RS-485 (Modbus-RTU)
RUN	Command source	Operation panel; Control terminals; Serial communication port You can perform switchover between these sources in various ways.
	Frequency source	8 frequency sources: digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting, PID, simple PLC; You can perform switchover between these sources in various ways.
	Auxiliary frequency source	There are 8 auxiliary frequency sources. Fine tuning of auxiliary frequency and frequency synthesis can be realized.
	Input terminal	5x DI, one of which supports up to 20kHz high-speed pulse input 1x AI that supports a voltage input from −10V to10V
	Output terminal	1x relay output 1x AO that supports 0-10V voltage output
Display and operation onthe operation panel	LED display	Display parameteres
	Key locking and function selection	Lock the keys partially or completely, and define the function range of some keys so as to prevent misoperation
	Protection	I/O phase-loss, over-current, over-voltage, under-voltage, overheat, overload protection
Environment	Altitude	Lower than 1000 m
	Ambient temperature	−10℃ to +40℃ (de-rated when ambient temperature ranges from40℃ to 50℃)
	Humidity	Less than 95%RH, without condensing
	Vibration	Less than 5.9 m/s (0.6g)
	Storage temperature	−20℃ to +60℃

Braking Component Selection

Inverter Model	Power of Recommended Braking Resistor	Recommended Braking Resistance
Single-phase 220V		
MD210S0.4B	80W	>200Ω
MD210S0.7B	80W	>150Ω
MD210S1.5B	100W	>100Ω
MD210S2.2B	100W	>70Ω
Three-phase 220V		
MD210-2T0.4B	150W	>150Ω
MD210-2T0.7B	150W	>110Ω
MD210-2T1.5B	250W	>100Ω
MD210-2T2.2B	300W	>65Ω
Three-phase 380V		
MD210T0.4B	150W	>300Ω
MD210T0.7B	150W	>300Ω
MD210T1.5B	150W	>220Ω
MD210T2.2B	250W	>200Ω

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Contact Information of Distributor

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AC Drive| PLC | HMI | Servo Drive | Motor| Large Drive| Energy

2013

Inoflex

MD210 Series Compact AC Drive

TÜV Rheinland Group
ISO9001 Certified

V1.0
Data code L 6210044
efesotomasyon.com

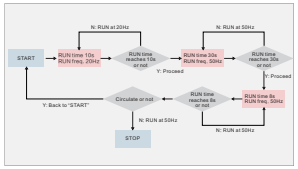
Performance Features

Compact size

- Tailored compact structure for small-size automation equipment
- Parallel installation of multiple drives save more space

Built-in simple PLC

Able to implement cycle operation with up to 16 speeds



Simple commissioning

Default setting is able to satisfy most applications. You can set/modify parameters and monitor the running status on the operation panel.

Built-in PID

PID algorithm is built in the AC drive, which simplifies the control system.

High reliability

- Allowable voltage fluctuation range: −15% to 20%
- Using of dust-proofing cover and thickened conformal coating guarantees reliable running of the drive in severe environment with high oil spray and dust.

Common DC bus

In the case of using multiple AC drives, you can connect the DC buses in parallel to realize energy sharing. In this case, power of the braking resistors is reduced; you can even eliminate braking resistors from the system.

Built-in RS485 interface (Modbus)

Configured 485+ and 485- terminals support Modbus-RTU communication, which facilitas integration of the system.

Easy maintenance

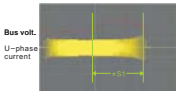
- Easy installation and dismantling of fan for maintenance and replacement

- One-key downloading of mass parameters on the monitoring software

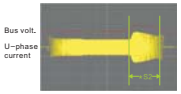
Excellent braking

The function of over-excitation braking significantly improves the start/stop performance and shortens the deceleration time,which enhances running efficiency of the equipment.

- Common deceleration



- Deceleration with over-excitation braking



Application Industries

Ceramics: ceramic conveyor, material distribution machine, edge grinding machine, polisher, crusher				
Woodworking: receprocating saw, edge bonding machine, matcher				
Textile: blowing−carding machine, cotton carding machine, quilter, elasticizer, circular loom				

Applications

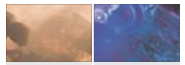
Applied to low-power conveyers

- Compact size, which saves installation space
- Default functions of automatic torque boost and rapid current limit, which ensures large torque at low frequency and prevents tripping at sudden increase of load
- Control of up to 16 speeds

Beer bottling line | LED production line | Conveyor of plastic extruder & feeding machine

Reliable running in severe environment with high temperature, oil spray and dust

- Dust-proofing cover to prevent from dust
- Thickened conformal coating to prevent from oil spray and moisture corrosion
- Optimized structure, with excellent heat dissipation



