



SLOVENSKI STANDARD

oSIST prEN 50136-2:2011

01-junij-2011

Nadomešča:

SIST EN 50136-2-1:1999

SIST EN 50136-2-1:1999/A1:2001

SIST EN 50136-2-2:1999

SIST EN 50136-2-3:1999

SIST EN 50136-2-4:1999

Alarmni sistemi - Alarmni prenosni sistemi in oprema - 2. del: Zahteve za oddajno-sprejemne naprave v nadzorovanih prostorih

Alarm systems - Alarm transmission systems and equipment - Part 2: Requirements for Supervised Premises Transceiver (SPT)

<https://standards.iteh.ai/catalog/standards/sist/31e03bf2-5035-4bb7-92e6-8810d034a255/sist-en-50136-2-2011>

Alarmanlagen - Alarmübertragungsanlagen und -einrichtungen - Teil 2: Anforderungen an Übertragungseinrichtungen (ÜE)

Systèmes d'alarme - Systèmes et équipements de transmission d'alarme - Partie 2: Exigences pour les transmetteurs des locaux surveillés

Ta slovenski standard je istoveten z: prEN 50136-2:2011

ICS:

13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
33.040.40	Podatkovna komunikacijska omrežja	Data communication networks

oSIST prEN 50136-2:2011

en,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 50136-2

April 2011

ICS 13.320; 33.040.40

Will supersede EN 50136-2-1:1998 + corr. Apr.1998 + A1:2001,
EN 50136-2-2:1998, EN 50136-2-3:1998, EN 50136-2-4:1998

English version

**Alarm systems -
Alarm transmission systems and equipment -
Part 2: Requirements for Supervised Premises Transceiver (SPT)**

Systèmes d'alarme -
Systèmes et équipements
de transmission d'alarme -
Partie 2: Exigences pour les transmetteurs
des locaux surveillés

Alarmanlagen -
Alarmübertragungsanlagen
und -einrichtungen -
Teil 2: Anforderungen an
Übertragungseinrichtungen (ÜE)

This draft European Standard is submitted to CENELEC members for CENELEC enquiry.
Deadline for CENELEC: 2011-09-02.

It has been drawn up by CLC/TC 79.

If this draft becomes a European Standard, CENELEC 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.

This draft European Standard was established by CENELEC in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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1

Foreword

2 This draft European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm
3 systems. It is submitted to the CENELEC enquiry.

4 This document will supersede EN 50136-2-1:1998 + A1:2001, EN 50136-2-2:1998, EN 50136-2-3:1998
5 and EN 50136-2-4:1998.

6 The main changes with respect to these previous editions are listed below:

7 1) referenced based standards were updated to the latest versions;

8 2) definitions were updated;

9 3) requirements were aligned with new ATS categories of the revised system standard EN 50136-1;

10 4) test methods were added;

11 5) the scope was changed to reflect the amalgamation of EN 50136-2-2:1998, EN 50136-2-3:1998
12 and EN 50136-2-4:1998 and to achieve compatibility with application specific standards such as
13 fire alarm transmission systems and social alarm transmission systems;

14 6) significant changes were made to the structure of the document to achieve general alarm
15 transmission requirements for SPT. Application specific requirements were removed;

16 7) the title was corrected to match the scope of the document.

17 This revision was prepared to bring the procedures up-to-date with current technical developments,
18 taking account of changes in the basic standards and the experience gained in the use of the
19 standard.

20 This European Standard is part of the EN/TS 50136 series. This series is intended to give the
21 requirements applicable to alarm transmission systems in general.

