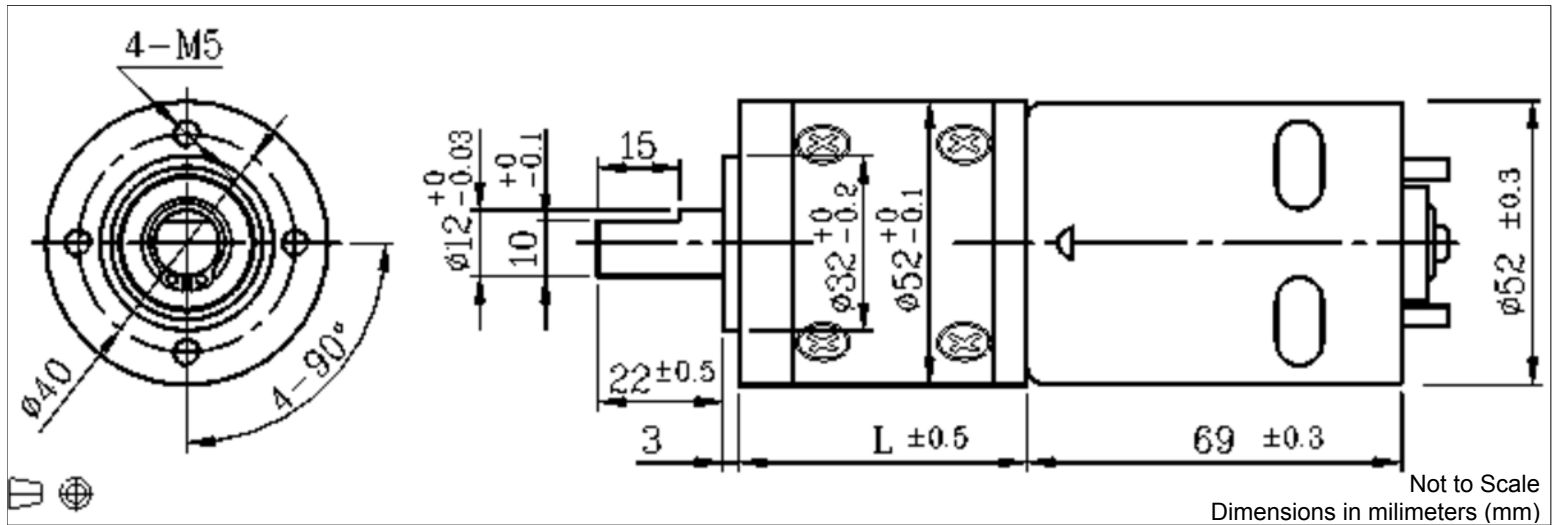


Planetary Gearmotor - 52 mm Ø



12 Volt - 58 Plus Watts - 9.8 Nm Torque

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
3.5:1	12.0	80 %	1,678 rpm	1.800 Amp	1.43 Nm	0.13 Nm	53.0 mm	955.0	Same	A520003GM00
4.3:1	12.0	80 %	1,355 rpm	1.800 Amp	1.77 Nm	0.16 Nm	53.0 mm	955.0	Same	A520004GM00
12.2:1	12.0	70 %	479 rpm	1.800 Amp	4.39 Nm	0.40 Nm	68.5 mm	1,140.0	Same	A520012GM00
15.2:1	12.0	70 %	387 rpm	1.800 Amp	5.43 Nm	0.49 Nm	68.5 mm	1,140.0	Same	A520015GM00
18.8:1	12.0	70 %	313 rpm	1.800 Amp	6.72 Nm	0.62 Nm	68.5 mm	1,140.0	Same	A520019GM00
21.0:1	12.0	70 %	280 rpm	1.800 Amp	7.52 Nm	0.69 Nm	68.5 mm	1,140.0	Same	A520021GM00
26.0:1	12.0	70 %	226 rpm	1.800 Amp	9.31 Nm	0.85 Nm	68.5 mm	1,140.0	Same	A520026GM00
42.8:1	12.0	60 %	137 rpm	1.800 Amp	13.13 Nm	1.18 Nm	84.0 mm	1,330.0	Same	A520043GM00
53.1:1	12.0	60 %	111 rpm	1.800 Amp	16.29 Nm	1.47 Nm	84.0 mm	1,330.0	Same	A520053GM00
65.7:1	12.0	60 %	89 rpm	1.800 Amp	20.17 Nm	1.86 Nm	84.0 mm	1,330.0	Same	A520066GM00
81.4:1	12.0	60 %	72 rpm	1.800 Amp	24.97 Nm	2.26 Nm	84.0 mm	1,330.0	Same	A520081GM00
100.3:1	12.0	60 %	59 rpm	1.800 Amp	30.77 Nm	2.75 Nm	84.0 mm	1,330.0	Same	A520100GM00

