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Entwurf

Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl – Teil 7-204: Generisches Interface und Nutzung von Profilen für Leistungsantriebssysteme (PDS) – Spezifikation von Profil-Typ 4 (IEC 22G/271/CDV:2014); Englische Fassung FprEN 61800-7-204:2014

Adjustable speed electrical power drive systems –
Part 7-204: Generic interface and use of profiles for power drive systems –
Profile type 4 specification
(IEC 22G/271/CDV:2014);
English version FprEN 61800-7-204:2014

Entraînements électriques de puissance à vitesse variable –
Partie 7-204: Interface générique et utilisation de profils pour les entraînements électriques de puissance – Spécification du profil de type 4
(CEI 22G/271/CDV:2014);
Version anglaise FprEN 61800-7-204:2014

Anwendungswarnvermerk

Dieser Norm-Entwurf mit Erscheinungsdatum 2015-01-23 wird der Öffentlichkeit zur Prüfung und Stellungnahme vorgelegt.

Weil die beabsichtigte Norm von der vorliegenden Fassung abweichen kann, ist die Anwendung dieses Entwurfes besonders zu vereinbaren.

Stellungnahmen werden erbeten

- vorzugsweise online im Norm-Entwurfs-Portal des DIN unter www.entwuerfe.din.de bzw. für Norm-Entwürfe der DKE auch im Norm-Entwurfs-Portal der DKE unter www.entwuerfe.normenbibliothek.de, sofern dort wiedergegeben;
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- oder in Papierform an die DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE, Stresemannallee 15, 60596 Frankfurt am Main.

Die Empfänger dieses Norm-Entwurfs werden gebeten, mit ihren Kommentaren jegliche relevanten Patentrechte, die sie kennen, mitzuteilen und unterstützende Dokumentationen zur Verfügung zu stellen.

Gesamtumfang 339 Seiten

DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE

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Nationales Vorwort

Die Englische Fassung des europäischen Dokuments FprEN 61800-7-204:2014 „Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl – Teil 7-204: Generisches Interface und Nutzung von Profilen für Leistungsantriebssysteme (PDS) – Spezifikation von Profil-Typ 4“ (Entwurf in der Umfrage) ist unverändert in diesen Norm-Entwurf übernommen worden.

Die Internationale Elektrotechnische Kommission (IEC) und das Europäische Komitee für Elektrotechnische Normung (CENELEC) haben vereinbart, dass ein auf IEC-Ebene erarbeiteter Entwurf für eine Internationale Norm zeitgleich (parallel) bei IEC und CENELEC zur Umfrage (CDV-Stadium) und Abstimmung als FDIS (en: Final Draft International Standard) bzw. Schluss-Entwurf für eine Europäische Norm gestellt wird, um eine Beschleunigung und Straffung der Normungsarbeit zu erreichen. Dem entsprechend ist das internationale Dokument IEC 22G/271/CDV:2014 „Adjustable speed electrical power drive systems – Part 7-204: Generic interface and use of profiles for power drive systems – Profile type 4 specification“ unverändert in den Entwurf FprEN 61800-7-204:2014 übernommen worden.

Das internationale Dokument wurde vom SC 22G „Adjustable speed electric drive systems incorporating semiconductor power converters“ der Internationalen Elektrotechnischen Kommission (IEC) erarbeitet.

Bei der Abstimmung zu dem Europäischen Schluss-Entwurf bei CENELEC und dem Internationalen Schluss-Entwurf bei IEC [Final Draft International Standard (FDIS)] sind jeweils nur „JA/NEIN“-Entscheidungen möglich, wobei „NEIN“-Entscheidungen fundiert begründet werden müssen. Dokumente, die bei CENELEC als Europäische Norm angenommen und ratifiziert werden, sind unverändert als Deutsche Normen zu übernehmen.

Für dieses Dokument ist das nationale Arbeitsgremium K 226 „Ausrüstung von Starkstromgeräten und -anlagen mit elektronischen Betriebsmitteln“ der DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE (www.dke.de) zuständig.