22 EN/TS 50136 series will consist of the following parts, under the general title *Alarm systems – Alarm*
23 *transmission systems and equipment*:

24 – Part 1 ¹⁾ General requirements for alarm transmission systems;

25 – Part 1-5 Requirements for Packet Switched Network PSN;

26 – Part 1-7¹⁾ Requirements for common protocol for alarm transmission using packet switched
27 network;

28 – Part 2 ¹⁾ Requirements for Supervised Premises Transceiver (SPT);

29 – Part 3 ¹⁾ Requirements for Receiving Centre Transceiver (RCT);

30 – Part 4 ¹⁾ Annunciation equipment;

31 – Part 5 (free);

32 – Part 6 (free);

33 – Part 7 Application guidelines.

34

1) At draft stage.

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Contents

36	1	Scope	5
37	2	Normative references	5
38	3	Terms, definitions and abbreviations	6
39	3.1	Terms and definitions	6
40	3.2	Abbreviations	6
41	4	General requirements	6
42	4.1	General	6
43	4.2	SPT classification	7
44	5	Functional requirements	7
45	5.1	General	7
46	5.2	Access levels	7
47	5.3	Remote access	7
48	5.4	Uploading and downloading of software and firmware	8
49	5.5	Storage of parameters	8
50	5.6	ATS and ATP fault reporting to the AS	8
51	5.7	Interface to the AS	8
52	5.8	Monitoring of the transmission network interface(s) – Fault reporting	8
53	5.9	Power supply for the SPT	9
54	5.10	Event logging	9
55	6	Operation	11
56	6.1	Modes of acknowledgement operation	11
57	6.2	SPT alarms	11
58	6.3	Substitution security	12
59	6.4	Information security	12
60	7	Documentation	12
61	7.1	SPT documentation	12
62	7.2	Marking and identification	13
63	8	Housing and tamper protection – Tamper protection requirements	13
64	9	Tests	13
65	9.1	General	13
66	9.2	General requirements	13
67	9.3	Reduced functional test	14
68	9.4	Functional tests	14
69	Annex A (normative)	Requirements of the interface between AS and SPT	27
70	A.1	Parallel interface between AS and SPT	27
71	A.2	Serial interface between AS and SPT	29
72		Bibliography	30

73

74 **Figures**

75	Figure A.1 – Schematic diagram of the parallel interface between AS and SPT.....	27
76	Figure A.2 – Additions for parallel interface between fire AS and SPT.....	28

77

78 **Tables**

79	Table 1 – Event recording classification – Events to be recorded	10
80	Table 2 – Event recording classification – Memory capacity & endurance	10
81	Table 3 – Alarms originated by the SPT and transmitted to the RCT	12
82	Table 4 – Summary of functional tests	15
83	Table 5 – Test of access levels	16
84	Table 6 – Test of upload and download of software and firmware	16
85	Table 7 – Test of parameter storage	17
86	Table 8 – Reporting path failures from the SPT to the AS in a Dual path ATS.....	18
87	Table 9 – Reporting all ATPs failure from the SPT to the AS in a Dual path ATS.....	18
88	Table 10 – Reporting the ATS path failure from the SPT to the AS in a Single path ATS.....	19
89	Table 11 – Test of standardized serial interface to the AS	19
90	Table 12 – Test of standardized parallel interface to the AS	20
91	Table 13 – Test of proprietary interface to the AS	21
92	Table 14 – Test of the transmission network interface monitoring.....	21
93	Table 15 – Test of protection of the log.....	22
94	Table 16 – Test of event log capacity.....	23
95	Table 17 – Test of clock resolution.....	23
96	Table 18 – Test of store-and-forward operation	24
97	Table 19 – Test of store-and-forward operation	25

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99

100 **1 Scope**

101 This European Standard specifies the general equipment requirements for the performance, reliability,
102 resilience, security and safety characteristics of supervised premises transceiver (SPT) installed in
103 supervised premises and used in alarm transmission systems (ATS). A supervised premises
104 transceiver can be a stand-alone device or an integrated part of an alarm system.

105 These requirements also apply to SPT's sharing means of interconnection, control, communication
106 and power supplies with other applications.

