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Première partie: Prescriptions générales

Second supplement to Publication 337-1 (1970) Control switches (low-voltage switching devices for control and auxiliary circuits, including contactor relays)

Part 1: General requirements



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SECOND SUPPLEMENT TO PUBLICATION 337-1 (1970)
CONTROL SWITCHES (LOW-VOLTAGE SWITCHING DEVICES
FOR CONTROL AND AUXILIARY CIRCUITS,
INCLUDING CONTACTOR RELAYS)

Part 1: General requirements

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendations and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This publication has been prepared by Sub-Committee 17B, Low-Voltage Switchgear and Controlgear, of IEC Technical Committee No. 17, Switchgear and Controlgear.

The first draft, established in April 1972, was amended by the Chairman and the Secretary of SC 17B who took into account the comments received, and the second draft was discussed at the meeting held in Paris in 1974. The final draft was submitted to the National Committees for approval under the Six Months' Rule in June 1974.

The following countries voted explicitly in favour of publication:

Australia
Austria
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Hungary
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Italy
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Netherlands

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Turkey
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Socialist Republics
United Kingdom
United States of America
Yugoslavia

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ADDITIONS TO PUBLICATION 337-1

After Clause 2.1.6, add:

2.1.7 *Conditional short-circuit current (of a control switch)*

A value of prospective current which a control switch, protected by a specified current-limiting switching device, can satisfactorily withstand for the operating time of this device under specified conditions of use and behaviour.

Note. — For a.c., the conditional short-circuit current is expressed by the r.m.s. value of the a.c. component.

2.1.8 *Fused short-circuit current (of a control switch)*

The conditional short-circuit current when the current-limiting switching device is a fuse.

After Clause 4.2.2.2, add:

4.2.2.3 *Rated conditional short-circuit current (or rated fused short-circuit current) (of a control switch)*

The value of prospective current which a control switch, protected by a specified current-limiting switching device, can satisfactorily withstand for the operating time of this device under the test conditions specified in Clause 3.

Unless otherwise stated by the manufacturer, this value is 1 000 A.

Note. — The condition of not more than 1 000 A prospective short-circuit current is characteristic for most cases of control circuits involving a control transformer. When the control circuit is fed directly from a source with a higher fault level, it is recommended that the manufacturer should be consulted.

The characteristics of the current-limiting switching device shall be stated by the manufacturer.

Notes 1. — It is assumed that the requirements will remain satisfied for lower values of rated current of a SCPD of the same type and homogeneous design.

2. — The above-mentioned requirements given for a.c. are considered to be adequate for d.c. also.

At the end of Clause 8.1, add the following paragraph:

d) if appropriate, tests for verification of the rated conditional short-circuit current or of the rated fused short-circuit current (see Clause 8.1.4).

After Clause 8.1.3.4, add:

8.1.4 Verification of the rated conditional short-circuit current or of the rated fused short-circuit current

8.1.4.1 Condition of the control switch for the test

The control switch shall be in a new and clean condition, mounted as in service and at room temperature.

8.1.4.2 Test procedure

The control switch may be operated a few times before the test, at no load or at any current not exceeding the rated current.

The test circuit and test quantities shall be as specified in Clause 8.1.4.3. The control switch shall be connected in series with the current-limiting switching device as stated by the manufacturer; it shall also be in series with a switching device intended to close the circuit.

The test shall be made on the control switch with the actuator in the position corresponding to the closed position of the contact element under test. The test is performed by making the current three times at random, by means of the switching device in series with the control switch, with an interval of rest not less than 3 min.

8.1.4.3 Test circuit and test quantities

The test circuit shall be inductive and be adjusted to a prospective current of 1 000 A at a power-factor of between 0.5 and 0.7; however, if the manufacturer has stated, for the rated conditional short-circuit current (or rated fused short-circuit current), a value which is different from 1 000 A, the test shall be made at this stated value. The limitation shall be obtained by a series circuit or by a suitable control transformer. No parallel damping load shall be added. The test voltage shall be equal to 1.1 times the maximum rated operational voltage of the control switch.

8.1.4.4 Behaviour of the control switch during and after the tests

After each short-circuit, the control switch shall remain in good working condition and no damage shall occur that may interfere with further use of the control switch; in particular, there shall be no welding of contacts to an extent that could impair normal operation.
