

Supplementary Bulletin

Electrical Installations for Tradeshow Stands

Supplementary to point 5.3, Technical Regulations of EMO Hannover 2019

Electrical installations for tradeshow stands shall be carried out in accordance with the latest EN, DIN and VDE provisions and in accordance with accepted rules of good practice. Compliance with the relevant safety provisions, and in particular with DIN VDE 0100 Parts 410, 520, 600 and 711, VdS guidelines and the accident prevention regulations BGV A1, A3 and A4, must be ensured for all activities. Tools and equipment must be tested by accredited European certification bodies such as VDE, OVE, etc.

Particular attention must be given to the following points:

- Work on electrical installations may only be performed by qualified electricians in the sense of VDE 0100-200 or VDE 0105-100. The qualified electricians must be equipped with suitable tools and aids.
- Operation of the electrical installation is only allowed if it is free of defects and after documented inspection and/or testing in accordance with VDE 0100-600. Measures for operational safety must therefore be completed before power is switched on.
- All work must be performed with the installation switched off.
- All persons involved in setting up electrical installations are in all cases personally responsible and liable for compliance with the accepted rules of good practice for electrical installations.

Power supply / Main distribution panel

It must be possible to switch off power to the entire stand installation by a common main switch. Ground fault interrupters do not qualify as main switches. The following items are exempted from this rule: refrigerators, fax machines, and electronic data storage devices. The main switch and the distribution panel of the stand must be mounted in positions where they are accessible at all times. Electrical malfunctions must be corrected immediately in a proper professional manner. A TN-S system (three phase lines, one neutral line and one protective ground line) shall be used for electrical supply.

AC line voltages:

230 V ($\pm 10\%$) / 50 Hz

400 V ($\pm 10\%$) / 50 Hz

Protective measures

In addition to protection by fuses or circuit breakers, each circuit shall be equipped with a ground fault interrupter (GFI). Maximum differential current 30 mA ($I_{\Delta} = 0.03$ A). Machinery controlled by variable-speed drives (machines, robots, motors, etc.) shall be equipped with type B SK GFIs. Please consult with the relevant EMO General Commissariat subcontractor in this regard. Series connection of different GFI types is not permissible.

Note:

The fixed feed points (outlets) in the exhibition halls are not protected by GFIs. All devices, lamps and other equipment must be connected to protective ground. This rule does not apply to double-insulated equipment (protection class 2) or equipment operating from a safe low voltage (voltage range 1, SELV).

Metal stand structures, conductively joined metal parts and relatively large metallic parts shall be connected to the protective equipotential bonding rail (grounded). Cross-members with lighting installations shall be equipped by the installer with an additional equipotential bonding conductor (copper, at least 10 mm²) in accordance with VDE 0100 Part 711). This protective equipotential bonding conductor must be connected to the main equipotential bonding device in the branch duct (this also applies to conductive parts of the stand).

Lighting system

The lighting system shall be properly installed and secured. The outer insulation (jacket) of cables shall extend into the equipment, lamps, outlets, etc. Effective strain relief shall be provided for all wiring and cables. The cables and wires used must be approved for the foreseen type of installation and adequately dimensioned (DIN 57298/VDE 298). The minimum cross-section is 1.5 mm². For wires that are not joined using approved plug-and-socket connectors, terminal blocks inside fully enclosed junction boxes must be used. Terminals in exposed positions are not permissible. In areas with foot traffic, cables shall be mechanically protected or only cables explicitly approved for high mechanical stress shall be used (at least H05RN-F). Please note that flat cables are not permissible, with the exception of flat cables certified by an accredited European certification body. Tripping risks from wires and cables must be avoided.

Lamps in general

Lamps must be secured in a manner that reliably prevents falling. All lamps must be installed with two mutually independent mounts, each able to support five times the dead weight of the lamp (note that safety cords or chains count as a second suspension mount). This is mandatory for mounting heights of 2.50 m or greater (see also "busbar/lamp rail") and weights of 2 kg or more. The use of cords or straps made from natural or synthetic materials (such as cable ties) for this purpose is not permissible. Safety cords shall be made from non-flammable material. Note that this also applies to lamp rail systems. All lamps shall be provided with mechanical protection, such as a protective screen or lens, or must have a catch device that prevents the falling of lighting fixtures or parts of them.

Mounting lamps on flammable construction materials (such as wood) is only permissible if:

- this is not expressly prohibited by the manufacturer's specifications;
- the distance between the lamps and the mounting surface is at least 35 mm; or
- the lamps are mounted on a non-flammable, thermally insulated substrate with a thickness of at least 10 mm.

