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CCV INSPECTION REGULATIONS DETECTION SYSTEMS

Version 1.0 +C1+C2

Date published
14 August 2020
Effective date
1 September 2020

FOREWORD

Theft of, from, and out of vehicles can be mitigated by installing security systems, both ex-factory as well as afterwards (aftermarket). Users and risk bearers both want to be sufficiently assured that the security provided is functional and has been correctly installed in/on the vehicle.
The desired functionality, as well as the installation, can be demonstrated through certification.

This document describes the requirements and assessment methods of detection systems, and is granted under the CCV Certificatieschema Systemen Voertuigbeveiliging (CCV Certification Scheme for Vehicle Security Systems).

The CCV Certificatieschema Systemen Voertuigbeveiliging (CCV Certification Scheme for Vehicle Security Systems) does not stand alone. Certified detection systems are installed by installation companies that are recognized on the basis of the CCV Erkenningsregeling Inbouwbedrijven Voertuigbeveiliging (CCV Recognition Scheme for Vehicle Security Installation Companies). The CCV Risicomodel Voertuigbeveiliging (CCV Vehicle Security Risk Model) provides guidance regarding which security should be installed.

The CCV is the scheme manager of these documents. These documents are approved by the CCV Commission of Stakeholders Vehicle Security.

Correction C1 and C2 are already integrated in this translation.

This text of this compliance scheme is issued under the auspices of the Centrum voor Criminaliteitspreventie en Veiligheid (Centre for Crime Prevention and Safety) in Utrecht.

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1 SUBJECT AND SCOPE

1.1 SUBJECT AND SCOPE

This document describes the requirements and the inspection method of detection systems in vehicles as part of the Keurmerk CCV Voertuigbeveiliging (CCV Vehicle Security Certification Mark).
This document is applied in conjunction with the CCV Certificatieschema Systemen Voertuigbeveiliging (CCV Certification Scheme for Vehicle Security Systems).

1.2 TRANSITIONAL PROVISIONS

This document replaces:
- Keuringsvoorschrift TT04 – Eisen en voorschriften Voertuigvolgsystemen (Inspection Regulations TT04 - Requirements and regulations for Vehicle tracking systems);
- Keuringsvoorschrift TV01 – Terugvindsystemen (Inspection Regulations TV01 – Recovery systems);
- Keuringsvoorschrift TW01 – Volgsystemen voor tweewielers (Inspection Regulations TW01 – Tracking systems for two-wheelers);
- Keuringsvoorschriften voor Beveiligingssystemen – AB04 – Administratieve Bepalingen (Inspection Regulations for Security Systems - AB04 - Administrative Provisions).

There is a transition period of 1 year during which the follow-up inspections may be carried out in accordance with the aforementioned Inspection Regulations in combination with or in accordance with this document in combination with the certification scheme.
After the transition period, follow-up inspections are carried out in accordance with this document in combination with the certification scheme.
From the effective date, new applications are executed in accordance with this document in combination with the certification scheme.

1.3 OVERVIEW OF THE MOST IMPORTANT CHANGES

The most important changes regarding these documents are:
<u>General:</u>
- Based on the standardization of CCV certification schemes and quality regulations, this document is a revision of the structure, language adjustments, adjustments of requirements, and an improved presentation of the requirements. The revision is part of a package of rewritten documents, part of the Keurmerk CCV Voertuigbeveiliging (CCV Vehicle Security Certification Mark).
- The inspection regulations describe the requirements for the security system, the procedures surrounding it are included in the CCV Certificatieschema Systemen Voertuigbeveiliging (CCV Certification Scheme for Vehicle Security Systems).
- A number of requirements that were included in other inspection regulations are now also included in this inspection regulation and are, therefore, new.

Important adjustments are:

- Requirements are clearer and better formulated.
- The classification has been adjusted, with regard to naming and contents:
    - A class 5 system is linked to the Alarm Receiving Centre (ARC).
    - Jamming detection has been made void.
    - Basic security is no longer a requirement for class TV systems.
    - Class TV systems may also be used on non-motorized objects (if they have a registration number).

Made void

- Test matrix has been made void (TV01/TW01/TT04).
- Theft reports can now only be dealt with through an ARC (Alarm Receiving Centre), not by any other methods.

