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Australian Standard®

Electricity metering

Part 4: Socket mounting system



STANDARDS AUSTRALIA



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Australian Electrical and Electronic Manufacturers' Association
Confederation of Australia Industry
Electricity Supply Association of Australia

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Electricity metering

Part 4: Socket mounting system

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electricity Metering Equipment as a means of ensuring, by its use, that the various components of the socket mounting system produced by different manufacturers are directly interchangeable without any adverse effect.

Certain performance aspects of sockets are specified to ensure they are adequate for their intended purpose.

This Standard specifies all the requirements that are considered necessary for safety, performance, and interchangeability of components from different manufacturers. Details which would restrict design or innovation have not been included. However, detailed drawings of certain components shown herein are available, on request, from:

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AS

- 1284.1 Part 1: General purpose induction watthour meters
- 1284.2 Part 2: Portable alternating current rotating standard watthour meters
- 1284.3 Part 3: Induction watthour meters—Energy demand type
- 1284.4 Part 4: Socket mounting system (this Standard)

Other Parts of AS 1284 are being drafted.

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FOREWORD

The socket mounting system for single-element electricity meters specified herein was developed in Australia in the mid-1970s. It was based on the North American plug-in system of the 1930s. (That system is complicated by the three-wire 120 V-0-120 V supply system and the need for two-element meters.)

The basic design involves a single-element meter with three blades, and a socket with three jaws, A, N, L; the heavy current jaws (A and L) are arranged at an angle of 90° to each other in order to facilitate self-alignment of the blades and to avoid the application of torque to the current coil of the meter during insertion.

The positions of the three jaws are staggered in order that disconnection of supply through a direct-connected meter may be carried out simply and safely by removing and reinstalling the meter 90° anticlockwise from its normal position and resealing the installation, all without touching the associated circuit wiring. No meter can be inserted 'upside-down' or in any position other than 'normal' or 'disconnected'. Staggering of jaws also facilitates factory connection of multiple sockets with surface sealed busbars, thereby achieving a significant reduction in space and in installation cost. The system allows for surface connection or back connection of wiring according to requirements.

Two additional jaws are provided to allow the system to accept current transformer-operated meters and meters with two-rate (mechanical changeover) registers. Bridging facilities are provided for a shorting bridge for use in changing a meter without interrupting supply (or open-circuiting a current transformer).

The same jaw arrangement will also accept other devices for metering and load control purposes. A load control socket can be located adjacent to a meter socket and the two conveniently interconnected. The system is rated at 500 V, 125 A, and is thus capable of accommodating all likely requirements: above 100 A or 125 A, CT metering is employed; above 500 V, VT (and CT) metering is employed.

STANDARDS AUSTRALIA

Australian Standard Electricity metering

Part 4: Socket mounting system

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies safety, performance and interchangeability requirements for sockets, rated 500 V, 125 A, for plug-in devices, for retaining covers, and for blanking plates. This Standard also specifies standard connection arrangements (see Appendix A), and standard arrangements for multiple sockets (see Appendix B).

NOTES:

- 1 Where a socket is to be used with a device rated at more than 100 A, the socket should be wired with a minimum of 35 mm² copper cable to terminals A and L.
- 2 To facilitate the specification and purchase of sockets and other components, the Standard lists information which should be supplied with enquiry and order (see Appendix C).

1.2 APPLICATION This Standard is intended to be read in conjunction with AS 134.1.

1.3 REFERENCED DOCUMENTS The documents referred to in this Standard are listed in Appendix D.

1.4 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.4.1 Blanking plate—a component intended to prevent access to live parts of a socket in the absence of any plug-in device, and held by a retaining cover.

1.4.2 Dust membrane—a component of a socket intended to provide protection against ingress of dust to a socket pending installation of a plug-in device or blanking plate.

1.4.3 Plug-in base—the base of a device fitted with contact blades and intended for insertion in a socket.

1.4.4 Plug-in device—a watt-hour meter or control device having a plug-in base.

1.4.5 Retaining cover—a component for retaining a plug-in device in a socket.

1.4.6 Safety plate—a component of a socket intended to provide protection of the fingers of a person installing a plug-in device in a live socket.

1.4.7 Socket—a device for fixing at the metering location of an electrical installation, having jaws intended for making a detachable connection with the blades of a plug-in meter or plug-in load control device.

1.4.8 Socket housing assembly—socket without its safety plate and dust membrane.