

低压直流无刷系列 选型手册

LOW VOLTAGE DC BRUSHLESS SERIES SELECTION MANUAL

V22



低压直流无刷驱动

Low Voltage DC Brushless Driver



► 无刷驱动命名规则

Brushless Driver Part Number

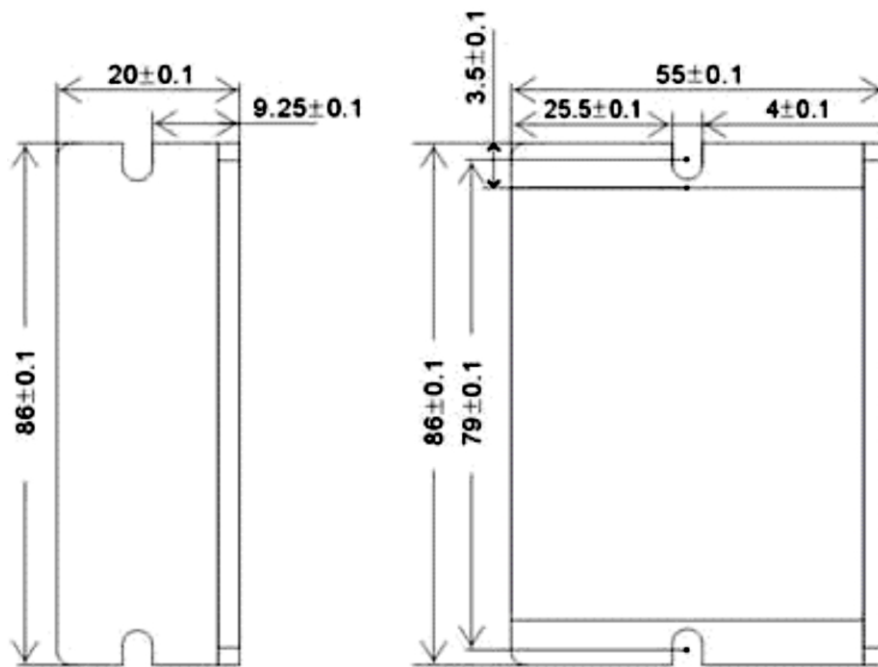
示例 Example	ZL DBL 50 10				
	①	②	③	④	⑤
①	ZL:中菱科技	ZL:Shenzhen ZhongLing Technology Co., Ltd.			
②	DBL:直流无刷	DBL:DC Brushless			
③	50:最高输入电压 (50:50V)	50:Max Input Voltage (50: 50V)			
④	10:额定输出电流 (10:10A)	10:Rated Output Current (10:10A)			
⑤	:特殊定制型号	: Special Customized Model			

型号 Model	ZLDBL4005S	ZLDBL5010S
实拍图 Photo		
工作电压 (V) Working Voltage	24~36	24~48
输出电流 (A) Output Current	0~5	0~10
控制方式 Control Method	RS485	RS485
外形尺寸 (mm) Dimension	86x55x20	118x33x76
适配电机 Matching Motor	100W以下的无刷电机 Srvo Motor with Power less than 100W	200W以下的无刷电机 Srvo Motor with Power less than 200W