2 NORMATIVE REFERENCES

The following documents that are referred to apply to these inspection regulations.
Only the quoted version applies to dated references (static reference). The latest version of the document (including supplemental and correction sheets) referred to applies to undated references (dynamic reference).
Transition periods referred to in these documents are binding, unless other certification terms and conditions have been laid down in this certification scheme and the inspection regulations.
Other standards or documents mentioned in these standards and documents apply, as indicated herein.
The certification body is in possession of all of the documents mentioned. The supplier is in possession of the documents marked with a *.

CCV Certificatieschema Systemen Voertuigbeveiliging (CCV Certification Scheme for Vehicle Security Systems)		*	CCV Website
CCV Inbouwvoorschrift Voertuigbeveiliging (CCV Installation Regulations for Vehicle Security)		*	CCV Website
CCV Keuringsvoorschrift Voertuigbeveiliging (CCV Inspection Regulations for Vehicle Security)		* (1)	CCV Website
Keurmerk CCV Voertuigbeveiliging – Termen en definities (CCV Vehicle Security Certification Mark - Terms and definitions)			CCV Website
ECE R116	Regulation No 116 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform technical prescriptions concerning the security of motor vehicles against unauthorised use	*	internet

(1) For class 4 4n 5 systems

3 TERMS AND DEFINITIONS

The following terms and definitions apply for the purposes of this standard.
All terms and definitions used in and concerning the documents accompanying the Keurmerk CCV Voertuigbeveiliging (CCV Vehicle Security Certification Mark) are included in the document "Keurmerk CCV Voertuigbeveiliging – termen en definities" (CCV Vehicle Security Certification Mark - terms and definitions).

Ex-factory	A system installed into the vehicle at the factory or factory organization (using OEM parts). An ex-factory system can only be installed after the date of the first authorization if the CCU is already present in the vehicle. The importer must have submitted any additional parts for inspection.
Aftermarket	A system not built into the vehicle at the factory or factory organization that is not Original Equipment Manufacturing (OEM).
Alarm condition	The condition the system is in when a tamper, alarm, or displacement detection has occurred.
Blocking condition	The condition in which blocking is engaged, which prevents the vehicle from moving on its own once the ignition is turned off. This condition never affects the driving state, only the restarting of the vehicle.
Immobilizer/ blocking system	A device that prevents the vehicle from moving on its own.
CCU	Central Control Unit of a security system in which the security functions are brought together.
DATA BUS	A digital system in a vehicle through which various messages are sent.
CCV	Centre for Crime Prevention and Safety. The CCV is the scheme manager and owner of the inspection regulations.
Commission of Stakeholders	The committee that provides support for the scheme and is responsible for the content of the inspection regulations. This committee represents interested parties and involved parties.
ARC	Alarm Receiving Centre (definition as referred to in the Private Security Organizations and Investigation Agencies Act (WPBR)) organization, designed and equipped for the professional reception and processing of (alarm) signals by third parties and in doing so, engaging third parties.
Monitoring state	The state in which the security system at rest with Ignition OFF and physical and logical input monitoring is active. Communication and positioning may be functionally disabled. When an Alarm condition occurs, the security system must engage automatically with communication and positioning functionalities available.

4 CLASSIFICATION

All classes of detection systems are used in:

- passenger vehicles (category M in accordance with directive 2007/46/EC - appendix 3);
- commercial vehicles (category N in accordance with directive 2007/46/EC - appendix 3);
- motorcycles (category L in accordance with EU/168/2013 - appendix 1);
- work equipment (category T and category C in accordance with 2003/37/EC - appendix 2);
- trailers and semi-trailers (category O in accordance with 2007/47/EC - appendix 3).

4.1 CLASS 4

A system that can automatically determine the location of the vehicle 24/7 and transmit it in real time to the Alarm Receiving Centre (ARC), as well as an immobilizer/blocking system.

At a minimum, this system has been equipped with the following functionalities:

- determining of location through GPS;
- communication through GSM;
- immobilizer/blocking system which can prevent movement of the vehicle on its own after a theft.

4.2 CLASS 5

A system that can automatically determine the location of the vehicle 24/7 and transmit it in real time to the Alarm Receiving Centre (ARC), as well as a blocking system.

At a minimum, this system has been equipped with the following functionalities:

- determining of location through GPS;
- communication through GSM;
- immobilizer/blocking system which can prevent movement of the vehicle on its own after a theft.
- link to a class 3 alarm system for reporting to the Alarm Receiving Centre (ARC) and automatic activation of the blocking system.

4.3 CLASS TV

A system that can find a stolen vehicle within 48 hours, whereby the location must be known within 24 hours.

At a minimum, this system has been equipped with the following functionalities:

- the possibility of determining the location of, and thus tracking down, the vehicle.

