Robust DataComm

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

CO. & GST REG. NO: 19-9600 372-Z

GIC — GUARDIAN INDEPENDENT CERTIFICATION

UKAS QUALITY MANAGEMENT 045

ISO 9001:2008   CERT NO.: 158206

Model: rdc232ir5

Isolated EIA/RS-232 Repeater
(5-wire: Tx, Rx, Rtx, Cts, Signal Gnd)

The rdc232ir5 safely connects two RS-232 devices without danger of ground loops and damaging surges. The RS-232 signals have 2.5 KV optical isolation, plus two isolated supplies for full galvanic isolation. Unlike self-powered isolators that weaken the RS-232 signal and stress your hardware, the rdc232ir5 boosts the signal, effectively doubling the maximum RS-232 distance and allows guaranteed performance up to 115kbps.

The data lines Txd & Rxd are fully isolated, plus over 1 million ohms of impedance are added to the ground path. This effectively decouples the signal grounds and prevents surge currents. The RS-232 uses 9-pin d-shell with computer-style pin configuration.

Isolation, industrial design, small size, DIN rail mount, user indication, and DC supply make the rdc232ir5 a very engineer-friendly device for your industrial data communication system.

Specification

RS-232 Ports (Ports 2 and 3)

Signal Type : EIA/RS-232
Voltage Levels : +/- 9 Vdc
Permitted Surge : +/- 25 Vdc Surge
Diodes Installed : +/- 15 Vdc, 600 W

Isolation (ISO/IEC 9549)

Port 2 and Port 3 : 2500 Vrms (optical, 5 KV test)
Power and Port 2 : 2500 Vrms (galvanic, 3 KV test)
Power and Port 3 : option -2p = none, -3p = 2500 Vrms
Conformal Coating : 5000 Vrms (optional)

Power Supply

9 to 36 Vdc : 0.75 W Nominal (32 mA @ 24 Vdc)
48 Vdc +/- 20% : 0.75 W Nominal (16 mA @ 48 Vdc)
5 Vdc +/- 5% : 0.75 W Nominal (150 mA @ 5 Vdc)
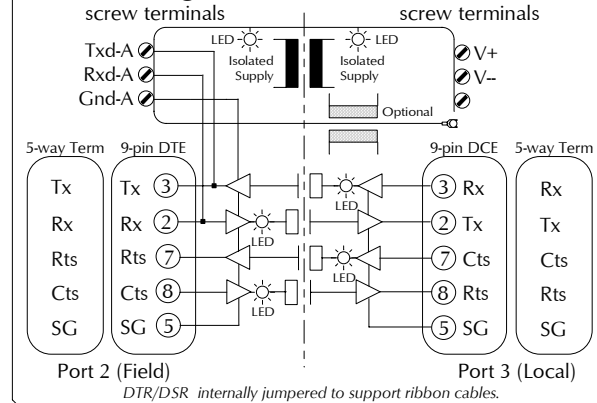User Indications : Green LEDs for isolated power supplies

Communication

Max Speed : 115200 bps
Character Setting : Transparent, no config required
User Indications : Yellow LEDs for Rx and Rts
Standard Distance : 15m or 2500 pf per wire
Practical Distance : 55m with low-cap (42 pF) cable

Mechanical / Environment

Operating Range : -20C to +65 C
Storage Range : -40C to +100 C
Relative Humidity : 10 to 90% RH, non-condensing
Case Material : nylon polymide, fungus and termite resistant self-extinguishing
Weight : approx 130 g
DB9 Connectors : 30µ gold pins, 500 insertion cycles
Screw Terminal : 2.5mm strand (12 AWG) 4.0mm solid (12 AWG)
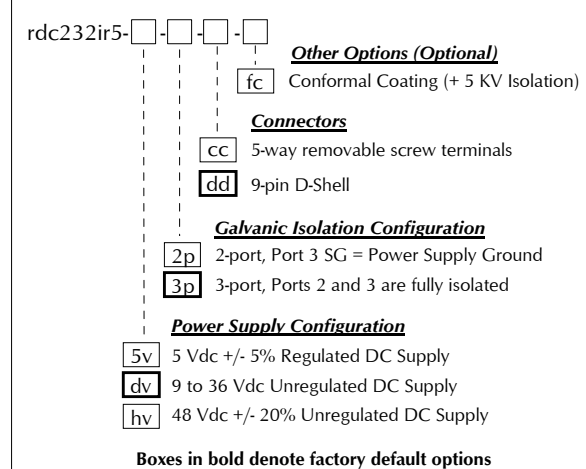Mounting Rail : DIN EN 50 022 or DIN EN 50 035

Block Diagram

Port 2 (Field)   Port 3 (Local)

DTR/DSR internally jumpered to support ribbon cables.
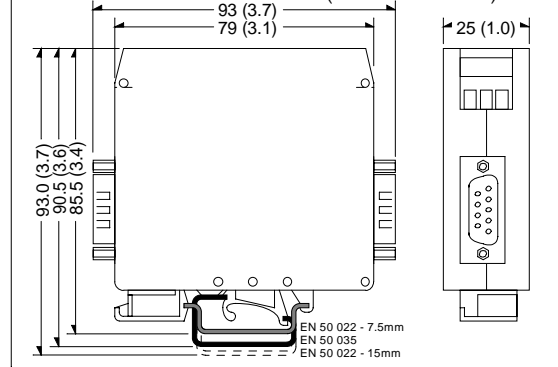
Application Details:

The rdc232ir5 is ideal for use with radio modems. The Txd/RXD and RTS/CTS signals pass through the isolator. The DTR/DSR/DSD signals are looped back and do not pass through the isolator. Special cables allow any combination of 2 out and 2 in signals. Common situations to use an RS-232 isolator:
- Between device and radio modem (RTS/CTS used for direction control)
- Between devices using RTS/CTS hardware hand-shaking

Order Information

rdc232ir5- ☐ - ☐ - ☐ - ☐

Other Options (Optional)
fc   Conformal Coating (+ 5 KV Isolation)

Connectors
cc   5-way removable screw terminals
dd   9-pin D-Shell

Galvanic Isolation Configuration
2p   2-port, Port 3 SG = Power Supply Ground
3p   3-port, Ports 2 and 3 are fully isolated

Power Supply Configuration
5v   5 Vdc +/- 5% Regulated DC Supply
dv   9 to 36 Vdc Unregulated DC Supply
hv   48 Vdc +/- 20% Unregulated DC Supply

Boxes in bold denote factory default options

Dimensions in mm (and inches)

93 (3.7)
79 (3.1)
25 (1.0)
93.0 (3.7)
90.5 (3.6)
85.5 (3.4)
EN 50 022 - 7.5mm
EN 50 035
EN 50 022 - 15mm

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