# INSTALLATION STEPS FOR PROPER DATA LINE PROTECTION

You just made the best investment for your protection. All Cylix protectors have been designed with fast and efficient performance in mind. You'll find our unique design allows for quick and easy installation. For more information on Cylix products, visit our website at: www.cylix.com



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## Important things to remember:
1. Read and understand all instructions before installation.
2. Never install products during a lightning storm.
3. Intended for indoor use only.
4. Cylix telecommunication protection devices are for use as  secondary surge protection at the equipment level behind a primary protection environment (see UL497A). Usage of Cylix telecommunication protection devices as primary protection renders our warranty null and void.
5. To best protect your equipment, always keep the cord length between the protector and equipment to a minimum, not to exceed 10 inches.
6. The ground wire on the product (if included) must be attached directly to the metal chassis of the equipment to be protected. The length of the ground wire is not to exceed 11".
7. Verify that the metal chassis of your equipment is connected to ground via a properly grounded AC electrical outlet.
8. Most installations require one protector at each end of the data line.
9. All Cylix protectors have been designed to reset after each surge. In the rare event that the protector encounters a surge greater than its maximum rating, the protector will fail-safe before allowing damage to occur to your communication port.
10. Cylix protectors are not intended to be used as protection against a direct lightning strike to your facility. It is advisable to consult a licensed electrician to ensure that proper lightning rod protection and grounding equipment are installed per National Electrical Code.

## Installation for CCP Series:
1. Remove power to the unprotected equipment.
2. Disconnect the incoming data line from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. If possible, directly attach the Cylix protector to the equipment port.  The use of a short cable jumper (not supplied) is permitted to facilitate installation.
5. Attach the green ground wire to the metal chassis:
   a.  Remove a screw on the metal chassis that is within reach of the ground wire.
   b.  Remove any paint around the screw hole.

c.  Install screw with ground wire under it. If the protected product is not connected to ground via a 3 prong plug or does not have an accessible metal chassis, the following instructions should be followed:
   i.  Locate the AC receptacle that the protected device is plugged into.
   ii. Remove the screw which holds the AC wall plate to an AC receptacle that is to code (properly grounded).
5. Reinstall the screw with the protector's ground lug (on green wire) between the screw and the AC wall plate and tighten in place.
6. Attach the incoming data line to the protector.
7. Apply power to the now protected equipment.

## Installation for DDP Series:
1. Remove power to the unprotected equipment.
2. Disconnect the incoming data line from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. Directly attach the Cylix protector to the equipment port.
5. Attach the green ground wire to the metal chassis:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with ground wire under it.
6. Attach the incoming data line to the protector.
7. Apply power to the now protected equipment.

## Installation for MTJ and CAT6-PPC Series:
### (for DSL, see below)
1. Remove power to the unprotected equipment.
2. Disconnect the incoming data line from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. Plug the 6"cable (not included with MTJ-C5) between your equipment and the protector.
5. Attach the green ground wire to the metal chassis:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with ground wire under it.
6. Attach the incoming data line to the protector.
7. Apply power to the now protected equipment.

### MTJ-DSL
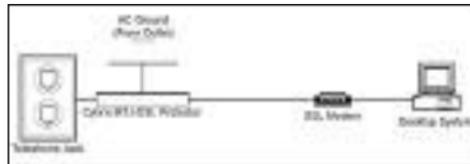


1. Remove power to the DSL Modem.
2. Disconnect the telephone line going to the modem from the wall outlet.
3. Plug the protector into the wall outlet.
4. Remove the screw which holds the AC wall plate to an AC receptacle that is to code (properly grounded).
5. Reinstall the screw with the protector's ground lug (on green wire) between the screw and the AC wall plate and tighten in place.
6. Install the telephone line from the modem to the protector.
7. Apply power to the now protected equipment.

### CAT 6-PPC
1. Remove power to the unprotected equipment.
2. Disconnect the incoming dataline from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. Plug the short end of the CAT6-PPC into the device to be protected.
5. Attach the green ground wire to the metal chassis:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with ground wire under it.
6. Plug the long end of the CAT6-PPC into the data jack.
7. Apply power to the protected equipment.

### Installation for PCH Series:
1. Remove power to the unprotected equipment.
2. Mount the patch panel to your 19" relay rack using the supplied hardware.
3. Disconnect the incoming data lines from the equipment.

4. Attach the ground wire to your rack. The installer should confirm a proper rack to earth ground connection. Consult with an electrician if needed. Try to keep the resistance from the supplied fork terminal ground to the rack frame minimal. It is imperative that both the PCH rack and the equipment to be protected are properly grounded for effective operation.
5. Using a 110 punch down tool, install the cable "22-26 AWG wire" matching the color code on the 110 IDC (Insulation Displacement Contact).