107 The alarm transmission system requirements and classifications are defined within EN 50136-1.
108 Different types of alarm systems may in addition to alarm messages also send other types of
109 messages, e.g. fault messages and status messages. The term alarm is used in this broad sense
110 throughout the document. Additional requirements for the connection of specific types of alarm
111 systems are given in the relevant European Standards.

112 Because the SPT can be applied in different applications (e.g. I&HAS, fire and social alarm systems),
113 requirements for the SPT, additional to those of this European Standard, may be specified in separate
114 application specific documents.

115 This European Standard specifies the requirements specific to alarm transmission. Application specific
116 requirements for the connection of the SPT to specific types of alarm systems are given in the
117 EN/TS 50131 series for I&HAS, and EN 54 series for fire. For other SPT applications, see the relevant
118 National or European standards

119 **2 Normative references**

120 The following referenced documents are indispensable for the application of this document. For dated
121 references, only the edition cited applies. For undated references, the latest edition of the referenced
122 document (including any amendments) applies. standards.iteh.ai

EN 54-21	Fire detection and fire alarm systems – Part 21: Alarm transmission and fault warning routing equipment
EN 50130-4	Alarm systems – Part 4: Electromagnetic compatibility – Product family standard – Immunity requirements for components of fire, intruder and social alarm systems
EN 50130-5	Alarm systems – Part 5: Environmental test methods
EN 50136-1:201X ¹⁾	Alarm systems – Alarm transmission systems and equipment – Part 1: General requirements for alarm transmission systems

123

1) At draft stage.

124 3 Terms, definitions and abbreviations

125 3.1 Terms and definitions

126 For the purposes of this document, the terms and definitions given in EN 50136-1:201X and the
127 following apply.

128 3.1.1

129 **alternative power source**

130 power source capable of powering the SPT for a predetermined time when a prime power source is
131 unavailable

132 3.1.2

133 **indication**

134 information (in audible, visual or any other form) about the state of the SPT, RCT and/or ATS

135 3.1.3

136 **prime power source**

137 power source used to support an SPT under normal operating conditions

138 3.2 Abbreviations

139 For the purposes of this document, the following abbreviations apply:

140 **AE** Annunciation Equipment

141 **AS** Alarm System

142 **ATP** Alarm Transmission Path

143 **ATS** Alarm Transmission System

144 **CIE** Control and Indicating Equipment

145 **EMC** Electromagnetic Compatibility

146 **GND** Ground

147 **GPRS** General Packet Radio Services

148 **I&HAS** Intruder and Hold-up Alarm Systems

149 **I/O** Input/Output

150 **NTP** Network Time Protocol

151 **RCT** Receiving Centre Transceiver

152 **SPT** Supervised Premises Transceiver

153 4 General requirements

154 4.1 General

155 Where appropriate, equipment shall comply with local, national and European requirements and
156 regulations for connection and transmission via public or private networks.

157 Requirements in this European Standard shall be considered as a minimum. As the SPT is used together
158 with or integrated in associated alarm systems, the requirements of the specific applications or related
159 standards shall apply.

160 Specific applications may require additional testing of the SPT. If such characteristics for a non-alarm
161 application are provided and are submitted for testing, they shall be specified by the manufacturer at the
162 time of testing.

163 4.2 SPT classification

164 This European Standard defines SPT requirements. For some specific characteristics also, a
165 classification system or measuring scale is introduced. For the purpose of SPT classification,
166 reference is made to the ATS categories in EN 50136-1. The SPT shall be labelled with each category
167 or range of categories that it can be applied to.

168 If a Custom Category (category C) is defined then the requirements corresponding to Tables 1, 2
169 and 3 shall also be defined.

170 5 Functional requirements

171 5.1 General

172 The SPT shall be able to receive alarms from one or more ASs and transmit the alarm to one or more
173 RCTs via one or more ATPs within the requirements of the appropriate ATS category.

174 5.2 Access levels

175 This European Standard specifies three levels of access that categorise the ability of users to access
176 the SPT functions.

