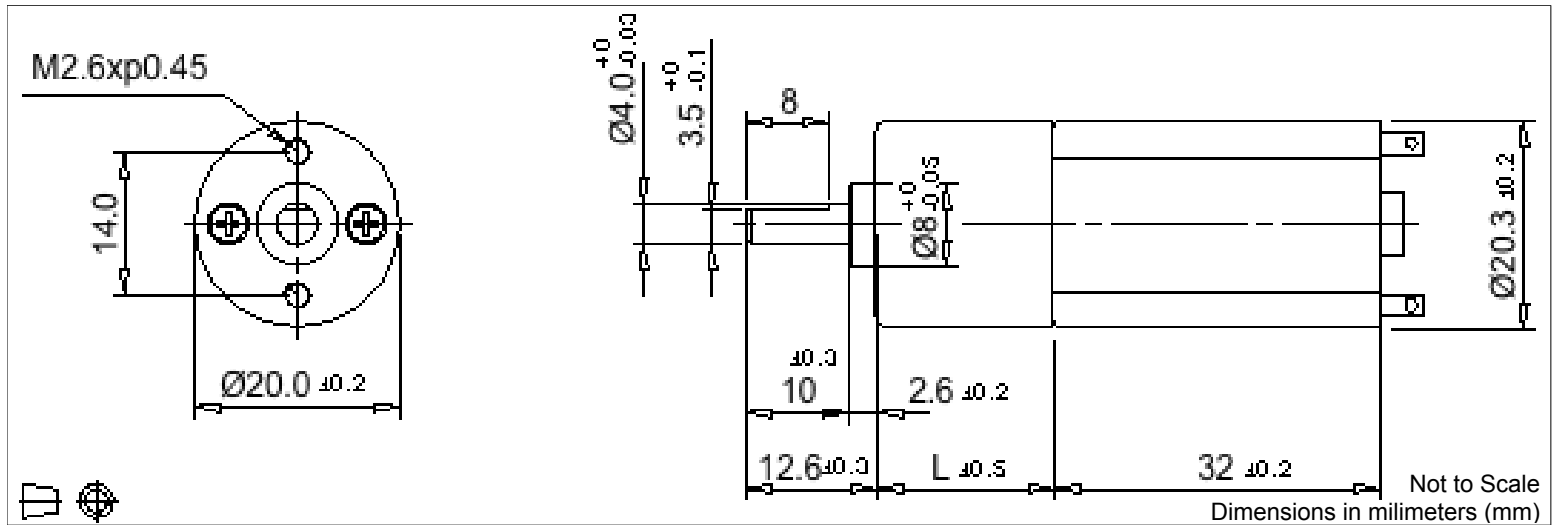


Spur Gearmotor - 20 mm Ø



Low Friction - Low Cost Encoder Option

Global Motion Products



Ratio	Voltage Volts	Gearbox Efficiency %	No Load Speed rpm	Gearmotor No Load Current A	Stall Torque Nm	Continuous Torque Nm	Length L mm	Gearmotor Mass grams	Direction of Rotation*	Order Part Number
10.0:1	12.0	73 %	799 rpm	0.075 Amp	0.11 Nm	0.016 Nm	16.5 mm	56.0 grams	Opposite	S200010AM20
12.5:1	12.0	73 %	636 rpm	0.075 Amp	0.13 Nm	0.020 Nm	16.5 mm	56.0 grams	Opposite	S200013AM20
18.2:1	12.0	65 %	437 rpm	0.075 Amp	0.17 Nm	0.025 Nm	20.0 mm	59.5 grams	Same	S200018AM20
28.8:1	12.0	65 %	277 rpm	0.075 Amp	0.28 Nm	0.040 Nm	20.0 mm	59.5 grams	Same	S200029AM20
42.0:1	12.0	55 %	190 rpm	0.075 Amp	0.34 Nm	0.050 Nm	20.0 mm	59.5 grams	Same	S200042AM20
52.0:1	12.0	55 %	153 rpm	0.075 Amp	0.42 Nm	0.061 Nm	20.0 mm	59.5 grams	Same	S200052AM20
67.2:1	12.0	55 %	119 rpm	0.075 Amp	0.54 Nm	0.079 Nm	20.0 mm	59.5 grams	Same	S200067AM20
80.2:1	12.0	50 %	99 rpm	0.075 Amp	0.59 Nm	0.084 Nm	21.8 mm	61.0 grams	Opposite	S200080AM20
99.3:1	12.0	50 %	80 rpm	0.075 Amp	0.73 Nm	0.108 Nm	21.8 mm	61.0 grams	Opposite	S200099AM20
119.5:1	12.0	50 %	67 rpm	0.075 Amp	0.88 Nm	0.127 Nm	21.8 mm	61.0 grams	Opposite	S200120AM20
150.2:1	12.0	50 %	53 rpm	0.075 Amp	1.11 Nm	0.147 Nm	21.8 mm	61.0 grams	Opposite	S200150AM20
179.2:1	12.0	45 %	44 rpm	0.075 Amp	1.19 Nm	0.174 Nm	25.3 mm	64.0 grams	Same	S200179AM20

