Artisan Technology Group

Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS
Experienced engineers and technicians on staff at our full-service, in-house repair center

WE BUY USED EQUIPMENT
Sell your excess, underutilized, and idle used equipment
We also offer credit for buy-backs and trade-ins
www.artisantg.com/WeBuyEquipment ↗

InstraView™ **REMOTE INSPECTION**
Remotely inspect equipment before purchasing with our interactive website at ***www.instraview.com*** ↗

LOOKING FOR MORE INFORMATION?
Visit us on the web at ***www.artisantg.com*** ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisantg.com | www.artisantg.com

SERVODRIVE

DS2110



Rev. C 0809

INTEGRATED AXIS MOTION CONTROL FOR
BRUSHLESS SERVOMOTORS AND ACTUATORS

WHAT MOVES YOUR WORLD

MOOG

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.

OVERVIEW 3
FEATURES 4
PERFORMANCE SPECIFICATIONS 5
TECHNICAL DATA 6
ORDERING INFORMATION 13
ORDERING NOTES 14
SUPPORT 15



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

Moog is a registered trademark of Moog Inc. and its subsidiaries. All trademarks as indicated herein are the property of Moog Inc. and its subsidiaries.

©Moog Inc. 2007. All rights reserved. All changes are reserved.

Servodrive Control Solution
Higher performing machinery equates to real advantages in productivity and profitability for any manufacturing line. Servodrives are crucial to production capabilities in the plastics, metal forming, flight simulation and power generation industries to name a few. When choosing a servodrive, you want one known for dependability and accurate control in all applications. The DS2110 Servodrive is a proven unit that delivers consistent high dynamic performance control accuracy and versatility. This servodrive is ideal for applications requiring integrated axis motion control.

MEETING YOUR TOUGHEST MACHINE CHALLENGES

The DS2110 Servodrive 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
DS2110'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 a 16-bit analog to digital sampling and low drift current sensors.

Production reliability
Take advantage of increased capacity by eliminating downtime. The DS2110 keeps you productive with the ability to operate a broad range of brushless servomotors giving you the adaptability you need along with easy to use motion template for electro-mechanical actuators.

Complete machine adaptability
Adaptability means you are prepared for future changes. The DS2110 servodrive gives you the ability to adapt with a high speed interface, universal FieldBus acceptance and motor feedback supported through resolver or high resolution, interpolated sin/cos encoder feedback. The built-in Moog motion template gives you flexible motion control.

COMPLETE FLEXIBILITY

The DS2110 Servodrive 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 8Khz for true real-time control.

The DS2110 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 DS2110 on your motion control challenges and see how one servodrive 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 communications protocols via the FieldBus gives you adaptability. The high speed interface provides status reports and initializing controller parameters. Supported FieldBuses include DeviceNet, RS485, F-NET, Modbus, FireWire, CANopen, Ethernet IP, ProfiNet, SERCOS, 12-bit Analog IN and 16-bit Analog I/O.

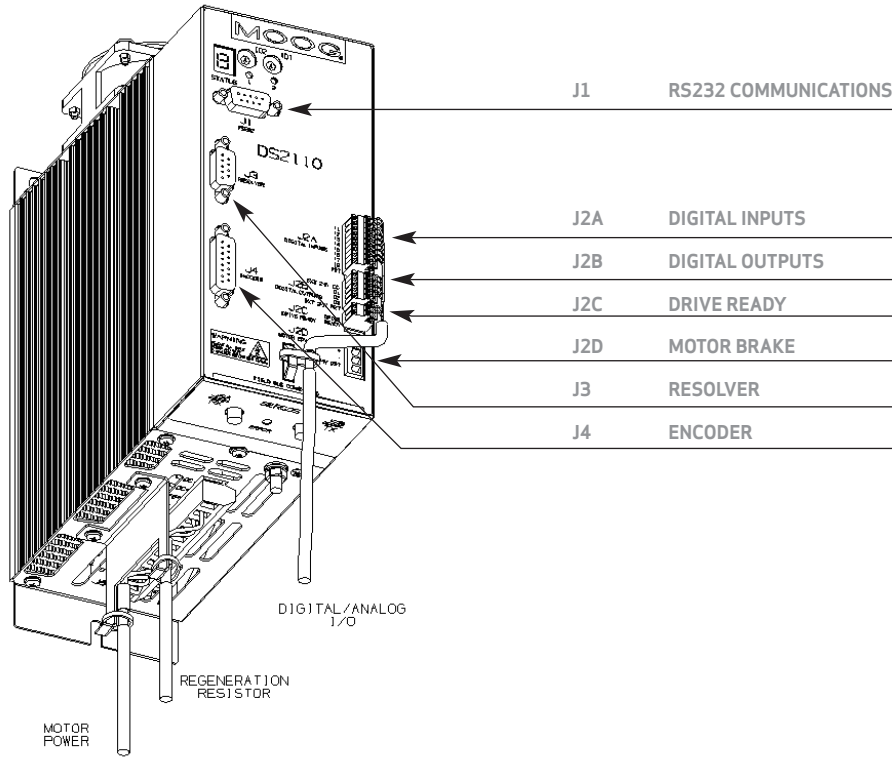
Flexible performance allows up to three feedback devices like sin/cos encoder, and 2 to 24 pole resolvers. This also includes Stegmann & Heidenhain encoders.

