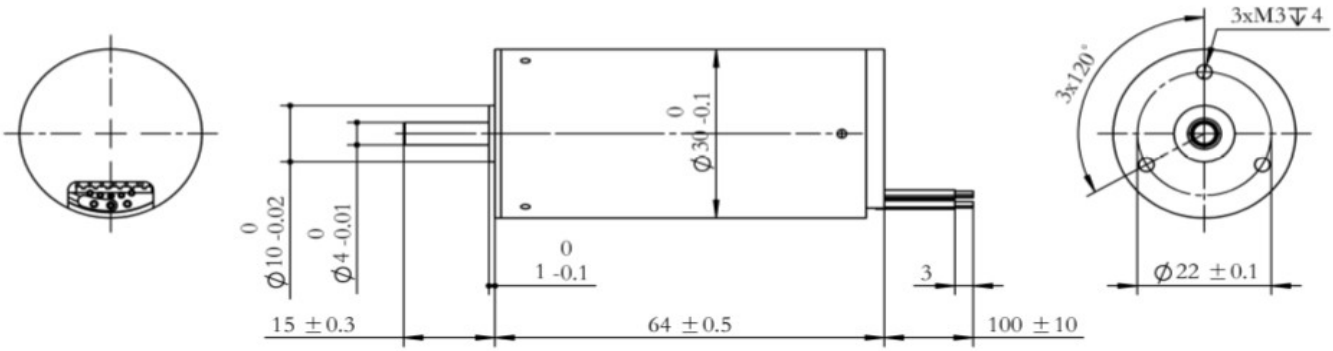
Φ30 mm brushless motor (high power)

Motor Data		105506412						
Values at nominal voltage								
1 Nominal voltage	U_N	24						V
2 No load speed	n_0	9500						rpm
3 No load current	I_0	200						mA
4 Stall torque	M_H	419.3						mNm
5 Stall current	M_I	17.8						A
6 Max. efficiency	η_{max}	80						%
7 Nominal power	W_N	67						W
8 Nominal speed	n_N	7608						rpm
9 Nominal torque (max.continuous torque)	M_N	83						mNm
10 Nominal current (max.continuous current)	I_N	3.7						A
Characteristics								
11 Terminal resistance phase to phase	R	1.35						Ω
12 Terminal inductance phase to phase	L	0.23						mH
13 Back-EMF constant	K_E	2.50						mV/rpm
14 Torque constant	K_M	23.85						mNm/A
15 Speed constant	K_n	400						rpm/V
16 Current constant	K_I	0.042						A/mNm
17 Speed / torque gradient	$\Delta n/\Delta M$	22.66						rpm/mNm
18 Mechanical time constant	τ_m	9.7						ms
19 Rotor inertia	J	12.25						gcm²
Specifications								
20 Operating temperature range:								
-Motor				-20……+100				℃
-winding, max permissible				+125				℃
21 Housing material				aluminium, black anodized				
22 Direction of rotation				electronically reversible				
23 Max. speed	n_{max}			35000				rpm
24 Number of pole pairs				1				
25 Number of phases				3				
26 Magnet material				NdFeB				
27 Hall sensors				digital				
Mechanical data								
28 Bearing type				ball bearings, preloaded				
29 Axial play				0 - 0.3				mm
30 Max. axial load (dynamic)				6				N
31 Max. force for press fits (static)				98				N
(static, shaft supported)				1200				N
32 Max. radial loading, 5 mm from flange				28				N
Product								
33 Weight of motor		280						g

Dimensional drawing



Option, cable and connection information

Connection Motor (Cable AWG20)	
Motor winding A	red
Motor winding B	black
Motor winding C	yellow

Connection sensors (Cable AWG24)	
V_{hall} 4.5V……24V	red
GND	black
Hall sensors A	blue
Hall sensors B	green
Hall sensors C	white