

Specification

Product Name: DC RELAY

Product model: C10P-600

Publish Date: 2023.04.16

Production Plant: Component Basics


Version: a

CB-VAC

Especially claim:

1. This specification is expected to be checked within 2 weeks. Without feedback after 2 weeks, CBV will take it as granted that customer approves of this specification.
2. This specification will be invalid if no order within 2 years.

Revisions Record

| Customer | | Part No. | | |
|--|-------------|-------------|----------|------------------|
| Version No. | Change Date | Description | Reason | By |
| a | 2023.04.16 | creation | creation | Component Basics |
|  | | | | |

C10P-600 Relay Specification

1 Ordering Information

| <u>C10</u> ① | <u>P</u> ② | - <u>600</u> ③ | / <u>1500</u> ④ | - <u>24D</u> ⑤ | - <u>H</u> ⑥ | <u>A</u> ⑦ | <u>C</u> ⑧ | <u>5</u> ⑨ | <u>W</u> ⑩ | <u>(XXX)</u> ⑪ |
|--------------------------|--|-------------------|--------------------|-------------------|-----------------|---------------|---------------|---------------|---------------|-------------------|
| ① Type | C10 | | | | | | | | | |
| ② Application | P: Pv and energy storage | | | | | | | | | |
| ③ Lode Current | 600: 600A | | | | | | | | | |
| ④ Lode Voltage | 1500: 1500 Vd. c. 1000: 1000 Vd. c. | | | | | | | | | |
| ⑤ Coil Voltage | 12D:12 Vd. c. Double coil 24D:24 Vd. c. Double coil | | | | | | | | | |
| ⑥ Contact Type | H: 1 Form A | | | | | | | | | |
| ⑦ Auxiliary Contact Type | A: 1 Form A | | | | | | | | | |
| ⑧ Coil Termination | C: Connector | | | | | | | | | |
| ⑨ Load Termination | 5: Bolt terminal Female | | | | | | | | | |
| ⑩ Mounting | Nil: Vertical Mounting W: Horizontal Mounting | | | | | | | | | |
| ⑪ Special Code | customer demand(Only for special requirements) | | | | | | | | | |

2 Coil Rating

| Rated Voltage Vd.c. | Operate Voltage Vd.c. (at 23 °C) | Release Voltage Vd.c. (at 23 °C) | Coil Resistance Ω (at 23 °C) | Coil Power W Approx. at 23°C |
|------------------------|-------------------------------------|-------------------------------------|---|---|
| 12 | ≤ 9 | ≥ 1 | Driving $2.9 \times (1 \pm 7\%)$ Holding $28.8 \times (1 \pm 7\%)$ | Driving Power 50 W Holding Power 5 W |
| 24 | ≤ 18 | ≥ 2 | Driving $11.5 \times (1 \pm 7\%)$ Holding $115 \times (1 \pm 7\%)$ | Driving Power 50 W Holding Power 5 W |

3 Main contact Specification

- 3.1 Contact Arrangement: 1 Form A .
- 3.2 Contact Material: Copper Alloy .
- 3.3 Contact Resistance: $\leq 0.3 \text{ m}\Omega$ (at 600A 23°C) .
- 3.4 Contact Rating: 600A (320 mm² wire) .
- 3.5 Max. Breaking Current: 2000A (1op) .
- 3.6 Max. Switching Voltage: 1500 Vd.c. .
- 3.7 Min. Applicable Load: 6 Vd.c. 1 A .
- 3.8 Current Endurance

| Current | Duration |
|---------|----------|
| 600 A | cont. |
| 750 A | 15 min |
| 900 A | 120 s |
| 2000 A | 1 s |
| 8000 A | 5 ms |

Condition for current endurance

- 1) Ambient temperature: 85 °C;
- 2) Supply rated voltage to coil;
- 3) The cross section area of wire is 320 mm².

