

2.1.6.3.2 MV Drive

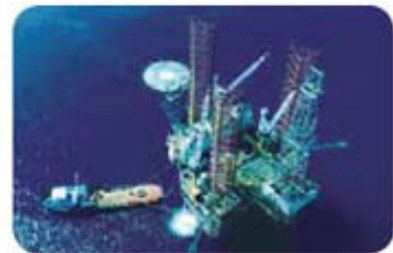
The MVD2000 is a medium voltage variable speed drive series for speed and torque control based on advanced frequency-conversion multilevel inverter technologies and advanced vector control algorithms. The MVD2000 is a modular and configurable cost-effective solution that provides efficient and reliable operation across many industrial applications. Simple installation requirements, easy operation and maintenance make the MVD2000 the drive of choice across industrial segments that require energy savings or speed control for constant torque loads over the operating speed range.



Series: **MVD 2000**

Application

Power generation	coal mills, blower fans, and water pumps.
Metallurgy	conveyor belts, positive displacement pumps, fans, and water pumps.
Mining	crushers, conveyor belts, PD pumps, fans and water pumps.
Oil & Gas	compressors, PD pumps, centrifugal pumps, fans and water pumps.
Cement & Materials	crushers, mixers, extruders, rotary kilns, drying furnaces, fans and water pumps.
Sugar & Ethanol	mills, pumps, and fans.
Municipal works	water supply pumps, sewage pumps, heat network pumps.



Specification

System Technology		Cascaded multilevel inverter based on IGBT devices
Efficiency		>98% (Rated, excluding transformer)
Input	Voltage range	-10%~+10% (normal operation), -10%~-30% (continuous running at derated 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	Meets IEEE519 standard, without input filter
	Power factor	>0.96 (lagging at rated speed and power)
Output	Voltage	3.3kV~11kV
	Max. output frequency	75Hz
	Overload capacity	150% per min/10 min. (standard), other options available
	Start-up torque	150% rated torque (standard), other options available
	Speed regulation range	1%~100% (with encoder) , 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	60rad/s (with speed sensor), 20rad/s (without speed sensor)
	Current response bandwidth	600rad/s
Control Parameters	Control methods	Vector control with encoder and encoderless
	Modulation method	SVPWM
	Acceleration & deceleration time	0~3000s (programmable)
	Alarms	Power cell under-voltage, analog reference loss, cooling fan over-temperature, cooling fan power supply failure, cabinet over-pressure, air filter blocked, control power supply failure, transformer high-temperature, HMI communication failure, ac input under-voltage, UPS failure, PLC communication failure, flying start failure
	Protections	Over-current, over-load, short-circuit, input over-voltage, input/output phase loss, input voltage power loss, output fault to ground, transformer over-temperature, power cell communication failure, optical fiber communication failure, high-voltage cabinet door open, control power supplies failures, dc auxiliary power supply failure, power cell over-temperature, power cell over-voltage, power cell IGBT gate drive failure, over-speed protection, under-speed protection, reverse rotation protection, motor stall protection
	Functions	Speed skipping, PID regulator, fault event log, flying start, power loss ride through, automatic restart, auto-tuning, S-curve acceleration, adaptive acceleration and deceleration, DC braking current injection, forward/reverse rotation selection, jogging, system bypass, synchronous motor transfer option, master-slave control
	Analog input	0~10V/4~20mA, two channels (expandable)
	Analog output	0~10V/4~20mA , four channels, (expandable)
	Digital input / output	10-channel input, 8-channel output (expandable)
Human machine interface	Chinese/English touch-screen LCD display	
Control Parameters	Display parameters	Reference speed, output speed, input/output current, operating status indication
	Communication interface	Isolated RS485, industrial Ethernet (option), GPRS (option)
	Communication protocol	MODBUS, PROFIBUS, other options
Environment	Operating temperature	-5°C~+40°C (normal operation); +40°C~+50°C (de-rating operation)
	Storage/transportation temperature	-40°C~+70°C
	Relative humidity	5%~95%, no condensation
	Altitude	<1000m
Structure	Dimension & quality	Refer to the spec list
	Color	RAL7035 (or customized)
Cooling method		Forced air cooling
Protection level		IP30 (standard), other configurations can be customized