

Leutron

Lightning- and Surge Protection for Power Net Systems (SPD)

with PowerPro Combi-Devices

Novelties 2003 Combi Surge Protectors

Leutron GmbH, 70771 Leinfelden-Echterdingen, Deutschland

Leutron Lightning and Surge Protection for Power Net Systems (SPD)

PowerPro Combi-Surge Protectors

for TN and TT- Power Net Systems

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Primary-, Secondary and Fine-Protection **T1+T2+T3** (BCD)

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Lightning Protection

PowerPro B TNC

(Reducing Follow On Current)

PP B TNC 50/100 (/FM)

Combined three-pole lightning current protective device meeting protection category T1 (B), class I

Used as equipotential bonding lightning protection in TNC-Power Net Systems



- **Combined three-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current protective device based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 4,0$ kV**
- **Lightning current test level 50 kA (10/350 μ s) per phase, total 100 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined three-pole **SPD** type PP B TNC 50/100 and PP B TNC 50/100 /FM, with remote signal contacts, offer a complete solution for the protection of TNC-Power Net Systems. They are usually installed in main- or sub-distribution panel.

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 Germany Electric Works).

This device is capable to discharge lightning current surges of 50 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) as well as self-extinguish power supply follow-on currents and limiting up to 4 kA.

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') 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.

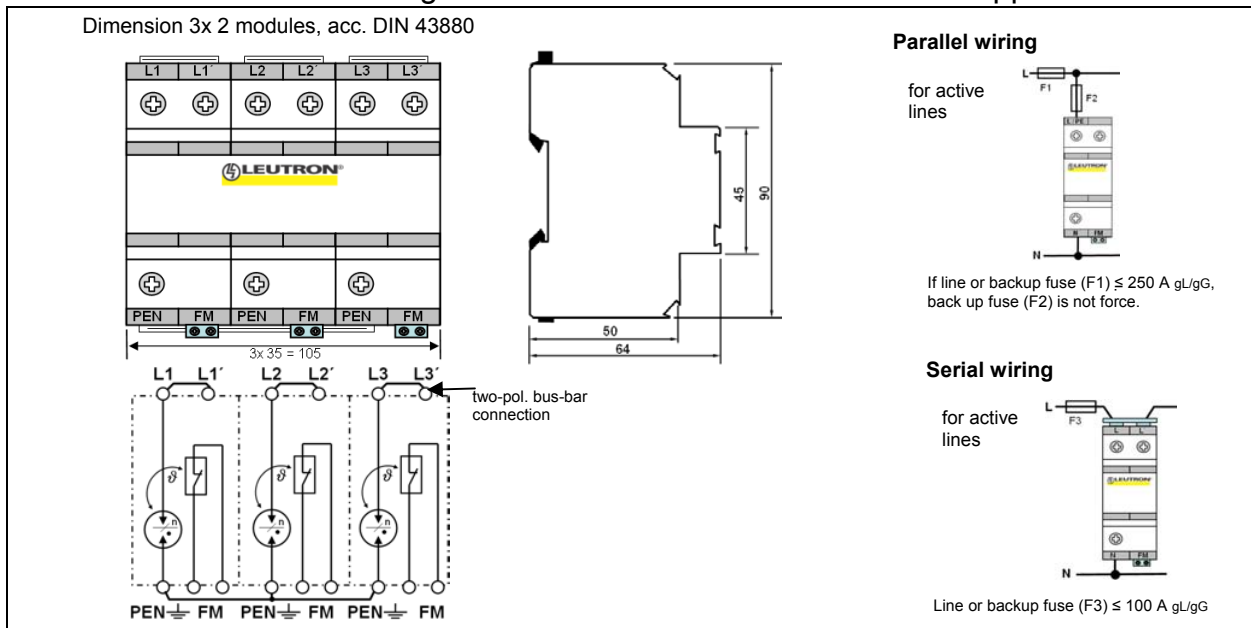
Technical Data:

Type	PP B TNC 50/100 / PP B TNC 50/100 /FM
Application	three-pole lightning current protective device for TNC-Power Net Systems protection category T1 (B), class I

Type			PP B TNC 50/100 / PP B TNC 50/100 /FM
Article number			373 970 / 373 972
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 4,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 4,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3 – PE: 50 25 625
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 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			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

Application:



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Subject to technical modifications and
delivery possibilities

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Lightning and Surge Protection

PowerPro BC TNC

(Reducing Follow On Current)

PP BC TNC 25/75 (/FM)

Combined three-pole lightning current and Surge Protective Device meeting protection category **T1** **T2** (BC), class I+II

Used as equipotential bonding lightning surge protection in TNC-Power Net Systems



- **Combined three-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 $\leq 2,5$ kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, total 75 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined three-pole **SPD** type PP BC TNC 25/75 and PP BC TNC 25/75 /FM, with remote signal contacts, offer a complete solution for the protection of TNC-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 75 kA (10/350 μ s) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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') 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.

Technical Data:

Type	PP BC TNC 25/75 / PP BC TNC 25/75 /FM
Application	three-pole lightning current and Surge Protective Device for TNC-Power Net Systems protection category T1 T2 (BC), class I+II

Type			PP BC TNC 25/75 / PP BC TNC 25/75 /FM
Article number			373 980 / 373 982
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 + T2
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 2,5$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 2,5$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3 - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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 3x 2 modules, acc. DIN 43880

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

two-pol. bus-bar connection

Application:

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Lightning and Surge Protection

PowerPro BCD TNC

(Limiting Follow on current)

PP BCD TNC 25/75 (/FM)

Combined three-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 TNC-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 ≤ 1 kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined three-pole **SPD** type PP BCD TNC 25/75 and PP BCD TNC 25/75 /FM, with remote signal contacts, offer a complete solution for the protection of TNC-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 75 kA (10/350 μ s) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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') 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.

