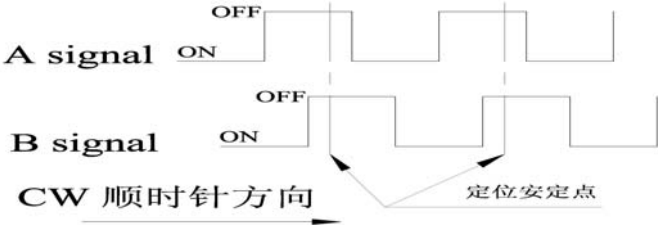
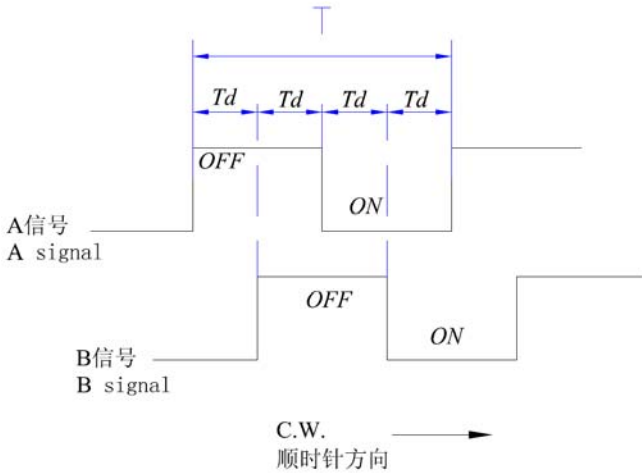


# 编码器规格书

## ENCODER SPECIFICATIONS

<b>1 一般事项</b> <b>General information</b>	
1-1 适用型号 Applicable models	<b>ED11302O-FB15S7.0-C12-0005</b>
1-2 使用环境温度 Usage environment temperature	- 30℃ ~ + 80℃
1-3 保存环境温度 Storage environment temperature	- 40℃ ~ + 85℃
1-4 测试条件 Test condition	温度: 5~35℃, 湿度: 45~85%HR Temperature: 5~35℃, Moisture: 45~85%HR
1-5 环保要求 Environmental requisition	本产品符合 RoHS 指令 This product is compliant with RoHS Directive
1-6 耐焊接热 Soldering heat-resistance	1、手工焊接温度最高 350℃ ± 5℃, 3 秒; 2、自动焊接温度最高 260℃ ± 5℃, 3 秒; 基板表面预热温度最高 100℃, 1 分钟以内; 3、以上过程均保证在 1 到 2 次; 4、不适用回流焊。  1. Soldering iron Max ,350℃ ± 5℃ at 3 sec 2. Auto soldering 260℃ ± 5℃ max. at 3 Sec. Preheating temperature of board surface: 100℃ max. at within 1 minutes. 3. To guarantee the above process at 1 or 2 times. 4. No apply the reflow soldering.
1-7 原产地 Country of origin	中国 China
<b>2 构造</b> <b>Construction</b>	
2-1 外观 Appearance	各部件应完整, 无锈蚀、裂痕、电镀不良 Every part should finished, be not exist rust flaw crack and bad plating
2-2 寸法 Measurements	依照图面规定 Under conditions prescribed by design drawing.
<b>3 机械性能</b> <b>Mechanical characteristics</b>	
3-1 全回转角度 Total rotational angle	360°
3-2 回转力矩 Rotational torque	80~200gf.cm (旋转速度: 60° /1 秒) 80~200gf.cm (Rotational velocity : 60° /1 Sec. )
3-3 定位数 Number of detent	■ <u>12</u>
3-4 轴压引强度 Pull-Push Strength of Shaft	10Kgf.cm Min.
3-5 螺母锁紧强度 Nut tightening strength	10Kgf.cm Min.
3-6 轴摇晃度 Shaft wobble	在距离轴顶端 5mm 处, 沿径向瞬间施加 500gf.cm 力的测试; 轴径向偏移量小于: 0.7*轴长 L 尺寸/30mm A momentary load of 500gf.cm should be applied at the point 5mm from the tip of the shaft in a direction perpendicular to the axis of shaft; Shaft radial deviant be smaller than: 0.7*shaft long L size/30mm