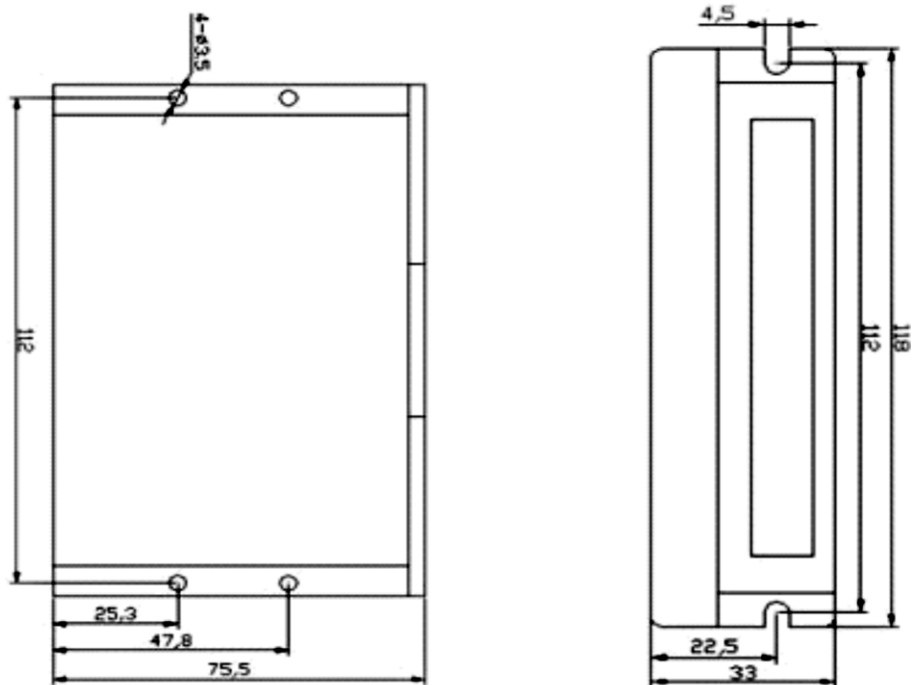
型号 Model	ZLDBL5015	ZLDBL5030S
实拍图 Photo		
工作电压 (V) Working Voltage	24~48	24~48
输出电流 (A) Output Current	0~15	0~30
控制方式 Control Method	RS485	RS485
外形尺寸 (mm) Dimension	150x48x97	166x67x102
适配电机 Matching Motor	400W以下的无刷电机 Srvo Motor with Power less than 400W	1000W以下的无刷电机 Srvo Motor with Power less than 1000W

