

**SYSTIMAX® Solutions**

## Category 5 Outside Plant

Application Guide

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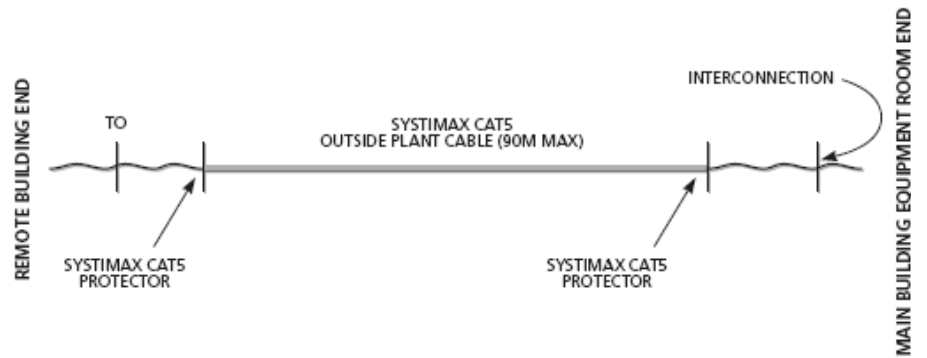
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## Design Options



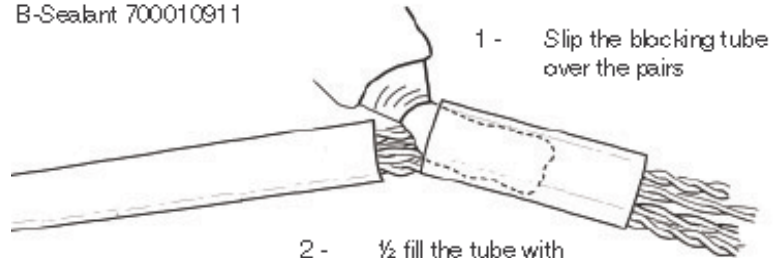
### NOTES:

1. NO MORE THAN 4 CONNECTIONS ARE ALLOWED. CONNECTIONS ON APPLICATION EQUIPMENT ARE NOT COUNTED.
2. FULL CHANNEL DISTANCE NO MORE THAN 100M TO MAINTAIN TRANSMISSION PERFORMANCE.
3. EACH PROTECTOR IS COUNTED AS ONE CONNECTION.
4. CAT5 PROTECTORS ARE ONLY REQUIRED FOR EXPOSED CABLE LOCATIONS. DESIGNERS ARE REQUIRED TO FOLLOW LOCAL CODE REQUIREMENTS.

## Cable Blocking

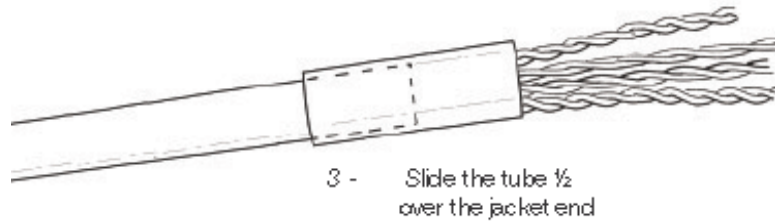
The water repelling gel may leak from the end, so it should be blocked before termination. A vertical drop to the protector and/or high temperatures may aggravate this. After removing the jacket end, carefully wipe the excess gel from the end, and then follow the steps below.

B-Sealant 700010911

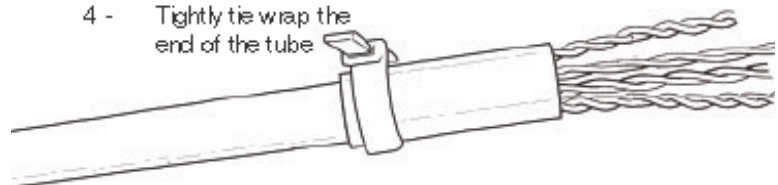


2 -  $\frac{1}{2}$  fill the tube with blocking sealant

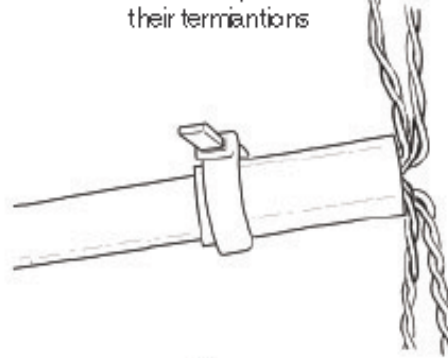
A 5 cm (2in) long narrow-wall vinyl tube is required for blocking. This is included with the D-181781 Fiber Breakout Kit, or a length of tubing may be ordered from Alpha (PVC-105-3-100) and cut as needed.



