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Alarm systems - Part 5: Requirements for alarm transmission systems - Section 4: Alarm transmission systems using dedicated alarm transmission paths

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Systèmes d'alarme - Partie 5: Prescriptions pour les systèmes de transmission d'alarme - Section 4: Systèmes de transmission d'alarme utilisant des voies de transmission d'alarme spécialisées

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

This section of the International Standard IEC 839-5 has been prepared by IEC Technical Committee No. 79: Alarm systems.

The text of this section is based on the following documents:

Six Months' Rule	Report on Voting	Two Months' Procedure	Report on Voting
79(CO)21	79(CO)32	79(CO)39	79(CO)49

Full information on the voting for the approval of this section can be found in the Voting Reports indicated in the above table.

ALARM SYSTEMS

Part 5: Requirements for alarm transmission systems

Section 4: Alarm transmission systems using dedicated alarm transmission paths

1 Scope

This section of IEC 839-5 specifies the requirements for alarm transmission systems using dedicated alarm transmission paths which are additional to those specified in IEC 839-5-1 and IEC 839-5-2.

It covers dedicated connections providing signalling continuity between an alarm system and the presentation of alarm system information at an alarm receiving centre.

The alarm transmission system may utilise d.c. pairs, voice grade signalling, links or data links and may include multiplexors or message processors. This section of IEC 839-5 is also applicable to alarm transmission systems in which signals are superimposed on other services such as normal subscriber telephone lines from the supervised premises to the local exchange, cable TV or power distribution networks.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this section of IEC 839-5. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this section of IEC 839-5 are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 839-5-1: 1991, *Alarm systems - Part 5: Requirements for alarm transmission systems – Section 1: General requirements for systems.*

IEC 839-5-2: 1991, *Alarm systems - Part 5: Requirements for alarm transmission systems – Section 2: General requirements for equipment.*

3 Definitions

3.1 alarm transmission path: Connection between an individual alarm system and its associated alarm receiving centre.

3.2 dedicated alarm transmission path: Alarm transmission path which is continually available during the period of protection for the connection of an alarm system to its associated alarm receiving centre and which does not require switching or setting up prior to the transmission of individual alarm events.

NOTES

1 Some of the transmission equipment or lines may be shared with other alarm transmission paths or other services e.g. by use of multipoint or multiplex circuits or by superimposition.

2 Systems which include switching to select one of a number of alternative dedicated channels are acceptable.

4 General considerations

4.1 *Integrity*

The alarm transmission system shall assure the correct transmission of information by the use of verification techniques such as handshake, parity check, polynomial check, echo back or error detecting codes.

4.2 *Multiplexed systems*

If faults or deliberate interference on the transmission path from one alarm system cannot affect the performance of transmission paths from other alarm systems, the total number of transmission paths which may be connected will be limited by the system availability requirements.

If faults or deliberate interference on one transmission path can affect the performance of the others and prevent them from meeting the requirements of this section of IEC 839-5, the total number of transmission paths that may be connected will be limited by the application and the security requirements and should be given in the alarm system information.

4.3 *Superimposed systems using telephone lines*

The alarm system information is superimposed on a normal subscriber telephone line by means of a combining unit which allows the simultaneous transmission of both speech and alarm system information over the subscriber's line. At the local telephone exchange, the alarm system information is separated from the speech channel by means of the combining unit and is passed to the alarm signal receiver for onward transmission via a dedicated transmission path to an alarm receiving centre or a monitoring centre, either directly or via intermediate processors.

5 Requirements

5.1 *General*

The alarm transmission system shall be such that, except under alarm or fault conditions, a status signal is either transmitted continuously or on a regular basis from the supervised premises or results from regular interrogation by the remote centre in order to monitor the integrity of the alarm transmission system and to meet the requirements for fault reporting given in 5.3.

An alarm condition at the alarm system shall cause a change in the transmitted signal which shall give rise to an alarm output at the alarm receiving centre.

An alarm or fault output containing information identifying which alarm transmission paths are not available shall be given at the alarm receiving centre and/or at the monitoring centre when a fault in the alarm transmission system is detected.

Loss of communication from all or part of the alarm transmission system as a result of interference shall be detected and an alarm of fault output generated at the alarm receiving centre and/or at the monitoring centre.

No spurious alarm outputs shall occur when reception is restored to normal.

In the event of a fault in the first link of the alarm transmission system, a fault output shall be provided to alarm systems affected by the fault. In the event of a fault in any other part of the alarm transmission network, a fault output may be provided to alarm systems affected by the fault. The fault output shall meet the requirements of 4.2 of IEC 839-5-2.

5.2 *Shared communication channel*

5.2.1 *Multiplexed systems*

If signals from a number of alarm systems share common equipment or lines, each of the alarm transmission paths shall comply with the requirements of this section of IEC 839-5.

5.2.2 *Superimposed system using telephone lines*

The method of transmission used shall be such that use of the telephone channel does not prevent the alarm transmission system from meeting the requirements of 5.3.

It shall not be possible to interfere with the alarm transmission system by employing any other system sharing the same telephone line.

The transmitter and receiver equipment shall operate under normal voltage conditions, including the application of 70 V d.c. of either polarity, superimposed a.c. ringing signals of up to 120 V a.c. and signal tones of +10 dBm in the frequency band of 300 Hz to 3,4 kHz with no adverse effect on its performance.