4 Aux contact Specification

- 4.1 Contact Arrangement: 1 Form A

4.2 Contact Material: Copper Alloy

4.3 Contact Resistance: $\leq 100\text{m}\Omega$ (at 1A 23°C)

4.4 Contact Rating: 6 Vd. c. 0.1 A

5 Endurance

5.1 Electrical Endurance

| Product model | Ambient Temperature | Contact Rating | Ratio | Electrical Endurance |
|---------------|---------------------|---|-------------|----------------------|
| C10P-600 | Room Temperature | Breaking: Steady 100 A Contact Voltage 1500 Vd. c | 0.6 s:5.4 s | 5000 ops |
| | | Breaking: Steady 150 A Contact Voltage 1500 Vd. c | 0.6 s:5.4 s | 3000 ops |
| | | Breaking: Steady 350 A Contact Voltage 1000 Vd. c | 0.6 s:5.4 s | 1000 ops |
| | | Breaking: Steady 600 A Contact Voltage 1000 Vd. c | 0.6 s:5.4 s | 100 ops |

5.2 Mechanical Endurance

| Version | Contact Rating | Ambient Temperature | ON: OFF | Mechanical Endurance |
|---------|----------------|---------------------|-----------|----------------------|
| 1H | No load | Room Temperature | 0.5s:0.5s | 2×10^5 ops |

6 Insulation Resistance

6.1 Before Test

Between main open contacts: $1000\text{ M}\Omega$ (1000 Vd. c.)

Between main contact and coil: $1000\text{ M}\Omega$ (1000 Vd. c.)

Between main contact and aux contact: $1000\text{ M}\Omega$ (1000 Vd. c.)

6.2 After Test

Between main open contacts: $10\text{ M}\Omega$ (1000 Vd. c.)

Between main contact and coil: $10\text{ M}\Omega$ (1000 Vd. c.)

Between main contact and aux contact: $10\text{ M}\Omega$ (1000 Vd. c.)

7 Dielectric Strength (Leak Current:1 mA)

7.1 Before Test

Between main open contacts: 4000 Va.c. (50/60 Hz 1 min)

Between main contact and coil: 4000 Va.c. (50/60 Hz 1 min)

Between main contact and aux contact: 4000 Va.c. (50/60 Hz 1 min)

7.2 After Test

Between main open contacts: 3000 Va.c. (50/60 Hz 1 min)

Between main contact and coil: 3000 Va.c. (50/60 Hz 1 min)

Between main contact and aux contact: 3000 Va.c. (50/60 Hz 1 min)

8 Time (At Rated Voltage)

8.1 Operate Time: ≤ 50 ms

8.2 Release Time: ≤ 30 ms

8.3 Bounce Time: ≤ 5 ms

9 Vibration

Functional: 10 Hz ~ 55 Hz, 1.5 mm double amplitude, 1 hour Per Cross-axis. No opening or closing of any closed or opened contact circuit respectively shall exceed 10 μ s.

10 Shock

10.1 Functional

98m/s² (Duration 11ms), 6 shocks (six ops in both directions of each of the three mutually perpendicular axes, totally 36 ops), No opening or closing of any closed or opened contact circuit respectively shall exceed 10 μ s.

10.2 Destructive

490 m/s², duration 6 ms, 50 shocks for each directions of three mutually perpendicular axes, total 300 shocks. There shall not be any abnormalities on relay appearance, construction and performance.

11 Standards Test Condition

11.1 Temperature: 23 °C \pm 5 °C。

11.2 Humidity: 25 % ~ 75% RH。

11.3 Direction of Measurement: 立式 Vertical

12 Operating Condition

12.1 Temperature: -40 °C ~ 85 °C 。

12.2 Humidity: 5 % ~ 85 % RH 。

12.3 Mounting Direction: 立式 Vertical

Note: The ambient environment of application shall not cause any dewing or icing inside the relay. Otherwise, the relay may fail to work consequently.

