



**SLOVENSKI STANDARD**  
**SIST EN 4819:2012**

**01-september-2012**

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**Aeronavtika - Priponke s kontaktnim gumbnim pomnilnikom (CMB) za uporabo v letalstvu**

Aerospace series - Contact Memory Button CMB tags intended for aircraft use

Luft- und Raumfahrt - Kontakt-Speicherknopf CMB für Luftfahrtverwendung

Série aérospatiale - Bouton Mémoire par Contact CMB pour usage aéronautique

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**Ta slovenski standard je istoveten z: EN 4819:2012**

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**ICS:**

49.035

Sestavni deli za letalsko in  
vesoljsko gradnjo

Components for aerospace  
construction

**SIST EN 4819:2012**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 4819**

May 2012

ICS 35.240.60; 49.035

English Version

## Aerospace series - Contact Memory Button (CMB) tags intended for aircraft use

Série aérospatiale - Bouton Mémoire par Contact (CMB)  
pour usage aéronautique

Luft- und Raumfahrt - Kontakt-Speicherknopf (CMB) für  
Luffahrtverwendung

This European Standard was approved by CEN on 25 February 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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, Turkey and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 4819:2012) 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 November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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, Bulgaria, Croatia, 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, Turkey and the United Kingdom.

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**EN 4819:2012 (E)****1 Scope**

The scope of this European Standard is to:

- Provide a requirements document for CMB Manufacturers to produce systems for the Aerospace and Defence industry.
- Identify the minimum performance requirements specific to CMB used on Aerospace and Defence vehicle parts accessed only during ground operations.
- Identify existing standards applicable to CMB.
- Provide a qualification standard for CMB which will use permanently-affixed installation on systems.
- Provide some patterns of data.

In addition to any relevant document from certification authorities, the following documents should be taken into account to define requirements concerning the technical specifications for CMB:

- EUROCAE documents: ED-14, Environmental Conditions and Test Procedures for Airborne Equipment.
- RTCA documents: DO-160, Environmental Conditions and Test Procedures for Airborne Equipment.
- Military Standard: MIL-STD-810, Department of Defense Test Method Standard for Environmental Engineering Considerations and Laboratory Tests.

**2 Normative references**

**STANDARD PREVIEW**

(standards.iteh.ai)

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

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ED-14, *Environmental Conditions and Test Procedures for Airborne Equipment* <sup>1)</sup>

DO-160, *Environmental Conditions and Test Procedures for Airborne Equipment* <sup>2)</sup>

MIL-STD-810, *Department of Defense Test Method Standard for Environmental Engineering Considerations and Laboratory Tests* <sup>3)</sup>

**3 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

**3.1****AEROSPACE APPLICATIONS**

used on products created for the aerospace industry

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1) Published by: EUROCAE Regional (EU) EUROpean Organisation for Civil Aviation Equipment <http://www.eurocae.org/>.

2) Published by: Radio Technical Commission for Aeronautics <http://www.rtca.com/>.

3) Published by: DoD National (US) Mil. Department of Defense <http://www.defenselink.mil/>.

**3.2****AIRBORNE USE**

used on aircraft while in flight—as opposed to Ground Service Equipment, which is used on aircraft, but only while, the aircraft is on the ground

**3.3****AIR TRANSPORT ASSOCIATION**

Airline trade association whose purpose is to foster a business and regulatory environment that ensures safe and secure air transportation. ATA coordinates standards-creation in support of this purpose

**3.4****CONTACT MEMORY BUTTON**

Battery-Free Read/Write Electronic Storage Device which Data is retrieved and updated with Momentary Contact using a Button Link

**3.5****EASA**

European Aviation Safety Agency

**3.6****EUROCAE**

European Organisation for Civil Aviation Equipment

**3.7****FAA**

Federal Aviation Administration — the airworthiness and aviation authority in the United States of America

**3.8****HUMAN-READABLE**

Human-readable refers to a representation of information that can be naturally read by humans. In most contexts, the alternative representation is data primarily designed for reading by a machine, e.g., scanner/computer/etc.

