

CUSTOMIZABLE SINGLE-AXIS SERVO DRIVE CSA



Rev. -, April 2013

CUSTOMIZABLE SINGLE-AXIS SERVO DRIVE
(FORMERLY DS2110) WITH INTEGRATED AXIS
MOTION CONTROL FOR BRUSHLESS SERVO
MOTORS AND ACTUATORS

Whenever the highest levels of motion control performance and design flexibility are required, you'll find Moog expertise at work. Through collaboration, creativity and world-class technological solutions, we help you overcome your toughest engineering obstacles. Enhance your products' performance. And help take your thinking further than you ever thought possible.

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This catalog is for users with technical knowledge. To ensure that all necessary characteristics for function and safety of the system are given, the user has to check the suitability of the products described herein. The products described herein are subject to change without notice. In case of doubt, please contact Moog.

For the most current information, visit www.moog.com/servomotorsanddrives

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PRODUCT OVERVIEW

Servo Drive Control Solution

Higher performing machinery equates to real advantages in productivity and profitability for any manufacturing line. Servo Drives are crucial to production capabilities in the plastics, metal forming, flight simulation and power generation industries to name a few. When choosing a Servo Drive, you want one known for dependability and accurate control in all applications. The CSA Servo Drive is a proven unit that delivers consistent high dynamic performance control accuracy and versatility. This Servo Drive is ideal for applications requiring integrated axis motion control. This is a new generation of the former DS2110 Servo Drive with many upgrades to this proven design.

MEETING YOUR TOUGHEST MACHINE CHALLENGES

The CSA Servo Drive represents the highest level of control accuracy, dynamic performance and reliability in a user friendly configuration that can adapt to all your motion control and performance needs.

Easy installation and maintenance

CSA's user friendly installation allows you to get up to speed quickly while the maintenance program lets you stay at full production.

Control accuracy and dynamic performance

Complete customization gives you that edge in production so sought after in manufacturing today. Precise control is gained through state-of-the-art fieldBus interfaces, 16-bit analog to digital sampling and low drift current sensors.

Production reliability

Take advantage of increased capacity by eliminating downtime. The CSA keeps you productive with the ability to operate a broad range of brushless servo motors giving you the adaptability you need along with an easy to use motion template for electro-mechanical actuators.

Complete machine adaptability

Adaptability means you are prepared for future changes. The CSA Servo Drive gives you the ability to adapt with a high speed interface, universal fieldBus acceptance and motor feedback supported through resolver, high resolution, interpolated sin/cos encoder, or incremental and commutation track encoder feedback.

PRODUCT OVERVIEW

COMPLETE FLEXIBILITY

The CSA Servo Drive gives you integrated axis motion control in a self contained, customizable, and fully digitized stand-alone unit. Custom applications are achieved with model-based control templates that allow parameterization of motion limits, command profiles and closed-loop gains. Precision motion is implemented with closed-loop position and velocity control. Maximum motor efficiency is maintained by the field oriented DQ current control loops that produce optimum torque/amp output. All loops and trajectory generation are processed up to 8 kHz for true real-time control.

The CSA is your answer when the highest levels of motion control performance and design flexibility are required. Through collaboration, creativity and world-class technological solutions, Moog helps you overcome your toughest engineering obstacles.

DESIGNED FOR HIGH PERFORMANCE APPLICATIONS

Put the CSA on your motion control challenges and see how one Servo Drive with a comprehensive range of performance features can tackle your most demanding applications.

Ease of use through a comprehensive windows based Graphical User Interface (GUI). The GUI gives you control model downloading, configuration and application parameters plus system tuning/diagnostics.

Automatic phasing and error detecting features allow you to fine tune your operation even further.

Support for multiple communication protocols via the fieldBus gives you adaptability. Supported fieldBuses include DeviceNet, EtherCat, Ethernet IP and 16-bit Analog I/O.

Flexible performance supports several feedback devices including Stegmann Hiperface absolute encoders, Hedenhain Endat 2.1 and 2.2 absolute encoders, incremental encoders with commutation tracks and 2 to 24 pole resolvers.

The ability to monitor drives and control them via a Digital I/O allows you the total customization you need. In addition to the Motor Brake control output and Drive Ready output there are seven programmable digital inputs and three programmable outputs.

