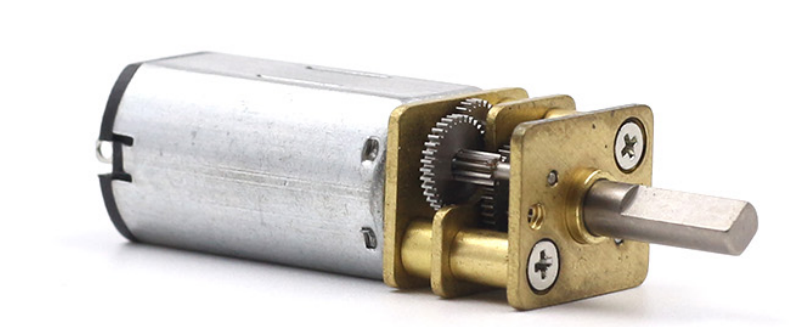


TSL-GA12-N30

12 mm Brushed DC Motor with Spur Gearbox



Product Type	Brushed DC Motor with Spur Gearbox
Nominal Voltage	3 VDC / 6 VDC / 12 VDC
Gear Ratios	5:1, 10:1, 20:1, 30:1, 50:1, 70:1, 100:1, 150:1, 210:1, 250:1, 298:1, 380:1, 500:1, 1000:1
Motor Cross-Section	12 mm x 10 mm
Gearbox Length	9.0 mm / 11.6 mm
Output Shaft	Ø3.0 mm, D-shaped
Mounting Thread	2 x M1.6

Ultra-Compact Design
12 mm-class motor with an open spur gearbox for space-limited assemblies.

Fourteen Gear Ratios
Reduction ratios from 5:1 to 1000:1 cover a wide range of speed and torque requirements.

OEM Customization
Voltage, shaft, terminals, wiring, ratio and performance can be customized.

Performance Parameters - 3 VDC

Ratio	No Load		Rated Load			Stall	
	Speed	Current	Speed	Current	Torque	Torque	Current
i:1	RPM $\pm 10\%$	A	RPM $\pm 10\%$	A	kg.cm	kg.cm	A
5	4000	0.13	3100	0.60	0.02	0.09	2.6
10	2000	0.13	1550	0.60	0.04	0.17	2.6
20	1000	0.13	775	0.60	0.08	0.34	2.6
30	666	0.13	516	0.60	0.12	0.5	2.6
50	400	0.13	310	0.60	0.2	0.8	2.6
70	285	0.13	221	0.60	0.3	1.2	2.6
100	200	0.13	152	0.60	0.4	1.7	2.6
150	133	0.13	103	0.60	0.6	2.5	2.6
210	95	0.13	73	0.60	0.8	3.4	2.6
250	80	0.13	62	0.60	1.0	4.2	2.6
298	67	0.13	52	0.60	1.2	5.0	2.6
380	52	0.13	40	0.60	1.5	6.4	2.6
500	40	0.13	31	0.60	2.0	8.5	2.6
1000	20	0.13	15	0.60	2.5	17.0	2.6

Note: Gear ratios above 210:1 must not be used under stall conditions.

Performance parameters can be customized according to customer requirements.

Performance Parameters - 6 VDC

Ratio	No Load		Rated Load			Stall	
	Speed	Current	Speed	Current	Torque	Torque	Current
i:1	RPM $\pm 10\%$	A	RPM $\pm 10\%$	A	kg.cm	kg.cm	A
5	4000	0.07	3100	0.35	0.02	0.09	1.5
10	2000	0.07	1550	0.35	0.04	0.17	1.5
20	1000	0.07	775	0.35	0.08	0.34	1.5
30	666	0.07	516	0.35	0.12	0.5	1.5
50	400	0.07	310	0.35	0.2	0.8	1.5
70	285	0.07	221	0.35	0.3	1.2	1.5
100	200	0.07	152	0.35	0.4	1.7	1.5
150	133	0.07	103	0.35	0.6	2.5	1.5
210	95	0.07	73	0.35	0.8	3.4	1.5
250	80	0.07	62	0.35	1.0	4.2	1.5
298	67	0.07	52	0.35	1.2	5.0	1.5
380	52	0.07	40	0.35	1.5	6.4	1.5
500	40	0.07	31	0.35	2.0	8.5	1.5
1000	20	0.07	15	0.35	2.5	17.0	1.5

Note: Gear ratios above 210:1 must not be used under stall conditions.

Performance parameters can be customized according to customer requirements.

