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AS 3749.2—1990

(Basically in accordance with BS 6803.1-1987; BS 6803.2-1986;  
Draft IEC 839.10.1.1 + IEC 839.10.1.2)

Australian Standard®

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**Intruder alarm systems—Road  
vehicles**

**Part 2: Installation and  
maintenance**

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This Australian Standard was prepared by Committee EL/31, Intruder Alarm Equipment and Installation. It was approved on behalf of the Council of Standards Australia on 13 October 1989 and published on 9 February 1990.

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The following interests are represented on Committee EL/31:

Association of Burglary Insurance Surveyors, Australasia  
Australian Automobile Association  
Australian Electrical and Electronic Manufacturers Association  
Australian Federal Police  
Australian Security Industry Association  
Building Owners and Managers Association of Australia  
Confederation of Australian Industry  
Department of Administrative Services—Construction Group  
Department of Business and Consumer Affairs, N.S.W.  
Department of Defence  
Insurance Council of Australia  
Metal Trades Industry Association of Australia  
Police Department, N.S.W.  
Public Works Department, N.S.W.  
State Pollution Control Commission, N.S.W.  
Tasmania Police  
Telecom Australia  
Victoria Police  
Victorian Security Institute

Additional interests participating in preparation of this Standard:

Federal Chamber of Automotive Industries  
Manufacturing and retailing interests

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✓ First published as AS 3749.2—1990.

## PREFACE

This Standard was prepared by the Standards Australia Committee on Intruder Alarm Equipment and Installation. During the development of the Standard the Federal Chamber of Automotive Industries (FCAI), representing the manufacturers of motor vehicles, did not support the publication of the Standard in its final form and sought to have original equipment systems removed from its Scope.

The FCAI has expressed some concern that the minimum system requirements of this Standard may provide a higher level of security than is necessary for all types of road vehicles and may be too restrictive as to the choice of options available as a basis for setting the minimum system requirements. Also, FCAI has pointed out that interior movement detectors may be difficult to install and adjust in an original equipment fitment environment.

These concerns have been recognized, however the Committee believe that the minimum system requirements specified are necessary to achieve the purposes of this Standard. The Committee in reaching their conclusions, referenced British Standard BS 6803, *Vehicle security alarm systems, Part 1: Specification for systems installed as original vehicle equipment*, and Part 2: *Code of practice for systems installed after vehicle marketing*, as well as International Electrotechnical Commission Draft, IEC Publication 839, *Standard for transport alarm systems—General requirements (839-10-1-1) and Specific requirements for motor cars (839-10-1-2)*. This Standard is basically in accordance with BS 6803 and draft IEC Publication 839-

This Standard is Part 2 of a two part Standard, the parts of which are as follows:

Part 1: *Performance requirements*

Part 2: *Installation and maintenance* (this Standard)

This Standard details the installation and maintenance procedures for a variety of vehicle alarm systems with the intent of ensuring that systems meeting the performance requirements of Part 1 will be properly installed and maintained with a consequent reduction in false alarms and unwanted noise pollution.

It is desirable that alarm companies and their personnel be identified with a particular uniform and identification. Legislation in some States require installation and maintenance personnel to carry identification and be licensed for this type of work.

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# STANDARDS AUSTRALIA

## Australian Standard

### Intruder alarm systems—Road vehicles

#### Part 2: Installation and maintenance

## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This Standard sets out the requirements for the installation and maintenance of alarm systems in road vehicles to ensure that the alarm system performs according to the manufacturers' specification and unwanted alarms do not occur.

**1.2 APPLICATION.** This Standard applies to alarm systems whose equipment complies with AS 3749.1.

**1.3 REFERENCE DOCUMENTS.** The following documents are referred to in this Standard:

AS  
2218 Cables for use in automotive vehicles—PVC insulated cables having copper conductors

3749 Alarm systems—Road vehicles  
3749.1 Part 1: Performance requirements

SAE  
J 561 Electrical terminals—Eyelet and spade type

J 1211 Recommended environmental practices for electronic equipment design

AUSTRALIAN DESIGN RULES  
ADR 42/000 General safety requirements

**1.4 DEFINITIONS.** For the purpose of this Standard the definitions given in AS 3749.1 apply.

## SECTION 2. INSTALLATION

**2.1 GENERAL.** This Section provides details of the work and materials necessary to install the alarm system to give correct operation according to the manufacturer's instructions and to conform to required standards of workmanship.

