SVENSK STANDARD SS-EN 62026-3

Fastställd	Utgåva	Sida	Ansvarig kommitté
2015-05-13	2	1 (1+128)	SEK TK 121A

Kopplingsapparater för högst 1000 V – Nätverk för styrning av apparater (CDI) – Del 3: DeviceNet

Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs) – Part 3: DeviceNet

Som svensk standard gäller europastandarden EN 62026-3:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62026-3:2015.

Nationellt förord

Europastandarden EN 62026-3:2015

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62026-3, Third edition, 2014**[*)] **- Low-voltage switchgear and controlgear - Controller-device interfaces (CDIs) - Part 3: DeviceNet**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62026-3, utgåva 1, 2009, gäller ej fr o m 2017-09-26.

[*)] Corrigendum March 2015 till IEC 62026-3:2014 är inarbetat i standarden.

ICS 29.130.20

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Telefon: 08 - 444 14 00.
E-post: sek@elstandard.se. Internet: www.elstandard.se

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SEK Svensk Elstandard
Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62026-3

April 2015

ICS 29.130.20

Supersedes EN 62026-3:2009

English Version

Low-voltage switchgear and controlgear - Controller-device interfaces (CDIs) - Part 3: DeviceNet (IEC 62026-3:2014 + COR1:2015)

Appareillage à basse tension - Interfaces appareil de commande-appareil (CDI) - Partie 3: DeviceNet (IEC 62026-3:2014 + COR1:2015)

Niederspannungsschaltgeräte - Steuerung-Geräte-Netzwerke (CDIs) - Teil 3: DeviceNet (IEC 62026-3:2014 + COR1:2015)

This European Standard was approved by CENELEC on 2014-10-29. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 62026-3:2015 E

SEK Svensk Elstandard

Foreword

The text of document 17B/1814/CDV, future edition 3 of IEC 62026-3 + Corrigendum March 2015, prepared by SC 121A "Low-voltage switchgear and controlgear" of IEC/TC 121 " Switchgear and controlgear and their assemblies for low voltage" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62026-3:2015.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-10-03
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-09-26

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 62026-3:2014 + Corrigendum March 2015 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 61131-3:2013	NOTE	Harmonized as EN 61131-3:2013.
IEC 61158 (Series)	NOTE	Harmonized as EN 61158 (Series).
IEC 61508 (Series)	NOTE	Harmonized as EN 61508 (Series).
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61784-5-2	NOTE	Harmonized as EN 61784-5-2..
ISO/IEC 7498-1:1994	NOTE	Harmonized as EN ISO/IEC 7498-1:1995.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
			+EN 60529:1991/corrigendum May 1993	1993
IEC 60529:1989/A1	1999		EN 60529:1991/A1	2000
IEC 60529:1989/A2	2013		EN 60529:1991/A2	2013
IEC 60947-5-2	2007	Low-voltage switchgear and controlgear -- Part 5-2: Control circuit devices and switching elements - Proximity switches	EN 60947-5-2	2007
+A1	2012		+A1	2012
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) -- Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) -- Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
+A1	2007		+A1	2008
+A2	2010		+A2	2010
IEC 61000-4-4	2012	Electromagnetic compatibility (EMC) -- Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	2005	Electromagnetic compatibility (EMC) -- Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006
IEC 61000-4-6	2013	Electromagnetic compatibility (EMC) -- Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
IEC 61158-4-2	2014	Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements	EN 61158-4-2	2014
IEC 61158-5-2	2014	Industrial communication networks - Fieldbus specifications -- Part 5-2: Application layer service definition - Type 2 elements	EN 61158-5-2	2014

IEC 61158-6-2	2014	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	EN 61158-6-2	2014
IEC 61784-3-2	-	Industrial communication networks - Profiles -- Part 3-2: Functional safety fieldbuses - Additional specifications for CPF 2	EN 61784-3-2	-
IEC 62026-1	2007	Low-voltage switchgear and controlgear - Controller-device interfaces (CDIs) -- Part 1: General rules	EN 62026-1	2007
ISO 11898-1	2003	Road vehicles_- Controller area network (CAN)_- Part_1: Data link layer and physical signalling	-	-
ISO 11898-2	2003	Road vehicles_- Controller area network (CAN)_- Part_2: High-speed medium access unit	-	-
ANSI B93.55M-1981		Hydraulic Fluid Power Solenoid-piloted Industrial Valves - Interface Dimensions for Electrical Connectors	-	-
ASTM D 4566-94	-	Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable	-	-
CISPR 11 (mod)	2009	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement	EN 55011 +prA +AA	2009
CISPR 11:2009/A1	2010		EN 55011:2009/A1	2010

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – CONTROLLER-DEVICE INTERFACES (CDIs) –

Part 3: DeviceNet

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
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International Standard IEC 62026-3 has been prepared by subcommittee 121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage.

