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)
APPROVAL S / DIRECTIVES / STANDARDS	
FCC	
CE - Directives	2014/30/EU - Electromagnetic Compatibility Directive 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS) 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)
CE - Standards	EN 55032 - Class A Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 - Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement EN 61000-6-1 - Generic Immunity Standard for Residential, Commercial and Light-industrial Environments

All product specifications are subject to change without notice.
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