INTERNATIONAL STANDARD ISO 3732

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Road vehicles — Electrical connections between towing vehicles and trailers with 6 or 12 V electrical equipment — Type 12 S (supplementary)

Véhicules routiers — Liaisons électriques entre véhicules tracteurs et véhicules remorqués avec équipement électrique 6 ou 12 V — Type 12 S (supplémentaire)

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3732 was drawn up by Technical Committee ISO/TC 22, *Road vehicles*, and circulated to the Member Bodies in November 1974.

It has been approved by the Member Bodies of the following countries :

Austria	India	Romania
Belgium	Iran	South Africa, Rep. of
Bulgaria	Ireland	Sweden
Chile	Italy	Switzerland
Finland	Japan	Turkey
France	Netherlands	Yugoslavia
Germany	Poland	
Hungary	Portugal	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Czechoslovakia
United Kingdom

Printed in Switzerland

Road vehicles — Electrical connections between towing vehicles and trailers with 6 or 12 V electrical equipment — Type 12 S (supplementary)

1 SCOPE

This International Standard establishes specifications which will permit, by means of a socket and a plug, type 12 S, interchangeability of supplementary electrical connections between towing vehicles and towed vehicles (see figure 3).

These sockets and plugs are not interchangeable with type 12 N (normal) sockets and plugs. (See ISO 1724.)

2 FIELD OF APPLICATION

These specifications apply to vehicles fitted with electrical equipment operating at a nominal voltage of 6 or 12 V.

3 GENERAL REQUIREMENTS

3.1 Number of necessary contacts

The functions of the seven contacts are as follows :

1 Reversing light and/or reversing catch for inertia brakes.

2 No allocation.[1)]

3 Common return.

4 No allocation.[1)]

5 Sensing device with common return.

6 Power supply.

7 No allocation.[1)]

3.2 Arrangement of the contacts

The arrangement of the contacts is shown in figures 1 (socket) and 2 (plug).

The numbers designating the contacts correspond to those indicated in 3.1.

3.3 Socket

The socket shall be mounted on the rear of the towing vehicle.

The socket is provided with :

- 4 tubes (Nos. 1, 3, 4, 6);
- 1 tube 3 mm longer (No. 7);
- 2 spring pins (No. 2, 5).

Tube and pin design details are given in figure 1.

Pins Nos. 2 and 5 shall be able to spring back over a minimum length of 9,5 mm. The diameter of the pins shall be such that the corresponding tubes of the plug can be connected with a moderate push, but they shall ensure a good electrical contact.

Contact No. 3 shall be insulated, as are the other contacts. After fitting, contact No. 3 may be connected to the common return of the vehicle.

The rear terminals shall each be capable of receiving two conductors of at least 1,5 mm^2 cross-section.

The contact designations shall be permanently marked on the inside of the socket cover and on the terminal face (except where the cable is moulded into the socket) in symbols not less than 2 mm high. These symbols, which are not necessarily numbers, may be different from those indicated in figure 1, provided that the specified pin locations of the different functions are complied with.

The socket shall be provided with a splashproof cover which shall close automatically when the plug is disengaged. The hinged cover on the socket shall be provided with a lip to retain the plug when it is engaged.

All metallic parts of the socket shall be made of corrosion-resistant material or be adequately protected against corrosion.

1) These contacts shall be kept free pending further ISO decisions.

3.4 Plug

The plug shall be mounted on the trailer.

The plug is provided with :

- 4 spring pins (Nos. 1, 3, 4, 6);
- 1 spring pin 3 mm longer (No. 7);
- 2 tubes (Nos. 2, 5).

The pins Nos. 1, 3, 4 and 6 and tubes Nos. 2 and 5 of the plug correspond respectively to the tubes Nos. 1, 3, 4 and 6 and to the pins Nos. 2 and 5 of the socket.

Pins Nos 1, 3, 4 and 6 shall be able to spring back over a minimum length of 9,5 mm. Pin No. 7 shall be able to spring back over a minimum length of 15,5 mm. The diameter of the pins shall be such that the corresponding tubes can be connected with a moderate push, but they shall ensure a good electrical contact.

The rear terminals shall each be capable of receiving one conductor of at least 2,5 mm^2 cross-section.

The contact designations shall be permanently marked on the terminal face (except where the cable is moulded into the plug) in symbols not less than 2 mm high. These symbols, which are not necessarily numbers, may be different from those indicated in figure 2, provided that the specified pin locations of the different functions are complied with.

All metallic parts of the plug shall be made of corrosion-resistant material or be adequately protected against corrosion.

The manufacturer shall provide means for fixing and sealing the cable.

3.5 Allocation of cable colours

The cable colours of the seven-core connecting cable shall be allocated to the different circuits as follows :

Contact No.	Circuit	Cable colour
1	Reversing light and/or reversing catch for inertia brakes	yellow
2	No allocation	blue
3	Common return	white
4	No allocation	green
5	Sensing device with common return	brown
6	Power supply	red
7	No allocation	black

3.6 Distinguishing marking

The 12 S connector shall be distinguished from the 12 N connector (see ISO 1724) by means of a different colouring at least of the insulating parts.

A white and permanent colour shall be used for the 12 S connector.