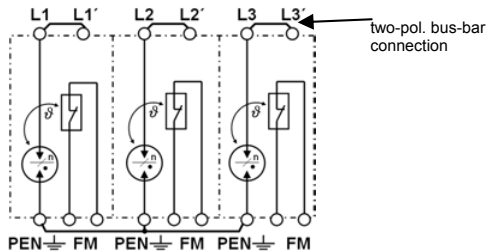
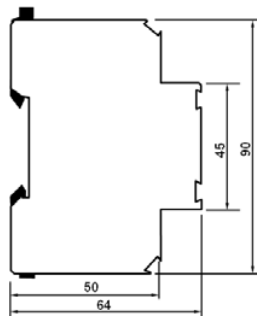
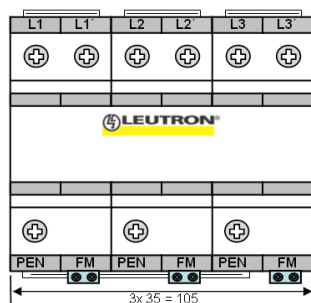
Technical Data:

Type	PP BCD TNC 25/75 / PP BCD TNC 25/75 /FM
Application	three-pole lightning current and Surge Protective Device for TNC-Power Net Systems protection category T_1 T_2 T_3 (BCD), class I+II+III

Type			PP BCD TNC 25/75 / PP BCD TNC 25/75 /FM
Article number			373 990 / 373 992
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			$T_1 + T_2 + T_3$
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 1,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 1,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3 - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 wiring		[A]	100 A gL/gG
Operating temperature range	t	[$^{\circ}$ 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			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 3x 2 modules, acc. DIN 43880



Application:

Parallel wiring

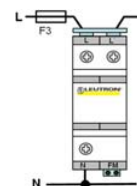
for active lines



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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Lightning Protection

PowerPro B TNS

(Reducing Follow On Current)

PP B TNS 50/100 (/FM)

Combined four-pole lightning current protective device
meeting protection category **T1** (B), class I

Used as equipotential bonding lightning protection in TNS-Power Net Systems



- **Combined four-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current protective device based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 4,0$ kV**
- **Lightning current test level 50 kA (10/350 μ s) per phase, total 100 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined four-pole **SPD** type PP B TNS 50/100 and PP B TNS 50/100 /FM, with remote signal contacts, offer a complete solution for the protection of TNS-Power Net Systems. They are usually installed in main- or sub-distribution panel.

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 Germany Electric Works).

This device is capable to discharge lightning current surges of 50 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) as well as self-extinguish power supply follow-on currents and limiting up to 4 kA.

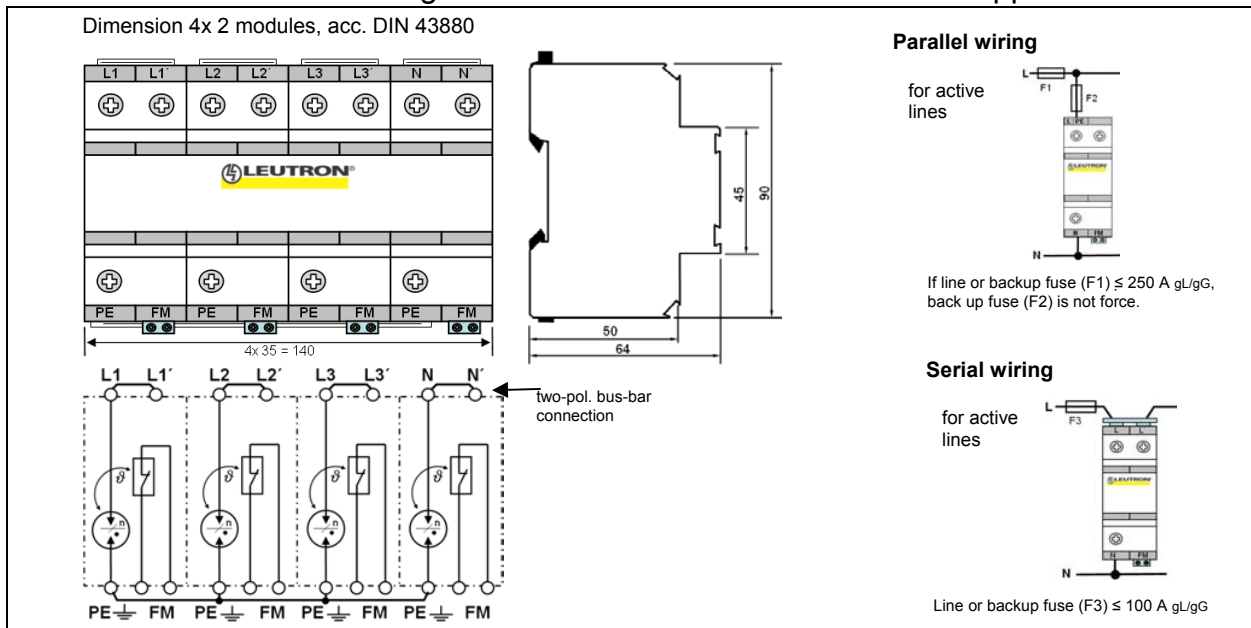
The protective circuit is installed in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the multifunctional screw connection terminal (terminal L1', L2', L3', and N') 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.

Technical Data:

Type	PP B TNS 50/100 / PP B TNS 50/100 /FM
Application	four-pole lightning current protective device for TNS-Power Net Systems protection category T1 (B), class I

Type			PP B TNS 50/100 / PP B TNS 50/100 /FM
Article number			373 940 / 373 942
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 4,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 4,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3, N – PE: 50 25 625
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 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			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



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delivery possibilities

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Lightning and Surge Protection

PowerPro BC TNS

(Reducing Follow On Current)

PP BC TNS 25/100 (/FM)

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

Used as equipotential bonding lightning surge protection in TNS-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 $\leq 2,5$ kV**
- **Lightning current test level 25 kA (10/350 μs) per phase, total 100 kA (10/350 μs)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined four-pole **SPD** type PP BC TNS 25/100 and PP BC TNS 25/100 /FM, with remote signal contacts, offer a complete solution for the protection of TNS-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μs) per phase and total 100 kA (10/350 μs) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 N') 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.