Für den Fall einer undatierten Verweisung im normativen Text (Verweisung auf eine Norm ohne Angabe des Ausgabedatums und ohne Hinweis auf eine Abschnittsnummer, eine Tabelle, ein Bild usw.) bezieht sich die Verweisung auf die jeweils neueste gültige Ausgabe der in Bezug genommenen Norm.

Für den Fall einer datierten Verweisung im normativen Text bezieht sich die Verweisung immer auf die in Bezug genommene Ausgabe der Norm.

Der Zusammenhang der zitierten Normen mit den entsprechenden Deutschen Normen ergibt sich, soweit ein Zusammenhang besteht, grundsätzlich über die Nummer der entsprechenden IEC-Publikation. Beispiel: IEC 60068 ist als EN 60068 als Europäische Norm durch CENELEC übernommen und als DIN EN 60068 ins Deutsche Normenwerk aufgenommen.

Das Präsidium des DIN hat mit Präsidialbeschluss 1/2004 festgelegt, dass DIN-Normen, deren Inhalt sich auf internationale Arbeitsergebnisse der Informationsverarbeitung gründet, unter bestimmten Bedingungen allein in englischer Sprache veröffentlicht werden dürfen. Diese Bedingungen sind für die vorliegende Norm erfüllt.

Da sich die Benutzer des vorliegenden Normentwurfs der englischen Sprache als Fachsprache bedienen, wird die englische Fassung der FprEN 61800-7-204 veröffentlicht. Zu deren Abschnitt 1, der den Anwendungsbereich festlegt, und deren Abschnitt 3, der die Begriffe festlegt, wurde eine Übersetzung angefertigt und als informativer Nationaler Anhang NA des vorliegenden Normentwurfs hinzugefügt. Für viele der verwendeten Begriffe existieren keine gebräuchlichen deutschen Benennungen, da sich die deutschen Anwender in der Regel ebenfalls der englischen Benennungen bedienen. Dieser Normentwurf steht nicht in unmittelbarem Zusammenhang mit Rechtsvorschriften und ist nicht als Sicherheitsnorm anzusehen.

Es ist vorgesehen, auch bei der entsprechenden zukünftigen Deutschen Norm auf die deutsche Sprachfassung zu verzichten und diese in der englischsprachigen Fassung zu veröffentlichen.

Es wird auf die Möglichkeit hingewiesen, dass einige Elemente dieses Dokuments Patentrechte berühren können. ISO [und/oder] IEC sind nicht dafür verantwortlich, einige oder alle diesbezüglichen Patentrechte zu identifizieren.

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Das Original-Dokument enthält Bilder in Farbe, die in der Papierversion in einer Graustufen-Darstellung wiedergegeben werden. Elektronische Versionen dieses Dokuments enthalten die Bilder in der originalen Farbdarstellung.

Änderungen

Gegenüber DIN EN 61800-7-204:2008-11 wurden folgende Änderungen vorgenommen:

a) Aktualisierung der Antriebsparameter und deren Spezifikationen;

b) redaktionelle Überarbeitung des gesamten Dokumentes.

Nationaler Anhang NA
(informativ)

Die deutschen Übersetzungen haben Empfehlungscharakter und können nur die ungefähre Begrifflichkeit in Deutsch wiedergeben. Unter Experten wird empfohlen, ausschließlich die englischen Fachbegriffe zu verwenden, um die Gefahr von Missverständnissen zu reduzieren.

1 Anwendungsbereich

IEC 61800-7 beschreibt Profile für Leistungsantriebssysteme (en: Power Drive Systems, PDS) und ihre Abbildung auf bestehende Kommunikationssysteme unter Verwendung eines generischen Schnittstellen-modells.

Es ist nicht Zweck der in diesem Teil der IEC 61800-7 beschriebenen Funktionen, funktionale Sicherheit zu gewährleisten. Dies erfordert zusätzliche Maßnahmen nach den maßgeblichen Normen, Vereinbarungen und Gesetzen.