► 驱动尺寸图

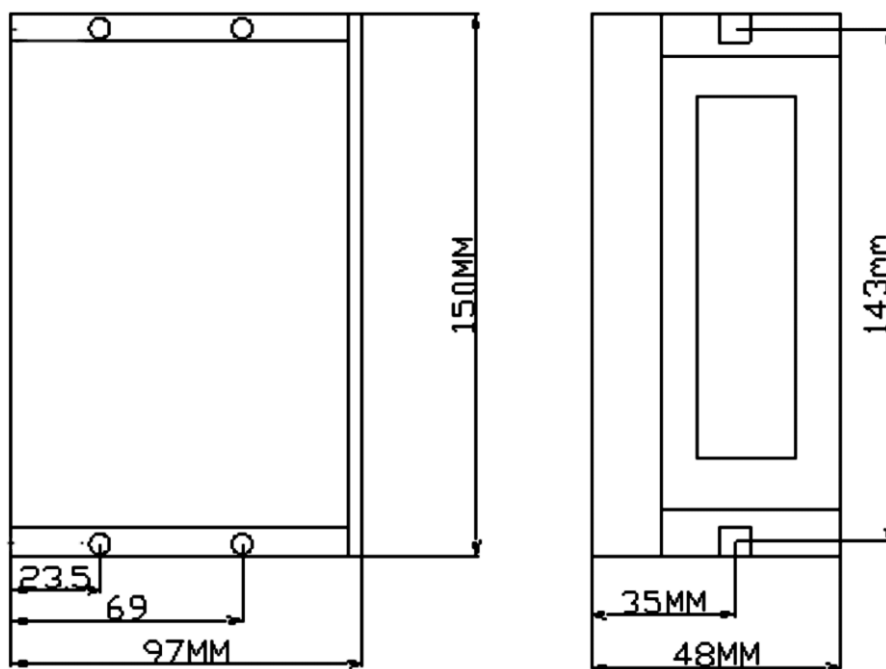
Driver Dimension Drawing



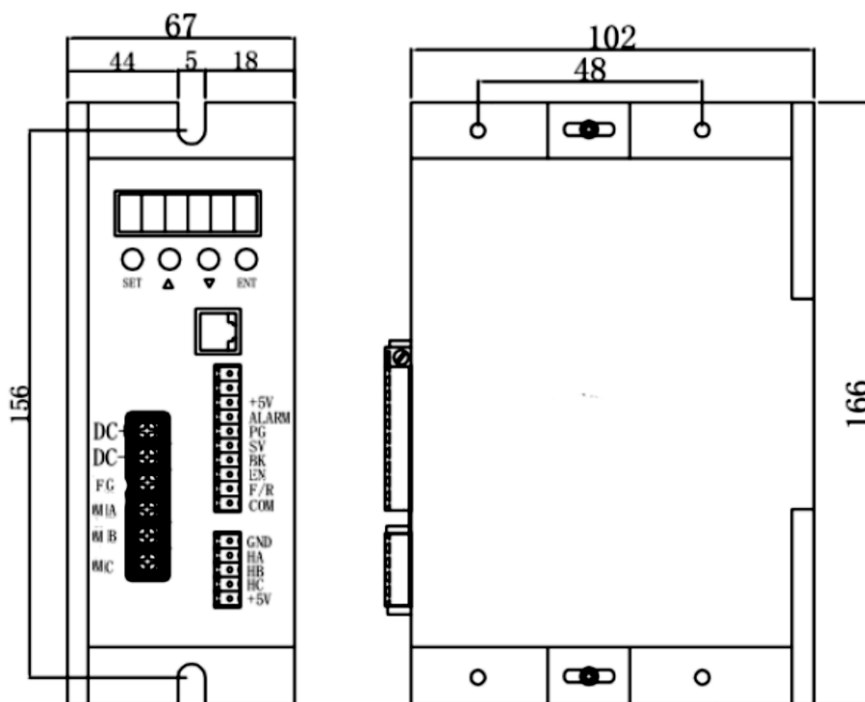
ZLDBL4005S Unit:mm



ZLDBL5015 Unit:mm



ZLDBL5015 Unit:mm



ZLDBL5030S Unit:mm

低压直流无刷电机

Low voltage DC Brushless Motor



► 无刷电机命名规则

Brushless Motor Part Number

示例 Example	<u>ZL</u>	<u>60</u>	<u>DBL</u>	<u>200</u>	<u>□□□</u>
	①	②	③	④	⑤
①	ZL:中菱科技		ZL:Shenzhen ZhongLing Technology Co., ltd.		
②	60:电机尺寸(60:法兰, 86:法兰)		60:Flange Size (60: Flange Size 60mm,86:Flange Size 86mm)		
③	DBL:直流无刷		DBL:DC Brushless		
④	200:功率(200-200W, 400-400W, 1000-1000W)		200:Power (200-200W, 400-400W, 1000-1000W)		
⑤	□□□:特殊定制型号		□□□: Special Customized Model		

