DL4000-DFX:
Two Serial DF1 Devices to a PLC/SLC CH0 or other DF1 Device

The DL4000-DFX has three communication ports. Channel A is designed to connect to a PC(MMI/HMI/RSLINX) or like device that has the DF1 protocol.   Channel B and Channel C are designed to connect to PLC's, SLC's, Micrologix's, PanelView's or other equipment that uses the DF1 protocol.

Easy Configuration
See attached example for configuration of the Operating Parameters for a common use of the DL4000-DFX.

Serial Interfacing
CHA – RS232, RS422 and RS485 Interface to DF1 (Full Duplex) device
CHB – RS232, RS422 and RS485 Interface to DF1 (Full Duplex) device
CHC – RS232 Interface to DF1 (Full Duplex) device (SLC/PLC CH0)

Physical Dimensions
Size: 1.2"H x 4.75"L x 3.2"W
(30.4 mm x 120.7 mm x 81.3 mm)
Weight: 0.45lbs (0.205 kg)
Power: DC: 9-27 VDC; Less than 2 Watts

Installation
Metal enclosure; Freestanding, DIN rail mounting clips, or #8 bolts

Environment
Operating: +32 F to 122 F (0 C to +50 C)
Storage: -40 F to +185 F (-40 C to +85 C)
Humidity: 5% to 95% non-condensing

Indicators
Green LED for power-on
Red/Green BI-Color LED's for communications

Pushbuttons
Reset and Configure/Diagnostics mode pushbuttons

Communications
CHA: Full Duplex DF1, 300 b to 230.4 Kb
CHB: Full Duplex DF1, 300 b to 230.4 Kb
CHC: Full Duplex DF1, 300 b to 38.4 Kb

Connectors
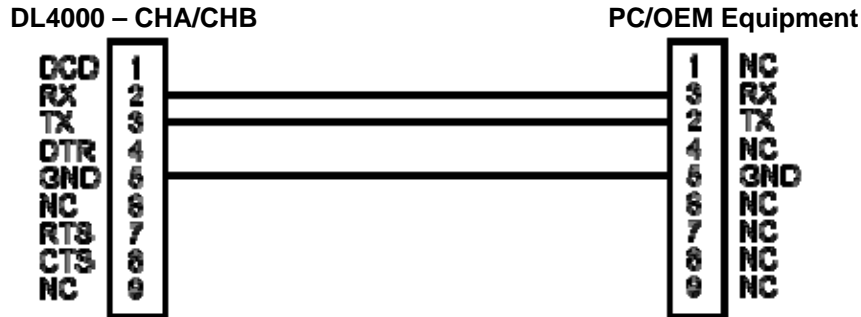CHA: 9-pin RS232, 4-pin RS422/RS485
CHB: 9-pin RS232, 4-pin RS422/RS485
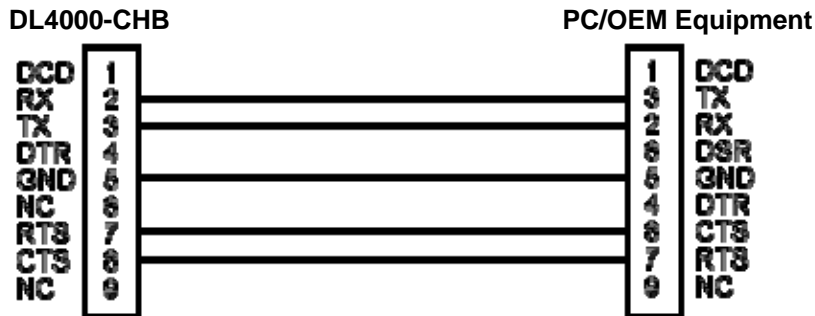CHC: 3-pin Euro RS232
Power: 2-pin Phoenix Euro

Wiring Diagrams:

1. **Configuration Cable DL4000-CHA RS-232**
2. **Online Cable DL4000-CHA – No Handshaking**
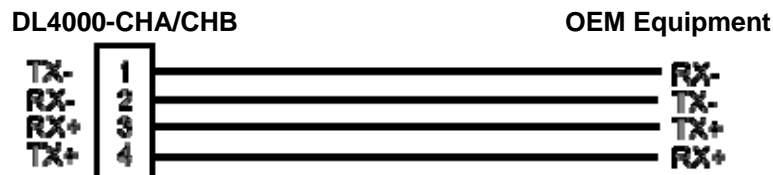3. **Online Cable DL4000-CHB – No Handshaking**

