

电动机规格书
MOTOR SPECIFICATION

电动机型号 MOTOR MODEL STP-28D1020

顾客型号 CUSTOMER MODEL

1、适用范围 SCOPE

本规格书概括了混合式步进电动机STP-28D1020的基本要求
THIS SPECIFICATION COVERS THE GENERAL REQUIREMENTS FOR
THE STEP MOTOR STP-28D1020 THAT CONSISTS OF BIPOLE
WINDING STATOR AND HYBRID MAGNET ROTOR

2、电气特性 ELECTRICAL CHARACTERISTICS

项目/ITEM	内容/SPECIFICATION	备注/DESCRIPTION
额定工作状态/DUTY	连续/CONTINUOUS	
驱动电压/DRIVE VOLTAGE	24 V D.C.	
额定电流/RATED CURRENT	1.3 A/相(PHASE)	
步进角/STEP ANGLE	1.8° (DEG) 全步/FULL STEP	
相数/NUMBER OF PHASE	2相 双极的 2相励磁/2 PHASE BIPOLE 2 PHASE EXCITING	
绝缘等级(UL)/INSULATION CLASS (UL)	UL B级/CLASS (绕组/COIL)	
卷线电阻/WINDING RESISTANCE	1.45 Ω ±10%	25° C
卷线电感/WINDING INDUCTANCE	1.25mH±20%	(注释)1/NOTE)1
保持力矩/HOLDING TORQUE	78.5mN·m(800gf·cm)以上/MIN.	(注释)2/NOTE)2
制动力矩/DETENT TORQUE	2.94mN·m(30gf·cm)参考值/REF.	
最大自启动频率/MAX STARTING PULSE RATE	2060PPS以上/MIN.	(注释)3/NOTE)3
静止角度误差/POSITIONAL ACCURACY	±0.09° (deg) 以下/MAX.	(注释)4/NOTE)4
绝缘耐压/DIELECTRIC STRENGTH	500V A.C 1分钟/MINUTE 无异常/NO ABNORMAL	(注释)5/NOTE)5
绝缘电阻/INSULATION RESISTANCE	100 MΩ 以上/MIN.	(注释)6/NOTE)6
温度上升/TEMPERATURE RISE	80 K (80 DEG) 以下/MAX.	(注释)7/NOTE)7

3、机械特性 MECHANICAL CHARACTERISTICS

项目/ITEM	内容/SPECIFICATION	备注/DESCRIPTION
机械尺寸/ MECHANICAL DEMENSION	根据电动机规格书 113-5842-(3/3页)所示 ACCORDING TO SPECIFICATION 113-5842-(PAGE3/3)	
轴材料/SHAFT MATERIAL	SUS303	
轴承/BALL BEARING	单列滚珠轴承/SINGLE ROW BALL BEARING	
端盖材料/END BELL MATERIAL	铝合金/ALUNINUM ALLOY	
质量/MASS	约110克/APPROXIMATELY 110g	
转子惯量/ROTOR INERTIA	约8g·cm² (8.3×10⁻³g·cm·s²) APPROXIMATELY 8g·cm² (8.3×10⁻³g·cm·s²)	

4、其他 ADDITIONAL

项目/ITEM	内容/SPECIFICATION	备注/DESCRIPTION
转动方向/DIRECTION OF ROTATION	按照表1的励磁顺序从安装面看顺时针方向 PHASE SEQUENCE TO PRODUCE CLOCKWISE ROTATION VIEWED FROM MOUNTING END IS AS TABLE 1	
电机引线型号/TYPE OF LEAD WIRE	UL1430 CSA AWM AWG26	
电机引线颜色/COLOR OF LEAD WIRE	按照表2所示/ACCORDING TO TABLE 2	
寿命/LIFE	20000小时以上/HOURS MIN	(注释)8/NOTE)8
本电机Pb、Cr(VI+)、Cd、Hg、PBB、PBDE 6种物质的含有量满足RoHS指令(2011/65/EU)的要求。 MATERIALS OF MOTOR CONTAIN SIX SUBSTANCES Pb Cr(VI+) Cd Hg PBB AND PBDE; THOSE CONTENTS COMPLY WITH THE RoHS INSTRUCTION		

