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Avid Controls Inc.
41261 Park 290 Drive, Waller, TX 77484, USA
info@avidcontrolsinc.com
(+1) (281) 640-8600

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1. Introduction

- The MVR1600-4601-A is manufactured by Avid Controls under license from the General Electric Company.
- Rated at 690 Vac, 1600 Adc (nominal).
- Thyristor/Diode based Rectifier Bridge Module.
- Air Cooled.
- Protected Pre-charge circuit

2. Spares

- The MVR1600-4601-A module contains no user serviceable components.

3. 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 mal-operation, fire or electric shock.
- Instructions for removing and installing the module, and for commissioning the drive, are contained in the following GE manuals:
 - T1676EN, MV3000 Getting Started Manual for AC-fed Drives
 - T1689, MV DELTA Technical Manual for MV3000 DELTA
 - T1679EN, MV3000 Drive Range Software Technical Manual

4. 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.
- The fuse information detailed here, is intended to provide a basic fusing arrangement for a single unit operating at rated current and voltage with an overload occurring for 60s once every 10 minutes and one stop/start per day.

Duty	Suggested Fuses (or equivalent)
1.1 overload rating, 600/690 Vac	Bussmann 170M6718 Ferraz 8.5 URD 73 TTF 1400, Ref No. : S 300 718
1.5 overload rating, 600/690 Vac	Bussmann KTU-1500 Ferraz 6.6 URD 33 TTF 1400, Ref No. : C 300 085

5. Mechanical Specification

Width:	247mm (9.7 in)
Depth:	589mm (23.2 in), including shroud
Height:	840mm (33.0 in)
Weight:	79.5 kg (175 lb.)
Enclosure:	Ingress Protection IP00 (to IEC 60529: 1989; BS EN 60529:1992), (NEMA 1) The MVR1600-4601-A modules and associated components must always be installed in an appropriate enclosure with restricted access.

- The unit is designed to slide into a standard Air Cooled DELTA mounting frame

6. Power and Control Customer Connections

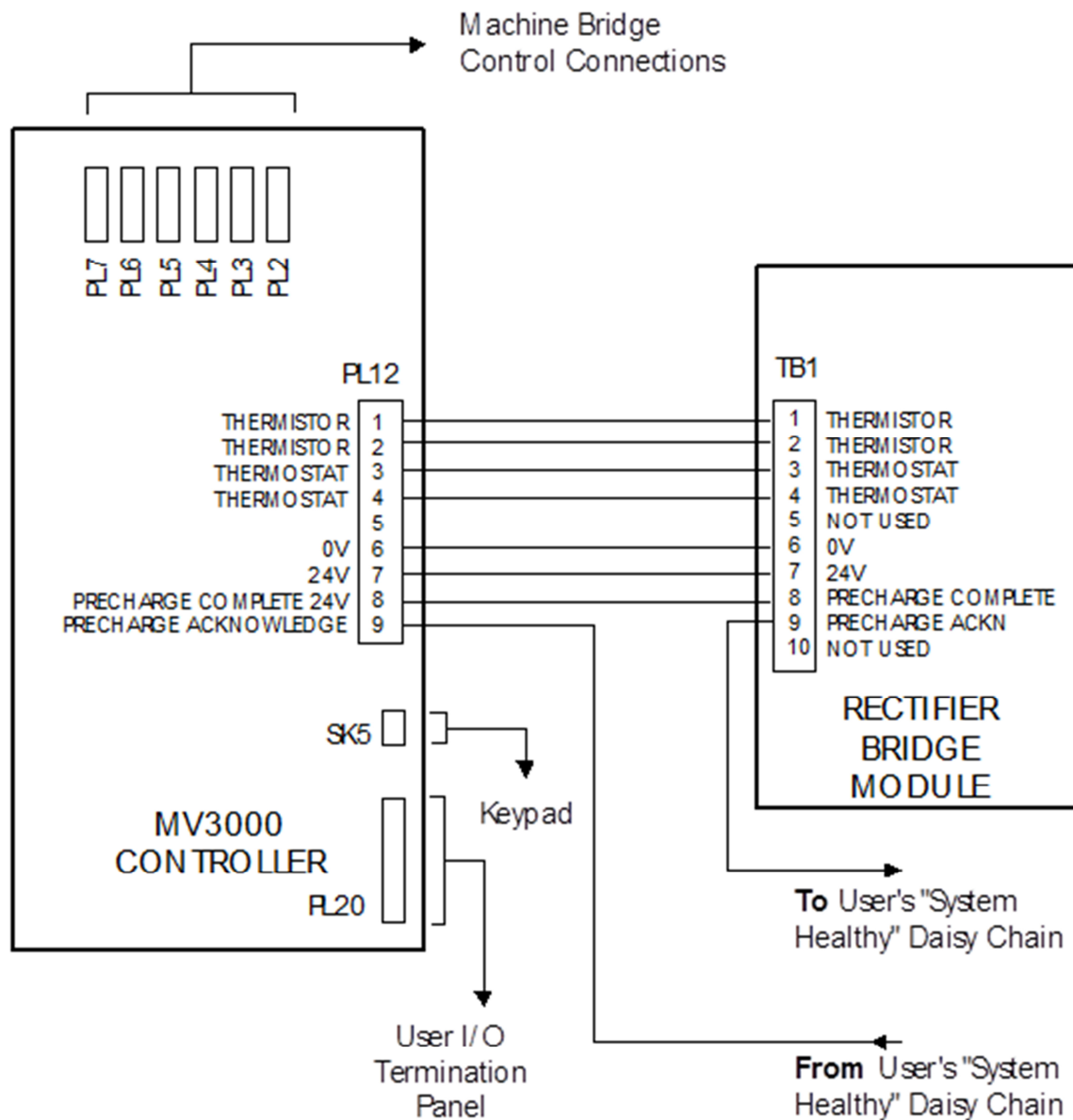
- AC and DC Power connections are based on High Temperature Cable, e.g. Von Roll Isola silicone rubber type SIWO-KUL or equivalent.

