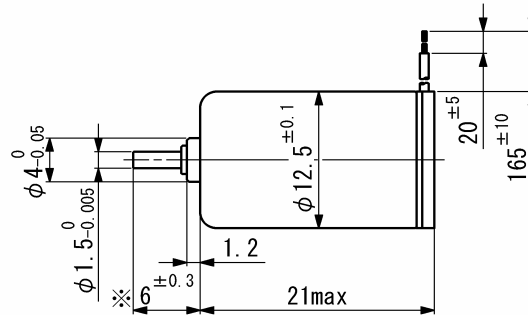
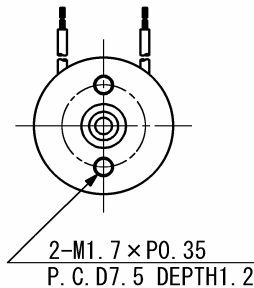


SCL12-20

Precious metal commutation



Weight 11.8 g
Dimension in mm

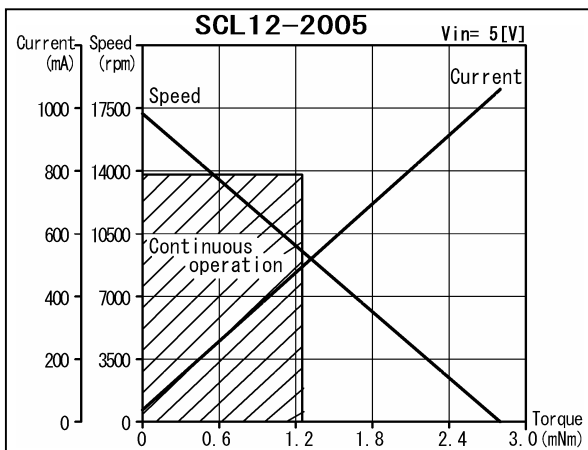
Note) Dimension marked ※ is measured with shaft pushed against motor.

For combination with gearheads: SSG12, SPG12

Ordering number	SCL12-2003	SCL12-2005	SCL12-2038	SCL12-20H3
1 Nominal voltage	3	5	12	15 V
2 Terminal resistance	2.6	4.7	38.1	126 Ω
3 Output power	0.79	1.3	0.86	0.39 W
4 Efficiency	62	75	62	55 %
5 No-load speed	15100	17200	15900	11600 rpm
6 No-load current	53	20	14	8 mA
7 Stall torque	1.99	2.84	2.07	1.26 mNm
8 Friction torque	0.1	0.05	0.1	0.09 mNm
9 Back-EMF constant	0.19	0.28	0.72	1.2 mV/rpm
10 Torque constant	1.81	2.72	6.88	11.5 mNm/A
11 Slope of N-T curve	7590	6060	7680	9150 rpm/mNm
12 Coil inductance	0.025	0.06	0.26	0.253 mH
13 Mechanical time constant	14.7	14.1	15.1	13.6 ms
14 Rotor inertia	0.19	0.22	0.19	0.14 gcm ²

Continuous operation

15 Speed range	12100	13800	12700	9300 rpm
16 Max. torque	1	1.25	1.04	0.64 mNm



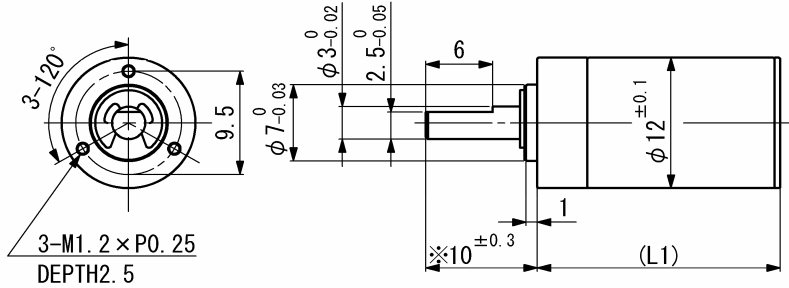
General specifications

17 Operating temperature	-20...+60	°C
18 Max. coil temperature	+80	°C
19 Thermal resistances	R _{th1} = 9, R _{th2} = 33	K/W
20 Bearings type	Sintered sleeves	
21 Max. shaft radial load	1.2 (5 mm)	N
22 Max. shaft axial load	0.2	N
23 Max. axial load at standstill	9.8	N
24 Shaft radial play	0.05	mm
25 Shaft axial play	0.03...0.2	mm

Options: Lead wires length, terminals instead of lead wires, shaft length, special coils, commutator with capacitors.

