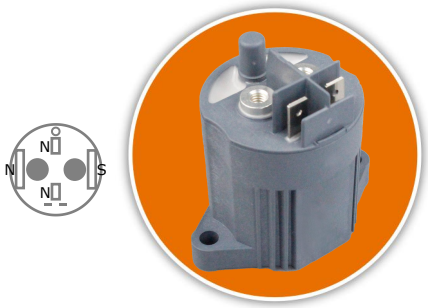
# EVQ50 Series

1,000V DC / 50A DC Contactor Specification

## Product description［产品描述］

### ■ Features［特性］

- ✓ Epoxy packaging, the contacts are protected by nitrogen, preventing oxidation, strong cooling arc capacity.［环氧封装，触点由氮气保护，防止氧化，具有极强的冷却电弧能力］
- ✓ High-voltage, high-current control capable.［具有高电压、大电流控制能力］
- ✓ Compact & low operating sound.［紧凑和低操作声音］
- ✓ Safety and high contact reliability.［安全和高接触可靠性］
- ✓ Can be installed in any direction.［可任意方向安装］
- ✓ Not freezing and condensing at low temperature.［在低温下不冻结和冷凝］




### ■ Certification［认证］

- ✓ CCC (Certificate No.［证书号］: 2024010304634919)

### ■ Applications［应用］

- ✓ Pre-charge［预充电］
- ✓ Energy storage equipment［储能系统］
- ✓ Power battery system［动力电池系统］
- ✓ High voltage inverter［高压变频器］

■ For product details and the latest product specifications, please visit the following website［产品详细信息及最新产品说明书请浏览以下网站］

Google **www.alq-dccontactor.com**

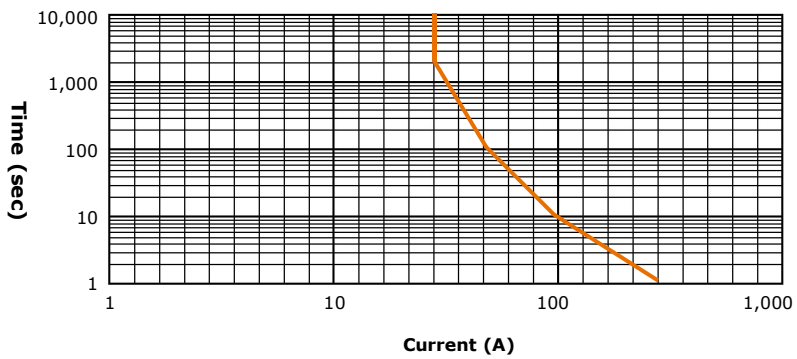
**www.zqalq.com**

## Performance data［性能数据］

### ■ Power contact［主触点］

| Parameter［参数］ | Data［数据］ |
|---|---|
| Contact arrangement［触点形式］ | 1 Form X (SPST-NO-DM) ［常开］ |
| Contact polar［触点极性］ | Without polarity［无极性］ |
| Power contact material［主触点材料］ | Copper［铜］ |
| Rated operating voltage［额定工作电压］ | 1,000V DC |
| Max. Continuous current (at 23℃) ［最大连续电流］ | 50A |

Short term withstand current［短时耐受电流］(at 85℃)




Notes［备注］:

1. The curve data is for buyers design reference, and the selection of DC contactor and short circuit matching fuse is subject to the actual verification［该曲线数据供用户设计参考，直流接触器选型与短路匹配熔断器时以实际验证为准］
2. Conductor size see ALQ-SPEC-000 【DC Contactor User Manual】［导体尺寸请查看ALQ-SPEC-000【直流接触器使用说明书】］
3. The set curve for the DC contactor power contacts has a safety temperature upper limit of 150℃; the functional temperature upper limit is 130℃.［该曲线设定的直流接触器主触点安全温度上限为150℃；功能温度上限为130℃］

| | | | | |
|---|---|---|---|---|
| Electrical life ［电气寿命］ | Resistive load (R load) ［阻性负载］<br><br>L/R ≤ 0.1ms<br>ON : OFF = 1s : 9s | Break ［分断］ | 1,000V DC | 3 cycles (at 50A) |
| | | | 750V DC | 500 cycles (at 50A) |
| | | | 450V DC | 3,000 cycles (at 50A) |
| Max. cut-off current ［最大切断电流］ | | | 100A | 1 cycle (at 750V DC) |
| | | | 300A | 1 cycle (at 450V DC) |
| Mechanical life ［机械寿命］ (ON : OFF = 1s : 9s) | | | 200,000cycles | |
| Initial contact resistance (at 1A) ［初始接触电阻］ | | | Max.［最大］: 30mΩ | Typical［典型］: 1mΩ |
| Operate Time (at 23℃) ［动作时间］ | | Close ［吸合］ | 30ms Max. 〈01 | |
| | | Bounce ［弹跳］ | 7ms Max. | |
| | | Release ［释放］ | 12ms Max. 〈02 | |