AC Power Connections	3 X M10 studs per phase Suitable for 3 x 120mm ² cable per phase
DC Power Connections	3 X M10 studs per DC connection Suitable for 3 x 185mm ² cable per connection
Earth / Ground Connection	1 X M10 Bolt
Low Voltage Control Connections	10-way terminal block TB1 to MV3000E Controller

- If larger cables or non SIWO-KUL type cables are required to be fitted to the equipment, fish-plates will need to be fitted to the customer connections. With extension brackets fitted, the standard shrouds will not fit and additional shrouding will need to be fitted. For additional protection, a shroud is supplied which fits around the lower front cross-rail to provide additional mechanical protection for cables connected to the DC- customer connection.

7. Control Terminals

- The control terminations for the MVR1600-4601-A, which are made via TB1, are suitable for 0.5mm² to 2.5mm² size wire (20 - 14 AWG). Functional details are as follows:



8. AC Line Reactor / DC Link Inductor Details

- These components are application dependent and are therefore not specified in this data sheet.

9. Environmental Specifications

Function		Specification			
Operating	Ambient air temperature	0 to 40°C (32°F to 104°F), de-rate to 50°C (122°C)			
	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 maximum of 2000 m (6551 ft.) de-rate 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: - excluding the conductive pollution e.g. by the use of filtered air; - preventing condensation e.g. by use of anti-condensation heaters. In extreme environments dual circuit heat exchangers are recommended.			
	Chemicals (max.)	15 ppm H2S	25 ppm NO2	25 ppm SO2	
	Vibration	To IEC 61800-2 which specifies 'Class 3M1' of IEC 60721-3-3 and to the vibration requirements of EN50178. The products comply with the more severe requirements from both standards - this is given as the 'Composite' data represented in the following table.			
		Frequency	IEC 61800-2	EN 50178	Composite
2 Hz to 9 Hz		0.3 mm amplitude		0.3 mm amplitude	
9 Hz to 18.4 Hz		1 m/s ²	0.075 mm from 10 Hz	1 m/s ²	
18.4 Hz to 57 Hz		1 m/s ²	0.075 mm amplitude	0.075 mm amplitude	
57 Hz to 150 Hz		1 m/s ²	9.81 m/s ²	9.81 m/s ²	
150 Hz to 200 Hz	1 m/s ²		1 m/s ²		
Storage	Temperature	-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			
Vibration	To IEC 61800-2 which specifies Class 2M1 of IEC 60721-3-2 when equipment is packed for transport: 2 to 9 Hz 3.5 mm amplitude 9 to 200 Hz 10 m/s ² 200 to 500 Hz 15 m/s ²				
Transport	Temperature	-25 to +70°C (-13°F to 158°F)			
	Relative humidity	≤ 95% non-condensing			
	Altitude	Will withstand air transport			
	Drop	To IEC 61800-2 which specifies Class 2M1 of IEC 60721-3-2 when equipment is packed for transport: mass < 100 kg 0.25 m			
	Vibration	Same as Storage			

10. 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.

11. Document Revision History

Rev.	Date	Author	Changes
00	June 29, 2017	Gary Pace	Document created from GE document T2111EN Rev. 04