

Lightning and Surge Protection

PowerPro BCD TT (3+1 circuit)
(Limiting Follow On Current)

PP BCD TT 25/100-350 (/FM)

Combined four-pole lightning current and Surge Protective Device meeting protection category T1 T2 T3 (BCD), class I+II+III

Used as equipotential bonding lightning surge protection in TT3+1-Power Net Systems



- **Combined four-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current and SPD based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 1 \text{ kV}$ ($\leq 750 \text{ V}$)**
- **Lightning current test level 25 kA (10/350 μs) per phase, resp. 100 kA (10/350 μs) for N-PE**
- **Follow-on currents reducing**
- **High insulation resistance $R_{\text{isol}} > 10 \text{ G}\Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined four-pole **SPD** type PP BCD TT 25/100-350 and PP BCD TT 25/100/FM-350, with remote signal contacts, connected in the so called 3+1 circuit, offer a complete solution for the protection of TT-Power Net Systems. They are usually installed in main- or subdistribution panel or before the equipment to be protected.

Thanks to the use of the patented, hermetically sealed gas-filled isolating spark-gaps (inert gas) this SPD allows you to achieve a high-level discharge capacity without needing blow-out vents. This saves you from keeping the safety distance to adjoining electrical components usually necessary to avoid unwanted electric arcs and fire hazardous.

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

This device is capable to discharge lightning current surges of 25 kA (10/350 μs) per phase and total 100 kA (10/350 μs) between N-PE as well as self-extinguish main supply follow-on currents limiting. The protective circuit is installed 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 multifunctional screw connection terminal (terminal L1', L2', L3', and PE') or else as serial wiring via the optional two-pole bus-bar connection (L1 to L1' and so on). There is an optional potential-free remote signal contact (/FM) inside the housing. The wire connection is made via a pluggable screw terminal block.

Protects People and Valuables



Technical Data:

Type	PP BCD TT 25/100-350 / PP BCD TT 25/100/FM-350
Application	four-pole lightning current and Surge Protective Device for TT3+1-Power Net Systems protection category T1 T2 T3 (BCD), class I+II+III

Type			PP BCD TT 25/100-350	PP BCD TT 25/100/FM-350
Article number			38 50 40	38 50 50
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 + T2 + T3 (BCD)	
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400...240/415 V	
Rated voltage (max. continuous operating voltage) 50/60 Hz	U_c	[V~]	350	
Insulation resistance	R_{isol}	[GΩ]	> 10	
Voltage protection level at 100% lightning impulse spark over voltage (1,2/50μs), 6kV	U_{as}	[kV]	≤ 1,0	
U_{rest} at 3kA/ 5kA (8/20μs) & 6kV (1,2/50μs)	U_{rest}	[kV]	0,60 / ≤0,75	
Voltage protection level at I_{imp} 10/350μs	U_p	[kV]	≤ 1,0	
Response time	t_A	[ns]	< 50	
Lightning impulse current I_{imp} (10/350μs)	I_{peak} Q W/R	[kA] [As] [kJ/Ω]	L1, L2, L3 – N: 25 per phase 12,5 160	N - PE: 100 50 2.500
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		[mm²]	stranded 50 / flexible 35	
Recommended cross sectional area		[mm²]	25	
Recommended connection torque		[Nm]	4,5	
Max. cross-sectional area for remote signal contact		[mm²]	1,5	
Max. switching capacity of remote signal contact			250V/0,5A	
Material of housing / colour			Polycarbonate (halogen free) UL 94-V0 / yellow	
Environment protection category			IP 20 (IEC/EN 60529)	
Mounting on			DIN rail 35 mm (DIN/EN 50 022)	

Dimensions in mm / Diagram

Dimension 4x 2 modules, acc. DIN 43880

two-pol. bus-bar connection

Application:

Parallel wiring

for active lines

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

Serial wiring

for active lines

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

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