

User Guide

Regenerative & Non-Regenerative Digital DC Drives 5 to 1000 HP



Quantum III



The drive stop and start inputs should not be relied upon alone to ensure the safety of personnel. If a safety hazard could arise from the unexpected starting of the drive, a further interlock mechanism should be provided to prevent the motor from running except when it is safe to do so.

The manufacturer accepts no liability for any consequences resulting from inappropriate, negligent or incorrect installation or adjustment of the optional operating parameters of the equipment, or from mismatching of the drive to the motor.

The contents of this guide are believed to be correct at the time of printing. In the interests of a commitment to a policy of continuous development and improvement, the manufacturer reserves the right to change the specification of the product or its performance or the contents of the User's Guide without notice.

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1.1 GENERAL DESCRIPTION

Quantum III is the new redesigned family of advanced, fully microprocessor-controlled DC variable speed drive units covering the output range 5 to 1000 HP both as single-ended converters, and in four-quadrant, fully regenerative models. The Quantum III marks a significant achievement in the field of DC drive technology by providing within a compact package all the accuracy and versatility inherent in microprocessor control while remaining competitive in price with conventional analog drives.

All models feature a fully controlled six-pulse SCR bridge, comprehensively protected against voltage transients and isolated from the control electronics. Full details of unit ratings and dimensions are included in sections 2, 4 and 5.

The microprocessor-based control system, employing the latest surface-mount technology, is programmed and adjusted by integral pushbuttons or by a serial interface, and displayed on two (2) seven-segment LED displays which form part of the powerful built in diagnostic facility.

Options include a second processor called MD29, to service special application software which expands the drive's standard capabilities.

Quantum III is extremely compact and simple in construction, taking full advantage of modern high-volume production techniques. Access is particularly good, for ease of installation and servicing.

1.2 EQUIPMENT IDENTIFICATION

It is important to identify the control completely and accurately whenever ordering spare parts or requesting assistance in service.

The control includes a product nameplate located on the side panel of the enclosure. The product nameplate should appear as the sample nameplate shown in Figure 1-2. Record the part number, revision level, and serial number for future reference in Appendix B.

If the control is part of an engineered drive system, the system cabinet will also include a product nameplate. Record the part number, revision level, and serial number of the engineered system and include this information with the information on the individual controls whenever contacting the factory. See Appendix B.



Figure 1-1.
Quantum III
Fully Microprocessor-controlled
3-phase 6-pulse SCR Drive

1 Introduction

1.3 MODEL NUMBER/RATING LABEL LOCATION



Figure 1-2
Size 1
9500-8x02 thru 8x06



Figure 1-3
Size 2
9500-8x07 thru 8x11

Drive Model Name/Family	→	MODEL QUANTUM III	
		AC INPUT	
AC Line Voltage Input	→	V AC 240/480 A 143	← Max AC Input Line Current - AC amps
AC Line Frequency	→	HZ 50/60 P 3	← 3 Phase
		MAX DC OUTPUT	
Max DC Armature Voltage Output	→	V DC 240/500 A 173.5	← DC Output Amps @ Full Load-100%
Rated Horsepower	→	HP 50/100 K W 41.8/87	← KW Output
Field Voltage Output	→	V FL 150/300 A 5	← Maximum Field Output Amps-DC
Model Part Number	→	9500-8606 B	← Model Revision Level
Schematic Set Number - Interconnect	→	9500-1300-I E	← Drawing Revision
Serial Number	→	3288114007-TN-LZ	
Software Program Revision	→	5.01	

Items in **bold** print are information required should one need to call for warranty replacement.

Figure 1-4
Quantum III Label

1.3.1 Quantum III Models

Quantum III drives are available in Non-Regenerative (uni-directional) and Regenerative (bi-directional) models. These models span 5-1000HP using 3 basic chassis sizes as shown below.



Figure 1-5
Size 1
5-100HP @ 480 VAC
5-50HP @ 230 VAC
9500-8X02 thru 8X06



Figure 1-6
Size 2
150-400HP @ 480 VAC
75-200HP @ 230 VAC
9500-8X07 thru 8X11

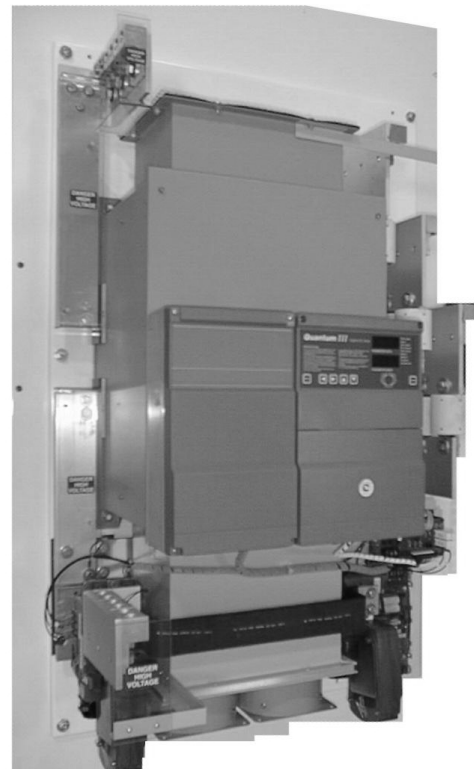


Figure 1-7
Size 3
500-1000HP @ 480 VAC
250-500HP @ 230 VAC
9500-8X15 thru 8X20

