

**SYSTIMAX® Solutions**

## Category 6 Outside Plant Design and Installation Guidelines

June 2007

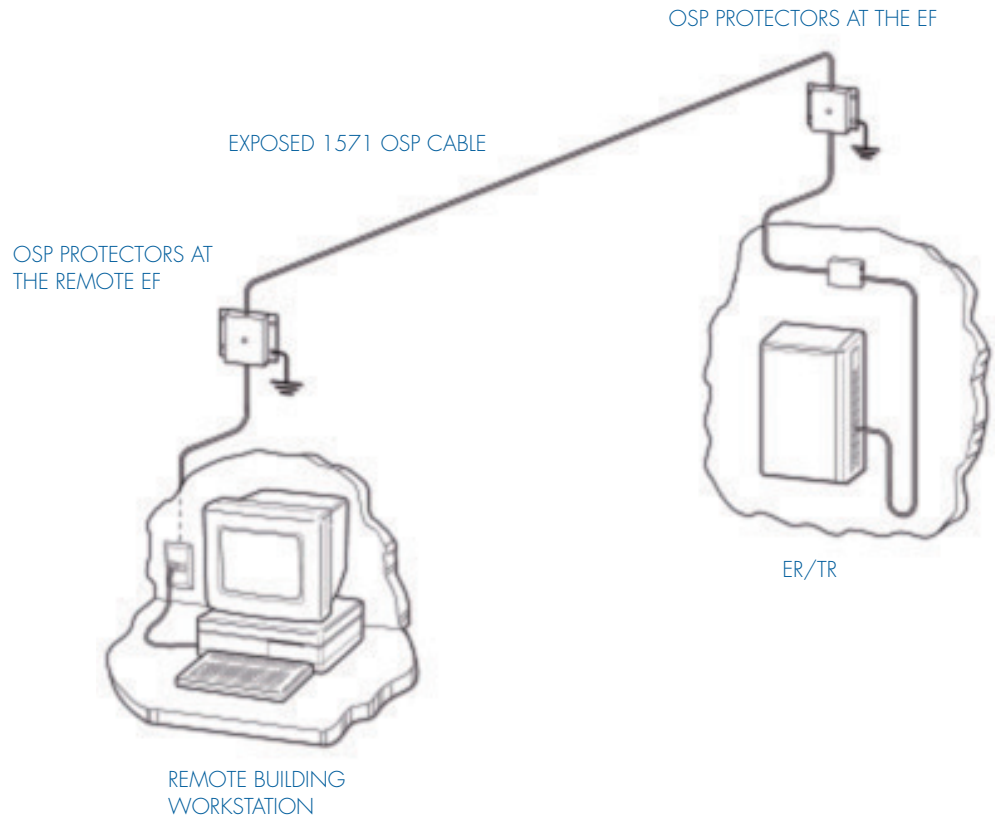
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# Overview

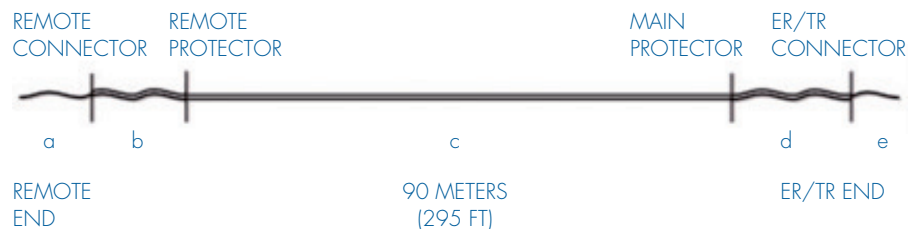
The SYSTIMAX Category 6 OSP solutions can be used when Channels are needed to locations outside the normal protection of a building. Typical applications are for adjacent buildings, parking garage terminals, guardhouses, outdoor wireless Access Points.



