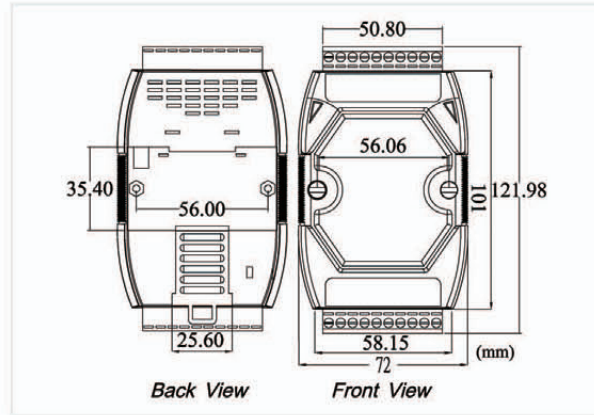


## Two-channel CAN Bus Isolated Repeater



**I-7531**

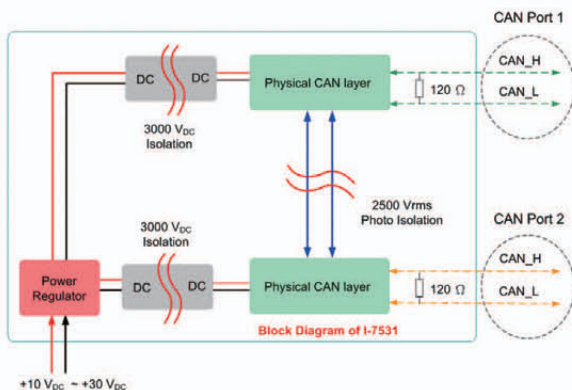


The I-7531 is a CAN repeater used to establish a physical coupling of two or more segments of a CAN bus system. Users can implement tree or star topologies as well as the long drop lines with the I-7531. Users can also increase the maximum number of bus nodes by using the I-7531. The I-7531 is an optically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

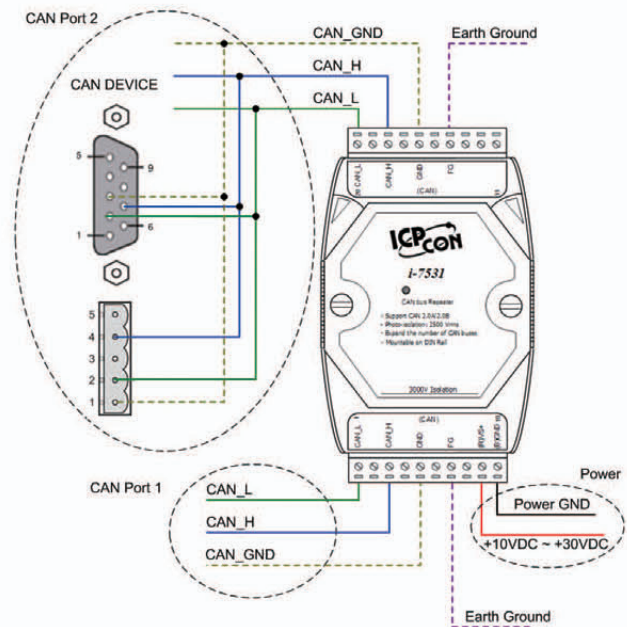
### Features

- Compatible with CAN specification 2.0A and 2.0B
- Fully compatible with the ISO 11898-2 standard
- Maximum communication baud : 800 kbps
- 2500 Vrms photo-couple isolation on the CAN side
- 3 kV galvanic isolation among the power supply and 2 CAN ports
- Jumper for 120 Ω terminator resistor of the CAN bus
- Two CAN channels
- Detect baud rate automatically
- up to 100 nodes on each CAN port
- Removable terminal block
- Mount easily on DIN-rail

