

# **Alarm systems — Alarm transmission systems and equipment —**

## **Part 2-3: Requirements for equipment used in systems with digital communicators using the public switched telephone network**

The European Standard EN 50136-2-3:1998 has the status of a  
British Standard

ICS 13.320; 33.040.20

## National foreword

This British Standard is the English language version of EN 50136-2-3:1998.

The UK participation in its preparation was entrusted by Technical Committee GW/1, Electronic security systems, to Subcommittee GW/1/11, Remote centres, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible 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.

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### Summary of pages

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English version

## Alarm systems — Alarm transmission systems and equipment — Part 2-3: Requirements for equipment used in systems with digital communicators using the public switched telephone network

Systèmes d'alarme — Systèmes et équipements de transmission d'alarme — Partie 2-3: Exigences pour les équipements utilisés dans des systèmes de transmetteurs numériques sur le réseau téléphonique public auto-commuté

Alarmanlagen — Alarmübertragungsanlagen — und -einrichtungen — Teil 2-3: Anforderungen an Einrichtungen für Wähl- und Übertragungsanlagen für das öffentliche Fernsprechwählnetz

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

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50136-2-3 on 1997-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-08-01

EN 50136 consists of the following parts, under the general title *Alarm systems — Alarm transmission systems and equipment*:

- *Part 1-1, General requirements for alarm transmission systems*;
- *Part 1-2, Requirements for systems using dedicated alarm paths*;
- *Part 1-3, Requirements for systems with digital communicators using the public switched telephone network*;
- *Part 1-4, Requirements for systems with voice communicators using the public switched telephone network*;
- *Part 2-1, General requirements for alarm transmission equipment*;
- *Part 2-2, Requirements for equipment used in systems using dedicated alarm paths*;
- *Part 2-3, Requirements for equipment used in systems with digital communicators using the public switched telephone network*;
- *Part 2-4, Requirements for equipment used in systems with voice communicators using the public switched telephone network*;
- *Part 3, Alarm transmission protocols*; (in preparation)
- *Part 4, Annunciation equipment*; (in preparation)
- *Part 5, (free)*;
- *Part 6, (free)*;
- *Part 7, Application guidelines* (in preparation).

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## 1 Scope

This standard specifies in addition to the requirements specified in EN 50136-2-1, the requirements for equipment used in digital communicator systems utilizing the public switched telephone network.

The remote centre will normally be an alarm receiving centre but may be a satellite station with onward transmission using an alarm transmission system meeting the requirements of EN 50136-1-2.

NOTE A satellite station is a normally unmanned connection point to which one or several alarm transceivers are connected for onward connection to an alarm receiving centre.

## 2 Object

The object of this standard is to specify the performance characteristics of equipment used in digital communicator systems using the public switched telephone network to ensure their suitability for use with and compatibility with different applications.

## 3 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 50136-1-2, *Alarm systems — Alarm transmission systems and equipment — Part 1-2: Requirements for systems using dedicated alarm paths.*

EN 50136-2-1, *Alarm systems — Alarm transmission systems and equipment — Part 2-1: General requirements for alarm transmission equipment.*

ETS 300 001, *Attachments to the Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN.*

## 4 Alternative destinations

Where the digital communicator includes a facility for dialling more than one alarm receiving centre dependent on the message to be transmitted, the dialling sequence initiated by one event may be interrupted in order to allow the transmission of a higher priority event.

## 5 Equipment requirements

Alarm transmission equipment within the scope of this standard shall comply with the requirements in EN 50136-2-1.

In addition, the alarm system transceiver shall meet the following requirements.

### 5.1 Connection to first exchange of PSTN

#### 5.1.1 From supervised premises

Where the digital communicator is intended for use on a shared telephone line, the following requirements shall be met.

- a) If a telephone call is in progress when a condition requiring transmission occurs, the call shall be terminated subject to PSTN requirements and the transmission procedure initiated.
- b) The digital communicator equipment shall not be damaged by connection to the same telephone line as equipment that meets ETS 300 001 requirements.

#### 5.1.2 Monitoring

A facility shall be provided for monitoring the integrity of the connection, e.g. by monitoring the voltage from the exchange, from the supervised premises to the first exchange of PSTN and providing this information to the associated alarm system.

### 5.2 Performance of power supply of the digital communicator

No spurious transmissions shall occur as the result of failure or restoration of any power supply.

### 5.3 Operation

The digital communicator shall be capable of the following sequence of operation, when connected to a telephone line, the purpose being that the digital communicator should send its message without unnecessary delay.