Technical Data:

Type	PP BC TNS 25/100 / PP BC TNS 25/100 /FM
Application	four-pole lightning current and Surge Protective Device for TNS-Power Net Systems protection category T1 T2 (BC), class I+II

Type			PP BC TNS 25/100 / PP BC TNS 25/100 /FM
Article number			373 950 / 373 952
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 + T2
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 2,5$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 2,5$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3, N - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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

The drawing includes a front view of the device with terminals labeled L1, L1', L2, L2', L3, L3', N, N', PE, and FM. The width is 140 mm (4x 35 mm) and the height is 90 mm. A side view shows a depth of 64 mm and a mounting height of 45 mm. A schematic diagram illustrates the two-pole bus-bar connection for active lines.

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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Lightning and Surge Protection

PowerPro BCD TNS

(Limiting Follow On Current)

PP BCD TNS 25/100 (/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 TNS-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 ≤ 1 kV**
- **Lightning current test level 25 kA (10/350 μs) per phase, resp. 100 kA (10/350 μs) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **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 TNS 25/100 and PP BCD TNS 25/100 /FM, with remote signal contacts, offer a complete solution for the protection of TNS-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μs) per phase and total 100 kA (10/350 μs) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 N') 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.

Technical Data:

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

Type			PP BCD TNS 25/100 / PP BCD TNS 25/100 /FM
Article number			373 960 / 373 962
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
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 1,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 1,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3, N - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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

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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Lightning Protection

PowerPro B TT

(Reducing Follow On Current)

PP B TT 50/100 (/FM)

**Combined four-pole lightning current protective device
meeting protection category T1 (B), class I**

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



- **Combined four-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current protective device based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 4,0$ kV**
- **Lightning current test level 50 kA (10/350 μs) per phase, resp. 100 kA (10/350 μs) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined four-pole **SPD** type PP B TT 50/100 and PP B TT 50/100 /FM, 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 sub-distribution panel.

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 Germany Electric Works).

This device is capable to discharge lightning current surges of 50 kA (10/350 μs) per phase and total 100 kA (10/350 μs) between N-PE as well as self-extinguish power supply follow-on currents and limiting up to 4 kA.

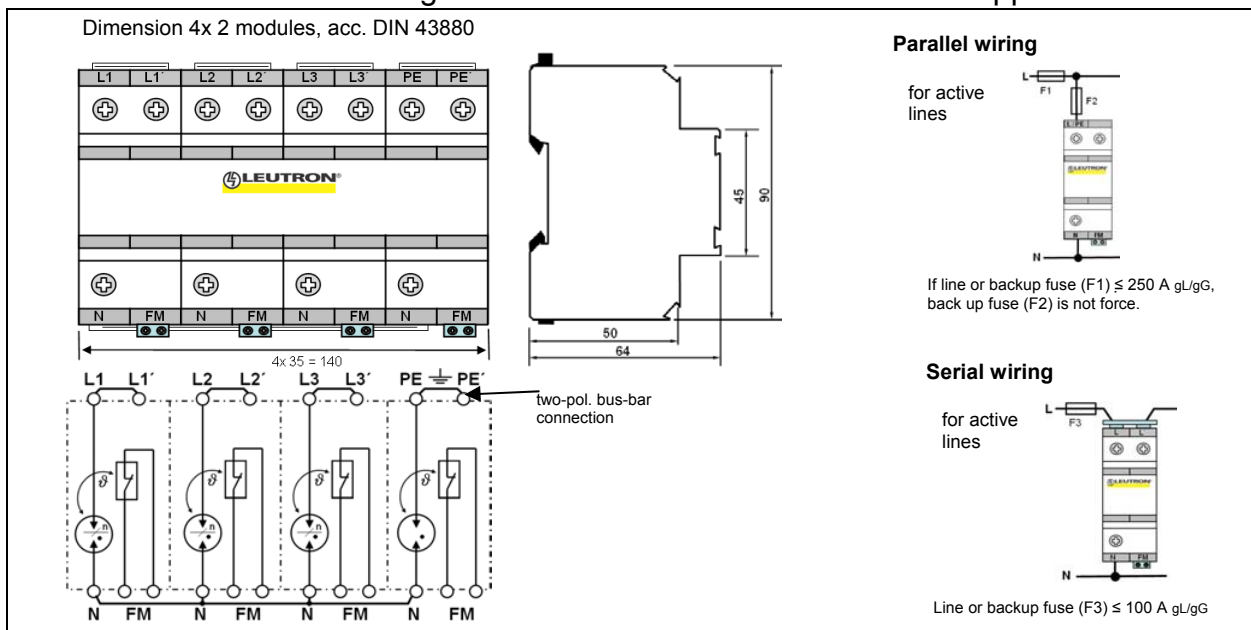
The protective circuit is installed in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the multifunctional screw connection terminal (terminal 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.

Technical Data:

Type	PP B TT 50/100 / PP B TT 50/100 /FM
Application	four-pole lightning current protective device for TT3+1-Power Net Systems protection category T1 (B), class I

Type	PP B TT 50/100 / PP B TT 50/100 /FM	
Article number	373 910	/ 373 912
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1	T1	
Nominal voltage 50/60 Hz	U_n [V~]	230 / 400
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]	$\leq 4,0$
Voltage protection level at I_{imp}	U_p [kV]	$\leq 4,0$
Response time	t_A [ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} [kA] Q [As] W/R [kJ/ Ω]	L1, L2, L3 – N: 50 25 625 N – PE: 100 50 2.500
Follow current extinguishing capability at U_c	I_f [kA $_{peak}$]	4,0 (IEC: 3.0)
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 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		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



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Lightning and Surge Protection

PowerPro BC TT

(Reducing Follow On Current)

PP BC TT 25/100 (/FM)

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

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 $\leq 2,5$ kV
- Lightning current test level 25 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE
- Self-extinguishing main supply follow-on currents up to 4 kA
- High insulation resistance $R_{isol} > 10^{10} \Omega$
- Serial wiring with multifunctional screw terminal
- Function control with potential-free remote signal contact (optional)

Product description:

This combined four-pole SPD type PP BC TT 25/100 and PP BC TT 25/100 /FM, 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 sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) between N-PE as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

