

Application note

Surge protection devices in DC applications

Through to the coming up of more and more renewable energy systems and the change from AC to DC grids, it will also come to new applications for surge protection.

Therefore, it will be defined a new standard for the DC SPD (IEC/EN 61643-41). In the time the standard is not published and the products are approved to this new standard, we must solve these applications by using SPDs out of the AC and PV product range.

Implementing a surge protection device in such an application, e.g. a battery storage system, it is necessary to protect the surge protection device against the high DC short circuit power with a backup fuse, which must be coordinated to the surge protection device.

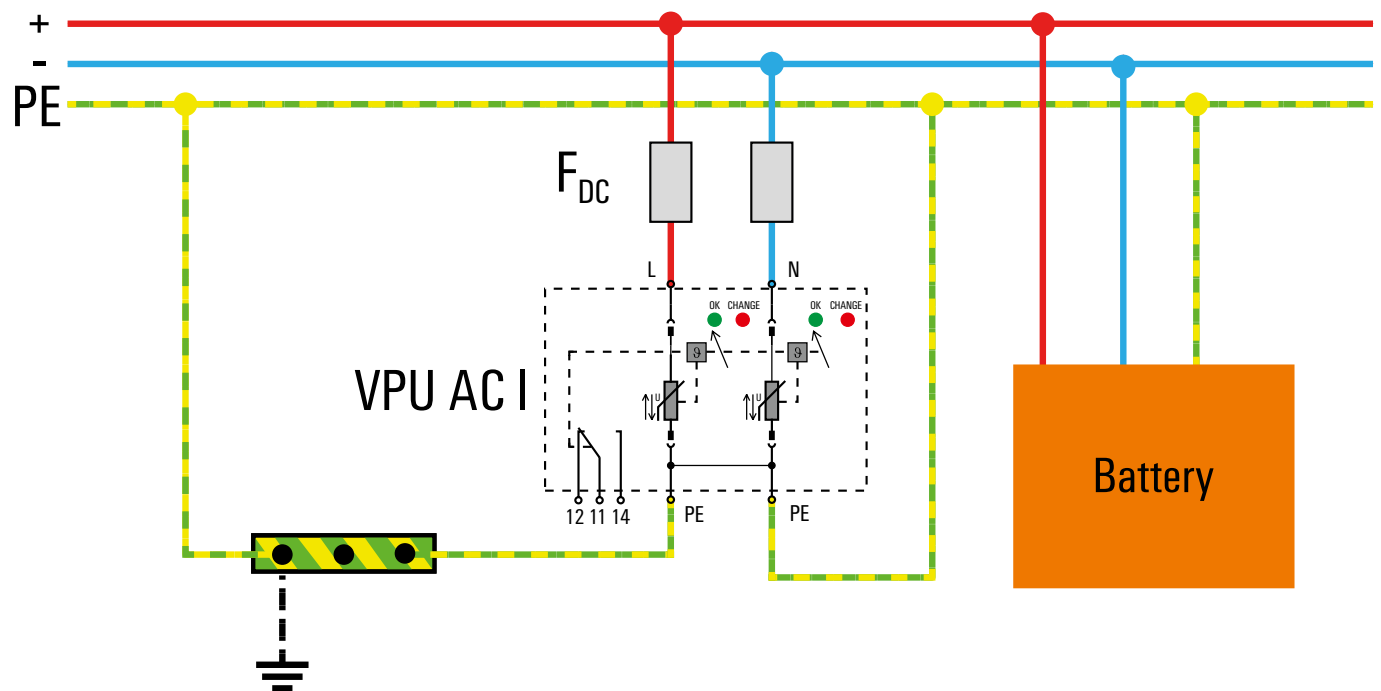


Figure 1: Sample drawing of the DC application

Selection of the required back-up fuse

Below table gives a recommendation which VARITECTOR PU can be used for the different DC voltages. Furthermore, there is a recommendation for the required fuses.

DC voltage	Usable Weidmüller SPD	Order No.	Needed DC Fuse	Recommended fuse
24 V	VPU III R 24 V / 4 kV AC / DC	1351580000	16 A gG	ETI 16 A gG or SIBA 16 A gG
48 V	VPU AC II US 2 R 60 / 50	2730790000	63 A gG	ETI 63 A gG or SIBA 63 A gG
	VPU III R 48 V / 4 kV AC / DC	1351600000	16 A gG	ETI 16 A gG or SIBA 16 A gG
60 / 75 V	VPU AC II 2 R 75 / 50	2591630000	63 A gG	ETI 63 A gG or SIBA 63 A gG
110 / 120 V	VPU AC II US 2 R 120 / 50	2730480000	63 A gG	ETI 63 A gG or SIBA 63 A gG
220 / 242 V	VPU AC I 2 R 300 / 12.5	2591410000	100 A gG	ETI 100 A gG or SIBA 100 A gG
	VPU AC II 2 R 300 / 50	2591050000	63 A gG	ETI 63 A gG or SIBA 63 A gG
380 V	VPU PV I+II 3 R 600 E	2857040000	125 A gRB	Mersen 125 A gRB
			160 A / 440 V gBat	ETI 160 A / 440 V gBat
	VPU AC II 2 R 300 / 50	2591050000	80 A gRB	Mersen 80 A gRB
			160 A / 440 V gBat	ETI 160 A / 440 V gBat
550 / 600 V	VPU PV I+II 3 R 600 E	2857040000	125 A gRB	Mersen 125 A gRB
			160 A / 700 V gBat	ETI 160 A / 700 V gBat
	VPU PV II 3 R 600	2857070000	80 A gRB	Mersen 80 A gRB
			160 A / 700 V gBat	ETI 160 A / 700 V gBat
750 / 900 / 950 / 1000 V	VPU PV I+II 3 R 1000	2530620000	160 A / 1000 V gBat	ETI 160 A / 1000 A gBat
	VPU PV II 3 R 1000	2530180000		
1500 V	VPU PV I+II 3 R 1500	2530590000	160 A / 1500 V gBat	ETI 160 A / 1500 V gBat
	VPU PV II 3 R 1500	2530650000		



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