

OBSOLESCENT
JULY 1983

Specification for

Hand-operated circuit-breakers for aircraft —

Part 1: Single-pole circuit-breakers

[UDC 621.316.57:629.13.066]

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

This British Standard, having been approved by the Aircraft Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council was published under the authority of the General Council of the Institution on 31 July 1962

© BSI 04-2000

The following BSI references relate to the work on this standard:
Committee reference ACE/43
Draft for comment AA(ACE) 5330

ISBN 0 580 34535 1

Amendments issued since publication

Amd. No.	Date of issue	Comments
5830	May 1966	
4299	July 1983	Indicated by a sideline in the margin

Contents

	Page
Foreword	iii
1 Scope	1
2 Definitions	1
Section 1. General requirements	
3 General	1
4 Rating	1
5 Performance	1
6 Declarations	2
7 Marking	2
Section 2. Particular requirements	
8 Method of operation	2
9 Construction	2
10 Dimensions	3
11 Environmental requirements	3
12 Explosion-proofness	3
13 Magnetic interference	3
Section 3. Tests	
14 General	3
A. Type tests	
15 Vibration test	4
16 Acceleration test	4
17 Climatic test	5
18 High voltage and insulation tests	5
19 Test of explosion-proofness	5
20 Measurement of compass safe distance	5
21 Tests of temperature rise and minimum and maximum limit of ultimate trip current	5
22 Operating forces test	6
23 Mechanical tests	6
24 Test of calibration of overload trip	6
25 Overload and re-closure test	7
26 Endurance tests	7
27 Making and breaking capacity tests	8
28 Test of self re-closing at low temperature	9
B. Production tests	
29 Calibration tests	9
30 High voltage and insulation tests	9
C. Quality tests	
31 Selection of samples	10
32 Tests of minimum and maximum limit of ultimate trip current	10
33 Operating force test	10
34 Test of calibration of overload trip	10
35 Vibration test	11
36 Strip examination and report	11
Appendix Serviceability tests	12
Figure 1 — Dimensions and fixing holes for 3 to 35 amp push-pull circuit-breakers	10
Figure 2 — Typical test circuit for breaking capacity test	11

	Page
Table 1	1
Table 2	2
Table 3	3
Table 4	5
Table 5	8
Table 6	8
Table 7	9

Foreword

This standard has been prepared as part of a programme of work to bring the aircraft series British Standards for hand-operated circuit-breakers up-to-date in relation to present-day and probable future requirements, and to experience gained in working to earlier issues of the standards. Account has been taken of the requirements of relevant American specifications, and of the work of Technical Committee 20 — Aircraft, of the International Organization for Standardization, to establish ISO Recommendations on aircraft circuit-breakers to facilitate their interchangeability internationally.

It is intended to publish the standard in a number of separate parts, each dealing with a particular type of circuit-breaker and replacing BS 2G 121 and BS G 140. Part 1 relates to hand-operated, single-pole circuit-breakers for use on 28 V d.c. and/or 115 V single-phase 400 cycle a.c. line to neutral circuits in aircraft; Part 2¹⁾ relates to hand-operated, multi-pole circuit-breakers for use on 200 V three-phase, 400 cycle a.c. aircraft systems.

One of the principal differences between this standard and earlier British Standards for aircraft circuit-breakers, e.g. BS G 121, is that preference is now expressed for the type of circuit-breaker operated by a single push-button.

Provision is made for the classification of the circuit-breakers in categories according to their making-and-breaking capacity. In determining these categories, whilst adopting the essential features of the American specification test method and fault current characteristic, reference has been made to the actual measured conditions which apply at various points in the electrical power system of a number of particular aircraft types, and also to the tested making-and-breaking capacity of a number of existing circuit-breakers of British and American design.

The tests, which have been grouped as type tests, production tests and quality tests, now include a test of the force required to operate the circuit-breaker and a test for freedom from compass interference. A test circuit is specified for the making-and-breaking capacity test, and recommendations are made as to suitable tests for verifying the serviceability of the circuit-breakers after storage or use.

Reference to the following British Standards is required:

BS 2G 100, *General requirements for electrical equipment and indicating instruments for aircraft.*

BS G 177, *Nyvin type electrical cables for aircraft.*

BS G 178, *Crimped joints (non-insulated) for general purpose electrical cables for aircraft.*

BS 862, *Air-break circuit-breakers (including totally-enclosed and flame-proof types) for voltages not exceeding 660 volts.*

NOTE The figures in British units are to be regarded as the standard: metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, "Conversion factors and tables".

Obsolescent

The need for the equipment covered by this British Standard has been reviewed and it has been decided that, in the interests of rationalization, it should be regarded as obsolescent and not therefore used for new designs. The standard will be withdrawn in due course.

¹⁾ To be prepared.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 12 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.