



Road vehicles — Working voltages for lights fitted to motor vehicles and to their trailers

Véhicules routiers — Tensions d'alimentation des feux montés sur les automobiles et sur leurs remorques

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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 3559 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	Iran	Spain
Belgium	Ireland	Sweden
Bulgaria	Italy	Switzerland
Chile	Japan	Turkey
Czechoslovakia	Poland	U.S.S.R.
France	Romania	Yugoslavia
Hungary	South Africa, Rep. of	

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

Germany
United Kingdom

Road vehicles — Working voltages for lights fitted to motor vehicles and to their trailers

1 SCOPE

This International Standard specifies a method for measuring the working voltages present at the contacts of the filament lamps in the lighting and light signalling devices fitted to motor vehicles and their trailers, and at the terminals of the trailer connector socket, if fitted¹⁾. It also specifies the voltages required to ensure proper working of these devices.

2 FIELD OF APPLICATION

This International Standard applies to vehicles propelled by internal combustion engines and equipped with lead-acid batteries, and to their trailers, as defined in 3.1 and 3.2 of ISO 3833²⁾ (motorcycles excluded).

The values given in the tables of clause 6 apply to new vehicles only.

3 DEFINITIONS

3.1 Terms relating to filament lamps

3.1.1 rated voltage : The voltage marked on the filament lamp.

3.1.2 rated wattage : The wattage marked on the filament lamp.

3.1.3 working voltage : The voltage actually present at the contacts of a filament lamp, or at the terminals of the trailer connector socket, if fitted.

3.1.4 test voltage : The voltage for which the different characteristics of a filament lamp are defined.

3.1.5 required voltage : The voltage which is required to be available at the contacts of a filament lamp under well-defined test conditions, when the filament lamp is fitted on the vehicle, in order to ensure proper working of the lighting or light signalling device in which it is fitted.

3.2 Terms relating to a vehicle's electrical system

3.2.1 nominal voltage : The characteristic voltage of a vehicle's electrical system. It is equal to the nominal voltage of the battery used (in general a vehicle has a nominal voltage of 12 or 24 V depending on the number of battery elements).

3.2.2 vehicle test voltage : The value at which the voltage of the external power supply is stabilized for the measurement of working voltages.

4 CONDITIONS OF MEASUREMENT

4.1 General conditions

4.1.1 The ambient temperature for measurements shall be $23 \pm 5^{\circ}\text{C}$, for tests on power-driven vehicles and $23 \pm 10^{\circ}\text{C}$ for tests on trailers.

4.1.2 The external stabilized power supply shall be capable of delivering the output current and voltage required for the tests. Its internal resistance shall not exceed $0,003\ \Omega$. Residual ripple shall not exceed 25 mV peak to peak.

4.1.3 For voltage measurements, measuring instruments of a quality category at least equal to 0,5 shall be used. Internal resistance shall be not less than $1\ 000\ \Omega$ per volt. With pointer instruments the measuring range shall be such that all readings are made in the upper third of the measuring scale.

With digital instruments, the uncertainty of measurement shall not exceed $\pm 0,5\ \%$ of the value indicated.

4.2 Preparation of vehicles

4.2.1 All voltage measurements shall be made with measuring resistors or calibrated filament lamps substituted for all those filament lamps whose working voltages are to be measured. The method chosen shall be recorded in the test report. In case of dispute, the method using resistors shall be decisive.

1) This method of measurement has been written for the case in which the socket of the trailer connector is mounted on the towing vehicle. It applies equally to an articulated vehicle in which the socket is mounted on the semi-trailer, for which case, however, the words "plug" and "socket" should be interchanged wherever they refer to a trailer connector (see figure 1).

2) ISO 3833, *Motor vehicles, trailers and vehicle combinations — Designations and definitions*. (At present at the stage of Draft.)