DL4000 – CHA/CHB   **PC/OEM Equipment**

DL4000		PC/OEM
DCD	1	1 NC
RX	2	3 RX
TX	3	2 TX
DTR	4	4 NC
GND	5	5 GND
NC	6	6 NC
RTS	7	7 NC
CTS	8	8 NC
NC	9	9 NC

4. Online Cable DL4000-CHA RS-232C – With Handshaking

DL4000-CHA   **PC/OEM Equipment**

DL4000-CHA		PC/OEM
DCD	1	1 DCD
RX	2	3 TX
TX	3	2 RX
DTR	4	6 DSR
GND	5	5 GND
NC	6	4 DTR
RTS	7	8 CTS
CTS	8	7 RTS
NC	9	9 NC

5. Online Cable DL4000-CHB RS-232 – With RTS/CTS Handshaking

DL4000-CHB   **PC/OEM Equipment**

DL4000-CHB		PC/OEM
DCD	1	1 DCD
RX	2	3 TX
TX	3	2 RX
DTR	4	6 DSR
GND	5	5 GND
NC	6	4 DTR
RTS	7	8 CTS
CTS	8	7 RTS
NC	9	9 NC

6. Online Cable DL4000-CHA RS422/RS485
7. Online Cable DL4000-CHB RS422/RS485

DL4000-CHA/CHB   **OEM Equipment**

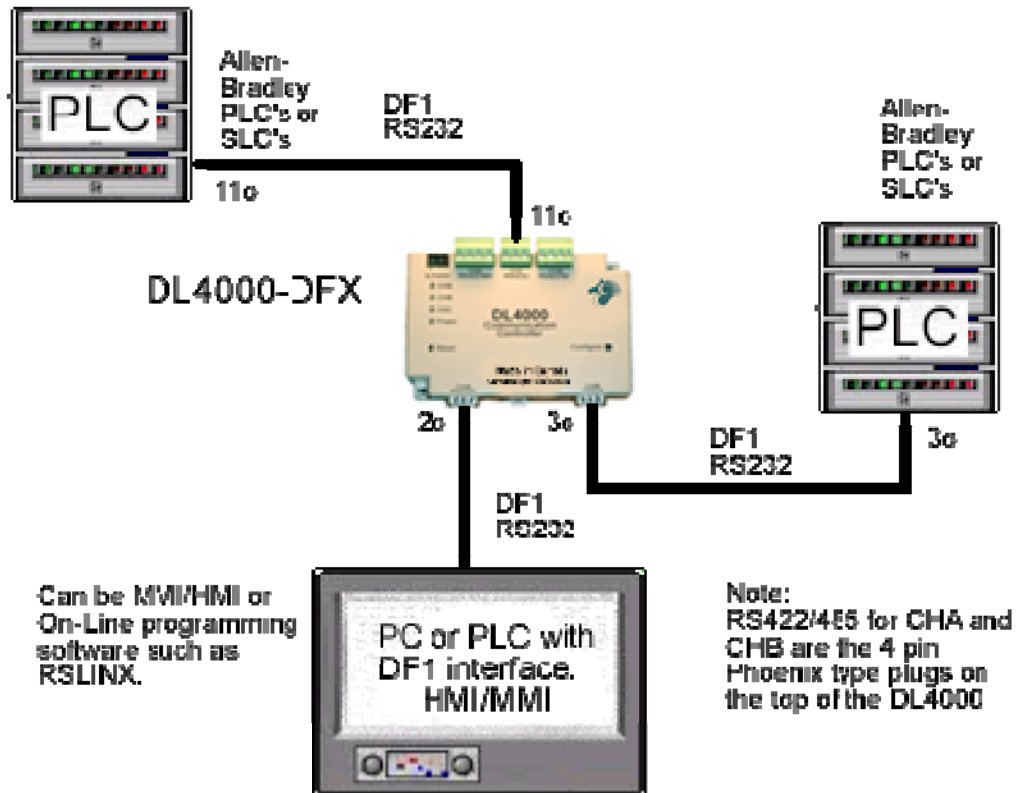| DL4000-CHA/CHB		OEM
TX-	1	RX-
RX-	2	TX-
RX+	3	TX+
TX+	4	RX+

