

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Low-voltage switchgear and controlgear –  
Part 8: Control units for built-in thermal protection (PTC) for rotating electrical  
machines**

**Appareillage à basse tension –  
Partie 8: Unités de commande pour la protection thermique incorporée (CTP)  
aux machines électriques tournantes**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

#### Part 8: Control units for built-in thermal protection (PTC) for rotating electrical machines

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This consolidated version of IEC 60947-8 consists of the first edition (2003) [documents 17B/1276/FDIS and 17B/1282/RVD], its amendment 1 (2006) [documents 17B/1477/FDIS and 17B/1504/RVD] and its amendment 2 (2011) [documents 17B/1732/FDIS and 17B/1739/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 1.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

This standard shall be used in conjunction with IEC 60947-1: General rules.

The provisions of the general rules dealt with in IEC 60947-1 are applicable to this standard, where specifically called for. Clauses and subclauses, tables, figures and annexes of the general rules thus applicable are identified by reference to IEC 60947-1 (e.g. 1.2.3 of IEC 60947-1, Table 4 of IEC 60947-1 or Annex A of IEC 60947-1, etc.).

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## INTRODUCTION

Thermal protection systems which are based on the principle of monitoring the temperature of the protected parts constitute a simple and effective means of protecting rotating electrical machines against excessive temperature rises, including those caused by faults in the cooling system, or excessively high ambient temperature, whereas systems of protection based only on monitoring the current absorbed may not ensure this type of protection.

Since the operating temperature and response times of thermal protection systems are fixed in advance, they may not be adjusted in relation to the conditions of use of the machine and they may not be completely effective for all fault conditions or improper use of the machine.

A thermal protection system in accordance with this standard may consist of a characteristic change thermal detector which has an associated control unit to convert a point on the characteristic of the detector to a switching function. A very large number of thermal protection systems are in use and, in all cases, the machine manufacturer will fit the detectors in the machine. The machine manufacturer will either supply the control unit with the machine or specify particulars of the control unit to be used.

It is also customary for the control units to be considered as part of the control system and not necessarily supplied with the machine. For this reason it is considered necessary to have an interchangeable system, where the characteristics of association between the detector and the control unit are specified. This particular system is not considered superior in any way to other systems complying with the requirements of this standard, but in some fields the practice is likely to be that this interchangeable system will be used, as indicated by the designation "Mark A".

Withhold