

编码器规格书

SPECIFICATIONS

适用型号 : ED11C02M-FE13S6.5-E08-10G
 APPLICABLE MODELS: ED11C02M-FE13S6.5-E08-10G

1. 一般事项 General information

1-1 适用范围: 本规格书适用于车载机器、AV 机器、收音机、通讯设备用之 11 型金属轴编码器。

Applying range: This specification is applied to 11mm size metal shaft type encoder used in vehicle ,audio-visual. radio and communication equipment.

1-2 使用温度范围 Operating temperature range $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$

1-3 储存温度范围 Storage temperature range $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

1-4 试验的状态 温度 $15 \sim 35^{\circ}\text{C}$ 、 $25 \sim 85\% \text{RH}$ 、气压 $86 \sim 106 \text{kPa}$ 的标准状态.当判定有疑问时,则在以下基准状态下进行: 温度 $20 \pm 1^{\circ}\text{C}$ 、 $63 \sim 67\% \text{RH}$ 、气压 $86 \sim 106 \text{kPa}$

Test condition As our standard condition:Temperature $15 \sim 35^{\circ}\text{C}$ 、Moisture: $25 \sim 85\% \text{RH}$ 、air pressure: $86 \sim 106 \text{kPa}$.Should any doubt arise in judgment ,tesrs shall be conducted at the following conditions:
 Temperature $20 \pm 1^{\circ}\text{C}$ 、Moisture: $63 \sim 67\% \text{RH}$ 、air pressure: $86 \sim 106 \text{kPa}$.

2.外观尺寸 Appearance and dimensions

2-1 外观 外观无锈蚀,电镀不良,破裂和明显变形.

Appearance No harmful rust ,cracks ,scratches and poor under functioning

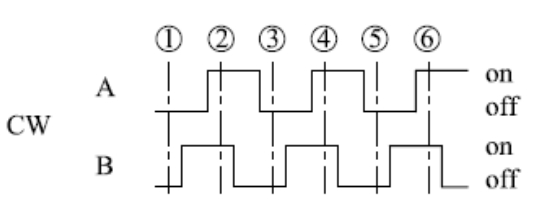
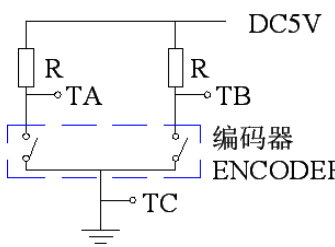
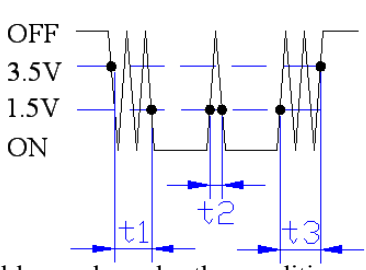
2-2 尺寸 见附图 Dimensions Refer to attached drawing

3.额定参数 Electrical ratings

3-1 最大额定(电阻负荷) 2.5 mA DC5V

Rating(max.)(Resistive load)

4.电气特性 Electrical characteristics

项目 Items	规格 Specifications	条件 Condition
4-1 最高使用电流 Maximum operating current	2.5mA	有负载的情况下,公共端为 5 mA Common terminal shall be withstanded at 5 mA
4-2 耐电压 Dielectric strength	绝缘材料无击穿 No subversion on insulated material	交流 380V/2 秒,施加位置:所有端子与接地(外壳)间 AC380V/ 2S Applied position: Between all terminals and ground(frame)
4-3 绝缘电阻 Insulation resistance	100MΩ 以上 100MΩMIN	直流 250V 1 分钟,施加位置:所有端子与接地(外壳)间 DC250V 1min±5S Applied position: Between all terminals and ground(frame)
4-4 输出信号 Output signal	A、B 二信号的相位差输出 Output of A and B signal, proportionate to phase difference.	
4-5 滑动噪音 Sliding noise	在恒定转动速度下测量。 	
	测定条件:旋转速度 $360^{\circ}/\text{秒}$ Measurement shall be made under the condition which the shaft is rotated im constant speed. $360^{\circ}/\text{S}$ 开码区间:输出电压 $\leq 1.5\text{V}$,关码区间:输出电压 $\geq 3.5\text{V}$ Code-on area: output $V \leq 1.5\text{V}$ area, Code-offarea: output $V \geq 3.5\text{V}$ area	
	R=5K 振动/chattering:5ms max 回弹/bounce:5ms max	