**Note: 4 Pin Connectors are numbered from Left to Right
For RS485 Jumper Pins 1-2 and 3-4 for - and + wires**

8. Online Cable DL4000-CHC RS232

DL4000-CHC   **OEM Equipment**

```
TX  ┌─1─┐ ──────────────────────── RX
RX  │ 2 │ ──────────────────────── TX
GND └─3─┘ ──────────────────────── GND
```
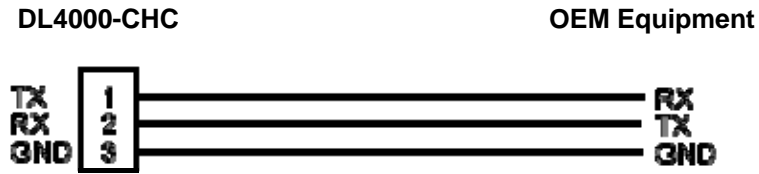
Connection Diagram Example:

Allen-
Bradley
PLC's or
SLC's

DF1
RS232

DL4000-DFX

Allen-
Bradley
PLC's or
SLC's

11o   11o

2o   3o

DF1
RS232   3o

DF1
RS232

Can be MMI/HMI or
On-Line programming
software such as
RSLINX.

PC or PLC with
DF1 interface.
HMI/MMI

Note:
RS422/485 for CHA and
CHB are the 4 pin
Phoenix type plugs on
the top of the DL4000

April 21, 2004

DL4000-DFX Configuration Example
Using RSLINX to Communicate with a PLC via two PC's

In this example the DL4000-DFX 's three communication ports will be setup as follows. Channel A and Channel C will be used to connect to the two PC's using RSLINX and RSLOGIX5 to go online with a PLC connected to Channel B.

DL32 V3.X is the configuration software needed to setup the channels; the latest version is available from the Equustek Solutions Inc. website at:
http://www.equustek.com/Downloads.html

General Information of the DL4000-DFX's communication Channels

Channel A and B are full RS232-C / RS 422/RS485 channels. Channel C is only RS232 3 Wire.

The following addresses are allowed for each channel.

Channel	Address Range (Octal)
A	00-76
B	01-77
C	00-77

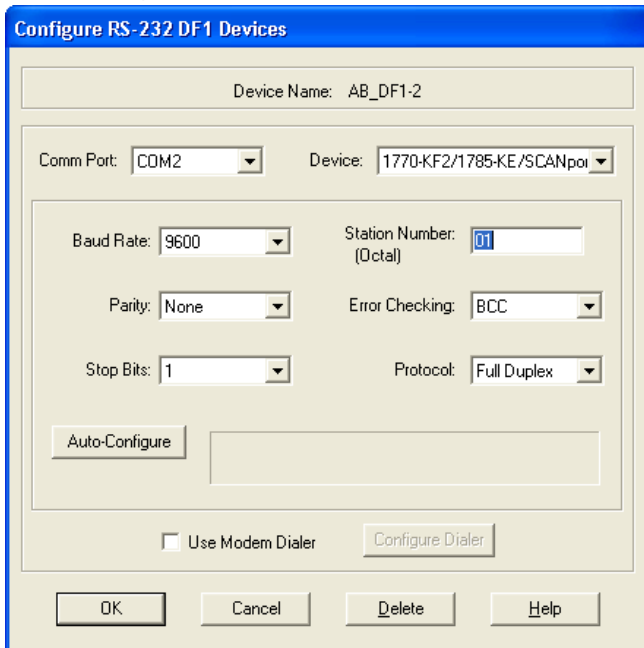NOTE: Devices connected to each Channel MUST have the same address!

