Model: rdc485ih

(Previously known as rdc485hub)

Isolated Intelligent Hub, RS-232 to Dual RS-485

The rdc485ih allows connection of one RS-232 and two RS485 devices complete with full 4-port 2.5kv optical/galvanic isolation - including 3 isolated DC supplies. Each port is fully isolated (with floating ground) with reference to the other data ports and the power supply.

In a Master/Slave configuration (Mode 1), any data received on port C ("Master") is echoed out from both ports A and B ("Slaves"). In a hub configuration (Mode 2), any port can freely talk to the other two. Any data received on any port is echoed out the other two. Data received on either port A or B is only echoed to port C ("Master"). In Switch mode, only port B is allowed to talk to port C. When the external terminal (SWITCH) is pulled to ground, only port A is allowed to talk to port C.

The RS-485 ports can be field set for 2 or 4-wire (default) operation and includes options for line biasing and a 120-ohm internal termination. 500-watt voltage transient suppressor diodes protect the rdc485ih from normal mode surges, while full galvanic isolation protects the unit from common mode surges.

Isolation, industrial design, small size, DIN rail mount, user indication, and DC supply make the rdc485ih a very engineer-friendly device for your industrial data communication system.

RS-232/485 port Description:

Port Type EIA/RS-232 EIA/RS-485
Voltage Levels .... ±9v DC -7 to +12v DC
Permitted Surge .... ±25v DC ±25v DC
Surge Diodes Installed .... ±15v, 500-watt ±15v, 500-watt

Isolation (ISO/IEC 9549):

RS-232 to 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 .... 2500v (galvanic, 3kV test)
Power to RS-232 Port C .... 2500v (galvanic, 3kV test)
Conformal Coating .... (optional) 5000v spec

Power Supply Options:

9v to 36v DC (1.5watt 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 Red "Break' LED for each RS-485
Maximum Bus Length .... 1000m per EIA-48515m per EIA-232

Environmental:

Ambient operating temperature: -20C 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)

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(Version 1.0) *Specifications subject to change without notice*

Block Diagram
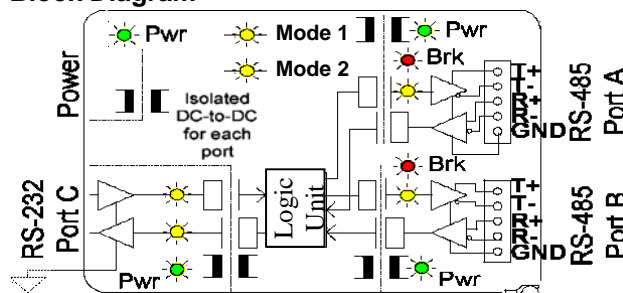
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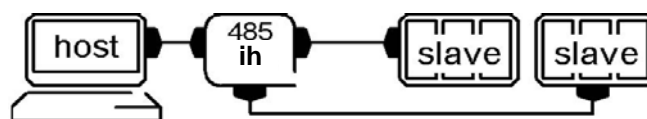
Master/Slave (Default) mode : One RS-232 Host has 2 RS-485 network (can be multi-dropped)

Hub mode : Two RS-485 Hosts share single RS-232 Slave (only ONE host can talk to slave at one time – rdc485ih does NOT arbitrate)

Switch mode : If there is a risk of 2 hosts talking simultaneously, Switch mode can be used to only allow one of them to talk to the slave.

Order Information:

rdc485ih

Input Power Supply (Select One)	
dv	9 to 36vDC, 1.5 watt (63mA @24v)
hv	48vDC +/- 20% 1.5 watt
5v	5vDC +/- 5% (260mA max)
Ground Isolation (No Option)	
4p	Full 4-of-4 Ground Isolation
Connectors (Select One)	
cd	RS-232 = DB9, RS-485 Terminals
dd	All 9-pin D-Shell
Other Options (none required)	
fc	Conformal Coating (+5000v)

Example: model **rdc485ih-dv-4p-cd** is an "Isolated Intelligent Hub, 1 x RS-232, 2 x RS-485 Ports, DIN-Rail Mount, 9-36vDC Supply, Full 4-of-4 Ground Isolation, 9-pin D-Shell for RS232 port, removable screw terminals for RS485 ports."

Mechanical Dimensions: mm (inches)