Robust Data Comm
Making Industrial Data Flow Like Water ... Safely, Silently, & Sanely

Co. & GST Reg. No: 19-9600 372-Z
ISO 9001 : 2000 Cert.No. : 1582

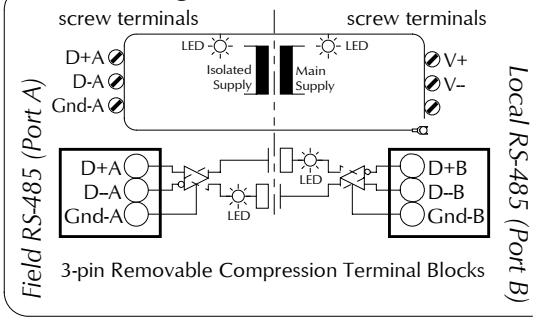
Model: rdc485ir3

Isolated RS-485 Repeater (2-wire)

The rdc485ir3 safely connects 2-wire RS-485 devices and networks together without danger of ground loops and damaging surges. It also doubles permitted cable length. The isolated DC supplies provide full 3-port galvanic isolation up to 2.5 KV, which also implies that the grounds of the data ports are floating with respect to each other as well as the supply port. Data direction control is fully automatic. The internal terminating resistor (120 ohms) and bias resistors can be enabled via jumpers. 500 watt voltage transient suppressor diodes protect the rdc485ir3 from normal mode surges, while the full galvanic isolation protects the rdc485ir3 from common mode surges. With the "Fault Isolation" (FI) option, line breaks and/or shorts on Port A's segment will not interfere with the data on Port B's segment.

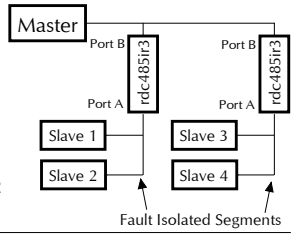
Isolation, industrial design, small size, DIN rail mount, user indication, and DC supply make the rdc485ir a very engineer-friendly device for your industrial data communication system.

Block Diagram



Fault Isolation

When a line fault (short or open-circuit) occurs at any one of the segments, the other segments will not be affected.
For example, when a line short occurs between slaves 3 and 4, the Master will still be able to poll slaves 1 and 2 normally.



Order Information

rdc485ir3 - □ - □ - □ - □ - □

Conformal Coating Option

- cf — with conformal coating
- □ — without conformal coating

Fault Isolation Option for Port A

- FI — Installed
- □ — Not installed

Connector Configuration

- cc — Removable screw terminal for both ports
- dd — D-sub 9-pin for both ports (1 x male, 1 x female)

Galvanic Isolation Configuration

- 2p — 2-port, Gnd-B = Supply Ground (5v supply only)
- 3p — 3-port, isolation between ports A, B & supply

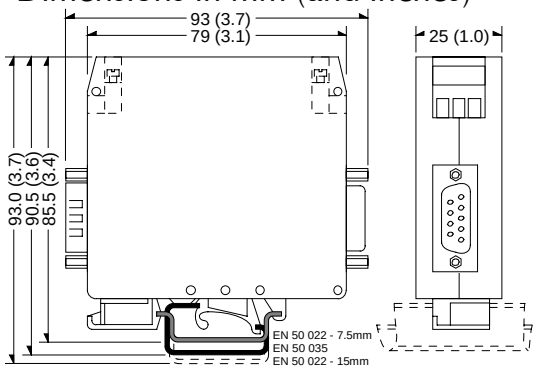
Power Supply Configuration

- 5v — 5v +/- 5% Regulated DC Supply
- dv — 9 to 36v Unregulated DC Supply

Boxes in bold denote factory default options

Option 3p includes 500 watt transient surge suppressor diodes on both RS-485 ports. Option 2p has them only on port A.

Dimensions in mm (and inches)



Specification

RS-485 Ports

Signal Type ..... : EIA/RS-485A
Voltage Level ..... : -7 to +12 vDC
Permitted Surge ..... : +/- 25 vDC

Isolation (ISO/IEC 9549)

Port A to Port B .....: 2500 v (optical, 5kV test)
Supply to Port A .....: 2500 v (galvanic, 3kV test)
Supply to Port B .....: 2-port = none ; 3-port = 2500v
Conformal Coating ..: 14,000 v per mm

Power Supply:

9 to 36v DC.....: 1.2 watt (About 50 mA @ 24 Vdc)
5v DC +/- 10%.....: About 175 mA

LEDs (green) indicate isolated power status

Communication:

Max Speed .....: at least 115Kbps over 500m
Character Setting .....: transparent, no configuration required
User Indications .....: Each receive signal has LED (yellow)
Standard Distance ...: 1000m for EIA/RS-485
Practical Distance .....: less than 3000m for RS-485
(requires quality, low-cap cable < 50 pf/m)

Mechanical / Environment

Operating Range .....: -20C to +65C
Storage Range .....: -40C to +100C
Relative Humidity.....: 10 to 90% RH, non-condensing
Terminals .....: wire up to 2.5mm (12 AWG)
Case Material .....: nylon polymide, fungus and termite resistant self-extinguishing, epoxy potting
Weight .....: approx 130g
Mounting Rail .....: DIN EN 50 022 or DIN EN 50 035

(Version 1.1) Specifications subject to change without notice.

www.robustdc.com

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