# Design Options

Standards based configurations up to 100 meters having up to 4 connections meet Category 6 (Class E) specifications. When an outside line is considered exposed, a protector must be installed at each end to intercept and ground hazardous voltages and currents. The protectors also terminate the OSP cable and connect it to an approved building cable.

Local code requirements must be followed. Typical code requirements include terminating the OSP cable within 50 feet of entering the building, and common bonding with the electrical systems. The 1571 OSP cable does not have an aerial support strand or rodent protection. These must be included with the design as needed.



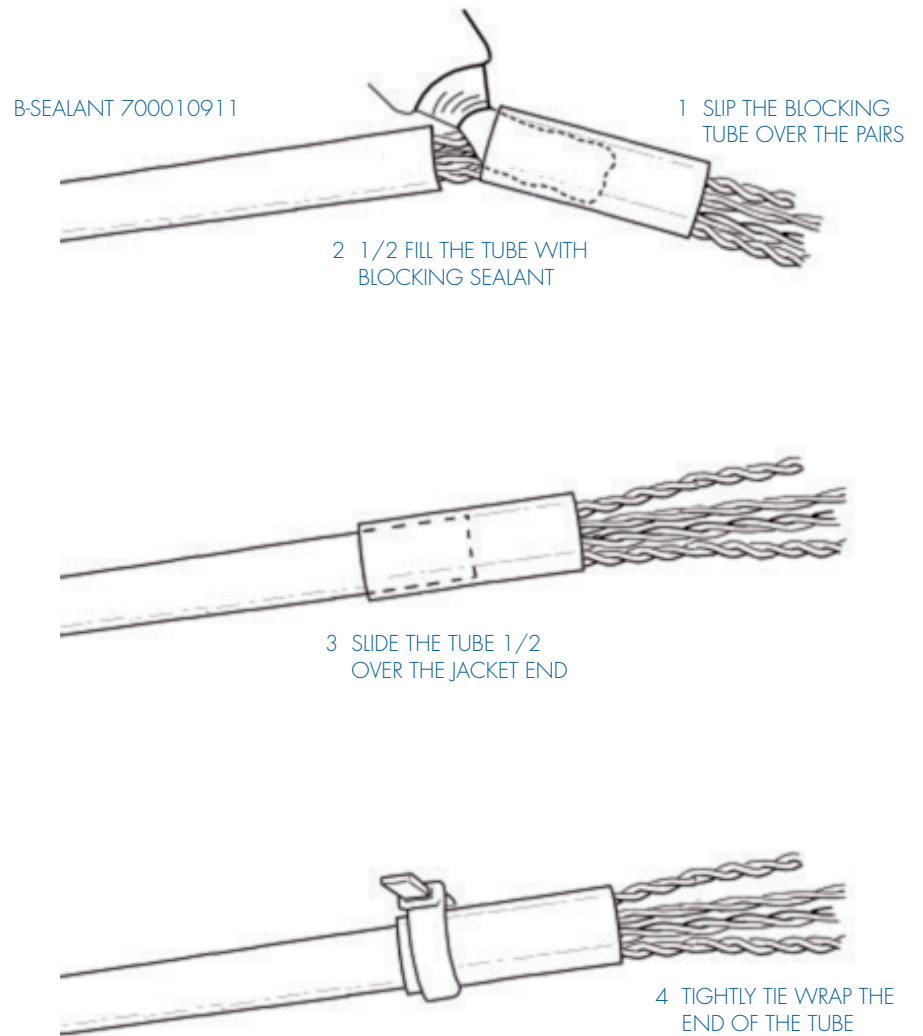
Channel Element	C6 OSP Products
a – Work area cord	GS8E
b – Remote zone cable	1071/2071/3071 1081/2081/3081
c – OSP cable	1571
d – EF cable	1071/2071/3071 1081/2081/3081
e – Equipment cord	GS8E
Protector	Category 6 16V (LAN - See Note 2) Category 6 16V w/PoE (LAN e/PoE - See Note 3) Category 6 235V (Analog Telephone)

