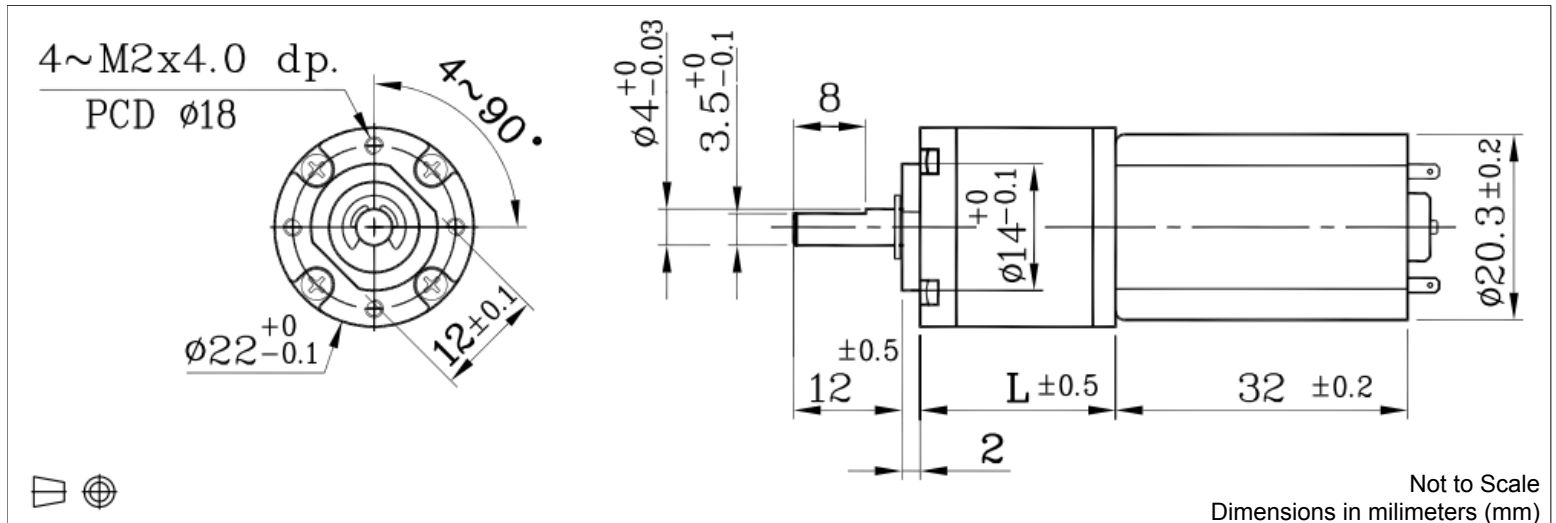


Planetary Gearmotor - 22 mm Ø



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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
4:1	12.0	80 %	1,959 rpm	0.070 Amp	0.04 Nm	0.008 Nm	14.4 mm	59.0 grams	Same	A220004GM00
14:1	12.0	70 %	560 rpm	0.070 Amp	0.12 Nm	0.021 Nm	18.1 mm	63.0 grams	Same	A220014GM00
16:1	12.0	70 %	490 rpm	0.070 Amp	0.14 Nm	0.025 Nm	18.1 mm	63.0 grams	Same	A220016GM00
19:1	12.0	70 %	413 rpm	0.070 Amp	0.16 Nm	0.029 Nm	18.1 mm	63.0 grams	Same	A220019GM00
53:1	12.0	60 %	148 rpm	0.070 Amp	0.39 Nm	0.068 Nm	21.7 mm	67.0 grams	Same	A220062GM00
62:1	12.0	60 %	126 rpm	0.070 Amp	0.46 Nm	0.079 Nm	21.7 mm	67.0 grams	Same	A220062GM00
72:1	12.0	60 %	109 rpm	0.070 Amp	0.53 Nm	0.093 Nm	21.7 mm	67.0 grams	Same	A220084GM00
84:1	12.0	60 %	93 rpm	0.070 Amp	0.62 Nm	0.108 Nm	21.7 mm	67.0 grams	Same	A220084GM00
104:1	12.0	60 %	75 rpm	0.070 Amp	0.76 Nm	0.134 Nm	21.7 mm	67.0 grams	Same	A220104GM00
198:1	12.0	50 %	40 rpm	0.070 Amp	1.21 Nm	0.206 Nm	23.4 mm	72.0 grams	Same	A220231GM00
231:1	12.0	50 %	34 rpm	0.070 Amp	1.42 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220231GM00
270:1	12.0	50 %	29 rpm	0.070 Amp	1.65 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220231GM00

Radial Load Rating	≤ 7.8 N	Radial Play	≤ 0.05 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Thrust Play	≤ 0.20 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 5.9 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 85%
Press Fit Force - Max	≤ 49.0 N	Options	Bearing	Sleeve	
			Magnetic Encoders. Ball Bearings. Leads. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material.		

