

Surge Protection SPBT12



Powering Business Worldwide

sg03316



Description

- Combined test class 1/2 tested SPD
- Suitable for applications with an external lightning protection system (where also a limp of 12,5 kA per phase is needed)
- For TT, TN-C and TN-S supply systems
- Auxiliary contact and busbar available as an accessory

Types

SPB „BB“

- SPD which can be connected via busbar to a 4pole protective device/ switch disconnector

SPB „NPE“

- Galvanic separated SPD path between neutral and protective earth
- Suitable for TT and TN-S systems due to the 3+1 connection

Description

Type
Designation

Article No.

Units per
package**Lightning current arrester - surge arrester sets, Lightning protection classes III, IV**

sg28912

**Single phase supply / 2+0 connection**

TN-S-Set 2pole	SPBT12-280/2	158309	1 / 60
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**Single phase supply / 1+1 connection**

TN-S/TT Set 1+N Set 50kA	SPBT12-280-1+NPE50	184752	1 / 30
TN-S/TT-Set 1+1pole 100kA	SPBT12-280-1+NPE	158308	1 / 40

sg29612

**Three phase supply**

TN-C-Set 3pole (3+0 connection)	SPBT12-280/3	158330	1 / 40
TN-S-Set 4pole (4+0 connection)	SPBT12-280/4	158331	1 / 30

sg29616

**Three phase supply / 3+1 connection (50 kA)**

TN-S/TT Set 3+N Set	SPBT12-280-3+NPE50	184750	1 / 60
TN-S/TT Set 3+N Set with busbar	SPBT12-280-3+NPE50/BB	184751	1

sg65112

**Three phase supply / 3+1 connection (100 kA)**

TN-S/TT-Set 3+1pole	SPBT12-280-3+NPE	158332	1 / 20
TN-S/TT-Set 3+1pole with busbar	SPBT12-280-3+NPE/BB	158333	1

Description	Type Designation	Article No.	Units per package
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Accessories

Auxiliary switch for SPBT12-280	ASAUWSC-SPM	131785	4/120
Busbar	ZV-KSBL...		

Impulse current I_{imp} (10/350) μ s	Type Designation	Article No.	Units per package
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Lightning current arrester - surge arrester SPBT12

Complete

12.5 kA L - (PE) N	SPBT12-280/1	158306	12/120
50 kA N-PE	SPBT12-NPE50	184749	1/60
100 kA N-PE	SPBT12-NPE100	158307	1/60

Insert

12.5 kA Insert	SPBT12-280	167341	2/120
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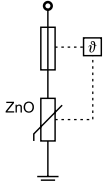
sg63312



Description Surge Protective Class T1&T2

- Field of application:
For the protection of low voltage distribution systems against transient overvoltage caused by direct and indirect lightning stroke and switching operations
- Application according to IEC 60364-5-53 Clause 534
- Test class **I**, **II** according to IEC 61643-11
- SPD-type **T1**, **T2** according to EN 61643-11
- Lightning protection classes III and IV according to IEC 62305
- Busbars ZV-KSBI are available for all customary applications

Technical Data

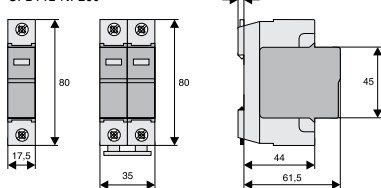
		SPBT12-280...	SPBT12-NPE50	SPBT12-NPE100
Electrical	per pole			
Responding time (rate of voltage rise 5 kV/μs)		< 25 ns	< 100 ns	< 100 ns
Voltage protection level	U_p	≤ 1.5 kV	< 1.4 kV	< 1.5 kV
Voltage protection level at 5 kA (8/20) μs	U_p	950 V	—	—
Max. continuous operating voltage	U_c	280 VAC	260 VAC	255 VAC
TOV test value	U_T	335 VAC (5 s)	1200 VAC (200 ms)	1200 VAC (200 ms)
Rated frequency		50 Hz	50 Hz	50 Hz
Open circuit voltage	U_{oc}	10 kV	—	20 kV
Nominal discharge current (8/20) μs	I_n	25 kA	50 kA	100 kA
Max. discharge current	I_{max}	50 kA	100 kA	100 kA
Impulse current (10/350) μs	I_{imp}			
Peak current		12.5 kA	50 kA	100 kA
Follow current interrupt rating	I_{fi}	—	100 A _{r.m.s.}	100 A _{r.m.s.}
Maximum back-up fuse		160 AgL/gG	—	—
Maximum short-circuit current		50 kA _{r.m.s.}	—	—
Connection diagram				