Dieser Teil der IEC 61800-7 beschreibt den Profil-Typ 4 für Leistungsantriebssysteme (PDS. Profil-Typ 4 kann auf verschiedene Technologien für Kommunikationsnetzwerke abgebildet werden.

3 Begriffe und Abkürzungen

3.1 Begriffe

Für die Anwendung dieses Dokuments gelten die folgenden Begriffe.

3.2
Bestätigungstelegramm
(en: acknowledge telegram, AT)
Telegramm, in das jeder Slave seine Daten einfügt

3.3
Istwert
(en: actual value)
Wert einer variablen Größe zu einem gegebenen Zeitpunkt

Anmerkung 1 zum Begriff: Istwerte oder Ist-Größen werden in diesem Teil der Reihe IEC 61800-7 als Eingangsdaten des Programms zur Steuerung der Anwendung verwendet, um Rückführgrößen oder andere Prozessgrößen des PDS zu überwachen.

[Quelle: IEV 351-21-02]

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3.4
Anwendung
(en: application)
funktionales Element der Software, spezifisch für die Problemlösung beim Messen und Steuern in industriellen Prozessen

Anmerkung 1 zum Begriff: Eine Anwendung kann über Ressourcen verteilt sein und kann mit anderen Anwendungen kommunizieren.

[Quelle: IEC/TR 62390:2005, 3.1.2, modifiziert]

3.5
Attribut
(en: attribute)
Eigenschaft oder Charakteristik einer Einheit

[Quelle: IEC/TR 62390:2005, 3.1.3]

3.6
Klasse
(en: class)
Beschreibung einer Menge von Objekten, die dieselben Attribute, Operationen, Methoden, Beziehungen und Bedeutungen haben

[Quelle: ISO/IEC 19501, modifiziert]

3.7
Befehle
(en: commands)
Menge an Befehlen von dem Programm zur Steuerung der Anwendung an das PDS, um das Verhalten des PDS oder der funktionalen Elemente des PDS zu steuern

Anmerkung 1 zum Begriff: Das Verhalten wird durch Zustände oder Betriebsarten wiedergegeben.

Anmerkung 2 zum Begriff: Die verschiedenen Befehle können jeweils durch ein Bit dargestellt werden.

3.8
Kommunikationszyklus
(en: communication cycle)
Ansammlung aller Telegramme zwischen zwei Master-Synchronisationstelegrammen

3.9
Leiten
(en: control)
zweckmäßige Maßnahmen an oder in einem Prozess, um vorgegebene Ziele zu erreichen

[Quelle: IEV 351-21-29]

3.10
Steuergerät
(en: control device)
physikalische Einheit, die – innerhalb eines Moduls/einer Baugruppe oder eines Gerätes – ein Anwendungsprogramm zur Steuerung des PDS enthält

3.11
Steuereinheit
(en: control unit)
Steuergerät (en: control device)

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3.12
Steuerwort
(en: control word)
zwei benachbarte Bytes im Master-Datentelegramm, die Befehle für den adressierten Antrieb enthalten

3.13
Zykluszeit
(en: cycle time)
Zeitspanne zwischen zwei aufeinanderfolgenden zyklisch auftretenden Ereignissen

3.14
zyklische Daten
(en: cyclic data)
Teil des Datensatzes, dessen Bedeutung sich während einer zyklischen Operation der Schnittstelle nicht ändert

3.15
zyklische Operation
(en: cyclic operation)
Geräte im Kommunikationsnetzwerk werden nacheinander zu feststehenden, konstanten Zeitintervallen adressiert und abgefragt

3.16
Datenaustausch
(en: data exchange)
bedarfsabhängig; nicht zyklische Übertragung (Dienstkanal); Übertragung von Informationen, nachdem eine Anforderung durch den Master gesendet wurde

3.17
Datentyp
(en: data type)
Menge von Werten mit einer Menge zulässiger Operationen

[Quelle: ISO/IEC 2382-15:1999, 15.04.01, modifiziert]