项目/ITEM	内容/SPECIFICATION	备注/DESCRIPTION
使用温度范围 OPERATION AMBIENT TEMPERATURE	0°C ~ +50°C	
使用湿度范围 OPERATION AMBIENT HUMIDITY	20%RH ~ 90%RH	(注释)9/NOTE)9
保存温度范围 STORAGE AMBIENT TEMPERATURE	-20°C ~ +70°C	
使用湿度范围 STORAGE AMBIENT HUMIDITY	15%RH ~ 95%RH	(注释)9/NOTE)9

使用时的注意事项 CAUTION AND RECOMMENDATION	不可拎着电动机引线拿取电动机 PLEASE DON'T HOLD MOTOR BY LEAD WIRES	
	通电状态下不可插拔电动机插头 PLEASE DON'T PLUG OR UNPLUG THE MOTOR CONNECTOR WHILE POWER ON	
	请不要使电动机落地以及碰撞电动机 如有此类情况发生 即使当时电动机可以使用 但质量将不能得到保证 PLEASE DON'T DROP AND BUMP MOTOR AGAINST HARD MATERIAL MALFUNCTION MAY NOT BE OBSERVED AT EARLY STAGE AFTER SUCH SHOCK BUT IT MAY BE FOUND LATER THIS TYPE OF MISHANDLING VOIDS OUR WARRANTY	
	请顾客方对电动机在实际装配的状态进行确认 验证实际使用时的适用性 THE FUNCTION OR PERFORMANCE SHALL BE EVALUATED BY INSTALLING MOTOR TO APPLICATION THAT SHOULD BE CHECKED AT BUYER'S SIDE	
	电动机分解后不可再组装使用 PLEASE DON'T REUSE DISASSEMBLED MOTOR	
	在电动机的使用上 若产生有关专利问题 本公司不予保证 请贵公司特别注意 OUR CORPORATION WILL NOT BE RESPONSIBLE FOR ANY PATENT DISPUTE OR PROBLEM CAUSED BY ACTUAL APPLICATIONS	

MATERIAL	—	—	01 2020-05-19 C-DY-2020-0170	轴端追加低平台	周振	STP-28D1020	
						DATE	REVISION NO.
FINISH	—	—	— 2017-05-15 —	00 初版	胡金平		
DRAWN	DESIGNED	CHECKED	APPROVAL SCALE —	TITLE	电动机规格书 MOTOR SPECIFICATION	THIRD ANGLE PROJECTION	
东莞信浓	东莞信浓	东莞信浓	东莞信浓	UNIT [mm]	DWG. NO.	113-5842-01	Φ
2020-05-19	2020-05-19	2020-05-20	2020-05-20				CONFIDENTIAL
周振	周振	倪烽	倪烽				