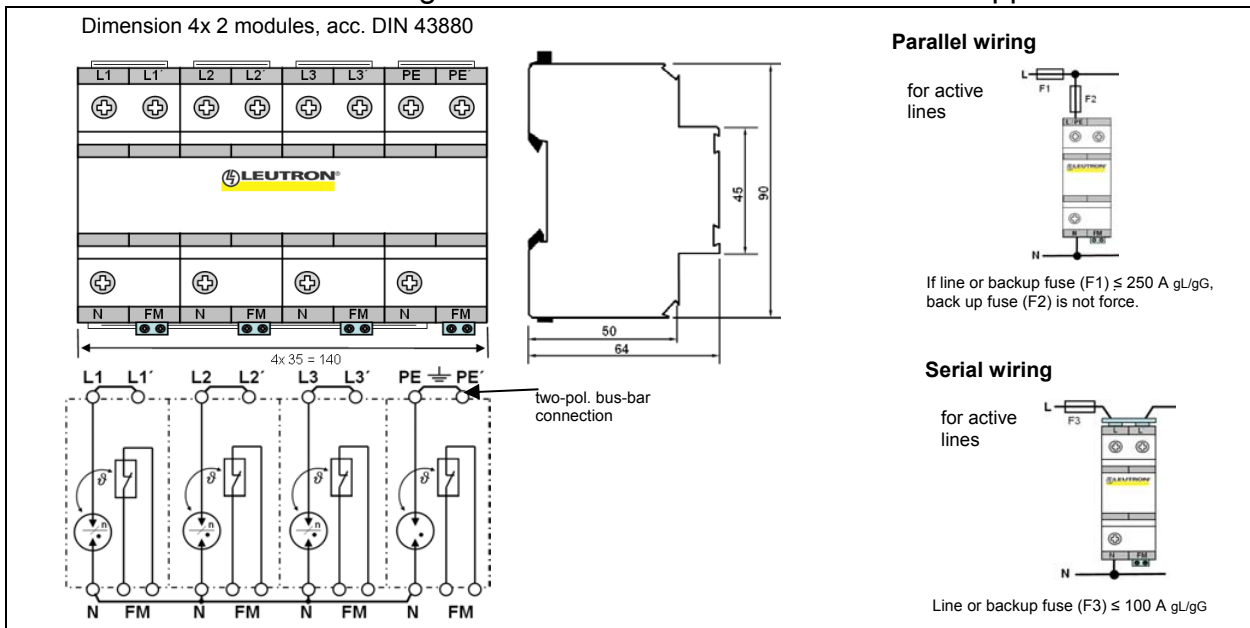
The protective circuit is installed in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the multifunctional screw connection terminal (terminal 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.

Technical Data:

Type	PP BC TT 25/100 / PP BC TT 25/100 /FM
Application	four-pole lightning current and Surge Protective Device for TT3+1-Power Net Systems protection category $\overline{T1}$ $\overline{T2}$ (BC), class I+II

Type	PP BC TT 25/100 / PP BC TT 25/100 /FM	
Article number	373 920	/ 373 922
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1	$\overline{T1} + \overline{T2}$	
Nominal voltage 50/60 Hz	U_n [V~]	230 / 400
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]	$\leq 2,5$
Voltage protection level at I_{imp}	U_p [kV]	$\leq 2,5$
Response time	t_A [ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} [kA] Q [As] W/R [kJ/ Ω]	L1, L2, L3 – N: 25 12,5 160 N - PE: 100 50 2.500
Follow current extinguishing capability at U_c	I_f [kA $_{peak}$]	4,0 (IEC: 3.0)
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 wiring	[A]	100 A gL/gG
Operating temperature range	t [$^{\circ}$ 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		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



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Lightning and Surge Protection

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

PP BCD TT 25/100 (/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 ≤ 1 kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **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 and PP BCD TT 25/100 /FM, 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 sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) between N-PE as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

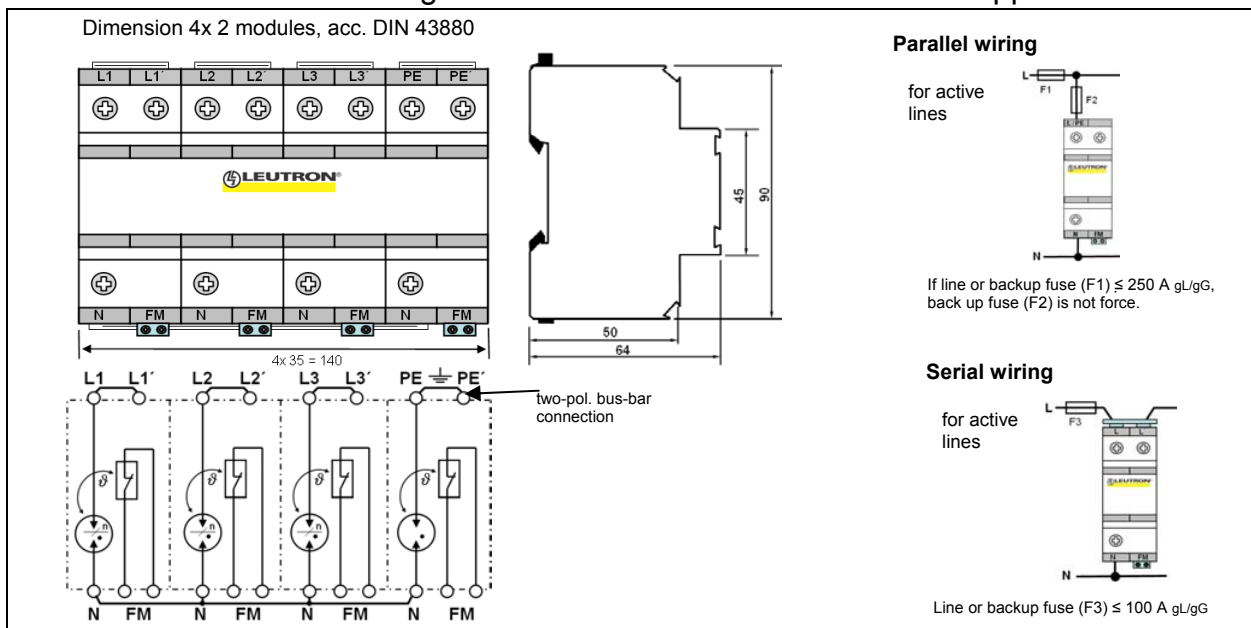
The protective circuit is installed in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the multifunctional screw connection terminal (terminal 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.