3.18
Gerät
(en: device)
Feldgerät
vernetzte unabhängige physikalische Einheit eines industriellen Automatisierungssystems, die fähig ist, spezifische Funktionen in einem bestimmten Kontext auszuführen und die durch ihre Schnittstellen begrenzt ist

[Quelle: IEC 61499-1:2005, 3.30, modifiziert]

Einheit, die Steuerungs- und Regelfunktionen sowie Aktor- und/oder Sensorfunktionen ausführt und Schnittstellen zu anderen derartigen Einheiten innerhalb eines Automatisierungssystems hat

[Quelle: ISO 15745-1:2003, 3.11]

3.19
Geräteprofil
(en: device profile)
Darstellung eines Gerätes bezüglich seiner Parameter, seiner Parametergruppen und seines Verhaltens nach einem Gerätemodell, das die Daten und das Verhalten des Gerätes beschreibt, wie es durch ein Netzwerk gesehen wird

Anmerkung 1 zum Begriff: Dies ist eine Definition aus IEC/TS 61915, die durch das Hinzufügen der funktionalen Gerätestruktur erweitert ist.

[Quelle: IEC/TR 62390:2005, 3.1.9, modifiziert]

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3.20
Vorsteuerung
(en: feed forward)
Befehlswert, der zum Ausgleichen der Verzögerung im Regelkreis verwendet wird

3.21
Rückführgröße
(en: feedback variable)
variable Größe, die die Regelgröße abbildet und die zu einem Vergleichsglied zurückgeführt wird

[Quelle: IEV 351-27-03]

3.22
funktionales Element
(en: functional element)
Einheit von Software oder von Software, die mit Hardware kombiniert ist, fähig, eine festgelegte Funktion eines Gerätes zu erfüllen

Anmerkung 1 zum Begriff: Ein funktionales Element hat eine Schnittstelle zu anderen funktionalen Elementen und Funktionen.

Anmerkung 2 zum Begriff: Ein funktionales Element kann aus einem oder mehreren Funktionsbausteinen, Objekten oder Parameterlisten erstellt werden.

[Quelle: IEC/TR 62390:2005, 3.1.12]

3.23
Identifikationsnummer
IDN
(en: Identification Number)
Kennzeichnung von Betriebsdaten, unter der ein Datenblock mit seinem Attribut, seinem Namen, seiner Einheit, seinen minimalen und maximalen Eingabewerten und den Daten aufbewahrt wird

3.24
Eingangsdaten
(en: input data)
Daten, die von einer externen Quelle in ein Gerät, eine Ressource oder ein funktionales Element übertragen werden

[Quelle: IEC/TR 62390:2005, 3.1.14]

3.25
Schnittstelle
(en: interface)
Grenze zwischen zwei Einheiten, die durch funktionale Merkmale, Signal-Eigenschaften oder andere geeignete charakteristische Merkmale festgelegt ist

[Quelle: IEV 351-21-35, modifiziert]

3.26
Maschinennullpunkt
(en: machine zero point)
maschinenbezogener Punkt (auf jeder Achse), auf den alle Positionsdaten bezogen werden

3.27
Master
(en: master)
Knoten, der den anderen Knoten das Recht zur Übertragung zuweist

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3.28
Master-Datentelegramm
MDT
(en: Master Data Telegram)
Telegramm, in das der Master seine Daten einfügt

3.29
Master-Synchronisationstelegramm
MST
(en: Master Synchronisation Telegram)
Telegramm oder Teil eines Telegramms, in das der Master ein Zeitsynchronisationssignal einfügt

3.30
Modell
(en: model)
mathematische oder physikalische Darstellung eines Systems oder Prozesses, die das System oder den Prozess aufgrund bekannter Gesetzmäßigkeiten, einer Identifikation oder getroffener Annahmen genügend genau abbildet

[Quelle: IEV 351-21-36]

3.31
Betriebsart
(en: operating mode)
Kennzeichnung von Art und Umfang, wie der Mensch als Bediener in eine Leiteinrichtung eingreift