## Notes

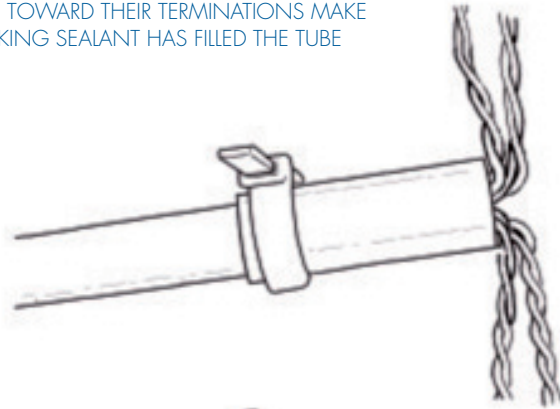
- 1 Details of connectors and a, b, d, and e can be found in the SYSTIMAX PS/GS Design Guidelines and Installation Guidelines.
- 2 VoIP phones, not powered by PoE, should use the Category 6 16V LAN protector
- 3 It is imperative to determine whether PoE power is being deployed per IEEE 802.3af Alternative A or B prior to the installation of protectors:
  - a. Category 6 w/PoE Protectors support the following PoE devices:
    - All Midspan devices because they only supply power per Alternative B. All SYSTIMAX PoE devices are Midspan.
    - Endspan devices adjusted to supply power per Alternative B
  - b. Category 6 w/PoE Protectors do not support the following PoE devices:
    - Endspan devices adjusted to supply power per Alternative A

# Cable Blocking

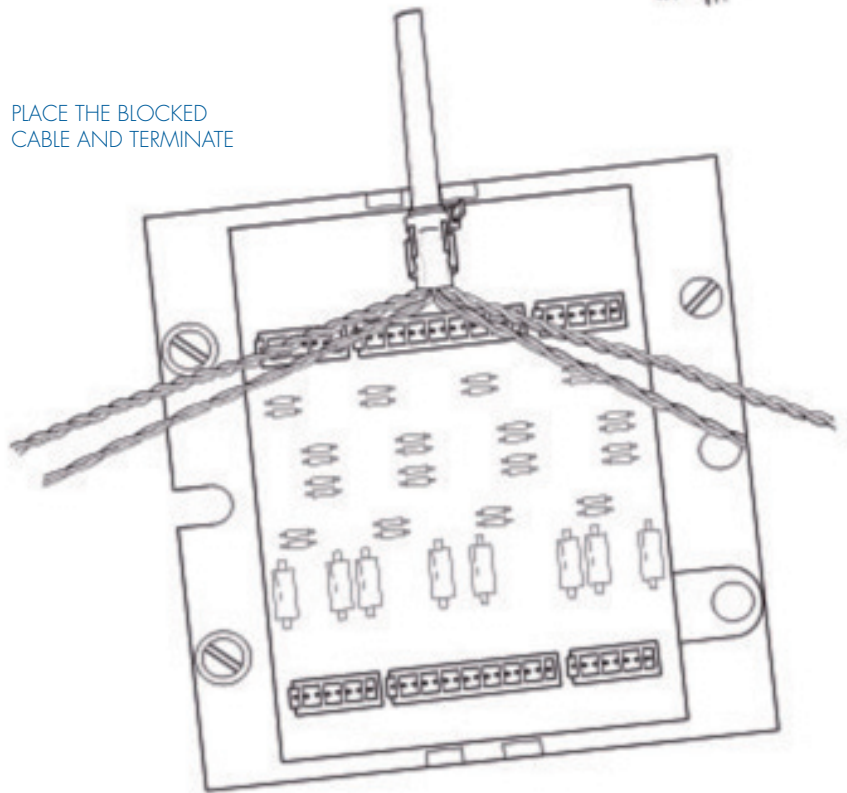
The water repelling gel may leak from the end, so it should be blocked before termination. A vertical drop to the protector and/or high temperatures may aggravate this. After removing the jacket end, carefully wipe the excess gel from the end, and then follow the steps below.



