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### Introduction

The MVD300 is an IGBT based inverter power module designed for use with the MV3000 drive system. Up to six Delta modules may be connected in parallel to achieve higher power ratings.

### Features / Specifications :

- Rated at 690 Vac, 300 A (nominal)
- IGBT based Transistor Bridge Module.
- Air Cooled.

### Related Documents

**Failure to comply with any of the general requirements for installation, operation and maintenance provided in the technical manuals will significantly increase the risk of maloperation, fire or electric shock.**

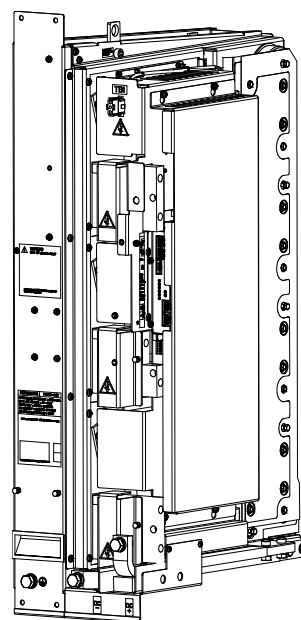
Instructions for removing and installing the module, and for commissioning the drive, are contained in the following manuals:

T1676EN, MV3000 Getting Started Manual for AC-fed Drives

T2002EN, MV3000 Getting Started Manual for Active Energy Management Drives

T1693EN, MV DELTA Liquid Cooled Drive System

T1679EN, MV3000 Drive Range Software Technical Manual



### Electrical Specification

Supply Voltage:	690 V ac rms (nominal), +/- 10% long term, +/- 15% for 0.5 to 30 cycles with loss of performance but no trip.
Operational Supply Frequency Range:	45 to 63 Hz
Output Frequency Range :	0 to 200 Hz
Maximum Continuous Operating Voltage :	1160 Vdc (limited by SMPS over-voltage trip)
Maximum DC Surge Voltage:	1300 Vdc (SMPS limit must be respected)
Maximum DC Link Capacitor Bank Voltage:	1300 Vdc (SMPS limit must be respected)

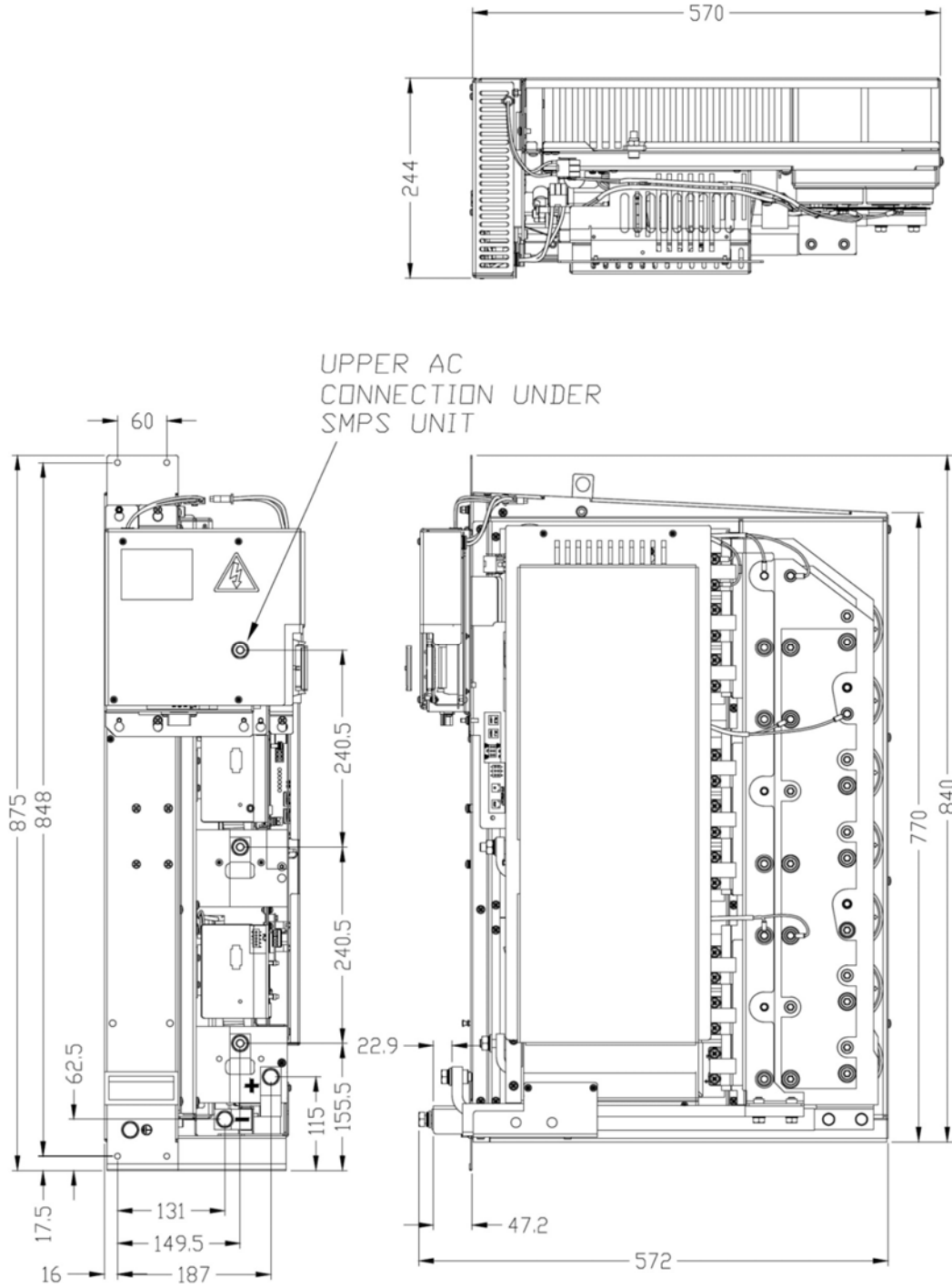
Maximum Silicon Voltage ( $V_{CES}$ ) :	1700 Vdc (SMPS limit must be respected)		
Current Rating with 1.1 x Overload :	298 A	Standard Fan;	356A Large Fan
Current Rating with 1.5 x Overload :	239 A	Standard Fan;	282 A Large Fan
Instantaneous Over-current Trip Level :	938 A		
Brick-wall Current Level :	844 A		
DC Link Capacitance :	7,833 $\mu$ F (5 parallel paths of 3 series 4,700 $\mu$ F)		