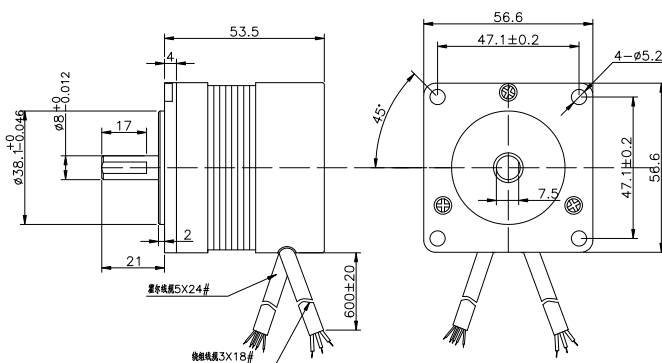
► 57系列无刷电机选型

57 Series Brushless Motor Selection

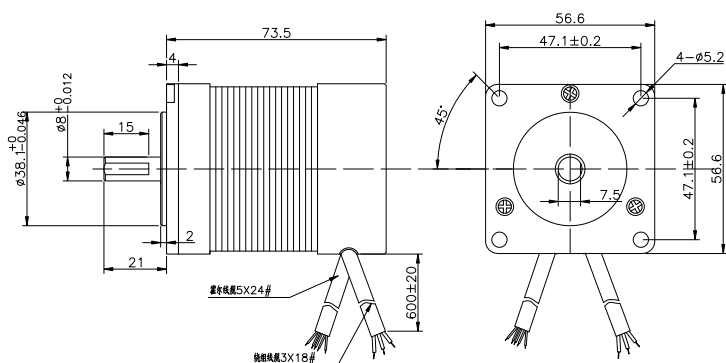
型号 Model	ZL57DBL35	ZL57DBL70	ZL57DBL100	ZL57DBL150
极数 Number Of Poles	4	4	4	4
额定电压 (VDC) Rated Voltage (VDC)	24	24	24	48
额定转速 (RPM) Rated Speed (RPM)	3000	3000	3000	3000
额定功率 (W) Rated Power (W)	35	70	100	150
额定扭矩 (N.m) Rated Torque (N.m)	0.11	0.22	0.33	0.45
峰值扭矩 (N.m) Peak Torque (N.m)	0.33	0.66	1.0	13.5
额定电流 (A) Rated Current (A)	$2.1 \pm 10\%$	$4.2 \pm 10\%$	$6.3 \pm 10\%$	$4.2 \pm 10\%$
峰值电流(A) Peak Current (A)	$6.3 \pm 10\%$	$12.6 \pm 10\%$	$19 \pm 10\%$	$12.6 \pm 10\%$
力矩系数(N.m/A) Torque Coefficient(N.m/A)	$0.018 \pm 10\%$	$0.018 \pm 10\%$	$0.018 \pm 10\%$	$0.11 \pm 10\%$
反电动势系数(V/RPM) Back EMF Constant(V/RPM)	$3.4 \times 10^{-3} \pm 10\%$	$3.4 \times 10^{-3} \pm 10\%$	$3.4 \times 10^{-3} \pm 10\%$	$6.8 \times 10^{-3} \pm 10\%$
转子惯量($\text{kg} \cdot \text{m}^2 \times 10^{-4}$): Rotor Moment Of Inertia ($\text{kg} \cdot \text{m}^2 \times 10^{-4}$):	$0.075 \pm 10\%$	$0.119 \pm 10\%$	$0.172 \pm 10\%$	$0.23 \pm 10\%$
机身长度(mm) Motor Length(mm)	53.5	73.5	93.5	113.5
重量(KG) Weight(KG)	$0.5 \pm 10\%$	$0.75 \pm 10\%$	$1.0 \pm 10\%$	$1.25 \pm 10\%$
绝缘等级 Insulation Voltage(V)	B	B	B	B
环境温度 (°C) Ambient Temperature (°C)	-20~50	-20~50	-20~50	-20~50