5 BEND THE PAIRS TOWARD THEIR TERMINATIONS MAKE SURE THE BLOCKING SEALANT HAS FILLED THE TUBE



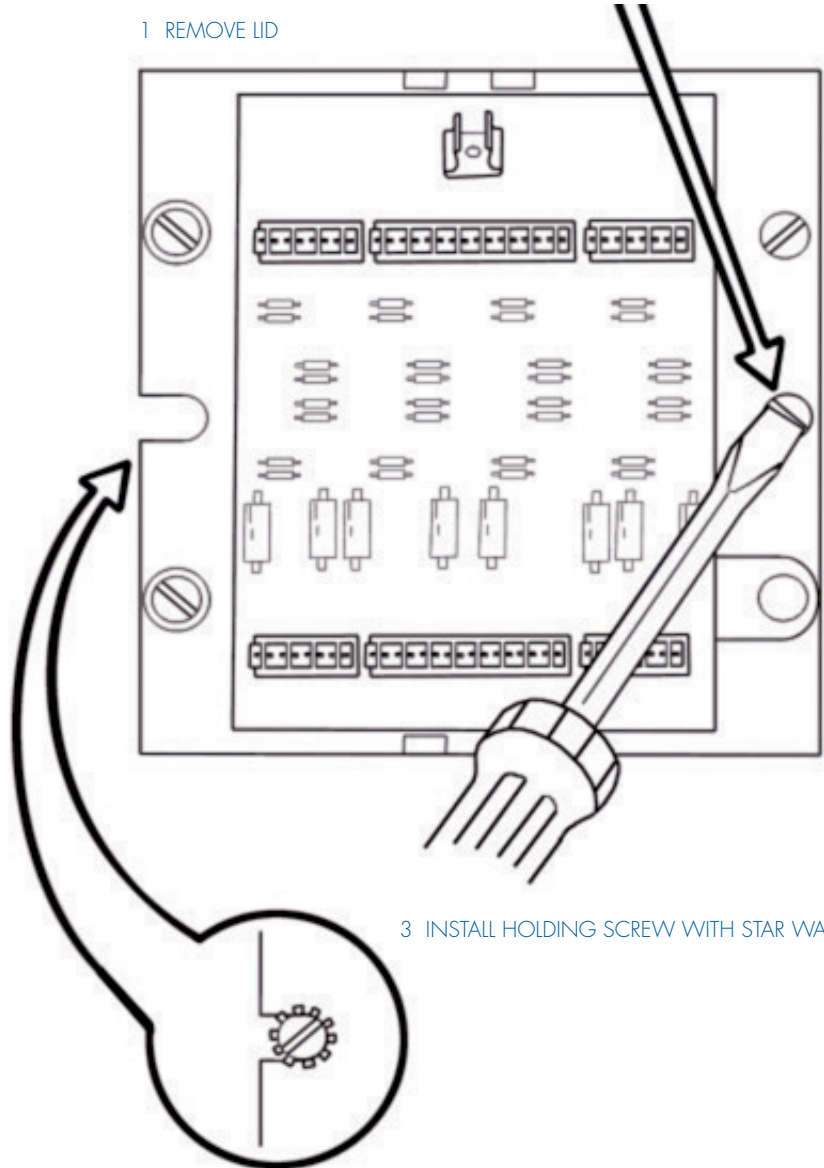
6 PLACE THE BLOCKED CABLE AND TERMINATE



# Protector Installation

2 INSTALL STARTING SCREW WITH EYELET

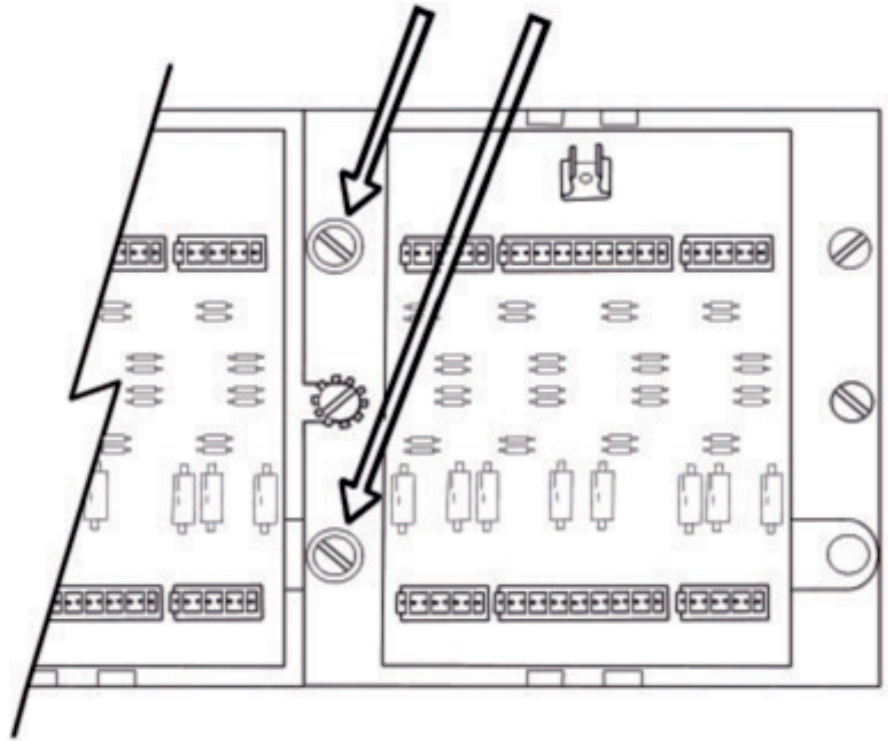
1 REMOVE LID



