
Freight containers — Electronic seals —
Part 5:
Physical layer

*Conteneurs pour le transport de marchandises — Scellés
électroniques —*

Partie 5: Couche physique



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 18185-5 was prepared by Technical Committee ISO/TC 104, *Freight containers*, Subcommittee SC 4, *Identification and communication*.

ISO 18185 consists of the following parts, under the general title *Freight containers — Electronic seals*:

- *Part 1: Communication protocol*
- *Part 2: Application requirements*
- *Part 3: Environmental characteristics*
- *Part 4: Data protection*
- *Part 5: Physical layer*

Introduction

This part of ISO 18185 defines the physical layer for compliant electronic seals.

It has been created to ensure global adoption of ISO 18185, providing a standardized physical layer as developed in the RFID standards of ISO/IEC 18000 and ISO/IEC 24730.

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Freight containers — Electronic seals —

Part 5: Physical layer

1 Scope

This part of ISO 18185 specifies the air interface between electronic container seals and Reader/Interrogators of those seals.

It is to be used in conjunction with the other parts of ISO 18185.

This part of ISO 18185 describes the physical layer for supply chain applications of RFID for freight containers in accordance with the ISO 18185 series and ISO 17363, since it is expected that the implementation of these standards will face the same international conditions. However, each of these standards has its own unique requirements other than the physical layer. It is expected that RFID Freight Container Identification (as specified in ISO 10374 and ISO 17363), and electronic seals (as specified in the ISO 18185 series) will be able to use the same infrastructure, while recognizing that there may be requirements for different frequencies for passive devices as opposed to the active devices identified in this part of ISO 18185.

This part of ISO 18185 is applicable to all electronic seals used on freight containers covered by ISO 668, ISO 1496 (parts 1 to 5) and ISO 830 and should, wherever appropriate and practicable, be applied to freight containers other than those covered by the aforementioned International Standards.

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.

ISO/PAS 17712, *Freight containers — Mechanical seals*

ISO 18185-3, *Freight containers — Electronic seals — Part 3: Environmental characteristics*

ISO/IEC 18000-7:—¹⁾, *Information technology — Radio frequency identification for item management — Part 7: Parameters for active air interface communications at 433 MHz*

ISO/IEC 19762-1, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary — Part 1: General terms relating to AIDC*

ISO/IEC 19762-3, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary — Part 3: Radio frequency identification (RFID)*

ISO/IEC 2382-26, *Information technology — Vocabulary — Part 26: Open systems interconnection*

ISO/IEC 24730-2:2006, *Information technology — Real-time locating systems (RTLS) — Part 2: 2,4 GHz air interface protocol*

1) To be published. (Revision of ISO/IEC 18000-7:2004)