<b>ELECTRICAL SUPPLY</b>	
<b>Function</b>	<b>Specification</b>
Network Type	TN or TT (i.e. earthed/grounded neutral). Can also be connected to IT network (i.e. isolated neutral) if IT network separated from public mains supply by an isolating transformer.
Voltage Unbalance	Negative sequence voltage not to exceed 3%
<b>OUTPUT SWITCHING FREQUENCY</b>	
Settings	1.25 kHz, 2.5 kHz or 5 kHz for all drives.
<b>OUTPUT</b>	
Overload Current	50% or 10% for one minute, as selected.
<b>INSULATION</b>	
Standards	UL 840, CSA C22-2 No. 0.2, EN 50178: TN or TT network : Overvoltage Category III IT network : Overvoltage Category II For full compliance with UL 508C, transient suppressers complying with UL 1449 must be fitted external to the drive.

### Losses

Losses at 1.1 Current Rating :	3,977 W	Standard Fan
	5,070W	Large Fan
Losses at 1.5 Current Rating :	2,864W	Standard Fan
	3,533W	Large Fan

Note : Ratings and losses are based on nominal voltage and current, 1.25 kHz PWM frequency and 40° C (104° F) ambient air temperature. Refer to Convertteam for ratings and losses under other operating conditions.



**Fusing**

Fuse selection depends on many external factors, including the current/time loading conditions, number of starts per hour/day etc., fuse cooling, ambient temperature, continuous running or intermittent running and fuse connection/mounting arrangements. As such it is application dependant and needs to be ascertained on a project by project basis.

**Mechanical Specification**

Width :	247 mm (9.7 in)
Depth :	559 mm (22 in), including SMPS
Height :	1,263 mm (49.7 in)
Weight :	74 kg (161 lb.)

The unit is designed to slide in between a lower guide plate and an upper cross member of an Air Cooled DELTA mounting frame.

**Power and Control Customer Connections**

AC Power Customer Connections	1 x M10 studs/phase
DC Power Customer Connections :	1 x M10 studs/phase
Earth Connection :	1 x M10 bolt
DC High Voltage Control Connection :	2-way Connector TB1 for SMPS or Voltage monitoring