Radial Load Rating	≤ 3.9 N	Radial Play	≤ 0.05 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 2.0 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 85%
Press Fit Force - Max	≤ 19.6 N			Options	Bearing Sleeve

CAUTION:
Stall Torque is a theoretical calculation- NOT a rating or maximum value. Continuous Torque is the lesser of the Gearbox Continuous Torque Rating or the Motor's Continuous Torque Rating at gearbox output shaft.

Magnetic Encoders. Leads. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Shaft modifications and component mounting. Coreless Motor.

* Rotational Sense of Gearbox Output Shaft to Motor Shaft

Global Motion Products
 Distributed by:
 Precision Motion Distributors: (925) 803-9565
 Technical Support: (760) 451-2723
<http://www.gmpwebsite.com> Email: info@gmpwebsite.com

Commutation Type:
 Metal Graphite

RoHS Compliant

A - March 2011

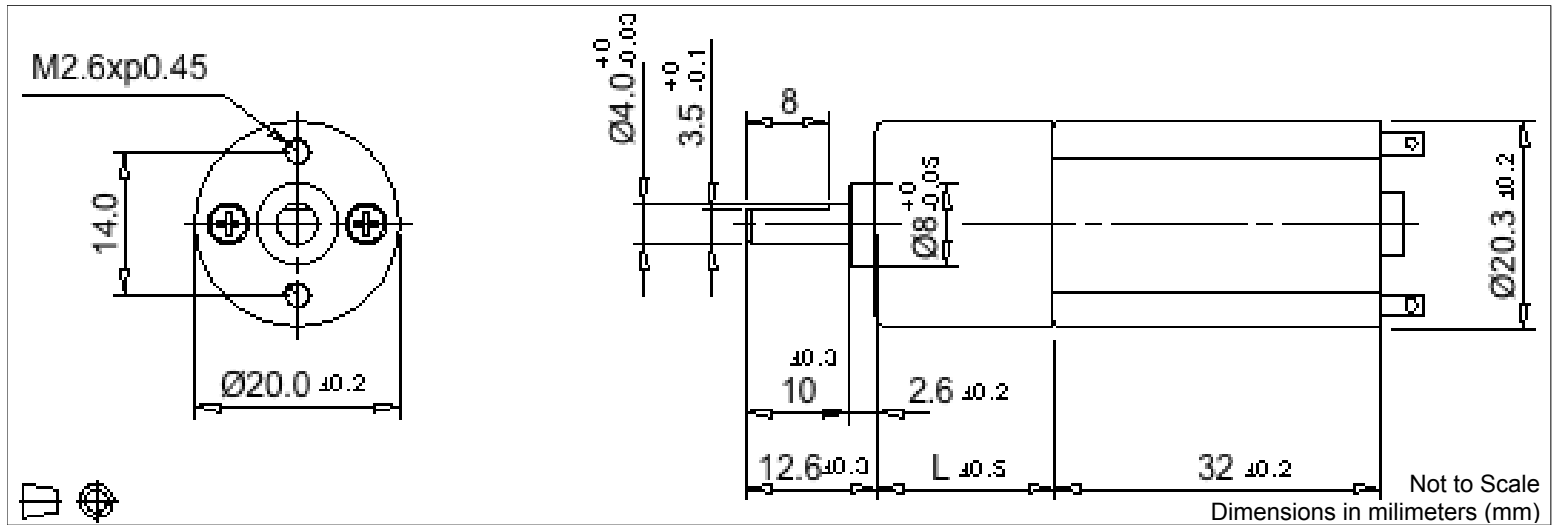
Specifications Subject to change without notice

