

DC Worm Gear Motor

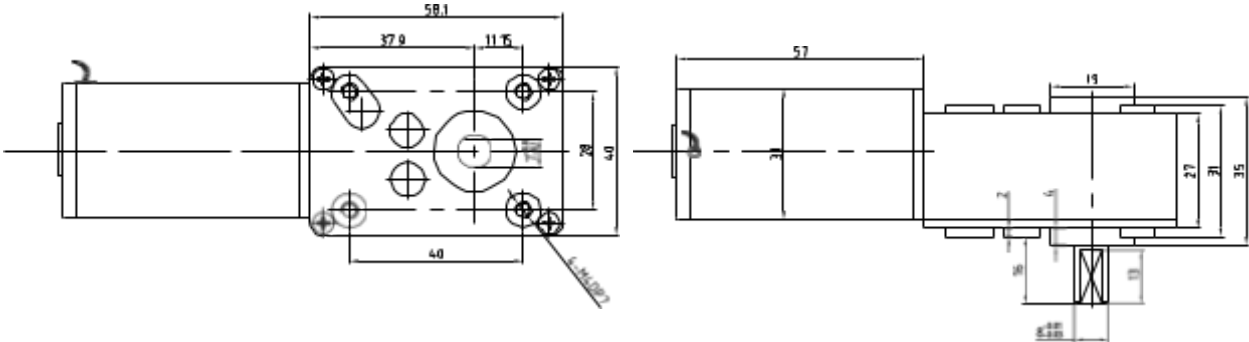
3157ZY Micro brushed dc motor with worm gearbox

2.5 Nm 7 Watts

For combination
with Hall sensor
encoder

TJW58FX Series

Dimensional drawing (mm)



Picture of motor



Motor characteristics

Housing material	Zinc alloy	
Gear chain material	Powder metallurgy	
Back lash	≤2°	
Bearings on output shaft	Ball bearing	
Recommended max input speed	≤8000RPM	
Radial force	≤3kgf	
Axial force	≤5kgf	
Maximum pressure force on shaft	≤15kgf	
Radial clearance	≤0.1mm	
Axial clearance	≤0.3mm	
Operating temperature range	-20℃-120℃	
Commutator	Brushed	
Direction of rotation	CW / CCW	
Noise	≤55dB	

DC Motor Technical Data

Values at 25-30℃

Model	Rated Voltage (V)	No-Load		Rated					Stall	
		Speed	Current	Speed	Current	Torque	Output	Eff	Torque	Current
		rpm	mA	rpm	A	mN.m	W	%	mN.m	A
ZY3157	12	5000	138	4000	0.35	6.54	2.74	65.47	19.62	1.70
ZY3157	24	5000	70	4000	0.18	6.68	2.80	66.62	20.04	0.84

*Tips: The datasheet on left side are limited, please consult our staffs for more parameter information.

Motor With Gearbox Technical Data

Gearbox data

Gear ratio n:1	27	50	79	93	122	167	213	263	311	407	556	710							
Number of gear stages	3	3	3	3	3	3	3	4	4	4	4	4							
Gearbox size (mm)	58*40	58*40	58*40	58*40	58*40	58*40	58*40	58*40	58*40	58*40	58*40	58*40							
Efficiency (%)	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.52	0.52	0.52	0.52							

ZY3157-12V-5000R

No-load speed (RPM)	185.2	100.0	63.3	53.8	41.0	29.9	23.5	19.0	16.1	12.3	9.0	7.0							
Rated speed (RPM)	148.1	80.0	50.6	43.0	32.8	24.0	18.8	15.2	12.9	9.8	7.2	5.6							
Rated torque (N.M)	0.108	0.201	0.317	0.374	0.490	0.671	0.855	0.898	1.062	1.389	1.898	2.424							
Rated torque (K.G.CM)	1.06	1.97	3.11	3.66	4.80	6.57	8.38	8.80	10.40	13.62	18.60	23.75							
Rated torque (LB.IN)	1.22	2.27	3.58	4.22	5.53	7.57	9.66	10.14	11.99	15.69	21.43	27.37							

ZY3157-24V-5000R

No-load speed (RPM)	185.2	100.0	63.3	53.8	41.0	29.9	23.5	19.0	16.1	12.3	9.0	7.0							
Rated speed (RPM)	148.1	80.0	50.6	43.0	32.8	24.0	18.8	15.2	12.9	9.8	7.2	5.6							
Rated torque (N.M)	0.111	0.205	0.324	0.382	0.500	0.685	0.874	0.917	1.084	1.419	1.939	2.476							
Rated torque (K.G.CM)	1.09	2.01	3.18	3.74	4.90	6.71	8.56	8.99	10.63	13.91	19.00	24.26							
Rated torque (LB.IN)	1.25	2.32	3.66	4.31	5.65	7.74	9.87	10.35	12.24	16.02	21.89	27.95							

Gear motor curve case

Project: DC GEAR MOTOR	Date:	2023/5/26	Performance (in an ambient temperature of 25-30℃)
Motor speed: 5000RPM	Full scale:	100%	Eff
Gear chain: 3		5.0	Watts
Gear ratio: 167		1.0	Amp.
			Constant voltage: 24 Volts
			Direction: CW/CCW
			At no-load
			Speed: 30.0 RPM
			Current: 0.070 AMPS
			Max instantaneous parameters
			Torque: 3866.1 mN-m
			Current: 0.840 AMPS
			At maximum efficiency
			Efficiency: 36.9 %
			Torque: 880.62 mN-m
			Speed: 23.3 RPM
			Current: 0.242 AMPS
			Output: 2.15 Watts
			At maximum power output
			Output: 3.087 Watts
			Torque: 1965.6 mN-m
			Speed: 15.0 RPM
			Current: 0.46 AMPS

Production Combination

Accessories	Voltage	Resolution	Channels	Remark
Magnetic Encoder	5V-24V	12ppr	A&B	