13 Storage Condition

13.1 Temperature: -40°C ~ 85°C

13.2 Humidity: 5% ~ 85% RH

13.3 Storage Life: 12 Months (Original Package)

13.4 Environment

13.4.1 Store in locations where the product is not exposed to corrosive gas.

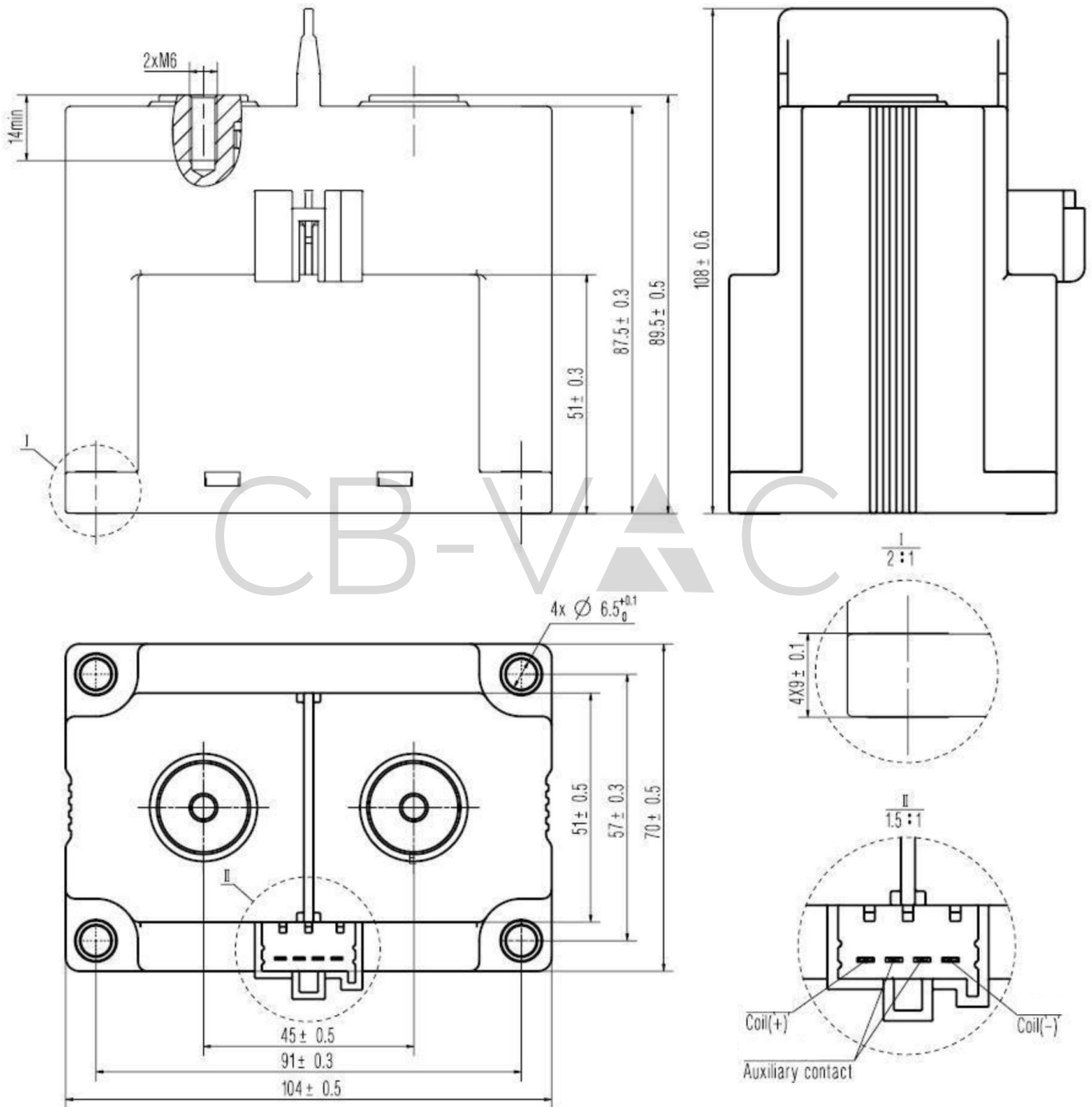
13.4.2 Keep product is not exposed to the direct ray of the sun.