Spur Gearmotor - 20 mm Ø



Low Friction - Low Cost Encoder Option

Global Motion Products



Ratio	Voltage Volts	Gearbox Efficiency %	No Load Speed rpm	Gearmotor No Load Current A	Stall Torque Nm	Continuous Torque Nm	Length L mm	Gearmotor Mass grams	Direction of Rotation*	Order Part Number
225.2:1	12.0	45 %	35 rpm	0.075 Amp	1.49 Nm	0.177 Nm	25.3 mm	64.0 grams	Same	S200225AM20
274.9:1	12.0	45 %	29 rpm	0.075 Amp	1.82 Nm	0.177 Nm	25.3 mm	64.0 grams	Same	S200275AM20
350.4:1	12.0	45 %	23 rpm	0.075 Amp	2.32 Nm	0.177 Nm	25.3 mm	64.0 grams	Same	S200350AM20
430.4:1	12.0	40 %	19 rpm	0.075 Amp	2.54 Nm	0.177 Nm	25.3 mm	64.0 grams	Opposite	S200430AM20
548.7:1	12.0	40 %	15 rpm	0.075 Amp	3.23 Nm	0.177 Nm	25.3 mm	64.0 grams	Opposite	S200549AM20
689.3:1	12.0	40 %	12 rpm	0.075 Amp	4.06 Nm	0.177 Nm	25.3 mm	64.0 grams	Opposite	S200689AM20
794.5:1	12.0	40 %	10 rpm	0.075 Amp	4.68 Nm	0.177 Nm	25.3 mm	64.0 grams	Opposite	S200794AM20
866.1:1	12.0	40 %	9 rpm	0.075 Amp	5.11 Nm	0.177 Nm	25.3 mm	64.0 grams	Opposite	S200866AM20

Radial Load Rating	≤ 3.9 N	Radial Play	≤ 0.05 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 2.0 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 85%
Press Fit Force - Max	≤ 19.6 N	Options	Bearing	Sleeve	

CAUTION:
Stall Torque is a theoretical calculation- NOT a rating or maximum value. Continuous Torque is the lesser of the Gearbox Continuous Torque Rating or the Motor's Continuous Torque Rating at gearbox output shaft.

Magnetic Encoders. Leads. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Shaft modifications and component mounting. Coreless Motor.

* Rotational Sense of Gearbox Output Shaft to Motor Shaft

Global Motion Products
 Distributed by:
 Precision Motion Distributors: (925) 803-9565
 Technical Support: (760) 451-2723
<http://www.gmpwebsite.com> Email: info@gmpwebsite.com

