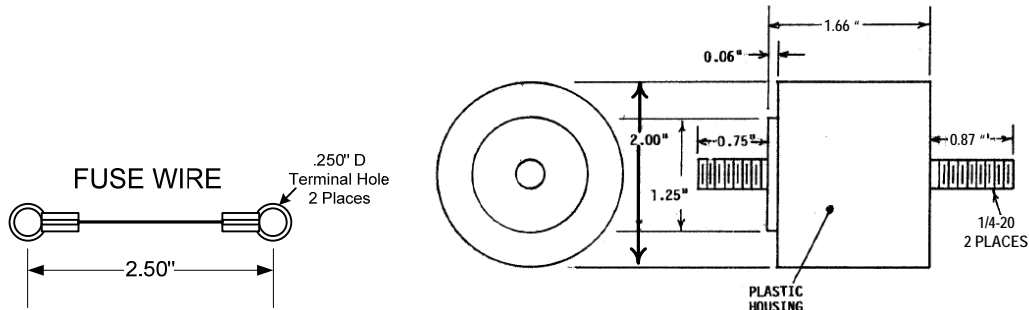


DATA SHEET MODEL LPC 11911-124 1000 VDC MCOV LIGHTNING AND SURGE PROTECTIVE DEVICE (SPD)



The LPC 11911-124 is a two terminal lightning and surge protective device for protection of electrical and electronic equipment against surges and overvoltage conditions appearing on the “plus” and “minus” lines of the power system. Maximum continuous operating voltage is 1000 VDC.

Response is less than one nanosecond in either polarity. Restoration is automatic at the instant the voltage reduces to the normal operating voltage. There is no follow current, no power voltage dip, no power interruption.

This SPD is a metal oxide varistor device. It is maintenance free, not repairable. The failure mode is short circuit. With the occurrence of a destructive surge the SPD is removed from the circuit by a special fuse wire (provided with the SPD). The two terminals are threaded studs (1/4-20 thread). Either terminal may be connected to the “plus” or “minus” bus. The enclosure is black valox plastic.

The SPD shall be customer mounted within a suitable metal enclosure to contain any possible flying debris should a failure occur. The location shall be inaccessible to unauthorized personnel.

For a sound and realistic installation a multiplicity of fused parallel SPD's is suggested. This permits the assembly to have uninterrupted continuation of protection with the remaining SPD's. Another significant advantage of multiple, parallel SPD's is the extension of life. With two SPD's in parallel life is extended 3 to 5 times; with three 7 to 20 times; with four 25 to 100 times. For heavy lightning areas it is advisable to use four or more SPD's in parallel, in view that each SPD is rated for a maximum 30 KA on an 8/20 μ s lightning wave and that lightning may occasionally exceed 100 KA. Lesser intensity lightning strokes would also require parallel SPD's, considering that the lightning channel discharges an average of six individual strokes (as many as 40 have been recorded).

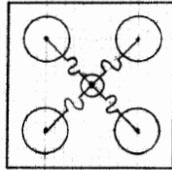
SPECIFICATIONS

- 1) **Voltage rating** : 1000 VDC maximum continuous operation voltage (MCOV).
- 2) **Connections** : Two terminals 1/4-20 studs (bus to mainframe) with special fuse link supplied with the SPD.
- 3) **Performance** : Bipolar operation. Surge is clamped with equal performance in either polarity. Response is less than one nanosecond. No power follow current. No power consumption.

4) **Maximum surge current rating**, either polarity :

Number in parallel	Max. surge 8/20 μ s wave	Max. surge 1 ms wave
1	30 KA	1 KA
2	60	2
3	90	3
4	120	4

5) **Suggested mounting** : Safety enclosure mounting provided by customer.



6) **Environmental performance** :

Operating temperature -40°C to +55°C.

Max. altitude 15,000 ft.

Relative humidity : 20 to 100% non-condensing.

Air quality and environmental functionality. SPD operates in the following conditions :

Salt-laden atmosphere.

Dry and “dusty” atmosphere (approximately 0.1mm to 1mm air born particles).

Any current world ozone condition.

Presence of sulfates, SO₂.

Acid rain.

Some protection to be offered by the safety enclosure (non air-tight) required for mounting.

7) **Clamping voltage vs. peak surge current**, either polarity :

Peak Current (KA)	Clamping Voltage, number of devices in parallel			
	1	2	3	4
0.1	1900 V	1800 V	1750 V	1740 V
1	2100	2040	1960	1900
10	2750	2550	2450	2320
30	3200	2900	2750	2650
60	-	3200	3050	2800
90	-	-	3200	3100
120	-	-	-	3200

8) **Life** : Number of operations vs. current, either polarity.

Peak Current (amps)	Number of operations, number of devices in parallel							
	1		2		3		4	
	8/20 μ s	1 ms	8/20 μ s	1 ms	8/20 μ s	1 ms	8/20 μ s	1 ms
100	10 ⁶	1,000	10 ⁶	100,000	10 ⁶	10 ⁶	10 ⁶	10 ⁶
200	10 ⁶	60	10 ⁶	1,000	10 ⁶	10,000	10 ⁶	100,000
400	200,000	30	10 ⁶	60	10 ⁶	800	10 ⁶	1,000
800	30,000	5	100,000	6	10 ⁶	10	10 ⁶	60
1600	3,000	-	20,000	1	70,000	2	200,000	6
4000	100	-	1,000	-	3,000	-	10,000	1
10,000	8	-	70	-	200	-	800	-
30,000	2	-	6	-	8	-	30	-
60,000	-	-	1	-	3	-	4	-
90,000	-	-	-	-	2	-	3	-
120,000	-	-	-	-	-	-	1	-