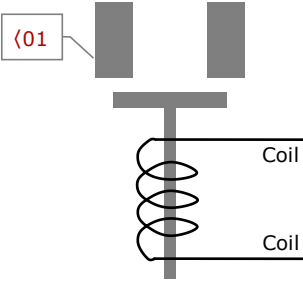
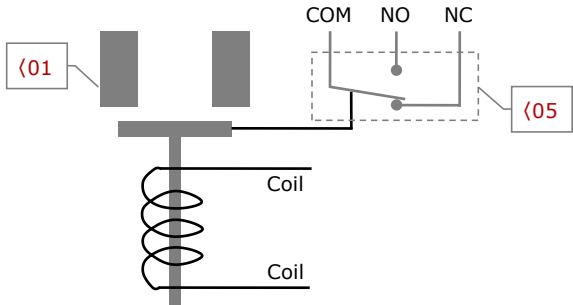
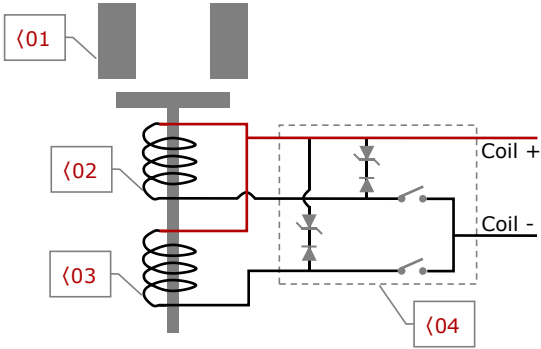
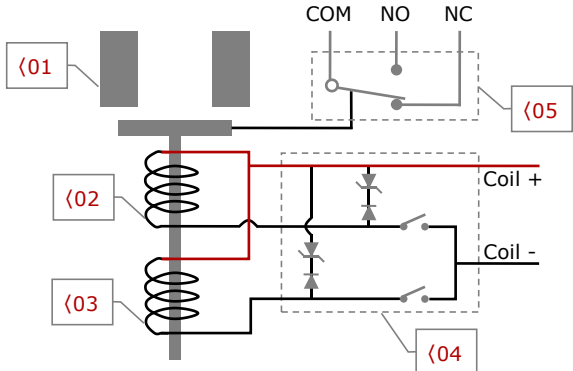


Coil control circuit diagram [线圈控制电路图]

Single coil, without auxiliary contact [单线圈，无辅助触点]	Single coil, with auxiliary contact [单线圈，有辅助触点]
 The diagram shows a power contact (01) connected to a single coil (02) and a keep coil (03). The coil is represented by a vertical line with a horizontal line through it, and the keep coil is represented by a vertical line with a horizontal line through it.	 The diagram shows a power contact (01) connected to a single coil (02) and a keep coil (03). The auxiliary contact (05) is shown as a switch with COM, NO, and NC terminals. The coil is represented by a vertical line with a horizontal line through it, and the keep coil is represented by a vertical line with a horizontal line through it.
Dual coil, without auxiliary contact [双线圈，无辅助触点]	Dual coil, with auxiliary contact [双线圈，有辅助触点]
 The diagram shows a power contact (01) connected to two coils: a start coil (02) and a keep coil (03). The coil control board (04) is shown as a dashed box containing the coil symbols. The start coil is represented by a vertical line with a horizontal line through it, and the keep coil is represented by a vertical line with a horizontal line through it.	 The diagram shows a power contact (01) connected to two coils: a start coil (02) and a keep coil (03). The auxiliary contact (05) is shown as a switch with COM, NO, and NC terminals. The coil control board (04) is shown as a dashed box containing the coil symbols. The start coil is represented by a vertical line with a horizontal line through it, and the keep coil is represented by a vertical line with a horizontal line through it.

- <01 Power contact [主触点]

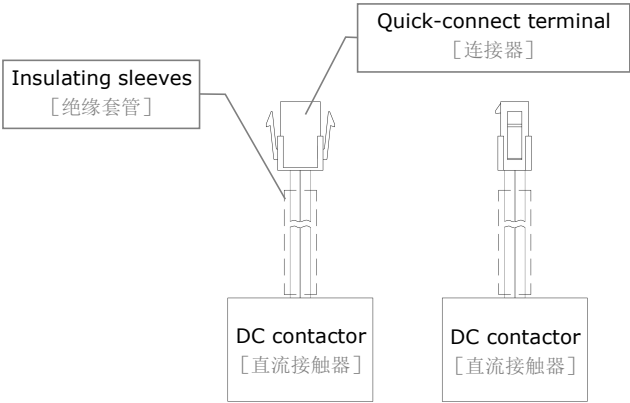
<02 Start coil [启动线圈]

<03 Keep coil [保持线圈]
- <04 Coil control board [线圈控制板]

<05 Auxiliary contact [辅助触点]

Coil and auxiliary output type [线圈与辅助开关引出方式]