Technical Data:

Type	PP BCD TT 25/100 / PP BCD TT 25/100 /FM
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 / PP BCD TT 25/100 /FM
Article number			373 930 / 373 932
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
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 1,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 1,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak} Q W/R	[kA] [As] [kJ/ Ω]	L1, L2, L3 – N: 25 12,5 160 N - PE: 100 50 2.500
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 wiring		[A]	100 A gL/gG
Operating temperature range	t	[$^{\circ}$ 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			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



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Lightning Protection

PowerPro B TT

(Reducing Follow On Current)

PP B TT1+1 50/100 (/FM)

**Combined two-pole lightning current protective device
meeting protection category T1 (B), class I**

Used as equipotential bonding lightning protection in two-pole TT-Power Net Systems



- **Combined two-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current protective device based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 4,0$ kV**
- **Lightning current test level 50 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined two-pole **SPD** type PP B TT1+1 50/100 and PP B TT1+1 50/100 /FM, with remote signal contacts, connected in the so called 1+1 circuit, offer a complete solution for the protection of two-pole TT-Power Net Systems. They are usually installed in main- or sub-distribution panel.

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 Germany Electric Works).

This device is capable to discharge lightning current surges of 50 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) between N-PE as well as self-extinguish power supply follow-on currents and limiting up to 4 kA.

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 L' and PE') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

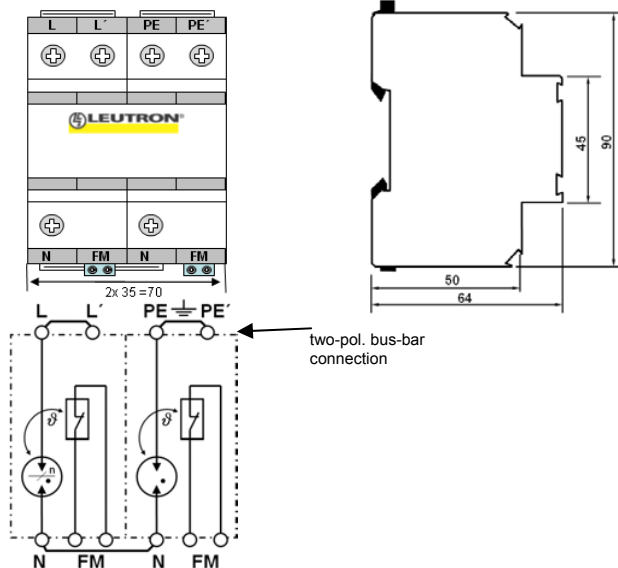
Technical Data:

Type	PP B TT1+1 50/100 / PP B TT1+1 50/100 /FM
Application	two-pole lightning current protective device for TT1+1-Power Net Systems protection category T1 (B), class I

Type			PP B TT1+1 50/100 / PP B TT1+1 50/100 /FM
Article number			381 130 / 381 131
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-1 resp. IEC 61643-1			T1
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 4,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 4,0$
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 2.500
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

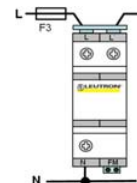
for active lines



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

Serial wiring

for active lines



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

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Lightning and Surge Protection

PowerPro BC TT

(Reducing Follow On Current)

PP BC TT1+1 25/50 (/FM)

Combined two-pole lightning current and Surge Protective Device meeting protection category **T1** **T2** (BC), class I+II

Used as equipotential bonding lightning surge protection in two-pole TT-Power Net Systems



- **Combined two-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 $\leq 2,5$ kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, resp. 50 kA (10/350 μ s) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined two-pole **SPD** type PP BC TT1+1 25/50 and PP BC TT1+1 25/50 /FM, with remote signal contacts, connected in the so called 1+1 circuit, offer a complete solution for the protection of two-pole TT-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 50 kA (10/350 μ s) between N-PE as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 L' and PE') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

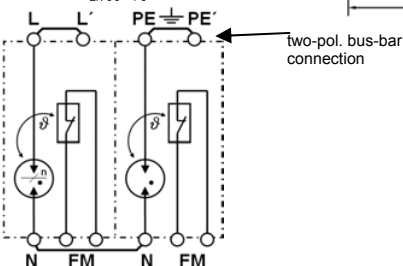
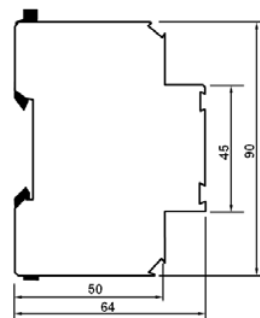
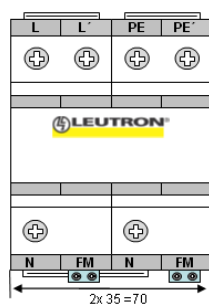
Technical Data:

Type	PP BC TT1+1 25/50 / PP BC TT1+1 25/50 /FM
Application	two-pole lightning current and Surge Protective Device for TT1+1-Power Net Systems protection category T1 T2 (BC), class I+II

Type			PP BC TT1+1 25/50 / PP BC TT1+1 25/50 /FM
Article number			381 132 / 381 133
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 + T2
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 2,5$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 2,5$
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: 25 12,5 160 N - PE: 50 25 625
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

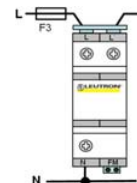
for active lines



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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Subject to technical modifications and delivery possibilities

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Lightning and Surge Protection

PowerPro BCD TT

(Limiting Follow On Current)

PP BCD TT1+1 25/50 (/FM)

Combined two-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 two-pole TT-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 ≤ 1 kV
- Lightning current test level 25 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE
- Self-extinguishing main supply follow-on currents up to 4 kA
- High insulation resistance $R_{isol} > 10^{10} \Omega$
- Serial wiring with multifunctional screw terminal
- Function control with potential-free remote signal contact (optional)

Product description:

This combined two-pole **SPD** type PP BCD TT1+1 25/50 and PP BCD TT1+1 25/50 /FM, with remote signal contacts, connected in the so called 1+1 circuit, offer a complete solution for the protection of two-pole TT-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 50 kA (10/350 μ s) between N-PE as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 L' and PE') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