3 INSTALL HOLDING SCREW WITH STAR WASHER

IF TWO OR MORE PROTECTORS ARE  
USED IN THE SAME LOCATION, THEY  
SHOULD BE BONDED DIRECTLY TOGETHER

TIGHTEN THE BOUNDING SCREWS



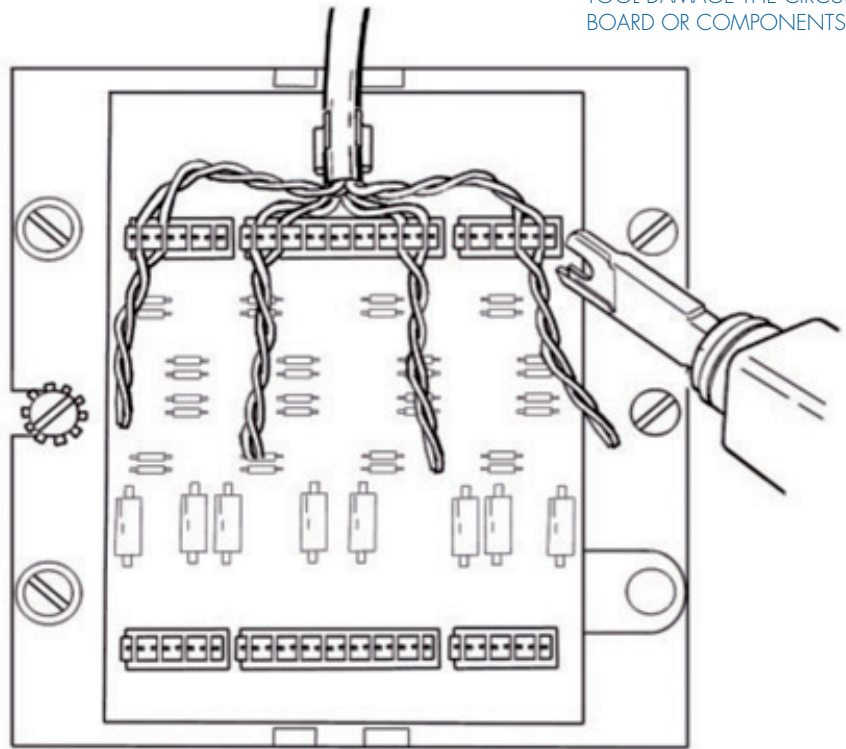
**Notes**

Only the rightmost protector is bonded to ground (see page 9)