Commutation Type:
 Metal Graphite

RoHS Compliant

A - March 2011

Specifications Subject to change without notice

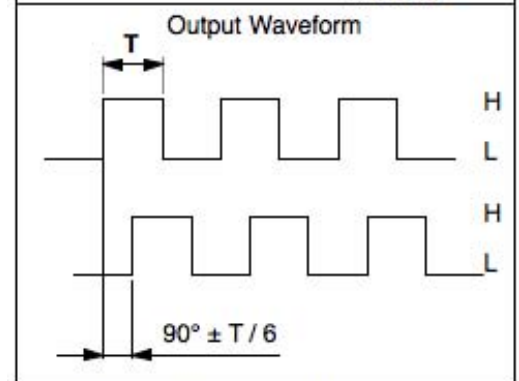
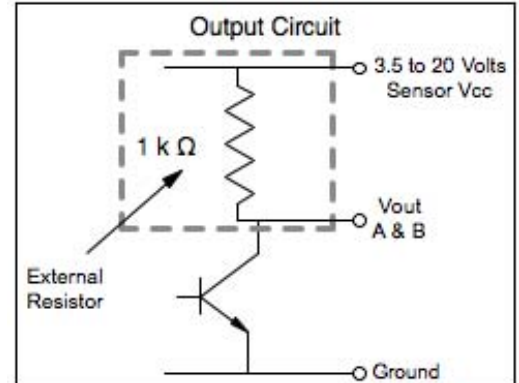
Magnetic Encoders - Integrated

Low Cost - Single & Quadrature Channels



Global Motion Products

Supply Voltage - Max	20.0 Volt
Supply Voltage - Min	3.5 Volt
Supply Voltage - Symbol	Vcc
Output Saturation Voltage - Max	700 mVolts
Output Saturation Voltage - Ref	300 mVolts
Output Saturation Voltage - Symbol	Vce(sat)
Output Saturation Voltage - Test Conditions	Vcc = 14 Volts; Ic = 20mA
Output Leakage Current - Max	10.0 µAmp
Output Leakage Current - Ref	< 0.1 µAmp
Output Leakage Current - Symbol	Icex
Output Leakage Current - Test Conditions	Vce = 14 Volts; Vcc = 14 V
Supply Current - Max	10 mAmp
Supply Current - Ref	5 mAmp
Supply Current - Symbol	Ice
Supply Current - Test Conditions	Vcc = 20 Volts, Output Open
Output Rise Time - Max	1.5 µSec
Output Rise Time - Ref	0.3 µSec
Output Rise Time - Symbol	tr
Output Rise Time - Test Condition	Vce = 14 Volts; RI = 820 Ω; CI = 20pF
Output Fall Time - Max	1.5 µSec
Output Fall Time - Ref	0.3 µSec
Output Fall Time - Symbol	tf
Output Fall Time - Test Conditions	Vce = 14 Volts; RI = 820 Ω; CI = 20pF
Max Temperature - Operating	60°C
Min Temperature - Operating	-10°C
Relative Humidity - Operating	20% to 85% RH



Two Channel Encoder

Connector Pin	Color	Function
1	Black	- Motor
2	Red	+ Motor
3	Brown	Hall Sensor Vcc
4	Green	Hall Sensor Ground
5	Blue	Hall Sensor A Vout
6	Purple	Hall Sensor B Vout

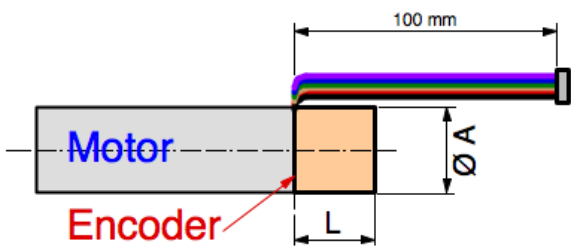
One Channel Encoder

Connector Pin	Color	Function
1	Black	- Motor
2	Red	+ Motor
3	Brown	Hall Sensor Vcc
4	Green	Hall Sensor Ground
5	Blue	Hall Sensor A Vout
6	Purple	No Function

CONNECTOR A
JST ZHR-6, P=1.5-6P
26 AWG, UL 1061 Wires

CONNECTOR B
JST PHR-6; P=2.0-6P
24 AWG, UL 1007 Wires

CONNECTORS C - Two
JST PHR-4; P=2.0-6P
24 AWG, UL 1007 Wires
Molex 09-50-3021; P= 3.96-2P
18 AWG 18, UL 1007 Wires



Note:

For encoder resolution and channel options, how to order, diameter and encoder length details refer to the following pages. Resolution options vary by motor diameter, as do connector(s) and wire gauge(s).