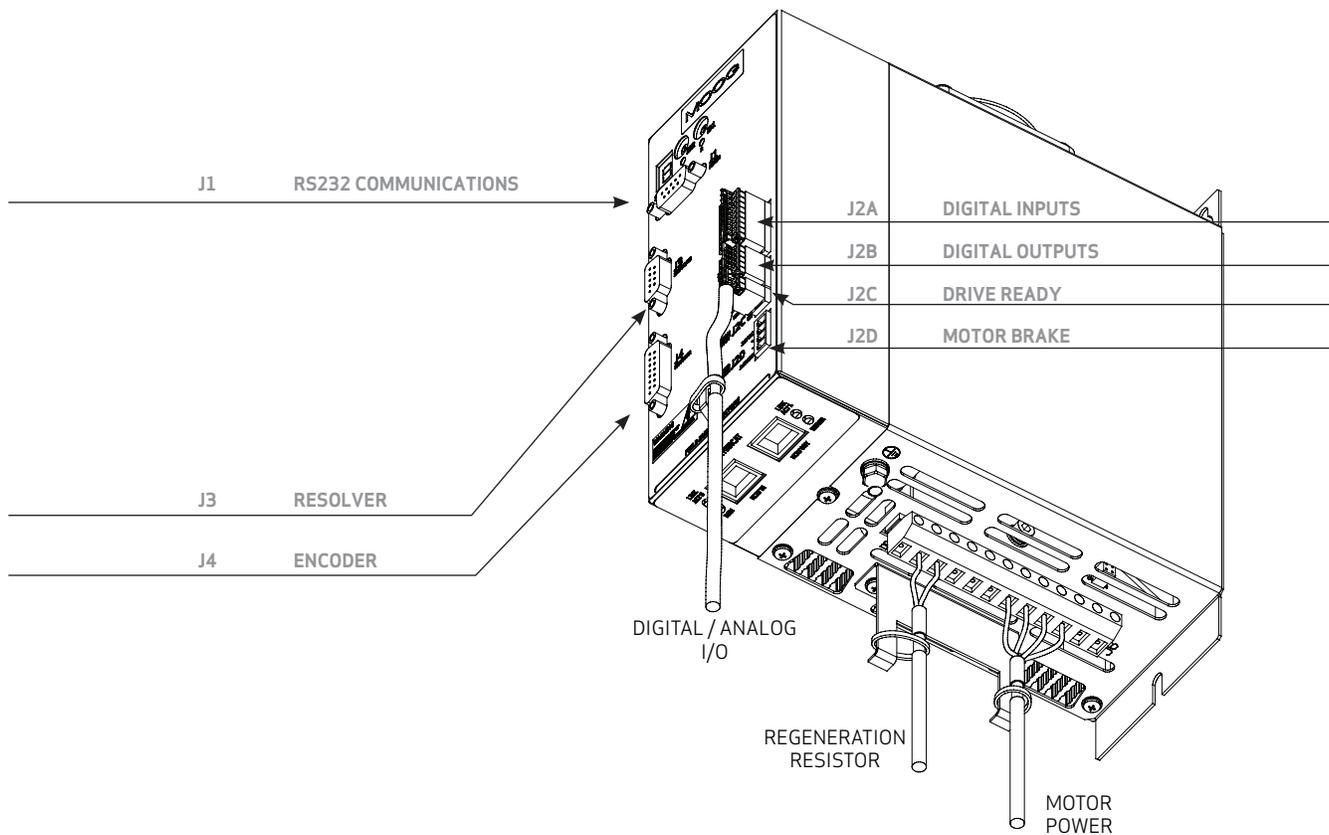
FEATURES

Electrical Characteristics	
Power supply	3-phase, 65 Vac to 510 Vac, 1 phase, 103 to 243 Vac
Auxiliary power supply	24 Vdc, 2 A
PWM Frequency	8 kHz
Position control loop Frequency	8 kHz
Speed control loop frequency	8 kHz
Continuous / peak output current	3 A/11 A to 140 A/300 A
Certifications include	
	UL, CE, ODVA
Environmental data	
Operating ambient temperature	0 to 40 °C
Storage Temperature	-25 to +55 °C
Thermal Protection	70 °C with de-rating
Ingress Protection	IP20
Protection	
	Servo Motor and Servo Drive over temperature
	Out of tolerance power supply detection
	Encoder/Resolver missing signal detection
	Output Open/Short circuit detection
	I ² T limiting
	Thermal foldback

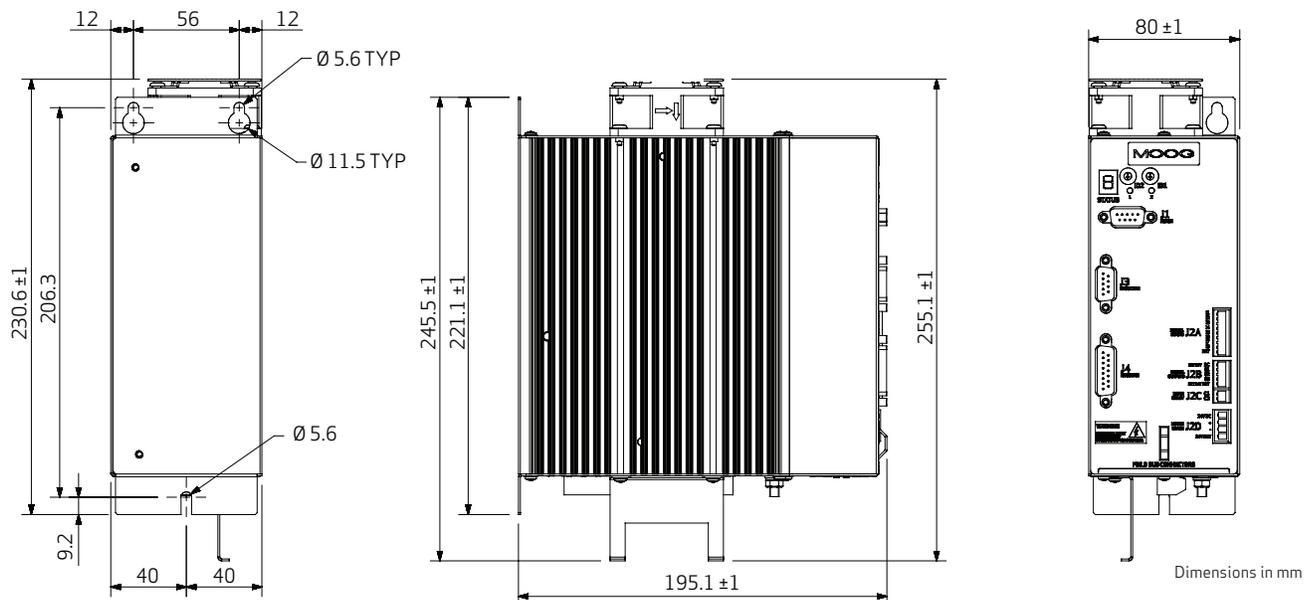
Code (*)	Type	Nominal (Arms)	Max (Arms)	Peak (A)	Mass (kg)	Size
G362-003	3/11	3	8	11	2.7, 4.5	micro A
G362-006	6/22	6	16	22	2.7, 4.5	micro A
G362-008	8/22	8	16	22	4.5	A
G362-014	14/42	14	29	42	6	B
G362-020	20/45	20	31	45	10	C
G362-025	25/70	25	49	70	10	C
G362-030	30/90	30	63	90	10	C
G362-050	50/140	50	99	140	22	D
G362-060	60/180	60	127	180	22	D
G362-100	100/300	100	212	300	30	E
G362-140	140/300	140	212	300	30	F