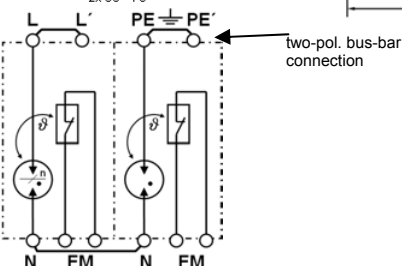
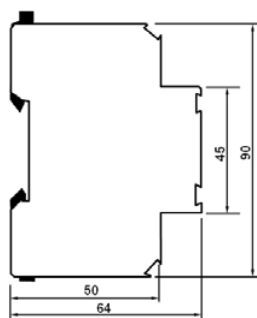
Technical Data:

Type	PP BCD TT1+1 25/50 / PP BCD TT1+1 25/50 /FM
Application	two-pole lightning current and Surge Protective Device for TT1+1-Power Net Systems protection category T1 T2 T3 (BCD), class I+II+III

Type			PP BCD TT1+1 25/50 / PP BCD TT1+1 25/50 /FM
Article number			381 134 / 381 135
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-1 resp. IEC 61643-1			T1 + T2 + T3
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 1,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 1,0$
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: 25 12,5 160 N - PE: 50 25 625
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 wiring		[A]	100 A gL/gG
Operating temperature range	t	[$^{\circ}$ 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

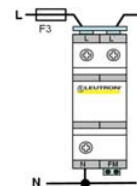
for active lines



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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Subject to technical modifications and delivery possibilities

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Lightning Protection

PowerPro B TN

(Reducing Follow on current)

PP B TN 50/100 (/FM)

Combined two-pole lightning current protective device meeting protection category **T1** (B), class I

Used as equipotential bonding lightning protection in two-pole TN-Power Net Systems



- **Combined two-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current protective device based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **Protection level $\leq 4,0$ kV**
- **Lightning current test level 50 kA (10/350 μ s) per phase, total 100 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined two-pole **SPD** type PP B TN 50/100 and PP B TN 50/100 /FM, with remote signal contacts, offer a complete solution for the protection of two-pole TN-Power Net Systems. They are usually installed in main- or sub-distribution panel.

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 Germany Electric Works).

This device is capable to discharge lightning current surges of 50 kA (10/350 μ s) per phase and total 100 kA (10/350 μ s) as well as self-extinguish power supply follow-on currents and limiting up to 4 kA.

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 L', N') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

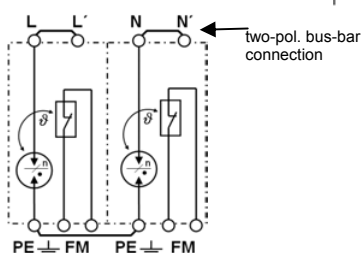
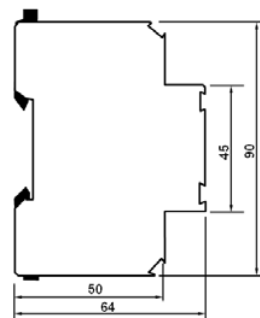
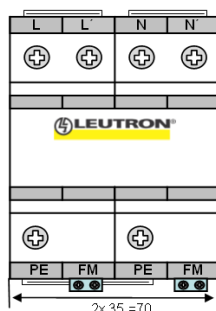
Technical Data:

Type	PP B TN 50/100 / PP B TN 50/100 /FM
Application	two-pole lightning current protective device for TN-Power Net Systems protection category T1 (B), class I

Type			PP B TN 50/100 / PP B TN 50/100 /FM
Article number			381 210 / 381 211
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 4,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 4,0$
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 – PE: 50 25 625
Follow current extinguishing capability at U_c	I_f	[kA $_{peak}$]	4,0 (IEC: 3.0)
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 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

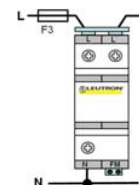
for active lines



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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Subject to technical modifications and
delivery possibilities

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Lightning and Surge Protection

PowerPro BC TN

(Reducing Follow On Current)

PP BC TN 25/50 (/FM)

Combined two-pole lightning current and Surge Protective Device meeting protection category **T1** **T2** (BC), class I+II

Used as equipotential bonding lightning surge protection in two-pole TN-Power Net Systems



- **Combined two-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 $\leq 2,5$ kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, total 50 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined two-pole **SPD** type PP BC TN 25/50 and PP BC TN 25/50 /FM, with remote signal contacts, offer a complete solution for the protection of two-pole TN-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 50 kA (10/350 μ s) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 L', N') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

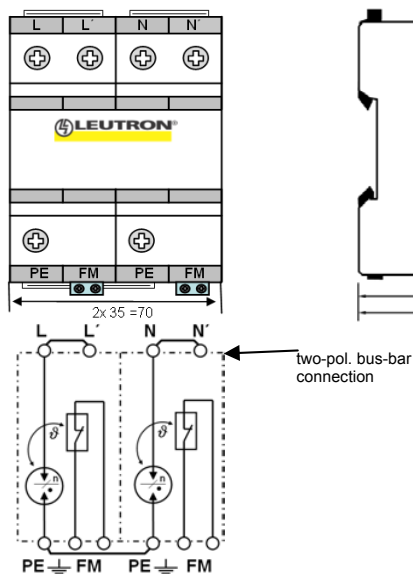
Technical Data:

Type	PP BC TN 25/50 / PP BC TN 25/50 /FM
Application	lightning current and Surge Protective Device for two-pole TN-Power Net Systems protection category T1 T2 (BC), class I+II

Type			PP BC TN 25/50 / PP BC TN 25/50 /FM
Article number			381 212 / 381 213
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 + T2
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 2,5$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 2,5$
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 - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

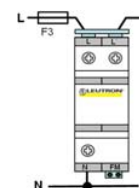
for active lines



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

Lightning and Surge Protection

PowerPro BCD TN

(Limiting Follow On Current)

PP BCD TN 25/50 (/FM)

Combined two-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 two-pole TN-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 ≤ 1 kV**
- **Lightning current test level 25 kA (10/350 μ s) per phase, resp. 100 kA (10/350 μ s) for N-PE**
- **Self-extinguishing main supply follow-on currents up to 4 kA**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined two-pole **SPD** type PP BCD TN 25/50 and PP BCD TN 25/50 /FM, with remote signal contacts, offer a complete solution for the protection of two-pole TN-Power Net Systems. They are usually installed in main- or sub-distribution 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 50 kA (10/350 μ s) as well as self-extinguish main supply follow-on currents and limiting up to 4 kA.

