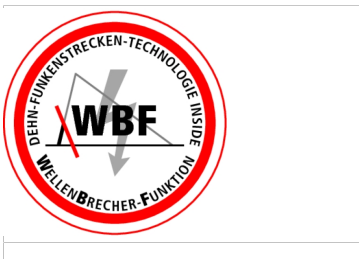




Application-optimised prewired combined lightning current and surge arrester based on spark gap technology
Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
For protecting residential buildings and special applications (see brochure No. DS193)
Capable of protecting terminal equipment
Discharge capacity up to 50 kA (10/350 μ s)
Operating state/fault indication by indicator flag in the inspection window

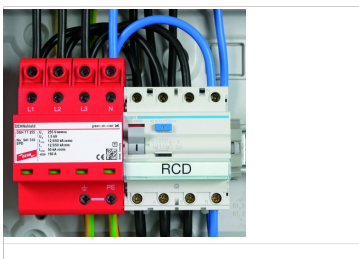
For protecting compact low-voltage consumer's installations against surges, even in case of direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$.

Version



- DEHNshield TNC 255:** Application-optimised combined lightning current and surge arrester for TN-C systems
- DEHNshield TNS 255:** Application-optimised combined lightning current and surge arrester for TN-S systems
- DEHNshield TT 255:** Application-optimised combined lightning current and surge arrester for TT and TN-S systems ("3+1" circuit)
- DEHNshield TN 255:** Application-optimised combined lightning current and surge arrester for single-phase TN systems
- DEHNshield TT 2P 255:** Application-optimised combined lightning current and surge arrester for single-phase TT and TN systems ("1+1" circuit)

FF-Std



The space-saving and application-optimised DEHNshield family offers various benefits that are characteristic of spark-gap-based Type 1 arresters such as the "wave breaker function". This function and the associated reduction of the pulse time reduce the energy of the lightning current to an acceptable level for downstream protection stages or terminal equipment. Moreover, DEHNshield arresters are directly energy coordinated with other arresters of the Red/Line product family.

Application-optimised DEHNshield combined lightning current and surge arresters combine lightning equipotential bonding up to 50 kA (10/350 μ s) lightning impulse currents and surge protection in a single device.

This clearly distinguishes DEHNshield from varistor-based arresters of this application and performance class.

Due to their technical parameters which are rated for use in simple and compact electrical installations, DEHNshield arresters are ideally suited for this application class. For this reason, they are a space-saving and application-optimised solution in particular for residential buildings.

DEHNshield arresters also provide optimal protection in buildings without external lightning protection system where roof superstructures or overhead line supplies are installed. According to VdS 2031, it is advisable to use Type 1 SPDs for these buildings. A detailed application description can be found in brochure DS193.

If an installation is protected by backup fuses up to 160 A, no additional backup fuse is required.

If applications are not sufficiently defined, it is advisable to use DEHNventil. Fulfilling the most stringent technical requirements, DEHNventil provides adequate protection at any time and is suitable for any application.

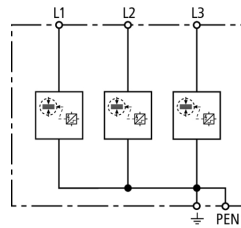
The energy coordinated arresters even allow to protect terminal equipment if the distance between DEHNshield and the consumers is ≤ 5 m. Owing to their non-exhausting spark gap and low space requirements, the application-optimised combined lightning current and surge arresters can be easily integrated into distribution boards.

The follow-current-limiting spark gap technology ensures selectivity even in case of low-value fuses (35 A gL/gG), meaning that upstream fuses are not tripped by mains follow currents.

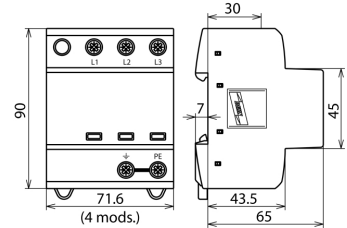
Busbars and pin-shaped terminals from DEHN + SÖHNE can be used for connecting DEHNshield to other DIN rail mounted devices. The type designation of DEHNshield allows to easily choose the right arrester for the relevant system configuration of the low-voltage consumer's installation.

The operating state/fault indication of every protective path immediately provides information on the availability of the arrester even if no operating current is present.