The installation should be carried out only by persons having qualifications and experience suitable for the work on which they are engaged and should comply with Australian Design Rules ADR 42/000.

**2.1.1 System/component location.** The alarm system shall be located in accordance with the following:

- (a) The alarm equipment and associated wiring shall be mounted in accordance with the manufacturer's/supplier's instructions ensuring minimum exposure to heat generated by the engine exhaust systems.

NOTE: Most alarm systems are only protected against splashing water and care should be taken with an installation to minimize accidental entry of water into the system.

- (b) The alarm module shall not be readily accessible from outside the vehicle and shall be protected from accidental damage.

NOTE: If the alarm module is installed within the engine compartment, the module should conform to the higher temperature conditions as specified in SAE Standard J 1211.

### 2.2 WIRING.

**2.2.1 General.** Wiring shall comply with AS 2218 and the following:

- (a) The vehicle battery shall be disconnected before any changes are made to electrical connections on the vehicle.

NOTE: Care should be taken to consult the vehicle manufacturer's instructions before disconnecting the vehicle battery.

- (b) Conductors shall be stranded and shall be suitable for the voltage and current conditions specified by the manufacturer.
- (c) All wiring exposed in the engine compartment shall be sheathed in black automotive sheath or convoluted sheathing.
- (d) When wiring passes through any metal work, it shall be protected from damage by a suitably sized grommet and shall not use existing loom penetrations.
- (e) The outputs from the alarm system to blinkers or parking lights shall be fused so that in the event of a short circuit and a blown fuse, the other operations of the alarm system shall not be affected.
- (f) The alarm system main power fuse shall be installed as close as practical to the power source.
- (g) The completed loom shall be kept at a minimum of 25 mm from existing wiring looms. Where possible, the alarm wiring should cross an existing loom at 90 degrees. The ties used should be of sufficient strength to support the cable weight, should be placed every 150 mm and not overly tightened to cause the tie to break from flexing caused by the motion of the vehicle.

**2.2.2 Jointing.** All earth and power supply connections shall be machine crimped or soldered and

insulated, or bolted. All other connections shall be machine crimped or soldered, and insulated.

### 2.2.3 Terminations.

**2.2.3.1 Connecting facilities required.** Every detection device, power supply, accessory or apparatus shall be provided with terminals for the connection of conductors in one of the following forms:

- (a) Tunnel type. A clamping shoe shall be provided for every screw (see Clause 2.2.3.2).
  - (b) Clamping-screw or stud type. Conductors shall be secured by a screw or nut which clamps all strands of the conductor between metallic surfaces using an eyelet or spade type terminal. (See SAE J 561.)
  - (c) Crimped. Conductors shall be crimped in a ferrule of the correct size by a crimping tool of the appropriate size, which cannot be released until the crimp is completed, and which is suitable for the size of ferrule and conductor used. The finished joint shall be suitably insulated. Crimped joints shall be used only on stranded cables.
  - (d) Plugs and sockets. All plugs and sockets shall be keyed so that connection can be only in one position.
  - (e) Soldered joints. Incoming conductors shall be soldered to internal conductors, terminals, lugs or the like. This form of connection shall comply with the following requirements:
    - (i) Soldering terminals, lugs or the like shall be—
      - (A) designed so that the conductors are held in position independently of the soldering; and
      - (B) located and arranged so as to minimize the likelihood of insulation being bridged by excess solder and that essential insulation will not be damaged during soldering.
    - (ii) Joints shall be made using non-corrosive flux.
    - (iii) Finished joints shall be suitably insulated.
  - (f) Self-locking terminals or connectors. Terminals and connectors shall be of the correct size for the conductor(s) being terminated.
  - (g) Stranded conductors. Where stranded conductors are terminated in connectors designed for use with solid conductors, one of the following procedures shall be adopted:
    - (i) Conductors shall be tinned solid at the point of termination. The soldering shall not extend significantly beyond the length required for effective termination, nor shall it adversely affect the flexibility of the termination.
    - (ii) Conductors shall be fitted with a soldered or crimped ferrule of the correct size to suit both the conductor and the terminal/connector.
- 2.2.3.2 Terminals, design and construction.** Terminals shall be of copper or copper alloy and suitable for the application. Terminals shall be designed and proportioned so that a connection made will not slacken off or overheat under normal conditions of