

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Low-voltage switchgear and controlgear –
Part 6-2: Multiple function equipment – Control and protective switching devices
(or equipment) (CPS)**

**Appareillage à basse tension –
Partie 6-2: Matériels à fonctions multiples – Appareils (ou matériel) de connexion
de commande de protection (ACP)**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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CONTENTS

FOREWORD.....	7
1 Scope.....	10
2 Normative references	10
3 Terms and definitions	11
3.1 General.....	11
3.2 Terms and definitions related to the equipment.....	12
3.3 Terms and definitions concerning characteristic quantities.....	13
3.4 Terms and definitions concerning safety aspects	14
4 Classification.....	15
5 Characteristics	15
5.1 Summary of characteristics.....	15
5.2 Type of equipment	15
5.2.1 Number of poles	15
5.2.2 Kind of current (alternating current or direct current).....	15
5.2.3 Method of operation.....	15
5.2.4 Method of control.....	16
5.2.5 Method of resetting after overload	16
5.2.6 Method of rearming after short-circuit	16
5.3 Rated and limiting values of the main circuit	16
5.3.1 Rated voltages	16
5.3.2 Currents and powers	16
5.3.3 Rated frequency	16
5.3.4 Rated duties	16
5.3.5 Normal load and overload characteristics – Rated making and breaking capacities	17
5.3.6 Short circuit characteristics – Rated service short-circuit breaking capacity (I_{CS}).....	17
5.3.7 Pole impedance of a CPS (Z).....	17
5.4 Utilization categories.....	17
5.4.1 General	17
5.4.2 Assignment of utilization categories based on the results of tests	18
5.4.3 Application of utilization categories for motor control duty.....	19
5.5 Control circuits.....	19
5.6 Auxiliary circuits.....	20
5.7 Relays or releases	20
5.7.1 Summary of characteristics.....	20
5.7.2 Types of relays or releases.....	20
5.7.3 Characteristic values	21
5.7.4 Designation and current setting of overload relays or releases	21
5.7.5 Time-current characteristics of over current relays or releases	21
5.7.6 Influence of ambient air temperature.....	22
6 Product information	22
6.1 Nature of information	22
6.1.1 Identification.....	22
6.1.2 Characteristics.....	22
6.2 Marking.....	23
6.3 Instructions for installation, operation and maintenance	24

6.4	Environmental information	24
7	Normal service, mounting and transport conditions	24
8	Constructional and performance requirements	25
8.1	Constructional requirements	25
8.1.1	General	25
8.1.2	Materials	25
8.1.3	Current-carrying parts and their connections	26
8.1.4	Clearances and creepage distances	26
8.1.5	Actuator	26
8.1.6	Indication of the contact position	27
8.1.7	Additional requirements for equipment suitable for isolation	27
8.1.8	Terminals	27
8.1.9	Additional requirements for equipment provided with a neutral pole	27
8.1.10	Provisions for protective earthing	27
8.1.11	Enclosures for equipment	27
8.1.12	Degrees of protection of enclosed equipment	28
8.1.13	Conduit pull-out, torque and bending with metallic conduits	28
8.1.14	Limited energy source	28
8.1.15	Stored charge energy circuit	30
8.1.16	Fault and abnormal conditions	30
8.1.17	Short-circuit and overload protection of ports	31
8.2	Performance requirements	31
8.2.1	Operating conditions	31
8.2.2	Temperature-rise	37
8.2.3	Dielectric properties	39
8.2.4	Performance under no load, normal load and overload conditions	39
8.2.5	Ability to make, carry and break short-circuit currents	45
8.2.6	Pole impedance	46
8.2.7	Leakage currents of equipment suitable for isolation	46
8.2.8	Coil power consumption	46
8.2.9	Co-ordination between a CPS and another short-circuit protective device	46
8.3	Electromagnetic compatibility (EMC)	46
8.3.1	General	46
8.3.2	Immunity	47
8.3.3	Emission	47
9	Tests	48
9.1	Kind of tests	48
9.1.1	General	48
9.1.2	Type test	48
9.1.3	Routine tests	48
9.1.4	Sampling tests	48
9.1.5	Special tests	48
9.2	Compliance with constructional requirements	49
9.2.1	General	49
9.2.2	Electrical performance of screwless-type clamping units	49
9.2.3	Ageing test for screwless-type clamping units	50
9.2.4	Limited energy source test	50
9.2.5	Breakdown of components	51