DEHNshield TNC



Basic circuit diagram DSH TNC 255



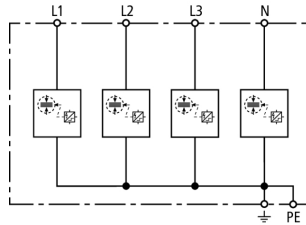
Dimension drawing DSH TNC 255

Application-optimised prewired combined lightning current and surge arrester for TN-C systems

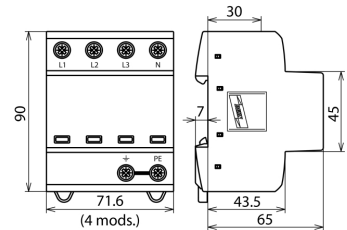
| Type | DSH TNC 255 | |
|---|---|-------------|
| Part No. | 941 300 | |
| SPD according to EN 61643-11 / IEC 61643-1 | Type 1 / Class I | |
| Energy coordination with terminal equipment | Type 1 + Type 2 | |
| Energy coordination with terminal equipment (≤ 5 m) | Type 1 + Type 2 + Type 3 | |
| Nominal a.c. voltage (U_N) | V | 230 / 400 |
| Max. continuous operating a.c. voltage (U_C) | V | 255 |
| Lightning impulse current (10/350 μ s) [L1+L2+L3-PEN] (I_{total}) | kA | 37.5 |
| Specific energy [L1+L2+L3-PEN] (W/R) | kJ/ohms | 352.00 |
| Lightning impulse current (10/350 μ s) [L-PEN] (I_{imp}) | kA | 12.5 |
| Specific energy [L-PEN] (W/R) | kJ/ohms | 39.06 |
| Nominal discharge current (8/20 μ s) (I_n) | kA | 12.5 / 37.5 |
| Voltage protection level (U_P) | kV | ≤ 1.5 |
| Follow current extinguishing capability a.c. (I_R) | kA _{rms} | 10 |
| Response time (t_A) | ns | ≤ 100 |
| Max. mains-side overcurrent protection | A gL/gG | 160 |
| Temporary overvoltage (TOV) (U_T) | V / 5 sec. | 440 |
| TOV characteristic | withstand | |
| Operating temperature range (T_U) | -40 °C...+80 °C | |
| Operating state/fault indication | green / red | |
| Number of ports | 1 | |
| Cross-sectional area (L1, L2, L3, PEN) (min.) | 1.5 mm ² solid/flexible | |
| Cross-sectional area (L1, L2, L3, PEN) (max.) | 35 mm ² stranded/25 mm ² flexible | |
| For mounting on | 35 mm DIN rails acc. to EN 60715 | |
| Enclosure material | thermoplastic, red, UL 94 V-0 | |
| Place of installation | indoor | |
| Degree of protection | IP 20 | |
| Capacity | module(s), DIN 43880 | 4 |
| PU | 1 pc(s) | |

We reserve the right to introduce changes in performance, configuration and technology, dimensions, weights and materials in the course of technical progress. The figures are shown without obligation.

DEHNshield TNS



Basic circuit diagram DSH TNS 255



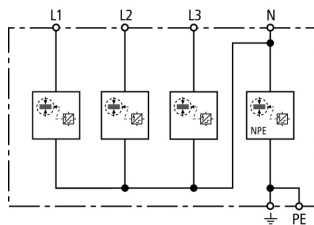
Dimension drawing DSH TNS 255

Application-optimised prewired combined lightning current and surge arrester for TN-S systems

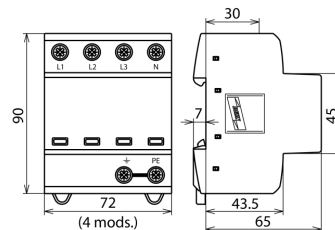
| Type | DSH TNS 255 | |
|--|---|-----------------------|
| Part No. | 941 400 | |
| SPD according to EN 61643-11 / IEC 61643-1 | Type 1 / Class I | |
| Energy coordination with terminal equipment | Type 1 + Type 2 | |
| Energy coordination with terminal equipment (≤ 5 m) | Type 1 + Type 2 + Type 3 | |
| Nominal a.c. voltage (U_N) | V | 230 / 400 |
| Max. continuous operating a.c. voltage (U_C) | V | 255 |
| Lightning impulse current (10/350 μ s) [L1+L2+L3+N-PE] (I_{total}) | kA | 50 |
| Specific energy [L1+L2+L3+N-PE] (W/R) | kJ/ohms | 625.00 |
| Lightning impulse current (10/350 μ s) [L, N-PE] (I_{imp}) | kA | 12.5 |
| Specific energy [L, N-PE] (W/R) | kJ/ohms | 39.06 |
| Nominal discharge current (8/20 μ s) (I_n) | kA | 12.5 / 50 |
| Voltage protection level [L-PE]/[N-PE] (U_p) | kV | $\leq 1.5 / \leq 1.5$ |
| Follow current extinguishing capability a.c. (I_{ϕ}) | kA _{rms} | 10 |
| Response time (t_A) | ns | ≤ 100 |
| Max. mains-side overcurrent protection | A gL/gG | 160 |
| Temporary overvoltage (TOV) [L-N] (U_T) | V / 5 sec. | 440 |
| TOV characteristic | withstand | |
| Operating temperature range (T_U) | -40 °C...+80 °C | |
| Operating state/fault indication | green / red | |
| Number of ports | 1 | |
| Cross-sectional area (L1, L2, L3, N, PE, \pm) (min.) | 1.5 mm ² solid/flexible | |
| Cross-sectional area (L1, L2, L3, N, PE, \pm) (max.) | 35 mm ² stranded/25 mm ² flexible | |
| For mounting on | 35 mm DIN rails acc. to EN 60715 | |
| Enclosure material | thermoplastic, red, UL 94 V-0 | |
| Place of installation | indoor | |
| Degree of protection | IP 20 | |
| Capacity | module(s), DIN 43880 | 4 |
| PU | 1 pc(s) | |