NOTE Where national or local requirements for equipment connected to national or private networks exist these should be met even when these requirements are contradictory to the requirements in 5.3.

#### 5.3.1 Initiation of connection

Following a change of the status of the interface to the alarm system the transceiver shall go off-hook within 4 seconds.

After going off-hook, the transceiver shall wait until a signal has been detected indicating that the network is available and then begin the dialling process. The wait for the signal shall not exceed 7 seconds. An option may be provided to allow the delay for the signal to be set to an alternative, longer time limit for use in areas where it is known that the delay to the receipt of the signal normally exceeds 7 seconds.

If the signal has not been detected within the time limit set, the transceiver shall go on-hook and start the sequence again. On the second and subsequent attempts to detect the signal the wait may exceed the initial time limit.

#### 5.3.2 Establishment of connection

The receiving centre transceiver shall detect the receipt of an incoming call and go off-hook within 5 seconds of the commencement of ringing on its line. It shall begin transmission of a handshake signal within 2 seconds of going off-hook.

Establishment of the connection to the correct party shall be detected by means of a handshake signal.

If a connection is not successfully established within 40 s measured from the end of the dialling sequence, then the transceiver shall close down and repeat the procedure from the start.

### 5.3.3 Repeat attempts to connect

A facility shall be provided to limit to 16 the total number of attempts made to connect to any one number.

Where more than one number may be called then a facility shall be provided to limit the successive attempts to call one number before proceeding to the next number. Such attempts may be limited by the requirements of the associated alarm system but shall not exceed 4.

### 5.3.4 Transmission of information

After the handshake procedure has been completed the alarm system information shall be transmitted and correct reception of the information shall be confirmed by the transmission of an acknowledge signal.

Information concerning the event which initiated the digital communicator shall be transmitted although the event itself may have restored to normal.

Information concerning other events which may have occurred during the dialling sequence may also be transmitted once the connection is established.

The information message shall be repeated at least once if an acknowledge signal is not received within 5 seconds from the end of the message transmission.

If an acknowledge signal is not received within 60 seconds measured from the start of transmission of the information message, the call shall be terminated and a new attempt made to establish a connection and transmit the information within the limitations specified in clause 5.3.1, 5.3.2 and 5.3.3.

### 5.3.5 Termination of call

The digital communicator shall detect the receipt of the acknowledgement signal and, if it has no further information to transmit, shall either:

- a) close down and release the line during the remainder of the acknowledgement signal or within 2 seconds of the end of the acknowledgement signal; or
- b) switch to provide an audio channel between the supervised premises and the alarm receiving centre.

In the latter case provision shall be made for the connection to be terminated by the alarm receiving centre operator.

The receiving centre transceiver shall, if it is not required to switch to an audio channel, go on-hook within 5 seconds of the end of transmission of the acknowledgement signal. It shall go on-hook, if the transmission is unsuccessful, within 15 seconds of the end of an incoming transmission or within 15 seconds from the time at which it detects the failure. A fault output shall be provided at the receiving centre transceiver interface to the annunciation equipment to indicate the unsuccessful activation.

Following the termination of a call an attempt may be made to transmit the information message to a different alarm receiving centre or responsible person but further calls of the same message shall not be made to the original destination.

### 5.3.6 Failure to connect

Information shall be provided by the supervised premises transceiver to the associated alarm system:

- a) if a fault is detected by the supervised premises transceiver in its own transceiver or in the alarm transmission system; and
- b) in the event of failure to achieve a successful connection and/or transmission of the information message within 240 seconds measured from the appearance of the event which initiated the transceiver.

## 6 Testing

### 6.1 General

Equipment shall be tested in accordance with the requirements of EN 50136-2-1.

### 6.2 Functional test

The following additional tests shall be added to the basic functional test, as described in EN 50136-2-1.

Tests shall confirm that when an alarm condition is presented to the alarm inputs of the equipment then the unit will respond and seek to establish a connection in accordance with the manufacturer's product specification and the requirements of subclause 5.2 of this standard.

These shall include tests to ensure that the equipment retries to establish a connection where the first attempt fails and that it generates a local fault signal in the event of failure to establish a connection.

### 6.3 Environmental testing

The electrostatic discharge test specified in EN 50136-2-1 shall also be carried out during the dialling process of the basic functional test. The test shall not compromise the ability of the transceiver to send the intended message. It may, however, corrupt the specific attempt then resulting in a new attempt by the transceiver.

## 7 Product specification

In addition to the requirements of EN 50136-2-1, the product specification shall include:

- a) details of how to program the telephone numbers, the calling sequence and any other details required;
- b) the number of repeat transmissions supported and of any adjustment available.



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