

Quick Start Guide

ILinx 485DRCI
Triple Isolated RS-232 to
RS-422/485 Converter



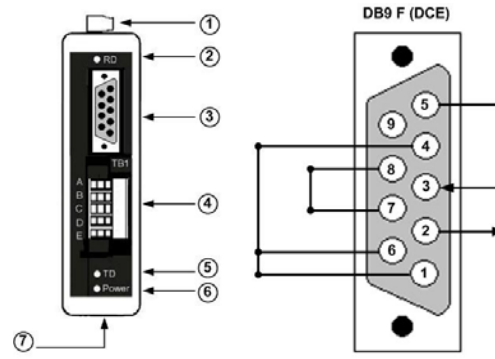
1. Check for Required Hardware

- ILinx 485DRCI Serial Converter
- This Quick Start Guide
- Additional Items Required but not included
 - o A 10 to 48 VDC Power Supply, 0.2A.
 - o RS-232 cable. The converter is a DCE device.
 - o RS-422/485 Cable.

2. Information – UL Class 1 Div 2

1. Power, input /output (I/O) wiring must be in accordance with Class 1 Division 2 wiring methods [Article 501.10(B) of the National Electric code, NFPA70] and in accordance with the local authority having jurisdiction.
2. Maximum ambient air temperature 80°
3. **WARNING – EXPLOSION HAZARD:** SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.
4. **WARNING – EXPLOSION HAZARD:** WHEN IN HAZARDOUS LOCATIONS, TURNING OFF POWER BEFORE REPLACING OR WIRING MODULES
5. **WARNING – EXPLOSION HAZARD:** DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
6. **WARNING – THIS APPARATUS IS SUITABLE FOR USE IN CLASS 1 DIVISION 2, GROUPS A, B, C, AND D, OR UNCLASSIFIED AREAS.**

3. Information – Front Panel



Front Panel

| | | |
|---|------------|----------------------------------------------|
| 1 | Power TB | 2 Position, Removable |
| 2 | RD LED | Red, Flashes when RS-422/485 Data Received |
| 3 | DB9 Female | RS-232 (Wired DCE) |
| 4 | 422/485 TB | 5 Position, Removable |
| 5 | TD LED | Red Flashes when RS-422/485 Data Transmitted |
| 6 | Power LED | Red, ON When Power Applied |
| 7 | Dip Switch | 12 Position |

DB9 Female Pin out (DCE)

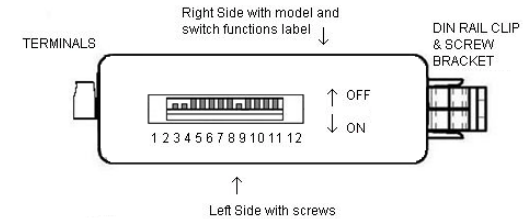
| Pin | Signal | Direction |
|-----|------------------------------------|-----------|
| 1 | Receive Line Signal Detector (DCD) | --- |
| 2 | Receive Data (RD) | OUTPUT |
| 3 | Transmit Data (TD) | INPUT |
| 4 | DTE Ready (DTR) | --- |
| 5 | Signal Ground (SG) | --- |
| 6 | DCE Ready (DSR) | --- |
| 7 | Request to Send (RTS) | --- |
| 8 | Clear to Send (CTS) | --- |
| 9 | Ring Indicator (RI) | --- |

Note: Pin 1, Pin 4, and Pin 6 are tied together internally. Pin 7 and Pin 8 are tied together internally.

RS-422/485 Terminal Block

| Terminal | RS-485 2-Wire | RS-422/485 4-Wire |
|----------|---------------|-------------------|
| A | GND | GND |
| B | Data B(+) | RDB(+) |
| C | Data A(-) | RDA(-) |
| D | --- | TDB(+) |
| E | --- | TDA(-) |

4. Information - DIP Switch



Communications Mode

| | 1 | 2 | 3 | 4 |
|---------------------------|-----|-----|-----|-----|
| RS-485 2-Wire Half Duplex | ON | ON | ON | ON |
| RS-485 4-Wire Full Duplex | ON | OFF | OFF | OFF |
| RS-422 Full Duplex | OFF | OFF | OFF | OFF |

Termination Resistor

| | 5 |
|-----------------------------------|-----|
| Use the 120Ω Built in Termination | ON |
| Use External or no termination | OFF |

Transmit Bias

| | 6 |
|-------------------------------------------|-----|
| Use the 1.2KΩ Transmit Bias Resistor | OFF |
| Use External or no Transmit Bias Resistor | ON |

Receive Bias

| | 7 |
|-------------------------------------------|-----|
| Use the 1.2KΩ Receive Bias Resistor | OFF |
| Use External or no Transmit Bias Resistor | ON |

