

05903 SERIES

24V 100A HIGH-CURRENT CUBE-STYLE DC COIL RELAY



05903300

Description

The 05903 Series 24V 100A High-Current Relay is a normally open, armature relay that can be used in heavy trucks and commercial vehicles.

Glass-fiber-reinforced housing and a compact form help ensure safe use in automotive applications. Configurations of this cube relay are available with 12V and 24V coil voltage ratings.

Web Resources

Download 2D print, installation guide and technical resources at: [littelfuse.com/05903](https://www.littelfuse.com/05903)

Specifications

| | |
|---------------------------------------|------------|
| Max Voltage Rating (V DC): | 24 |
| Current Rating Continuous (A): | 100 |
| Coil Voltage Rating (V DC): | 12, 24 |
| Ingress Protection: | IP 54 |
| Operating Temperature (°C): | -40 to +85 |

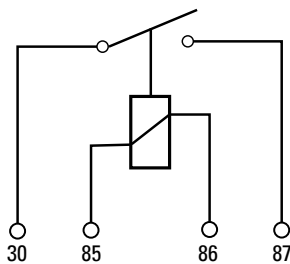
Applications

- Heavy trucks
- Commercial vehicles

Features and Benefits

- Continuous current rating of 100A for high-current contact switching
- Glass-fiber-reinforced nylon housing enables use in automotive applications
- Main contacts are rated for 24V
- Contact voltage drop of $\leq 40\text{mV}$ @ 40A
- Normally open (also known as monostable) relay design
- Armature relay uses a single coil that pulls down on an armature to close the relay
- Coil voltage options include 12V and 24V

Electrical Diagram



05903300 & 05903500

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Ordering Information

| PART NUMBER | CONTINUOUS CURRENT (A) | INTERMITTENT CURRENT | VOLTAGE RATING | MOUNTING | COIL VOLTAGE (V DC) | COIL TYPE | AUX CONTACT | POLARIZED |
|-------------|------------------------|----------------------|-----------------------|------------|---------------------|-----------|-------------|-----------|
| | | | SYSTEM NOMINAL (V DC) | | | | | |
| 05903300 | 100 | 200 | 12 | SIDE MOUNT | 12 | Single | No | No |
| 05903500 | 100 | 140 | 24 | SIDE MOUNT | 24 | Single | No | No |

Performance Data

| MAIN CONTACT | |
|------------------------------|------------------|
| Contact Arrangement | SPST NO |
| Rated Operating Voltage | 12V DC |
| Max Short Circuit Current | 400A @ 24V DC |
| Dielectric Withstand Voltage | 1000V AC |
| Insulation Resistance | ≥500MΩ @ 500V DC |
| Max Voltage Drop | ≤40mV @ 40 A |

| COIL DATA | | |
|-----------------------------------|-----|------|
| Voltage Rating (V DC) | 12 | 24 |
| Pickup Voltage @ 25°C (V DC MAX) | 8.5 | 18 |
| Dropout Voltage @ 25°C (V DC MIN) | 1.8 | 2 |
| Hold Current (A) | 0.5 | 0.15 |
| Coil Watts @ 25°C (W) | 5.5 | 4 |

| LIFE | |
|-----------------|---------|
| Electrical Life | 6,000 |
| Mechanical Life | 100,000 |

| OPERATE / RELEASE TIME | |
|------------------------|----|
| Close (ms) | 15 |
| Release (ms) | 10 |

| ENVIRONMENTAL DATA | |
|---------------------|--|
| Shock | 3G |
| Vibration | 1-50Hz (freq.1-10Hz, amp;.25/f ² ; freq.10-50Hz, ampl.250/f ²) |
| Ambient Temperature | -40°C~+85°C |
| Weight (g) | 96.1 |

Note: Estimated Make Break Charts and Time Current Curves Coming Soon

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Application Notes & Definitions

- Be sure to use a washer to prevent screws from loosening. Tighten the screw so that the torque is in the range specified below. Exceeding the maximum torque can lead to product rupture.

| PRODUCT SERIES | PRODUCT MODEL | CONTACT TERMINAL | | COIL TERMINAL | | MOUNTING |
|----------------|----------------------|------------------|------------------|-------------------------|------------------|------------------|
| | | HOLE OR BOLT | REFERENCE TORQUE | HOLE/BOLT/WIRE/TERMINAL | REFERENCE TORQUE | REFERENCE TORQUE |
| 05903 | 05903300 05903500 | Bolt : M6 | 3~4.5N.m | terminal | / | 2.0~2.8N.m |

- Please refer to the drawing for connection polarity.
- Do not use dropped products.
- Avoid installing the product in a strong magnetic field (Close to the transformer or magnet), or near an object with heat radiation.
- Electrical life
Please use under load capability and life cycle so as not to cause a function failure. (Please also treat the contactor as a product with specified life and replace it when necessary). It is possible to make parts burn around the contactor once operating failure happens. So it is necessary to take layout into account to make sure power shall be cut off within 1 second.
- Do not let particle and oil stain on the main terminal with which the load shall make a reliable contact or it will cause a lot of heat.