<b>4 电气性能</b> <b>Electrical characteristics</b>	
4-1 额定电压 Voltage rating	DC 5V
4-2 额定电流 Current rating	2.5mA
4-3 耐电压 Voltage proof	AC 300V 1 分钟以上 (端子和本体之间, 端子和轴芯之间) 1 Minute at AC 300V (Between terminal – case, Between terminal –shaft).
4-4 绝缘抵抗 Insulation resistance	DC 250V 100MΩ 以上 (端子和本体之间, 端子和轴芯之间) 100MΩ min. At DC 250V (Between terminal – case, Between terminal –shaft).
4-5 脉冲数 Number of pulses	■ <u>12</u> 旋转一周 (360° ) 输出的总脉冲数 Output total pulses of rotate one circle(360° ).
4-6 输出信号 Output signals	A、B 信号相位差输出波形如下: * 备注: A 信号 (A-COM 间), B 信号 (B-COM 间) Output signals A and B of phase difference wave form as below. *Remark: A signal (Between A-common) ,B signal (Between B-common)  <b>SW1: 12P12定位波形图: 代码C</b> 
4-7 相位差 Phase difference	在没有定位的情况下 $T_d=T/4 \pm T/6$ * 备注: T=周期 In no detent circumstances $T_d=T/4 \pm T/6$ in case of no detent. *Remark: T= Cycle  
4-8 回转寿命 Rotational life	无负荷情况下每小时旋转 600 周, 寿命 30,000 周, 寿命后: 1、绝缘抵抗 10MΩ 以上 DC250V (端子和本体之间, 端子和轴芯之间); 2、耐电压 AC100V 1 分钟 (端子和本体之间, 端子和轴芯之间), 绝缘阻抗无击穿; 3、回转力矩: 满足第 3-2 项; 4、外观和结构无损坏。 30,000 cycles under no load circumstances by 600 r/h of rotation, afterlife cycle: 1. Insulation resistance:10MΩ min. At DC 250V. (Between terminal – case, Between terminal –shaft). 2. Withstanding voltage : AC 100V at 1 minute (Between terminal – case, Between terminal –shaft). No subversion on insulation resistance. 3. Rotational torque : Content item No. 3-2. 4. No damage on appearance and structure.