SIZE MICRO A

CONNECTIONS

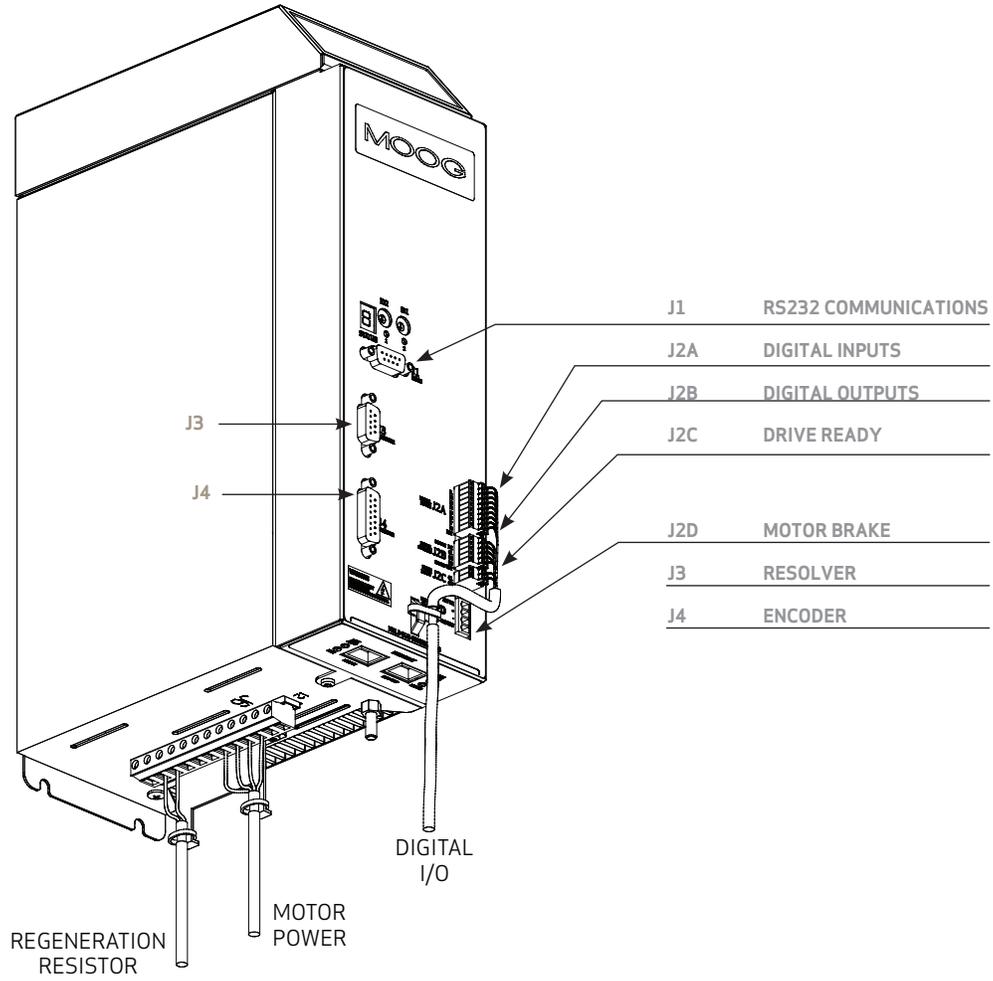


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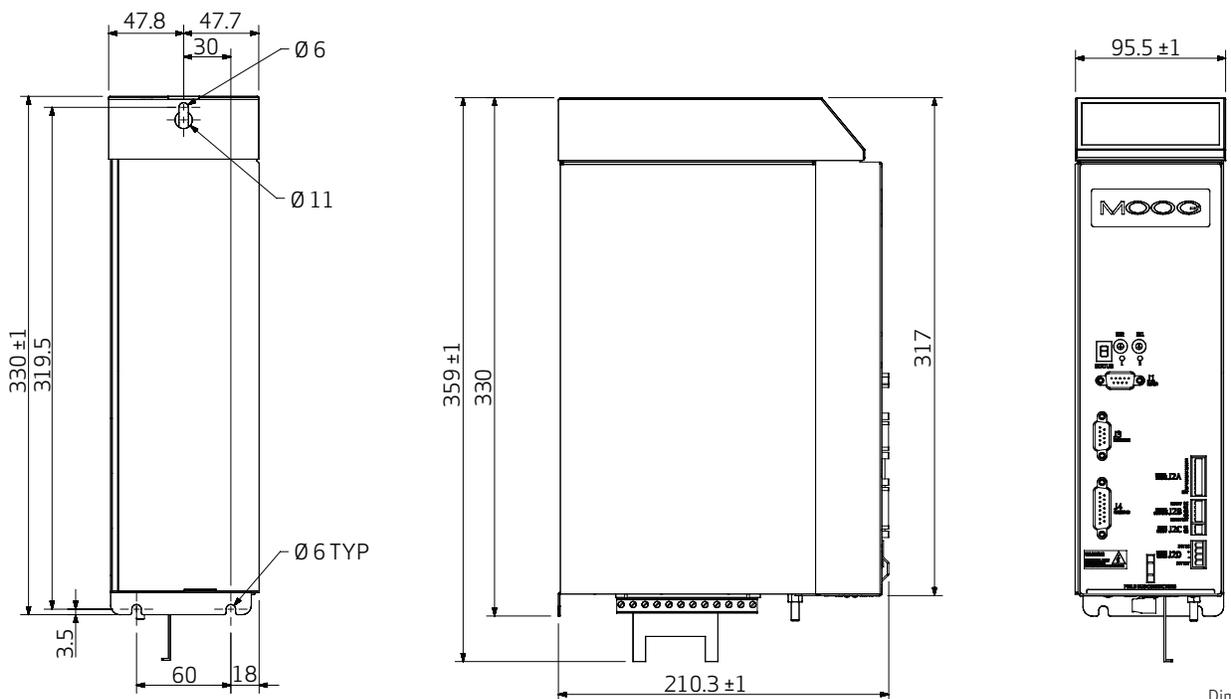


