How to Troubleshoot my contactor if it does not close?

I- Type of publication

- Typical application
- Best know Method (BKM)
- Troubleshooting guide
- Level 2 use
- Internal use
- Customer

II- Product

- Product range:
  Contactor
- Product family:
  TeSys K,D,F,CCV

III- Introduction

Use this troubleshooting guide if your power is not applied on your load after supplying your contactor’s coil.

Tools required:
- A controller to check voltage and resistance
- A screw driver
IV- Description

MY CONTACTOR DOES NOT CLOSE

Does the power supply apply to the coil? (1)

YES

Do you use coil at nominal voltage?

NO

CHECK DROPS OF VOLTAGE (2) AND POWER SUPPLY USED (3)

YES

Does the coil fail?

NO

WIRED POSITIVE CABLE ON “A1” WIRED NEGATIVE CABLE ON “A2”

YES

CHECK CONTINUITY (4)

NO

Is the contactor in vertical position?

NO

CHECK POSITION (5)

YES

CONTACT TECHNICAL SUPPORT
(1) **The power supply applies to the Coil**

Check coil voltage:

a) Look after your coil range:  

![Image of a coil with 24VDC label]

b) Put your probe on coil terminal A1 A2:

![Image of a coil with a multimeter connected]

Note: you can make the same job for a TeSysF but the multi meter is not connected on the same points:

![Image of a circuit diagram with connections highlighted]

c) Measure:

When contactor is driven the coils voltage should be different than “0 Volts”

(2) **Drop of voltage**

On power up sequence check if the voltage is stable. We can have different root cause for this issue:

a) You drive simultaneously more than one contactor and your power supply is not correctly sized -see point (3)-

b) You have a too long distance between supply and coil terminal. You will have to verify that your cable is correctly sized regarding the distance between the power supply and the contactor.

(3) **Power supply used**

Your power supply should be able to support the sums of all contactors inrush current. Please, for the inrush current level of each individual contactor, you will have to refer to the technical data for each contactor you drive.
(4) **Continuity**

For this point you will need to use a multi-meter to verify coils resistance. This resistance value should be between some Ohms to kOhms this depends on coils voltage and contactor models.

a) If you found a value close less than 0.1 ohms you are facing a coil short circuit:

![Multi-meter reading 0.0 Ohms](image)

b) If you have an infinite value you are facing an open coils circuit

![Multi-meter reading infinite](image)

For both situations, you have to replace coil or the full contactor if you have no other possibility.

(5) **Contactor Position**

<table>
<thead>
<tr>
<th>Operating positions</th>
<th>Without detailing in the following positions</th>
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<tbody>
<tr>
<td>(3)</td>
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**Positions that are not permissible**

For LC1 D05 to LC1 D55A.

![Contactor Position Diagram](image)