



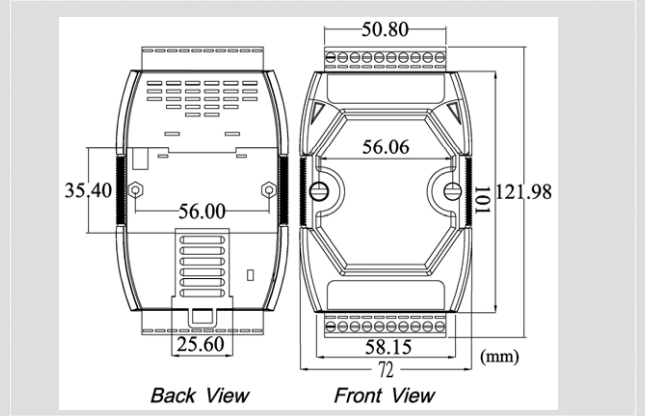
# CAN Series Products



## Two-channel CAN Bus Isolated Repeater



**I-7531**



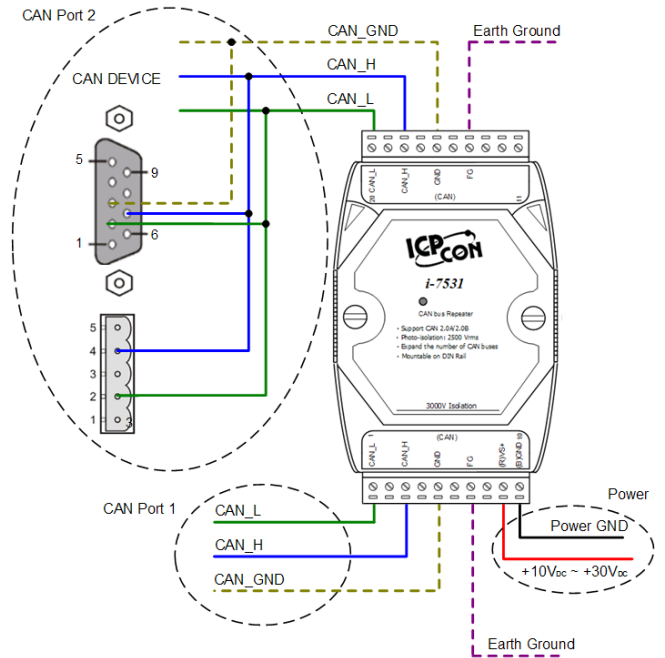
**Dimensions**

The I-7531 is a CAN repeater used to establish a physical coupling of two or more segments of a CAN bus system. Users can implement tree or star topologies as well as for long drop lines with I-7531. Users can increase the maximum number of bus nodes by using I-7531. The I-7531 is an optically isolated CAN repeater which provides 2500Vrms of optical isolation allowing you to separate and protect critical segments of the system from the rest of the CAN network. And its galvanic isolation isolates both CAN segments from each other as well as from the power supply.

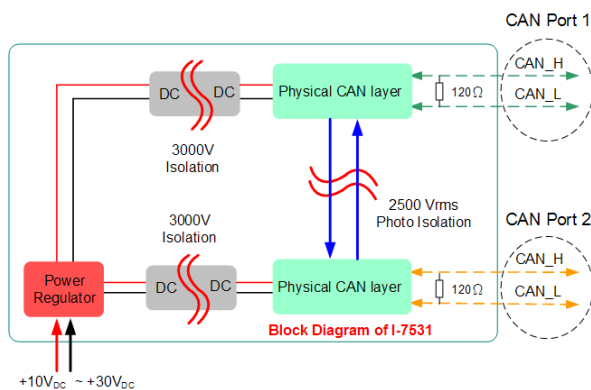
### Features

- Compatible with CAN specification 2.0A and 2.0B
- Fully compatible with the ISO 11898-2 standard
- Maximum communication baud : 800Kbps
- 2500 V<sub>RMS</sub> photo coupler isolation on the CAN side
- 3KV galvanic isolation among the power supply and 2 CAN ports
- Jumper for 120Ω terminator resistor of CAN bus
- Two CAN channels
- Auto-baud detection
- up to 100 nodes on each CAN port
- Removable terminal block
- Mount easily on DIN-rail