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 L', N') or else as serial wiring via the optional two-pole bus-bar connection (L to L' 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.

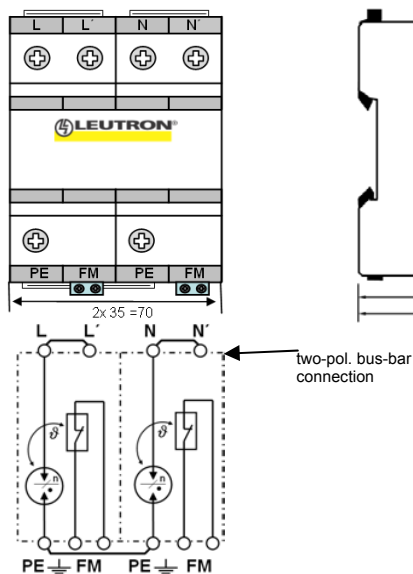
Technical Data:

Type	PP BCD TN 25/50 / PP BCD TN 25/50 /FM
Application	lightning current and Surge Protective Device for two-pole TN-Power Net Systems protection category T1 T2 T3 (BCD), class I+II+III

Type			PP BCD TN 25/50 / PP BCD TN 25/50 /FM
Article number			381 214 / 381 215
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
Nominal voltage 50/60 Hz	U_n	[V~]	230 / 400
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]	$\leq 1,0$
Voltage protection level at I_{imp}	U_p	[kV]	$\leq 1,0$
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 - PE: 25 12,5 160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	4,0 (IEC: 3.0)
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 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			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 2x 2 modules, acc. DIN 43880



Application:

Parallel wiring

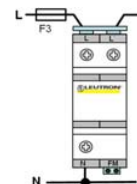
for active lines



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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Subject to technical modifications and delivery possibilities

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Lightning and Surge Protection

PowerPro B TNC

(Reducing Follow On Current)

PP B TNC 440V (/FM)

Combined three-pole lightning current protective device meeting protection category **T1** (B), class **I**

Used as equipotential bonding lightning protection in 400V TNC-Power Net Systems



- **Combined three-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current SPD based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **For 400V Power Net Systems**
- **Protection level $\leq 4,0$ kV**
- **Lightning impulse current 25 kA (10/350 μ s) per phase, total 75 kA (10/350 μ s)**
- **Self-extinguishing main supply follow-on currents up to 750 A**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial v-wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined three-pole **SPD** type PP B TNC 440V and PP B TNC 440V /FM, with remote signal contacts, offer a complete solution for the protection of 400V AC TNC-Power Net Systems. They are usually installed in the main-distribution panel class **I**.

Due 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μ s) per phase and total 75 kA (10/350 μ s) as well as self-extinguish power supply follow-on currents and limiting up to 750 A.

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') 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.

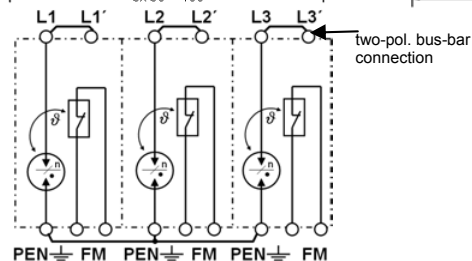
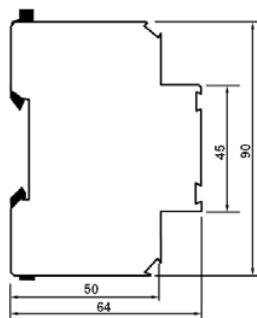
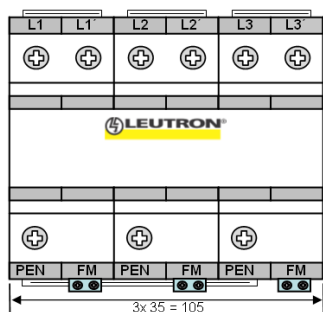
Technical Data:

Type	PP B TNC 440V / PP B TNC 440V /FM
Application	three-pole lightning current protective device for 400V TNC-Power Net Systems protection category T1 (B), class I

Type			PP B TNC 440V / PP B TNC 440V /FM
Article number			373 964 / 373 965
Protection category acc. to E DIN VDE 0675-6 11/98-A1 and acc. to EN 61643-11 resp. IEC 61643-1			T1 (B), class I
Nominal power supply voltage 50/60 Hz	U_n	[V~]	400 / 690
Rated voltage (max. continuous operating voltage) 50/60 Hz	U_c	[V~]	440
Insulation resistance	R_{isol}	[Ω]	$> 10^{10}$
Voltage protection level at 100% lightning impulse spark over voltage (1,2/50 μ s)	U_P	[kV]	$\leq 4,0$
Voltage protection level at I_{imp} (10/350 μ s)	U_p	[kV]	$\leq 4,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak}	[kA]	25
	Q	[As]	12,5
	W/R	[kJ/ Ω]	160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	750
Short-circuit withstand capability at max. pre-fuse	I_k	[kA _{eff}]	25
Max. permissible line resp. back fuse F2 at parallel wiring		[A]	63 A gL/gG
Max. permissible line resp. back fuse F3 at serial v-wiring		[A]	63 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 terminal		[mm ²]	1,5
Max. switching capacity of remote signal contact			250V / 0,5A
Material of housing / colour			Polycarbonate (halogen free) UL 94-V0 / yellow
Ambient protection category (IEC/EN 60529)			IP 20
Mounting on			DIN rail 35 mm (DIN/EN 50 022)

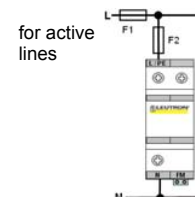
Dimensions in mm / Diagram

Dimension 3x 2 modules, acc. DIN 43880



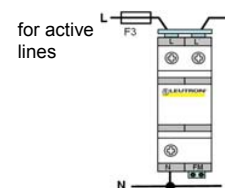
Application:

Parallel wiring



If line or backup fuse (F1) \leq 63 A gL/gG backup fuse (F2) is not force.

