

# CAN (Control Area Network) Optical Isolator

Model BB-CANOP

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## FEATURES

- Boost signals and increase node capacity of CAN networks
- Works with various CAN protocols and frame lengths
- 2,000V optical isolation protection from surges and spikes
- Data rate: up to 250 kbps (bit-wise enable)
- DIN rail mount enclosure – ideal for industrial cabinets
- 10-30 VDC external power required (not included, sold separately)

Model BB-CANOP increases the node capacity of CAN (Control Area Network) systems while protecting CAN networks from component destroying surges and transients. The BB-CANOP provides 2,000 VDC of optical isolation to separate and protect critical segments of the system from the rest of the CAN Network. It is protocol independent, allowing it to work with different CAN protocols and frame lengths.

According to the CAN specification, the CAN network must be terminated at both ends. Networks that are not properly terminated may experience data errors or miss data completely. The BB-CANOP creates two new ends to the CAN network. Space is provided on the board for a termination resistor on each side, R6 and R8 (120 Ohm resistor recommended). If the BB-CANOP is not at the end of the network, it should not be terminated.

Model BB-CANOP is bit-wise enable, allowing it to automatically adjust for different baud rates. Bit-wise enable only enables the driver on every low bit received. It also disables the driver on the receive side for the low bit plus a maximum of 2μ seconds. This prevents data from echoing back from the BB-CANOP, but allows the nodes to respond back.

A 10-30 VDC external power source is required (not included, sold separately).

## CAN in Industrial Automation

The multi-layer structure of Controller Area Network (CAN) allows any station on a serial bus to communicate with any other station. There are also benefits in central control and self-diagnosis and correction of transmission errors. A number of CAN-based, higher level protocols have been developed for use in industrial automation applications. CAN Application Layer (CAL), CAN Kingdom, CAN-open, DeviceNet and Smart Distributed System are just a few of these variations.

## ORDERING INFORMATION

| MODEL NUMBER | ISOLATION | CAN (COPPER)    |
|--------------|-----------|-----------------|
| BB-CANOP     | 2,000 VDC | Terminal Blocks |

## ACCESSORIES – sold separately

BB-MDR-20-24 – 24 VDC DIN rail mount power supply, 1.0 A output power

## SPECIFICATIONS

| SERIAL TECHNOLOGY                  |  |
|------------------------------------|--|
| Baud Rate                          | 250 kbps, maximum  |
| CAN Connector                      | Terminal blocks  |
| Turnaround                         | < 2μ seconds   |
| LEDs                               | TD, RD (may be difficult to see at high baud rates)  |
| ISOLATION                          |  |
| Isolation Voltage                  | 2,000V DC  |
| Voltage, Time                      | 2000V rms, 1 minute  |
| POWER                              |  |
| Power                              | 150 mA @ 12V, fully loaded   |
| Source                             | External, 10-30 VDC, required  |
| MECHANICAL                         |  |
| Dimensions                         | 9.3 x 8.6 x 3.6 cm (4.0 x 3.4 x 1.4 in)  |
| Enclosure                          | DIN rail mount, 35mm   |
| MEANTIME BETWEEN FAILURE (MTBF)    |  |
| MTBF                               | 269297   |
| MTBF Calc. Method                  | MIL 217F Parts Count Reliability Prediction Method   |
| ENVIRONMENTAL                      |  |
| Operating Temperature              | 0 to +70 °C (+32 to +158 °F)   |
| Storage Temperature                | -40 to +85 °C (-40 to +185 °F)   |
| APPROVALS / DIRECTIVES / STANDARDS |  |
| FCC                                |  |
| CE - Directives                    | 2014/30/EU - Electromagnetic Compatibility Directive<br>2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS)<br>2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)  |
| CE - Standards                     | EN 55032 - Class A Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements<br>EN 55024 - Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement<br>EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments |

All product specifications are subject to change without notice.  
BB-CANOP\_2220ds

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Advantech B+B SmartWorx, 707 Dayton Road, PO Box 1040 Ottawa, IL 61350 USA 1 (800)346-3119/Toll Free | orders@advantech-bb.com | support@advantech-bb.com

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