[Quelle: IEV 351-30-01]

3.32
Ausgangsdaten
(en: output data)
Daten, die von einem Gerät, einer Ressource oder einem funktionalen Element in externe Systeme übertragen werden

[Quelle: IEC/TR 62390:2005, 3.1.21]

3.33
Parameter
(en: parameter)
Datenelement, das Geräteinformationen darstellt, die aus einem Gerät gelesen oder in ein Gerät geschrieben werden können; z. B. durch ein Netzwerk oder ein lokales Bediengerät

Anmerkung 1 zum Begriff: Aus IEC/TS 61915, angepasst.

Anmerkung 2 zum Begriff: Ein Parameter ist typischerweise durch einen Parameternamen, einen Datentyp und eine Zugriffsrichtung gekennzeichnet.

[Quelle: IEC/TR 62390:2005, 3.1.22, modifiziert]

3.34
PDS enable
(en: PDS enable)
Befehl zum Schließen der (des) Rückführkreise(s)

3.35
PDS on
(en: PDS on)
Befehl zum Aktivieren der Leistungsstufe

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3.36
Profil
(en: profile)
Darstellung einer PDS-Schnittstelle hinsichtlich ihrer Parameter, Parametergruppierung und ihres Verhaltens nach einem Kommunikations- und einem Geräteprofil

3.37
Bezugspunkt
(en: reference point)
Punkt bezogen auf das Rückführsystem (auf jeder Achse), auf den die Rückführ- und Befehlswerte nach einem Referenziervorgang bezogen werden

3.38
Skalierungsdaten
(en: scaling data)
Daten, die die Wichtung der übertragenen Operationsdaten bestimmen

3.39
Slave
(en: slave)
Knoten, dem das Recht zur Übertragung durch den Master zugewiesen wird

3.40
Zustand
(en: status)
Menge an Informationen von dem PDS an das Programm zur Steuerung der Anwendung, die den Zustand oder die Betriebsart des PDS oder eines funktionalen Elementes des PDS wiedergibt

Anmerkung 1 zum Begriff: Die verschiedenen Zustandsinformationen können jeweils mit einem Bit kodiert werden.

3.41
Statuswort
(en: status word)
zwei aufeinanderfolgende Bytes im Antriebstelegramm, die Statusinformationen enthalten

3.42
Telegramm
(en: telegram)
Datensatz einer Nachricht

3.43
Typ
(en: type)
Hardware- oder Software-Element, das die gemeinsamen Attribute festlegt, die von allen Instanzen des Typs gemeinsam genutzt werden

[Quelle: IEC/TR 62390:2005, 3.1.25]

3.44
Variable
(en: variable)
Software-Einheit, die jeweils verschiedene Werte zu einer Zeit annehmen kann

Anmerkung 1 zum Begriff: Die Werte sowohl einer Variablen als auch eines Parameters sind üblicherweise auf einen bestimmten Datentyp festgelegt.

[Quelle: IEC/TR 62390:2005, 3.1.27]

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3.45 Abkürzungen

AT	Bestätigungstelegramm (en: Acknowledge Telegram)
C1D	Diagnoseklasse 1 (en: Class 1 Diagnostic)
C2D	Diagnoseklasse 2 (en: Class 2 Diagnostic)
C3D	Diagnoseklasse 3 (en: Class 3 Diagnostic)
CP	Kommunikationsphase (CP0 bis CP6 – Kommunikationsphasen 0 bis 6) (en: Communication Phase)
ID	Kennzeichner (en: Identifier)
IDN	Identifikationsnummer (en: Identification Number)
IPOSYNC	Synchronisation des PDS-Interpolators
HMI	Mensch-Maschine-Schnittstelle (en: Human Machine Interface)
K_V (K_V-Faktor)	Verstärkung des Positionsregelkreises
LSB	niedrigstwertiges Bit (en: Least Significant Bit)
Max	Maximum
MDT	Master-Datentelegramm
Min	Minimum
MSB	höchstwertiges Bit (en: Most Significant Bit)
MST	Master-Synchronisationstelegramm (en: Master Sync Telegram)
n	Geschwindigkeit
n_{min}	Abschaltgeschwindigkeit im Antrieb nach C1D-Fehler
n_x	Schwellenwert der Geschwindigkeit
P	Leistung (en: Power)
PDS	Leistungsantriebssystem (en: Power Drive System)
P_x	Schwellenwert der Leistung
SERCOS	SErial Real time COmmunication System
T	Drehmoment (en: Torque)
T_{limit}	Grenzwert für das Drehmoment
T_x	Schwellenwert des Drehmoments
t_{Ncyc}	Zykluszeit der Steuereinheit
t_{Scyc}	Kommunikationszykluszeit