### Block Diagram



### Pin Assignments



### CAN Bus Speed & Distance

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

## Hardware Specifications

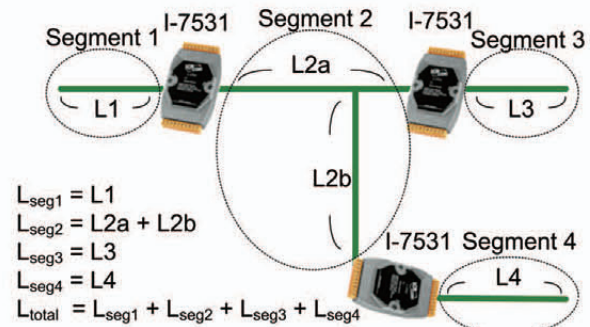
CAN Interface	
Transceiver	NXP 82C250
Channel number	2
Connector	3-pin screwed terminal block (CAN_GND, CAN_L, CAN_H)
Baud Rate (bps)	5 k ~ 800 k
Isolation	3000 V <sub>DC</sub> for DC-to-DC, 2500 V <sub>rms</sub> for photo-couple
Terminator Resistor	Jumper for 120 Ω terminator resistor
Specification	ISO-11898-2, CAN 2.0A and CAN 2.0B
Power	
Power supply	Unregulated +10 ~ +30 V <sub>DC</sub>
Protection	Power reverse polarity protection, Over-voltage brown-out protection
Power Consumption	2 W
Mechanism	
Installation	DIN-Rail
Dimensions	72mm x 118mm x 33mm (W x L x H)
Environment	
Operating Temp.	-25 ~ 75 °C
Storage Temp.	-30 ~ 80 °C
Humidity	10 ~ 90% RH, non-condensing

## Baud Rate & Bus Length

Applying the I-7531 into a CAN network, the ideal total bus length will reduce because of the signal propagation delay.

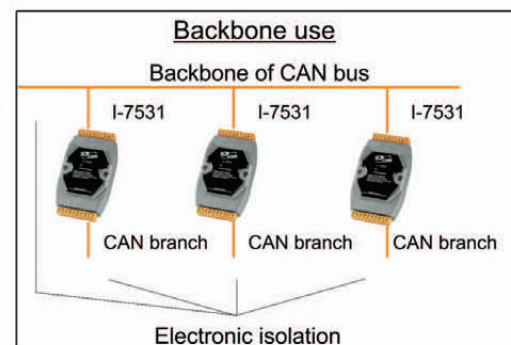
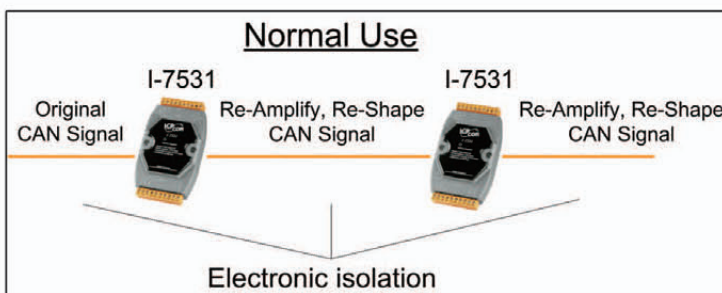
Users can use the following table to know the maximum node number in each segment and the maximum segment length when using different type of wire.

Wire Cross-Section [mm <sup>2</sup> ]	The maximum segment length [m] under the case of specific node number in this segmen		
	32 Nodes	64 Nodes	100 Nodes
~0.25 (AWG23)	<200 m	<170 m	<150 m
~0.5 (AWG20)	<360 m	<310 m	<270 m
~0.8 (AWG18)	<550 m	<470 m	<410 m
~1.3 (AWG16)	<900 m	<780 m	<670 m



The definition of segment and the relationship between segment length ( $L_{seg1}$ ,  $L_{seg2}$  ...) and ideal total bus length ( $L_{total}$ ) are shown in the figure.

## Applications



## Ordering Information

I-7531-G	Two-channel CAN Bus Isolated Repeater
I-7531-G CR	Two-channel CAN Bus Isolated Repeater (RoHS)