**3.9****BUTTON LINK**

system used to read or write information from / to the CMB and power supply it

**3.10****ISO INTERNATIONAL STANDARDISATION ORGANISATION**

an international association that manages the process of setting global standards for communications and information exchange

**3.11****MACHINE-READABLE**

the term machine-readable (or computer-readable) refers to information encoded in a form which can be read (i.e., scanned/sensed) by a machine/computer and interpreted by the machine's hardware and/or software. Machine-readable technologies include optical character recognition (OCR) and barcodes

**3.12****INERT DEVICE**

device with no emission of electromagnetic waves and no battery

**3.13****RTCA RADIO TECHNICAL COMMISSION FOR AERONAUTICS**

RTCA, Inc. is a private, not-for-profit corporation that develops consensus-based recommendations regarding communications, navigation, surveillance, and air traffic management (CNS/ATM) system issues. RTCA functions as a Federal Advisory Committee

**EN 4819:2012 (E)****3.14****SCD SPECIFICATION CONTROL DOCUMENT**

a requirements document used in lieu of, or in addition to, engineering drawings, and which specifies required performance, physical envelope, and interfaces with adjacent equipment and systems

**3.15****SECURITY**

some minimum level of encoding or password-protecting a data source in order to prevent tampering or inadvertent loss

**4 General requirements**

This standard establishes the documentation required for the development of Contact Memory Button.

This standard does not cover:

- Button link.

This standard's requirements will concern CMB that:

- Are approved for attachment to aircraft ("airborne use"), (regulations limit operation to read/write only while on the ground),
- Can be integrated into labels and tags with machine-readable and human-readable data (print and barcode),
- Are used for new airplane certification as well as retrofitting on previously-certified aircraft or systems,
- Use digital data for supplemental part marking and tracking.

This standard can also be used for "weapon systems".

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**5 General configuration**

CMB consists of a button.

Contact Memory Button is a battery-free, read/write electronic data storage device.

It can be used in environments including military, aerospace, utility, transportation and industrial applications.

Contact Memory Button enhances among others, applications such as configuration management, asset tracking, inspection and maintenance for the life of the asset it is attached to.

Data stored on the Contact Memory Button, which could be available in various memory capacities, is retrieved and updated with momentary contact using a button link.

Contact Memory Button should have the ability to be used with security system policies.

For the definition of the requirements concerning security, refer to common criteria. These criteria consider both intrinsic performance of the solution and the performance of their use in order to facilitate the choice of a solution adapted to their needs.

Contact Memory Button shall be permanently affixed to parts using approved mechanical or adhesive methods, processes and products. Contact Memory Button will have the possibility to be embedded into parts.



## 6 Applicability

This document establishes the documentation required for the development of CMB used for but not limited for:

- Aeronautics,
- Defence,
- Space,
- Industrial activities (products processes and services).

These Integrated Technology devices can be used but not limited for:

- Configuration management
  - Identification of the components.
- In service follow-up
  - Integration of technical data embedded in the datasheet regarding installation, use and maintenance of the equipment on which the CMB is installed.
- Asset tracking traceability industrial/supply chain,
- Inspection and maintenance activities,
- Calibration Data Management.

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## 7 Requirements

- In order not to trigger a re-assessment of the airworthiness certification of the systems or other kind of systems or certifications, the buyer will ensure that the fact to add CMB components is a minor change according to the dedicated referential.

The following criteria are considered as particularly important:

- Weight
  - The weight of the CMB compared to the weight of the system has to be under a level that ensures that the installation of the CMB is a minor evolution against FAA or EASA referential.
- Dimensions
  - The dimensions depend on the concerned system, the location of its installation and its environment.
- Affix – Integration
  - The CMB should have the possibility to be affixed by:
    - mechanical means (bolt, rivet, ...),
    - bonding or gluing,
    - integrating.
  - There should be a process to define the installation of the CMB on the part. The CMB shall consider the safety aspects of the system.