5 REQUIREMENTS

5.1 GENERAL

5.1.1
Parts of vehicles that are indirectly or directly part of the system are considered to be system components and must also be submitted for inspection. Parts that are already included in the vehicle type inspection do not need to be inspected again.

5.1.2
If the system or system component is integrated with equipment intended for other purposes, this equipment, insofar as it affects the functioning of the system, must meet the inspection requirements.

5.1.3
If requirements exist in accordance with Dutch or European legislation for the system or a system component, then these must also meet these requirements or be inspected in accordance with these requirements.

5.1.4
The system must be designed and installed in such a way that every vehicle equipped with it still meets the technical requirements (type approval).

5.1.5
The system must in no way endanger road safety.

5.1.6
Components and functionalities which are connected or applied to the security system and which are not described in these inspection regulations, are not part of the product approval.

5.1.7
It is not permitted for a system to write on the vehicle's DATA BUS. Only with a written statement from the official importer, or the manufacturer of the vehicle, stating that the respective supplier of the system may write on the DATA BUS of the vehicle, is the system allowed to write signals on the DATA BUS.

5.1.8
The user manual must include at least:
- operating conditions
- operating instructions
- an overview of the system components relevant to the user

5.1.9
The assembly instructions must include at least:
- projection of the system components;
- the method of installation.

The installation of these parts must not conflict with the CCV Installation Regulations
- installation and connection diagrams
- system check (checklist)
- troubleshooting/protocol
- an overview of the system components

5.1.10
The system, when notified by the certification body, is adapted to the specific M.O. for the specific make and type of vehicle. See appendix 2.

5.2 DESIGN AND FUNCTION REQUIREMENTS - GENERAL

5.2.1
The type designations and/or brand name under which the approval is issued must be clearly indicated on the CCU.

5.2.2
System parts that are visible outside the vehicle, such as sensors or LED indicators, must not show a recognizable brand or type indication.

5.2.3
A production code must be printed onto the circuit board or must be attached to the housing of the CCU. This can also be software-based.

5.2.4
The (external) antennas required for the system must be able to be positioned so that they are not visible from outside the vehicle.

5.2.5
A class 5 system must have a trigger input for coupling to the class 3 system.

5.2.6
Alarm condition: An alarm condition occurs in one of the following situations:
- As soon as the vehicle is moved over a linear distance (from parking to end position) of at least 300 meters with the ignition off;
- by interrupting the power supply to the system (not with wireless systems);
- a report of the theft of the vehicle by an authorized person to the Alarm Receiving Centre (ARC);
- For class 5, an alarm of the class 3 alarm system.

5.3 DESIGN AND FUNCTION REQUIREMENTS - CLASSES 4 AND 5

5.3.1
The system must be equipped with a remotely engaged interruption functionality, which prevents the vehicle from being moved by unauthorized persons after the ignition has been switched off.

The disengaging occurs through an authorization method that meets the requirements as set out in CCV Keuringsvoorschrift Voertuigbeveiliging (CCV Inspection Regulations for Vehicle Security).

5.3.2
The system's power supply must be provided by the vehicle's on-board voltage.

5.3.3
The system must have its own emergency power supply so that it can report independently and separately from on-board voltage:

- for at least 8 hours,
- at least once every sixty (60) seconds, the location determination is renewed and reported to the Alarm Receiving Centre (ARC). This happens under normal conditions.

5.3.4
The system must generate a message at the latest before the actual voltage of the emergency power supply has dropped below the value at which the system will no longer function.
This value must be indicated by the supplier. A = upper value, B = lower value, C = report value.

5.3.5
The average power consumption of the class 4 or 5 systems in resting state must be limited to a maximum of twenty (20.0) ma. This is measured over a 24-hour period.
Note for the testing institution: prior to this test, the system must be able to communicate with the Alarm Receiving Centre (ARC), and sufficient GPS signals must be available.

5.3.6
An alarm must be logged in the Alarm Receiving Centre (ARC) and reported to the Alarm Receiving Centre (ARC). The alarm message may also be forwarded to the owner of the vehicle.

5.3.7
The system must be able to be monitored live in an alarm condition. This means that a location must be reported to the Alarm Receiving Centre (ARC) at least once every 60 seconds. At least 90% of the locations must be received at the Alarm Receiving Centre (ARC) (measured over 30 minutes).

5.3.8
The Alarm Receiving Centre (ARC) must be able to determine the current location of the vehicle at any time after a verified notification of theft.