SIZE A

CONNECTIONS



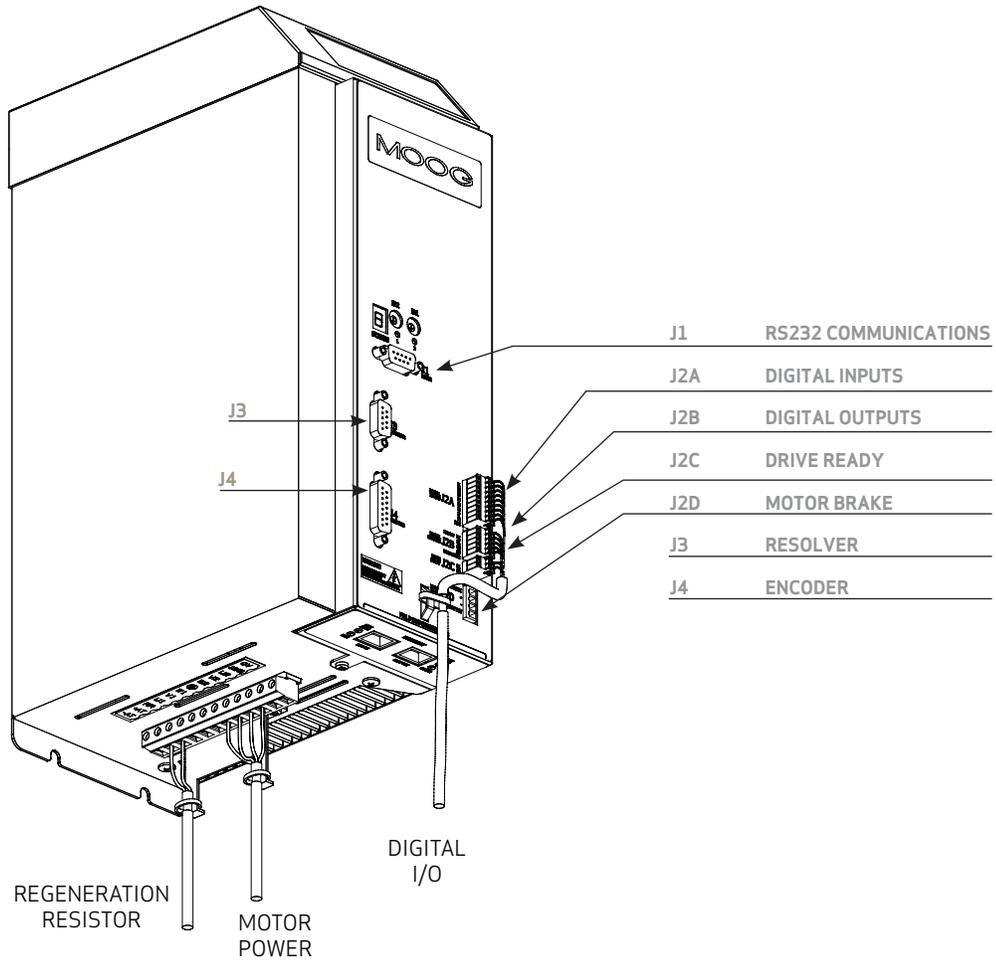
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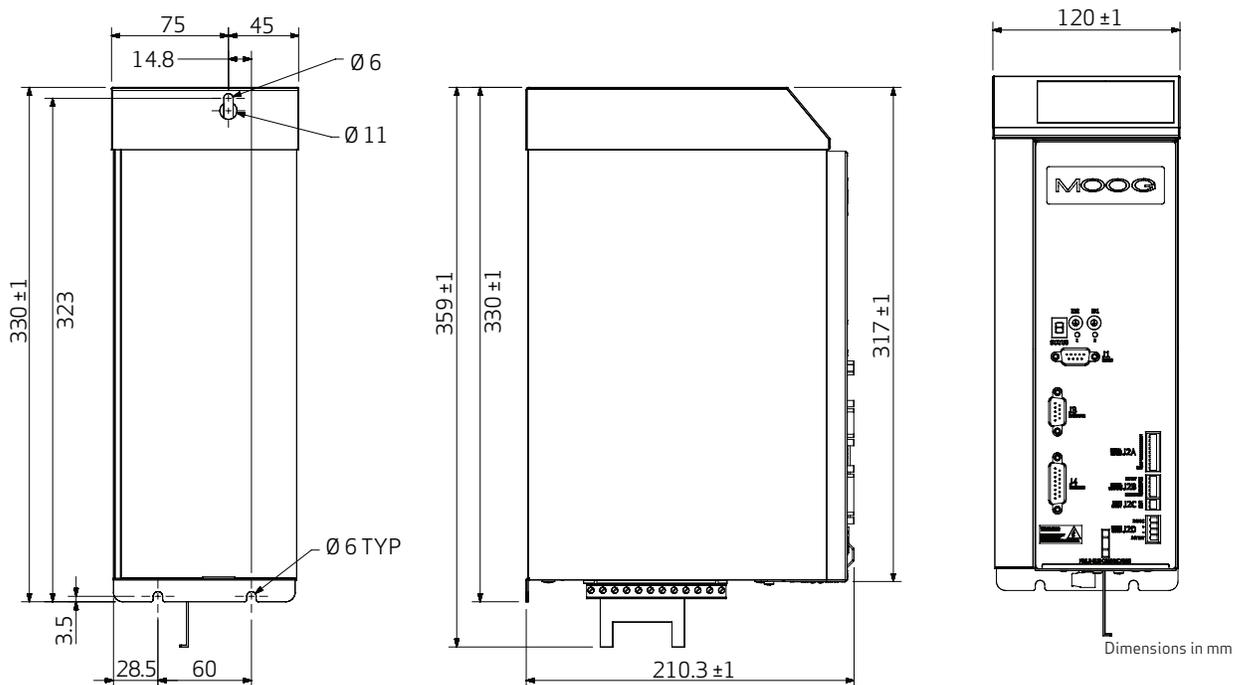
Dimensions in mm

SIZE B

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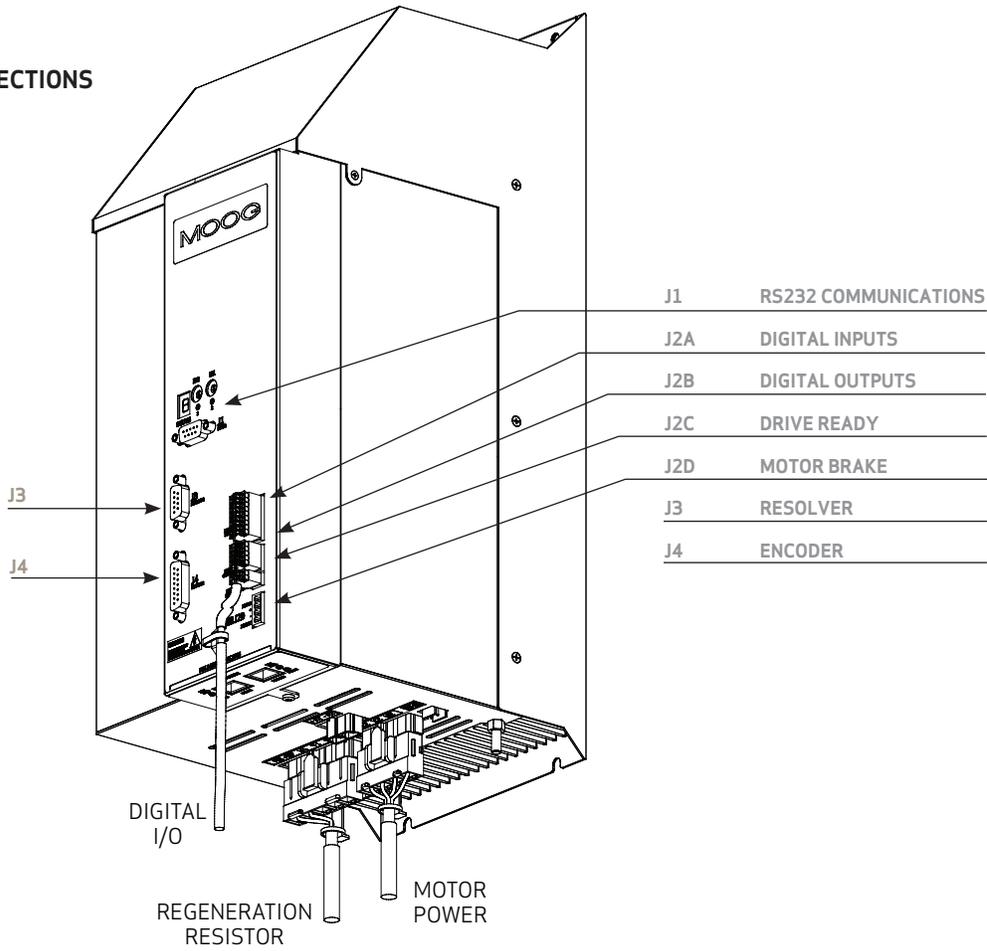