〈01 Coil nominal voltage, includes contact bounce time. ［线圈施加额定工作电压，含触点弹跳时间］

〈02 Coil nominal voltage, includes arcing, without diode. ［线圈施加额定工作电压，含电弧，无续流二极管］

## ■ Coil（at 23℃）［线圈］

| Parameter ［参数］ | Data ［数据］ | | |
|---|---|---|---|
| Coil type ［线圈形式］ | Single coil, no TVS ［单线圈，无 TVS］ 〈03 | | |
| Rated voltage ［额定工作电压］ | 12V DC | 24V DC | 48V DC |
| Pick-up (close) voltage Max. ［吸合电压］ 〈04 | 9V DC | 18V DC | 36V DC |
| Drop-out (open) voltage Min. ［释放电压］ 〈04 | 1.2V DC | 2.4V DC | 4.8V DC |
| Coil resistance (±10%) ［线圈电阻］ 〈04 | 45Ω | 167Ω | 630Ω |
| Holding current (Avg.) ［保持电流（平均值）］ | 267mA (at 12V DC) | 144mA (at 24V DC) | 76.2mA (at 48V DC) |
| Coil power Max. ［线圈功率］ 〈04 | 3.2W (at 12V DC) | 3.5W (at 24V DC) | 3.7W (at 48V DC) |
| Operating voltage range ［工作电压范围］ | 10.2-13.2V DC | 20.4-26.4V DC | 40.8-52.8V DC |

〈03 The product is not equipped with a TVS (Transient Voltage Suppressor) coil surge absorption circuit; buyers need to configure it. ［该产品未配置线圈浪涌吸收电路（TVS），用户需配置。］

〈04 Because the DC contactor is operated by a coil that changes resistance with temperature: When the temperature is higher than 23℃, coil resistance, pick-up voltage and drop-out voltage will be higher than the nominal value, and the coil power will be lower than the nominal value. When the temperature is below 23℃, coil resistance, pick-up voltage and drop-out voltage will be lower than the nominal value, and the coil power will be higher than the nominal value. ［因为直流接触器是通过一个随温度变化电阻的线圈来操作的。当温度高于 23℃时，线圈电阻、吸合电压和释放电压会高于标称值，而线圈功率会低于标称值。当温度低于 23℃时，线圈电阻、吸合电压和释放电压会低于标称值，而线圈功率会高于标称值。］

## ■ Insulation ［绝缘］

| Parameter ［参数］ | | Data ［数据］ |
|---|---|---|
| Insulation resistance (at 1000V DC) ［绝缘电阻］ 〈05 | | Initial［初始］: 100MΩ Min. |
| | | End of life［寿命终结］: 50MΩ Max. |
| Dielectric withstanding voltage ［介质耐压］ (at sea level ［海平面］) | Between open contacts ［主触点间］ | AC 3,500 Vrms for 1min. 〈06 |
| | Between contacts and coil ［主触点与线圈间］ | |

〈05 Measurement at same location as "Dielectric withstanding voltage" section. ［测量位置与“介质耐压”部分相同］

〈06 Leakage current ［漏电流］: 10mA

## ■ Environmental［环境］

| Parameter［参数］ | | Data［数据］ |
|---|---|---|
| Shock（1/2 Sine, 11ms）［冲击］ | Actuated (closed)［吸合］ | 20G |
| | Non-Actuated (open)［断开］ | 20G |
| Vibration, Sinusoidal（80-2000Hz Peak）［正弦振动］ | | 20G |
| Environmental seal［环境密封］ | | IP67 & IP69K |
| Salt fog［盐雾］ | | GB/T2423.17 / IEC60068-2-11 |
| Operating ambient temp range［使用环境温度］ | | -40℃ to +85℃ |
| Storage ambient temp range［储存环境温度］ | | -40℃ to +85℃ |
| Ambient humidity［环境湿度］ | | 5%～95% RH |
| Altitude［海拔高度］ | | ≤4000m |