Mechanical

Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	17.5 mm	17.5 mm	35 mm
Weight	121 g	93 g	250 g
Permitted ambient temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Degree of protection	IP20	IP20	IP20
Upper and lower lift terminal capacity	4 - 25 mm ²	top 4 - 50 mm ² , bottom 4 - 35 mm ²	4 - 35 mm ²
Upper and lower open mouthed terminals for busbar thickness up to	1.5 mm	top - / bottom 1.5 mm	1.5 mm
Tightening torque of terminal screws	2.4 - 3 Nm	2.4 - 3 Nm	2.4 - 3 Nm
Quick fastening on DIN rail according to	IEC/EN 60715	IEC/EN 60715	IEC/EN 60715
Accessories: busbars 16 mm ²	Type ZV-KSBI ...	Type ZV-KSBI ...	Type ZV-KSBI ...

Dimensions (mm)

SPBT12-280 SPBT12-NPE100
SPBT12-NPE50

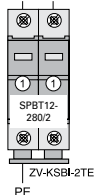


Lightning current arrester - surge arrester sets, Lightning protection classes III, IV

L, N, PE

TN-S-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)

L N

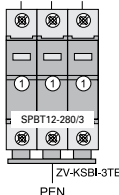


① ... SPBT12-280

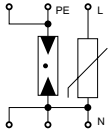
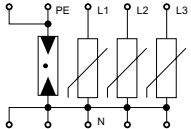
L1, L2, L3, N, PE

TN-C-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)

L1 L2 L3



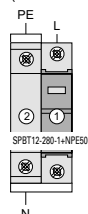
Technical Data

			SPBT12-280-1+NPE50	SPBT12-280-3+NPE50
Electrical		per pole		
Responding time (rate of voltage rise 5 kV/μs)	L-N / N-PE		< 25 ns / < 100 ns	< 25 ns / < 100 ns
Voltage protection level	L-N / L-PE / N-PE	U_p	< 1.5 kV	< 1.5 kV
Max. continuous operating voltage	L-N / N-PE	U_c	280 VAC / 260 VAC	280 VAC / 260 VAC
TOV test value		U_T		
5 s	L-N / L-PE		348 VAC / 370 VAC	348 VAC / 370 VAC
200 ms	N-PE		1200 VAC	1200 VAC
Rated frequency			50/60 Hz	50/60 Hz
Open circuit voltage		U_{oc}	10 kV	20 kV
Nominal discharge current (8/20) μs	L-N / N-PE	I_n	25 kA / 50 kA	3x25 kA / 50 kA
Max. discharge current	L-N / N-PE	I_{max}	50 kA / 100 kA	3x50 kA / 100 kA
Impulse current (10/350) μs		I_{imp}		
Peak current	L-N / N-PE		12.5 kA / 50 kA	3x12.5 kA / 50 kA
Follow current interrupt rating	N-PE	I_{fi}	100 A _{r.m.s.}	100 A _{r.m.s.}
Maximum back-up fuse			—	—
Maximum short-circuit current			—	—
Connection diagram				
Mechanical				
Frame size			45 mm	45 mm
Device height			80 mm	80 mm
Device width			35 mm	70 mm
Weight			218 g	470 g
Permitted ambient temperature			-40°C to +70°C	-40°C to +70°C
Degree of protection (built-in)			IP40	IP40
Upper and lower lift terminal capacity				
L, N			4 - 25 mm ²	4 - 25 mm ²
N, PE			4 - 50 mm ²	4 - 50 mm ²
Upper and lower open mouthed terminals for busbar thickness up to			1.5 mm	1.5 mm
Tightening torque of terminal screws			2.4 - 3 Nm	2.4 - 3 Nm
Quick fastening on DIN rail according to			IEC/EN 60715	IEC/EN 60715
Accessories: busbars 16 mm ²			Type ZV-KSBI ...	Type ZV-KSBI ...

