

TO INSTALL A LINK/REPEATER

1. Set the FD/HD Switch and the Repeater Mode Switch to the appropriate position.
2. Connect an earth ground wire to the ground stud on the unit. The ground stud has two nuts attached. Place the ground wire between these two nuts and securely tighten the nuts together.

WARNING: WHEN INSTALLING A MODEL /48DC or /HV LINK/REPEATER, AN EARTH GROUND MUST BE ATTACHED TO THE GROUND STUD ON THE SIDE OF THE CASE BEFORE CONNECTING POWER. FAILURE TO FOLLOW THIS PROCEDURE MAY RESULT IN ELECTRICAL SHOCK TO PERSONNEL.

3. Connect the Link/Repeater's 9-pin connector to the appropriate communication port on the IED. This connection is made by connecting the Link/Repeater to the EIA 422/485 communication port on the IED by means of an adapter or low capacitance extension cable (make sure that the pin assignments are correctly matched and only connect the pins that will be utilized for the application).
4. Connect the Fiber Optic Cable (FOC).

Note: The FOC must connect a "T" optical port of one Link/Repeater to the "R" optical port of another Link/Repeater and visa-versa.

5. Connect the power source to the Link/Repeater. If powering through the power connector on the side of the unit:
 - Check the Link/Repeater's voltage rating, printed next to the power connector and verify that it matches the power source. (Models RLFDX485M2/24DC and RLFDX485S2/24DC have an optional Ac to 9Vdc adapter available).
 - Remove the plug portion of the power connector by loosening the two captive mounting screws.
 - Strip back 1/4" off the insulation of the wires that will later connect the unit to the power source.
 - Insert each conductor firmly into the proper terminal hole of the plug (note: this connection is polarity sensitive).
 - Visually inspect that no strands of wire are straying out of the hole, potentially shorting to ground or the other conductor. Tighten the saddle screws until secure. Re-insert the plug into the power connector and secure with the two captive mounting screws.
 - Connect the power leads to the power source. The unit is now powered and the red "PWR" LED illuminates.
6. Verify operation. When powered and transmitting, the amber LEDs TE & TO illuminates. When receiving, the RO and RE LEDs illuminate. When in the repeat mode and receiving, both RO and RE as well as the optical TO LEDs illuminates.

Note: The TE, TO, RE and RO LEDs do not illuminate when power is applied. They are normally off and illuminate only when data signal traffic occurs. These LEDs “flicker” as data passes through the Link/Repeater. This is normal operation. If the TE and TO illuminate when power is applied and stay on, check the polarity of the signal connections of pin 2 (+) with respect to pin 1 (-). If the connection polarity is correct, check the position of the NORM / INV switch.

Note: All RLFDX485 Link/Repeaters connected in the same network must have the NORM / INV switch in the same position.

7. For more detailed information on operation, please refer to the Complete Product Installation and Operation Manual.

TESTING

RLFDX485(M,S)2 Link/Repeaters are easily tested. Testing the units can be done by setting the Test mode switch that transmits 100 Hz signal on the optical transmit port or requires transmitting and receiving data using an IED while observing that the diagnostic LEDs are illuminating in the proper sequence. To test whether a unit is transmitting and receiving correctly, insert a short fiber jumper between its “T” and “R” optical ports, power the units, transmit a signal or set the test mode switch to ON and note that all four diagnostic LEDs illuminate during communications.

To test the units in a loop configuration, two Link/Repeaters are required. Connect two short jumper fibers from the “T” optical port of each Link/Repeater to the “R” optical port of the other. Set the Mode switch on one of the units to REP and the other to OFF. The unit with the REP switch in the OFF position is the Local. Power both units. Using the Local set the Test mode switch to ON, or sends data through the other unit in the repeat mode. Observe the diagnostic LEDs’ illumination patterns during communication.

Note: If interconnecting EIA 485 optically to RS232, the NORM / INV switch must be in the INV position. If the IED’s design biases A (“+”) high and B (“-”) low (a steady on TE with no data flowing will indicate this), then the NORM / INV switch must be in the INV position.

Note: If a local of a local/remote loop is operating in the HD mode (EIA 485), refer to the full Installation and Operation manual on our website, for special system requirements for the control of the echo.

TROUBLE SHOOTING

If the unit does not work properly, refer to the User Manual (UM5845), and use the following checklist:

- Is the unit properly powered?
 - Verify that the unit is receiving the correct power and the Green "PWR" LED is illuminated.
 - If powered through the D-connector, make sure that + is on pin 9 and - on pin 6.
- Check that the diagnostic LEDs are responding to the optical and electrical activity.
- Is the unit mated properly to the IED? If an adapter is used, check that pins are connected correctly.
- Are the fiber cables connected properly? "T" to "R"; not "R" to "R" or "T" to "T".
- Are the FD/HD switch, the Repeat switch, and NORM / INV switch set to the proper position for the application?
- Review the IED's software and protocols. Have the appropriate settings on the IED been made to compensate for these requirements?
- Consult factory.

Pinout for HD Mode (Normal Functionality)	Pinout for FD Mode (Normal Functionality)
1 Trans / Rec Data -	1 Trans Data - (Link Input)
2 Trans / Rec Data +	2 Trans Data + (Link Input)
6 Chassis (Earth) Ground	6 Chassis (Earth) Ground
3 -----	3 Rec Data - (Link Output)
4 -----	4 Rec Data + (Link Output)
Pinout for HD Mode (Extended Functionality)	Pinout for FD Mode (Extended Functionality)
5 Signal Common	5 Signal Common
7 Repeat Enable / Disable	7 Repeat Enable / Disable
8 Optical Receive Enable/Disable	8 Optical Receive Enable/Disable
9 + 9 to 15 Vdc Input	9 + 9 to 15 Vdc Input

DO NOT ATTEMPT TO DISASSEMBLE LINK/REPEATERS AS THERE ARE NO USERSERVICEABLE PARTS WITHIN. THIS ACTION WILL VOID THE WARRANTY.

Need Additional Assistance?

Visit our website <http://www.comnet.net> or contact Comnet tech support:

Tel: (203) 796-5300

Toll free: (888) 678-9427

Email: techsupport@comnet.net

Additional Technical support contact details can be found at:

<http://www.comnet.net/services/technical-support.html>

Or Visit our pre-sales design center:

<http://www.comnet.net/services/design-center.html>

Or our customer care:

<http://www.comnet.net/services/customer-care.html>

Additional Downloads

Datasheets, Installation manuals and other product documentation can be found at:

<http://www.comnet.net/comnet-products/ethernet/wireless/>



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