

IEC/TC OR SC: <b>94</b>	SECRETARIAT: <b>Austria</b>	DATE: <b>2019-04</b>
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Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

**A. ALL-OR-NOTHING ELECTRICAL RELAYS**

To prepare international standards applicable to all-or-nothing electrical relays used in the various fields of Electrical Engineering covered by the IEC, normally produced in very large numbers as components of electromechanical or electronic equipment and eventually submitted to Quality Assurance requirements based on sampling techniques.

**B. MANAGEMENT STRUCTURE OF THE TC**

The current status of the programme of work of TC 94 can be found on the IEC website.

**Working Groups**

- WG 3 Maintenance of basic relay standards
- WG 9 Solid-state relays

**Maintenance Teams**

- MT 4 Maintenance of time relay standards
- MT 5 Maintenance of series IEC 61811 Electromechanical all-or-nothing relays
- MT 6 Maintenance of reed switch standards

The series of basic standards for electromechanical elementary relays (IEC 61810 series) reached a consolidated status. WG 3 started to maintain the various parts of the IEC 61810 series starting and also considering the safety requirements of ISO/IEC Guide 51 and IEC Guide 104. The high demand applications of the photovoltaic and the electric vehicle markets will be handled in IEC 61810-10. The needs for USA harmonizations will be considered for all parts of IEC 61810.

Within WG 9 62314 Solid-state relays are handled.

The main task of MT 4 was the revision of the basic standard for time relays, IEC 61812-1.

MT 5 is responsible for the IEC 61811-1 (including and replacing the entire series (IEC 61811-10, IEC 61811-11, IEC 61811-50, IEC 61811-51, IEC 61811-52, IEC 61811-53, IEC 61811-54, IEC 61811-54). After the publication of the standard in 2015 no further activity is seen required at this moment.

MT 6 is reviewing the generic specification for reed switches IEC 62246-1 & IEC 62246-1-1. A TR 62246-3 for typical safety applications is available.

The reduction of the development time of TC 94 standards to the anticipated 30 months is to be accomplished by using the procedural options allowed by the IEC rules (e.g. omit the CD stage, skip the final voting stage where no negative votes have been received against the CDV).

The maintenance teams will have to minimize travelling costs for delegates. This goal is to be achieved by grouping meetings of several MTs, and arrange meetings in conjunction with the TC 94 plenary sessions. Moreover, suitable electronic means (correspondence by e-mail, web or video conferences, conference phonecalls) further reduce travel costs..

**C. BUSINESS ENVIRONMENT**

Market for all-or-nothing relays has been steadily increasing for the past years. In particular in the field of industrial applications relays are produced in very large quantities under extreme price pressure. This emphasizes the importance of adequate IEC relay standards agreed upon on worldwide level.

The overall annual market for all-or-nothing electrical relays is estimated to approach 5 billion USD.

**D. MARKET DEMAND**

The relay standards established by TC 94 are used by major relay manufacturers (already represented in TC 94), testing laboratories, and various customer groups within the electrotechnical community. Certification of general purpose and power relays against the basic relay standards is a prerequisite to delivering such relays to equipment manufacturers.

The parallel IEC/CENELEC voting has resulted in the implementation of the TC 94 standards by European IEC members as national standards. Together with the adoption of these standards in far eastern and emerging countries this process emphasizes the importance of worldwide relay standards, in particular in light of the possibility to avoid trade barriers and costly re-certifications that otherwise would exist due to deviating national/regional standards.

Due to deviating requirements in North America (e.g. as laid down in the USA by the National Electrical Code), the current relay standards cannot be adopted directly. Therefore, TC 94 activities aim at aligning requirements and tests so that for the future a gradual harmonization of standards can be accomplished. USA representatives participate in WG3 and others. Further harmonization are aspired.

Several other organizations provide complementary and/or competing standards in the field of relays, for instance

ISO: Standards covering relays used in automotive and aircraft applications (ISO 7588-x, ISO 2315)

MIL: Military specifications issued by the US Department of Defense (MIL-R-39016, MIL-R-5757)

UL: Underwriters Laboratories Inc. (USA) for the North American market (UL 508)

In order to ensure adequate flexibility to adapt relays to improved manufacturing processes, new materials and other innovations, the standards created by TC 94 lay down performance requirements, but do not prescribe specific technological solutions nor design features.

**E. TRENDS IN TECHNOLOGY AND IN THE MARKET**

No extraordinary changes are foreseen for the medium term future in the principal technologies of all-or-nothing electrical relays.

Nevertheless, there is an ongoing evolution towards even higher reliability ("zero defects") and further miniaturization.

In the long term, micro-mechanical relays may become relevant on the market.

**F. SYSTEM APPROACH ASPECTS (REFERENCE - AC/33/2013)**

TC 94 establishes liaisons with other technical committees as appropriate.

**G. CONFORMITY ASSESSMENT**

All publications are in line with the requirements related to conformity assessment aspects.

TC/SC publications may be used for IEC Conformity Assessment Systems (IECEE, IECEx, IECQ, and IECRE).

Standards include test specifications, reproducible test requirements, and test methods.

No projects to add special conformity assessment requirements to TC 94 standards are envisaged.

**H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES**

For the time being it is anticipated that TC 94 activities will focus on the maintenance of the existing standards and specifications for relays and reed switches.

In the past the majority of TC 94 projects have been accomplished within the given timeframe. Generally the overall development time has not exceeded 3 years. For the medium term future it is intended to further reduce the mean time to publication to some 30 months.

During the review of relay standards a close cooperation with system committees (e.g. TC 72) and application committees (e.g. TC61) is to be sought in order to improve the acceptance of relay standards and avoid discrepancies due to deviating technical requirements.

Currently there is sufficient support from industry, since obviously the relevance of relay standards developed by TC 94 is considered important, and the quality of the standardization activities is appreciated. Increased participation from relay users (equipment manufacturers) is encouraged.

To adequately reflect the rising acceptance of online meetings etc., TC 94 will consider appropriate actions in order to keep the expenses for delegates within acceptable limits. Thus future active participation can be maintained even under detrimental financial conditions.

Invitations for meeting venues of the maintenance teams are always welcome.

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS

Note: The progress on the actions should be reported in the RSMB.