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Adjustable speed electrical power drive systems - Part 7-302: Generic interface and use of profiles for power drive systems - Mapping of profile type 2 to network technologies (IEC 61800-7-302:2007)

iTeh STANDARD PREVIEW
 Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl - Teil 7-302:
 Generisches Interface und Nutzung von Profilen für Leistungsantriebssysteme (PDS) -
 Abbildung von Profil-Typ 2 auf Netzwerktechnologien (IEC 61800-7-302:2007)

SIST EN 61800-7-302:2008

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Entraînements électriques de puissance à vitesse variable. Partie 7-302: Interface et utilisation génériques de profils pour les entraînements électriques de puissance - Mapping des profils de type 2 pour technologies réseaux (CEI 61800-7-302:2007)

Ta slovenski standard je istoveten z: EN 61800-7-302:2008

ICS:

29.200	W{ ^ } ã äU^c[] ã Ë Ùcãã äã [Á^ dã] } ã äã ð	Rectifiers. Convertors. Stabilized power supply
35.100.05	X^ • [ð^Á] [ãä] ã\ ^ ^zã^	Multilayer applications

SIST EN 61800-7-302:2008

en

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Part 7-302: Generic interface and use of profiles for power drive systems -
Mapping of profile type 2 to network technologies
(IEC 61800-7-302:2007)**

Entraînements électriques de puissance
à vitesse variable -
Partie 7-302: Interface et utilisation
génériques de profils
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Mapping des profils de type 2
pour technologies réseaux
(CEI 61800-7-302:2007)

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mit einstellbarer Drehzahl -
Teil 7-302: Generisches Interface
und Nutzung von Profilen
für Leistungsantriebssysteme (PDS) -
Abbildung von Profil-Typ 2
auf Netzwerktechnologien
(IEC 61800-7-302:2007)

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This European Standard was approved by CENELEC on 2008-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 22G/185/FDIS, future edition 1 of IEC 61800-7-302, prepared by SC 22G, Adjustable speed electric drive systems incorporating semiconductor power converters, of IEC TC 22, Power electronic systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61800-7-302 on 2008-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2008-11-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-02-01

The International Electrotechnical Commission (IEC) and CENELEC draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning:

Publication/ Application serial number	Holder	Title
US 11/241,539	[RA]	Time Stamped Motion Control Network Protocol That Enables Balanced Single Cycle Timing and Utilization of Dynamic Data Structures

The IEC and CENELEC take no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the IEC. Information may be obtained from:

[RA] Rockwell Automation, Inc.
1201 S. Second Street
Milwaukee, WI 53204
USA
Attention: Intellectual Property Dept.

<https://standards.iteh.ai/catalog/standards/sist/ea5f2267-3c24-440c-a567-bb0a42fd5e43/sist-en-61800-7-302-2008>

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Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61800-7-302:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61158-2	NOTE	Harmonized as EN 61158-2:2008 (not modified).
IEC 61158-3-2	NOTE	Harmonized as EN 61158-3-2:2008 (not modified).
IEC 61499-1	NOTE	Harmonized as EN 61499-1:2005 (not modified).
IEC 61784-1	NOTE	Harmonized as EN 61784-1:2008 (not modified).
IEC 61784-2	NOTE	Harmonized as EN 61784-2:2008 (not modified).
IEC 61800	NOTE	Harmonized in EN 61800 series (not modified).
IEC 61800-7-1	NOTE	Harmonized as EN 61800-7-1:2008 (not modified).
IEC 61800-7-201	NOTE	Harmonized as EN 61800-7-201:2008 (not modified).
IEC 61800-7-203	NOTE	Harmonized as EN 61800-7-203:2008 (not modified).
IEC 61800-7-204	NOTE	Harmonized as EN 61800-7-204:2008 (not modified).
IEC 61800-7-301	NOTE	Harmonized as EN 61800-7-301:2008 (not modified).
IEC 61800-7-303	NOTE	Harmonized as EN 61800-7-303:2008 (not modified).
IEC 61800-7-304	NOTE	Harmonized as EN 61800-7-304:2008 (not modified).

[SIST EN 61800-7-302:2008](https://standards.iteh.ai/catalog/standards/sist/ea5f2267-3c24-440c-a567-bb0a42fd5e43/sist-en-61800-7-302-2008)
<https://standards.iteh.ai/catalog/standards/sist/ea5f2267-3c24-440c-a567-bb0a42fd5e43/sist-en-61800-7-302-2008>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61158-4-2	- ¹⁾	Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements	EN 61158-4-2	2008 ²⁾
IEC 61158-5-2	- ¹⁾	Industrial communication networks - Fieldbus specifications - Part 5-2: Application layer service definition - Type 2 elements	EN 61158-5-2	2008 ²⁾
IEC 61158-6-2	- ¹⁾	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	EN 61158-6-2	2008 ²⁾
IEC 61588	2004	Precision clock synchronization protocol for networked measurement and control systems	-	-
IEC 61800-7	Series	Adjustable speed electrical power drive systems - Part 7: Generic interface and use of profiles for power drive systems	EN 61800-7	Series
IEC 61800-7-202	2007	Adjustable speed electrical power drive systems - Part 7-202: Generic interface and use of profiles for power drive systems - Profile type 2 specification	EN 61800-7-202	2008 ²⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.