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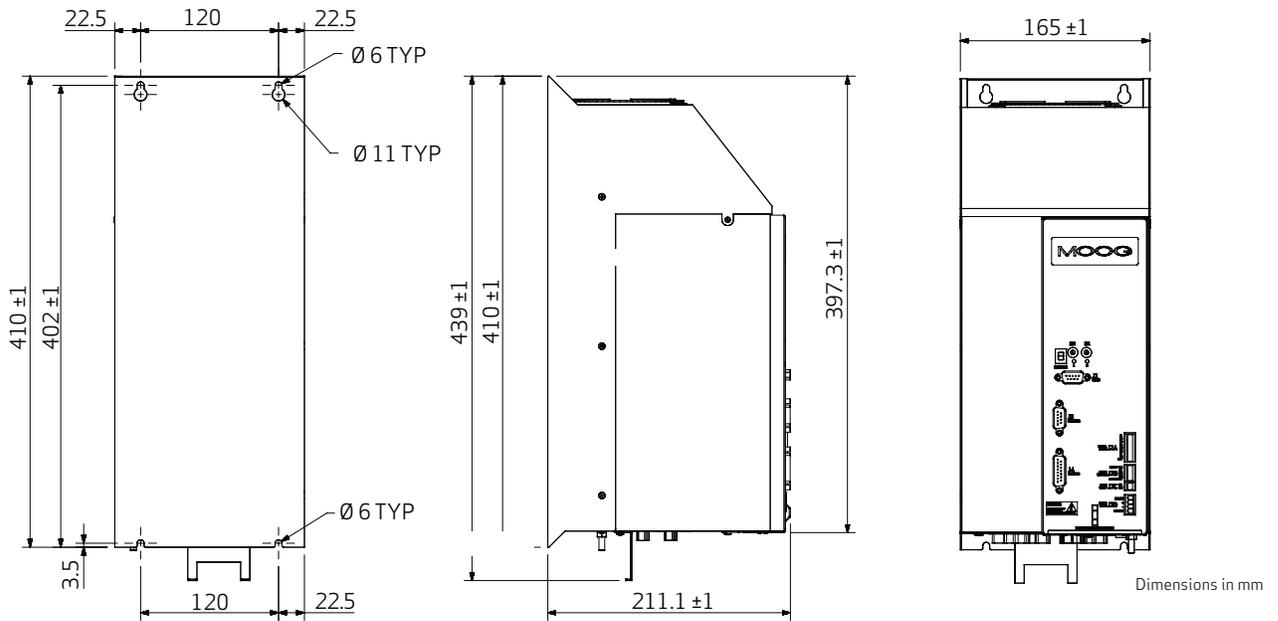


SIZE C

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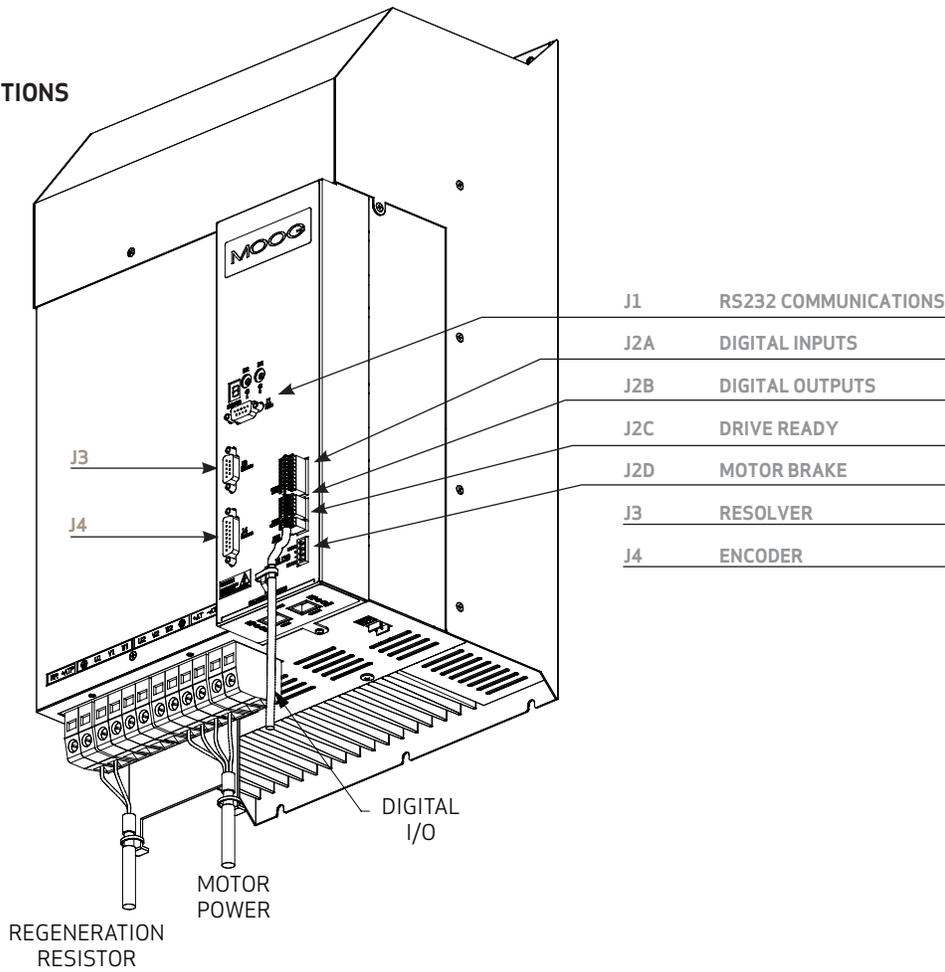


