



Delta MVD2000 Series

Medium Voltage Drive



www.deltaww.com/mvd



DELTA
Smarter. Greener. Together.



Contents

Delta Group Introduction	1
Delta MVD 2000 Series	2
Major Application	3
Major Advanced Features & Benefits	4
System Structure	5
Spec. & Parameters	7
Compliance & Standards	9
Product Dimensions	11
Product Selection	12
Installation Diagram	14
MVD Cooling Proposal	15
Reliability & Certificate	16
System Model Names	17
Global Sales & Services	17



Delta Group

Delta Group, founded by Mr. Bruce C.H. Cheng in 1971, is the global leader in power and thermal management solutions. Our mission statement, “To provide innovative, clean and energy-efficient solutions for a better tomorrow” focuses on our role in addressing key environmental issues such as global climate change. With our concern for the environment, we continue to develop innovative energy efficient products and solutions. Our businesses encompass power electronics, energy management, and smart green life.

Delta is devoted to innovation and systematically developing new products and technologies, particularly those that are high-efficiency and energy-saving. We invest 5% to 6% of our group’s annual sales revenues in R&D and have worldwide R&D facilities in Taiwan, China, Thailand, Japan, the U.S., and Europe. Our national honors for innovation include the Taiwan National Industry Innovation Award (2008 and 2012) and the Thailand Prime Minister’s Industry Award (1995, 2010, 2011, and 2012).

Throughout Delta Group’s history we have received many global awards and recognitions for our business, technology, and corporate social responsibility. In 2012, for the second consecutive year, Delta was selected for two of the prestigious Dow Jones Sustainability Indexes -- the DJSI World Index and the DJSI Asia / Pacific Index. Delta was also ranked first among the 29 leading companies in the Electronic Equipment sector and named as “Sector Leader.” Since 2010, Delta has received 47 internationally recognized design awards including iF, Reddot, CES Innovation, Computex Best Choice, and Taiwan Excellence Award.

Delta will continue its dedication to developing technologies and solutions that aim to reduce global warming and ensure a sustainable future for mankind.

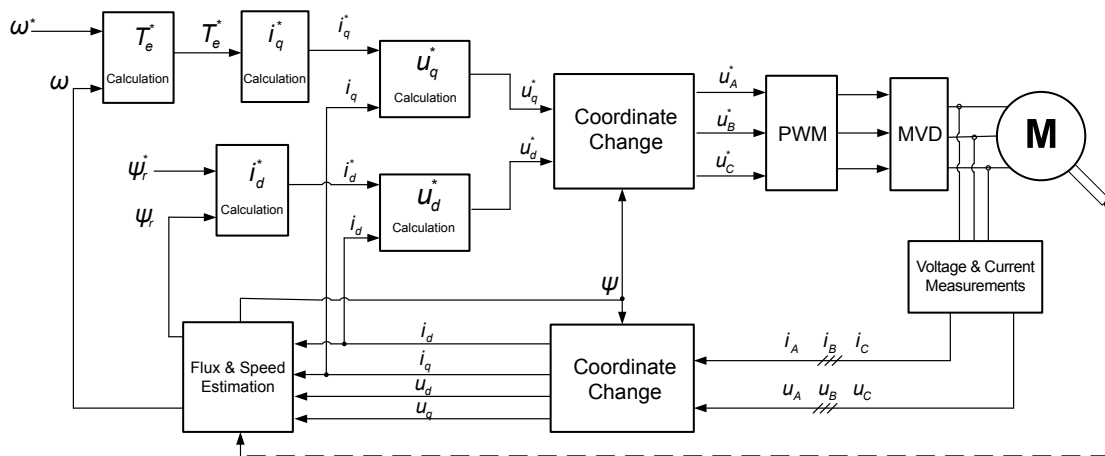
More information refers to the website: www.deltaww.com

Delta MVD2000 Series

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.

MVD2000 delivers high performance control accuracy using vector control. The ability to independently control motor flux and speed yields fast dynamic response to load fluctuations and high torque at low speeds, including during motor start-up.

Both encoder and sensor-less vector control approaches are available for selection. The speed sensors can be installed depending on actual application conditions. For cases without the speed sensors, the system can still provide fast dynamic responses and high output torque when the motor is running at low speed.





Applications

The MVD2000 series is applied for speed control of square torque loads such as fans, pumps, and compressors, as well as for mills, crushers, and conveyor belts that require constant torque operation over the entire speed range. Accurate speed and torque controls result in better energy saving, improved process quality, and prolonged equipment lifetime. Various industry segments that require reliable and stable operation can benefit from MVD2000's high performance:

- 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.



Advanced Features & Benefits

Advanced Technologies

- Advanced vector control algorithms with and without speed sensors to enhance motor control performance.
- Advanced auto tuning of motor parameters to improve the stability of the vector control.
- DC current braking injection.
- Power loss ride through, and synchronous transfer for single or several motors.
- Coordination and control of master-slave variable frequency inverters to meet load sharing application requirements.
- Use of phase-shift multi-pulse input transformer to decrease the input grid current harmonics and meet the IEEE 519-1992 requirements.
- Use of cascaded multilevel inverter technologies to deliver nearly sinusoidal output voltage waveforms, meeting motor drive requirements for long-distance cables.