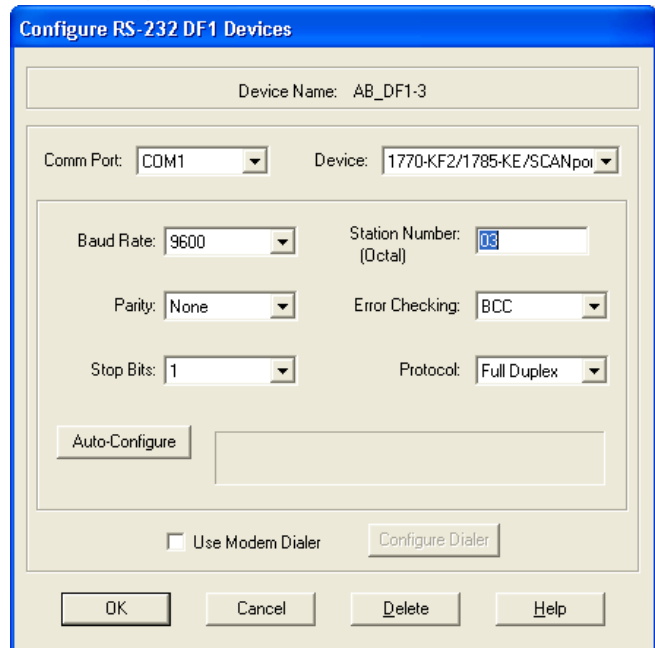**In this example Configuration of DL4000 is as follows:**

Channel A – Address 1o   - Connected to RSLINX
Channel B– Address 2o   - Connected to PLC CH0
Channel C– Address 3o   - Connected to RSLINX

Note: For RSLINX… Use the Serial DF1 Driver and then choose 1770-KF2 Device.
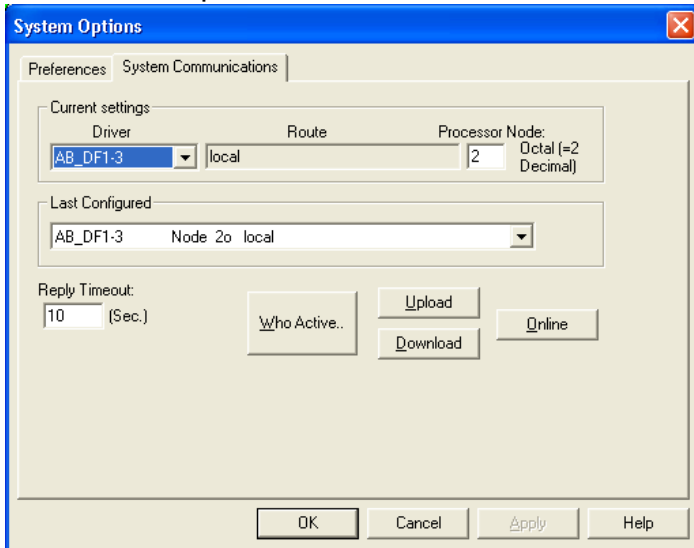Baud rates, Parity, Error Checking all have to match. **WHO ACTIVE DOES NOT WORK!!!**

Setting For DF1 driver for Channel A   Setting for DF1 Driver Channel C

Configure RS-232 DF1 Devices

Device Name: AB_DF1-2

Comm Port: COM2   Device: 1770-KF2/1785-KE/SCANpor

Baud Rate: 9600   Station Number: 01
                     (Octal)

Parity: None   Error Checking: BCC

Stop Bits: 1   Protocol: Full Duplex

Auto-Configure

☐ Use Modem Dialer   Configure Dialer

OK   Cancel   Delete   Help

Configure RS-232 DF1 Devices

Device Name: AB_DF1-3

Comm Port: COM1   Device: 1770-KF2/1785-KE/SCANpor

Baud Rate: 9600   Station Number: 03
                     (Octal)

Parity: None   Error Checking: BCC

Stop Bits: 1   Protocol: Full Duplex

Auto-Configure

☐ Use Modem Dialer   Configure Dialer

OK   Cancel   Delete   Help

Then Setup RSLOGIX 5 as follows:

System Options

Preferences | System Communications

Current settings
Driver   Route   Processor Node:
AB_DF1-3   local   2   Octal (=2 Decimal)

Last Configured
AB_DF1-3   Node 2o local

Reply Timeout:
10   (Sec.)   Who Active..   Upload   Online
                                    Download

OK   Cancel   Apply   Help

The Processor node is the setting for
Channel B, or node 2 in this example.
Both RSLOGIX5's on both PC's
will have the same settings.