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Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections —

Part 4: Pyrotechnic device and harness connector assembly - type 2

Véhicules routiers — Interface de raccordement pour dispositifs pyrotechniques, deux voies et trois voies —

Partie 4: Assemblage du dispositif pyrotechnique et du connecteur faisceau - type 2

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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.

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).

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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 22, *Road vehicles,* Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

This first edition of ISO 19072 cancels and replaces ISO/TS 19072-4:2012, which has been technically revised.

The main changes are as follows:

— coding version IV for two-way has been removed;

— coding version IV and V for three-way has been added;

— Table 1 has been adjusted;

— there has been a dimensional review;

— Figure 5 has been added;

— Annex B has been added.

A list of all parts in the ISO 19072 series can be found on the ISO website.

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.

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Introduction

Road vehicles integrate an increasing number of pyrotechnic devices contributing to occupant safety in vehicles (for example frontal and side airbag, safety belt pre-tensioner, etc.).

Building the complete system requires a supply of various components from several different equipment suppliers. Vehicle manufacturers need to define a common specification to ensure that connectors designed and produced for the various equipment suppliers can be mated without any difficulty.

In the current design of this vehicle equipment, three areas of connection have been identified:

— connection between the pyrotechnic device (e.g. initiator) and the harness connector;

— connection between the tab holder and the clip holder of the harness connector; and

— connection between the harness connector and the electronic control module.

The connection between the pyrotechnic device and the harness connector is the only connection that can be standardized and it forms the subject of this document. Due to the location of the safety device in the vehicle, the connector design could be right angle or straight.

Due to the fact that several electrostatic discharge (ESD) protection is requested by several vehicle manufacturers, a three-way with ground option of the pyrotechnic device/initiator harness connector assembly is also defined (see Annex A).

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Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections —

Part 4:
Pyrotechnic device and harness connector assembly - type 2

1 Scope

This document defines the general minimum specifications of a type 2 two-way connection interface, linking the pyrotechnic device and harness connector built into a road vehicle.

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 178, *Plastics — Determination of flexural properties*

ISO 8092-2, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 2: Definitions, test methods and general performance requirements*

ISO 14647, *Metallic coatings — Determination of porosity in gold coatings on metal substrates — Nitric acid vapour test*

ISO 19072-1, *Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections — Part 1: Pocket interface definition*

ISO 19072-2, *Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections — Part 2: Test methods and general performance requirements*

ISO 27874, *Metallic and other inorganic coatings — Electrodeposited gold and gold alloy coatings for electrical, electronic and engineering purposes — Specification and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8092-2 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
connector
assembly used to connect several conductors together or a single conductor to an appliance

Note 1 to entry: A male (female) connector is a housing containing male (female) contacts and accessory items. A male connector may be permanently fixed to a wiring harness or to an appliance [an electronic control unit (ECU) for example]. A female connector is generally permanently fixed to a wiring harness.

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3.2
housing
connector without its contacts

3.3
initiator
part of the pyrotechnical device with two male contacts

3.4
pocket
squib holder inner interface including male contacts

3.5
retainer
ring holding an optional shorting clip (shunt) and providing coding and electrical insulation, generally made of plastic

Note 1 to entry: The shorting clip (shunt) may be omitted by decision between manufacturer and supplier.

3.6
shorting clip
shunt
metallic bar of the retainer providing the electrical connection between two male contacts

3.7
squib holder
part of the pyrotechnic device, holding the initiator and the retainer

4 Dimensional features and performance requirements

4.1 General

The female connector shall be designed to avoid damage to male contacts and the initiator in the case of improper mating, see Figure 1.

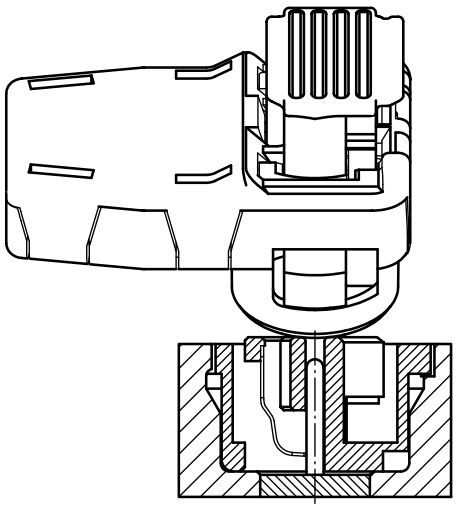


Figure 1 — Example of scoop proof design

Connector, retainer and squib holder assembly shall comply with requirements in ISO 19072-1 and ISO 19072-2.

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