SPG12

Planetary gearhead



Dimension in mm

Note) Dimension marked ※ is measured with shaft pushed against gearhead.

For combination with motors: SCL12-20, SCL12-22, SCL12-30

General specifications

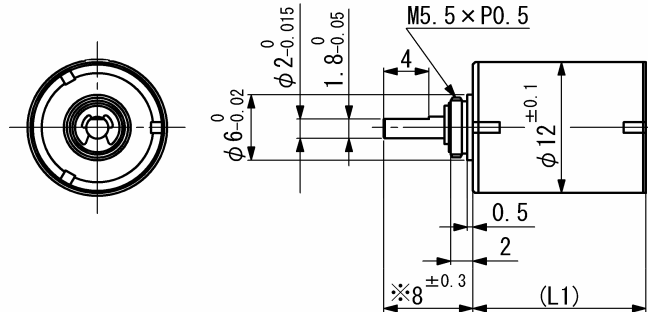
General specifications	SPG12	
Housing material	Metal	
Geartrain material	Steel	
Recommended max. input speed	8000	rpm
Operating temperature range	-10...+60	°C
Backlash at no-load per stage	≤ 1	°
Bearings on output shaft	Sintered sleeve bearings	
Max. shaft radial load (7 mm from flange)	4 (25)	N
Max. shaft axial load	2	N
Max. shaft press fit force	30	N
Shaft radial play	≤ 0.03	mm
Shaft axial play	≤ 0.3	mm

In parenthesis the max. radial load with ball bearing option.

Ratio (nominal)	Stage	Gearhead length, L1 [mm]	Gearhead weight [g]	Max. allowable torque [mNm]		Length with motor [mm]			Efficiency [%]	Direction of rotation
				Continuous	Intermittent	SCL12-20	SCL12-22	SCL12-30		
3.5 : 1	1	14.2	11.6	100	200	35.2	37.2	46.2	85	=
4.8 : 1	1	14.2	11.6	100	200	35.2	37.2	46.2	85	=
12 : 1	2	18	14.1	100	200	39	41	50	72	=
23 : 1	2	18	14.1	100	200	39	41	50	72	=
58 : 1	3	21.8	16.6	100	200	42.8	44.8	53.8	61	=
107 : 1	3	21.8	16.6	100	200	42.8	44.8	53.8	61	=
509 : 1	4	25.7	19.1	100	200	46.7	48.7	57.7	52	=

SSG12

Spur gearhead



Dimension in mm

Note) Dimension marked ※ is measured with shaft pushed against gearhead.

For combination with motors: SCL12-20, SCL12-22, SCL12-30

General specifications

	SSG12	
Housing material	Metal	
Geartrain material	Metal	
Recommended max. input speed	8000	rpm
Operating temperature range	-10...+60	°C
Max. backlash at no-load, 5 stages	≤ 5	°
Bearings on output shaft	Sintered sleeve bearings	
Max. shaft radial load (10 mm from flange)	3	N
Max. shaft axial load	1	N
Max. shaft press fit force	20	N
Shaft radial play	≤ 0.03	mm
Shaft axial play	≤ 0.2	mm

Ratio (nominal)	Stage	Gearhead length, L1 [mm]	Gearhead weight [g]	Max. allowable torque [mNm]		Length with motor [mm]			Efficiency [%]	Direction of rotation
				Continuous	Intermittent	SCL12-20	SCL12-22	SCL12-30		
16 : 1	3	14	8.3	12	30	35	37	46	73	≠
25 : 1	3	14	8.3	12	30	35	37	46	73	≠
47 : 1	4	16	9.2	15	30	37	39	48	66	=
74 : 1	4	16	9.2	15	30	37	39	48	66	=
94 : 1	4	16	9.2	15	30	37	39	48	66	=
175 : 1	5	18	10.2	15	30	39	41	50	59	≠
282 : 1	5	18	10.2	15	30	39	41	50	59	≠