

SCM9B-D192



DIN Rail Mount RS-485 Repeater

Description

The SCM9B-D192 RS-485 repeater reamplifies, or boosts, existing RS-485 signals transmitted over long distances. Repeaters are required to extend communications bus lengths or to allow more than 32 RS-485 devices to be connected to a communications bus.

The SCM9B-D192 operates on +5VDC power supply input voltage.

Automatic RS-485 Bus Supervision

The SCM9B-D192 automatically controls bus direction in hardware without the need of handshaking signals from the host computer. As shown in figure 1, the I/O control circuitry monitors both RS-485 drivers. The RS-485 drivers in the converter are always in the receive mode until either RS-485 driver receives the start of a character to be retransmitted. When the start of a character is detected, the I/O circuitry enables the proper RS-485 driver for one character time at the selected data rate. When the character time expires the drivers return to receive mode. Since the converters are bidirectional it does not matter which driver receives the character.

Isolation

The SCM9B-D192 is designed to protect host computers from destructive fault conditions that may occur on the RS-485 data lines. The host input connections on each converter are optically-isolated to 500VAC from the RS-485 connections. The optical-isolation will prevent short circuits to hazardous AC voltages on the RS-485 data lines, or static discharges, from reaching a host computer. The RS-485 output is connected to earth ground to provide a safe path for static discharge. The power supply ground should reference earth ground to provide a safe path for static discharge.

Surge Protection

The SCM9B-D192 RS-485 drivers contain internal surge-protection on the data lines. Internal high speed transient suppressors on each RS-485 data line protect the driver from dangerous voltage levels, or spikes, that can occur on the data lines. Thermistors are installed in series with each RS-485 data line to protect the drivers against overcurrent and excessive voltage conditions. In a fault condition the normally low impedance thermistor reacts by rapidly increasing its impedance thus limiting excessive current flow. Once the fault condition is corrected the thermistor will return to its normally low impedance.

► Features

- Completely Transparent to Host Software
- No External Flow Control Signals Required
- Optically-Isolated Bidirectional Data Flow
- Standard Data Rates: 300 to 115kbps
- Automatic Internal RS-485 Bus Supervision
- Networking up to 4,000 Feet
- Transient Suppression on RS-485 Data Lines
- Internal Jumper Selectable Termination Resistors
- CE Compliant

Specifications Typical at 25°C and nominal power supply unless otherwise noted

- Max common mode voltage: 500Vrms, 60s duration.
- Data rates: 300,600,1200,2400, 4800, 9600, 19200, 38400, 57600, 115200bps (dip-switch selectable).
- Temperature range (operating & storage): -25°C to +70°C.
- Relative humidity: 0 to 95% Noncondensing.
- Warranty: 12 months on workmanship and materials.

Power Specifications

- Requirements: +5VDC regulated.
- Power consumption: 1.0W Max (RS-485 driver on).

Mechanical

- Case: ABS case with screw terminal barrier plug (supplied).

Ordering Information

Model	Description
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RS-485 Termination

The RS-485 standard is highly immune to noise when each data line is properly biased and terminated. Each RS-485 driver is connected to pull-up and pull-down biasing resistors and termination resistors to insure the proper termination technique for any RS-485 system.

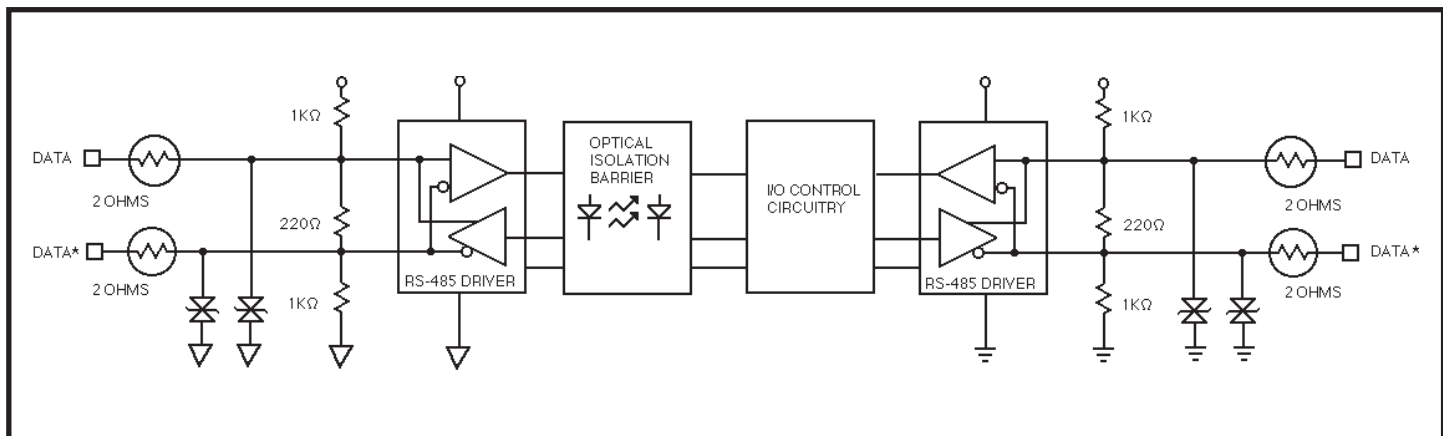


Figure 1: SCM9B-D192 Block Diagram