This applies similarly to outlets or other equipment that is mounted on flammable construction materials. The same provisions apply to lamps installed in the floor.

A sufficient distance to flammable materials must be maintained in accordance with the manufacturer's specifications (usually marked on the lamp). The minimum distance is 0.5 m – for example, 0.5 m away from the illuminated surface. If busbars or lamp rails are used, it must unconditionally be ensured that the associated insulating end fittings are fitted on the busbar to prevent contact with the live conductors. The minimum installation height for lamp rails is 2.50 m. Lower installation is only possible if the rail is completely covered.

Complete contact protection must be ensured. The busbar must be securely attached to the substrate by non-flammable fasteners, such as screws, metal straps or the like. Plastic cable ties are only permissible as additional installation aids.

Photovoltaic systems and electrical generation systems

In the case of presentation of photovoltaic systems or other electrical generation systems, a disconnect device (fireman switch) for switching off the system in the event of danger must be mounted in a readily visible and constantly accessible location, unless the generated no-load voltage does not exceed 120 V DC. The provisions of DIN VDE 0100 Part 712 and DIN VDE 0126 must be observed, and a record conforming to VDE 0126-23 must be prepared and presented on request. The stand must be registered with the EMO General Commissariat and marked with a "PV System" sign.

Low-voltage lighting

In the case of halogen lighting, falling of the light bulbs must be prevented by suitable retainers, such as clamps, claws or springs. A plug-and-socket connection in the lamp base is not sufficient as a retainer.

All wiring up to the lamp must be insulated. Note that paint and varnish do not count as insulation. This also applies to structural parts that are used as electrical conductors. Transformers:

- Only safety transformers suitably approved for the intended purpose may be used. They must be mounted with attention to unrestricted heat dissipation, with spacing according to the transformer marking or the manufacturer's specifications.
- Transformers must have protective devices on the primary and secondary sides. Transformers without secondary protective devices must be retrofitted. The maximum fuse rating is 25 A, depending on the transformer size.
- The fuse must be able to mechanically withstand the expected short-circuit current. Circuit breakers shall be used by preference (tripping tolerance in the event of a fault ± 60 W).
- Electronic transformers may be used without secondary protection if they have been tested by an accredited European certification body.

Attention: Maximum wire/cable length with electronic transformers: 2 m.

Neon lighting systems and illuminated signs

Systems with electrical discharge lamps: Systems with any sort of neon signs or lamps as an illumination unit on a stand or as an exhibit having a rated supply voltage higher than 230/400 V AC must conform to the following conditions:

The neon sign or the lamp must be mounted out of normal reach (minimum height 2.5 m) or adequately protected to minimize the risk of injury (shatterproof transparent cover).

Use of electrical equipment

All electrical equipment used on the Deutsche Messe site must be in good, safe and tested condition and must be used as intended. This applies to stationary equipment, such as steam cookers with fixed connection, hot air ovens with fixed connection, exhibited machinery and systems, etc. (see the definition below), and to movable equipment, such as drills, circular saws, coffee machines, etc. (see the definition below).

All equipment brought to the stand (including personal equipment) must have an inspection label on which the month and year of the next inspection are noted. The record of the most recent inspection, from which the basis of the inspection, the inspection process and the nature and scope of the inspection can be seen, must be presented to Deutsche Messe on request. The inspections must have been performed by an authorized person in accordance with the German Industrial Safety and Health Ordinance (BetrSichV) in combination with the Technical Rules for Industrial Health and Safety (TRBS 1203). The interval for periodic inspections shall be determined by means of a hazard assessment.

When leaving the workplace, users must secure equipment in a manner that prevents any hazard to people or property.

All equipment used is subject to a prohibition on tampering with protective and safety devices; see in particular DGUV Regulation 1 (BGV A1) Sections 15 and 16 and the German Criminal Code (StGB), Section 145.

Definition

Movable electrical equipment is any equipment that can be moved during operation or can easily be moved from one place to another while connected to the supply circuit (see also Section 826-16-04 DIN VDE 0100-200). Stationary electrical equipment is equipment with fixed mounting or equipment that does not have any carrying device and is so heavy that it cannot be moved easily. This also includes electrical equipment with provisional fixed mounting that is operated via movable connection cables (see also Section 826-16-06 DIN VDE 0100-200).

Note

The instructions of the electrical experts commissioned by EMO General Commissariat must be followed. In the event of violation of the above provisions and instructions, the tradeshow stand concerned will be denied connection to the electrical supply for safety reasons.