

Bulletin 4983 Surge Protective Devices



UL 1449 3rd Edition Standard Updates

Changes to UL 1449 Standard

Effective September 29, 2009 the UL 1449 Standard was updated:

- UL Category Code Number Changed from VZCA (2nd Edition) to VZCA2 (3rd Edition)
- Combined terminology of transient voltage surge suppressor (TVSS) and surge “arrestors” into one standard term called surge protective device (SPD)
- New definitions of SPD installation locations: types 1-4
- New let-thru voltage test requirements: voltage protection rating (VPR) versus suppressed voltage rating (SVR)
- New nominal discharge current ratings

Rockwell Automation offers a broad line of Allen-Bradley Surge Protective Devices that are approved for the latest UL 1449 3rd Edition requirements.

As a result of these updates, product ratings have changed. Users are advised to confirm that products currently specified comply with the new standard.

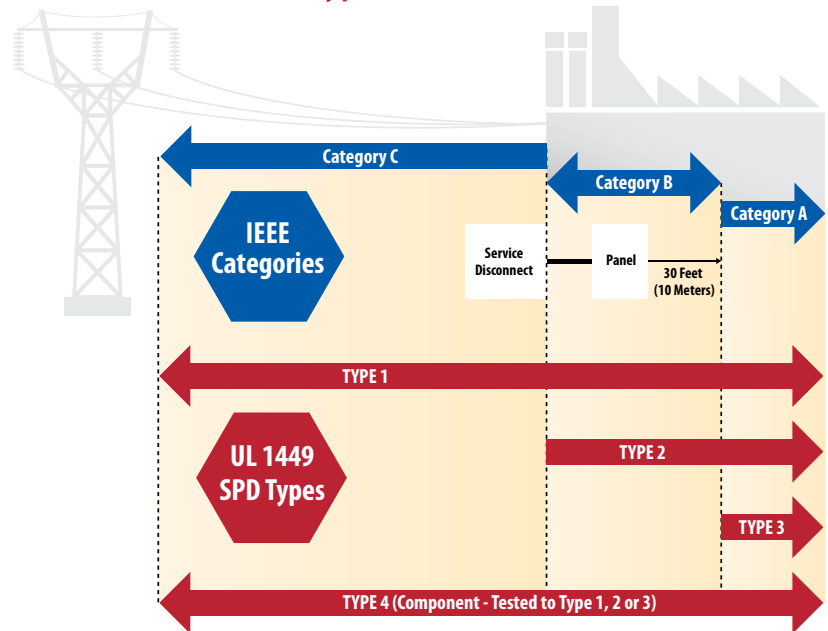


Overview

UL has updated the 1449 Surge Protection Standard to the latest version of 3rd Edition. This edition provides no grandfather clauses and therefore all products must be retested and certified.

The terminology and category code number have also been updated in order to provide harmonization and clarity between various standards. Previously known devices called Transient Voltage Surge Suppressors (TVSS) and “Surge Arrestors” have now been changed into the Surge Protective Devices (SPD). Category code number was changed from VZCA (2nd Edition) to VZCA2 (3rd Edition).

UL 1449 3rd Edition – Types/Locations



LISTEN.
THINK.
SOLVE.

New Definitions

New Definitions of the SPD Installation locations/types have been established (See Graphic on front page):

- Type 1: Permanently-connected SPDs intended for installation between the secondary of the service transformer and the line side of the overcurrent device.
- Type 2: Permanently-connected SPDs intended for installation on the load side of the service equipment overcurrent device.
- Type 3: Point-of-utilization SPDs, installed at a minimum of 30 feet from the electrical service panel to the point of utilization (Example: Cord Connected Receptacle Type)
- Type 4: Component Assembly, tested to Type 1-3. Allen-Bradley components are Type 4 tested to Type 2

Product Selection

4983-DS: Standard Duty

- UL 1449 3rd Edition, CSA, CE
- Replacement Module
- Compact Modular Design
- Visual and Remote Status Indicator



New Let-Thru Voltage Test Requirements:

Voltage Protection Rating (VPR) versus Suppressed Voltage Rating (SVR)

- Voltage Protection Rating is a measured limiting voltage rating that is determined during a surge suppression test using a combination wave generator setting of 6kV, 3kA. UL 1449 3rd Edition (Table 63.1) provides a listing of preferred values. VPR value is NOT the same as the SVR value.

New Nominal Discharge Current Ratings (Inominal):

- Nominal discharge current is a test incorporated into the 3rd Edition standard to provide a surge current level of which the device can withstand a minimum of 15 surges (8/20 μ s waveform) while continuing to function properly.
 - Type 1: 10 or 20kA
 - Type 2: 3, 5, 10, or 20kA
 - Type 3: 3kA
 - Type 4: Dependent upon Usage Type (1, 2, or 3)

4983-DH: Heavy Duty



- UL 1449 3rd Edition, CSA, CE
- Highest Energy Absorption Capability
- Visual and Remote Status Indicator

AC Network	Connection Mode	No. of Poles and Devices Needed	Max. Continuous Operating Voltage (MCOV) (U_c) [V AC]	Lightning Current 10/350 μ s (I_{imp}) [kA]	Max. Discharge Current 8/20 μ s (I_{max}) [kA]	Nominal Discharge Current 8/20 μ s (I_n) [kA]	Protection Level (Up) [kV]	UL 1449 Voltage Protection Rating (VPR) [V]	Cat. No.
120	L/G or N/G	1	150	25	70	20	1.0	1200	4983-DH120-25
	L/G, N/G	2							
120/208	L1/G, L2/G, L3/G, N/G	4	330	25	70	20	1.5	900	4983-DH300-25
230/400	L/G or N/G	1							
	L/G, N/G	2							
	L1/G, L2/G, L3/G, N/G	3							
277/480Y	L1/G, L2/G, L3/G, N/G	4							
230/400	L/G or N/G	1	330	50	70	20	1.5	1200	4983-DH300-50
	L/G, N/G	2							
	L1/G, L2/G, L3/G or N/G	3							
	L1/G, L2/G, L3/G, N/G	4							
277/480 Y	L1/G, L2/G, L3/G, N/G	4							

4983-DC: Heavy Duty

Bulletin 4983-DC DIN Rail Filter and Surge Protective Device is the combination of a filter and a surge protective device. This device provides transient and noise protection in one small package.



- Small combination (filter and SPD) package size
- Features Isatrol technology
- All-mode transient protection with exceptional line-to-neutral value of 25 kA
- Status indicator
- Form C contact for remote status indication
- Mounts to DIN rail

AC Network	Connection Mode	No. of Poles	Max. Continuous Operating Voltage (MCOV) (U_c) [V AC]	Max. Discharge Current 8/20 μ s (I_{max}) [kA]	Nominal Discharge Current 8/20 μ s (I_n) [kA]	Protection Level (U_p) [kV]	UL 1449 Voltage Protection Rating (VPR) [V]	Cat. No Base and Module	Cat. No Replacement Module Only	Cat. No Replacement Module Only Gas Discharge Tube
120	L/G or N/G	1	150	40	20	0.9	700	4983-DS120-401	4983-DS120-40	—
	L/G or N/G	2						4983-DS120-402		
120/208Y	L1/G, L2/G, L3/G	3	150	40	20	0.9	700	4983-DS120-403	4983-DS120-40	—
	L1/G, L2/G, L3/G, N/G	4						4983-DS120-404		
230/400	L/G or N/G	1	275	40	20	1.25	1000	4983-DS230-401	4983-DS230-40	—
	L/G, N/G	2						4983-DS230-402		
	L1/G, L2/G, N/G	3						4983-DS230-403		
277	L/G or N/G	1	420	40	20	1.8	1500	4983-DS277-401	4983-DS277-40	—
	L1/G, L2/G, L3/G	3						4983-DS277-403		
277/480Y	L1/G, L2/G, L3/G, N/G	4	420	40	20	1.8	1500	4983-DS277-404	4983-DS277-40	—
	L1/G, L2/G, L3/G, N/G	4						4983-DS277-404		
480D	L1/G, L2/G, L3/G	3	550	40	20	1.8	1800	4983-DS480-403	4983-DS480-40	—
230/400	L/G, N/G	2	275	40	20	1.25	*	4983-DS230-401G	4983-DS230-40	4983-DS230-40G
	L1/G, L2/G, L3/G, N/G	4						4983-DS230-403G		
120	L/G or N/G	1	150	80	20	0.9	700	4983-DS120-801	4983-DS120-80	—
	L/G, N/G	2						4983-DS120-802		
120/208Y	L1/G, L2/G, L3/G	3	150	80	20	0.9	700	4983-DS120-803	4983-DS120-80	—
230/400	L/G or N/G	1						4983-DS230-801		
	L/G, N/G	2	4983-DS230-802							
	L1/G, L2/G, N/G	3	4983-DS230-803							
277	L/G or N/G	1	420	80	20	1.25	1000	4983-DS277-801	4983-DS277-80	—
	L1/G, L2/G, L3/G	3						4983-DS277-803		
277/480Y	L1/G, L2/G, L3/G, N/G	4	420	80	20	1.8	1500	4983-DS277-804	4983-DS277-80	—
	L1/G, L2/G, L3/G, N/G	4						4983-DS277-804		
480D	L1/G, L2/G, L3/G	4	680	80	20	1.8	2500	4983-DS277-804	4983-DS277-80	—
600D	L1/G, L2/G, L3/G	4	690	80	20	1.8	2500	4983-DS600-804	4983-DS600-80	—

*Consult your Rockwell Automation Sales office or Allen-Bradley Distributor.

AC Network	Connection Mode	Frequency [Hz]	Max. Continuous Operating Voltage (MCOV) (U_c) [V AC]	Maximum Discharge Current 8/20 μ s (I_{max}) [kA]			Nominal Discharge Current 8/20 μ s (I_n) [kA]	UL1449 Voltage Protection Rating (VPR) [V AC]				Ampacity [A]	Cat. No.
				L/G	L/N	N/G		L/G	L/N	N/G	L-L		
120V AC	L/G, L/N, N/G	47...63	150	10	25	10	3	600	400	600	-	3.0	4983-DC120-03
												5.0	4983-DC120-05
												10	4983-DC120-10
												20	4983-DC120-20
240V AC	L/G, L/N, N/G	47...63	320	10	25	10	3	1200	-	-	800	3.0	4983-DC240-03
												5.0	4983-DC240-05
												10	4983-DC240-10
												20	4983-DC240-20

4982-DD: Dataline

Bulletin 4983-DD DIN Rail Dataline Surge Protective Devices protect industrial communication networks. These devices use a combination of 3-electrode gas discharge tubes and fast-clamping diodes.

- UL 497B
- Compact, modular design
- Cost-effective to protect individual loads



AC Network	Max. Continuous Operating Voltage (MCOV) [V DC]	Nominal Discharge Current 8/20 μ s (I_n) [kA]	Max. Discharge Current 8/20 μ s (I_{max}) [kA]	Protection Level (U_p)	Nom. Line Voltage [V]	Line Type	Cat. No.
4...20 mA Loop type	28	5	20	40 V	24V	1 pair with shield	4983-DD24
RS232 type	15	5	20	30 V	12V	1 pair with shield	4983-DD12
High-speed transmission (LAN) RS485 type, RS422 type	8	5	20	25 V	6V	1 pair with shield	4983-DD06

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