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Incorporating corrigendum July 2012



BSI Standards Publication

Low-voltage switchgear and controlgear — Device profiles for networked industrial devices

Part 2: Root device profiles for starters
and similar equipment

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The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by IEC corrigendum July 2012 is indicated in the text by AC1 AC1.

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A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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**Low-voltage switchgear and controlgear -
Device profiles for networked industrial devices -
Part 2: Root device profiles for starters and similar equipment
(IEC 61915-2:2011)**

Appareillage à basse tension -
Profils d'appareil pour les appareils
industriels mis en réseau -
Partie 2: Profils racines d'appareil pour les
démarreurs et les matériels similaires
(CEI 61915-2:2011)

Niederspannungsschaltgeräte -
Geräteprofile für vernetzte industrielle
Schaltgeräte -
Teil 2: Grundlegende Geräteprofile für
Starter und ähnliche Betriebsmittel
(IEC 61915-2:2011)

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Foreword

The text of document 17B/1752/FDIS, future edition 1 of IEC 61915-2, prepared by SC 17B, "Low-voltage switchgear and controlgear", of IEC/TC 17, "Switchgear and controlgear" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61915-2:2012.

The following dates are fixed:

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

IEC 60947 series	NOTE	Harmonized in EN 60947 series.
IEC 60947-4-1:2009	NOTE	Harmonized as EN 60947-4-1:2010 (not modified).
IEC 60947-4-2:2011	NOTE	Harmonized as EN 60947-4-2:201X ¹⁾ (not modified).
IEC 60947-4-3:1999 + A1:2006 + A2:2011	NOTE	Harmonized as EN 60947-4-3:2000 + A1:2006 + A2:2011 (not modified).
IEC 60947-6-2:2002 + A1:2007	NOTE	Harmonized as EN 60947-6-2:2003 + A1:2007 (not modified).
IEC 60947-8:2003 + A1:2006 + A2:2011	NOTE	Harmonized as EN 60947-8:2003 + A1:2006 + A2:201X ¹⁾ (not modified).

¹⁾ To be published.

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 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 60947-1	2007	Low-voltage switchgear and controlgear -	EN 60947-1	2007
+ A1	2010	Part 1: General rules	+ A1	2011
IEC 61915-1	2007	Low-voltage switchgear and controlgear - Device profiles for networked industrial devices - Part 1: General rules for the development of device profiles	EN 61915-1	2008

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INTRODUCTION

This International Standard follows the rules and uses the framework of IEC 61915-1, *Low-voltage switchgear and controlgear – Device profiles for networked industrial devices – Part 1: General rules for the development of device profiles*. This International Standard is to define the common set of functionality (data and behaviour) for motor starters and similar devices thereby allowing system designers, system integrators and maintenance personnel to handle profile-based devices without a special tool configuration.

This International Standard gives manufacturers and other organizations the common set of functionality to represent their network capable devices. Manufacturers or other organizations may use the root device profiles specified to add their manufacturer-specific extensions.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – DEVICE PROFILES FOR NETWORKED INDUSTRIAL DEVICES –

Part 2: Root device profiles for starters and similar equipment

1 Scope

This part of IEC 61915 specifies root device profiles as defined by IEC 61915-1 for starters and similar equipment covered by the following product standards:

- electromechanical contactors and motor-starters (IEC 60947-4-1),
- AC semiconductor motor controllers and starters (IEC 60947-4-2),
- AC semiconductor controllers and contactors for non-motor loads (IEC 60947-4-3),
- control and protective switching devices (or equipment) (CPS) (IEC 60947-6-2),
- control units for built-in thermal protection (PTC) for rotating electrical machines (IEC 60947-8).

2 Normative references

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 amendments) applies.

IEC 60947-1:2007, *Low-voltage switchgear and controlgear – Part 1: General rules*
Amendment 1 (2010)

IEC 61915-1:2007, *Low-voltage switchgear and controlgear – Device profiles for networked industrial devices – Part 1: General rules for the development of device profiles*

3 Terms, definitions and abbreviated terms

3.1 General

For the purposes of this document, the terms, definitions, abbreviations and symbols given in IEC 61915-1, as well as the following apply.

3.2 Terms and definitions

3.2.1

built-in thermal protection

protection of certain parts (called protected parts) of a rotating electrical machine against excessive temperatures resulting from certain conditions of thermal overload, achieved by means of a thermal protection system, the whole or part of which is a thermally sensitive device (thermal detector or protector) incorporated within the machine

[IEC 60947-8:2003, 3.1.1, modified]

3.2.2

thermal protection system

system intended to ensure the built-in thermal protection of a rotating electrical machine by means of a thermal detector (or thermal detectors) together with a control system, or by means of a thermal protector (or thermal protectors)

[IEC 60947-8:2003, 3.1.2, modified]

3.2.3

thermal detector

electrical insulated device (component), sensitive to temperature only, which will initiate a switching function in the control system when its temperature reaches a predetermined level

[IEC 60947-8:2003, 3.1.3]

3.2.4

control system

system to translate a particular point on the characteristic of a thermal detector to a switching function on the supply to the rotating electrical machine

NOTE The system is capable of being reset (either manually or automatically) when the temperature falls to the reset value.