电机尺寸图

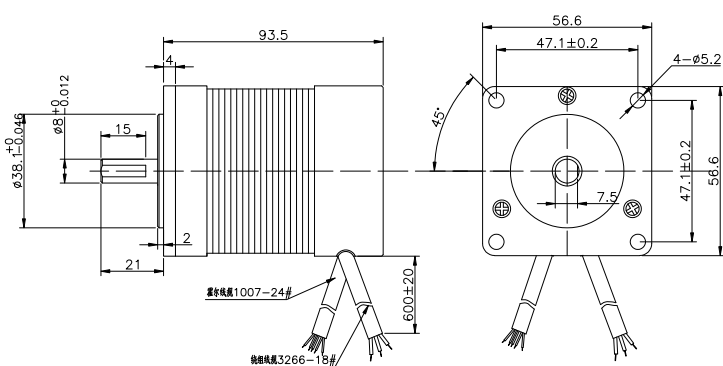
Motor Dimension Drawing



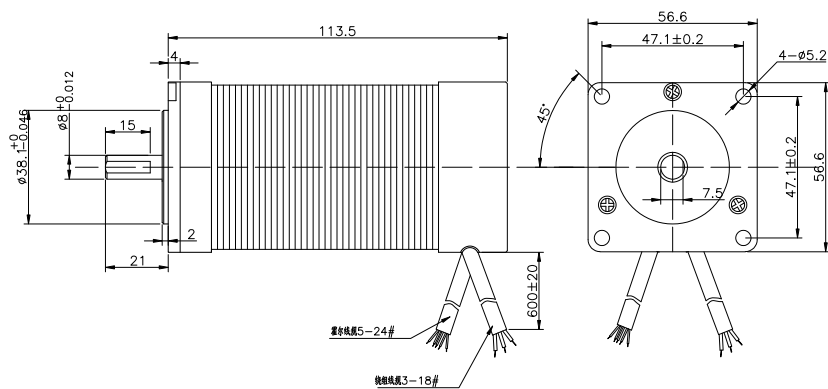
ZL57DBL35 Unit:mm



ZL57DBL70 Unit:mm



ZL57DBL100 Unit:mm



ZL57DBL150 Unit:mm

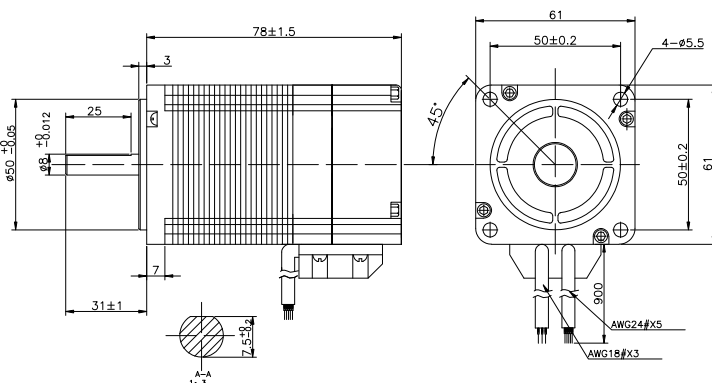
► 60系列无刷电机选型

60 Series Brushless Motor Selection

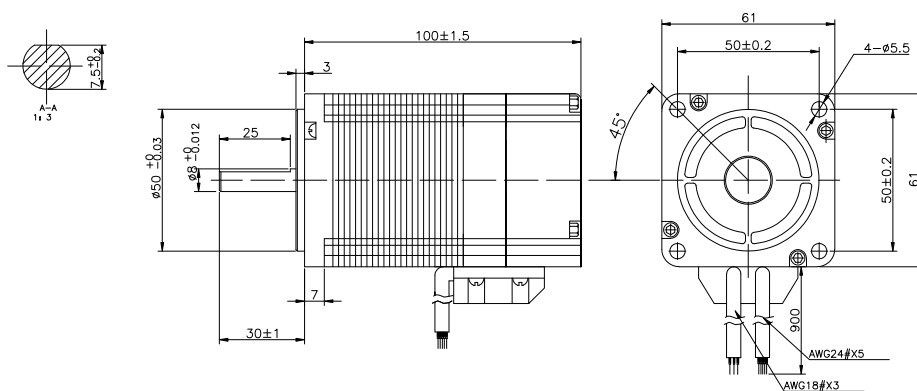
型号 Model	ZL60DBL100	ZL60DBL200	ZL60DBL300	ZL60DBL400
极数 Number Of Poles	8	8	8	8
额定电压 (VDC) Rated Voltage (VDC)	24	24	48	48
额定转速 (RPM) Rated Speed (RPM)	3000	3000	3000	3000
额定功率 (W) Rated Power (W)	100	200	300	400
额定扭矩 (N.m) Rated Torque (N.m)	0.32	0.64	0.96	1.28
峰值扭矩 (N.m) Peak Torque (N.m)	1.0	1.92	2.88	3.84
额定电流 (A) Rated Current (A)	$5.5 \pm 10\%$	$11 \pm 10\%$	$8.3 \pm 10\%$	$11 \pm 10\%$
峰值电流(A) Peak Current (A)	$16.5 \pm 10\%$	$33 \pm 10\%$	$25 \pm 10\%$	$33 \pm 10\%$
力矩系数(N.m/A) Torque Coefficient(N.m/A)	$0.06 \pm 10\%$	$0.06 \pm 10\%$	$0.09 \pm 10\%$	$0.12 \pm 10\%$
反电动势系数(V/RPM) Back EMF Constant(V/RPM)	$4.2 \times 10^{-3} \pm 10\%$	$4.2 \times 10^{-3} \pm 10\%$	$6.4 \times 10^{-3} \pm 10\%$	$8.4 \times 10^{-3} \pm 10\%$
转子惯量($\text{kg} \cdot \text{m}^2 \times 10^{-4}$): Rotor Moment Of Inertia ($\text{kg} \cdot \text{m}^2 \times 10^{-4}$):	$0.24 \pm 10\%$	$0.48 \pm 10\%$	$0.72 \pm 10\%$	$0.96 \pm 10\%$
机身长度(mm) Motor Length(mm)	78	99	120	141
重量(KG) Weight(KG)	$0.85 \pm 10\%$	$1.25 \pm 10\%$	$1.65 \pm 10\%$	$2.05 \pm 10\%$
绝缘等级 Insulation Voltage(V)	B	B	B	B
环境温度 (°C) Ambient Temperature (°C)	-20~50	-20~50	-20~50	-20~50

