IEC 63281-1

Edition 1.0 2023-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

E-Transporters –
Part 1: Terminology and classification

E-Transporteurs –
Partie 1: Terminologie et classification



IEC 63281-1:2023-07(en-fr)



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 43.120

ISBN 978-2-8322-7253-4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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E-TRANSPORTERS –

Part 1: Terminology and classification

FOREWORD

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IEC 63281-1 has been prepared by IEC technical committee 125: e-Transporters. It is an International Standard.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
125/81/FDIS	125/85/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

A list of all parts in the IEC 63281 series, published under the general title *E-Transformers*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Standardization of "e-Transporters": electrically powered transport devices for use on public roads or in public spaces. These e-Transporters provide solutions for transporting either passengers or goods, or both.

These devices can:

- be manually controlled;
- have automated functions;
- be autonomous.

This document has been developed in response to an increased demand throughout the world for e-Transporters. The world market sizes and applications are expected to grow significantly. To date, e-Transporters have not had a complete and unified standard of classification. This has created challenges for engineers, producers, operators, and other actors in the field of e-Transporters. The development of a terminology and classification standard applicable to e-Transporters, will promote the standardization of e-Transporters, aid the progress of technology, improve product quality, and increase safety.

E-TRANSPORTERS –

Part 1: Terminology and classification

1 Scope

This document specifies the terminology and classification of e-Transporters.

This document is applicable to "e-Transporters": electrically powered transport devices for use on public roads or in public spaces. These e-Transporters provide solutions for transporting either passengers or goods, or both. These devices can be manually controlled, have automated functions or be autonomous.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
public space
place that is accessible to the public whether it is in the public domain or privately owned

Note 1 to entry: Examples are roads, cycle tracks, sidewalks, public squares, parks, stations, airports, hotels, hospitals, restaurants, etc.

3.2
e-Transporter
electrically powered transport device for use on public roads or in public spaces which provides solutions for transporting either passengers or goods, or both

Note 1 to entry: The device can be manually controlled, have automated functions, or be autonomous.

3.3
personal e-Transporter
PeT
e-Transporter that is primarily designed for transporting person(s)

3.4
cargo e-Transporter
CeT
e-Transporter that is primarily designed for transporting cargo or goods, or both

3.5
utility e-Transporter
UeT
e-Transporter that can transport person(s), cargo(s), or both

3.6
self-balancing e-Transporter
inherently unstable e-Transporter that dynamically stabilizes itself in at least one direction (pitch) using a control system

3.7
e-scooter
PeT that consists of at least a footrest, a steering handlebar and two wheels

3.8
folding system
electrical or mechanical system enabling the e-Transporter to be folded in order to change from the configuration of use (unfolded) to the configuration of storage (folded)

3.9
unfolding system
electrical or mechanical system enabling the e-Transporter to be unfolded in order to change from the configuration of storage (folded) to the configuration of use (unfolded)

3.10
manual driving mode
driving mode in which the e-Transporter is operated by direct physical human intervention

Note 1 to entry: Examples are:

– push button,
– joystick or steering column,
– throttle lever,
– touch control (e.g., a touch display of a mobile phone used on the e-Transporter),
– changes in human body posture while on the e-Transporter.

3.11
autonomous driving mode
driving mode in which the e-Transporter function accomplishes its assigned mission without the need for direct human intervention

3.12
semi-autonomous driving mode
driving mode in which motions are determined by combination of the autonomous driving function and manual user inputs given at the same time

Note 1 to entry: In this operating mode, the manual user input can override the autonomous driving function (e.g., speed control, lane keep assist) or the autonomous driving function can override manual user input (e.g., emergency braking for safety related object detection and automatic avoidance).

[ISO 8373:2021, 6.13.3, modified – The term "semi-autonomous mode" has been replaced with "semi-autonomous driving mode" and, in the definition and note to entry, the terms "operating mode" and "task program" have been replaced with "driving mode" and "driving function", respectively, and the examples in the note replaced with different examples.]

3.13
autonomous e-Transporter
e-Transporter that can operate in autonomous driving mode or semi-autonomous driving mode

3.14
rated load
maximum allowed weight of the person(s) and cargo(s) transported by the e-Transporter, as defined by the manufacturer

3.15
warning indicators and signals
visual or audible devices to

a) inform users of the safety status of the e-Transporter

b) alert third parties to the presence of the e-Transporter

Note 1 to entry: Examples of a visual or audible device to inform users of the safety status of the e-Transporter include lights or beeping sounds to indicate a function is working correctly, or lights or beeping sounds which operate to indicate a malfunction or condition which may become serious or which is immediately serious.

Note 2 to entry: Examples of a visual or audible device to alert third parties to the presence of the e-Transporter include, lights or reflectors which make the e-Transporter more easily visible, or an audible device to alert third parties to the presence of the e-Transporter.

3.16
brake
part of the braking system where the forces opposing the movement of the e-Transporter are developed

3.17
braking system
combination of parts consisting of the control, transmission, and brake, whose function is to progressively reduce the speed of a moving e-Transporter, bringing it to a halt

Note 1 to entry: The braking system can have the function to keep the e-transporter stationary when halted.

Note 2 to entry: The electric motor can be a part of the system.

3.18
direct braking system
braking system actuated directly by the user

EXAMPLE Brake handle or brake pedal.

3.19
indirect braking system
braking system actuated without voluntary action by the user (for example, braking activated by a gyroscopic system or through the detection of obstacles or anomalies) or automatically actuated

3.20
parking device
device to maintain the e-Transporter in a stationary position

3.21
localization
process of identifying or distinguishing the position of the e-Transporter on the environment map