4 - Tightly tie wrap the end of the tube

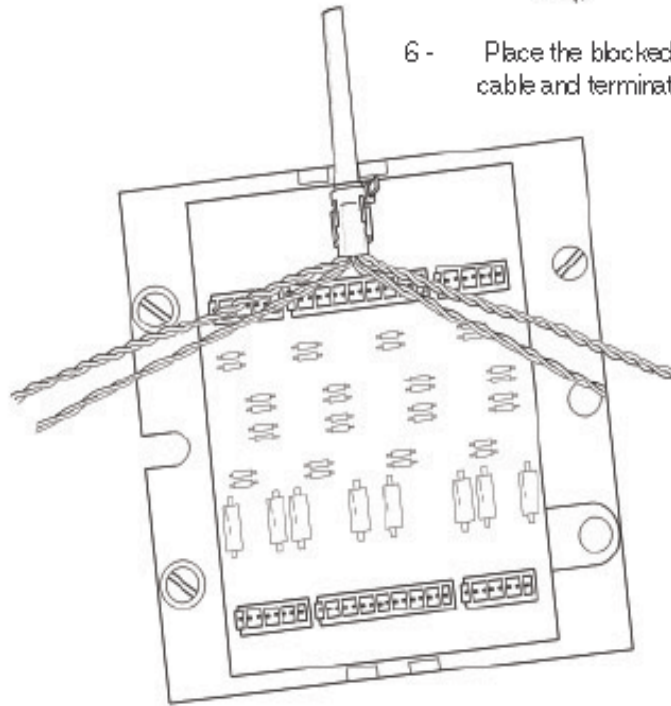


5 - Bend the pairs toward their terminations

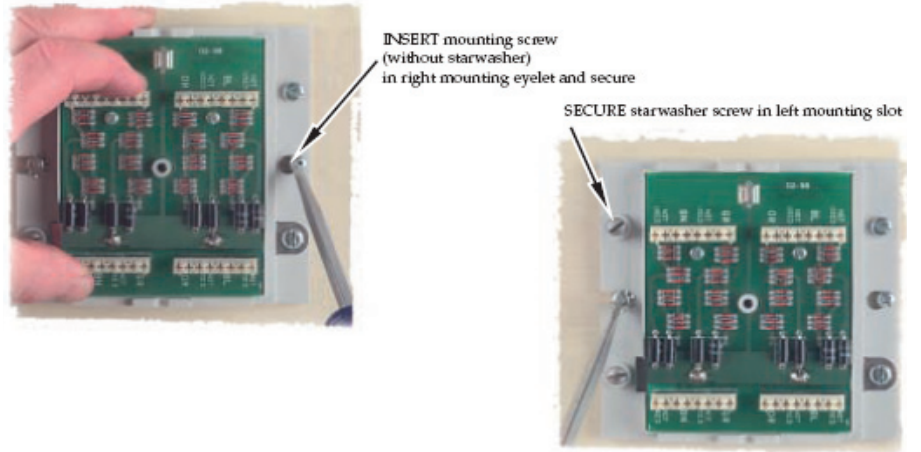


Make sure the blocking sealant has filled the tube

6 - Place the blocked cable and terminate

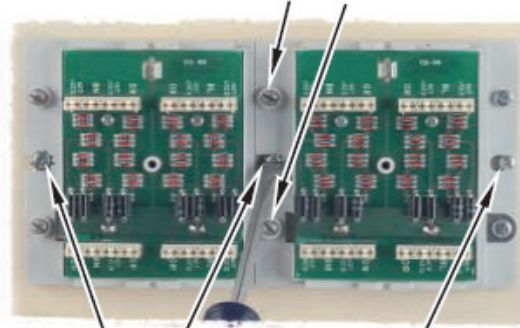


### Mounting The SYSTIMAX Cat 5 Protector



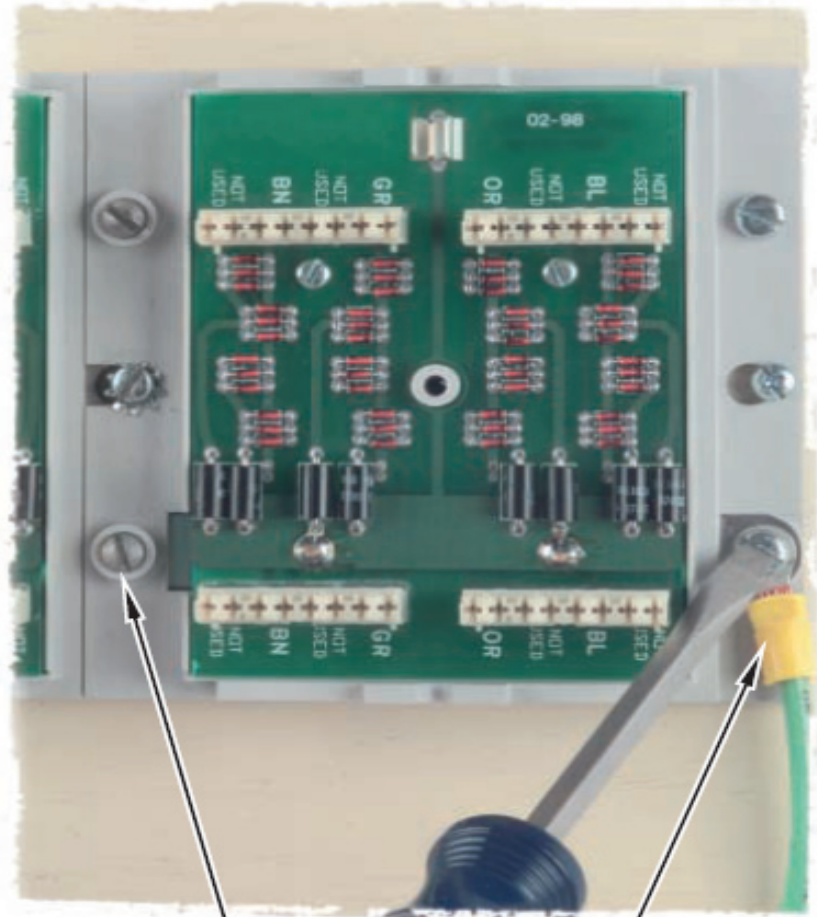
