# 31M Series Multiplexed Power Distribution Module



## Multiplexed Vehicle Electrical Center (mVEC)

The multiplexed Vehicle Electrical Center (mVEC) offers economical CAN Network oversight for high power circuits in vehicle power distribution. Manufactured as a hardened and weather tight module, the mVEC is rated at 200 Amps. The mVEC may be configured to provide various OEM circuit protection and switching functions, using industry standard fuses, relays and breakers, with the status and control of each circuit accessible through J1939 CAN open messages. The mVEC is based on proven and patented technology and is suited for the most demanding transportation vehicle applications.

**High Power:** The mVEC uses patented Cooper Bussmann VEC 'power grid' technology, ideal for high current circuits and Sure Power networking electronics. Each mVEC is rated at 200 Amps, with individual outputs rated up to 30A, and a maximum of 32 outputs possible with the mVEC. 12 and 24 volt systems are supported.

**Rugged:** Waterproof to high pressure spraying (IP66). The mVEC is designed and manufactured with robust features such as a heavy-duty housing, silicon and Gortex gasketing, and protective conformal coated electronics, to operate in demanding vehicle environments such as those found in construction, agriculture, heavy truck, bus, RV, marine and specialty vehicle markets.

**Flexible:** The mVEC is offered in various standard and customized versions, with custom versions being configured to OEM wiring requirements. The two standard mVEC configurations include the 8-relay 31M-000-2 and the 12-relay 31M-300-0. The mVEC accepts relays, fuses, circuit breakers, resistors, diodes, etc. based on the industry standard 2.8mm footprint.

**Basic Features:** The mVEC acts as a slave module on a J1939 network, communicating via the vehicle data bus with the master controller. The mVEC functions as a node in an existing vehicle J1939 multiplexing network. The mVEC controls relays via direction of J1939 CAN bus and reports status of relays and fuses each second to the J1939 CAN bus, indicating any blown fuse or failed relay. The mVEC supports both 12V and/or 24V electrical requirements. The mVEC is capable of custom designs with differing configurations of relays, fuses, circuit breakers, etc. per customer requirements.

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## Specifications

**Capacity:** 200 Amps maximum rating, 30 Amps per output pin, Maximum of 12 relays and/or 32 fuses, or various combinations thereof (unique design configurations may be required)

**Materials:** Housing and connector cavities: 94V0 rated thermoplastic
Internal power grid: tin-plated copper
CAN circuit board: conformally coated

**Operating Temperature Ratings:** -40°C to 85° C [Consult factory for higher temp versions (up to 105°C)]

**Ingress Protection:** IP66 compliant

**Foot Torque Rating:** 60 in-lbs w/out compression limiters, 200 to 300 in-lbs with compression limiters.

**Connections:** ***Output:*** Standard Cooper Bussmann VEC connectors
- 8-way, colored/keyed, sealed connectors
- 30A max per terminal
- Accepts Packard Metri-Pack 280 Series terminals (tanged/tangless)

## Specifications (Cont)

***Input:***
- Studded input option: supports two M8 input power studs for DC power into the VEC power grid (100A max per stud)
- Connectorized: accepts up to 2 Cooper Bussmann 32004 VEC connectors (2 terminal, colored/keyed, sealed connectors)
- 60A max per terminal, providing power to the VEC Power Grid; uses Packard 800 series terminals

***CAN:***
- Uses AMP SSC 12-position sealed connector
- CAN connector provides CAN signaling, power, ground, addressing, auxiliary relay control, and reserve connections to mVEC 'smart' layer

## Options

1. Mounting: compression limiters on mounting feet
2. Labeling to customer specifications
3. Stuffed (with/without components including, but not limited to: fuses, relays, diodes, circuit breakers, fuse puller)
4. Customized circuit layouts, standard and custom CAN messages

# Dimensions - mm(in)