电机尺寸图

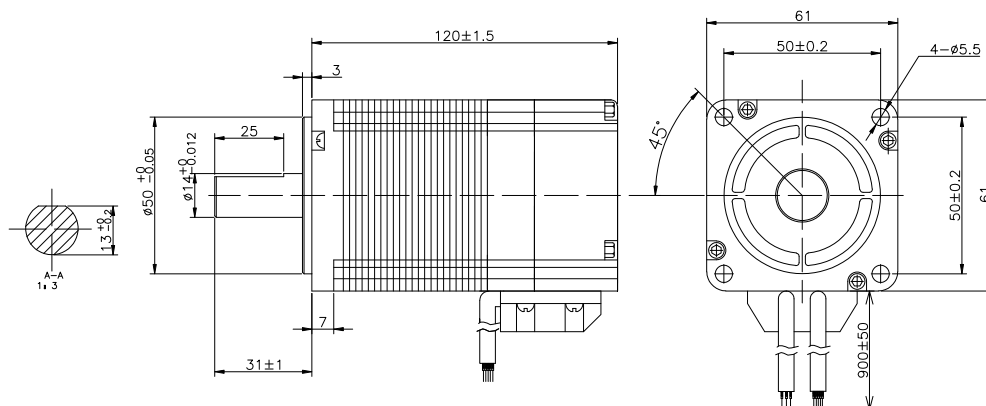
Motor Dimension Drawing



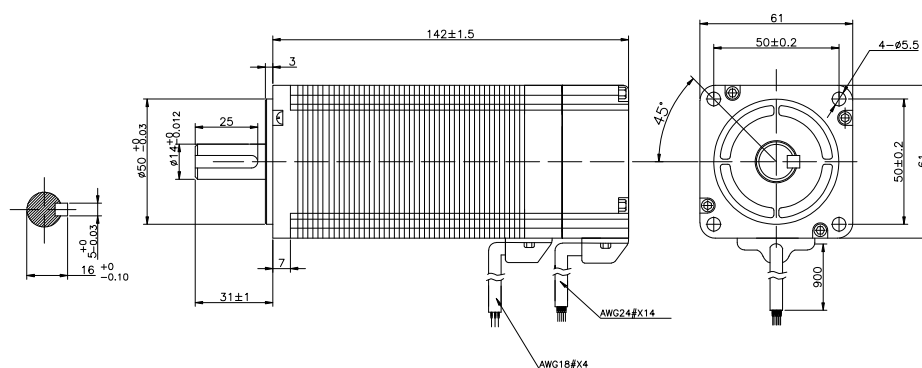
ZL60DBL100 Unit:mm



ZL60DB200 Unit:mm



ZL60DBL300 Unit:mm



ZL60DBL400 Unit:mm

► 80系列无刷电机选型

80 Series Brushless Motor Selection

型号 Model	ZL80DBL400
极数 Number Of Poles	4
额定电压 (VDC) Rated Voltage (VDC)	48
额定转速 (RPM) Rated Speed (RPM)	3000
额定功率 (W) Rated Power (W)	400
额定扭矩 (N.m) Rated Torque (N.m)	1.2
峰值扭矩 (N.m) Peak Torque (N.m)	3.6
额定电流 (A) Rated Current (A)	11±10%
峰值电流(A) Peak Current (A)	33±10%
力矩系数(N.m/A) Torque Coefficient(N.m/A)	0.11±10%
反电动势系数(V/RPM) Back EMF Constant(V/RPM)	8.2×10 ⁻³ ±10%
转子惯量(kg.m ² ×10 ⁻⁴): Rotor Moment Of Inertia (kg.m ² ×10 ⁻⁴):	0.42±10%
机身长度(mm) Motor Length(mm)	92
重量(KG) Weight(KG)	1.85±10%
绝缘等级 Insulation Voltage(V)	B
环境温度 (°C) Ambient Temperature (°C)	-20~50

