

Lightning and Surge Protection

PPB TT2+1 50/100 (/FM)

Reducing Follow On Current

PowerPro B TT (2+1 circuit)

Combined 2-pole Lightning- and Surge Protective Device
protection category **T1** (B), class I

Equipotential bonding lightning surge protection in 1-phase 3 wires special TT - Net Systems



- **2-pole leakage current free Combined SPD, fully pre-wired**
- **Defect single modules can be replaced easily**
- **Lightning current SPD based on hermetically sealed gas filled metal-Ceramics spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Low voltage protection level ≤ 4 kV**
- **Lightning current test level 50 kA (10/350 μ s) per line, resp. 100 kA (10/350 μ s) for N-PE**
- **Follow on current extinguishing capability up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial V - wiring with multifunctional screw terminals**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined 2-pole leakage free SPD type PP B TT2+1 50/100 and PP B TT2+1 50/100 /FM, with remote signal contact, connected in the 2+1 circuit, offer a complete solution for the protection of a 1-phase 3 wire special TT- Net System. The PPB TT2+1 50/100 (/FM) is equipped with two new developed and patented Multi-Arc isolating spark gaps filled with inert gas, as well as a heavy duty N-PE isolating spark gap. Electronic triggering and high voltage ignition aid is not required.

Thanks to the use of hermetically sealed heavy duty spark-gaps filled with inert gas, dangerous blow-out vents are not needed. This saves you from keeping the safety distance to adjoining electrical components usually necessary to avoid unwanted electric arcs.

As there is no risk of leakage currents, acc. to TAB2000 of VDEW (installation rules of the Union of Germany Electric Works) this SPD can also be installed before the electric power meter

Each protective spark gap is separately mounted in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the screw terminal (terminal L' and PE') or else as serial V - wiring via the optional two-pole bus-bar connection (L1 to L1' and L2 to L2'). There is an optional potential-free remote signal contact (/FM) inside the housing, the wire connection is made via a pluggable screw terminal block.

Technical Data:

Type	PP B TT2+1 50/100 and PP B TT2+1 50/100 /FM
Application	two-pole lightning current and Surge Protective Device for special TT2+1-Net Systems protection category T1 (B), class I

Type			PP B TT2+1 50/100	PP B TT2+1 50/100 /FM
Article number			373 915	373 917
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and EN 61643-11 resp. IEC 61643-1			T1 (B), class I	
Nominal voltage of power net (50/60 Hz)	U_n	[V~]	100 / 200V or 110 / 220V	
Rated voltage (max. continuous operating voltage) 50/60 Hz	U_c	[V~]	>255	
Insulation resistance	R_{isol}	[Ω]	> 10 ¹⁰	
Voltage protection level at 100% lightning impulse spark over voltage (1,2/50 μ s)	U_{as}	[kV]	≤ 4,0	≤ 4,0
Voltage protection level at I_{imp} (10/350 μ s)	U_p	[kV]	≤ 4,0	≤ 4,0
Response time	t_A	[ns]	< 50	
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L – N: 50 25 625	N – PE: 100 50 2500
Nominal discharge current (8/20 μ s)	$I_n (i_{sn})$	[kA]	100	
Maximal discharge current (8/20 μ s)	I_{max}	[kA]	140	
Follow on current extinguishing capability at U_c	I_f	[kA _{peak}]	4 (IEC: 3.0)	0,2 (IEC: 0,1)
Short-circuit withstand capability at max. pre-fuse	I_k	[kA _{eff}]	25	
Max. permissible line resp. back fuse F2 at parallel wiring		[A]	250 A gL/gG	
Max. permissible line resp. back fuse F3 at serial V - wiring		[A]	100 A gL/gG	
Operating temperature range	t	[°C]	-40 ... +85	
Max. cross-sectional area		[mm ²]	stranded 50 / flexible 35	
Recommended cross sectional area		[mm ²]	25	
Recommended connection torque		[Nm]	4,5	
Max. cross-sectional area for remote signal contact		[mm ²]	1,5	
Max. switching capacity of remote signal contact			AC: 250V/0,5A.....DC: 250V/01A	
Material of housing / colour			Polycarbonate (halogen free) UL 94-V0 / yellow	
Ambient protection category			IP 20 (IEC/EN 60529)	
Mounting on			DIN rail 35 mm (DIN/EN 50022)	

Dimensions in mm / Diagram

Application:

Dimension 3 x 3 modules, acc. DIN 43880

two-pol. bus-bar connection

Parallel wiring

for active lines

If line or backup fuse (F1) ≤ 250 A gL/gG, back up fuse (F2) is not force.

Serial V - wiring

for active lines

Line or backup fuse (F3) ≤ 100 A gL/gG

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