5.3.9
An initial notification must be received by the receiving platform within one hundred and eighty (180) seconds of the occurrence of an alarm condition (provided the vehicle is not in a shielded space, making communication impossible).
This notification must always be received at the Alarm Receiving Centre (ARC).

5.3.10
At the end of each trip, the vehicle location must be recorded and stored in the Alarm Receiving Centre (ARC). Only the most recent position may be kept unless otherwise agreed on with the owner/user of the vehicle.
This location must be available to the Alarm Receiving Centre (ARC) at all times.

5.3.11
If an alarm message or last location determination cannot be sent by the system, it must occur within 180 seconds once communication becomes possible again.

5.3.12
At least once (1 time) per week, the unit must be checked whether it can communicate and transmit its location (if possible). If communication itself is not possible, verification must take place. The test report or the verification must be logged in the Alarm Receiving Centre (ARC).
(This must be submitted by the supplier as a statement)

5.3.13
Information protocol:
In case of a verified theft report, the system must at least be able to send the following information to the Alarm Receiving Centre (ARC)

- Location
- Date and time
- Speed
- Driving direction
- Vehicle identity
- Status contact
- Alarm condition

It is not necessary to include the identifying features of the vehicle, as these may also be available in a database at the Alarm Receiving Centre (ARC).

5.3.14
When Class 4 and 5 systems are supplied, a contract with the Alarm Receiving Centre (ARC) is included.

5.4 DESIGN AND FUNCTION REQUIREMENTS - CLASS TV

5.4.1
The (GSM) connections that are used must have at least nation-wide coverage in the Netherlands, as well as roaming provisions if available (possible if there is a statement from the provider).

5.4.2
In class TV systems, the system's power supply may be provided by its own as well as by the on-board voltage that is present in the vehicle.
The system must have an emergency power supply, so that after it has been disconnected, a full recovery operation that takes 48 hours as described under 4.5.3. can be carried out.

Class TV systems may be supplied with its own power supply.
The power supply has sufficient capacity to monitor for three years and to carry out a full recovery that takes 48 hours as described under 4.5.3.

5.4.3

Recovery operation function test:

10 units of each system are handed over. Of these, 5 pieces will be asked to initiate recovery operation at announced moments in time:

- construction or installation by an independent third party;
- scattered over 5 locations, each at least 50 kilometres away from the others:
  - 2 in urban areas
  - 2 in rural areas
  - 1 in a border area
- start signal “stolen”, no intermediate movements;
- the coordinates of the location must be provided within 24 hours of the theft notification. In doing so, it must be demonstrated that the investigation authority is on-site within 48 hours after the theft notification. The provision of photo material of the location including the system on site is sufficient;
- the recovery rate of the five deployed systems must be 100%;

APPENDIX 1 - TESTS

The applicant will provide one or more test reports or certificates showing that the system and the components meet the set requirements.
The tests derived from ECE R116 (which are legally required for immobilizers / blocking systems and alarm systems in passenger vehicles) have been declared as applying to these inspection regulations.
The tests are performed at the voltage for which the system has been designed. A multi-voltage system is tested at all voltages.

The order in which the tests will be performed is determined by the testing institute, taking into account the provisions in ECE R116.
The system components are tested in the condition in which they have been assembled and delivered.
The positioning of the system components during the tests that will be performed is determined by the testing institute and, if possible, in accordance with the CCV installation regulations and/or the supplier's assembly instructions. If there are special requests made by a manufacturer, it must be demonstrated that these are adhered to in the assembly of the position in which the tests have taken place.
During the duration of each test, no unnecessary alarms should be caused, and the system status should not change, except in the usual or intended manner.
After each test, the system components must operate in accordance with the manufacturer's specifications and may not have undergone any distortions and/or changes that may adversely affect the operation of the system components at that time, or over time.
Before and after performing the tests listed below, the system should function normally.

