
INTERNATIONAL STANDARD



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Static invertors for aircraft

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2277 was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and circulated to the Member Bodies in July 1971.

It has been approved by the Member Bodies of the following countries :

Austria	India	Spain
Belgium	Japan	Thailand
Canada	Netherlands	Turkey
Czechoslovakia	New Zealand	United Kingdom
Egypt, Arab Rep. of	Poland	U.S.S.R.
France	Romania	
Germany	South Africa, Rep. of	

The Member Body of the following country expressed disapproval of the document on technical grounds :

U.S.A.

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ERRATUM

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Clause 6.3, third line : Correct “ $M\Omega$ ” to “ $m\Omega$ ”.

Static invertors for aircraft

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the general design and test requirements for 400 Hz static invertors for aircraft.

2 REFERENCES

ISO/R 224, *Standard form of declaration of performance of aircraft electrical equipment*.

ISO 1540, *Characteristics of aircraft electrical power systems* ¹⁾

3 TERMINOLOGY

static inverter : A unit in which semi-conductor devices are used for deriving alternating current at constant voltage and frequency from a direct current supply.

4 DESIGN REQUIREMENTS

4.1 Unless otherwise required by the individual specification, the design and construction of the inverter shall be such that it is suitable for continuous operation at altitudes up to 18 300 m (60 000 ft) (See section 23.)

4.2 There shall preferably be no limitation in the performance of the inverter in respect of the attitude and location in which it may be mounted.

4.3 All invertors bearing the same identifying number shall be directly and completely interchangeable with respect to installation and performance.

4.4 The design and construction of the inverter shall be such that it is suitable for a minimum of 3 000 h operation between overhauls.

4.5 The inverter shall conform in outline and size to the requirements of the individual specification.

4.6 Unless otherwise specified, the inverter shall be designated to operate from a fully-insulated system, i.e. all

the electrical circuits shall be insulated from the frame, and the neutral point shall be brought out to a termination.

5 PREFERRED RATINGS

5.1 The preferred ratings for the invertors at sea level and at a temperature of + 70 °C are as follows :

Rating in VA	
Single-phase	Three-phase
100	100
150	250
250	500
500	750
750	1 000
1 000	1 500
	3 000

5.2 If required by the individual specification, the ratings at temperatures of + 55 °C and + 85 °C shall be declared.

6 SUPPLY CHARACTERISTICS

6.1 The inverter shall be capable of operating over the normal input terminal voltage range specified for Category B equipment, excluding emergency conditions, in ISO 1540.

6.2 The inverter shall be capable of withstanding and operating under the conditions of transient and over voltage input indicated by the appropriate curves in ISO 1540.

6.3 The inverter shall be capable of operating with a supply at its terminations having a maximum impedance made up of 50 M Ω resistive and 10 μ H inductive components. The ripple voltage superimposed on a smooth d.c. supply of this source impedance shall not exceed 2 V peak-to-peak under steady state conditions.

1) At present at the stage of draft.