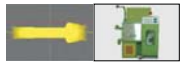
Ceramic crusher (heavy dust) | Die-casting machine, fan (heavy oil spray)

Virtual I/O

- Internal logic control implemented by simple setting

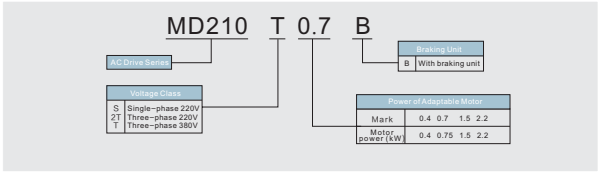
AC drive reports error after its power-on time reaches the preset 100 hours.	A1~02=64 A1~05=0000 A1~11=24 F8~16=100
AC drive reports error and stops when AI input exceeds the upper or lower limit.	A1~02=64 A1~05=0000 A1~11=31
AC drive automatically enters the running state upon power-on.	A1~02=1 A1~05=0001 A1~06=0001 F0~02=1 F8~18=0

Rapid start/stop at small load inertia, improving manufacturing efficiency



Small wire drawing machine

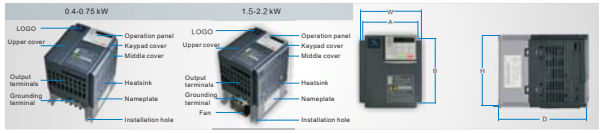
Model and Technical Data



Inverter Model	Power Capacity (kVA)	Input Current (A)	Output Current (A)	Adaptable Motor (kW)	(HP)
*Single−phase 220V, 50/60Hz					
MD210S0.4B	1.0	5.4	2.3	0.4	0.5
MD210S0.7B	1.5	8.2	4.0	0.75	1
MD210S1.5B	3.0	14.0	7.0	1.5	2
MD210S2.2B	4.0	23.0	9.6	2.2	3
*Three−phase 220V, 50/60Hz					
MD210−2T0.4B	1.5	3.4	2.1	0.4	0.5
MD210−2T0.7B	3.0	5.0	3.8	0.75	1
MD210−2T1.5B	4.0	5.8	5.1	1.5	2
MD210−2T2.2B	5.9	10.5	9.0	2.2	3
Three−phase 380V, 50/60Hz					
MD210T0.4B	1.2	1.9	1.5	0.4	0.5
MD210T0.7B	1.5	3.4	2.1	0.75	1
MD210T1.5B	3.0	5.0	3.8	1.5	2
MD210T2.2B	4.0	5.8	5.1	2.2	3

Note: "*" to be released

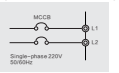
Mounting Dimensions



Inverter Model	Mounting Hole (mm) A	Mounting Hole (mm) B	Mounting Dimension (mm) H	Mounting Dimension (mm) W	Mounting Dimension (mm) D	Diameter of Mounting Hole (mm)	Weight (kg)
Single−phase 220V, 50/60Hz							
MD210S0.4B	96	118	128	108	148	ø5.0	1.1
MD210S0.7B					148		1.1
MD210S1.5B					158		1.3
MD210S2.2B					158		1.3
Three−phase 220V, 50/60Hz							
MD210−2T0.4B	96	118	128	108	148	ø5.0	1.1
MD210−2T0.7B					148		1.1
MD210−2T1.5B					158		1.3
MD210−2T2.2B					158		1.3
Three−phase 380V, 50/60Hz							
MD210T0.4B	96	118	128	108	148	ø5.0	1.1
MD210T0.7B					148		1.1
MD210T1.5B					158		1.3
MD210T2.2B					158		1.3

Wiring Diagram

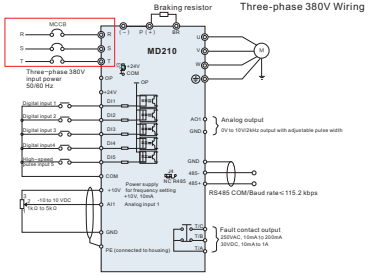
Single−phase 220V Wiring



Three−phase 220V Wiring

Braking resistor

Three−phase 380V Wiring



Terminal	Description
AI	Wide voltage range between ±10V, with fast response and a control accuracy of within 1%
AO	Adjustable output of duty ratio from 0 to 10V, with fast response and a control accuracy of within 1%
DI5	High-speed pulse input, whose frequency reaches 20 kHz and with a control accuracy of within 1%
DI1 to DI5	Used as common digital input as well as compatible to NPN and PNP input
RS485 communication terminal	Supports Modbus protocol whose communication rate reaches up to 115.2 kbps. Supports paralleling connection of up to 32 sub-systems.
Relay output	Configured with NO and NC options; Input voltage can reach 220 VAC.