



Delta MVD 2000 Series

Medium Voltage Drives

www.deltaww.com/mvd





Features & Benefits

- Best solution for new and retrofit standard induction motor installations
- Simple system integration into customers process needs
- Multilevel inverter technology without output filters
- Almost sinusoidal output voltage and current without need to de-rate motor power
- Easy installation using minimum engineering effort
- Advanced vector control with and without encoder for stable operation and precise speed control
- Auto-tuning of motor parameters



Industry Segments & Applications

The MVD2000 provides simple and flexible motor drive control for a wide range of industry applications.

Industry	Application
Sugar/Ethanol	Mills, pumps and fans
Cement/Materials	Crushers, mills, mixers, extruders, kilns, pumps and fans
Mining & Metals	Crushers, mills, conveyors (with brakes), pumps and fans, PD pumps
Power generation	Pumps and fans, coal mills
Oil & Gas	Compressors, PD pumps, centrifugal pumps and fans
Chemical	Compressors, pumps and fans
Water/Wastewater	Pumps

Delta MVD 2000 Series

Adaptable for motors 3.3 kV to 11 kV

The Delta MVD2000 Series comes with an integrated cabinet transformer for easy three-cable-in and three-cable-out installation and commissioning. Its advanced vector control provides excellent speed control range, stable operation, and improved motor start-up behavior.



Delta Advantage

Low Harmonic Distortion

The MVD2000 series delivers the best motor waveform in the market.

The multilevel inverter technology drastically reduces the output harmonics, eliminating output filters and voltage stresses across the motor windings. The output currents are nearly sinusoidal, requiring no motor de-rating. The integrated phase-shift transformer results in very low input current harmonics, ensuring compliance with IEEE 519 and no need for input filters

High Efficiency System

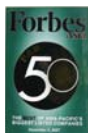
State-of-the-art components ensure that the MVD2000 systems will operate with efficiencies as high as 97% (including transformer losses), thus providing the best value for your investment due to the minimum operating expenses over the product life time.

Advanced Motor Control

The MVD2000 delivers high performance control accuracy using vector control, thus enabling independent control of motor flux and speed. The result is a fast dynamic response to load fluctuations and high torque at low speeds and during motor start-up. Both encoder and sensor-less vector control approaches are available. Sensor-less vector control provides simple fast speed and high output torque responses even at low speeds.

Technical Specifications

Input Section		
Voltage	3.3 kV to 11 kV – 3 phase, $\pm 10\%$, tolerates 30% voltage dips without tripping (at de-rated output voltage)	
Frequency	50 Hz or 60 Hz, $\pm 5\%$	
Power factor	95% lagging at rated load	
Total input current distortion	Compliance with IEEE 519 without input filters	
Output Section		
Voltage	3.3 kV to 11 kV	
Current	35 A – 350 A	
Maximum output frequency	75 Hz	
Overload	150% for 1 min (other overload options)	
Start-up torque	150% (175% and 200% options)	
Efficiency	97%	
Converter Type	Multilevel cascaded inverter cells	
Power semiconductors	IGBT modules, 1700 V devices	
Transformer	Dry type, class H, phase-shift transformer	
Environmental		
Operating temperature	-5°C to +40°C	
Humidity	85% maximum, non condensing	
Altitude	1000 m	
Cooling	Forced air cooling	
Enclosure	IP 20 (other options)	
Acoustic noise	<80 dBA at 1 m from enclosure	
Control		
	Vector Control with Encoder	Sensor-less Vector Control
Speed control range	0% to 100%	5% to 100%
Speed control accuracy	$\pm 0.01\%$	$\pm 0.5\%$
Speed response	60 rd/s	20 rd/s
Current response	600 rd/s	600 rd/s
Functions		
Protective	Over current (input/output), overload, short-circuit, input overvoltage, over temperature, phase loss (input/output), phase-to-ground fault on motor side	
Control	Auto-tuning, process PID regulator, frequency jump, flying start, ride-through, master/slave control, acceleration/ deceleration ramps	



2007~ 2008 Forbes
Asia's Fabulous 50



2009 Frost & Sullivan
Green Excellence Award for
Corporate Leadership



Delta's Manufacturing
System is Certified by
ISO 9001 and ISO 14001
Standards



IECQ Certificate of
Hazardous Substance
Process Management



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