Performance Parameters - 12 VDC

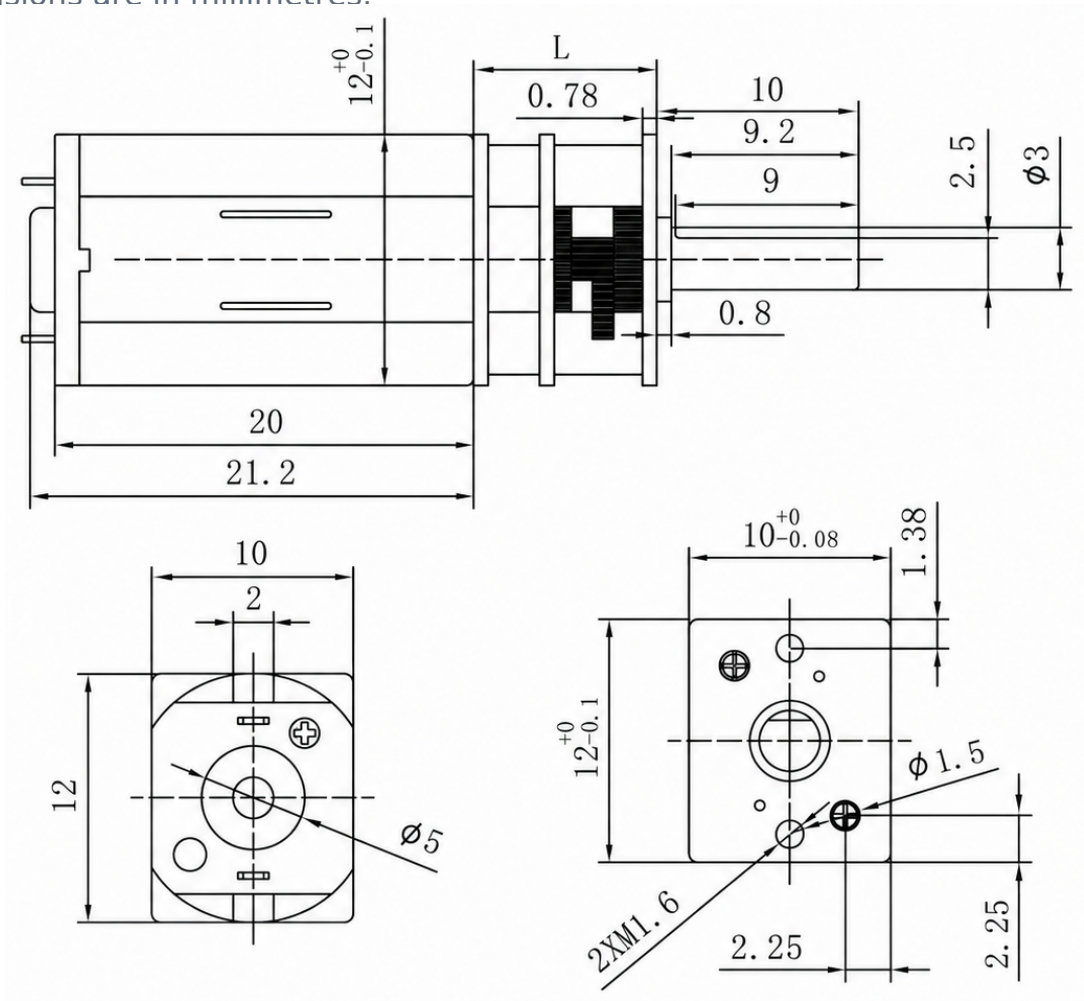
Ratio	No Load		Rated Load			Stall	
	Speed	Current	Speed	Current	Torque	Torque	Current
i:1	RPM $\pm 10\%$	A	RPM $\pm 10\%$	A	kg.cm	kg.cm	A
5	4000	0.04	3100	0.18	0.02	0.09	0.7
10	2000	0.04	1550	0.18	0.04	0.17	0.7
20	1000	0.04	775	0.18	0.08	0.34	0.7
30	666	0.04	516	0.18	0.12	0.5	0.7
50	400	0.04	310	0.18	0.2	0.8	0.7
70	285	0.04	221	0.18	0.3	1.2	0.7
100	200	0.04	152	0.18	0.4	1.7	0.7
150	133	0.04	103	0.18	0.6	2.5	0.7
210	95	0.04	73	0.18	0.8	3.4	0.7
250	80	0.04	62	0.18	1.0	4.2	0.7
298	67	0.04	52	0.18	1.2	5.0	0.7
380	52	0.04	40	0.18	1.5	6.4	0.7
500	40	0.04	31	0.18	2.0	8.5	0.7
1000	20	0.04	15	0.18	2.5	17.0	0.7

Note: Gear ratios above 210:1 must not be used under stall conditions.

Performance parameters can be customized according to customer requirements.

Mechanical Dimensions

All dimensions are in millimetres.



Item	Dimension
Motor cross-section	12 (+0 / -0.1) x 10 (+0 / -0.08) mm
Motor body length	21.2 mm
Gearbox length L	9.0 mm / 11.6 mm
Output shaft	Ø3.0 mm, D-shaped
Shaft protrusion	10 mm
Shaft flat width	2.5 mm
Mounting thread	2 x M1.6

The dimension drawing is for reference only. Output shaft, mounting details, terminal configuration and performance can be customized according to customer requirements.