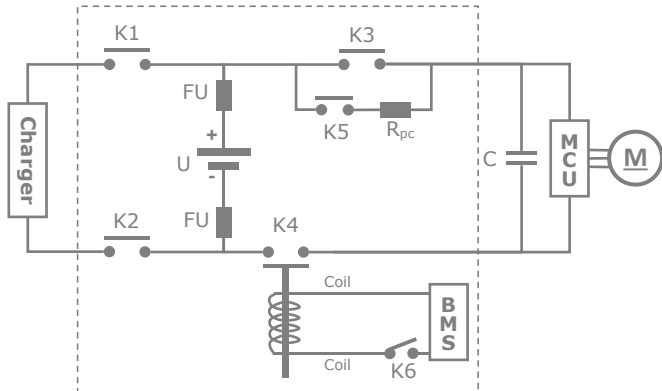
ALQ typically provides buyers with standard wires length DC contactors without quick-connect, but in reality, different buyers may be different about the length of coil leads, auxiliary leads length, insulating sleeves and quick-connect terminal. ALQ provides buyers with more intimate services, different lengths of leads, different forms of insulated sleeves, and different forms of quick-connect terminal can be customized according to the buyer's requirements (see the picture on the right.). When purchasing ALQ DC contactors, please explain your specific requirements to the ALQ staff. [通常安来强为用户提供标准线长且不带连接器的直流接触器，但实际上不同用户对线圈导线长度、辅助开关导线长度、绝缘套管和连接器均有可能不相同。安来强为用户提供更贴心的服务。可以根据用户的要求定制不同长度的导线、不同形式的绝缘套管和不同形式的连接器（详见右图），用户在选购安来强直流接触器时请将具体的要求向安来强工作人员说明。]



Instructions for use [使用注意事项]

■ About load [关于负载]

- ✓ Applications with capacitors (C load) will require a pre-charge circuit (Pre-charge circuit refer to the following figure.), otherwise, it may cause power contacts welding. In this application scenario, it is recommended to use a DC contactor with a power contact material of silver alloy. [带有电容器 (C 负载) 的应用将需要一个预充电电路 (预充电电路参考下图), 否则可能会造成主触点粘连。在此应用场景中, 建议采用主触点材料为银合金的直流接触器]



Notes [说明] :

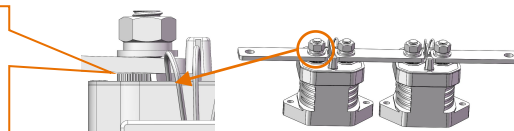
1. The wiring diagram is a simplified schematic diagram expressing only the partial control logic of the DC contactor. [该接线图为简化的示意图, 仅表达直流接触器的部分控制逻辑。]
2. DC contactors K1, K2, K3, K5 coils with K4, are controlled by BMS. [直流接触器 K1、K2、K3、K5 线圈同 K4, 均由 BMS 控制。]

- ✓ Electrical life rating is based on resistive load ($L/R \leq 0.1ms$). Because your application may be different, we suggest you test the DC contactor in your circuit to verify life is as required. [电气寿命评级基于阻性负载 ($L/R \leq 0.1ms$)。因为您的应用可能不同, 我们建议您在自己的电路中测试直流接触器, 以验证寿命是否符合要求。]

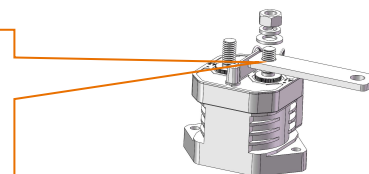
■ About mounting [关于安装]

- ✓ When installing the DC Contactor, always use washers to prevent the screws from loosening. Screw locking torque should be in specified range. Damage may occur when it is beyond. [在安装直流接触器时, 始终使用垫圈以防止螺丝松动。螺丝锁定扭矩应在指定范围内。超出此范围可能会造成损坏。]

- ✓ There is no gap between the conductors and the power contact terminal (See the picture on the right.). Otherwise, it will cause the power contact to overheat abnormally. [导体与主触点端子间确保无缝隙 (详见右图), 否则会导致主触点异常发热。]



- ✓ Conductor mounting holes should not be too large (See the picture on the right.), ensuring that the contact area between the conductor and the power contact terminal is as large as possible. Otherwise, it will cause the power contact to overheat abnormally. [导体安装孔不易过大 (详见右图), 确保导体与主触点端子的接触面积尽可能大, 否则会导致主触点异常发热。]



- ✓ Be careful that foreign matter and oils and fats kind don't stick to the power contact terminal parts because it is likely to cause terminal parts to give off unusual heat. [小心不要让异物和油脂类物质粘附在主触点端子上, 因为这可能会导致端子异常发热。]
- ✓ The dual coil and PWM coil leads are polar(see "Coil control circuit diagram"), please connect them according to the standard. Incorrect connections can result in the DC contactor not pick-up and may also damage the circuit board on the DC contactor. [双线圈和 PWM 线圈引线是有极性的 (详见 "线圈控制电路图"), 请按标准进行连接。连接错误会导致直流接触器无法吸合, 也可能会损坏直流接触器上的线路板。]

