

Selecting Surge Protective Devices (SPDs) and their associated protection

The general rules are imposed by the international standard HD/IEC 60364 articles 443 and 534. They can be replaced or amended by specific local (country) rules and/or regulations.

Technical characteristics and standards p. 79

Risk levels:



- Very high risk:** EN/IEC 62305 standards, installations with a LPS or metal structure (acting as a lightning conductor), installations that are isolated, or on a high mountain, or have a history of lightning strikes, etc.
- High risk:** installations outside of urban areas, in mountainous areas, isolated, at the end of a line, near a body of water, trees or near installations equipped with lightning conductors, etc.
- Low risk:** installations in urban areas (or grouped buildings), flat areas, or low and medium height mountains

Group or individual houses, small commercial buildings	Commercial buildings	Large commercial/Industrial buildings
In ≤ 125 A	In ≤ 400 A	In > 400 A

Low voltage installation	Main distribution board	Power network	Isc	SPD type	SPD (N left/right) + recommended overcurrent protection ⁽¹⁾	Isc	SPD type	SPD (N left/right) + recommended overcurrent protection ⁽¹⁾	Isc	SPD type	SPD (N left/right) + recommended overcurrent protection ⁽¹⁾
	MB	1P+N	≤ 10 kA	T1+T2 / 12.5 kA	4 122 74/76 + 4 078 06	≤ 25 kA	T1+T2/25 kA	-	≤ 50 kA	T1+T2/25 kA	-
					4 122 72 + 4 078 65			4 122 82 + 4 200 44			4 122 82 + 4 201 24
					4 122 75/77 + 4 079 34			4 122 83 + 4 200 54			4 122 83 + 4 201 34
		3P		T1+T2 / 8 kA	4 122 54/56 + 4 078 04		-	-			
					4 122 52 + 4 078 63		4 122 72 + 4 097 87	4 122 82 + 4 201 24			
					4 122 55/57 + 4 079 32		4 122 75/77 + 4 098 00	4 122 83 + 4 201 34			
	3P+N	T2 / 40 kA	4 122 44/46 + 4 078 02	-	-						
			4 122 42 + 4 078 61	4 122 72 + 4 097 87	4 122 72 + 4 101 67						
			4 122 45/47 + 4 079 30	4 122 75/77 + 4 098 00	4 122 75/77 + 4 101 80						
	DB	1P+N	≤ 6 kA	T2 / 12 kA	0 039 51 (integrated protection)	≤ 10 kA	T2 / 12 kA	0 039 71 (integrated protection)	≤ 25 kA	T2/40 kA	-
					-			-			-
					0 039 53 (integrated protection)			0 039 73 (integrated protection)			-
3P+N		T2 / 20 kA		4 122 24/26 + 4 078 01	4 122 60/62 + 4 092 03		4 122 64/66 + 4 097 70				
				-	4 122 42 ⁽²⁾ + 4 092 55		4 122 42 ⁽²⁾ + 4 097 83				
				4 122 25/27 + 4 079 29	4 122 61/63 + 4 093 37		4 122 65/67 + 4 097 96				
Proximity protection of sensitive equipment (Type 3)	Multi-outlet extensions		6 946 14/48/51/56/64/66/70/71		Mosaic	0 775 40 (p. 890)		Mosaic	0 775 40 (p. 890)		
	Mosaic		0 775 40 (p. 890)			0 775 40 (p. 890)					

Communication lines

(See p. 78)

When low voltage SPDs are present, protection of all lines entering the building is recommended

General recommendations for associated protection devices Technical sheets see e-catalogue

SPDs Cat.Nos	T1+T2 / 25 kA and 35 kA		T1+T2 / 12.5 kA			T1+T2 / 8 kA			T2 / 40 kA			T2 / 20 kA		
	4 122 80/81/82/83		4 122 70/71/72/73/74/75/76/77			4 122 50/51/52/53/54/55/56/57			4 122 30/32/33/40/41/42/43/44/45/46/47/64/65/66/67			4 122 20/21/23/24/25/26/27/60/61/62/63		
Network	3P	3P+N	1P+N	3P	3P+N	1P+N	3P	3P+N	1P+N	3P	3P+N	1P+N	3P	3P+N
Circuit breaker	DPX ³ 160 - 80 A		DX ³ 63 A C curve			DX ³ 40 A C curve			DX ³ 40 A C curve			DX ³ 20 A C curve		
	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P
Isc ≤ 10 kA	-	-	4 078 06	4 078 65	4 079 34	4 078 04	4 078 63	4 079 32	4 078 04	4 078 63	4 079 32	4 078 01	4 078 60	4 079 29
Isc ≤ 16 kA	4 200 04	4 200 14	4 092 08	4 092 60	4 093 42	4 092 06	4 092 58	4 093 40	4 092 06	4 092 58	4 093 40	4 092 03	4 092 55	4 093 37
Isc ≤ 25 kA	4 200 44	4 200 54	4 097 74	4 097 87	4 098 00	4 097 72	4 097 85	4 097 98	4 097 72	4 097 85	4 097 98	4 097 69	4 097 82	4 097 95
Isc ≤ 50 kA	4 201 24	4 201 34	4 101 54	4 101 67	4 101 80	4 101 52	4 101 65	4 101 78	4 101 52	4 101 65	4 101 78	-	-	-

IT earthing system (all risks)

SPD type	Network	Icc	SPD + protective device ⁽¹⁾
MB T1+T2 35 kA/440 V	3P	50 kA	4 122 80 (x 3) + 4 201 24
	3P+N		4 122 80 (x 4) + 4 201 34
DB T2 40 kA/440 V	1P+N	25 kA	4 122 30 (x 2) + 4 097 70
	3P		4 122 32 + 4 097 83
	3P+N		4 122 33 + 4 097 96