

## Model 485SD9RJ Technical Diagrams

The 485SD9RJ is a port-powered, half-duplex RS-232 to RS-485 converter with send data control. The unit converts TD and RD RS-232 lines to balanced RS-485 signals and supports two-wire RS-485 communications only. The converter is powered from the RS-232 handshake lines, RTS, CTS and DTR, DSR, CD. The handshake lines are looped back on each other and can be in either state. No handshake change is necessary so no software is required to control the lines. The RS-485 driver is enabled with each bit of data. The RS-485 receiver is disabled when the driver is enabled and is enabled when the driver is disabled. This prevents data from being echoed back into the RS-232 device. The RS-232 side has a DB-9 female connector. The RS-485 side has a six-position RJ11 connector.

### Connections

Regardless of the system, the 485SD9RJ must be connected with the proper polarity (See Table 1). With no data being sent and the driver enabled, the RS-232 line should be negative and the Data (A) should be negative with respect to Data(B). Proper operation of any RS-485 system requires the presence of a signal return path between the signal grounds of the equipment at each end of an interconnection. This circuit reference may be established by a third conductor connecting the common leads of devices, or it may be provided by connections in each piece of equipment to an earth reference. When the circuit reference is provided by a third conductor, the connection between the signal grounds and the third conductor should contain some resistance (e.g. 100 ohms) to limit circulating currents when other ground connections are provided for safety.

Modular Connector Pin Assignment



Jack End RJ-11



Plug End RJ-11 6 Conductor

**Table 1: 485SD9RJ Pin-outs**

Signal	RJ11 Pin #
Data A (-)	2
Data B (+)	5
Signal Ground	4

