

Applications

- Automotive CAN bus systems
- Automation CAN bus systems
- General purpose CAN bus interfaces
- CANopen, CAN FD, MilCAN
- Industrial field networks

Product Features

- 2500V rms fully isolated CAN Bus communication
- Regenerates and extends CAN Bus signal line
- Complies with ISO 11898 standards
- Communication baud rate up to 1Mbps
- Compatible with OBDII and SAE J1939
- Prevent the CAN Bus main line from connected faulty devices
- Power input: 9-36VDC, 55mA max, 2W max
- Power and CAN 1 – CAN 2 activity LEDs
- 120 Ohm termination resistors with dip-switches
- EMI noise suppression up to 30 dB
- ESD protection up to 30 kV according to IEC 61000-4-2 and ISO 10605
- ESD protection is 4A with the condition of 8/20 μs according to IEC 61000-4-5
- Extended operating temperature: -40 ~ +85 °C
- Extended storage temperature: -40 ~ +105 °C
- Latest technology, highly durable components
- Designed for working under hard conditions and suitable for military standards
- IP62. Optional IP65, please contact us
- Various mounting options: M4 screw, DIN rail
- Various connector options: Screw connector, push-in spring connector, DB9 male, DB9 female

General Description

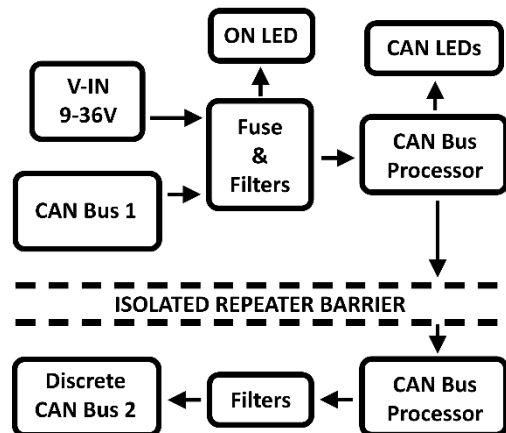
The CAN Bus Isolated Repeater completely isolates the CAN line and rebuilds the CAN communication and extends the distance. System can run at high speeds up to 1 Mbps bidirectionally and fully compatible with ISO 11898 standard. Provides EMI suppression up to 30 dB and ESD protection according to IEC 61000-4-2, IEC 61000-4-5 in data and power line.



The PreoTech CAN Bus Isolated Repeater protects the CAN Bus, CAN Devices and prevents data loss. Should be used in places where long and noisy CAN bus lines, high electrical risks, ESD and EMI noise may occur.

Options are available regarding mounting and connector type.

Functional Diagram



The PreoTech CAN Bus Isolated Repeater works with 9-36VDC and 55mA maximum current. The maximum power consumption is 2W.

"V-IN 9-36V" and "CAN Bus 1" have common ground. However, the "Discrete CAN Bus 2" is isolated of all system, therefore has an isolated ground.

The CAN line to be isolated and extended must be connected to the "Discrete CAN Bus 2" connector.

CAN Bus communication activities can be monitored with C1 (CAN Bus 1) and C2 (Discrete CAN Bus 2) LEDs.

Dip-switches are used for the CAN Bus 120R terminating resistors for each channel. The terminations can be changed easily.

If the switch is "DIP-ON", the 120R termination resistor is included in the CAN Bus line. If the switch is "DIP-OFF", the 120R termination resistor is not included in the CAN Bus line.



DIP-ON



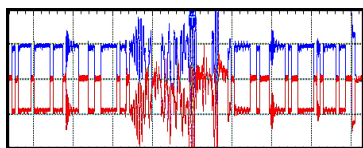
DIP-OFF

Effect On Signal

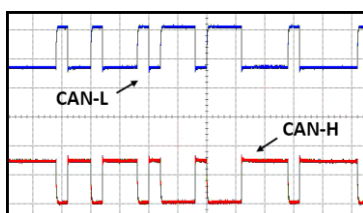
The PreoTech CAN Bus Isolated Repeater rebuilds the CAN Bus line and separates with 2500V rms isolation. Prevent the CAN Bus main line from connected faulty devices.

In the pictures below, the CAN bus line is seen under the oscilloscope. If do not use filters, it is inevitable to experience data loss on the CAN Bus.