### ENVIRONMENTAL

Function	Specification																														
<b>Operating</b> - Ambient Air Temperature range	0 to 50°C (32°F to 122°F)																														
- Relative Humidity	5 to 95% (non-condensing)																														
- Altitude	Normal operating altitude up to 1000 m (3280 ft) above sea level. From 1000 m (3280 ft) to a max of 2000 m (6551 ft) derate by 7.3% per 1000 m (3280 ft).																														
- Cooling air	Pollution Degree 2 (IEC 60664-1, UL 840 and CSA C22.2 No. 0.2-93) i.e. clean, free from dust, condensation and conductive or corrosive gases. If conductive pollution or condensation are expected (Pollution Degree 3), the drive must be placed in an enclosure which achieves Pollution Degree 2 by: <ul style="list-style-type: none"> <li>- excluding the conductive pollution e.g. by the use of filtered air;</li> <li>- preventing condensation e.g. by use of anti-condensation heaters.</li> </ul>																														
- Chemicals (max.)	15 ppm H <sub>2</sub> S      25 ppm NO <sub>2</sub> 25 ppm SO <sub>2</sub>																														
<b>Storage</b> - Temperature range	-25 to +55°C (-13°F to 131°F)																														
- Relative Humidity	5 to 95% non-condensing																														
- Altitude	Up to 3000 m (9842 ft) above sea level																														
<b>Transport</b> - Temperature range	-25 to +70°C (-13°F to 158°F)																														
- Relative Humidity	≤ 95% (non-condensing)																														
- Altitude	Will withstand air transport																														
<b>MECHANICAL</b>																															
<b>Enclosure</b> - Ingress Protection	IP00 (to IEC 60529: 1989; BS EN 60529:1992), (NEMA 1) These modules must always be installed in an appropriate enclosure with restricted access.																														
<b>Vibration</b> - Operational	To IEC 61800-2 which specifies 'Class 3M1' of IEC 60721-3-3, vibration requirements of EN 50178 and DNV Rules for classification of ships, Part 4, Chapter 8. The products comply with the more severe requirements from these standards - this is given as the 'Composite' data represented in the following table. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th>Frequency</th> <th>IEC 61800-2</th> <th>EN 50178</th> <th>DNV Rules Pt.4 Ch.8 Sec.3</th> <th>Composite</th> </tr> </thead> <tbody> <tr> <td>2 to 5 Hz</td> <td>0.3 mm amplitude</td> <td></td> <td></td> <td>0.3 mm amplitude</td> </tr> <tr> <td>5 to 45 Hz</td> <td></td> <td></td> <td>20 mm/s velocity</td> <td>20 mm/s velocity</td> </tr> <tr> <td>45 to 57 Hz</td> <td></td> <td>0.075 mm amplitude</td> <td></td> <td>0.075 mm amplitude</td> </tr> <tr> <td>57 to 150 Hz</td> <td></td> <td>9.81 m/s<sup>2</sup> acceleration</td> <td></td> <td>9.81 m/s<sup>2</sup> acceleration</td> </tr> <tr> <td>150 to 200 Hz</td> <td>1 m/s<sup>2</sup> acceleration</td> <td></td> <td></td> <td>1 m/s<sup>2</sup> acceleration</td> </tr> </tbody> </table>	Frequency	IEC 61800-2	EN 50178	DNV Rules Pt.4 Ch.8 Sec.3	Composite	2 to 5 Hz	0.3 mm amplitude			0.3 mm amplitude	5 to 45 Hz			20 mm/s velocity	20 mm/s velocity	45 to 57 Hz		0.075 mm amplitude		0.075 mm amplitude	57 to 150 Hz		9.81 m/s <sup>2</sup> acceleration		9.81 m/s <sup>2</sup> acceleration	150 to 200 Hz	1 m/s <sup>2</sup> acceleration			1 m/s <sup>2</sup> acceleration
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<b>Vibration</b> - Storage and transport	To IEC 61800-2 which specifies Class 2M1 of IEC 60721-3-2 when equipment is packed for transport: <table style="width: 100%; margin-top: 5px;"> <tr> <td>2 to 9 Hz</td> <td>3.5 mm amplitude</td> </tr> <tr> <td>9 to 200 Hz</td> <td>10 m/s<sup>2</sup> acceleration</td> </tr> <tr> <td>200 to 500 Hz</td> <td>15 m/s<sup>2</sup> acceleration</td> </tr> </table>	2 to 9 Hz	3.5 mm amplitude	9 to 200 Hz	10 m/s <sup>2</sup> acceleration	200 to 500 Hz	15 m/s <sup>2</sup> acceleration																								
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<b>Drop</b> - Transport	To IEC 61800-2 which specifies Class 2M1 of IEC 60721-3-2 when equipment is packed for transport:																														

**Commissioning**

**Refer to the WARNINGS and CAUTIONS in the relevant Manual(s)**

Commissioning of the unit is dependent upon the application of the unit. Refer to the relevant manual(s) for details of the commissioning procedure.

**Compatibility**

The MVD300-3702-A can be used as replacement for MVD300-4601, MVD300-4602, MVD300-3702.

**Spares**

The MVD300-3702-A contains no user serviceable parts – please contact Avid Controls Inc., see details below.

**Document Revision History**

Rev.	Date	Author	Changes
00	Aug 31, 2017	Mark Woods	Document created from GE documents T2115EN and T1693EN

**CONTACT DETAILS FOR SALES, SERVICE AND SUPPORT**

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