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS –

Part 7-204: Generic interface and use of profiles for power drive systems – Profile type 4 specification

FOREWORD

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International Standard IEC 61800-7-204 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.

This second edition cancels and replaces the first edition published in 2007. This edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below.

- Update of drive parameters and their specification
- Editorial adjustments in relation with the new version of the IEC Directive Part 2.

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

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FDIS	Report on voting
22G/XX/FDIS	22G/XX/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 stability 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.

The National Committees are requested to note that for this publication the stability date is 2019.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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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.

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.

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125

126 IEC 61800-7-1 is divided into a generic part and several annexes as shown in Figure 1. The
127 drive profile types for CiA® 402[1], CIP Motion™[2], PROFIdrive[3] and SERCOS®[4] are mapped
128 to the generic interface in the corresponding annex. The annexes have been submitted by
129 open international network or fieldbus organizations which are responsible for the content of
130 the related annex and use of the related trademarks.

131 This part of IEC 61800-7 specifies the profile type 4 (SERCOS®).

132 The profile types 1, 2 and 3 are specified in IEC 61800-7-201, IEC 61800-7-202 and
133 IEC 61800-7-203.

134 IEC 61800-7-301, IEC 61800-7-302, IEC 61800-7-303 and IEC 61800-7-304 specify how the
135 profile types 1, 2, 3 and 4 are mapped to different network technologies (such as CANopen®[5],
136 CC-Link IE® Field Network[6], EPA™[7], EtherCAT®[8], Ethernet Powerlink™[9], DeviceNet™[10],
137 ControlNet™[11], EtherNet/IP™[12], PROFIBUS[13], PROFINET[14] and SERCOS®).

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1 CiA® 402 is a registered trade mark of CAN in Automation e.V. (CiA). This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the registered trade mark CiA® 402. Use of the registered trade mark CiA® 402 requires permission of CAN in Automation e.V. (CiA).

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3 PROFIdrive is a trade name of PROFIBUS & PROFINET International. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade name holder or any of its products. Compliance to this profile does not require use of the trade name PROFIdrive. Use of the trade name PROFIdrive requires permission of PROFIBUS & PROFINET International.

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6 CC-Link IE® Field Network is a registered trade mark of Mitsubishi Electric Corporation. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the registered trade mark CC-Link IE® Field Network. Use of the registered trade mark CC-Link IE® Field Network requires permission of Mitsubishi Electric Corporation.

7 EPA™ is a trade mark of SUPCON Group Co. Ltd. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the trade mark EPA™. Use of the trade mark EPA™ requires permission of the trade mark holder.

8 EtherCAT® is a registered trade mark of Beckhoff, Verl. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the registered trade mark EtherCAT™. Use of the registered trade mark EtherCAT™ requires permission of the trade mark holder.

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11 ControlNet™ is a trade mark of ODVA, Inc. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the trade mark ControlNet™. Use of the trade mark ControlNet™ requires permission of ODVA, Inc.