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DEHNshield TT



Basic circuit diagram DSH TT 255



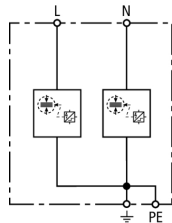
Dimension drawing DSH TT 255

Application-optimised prewired combined lightning current and surge arrester for TT and TN-S systems ("3+1" circuit)

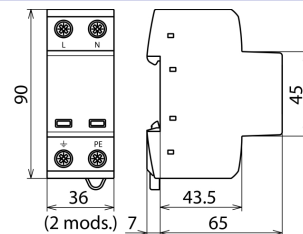
| Type | DSH TT 255 | |
|--|---|-----------------------|
| Part No. | 941 310 | |
| SPD according to EN 61643-11 / IEC 61643-1 | Type 1 / Class I | |
| Energy coordination with terminal equipment | Type 1 + Type 2 | |
| Energy coordination with terminal equipment (≤ 5 m) | Type 1 + Type 2 + Type 3 | |
| Nominal a.c. voltage (U_N) | V | 230 / 400 |
| Max. continuous operating a.c. voltage (U_C) | V | 255 |
| Lightning impulse current (10/350 μ s) [L1+L2+L3+N-PE] (I_{total}) | kA | 50 |
| Specific energy [L1+L2+L3+N-PE] (W/R) | kJ/ohms | |
| | 625.00 | |
| Lightning impulse current (10/350 μ s) [L-N]/[N-PE] (I_{imp}) | kA | 12.5 / 50 |
| Specific energy [L-N]/[N-PE] (W/R) | kJ/ohms | |
| | 39.06 / 625.00 | |
| Nominal discharge current (8/20 μ s) [L-N]/[N-PE] (I_n) | kA | 12.5 / 50 |
| Voltage protection level [L-N]/[N-PE] (U_p) | kV | $\leq 1.5 / \leq 1.5$ |
| Follow current extinguishing capability [L-N]/[N-PE] (I_{ϕ}) | 10 kA _{rms} / 100 A _{rms} | |
| Response time (t_A) | ns | ≤ 100 |
| Max. mains-side overcurrent protection | A gL/gG | 160 |
| Temporary overvoltage (TOV) [L-N] (U_T) | V / 5 sec. | 440 |
| Temporary overvoltage (TOV) [N-PE] (U_T) | V / 200 ms | 1200 |
| TOV characteristic | withstand | |
| Operating temperature range (T_U) | -40 °C...+80 °C | |
| Operating state/fault indication | green / red | |
| Number of ports | 1 | |
| Cross-sectional area (L1, L2, L3, N, PE, \pm) (min.) | 1.5 mm ² solid/flexible | |
| Cross-sectional area (L1, L2, L3, N, PE, \pm) (max.) | 35 mm ² stranded/25 mm ² flexible | |
| For mounting on | 35 mm DIN rails acc. to EN 60715 | |
| Enclosure material | thermoplastic, red, UL 94 V-0 | |
| Place of installation | indoor | |
| Degree of protection | IP 20 | |
| Capacity | module(s), DIN 43880 | 4 |
| PU | 1 pc(s) | |

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DEHNshield TN



Basic circuit diagram DSH TN 255



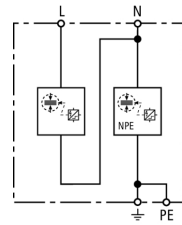
Dimension drawing DSH TN 255

Application-optimised prewired combined lightning current and surge arrester for single-phase TN systems

