# DEHNshield®

**Universal solution for electromobility**

## Compact spark-gap-based DEHNshield® arrester – Ideally suited for charging stations.

**Space is often limited in charging stations. The compact DEHNshield combined arrester is the ideal surge protection solution: Apart from its compact dimensions, it is capable of protecting terminal equipment thanks to its triggered spark gap.**

Figure 1: Vehicle at a charging station

DEHNshield is one of the most compact spark-gap-based arresters worldwide. With its triggered spark gap, DEHNshield does not only discharge lightning currents up to 50 kA, but also limits surge impulses in such a way that the arrester is capable of protecting terminal equipment. The spark gap technology ensures that no leakage currents occur so that the arrester can be used upstream of the meter.

Since the final location of the charging systems is frequently not known at the production stage, a universal arrester such as DEHNshield DSH TT 255 that is suitable for TNS, TNC and TT systems is required. According to the lightning protection zone concept as per EN 62305, the combined arrester is suitable for all lightning protection zones and can be used universally at any location (Figure 3).

With its powerful spark gap for discharging lightning currents, DEHNshield only takes up as little space as a conventional varistor-based type 2 arrester.
DEHNshield can be used in combination with four STAK 25 pin-shaped terminals up to a nominal current of 100 A instead of the input terminals of the charging station (L1, L2, L3, N). The arrester typically occupies the same mounting space on the DIN rail as the input terminals. DEHNshield allows to connect supply lines with a cross-section up to 35 mm² and, in combination with the STAK 25 pin-shaped terminal, up to 25 mm² (Figure 2).

Apart from saving costs, this type of connection has two other advantages: On the one hand, the arrester is automatically placed where it has an optimum effect, on the other hand the use of the STAK 25 pin-shaped terminal allows EMC-optimised through-wiring according to IEC 60364-5-53.

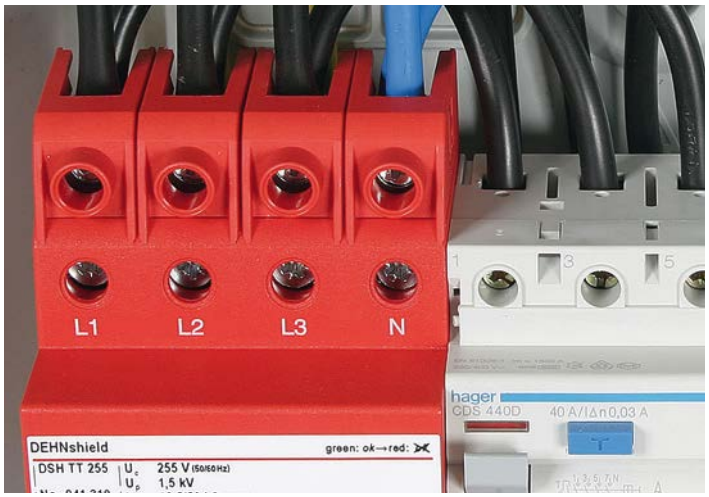


Figure 2: DEHNshield® with STAK 25 terminals

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### DEHNshield® TT 255, optionally in combination with STAK 25

- Prewired spark-gap-based combined lightning current and surge arrester
- KEMA-approved
- For installation in conformity with the lightning protection zone concept according to EN 62305-4 at all boundaries ($0_A$ to 2).
- No leakage currents, suitable for use upstream of the meter
- Suitable for TNC, TNS and TT systems
- Space-saving design (only 4 modules)
- Space-saving use if STAK 25 terminals are used instead of the input terminals (up to 25 mm² stranded / 16 mm² flexible )

| Technical data DSH TT 255 / Part No. 941 310 | |
|---|---|
| SPD according to EN 61643-11 / IEC 61643-1 | type 1 |
| Nominal voltage (a.c.) $U_N$ | 230/400 V |
| Max. continuous operating voltage | 255 V |
| Lightning impulse current (10/350) $I_{total}$ | 50 kA |
| Lightning impulse current (10/350) pole $I_{imp}$ | 12.5 kA |
| Voltage protection level $U_p$ | 1.5 kV |
| Max. mains-side overcurrent protection | 160 A gL/gG |
| in combination with STAK 25 | 100 A gL/gG |
| TOV characteristic | withstand |
| Cross-sectional area DSH TT 255 | 35 mm² (stranded)<br>25 mm² (flexible) |
| with STAK 25 | 25 mm² (stranded)<br>16 mm² (flexible) |
| Operating state/fault indication | green / red |
| Dimensions | 4 modules, DIN 43880 |


**DEHNshield®**

**STAK 25 terminal**

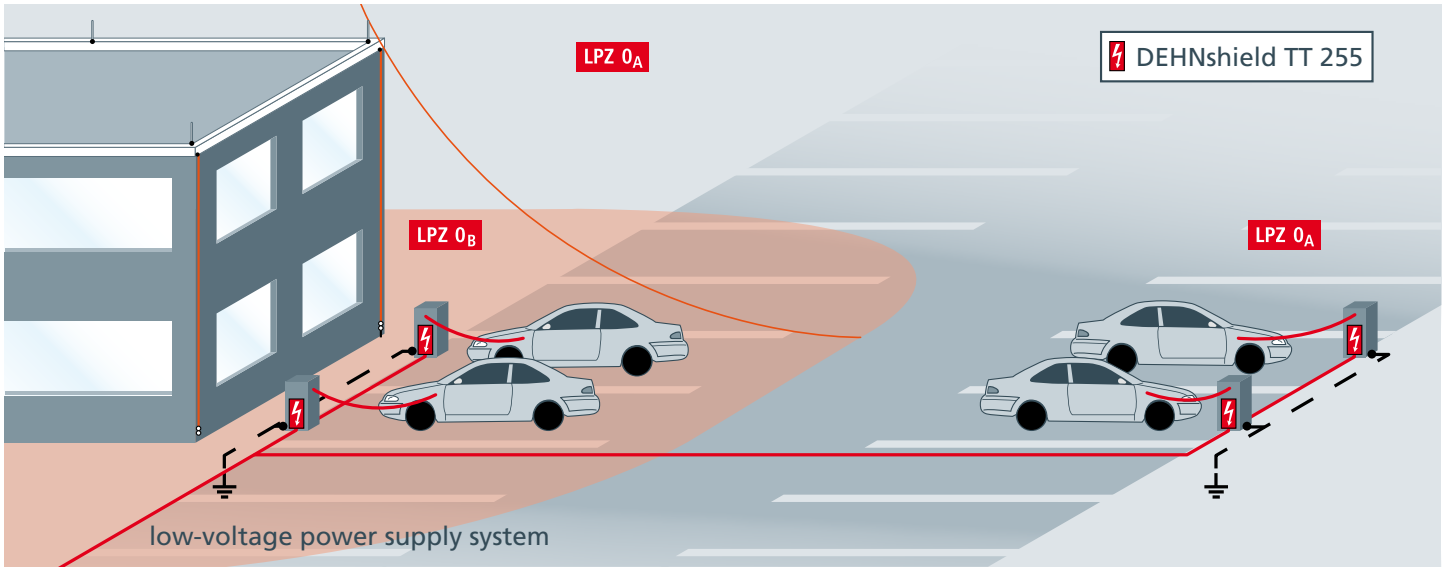


**Figure 3: Ideally suited for all lightning protection zones according to EN 62305**

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