



**TYPE SS Transient Voltage Surge Suppression**

Power Protection

## ADVANCED HYBRID SURGE SUPPRESSION TECHNOLOGY

Approved by Motorola R56 Committee, Standards and Guidelines for Communication Sites — Type 1, 1A and 2 Devices

Utilizes advanced SAD/MOV array technology for industry leading transient suppression voltages

Incorporates Liebert's "state-of-the-art" Interceptor technology for enhanced safety and performance coordination of all surge and fuse components

Modular design for flexibility and ease of servicing

400 kA surge current capacity for increased reliability

Real-time system monitoring

Product performance and safety standards — UL1283, 1449 second edition, C22.2 No. 8 Bulletin 516 and NEMA LS1-1992

Three different units available:

- **Type 1 Hybrid TVSS** — 250 joules of SAD protection and 5,000 joules of MOV protection
- **Type 1A Hybrid TVSS** — 500 joules of SAD protection and 5,000 joules of MOV protection
- **Type 2 MOV only TVSS** — 5,000 joules of MOV protection

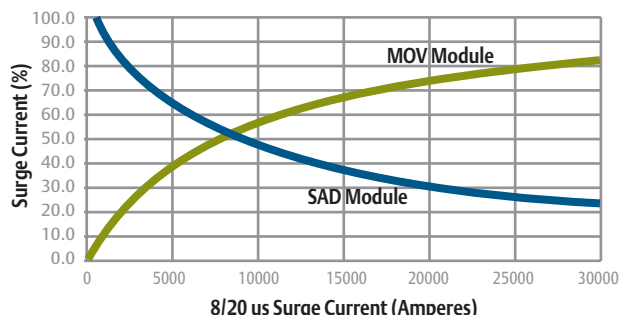
**Warranty** — Covered 24x7 by Liebert Global Services  
10-Years for Parts, 5-Years On-Site Labor

Typical applications:

- Cell Sites
- Communication shelters
- AC main and distribution panels and load centers
- Transmitters
- Base Stations



## Type SS MOV/SAD Current Sharing – Type 1 and Type 1A Models



### The Liebert Answer:

The Liebert Type SS offers a true, coordinated multi-stage system of suppression. It integrates the fast response time of the silicon avalanche diode (SAD) with the high-energy capability of the metal oxide varistor (MOV) for increased reliability and performance. This unique circuitry does not sacrifice the sensitive SAD module when subjected to a damaging high-energy transient event.

## TYPE SS TVSS Technical Specifications

Voltage Configurations	120/240V and 120/208V (Please consult factory for additional voltage configurations)
Maximum Continuous Operating Voltage (MCOV)	≥125%
Fault Current Rating (AIC)	65 kAIC
Operating Frequency Range	47 – 63 Hz
Connection	Parallel (4-6 AWG recommended and 14-1/0 AWG capable); wire lug or disconnect
Modes of Protection	Line to Neutral/standard
Surge Current Capacity	400 kA per mode
Response Time	<0.5 nanoseconds
Dimensions	120/240V – 15.32 in. x 13.32 in. x 6.60 in. 120/208V – 18 in. x 16 in. x 8.62 in.
Weight	35 lbs.
Operating Temperature	-40°C to +60°C
Status Indication	LEDs, Form 'C' contacts-2 sets
Form "C" Contact Rating	120 VAC, 5.0 amps, pF of 1.0
Certifications	Product performance and safety standards – UL1283, 1449 second edition, C22.2 No.8 Bulletin 516, NEMA LS1-1992
Technology	Type 1 Hybrid TVSS – 250 joules of SAD protection and 5,000 joules of MOV protection Type 1A Hybrid TVSS – 500 joules of SAD protection and 5,000 joules of MOV protection Type 2 MOV only TVSS – 5,000 joules of MOV protection
Enclosure	NEMA 4X; suitable for indoor or outdoor applications
Warranty	Covered 24x7 by Liebert Global Services 10-Years Parts and 5-Years On-Site Labor

## Typical NEMA LS1 Data

	Type 1 & 1A Unit; Line - Neutral	Type 2 Unit Line - Neutral
	120/208V & 120/240V	120/208V & 120/240V
	Clamping Voltage (Vpk)	Clamping Voltage (Vpk)
Category A Ringwave (6 kV / 0.2 kA)	176	284
Category B Ringwave (6 kV / 0.5 kA)	288	304
UL 1449 Combination Wave Wave (6 kV / 0.5 kA)	256	300
Category B Combination Wave (6 kV / 3.0 kA)	304	336
Category C Combination Wave (20 kV / 10.0 kA)	440	408

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## LIEBERT WEB SITE

<http://www.liebert.com>

## 24 x 7 WARRANTY SUPPORT

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## TECHNICAL SUPPORT

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