



SLOVENSKI STANDARD
SIST ENV 12796:2003

01-oktober-2003

Cestna transportna in prometna telematika – Javni prevoz – Validatorji

Road transport and traffic telematics - Public transport - Validators

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Ta slovenski standard je istoveten z: ENV 12796:1997

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ICS:

35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade
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EUROPEAN PRESTANDARD

ENV 12796

PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

August 1997

ICS 35.240.60

Descriptors: road vehicles, passenger transport, public utilities, teleprocessing, control devices, access, specifications, position (location), dimensions, characteristics, data processing

English version

Road transport and traffic telematics - Public transport - Validators

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CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

1. Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NNI.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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2. Scope

The present European Standard refers to the validators, excluding ticket vending machines, installed on board in Public Transport road vehicles (buses, trams, light rail). It specifies: location, dimensions, display and keypad characteristics, functions and data processing of this equipment.

3. Normative references

EN 60529 Degrees of protection provided by enclosures (IP code) (IEC 529:1989)

4. Definitions

4.1 Validator

(generic name) a device which controls the access and usage rights, it is independent from any technology

EXAMPLE: simple paper ticket, magnetic stripe reading, electronic smart card and contactless cards

5. Functions and general requirements

5.1 Functions

Validation of the transport right resulting from the transportation contract between an operator and the user including proof of payment.

This validation mainly consists in marking a card/ticket. The validation mark may consist in:

1. printing a readable mark or punching out a piece of ticket
2. and/or recording data on the backing for further automatic reading and recording inside the validator.

The validation act shall allow (except for the paper ticket) to ensure the following recordings :

1. geographic and/or time validity
2. checking of the validity of the right of use
3. optionally user category

According to the tariffs and to the types of tickets and cards, other functions may occur, such as countdown the payment of trips on a card, or countdown the payment of trips, or recording the origin of a trip etc.

5.2 General requirements

The validator shall include:

1. Ticket reading or cancellation function
2. 'Wrong presentation of the ticket' indication if applicable
3. Validity of tickets and right of use checking
4. Indication of ticket acceptance or rejection
5. Transaction processing (i.e. data recording)
6. Indication of defective operation of the validator
7. Recording function of the transactions and possibility of reading or dumping the recorded data
8. Updating of the parameters function
9. Diagnostic functions
10. Securing memory (battery back up, non volatile memory...)
11. Safe keeping data integrity.

6. Electric characteristics

When an European standard exists for an on board transmission bus for road public transport vehicles and is implemented in the vehicle, then the validator shall be either directly connected to this bus or connected to this bus through a special control unit.

When a European standard exists for Environmental and Electrical conditions and limits for Public Transport Road Vehicles, it shall apply.

7. Electrical connection

It shall be possible to exchange the device without having to switch off the power supply.

Fixing and electrical connection shall be made in a single operation.

8. Climatic characteristics

When a European standard exists for Environmental and Electrical conditions and limits for Public Transport Road Vehicles, it shall apply.

9. Chemical characteristics

When a European standard exists for Environmental and Electrical conditions and limits for Public Transport Road Vehicles, it shall apply.

10. Protection level

A minimum IP 543 protection level according to EN 60529 shall apply (splashproof), except for the introduction zone of the ticket where IP 433 shall apply.

11. Vibration test

When an European standard exists for Environmental and Electrical conditions and limits for Public Transport Road Vehicles, it shall apply.

12. Data transmission

When an European standard exists for an on board transmission bus for Public Transport Road vehicles and is implemented in the vehicle, then the validator shall be either directly connected to this bus or connected to this bus through a special control unit.