IEC 61800-7-302

Edition 1.0 2007-11

INTERNATIONAL STANDARD

**Adjustable speed electrical power drive systems –
Part 7-302: Generic interface and use of profiles for power drive systems –
Mapping of profile type 2 to network technologies**

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	9
2 Normative references	9
3 Terms, definitions and abbreviated terms	10
3.1 Terms and definitions	10
3.2 Abbreviated terms	15
4 Principles for mapping CIP Motion™	15
4.1 General principles for mapping CIP Motion™	15
4.2 Mapping CIP Motion™	16
4.3 Data types	17
4.4 I/O connection interface	17
4.4.1 General	17
4.4.2 I/O connection formats	17
4.4.3 Fixed I/O connection format.....	18
4.4.4 Variable I/O connection format	19
5 Mapping to DeviceNet™	21
5.1 Adaptation of the device model	21
5.2 Use of I/O data formats	22
6 Mapping to ControlNet™	23
6.1 Adaptation of the device model	23
6.2 Use of I/O data formats	24
7 Mapping to EtherNet/IP™	24
7.1 Adaptation of the device model	24
7.2 Use of I/O data formats	26
Bibliography.....	27
Figure 1 – Structure of IEC 61800-7.....	8
Figure 2 – Overview of CIP-based networks.....	16
Figure 3 – Connection Header	17
Figure 4 – Connection Format.....	18
Figure 5 – Fixed Controller to Device I/O Connection Format (fixed size = 16 bytes)	19
Figure 6 – Fixed Device to Controller I/O Connection Format (fixed size = 16 bytes)	19
Figure 7 – Controller-to-Device I/O connection format (variable size).....	20
Figure 8 – Device-to-Controller I/O connection format (variable size).....	21
Figure 9 – Object Model for a CIP Motion drive on DeviceNet	22
Figure 10 – Object Model for a CIP Motion drive on ControlNet	23
Figure 11 – Object Model for a CIP Motion drive on EtherNet/IP	25
Table 1 – Data types.....	17
Table 2 – Object classes for a CIP Motion drive device type on DeviceNet	22
Table 3 – Object classes for a CIP Motion drive device type on ControlNet.....	24

Table 4 – Object classes for a CIP Motion drive device type on EtherNet/IP	25
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS –

**Part 7-302: Generic interface and use
of profiles for power drive systems –
Mapping of profile type 2 to network technologies**

FOREWORD

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[RA]	Rockwell Automation, Inc. 1201 S. Second Street Milwaukee, WI 53204 USA Attention: Intellectual Property Dept.
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The International Standard IEC 61800-7-302 has been prepared by subcommittee SC 22G: Adjustable speed electric drive systems incorporating semiconductor power converters, of IEC technical committee TC 22: Power electronic systems and equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
22G/185/FDIS	22G/193/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61800 series, under the general title *Adjustable speed electrical power drive systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

The IEC 61800 series is intended to provide a common set of specifications for adjustable speed electrical power drive systems.

IEC 61800-7 describes a generic interface between control systems and power drive systems. This interface can be embedded in the control system. The control system itself can also be located in the drive (sometimes known as "smart drive" or "intelligent drive").

A variety of physical interfaces is available (analogue and digital inputs and outputs, serial and parallel interfaces, fieldbuses and networks). Profiles based on specific physical interfaces are already defined for some application areas (e.g. motion control) and some device classes (e.g. standard drives, positioner). The implementations of the associated drivers and application programmers interfaces are proprietary and vary widely.

IEC 61800-7 defines a set of common drive control functions, parameters, and state machines or description of sequences of operation to be mapped to the drive profiles.

IEC 61800-7 provides a way to access functions and data of a drive that is independent of the used drive profile and communication interface. The objective is a common drive model with generic functions and objects suitable to be mapped on different communication interfaces. This makes it possible to provide common implementations of motion control (or velocity control or drive control applications) in controllers without any specific knowledge of the drive implementation.

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There are several reasons to define a generic interface:

For a drive device manufacturer

- Less effort to support system integrators
- Less effort to describe drive functions because of common terminology
- The selection of drives does not depend on availability of specific support

For a control device manufacturer

- No influence of bus technology
- Easy device integration
- Independent of a drive supplier

For a system integrator

- Less integration effort for devices
- Only one understandable way of modeling
- Independent of bus technology

Much effort is needed to design a motion control application with several different drives and a specific control system. The tasks to implement the system software and to understand the functional description of the individual components may exhaust the project resources. In some cases, the drives do not share the same physical interface. Some control devices just support a single interface which will not be supported by a specific drive. On the other hand, the functions and data structures are often specified with incompatibilities. This requires the system integrator to write special interfaces for the application software and this should not be his responsibility.

Some applications need device exchangeability or integration of new devices in an existing configuration. They are faced with different incompatible solutions. The efforts to adopt a solution to a drive profile and to manufacturer specific extensions may be unacceptable. This will reduce the degree of freedom to select a device best suited for this application to the selection of the unit which will be available for a specific physical interface and supported by the controller.