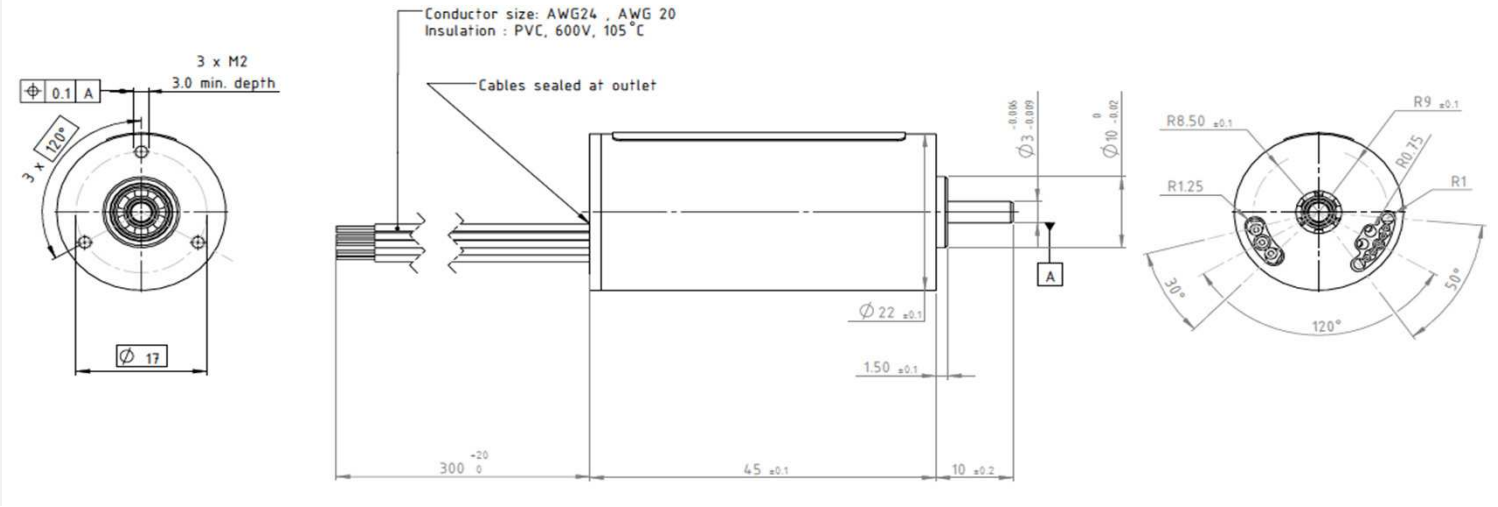
22ECS45 ULTRA EC Brushless Slotless Ø22mm 120 W



22ECS45 10B - **

Electrical Data	**	24	18	
1 Nominal Voltage	U_N	24	24	Volt
2 Optimization direction	-	CCW	CCW	-
3 No-Load Speed	n_0	51,600	68,500	rpm
4 Typical no-load current	I_0	240.0	300.0	mA
5 Max continuous mechanical power (@ 25°C)	P_{max}	120.0	120.0	W
6 Max continuous current	$I_{e\ max}$	6.4	8.2	A
7 Max continuous torque	$M_{e\ max}$	26.7 (3.78)	26.8 (3.8)	mNm (oz-in)
8 Back EMF Constant	K_E	0.44	0.34	V/1000 rpm
9 Torque Constant	k_M	4.2	3.3	mNm/A
10 Motor regulation	R/k^2	8.5	8.5	10^3/Nms
11 Motor regulation	$k/R^{½}$	10.8 (1.54)	11 (1.56)	mNm/$W^{½}$ (oz-in/$W^{½}$)
12 Internal resistance - phase to phase	R_I	0.15	0.09	ohms
13 Line to line resistance at connectors	R_L	0.17	0.10	ohms
14 Inductance phase to phase	L	0.02	0.02	mH
15 Mechanical Time Constant	t_m	1.9	1.9	ms
16 Electrical Time Constant	t_e	0.13	0.17	ms

General Data			
17 Maximum motor speed	n_{max}	73,000	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	-	5.5	N
21 Axial static force without shaft support (max)	-	34.0	N
22 Maximum winding temperature	-	125 (257)	°C (°F)
23 Thermal Resistance	R_{th1}/R_{th2}	1.3 / 10.4	°C/W
24 Thermal time constant	t_w	660	s
25 Weight	-	110 (3.89)	g (oz)
26 Rotor Inertia	J	2.300	$g.cm^2$
27 Hall sensor electrical phasing	-	120	Electrical °

22ECS45 - 10B - ** - 01
with hall effect sensors

Wire	Description
Grey	Phase 1
Violet	Phase 2
Blue	Phase 3
Green	3.5 to 27V DC
Yellow	GND
Orange	Sensor 1
Red	Sensor 2
Brown	Sensor 3
Black	NTC 1
White	NTC 2