Enhanced Process & Quality Control

- Capability to produce large output torque at low speeds and during motor startup, increasing speed response and control accuracy within motor torque limits.
- Integrated PID controller for precise control on flow, pressure or other process variable.
- Control operation under temporary input power loss and capability to restart automatically after grid fault and recovery.
- Advanced protection functions such as motor stall and output fault to ground.
- Friendly customer interface for easy system integration with customer's process.

Control and Monitoring Functions

- Speed command (rpm)
- Operating speed (rpm)
- Input/output power, current, voltage
- Accumulated running time
- MVD status

- System bypass switches and user breaker status
- Programmable analog I/Os
- Alarms and faults
- Event recording

Lower Cost of Ownership

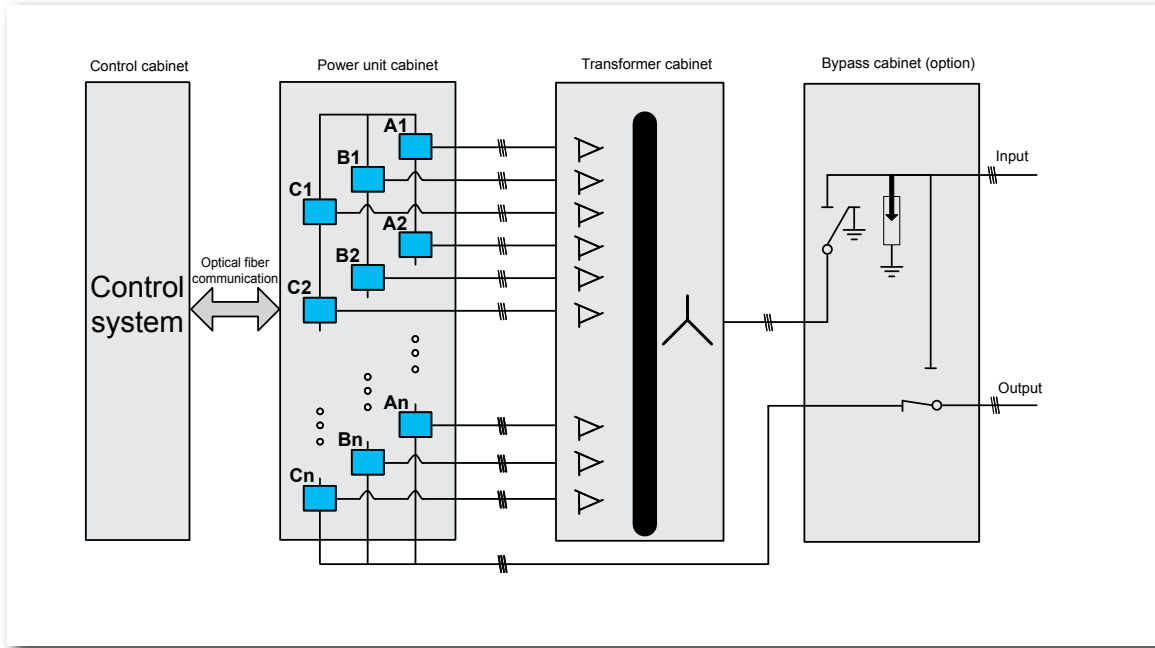
- System efficiency is higher than 98%, which decreases system operating costs (excluding phase-shift transformer).
- Optimized blower and water pump operations to ensure energy-saving and shorten the investment recovery period.
- Integration of input transformer allows three-cable-in-three-cable-out reduced installation engineering effort.
- Smooth speed control decreases mechanical stress, eliminates pipe-hammer effect and reduces maintenance costs.
- Multilevel output voltage and controlled starting currents reduce motor stress.
- Synchronous transfer switchgear cabinet for soft starter applications for single or multiple motors.

Protection Functions

- Over-current protection
- Over-load protection
- Transformer high-temperature alarm & over-temperature protection
- MVD over-temperature protection
- Under-voltage & over-voltage protection
- Motor over-load protection (external protection relay connection)
- Cooling fan abnormal alarm
- Cabinet door open protection
- Cabinet pressure alarm
- Output short-circuit protection
- Input/output phase loss protection
- Communication failure protection
- Output grounding protection
- Motor stall alarm/protection
- Motor reverse rotation alarm/protection
- Over-speed and under-speed alarm/protection

System Structure

System Diagram



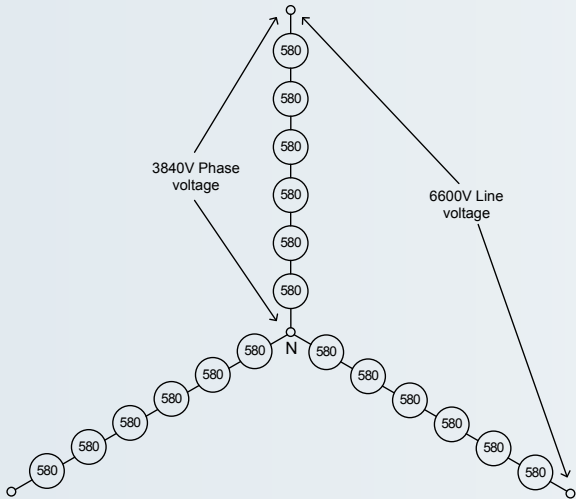
Modular System

Each output phase consists of multiple power modules connected in series to achieve the required output voltage level.

