



# SLOVENSKI STANDARD

## SIST EN 12675:2017

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Nadomešča:  
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### Krmilniki za svetlobne prometne znake - Funkcionalne varnostne zahteve

Traffic signal controllers - Functional safety requirements

Steuergeräte für Lichtsignalanlagen - Funktionale Sicherheitsanforderungen

Contrôleurs de feux d'intersection - Prescription de sécurité fonctionnelle  
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#### **ICS:**

93.080.30	Cestna oprema in pomožne naprave	Road equipment and installations
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EUROPEAN STANDARD

EN 12675

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2017

ICS 93.080.30

Supersedes EN 12675:2000

English Version

## Traffic signal controllers - Functional safety requirements

Contrôleurs de signaux de circulation routière -  
Exigences de sécurité fonctionnelle

Steuergeräte für Lichtsignalanlagen - Funktionale  
Sicherheitsanforderungen

This European Standard was approved by CEN on 19 June 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 12675:2017) has been prepared by Technical Committee CEN/TC 226 “Road equipment”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12675:2000.

The main changes in this revision are as follows:

- a) Clause 1, Scope: deleted the restriction of scope for portable traffic signal control equipment;
- b) Clause 1, Scope: clarified the handling of classes on national level;
- c) Clause 2, Update of references to standard EN 50556;
- d) 3.9: deleted the restriction of manual operation mode to an operator;
- e) 3.12: renamed and reordered the operation modes of a traffic signal controller;
- f) 3.29: invented the definition for time base frequency;
- g) 3.32: extended the definition of traffic signal controller by the function of monitoring;
- h) 3.34: invented the definition of traffic signal controller logic;
- i) 4.2: generalized the requirement on power up self-test;
- j) 4.3: generalized the requirement on continuous diagnostic checks;
- k) 4.7.1 Class CB1: deleted the restriction to vehicular signal groups;
- l) 4.9: clarified the requirements to safety relevant timings;
- m) 5.2: deleted the requirement for ongoing operation of master clock and maintenance facilities in the case of a major fault;
- n) 5.4: renumbered and corrected the list of faults necessary to be recorded;
- o) 6: restricted necessary user documentation to needs for safe operation and service;
- p) 6 f): replaced means of programming by tools;

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- q) 7. Reformulated the requirements for marking and labelling more general, to cover also onsite reprogrammable memory;
- r) Annex A: deleted deviations on National Regulations for Netherlands;
- s) Some corrections in orthography and grammar.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## Introduction

The objective of this European Standard is to specify the functional safety requirements of equipment used for the control of traffic signals. It relates to the control of signals to traffic, and any associated signalled traffic movements. The primary concern is to safeguard persons and objects against hazards due to conflicting signals to traffic.

The hazards to be considered include, but are not limited to, the following types of possible signal failures:

- a) the failure to display a red signal to traffic;
- b) the display of a green signal to conflicting traffic;
- c) the failure to display the correct signal sequence to traffic;
- d) the failure to provide the correct timing of all signals.

Persons to be safeguarded are:

- e) users of traffic signals, drivers and passengers of vehicles (including public transport), pedestrians, cyclists and equestrians, persons with physical disabilities;
- f) maintenance and inspection personnel.

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## 1 Scope

This European Standard specifies the functional safety requirements for traffic signal controllers. It is applicable to traffic signal control equipment permanently and temporarily installed, and portable traffic control equipment, with the exception of portable traffic signal equipment only capable of controlling alternate / shuttle working lanes (as further defined in 3.37), without the control of crossing vehicular or pedestrian movements. Traffic signal controllers, as defined by this European Standard, are required to control conflicting traffic, both vehicular and pedestrian in a safe manner. Examples are junction signals, pedestrian crossings, shuttle signals, public transport signals.

The electrical safety requirements and additional traffic safety requirements, the interfacing with external equipment and the test methods for verifying compliance with this European Standard are contained in EN 50556.

For a full applicability of this European Standard as well as of the EN 50556 the national standardization bodies are requested to define the set of classes relevant for their national requirements.

