

## KKK-C150

## 150A Automotive Relay

### Features

- 150A switching capability at both 12VDC and 24VDC
- 1 Form A (SPST-NO) contact arrangement
- Resistor and diode for coil component available
- Ambient temperature -40°C ~ +125°C



### Typical Application

Applicable for 150A Automotive Grade Circuit: Engine start preheating system, power management system, heating plug, front windshield heating start/stop control, etc.

## ORDERING GUIDE

|                          |                                                                                                                                                                                                                                                  |      |    |     |    |       |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|-----|----|-------|
|                          | KKAC150                                                                                                                                                                                                                                          | -012 | 1H | 3.5 | -R | (XXX) |
| Type                     | KKAC150                                                                                                                                                                                                                                          |      |    |     |    |       |
| Coil Voltage             | 012:12VDC 024:24VDC                                                                                                                                                                                                                              |      |    |     |    |       |
| Contact Form             | 1H:1 Form A (SPST-NO)                                                                                                                                                                                                                            |      |    |     |    |       |
| Coil Power               | 3.5W/3.9W/3.2W/4.1W Customization Available                                                                                                                                                                                                      |      |    |     |    |       |
| Parallel Coil Components | Nil: without parallel component<br>R: parallel transient suppression resistors<br>D1: parallel transient suppression diode, with anode connected to terminal #1<br>D2: parallel transient suppression diode, with anode connected to terminal #2 |      |    |     |    |       |
| Special Code             | (XXX):customer special requirement Nil: Standard                                                                                                                                                                                                 |      |    |     |    |       |

## COIL DATA

| Nominal voltage (VDC) | Pick-up voltage(VDC) |      |        | Drop-out voltage(VDC) |       |       | Coil resistance x (1±10%)Ω | Parallel resistance x(1+5%)Ω | Equivalent resistance x(1±10%)Ω | Power consumption (W) |
|-----------------------|----------------------|------|--------|-----------------------|-------|-------|----------------------------|------------------------------|---------------------------------|-----------------------|
|                       | -40°C                | 23°C | 125°C  | -40°C                 | 23°C  | 125°C |                            |                              |                                 |                       |
| 12                    | ≤ 7                  | ≤ 8  | ≤ 11.5 | ≥ 0.8                 | ≥ 1.2 | ≥ 1.4 | 40.8                       | --                           | --                              | 3.5                   |
| 12                    | ≤ 7                  | ≤ 8  | ≤ 11.5 | ≥ 0.8                 | ≥ 1.2 | ≥ 1.4 | 40.8                       | 390                          | 37                              | 3.9                   |
| 24                    | ≤ 14.5               | ≤ 16 | ≤ 24   | ≥ 1.6                 | ≥ 2.4 | ≥ 2.8 | 177.5                      | --                           | --                              | 3.2                   |
| 24                    | ≤ 14.5               | ≤ 16 | ≤ 24   | ≥ 1.6                 | ≥ 2.4 | ≥ 2.8 | 177.5                      | 680                          | 141                             | 4.1                   |

1)Max.allowable overdrive voltage is stated with no load applied.

2)with the type with parallel resistor (680Ω,12V),(2700Ω,24V).

## CHARACTERISTICS

|                                                         |                                                                                             |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Contact arrangement                                     | 1H (SPST-NO)                                                                                |
| Contact Resistance                                      | Typ.:0.7mΩ (at 100A) initial                                                                |
| Contact Rating <sup>1)</sup>                            | 12VDC 150A<br>24VDC 150A                                                                    |
| Max.continuous current <sup>1)</sup>                    | 180A (23°C) 5min<br>150A (23°C) long-term<br>130A (85°C) long-term<br>70A (125°C) long-term |
| Overload current <sup>2)</sup>                          | 300A 1min (23°C)<br>750A 5s (23°C)                                                          |
| Short Circuit Resistance current <sup>1)2)</sup>        | 1500A 1s (23°C)<br>2000A 500ms (23°C)<br>3000A 20ms (23°C)                                  |
| Min.contact load                                        | 1A 6VDC                                                                                     |
| Electrical endurance                                    | See "CONTACT DATA"                                                                          |
| Mechanical endurance                                    | 1x107OPS (60OPS/min)                                                                        |
| Insulation resistance                                   | 100M Ω (at 500VDC)                                                                          |
| Dielectric strength <sup>3)</sup>                       | 1000VAC 1min                                                                                |
| Operate time <sup>4)</sup>                              | Typ.:25ms                                                                                   |
| Release time <sup>4)</sup>                              | Typ.:10ms                                                                                   |
| Noise <sup>5)</sup>                                     | Typ.: 75dB(A)                                                                               |
| Ambient temperature                                     | -40°C to +125°C<br>No condensation and ice                                                  |
| Vibration resistance (random)(functional) <sup>6)</sup> | 10Hz to 2000Hz, >3g<br>GB/T 28046.3 4.1.2.4 Test IV                                         |

