

## Information concerning the design verification according to IEC / EN 61439-1

### General:

When using surge protective devices from DEHN+SÖHNE GmbH & Co. KG which are connected in parallel, the switchgear manufacturer does not have to observe special requirements for the design verification according to IEC / EN 61439-1. Since operating currents usually do not flow through these surge protective devices, they do not significantly increase the temperature and therefore do not have to be considered separately or are considered in other loss such as terminals. In case of surge protective devices, which carry continuous current and feature a series impedance (e.g. arresters for information technology systems), the power loss data can be calculated with the help of the parameters specified in the datasheets of the surge protective devices.

However, it is important that the specified short-circuit withstand strength of the surge protective device is at least equal to the short-circuit withstand strength required at the place of installation. According to the CE declaration, the surge protective devices are tested in conformity with the relevant product standards (EN 61643-11, EN 61643-21, EN 50539-11). The necessary data and information can be found in the datasheets and installation instructions.

### Information concerning the design verification according to EN 61439-1:

| Section  | Verification   |   |
|----------|--|---|
| 10.2     | Strength of material and parts   | See the following sub-chapters  |
| 10.2.2   | Resistance to corrosion  | The requirements of the relevant product standards* are fulfilled. In general, the products are used in the protected area. The degree of protection is defined according to the relevant datasheet.  |
| 10.2.3.1 | Thermal stability of enclosures  | Basically, DEHN products do not present an enclosure.   |
| 10.2.3.2 | Resistance of insulating materials to heat                             | The requirements of the relevant product standards* are fulfilled.  |
| 10.2.3.3 |  |   |
| 10.2.4   | Resistance to ultra-violet (UV) radiation                              | Not relevant. DEHN products are basically not directly used in outdoor areas.   |
| 10.2.5   | Lifting  | Not relevant since this does not apply to individual components.  |
| 10.2.6.  | Mechanical impact  | Not relevant since this only applies to enclosures.   |
| 10.2.7   | Marking  | The requirements of the relevant product standards* are fulfilled.  |
| 10.3     | Degree of protection of assemblies                                     | Not relevant since this only applies to enclosures.   |
| 10.4     | Clearances and creepage distances                                      | The requirements of the relevant product standards* are fulfilled for the individual DEHN products.   |
| 10.5     | Protection against electric shock and integrity of protective circuits | The installer of the switchgear and controlgear assembly is responsible for this.   |
| 10.6     | Incorporation of switching devices and components                      | The installer of the switchgear and controlgear assembly is responsible for this. The requirements are fulfilled for the individual DEHN products as long as they are used for their intended purpose and the installation instructions are observed. |
| 10.7     | Internal electrical circuits and connections                           | The installer of the switchgear and controlgear assembly is responsible for this. The requirements are fulfilled for the individual DEHN products as long as they are used for their intended purpose and the installation instructions are observed. |
| 10.8     | Terminals for external conductors                                      | The installer of the switchgear and controlgear assembly is responsible for this. The requirements are fulfilled for the individual DEHN products as long as they are used for their intended purpose and the installation instructions are observed. |
| 10.9     | Dielectric properties  | See the following sub-chapters  |
| 10.9.2   | Power-frequency withstand voltage                                      | The relevant requirements of the product standards* are fulfilled.  |
| 10.9.3   | Impulse withstand voltage  | Not relevant if the surge protective device for limiting impulse voltages is used for its intended purpose.   |
| 10.10    | Temperature rise   | Since operating currents usually do not flow through surge protective devices which are connected in parallel, they do not  |

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|-------|-------------------------------------|--|
|       |                                     | significantly increase the temperature and therefore do not have to be considered separately or are considered in other loss such as terminals. Consequently, a through-wired double terminal can be used like a normal clamping point. If surge protective devices carry continuous current in an exceptional case and feature a series impedance (e.g. arresters for information technology systems), the data for the power loss can be calculated with the help of the parameters specified in the datasheets. The limit temperatures required in the relevant product standards are adhered to. |
| 10.11 | Short-circuit withstand strength    | The short-circuit withstand strength $I_{sc cr}$ of the surge protective device specified in the datasheet must meet the requirements at the place of installation.  |
| 10.12 | Electromagnetic compatibility (EMC) | The relevant requirements of the product standards* are fulfilled. Moreover, the intended use of a surge protective device, the switchgear and controlgear assembly or downstream loads must be protected from these effects of conducted high-energy interference (surges).   |
| 10.13 | Mechanical operation                | The requirements are fulfilled for the individual DEHN products as long as they are used for their intended purpose and the installation instructions are observed.  |

\* EN 61643-11, EN 61643-21, EN 50539-11