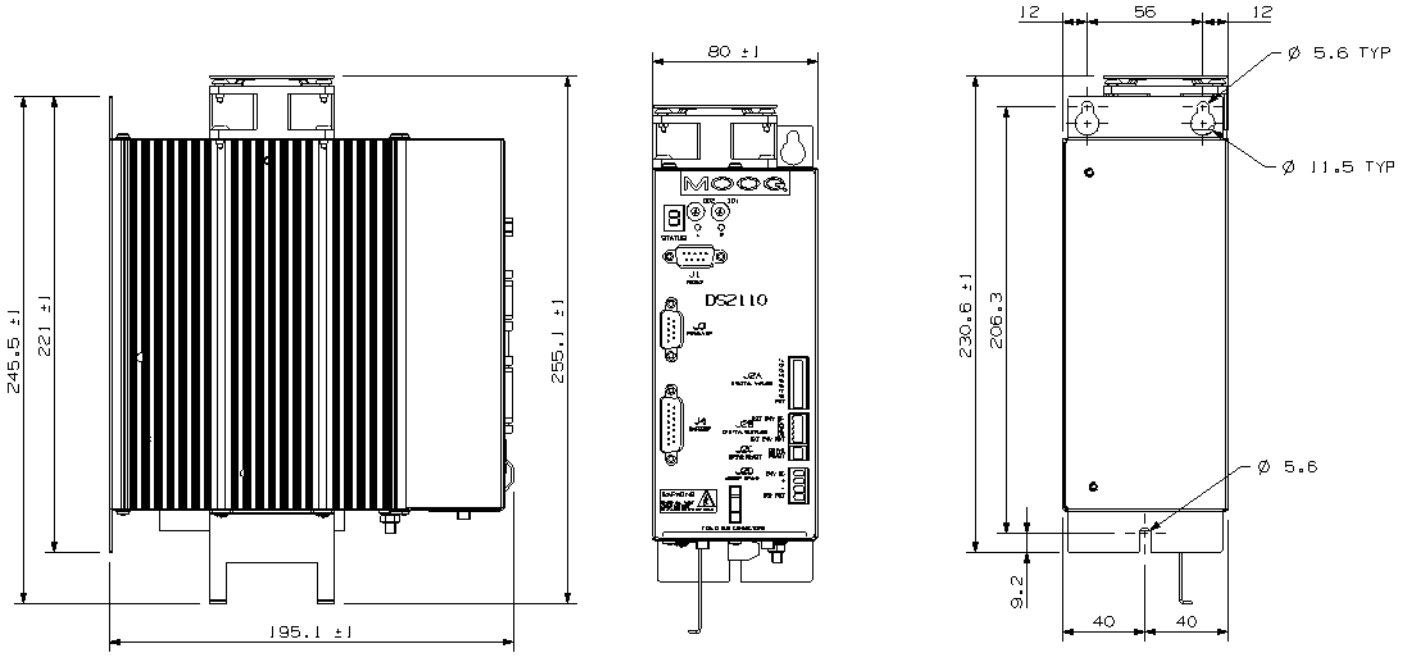
The ability to monitor drives and control them via a Digital I/O allows you the total customization you need. In addition to the Motor Brake control output and Drive Ready output there are seven programmable inputs and three outputs.

Electrical Characteristics	
Power supply	3-phase, 65 Vac to 510 Vac, 1 phase, 103 to 243 VAC
Auxiliary power supply	24 Vdc, 2A
PWM Frequency	10 kHz
Position control loop Frequency	8 kHz
Speed control loop frequency	8 kHz
Continuous / peak output current	8A/22A with 3-phase supply; 6A/6A with single phase supply (Size 3); 10A/42A with 3-phase supply (Size 4); 20A/45A with 3-phase supply (Size 5)
Certifications include	
	UL, CE, ODVA
Environmental data	
Operating ambient temperature	0 to 40°C
Storage Temperature	-25 to +55°C
Thermal Protection	70°C to de-rating the servodrive
Ingress Protection	IP20
Protection	
	Servomotor and servodrive over temperature Out of tolerance power supply detection Encoder/Resolver missing signal detection Output Open/Short circuit detection I^2T limiting Thermal foldback

Code (*)	Type	Nominal (Arms)	Max (Arms)	Peak (A)	Mass (kg)	Size
G362-x03	3/9	3	6	9	2.7, 4.5	uA, A
G362-x04	4/12	4	8	12	4.5	A
G362-x06	6/22	6	16	22	2.7, 4.5	uA, A
G362-x08	8/22	8	16	22	4.5	A
G362-010	10/42	10	29	42	6	B
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

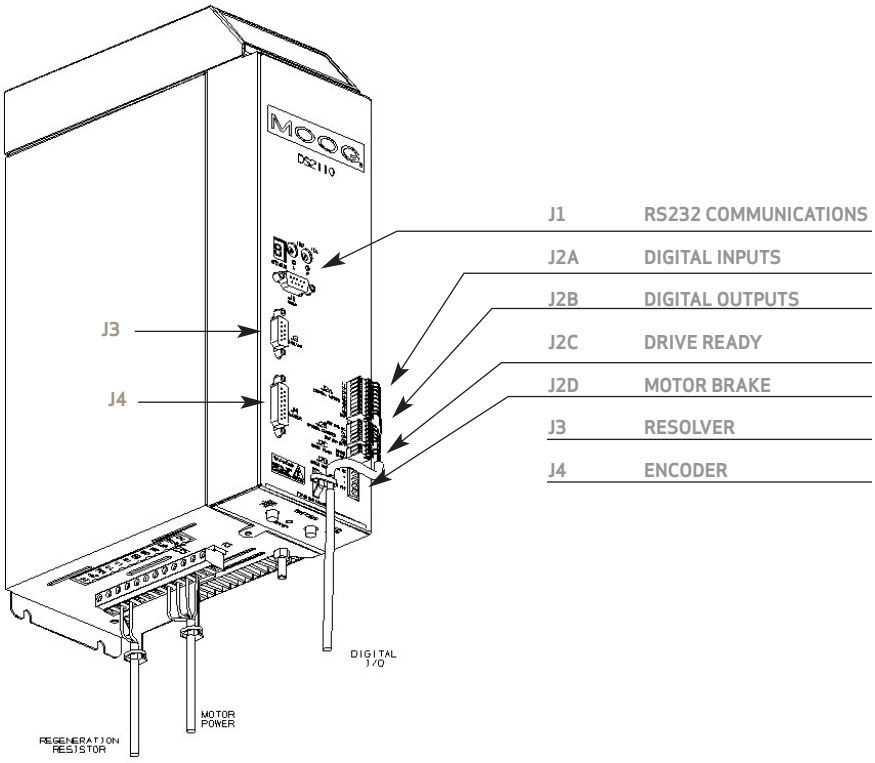
CONNECTIONS SIZE µA AND DIMENSIONS

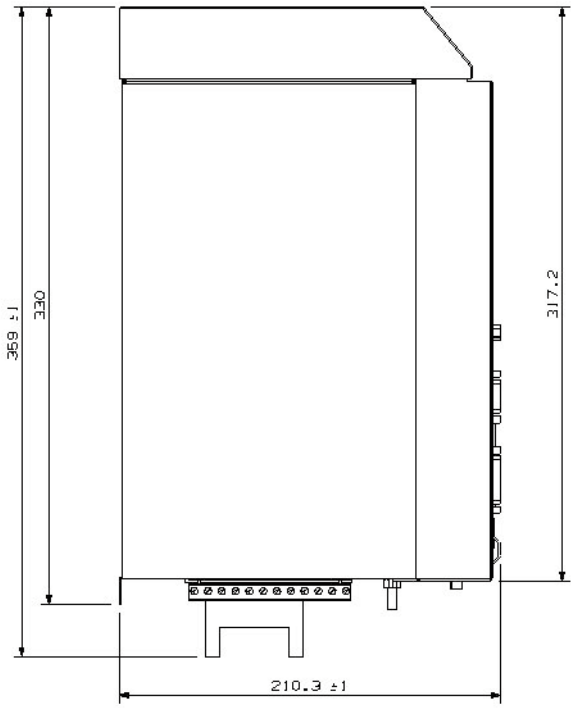


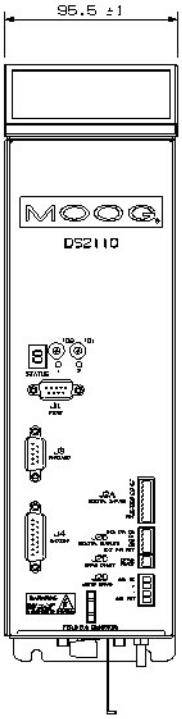


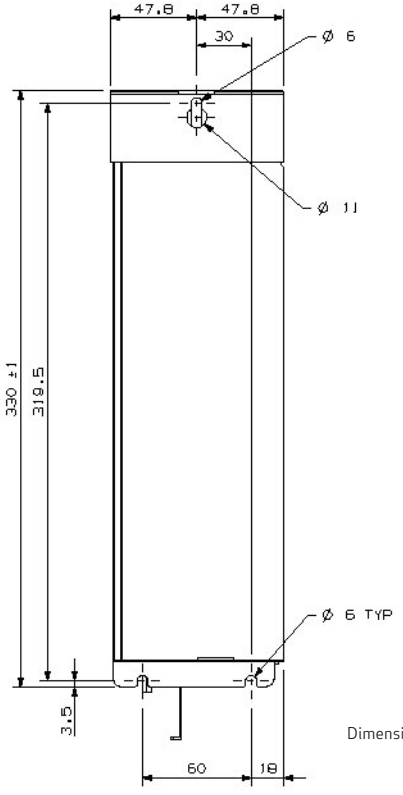
Dimensions in mm

CONNECTIONS SIZE A AND DIMENSIONS



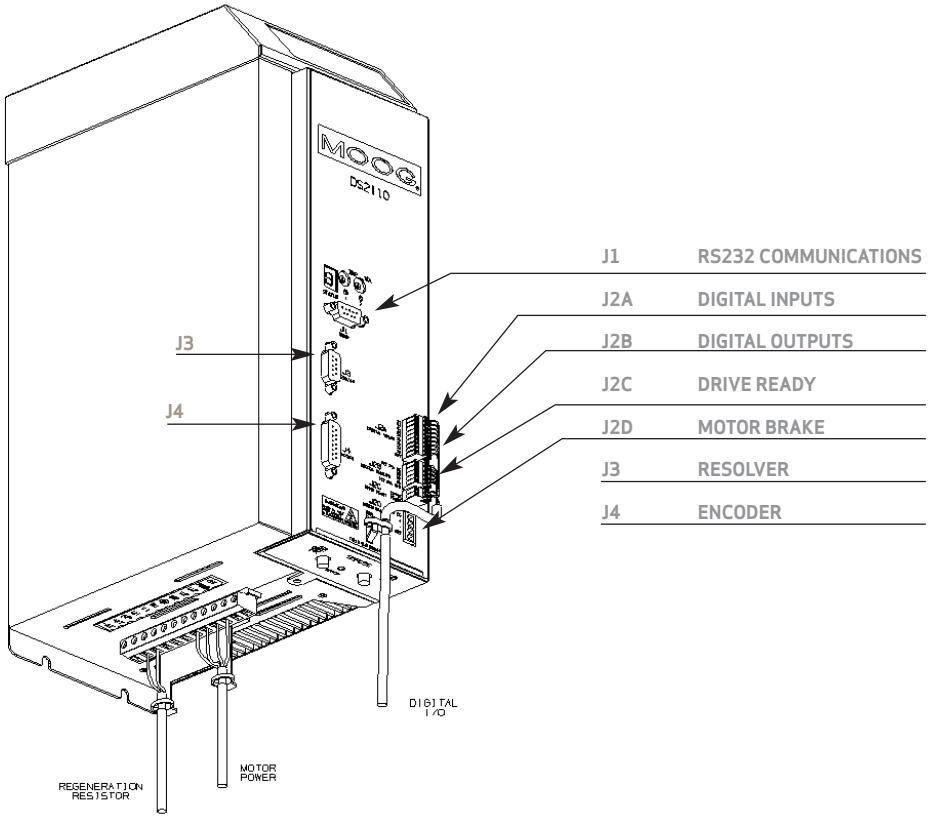


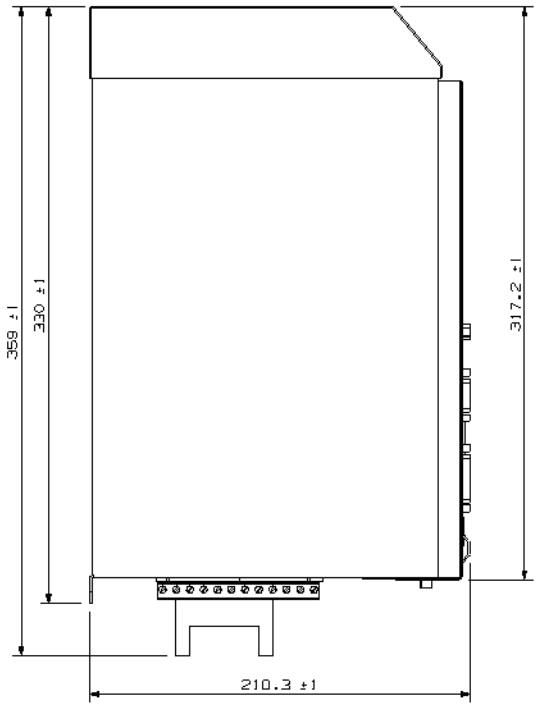


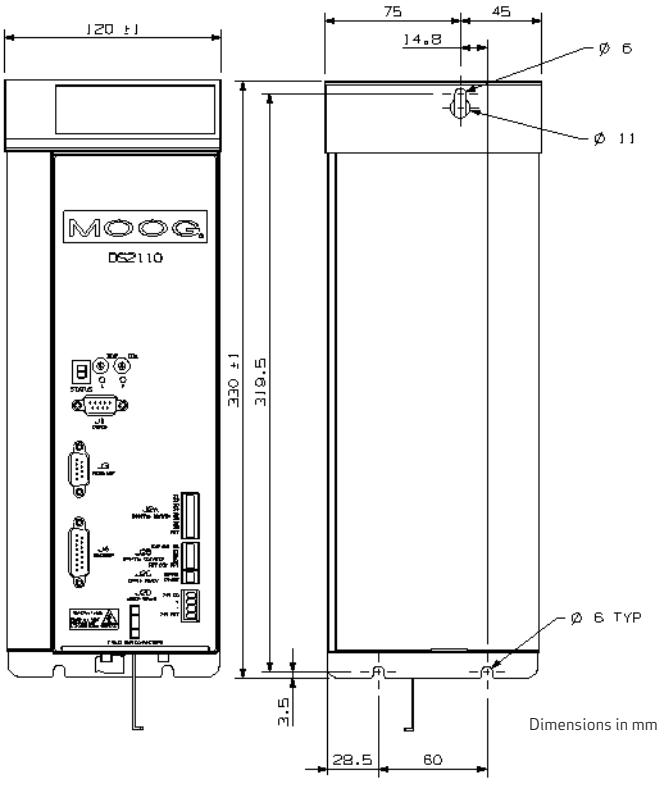


Dimensions in mm

CONNECTIONS SIZE B AND DIMENSIONS

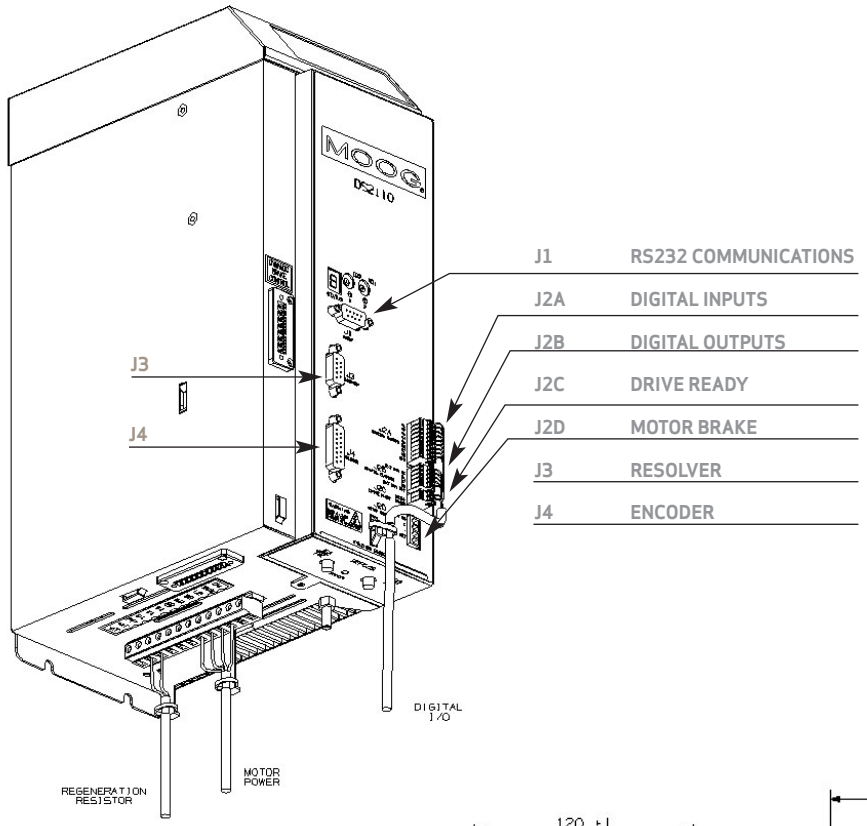


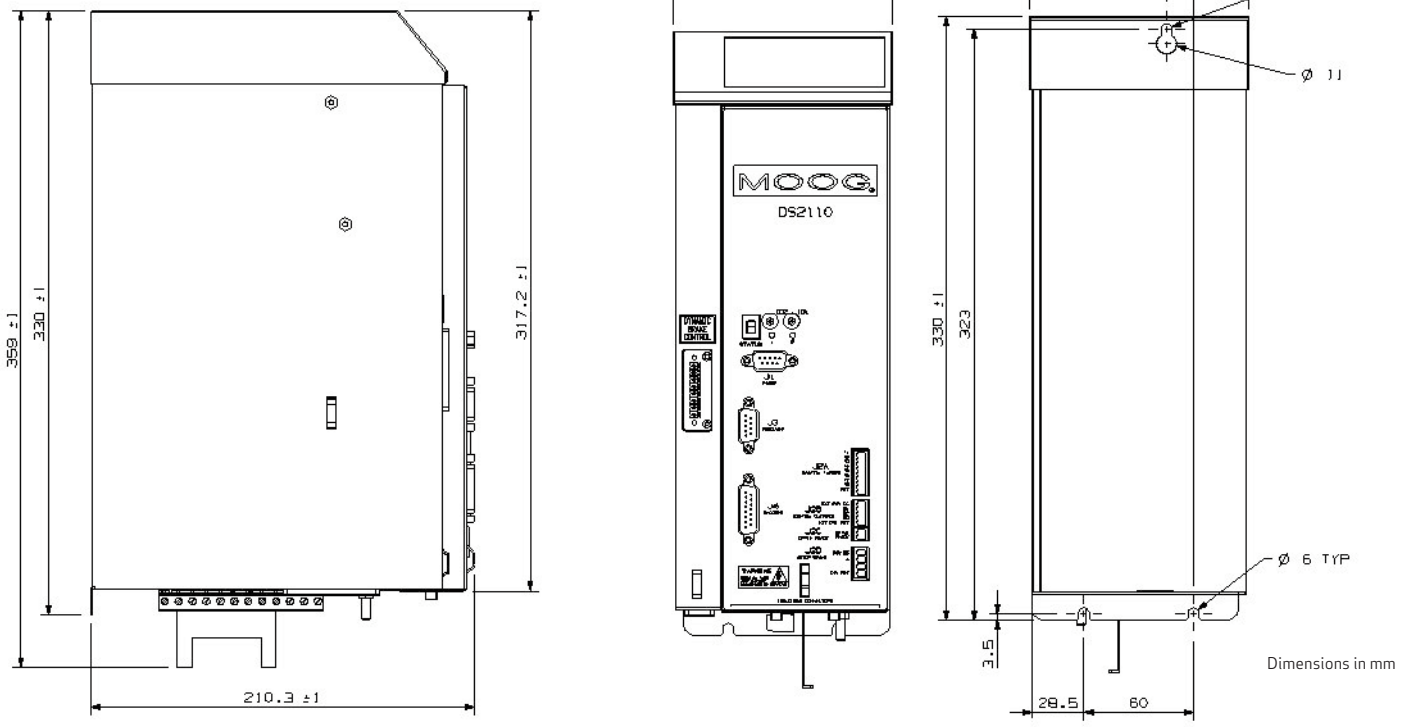




Dimensions in mm

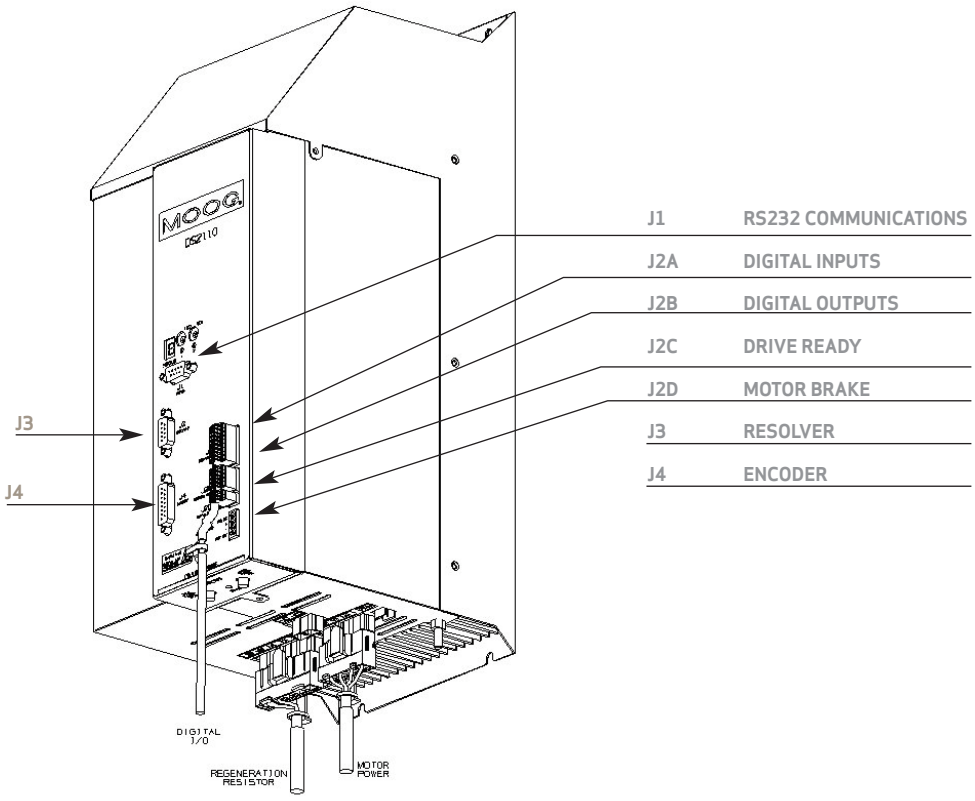
CONNECTIONS SIZE B WITH DYNAMIC BRAKE CONTROL AND DIMENSIONS



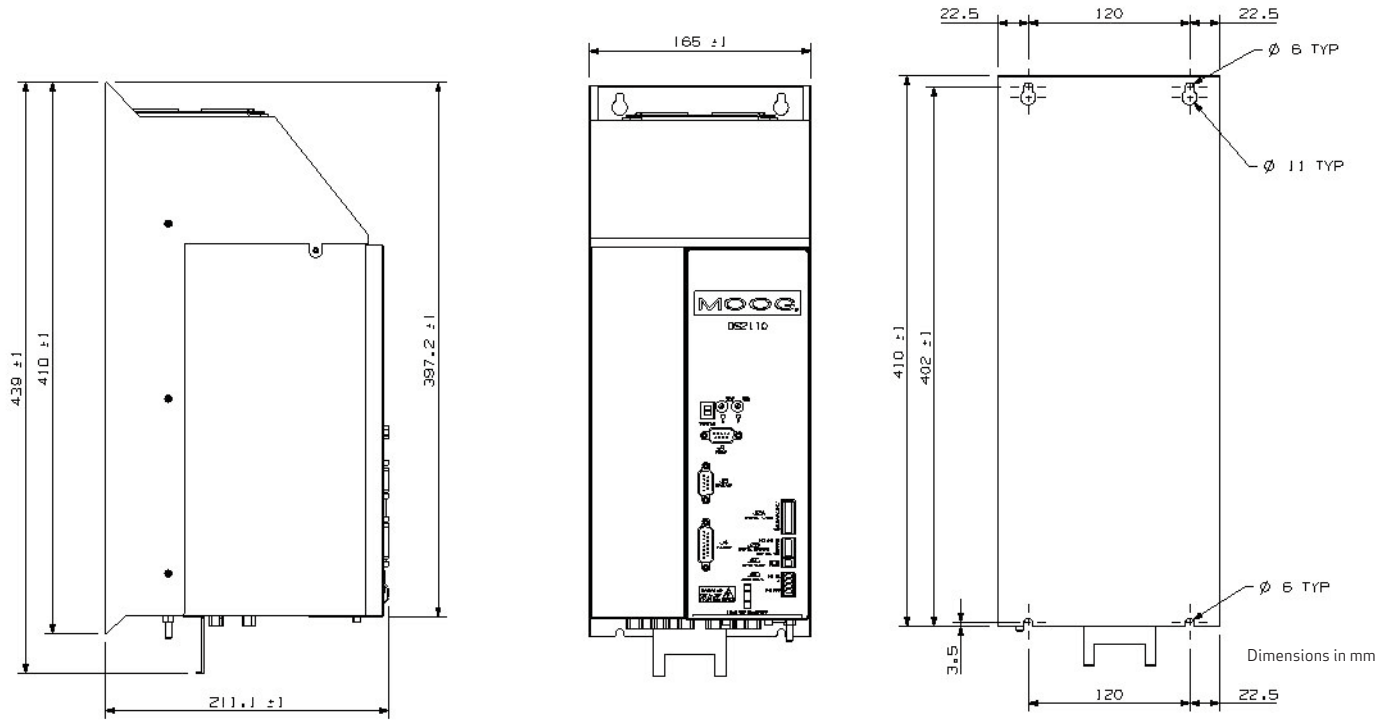


Dimensions in mm

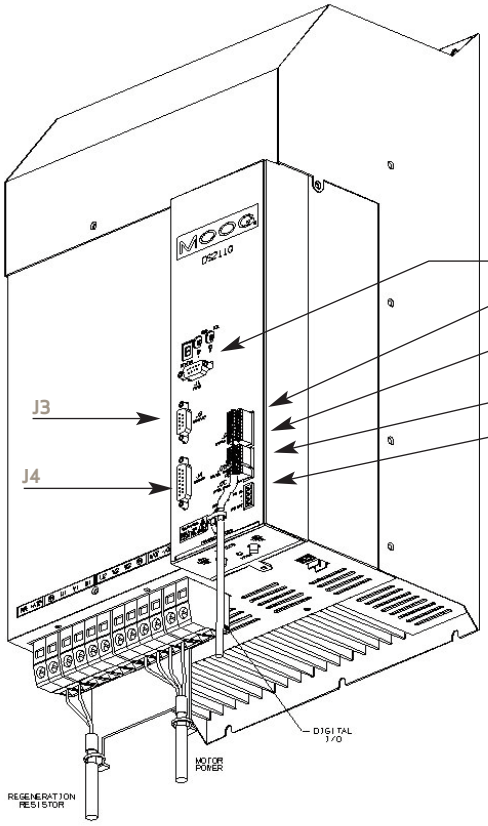
CONNECTIONS SIZE C AND DIMENSIONS



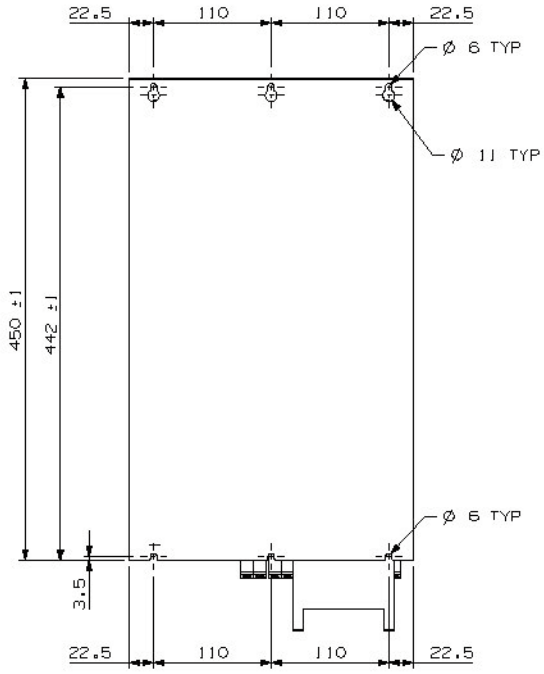
J1	RS232 COMMUNICATIONS
J2A	DIGITAL INPUTS
J2B	DIGITAL OUTPUTS
J2C	DRIVE READY
J2D	MOTOR BRAKE
J3	RESOLVER
J4	ENCODER

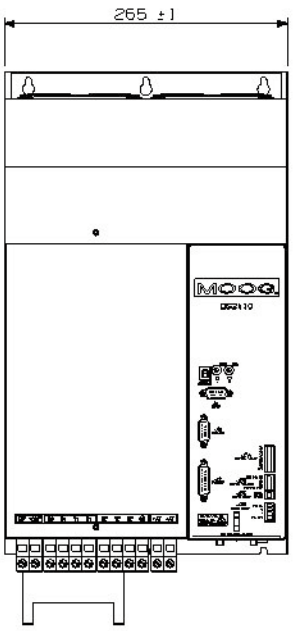


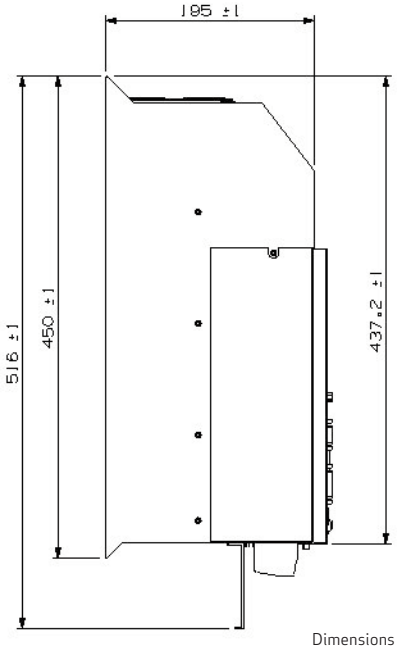
CONNECTIONS SIZE D AND DIMENSIONS



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

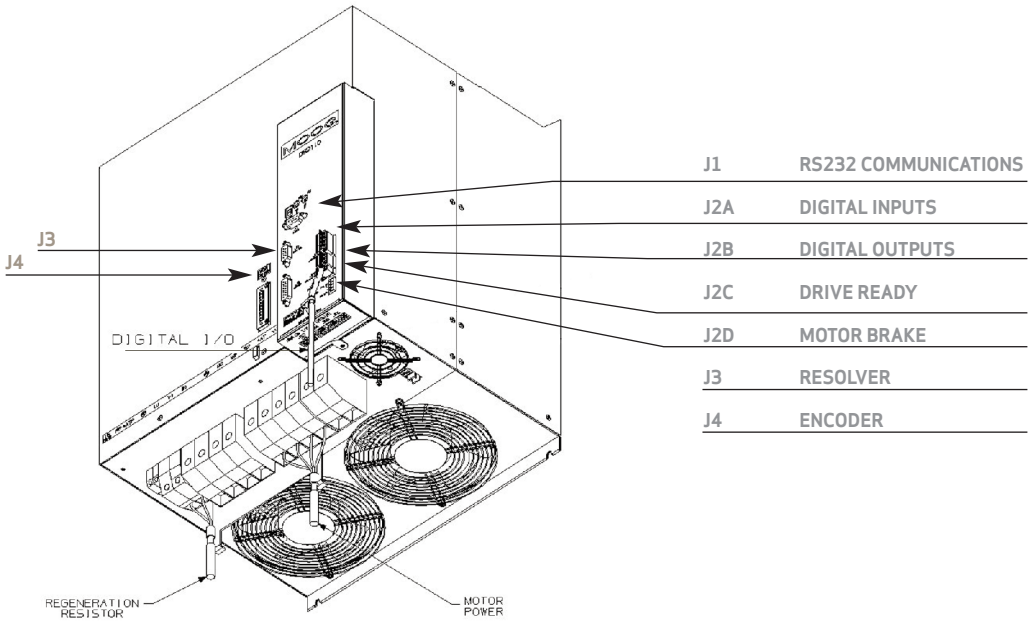


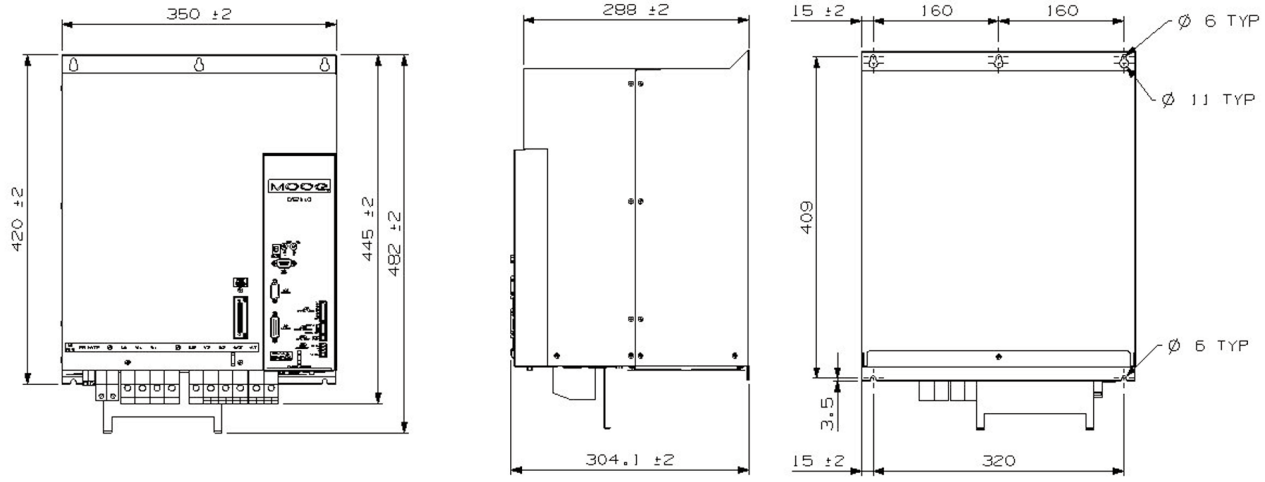




Dimensions in mm

CONNECTIONS SIZE E AND DIMENSIONS





Dimensions in mm

TYPE 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
x03	3/9	A
x04	4/12	A
x06	6/22	A
x08	8/22	A
010	10/42	B
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