Radial Load Rating	≤ 196.1 N	Radial Play	≤ 0.04 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 98.1 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 80%
Press Fit Force - Max	≤ 294.2 N			Bearing	Ball

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

Options
Magnetic Encoders. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Coreless, Brushless and Stepper Motors. Larger Iron Core Motors.

* 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 - June 2011

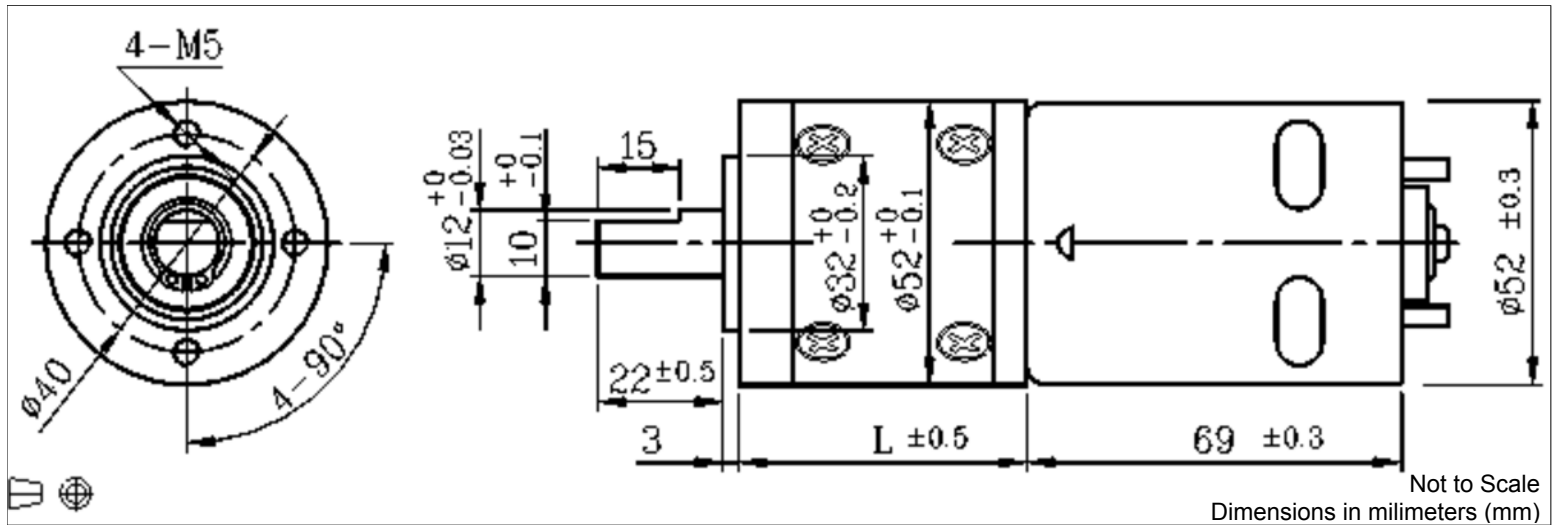
Specifications Subject to change without notice