CAUTION. Stall Torque is a theoretical calculation and IS NOT a rating or maximum value. * Rotational Sense of Gearbox Output Shaft to Motor Shaft

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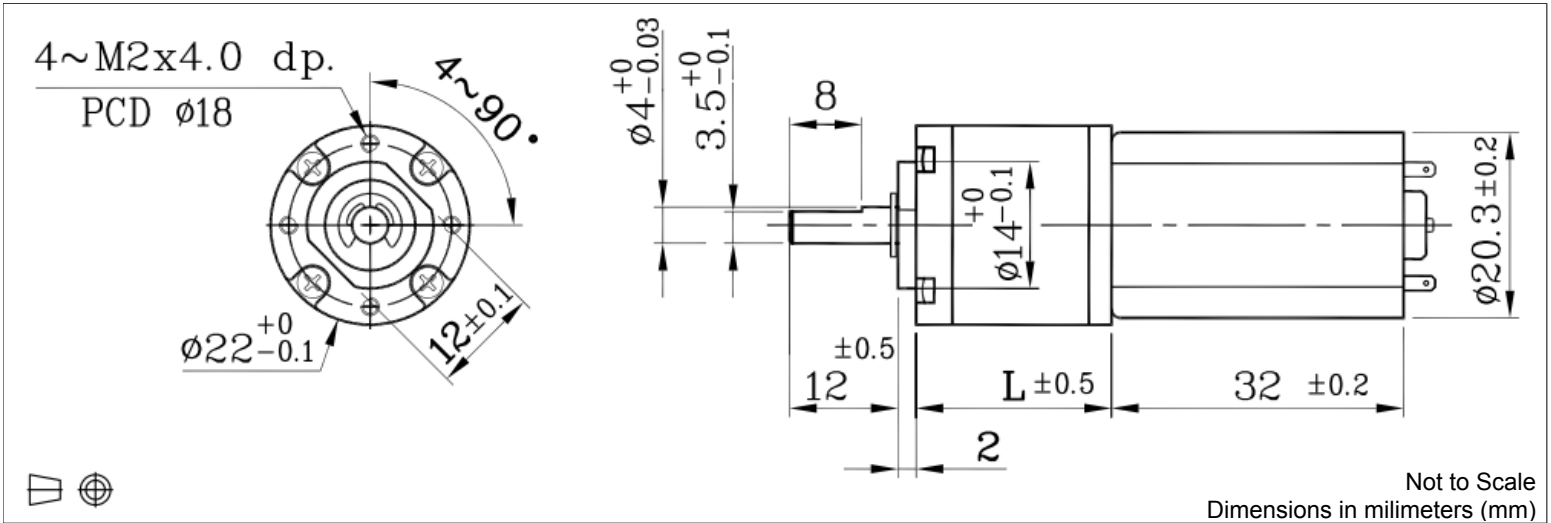
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Planetary Gearmotor - 22 mm Ø



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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
316:1	12.0	50 %	25 rpm	0.070 Amp	1.94 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220316GM00
370:1	12.0	50 %	21 rpm	0.070 Amp	2.27 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220370GM00
455:1	12.0	50 %	17 rpm	0.070 Amp	2.79 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220455GM00
742:1	12.0	40 %	11 rpm	0.070 Amp	3.64 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221014GM00
1,014:1	12.0	40 %	8 rpm	0.070 Amp	4.97 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221014GM00
1,249:1	12.0	40 %	6 rpm	0.070 Amp	6.12 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221621GM00
1,621:1	12.0	40 %	5 rpm	0.070 Amp	7.95 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221621GM00
1,996:1	12.0	40 %	4 rpm	0.070 Amp	9.79 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221996GM00

Radial Load Rating ≤ 7.8 N
 Radial Load Distance 10 mm
 Axial Load ≤ 5.9 N
 Press Fit Force - Max ≤ 49.0 N

Radial Play ≤ 0.05 mm
 Thrust Play ≤ 0.20 mm
 Backlash $\leq 3.0^\circ$

Max Temperature Oper. 60°C
 Min Temperature Oper. -10°C
 Relative Humidity Oper. 20% to 85%

Options Bearing Sleeve
 Magnetic Encoders. Ball Bearings. Leads. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material.