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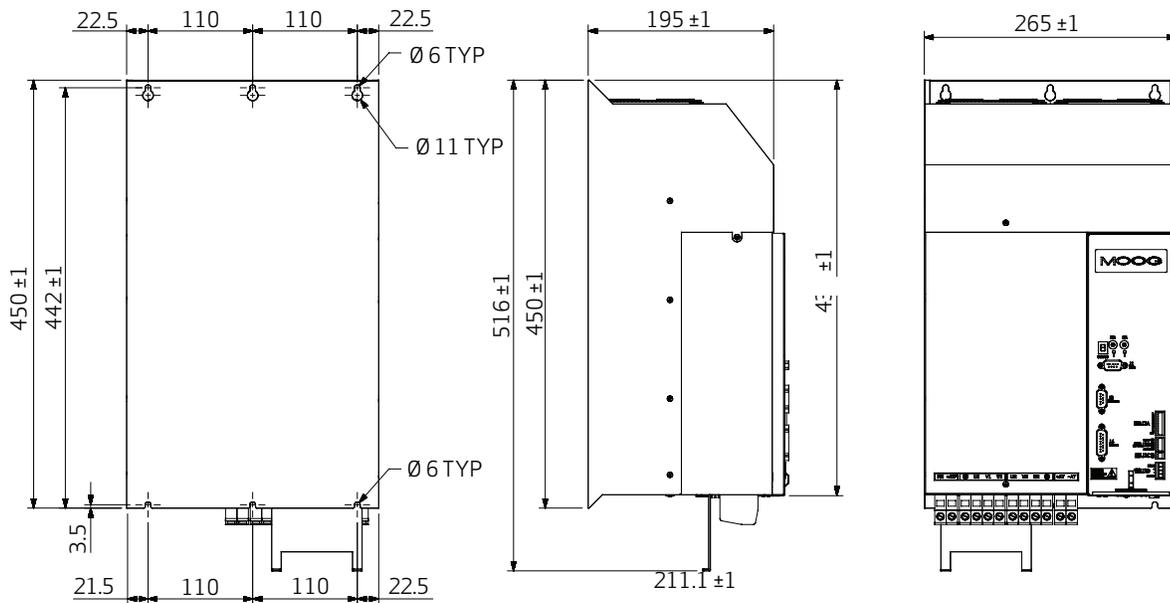


SIZE D

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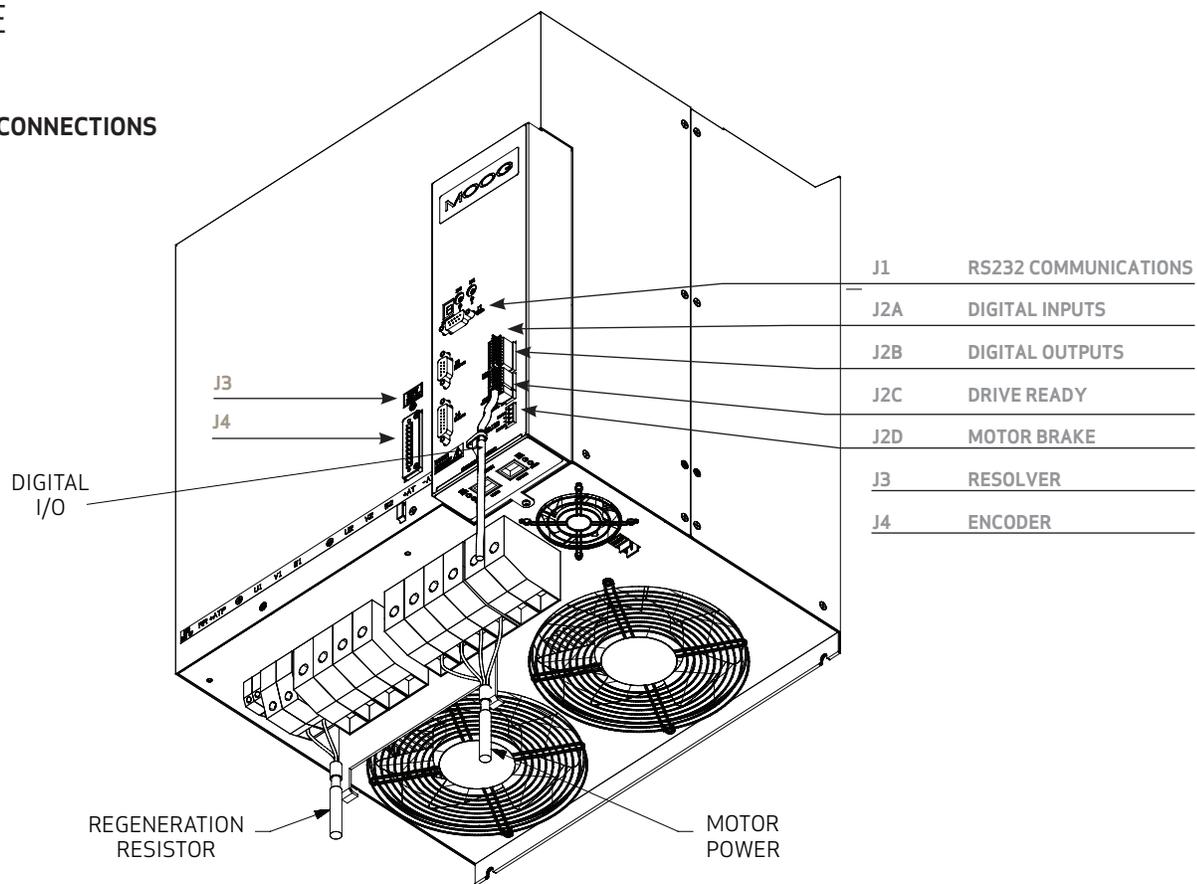
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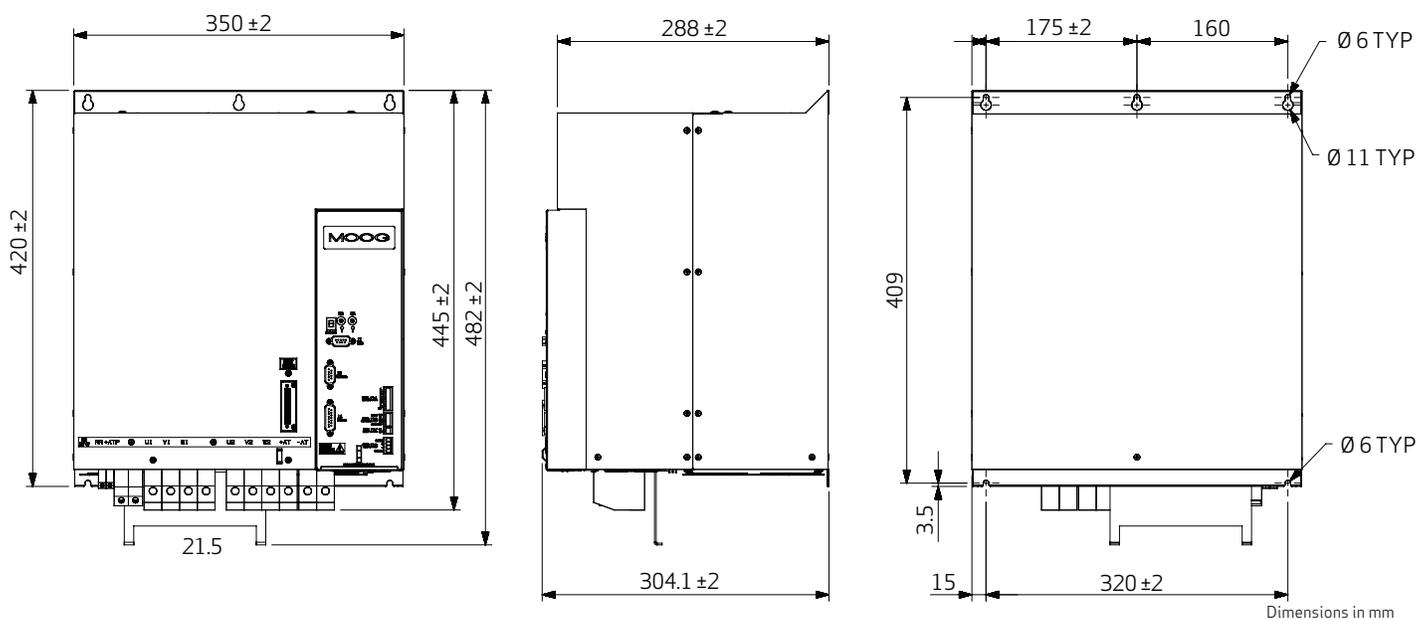
Dimensions in mm