NOTE National requirements may specify special conditions for public transport signals (PT) and for any other signal that is not specified in a European Standard.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50556:2011, *Road traffic signal systems*

## 3 Terms and definitions

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

### 3.1

#### **absent signal**

intended signal the luminous intensity of which does not comply with the signal "ON" requirements

Note 1 to entry: "ON" requirements as specified in EN 50556

### 3.2

#### **bicycle signal**

traffic signal for the exclusive purpose of directing bicycle traffic at signalized locations

### 3.3

#### **central control**

system for co-ordinating and monitoring a network or group of traffic signals using a central computer, or equivalent device, and transmission systems

### 3.4

#### **conflicting green (green/green conflict)**

simultaneous display of green signals allowing conflicting traffic movements

### 3.5

#### **conflicting signal groups**

two or more signal groups that will cause conflicting traffic movements if operated concurrently



**3.6****failure mode**

non-operational state of the traffic signal controller in which, as a result of a major fault, the normal operation mode is replaced with a flashing yellow or a signals off condition

**3.7****green signal**

signal that is displayed to traffic having the colour “green”

Note 1 to entry: Colour “green” as specified in EN 12368.

**3.8****major fault**

fault the occurrence of which has the effect that the safe operation of the signal traffic system cannot be guaranteed as defined in the national requirements

**3.9****manual operation mode**

operational state of the traffic signal controller in which the state of the signals to traffic is controlled manually

**3.10****memory device**

means of storing information in a manner permitting its retrieval

**3.11****minor faults**

fault as defined in the national requirements, other than a major fault, that is capable of being identified and recorded

**3.12****mode**

specific condition of a traffic signal controller used to control the signals to traffic

## EXAMPLE

- fixed time operation mode;
- traffic dependent operation mode;
- standby operation mode;
- manual operation mode;
- failure mode;

**3.13****monitoring**

method of collecting information about the traffic signal controller including diagnostic checks used to detect a fault condition

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**3.14****national signal regulation**

order and appearance of signal aspects, displayed to traffic, that are prescribed in national requirements

**3.15****national signal sequence**

sequential order and appearance of signals, to traffic, to satisfy a specific national condition and/or application

EXAMPLE: signal start up sequence

**3.16****normal operation mode**

any operational state of the traffic signal controller, other than failure mode, especially the operational state in which the signals are in accordance with the national signal regulation

**3.17****pedestrian signal**

traffic signal for the exclusive purpose of directing pedestrian traffic at signalized locations

**3.18****portable traffic signal control equipment**

traffic signal control equipment designed for temporary applications and designed for easy transportation from one site to another

**3.19****power supply**

power source providing energy to an active device or circuit

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**3.20****public transport signals (PT)**

traffic signal for the exclusive purpose of directing public transport vehicles at signalized locations

**3.21****red signal**

signal that is displayed to traffic having a colour "red"

Note 1 to entry: Colour "red" as specified in EN 12368

**3.22****safety timings**

time settings that, in the event of an error, can affect the safety of the traffic signal control equipment

**3.23****shuttle signals**

set of traffic signals controlling a narrow section of road where traffic can only proceed in each direction alternately

**3.24****signal**

dynamic message supplied to road users

**3.25****signal group**

group of signal heads that always receive identical signal light indications

**3.26****signal head**

device which comprises one or more optical units, including the housing(s), together with all the mounting brackets, fixings, hoods, visors, cowls and background screens, whose task is to convey a visual message to road users

**3.27****standby operation mode**

operational state of the traffic signal controller in which a flashing yellow signal, or signals off condition, is permitted by the national signal regulation

**3.28****start-up sequence**

when requested in standby operation mode of the controller, it may be required to go through a controlled start up sequence to change from the display of either “all signals off” or “flashing yellow” to normal operation mode

**3.29****time base frequency**

frequency of the time base that is used to determine the duration of the signal states

**3.30****time settings**

all the time information relating to the traffic signal controller for a particular intersection

**3.31****traffic control**

regulation of traffic by traffic signals or traffic signs

**3.32****traffic signal controller**

equipment driving and monitoring traffic signals

**3.33****traffic signal control equipment**

traffic signal controller, working together with the signal under control, and the associated interfaced equipment

**3.34****traffic signal controller logic**

set of logical functions in the traffic signal controller equipment related to driving and monitoring traffic signals

**3.35****unwanted signal**

unintended signal the luminous intensity of which does not comply with the signal “OFF” requirements

Note 1 to entry: Signal “OFF” as specified in EN 50556