

## 9 STANDARDS

Compliance with National and International standards ensures the safety of electrical appliances and minimises the risk to life, health and the possibility of fire.

In some countries component approval to the relevant National standard is compulsory but in others it is the responsibility of the manufacturer to ensure that the design and manufacture of products complies with applicable National standards. (see fig 9.1).

Approval authorities will sometimes wish to confirm compliance with the regulations by carrying out tests in their own laboratory and may want to monitor production and processes regularly to confirm ongoing compliance.

In addition to industrial standards and specifications, there are particular specifications for military use. The most important of these are the MIL-standards.

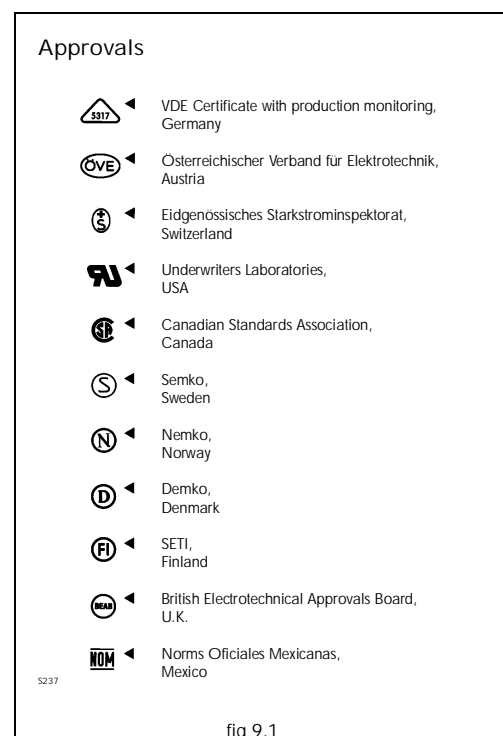
### International standards

The importance of National regulations and standards is being reduced as harmonisation with international associations such as IEC (International Electrotechnical Commission) or CENELEC, the European counterpart, increases.

### European standards

Unified standards are a basic requirement for the international exchange of goods and services. For more than 30 years many countries, especially in Europe, have worked towards the harmonisation of technical regulations.

CENELEC was founded in 1973 and members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Affiliates are the Czech Republic, Hungary, Poland, Romania, Slovenia, and Turkey.



## POWER RELAYS

When CENELEC starts drafting regulations on a specific topic, all national activities in the same field are stopped. On completion, the draft proposals are submitted to the IEC committee for discussion.

### Relationship of National standards to European standards

The relationship between National and European electrotechnical standards is similar to the relationship between National law and Community law.

The members of CENELEC are obliged to withdraw established National standards which contradict European standards.

It is the responsibility of manufacturers and their suppliers to comply with European standards as well as EU Directives concerning health and safety.