5. RS-422/485 Time Out

| Switch Selectable | | | | | | Timeout (ms) |
|-------------------|-----|-----|-----|-----|-----|--------------|
| Baud (Kbps) | 8 | 9 | 10 | 11 | 12 | |
| 2.4 | ON | OFF | OFF | OFF | OFF | 4.37 |
| 4.8 | OFF | ON | OFF | OFF | OFF | 2.03 |
| 9.6 | OFF | OFF | ON | OFF | OFF | 1.02 |
| 19.2 | OFF | OFF | OFF | ON | OFF | 0.57 |
| 38.4 | OFF | OFF | OFF | OFF | ON | 0.27 |

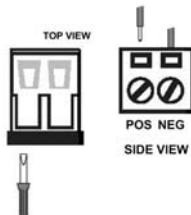
| Resistor Selectable | | | |
|---------------------|--------------|------------|--------------|
| Baud (Kbps) | 8 through 12 | R-11 Value | Timeout (ms) |
| 1.2 | OFF | 820 KΩ | 8.32 |
| 57.6 | OFF | 16 KΩ | 0.16 |
| 115.2 | OFF | 8.2 KΩ | 0.08 |

Pre-defined timeouts are set using switches 8 through 12. Resistor selectable baud rates are set by inserting a through hole resistor (R-11) on the circuit board.

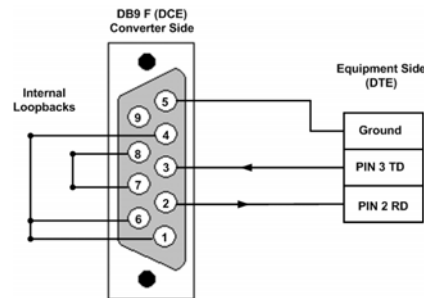
Timeout selections are equal to one character time at the indicated baud rate. Setting the converter to 9600 will generally work at 9600 and higher baud rates. **In RS-422 mode, timeouts are not required.**

6. Power Connection

Power Requirements:
 10 – 48 VDC @ 0.2A



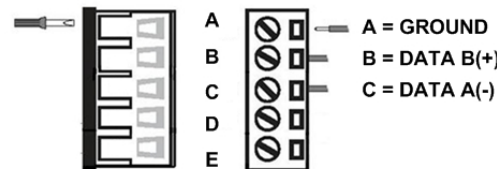
7. RS-232 Connection



1. DB9 F is DCE, Pin 2(RD) is the converter's RS-232 Data output. Pin 3 (TD) is the converter's RS-232 Data input.
2. Pins 1, 4, and 6 (DCD, DTR, and DSR) are tied together inside the converter.
3. Pins 7 and 8 (RTS and CTS) are tied together inside the converter.

8. Wiring Examples

Two Wire RS-485



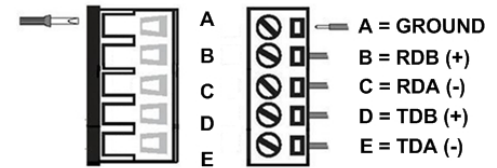
DIP Switch SW-1

| | | | | | | |
|----|----|----|----|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| ON | ON | ON | ON | X | Y | Z |

POSITIONS 5 THROUGH 7 ARE USED FOR TERMINATION AND BIASING. SEE SECTION 4.

POSITIONS 8 THROUGH 12 ARE USED TO SET THE BAUD RATE. SEE SECTION 5.

RS-422/ Four Wire RS-485



DIP Switch SW-1

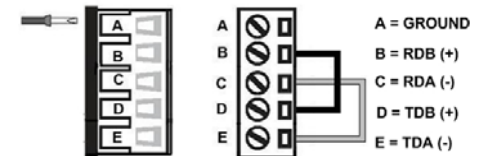
| | | | | | | |
|---|----|----|----|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| W | ON | ON | ON | X | Y | Z |

POSITION 1 SELECTS RS-422 OR RS-485. SEE SECTION 4.

POSITIONS 5 THROUGH 7 ARE USED FOR TERMINATION AND BIASING. SEE SECTION 4.

POSITIONS 8 THROUGH 12 ARE USED TO SET THE BAUD RATE. SEE SECTION 5.

9. Loop Back Test / Troubleshooting



DIP Switch SW-1

| | | | | | | |
|----|-----|-----|-----|-----|-----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| ON | OFF | OFF | OFF | OFF | OFF | ON |

POSITIONS 8 THROUGH 12 ARE USED TO SET THE BAUD RATE.

- ❑ Configure for RS-485 Four wire, 9600 baud
- ❑ Jumper terminals B to D and C to E
- ❑ Connect a PC to the RS-232 port (see Step 7).
- ❑ Using hyper terminal or similar program, connect to the appropriate COM port (remember to set the baud rate to 9600). Turn off hyper terminal local echo
- ❑ Transmit data. The same data should be returned. LED Indicators: Power is ON when power is applied. TD flashes when RS-422/485 data is sent. RD flashes when RS-422/485 Data is received.