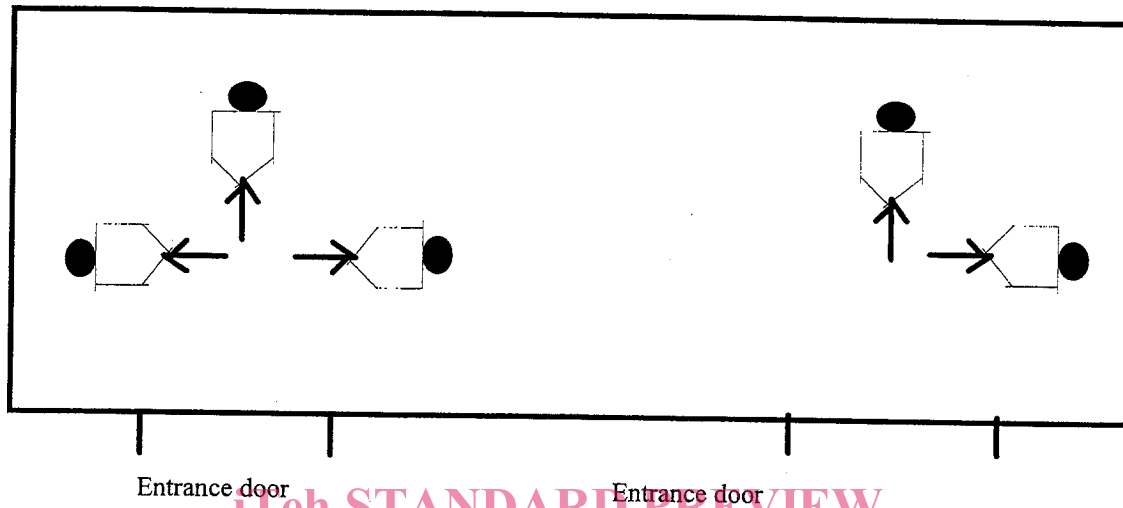
13. Physical set up

Possible positions of validators in buses or tramways

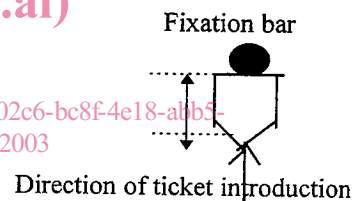
The location of their installation, near the front door and / or other doors have an influence on the physical set up on the fixation bar.

EXAMPLE:

Figure 12.1: Examples of implementation



- The position "backward bar" shall be preferred for ergonomic and industrial reasons
- The fixing device should allow fixing to bar diameter from 30 to 40 mm.
- Putting in place and removing shall be done in using a key



14. Size / dimensions

The following specifications shall apply

- 1 10 litre maximum
- 2 <5 kg for easy manipulation
- 3 maximal dimensions, excluding the fixation devices, shall be : Height 350 mm maximum, Depth (distance between the fixation bar and the face of the validator which is parallel and opposed to this fixation bar) of 190 mm.

15. Ticket introduction zone

At least one validator per entrance lane shall be operated with slot or introduction of the ticket or active area for contactless system standing in between 0,9 and 1,3 m high from the ground.

It is mandatory that the introduction zone of the ticket or active area for contactless card is well contrasted with the rest of the validator (colour and / or suitable shape).

The size of the introduction zone shall be 1 mm wider than the tickets.

16. Display / lights / audio

It is mandatory that the validator has a visual signal for explaining authorisation or refusal, this signal can be a pictogram, a display or a two lights signal and it is mandatory to strengthen it by an audio signal.

16.1 Lights

If lights are used, they shall be :

1. green light for authorisation of access
2. red light for refusal

It is mandatory that the 'authorisation of access' indicator is situated on the right while the refusal is on the left.

16.2 Pictograms

If pictograms are used :

Two visual indicators are mandatory

1. green arrow for 'authorisation of access'
2. red ST ANDREW CROSS for 'refusal of access'

Any other visual indicator is permitted if it doesn't disturb the comprehension of the former two.

It is mandatory that the 'authorisation of access' indicator is situated on the right while the refusal is on the left.

A pictogram for reading area of contactless card shall be implemented.

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16.3 displays

Displays shall follow the recommendations of typographical specifications

1. Type of characters: Helvetica bold should be preferred
2. Colour of text: well contrasted [SIST ENV 12796:2003](https://standards.iteh.ai/catalog/standards/sist/4ef902c6-bc8f-4e18-abb5-4655231e1109/standards/sist/12796-2003)

EXAMPLE: black text on yellow background, or yellow text on black background

It is mandatory that characters size is 6 mm minimum height in order to be read at a distance of 70 cm.

The viewing angle shall be such that, at 0,5 meter from the display it can be read from an height ranging from 1 m up to 2 m to ground.

16.4 audio signal

If there is an audio signal, it shall distinguish acceptance and refusal, acceptance shall be signalled by one 'beep', and refusal by three 'beeps'.

It is mandatory to integrate within a magnetic validator, an audio signal to confirm refusal.

It is mandatory to integrate within a contactless validator, an audio signal to confirm access.

17. Keyboard

When a keypad exists :

1. if there exists a validation key (V), it shall be green on the right side of the validator,
2. if there exists a cancellation key (A), it shall be red and on the left side of the validator,
3. if the keyboard is fully numeric the disposal of keys is the following, and the number (5) shall be easily identified by touching.