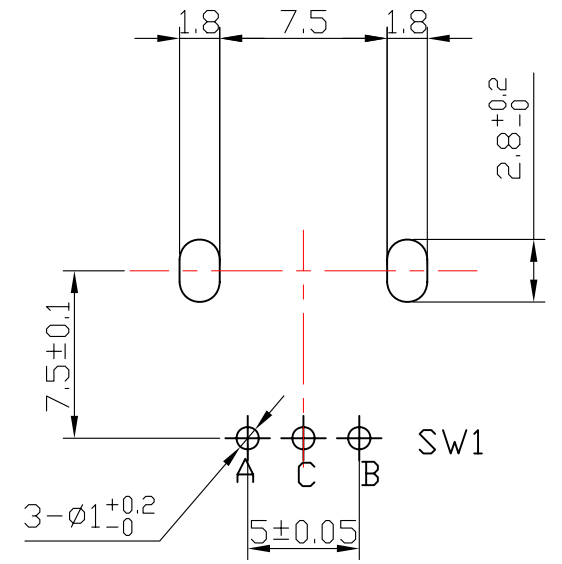
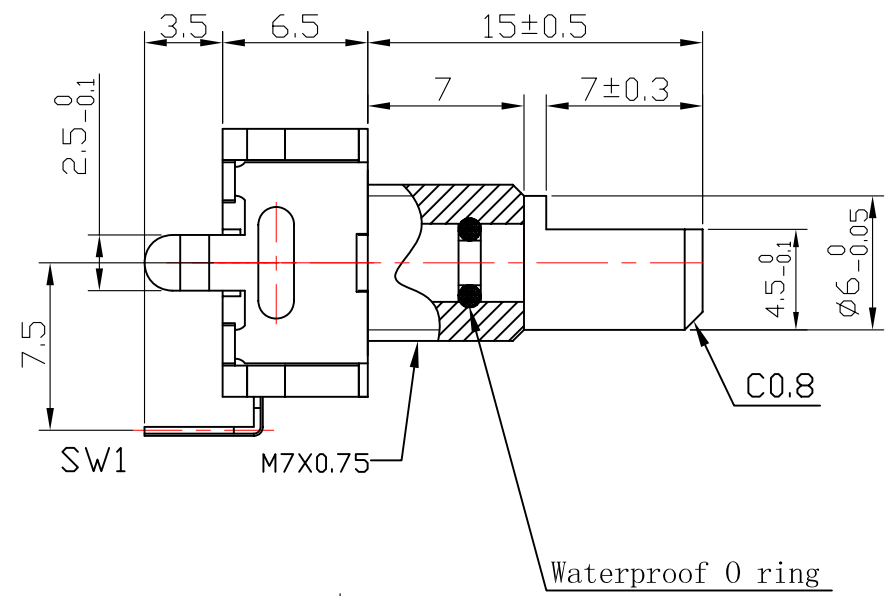
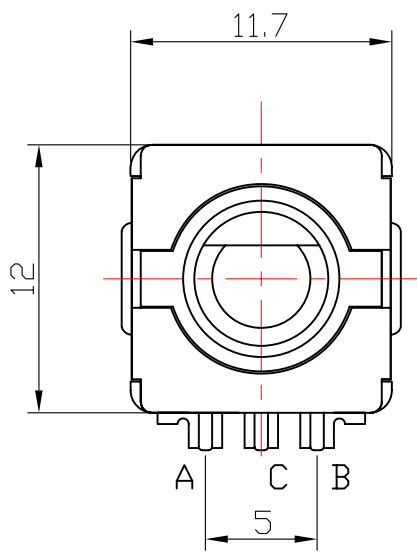
<p>4-9 耐湿性 Damp heat</p>	<p>温度 <math>40 \pm 2^{\circ}\text{C}</math>, 湿度 90-95% 的恒温恒湿槽中放置 <math>96 \pm 4</math> 小时, 在常温、常湿中放置 1.5 小时后测试.</p> <p>所有项目应满足初期规格.</p> <p>The encoder shall be stored at temperature of <math>40^{\circ}\text{C} \pm 2^{\circ}\text{C}</math> with relative humidity of 90% to 95% for <math>96 \pm 4\text{H}</math> in a thermostatic chamber . And the encoder shall be subjected to standard atmospheric conditions for 1.5H , After which measurements shall be made.</p> <p>Specifications in clause all items is shall be satisfied.</p>
<p>4-10 耐热性 Dry heat</p>	<p>温度 <math>85 \pm 3^{\circ}\text{C}</math> 的恒温箱中放置 <math>96 \pm 4</math> 小时; 在常温、常湿中放置 1.5 小时后测试.</p> <p>所有项目应满足初期规格.</p> <p>The encoder shall be stored at a temperature of <math>85 \pm 3^{\circ}\text{C}</math> for <math>96 \pm 4\text{H}</math> in a thermostatic chamber . And the encoder shall be subjected to standard atmospheric conditions for 1.5H , After which measurements shall be made.</p> <p>Specifications in clause all items is shall be satisfied.</p>
<p>4-11 低温特性 Cold</p>	<p>温度 <math>-40 \pm 3^{\circ}\text{C}</math> 的恒温箱中放置 <math>96 \pm 4</math> 小时; 在常温、常湿中放置 1.5 小时后测试.</p> <p>所有项目应满足初期规格.</p> <p>The encoder shall be stored at a temperature of <math>-40 \pm 3^{\circ}\text{C}</math> for <math>96 \pm 4\text{H}</math> in a thermostatic chamber . And the encoder shall be subjected to standard atmospheric conditions for 1.5H , After which measurements shall be made.</p> <p>Specifications in clause all items is shall be satisfied.</p>