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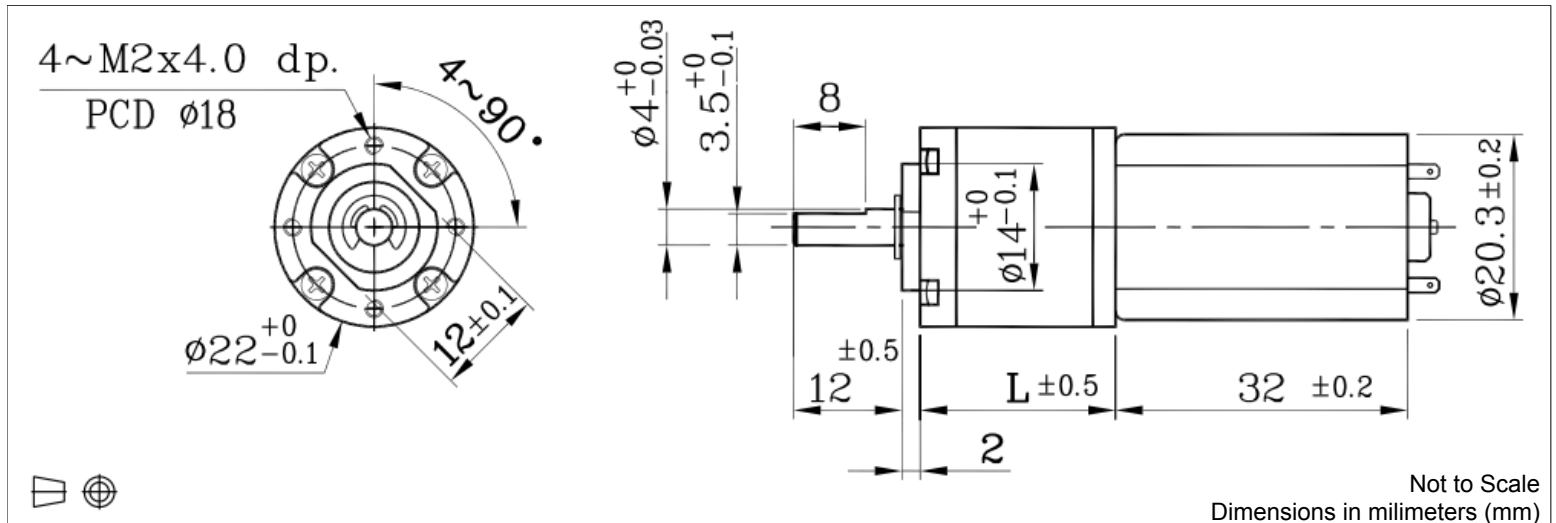
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Ratio	Voltage Volts	Gearbox Efficiency %	No Load Speed rpm	Gearmotor No Load Current A	Stall Torque Nm	Continuous Torque Nm	Length L mm	Gearmotor Mass grams	Direction of Rotation*	Order Part Number
4:1	24.0	80 %	2,164 rpm	0.040 Amp	0.04 Nm	0.008 Nm	14.4 mm	59.0 grams	Same	A220004GM10
14:1	24.0	70 %	618 rpm	0.040 Amp	0.11 Nm	0.021 Nm	18.1 mm	63.0 grams	Same	A220014GM10
16:1	24.0	70 %	541 rpm	0.040 Amp	0.13 Nm	0.025 Nm	18.1 mm	63.0 grams	Same	A220016GM10
19:1	24.0	70 %	456 rpm	0.040 Amp	0.15 Nm	0.029 Nm	18.1 mm	63.0 grams	Same	A220019GM10
53:1	24.0	60 %	163 rpm	0.040 Amp	0.36 Nm	0.068 Nm	21.7 mm	67.0 grams	Same	A220062GM10
62:1	24.0	60 %	140 rpm	0.040 Amp	0.42 Nm	0.079 Nm	21.7 mm	67.0 grams	Same	A220062GM10
72:1	24.0	60 %	120 rpm	0.040 Amp	0.49 Nm	0.093 Nm	21.7 mm	67.0 grams	Same	A220062GM10
84:1	24.0	60 %	103 rpm	0.040 Amp	0.57 Nm	0.108 Nm	21.7 mm	67.0 grams	Same	A220084GM10
104:1	24.0	60 %	83 rpm	0.040 Amp	0.70 Nm	0.134 Nm	21.7 mm	67.0 grams	Same	A220104GM10
198:1	24.0	50 %	44 rpm	0.040 Amp	1.12 Nm	0.206 Nm	23.4 mm	72.0 grams	Same	A220231GM10
231:1	24.0	50 %	37 rpm	0.040 Amp	1.30 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220231GM10
270:1	24.0	50 %	32 rpm	0.040 Amp	1.52 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220316GM10

Radial Load Rating	≤ 7.8 N	Radial Play	≤ 0.05 mm	Max Temperature Oper.	60°C
Radial Load Distance	10 mm	Thrust Play	≤ 0.20 mm	Min Temperature Oper.	-10°C
Axial Load	≤ 5.9 N	Backlash	≤ 3.0 °	Relative Humidity Oper.	20% to 85%
Press Fit Force - Max	≤ 49.0 N	Options	Bearing	Sleeve	
			Magnetic Encoders. Ball Bearings. Leads. Connectors. Pinion/Gear Mounting. Lubricants. Motor Windings. Gear material.		

