

AS/NZS 4383.3:1996
IEC 1082-3:1993

AS/NZS 4383.3

Australian/New Zealand Standard®

**Preparation of documents used
in electrotechnology**

**Part 3: Connection diagrams,
tables and lists**

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AS/NZS 4383.3:1996

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE/13 on Symbols, Units and Quantities for Electrotechnology. It is issued as a Joint Standard to supersede various parts of AS 1103, *Diagrams, charts and tables for electrotechnology*.

The objective of this Standard is to provide those who use and develop electrotechnical diagrams with the rules for preparing connection diagrams and tables for the purpose of uniform and efficient presentation of information.

This Standard is identical with and has been reproduced from IEC 1082-3, *Preparation of documents used in electrotechnology, Part 3: Connection diagrams, tables and lists*.

Due to restructuring and extensions of the material in this series of Joint Standards, there is no exact correspondence between the parts of AS/NZS 4383 and those of AS 1103. The following gives an approximate indication:

AS/NZS 4383	Corresponding parts of AS 1103
Part 1	Parts 1 and 3, portions of parts 7 and 8
Part 2	Part 4, portions of parts 7 and 8
Part 3	Parts 5 and 6

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References to international Standards should be replaced by equivalent Australian or Australian/New Zealand Standards as follows:

Reference to International Standard or other Publications		Australian or Australian/New Zealand Standard	
IEC		AS	
445	Identification of equipment terminals and of terminations of certain designated conductors, including general rules for an alphanumeric system	—	
446	Identification of conductors by colours or numerals	—	
617-3	Graphical symbols for diagrams Part 3: Conductors and connecting devices	1102	Graphical symbols for electrotechnology
		1102.103	Part 103: Conductors and connecting devices
750	Item designation in electrotechnology	3702	Item designation in electrotechnology
757	Code for designations of colours—	—	

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IEC		AS/NZS	
1082	Preparation of documents used in electrotechnology	4383	Preparation of documents used in electrotechnology
1082-1	Part 1: General	4383.1	Part 1: General requirements
1082-2	Part 2: Function-oriented diagrams	4383.2	Part 2: Function-oriented diagrams

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Originated in part as AS 1103.5—1978.
 Previous editions AS 1103.5—1978 and AS 1103.6—1981.
 Revised, amalgamated and redesignated AS/NZS 4383.3:1996.

AUSTRALIAN/NEW ZEALAND STANDARD

Preparation of documents used in electrotechnology**Part 3:**
Connection diagrams, tables and lists**Section 1: General****1.1 Scope**

This International Standard provides rules for connection diagrams, tables and lists.

NOTE – According to IEC 1082-1, no difference between the terms *table* and *list* exists.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1082. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and the parties to agreements based on this part of IEC 1082 are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 445: 1988, *Identification of equipment terminals and of terminations of certain designated conductors, including general rules for an alphanumeric system*

IEC 446: 1989, *Identification of conductors by colours or numerals*

IEC 617-3: 1983, *Graphical symbols for diagrams – Part 3: Conductors and connecting devices*

IEC 750: 1983, *Item designation in electrotechnology*

IEC 757: 1983, *Code for designation of colours*

IEC 1082-1: 1991, *Preparation of documents used in electrotechnology – Part 1: General requirements*

IEC 1082-2: 1993, *Preparation of documents used in electrotechnology – Part 2: Function-oriented diagrams*

Section 2 - Common rules for connection diagrams, tables and lists

2.1 General

Connection documents provide information on physical connections among, for example, components, devices, assemblies, and installations. Connection documents are used when assembling, installing or maintaining equipment.

Connection documents shall include information identifying the connection points of each connection and the conductors or cables used to make the connections. In the case of terminal connection documents, only one end need be shown.

Other information may be included as needed or as appropriate, and shall be included to the extent that is required for the intended use of the document. The following types of information shall be considered for inclusion:

- conductor or cable type information (for example, a recognized type designation, catalogue or part number, material, construction, size, colour of insulation, voltage rating, number of conductors, other technical data);
- conductor or cable number or item designation;
- identification or representation of the connection points (for example, item and/or terminal designation, pictorial representations, remote end designation);
- instruction for, or methods of, laying, routing, termination, attachment, twisting, screening, etc.;
- length of conductor or cable;
- signal designation and/or technical data about the signal; and
- special classification or information.

For identification of conductors by means of colours or numerals, see IEC 446. Colour codes shall be in accordance with IEC 757. For identification of items, see IEC 750.

The information may be given in diagrammatic or tabular form, or a combination of these, provided clarity is maintained.

Connection documents shall be prepared in accordance with the rules in IEC 1082-1 and in accordance with the rules given in this Part of IEC 1082.

If any special convention is used, for example, to indicate methods for attachment or removal, it should be shown or referenced in the document or in supporting documents.

2.2 Connection diagrams

2.2.1 Layout

Connection diagrams should use topographical layout but need not be to scale.

2.2.2 Representation and identification of devices and terminals

Devices should be represented by simple outlines, such as squares, rectangles, or circles, or by simplified pictorial representations. Graphical symbols according to IEC 617 may also be used. Terminals shall be clearly indicated but symbols for terminals need not be shown unless special conditions require their depiction.

2.2.3 Representation and identification of conductors

Conductors shall be represented using one of the following methods:

- a) *Continuous line* - where continuous lines represent the actual conductors between terminals. See figure 1. Conductor groups, cables, cable bundles, etc. may be represented by a single line. See figure 3.

If a unit or installation contains several conductor groups, cables, cable bundles, etc., these may be separated from one another and designated by item designations. See figure 3, cable bundles -W1 and -W2.

- b) *Interrupted line* - where the lines representing the conductors are interrupted and provision is made for the association of the interrupted lines. See figure 2.

Symbols 03-02-04 and 03-02-05 in IEC 617 for a junction of conductors ('T-junction') shall not be used unless there is a physical junction.

Figure 4 shows a number of examples of how connections to various types of cables should be represented.

2.2.4 Matrix form

If there are a large number of connections to be shown in a small space, as for example for the connections in a rack or subassembly containing printed circuit boards, a matrix form of layout may be advantageous.

The symbols for the terminals to be connected shall be arranged in a grid format, and each shall be identified.

All of the terminal symbols for a single device shall be aligned vertically [horizontally] in a sequence that provides a clear presentation of the connection information. The sequence need not conform to the physical sequence of the terminals on the device.