<b>5 开关的性能</b> <b>Switch characteristics</b>				
<input type="checkbox"/> 适用 <input checked="" type="checkbox"/> 不适用 Apply                              No apply				
5-1 开关型式 Switch type	按压式 Push type,			
5-2 开关回路 Switch circuit	单刀单掷 S.P.S.T			
5-3 开关定格电力 Switch working angle	DC 5V, 10mA			
5-4 开关按压行程 Switch push travel	0.5±0.2 mm			
5-5 开关按压力 Switch push pressure	1200±400gf			
5-6 开关接触电阻 Switch contact resistance	≤100mΩ, 寿命后: ≤200mΩ ≤100mΩ, after life cycle: ≤200mΩ			
5-7 开关按压寿命 Operating life for momentary push switch	无负荷情况下每小时按压 600 次, 寿命 20,000 次, 寿命后: 1、耐电压 AC100V 1 分钟 (开关端子和本体之间), 绝缘阻抗无击穿; 2、开关按压力: 满足第 5-5 项; 3、外观和结构无损坏。  20,000 cycles under no load circumstances by 600 r./h of push, afterlife cycle: 1. Withstanding voltage: AC 100V at 1 minute (Between switch terminal – case). No subversion on insulation resistance. 2. Switch push pressure: Content item No. 5-5. 3. No damage on appearance and structure.			
<b>6 防水性能</b> <b>Waterproof standard characteristics</b>				
6-1 防水标准 Waterproof standard	<input type="checkbox"/> 不适用 No Apply  <input checked="" type="checkbox"/> 七级防水 编码器轴芯轴套置于水中 1 米深处, 其它部件密封后暴露在标准大气压中, 30 分钟后电位器内部未进水。 Grade -7 of Waterproof standard Encoder's Shaft and Bush in water 1M deep, after other component sealed exposed to the standard atmosphere, after 30 minutes no water into the Encoder's inner.			
<b>东莞市长泰尔电子有限公司</b> <b>DONG GUAN CHANG TAI ER ELECTRONIC CO., LTD.</b>		制作 Designed By	审核 Checked By	核准 Approved By
				

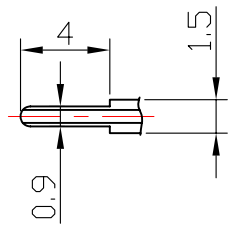
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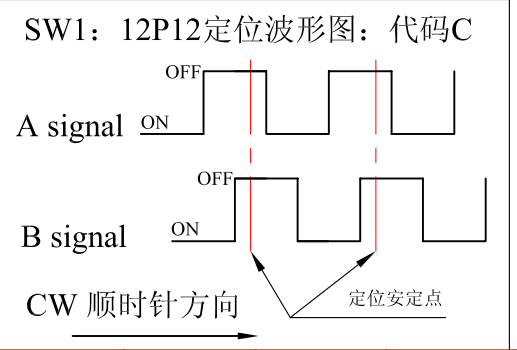
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P. C. B MOUNTING DETAIL



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未注尺寸公差		东莞市长泰尔电子有限公司					
L≤1.0时 ±0.1		视角	制图	谢敏	出图日	2019-12-09	
1.0<L≤10时 ±0.3		比例	3:1	单位	mm		
10<L≤30时 ±0.5		版本	1.0	设计	审核	批准	
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		图号	ED113020-FB15S7.0-C12-0005		工程 2019.12.09 彭先炎		

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