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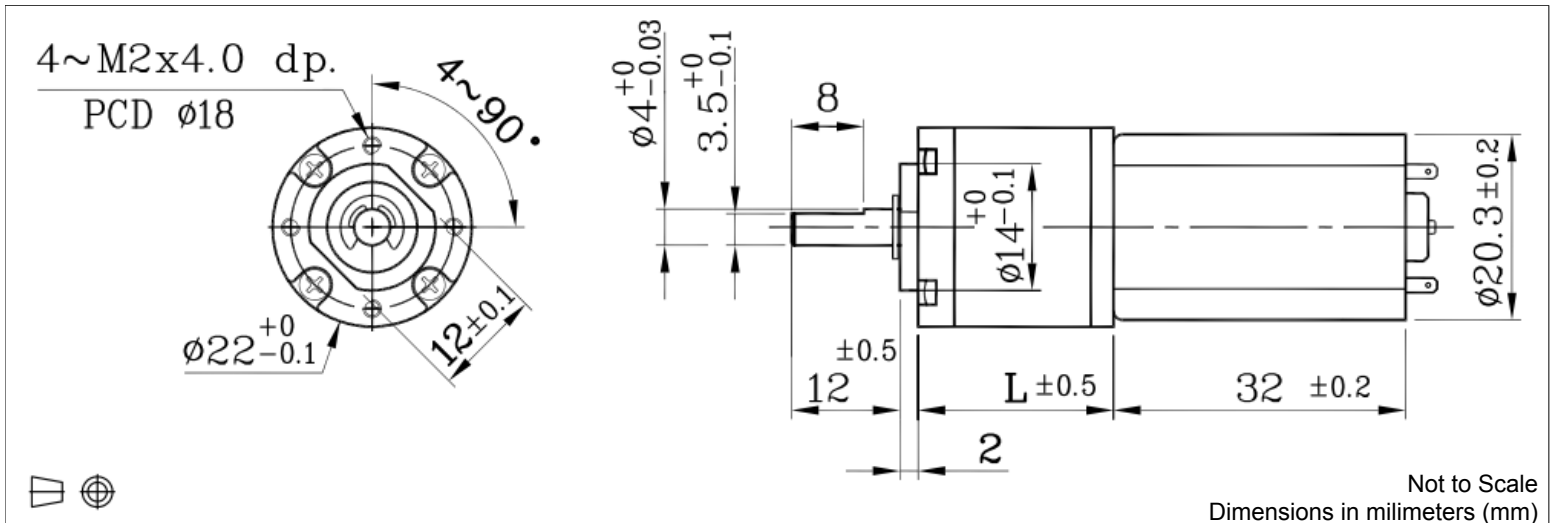
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316:1	24.0	50 %	27 rpm	0.040 Amp	1.78 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220316GM10
370:1	24.0	50 %	23 rpm	0.040 Amp	2.09 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220370GM10
455:1	24.0	50 %	19 rpm	0.040 Amp	2.57 Nm	0.245 Nm	23.4 mm	72.0 grams	Same	A220455GM10
742:1	24.0	40 %	12 rpm	0.040 Amp	3.35 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221014GM10
1,014:1	24.0	40 %	9 rpm	0.040 Amp	4.58 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221014GM10
1,249:1	24.0	40 %	7 rpm	0.040 Amp	5.64 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221621GM10
1,621:1	24.0	40 %	5 rpm	0.040 Amp	7.32 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221621GM10
1,996:1	24.0	40 %	4 rpm	0.040 Amp	9.01 Nm	0.294 Nm	29.0 mm	76.0 grams	Same	A221996GM10

Radial Load Rating ≤ 7.8 N
 Radial Load Distance 10 mm
 Axial Load ≤ 5.9 N
 Press Fit Force - Max ≤ 49.0 N

Radial Play ≤ 0.05 mm
 Thrust Play ≤ 0.20 mm
 Backlash ≤ 3.0 °

Max Temperature Oper. 60°C
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