IEC TS 62735-2

Edition 1.0 2016-12

TECHNICAL SPECIFICATION

Direct current (DC) plugs and socket-outlets for information and communication technology (ICT) equipment installed in data centres and telecom central offices –
Part 2: Plug and socket-outlet system for 5,2 kW

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Part 2: Plug and socket-outlet system for 5,2 kW

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62735-2, which is a technical specification, has been prepared by IEC technical committee 23: Electrical accessories.

This technical specification is to be used in conjunction with IEC 62735-1:2015.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
23/743/DTS	23/745A/RVC

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

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

This Part 2 supplements or modifies the corresponding clauses in IEC 62735-1 so as to convert that publication into the IEC technical specification: *Direct current (DC) plugs and socket-outlets for information and communication technology (ICT) equipment installed in data centres and telecom central offices.*

Where this Part 2 states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in Part 1 should be adapted accordingly.

Where no change is necessary, this Part 2 indicates that the relevant clause or subclause applies.

In this publication:

1) The following print types are used:
   - Requirements proper: in roman type.
   - *Test specifications: in italic type.*
2) Subclauses, notes, tables or figures which are additional to those in Part 1 are numbered starting from 101 and additional list items are numbered from aa). Additional annexes are lettered AA, BB, etc.

A list of all parts in the IEC 62735 series, published under the general title *Direct current (DC) plugs and socket-outlets for information and communication technology (ICT) equipment installed in data centres and telecom central offices,* 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 website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

DIRECT CURRENT (DC) PLUGS AND SOCKET-OUTLETS FOR INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) EQUIPMENT INSTALLED IN DATA CENTRES AND TELECOM CENTRAL OFFICES –

Part 2: Plug and socket-outlet system for 5,2 kW

1 Scope

This clause of Part 1 is applicable except as follows:

Replacement:

Replace the first paragraph with the following:

This part of IEC 62735, which is a technical specification, applies to plugs and fixed socket-outlets for class I equipment with two active contacts plus an earthing contact, a rated power of 5,2 kW and a rated voltage range from 294 V to 400 V d.c. They are intended to power d.c. information and communication technology equipment only.

The 2,6 kW system complying with Part 1 is safely compatible with the system complying with this part as it is possible to insert the 2,6 kW plug in the 5,2 kW socket-outlet but it is not possible to insert the 5,2 kW plug into the 2,6 kW socket-outlet.

Replace the third paragraph with the following:

The maximum current for the plug and the socket-outlet is

– 13 A when the voltage between live contacts is 400 V d.c.
– 17,6 A when the voltage between live contacts is 294 V d.c.

and can rise up to 20 A when the voltage between live contacts decreases to 260 V d.c. for 10 min maximum.

Replace, in the 6th paragraph, the second dash with:

– an overcurrent protection (of 17,6 A or less for each socket-outlet or multiple socket-outlet),

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

This clause of Part 1 is applicable except as follows:

Addition:

Add the following definitions:

3.101
retaining device
mechanical arrangement which holds a plug in the normal position when it is in proper engagement, and prevents its withdrawal in the case of manual interlock

3.102
interlocked plug and socket-outlet system
plug and socket-outlet system, which allows plug insertion and withdrawal only when socket-outlet contacts are not energized

4 General requirements

This clause of Part 1 is applicable.

5 General notes on tests

This clause of Part 1 is applicable.

6 Ratings

Replacement:

Replace the text with the following:

Accessories shall have a rated power of 5,2 kW at any voltage within the rated voltage range of 294 V to 400 V.

7 Classification

This clause of Part 1 is applicable except as follows:

Addition:

Add the following subclause:

7.2.101 Classification according to the type of interlock

Socket-outlets are classified according to the type of interlock:

a) socket-outlets provided with an automatic interlock
b) socket-outlets provided with a mechanical interlock

8 Marking

This clause of Part 1 is applicable except as follows:

8.1 General

Addition:

Add the following list item:

aa) “ON” and “OFF” positions in case of an external user activated switch or control.

8.2 Symbols

Addition:

Add the following symbols before Note 1:

"ON" position I
"OFF" position ..... O

Add the following paragraphs at the end of the subclause:

It is also permitted to use the symbols "I" and "O" to indicate the "ON" and "OFF" position of any primary or secondary power switches, including isolating switches.

A socket-outlet classified according to 7.2.101 a) and its mating plug do not need to be marked.

8.3 Visibility of markings

Addition:

Add, after the second paragraph, the following paragraph:

The "ON" and "OFF" symbols shall be marked on or near the switch.

9 Checking of dimensions

This clause of Part 1 is applicable.

10 Protection against electric shock

This clause of Part 1 is applicable.

11 Provision for earthing

This clause of Part 1 is applicable.

12 Terminals and terminations

This clause of Part 1 is applicable except as follows:

12.2.1

Replacement:

Replace Table 1 with the following:

Table 1 – Relationship between rated power and connectable nominal cross-sectional areas or American Wire Gauge (AWG) size of copper conductors

Power and type of accessory	Rigid (solid or stranded) copper conductors		Flexible copper conductors	
	Nominal cross-sectional area or AWG size	Diameter of the largest conductor mm	Nominal cross-sectional area or AWG size	Diameter of the largest conductor mm
5,2 kW 2P+ ⏚	From 1,5 mm^2 up to 2,5 mm^2 inclusive or from16 AWG up to 14 AWG	2,13 or 1,85	From 0,75 mm^2 up to 1,5 mm^2 inclusive or from 18 AWG up to 16 AWG	1,73 or 1,50

12.2.6

Replacement:

Replace Table 2 with the following:

Table 2 – Values for pull test for screw-type terminals

Nominal cross-sectional area or AWG size of conductors accepted by the terminal	Pull N
From 1,5 mm^2 up to 2,5 mm^2 inclusive or from 16 AWG up to 14 AWG	50

12.2.7

Table 3 – Composition of conductors for plugs

Addition:

Add the following rows to Table 3:

Nominal cross-sectional area or AWG size	Number of wires (n) and nominal diameter of conductors (d) $n \times d$ [a]		
	Flexible conductor	Rigid solid conductor	Rigid stranded conductor
2,5 mm^2 or	50 x 0,25	1 x 1,78	7 x 0,67
14 AWG	41 x 0,255	1 x 1,63	7 x 0,615

12.3.2

Replacement:

Replace Table 5 with the following: