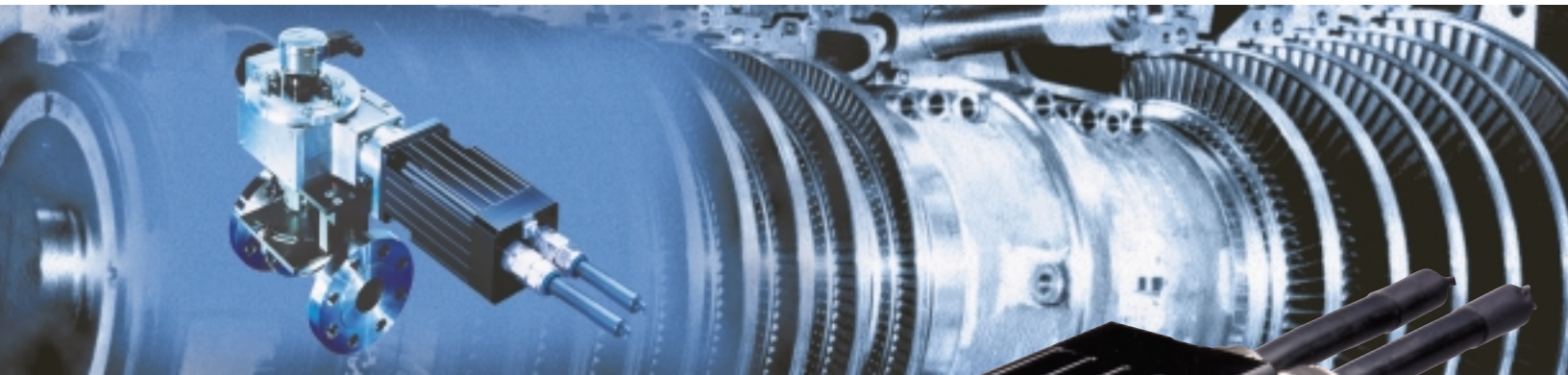


# MOOG

## G493 Series Explosion-Proof Brushless Servo Motors



**CENELEC Certified  
FM Approval Pending**

**Explosion-proof design for  
hazardous environments**

Designed and tested for operation in environments where vapors or gasses form flammable or explosive environments. Flameproof housing has proven capable of withstanding internal explosions without bursting or allowing ignition to reach outside the motor frame.



## SERVO MOTOR FEATURES:

- **International Acceptance.** Explosion-proof (Ex-d) design has proven capable of withstanding internal explosions without bursting or allowing ignition to reach outside the motor frame in compliance with:
  - CENELEC Group IIC for Class T4 environments
  - FM Division I, Class I for Group A, B, C and D environments
  - CENELEC certified/FM approval pending
- **Compact Design.** Through the use of high energy magnets, high fill factor stators and a thermally efficient aluminum case; Moog's G493 series motors are among the industry's highest in power density. The compact package increases design flexibility by allowing you to put the power where you need it.
- **High Dynamics.** Combining the high power density package with a low inertia rotor allows G493 series motors to deliver rapid load acceleration and deceleration to reduce move time.
- **High Temperature Operation.** Use of SmCo magnets, resolver feedback and Class H winding insulation allows G493 series motors to be used in environments with high ambient temperatures. Fully rated performance available with ambient temperatures to 45°C. Reduced torque operations supported at ambient temperatures over 100°C. (For CENELEC Class T4 applications, performance will be derated at ambient temperatures above 35°C.)
- **Customized Solutions.** Custom shafts and windings available to match your special needs.
- **Flexible Drive Solutions.** Moog servo drives, available with integral motion control, can be used to fully satisfy your system solutions.

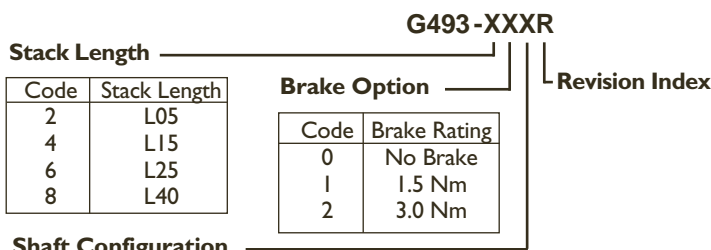
## SPECIFICATIONS

MOTOR	UNITS	MODELS			
	METRIC (ENGLISH)	G493-2xx	G493-4xx	G493-6xx	G493-8xx
<b>PERFORMANCE</b>					
△ Continuous Stall Torque	Nm (lb-in)	0.60 (5.31)	1.65 (14.60)	2.55 (22.57)	3.70 (32.8)
△ Continuous Stall Current	Arms	1.60	3.20	3.40	4.20
△ Peak Stall Torque	Nm (lb-in)	1.50 (13.3)	4.70 (41.60)	8.50 (75.23)	13.00 (115)
△ Peak Stall Current	Arms	4.60	10.6	12.4	16.3
△ Nominal Speed	rpm	8800	6300	4800	3900
△ Nominal Power	kW (hp)	0.45 (0.60)	0.95 (1.27)	1.15 (1.54)	1.40 (1.88)
△ Max Speed	rpm	10500	8000	5500	4500
6 Torque Constant	Nm/Arms (lb-in/Arms)	0.40 (3.54)	0.53 (4.69)	0.75 (6.64)	0.90 (7.97)
△ Terminal Resistance	Ohm	15.2	4.9	5.1	4.1
△ Motor Inductance	mH	18.8	8.5	10.3	8.9
△ Electrical Time Constant	msec	1.2	1.7	2.0	2.2
Inertia – w/o brake	kg-cm <sup>2</sup> (lb-in-sec <sup>2</sup> x 10 <sup>-4</sup> )	0.16 (1.42)	0.39 (3.45)	0.62 (5.49)	0.97 (8.59)
Weight – w/o brake	kg (lb)	2.1 (4.6)	2.7 (5.9)	3.3 (7.3)	4.2 (9.2)

### NOTES:

- △ With motor mounted on a 300 x 300 x 12 mm steel heat sink with a coil temperature 100°C over ambient (max. 45°C).
- △ For at least 1 second out of 10 with less than 15% saturation. Contact Moog for higher torque at lower duty cycles.
- △ K<sub>t</sub>-line shows non-linearity between current and torque at high end.
- △ Nominal values at maximum continuous output power with conditions as in note 1.
- △ Speed where EMF is 360 volts.
- △ At 25°C (80°F) coil temperature.
- △ Currents are Arms per phase.
- 8. Specification tolerances are ±10%.

## MODEL NUMBER DESIGNATION



### Shaft Configuration

Code	Shaft Type	Sealing	Cable Outlet
0	Slot & Key	No	Back
1	Slot & Key	Yes	Back
2	Plain	No	Back
3	Plain	Yes	Back
4	Slot & Key	No	Top
5	Slot & Key	Yes	Top
6	Plain	No	Top
7	Plain	Yes	Top

## RESOLVER-TRANSMITTER

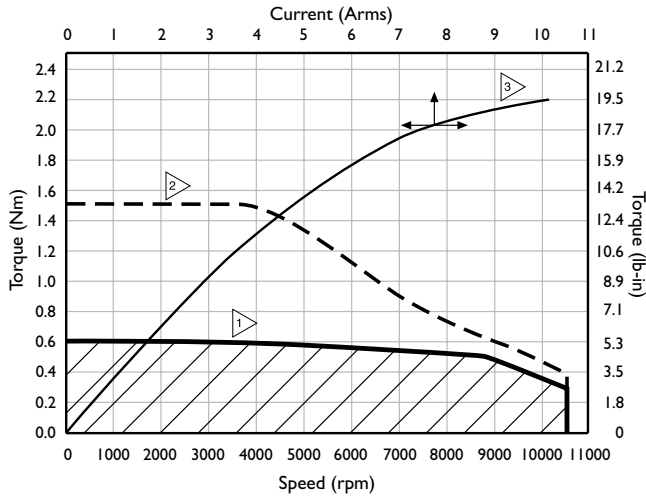
	SPECIFICATIONS
Pole Count	2
Input voltage	4.0 Vrms
Input frequency	3400 Hz - 8000 Hz
Input current	≤ 35 mA rms
Transformation Ratio	0.5

### OPTIONAL BRAKE (Supply 24 Volts ±10%)

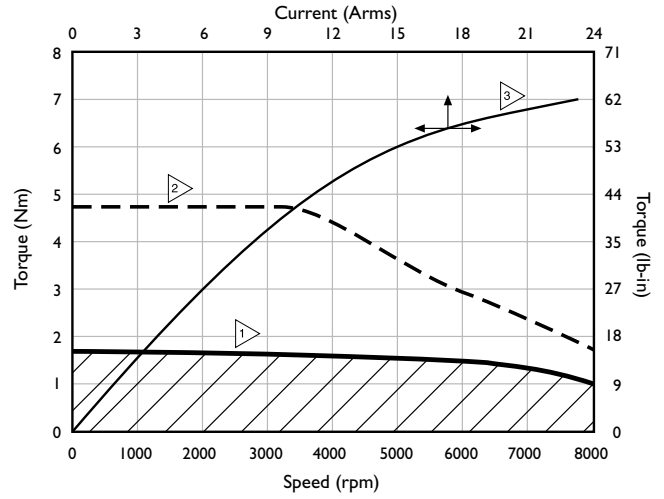
	Units	1	2
Torque (min)	Nm (lb - in)	1.5 (13.3)	3.0 (26.6)
Power Input (max)	Watt	11	10
Inertia (additional)	kg-cm <sup>2</sup> (lb-in-sec <sup>2</sup> x 10 <sup>-4</sup> )	0.07 (0.62)	0.18 (1.59)
Weight (additional)	kg (lb)	0.20 (0.44)	0.32 (0.70)

## PERFORMANCE CURVES

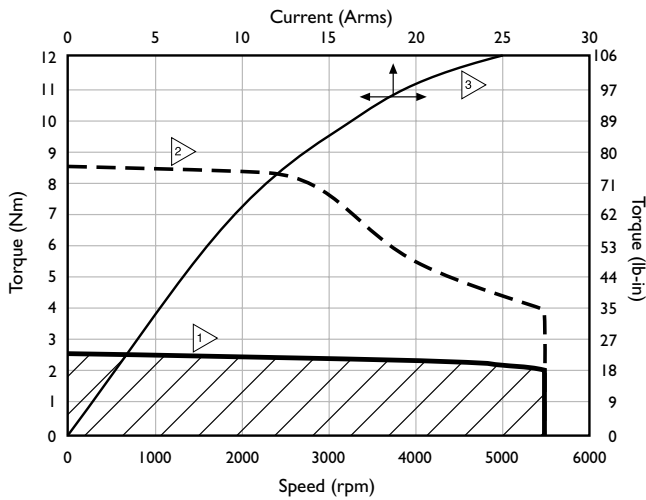
### MODEL G493-2xx



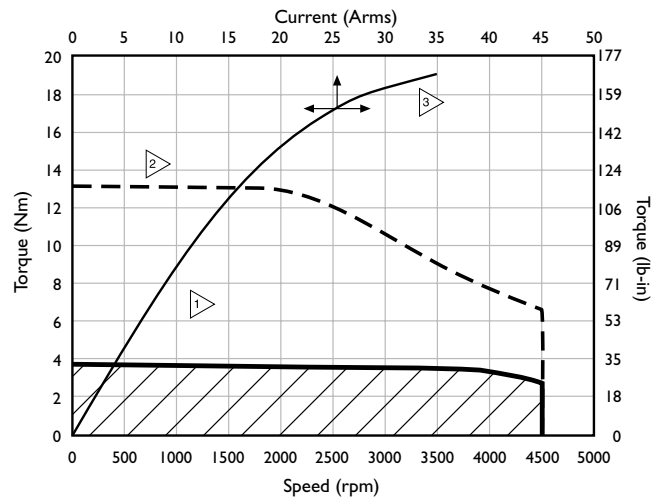
### MODEL G493-4xx



### MODEL G493-6xx



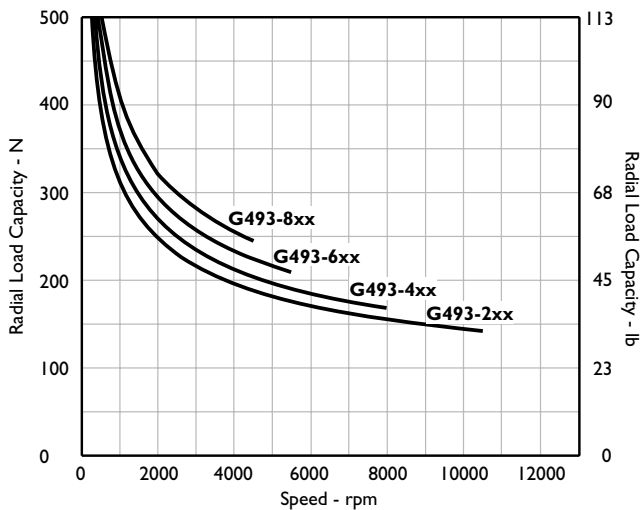
### MODEL G493-8xx



Conditions : See notes  $\triangle 1$ ,  $\triangle 2$  and  $\triangle 3$ .

 Designates Continuous Operating Area.

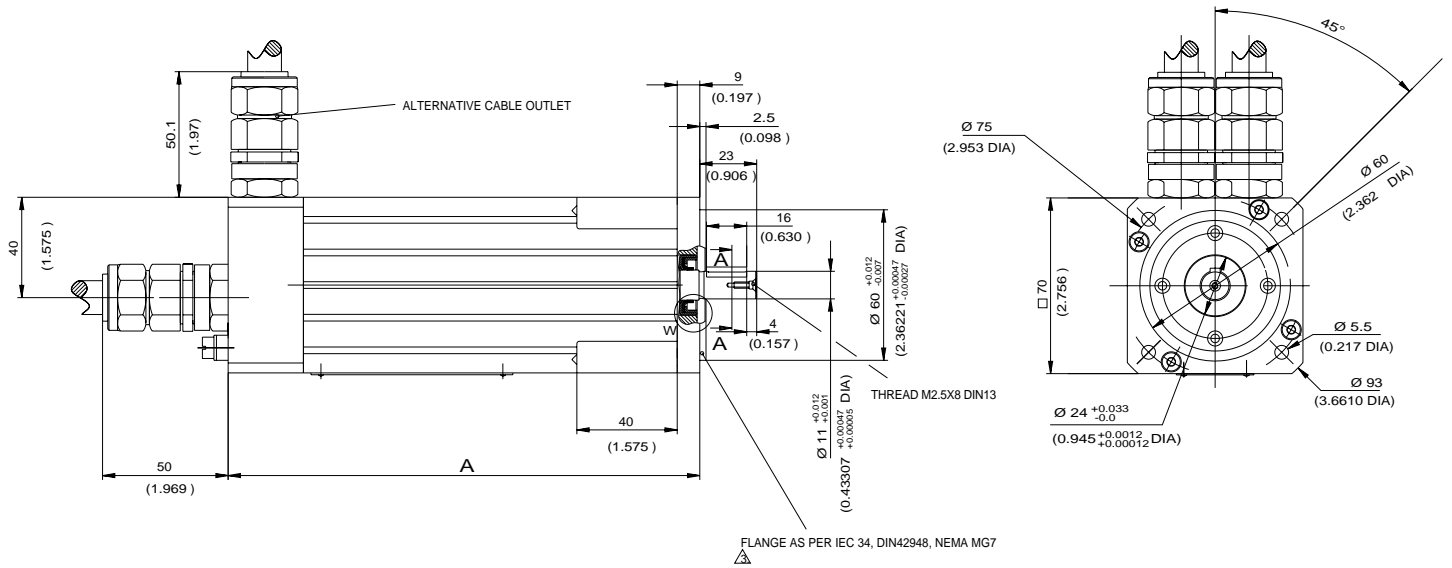
## BEARINGS - RADIAL LOAD CAPACITY



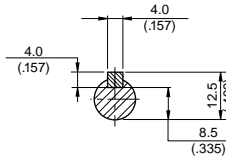
Contact Moog for applications with elevated ambient temperatures.