► **电机尺寸图**
Motor Dimension Drawing

Motor Dimension Drawing



ZL80DBL400 Unit:mm

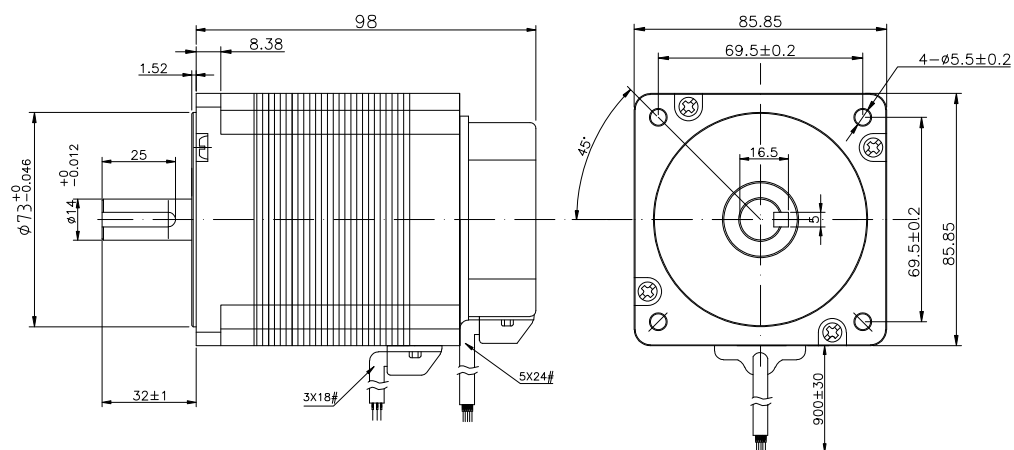
► 86系列无刷电机选型

86 Series Brushless Motor Selection

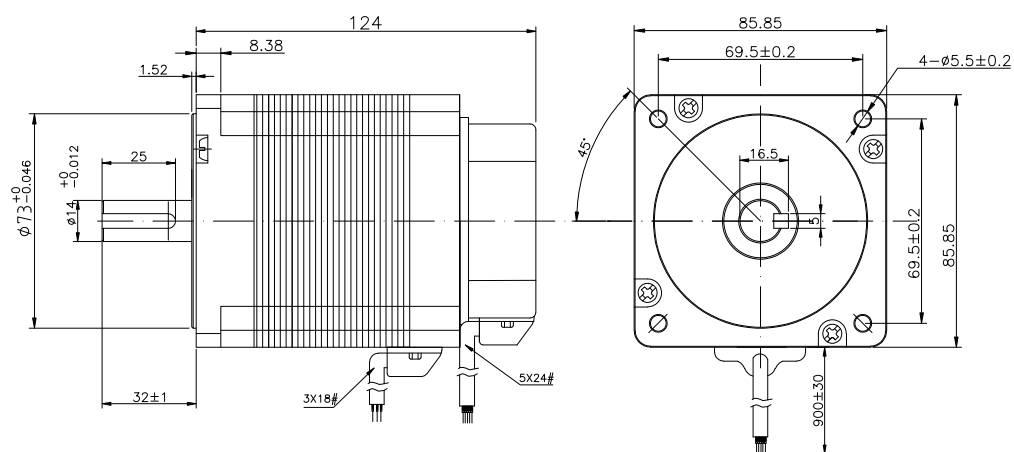
型号 Model	ZL86DBL250	ZL86DBL500	ZL86DBL500	ZL86DBL750
极数 Number Of Poles	8	8	8	8
额定电压 (VDC) Rated Voltage (VDC)	24	36	48	48
额定转速 (RPM) Rated Speed (RPM)	3000	3000	3000	3000
额定功率 (W) Rated Power (W)	250	500	500	750
额定扭矩 (N.m) Rated Torque (N.m)	0.8	1.6	1.6	2.4
峰值扭矩 (N.m) Peak Torque (N.m)	2.4	4.8	4.8	7.2
额定电流 (A) Rated Current (A)	14±10%	18.5±10%	14±10%	21±10%
峰值电流(A) Peak Current (A)	42±10%	55.5±10%	42±10%	63±10%
力矩系数(N.m/A) Torque Coefficient(N.m/A)	0.06±10%	0.09±10%	0.115±10%	0.115±10%
反电动势系数(V/RPM) Back EMF Constant(V/RPM)	4.2x10 ⁻³ ±10%	6.4x10 ⁻³ ±10%	8.2x10 ⁻³ ±10%	8.2x10 ⁻³ ±10%
转子惯量(kg.m ² ×10 ⁻⁴): Rotor Moment Of Inertia (kg.m ² ×10 ⁻⁴):	0.8±10%	1.6±10%	1.6±10%	2.4±10%
机身长度(mm) Motor Length(mm)	98	125	125	152
重量(KG) Weight(KG)	1.85±10%	2.6±10%	2.6±10%	4.0±10%
绝缘等级 Insulation Voltage(V)	B	B	B	B
环境温度 (°C) Ambient Temperature (°C)	-20~50	-20~50	-20~50	-20~50