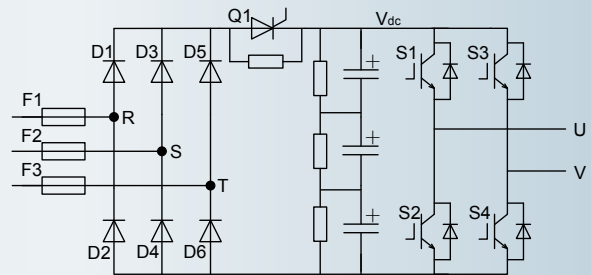
System voltage	Cells / Phase *	Phase-shift transformer (pulses)
3.3kV	3/4	18/24
4.16kV	4/5	24/30
6kV	5/6	30/36
6.6kV	6	36
10kV	8/9	48/54
11kV	9/10	54/60

*N+1 redundant power cells (option)

Cascaded Output Voltage Map



Power Unit Schematic Diagram



MVD2000 Specifications & Parameters

MVD2000		
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 (-5%~+5%)
	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



Compliance & Standards

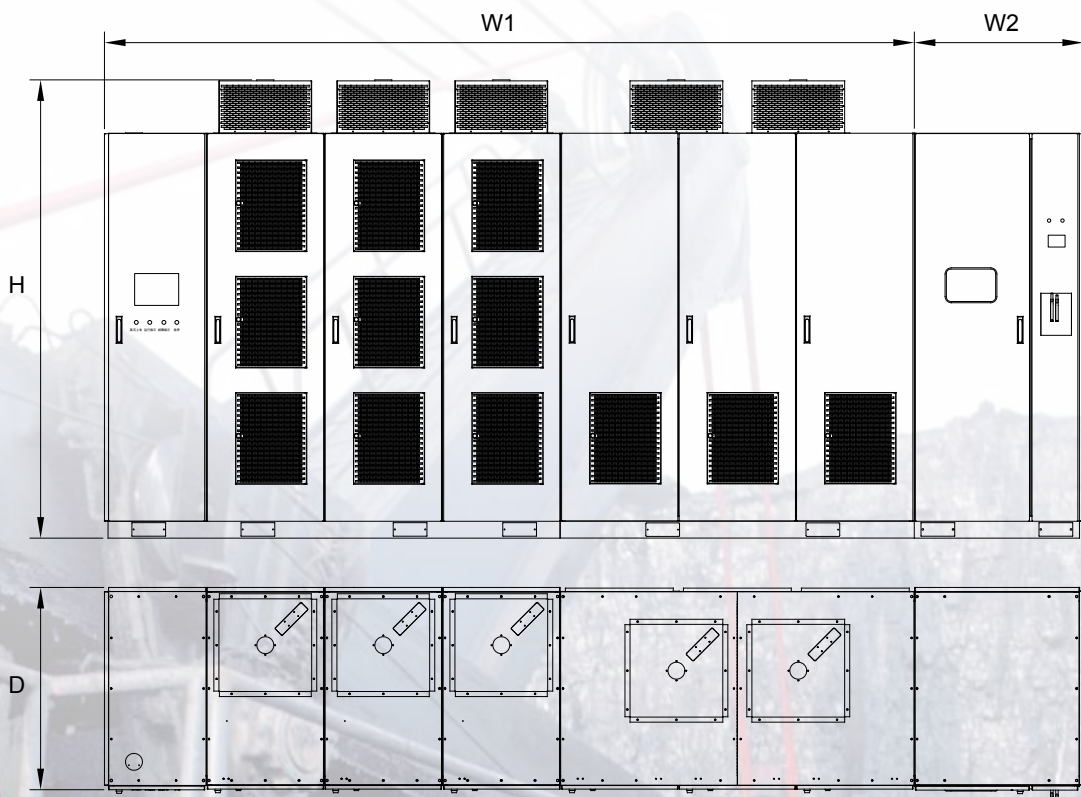
Standard No.	Standard Title
GB/T 156-2007	Standard Voltages
GB/T 1980-2005	Standard Frequencies
GB/T 2423.10-2008	Environmental testing for electric and electronic products - Part 2: Test methods - Test Fc: Vibration (sinusoidal)
GB 2681-81	Colors of insulated conductors used in electrical assembly devices
GB 2682-1981	Colors of indicator lights and push-buttons used in electrical assembly devices
GB/T 3797-2005	Electrical control assemblies
GB/T 3859.1-93	Semiconductor convertors - Specification of basic requirements
GB/T 3859.2-93	Semiconductor convertors - Application guide
GB/T 3859.3-93	Semiconductor convertors - Transformers and reactors
GB 4208-2008	Degrees of protection provided by enclosures (IP code)
GB/T 4588.1-1996	Sectional specification: Single and double sided printed boards without plain holes
GB/T 4588.2-1996	Sectional specification: single and double sided printed boards with plated-through holes
GB 7678-87	Semiconductor self - commutated convertors
GB/T 10233-2005	Basic testing method for low-voltage switchgear and control-gear assemblies
GB 12668-90	General specification for speed control assembly with semiconductor adjustable frequency for A.C. motor
GB/T 15139-94	General technical standard for electrical equipment structure
GB/T 13422-92	Power semiconductor convertors—Electrical test methods
GB/T 14549-93	Quality of electric energy supply-Harmonics in public supply network
GB/T 12668.3-2003	Adjustable speed electrical power drive systems Part 3: EMC product standard including specific test methods
GB/T 12668.4-2006	Adjustable speed electrical power drive systems—Part 4: General requirements—Rating specifications for A.C. power drive systems above 1000 V A.C. not exceeding 35 kV
IEEE 519-1992	IEEE recommended practices and requirements for harmonic control in electrical power systems
IEC 60038	IEC standard voltages
IEC 60076-1	Power transformers - Part 1: General
IEC 60076-11	Power transformers - Part 11: Dry-type transformers
IEC 60076-12	Power transformers - Part 12: Loading guide for dry-type power transformers
IEC 60076-2	Power transformers - Part 2: Temperature rise
IEC 60076-3	Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air

