



# Grommes~Precision Precision Electronics



DESIGNED AND  
MADE IN U.S.A.



**Stop lightning damage! Save  
your equipment, time, and  
money!**



## TLS / LLS

### Tel-Page Line / Line Level Lightning Suppressor

#### FEATURES

- Induced Lightning Strike Protection
- Rugged Construction
- Triple Protection: Primary & Secondary, Series, and Shunt
- Utilizes Advanced Protection Technology—Think of the SLS similar to a Transient Voltage Suppressor Diode with a Gate Feature

No one knows when and where lightning will strike. But with the inexpensive **Grommes~Precision TLS/LLS**, you can rest easy in knowing that if lightning induces a surge into your Tel-Page line, your paging amplifier will be protected!

Most lightning damage to electronic equipment is caused through *induction*. With induction, lightning does not strike the telephone line or electronic equipment directly, rather, it propels, or induces, large voltages of electrical energy into the system. Long telephone lines and the electronic equipment connected to them are particularly susceptible to damage from induction.

Therefore, **Grommes~Precision** designed the **TLS/LLS** to prevent surges on the Tel-Page line from harming the electronic equipment connected to it. Though few things can withstand a rare direct strike, the **TLS/LLS** can help protect electronic equipment from the much more likely induced strike. Once the current flowing through the **TLS/LLS** exceeds its switching current, the **TLS/LLS** clamps the transient voltage simulating a short circuit condition. Once the current flowing through the **TLS/LLS** is less than the devices holding current, the **TLS/LLS** will reset, protecting your electronic equipment.

Simply connect the **TLS/LLS** within the Tel-Page line after the phone system (the **TLS/LLS** does not pass telephone ringer voltage) and directly before the electronic equipment you wish to protect.

And, with over a half-century of experience in the business, **Grommes~Precision's TLS/LLS** is made in America, and is backed by **Grommes~Precision's** unbeatable expertise and Assurance Policy: a **5 year warranty** and **30 Day Money Back Guarantee**.

#### Compare the Grommes~Precision TLS/LLS

|  | TLS<br>LLS                      | Metal<br>Oxide<br>Varistor<br>(MOV) | Gas<br>Discharge<br>Tubes       | Transient<br>Voltage<br>Suppressors<br>(TVS)   |
|--|---------------------------------|-------------------------------------|---------------------------------|--|
| <b>Speed</b>                                 | Very Fast                       | Slow                                | Slow                            | Very Fast  |
| <b>Degradation</b>                           | None, the<br>TLS is<br>Reusable | Degrades<br>with each<br>strike     | Degrades<br>with each<br>strike | None, but<br>only Reus-<br>able so long<br>as Surge<br>Power<br>Handling<br>Capacity not<br>exceeded |
| <b>Surge Power<br/>Handling<br/>Capacity</b> | High                            | Medium to<br>High                   | Medium to<br>High               | Low  |



Place the TLS near electronic equipment to protect that equipment

|                            | TLS/LLS              |
|----------------------------|----------------------|
| <b>MAX. SIGNAL VOLTAGE</b> | 1V RMS               |
| <b>SWITCHING VOLTAGE</b>   | Approx. 25V          |
| <b>DIMENSIONS</b>          | 2.75"Wx2.75"Hx4.88"D |
| <b>WEIGHT</b>              | 2LBS                 |



**Grommes~Precision**

## Grommes~Precision

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