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**General requirements for solid-state remote power controllers
of aircraft**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the use of ISO 27027.2014 "aerospace solid state remote power controller general performance requirements

begging".

Compared with ISO 27027.2014, this standard changes as follows.

--- Added "5.2 Environmental Adaptability".

The technical differences between this standard and ISO 27027.2014 and their reasons are as follows.

--- In accordance with the provisions of GB/T 1.1-2009, the scope of the increase "this standard applies to aircraft solid state remote power controller and aircraft solid

Description of the state remote power controller group";

--- In view of the domestic product has a bus control mode, the shutdown signal is modified (see 3.20), and the content is added with "or bus shutdown"

make";

--- In view of the domestic product has a bus control mode, the turn-on signal is modified (see 3.21), and the content is added with "or bus connection".

command";

--- In view of the domestic product with bus control mode, the shutdown time (AC SSPC with zero crossing) is modified (see 3.22), modified

For the time interval from the start of the shutdown signal level or the connection of the bus to the power switch to the zero crossing of the power switch, see

Figure 1b)";

--- In view of the domestic product with bus control mode, the turn-off time is modified (DC SSPC and AC SSPC with non-zero crossing)

(See 3.23), modified to "from the start of the shutdown signal level or to the bus shutdown command until the output reaches its steady state value of 10%

Interval, see Figure 1a)";

--- In view of the domestic product with bus control mode, the switch-on time (AC SSPC connected to the zero crossing point) is modified (see 3.24), modified

For the time interval from the start of the signal level or the connection of the bus to the switch of the power switch to the zero crossing point, see

Figure 1b)";

--- In view of the domestic product with bus control mode, the switch-on time (DC SSPC and AC SSPC with non-zero crossing)

(see 3.25), modified to "from the start of the signal level or the bus-on command to the output reaches its steady state value of 90%

Interval, see Figure 1a)";

--- In view of the domestic product with bus control mode, the control signal level has been modified (see 4.3.5), and the content has been added

Flat Control SSPC" and "For SSPCs using bus control, bus control signals when tested in accordance with 5.1.6

The number should comply with the corresponding regulations. The SSPC should be able to control normally at the specified identifiable bus level";

--- In view of the domestic product has a bus control mode, the turn-on signal is modified (see 5.1.2.2), and the content is added "or using the bus

Send connection command";

--- In view of the domestic product has a bus control mode, the shutdown signal has been modified (see 5.1.2.3), and the content has been added "or using the bus to send

Send a shutdown command";

--- In view of the control signal requirements only for level control, modified control signals (see 5.1.6), added "using level control

SSPC";

--- In view of the verification requirements of domestic products, increase the "5.2 environmental adaptability SSPC according to the requirements of ISO 7137 and special specifications

Verification to meet the environmental adaptability of SSPC. ";

--- In view of the domestic product has a bus control mode, modified Figure 3, Figure 6b), Figure 7b), Figure 8b), Figure 9, Figure 10, increase bus control

Schematic module.

There are technical differences between this standard and ISO 27027.2014, and the terms involved in these differences have been passed on the outer margins of the margins.

The vertical single line (|) is marked.

This standard also made the following editorial changes.

--- The standard name was changed to "General Requirements for Aircraft Solid State Remote Power Controllers".

This standard is proposed and managed by the National Aircraft Standardization Technical Committee (SAC/TC435).

This standard was drafted. Tianjin Aviation Electromechanical Co., Ltd., China Aviation Integrated Technology Research Institute, Aviation Industry First Aircraft Design and Research

Research Institute.

Introduction

With the development of avionics systems in the field of high-voltage systems, aircraft arc fault detection technology has become an important group in power distribution systems.

In part.

Solid-state remote power controller (SSPC) consists of solid-state switching devices and related solid-state circuits

Or bus control circuit components, complete protection, control signal drive and provide status information. The purpose of this standard is to specify SSPC

Definition and the following.

a) The purpose of this standard.

1) Standardize various physical and environmental requirements for solid state remote power controllers;

2) Provide application standard files for various solid state remote power controllers.

b) Definition of SSPC.

1) comprising a solid state power switching device and its driving circuit;

- 2) turning on or off the power output by receiving a control signal;
 - 3) Monitor the load overcurrent condition and perform the current limit or shutdown operation according to the overcurrent condition; or the non-mandatory detection circuit Arc fault and perform shutdown to cut off the arc;
 - 4) Display the on/off status of the power output.
- c) The content of this standard.
- 1) definition of technical terms;
 - 2) Electrical requirements;
 - 3) Test method.

In order to meet the requirements of this standard, relevant physical, environmental and independent requirements are independently published by each special specification.

General requirements for aircraft solid state remote power controllers

1 Scope

This standard specifies the performance definition, general requirements and test methods for the solid state remote power controller (SSPC) of the aircraft power supply system.

This standard applies to aircraft solid state remote power controllers and aircraft solid state remote power controllers.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 1540 Aerospace Aircraft Electrical System Characteristics (Aerospace-Characteristics of aircraft electrical systems)

ISO 7137 aircraft airborne equipment test environmental conditions and test methods (Aircraft-Environmental conditions and

Test procedures for airborne equipment)

3 Terms and definitions

The following terms and definitions apply to this document.