Standard No.	Standard Title
IEC 60721-3-1	Classification of environmental conditions - Part 3 Classification of groups of environmental parameters and their severities - Section 1: Storage
IEC 60721-3-2	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 2: Transportation
IEC 60721-3-3	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Stationary use at weather protected locations
IEC 61000-2-4	Electromagnetic compatibility (EMC) - Part 2-4: Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances
IEC 61800-3	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods
IEC 61800-4	Adjustable speed electrical power drive systems - Part 4: General requirements - Rating specifications for a.c. power drive systems above 1000V a.c. and not exceeding 35kV
IEC 61800-5-1	Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - Electrical, thermal and energy
IS 2147	Degrees of protection provided by enclosures (IP Code)
IS 13118	High voltage a.c. circuit breaker
IS 4237	General requirement for switchgear and control for voltages not exceeding 100 AC or 1200 DC
IS 12729	general requirements for switchgear & control gear for voltages exceeding 1000V



Product Dimensions

MVD2000 outline drawings shown below:



Product Selection

MVD2000								
Rated Voltage (kV)	Rated Output Current (A)		Motor Shaft Power (kW)		Cabinet Dimensions (H×W1×D) (mm)	Weight (kg)	Bypass Canbinet(Optional)	
	CT	VT	Constant Torque Load	Variable Torque Load			Width W2 (mm)	Weight (kg)
3.3	40	50	183	229	2480x3200x1200※	2500	980	800
	56	70	256	320	2480x3200x1200※	3100	980	800
	72	90	329	411	2480x3200x1200※	5000	980	800
	96	120	439	549	2480x3200x1200※	5000	980	800
	120	150	549	686	2850x3700x1400	6000	980	800
	152	190	695	869	2850x3700x1400	6000	980	800
	200	250	914	1143	2850x3700x1400	7400	980	800
	244	305	1116	1395	2850x3700x1400	8500	980	800
	280	350	1280	1600	2850x3700x1400	9000	980	800
	350	438	1600	2003	2850x4850x1400	9500	980	800
	448	560	2048	2561	2850x5450x1400	10500	980	800
544	680	2488	3109	2850x6200x1400	11500	980	800	
672	840	3073	3841	2850x6200x1400	12000	980	800	
4.16	40	50	231	288	2480x3500x1200※	2600	980	800
	56	70	323	403	2480x3500x1200※	3200	980	800
	72	90	415	519	2480x3500x1200※	5100	980	800
	96	120	553	692	2480x3500x1200※	5100	980	800
	120	150	692	865	2850x4200x1400	6100	980	800
	152	190	876	1095	2850x4200x1400	6100	980	800
	200	250	1153	1441	2850x4200x1400	7500	980	800
	244	305	1406	1758	2850x4200x1400	8600	980	800
	280	350	1614	2017	2850x4200x1400	9100	980	800
	350	438	2017	2525	2850x5400x1400	9500	980	800
	448	560	2582	3228	2850x6000x1400	10400	980	800
544	680	3136	3920	2850x6900x1400	11600	980	800	
672	840	3874	4842	2850x6900x1400	13500	980	800	
6	40	50	333	416	2480×3800×1200※	3000	980	800
	56	70	466	582	2480×3800×1200※	3600	980	800
	72	90	598	748	2480×3800×1200※	5500	980	800
	96	120	798	998	2480×3800×1200※	5500	980	800
	120	150	998	1247	2850×4700×1400	6500	980	800
	152	190	1264	1580	2850×4700×1400	6500	980	800
	200	250	1663	2078	2850×5000×1400	7900	980	800
	244	305	2029	2536	2850×5000×1400	8900	980	800
	280	350	2327	2909	2850×5000×1400	9500	980	800
	350	438	2910	3641	2850×7600×1400	10500	980	800
	448	560	3724	4656	2850×7600×1400	12000	980	800
544	680	4523	5653	2850×8000×1400	13200	980	800	
672	840	5587	6984	2850×8000×1400	14000	980	800	