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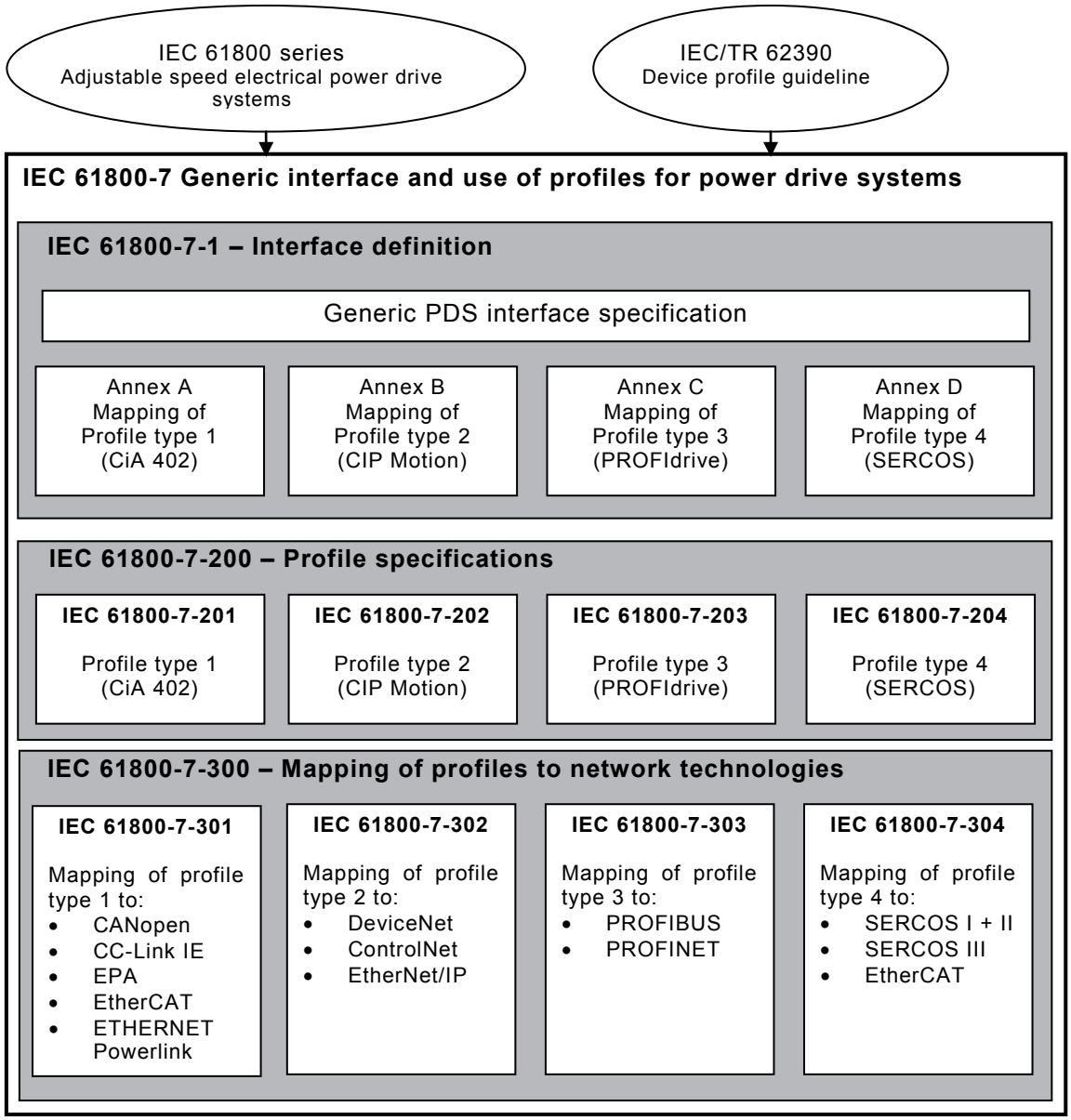


Figure 1 – Structure of IEC 61800-7

[12] EtherNet/IP™ is a trade mark of ODVA, Inc. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade mark holder or any of its products. Compliance to this profile does not require use of the trade mark EtherNet/IP™. Use of the trade mark EtherNet/IP™ requires permission of ODVA, Inc.

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