Planetary Gearmotor - 52 mm Ø



12 Volt - 58 Plus Watts - 9.8 Nm Torque

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
112.7:1	12.0	60 %	52 rpm	1.800 Amp	34.57 Nm	3.14 Nm	84.0 mm	1,330.0	Same	A520113GM00
126.0:1	12.0	60 %	47 rpm	1.800 Amp	38.66 Nm	3.33 Nm	84.0 mm	1,330.0	Same	A520126GM00
150.1:1	12.0	50 %	39 rpm	1.800 Amp	38.37 Nm	3.53 Nm	99.5 mm	1,500.0	Same	A520150GM00
230.0:1	12.0	50 %	26 rpm	1.800 Amp	58.82 Nm	5.39 Nm	99.5 mm	1,500.0	Same	A520230GM00
284.8:1	12.0	50 %	21 rpm	1.800 Amp	72.82 Nm	6.67 Nm	99.5 mm	1,500.0	Same	A520285GM00
352.6:1	12.0	50 %	17 rpm	1.800 Amp	90.16 Nm	8.24 Nm	99.5 mm	1,500.0	Same	A520353GM00
488.2:1	12.0	50 %	12 rpm	1.800 Amp	124.83 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520488GM00
546.0:1	12.0	50 %	11 rpm	1.800 Amp	139.61 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520546GM00
676.0:1	12.0	50 %	9 rpm	1.800 Amp	172.85 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520676GM00
756.0:1	12.0	50 %	8 rpm	1.800 Amp	193.30 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520756GM00
936.0:1	12.0	50 %	6 rpm	1.800 Amp	239.32 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520936GM00

Radial Load Rating	≤ 196.1 N	Radial Play	≤ 0.04 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 98.1 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 80%
Press Fit Force - Max	≤ 294.2 N				Bearing Ball

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

Options
Magnetic Encoders. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Coreless, Brushless and Stepper Motors. Larger Iron Core Motors.

* 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 - June 2011

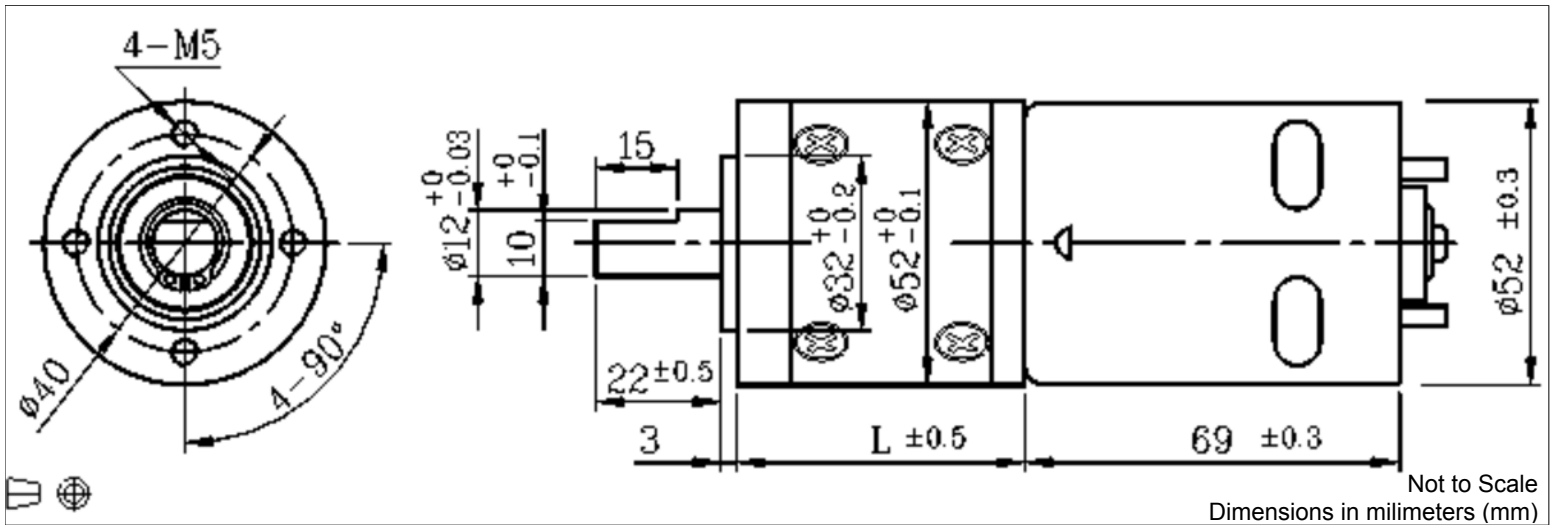
Specifications Subject to change without notice

