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ICS 49.060

**AEROSPACE SERIES - CIRCUIT BREAKERS -  
TEST METHODS - PART 509: INSERTION AND  
EXTRACTION FORCES OF SIGNAL CONTACT  
TERMINALS**

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English version

## Aerospace series - Circuit breakers - Test methods - Part 509: Insertion and extraction forces of signal contact terminals

Série aérospatiale - Disjoncteurs - Méthodes d'essais -  
Partie 509 : Forces d'insertion et d'extraction des  
connexions enfichables

Luft- und Raumfahrt - Schutzschalter - Prüfverfahren - Teil  
509: Steck- und Ziehkräfte der Signalkontakt-Anschlüsse

This European Standard was approved by CEN on 10 September 2004.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN 3841-509:2004) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EN 3841-509:2004 (E)

## 1 Scope

This standard specifies a method of determining the forces required to insert and extract the contact pin into and out of the terminal socket of the signal contact.

It shall be used together with EN 3841-100.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 3841-100, *Aerospace series – Circuit breakers – Test methods – Part 100: General*

## 3 Method

### 3.1 Preparation of specimens

All contact pins shall be wired as specified by the technical specification and installed in an insert except those to be used for test.

Unless indicated in the technical specification, the following details shall be specified:

- type of insertion and extraction tool;
- method of mounting;
- insertion and extraction forces;
- type of cable.

The apparatus shall consist of:

- an appropriate insertion and extraction tool;
- a suitable device for holding the element of connection;
- a force measuring device.

### 3.2 Procedure

#### 3.2.1 Method

Each contact pin shall be submitted to 10 inserting and extracting operations each. Forces shall be measured during the first and the last operation.

#### 3.2.2 Insertion force

The contact pin shall be inserted with the toll specified in the technical specification. Ascertain that the contact pin is correctly engaged.

The axial force required to install the contact pin shall be measured by a suitable means.

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