PRODUCED BY THE OPERATIONS DIRECTORATE OF ENERGY NETWORKS ASSOCIATION

Engineering Recommendation G18

Issue 3 2013

Air Break Switch Disconnectors: Recommendations

www.energynetworks.org

PUBLISHING AND COPYRIGHT INFORMATION

Operations Directorate
Energy Networks Association
6th Floor, Dean Bradley House
52 Horseferry Rd
London
SW1P 2AF

Issue 2 published, February, 2008.

Amendments since publication

Issue	Date	Amendment
Issue 3	November, 2013	Minor revision of Issue 2 to reflect changes in ENA TS 41-36 and amendment of affected clauses. This issue includes the following principal technical changes. Clause 2: Ratings (re-numbered Clause 5). Paragraph 4 revised to refer explicitly to Table 2.1 for the ratings of new ABSDs fitted with a mechanism other than dependent manual or dependent power, and fitted with a self-contained arc extinguishing device. Note a) deleted now that ENA TS 41-36 has been revised. Clause 3: Design (re-numbered Clause 6). Recommendation added that high level operated mechanisms should be bonded to the switch and the pole top steelwork. Table 2.1. Table A2.1 of Annex B placed in the main body of the document as Table 2.1 with the layout modified to match that of the other ratings tables. This table of rated values for Category 0 ABSDs has been retained because the values have not been included in TS 41-36 Issue 3. The note that "Rated values form basis for ratings in Part 6 of ENA TS 41-36 'Additional clauses for overhead connected air-break switch disconnectors'" deleted and replaced with "ENA TS 41-36 Table 6.2 includes an entry of short-circuit making current for ABSDs fitted with a mechanism other than dependent manual or dependent power of 10 kA (25 kA peak) irrespective of current rating". Annex 1 (re numbered Annex A) with following recommendations added. Item e) that a check is made to ensure the switch is in the expected position for the intended operation and item g) to make a visual inspection of the earth arrangement where the ABSD is mounted on a pole with a separate HV earth.

		Annex 2 deleted - see comments on Table 2.1 above. Details of all other technical, general and editorial amendments are included in the associated Document Amendment Summary for this Issue (available on request from the Operations Directorate of ENA).

Contents

Tables

This page deliberately left blank

Foreword

This Engineering Recommendation (EREC) is published by the Energy Networks Association (ENA) and comes into effect from date of publication. It has been prepared under the authority of the ENA Engineering Policy and Standards Manager and has been approved for publication by the ENA Electricity Networks and Futures Group (ENFG). The approved abbreviated title of this engineering document is “EREC G18”, which replaces the previously used abbreviation “ER G18”.

This Engineering Recommendation provides recommendations for the categorisation and the ratings of air break switch disconnectors that are appropriate to the needs of the UK electricity distribution network.

ENA Engineering Technical Report No. 137 considered the past service performance of operating air break switch disconnectors in Distribution Network Operator Companies, and concluded that because of the continued good operational and safety record, Engineering Recommendation G18 should continue to be used as the basis for specifying air break switch disconnectors with dependent manual mechanisms.

This Engineering Recommendation was revised in 2008 to review and update the recommendation for operating air break switch disconnectors to meet current and future requirements. Amendments resulting from the revision of ENA TS 41-36 are addressed in this Issue.

This Engineering Recommendation forms the basis and source of the additional clauses in Clause 6 of ENA Technical Specification 41-36 for specifying ratings, design & construction, operation and testing of air break switch disconnectors.

Where the term “shall” or “must” is used in this document it means the requirement is mandatory. The term “should” is used to express a recommendation. The term “may” is used to express permission."

Commentary, explanation and general informative material is presented in smaller type, and does not constitute a normative element.

1 Scope

This Engineering Recommendation specifies the ratings applicable to overhead conductor connected air break switch disconnectors (ABSDs) from 7.2 kV to 36 kV, together with some technical requirements. This Recommendation excludes ABSDs incorporated in metal-clad or cellular type switchgear.

This Engineering Recommendation also covers typical operational practices and safety precautions, and for convenience includes the suggested methods of identification and marking from Issue 1 that continue to be used throughout the industry.

2 Normative references

The following referenced documents, in whole or part, are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publications

IEC 62271-102 Ed 1:2002+A1:2011, *High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches*

Other publications

[N1] ENA ETR 137, *Review of Operation of Air Break Switch Disconnectors*

NOTE: This report is confidential to ENA Member Companies.

[N2] ENA TS 41-24, *Guidelines for the Design, Installation, Testing and Maintenance of Main Earthing Systems in Substations*

[N3] ENA TS 41-36 Issue 3:2012, *Switchgear for Service up to 36 kV (Cable and Overhead Conductor Connected)*

3 Terms and definitions

3.1
air break switch disconnector (ABSD)
switch disconnector in which the contacts open and close in air at atmospheric pressure

[IEV 441-14-27 modified]

NOTE: The term ‘air break isolating switch’ was used in earlier versions of ER G81.

3.2
dependent manual operation
operation solely by means of directly applied manual energy, such that the speed and force of the operation are dependent upon the action of the operator

[IEV 441-16-13]

3.3
switch disconnector
switch which, in the open position, satisfies the isolating requirements specified for a disconnector

[IEV 441-14-12]