177 Access levels are defined as following:

178 Level 1 access to functions, indications and notifications available to any individual without
179 authentication;

180 Level 2 access to information about the operational status of the SPT. Access level 2 may also allow
181 access to basic functional tests and the management of other Access level 2 users;

182 Level 3 maintenance and commissioning functions, access to affect the SPT configuration including
183 software changes, the addition, removal or replacement of components and other operations
184 that directly, or indirectly, may adversely influence the functions of the SPT.

185 Access to level 2 and level 3 functions shall require authorisation with a key.

186 NOTE Access at level 3 should be authorised by a user with level 2 access. This may be achieved by a one time authorisation
187 as part of a service level agreement.

188 Access at levels 2 & 3 may be achieved remotely providing authorisation, equivalent to 1 000 000 key
189 differs is achieved.

190 Where it is possible to gain local access more frequently than 3 times in any 60 s period, then the
191 number of successive failed attempts shall be limited to three, continued attempts shall not be
192 permissible for a further 300 s as a minimum.

193 Where factory default keys are provided, it shall not be possible to complete the SPT commissioning
194 without first, changing these keys e.g. during installation. It shall not be possible to read any key that
195 provides authorisation for access at levels 2 or 3.

196 5.3 Remote access

197 Remote access to the SPT shall meet at least the same information security requirements that are
198 required for alarm transmission as defined in EN 50136-1 for the appropriate category.

199 **5.4 Uploading and downloading of software and firmware**

200 Where upload and download functions are provided, the upload and download of software to a SPT is
201 only allowed to be performed by users with appropriate access level, as defined in 5.2.

202 The software to be replaced by a software download shall be stored. If there is a loss of connection or
203 another transmission fault disrupts the download, the last fully functional software version shall be
204 restored, and the SPT shall work as before the unsuccessful download.

205 EXAMPLE Procedure of a download: download software, check and validate the download, activate downloaded software.

206 **5.5 Storage of parameters**

207 Power cycle or a boot up sequence shall not result in the loss of any site specific data. The SPT shall
208 return to normal operation.

209 **5.6 ATS and ATP fault reporting to the AS**

210 Where the SPT is required to report an ATS and/or ATP failure to the AS as per EN 50136-1:201X,
211 Table 5, this shall take place within the reporting times shown in EN 50136-1:201X, Table 3.

212 NOTE 1 For an ATS with more than one ATP, as long as service is not lost, a single path line fault may be held by the SPT for
213 a period that is agreed between the interested parties until it is released to the AS.

214 NOTE 2 Where an AS includes the ability to display the status of each ATP the SPT may be configured to pass individual ATP
215 failures to the AS within the reporting times shown in EN 50136-1:201X, Table 3.

216 The manufacturer's documentation should define the process for the reporting of ATS faults to the AS.

217 **5.7 Interface to the AS**

218 The connections to the AS shall be monitored in accordance with EN 50136-1.

219 To allow compatibility of equipment from different manufacturers, this European Standard specifies
220 two electrical interfaces:

- 221 • parallel interface between AS and SPT, see Clause A.1;
- 222 • serial interface between AS and SPT, see Clause A.2.

223 The manufacturer shall state in the associated documentation which type(s) of interface(s) to the AS
224 are provided.

225 **5.8 Monitoring of the transmission network interface(s) – Fault reporting**

226 If required, the SPT shall be configured to detect the failure of a transmission network interface and
227 generate an ATP fault to the AS.

228 The manufacturer's documentation shall describe the process for monitoring and reporting the network
229 interface fault to the CIE.

230 NOTE 1 The message generated by the SPT may indicate either an ATP fault or an interface fault.

231 Where required, transmission network interface faults shall be reported within the time specified in
232 EN 50136-1:201X, Table 3.

233 For dual path category (Dx) ATSSs, a fault on one of the transmission network interfaces shall be
234 reported to the RCT over the remaining ATP within the time specified in EN 50136-1.

