TSL-20GAY-180

Brushed DC Motor with Planetary Gearbox

Product Type	Brushed DC Motor with Planetary Gearbox
Nominal Voltage	6 VDC / 12 VDC / 24 VDC
Motor Type	180 Brushed DC Motor
Gear Ratios	4.38:1, 19:1, 24:1, 29:1, 84:1, 104:1, 128:1, 157:1, 370:1, 560:1, 850:1
Gearbox Outer Diameter	Ø20 mm
Gearbox Length	15.8 / 20 / 24.3 / 28.5 mm (ratio-dependent)
Motor Body	20 x 15.5 mm cross-section; 32 mm length
Output Shaft	Ø4 mm, D-shaped; 15 ±0.3 mm protrusion
Mounting Holes	3 x M2.5

Compact Geared Drive

A compact 180-size brushed DC motor and planetary gearbox combination for instruments, smart devices, automation and electromechanical equipment.

Eleven Gear Ratios

Standard ratios from 4.38:1 to 850:1 provide a broad output speed and torque range for different motion requirements.

Three Voltage Options

6 V, 12 V and 24 V windings are available. Performance values can also be customized for customer applications.

Performance Parameters - 6 VDC

Ratio	No Load			Rated Load			Stall	
	Rated Voltage	Speed	Current	Speed	Current	Torque	Torque	Current
	V	RPM ±10%	A	RPM ±10%	A	kg.cm	kg.cm	A
4.38	6	2283	0.35	1963	0.65	0.1	0.35	3.5
19	6	526	0.35	452	0.65	0.55	1.5	3.5
24	6	416	0.35	358	0.65	0.7	1.9	3.5
29	6	344	0.35	296	0.65	0.8	2.3	3.5
84	6	119	0.35	102	0.65	2.4	6.7	3.5
104	6	96	0.35	82	0.65	3	8.2	3.5
128	6	78	0.35	67	0.65	3.5	10.2	3.5
157	6	63	0.35	54	0.65	4.5	12.5	3.5
370	6	27	0.35	23	0.65	10.5	Do not use stall torque	3.5
560	6	18	0.35	15	0.65	16		3.5
850	6	12	0.35	10	0.65	16		3.5
Note: Motors with reduction ratios of 370:1 and above must not be operated under stall conditions.								

Performance parameters can be customized according to customer requirements. The values above are standard specifications.

Performance Parameters - 12 VDC

Ratio	No Load			Rated Load			Stall	
	Rated Voltage	Speed	Current	Speed	Current	Torque	Torque	Current
	V	RPM ±10%	A	RPM ±10%	A	kg.cm	kg.cm	A
4.38	12	2283	0.25	1963	0.5	0.1	0.35	2
19	12	526	0.25	452	0.5	0.55	1.5	2
24	12	416	0.25	358	0.5	0.7	1.9	2
29	12	344	0.25	296	0.5	0.8	2.3	2
84	12	119	0.25	102	0.5	2.4	6.7	2
104	12	96	0.25	82	0.5	3	8.2	2
128	12	78	0.25	67	0.5	3.5	10.2	2
157	12	63	0.25	54	0.5	4.5	12.5	2
370	12	27	0.25	23	0.5	10.5	Do not use stall torque	2
560	12	18	0.25	15	0.5	16		2
850	12	12	0.25	10	0.5	16		2

Note: Motors with reduction ratios of 370:1 and above must not be operated under stall conditions.

Performance parameters can be customized according to customer requirements. The values above are standard specifications.

Performance Parameters - 24 VDC

Ratio	No Load			Rated Load			Stall	
	Rated Voltage	Speed	Current	Speed	Current	Torque	Torque	Current
	V	RPM ±10%	A	RPM ±10%	A	kg.cm	kg.cm	A
4.38	24	2283	0.2	1963	0.4	0.1	0.35	1
19	24	526	0.2	452	0.4	0.55	1.5	1
24	24	416	0.2	358	0.4	0.7	1.9	1
29	24	344	0.2	296	0.4	0.8	2.3	1
84	24	119	0.2	102	0.4	2.4	6.7	1
104	24	96	0.2	82	0.4	3	8.2	1
128	24	78	0.2	67	0.4	3.5	10.2	1
157	24	63	0.2	54	0.4	4.5	12.5	1
370	24	27	0.2	23	0.4	10.5	Do not use stall torque	1
560	24	18	0.2	15	0.4	16		1
850	24	12	0.2	10	0.4	16		1