Below 30 mm motor diameter the magnetic encoder does not have the option for a dust cap at this time. The encoder is exposed and the dimensions represent the largest dimension of the encoder. On 30 mm and larger diameter motors an OPTIONAL Dust Cap is available. Part Numbers here represent no Dust Cap.

Global Motion Products

Distributed by:

Precision Motion Distributors: (925) 803-9565

Technical Support: (760) 451-2723

http://www.gmpwebsite.com Email: info@gmpwebsite.com Preliminary - 03-2011

RoHS Compliant

Specifications Subject to change without notice

Magnetic Encoders - Integrated



Low Cost - Single & Quadrature Channels

Global Motion Products

Pulses per Revolution per Track	Track Number	Dust Cap Option	Cover ØA mm	Cover or Encoder L - mm	Connector Type(s)	Compatible Gearmotor Series	Order Part Number
1	X	No	12.0	6.5	A	A12----GM--	EM120001X00
3	X	No	12.0	6.5	A	A12----GM--	EM120003X00
1	X	No	15.4	6.5	A	A16----AS--	EM160001X00
3	X	No	15.4	6.5	A	A16----AS--	EM160003X00
1	X	No	20.3	8.5	B	S20----AM--; A22----GM--; A22----HM--	EM210001X00
3	X	No	20.3	8.5	B	S20----AM--; A22----GM--; A22----HM--	EM210003X00
1	X	Yes	30.0	12.6	B	A30----GM--	EM300001X00
3	X	Yes	30.0	12.6	B	A30----GM--	EM300003X00
7	X	Yes	30.0	12.6	B	A30----GM--	EM300007X00
7	X	Yes	32.0	14.3	B	A32----GM--	EM320007X00
7	X	Yes	36.0	13.5	B	A36----GM--	EM360007X00
1	X	Yes	42.5	15.5	C	A45----A---	EM430001X00
5	X	Yes	42.5	15.5	C	A45----A---	EM430005X00
1	X	Yes	52.0	18.0	C	A52----GM--	EM520001X00
1	X	Yes	52.0	18.0	C	A52----GM--	EM520001X00
5	X	Yes	54.0	18.0	C	A54----GM--	EM540005X00
5	X	Yes	54.0	18.0	C	A54----GM--	EM540005X00
1	X & Y	No	12.0	6.5	A	A12----GM--	EM120001Y00
3	X & Y	No	12.0	6.5	A	A12----GM--	EM120003Y00
1	X & Y	No	15.4	6.5	A	A16----AS--	EM160001Y00
3	X & Y	No	15.4	6.5	A	A16----AS--	EM160003Y00
1	X & Y	No	20.3	8.5	B	S20----AM--; A22----GM--; A22----HM--	EM210001Y00
3	X & Y	No	20.3	8.5	B	S20----AM--; A22----GM--; A22----HM--	EM210003Y00
1	X & Y	Yes	30.0	12.6	B	A30----GM--	EM300001Y00
3	X & Y	Yes	30.0	12.6	B	A30----GM--	EM300003Y00
7	X & Y	Yes	30.0	12.6	B	A30----GM--	EM300007Y00
7	X & Y	Yes	32.0	14.3	B	A32----GM--	EM320007Y00
7	X & Y	Yes	36.0	13.5	B	A36----GM--	EM360007Y00
1	X & Y	Yes	42.5	15.5	C	A45----A---	EM430001Y00
5	X & Y	Yes	42.5	15.5	C	A45----A---	EM430005Y00
1	X & Y	Yes	52.0	18.0	C	A52----GM--	EM520001Y00
1	X & Y	Yes	52.0	18.0	C	A52----GM--	EM520005Y00
5	X & Y	Yes	54.0	18.0	C	A54----GM--	EM540001Y00
5	X & Y	Yes	54.0	18.0	C	A54----GM--	EM540005Y00

Global Motion Products

Distributed by:

Precision Motion Distributors: (925) 803-9565

Technical Support: (760) 451-2723

<http://www.gmpwebsite.com> Email: info@gmpwebsite.com

Preliminary - 03-2011

Specifications Subject to change without notice

RoHS Compliant