235 NOTE 2 An SPT network interface fault provides indication of a path fault.

236 NOTE 3 Monitoring the state of a transmission network interface should not be used to monitor the state of an associated ATP.

237 NOTE 4 An ATP may be in a failed state whilst the associated network interface is in an optional state.

238 **5.9 Power supply for the SPT**

239 The SPT may be powered by the associated AS power supply or by a dedicated SPT power supply.

240 Where a dedicated SPT power supply is used, it shall meet the requirements of the most demanding
241 associated alarm system.

242 **5.10 Event logging**

243 A logging function for all categories of SPT except S1 and D1, shall be provided for the purposes of
244 providing an audit trail and problem resolution.

245 Dependent upon the ATS category where the SPT is applied, the events specified in Table 1 shall be
246 recorded in the SPT.

247 The means used to record the events shall be protected against the accidental or deliberate deletion
248 or alteration of the contents.

249 The means of recording events shall be non-volatile and have a capacity complying with the
250 requirements of Table 2. When the event recorder reaches maximum capacity, further events may
251 cause the oldest events to be erased.

252 The log shall record, in addition to the event, the time and date at which the event occurred.
253 The timing resolution shall be a minimum of 1 s and it shall be accurate to within ± 1 s per 24 h.

254 The SPT shall provide a means to adjust the date and time.

255 To optimise storage of events, where identical sequentially repeated events occur within any 12 h
256 period, then only the first and last event may be recorded. Where this is done then the number of
257 identical events shall be recorded.

258 When required by Table 1, the logging of access to the SPT shall include user identification.

259 The inclusion of requirements to record events in Table 1 does not imply a requirement to provide the
260 associated function.

261

Table 1 – Event recording classification – Events to be recorded

#	Event	Events to be recorded									
		S1	S2	S3	S4	S5	S6	D1	D2	D3	D4
1	Alarm message from and to the AS	Op	M	M	M	M	M	Op	M	M	M
2	Positive alarm message acknowledgement from RCT	Op	M	M	M	M	M	Op	M	M	M
3	Negative alarm message acknowledgement or timeout on alarm message acknowledgement from RCT	Op	M	M	M	M	M	Op	M	M	M
4	SPT primary power source failure & restore	Op	M	M	M	M	M	Op	M	M	M
5	SPT alternative power source failure & restore ^a	Op	M	M	M	M	M	Op	M	M	M
6	AS to SPT interconnection failure & restore	Op	M	M	M	M	M	Op	M	M	M
7	ATP failure & restore	Op	M	M	M	M	M	Op	M	M	M
8	ATS failure & restore	Op	M	M	M	M	M	Op	M	M	M
9	SPT – transmission network interface failure & restore	Op	M	M	M	M	M	Op	M	M	M
10	Changes to the configuration of the SPT	Op	M	M	M	M	M	Op	M	M	M
11	Power-up or reset	Op	M	M	M	M	M	Op	M	M	M
12	Any change to software	Op	M	M	M	M	M	Op	M	M	M
13	Manual changes to the date and time	Op	M	M	M	M	M	Op	M	M	M
14	Access to the SPT at level 2 or 3	Op	M	M	M	M	M	Op	M	M	M
Key											
Op = optional											
M = mandatory											
NOTE Logging requirements for primary and secondary power supply only apply if the SPT has its own integral power supply.											
^a It is only required to report alternative power source failures if such alternative power source is required by the associated application standard.											

262

263

Table 2 – Event recording classification – Memory capacity & endurance

Capacity & endurance	S1	S2	S3	S4	S5	S6	D1	D2	D3	D3
SPT memory capacity Minimum number of events.	–	250	1 000	1 000	1 000	1 000	–	250	1 000	1 000
Minimum endurance of memory after SPT power failure in days.	–	30	30	30	30	30	–	30	30	30

264