MVD2000								
Rated Voltage (kV)	Rated Output Current (A)		Motor Shaft Power (kW)		Cabinet Dimensions (H×W1×D) (mm)	Weight (kg)	Bypass Cabinet(Optional)	
	CT	VT	Constant Torque Load	Variable Torque Load			Width W2 (mm)	Weight (kg)
6.6	40	50	366	457	2480x3800x1200※	3000	980	800
	56	70	512	640	2480x3800x1200※	3600	980	800
	72	90	658	823	2480x3800x1200※	5500	980	800
	96	120	878	1097	2400x3800x1200※	5500	1030	1050
	120	150	1097	1372	2850x4700x1400	6500	980	800
	152	190	1390	1738	2850x4700x1400	6500	980	800
	200	250	1829	2286	2850x5000x1400	7900	980	800
	244	305	2231	2789	2850x5000x1400	8900	980	800
	280	350	2560	3200	2850x5000x1400	9500	980	800
	350	438	3201	4005	2850x6600x1400	9800	980	800
	448	560	4097	5121	2850x7800x1400	10700	980	800
	544	680	4975	6219	2850x6900x1400	11300	980	800
672	840	6146	7682	2850x6900x1400	12500	980	800	
10	40	50	554	693	2480x4800x1200※	4700	980	800
	56	70	776	970	2480x4800x1200※	5600	980	800
	72	90	998	1247	2480x4800x1200	7100	980	800
	96	120	1330	1663	2480x4800x1200	7100	980	800
	120	150	1663	2078	2850x6000x1400	9000	980	800
	152	190	2106	2633	2850x6000x1400	9000	980	800
	200	250	2771	3464	2850x6400x1400	11600	980	800
	244	305	3381	4226	2850x6400x1400	12800	980	800
	280	350	3880	4850	2850x6400x1400	13000	980	800
	350	438	4850	6069	2850x9700x1400	13500	980	800
	448	560	6207	7759	2850x9900x1400	14000	980	800
	544	680	7538	9422	2850x11400x1400	15600	980	800
672	840	9312	11639	2850x11400x1400	17300	980	800	
11	40	50	610	762	2480x5100x1200※	4800	980	800
	56	70	854	1067	2480x5100x1200※	5700	980	800
	72	90	1097	1372	2480x5100x1200	7200	980	800
	96	120	1463	1829	2480x5100x1200	7200	980	800
	120	150	1829	2286	2850x6000x1400	9100	980	800
	152	190	2317	2896	2850x6000x1400	9100	980	800
	200	250	3048	3810	2850x6400x1400	11700	980	800
	244	305	3719	4649	2850x6400x1400	12900	980	800
	280	350	4268	5335	2850x6400x1400	13000	980	800
	350	438	5335	6676	2850x9900x1400	13900	980	800
	448	560	6828	8535	2850x11900x1400	15000	980	800
	544	680	8292	10365	2850x12500x1400	16800	980	800
672	840	10243	12803	2850x12500x1400	19000	980	800	

Note : 1、CT: Constant torque —150% overload for 1 min. every 10 min.

2、VT: Variable torque —120% overload for 1 min. every 10 min.