|                                |                                                                                                                  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------|
| Shock resistance               | Energize: 50g (Half Sine, pulse 11ms)<br>Non-energize: 20g (Half Sine, pulse 11ms)                               |
| Termination                    | Screw connection                                                                                                 |
| Construction                   | Plastic sealed, Dust protected                                                                                   |
| Unit weight                    | Approx.220g                                                                                                      |
| Protection grade <sup>7)</sup> | Plastic sealed: IP6K7(GB/T 30038)<br>Dust cover type: IP5K4(GB/T 30038)                                          |
| Mechanical data <sup>8)</sup>  | housing retention (pull &push): 500N<br>terminal retention(pull &push):150N min.<br>Terminal torque: 6N·m ~ 8N·m |

Notes:

1)The conductor cross section 25mm<sup>2</sup>

2)Failure criterion: No smoke, fire or explosion occurs during the test;

3)1 min,leakage current less than 1mA;

4)Measurement of coil shunt resistance at rated voltage;

5)Test distance 0.4m;

6)When energized,opening time of closed NO contact shall not exceed 10μs,when non-energized,close time of NO contacts shall not exceed 10μs;

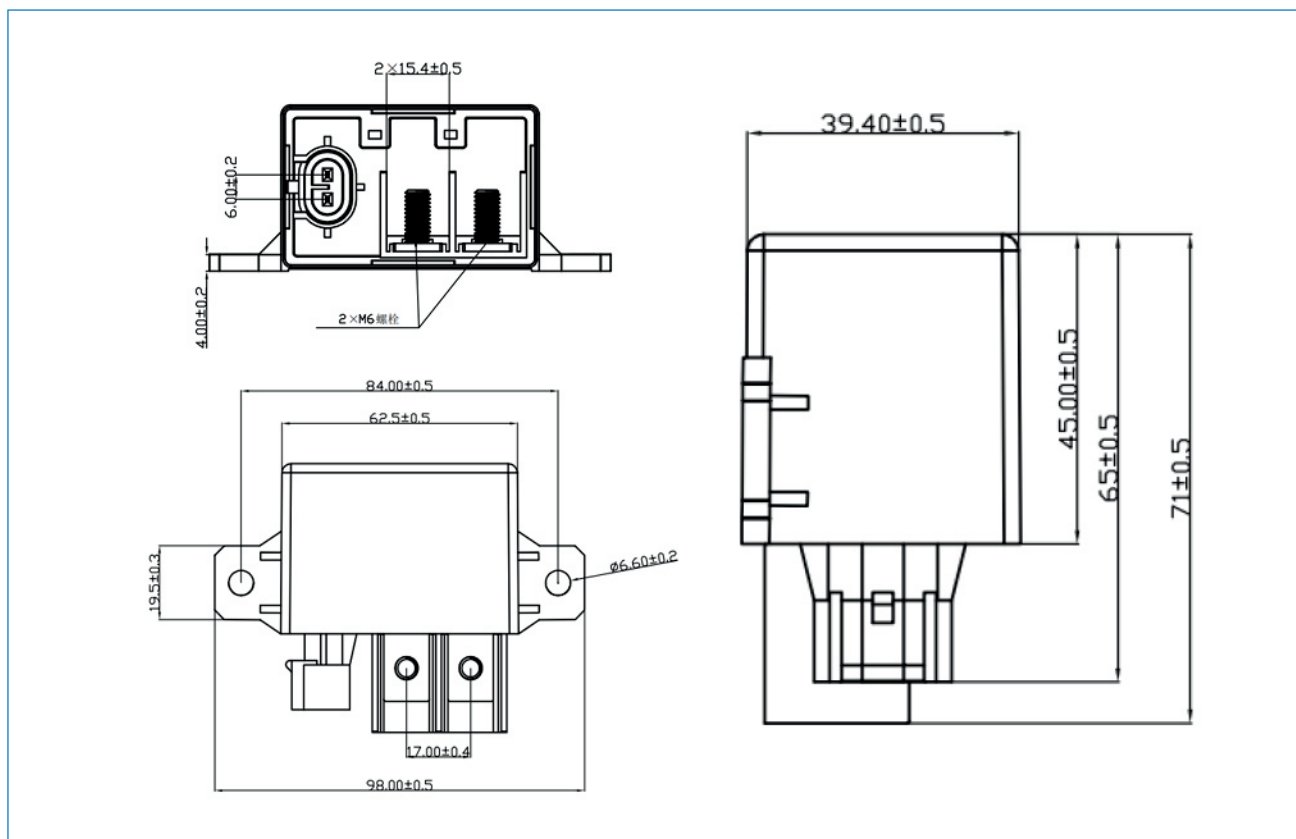
7)Use matching sealed connectors for protection level testing.

