



	Samples available			
Units	212-405			

## Design and Accessories

1	Commutation	Precious Metal Brush
2	No. of Output Shafts	1
3	Unit Weight	g 9.3
4	Body Diameter	mm 12
5	Body Length	mm 24
6	Rotation Direction	CW
7	Bearing Type	Sintered Bronze

## Physical Characteristics

8	Shaft Diameter	mm	3
9	Shaft Length	mm	8
10	Shaft Orientation		Inline
11	Motor Construction		Iron Core

## 11 Motor Construction

Operational Characteristics			
12	Typical Max. Mech. Noise	dB(A)	60
13	Rated Operating Voltage	V	12
14	Rated Load	mA·m	20
15	Rated Load Speed	rpm	137
16	N/L Speed	rpm	230
17	Max. Start Voltage	V	1.4
18	Max. N/L Current	mA	36
19	Max. Operating Voltage	V	12
20	Max. Rated Load Current	mA	161
21	Min. Insulation Resistance	MΩ	1
22	Max. Start Current	mA	265
23	Typical Rated Load Power Consumption	mW	1,370
24	Typical N/L Current	mA	30
25	Typical Peak Efficiency	%	22
26	Typical Peak Eff. Torque	mA·m	22
27	Typical Peak Eff. Speed	rpm	166
28	Typical Peak Eff. Current	mA	139
29	Typical Peak Eff. Power Out	mW	374

30	Typical Start Current	mA	265
31	Typical Max. Output Power	mW	434
32	Typical Stall Torque	mN·m	39

**Gear Characteristics**

33	Gear Ratio	:1	99
34	Gearhead Type		Spur

**Winding Characteristics**

35	Typical Terminal Resistance	Ohm	29
36	Typical Terminal Inductance	uH	4,100

**Environmental Characteristics**

37	Max. Operating Temp.	°C	50
38	Min. Operating Temp.	°C	-10
39	Max. Storage & Transportation Temp.	°C	80
40	Min. Storage & Transportation Temp.	°C	-40

**Packaging**

41	No. of Units per Carton	pcs	500
42	Carton Type		Boxed Trays

**Motor Body Characteristics**

43	No. of Poles		
44	Shaft Axial Float	mm	
45	Max. Axial Compression	N	
46	Max. Radial Load	mN	

**Performance**