- 4 PLACE OSP CABLE INTO THE HOLDING CLIP AND TERMINATE THE PAIRS (THIS IS THE LINE SIDE) DO NOT ALLOW PAIRS TO TWIST INTO EACH OTHER IF CROSSING OVER MAINTAIN PAIR TWISTS UP TO THE POINT OF TERMINATION

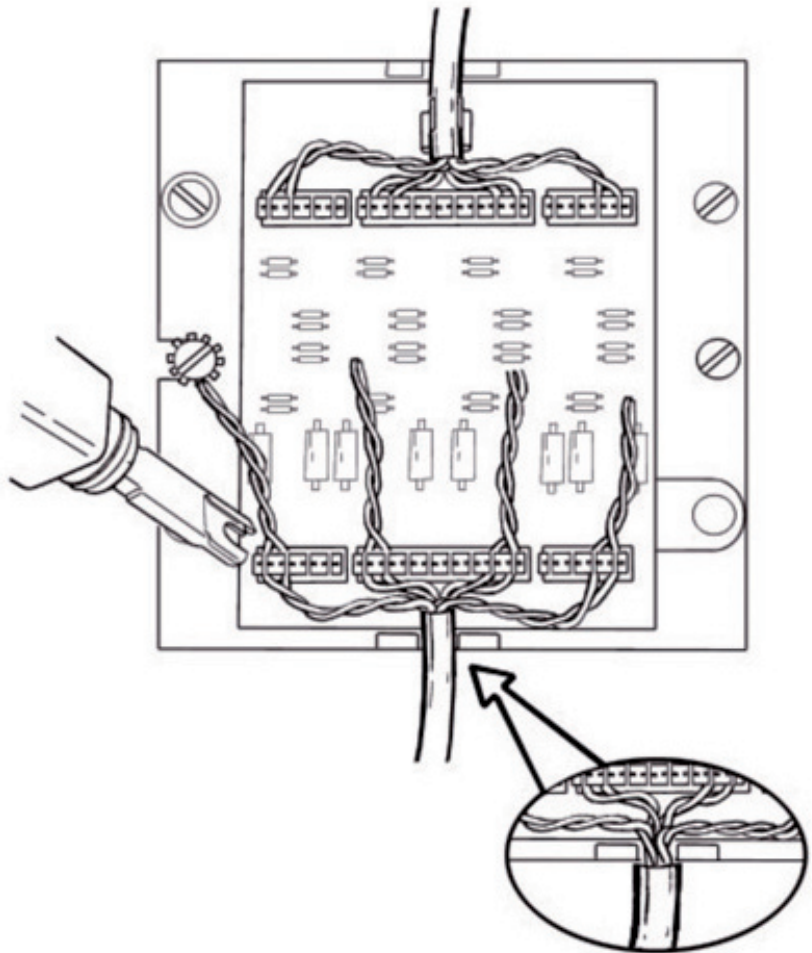
DO NOT LET THE 110 PUNCH TOOL DAMAGE THE CIRCUIT BOARD OR COMPONENTS



#### Notes

- 1 The pair positions are marked on the circuit board. Every other position is skipped.
- 2 The PoE protector has the Blue and Brown pair protection set at 62 volts (IEEE 802.3af Alternative B) to allow for power feed.