SIZE E

CONNECTIONS

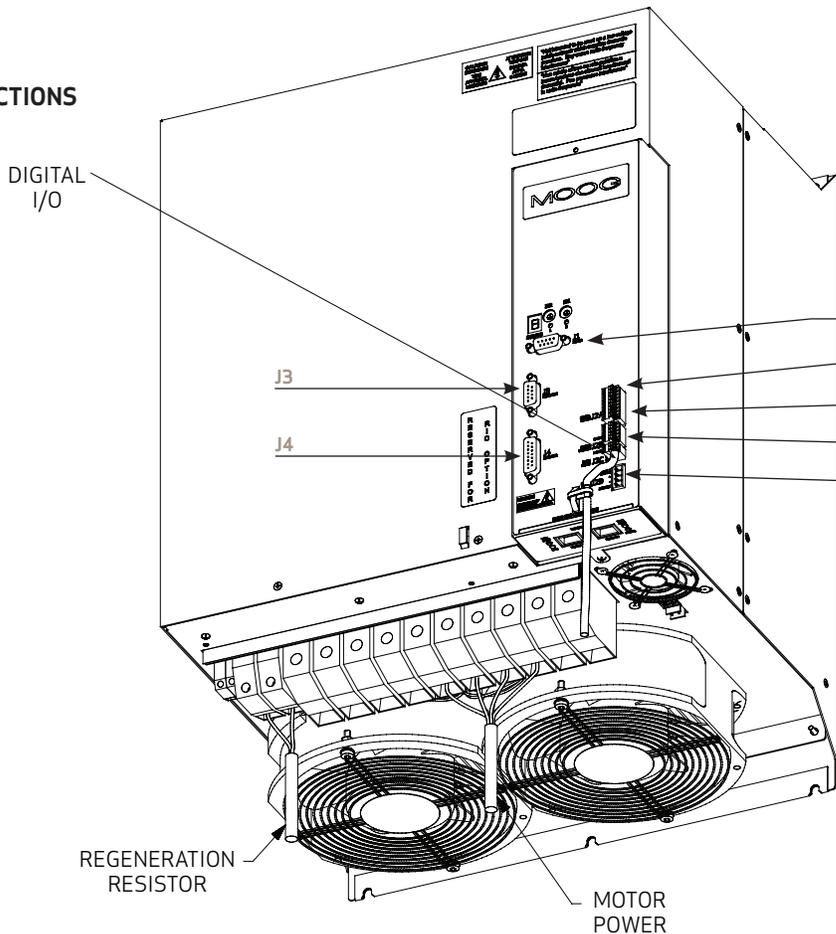


DIMENSIONS



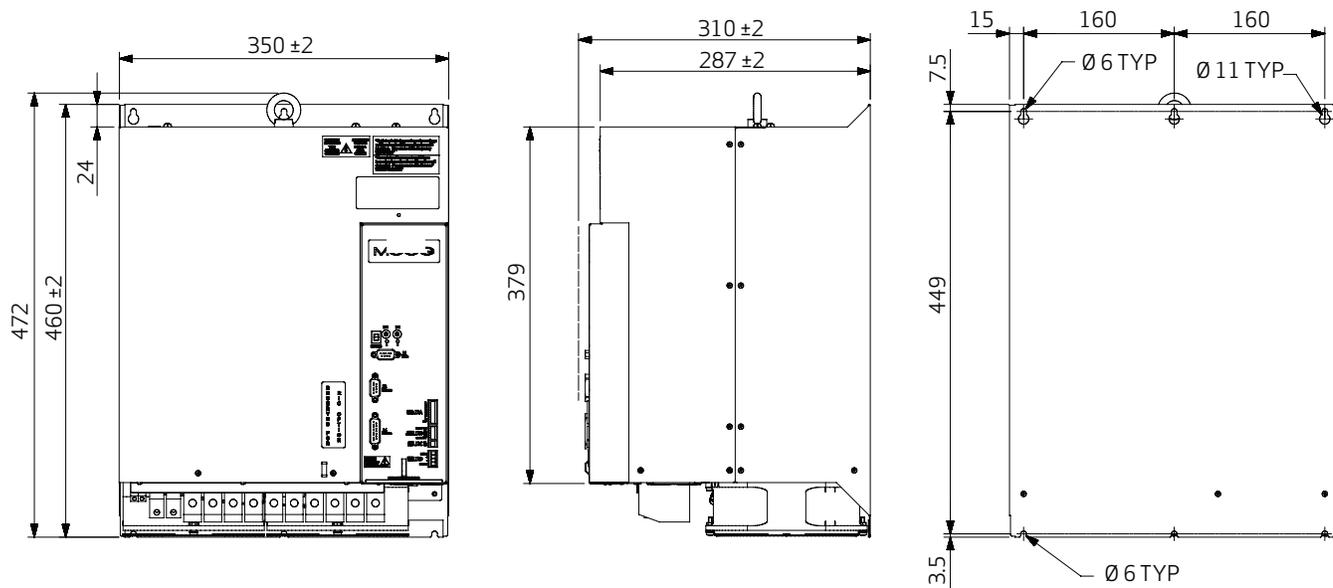
SIZE F

CONNECTIONS



J1	RS232 COMMUNICATIONS
J2A	DIGITAL INPUTS
J2B	DIGITAL OUTPUTS
J2C	DRIVE READY
J2D	MOTOR BRAKE
J3	RESOLVER
J4	ENCODER

DIMENSIONS



Dimensions in mm

GLOBAL SUPPORT

Moog Global Support is our promise to offer world-class Repair and Maintenance Services delivered expertly by our trained technicians. With the reliability only available from a leading manufacturer with facilities around the world, Moog offers you service and expertise you can count on to keep your equipment operating as it should.

This promise offers many benefits to our customers including:

- Reduce your downtime by keeping critical machines running in peak performance
- Protect your investment by ensuring reliability, versatility and long-life of products
- Better plan your maintenance activities and make systematic upgrades
- Leverage our flexible programs to meet unique service requirements of your facility

Look to Moog for global support including:

- Repair services using OEM parts are performed by trained technicians to the latest specifications
- Stock management of spare parts and products to prevent unplanned downtime
- Flexible programs, tailored to your needs such as upgrades, preventative maintenance and annual/multiyear contracts
- On-site services bring the expertise to you, providing quicker commissioning, set-up and diagnostics
- Access to reliable services that are guaranteed to offer consistent quality anywhere in the world

For more information on Moog Global Support, visit www.moog.com/industrial/service.



ORDERING CODE

Model Series Designator: **G362** X X X X - X X X - X X X - X

Current Model Design Status

Option	Description
E	Engineering
-(Dash)	Released

Power Stage/Drive Size

Option	Acont/Apk	Size
003	3/11	micro A
006	6/22	micro A
X08	8/22	A
014	14/42	B
020	20/45	C
025	25/70	C
030	30/90	C
050	50/140	D
060	60/180	D
100	100/300	E
140	140/300	F

Hardware Configuration

Option	Description
0	No fieldbus
1	Reserved
2	Reserved
3	Reserved
4	Devicenet
5	16-bit Analog ±10 V IO
6	16-bit Analog 0 - 20 mA IO
7	16-bit Analog ±10 V 0 - 20 mA IO
8	EtherCAT
9	Ethernet IP
A	Reserved

Restart Interlock Circuit and 24V Fan Option

Option	Description
0	RIC Not Installed and Fan Option Not Installed