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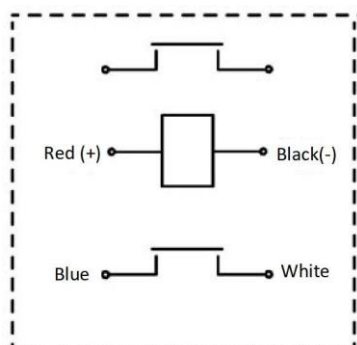
14 Configuration

14.1 Outline Dimensions:

C10P-600/XXXX-XX-XX-XX (XXX)



14.2 Wiring Diagram



The load is non-polar, the coil is polar

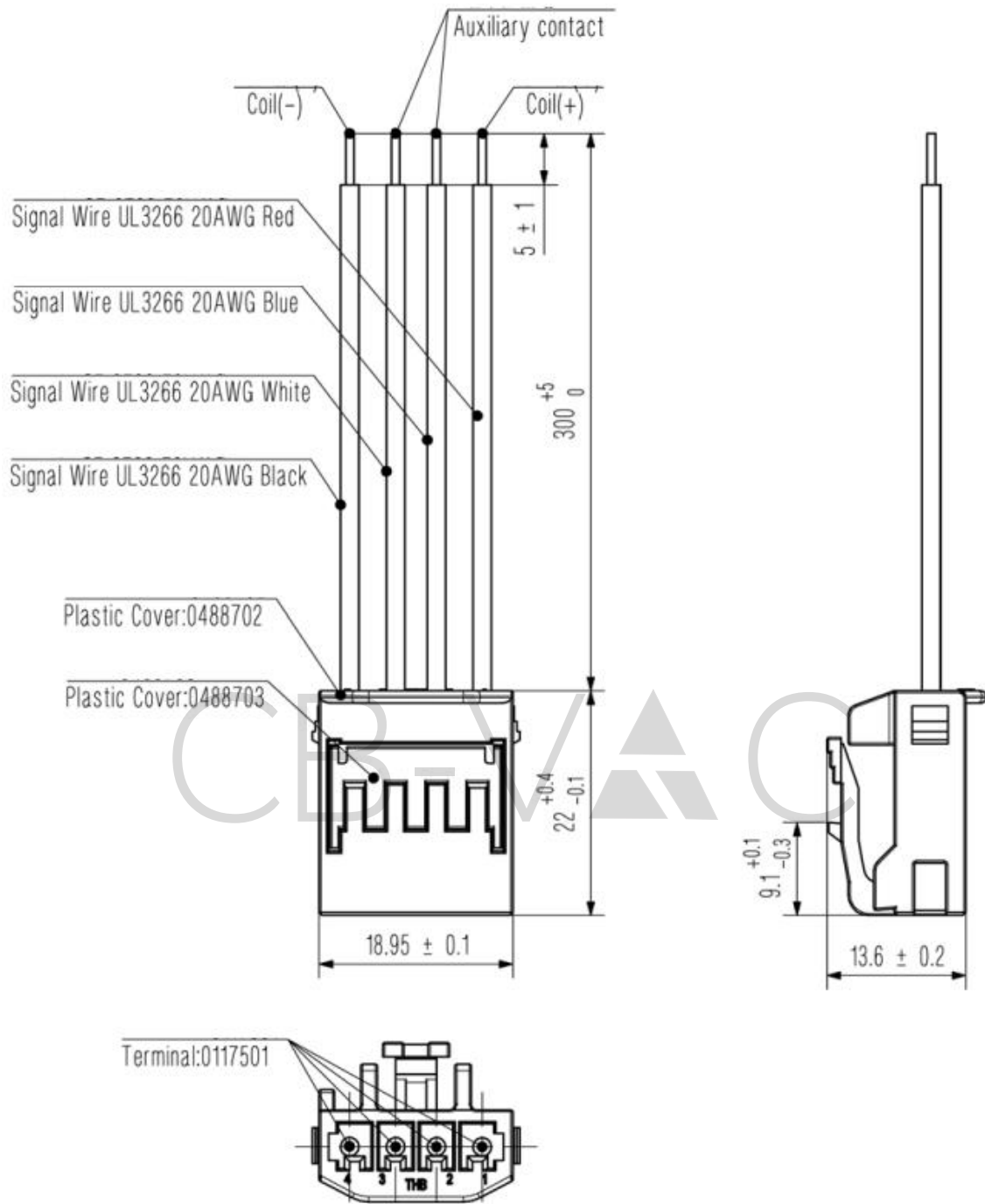
Notes

1. All unspecified tolerance according to following table.

| Outline dimensions hadn't specified tolerance | |
|---|-----------|
| Outline Dimensions | Tolerance |
| ≤10 | ±0.3 |
| >10~50 | ±0.5 |
| >50 | ±0.8 |

