The I-7510/I-7510A provides 2-way optical isolation between one piece of RS-422/RS-485 equipment and the rest of the system. It can also be used as a repeater to extend the transmission of an existing network. Additionally, an RS-485 system can be expanded beyond the 256 node limitation imposed by the standard. It can also be used to convert a four-wire RS-422 signal into a 2-wire RS-485 signal, and vice versa.

The I-7510AR is exactly the same as the I-7510A, except for the isolation side. The isolation side of the I-7510A is located in the input interface circuit, but the isolation side of the I-7510AR is located in the input and output interface circuit. In other words the I-7510AR is 3-way isolation repeater module.

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### System Specifications

<table>
<thead>
<tr>
<th>Models</th>
<th>I-7510</th>
<th>I-7510P</th>
<th>I-7510A</th>
<th>I-7510AR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-422</td>
<td>-</td>
<td>TxD+, TxD-, RxD+, RxD-</td>
<td>TxD+, TxD-, RxD+, RxD-</td>
</tr>
<tr>
<td>Transmission Distance</td>
<td>Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Tuner Asic Inside</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>300 ~ 115200 bps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESD Protection</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Isolated Voltage</td>
<td>2-way 3 kV Isolated</td>
<td>3-way 5 kV Isolated</td>
<td>2-way 3 kV Isolated</td>
<td>3-way 3 kV Isolated</td>
</tr>
<tr>
<td>Connector</td>
<td>Removable 10-Pin Terminal Block x 2</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>LED Indicators</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power/Communication</td>
<td>Yes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Power Consumption</td>
<td>2.2 W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>+10 Vac ~ +30 Vac</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing</td>
<td>Plastic</td>
<td></td>
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</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>72 mm x 122 mm x 35 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td>DIN-Rail Mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25 °C ~ +75 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30 °C ~ +75 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>10 ~ 90% RH, non-condensing</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
**Applications**

Applications for RS-422/485

- **RS-422 to RS-485 Converter (Only for half duplex application)**
  - RS-422 Device
  - Data+ TxD+ RxD+ RxD+
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR
  - DATA+ TxD+ RxD+ RxD+
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR

- **RS-485 to RS-485 Repeater (Only for half duplex application)**
  - RS-485 Device
  - DATA+ DATA-
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR
  - DATA+ DATA-
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR

- **RS-422 to RS-422 Repeater**
  - RS-422 Device
  - TxD+ RxD+ RxD+
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR
  - TxD+ RxD+ RxD+
  - 4000ft (1.2 km)
  - I-7510A/ I-7510AR

**Application for 3-way isolation**

- **I-7510A/7510AR**
  - RS-485 signal
  - DATA+ DATA-
  - TxD+ TxD-
  - RxD+ RxD-
  - 4000ft (1.2 km)

**Pin Assignments**

- **I-7510/I-7510P**
  - Terminal No. | Pin Assignment | Terminal No. | Pin Assignment
  - 01 | DATA+ | 20 | DATA+1
  - 02 | DATA- | 19 | DATA-
  - 03 | -- | 18 | --
  - 04 | -- | 17 | --
  - 05 | -- | 16 | --
  - 06 | -- | 15 | --
  - 07 | -- | 14 | --
  - 08 | -- | 13 | --
  - 09 | (R)+Vs | 12 | --
  - 10 | (B)GND | 11 | --

- **I-7510A**
  - Terminal No. | Pin Assignment | Pin Assignment
  - 01 | DATA+ | DATA+1
  - 02 | DATA- | DATA-
  - 03 | -- | --
  - 04 | -- | --
  - 05 | -- | --
  - 06 | -- | --
  - 07 | -- | --
  - 08 | -- | --
  - 09 | (R)+Vs | (R)+Vs
  - 10 | (B)GND | (B)GND

- **I-7510AR**
  - Terminal No. | Pin Assignment | Pin Assignment
  - 01 | DATA+ | DATA+1
  - 02 | DATA- | DATA-
  - 03 | -- | --
  - 04 | -- | --
  - 05 | -- | --
  - 06 | -- | --
  - 07 | -- | --
  - 08 | -- | --
  - 09 | (R)+Vs | (R)+Vs
  - 10 | (B)GND | (B)GND

**Ordering Information**

- **GPSU06U-6** 24 Vdc/0.25 A, 6 W Power Supply
- **DIN-KA52F** 24 Vdc/1.04 A, 25 W Power Supply with DIN-Rail Mounting

**Accessories**

- **I-7510 CR** Isolated RS-485 Repeater (RoHS)
- **I-7510A CR** Isolated RS-422/485 Repeater/Converter (RoHS)
- **I-7510AR CR** Three Way Isolated RS-422/485 Repeater/Converter (RoHS)
- **I-7510P CR** Three Way 5 kV Isolated 485 Repeater (RoHS)

**I-7510-G CR** Isolated RS-485 Repeater (Gray Cover) (RoHS)

**I-7510A-G CR** Isolated RS-422/485 Repeater/Converter (Gray Cover) (RoHS)

**I-7510AR-G CR** Three Way Isolated RS-422/485 Repeater/Converter (Gray Cover) (RoHS)