Lightning current arrester - surge arrester sets, Lightning protection classes III, IV

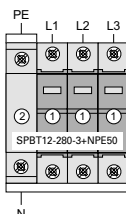
L, N, PE

TN-S-System
 3 x 230/400 VAC
 (3 x 220/380 VAC)
 (3 x 240/415 VAC)

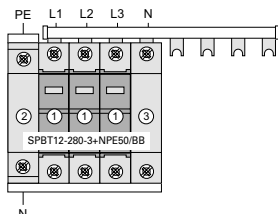


L1, L2, L3, N, PE

TN-S/TT-System
 3 x 230/400 VAC
 (3 x 220/380 VAC)
 (3 x 240/415 VAC)

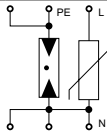
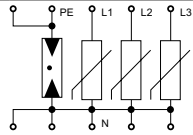


TN-S/TT-System
 3 x 230/400 VAC
 (3 x 220/380 VAC)
 (3 x 240/415 VAC)

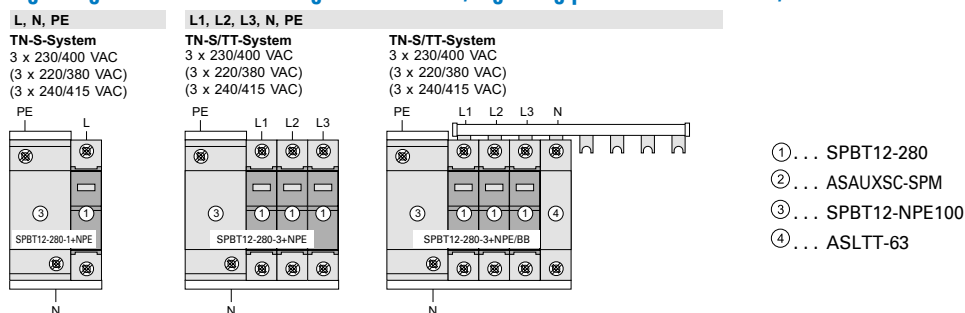


- ① ... SPBT12-280
- ② ... SPBT12-NPE50
- ③ ... ASLTT-63

Technical Data

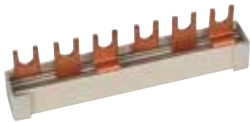
		SPBT12-280-1+NPE		SPBT12-280-3+NPE
Electrical		per pole		
Responding time (rate of voltage rise 5 kV/μs)	L-N / N-PE		< 25 ns / < 100 ns	< 25 ns / < 100 ns
Voltage protection level	L-N / L-PE / N-PE	U_p	< 1.5 kV	< 1.5 kV
Max. continuous operating voltage	L-N / N-PE	U_C	280 VAC / 255 VAC	280 VAC / 255 VAC
TOV test value		U_T		
5 s	L-N / L-PE		348 VAC / 370 VAC	348 VAC / 370 VAC
200 ms	N-PE		1200 VAC	1200 VAC
Rated frequency			50 Hz	50 Hz
Open circuit voltage		U_{oc}	10 kV	20 kV
Nominal discharge current (8/20) μs	L-N / N-PE	I_n	25 kA / 100 kA	3x25 kA / 100 kA
Max. discharge current	L-N / N-PE	I_{max}	50 kA / 100 kA	3x50 kA / 100 kA
Impulse current (10/350) μs		I_{imp}		
Peak current	L-N / N-PE		12.5 kA / 100 kA	3x12.5 kA / 100 kA
Follow current interrupt rating	N-PE	I_{fi}	100 A _{r.m.s.}	100 A _{r.m.s.}
Maximum back-up fuse			160 AgL/gG	160 AgL/gG
Maximum short-circuit current			50 kA _{r.m.s.}	50 kA _{r.m.s.}
Connection diagram				
Mechanical				
Frame size			45 mm	45 mm
Device height			80 mm	80 mm
Device width			52.5 mm	87.5 mm
Weight			375 g	626 g
Permitted ambient temperature			-40°C to +70°C	-40°C to +70°C
Degree of protection (built-in)			IP40	IP40
Upper and lower lift terminal capacity				
L, N			4 - 25 mm ²	4 - 25 mm ²
N, PE			4 - 35 mm ²	4 - 35 mm ²
Upper and lower open mouthed terminals for busbar thickness up to			1.5 mm	1.5 mm
Tightening torque of terminal screws			2.4 - 3 Nm	2.4 - 3 Nm
Quick fastening on DIN rail according to			IEC/EN 60715	IEC/EN 60715
Accessories: busbars 16 mm ²			Type ZV-KSBI ...	Type ZV-KSBI ...

