

## Australian/New Zealand Standard™

### Connecting devices for low-voltage circuits for household and similar purposes

### Part 2.3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units



## **AS/NZS IEC 60998.2.3:2012**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-004, Electrical Accessories. It was approved on behalf of the Council of Standards Australia on 8 June 2012 and on behalf of the Council of Standards New Zealand on 8 June 2012.

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*This Standard was issued in draft form for comment as DR AS/NZS IEC 60998.2.3.*

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### **Connecting devices for low-voltage circuits for household and similar purposes**

### **Part 2.3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units**

Originated as AS/NZS 60998.2.3:1998.  
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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-004, Electrical Accessories to supersede AS/NZS 60998.2.3:1998, *Connecting devices for low-voltage circuits for household and similar purposes, Part 2.3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units*.

The objective of this Standard is to provide Australian and New Zealand electrical industries with general requirements for connecting devices with insulation piercing clamping units primarily suitable for connecting insulated unprepared conductors.

The essential safety requirements in AS/NZS 3820, *Essential safety requirements for electrical equipment* that could be applicable to connecting devices for low voltage circuits for households are covered by this Standard.

This Standard is identical with, and has been reproduced from IEC 60998-2-3, Ed. 2.0 (2002), *Connecting devices for low-voltage circuits for household and similar purposes—Part 2-3: Particular requirements for connecting devices as separate entities with insulation piercing clamping units* and its Corrigendum No.1 (2006) which has been incorporated into the source text. See the Foreword for guidance on how to use this Standard. Note that IEC 60998-1 has been adopted as AS/NZS IEC 60998.1.

As this Standard is reproduced from an International Standard, the following applies:

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- (b) A full point substitutes for a comma when referring to a decimal marker.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a standard, whereas an ‘informative’ annex is only for information and guidance.

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## FOREWORD

This Part 2-3 is intended to be used in conjunction with IEC 60998-1. It was established on the basis of the second edition (2002) of that standard.

It supplements or modifies the corresponding clauses in IEC 60998-1, so as to convert that publication into the IEC standard: *Particular requirements for connecting devices as separate entities with insulation piercing clamping units*.

Where a particular subclause of Part 1 is not mentioned in this Part 2-2, that subclause applies as far as is reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant requirements, test specification or explanatory matter in Part 1 should be adapted accordingly.

In this standard, the following print types are used:

- requirements proper: in roman type.
- *test specifications: in italic type.*
- explanatory matter: in smaller roman type.

The contents of the corrigendum of November 2006 have been included in this copy.

## AUSTRALIAN/NEW ZEALAND STANDARD

**Connecting devices for low-voltage circuits for household and similar purposes****Part 2.3:**

Particular requirements for connecting devices as separate entities with insulation-piercing clamping units

**1 Scope**

This clause of Part 1 is applicable except as follows:

*Addition:*

This standard applies to connecting devices with insulation piercing clamping units primarily suitable for connecting insulated unprepared conductors.

In the connecting operation the insulation of the conductor is pierced, bored through, cut through, removed, displaced or made ineffective in some other manner at the point or points of contact.

NOTE In the text of this standard, connecting devices with insulation piercing clamping units are referred to as IPCDs (insulation-piercing connecting devices).

**2 Normative references**

This clause of Part 1 is applicable except as follows:

*Addition:*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables*

**3 Definitions**

This clause of Part 1 is applicable except as follows:

*Additional definitions:***3.101****insulation-piercing connecting device****IPCD**

connecting device for the connection and possible disconnection of one conductor or the interconnection of two or more conductors, the connection being made by piercing, boring through, cutting through, removing, displacing or making ineffective in some other manner the insulation of the conductor(s) without previous stripping

NOTE 1 The removal of the sheath of the cable, if necessary, is not considered as a previous stripping.

NOTE 2 Examples of IPCDs are given in Figure 103.

**3.102****reusable IPCD**

IPCD that can be used more than once

**3.103****non reusable IPCD**

IPCD that can be used only once

**3.104****non-removable IPCD**

PCD that can be used only once and can only be removed from the circuit by cutting the conductors

**4 General**

This clause of Part 1 is applicable.

**5 General notes on tests**

This clause of Part 1 is applicable except as follows:

**5.3 Replacement:**

*The tests are carried out in the sequence listed for each set in Annex AA.*

**5.4 Replacement:**

*The necessary number of new samples to be submitted to the tests is divided into sets as detailed in annex AA and this standard is met if all tests are satisfied.*

**6 Main characteristics**

This clause of Part 1 is applicable.

**7 Classification**

This clause of Part 1 is applicable except as follows:

*Additional subclauses:*

**7.101 Classification according to reusability and removability**

- reusable IPCD;
- non-reusable IPCD;
- non-removable IPCD.

**7.102 Classification according to the method of making the connection**

- with a general purpose tool;
- with a special tool;
- by hand.

### 7.103 Classification according to conductor type

- IPCDs for rigid solid conductors only;
- IPCDs for rigid (solid or stranded) conductors only;
- IPCDs for flexible conductors only;
- IPCDs for rigid (solid and/or stranded) and flexible conductors.

### 7.104 Classification according to conductor insulation

- IPCDs for conductors according to IEC 60227;
- IPCDs for conductors according to IEC 60245;
- IPCDs for special conductors specified by the manufacturer.

### 7.105 Classification according to the number of cores in the conductor to be connected

- IPCDs for one core conductors;
- IPCDs for multicore cables or cords.

## 8 Marking

This clause of Part 1 is applicable except as follows:

*Additional subclauses:*

**8.101** The following shall be indicated on the smallest package unit:

- if the IPCD is non-reusable or non-removable (7.101) (absence of marking indicates the IPCD is reusable);
- the connection and disconnection procedure, if necessary (for example, screw torque values if higher than stated in Table 102);
- the combinations of cross-sectional areas and types of conductors according to the classification of 7.103, 7.104 and 7.105 for which the IPCD is designed (method of connection according to 7.102 if necessary).

The manufacturer shall describe the types of cable and of insulation suitable for his system if the contact pressure is being transmitted through this conductor insulation.

**8.102** IPCDs classified according to 7.103 shall be marked as follows:

- terminals declared for solid conductors with the letter(s) “s” or “sol”;
- terminals declared for rigid conductors with the letter “r”;
- terminals declared for flexible conductors with the letter “f”.
- terminals declared for rigid (solid and/or stranded) and flexible conductors need not be marked.

This marking shall appear where it is practical on the end product or on the smallest package unit or in technical information and/or catalogues.

## 9 Protection against electric shock

This clause of Part 1 is applicable.