

# Transport information and control systems — Manoeuvring Aids for Low Speed Operation (MALSO) — Performance requirements and test procedures

ICS 43.040.15

# National foreword

This British Standard reproduces verbatim ISO 17386:2004 and implements it as the UK national standard.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Road transport informatics, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

## Cross-references

The British Standards which implement international publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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## Summary of pages

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## **Transport information and control systems — Manoeuvring Aids for Low Speed Operation (MALSO) — Performance requirements and test procedures**

*Systèmes d'information et de commande des transports — Aides à la  
conduite pour manoeuvre à vitesse réduite (MALSO) — Exigences de  
performance et modes opératoires*





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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 17386 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

## **Introduction**

Today's aerodynamically shaped vehicles often result in restricted rear and front visibility. Manoeuvring aids for low speed operation enhance safety and driver convenience during parking or manoeuvring situations at very low speed, e.g. in narrow passages. Drivers can avoid collisions with obstacles that cannot be seen but can be detected by the system and they can make more effective use of limited parking space.

Manoeuvring Aids for Low Speed Operation (MALSO) are detection devices with non-contact sensors which assist the driver during low speed manoeuvring. MALSO systems indicate to the driver the presence of front, rear or corner objects when squeezing into small parking spaces or manoeuvring through narrow passages. They are regarded as an aid to drivers for use at speeds of up to 0,5 m/s, and they do not relieve drivers of their responsibility when driving the vehicle.



# Transport information and control systems — Manoeuvring Aids for Low Speed Operation (MALSO) — Performance requirements and test procedures

## 1 Scope

This International Standard for Manoeuvring Aids for Low Speed Operation addresses light-duty vehicles, e.g. passenger cars, pick-up trucks, light vans and sport utility vehicles (motorcycles excluded) equipped with such MALSO systems. It specifies minimum functionality requirements which the driver can generally expect of the device; i.e., detection of and information on the presence of relevant obstacles within a defined (short) detection range. It defines minimum requirements for failure indication as well as performance test procedures; it includes rules for the general information strategy but does not restrict the kind of information or display system.

MALSO systems use object-detection devices (sensors) for ranging in order to provide the driver with information based on the distance to obstacles. The sensing technology is not addressed; however, technology affects the performance-test procedures set up in this International Standard (refer to Clause 7). The current test objects are defined based on systems using ultrasonic sensors, which reflect the most commonly used technology at the time of editing this International Standard. For other sensing technologies possibly coming up in the future, these test objects shall be checked and changed if required.

Visibility-enhancement systems like video-camera aids without distance ranging and warning are not covered by this International Standard.

Reversing aids and obstacle-detection devices on heavy commercial vehicles are not addressed by this International Standard; requirements for those systems are defined in ISO/TR 12155.

## 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 2575, *Road vehicles — Symbols for controls, indicators and tell-tales*

ISO 15006, *Road vehicles — Ergonomic aspects of transport information and control systems — Specifications and compliance procedures for in-vehicle auditory presentation*

ISO 15008, *Road vehicles — Ergonomic aspects of transport information and control systems — Specifications and compliance procedures for in-vehicle visual presentation*

ISO 16750 (all parts), *Road vehicles — Environmental conditions and testing for electrical and electronic equipment*