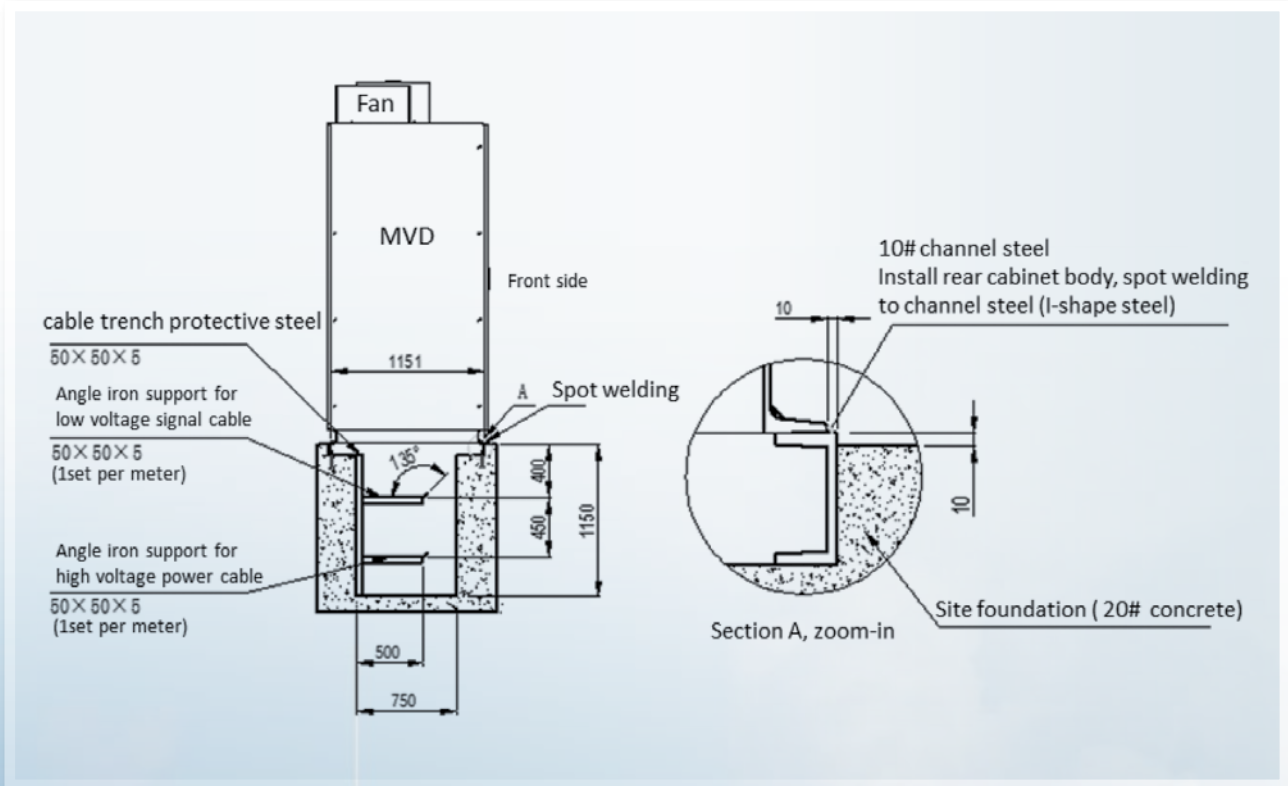
3、The table above shows the standard dimensions of the MVD2000 medium voltage drive, and the final dimensions of the product will be specifically designed and determined by the technical personnel according to the requirements of the customer.

4、※ indicates that this model has All-In-One type can be selected; Please kindly consult our technical personnel for specific dimensions.

Installation Diagram

Installation foundation

For wiring safety and convenience, it is recommended to install the MVD cabinet on a cable trench as shown in the drawing below.



Cross section of cable and installation trench

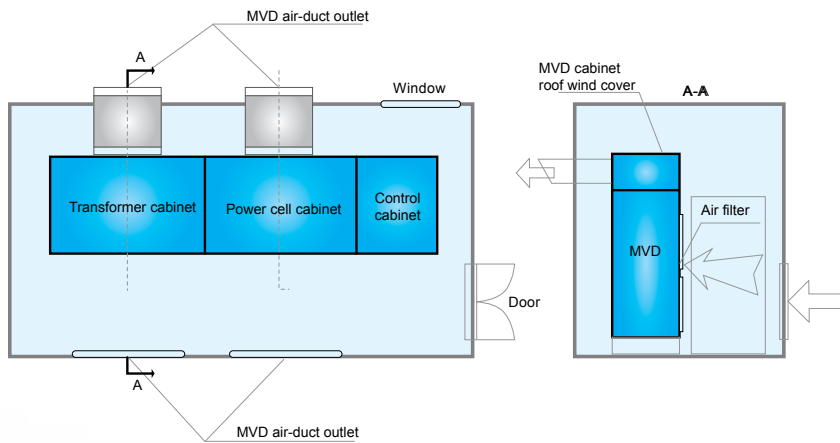
Detail requirements:

1. It is recommended to set the minimum length of cable trench as the total MVD length, adding 1m to the left and right for easy cabling and maintenance.
2. The MVD is placed on the trench rail using 10# channel steel (use 16# channel steel if the MVD power is $\geq 1600\text{kW}$ and 18# double-T steel if the MVD power is $\geq 4000\text{kW}$).
3. Reserve free space on top and front of the MVD cabinet, so that the distance between cabinet top and ceiling is $\geq 800\text{mm}$, and the distance between cabinet front and walls is $\geq 1500\text{mm}$.
4. For ventilation and maintenance convenience, the distance from the rear of the dry-type transformer cabinet and the back wall shall be $\geq 1000\text{mm}$.