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5. 注释 NOTE

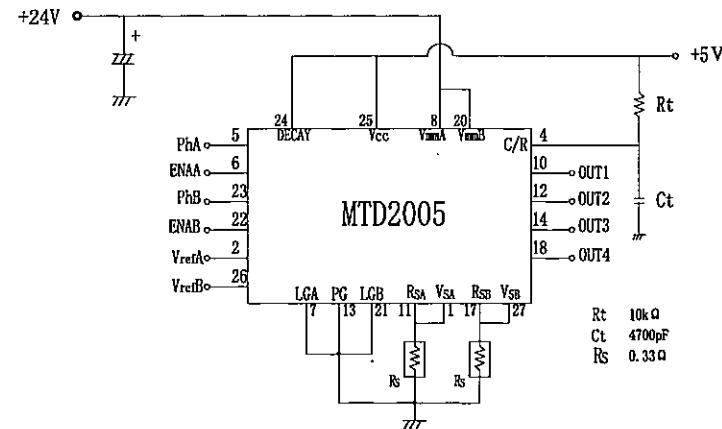
1.	在1kHz 1Vrms 条件下测定 MEASURED AT 1kHz 1Vrms
2.	在额定电流 2相励磁条件下进行测定 MEASURED AT RATED CURRENT AND 2PHASE EXCITING
3.	在无负载条件下测定 MEASURED AT NO LOAD
4.	不包括磁滞误差 2相励磁 EXCLUDING HYSTERESIS 2PHASE EXCITING
5.	在电机引线与铁芯间加50或60Hz交流电压1分钟无异常 并且泄漏电流在3mA以下 THERE SHOULD BE NO BREAK DOWN AT 50Hz&60Hz APPLIED FOR 1MINUTE BETWEEN MOTOR FRAME AND LEAD WIRES, AND THE CUT OFF CURRENT IS 3mA MAX
6.	在电机引线与铁芯间加500V D.C电压 APPLY 500V D.C BETWEEN MOTOR FRAME AND LEAD WIRES
7.	使用图1所示的电路 2相励磁 1.3A/相(峰值) 2060PPS 无负载 在安装150×150×t2放热铝板的条件下使用电阻法来测定 WITH TEST CIRCUIT OF FIG. 1 MEASURED BY RESISTANCE METHOD WHEN MOTOR IS OPERATED AT 2PHASE EXCITING 1.3A/PHASE(PEAK) 2060PPS NO LOAD WITH ALUMINIUM HEAT SINK 150×150×t2
8.	用图1所示的电路 2相励磁 I=1.3A/相(峰值) 2060PPS轴承温度低于80°C条件下进行寿命试验后 在使用温度 湿度条件下 能满足项目2的电气特性 WITH TEST CIRCUIT OF FIG. 1, 2PHASE EXCITING I=1.3A/PHASE(PEAK) AT 2060PPS WHILE TEMPERATURE AT BALL BEARING SHOULD BE 80°C MAX. TO DO LIFE TEST AFTER LIFE TEST IT SHOULD CONFORMS THE ELECTRICAL SPECIFICATION UNDER OPERATION AMBIENT
9.	表面应无结霜 NO CONDENSATION

【表1】 励磁顺序(2相励磁)
【TABLE1】 PHASE SEQUENCE(2PHASE EXCITING)

STEP	A	B	\bar{A}	\bar{B}
1	+	+	-	-
2	-	+	+	-
3	-	-	+	+
4	+	-	-	+
5	+	+	-	-

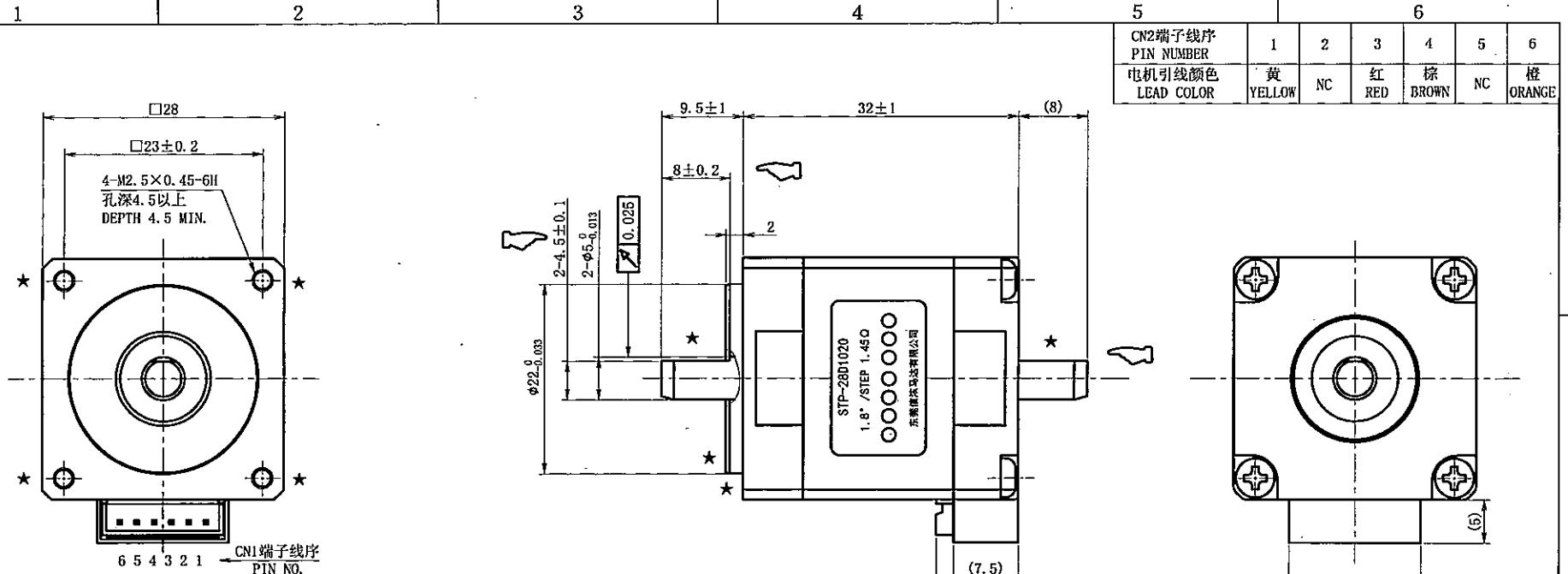
【表2】 电机引线颜色
【TABLE2】 COLOR OF LEAD WIRES