## CONTACT DATA

| Load voltage (VDC) | Load type | Load current A | On/Off ratio |        | Electrical endurance (ops) | Contact Material                                  | Ambient temp. |
|--------------------|-----------|----------------|--------------|--------|----------------------------|---------------------------------------------------|---------------|
|                    |           |                | On(s)        | Off(s) |                            |                                                   |               |
| 14                 | Resistive | 200            | 3            | 7      | 5 × 10 <sup>4</sup>        | AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub> | 23°C          |
| 28                 | Resistive | 150            | 3            | 7      | 5 × 10 <sup>4</sup>        |                                                   |               |

备注：( 1)本表中负载仅针对线圈并联电阻的情况，如需使用并联二极管、稳压管等元件，请与库客安联系以便获得更多的支持;当使用负载条件与本表不相符时，请将相应详细使用条件提供给库客安以获取更多的支持。

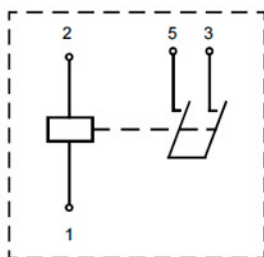
## DIMENSION



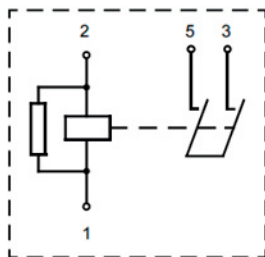
Remark: In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; Outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .

## WIRING DIAGRAM

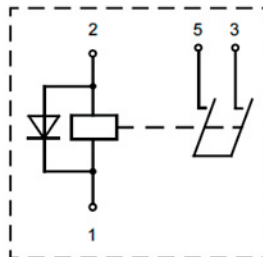
**KKA-C150-□1H□-□**



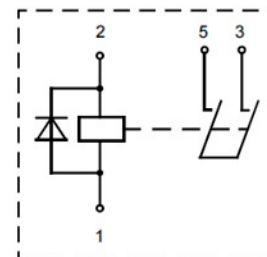
**KKA-C150-□1H□-R**



**KKA-C150-□1H□-D1**



**KKA-C150-□1H□-D2**



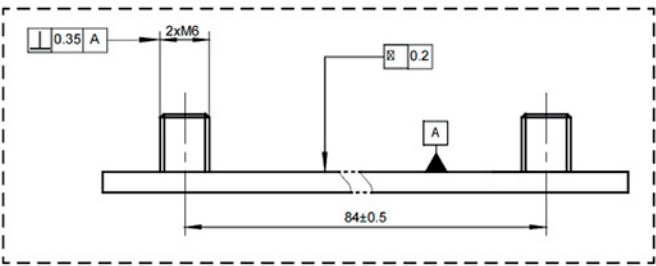
1.To prevent looseness, please use spring washer or jam nut when installing the relay. See the following table for installation requirements, if the scope is exceeded, the product may be damaged. When the use conditions are inconsistent with this table, please provide the corresponding detailed use conditions to KKA for more support.

| Load terminal mounting requirements |             |                     |                       |                   |                   | Housing mounting plate installation requirements |                     |                              |
|-------------------------------------|-------------|---------------------|-----------------------|-------------------|-------------------|--------------------------------------------------|---------------------|------------------------------|
| InstallationMethod                  | Threadpitch | Torque Requirements | Gasket outer diameter | Copper nose model | Wire diameter     | InstallationMethod                               | Torque Requirements | Base size requirements       |
| M6 Nut gasket                       | 1.0mm       | 6N•m ~ 8N•m         | <φ15mm                | SC25-6            | 25mm <sup>2</sup> | M6 Screw                                         | 3.4N•m ~ 4.2N•m     | See figure below for details |

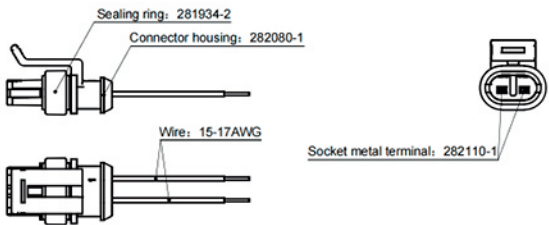
2. Please avoid grease and other foreign bodies on the terminal, please use the recommended specification of copper nose and wires in Article 1 of the precautions for installation, otherwise abnormal heat may occur at the load terminal.