电机尺寸图

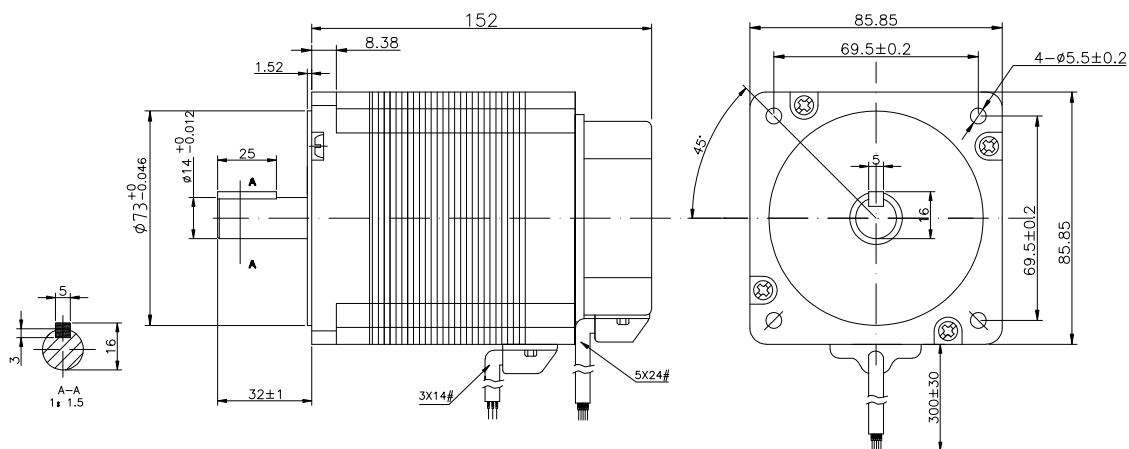
Motor Dimension Drawing



ZL86DBL250 Unit:mm



ZL86DBL500 Unit:mm



ZL86DBL750 Unit:mm

► 110系列无刷电机选型

110 Series Brushless Motor Selection

型号 Model	ZL110DBL1000
极数 Number Of Poles	8
额定电压 (VDC) Rated Voltage (VDC)	48
额定转速 (RPM) Rated Speed (RPM)	3000
额定功率 (W) Rated Power (W)	1000
额定扭矩 (N.m) Rated Torque (N.m)	3.2
峰值扭矩 (N.m) Peak Torque (N.m)	10
额定电流 (A) Rated Current (A)	28±10%
峰值电流(A) Peak Current (A)	84±10%
力矩系数(N.m/A) Torque Coefficient(N.m/A)	0.12±10%
反电动势系数(V/RPM) Back EMF Constant(V/RPM)	8.4x10 ⁻³ ±10%
转子惯量(kg.m ² ×10 ⁻⁴): Rotor Moment Of Inertia (kg.m ² ×10 ⁻⁴):	3±10%
机身长度(mm) Motor Length(mm)	138
重量(KG) Weight(KG)	4.5±10%
绝缘等级 Insulation Voltage(V)	B
环境温度 (°C) Ambient Temperature (°C)	-20~50



专 注 工 业 自 动 化 产 品

FOCUS ON INDUSTRIAL AUTOMATION PRODUCT

深圳中菱科技有限公司

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