Lightning current arrester - surge arrester sets, Lightning protection classes III, IV



Used for	Type Designation	Article No.	Units per package
Busbar Z-GV-16/3P-3TE/6			
for SPBT12 & SPCT2	Z-GV-16/3P-3TE/6	267511	12/240

WA_SG11202



	Poles	Type Designation	Article No.	Units per package
Busbar ZV-KSBI for SPBT12 & SPCT2				
 ZV-KSBI-2TE	2MU	ZV-KSBI-2MU	263961	10/600
 ZV-KSBI-3TE	3MU	ZV-KSBI-3TE	263962	10/600
 ZV-KSBI-3TE/S	3MU	ZV-KSBI-3TE/S	263963	10/600
 ZV-KSBI-3TE+HI	2MU+1.5MU	ZV-KSBI-3TE+HI	112370	50/150
 ZV-KSBI-4TE	4MU	ZV-KSBI-4TE	263964	10/600
 ZV-KSBI-5TE	5MU	ZV-KSBI-5TE	263965	10/200
 ZV-KSBI-5TE/N	5MU	ZV-KSBI-5TE/N	263966	10/200
 ZV-KSBI-5TE+HI	2MU+3x1.5MU	ZV-KSBI-5TE+HI	112371	50/150
 ZV-KSBI-6TE	6MU	ZV-KSBI-6TE	113118	50/500
 ZV-KSBI-7TE	7MU	ZV-KSBI-7TE	263967	50/500
 ZV-KSBI-7TE/S	7MU	ZV-KSBI-7TE/S	263968	10/100
 ZV-KSBI-7TE/N	7MU	ZV-KSBI-7TE/N	263969	10/100
 ZV-KSBI-9TE/N	9MU	ZV-KSBI-9TE/N	266874	50/500
 ZV-KSBI-11TE	11MU	ZV-KSBI-11MU	263970	50/500

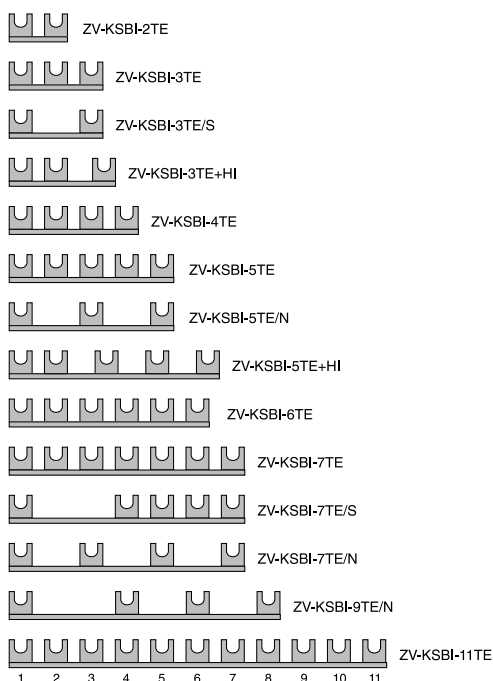
Description busbar ZV-KSBI

- With the ZV KSBI busbar bracket you can realize the common combinations of arrestors.
- Used for SPB-..., SPC-..., Z-D63
- The rated cross-section of the ZV-KSBI bridge metals is 16 mm²
- The busbar mounting bracket can be shortened

Technical Data

ZV-KSBI	
Electrical	
Rated voltage	230/400 V, 50/60 Hz
Rated current	63 A
Mechanical	
Busbar cross section	16 mm ² Cu

Design



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