Serial V-wiring



Line or backup fuse (F3) \leq 63 A gL/gG

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Lightning and Surge Protection

PowerPro B TNS

(Reducing Follow On Current)

PP B TNS 440V (/FM)

Combined four-pole lightning current protective device
meeting protection category **T1** (B), class **I**

Used as equipotential bonding lightning protection in 400V TNS-Power Net Systems



- **Combined four-pole Surge Protective Device (SPD), fully prewired**
- **Lightning current SPD based on hermetically sealed gas filled spark-gaps**
- **No blow-out vents, making the observance of safety distances for installation unnecessary**
- **For 400V Power Net Systems**
- **Protection level $\leq 4,0$ kV**
- **Lightning impulse current 25 kA (10/350 μs) per phase, total 100 kA (10/350 μs)**
- **Self-extinguishing main supply follow-on currents up to 750 A**
- **High insulation resistance $R_{isol} > 10^{10} \Omega$**
- **Serial v-wiring with multifunctional screw terminal**
- **Function control with potential-free remote signal contact (optional)**

Product description:

This combined four-pole **SPD** type PP B TNS 440V and PP B TNS 440V /FM, with remote signal contacts, offer a complete solution for the protection of 400V AC TNS-Power Net Systems. They are usually installed in the main-distribution panel class **I**.

Due 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 Germany Electric Works).

This device is capable to discharge lightning current surges of 25 kA (10/350 μs) per phase and total 100 kA (10/350 μs) as well as self-extinguish power supply follow-on currents and limiting up to 750 A.

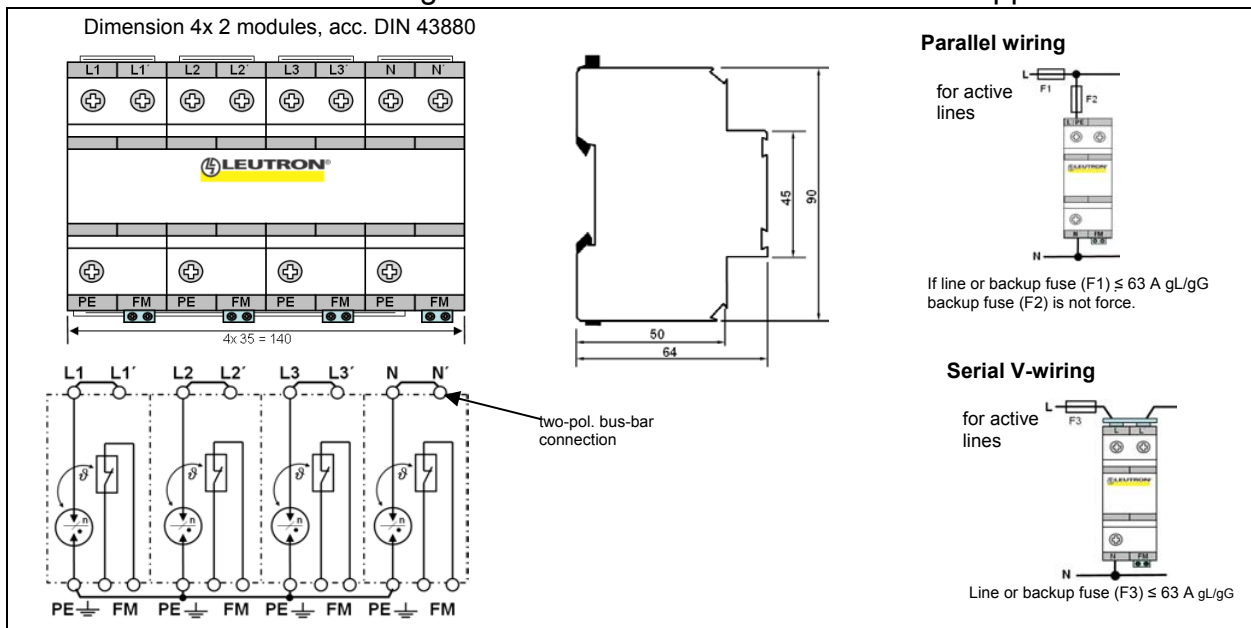
The protective circuit is installed in an easy-to-handle compact housing with snap-on clips for 35 mm DIN rail mounting, with multifunctional screw terminals for wire and bus-bar connections. Installation can be carried out either by wiring via the multifunctional screw connection terminal (terminal L1', L2', L3' and N') 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.

Technical Data:

Type	PP B TNS 440V / PP B TNS 440V /FM
Application	four-pole lightning current protective device for 400V TNS-Power Net Systems protection category T1 (B), class I

Type			PP B TNS 440V / PP B TNS 440V /FM
Article number			373 943 / 373 944
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 power supply voltage 50/60 Hz	U_n	[V~]	400 / 690
Rated voltage (max. continuous operating voltage) 50/60 Hz	U_c	[V~]	440
Insulation resistance	R_{isol}	[Ω]	$> 10^{10}$
Voltage protection level at 100% lightning impulse spark over voltage (1,2/50 μ s)	U_P	[kV]	$\leq 4,0$
Voltage protection level at I_{imp} (10/350 μ s)	U_p	[kV]	$\leq 4,0$
Response time	t_A	[ns]	< 50
Lightning impulse current I_{imp} (10/350 μ s)	I_{peak}	[kA]	25
	Q	[As]	12,5
	W/R	[kJ/ Ω]	160
Follow current extinguishing capability at U_c	I_f	[kA _{peak}]	750
Short-circuit withstand capability at max. pre-fuse	I_k	[kA _{eff}]	25
Max. permissible line resp. back fuse F2 at parallel wiring		[A]	63 A gL/gG
Max. permissible line resp. back fuse F3 at serial v-wiring		[A]	63 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 terminal		[mm ²]	1,5
Max. switching capacity of remote signal contact			250V / 0,5A
Material of housing / colour			Polycarbonate (halogen free) UL 94-V0 / yellow
Ambient protection category (IEC/EN 60529)			IP 20
Mounting on			DIN rail 35 mm (DIN/EN 50 022)

Dimensions in mm / Diagram



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