1	RIC Not Installed and Fan Option Installed
2	RIC Installed and Fan Option Not Installed
3	RIC Installed and Fan Option Installed
4	RIC Installed and External Regen 

Hardware Revision Level 

Application Software Identifier

Option	Description
0	Generic Configuration
901-999	Application Specific Configuration Reserved for Moog Engineering

Software Revision

Revision	Description
A	Original

Stuffing Options

Option	Description
1	Base Unit - Surrounding Air 0 - 40 °C
2	Base Unit w/Conformal Coating
3	Solid State Relay
4	Solid State Relay w/Conformal Coating 
5	Incremental Encoder w/ Hall Commutation
6	Incremental Encoder w/ Hall Commutation & Conformal Coating
7*	High Temp Base Unit Surrounding Air 0 - 70 °C
8*	High Temp Base Unit w/Conformal Coating 

* Discuss with Moog Engineering prior to order placement.

Turn to page 15 for related notes.

NOTES

1. Users must be experienced/qualified in the use of this product range before building products from this drawing.
2. The 'x' in the power stage/drive size option for the 03, 04, 06 and 08 drive sizes can mean:

Value in x:	Description
A	Size A, no internal regen resistor
R	Size A, with internal regen resistor

3. External regen resistors for all drive sizes are to be ordered and supplied separately using:

Drive Size (ACONT/APK)	Regen Description	Kit Order #
3/11 and 6/22	120 OHM/100 Watt	CA63569-009
8/22	51 OHM/200 Watt	CA63569-002
14/42	33 OHM/250 Watt	CA63569-004
20/45, 25/70, and 30/90	12 OHM/370 Watt	CA63569-005
50/140 and 60/80	10 OHM/750 Watt	CA63569-006
100/300	3.9 OHM/1000 Watt	CA63569-007
140/300	3.0 OHM/1500 Watt	CA63569-008

4. Restart interlocks circuit ONLY available on -100 and -140 power stage options.
5. External 24V fan connector ONLY available on -100 power stage option.
6. Applies to μ A size only. Form, fit and function different from μ A options 0 - 3.
7. Reference bill of material for hardware revision detail.
8. Conformal coating shall be applied to all printed circuit board assemblies as defined in the bill of materials.

Refer to page 14 for ordering schematic.

TAKE A CLOSER LOOK.

Moog designs a range of products that complement the performance of those featured in this catalog. Visit our website for more information or contact the Moog facility nearest you.

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