Signal Without CAN Bus Iso. Repeater (includes filter):

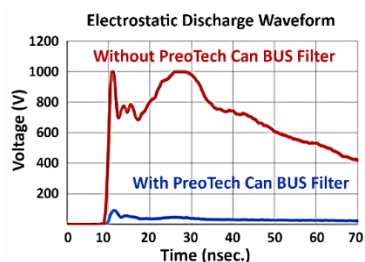


After PreoTech CAN Bus Iso. Repeater (includes filter):



Electrostatic discharge is also a serious problem for CAN bus lines.

Under ESD Condition (includes filter):



If the isolated repeater is not used, the voltage on the lines can rise to thousands of volts and can give damage to the CAN devices.

Pin Configuration

Connector Options:

- Screw Connector
 - Board side P/N: Würth 691322310002
 - Board side P/N: Würth 691322310004
 - Cable side P/N: Würth 691361300002
 - Cable side P/N: Würth 691361300004
- Push-In Spring Connector
 - Board side P/N: Würth 691322310002
 - Board side P/N: Würth 691322310004
 - Cable side P/N: Würth 691368300002B
 - Cable side P/N: Würth 691368300004B
- DB9 Male Connector
 - Board side P/N: Würth 618009231221
- DB9 Female Connector
 - Board side P/N: Würth 618009231121



Pin 1: - (GND)
Pin 2: + (Positive)



Pin 3: CAN-L Pin 2: CAN-GND
Pin 4: CAN-H Pin 1: CAN-SHLD



Pin 2: CAN-L Pin 3: CAN-GND
Pin 7: CAN-H Pin 5: CAN-SHLD

Ordering Information

PT-CIR-22-25-v2.2-1CH-SCR-PUSH

Device Type

Channel Type

1CH : Single Channel

Mounting Type

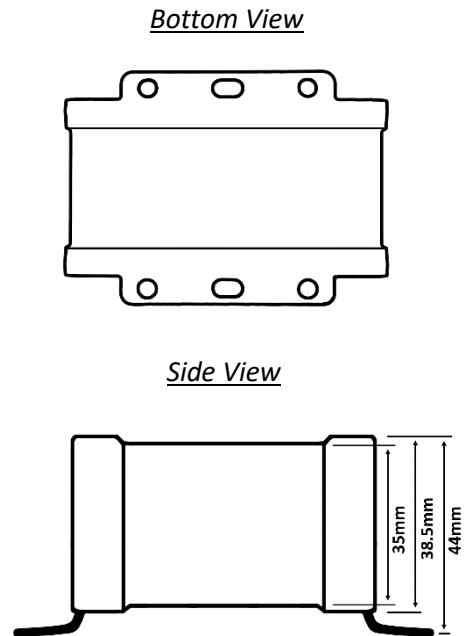
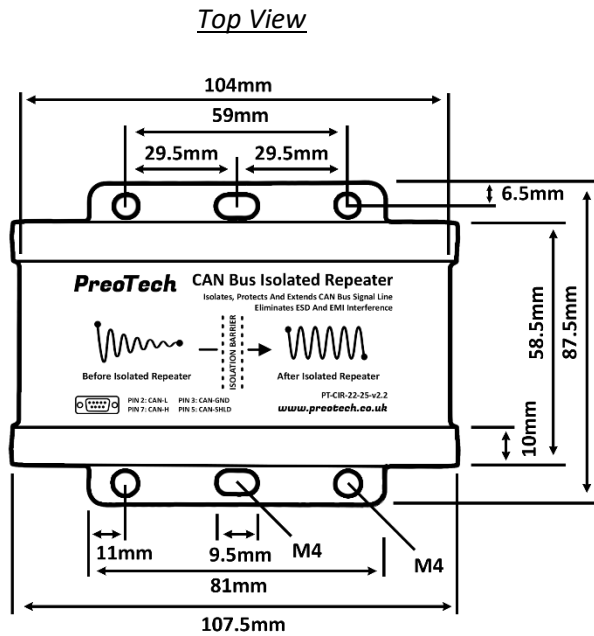
SCR : Screw Mount
DIN : DIN Rail Mount
BOX : Without Mounting Parts

Connector Type

SCREW : Screw Connector
PUSH : Push-In Spring Connector
DB9M : DB9 Male Connector
DB9F : DB9 Female Connector

