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Australian Standard®

Electricity metering

Part 10.1: Data exchange for meter reading, tariff and load control—Direct local data exchange via hand-held unit (HHU)—IEC Standard interface

IEC title: Data exchange for meter reading, tariff and load control—Direct local data exchange

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electricity Metering Equipment. It is identical with and has been reproduced from IEC 1107:1992, *Data exchange for meter reading, tariff and load control—Direct local data exchange*, however corrections to the IEC printed text have been made where indicated by marginal bars.

This Standard is Part 10.1 of AS 1284, *Electricity metering*, which is published in Parts as follows:

Part 1: General purpose induction watthour meters
Part 2: Portable alternating current rotating standard watthour meters
Part 3: Induction watthour meters—Energy demand type
Part 4: Socket mounting system
Part 5: General purpose electronic watthour meters
Part 6: Ripple control receivers for tariff and load control
Part 9: Electronic watthour meters (Classes 0.2 S and 0.5 S)
Part 10.1: Data exchange for meter reading, tariff and load control—Direct local data exchange via hand-held unit (HHU)—IEC Standard interface
Part 10.2: Data exchange for meter reading, tariff and load control—Direct local data exchange via hand-held unit (HHU)—ANSI Standard interface

Other Parts are in course of preparation.

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For the purposes of this Australian Standard, the IEC text should be modified as follows:

(i) *Decimal marker* Substitute a full point for a comma as a decimal marker.

(ii) *References* Replace references to other publications by references to Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
646	Information processing—ISO 7-bit coded character set for information interchange	1776	Information processing—7-bit coded character set for information interchange
1155	Information processing—Use of longitudinal parity to detect errors in information messages	2742	Information processing—Use of longitudinal parity to detect errors in information messages
1177	Information processing—Character structure for start/stop and synchronous character-oriented transmission	2825	Information processing—Character structure for start/stop and synchronous character-oriented transmission
1745	Information processing—Basic mode control procedures for data communication systems	2749	Information processing—Basic mode control procedures for data communication systems
7480	Information processing—Start/stop transmission signal quality at DTE/DCE interfaces	3618	Information processing—Start/stop transmission signal quality at DTE/DCE interfaces

7498	Information processing systems—Open Systems Interconnection—Basic reference model	2777	Information processing systems—Open Systems Interconnection—Basic reference model

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FOREWORD

This International Standard has been established by Working Group No. 14: Data exchange for meter reading, tariff and load control of Technical Committee No. 13: Equipment for electrical energy measurement and load control.

The Working Group has the task of establishing standards, by reference to ISO Standards, necessary for data exchanges by different communication media, for automatic meter reading, tariff and load control, consumer information.

The media can be either distribution line carrier, telephone (including ISDN), radio or other electrical or optical systems and they may be used for local or remote data exchanges.

Meter reading and programming may be performed manually by a meter reader, or supported by means of a local communication system, or automatically by means of a remote communication system. Manual meter reading that means the reader has access the meter, and reads each register while "supported" meter reading implies the use of a communication system or a local bus system and a hand-held unit (HHU). Fully automatic meter reading implies a remote communication system such as those involving distribution line carrier or telephone systems.

This International Standard describes a method for direct local data exchange, where the tariff device is read and programmed using a hand-held unit directly connected to the meter.

STANDARDS AUSTRALIA

Australian Standard
Electricity metering

Part 10.1: Data exchange for meter reading, tariff and load control— Direct local data exchange via hand-held unit (HHU)— IEC Standard interface

1 General

1.1 *Scope and object*

This International Standard presents hardware and protocol specifications for local systems, while specifications for a remote system falls within the scope of another document.

This standard deals with direct local systems, in which the hand-held unit (HHU) is connected to one tariff device only at a time. Connection can be permanent or disconnectable through an electrical or optical coupling. The protocol took as its basis the basic reference model for communication between open systems (OSI).

Considering the fact that several systems are in practical use already, particular care was taken to maintain compatibility with existing systems and/or system components and their relevant protocols.

The protocol permits the reading and programming of tariff devices. It has been designed to be particularly suitable for the environment of electricity metering, especially as regards electrical isolation, and software security. While the protocol is well-defined, its use and application is left to the user.

This standard prescribes the hardware and software preconditions which permit an exchange of data between a tariff device and an HHU. The connection to the HHU may be either permanent or disconnectable. Electrical as well as optical couplers are possible. An electrical contact is recommended for use with a fixed connection. The optical coupler should be easily disconnectable to enable data collection via an HHU. This standard incorporates parts of ISO 7498, augmented by further conditions concerning, for example, an optical interface, protocol controlled baud rate switchover and data transmission without acknowledgment of receipt. The preparatory work took as its basis the reference model for communication in open systems ISO 7498.

1.2 *Normative references*

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard 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 Standard.