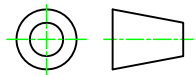
5.机械特性 Mechanical characteristics			
项目 Items	规格 Specifications	条件 Condition	
5-1 定位点力矩 Detent torque	250~500 gf. cm		
5-2 定位点数(360°) Number of detent	16 定位点 16 detents		
5-3 全旋转角度 Total rotational angle	360° endless		
5-4 端子强度 Terminal strength	端子焊接部位无松动、损坏、脱落。试验后,端子可能弯曲,但是应满足第 4 项规定的电气参数要求。 Shall be free from terminal looseness damage and breakage of terminal holding portion. terminals may be bent after test. electrical performance requirements specified in item 4 shall be satisfied.	在端子前端的垂直方向施加 2N 的静止荷重 10 秒钟。(每个端子 1 次) A static load of 2N shall be applied to the tip of terminal for 10S in a desired direction. The test shall be done once perterminal.	
5-5 轴推拉强度 Push-pull strength(N)	操作部摆动不超过预定值、无损坏和机械异常,满足系 4 项规定的电气参数要求 Shall be free from pronounced wobble, deformation and mechanical abnormality.	在操作部顶部按压方向施加静荷重 100N 10 秒 A static load of 100N shall be applied to the tip of the shaft for 10s in the push and pull direction.	
5-6 轴偏摆 Shaft wobble	轴套长 Bushing length	在距安装面 30mm 轴柄的位置, 施加弯曲力矩 50mN.m. Bending moment of 50mN.m to be applied to the shaft at 30 mm from the mounting surface. L: 距轴套安装面的测量点 L: Measurement point from surface of bushing.mounting	
	5		轴偏摆 Wobble(mm) (以下 less) 0.7×L/30
	7		0.6×L/30
	10 以上 MIN		0.5×L/30
5-7 轴套锁紧强度 Bushing nut tightening strength	螺母锁紧力矩值, 不得超出下表所列: Nut tightening torque shall not exceed value shown in the table below		
	轴套直径 bushing diameter	强度 torque	
	M6	1.2N.m	
	M7	1.0N.m	
5-8 耐焊接热 Resistance to soldering heat	不应有外观及操作异常发生, 电气性能符合规格第 4 项要求。 NO abnormalities shall be observed in appearance and operation. The electrical performance requirements specified in item 4 shall be satisfied. 被浸入表面均匀的焊锡涂层, 应达到 75%以上。 A new uniform coating of solder shall cover a minimum of 75% of the surface being immersed.	应符合每 8 项“焊接条件” Specified by the clause 8 “soldering conditions”	
5-9 防水性能 Assuring IPX7 waterproof grade	轴套部分置于 1 米深水中 0.5H 无进水 A part of stalk is place in one meter the deep 0.5 H in water has no into the water		

