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Characteristics of aircraft electrical system

飞机电气系统特性

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Foreword

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

This standard uses redrafted law revision of international standards ISO 1540:2006 "Air and Space Shuttle Electrical System Characteristics" (English Chinese Version).

And ISO 1540. compared to 2006, the technical modifications made to this standard are as follows.

- a) to ISO 1540:2006 in 3.33 voltage phase shift content has been modified;
- b) Delete ISO 1540:2006 in 3.49 Note 1 (DC voltage), Note 2 (DC steady-state voltage) content, and the title match;
- c) The ISO 1540:2006 Figure 8 table "minimum voltage" corresponds to "104V" changed to "100V";
- d) The ISO 1540:2006 16 table "10s" corresponding "32.7V" changed to "32.2V";
- e) The ISO 1540:2006 Table 1 Three-phase average voltage values \u200b\u200b of abnormal state 95.5V ~ 132.5V and single-phase voltage of 94V ~ 134V, respectively, modified to 98.5V ~ 132.5V and 97V ~ 134V. Fig. 7 Central Africa by the lower limit of normal steady-state voltage 94V amended accordingly to 97V.

And ISO 1540:2006 as compared to the standard editorial changes made as follows.

- a) to formulas and tables are numbered;
- b) to correct the ISO 1540:2006 in the editing, printing errors;

- c) The ISO 1540:2006 in 6.4.7 "non-normal power interruption time shall not exceed the limits specified in Table 2" to "non-positive Normal power supply interruption time should not exceed Table 2 (narrow frequency system) and Table 3 limits (wide conversion system) prescribed";
- d) The ISO 1540:2006 Tables 6 and 7, and "non-harmonic" corresponding " $I_h = 0.001 \times I_1$ " changed to " $0.001 \times I_1$ ";
- e) Remove the ISO 1540:2006 in Tables 1 to 3 in "Note 4" and Table 4 and Table 5, "Note 3";
- f) increase 10.5.2.1 "Overview", eliminate the suspension segment, ISO 1540:2006 in the original reg number successively postponed.

The standard proposed by China Aviation Industry Corporation.

This standard by the National Standardization Technical Committee on Aircraft (SAC/TC435) centralized.

This standard was drafted. AVIC First Aircraft Design and Research Institute of China Aviation Technology Institute.

1 Scope

This standard specifies the characteristics of airborne electrical equipment supply power input, in order to adapt to a variety of power on the new civil aircraft and set Meter electrical equipment [such as by technical standards (TSO) certification of electrical equipment] provides an interface definition. It has a single purpose or special Equipment for military purposes do not comply with this standard, in order to avoid due to the pursuit of multi-purpose and lead to reduced device performance.

This standard also provides a background of the development of these requirements for modern aircraft electrical system design and (or) integrated reference. Power quality is Results supply, power distribution and electrical equipment interaction. Once the specified limits for electrical equipment, will determine the support of the whole system open Background made of key interfaces power supply and distribution equipment.

This standard takes into account the type and variety of power distribution parameters in both small and large transport category aircraft are likely to encounter. Power is divided into Rotary and static variant, could be onboard power supply, it may be used as one of the ground support equipment ground power. This standard relates to the supply voltage Species Category are.

--- DC 14V, 28V and 42V (nominal value);

--- Single-phase AC 26V400Hz (nominal value);

--- Single-phase or three-phase AC 115V/200V and 230V/400V (nominal value), constant frequency or range of frequencies including 400Hz 400Hz Frequency.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 6858 General requirements for aircraft ground power supply
(Aircraft-Groundsupportelectricalsupplies-General requirements) ISO 7137:1995
Environmental conditions and test procedures for aircraft airborne equipment 1)
(Aircraft-Environmentalconditionsand testproceduresforairborneequipment)

1) EUROCAEED-14C and RTCA/DO-160C.

3 Terms and Definitions

The following terms and definitions apply to this document.

Abnormal electrical system work abnormalelectricalsystemoperation Electrical fault system appears abnormal or a state. In this case, before non-work beyond the limit, the system protection devices move for, the rest is not normal or defective parts and system quarantine system.

Note: In this state, the quality of power supply to provide electrical equipment may be beyond the normal working limit non-work but not exceeding the limit.

Non-normal power supply characteristics limit abnormalpowerqualitylimits During non-work, consider the system protection devices work tolerance and system design limitations inherent characteristics, electrical equipment, power input Supply side characteristics limit prescribed.

Note: See also 3.30.