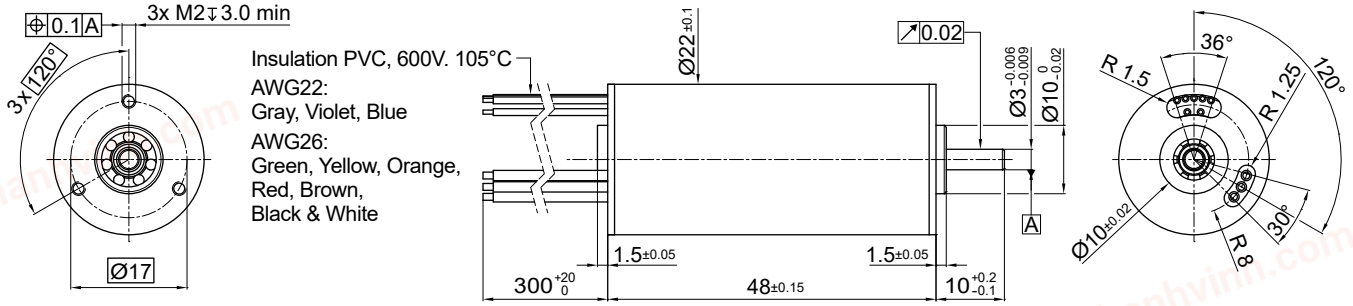
Brushless DC Slotless Motors

Portescap

22ECT48 Ultra EC™

Ø 22 mm • 4-pole • 54 W



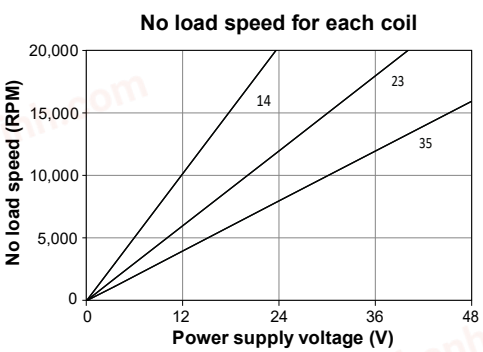
Dimensions in mm.

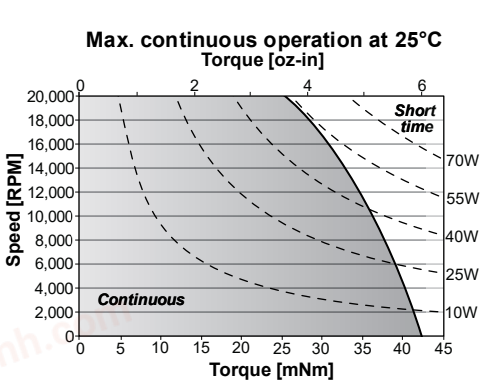
Electrical Data	Symbol	22ECT48 10B-xxx.01			Unit
		14	23	35	
1 Nominal Voltage	U_N	12	24	24	Volt
2 Optimization Direction	-	Symmetrical	Symmetrical	Symmetrical	-
3 No Load Speed	n_0	10,140	11,950	7,950	rpm
4 Typical No Load Current	I_0	155	120	70	mA
5 Max. Continuous Mechanical Power (@25°C)	P_{max}	54.0	54.0	54.0	W
6 Max. Continuous Current	$I_{e\,max}$	3.7	2.2	1.5	A
7 Max. Continuous Torque	$M_{e\,max}$	41.6 (5.9)	41.1 (5.82)	40.8 (5.78)	mNm (oz-in)
8 Back EMF Constant	k_E	1.17	1.95	2.94	V/1000 rpm
9 Torque Constant	k_M	11.2	18.6	28.1	mNm/A
10 Motor Regulation	R/k^2	2.9	3.0	3.0	10^3/Nms
11 Motor Regulation	$k/R^{½}$	18.4 (2.61)	18.2 (2.58)	18.1 (2.57)	mNm/$W^{½}$ (oz-in/$W^{½}$)
12 Internal Resistance - phase to phase	R_l	0.37	1.04	2.40	ohms
13 Line to Line Resistance at Connectors	R_L	0.40	1.07	2.43	ohms
14 Inductance Phase to Phase	L	0.04	0.11	0.24	mH
15 Mechanical Time Constant	τ_m	1.8	1.9	1.9	ms
16 Electrical Time Constant	τ_e	0.11	0.10	0.10	ms

General Data			
17 Maximum Motor Speed	n_{max}	20,000	rpm
18 Ambient Working Temperature Range	-	-30 to + 100 (-22 to + 212)	°C (°F)
19 Ambient Storage Temperature Range	-	-40 to + 100 (-40 to + 212)	°C (°F)
20 Ball Bearings Preload	-	6.8	N
21 Axial Static Force w/o Shaft Support (max)	-	45	N
22 Maximum Winding Temperature	-	125 (257)	°C (°F)
23 Thermal Resistance	R_{th}	2.1 / 12	°C/W
24 Thermal Time Constant	τ_w	962	s
25 Weight	-	98 (3.46)	g (oz)
26 Rotor Inertia	J	6.3	g-cm^2
27 Hall Sensor Electrical Phasing*	-	120	Electrical °

*Available without hall sensor

Wire	Description
Gray	Phase 1
Violet	Phase 2
Blue	Phase 3
Green	3.5 to 24V DC
Yellow	GND
Orange	Sensor 1
Red	Sensor 2
Brown	Sensor 3
Black	NTC 10 kohm
White	NTC 10 kohm
with hall effect sensor	





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