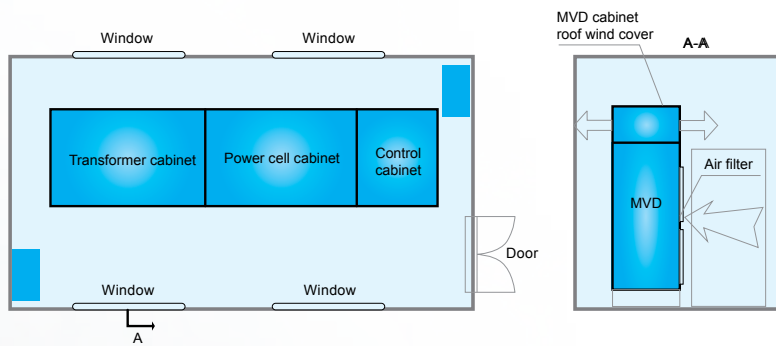
□

MVD Cooling Proposal

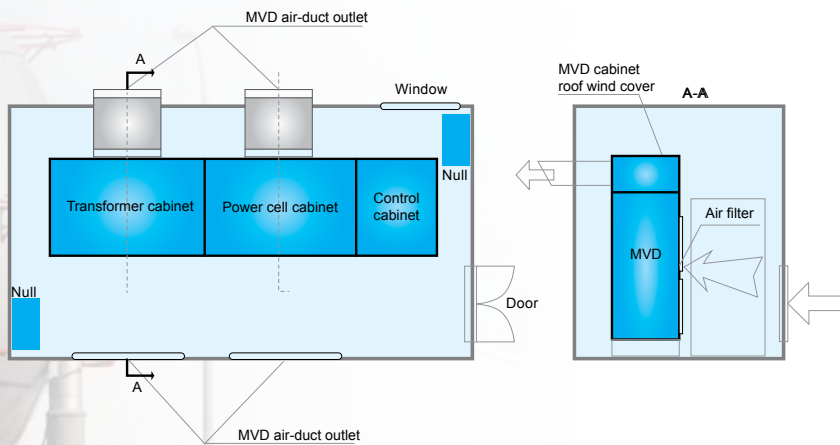
There are three possible cooling solutions which are open-air-duct cooling, sealed air conditioning cooling, and air conditioning with air-duct cooling.



Open-air-duct cooling



Sealed-air-conditioning cooling



Air-duct & air-conditioning cooling

Reliability & Certification

Delta provides quality assurance through rigorous inspection and testing based on international standards. To ensure that the drive operates as predicted upon start-up, Delta Electronics has built a state-of-the-art, multi-megawatt test facility for full load capacity and full load burn-in verification. A detailed test procedure reduces start-up time during installation and commissioning in the field.

Advanced test methods and equipment



• High Voltage Distribution Cabinet



• Low voltage inverter (re-generation)



• Central control room



• Burn-in Chamber



• Thermal Chamber



• Motor-Generator Groups

International certificates



ISO 9001:2008



ISO 14001:2004



OHSAS 18001:2007



QC 080000:2007

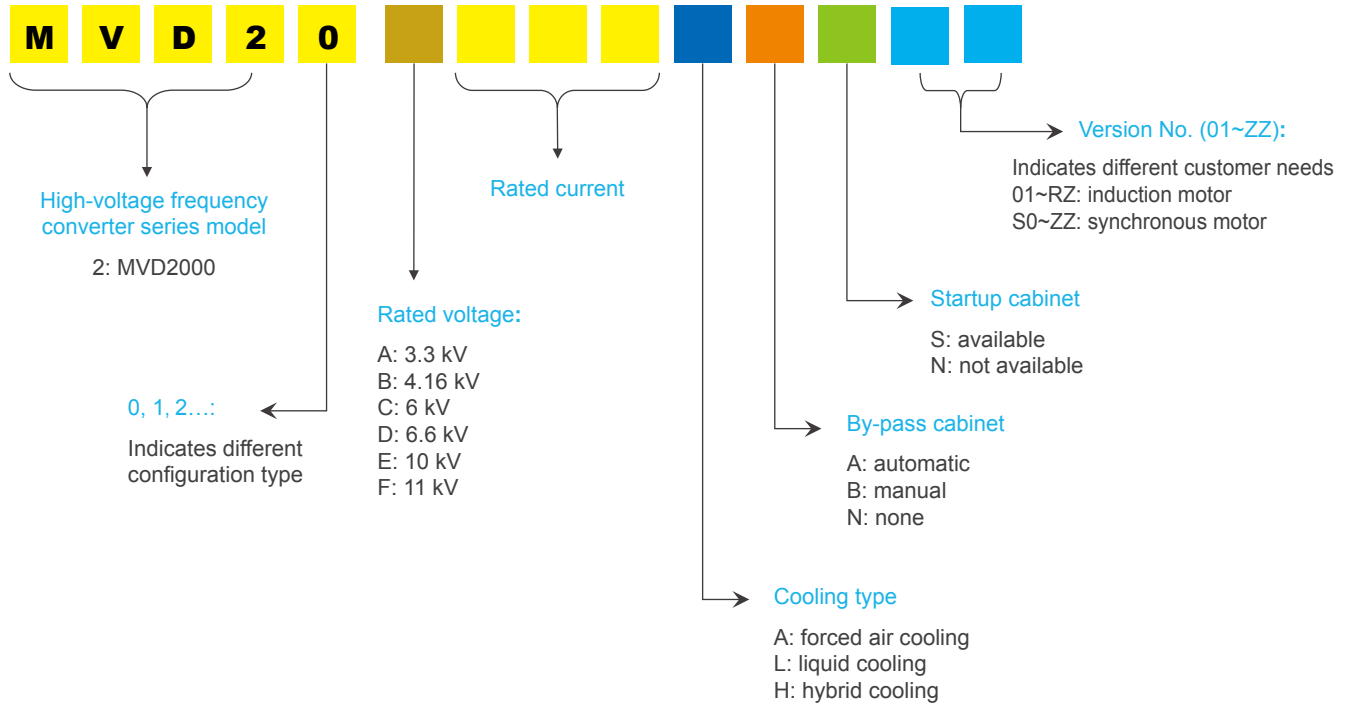


TL 9000 R5.0



CE (EMC)