Hardware Configuration

Option	Description
0	No fieldbus
1	Firewire & 2 Scalable AI
2	Firewire & 2 Fixed AI
3	Sercos
4	Devicenet
5	16-bit Analog ±10V IO
6	16-bit Analog 0-20mA IO
7	16-bit Analog ±10V 0-20mA IO
8	Reserved for ICD
9	RS485
A	FNET
B*	CanOpen
C*	RS485
D*	ProfiNet
E*	Modbus-TCP
F*	12-bit Analog ±10V IO
G*	Firewire Optical & 2 Scalable AO
H*	12-bit Analog 0-20mA IO
J*	12-bit Analog ±10V 0-20mA IO

Restart Interlock Circuit and 24V Fan Option

Option	Description
0	RIC Not Installed & Fan Option Not Installed
1	RIC Not Installed & Fan Option Installed
2	RIC Installed & Fan Option Not Installed
3	RIC Installed & Fan Option Installed

Application Software Identifier

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

Software Revision

Revision	Description
A	Original
B	
C	

Hardware Revision Level

Size µA	Size A-D	Size E	Description
B	B	C	No fieldbus
B	D	E	Firewire & 2 Scalable AI
A	B	C	Firewire & 2 Fixed AI
B	C	D	Sercos
B	B	C	Devicenet
C	C	D	16-bit Analog +/-10V IO
C	C	D	16-bit Analog 0-20mA IO
C	C	D	16-bit Analog +/-10V 0-20mA IO
B	B	*	Ethernet IP
B	B	*	FNET
*	*	*	CanOpen
*	*	*	RS485
*	*	*	ProfiNet
*	*	*	Modbus-TCP
*	*	*	12-bit Analog ±10V IO
*	*	*	Firewire Optical & 2 Scalable AI
*	*	*	12-bit Analog 0-20mA IO
*	*	*	12-bit Analog ±10V 0-20mA IO

* Discuss with Moog ICD Engineering prior to order placement.

Turn to page 14 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
0	µA size, with internal regen resistor
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 #
3/9 and 4/12	75 OHM/100 Watt	CA63569-001
6/15 and 8/22	51 OHM/200 Watt	CA63569-002
10/42	22 OHM/240 Watt	CA63569-003
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

4) Restart interlocks circuit ONLY available on -010 and -100 power stage options.

5) External 24V fan connector ONLY available on –100 power stage option.

Refer to page 12 for ordering schematic.

GLOBAL SUPPORT

As a recognized leader in motion control technologies, Moog offers a full range of services to support our products and ensure that they meet the expectations of customers.

Moog experts are the best at helping customers select the right products and ensuring that they run reliably for a long time. When it is time for new machine commissioning, refurbishment or routine maintenance, our engineers can help to optimize machine performance, minimize downtime and ensure the smooth application of our products.

Known for the ability to customize products for the specific needs of our customers, we are uniquely able to handle customer needs and supply services throughout the life cycle of the product. Moog Authentic Repair®is designed to provide the highest quality repair services using original equipment parts, the latest design specifications, and highly trained technicians. This ensures that our repaired products will run as well as when they were new.

With facilities in over 25 countries, Moog is committed to offering convenient local service to our customers.

Visit www.moog.com/industrial/globallocator to find the location nearest you for application engineering, repair, or field services.

FOR MORE INFORMATION VISIT

http://www.moog.com/industrial

TAKE A CLOSER LOOK

Solutions for linear actuation control of high performance applications are available around the world. For more information, visit our Web site or contact one of the locations below.

Argentina
+54 11 4326 5916
info.argentina@moog.com

Australia
+61 3 9561 6044
info.australia@moog.com

Austria
+43 664 144 65 80
info.austria@moog.com

Brazil
+55 11 5523 8011
info.brazil@moog.com

China
+86 21 2893 1600
info.china@moog.com

Finland
+358 9 2517 2730
info.finland@moog.com

France
+33 1 4560 7000
info.france@moog.com

Germany
+49 7031 6220
info.germany@moog.com

Hong Kong
+852 2 635 3200
info.hongkong@moog.com

India
+91 80 4120 8799
info.india@moog.com

Ireland
+353 21 451 9000
info.ireland@moog.com

Italy
+39 0332 421 111
info.italy@moog.com

Japan
+81 436 55 3767
info.japan@moog.com

Korea
+82 31 764 6711
info.korea@moog.com

Luxembourg
+352 40 46 401
info.luxembourg@moog.com

Netherlands
+31 252 462 000
info.netherlands@moog.com

Norway
+47 224 32927
info.norway@moog.com

Russia
+7 317131811
info.russia@moog.com

Singapore
+65 6773 6238
info.singapore@moog.com

South Africa
+27 11 655 7030
info.southafrica@moog.com

Spain
+34 902 133 240
info.spain@moog.com

Sweden
+46 31 680 060
info.sweden@moog.com

Switzerland
+41 71 394 5010
info.switzerland@moog.com

United Kingdom
+44 168 429 6600
info.uk@moog.com

United States
+1 716 652 2000
info.usa@moog.com

www.moog.com/industrial

©2008 Moog, Inc.

All trademarks as indicated herein are the property of Moog, Inc. and its subsidiaries. All rights reserved.

DS2110 CDL7219 Rev. C 0809
TJW/PDF

Artisan Technology Group

Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS
Experienced engineers and technicians on staff at our full-service, in-house repair center

WE BUY USED EQUIPMENT
Sell your excess, underutilized, and idle used equipment
We also offer credit for buy-backs and trade-ins
www.artisantg.com/WeBuyEquipment ↗

InstraView™ **REMOTE INSPECTION**
Remotely inspect equipment before purchasing with our interactive website at ***www.instraview.com*** ↗

LOOKING FOR MORE INFORMATION?
Visit us on the web at ***www.artisantg.com*** ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisantg.com | www.artisantg.com