

新品开发中敬请期待...
New Products Coming Soon.

模组
Module

编码器
Encoder

开关
Switch

电位器
Potentiometer

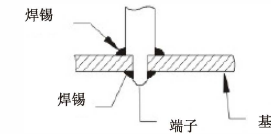
编码器使用注意事项

Encoders Usage Announcements

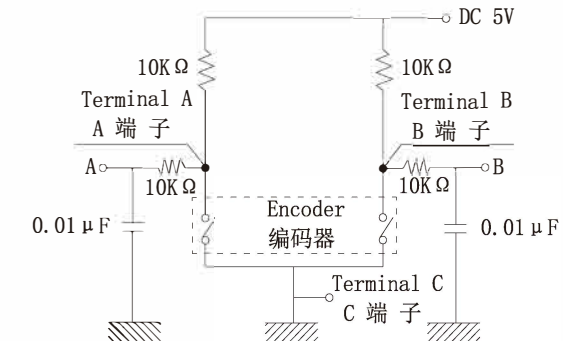


- 1、给端子进行焊接时，如果在端子上施加负荷，因条件不会有松动变形及电特性劣化的可能，请在使用时注意。
- 2、焊接时，水溶性助焊剂有可能腐蚀开关的可能，请避免使用。
- 3、关于焊接的条件设定，请根据实际批量生产时的条件进行。
- 4、进行两次焊接时，请在第一次焊接部份恢复到常温之后再行进行，连续加热可能使外围部变形，端子松动，脱落及电特性降低。
- 5、请不要让助焊剂从印刷电路板周围或上方流向开关。
- 6、安装开关后，为了使其他零部件的粘结剂硬化等，通过热硬化炉时，请与我们联系。
- 7、使用通孔印刷电路板及推荐以外的回路板时，由于热应力的影响会发生变化，所以请事先就焊接条件进行充分的确认。
- 8、带定位式，请在定位位置进行焊接。如果在定位中点被固定的状态下焊接，定位机构部可能变形。
- 9、不能清洗。
- 10、在组合部件安装工序中，特别注意不要对小型，薄型开关施加外力。
- 11、拧紧安装螺栓类时，要在规定的强度内进行，如果超过规定的强度，可能会造成动作不良或螺栓部损坏。
- 12、如果在电压DC1V以下或电流10uA以下使用，会有接触不良的可能。用于上述情况时，请另行确认。
- 13、本产品以直流的电阻负载为前提设计制造的。使用其他负荷（感性负荷（L），电容性负荷（C））时，请另行确认。
- 14、开关操作时，如果施加规定以上的负荷，开关将有损坏的可能。请注意不要在开关上施加规定以上的力。
- 15、安装时，请将产品本体插入到规定的安装面为止，并使其达到水平状态。如果达不到水平状态，会导致动作不良。
- 16、如果在尘埃多的环境下使用，尘埃会从开口部进入，造成接触故障的动作不良，整机设计时请预先考虑这一点。
- 17、如果使用开关的整机的周边材料产生腐蚀性气体，有可能造成接触不良等现象，所以请事先进行充分的确认。
- 18、〈关于轴松动〉
轴长很长时，松动（偏差）与轴长成比例增大，请在实际使用时确认。
- 19、〈关于焊接〉

如图所示，在印刷电路板表面进行布线或焊接时，请避免焊接液流出，否则容易引起接触不良。插入基板的金属脚，请焊接使用。



- 20、〈关于结露〉请避免在编码器的图形面等结露或附有水滴的条件下使用。否则会造成绝缘能力降低和短路。
- 21、〈关于药品的使用〉
由于绝缘型轴上使用聚碳酸酯等合成树脂，请避免在氨，胺类，硷溶液，芳香族碳化氢，酮类，酯类，卤化碳化氢等的环
境，特别是强气体环境下使用。
- 22、〈关于低温时的使用〉
象汽车用收音机，汽车立体声设备等有在低温下使用的可能时，可以对应即使使在低温状态下也容易进行旋转操作。订货
时，请指定有无低温特性需要。
- 23、〈关于带开关产品的使用〉带按压开关的编码器在轴被压下的状态下包装或保管，开关部可能产生故障，要注意。
- 24、〈关于脉冲数处理〉
在编码器脉冲计数处理的设计中，注意动作速度，取样时间，屏蔽时间等，在贴装确认之后使用。同时最好在编码器脉冲
计数处理回路中设置下图所示的滤波器。



25、保管方法

- ①产品以交货时的状态在常温，常湿，不直射阳光照射，不产生腐蚀性气体的场所保管，自交货起6个月以内为限度，请尽可能快的使用。
- ②开封后用聚乙烯袋与外气隔断，请在与上述相同环境下保管，并尽快使用。
- ③请不在过分地堆积。