### Mounting Additional Protectors

FIRST - align and join UP TO 4 protectors and secure with bonding screws



THEN - insert mounting screws in mounting holes and secure

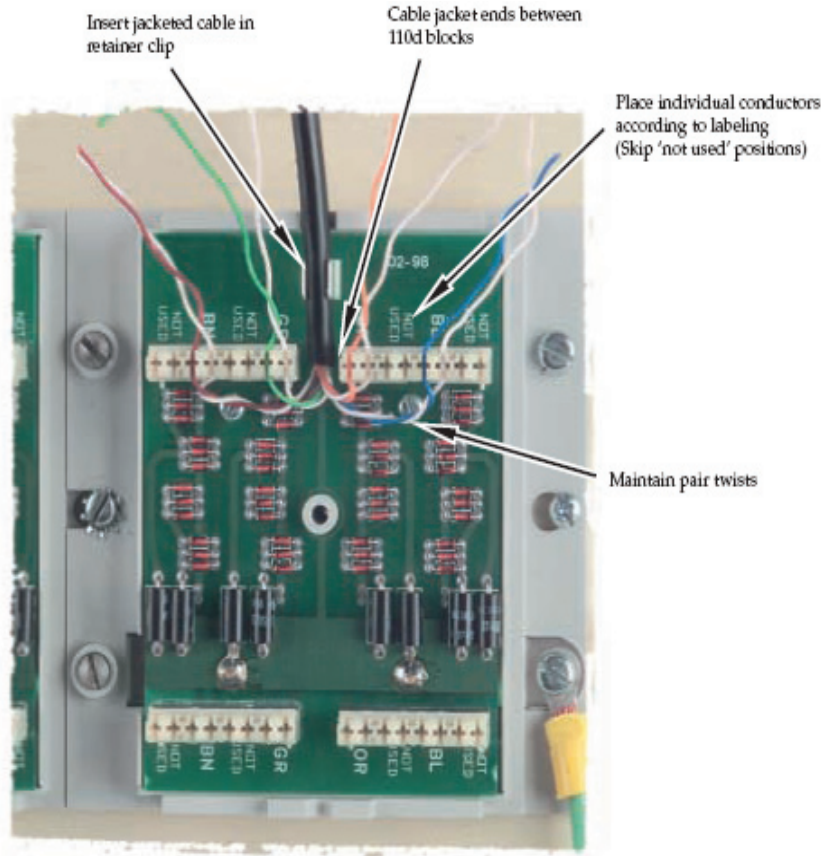
## Bond To Approved Ground



Bonding screw must be tight

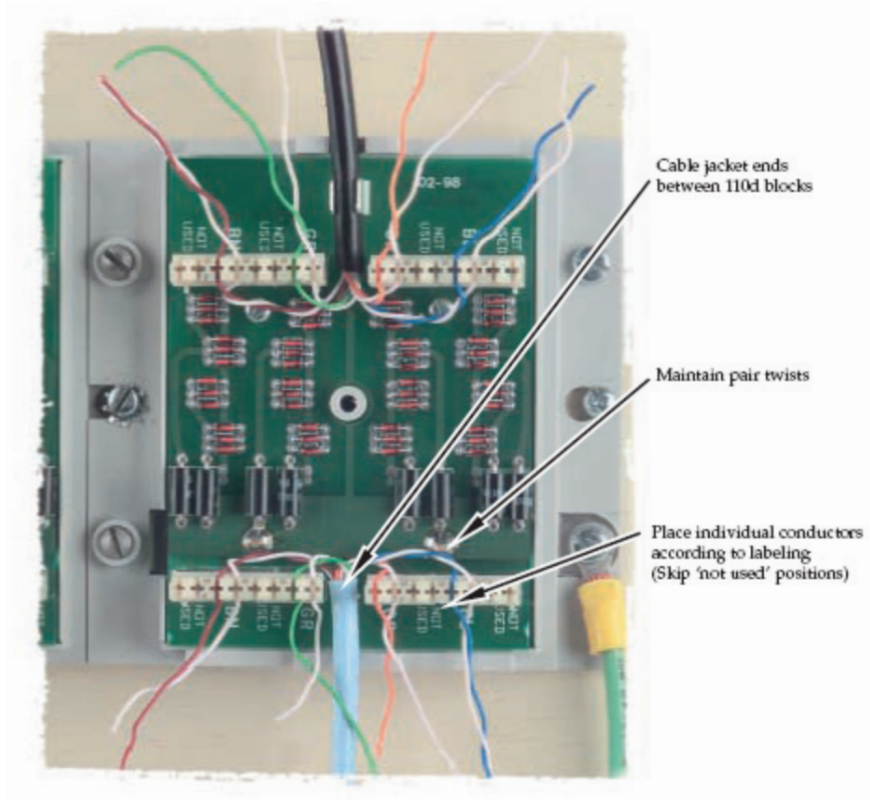
Use the ring lug and screw provided