[IEC 60947-8:2003, 3.1.5]

3.2.5

control unit

device which converts into a switching function the variation of the characteristic of a thermal detector

NOTE A control unit may be an electromechanical type, a static type or a combination of both.

[IEC 60947-8:2003, 3.1.15, modified]

3.2.6

manufacturer

any person, company or organisation with ultimate responsibility as follows:

- to verify compliance with the appropriate standard or standards;
- to provide the product information according to Clause 5 of IEC 60947-1:2007

NOTE For instance, in the case of “protected starters” assembled according to the instructions of the component providers, the manufacturer will be the entity that undertook the assembly.

[IEC 60947-1:2007, 2.1.21, modified]

3.2.7

switching device

device designed to make and/or break the current in one or more electric circuits

[IEC 60050-441:1984, 441-14-01, modified]

3.2.8

semiconductor switching device

switching device designed to make and/or break the current in an electric circuit by means of the controlled conductivity of a semiconductor

[IEC 60050-441:1984, 441-14-03, modified]

3.2.9

(mechanical) contactor

mechanical switching device having only one position of rest, operated otherwise than by hand, capable of making, carrying and breaking currents under normal circuit conditions including operating overload conditions

NOTE Contactors may be designated according to the method by which the force for closing the main contacts is provided.

[IEC 60050-441:1984, 441-14-33]

3.2.10
semiconductor contactor
solid-state contactor

device which performs the function of a contactor by utilizing a semiconductor switching device

NOTE A semiconductor contactor may also contain mechanical switching devices.

[IEC 60947-1:2007, 2.2.13]

3.2.11
starter

combination of all the switching means necessary to start and stop a motor, in combination with suitable overload protection

NOTE Starters may be designated according to the method by which the force for closing the main contacts is provided.

[IEC 60050-441:1984, 441-14-38]

3.2.12
short-circuit protective device
SCPD

device intended to protect a circuit or parts of a circuit against short-circuit currents by interrupting them

[IEC 60947-1:2007, 2.2.21]

3.2.13
tripping (operation)

opening operation of a mechanical switching device initiated by a relay or release

[IEC 60947-1:2007, 2.4.22]

3.2.14
switchgear and controlgear

general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures

[IEC 60050-441:1984, 441-11-01]

3.2.15
motor management starter

starter including extended functions and with communication ability

NOTE Some extended functions are described in IEC 60947-1.

3.2.16
remote control

control of an operation at a point distant from the controlled switching device

[IEC 60050-441:1984, 441-16-07]

NOTE Remote control, in the context of this standard, means control by any communication system using the profiles defined in this standard.

3.2.17**local control**

control of an operation at a point on or adjacent to the controlled switching device

[IEC 60050-441:1984, 441-16-06]

NOTE Local control, in the context of this standard, means the indication to a remote host controller that, as a result of operator intervention, commands received will not be accepted or acted upon. Safety control functions may still be active.

3.2.18**manual control**

control of an operation by human intervention

[IEC 60050-441:1984, 441-16-04]

3.2.19**manual mode**

switching commands are not accepted from the regular remote controller but from a manual secondary source for the purpose for example of maintenance, test, commissioning or configuring

NOTE 1 Manual mode, in the context of this standard, means that the starter does not react upon the switching commands from the remote host controller like for instance "Run forward", "Run reverse" and "Switch Off".

NOTE 2 The manual secondary source of command is for example a remote engineering tool or a remote operation terminal.

3.3 Abbreviated terms

O	Optional
R	Read
RW	Read/write
r	Reserved
Ready FRC	Ready for remote control

4 Root device profiles

Table 1 lists the root device profiles defined in this standard.

Table 1 – List of root device profiles

Standard	Root device profile	
	Identification	Name
IEC 61915-2	P(IEC 61915-2)00001	Motor starter ^a
	P(IEC 61915-2)00002	Soft starter
	P(IEC 61915-2)00003	Motor management starter
^a Motor starter may include some kind of soft starters.		

Some elements of the root device profile are common to different profiles covered by this standard:

- parameters,
- parameters groups.

Other elements are specific to the various parts of IEC 60947 series covered by this standard:

- header,

- parameters assemblies,
- state model.

The remaining elements of the root device profile described in IEC 61915-1 are under consideration:

- complex data types,
- functional elements,
- services.