Planetary Gearmotor - 52 mm Ø



24 Volt - 48 Plus Watts - 9.8 Nm Torque

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
3.5:1	24.0	80 %	1,685 rpm	0.825 Amp	1.66 Nm	0.13 Nm	53.0 mm	955.0	Same	A520003GM10
4.3:1	24.0	80 %	1,361 rpm	0.825 Amp	2.06 Nm	0.16 Nm	53.0 mm	955.0	Same	A520004GM10
12.2:1	24.0	70 %	482 rpm	0.825 Amp	5.09 Nm	0.40 Nm	68.5 mm	1,140.0	Same	A520012GM10
15.2:1	24.0	70 %	389 rpm	0.825 Amp	6.31 Nm	0.49 Nm	68.5 mm	1,140.0	Same	A520015GM10
18.8:1	24.0	70 %	314 rpm	0.825 Amp	7.81 Nm	0.62 Nm	68.5 mm	1,140.0	Same	A520019GM10
21.0:1	24.0	70 %	281 rpm	0.825 Amp	8.73 Nm	0.69 Nm	68.5 mm	1,140.0	Same	A520021GM10
26.0:1	24.0	70 %	227 rpm	0.825 Amp	10.81 Nm	0.85 Nm	68.5 mm	1,140.0	Same	A520026GM10
42.8:1	24.0	60 %	138 rpm	0.825 Amp	15.25 Nm	1.18 Nm	84.0 mm	1,330.0	Same	A520043GM10
53.1:1	24.0	60 %	111 rpm	0.825 Amp	18.92 Nm	1.47 Nm	84.0 mm	1,330.0	Same	A520053GM10
65.7:1	24.0	60 %	90 rpm	0.825 Amp	23.43 Nm	1.86 Nm	84.0 mm	1,330.0	Same	A520066GM10
81.4:1	24.0	60 %	72 rpm	0.825 Amp	29.00 Nm	2.26 Nm	84.0 mm	1,330.0	Same	A520081GM10
100.3:1	24.0	60 %	59 rpm	0.825 Amp	35.75 Nm	2.75 Nm	84.0 mm	1,330.0	Same	A520100GM10

Radial Load Rating	≤ 196.1 N	Radial Play	≤ 0.04 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 98.1 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 80%
Press Fit Force - Max	≤ 294.2 N			Bearing	Ball

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

Options
Magnetic Encoders. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Coreless, Brushless and Stepper Motors. Larger Iron Core Motors.

* 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 - June 2011

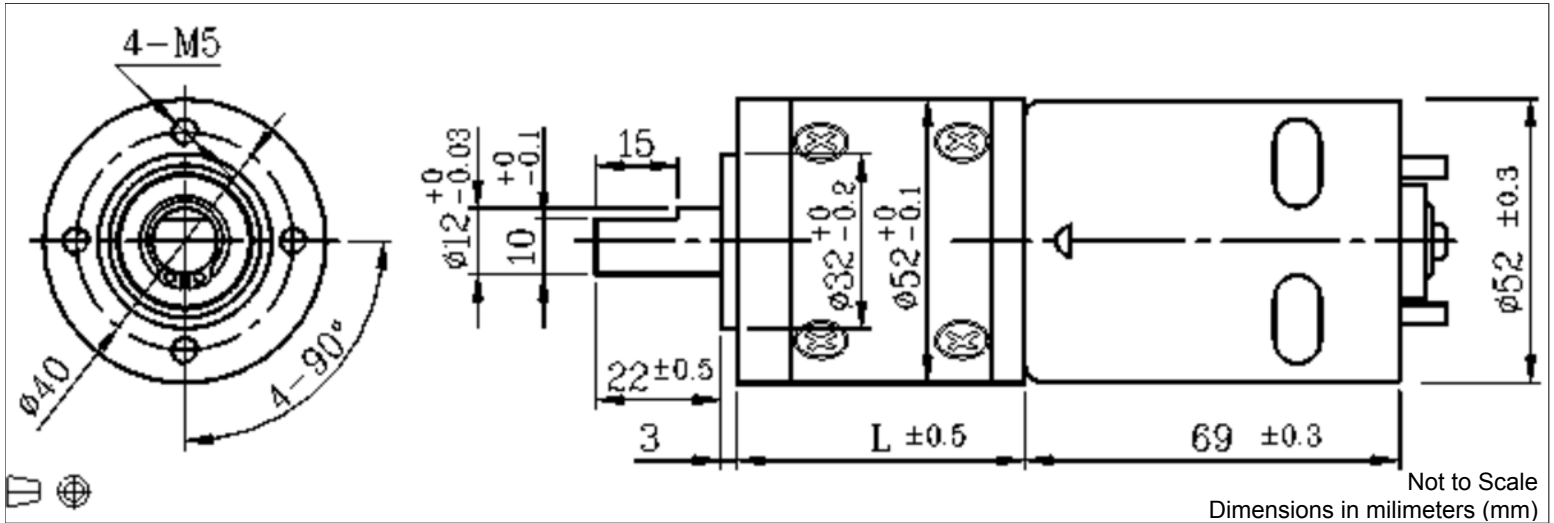
Specifications Subject to change without notice