## Terminate OSP Cable

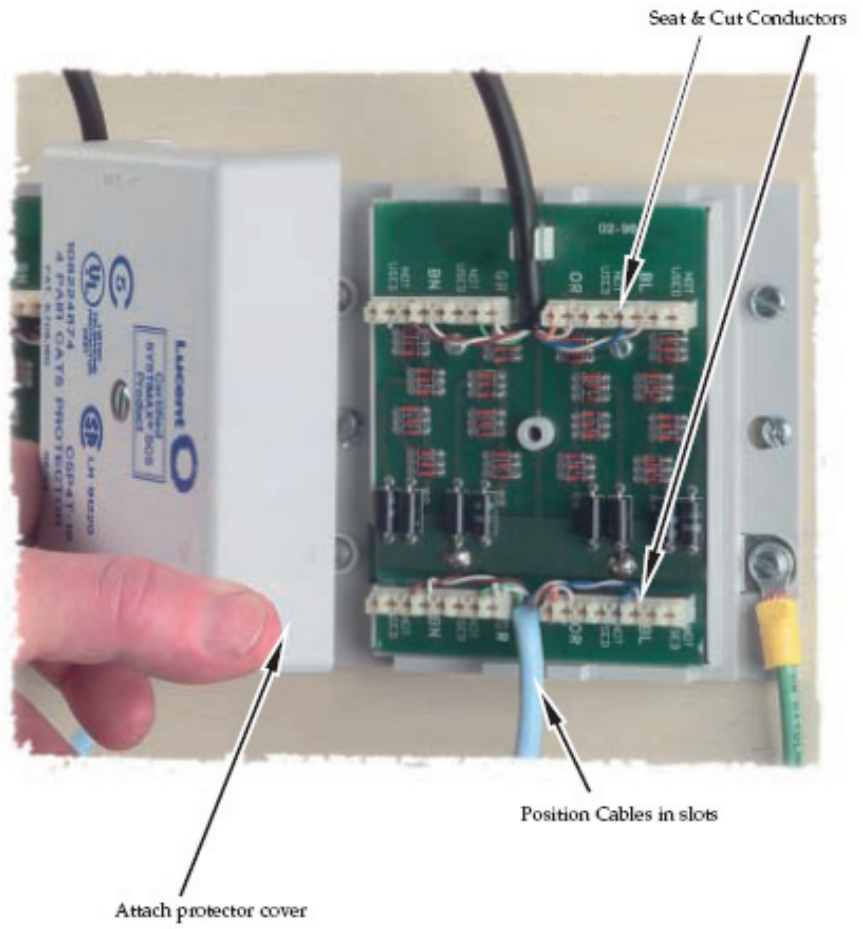




## Terminate Equipment Cable



## Install Cover



## Troubleshooting A Non-Functioning Channel

After an over-voltage incident below 16V, the protector will automatically reset and continue functioning. If the channel does not carry a signal, the protector should be checked for the following conditions:

### Fail - short

In this instance, the protector has failed with one or more of the eight wires shorted to electrical ground. Use an Ohmmeter to see if there is a value of 1000Ω or less between the ground screw of the protector and any of the wires on the protected or unprotected sides of the unit. The end equipment should be disconnected during this test. If this condition is found, the protector must be replaced.

### Fail - open

In this instance, the protector has failed by leaving one or more of the eight wires between the entry wiring termination and the equipment side termination open. Use an Ohmmeter to see if there is a value of 10Ω or greater between sides of the protector. The end equipment should be disconnected during this test. If this condition occurs, the protector must be replaced. A supply of replacement units should be stocked at all times.

## VoIP Operation

Do not use the C5P4T-16 Protector when PoE powers VoIP phones. The PoE voltage will be clamped at 16V. Substitute with the Cat 6-16v with PoE Protector (MID Number 760033951). Wire per Category 6 Outside Plant Design and Installation Guidelines found at:

[http://docs.commscope.com/Public/Cat6\\_OSP\\_D\\_and\\_I\\_guidelines.pdf](http://docs.commscope.com/Public/Cat6_OSP_D_and_I_guidelines.pdf)

## Analog Phone Operation Is Not Supported With Category 5 Protectors

The protectors used at both ends of the Category 5 channel do not support the use of standard analog telephone equipment. This is because the protector is designed for LAN use only and the clamping voltage threshold of 16V will not permit a standard analog phone to operate properly. The 110 ANA1-Type Multi-pair Protector Panel may be used for voice applications.

## PoE Operation

There are two types of PSE (Power Sourcing Equipment) that are defined for PoE per the IEEE802.3af standard. They are Midspan and Endspan PSE's.

### Midspan PSE's

- The SYSTIMAX Cat 6 16V w/ PoE Protector (MID 760033951) is compatible for use with all Midspan PSE's.
- All SYSTIMAX PSE's, Models 1200, 2400 & 2400G, are Midspan and power is supplied per PoE Standard IEEE802.3af Alternative B (power is run on cable pairs 1 & 4).

## Endspan PSE's

- The SYSTIMAX Cat 6 16V w/ PoE Protector (MID 760033951) is not compatible for use with Endspan PSE's that run power per Alternative A (power is run on cable pairs 2 & 3).
- The SYSTIMAX Cat 6 16V w/ PoE Protector is compatible for use with Endspan PSE's that run power per Alternative B.
- The cable designer and/or installer must verify with the customer whether Alternative A or B is being deployed in Endspan PSE. SYSTIMAX does not sell a PoE protector that supports Alternative A.

## 1571 Cat 6 OSP Cable Replaces Cat 5 OSP Cable

Please note that SYSTIMAX Cat 5 OSP Cable has been manufactured-discontinued and replaced by SYSTIMAX 1571 Cat 6 OSP cable. 1571 Cat 6 OSP Cable shall be used for both PowerSUM and GigaSPEED XL installations. A Channel comprised of 1571 OSP Cable and GigaSPEED XL Connecting hardware provides Category 6 channel performance.

The cable should be placed in conduit whenever possible. If it is to be installed as aerial placement, appropriate support means must be used as the cable does not have integral support members. It is not recommended for direct-buried applications as it does not have mechanical protection. This cable is not fire-rated for indoor use.

Specifications and Ordering Information Protectors		
Protector Type	100% Solid State	
Clamping Voltage	16V	16V Data (or/gr) 62V Power (bl/br)
Response Time	2-5 nanoseconds	
Grounding Requirements	#10 AWG (min)	
Grounding Connection	#8-32 Screw to ground plane on module	
Physical Dimensions	4.25"L x 4.25"W x 1.42"D	
Standards Compliance	UL497	
Product Code	C5PAT-16**	Cat 6 16V w/PoE*
Material ID Number	108224874	760033951

\* See the PoE Operations Section starting on Page 11

\*\* Does not support PoE

Specifications and Ordering Information OSP Cable	
Cable Type	4-Pair #23 AWG UTP
Cable Sheath	Polyethelene
Water-Displacing Compound	Flooding Compound
End Blocking	Not needed
Cable Diameter	0.250"
Product Code	1571 Cat 6 Cable
Material ID Number	760008888



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