

LPN-OVP Over Voltage Protection Unit.

Over Voltage Protection Unit.

Description.

The LPN-OVP is reliable and effective in protecting process control equipment against transients induced between the signal lines and instrument earth through lightning strikes or from other sources.

The circuit design is simple but very effective. Gas discharge tubes provide first stage protection, and can discharge up to 5000A when exposed to a 8 x 20µsec waveform. Transient voltage suppressors provide the second stage protection, and typically operate within 5nsec, and can discharge 600W when exposed to a 10 x 1000µsec waveform.

For maximum protection an LPN-OVP should be used at each end of a field cable to protect process control equipment at both ends.



Standard DIN Rail Mount Enclosure.

Ordering Information.

- LPN-OVP-D Standard DIN Rail Mount.
- LPN-OVP-E IP67 Enclosure, c/w glands.
- LPN-OVP-G Set of 3 Gas Discharge Tubes.

Specifications.

Leakage Current	10µA @ 24Vdc.
Added Line Resistance	28Ω Maximum for the Loop. ^{Note 1/}
Transient Cut off Voltage	32V Standard. (Other Ranges Are Available on Request.)
Gas Discharge Tubes	
- 8 x 20µsec	5000A.
- 10 x 1000µsec	100A.
- DC Spark Overvoltage	60~90V @ 100V/sec.
- Impulse Spark Overvoltage	<600V @ 1kV/µsec.
Transient Voltage Suppressors	
- 10 x 1000µsec	600W.
- Response Time	<5nsec from 0 to 41V typical.
- Standoff Voltage	33V Typical.
Operating Temperature.	0~60C.
Storage Temperature.	-20~80C.
Operating Ambient Humidity.	5~85% RH Max. Non-condensing.
EMC Compliances	Emissions EN 55022-A. Immunity EN 50082-1, <1% Effect FSO Typ.
Dimensions -LPN-OVP-D	L=79, W=22.5, H=85.
-LPN-OVP-E	L=110, W=80, H=65mm, excluding glands.

Note 1 Each LPN-OVP adds a total of 28Ω to the loop. Two units are recommended for each installation.
Eg: 2 units = 2 x 28Ω = 56Ω total loop resistance.

Note 2. Do not ground the signal. Only use the GROUND terminals provided on the LPN-OVP

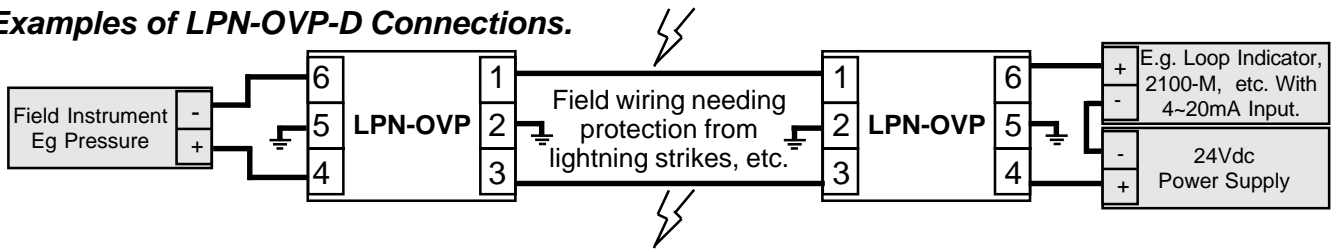
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Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independant fail-safe back-up system must always be implemented.

Quality Assurance Programme.

The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design / development, production and final inspection grant the long term reliability of the instrument.

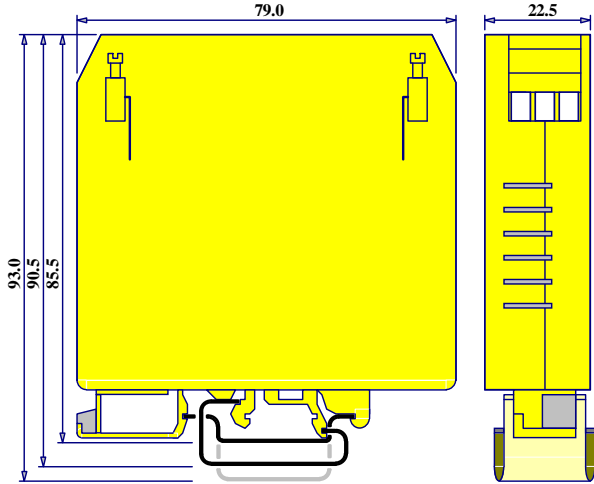
Examples of LPN-OVP-D Connections.



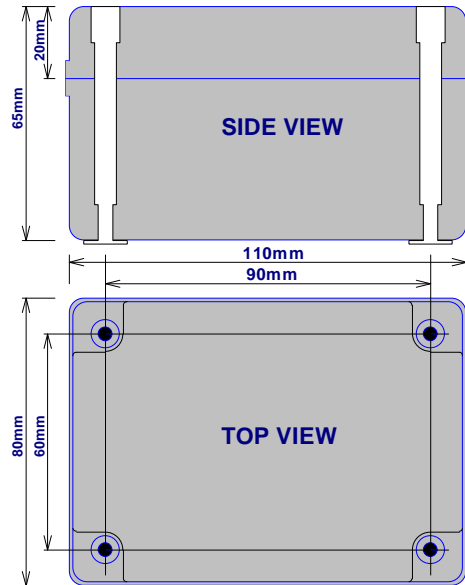
Note 1: Only one of terminals 2 or 5 need to be Earthed.

Note 2: The LPN-OVP inputs and outputs are not polarity conscious.

LPN-OVP-D Enclosure Dimensions.



LPN-OVP-E Enclosure Dimensions.



LPN-OVP Terminations.

- | | | | |
|---|--------------------------|---|--|
| 1 | Input 1: To Field Wiring | 6 | Output 1: To Process Control Equipment |
| 2 | Earth | 5 | Earth |
| 3 | Input 2: To Field Wiring | 4 | Output 2: To Process Control Equipment |

The Proper Installation & Maintenance of LPN-OVP.

All power and signals must be de-energised before connecting any wiring, or altering any Jumpers or Dip Switches.

MOUNTING.

- (1) Mount in a clean environment in an electrical cabinet on DIN or EN rail.
- (3) Draft holes must have minimum free air space of 20mm. Foreign matter must not enter or block draft holes.
- (4) Do not subject to vibration or excess temperature or humidity variations.
- (5) Avoid mounting in cabinets with power control equipment.
- (6) To maintain compliance with the EMC Directives the LPN-OVP is to be mounted in a fully enclosed steel cabinet. The cabinet must be properly earthed, with appropriate input / output entry points, filtering, and cabling.

WIRING.

- (1) All cables should be good quality overall screened INSTRUMENTATION CABLE with the screen earthed at one end only.
- (2) Signal cables should be laid a minimum distance of 300mm from any power cables.
- (3) For 2 wire current loops Austral Standard Cables B5102ES is recommended. For three wire transmitters and RTD's Austral Standard Cables B5103ES is recommended.
- (4) Refer to diagrams for connection information.

COMMISSIONING.

- (1) Once all the above conditions have been carried out and the wiring checked apply power to the LPN-OVP loop and allow five minutes for the loop to stabilize.
- (2) Take a low (approx. 10%) and a high (approx. 90%) reading of the value being measured on the field instrument, and ensure that this agrees with the value being indicated by the indicator, data Logger, PLC, etc. for that field instrument.

MAINTENANCE.

- (1) Repeat (2) of commissioning. Do it regularly - at least once every twelve months.

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