Planetary Gearmotor - 52 mm Ø



24 Volt - 48 Plus Watts - 9.8 Nm Torque

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
112.7:1	24.0	60 %	52 rpm	0.825 Amp	40.16 Nm	3.14 Nm	84.0 mm	1,330.0	Same	A520113GM10
126.0:1	24.0	60 %	47 rpm	0.825 Amp	44.91 Nm	3.33 Nm	84.0 mm	1,330.0	Same	A520126GM10
150.1:1	24.0	50 %	39 rpm	0.825 Amp	44.58 Nm	3.53 Nm	99.5 mm	1,500.0	Same	A520150GM10
230.0:1	24.0	50 %	26 rpm	0.825 Amp	68.33 Nm	5.39 Nm	99.5 mm	1,500.0	Same	A520230GM10
284.8:1	24.0	50 %	21 rpm	0.825 Amp	84.60 Nm	6.67 Nm	99.5 mm	1,500.0	Same	A520285GM10
352.6:1	24.0	50 %	17 rpm	0.825 Amp	104.74 Nm	8.24 Nm	99.5 mm	1,500.0	Same	A520353GM10
488.2:1	24.0	50 %	12 rpm	0.825 Amp	145.02 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520488GM10
546.0:1	24.0	50 %	11 rpm	0.825 Amp	162.19 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520546GM10
676.0:1	24.0	50 %	9 rpm	0.825 Amp	200.80 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520676GM10
756.0:1	24.0	50 %	8 rpm	0.825 Amp	224.57 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520756GM10
936.0:1	24.0	50 %	6 rpm	0.825 Amp	278.03 Nm	9.81 Nm	99.5 mm	1,500.0	Same	A520936GM10

Radial Load Rating	≤ 196.1 N	Radial Play	≤ 0.04 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Axial Play	≤ 0.30 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 98.1 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 80%
Press Fit Force - Max	≤ 294.2 N				Bearing Ball

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

Options
Magnetic Encoders. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material. Coreless, Brushless and Stepper Motors. Larger Iron Core Motors.

* 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 - June 2011

Specifications Subject to change without notice

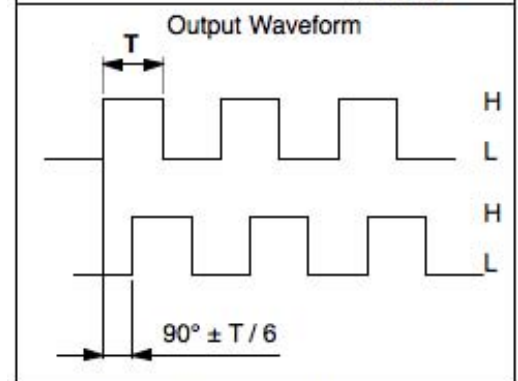
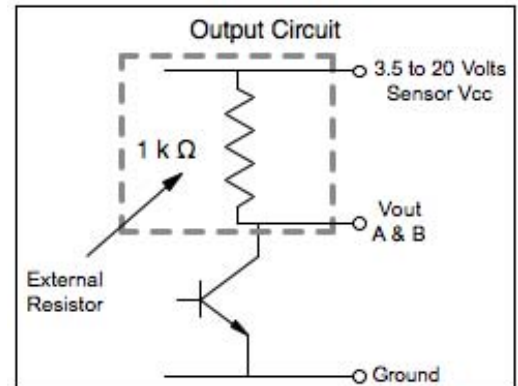
Magnetic Encoders - Integrated

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

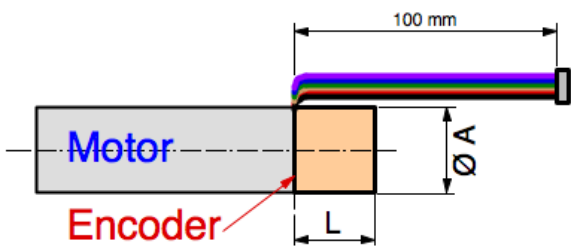
One Channel Encoder

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