This third edition of IEC 62026-3 cancels and replaces the second edition published in 2008. This third edition constitutes a technical revision.

The main changes with respect to the previous edition are the followings:

– specification of group 4 messages (5.1.2);
– clarifications on messaging protocol (5.2);
– addition of I/O multicast poll messages (5.5.2 and 5.5.8);
– clarifications on slave behaviour (5.5.4 and 5.5.9);
– clarifications on physical layer (transceiver) in 5.7;

– miscellaneous corrections/clarifications on cable (8.2);
– clarifications on EMC testing (9.2.10) and logical testing (9.3).

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

FDIS	Report on voting
17B/1814/FDIS	121A/18/RVC

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 62026, under the general title *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs)*, 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 contents of the corrigendum of March 2015 have been included in this copy.

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.

INTRODUCTION

DeviceNet™[1] is intended for use in, but is not limited to, industrial automation applications. These applications may include devices such as limit switches, proximity sensors, electro-pneumatic valves, relays, motor starters, operator interface panels, analogue inputs, analogue outputs and controllers.

[1] DeviceNet™ is a trade name 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 trademark holder or any of its products. Compliance to this standard does not require use of the trade name DeviceNet™. Use of the trade name DeviceNet™ requires permission of ODVA, Inc.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – CONTROLLER-DEVICE INTERFACES (CDIs) –

Part 3: DeviceNet

1 Scope

This part of IEC 62026 specifies an interface system between single or multiple controllers, and control circuit devices or switching elements. The interface system uses two conductor pairs within one cable – one of these pairs provides a differential communication medium and the other pair provides power to the devices. This part establishes requirements for the interoperability of components with such interfaces.

This part of IEC 62026 specifies the following particular requirements for DeviceNet:

– requirements for interfaces between controllers and switching elements;

– normal service conditions for devices;

– constructional and performance requirements;

– tests to verify conformance to requirements.

These particular requirements apply in addition to the general requirements of IEC 62026-1.

2 Normative references

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

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD 1:1999
IEC 60529:1989/AMD 2:2013

IEC 60947-5-2:2007, *Low-voltage switchgear and controlgear – Part 5-2: Control circuit devices and switching elements – Proximity switches*
IEC 60947-5-2:2007/AMD 1:2012

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*
IEC 61000-4-3:2006/AMD 1:2007
IEC 61000-4-3:2006/AMD 2:2010

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61158-4-2:2014, *Industrial communication networks – Fieldbus specifications – Part 4-2: Data-link layer protocol specification – Type 2 elements*

IEC 61158-5-2:2014, *Industrial communication networks – Fieldbus specifications – Part 5-2: Application layer service definition – Type 2 elements*

IEC 61158-6-2:2014, *Industrial communication networks – Fieldbus specifications – Part 6-2: Application layer protocol specification – Type 2 elements*

IEC 61784-3-2, *Industrial communication networks – Profiles – Part 3-2: Functional safety fieldbuses – Additional specifications for CPF 2*

IEC 62026-1:2007, *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs) – Part 1: General rules*

CISPR 11:2009, *Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement*
CISPR 11:2009/AMD 1:2010

ISO 11898-1:2003, *Road vehicles – Controller area network (CAN) – Part 1: Data link layer and physical signalling*

ISO 11898-2:2003, *Road vehicles – Controller area network (CAN) – Part 2: High-speed medium access unit*

ANSI B93.55M-1981 (R1988), *Hydraulic Fluid Power – Solenoid Piloted Industrial Valves – Interface Dimensions for Electrical Connectors*

ASTM D 4566-94[2], *Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable*

[2] A newer version of this document exists (ASTM D4566-08e1), however the listed revision applies for this standard