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

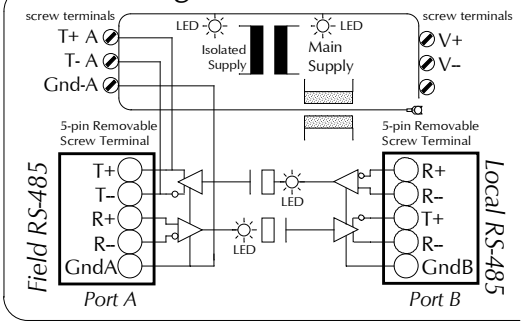
Model: rdc485ir

Isolated RS-485 Repeater (2 & 4-wire)

The rdc485ir safely connects 2/4-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. In 2-wire mode, 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 rdc485ir from normal mode surges, while the full galvanic isolation protects the rdc485ir 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.

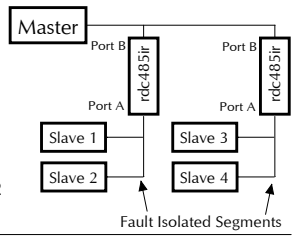
Isolation, industrial design, small size, DIN rail mount, user indication, and DC supply make the rdc485ir a very engineer-friendly device for your industrial data communication system.

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

rdc485ir - □ - □ - □ - □ - □

Other Options

fc — Conformal Coating (+5000 V isolation)

Fault Isolation Option for Port A

FI — Installed

□ — Not installed

Connectors

dd — DB9 (male on field side, female on local side)

cc — 5-way removal screw terminal

Galvanic Isolation Configuration

2p — 2-port, GndB = Supply Ground (for 5v & dv only)

3p — 3-port, isolation between both ports & supply

Power Supply Configuration

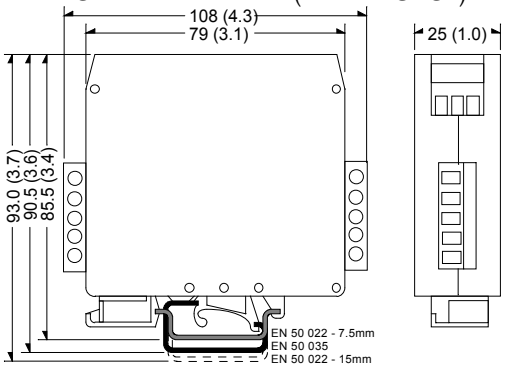
5v — 5v DC +/- 5% Regulated DC Supply

dv — 9 to 36v Unregulated DC Supply

hv — 48v DC +/- 20%

Boxes in bold denote factory default options

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)

RS-485 to RS-485 ..... : 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 .... : +5000V Isolation (Optional)

Power Supply:

5v DC +/- 5%..... : 200 mA Max
9v to 36v DC..... : 50 mA Max
48v DC +/- 20 %..... : 25 mA Max
LEDs (green) indicate isolated power status

Communication:

Max Speed .....: 115 Kbps, no configuration required
Character Setting .....: Transparent, no configuration required
Duplex / Direcetion....: Automatic
User Indications .....: Yellow LEDs for receive signals
Standard Distance .....: 1000m as per EIA/RS-485 standard
Practical Distance .....: up to 3000m
(requires quality, low-cap cable < 50 pf/m)

Mechanical / Environment

Operating Range .....: -20C to +65C
Storage Range .....: -40C to +100C
Relative Humidity.....: 10 to 95% 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 (35 mm symmetrical)
DIN EN 50 035 (32 mm asymmetrical)

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(Version 1.1) Specifications subject to change without notice.

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