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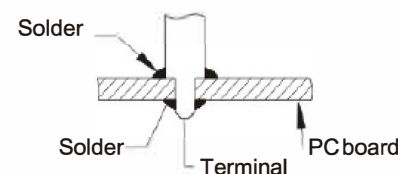
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Encoders Usage Announcements



- 1、 Note that if the load is applied to the terminals during soldering, they might suffer deformation and defects in electrical performance.
- 2、 Use of water-soluble soldering flux shall be avoided because it may cause corrosion of the switch.
- 3、 Verify soldering conditions under actual mass production conditions.
- 4、 When soldering twice, wait until the first soldered portion cools to normal temperature. Continuous heating will deform the external portions, loosen or dislodge terminals, or may deteriorate their electrical characteristics.
- 5、 Flux from around and above the PC board should not adhere to the switches.
- 6、 If you put the board with the switch in the oven so as to harden adhesive for other parts, consult with us.
- 7、 If you use a through-hole PC board or a PC board thinner or thicker than the recommendation, here may be greater heat stress. Verify the soldering conditions thoroughly before use.
- 8、 Solder the switches with detent at the detent position. Soldering switches fixed at the center of the detent may deform the detent mechanisms.
- 9、 No cleaning.
- 10、 Use care to protect small and thin switches from external forces in the SET mounting process.
- 11、 Tighten the mounting screws by applying the specified torque. Tightening with larger torque than the specified one will result in malfunction or breakage of screws.
- 12、 Use of the switches with voltage below 1V DC or current below 10uA may make contacts unstable. When using these switches in this way, consult with us beforehand.
- 13、 This product is designed and manufactured assuming that it is to be used with the resistance for direct current. If you use other kinds of resistance [inductive (L) or capacitive (C)], consult with us beforehand.
- 14、 The switch will break if you apply a greater stress than that specified. Take great care not to let the switch be subject to greater stress than specified.
- 15、 Insert these switches to the specified mounting surface and mount them horizontally. If not mounted horizontally, these switches will malfunction.
- 16、 Avoid using these switches in a dusty environment. Dust entering through the openings will result in imperfect contact or malfunction. Take this into account for set design. Let the switch be subject to greater stress than specified.
- 17、 When corrosive gas is generated by peripheral material of a set using the switch, malfunctions such as imperfect contacts can occur. Be mindful of this point thoroughly in advance.
- 18、 [Looseness of the Shaft] When long shafts are being employed, the looseness (deviation) tends to grow in proportion to the shaft length. Checking shaft looseness under actual operational conditions is recommended.
- 19、 [Soldering] Do not employ wiring designs and soldering methods as illustrated in the schematic drawing. Molten solder flowing over the upper surface of PC board can cause imperfect contacts.

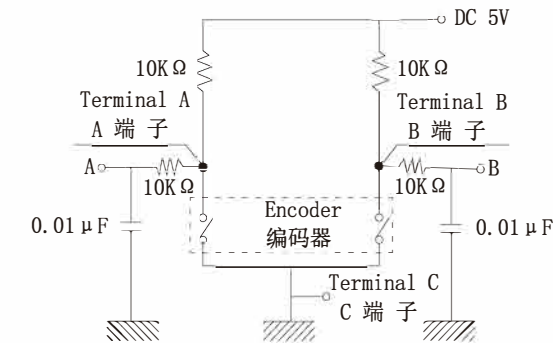


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- 20、 [Dew Condensation]
Do not use this product where dew or water drops might occur on the pattern surface of the encoder, etc. Insulation deterioration or shorting may occur.
- 21、 [Use of Chemicals]
Since synthetic resins such as polycarbonate are being used as the material for the insulated typeshafts, avoid using this product under gassy environments containing such chemicals as ammonia, amines, alkaline water solutions, aromatic hydrocarbons, ketones, esters and halogenated hydrocarbons, especially under intensive gas environments.
- 22、 [Operation at Low Temperature]
When these products are expected to be used under low temperature environments such as applications for car radios and car stereos, we can customize them for easier and more smooth rotary movements. When placing orders, indicate whether the low temperature specification is necessary or not.
- 23、 [Handling of Products with Switches]
Avoid packaging or storing encoders with push on switches with their shafts pushed in. Be careful not to damage the switch portion.
- 24、 [Pulse count process]
With respect to pulse count design of encoders, operational speed, sampling time, and masking time, etc. should be taken into consideration. Be sure to confirm these factors before using the encoder. For your pulse count design, consider adding R/C filters on your circuit as shown below.



- 25、 Storage methods
 - ① If you do not use the product immediately, store it just as delivered in the following environment: with neither direct sunshine nor corrosive gas and in normal temperatures. However, it is recommended that you should use it as soon as possible or within six months from the date of delivery at the most.
 - ② After you break the seal, you should put the remainder in a plastic bag to shut out outside air, and store it in the same environment mentioned above. You should use it up as soon as possible.
 - ③ Do not stack too many switches for safety.

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