## Relays Standards

|                                   |  |                           |  |
|-----------------------------------|--|---------------------------|--|
| DIN 17405 (4.70)                  | Weichmagnetische Werkstoffe für Gleichstromrelais.   | FTZ-Norm 547 PV 1         | Verfahren zur Feststellung von kontaktschädigenden Ausscheidungen von Kunststoffen, Fußbodenbelägen und Reinigungsmitteln. |
| DIN 40040 (2.73)                  | Anwendungsklassen und Zuverlässigkeitsangaben der Nachrichtentechnik und Elektronik.   | FTZ-Norm PV 704           | Spannungsfestigkeit und Isolationswiderstand in Fernmeldeanlagen und Geräten. Prüfvorschriften.                            |
| DIN 40045 (1.69)                  | Richtlinien für die Bildung von klimatischen Prüfklassen für elektrische Bauelemente der Nachrichtentechnik.                         | MIL-R 575 F               | Military Specification Relays (May 1970)   |
| DIN 40046 (6.60-8.73)             | Bl. 1—21: Klimatische und mechanische Prüfungen.   | SEV 1025, 1973            | Sicherheitsvorschriften für Schütze.   |
| DIN 40050 (1.63-5.73)             | Schutzarten  | ÖVE-R-255, Teil 1/1982    | Elektrische Relais<br>Teil 1: Schaltzeichen  |
| DIN 40713 (7.54-4.72)             | Schaltzeichen  | ÖVE-R-255, Teil 7/1984    | Elektrische Relais<br>Teil 7: Prüf- und Meßbedingungen für elektrische Schaltrelais.                                       |
| DIN 41020 (9.71)                  | Elektrische Nachrichtentechnik, Kontaktarten, Kurzzeichen.   | ÖVE-R-255, Teil 120/1986  | Verhalten der Kontakteinrichtungen elektrischer Relais.  |
| DIN 41215 (5.74)                  | Elektrische Nachrichtentechnik, Elektromagnetische Relais. Begriffe.   | IEC 50 (446)              | Chapter 446: Electrical relays.  |
| DIN 41216 (5.74)                  | Elektrische Nachrichtentechnik, Prüfung von elektromagnetischen Relais.  | IEC 65 (1985)             | Safety requirements for mains operated electronic and related apparatus for household and similar general use.             |
| DIN 41218 (9.68)                  | Elektrische Nachrichtentechnik, Einfachrelais mit Rundkern, Maße und technische Werte.   | IEC 68                    | Basic environmental testing procedures.  |
| DIN 41220 (9.68)                  | Elektrische Nachrichtentechnik, Flachrelais, Maße und technische Werte.  | IEC 225                   | Electrical relays.   |
| DIN 43639 (11.56)                 | Kenngrößen elektrische Relais, Bl. 1: Hilfsrelais<br>Bl. 2: Verzögerte Schaltrelais  | IEC 255-0-20 (1974)       | Contact performance of electrical relays.  |
| DIN 46199 (1.70-12.72)            | Bl. 1—6: Elektrische Schaltgeräte, Anschlußzeichnungen.  | IEC 255-1-00 (1975)       | All-or-nothing electrical relays.  |
| VDE 0435 Teil 201                 | Elektrische Relais, Schaltrelais   | IEC 255-5 (1977) Part 5   | Insulation tests for electrical relays.  |
| VDE 0435 Teil 120/10.81           | Elektrische Relais<br>Verhalten der Kontakte von elektrischen Relais.  | IEC 255-7 (1978) Part 7   | Test and measurement procedures for electromechanical all-or-nothing relays.   |
| VDE 0110/11.72<br>01106/2.79      | Bestimmungen für die Bemessung der Luft- und Kriechstrecken elektrischer Betriebsmittel.   | IEC 255-14 (1981) Part 14 | Endurance test for electrical relay contacts — Preferred values of contact loads.  |
| VDE 0580/10.70                    | Bestimmungen für elektromagnetische Geräte.  | IEC 255-15 (1981) Part 15 | Endurance test for electrical relay contacts — Specification for the characteristics of test equipment.                    |
| VDE 0631, Teil 1/09.87            | Automatische elektrische Steuer- und Regelgeräte für den Hausgebrauch und ähnliche Anwendungen                                       | IEC 255-18 (1982) Part 18 | Dimensions for general Purpose all-or-nothing relays.  |
| VDE 0660, Teil 100/06.85          | Begriffe und Anforderungen   | IEC 355                   | Safety of household and similar electrical appliances.   |
| VDE 0700, Teil 1/09.86            | Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke.   | IEC 470 (1974)            | High-voltage alternating current contactors.   |
| VDE 0804, Teil 1/5.85             | Sichere elektrische Trennung von Fernmelde- und Starkstromkreisen.   | IEC 529 (1976)            | Classification of degrees of protection provided by enclosures.  |
| VDE 0806 and IEC-Publications 337 | Niederspannungsschalter inkl. Kontaktrelais.   | IEC 664 (1980)            | Insulation co-ordination within low voltage systems including clearances and creepage distances for equipment.             |
| VDE 0860/8.86                     | Netzbetriebene elektronische Geräte.   | BS 3955                   | Electrical controls for household and similar purposes.  |
| TGL 24961                         | Elektrische Informationstechnik — Relais (Prüfungen).  | BS 5992                   | Specification for contact performance of electrical relays.  |
| FTZ-Norm 211 PV 1                 | Relais der Fernsprechvermittlungstechnik.<br>Bedingungen für die Ermittlung der Lebensdauer der Relaiskontakte (Dez. 1961). 2 Seiten | UL 508                    | Standards for industrial control equipment.  |
|                                   |  | CSA C22.2                 | Industrial Control Equipment.  |

fig 9.2