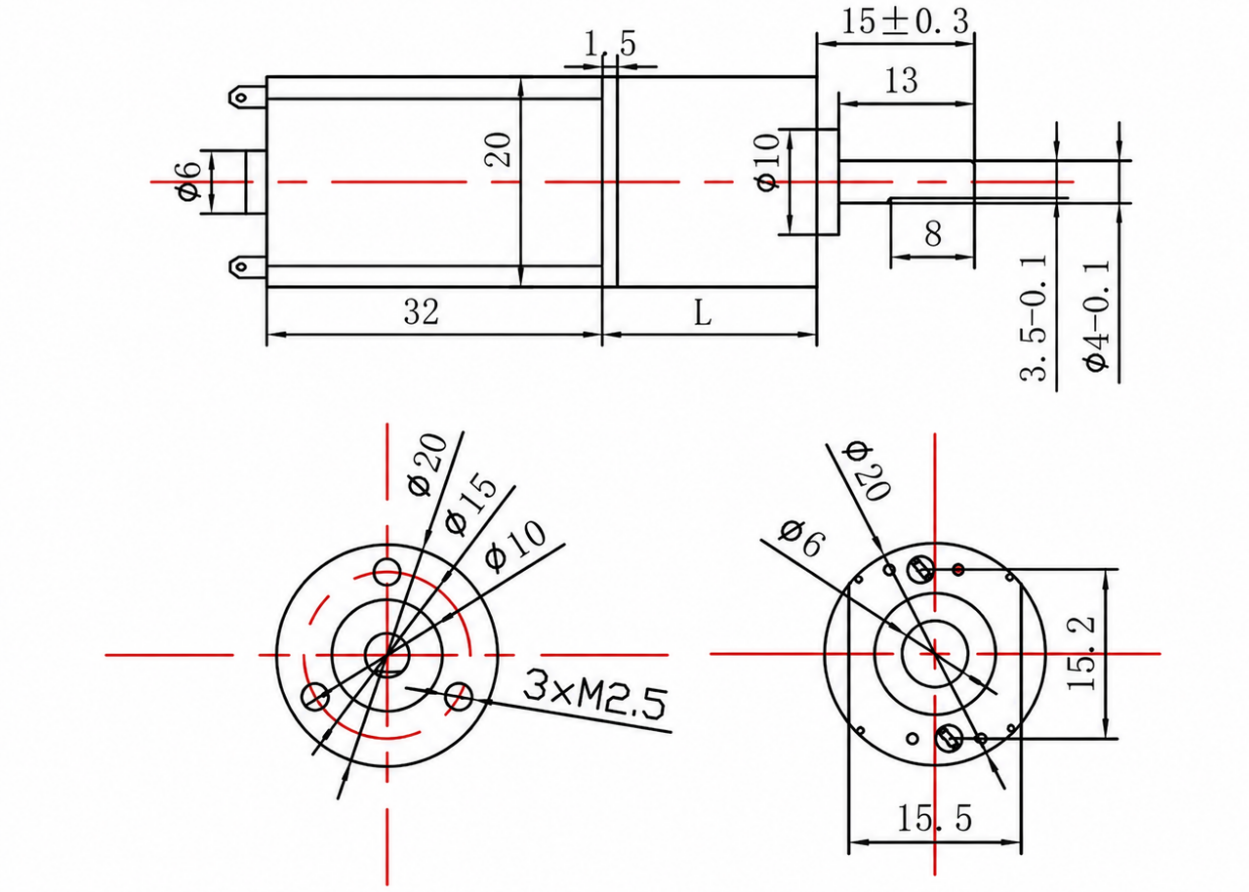
Note: Motors with reduction ratios of 370:1 and above must not be operated under stall conditions.

Performance parameters can be customized according to customer requirements. The values above are standard specifications.

Mechanical Dimensions

All dimensions are in millimetres.

L Value Represents Housing Length for Different Gear Ratios											
Gear Ratio	4. 38	19	24	29	84	104	128	157	370	560	850
L Dimension (mm)	15. 8	20			24. 3				28. 5		



Item	Dimension
Gearbox Outer Diameter	Ø20 mm
Motor Body	20 x 15.5 mm
Motor Body Length	32 mm
Gearbox Length L	15.8 / 20 / 24.3 / 28.5 mm
Output Shaft	Ø4 mm, D-shaped
Shaft Protrusion	15 ±0.3 mm
D-flat Length	8 mm
Mounting Holes	3 x M2.5

The gearbox housing length varies with the selected reduction ratio. Output shaft geometry and mounting details are shown in the drawing. Customized shaft and mounting configurations are available upon request.