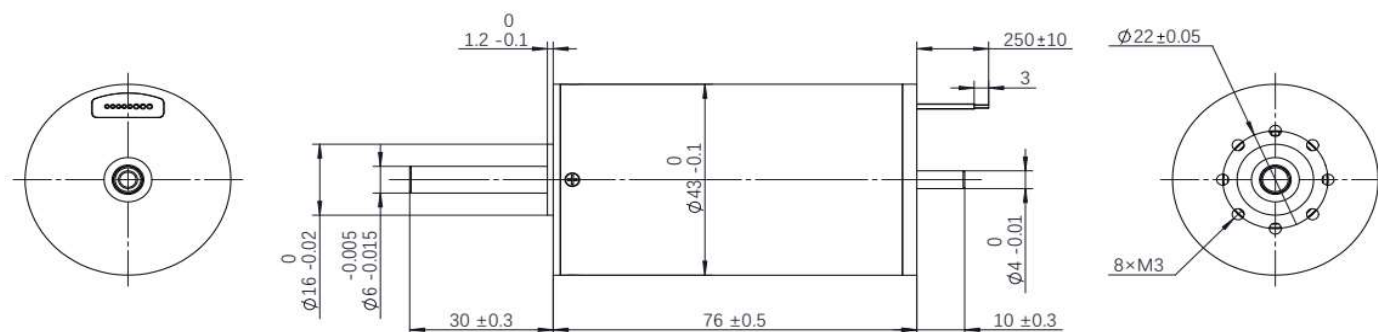


# Φ43 mm brushless motor (high power)

Motor Data		107007602						
<b>Values at nominal voltage</b>								
1	Nominal voltage	$U_N$	48					V
2	No load speed	$n_o$	12000					rpm
3	No load current	$I_o$	220					mA
4	Stall torque	$M_H$	1816.7					mNm
5	Stall current	$M_I$	48.0					A
6	Max. efficiency	$\eta_{max}$	87					%
7	Nominal power	$W_N$	206					W
8	Nominal speed	$n_N$	10799					rpm
9	Nominal torque (max.continuous torque)	$M_N$	182					mNm
10	Nominal current (max.continuous current)	$I_N$	5					A
<b>Characteristics</b>								
11	Terminal resistance phase to phase	$R$	1					Ω
12	Terminal inductance phase to phase	$L$	0.246					mH
13	Back-EMF constant	$K_E$	3.98					mV/rpm
14	Torque constant	$K_M$	38.02					mNm/A
15	Speed constant	$K_n$	251					rpm/V
16	Current constant	$K_I$	0.026					A/mNm
17	Speed / torque gradient	$\Delta n/\Delta M$	6.61					rpm/mNm
18	Mechanical time constant	$\tau_m$	9.7					ms
19	Rotor inertia	$J$	89.0					gcm <sup>2</sup>
<b>Specifications</b>								
20	Operating temperature range:							
	-Motor					-20.....+100		°C
	-winding, max permissible					+125		°C
21	Housing material					aluminium, black anodized		
22	Direction of rotation					electronically reversible		
23	Max. speed	$n_{max}$				15000		rpm
24	Number of pole pairs					1		
25	Number of phases					3		
26	Magnet material					NdFeB		
27	Hall sensors					digital		
<b>Mechanical data</b>								
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) (static, shaft supported)					90 1200		N
32	Max. radial loading, 5 mm from flange					28		N
<b>Product</b>								
33	Weight of motor		550					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