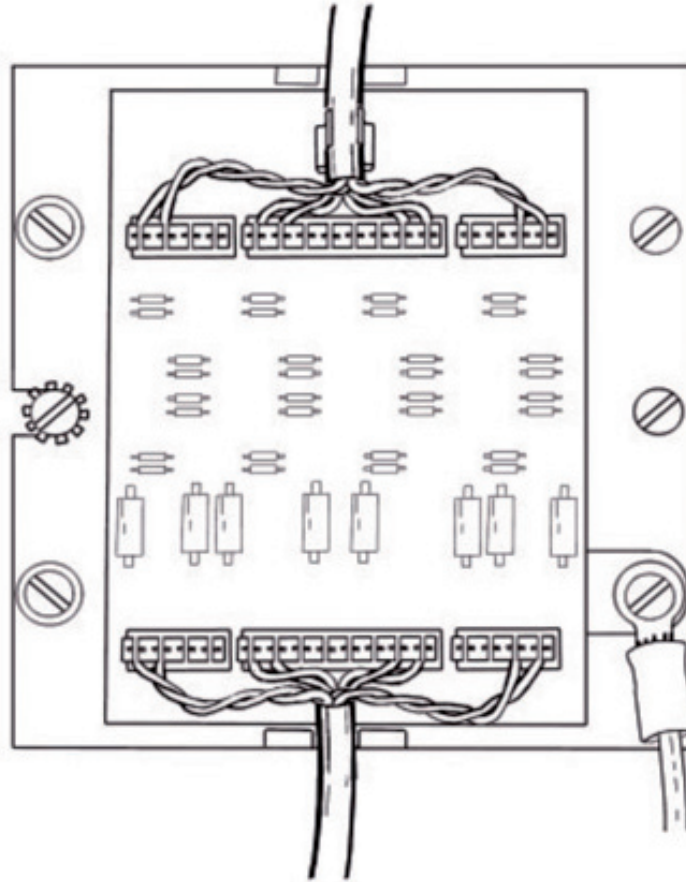
- 5 PLACE BUILDING CABLE INTO THE HOLE POSITION AND TERMINATE THE PAIRS (THIS IS THE EQUIPMENT SIDE)



**Notes**

Do not try to force 1081/2081/3081 cable into the hole position.  
End the jacket at the hole.

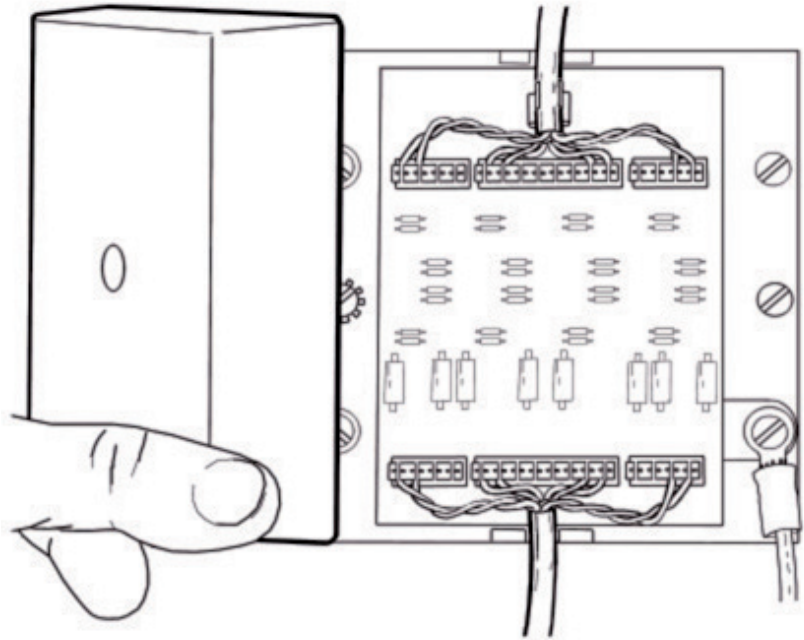
## 6 BOND TO THE LOCAL GROUND WITH MINIMUM 14 AWG GROUND WIRE



### Notes

- 1 Follow all local code requirements
- 2 The ground wire must be routed directly to the local ground with minimal bending and no excess
- 3 TIA 607 provides details for suitable grounding

## 7 REINSTALL LID



### Notes

Make sure cables are properly positioned and supported

## Notes

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change and SYSTIMAX® Solutions is not responsible for any errors or omissions contained within.



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