相 PHASE	A	B	\bar{A}	\bar{B}
颜色 COLOR	棕 BROWN	红 RED	橙 ORANGE	黄 YELLOW

图1 实验电路
FIG. 1 TEST CIRCUIT根据Vref调整电流值到1.3A/相(峰值)
I=1.3A/PHASE(PEAK) ADJUSTED BY Vref

MATERIAL			01	2020-05-19	C-DY-2020-0170	轴端追加低平台		周振	STP-28D1020	
						—	2017-05-15			
FINISH			SYM	DATE	REVISION NO.	REVISIONS		BY	NOTE	
						—	—			
DRAWN	DESIGNED	CHECKED	APPROVAL	SCALE	TITLE	电动机规格书 MOTOR SPECIFICATION		THIRD ANGLE PROJECTION		
东莞信浓 2020-05-19 周振	东莞信浓 2020-05-19 周振	东莞信浓 2020-05-20 倪烽	东莞信浓 2020-05-20 倪烽	—	UNIT [mm]	DWG. NO.	113-5842-01	◎		
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CN2端子线序 PIN NUMBER	1	2	3	4	5	6
电机引线颜色 LEAD COLOR	黄 YELLOW	NC	红 RED	棕 BROWN	NC	橙 ORANGE

【电机连接件 MOTOR SIDE CONNECTOR】	
CN1端子 CONTACT	MOLEX 53253-0650 或 53253-0670 颜色: 自然色 COLOR:NATURAL
【电机对接连接件 MATING CONNECTOR】	
CN2插接件 HOUSING	MOLEX : 51065-0600 颜色: 自然色 COLOR:NATURAL
【电机接线图 WIRING DIAGRAM】	
BROWN ORANGE RED	A A B B 黄 YELLO

【铭牌内容 LABEL DESCRIPTION】	
底色 BASE COLOR:白/WHITE	
文字色 LETTER COLOR:黑/BLACK	
STP-28D1020 1.8° /STEP 1.45Ω ○○○○○○○	批号 LOT NO. 东莞信浓马达有限公司
【批号构成/LOT NO. CONSTRUCTION】	
0000000	
日 DATE	
月 MONTH(10:X 11:Y 12:Z)	
公历年尾 LAST NO. OF YEAR	
变更号码(REV. No.)	
铭牌按图示的方向粘贴 STICK THE LABEL AT THE POSITION SHOWN IN THIS DWG.	

一般公差 TOLERANCES (EXCEPT AS NOTES)		±0.3/±2°	PORTIONS MARKED BY ★ ARE USED BY CUSTOMER(MOUNTING • POWER TRANSMISSION • POWER SUPPLY)					
MATERIAL	—	—	01	2020-05-19	C-DY-2020-0170	轴端追加低平台	周振	STP-28D1020
FINISH	—	—	—	2017-05-15	—	00 初版	胡金平	
SYS	DATE	REVISION NO.			REVISIONS	BY	NOTE	
DRAWN	DESIGNED	CHECKED	APPROVAL	SCALE 2:1	TITLE	电动机规格书 MOTOR SPECIFICATION		
东莞信浓 2020-05-19	东莞信浓 2020-05-19	东莞信浓 2020-05-20	东莞信浓 2020-05-20	UNIT [mm]	DWG. NO.	113-5842-01		
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