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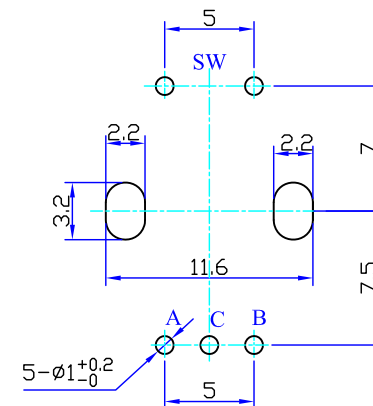
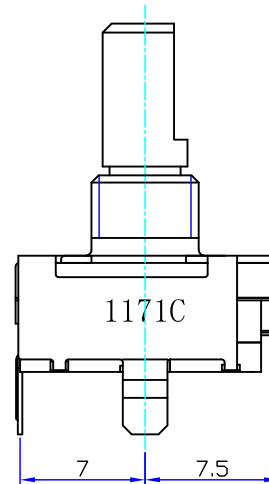
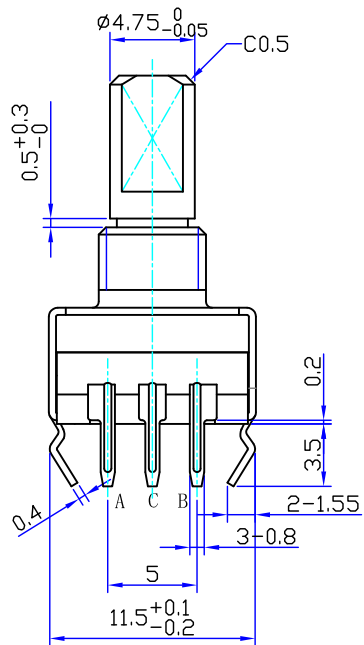
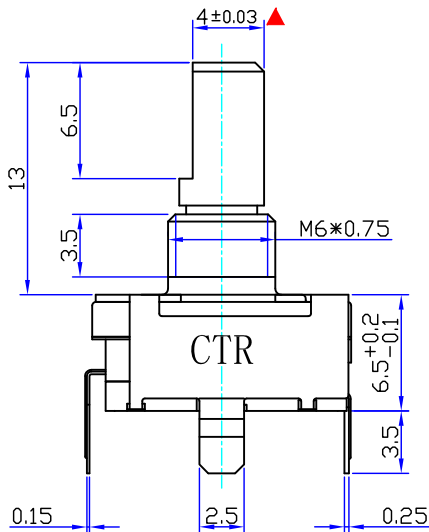
6.耐久性 Durability				
项目 Items	规格 Specifications	条件 Condition		
6-1 旋转寿命 Rotational life	1.定位点力矩: 大于 1.5N.cm Detent torque: 1.5N.cm min 2.电气性能符合初始规格 4 的要求。 Specification in clause 4 shall be satisfied.	无负荷, 速度: 600 周/小时: 30,000 次 Encoder shall be operated 30000 cycles at 600 cycles /H without load after which measurement shall be made.		
6-2 按压部分 Push portion	接触电阻: ≤500mΩ。 Contact resistance: ≤500mΩ.	无负荷, 速度: 30-40 周/分钟: 30,000 次 Encoder shall be operated 30000 cycles at 30-40 cycles /min without load.		
6-3 耐寒性 Cold	符合初始规格 4 的要求。 Specification in clause 4 shall be satisfied.	-40℃ 96 小时(无负荷放置) -40℃ 96 hours left without loading.		
6-4 耐热性 Dry heat		85℃ 96 小时(无负荷放置) 85℃ 96 hours left without loading.		
6-5 耐湿性 Damp heat		40℃ 90-95%RH 96 小时(无负荷放置) 40℃ 90-95%RH 96 hours left without loading.		
7.按压开关规格 push-on switch specifications				
项目 Items	规格 Specifications			
7-1 开关回路/接点数 Switch circuit/number of contact	单板单投 Single pole and single throw (push on)			
7-2 开关移动量 Travel of switch (mm)	0.5±0.2mm			
7-3 开关动作力 Operating force of switch (g)	800±200gf.cm			
7-4 额定值 Rating	1 mA / 5V DC			
7-5 接触电阻 Contact resistance	初期 200mΩmax . 200mΩmax .Fox initial			
8. 焊接条件 Soldering condering				
8-1 耐焊性 Soldering heat-resistance	1.手工焊接温度最高 350℃±5℃, 3 秒 Soldering iron Max ,350℃±5℃ at 3 sec 2.自动焊接温度最高 260℃, 10 秒 Auto soldering Max. 260℃ at 10 sec			
8-2 可焊性 Solderability	浸没面积至少达到 75%, 焊锡温度 235±5℃, 3±0.5 秒 With being covered 75% min. of immersed area. Solder temperature:235±5℃ Solder dipping time: 3±0.5 sec			
东莞市长泰尔电子有限公司 DONGGUAN CHANGTAIER ELECTRONICS CO.,LTD		制作 Prepared By	审核 Checked By	核准 Approved By

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16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

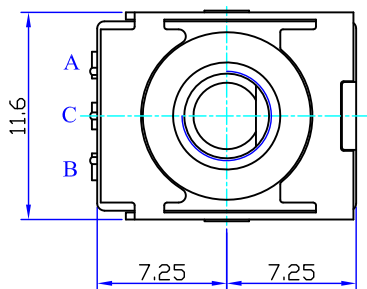
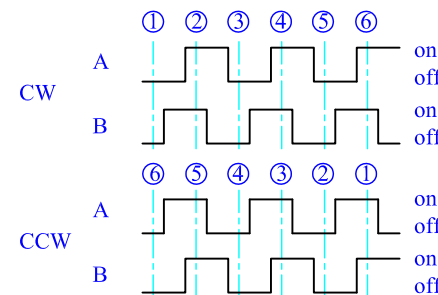


stroke:0.5mm



Mounting hole detail

Detent positions



11 7 1 C

COUNTRY OF ORIGIN: C (CHINA)

WEEK CODE: 1 (1st Week) 、 2 (2nd Week) 、 3 (3rd Week) 、 4 (4th Week) 、 5 (5th Week)

MONTH CODE: 1 (Jan.) 、 2 (Feb.) ... O(Oct.) 、 N (Nov.) 、 D (Dec.)

YEAR CODE: 1 (2001) 、 2 (2002) 、 3 (2003) ... 9 (2009) 、 10 (2010) 、 11 (2011)

东莞市长泰尔电子有限公司

DONG GUAN CHANG TAI ER ELECTRONICS CO.,LTD.

型号/Type	备注/Remarks
ED11C02M-FE13S6.5-E08-10G	16定位点 16 detents 本色 Light yellow

未注尺寸公差 Gen.tolerance
L≤1.0: ±0.1
1.0<L≤10: ±0.3
10<L≤30: ±0.5
30<L≤100: ±1.0

比例 Scale	2:1	版本 Edition	1.1	单位 Unit	mm	设计 Designed By		审核 Checked By		批准 Approved By	
品名 Type Name	ED11C02M 安装尺寸 MOUNT DIMENSION										
图号 Dwg.NO.	ED11C02M-FE13S6.5-E08-10G										

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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