

Australian Standard™

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**Industrial automation systems  
and integration—Product data  
representation and exchange**

**Part 11: Description methods:  
The EXPRESS language reference  
manual**

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This Australian Standard was prepared by Committee IT/6, Information Technology for Industrial Automation and Integration. It was approved on behalf of the Council of Standards Australia on 16 June 1998 and published on 5 September 1998.

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First published as AS 10303.11—1998.

## PREFACE

This Standard was prepared by Standards Australia Committee IT/6, Information Technology for Industrial Automation and Integration. The Standard is the result of a consensus among the representatives on the Committee that it be produced as an Australian Standard. It is identical with and has been reproduced from ISO 10303-11:1994, *Industrial automation systems and integration—Product data representation and exchange, Part 11: Description methods: The EXPRESS language reference manual*.

The objective of this Standard is to provide users of integrated automation systems with a specification of the EXPRESS language which is a formal information requirements specifications language.

This Standard is Part 11 of AS 10303, *Industrial automation systems and integration—Product data representation and exchange*, which is published in Parts as follows:

- Part 1: Overview and fundamental principles
- Part 11: Description methods: The EXPRESS language reference manual (this Standard)
- Part 21: Implementation methods: Clear text encoding of the exchange structure
- Part 31: Conformance testing methodology and framework: General concepts
- Part 41: Integrated generic resources: Fundamentals of product description and support
- Part 42: Integrated generic resources: Geometric and topological representation
- Part 43: Integrated generic resources: Representation structures
- Part 44: Integrated generic resources: Product structure configuration
- Part 46: Integrated generic resources: Visual presentation
- Part 101: Integrated application resources: Draughting
- Part 201: Application protocol: Explicit draughting
- Part 203: Application protocol: Configuration controlled design

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10303-1 Part 1: Overview and fundamental principles	10303.1 Part 1: Overview and fundamental principles

ISO/IEC	AS/NZS
8824	Information technology— Open Systems Interconnection— Abstract Syntax Notation One (ASN.1)
8824-1	Part 1: Specification of Basic Notation —
10646	Information technology—Universal multiple-octet coded character set (UCS)
10646-1	Part 1: Architecture and basic multilingual plane
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## AUSTRALIAN STANDARD

# Industrial automation systems and integration — Product data representation and exchange — Part 11 : Description methods: The EXPRESS language reference manual

## 1 Scope

This part of ISO 10303 defines a language by which aspects of product data can be specified. The language is called *EXPRESS*.

This part of ISO 10303 also defines a graphical representation for a subset of the constructs in the *EXPRESS* language. This graphical representation is called *EXPRESS-G*.

*EXPRESS* is a data specification language as defined in ISO 10303-1. It consists of language elements which allow an unambiguous data definition and specification of constraints on the data defined.

The following are within the scope:

- data types;
- constraints on instances of the data types.

The following are outside the scope of this part of ISO 10303:

- definition of database formats;
- definition of file formats;
- definition of transfer formats;
- process control;
- information processing;
- exception handling.

*EXPRESS* is not a programming language.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10303. At the time of publication, the editions indicated were