■ About life [关于寿命]

- ✓ End of life is defined as when the dielectric, insulation resistance or contact resistance exceeds the specifications listed. [寿命终结指的是当介电性能、绝缘电阻或接触电阻超过标准时。]
- ✓ DC contactor is a high-voltage DC switch. At the end of its life, it may lose its normal operating capability. Therefore, do not exceed the standard switching capacity and the number of life cycles. Treat the DC contactor as a product with a limited life span and replace it when necessary. [直流接触器是一个高压直流开关。在寿命终结时, 它可能会失去正常的工作能力。因此, 不要超过标准的开关容量和寿命次数。请将直流接触器视为一个有寿命限制的产品, 并在必要时更换它。]

■ About temperature rise of power contacts [关于主触点温升]

- ✓ Please select the appropriate conductor size based on Table 1 (except for special requirements.). [请依据表 1 选择合适的导体尺寸 (有

- 特殊要求除外)]
- ✓ If the DC contactor needs to be operating for a long time, the upper temperature limit of the main contact is recommended to be 130°C. If the safe temperature exceeds 180°C, the DC contactor may fail [直流接触器如需处于长时间工作状态，建议主触点温度上限为 130℃，如果超过安全温度 180℃，直流接触器可能会失效]
 - ✓ It is recommended that the upper ambient temperature of DC contactor is 85°C, and good ventilation or other active cooling methods should be maintained to ensure effective cooling of DC contactor. The DC contactor has a large bearing current, and a large amount of heat will be generated in the process of energization. The buyer needs to take sufficient measures to minimize the heat generation and take effective cooling methods [建议直流接触器使用环境温度上限为 85℃，且需要保持良好的通风或采取其它主动的降温方式，确保直流接触器有效降温。直流接触器承载电流大，通过程中会产生大量的热量，用户需采取充分的措施最大限度的降低热量的产生同时需采取有效的降温方式]

Table 1 [表 1]

Current [电流]	conductor size (Min.) [导体尺寸 (最小)]	Current [电流]	conductor size (Min.) [导体尺寸 (最小)]
10A	2mm ²	300A	100mm ²
30A	6mm ²	350A	120mm ²
50A	15mm ²	400A	150mm ²
100A	30mm ²	500A	180mm ²
135A	40mm ²	600A	200mm ²
150A	45mm ²	800A	500mm ²
200A	60mm ²	1,000A	600mm ²
250A	75mm ²		

■ Other [其它]

- ✓ All the performance data listed in the data sheet are the initial values tested under standard testing condition. [规格书内各项性能参数是基于标准测试条件下测得的初始值。]
- ✓ Please avoid impact or drop of the DC contactor during application or transportation. In order to maintain the performance of the DC contactor, it is not recommended to continue to use the DC contactor after impact or fall. [在应用或运输过程中请避免直流接触器受到冲击或跌落。为了保持直流接触器的性能，不建议继续使用受到冲击或跌落的直流接触器。]
- ✓ Please avoid installation in strong magnetic field (around the transformers or the magnets) and the heating objects nearby. [避免将产品安装在强磁场的地方 (靠近变压器或磁铁处) ，或靠近有热辐射的物体。]
- ✓ The driving circuit power of the DC contactor coil must be greater than the DC contactor coil power, otherwise it will reduce the breaking capacity of the DC contactor. [直流接触器线圈的驱动电路功率必须大于直流接触器线圈功率，否则会降低直流接触器的切断能力。]

Statement [声明]

- SuZhou ALQ Electronic Technology CO., LTD. (ALQ) product specifications are only to help ALQ products are used to connect the designer ("buyers"). The buyer understands and agrees that the buyer is still required to conduct adequate testing and evaluation of the ALQ product itself when designing its system or product to determine whether the ALQ product is suitable for the buyer's system or product. [苏州安来强电子科技有限公司 (安来强) 的产品说明书仅为帮助正在选用安来强产品的系统设计者 (以下简称 " 用户 ") 。用户理解并同意，用户在设计其系统或产品时仍需要自行对安来强产品进行充分的测试和评估，从而判断安来强产品是否适用于用户的系统或产品。]
- The data in the ALQ product specification sheet is created based on standard laboratory conditions and engineering practices. Any discrepancy in the data found by the buyer when testing an ALQ product may be the result of different test conditions. Buyers can contact ALQ in time to get more technical support. [安来强产品说明书上的数据是根据标准实验室条件和工程实践创建的，用户在测试安来强产品时如发现数据有差异，可能是测试条件不同所导致的。用户可及时联系安来强以获得更多的技术支持。]
- ALQ may make changes to the contents of product specifications without notice. Buyers may contact ALQ or visit the website on this product specification for the latest product specifications. [安来强可能会在不另行通知的情况下对产品说明书的内容进行更改。用户可联系安来强或浏览本产品说明书上的网站以获取最新的产品说明书。]