

Aerospace series - Requirements and test procedures for relays and contactors - Part 304: Operate and release time

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 2349-304:2006 sisaldab Euroopa standardi EN 2349-304:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 24.11.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 2349-304:2006 consists of the English text of the European standard EN 2349-304:2006.</p> <p>This document is endorsed on 24.11.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard specifies a method for testing the operating (actuating) and releasing time of relays and contactors. It shall be used together with EN 2349-100.</p>	<p>Scope:</p> <p>This standard specifies a method for testing the operating (actuating) and releasing time of relays and contactors. It shall be used together with EN 2349-100.</p>
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ICS 49.060

Võtmesõnad:

ICS 49.060

English Version

**Aerospace series - Requirements and test procedures for relays
and contactors - Part 304: Operate and release time**

Série aérospatiale - Exigences et méthodes d'essais des
relais et contacteurs - Partie 304 : Temps d'enclenchement
et de déclenchement

Luft- und Raumfahrt - Anforderungen und Prüfverfahren für
Relais und Schaltschütze - Teil 304: Ansprechzeit und
Rückfallzeit

This European Standard was approved by CEN on 10 May 2006.

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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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Contents		Page
Foreword.....		3
1	Scope	4
2	Normative references	4
3	Operate time	4
4	Release time	6

Foreword

This document (EN 2349-304:2006) has been prepared by the AeroSpace and Defence Industries Association of Europe - Standardization (ASD-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 ASD, 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 April 2007, and conflicting national standards shall be withdrawn at the latest by April 2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies a method for testing the operating (actuating) and releasing time of relays and contactors. It shall be used together with EN 2349-100.

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 2349-100, *Aerospace series — Requirements and test procedures for relays and contactors — Part 100: General requirements*¹⁾

ISO 2678, *Environmental tests for aircraft equipment — Insulation resistance and high voltage tests for electrical equipment*

3 Operate time

3.1 Test procedures

The operate time shall be measured from the application of the rated voltage to the coil until the last normally-open contact has closed, see Figure 2.

The operate time shall be evaluated without bounce time.

The contact load shall be between 5 mA and 100 mA. The open contact voltage shall be 6 V d.c. max. for relays or contactors of up to and including 25 A rating, and 28 V d.c. for relays or contactors above 25 A rating.

For qualification tests, five measurements shall be taken and recorded.

Figure 1 shows a typical test circuit.

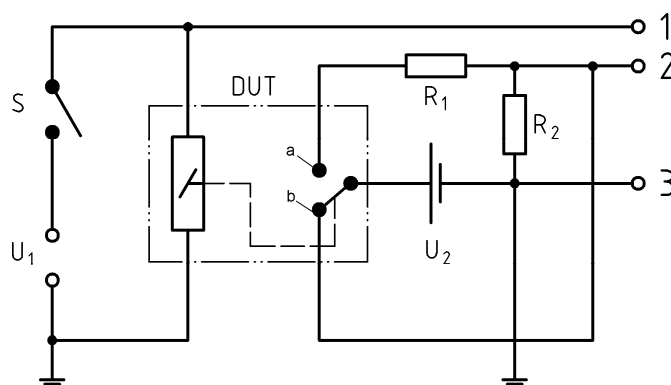
3.2 Test criteria

The relay or contactor shall operate within the time specified in the product standard.

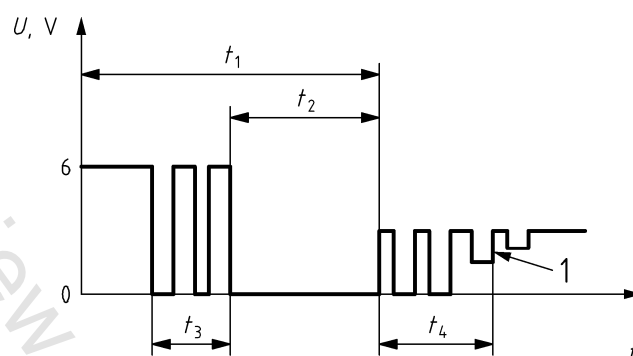
¹⁾ In preparation at the date of publication of this standard.

Key

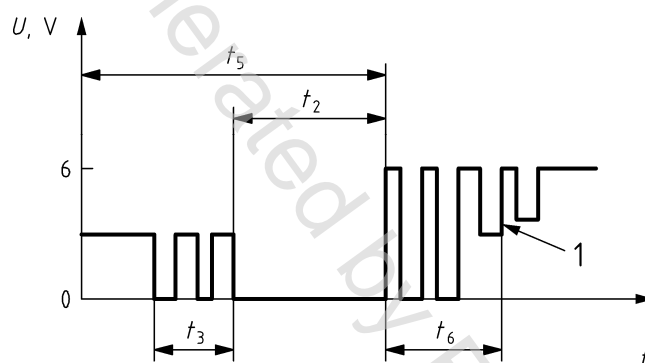
R_1, R_2	resistor $> 60 \Omega$
DUT	device under test (relay)
1	trigger input
2	signal input
3	ground input
U_1	control voltage
U_2	test voltage 6 V d.c.
S	switch
a	NO contact
b	NC contact

**Figure 1 — Test circuit for the determination of the actuation, release and bounce times****Key**

1	dynamic resistance effect
t_1	operate time
t_2	transfer time
t_3	contact break bounce duration
t_4	contact closing bounce duration (make bounces)

**Figure 2 — Switch closure at $t = 0$, Operate time characteristics****Key**

1	dynamic contact resistance effect
t_2	transfer time
t_3	contact break bounce duration
t_5	release time
t_6	contact make bounce duration

**Figure 3 — Switch opening at $t = 0$, Release time characteristics**