## Dimensions［尺寸］ (Dimensions are in mm［尺寸单位为毫米］)

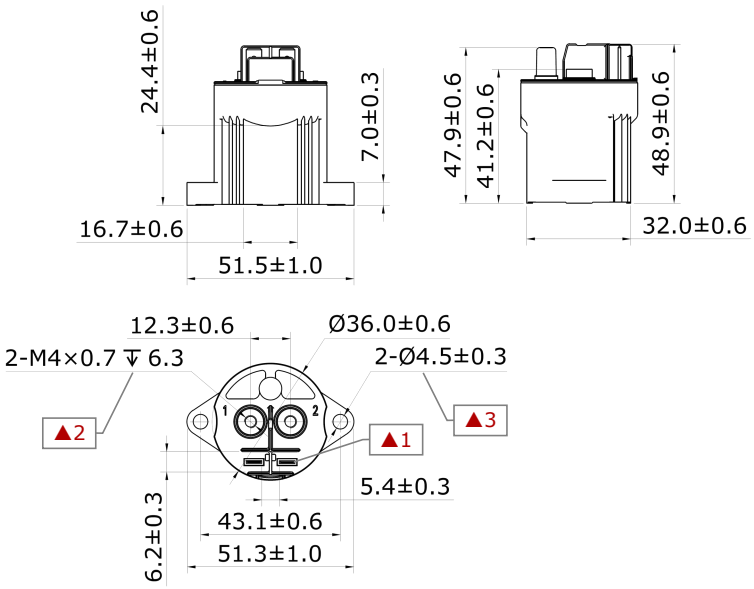
- **coil terminals ［线圈端子］**

▲1 Thickness x Width = 0.8×4.8［厚×宽=0.8×4.8］

- **Mounting［安装］**

▲2 M4 x 0.7 Power terminals (Internal thread)［M4×0.7 主触点端子（内螺纹）］
Torque 1.8 to 2.5Nm (typical 2Nm)［ 扭矩 1.8 至 2.5Nm（典型 2Nm）］
Hardware supplied［附带的硬件］:
2 X M4 Washer (stainless)［2 个 M4 平垫圈（不锈钢）］
2 X M4 Spring washer (stainless)［ 2 个 M4 弹簧垫圈（不锈钢）］
2 X M4 x 6.3 Bolt (stainless)［2 个 M4×6.3 螺栓（不锈钢）］

▲3 Base［底座］
Torque 1.8 to 2.5Nm (Typical 2Nm) ［扭矩 1.8 至 2.5Nm（典型 2Nm）］
Mounting hardware (not supplied)［安装硬件（不提供）］:
2 X M4 Bolt［2 个 M4 螺栓］
2 X M4 Washer［2 个 M4 平垫圈］
2 X M4 Spring washer［2 个 M4 弹簧垫圈］




- **Packaging［包装］**

70 units per shipping box［70 个/箱］
400mm x 385mm x 115mm shipping box［包装箱尺寸：长×宽×高］

- **Weight［重量］**

110g per product (typical)［110 克/个（典型）］
8.8kg per shipping box (typical)［8.8 千克/箱（典型）］

## Part numbering system［零件编码系统］

| EVQ | 50 | Y | E | 12 | Q | A | 1 | 72000 |
|---|---|---|---|---|---|---|---|---|

■ **Series［系列］:**
"**EVQ**"=EVQ series［EVQ 系列］

■ **Rated current［额定电流］:**
"**50**" = 50A

■ **Shell form［外壳形式］:**
"**Y**" = Circle ［圆形］

■ **Contact form［触点形式］:**
"**E**" = Power contact (1 Form X) without polarity, without auxiliary contact［主触点（一组常开）无极性，无辅助触点］

■ **Coil voltage［线圈电压］:**
"**12**" = 12V DC
"**24**" = 24V DC
"**48**" = 48V DC

■ **Coil output type［线圈引出方式］:**
"**Q**" =Pin［插片式］

■ **Mounting method［安装方式］:**
"**A**" = Base upright mounting, power contacts internal thread (M5×0.8)［底座为立式安装，主触点为内螺纹（M4×0.7）］

■ **Design series number［壳架号］:**
"**1**" = 1#

■ **Special client code［特殊客户代码］:**

● When buyers have special requirements, buyer special requirements are determined by ALQ after review, whether they are numbers or letters (they do not affect the construction and performance).［当用户存在特殊要求时使用，用户特殊要求由安来强评审后确定数字或字母（它们不影响构造和性能）］〈07

〈07

✓ First numbers or letters［第一位数字或字母］:
"**7**" = Buyer industry［用户行业］

✓ Second numbers or letters［第二位数字或字母］:
"**2**" = Power contact material is copper［主触点材料是铜］

✓ Third, fourth, and fifth digits or letters［第三位、第四位和第五位数字或字母］:
Buyer-customized coil and auxiliary switch lead length, insulated sleeve and quick-connect terminal. If the standard lead length and without quick-connect terminal, it is represented by 000. It can also be used to represent other special requirements of buyers［用户特殊订制的线圈与辅助开关导线长度、绝缘套管和连接器。如是标准线长且不带连接器，用 000 表示。也可以用于表示用户其它的特殊要求］

**Please refer to the ALQ-SPEC-000 "DC Contactor User Manual" for more information, which is an inseparable part of this document.［请查看 ALQ-SPEC-000【直流接触器使用说明书】获取更多内容，该文件是本文件不可分割的一部分］**