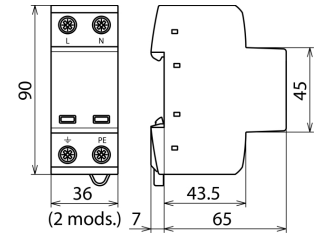
| Type | DSH TN 255 | |
|---|---|-----------------------|
| Part No. | 941 200 | |
| SPD according to EN 61643-11 / IEC 61643-1 | Type 1 / Class I | |
| Energy coordination with terminal equipment | Type 1 + Type 2 | |
| Energy coordination with terminal equipment (≤ 5 m) | Type 1 + Type 2 + Type 3 | |
| Nominal a.c. voltage (U_N) | V | 230 |
| Max. continuous operating a.c. voltage (U_C) | V | 255 |
| Lightning impulse current (10/350 μ s) [L+N-PE] (I_{total}) | kA | 25 |
| Specific energy [L+N-PE] (W/R) | kJ/ohms | 156.25 |
| Lightning impulse current (10/350 μ s) [L, N-PE] (I_{imp}) | kA | 12.5 |
| Specific energy [L, N-PE] (W/R) | kJ/ohms | 39.06 |
| Nominal discharge current (8/20 μ s) (I_n) | kA | 12.5 / 25 |
| Voltage protection level [L-PE]/[N-PE] (U_p) | kV | $\leq 1.5 / \leq 1.5$ |
| Follow current extinguishing capability a.c. ($I_{\bar{a}}$) | kA _{rms} | 10 |
| Response time (t_A) | ns | ≤ 100 |
| Max. mains-side overcurrent protection | A gL/gG | 160 |
| Temporary overvoltage (TOV) [L-N] (U_T) | V / 5 sec. | 440 |
| TOV characteristic | withstand | |
| Operating temperature range (T_U) | -40 °C...+80 °C | |
| Operating state/fault indication | green / red | |
| Number of ports | 1 | |
| Cross-sectional area (L, N, PE, \pm) (min.) | 1.5 mm ² solid/flexible | |
| Cross-sectional area (L, N, PE, \pm) (max.) | 35 mm ² stranded/25 mm ² flexible | |
| For mounting on | 35 mm DIN rails acc. to EN 60715 | |
| Enclosure material | thermoplastic, red, UL 94 V-0 | |
| Place of installation | indoor | |
| Degree of protection | IP 20 | |
| Capacity | module(s), DIN 43880 | 2 |
| PU | 1 pc(s) | |

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DEHNshield TT 2P



Basic circuit diagram DSH TT 2P 255



Dimension drawing DSH TT 2P 255

Application-optimised prewired combined lightning current and surge arrester for single-phase TT and TN systems ("1+1" circuit)

| Type | DSH TT 2P 255 | |
|---|---|-----------------------|
| Part No. | 941 110 | |
| SPD according to EN 61643-11 / IEC 61643-1 | Type 1 / Class I | |
| Energy coordination with terminal equipment | Type 1 + Type 2 | |
| Energy coordination with terminal equipment (≤ 5 m) | Type 1 + Type 2 + Type 3 | |
| Nominal a.c. voltage (U_N) | V | 230 |
| Max. continuous operating a.c. voltage (U_C) | V | 255 |
| Lightning impulse current (10/350 μ s) [L+N-PE] (I_{total}) | kA | 25 |
| Specific energy [L+N-PE] (W/R) | kJ/ohms | 156.25 |
| Lightning impulse current (10/350 μ s) [L-N]/[N-PE] (I_{imp}) | kA | 12.5 / 25 |
| Specific energy [L-N]/[N-PE] (W/R) | kJ/ohms | 39.06 / 156.25 |
| Nominal discharge current (8/20 μ s) [L-N]/[N-PE] (I_n) | kA | 12.5 / 25 |
| Voltage protection level [L-N]/[N-PE] (U_p) | kV | $\leq 1.5 / \leq 1.5$ |
| Follow current extinguishing capability [L-N]/[N-PE] (I_{fl}) | 10 kA _{rms} / 100 A _{rms} | |
| Response time (t_A) | ns | ≤ 100 |
| Max. mains-side overcurrent protection | A gL/gG | 160 |
| Temporary overvoltage (TOV) [L-N] (U_T) | V / 5 sec. | 440 |
| Temporary overvoltage (TOV) [N-PE] (U_T) | V / 200 ms | 1200 |
| TOV characteristic | withstand | |
| Operating temperature range (T_U) | -40 °C...+80 °C | |
| Operating state/fault indication | green / red | |
| Number of ports | 1 | |
| Cross-sectional area (L, N, PE, \pm) (min.) | 1.5 mm ² solid/flexible | |
| Cross-sectional area (L, N, PE, \pm) (max.) | 35 mm ² stranded/25 mm ² flexible | |
| For mounting on | 35 mm DIN rails acc. to EN 60715 | |
| Enclosure material | thermoplastic, red, UL 94 V-0 | |
| Place of installation | indoor | |
| Degree of protection | IP 20 | |
| Capacity | module(s), DIN 43880 | 2 |
| PU | 1 pc(s) | |

We reserve the right to introduce changes in performance, configuration and technology, dimensions, weights and materials in the course of technical progress. The figures are shown without obligation.