2. The default connector of the product and THB connector can be used, the specific models are as follows:

| Brand | Connector number |
|-------|------------------|
| THB | 0488701 |



3. The default product is shipped without connector harness, screws, washers, spring washers and other installation accessories.

15 Others

15.1 Supplier

Component Basics

15.2 All the performance data listed in the datasheet are the initial values tested under standard testing condition.

15.3 Notes

15.3.1 CBV could not evaluate all the performance and all the parameters for every potential application. The customer can choose the right product according to the specific usage conditions and requirements. If there is any queries, please contact CBV for the technical service. However, customer will responsible for what they choose and it is the user's responsibility to determine which product should be used.

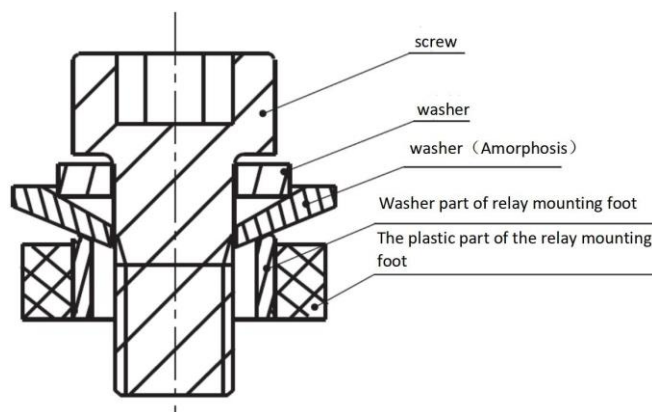
15.3.2 Without special note ,the load we commit to the load is the rating load .CBV doesn't response for any usage beyond our guarantee.

15.3.3 The relay contacts are sealed and filled with gas. When the contact temperature changes, there is internal gas penetrating characteristic. CBV relays are forbidden to be used at the temperature beyond our suggestion $-40\text{ }^{\circ}\text{C}\sim 85\text{ }^{\circ}\text{C}$ for long time.

15.3.4 Please avoid installation in strong magnetic field(around the transformers & the magnet)and the heating objects nearby.

15.3.5 In order to prevent loosening, please use the washer when installing the relay. Please use the M5 screws to install relay, screw locking torque within $3\text{N}\cdot\text{m}\sim 4\text{N}\cdot\text{m}$.

15.3.6 When use M5 screw, make sure the washer's thickness and strength are enough. Otherwise it will be out of shape, and the case will be broke.



15.3.7 Please avoid grease and other foreign matter in the terminal, please use the connecting wire with a cross section area $\geq 100 \text{ mm}^2$, or they may cause overheating to the terminal part.

15.3.8 Please pay attention to the thickness of copper bars and the value of the torque. If it goes beyond the recommended values in the below table, it will cause thread slide or installation is not tight. To avoid short circuit or fire, it's not suggest fix two copper bus bar at same side.

| screw on load terminal | the thickness of copper bus bar | suggest hole dimension of copper bus bar | Torque |
|------------------------|---------------------------------|--|-------------|
| M 6 | 5 mm | $\Phi 6.0\text{mm} \sim \Phi 6.5\text{mm}$ | 6 N·m~8 N·m |

15.3.9 In principle, please do not use it when the relay has fallen down.

15.4 Environmental Protection

CBV products are all RoHS compliant.

15.5 CBV reserves the right to make changes. Customers should reconfirm the contents of the specification before first orders and ask for us to supply a new specification if necessary.