

2.1.6.3.2 MV Drive

The MVD3000 supports vector control with and without speed sensors. Users can decide whether to install a speed sensor according to the applications on-site. Without a speed sensor, it can still provide fast dynamic response and greater output torque under low speed.

Series: **MVD 3000**



Application

Cement & Mining	Hoists, conveyors, crushers, mills, fans, water pumps, etc.
Oil & Gas	Oil pumps, compressors, blowers, water injection pumps, induced draft fan, etc.
Paper making	Fans, vacuum pumps, cutting machine, refining machine, etc.
Metallurgy	Fans, pumps, conveyors, etc.
Power generation	Fans, pumps, conveyors, coal mills, etc.
Municipal works	Water supply pumps, sewage pumps, heat network pumps, etc.



Specification

System Technology		Power cell cascade technology based on IGBT
Efficiency		>97.5% (Rated, excluding transformer)
Input	Voltage range	-10%~+10% (normal operation), -10%~-30% (continuous operation at de-rated speed)
	Frequency	50Hz/60Hz (-2%~+2%)
	Control power supply	AC380 V (three-phase four-wire system) or AC220V, 3kVA single-phase capacity
	Input current harmonic	<5%, Meets IEEE519 standard
	Power factor	>0.97
Output	Voltage	3.3kV~11kV
	Current	38A~385A
	Max. output frequency	75Hz
	Overload capacity	120% per min or 150% per min, other options available
	Start-up torque	150% rated torque (standard), 175% and 200% available
	Speed regulating range	0%~100% (with speed sensor), 5%~100% (without speed sensor)
	Speed control resolution (steady state)	±0.01% (with speed sensor, depending on sensor accuracy), ±0.5% (without speed sensor)
	Speed response bandwidth	60 rad/s (with speed sensor), 20 rad/s (without speed sensor)
	Current response bandwidth	600rad/s
Control Parameters	Control methods	Active front-end SVM control and vector control for with-speed/speed-less sensor
	PID function	Imbedded PID regulator with parameters to be set
	Modulation method	SVPWM
	Acceleration & deceleration time	0~3000s (programmable)
	Alarms	Cell over-voltage alarm, cell control power under-voltage alarm, FRAM read-and-write alarm, cell parameter download error alarm, analog reference offline, cooling fan over-temperature, cooling fan power supply failure, cabinet pressure under-/over-voltage, control power supply failure, transformer over-temperature, AC input under-voltage, UPS failure, PLC communication failure, flying start failure
	Protections	Input/output over-current, system over-load, output short-circuit, system over-voltage, input/output phase loss, high-voltage input power down / power loss, cell under-/over-voltage, cell over-current, cell phase loss, output grounding, transformer over-temperature, power cell communication failure, system optical fiber communication failure, high-voltage cabinet door open, control power supply failure, power cell power supply failure, power cell over-temperature, power cell under-/over-voltage, power cell drive failure, external failure, over-speed protection, under-speed protection, reverse rotation protection, motor stall protection
	Functions	Speed skipping, system bypass, flying start, power loss ride through, automatic restart, adaptive acceleration and deceleration, jogging, flux-weakening, S-curve acceleration/deceleration, forward/reverse rotation, PID regulator, input under-voltage de-rating, temperature de-rating, point floating, bypass de-rating, waveform storing, auto dehumidifying (optional), variable/industrial frequency auto-switch (optional), master-slave control (optional)
	Analog input	0~10V/4~20mA, two channels (expandable)
	Analog output	0~10V/4~20mA, four channels (expandable)
	Switch input / output	10-channel input, 8-channel output (expandable)
	Human machine interface	Chinese/English touch-screen LCD display
	Display parameters	Reference speed, output speed, input/output current, operating status indication
	Communication interface	Isolated RS485, industrial Ethernet (optional), Profibus-DP (optional), GPRS (optional)
	Communication protocol	MODBUS, PROFIBUS (optional)
Environment	Operating temperature	0°C~+40°C (normal operation); +40°C~+50°C (de-rated operation)
	Storage/transportation temperature	-25°C~+70°C
	Relative humidity	5%~85%, no condensation
	Altitude	<1000m (>1000m for de-rated use)
Structure	Dimension & weight	Refer to the spec list
	Color	RAL7035 (or customize color according to user)
Cooling method		Forced air cooling
Protection level		IP30 (standard), other configurations can be customized