



# TA 1000-0515

Technical Instruction

## Protective measures for installation of high-voltage circuits



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## 1 Purpose

To test the protection against shock currents (protective arrangements) when installing electrical equipment with nominal voltages of up to ~ 1000 V.

## 2 General

Each plant must be inspected and tested during and/or on completion of installation before it is commissioned by the user and measurements must be carried out.

The protective arrangements must be checked before the plant is first commissioned (original inspection) and before re-commissioning.

It is stressed that all regulations governing the protective arrangements (hitherto specific to each country) must be adhered to.

All those companies or operatives engaged in the setting up or installation of the above systems, who are subject to legislation other than that of Austria, must of course act strictly in accordance with the regulations by which they are bound.

Furthermore, it is emphasised that the first electrical commissioning, especially the protective arrangements check, may only be carried out by specialist staff who have received appropriate training.

## 3 Protective arrangements - classification and use

The protective arrangements are classified as those which offer protection against direct contact (basic protection) and those which offer protection against indirect contact (fault protection) and additional protection.

### 3.1 Protection against direct contact

In the case of normal electrical equipment, protection against live parts is achieved by combining protection by insulation and protection by covering. It must only be possible to open or remove covers using a tool or key, unless either the equipment is shut down before the covers are opened or removed, or there are additional suitable barriers inside.

### 3.2 Protection in the case of indirect contact

This form of protection, which is intended to prevent dangerous voltages from coming into contact with parts which should not normally carry operational voltages but which have been made live through damage to the basic insulation, may be classified as follows:

Protective arrangements without earth-protection conductor:

- Protective insulation
- Protective low voltage (Functional low voltage)
- Protective isolation of one or more pieces of equipment using equipotential bonding conductors

Protective arrangements with earth-protection conductor:

- Protective earth
- Protective multiple earthing, neutralisation
- Current-operated earth-leakage circuit-breaker system
- Protective conductor system

Systems supplied by INNIO Jenbacher GmbH & Co OG are always provided with protective arrangements in the form of protective conductors. The choice of fault protection is determined by the local conditions. The on-site power supply in particular is a deciding factor in the choice of protective arrangements which may be used in the case of indirect contact. In relation to neutralisation, this situation must be emphasised, especially, because the neutralisation conditions in the distribution network and the consumer unit also have to conform to the regulations. Only the local electricity supply company can decide whether this is the case in the distribution network and neutralisation may be used.

If specific types of electrical equipment or electrical operating areas are subject to additional or more stringent rules or exceptions under the applicable regulations, they will take precedence over the general regulations in this regard.

## 4 Reference sources

- ÖVE-EN 1 Part 1/1989, Part 1a/1992, Part 1b/10.95
- VDE 0100 Part 410/01.97
- VDE 0100 Part 610/04.94
- EN 60 439 Part 1
- Reference book: "Schutz gegen gefährliche Körperströme und gegen Überspannungen" [Protection against shock currents and overvoltages] - Bieglmeier/Mörx - seventh edition

## 5 Revision code

### Revision history

Index	Date	Description / Revision summary	Expert Auditor
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## Revision history

2	30.04.2019	GE durch INNIO ersetzt / GE replaced by INNIO	<b>Stojilkovic T.</b> <i>Pichler R.</i>
1	26.05.2010	Umstellung auf CMS / Change to <b>C</b> ontent <b>M</b> anagement <b>S</b> ystem ersetzt / replaced Index: <b>a</b>	<b>Schartner</b> <i>Giese</i>