3. Coil Terminal: Connector type AMP SUPERSEAL 1.5 series (Customer self-configuration: Connector housing 282080-1; Sealing ring 281934-2; Socket metal terminal 282110-1).

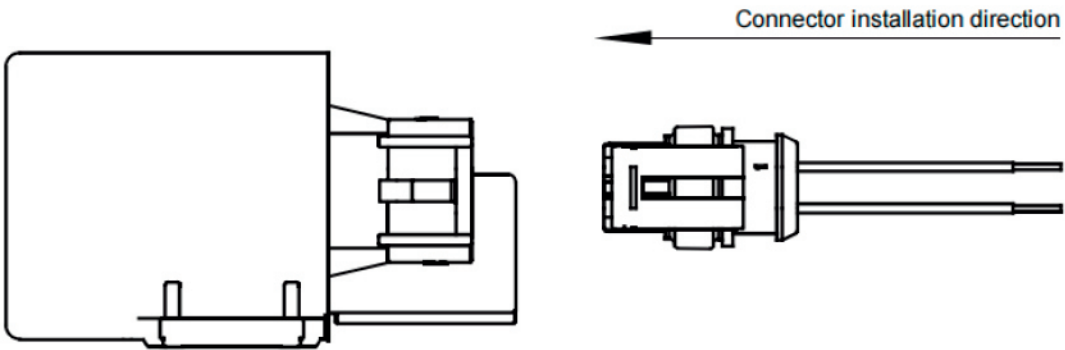
### Base size requirements



TE connector: AMPSUPERSEAL 1.5 serie(Customer self-configuration)



4.During the installation of the product, make sure that the connectors are inserted smoothly in the correct direction, the snap clips are in place, and do not plug and unplug more than once, to prevent the connector from distorting the opening of the metal terminal that connects, causing unreliable contact.



### 声明：

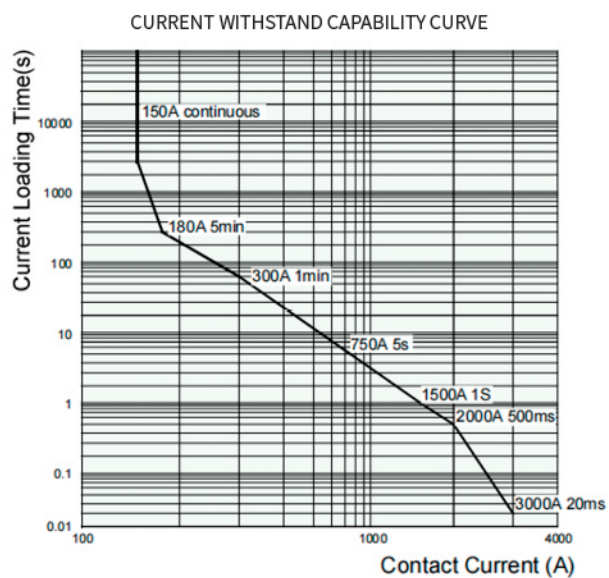
1、本资料仅供客户参考，库客安已尽力确保本资料中信息的准确性，但错误之处在所难免，且产品及Type、参数可能因产品改良等发生变更，其体涉及的每个产

品的参数及性能请以库客安提供的Type书和样品为准，恕不另行通知。

2、关于应用领域，对库客安而言，不可能评定继电器在每个具体应用领域的所有CHARACTERISTICS要求 因而客户应根据具体的使用条件选择与之相匹配的产品，其中未

明确规定的要求条件，请与库客安联系以便获取更多的技术支持。库客安明确声明对本资料中的信息仅供选型参考，且产品选型责任仅由客户负责。

## CHARACTERISTICS CURVES



### Notes

- 1) The temperature is 23°C;
- 2) Resistive load, Load Line Diameter 25mm<sup>2</sup>;
- 3) When the actual application conditions exceed the specified range of the curve, please contact KKA and provide detailed application conditions for more technical support.