### Pin Assignments



### Block Diagram





## Hardware Specifications

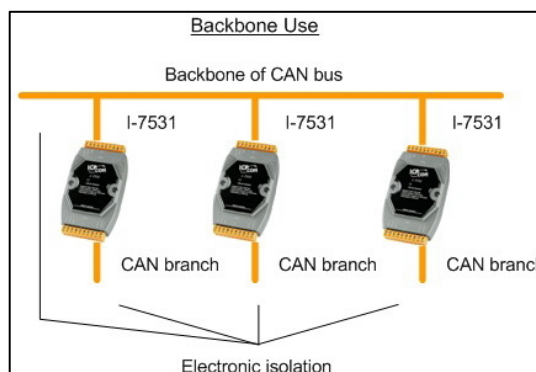
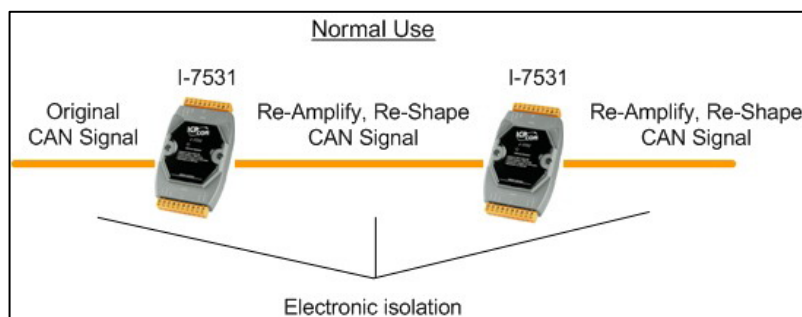
| Item                | I-7531   |
|---------------------|--|
| CAN Port Channels   | 2  |
| CAN Connector       | 10-pin removable screw terminal × 2  |
| Baud Rate           | 5K ~ 800Kbps   |
| Isolation           | 2500 V <sub>RMS</sub> photo couple isolation between 2 CAN ports<br>3000 VDC galvanic isolation among the power supply and 2 CAN ports |
| Terminator Resistor | Selectable 120Ω terminator resistor by jumper for each CAN port  |
| Support Protocol    | CAN 2.0A/2.0B  |
| Propagation Delay   | ~200ns (200ns delay shortens bus line length by ~40m)  |
| <b>General</b>      |  |
| Power Requirement   | Unregulated +10V <sub>DC</sub> ~ +30 V <sub>DC</sub> Power reverse protection, Over-Voltage brown-out protection                       |
| Power Consumption   | 2W max   |
| LED                 | One Status LED of Power and Communication  |
| <b>Environment</b>  |  |
| Operating Temp.     | -25°C to 75°C  |
| Storage Temp.       | -40°C to 80°C  |
| Humidity            | 5~95% non-condensing   |
| Dimensions          | 122mm × 72mm × 33mm (H x W x D)  |

## Baud Rate & Bus Length

When users add one I-7531 into a CAN network, the ideal total bus length will reduce 40 meters because of the propagation delay of I-7531. For example, if users use baud 500K and one I-7531, the ideal total bus length will be  $100 - 40 * 1 = 60$  meters. Specially, in baud 1M bps, add one I-7531 will cause the ideal total bus length to be less than 4 meters.

| Baud [bit/sec] | Ideal Bus Length without I-7531 [m] |
|----------------|-------------------------------------|
| 800K           | 50                                  |
| 500K           | 100                                 |
| 250K           | 250                                 |
| 125K           | 500                                 |
| 50K            | 1000                                |
| 20K            | 2500                                |
| 10K            | 5000                                |

## Applications



## Ordering Information

|                  |  |
|------------------|--|
| <b>I-7531</b>    | Two-channel CAN Bus Isolated Repeater        |
| <b>I-7531 CR</b> | Two-channel CAN Bus Isolated Repeater (RoHS) |