INTERNATIONAL STANDARD

ISO 20909

First edition
2019-08

Radio frequency identification (RFID) tyre tags

Tags d'identification de pneumatiques par radiofréquence (RFID)

Reference number
ISO 20909:2019(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document applies to radio frequency identification (RFID) enabled tyres using passive RFID tags. Tyre manufacturers consider the use of RFID during the tyre's life cycle.

There are two main technology families of RFID:

— Passive system: the tag backscatters information to the interrogator, without featuring an internal power source.

— Active system: the tag has a radio frequency transmitter on board and requires an internal power source.

This document has been developed to offer tyre manufacturers the possibility to use RFIDs throughout tyre life. Therefore, the passive tag solution without batteries has been adopted.

Three technologies are considered to obtain an RFID tag to the tyre: the embedding, the patch and the sticker.

Radio frequency identification (RFID) tyre tags

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This document specifies requirements for using an RFID tag to individually identify a tyre.

Three RFID tyre tag technologies are considered in this document: embedded, patch, sticker.

Tyre tags can be used for all tyre categories.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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/IEC 18000-63, *Information technology — Radio frequency identification for item management — Part 63: Parameters for air interface communications at 860 MHz to 960 MHz Type C*

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

ISO 20910, *Coding for radio frequency identification (RFID) tyre tags*

ISO 20911[1)], *Radio frequency identification (RFID) tyre tags — Tyre attachment classification*

ISO 20912[2)], *Conformance test methods for RFID enabled tyres*

EPC GS1, Radio-Frequency Identity Protocols Class-1 Generation 2 UHF RFID Protocol for communications at 860 MHz – 960 MHz

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
RFID module
electronic microchip that can support radio frequency identification protocol and store a unique tyre identifier

1) Under preparation. Stage at the time of publication: ISO/DIS 20911:2019.

2) Under preparation. Stage at the time of publication: ISO/DIS 20912:2019.