COLD TEST		
Temperature	T = - 40°C ± 2°C	ECE R116, 6.4.2.2.1
Voltage	U = 0.75 x nominal voltage 9 ± 0.2 V	
Acclimatization time	t = 4 hours	

HEAT TEST For parts to be fitted in the passenger or luggage compartments:		
Temperature	T = 85°C ± 2°C	ECE R116, 6.4.2.2.2
Voltage	U = 1.25 x nominal voltage 9 ± 0.2 V	
Acclimatization time	t = 4 hours	

HIGH HEAT TEST For components underneath the hood:		
Temperature	T = 125°C ± 2°C	ECE R116, 6.4.2.2.3
Voltage	U = 1.25 x nominal voltage 9 ± 0.2 V	
Acclimatization time	t = 4 hours	

HIGH VOLTAGE TEST 1	
The system must be exposed to 1.5 x the nominal voltage 9 +/- 2 Volt DC for 1 hour in both the monitoring state as well as in the off state.	ECE R116, 6.4.2.2.4

HIGH VOLTAGE TEST 2	
The system must be exposed to 2 x nominal voltage 9 +/- 2 Volts DC for 1 minute in both the monitoring state as well as in the off state.	ECE R116, 6.4.2.2.5

SAFE OPERATION AFTER WATER TIGHTNESS TESTS	
The system and its components must be protected in accordance with the classes listed below as defined in IEC publication 529-1989: IP40 for system components in the vehicle interior. IP42 for system components in the interior of convertibles and/or sports cars. IP54 for all other system components and motorcycle security systems.	ECE R116, 6.4.2.3

SAFE OPERATION AFTER HEAT TESTS WITH CONDENSATION TESTS	
Heat test with condensation test Weather resistance Seven days in accordance with IEC 68-2-30-1980	ECE R116, 6.4.2.4 ECE R116, 6.4.1.3

SAFE OPERATION AFTER POLARITY REVERSALS	
The system and its components should not fail after performing this test with a voltage of 13 Volts DC and a duration of 2 minutes.	ECER116 6.4.2.5

SAFE OPERATION AFTER A SHORT CIRCUIT	
The system and its components should not fail after performing this test with a voltage of 13 Volts DC.	ECE R116 6.4.2.6

SAFE OPERATION AFTER VIBRATION TEST	
Vibration test Type 1: System components mounted onto the vehicle: The frequency should range from 10 Hz to 500 Hz with a maximum amplitude of ± 5 mm and a maximum acceleration of 3 g (peak value). Type 2: System components mounted onto the engine: The frequency should range from 20 Hz to 300 Hz with a maximum amplitude of ± 2 mm and a maximum acceleration of 15 g (peak value). For type 1 and type 2: The frequency variation is 1 octave/min. 10 cycles along each of the 3 axes. Vibrations are applied at a low frequency with a maximum amplitude.	ECE R116, 6.4.2.8 ECE R116, 6.4.2.8.2

HF RADIATION (EMC)	
High-frequency radiation tests Pulse tests (ISO 7367-1) do not apply to recovery systems that are not connected to the vehicle power supply.	ECE R116, Appendix 9

RADIO TRANSMISSION	
If the detection system utilizes radio transmission (such as remote controls, but also between the components of the system).	ECE R116, 6.2.3

APPENDIX 2 - M.O. AND INSPECTION REQUIREMENTS

Effective vehicle security is characterized by:

- The correct security measures that are applicable to the risk.
- The correct installation method.

The CCV Risicomodel Voertuigbeveiliging (CCV Vehicle Security Risk Model) indicates which security measures must be applied.
In the addition of functionalities (such as blocking, alarming, detection,) the requirements of the security system are also focused on known M.O.

As scheme manager, the CCV has a Commission for Attack Resistance Assessment (CBA) that has the following tasks:

- Analysing (new and changing M.O.)
- Indicating the extent to which adapted inspection requirements must take effect.

Input for the CBA can be:

- Signalling that the theft percentage exceeds a certain limit, to be determined by the CvB Vehicle Security,
- Signals from the field
- The police determine that new M.O. has been established, or, for example, a location where several vehicles have been stolen is discovered.
- At the request of the parties.

The CBA investigates:

- What the M.O. is and which tools have been used,
- Whether this M.O. is practical and if it can be widely used,
- To what extent the manufacturer has to adapt the system to account for this M.O. and for which brand(s) and type(s).
- To what extent the requirements for the systems or their installation must be adapted.

The CBA records the analysis and conclusions in a report and makes it available to the certification body. With this report, the certification body informs the supplier and specifies within what time period the system must be adjusted.

CENTRE FOR CRIME PREVENTION AND SAFETY

The Centre for Crime Prevention and Safety is the centre that develops and implements coherent tools to increase social security. The CCV encourages cooperation between public and private organisations to integrally reduce crime and forms a link between policy and practice.

With these instruments developed by the CCV, instruments developed by other parties, or (technical) instruments already present at the market level, there may be a need to demonstrate the quality of achieved performances.

The CCV manages compliance schemes for this, for which a structure has been set up with the participation of interested parties.

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