# Robust DataComm

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

# Model: rdcRM

## Isolated RS-485 Ring Master

With the rdcRM, it is now possible to connect Modbus devices in a Ring configuration that provides line redundancy by allowing a single break to occur within the ring.

The rdcRM operates (transparently to the Master) by noting the addresses of the slaves in the ring in conjunction with the line status of the ring. If a timeout or response error occurs, the rdcRM will re-transmit the query in the opposite direction until the ring is fixed.

A redundant rdcRM (configured as a Ring Assistant) can be added to provide further robustness in the ring. A pair of rdcRMs can be configured to run in Normal or Arbitration Mode. Normal mode provides redundancy for a single Master while Arbitration Mode provides redundancy for two independently polling Masters.

For supporting a larger number of slaves, the rdcRM can be used in conjunction with the rdcISM to provide fault isolation in the Ring and more. Visit us at **www.robustdc.com** for more information.

# Specification

## Interface

Serial : RS-485 (2-wire mode)
Connectors : RS-485 3-way Screw Terminal
: Power Supply 3-way Screw Terminal

## Power Supply

9 to 36 VDC : 2.4 W Nominal (100 mA @ 24 Vdc)
User Indications : Green LED for main power supply

## Isolation

1 KV between all ports except between Master and Status port (i.e. Master and Status port will share the same floating ground)
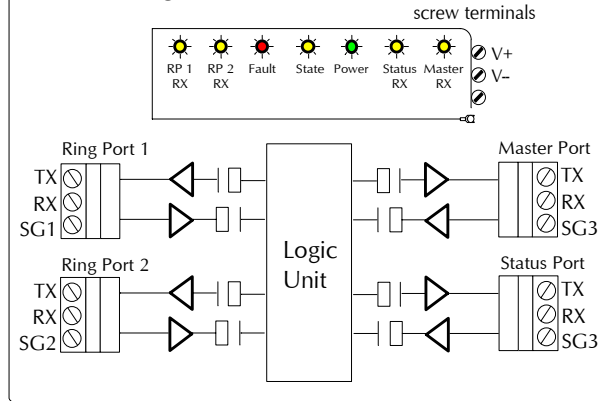
## Communication

Selectable Speeds : 9600, 19200, 38400, 57600, 115200 bps
User Indications : Yellow LEDs indicate RX for both Ring ports
: Master and Status Ports
: Yellow LED to indicate if RM is in ACTIVE or
: STANDBY state
: Red LED to indicate Ring / Communication Fault
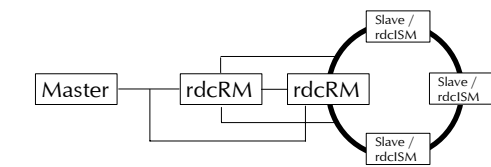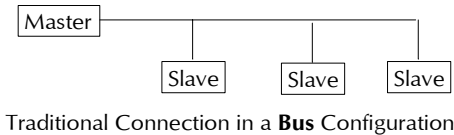Practical Distance : 2 Km

## Mechanical / Environment

Operating Range : -40C to +65C
Storage Range : -40C to +100C
Relative Humidity : 10 to 90% RH, non-condensing
Case Material : nylon polymide, fungus and termite resistant
self-extinguishing
Weight : approx 140g
Mounting Rail : DIN EN 50 022 or DIN EN 50 035

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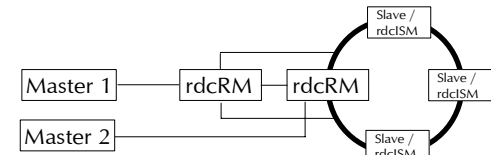*(Draft Version 1.2) Specifications subject to change without notice.*

## Block Diagram



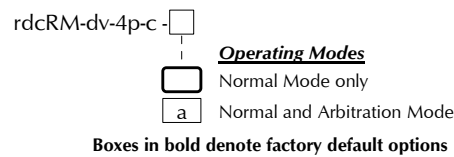screw terminals

RP 1 RX | RP 2 RX | Fault | State | Power | Status RX | Master RX

V+ / V−

Ring Port 1 — TX, RX, SG1
Ring Port 2 — TX, RX, SG2
Logic Unit
Master Port — TX, RX, SG3
Status Port — TX, RX, SG3

## Application



Master — Slave — Slave — Slave

Traditional Connection in a **Bus** Configuration

Master — rdcRM — rdcRM — Slave / rdcISM (ring)

A **Ring** Configuration with two rdcRMs to provide redundancy for a single Master in **Normal Mode.**

Master 1 / Master 2 — rdcRM — rdcRM — Slave / rdcISM (ring)

A **Ring** Configuration with two rdcRMs to provide redundancy to support dual Masters in **Arbitration Mode**.

## Order Information

rdcRM-dv-4p-c -☐

*Operating Modes*

☐ Normal Mode only
a Normal and Arbitration Mode

**Boxes in bold denote factory default options**

## Dimensions in mm (and inches)



106 (4.17)
78.1 (3.08)
33.7 (1.33)
112.5 (4.4)
110 (3.3)
105 (4.1)
EN 50 022 - 7.5mm
EN 50 035
EN 50 022 - 15mm