### PCH WIRING STANDARD

| Type 110 D-4 Insert-Number Code | Wire Color (Main/Stripe) | RJ-45 8P8C Pin Number |
|---|---|---|
| 1 | White/Blue | 5 |
| 2 | Blue/White | 4 |
| 3 | White/Orange | 1 |
| 4 | Orange/White | 2 |
| 5 | White/Green | 3 |
| 6 | Green/White | 6 |
| 7 | White/Brown | 7 |
| 8 | Brown/White | 8 |

6. Maintain pair twist, up to the point of termination, for maximum performance (untwist less than 0.5").
7. Connect the patch panel to the equipment.
8. The protectors are intended for indoor use on communication loop circuits which have been isolated from the Public Switched Telephone Network. The communication loop circuits should not be exposed to accidental contact with electric light or power conductors.
9. The MOD-24-C5 module is rated 12vdc.

## Installation for RAK Series:

**A. Installation of Product to Relay Rack**
1. Remove power to the unprotected equipment.
2. Install the 19" rack-mounted unit to the rack.
3. Disconnect the incoming data line from the equipment.
4. Verify that the rack will provide a good ground for the unit.

5. Connect the protector to the equipment.
6. Attach the incoming data line to the protector.
7. Apply power to the now protected equipment.

**B. Installation of Product to Wall**
1. Remove power to the unprotected equipment.
2. Install the Wall-mounted Stand-off unit to the wall.
3. Disconnect the incoming data line from the equipment.
4. Verify that the equipment chassis is attached through the power cord to an earth ground.
5. Connect the protector to the equipment.
6. Attach the ground wire to the metal chassis of the equipment being protected:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with the ground wire under it.
7. Attach the incoming data line to the protector.
8. Apply power to the now protected equipment.

**Note:** Flush-mount rack units have markings on the unit to designate the input and the output for the data cables. Stand-off rack units with clamp voltage designations of E, T, & A (7.5V, 18V, and 27V respectively) can be installed in either direction on the incoming cable. Stand-off rack units with clamp voltage designations of B & G are marked with "Line" and "Equip." Ensure that the "Equip." is connected to the equipment being protected.

## Installation for SIP Series:
1. Remove power to the unprotected equipment.
2. Disconnect the incoming data line from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. Attach the green ground wire (if included) to the metal chassis:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with ground wire under it.
5. Directly attach the protector to the equipment port, making sure that the hardware included with the product is attached and installed correctly.

6. Attach the incoming data line to the protector.
7. Apply power to the now protected equipment.

## Installation for TSP Series:
TSP Series protectors are designed for hard-wired applications where there are no connectors involved. Cylix utilizes the latest in wire connection technology: Quick Disconnect Terminals.

1. Remove power to the unprotected equipment.
2. Disconnect the incoming data line from the equipment.
3. Verify that the equipment chassis is attached through the power cord to an earth ground.
4. Strip about 1/4" of wire jacket to exposed conductor.
5. Connect the protector to the equipment. To use the Quick Disconnect connectors do the following:
   a. Insert slotted screwdriver into the top opening of the connector.
   b. Apply slight pressure. You should see the bottom portion of the connector open.
   c. Insert the bare wire in the bottom opening.
   d. Remove screwdriver.
   e. Repeat for each wire.
6. Attached the green ground wire to the metal chassis:
   a. Remove a screw on the metal chassis that is within reach of the ground wire.
   b. Remove any paint around the screw hole.
   c. Install screw with ground wire under it.
7. Attach the incoming data line to the protector following the same procedure used in steps 4 and 5, duplicating wire pattern.
8. Apply power to the now protected equipment.

**Note:** When installing the TSP-2(X) protector, only the center two connections are used. All other TSP-(XX) protectors use all the connection points.

**Note For All Products:** Units with clamp voltage designations of E, T, & A can be installed in either direction of the incoming cable, however, it is recommended that the end with the ground wire be positioned nearest the equipment being protected. The wire gauges are 26-14 AWG, any wire gauge in between will work with the protector. Units with clamp voltage designations of B & G are marked with the "Line" and "Equip." Ensure that the "Equip." is connected to the equipment being protected. C5-products are designed to protect C5 networks.

(*) CLAMP VOLTAGE OPTIONS
(MUST BE SPECIFIED WITH PART NUMBER WHERE APPLICABLE)

| CLAMP VOLTAGE | CLAMP CODE |
|---|---|
| 7.5V | E |
| 18V | T |
| 27V | A |
| 60V | B, fused |
| 240V | G, fused |

MTJ-C5 & PCH Series clamp at 12V.
MTJ-DSL clamps at 240V.

### Troubleshooting:

**New Installations:**
1. Is your equipment plugged in and turned "on" at both ends.
2. Have you installed the right protector for the application?
3. Are all cables firmly attached?
4. Does the system work if the protector is bypassed? If the system operates when the protector is bypassed and/or you have ruled out all of the above, please contact **Cylix's Technical Support at (800) 877-3735.**

**Existing Installation**
1. Check to see if your equipment is turned on.
2. Inspect all connections.
3. Remove and bypass all protection devices on that line and verify proper operation.

If the system comes back on line without the protectors installed, chances are one or all of the protectors have been damaged by an excessive surge. Replace as soon as possible with a new protector. It is not advised to run the system with protection devices removed.

**SAVE THESE INSTRUCTIONS.**