



**Model: ECD485ir**  
**Isolated EIA/RS-485 Repeater, 2 and 4-wire**

The ECD485ir safely connects 2 and 4-wire RS-485 devices and networks together without danger of ground loops and damaging surges. It also doubles permitted cable length. Data signals have 5Kv optical isolation. Isolated DC supplies provide full 3-port galvanic isolation. The signal (reference) ground for both RS-485 ports float with respect to power supply ground. The biased network principle is used for bi-directional communications without control signals. Jumpers enable 120-ohm internal terminating and bias resistors. 500-watt voltage transient suppressor diodes protect the ECD485ir from normal mode surges, while the full galvanic isolation protects the ECD485ir from common mode surges.

Isolation, industrial design, small size, DIN rail mount, user indication, and DC supply make the ECD485ir a very engineer-friendly device for your industrial data communication system.

**RS-485 port Description:**

Signal Type: EIA/RS-485A  
Termination: 120 ohm (by jumper)  
Line Bias : Pull-up/down 470 ohm (by jumper)  
Voltage Levels: -7 to +12v DC  
Permitted Surge” +/- 25v DC

Surge Diodes Installed +/- 15v, 500 watt

**Isolation (ISO/IEC 9549):**

RS-485 to RS-485: 2500v (optical, 5kV test)  
Power to RS-485 Port A: 2500v (galvanic, 3kV test)

Power to RS-485 Port B: model -2p = none, -3p = 2500v

**Power Supply Options:**

9v to 36v DC (1.2watt max) 12v or 24v including batteries  
48v DC +/- 20% (38-58v) 48v for telecom & transportation  
5v DC +/- 5% (4.75-5.25v) 5v for OEM integration  
User Indication Green LED for power status

**Communication:**

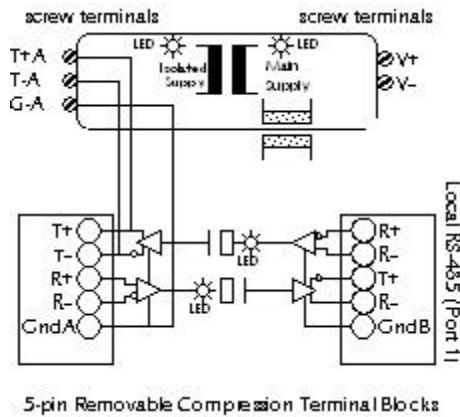
Max Speed 115kbps , no config required  
Character Setting Transparent, no config required  
Duplex / Direction Automatic, no RTS/CTS required  
User Indication Yellow LED for each Receive Signal  
Maximum Bus Length 1000m per EIA-485  
Practical maximum Length 500m per ISO 8482  
3000m under ideal conditions

**Environmental:**

Ambient operating temperature: -40C to + 65C  
Ambient storage temperature: -40C to +100C  
Relative Humidity 10 to 95% RH, non condensing  
Casing good fungus & termite resistance; self-extinguishing.  
Weight 130g.  
Terminal Capacity 2.5mm strand (12 AWG) 4.0mm solid (12 AWG).  
Mounting Rail DIN EN 50022 (35mm symmetrical)  
DIN EN 50025 (32mm asymmetrical)  
(Note: Style DIN 50022 works best)



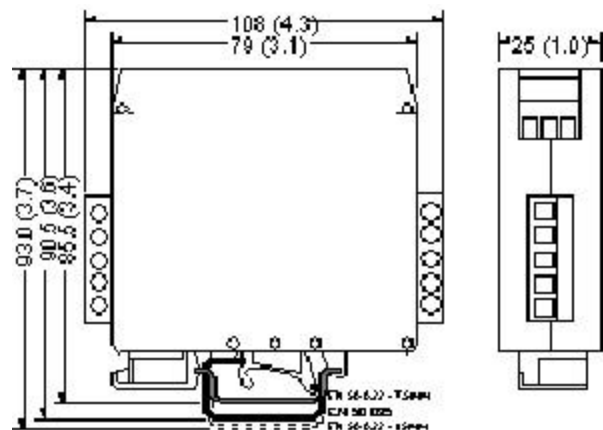
**Block Diagram**



		-2p	Two ports isolated, local port ground = power port ground
		-3p	Three Ports fully isolated

Example: model **ECD485ir-dv-3p-cc** is an “Isolated RS-485 Repeater, 2 & 4-wire, DIN-Rail Mount, 9-36VDC Supply, Full 3-of-3 Ground Isolation, both RS-485 ports with 5-screw removable terminal blocks.”

**Mechanical Dimensions: mm (inches)**



**Application Details:**

The ECD485ir isolated the following networks:

- RS-485 2-wire to 2-wire
- RS-485 4-wire to 4-wire
- RS-485 2-wire to 4-wire (includes echo cancellation)
- RS-485 4-wire to 2-wire \*includes echo cancellation
- RS-422 to RS-485 4-wire
- RS-422 to RS-485 2-wire (includes echo cancellation)

Settings can be done in the field. The 2-wire to 4-wire mode is unique in the market. It prevents the echo problem of using 2-wire with devices that normally only work in 4-wire mode.

**Order Information:**

ECD485ir		RS-485 to RS-485 Isolated Repeater (3-wire)
	-5V	Using 5Vdc +/-5% Regulated DC Power
	-dv	Using 9 to 36Vdc Unregulated DC Power

**Specifications subject to change without notice.**