Radial Load Capacity (for 20,000 hr. B10 life) applied at shaft extension mid-point.  
Consult factory for other loading conditions.

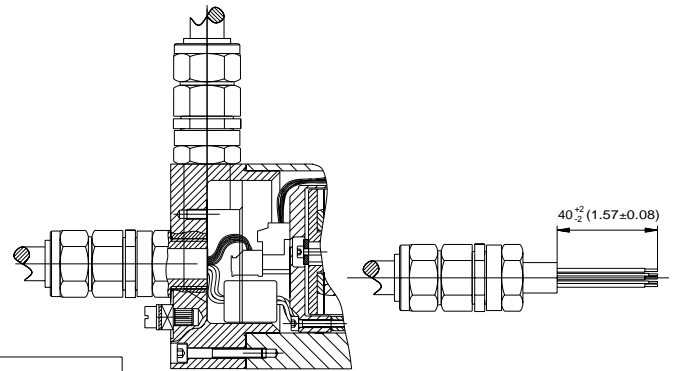
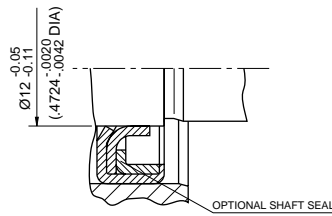
# INSTALLATION DRAWING



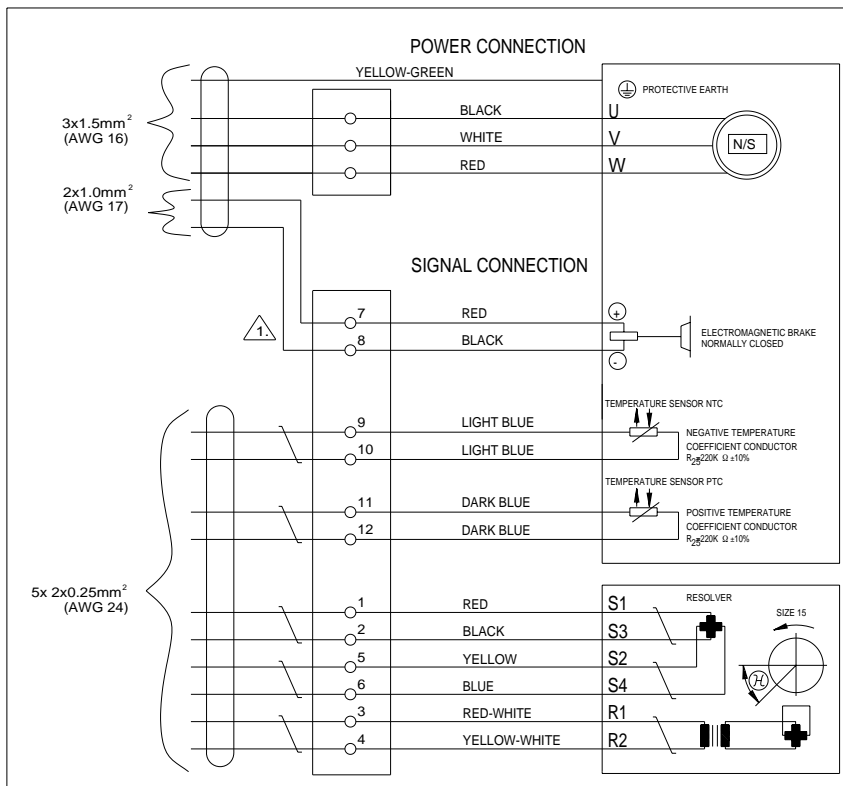
## SECTION A-A



## DETAIL W



## SCREW TERMINAL



MODEL NO.	"A"	"A" with brake
G493-2xx	162.0 (6.378)	188.0 (7.402)
G493-4xx	187.5 (7.382)	213.5 (8.405)
G493-6xx	213.0 (8.386)	239.0 (9.409)
G493-8xx	251.0 (9.882)	277.0 (10.905)

## NOTES:

- △ MOTOR WITHOUT BRAKE  
PIN 7 AND 8 NOT CONNECTED
- △ DIMENSIONS IN PARENTHESIS ARE IN INCHES
- △ NEMA/IEC METRIC MOUNTING