System Model Names



Global Sales & Service

The warranty period is one year counted from receiving the equipment at customer's site. During the warranty period, Delta will provide replacement of defective parts and repairs. Worldwide service capability ensures response in less than 8 hours, arrival at site in less than 24 hours and troubleshooting in less than 48 hours.





Smarter. Greener. Together.

Europe, Middle East & Africa

Czech Republic

Delta Energy Systems (Czech Republic),
spol.s r.o. Litevska 1174/8
T +420 272 019 330
F +420 271 751 799

Finland

Delta Energy Systems (Finland) Oy
Juvan teollisuuskatu 15
T +358 9 8496 6421
F +358 9 84 96 6100

France

Delta Energy Systems (France) S.A.
Route de Longjumeau
T +33 1 69 102 434
F +33 1 69 341 019

Germany

Delta Energy Systems (Germany) GmbH
Coesterweg 45
T +49 2921 987 582
F +49 2921 987 404

Great Britain

Delta Electronics Europe
1 Redwood Court
Peel Park Campus
East Kilbride, G74 5PF
T +44 1355 588 888
F +44 1355 588 889

Italy

Delta Energy Systems (Italy) Socio unico s.r.l.
Via Maggio, 6
T +39 051 733 045
F +39 051 731 838

Poland

Delta Energy Systems (Poland) Sp. z.o.o.
23 Poleczki Str.
T +48 22 335 26 00
F +48 22 335 26 01

Russia

Delta Energy Systems LLC
Vereyskaya Plaza II, office 401
T +7 495 644 3240
F +7 495 644 3241

Spain

Delta Energy Systems (Spain) S.L.
Telecom Power
Calle Luis I nº 60, Nave 1a
P.I. de Vallecas
E-28031 Madrid
T +34 91 223 74 20
F +34 91 332 90 38

Slovak Republic

Delta Energy Systems (Bratislava) spol.s.r.o
Botanická 25/A
T +421 2 65411 258
F +421 2 65411 283

Sweden

Delta Energy Systems (Sweden) AB
P.O. Box 3096
T +46 470 70 68 07
F +46 470 70 68 90

Switzerland

Delta Energy Systems (Switzerland) AG
Freiburgstrasse 251
CH-3018 Bern-Bümpliz
T +41 31 998 53 11
F +41 31 998 54 85

Turkey

Delta Greentech Elektronik San. LTD. STI.
Serifali Mevkii Barboros Bulvari Söylesi Sok.
No:19
K:1 34775, Y.Dudullu-Ümraniye-Istanbul
T +90 216 499 9910
F +90 216 499 8070

United Arab Emirates

Delta Energy Systems AG (Dubai BR)
Al Maktoum Road, Al Rigga Palace
Building, Suite 504, P.O. Box 185668,
Dubai, U.A.E.
T +971 4 224 8595
F +971 4 224 8596

South Africa

Delta Energy Systems (South Africa)
P.O. Box 3470 Brits
0250 Republic of South Africa (ZAR)

Americas

Brazil

Delta Greentech (Brazil) S.A.
Rua Itapeva, Nº 26 - 3º andar
01332-000 - São Paulo - SP - Brazil
T +55 11 3568 3850
F +55 11 3568 3865

Argentina

Delta Energy Systems
Ayacucho 720 8 A Buenos Aires
Argentina
T +5411 4372 3105

Colombia

Delta Greentech S.A.
Sales Office Región Andina:
CL 213 114-10 Of. 14-25 - Bogotá -
Colombia
T/F +57 1 673 4927

Asia Pacific

China

Delta Electronics Nanjing
No. 198,Hexi Road,Jianye Zone,Nanjing
City, JiangSu Province,210000,P.R.C.
T +86 25 68573008 ext 5602
F +86 25 68905267

Delta GreenTech (China) Co. Ltd

E3 Building No.12 Yumin Zhong Road,
Chaoyang, Beijing
T +86 10 82253225 ext 6117
F +86 10 8225 2308

India

Delta Power Solutions(India)
Plot No.43,Sector-35,HSIIDC
Gurgaon 122001,Haryana,India.
T +91 124 4874900 ext 4650
F +91 124 4874945

Taiwan

Delta Electronics Inc.
3 Tungyuan Road, Chungli Industrial
Zone, Taoyuan County 32063 Taiwan,
R.O.C.
T +886 3 452 6107 ext 6356
F +886 3 452 7314

More information of products and sales, please consult: mvd@delta.com.tw

www.deltaww.com/mvd/en

2014.10