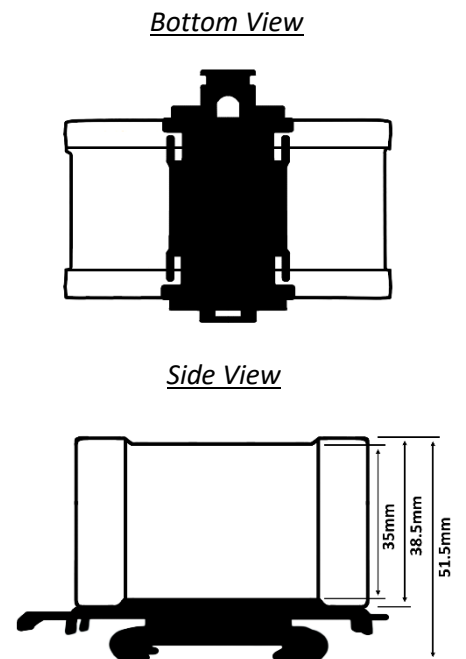
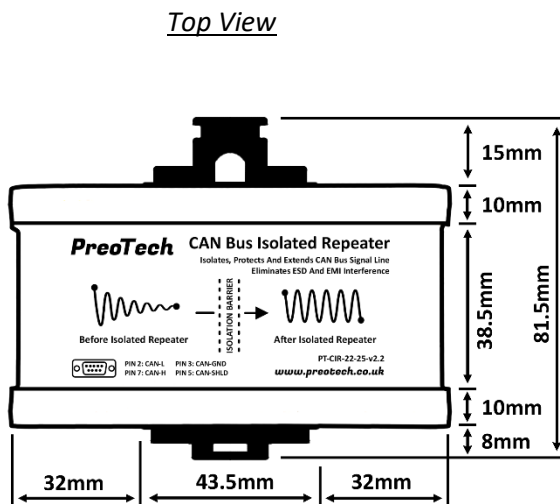
Mechanical Information

With Screw Mount: (SCR)



Dimensions are in millimeters.

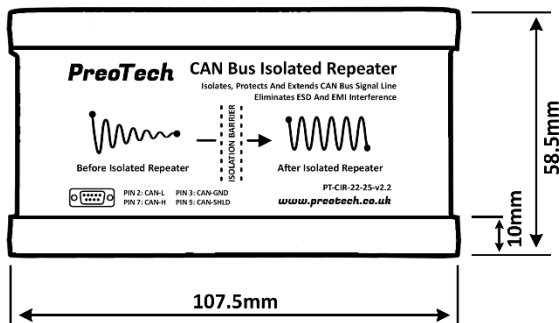
With DIN Rail Mount: (DIN)



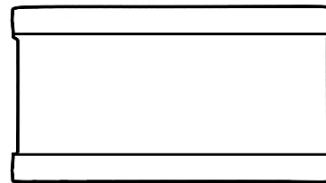
Dimensions are in millimeters.

Without Mounting Parts: (BOX)

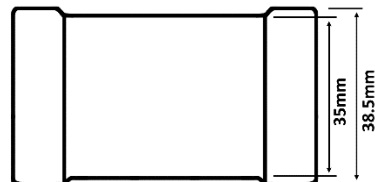
Top View



Bottom View



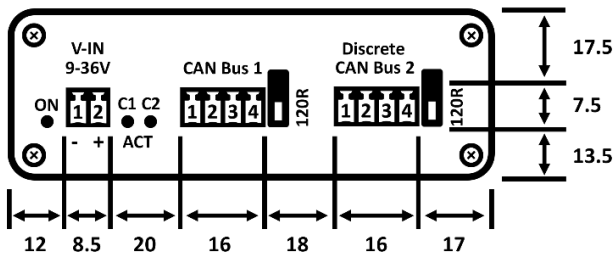
Side View



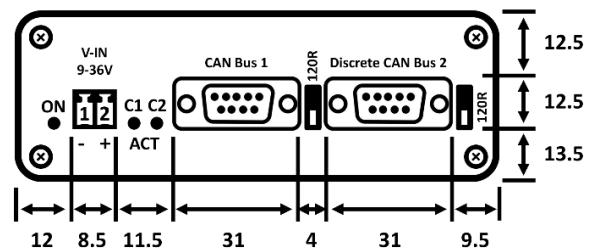
Dimensions are in millimeters.

Connector Type:

Screw and Push-In Spring Connectors



DB9 Male and DB9 Female Connectors



Dimensions are in millimeters.

Contact Information

For the latest specifications, additional product information, worldwide sales, distribution locations, and information about PreoTech:

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