9.3	Compliance with performance requirements	51
9.3.1	Test sequences	51
9.3.2	General test conditions	52
9.3.3	Performance under no load, normal load and overload conditions.....	52
9.3.4	Performance under short-circuit conditions	61
9.4	EMC tests	63
9.4.1	General	63
9.4.2	Immunity.....	64
9.4.3	Emission.....	69
9.5	Test sequences	70
9.5.1	General	70
9.5.2	Test sequence I: temperature-rise, operating limits, dielectric properties	71
9.5.3	Test sequence II: performance under normal load and overload conditions	75
9.5.4	Test sequence III: operational performance before and after operating sequences at conventional prospective current I_{Cr} and conventional prospective current "r" test	76
9.5.5	Test sequence IV: operational performance before and after operating sequences at I_{CS}	77
9.5.6	Test sequence V: additional breaking capacity	78
9.5.7	Test sequence VI: additional test sequence for four-pole CPS's.....	78
9.5.8	Test sequence VII: additional test sequence for CPS's intended for use in an individual enclosure	79
9.5.9	Test sequence VIII: EMC	79
9.6	Routine tests.....	79
9.6.1	General	79
9.6.2	Operation and operating limits	80
9.6.3	Dielectric tests.....	80
Annex A (normative)	Special tests	81
A.1	General.....	81
A.2	Mechanical durability	81
A.2.1	General	81
A.2.2	Verification of mechanical durability.....	81
A.3	Electrical durability	83
Annex B (xxx)	Vacant	84
Annex C (normative)	Marking and identification of CPS terminals	85
C.1	General.....	85
C.2	Marking and identification of terminals of main circuits.....	85
C.2.1	General	85
C.2.2	Marking and identification of terminals of auxiliary circuits	85
Annex D (informative)	Items subject to agreement between manufacturer and user	86
Annex E (xxx)	Vacant	87
Annex F (normative)	Requirements for auxiliary contact linked with power contact (mirror contact).....	88
F.1	Application and object.....	88
F.1.1	Application.....	88
F.1.2	Object.....	88
F.2	Terms and definitions.....	88
F.3	Characteristics.....	88

F.4	Product information.....	88
F.5	Normal service, mounting and transport conditions	89
F.6	Constructional and performance requirements	89
F.7	Tests	89
F.7.1	General	89
F.7.2	Tests on products in a new condition	89
F.7.3	Test after conventional operational performance (defined under Table 10) ...	90
Annex G (normative)	Test sequence for CPS's for IT systems	91
G.1	General.....	91
G.2	Individual pole short circuit	91
G.3	Verification of dielectric withstand	92
G.4	Verification of overload releases	92
G.5	Marking.....	92
Annex H (xxx)	Vacant	93
Annex I (informative)	Glossary of symbols and graphical representation of characteristics	94
Annex J (xxx)	Vacant	95
Annex K (normative)	Procedure to determine data for electromechanical CPS used in functional safety applications	96
K.1	General.....	96
K.2	Test requirements	96
K.3	Characterization of a failure mode	96
K.4	Failure ratios of a CPS.....	96
Annex L (xxx)	Vacant.....	98
Annex M (informative)	Load monitoring indicators	99
M.1	General.....	99
M.2	Indicators list	99
M.3	Uncertainty	101
M.4	Tests	102
M.4.1	Routine tests	102
M.4.2	Type tests.....	102
Annex N (normative)	Additional requirements and tests for equipment with protective separation.....	104
N.1	General.....	104
N.2	Terms and definitions.....	104
N.3	Requirements	104
N.3.1	Test method for implementing protective impedance.....	104
N.3.2	Touch current measurement	105
Bibliography	107
Figure 1	Multiple of current setting limits for ambient air temperature time-delay overload relays or releases (see 8.2.1.5.1)	34
Figure 2	Thermal memory test	36
Figure 3	Voltage drop measurement at contact point of the clamping terminal	50
Figure 4	Example of a pole impedance measurement for a three-pole CPS.....	59
Figure 5	Representation of test current produced by back-to-back thyristors.....	67
Figure 6	Test current for the verification of the influence of the current dips and interruptions.....	68

Figure F.1 – Mirror contact.....	89
Figure M.1 – Example of quantification of a process change.....	101
Figure N.1 – Protection by means of protective impedance.....	105
Figure N.2 – Measuring instrument.....	106
Table 1 – Utilization categories.....	18
Table 20 – Limits for limited energy sources without an over-current protective device.....	29
Table 21 – Limits for limited energy sources with an over-current protective device.....	29
Table 22 – Limits for limited energy source with current limiting impedance.....	30
Table 2 – Limits of operation of inverse time-delay overload relays or releases when energized on all poles.....	33
Table 3 – Trip classes of overload relays or releases for utilization categories AC-2, AC-3, AC-3e, AC-4, DC-3, DC-5.....	34
Table 4 – Limits of operation of three-pole inverse time-delay overload relays or releases when energized on two poles only.....	35
Table 5 – Temperature-rise limits of terminals.....	37
Table 6 – Temperature-rise limits for insulated coils in air.....	38
Table 7 – Intermittent duty test cycle data.....	38
Table 8 – Rated making and breaking capacities – Making and breaking conditions corresponding to the utilization categories.....	40
Table 9 – Relationship between current broken I_C and OFF-time for the verification of rated making and breaking capacities.....	41
Table 10 – Conventional operational performance after making/breaking capacity tests – Making and breaking conditions according to utilization category.....	43
Table 11 – Operational performance before and after short-circuit tests at I_{Cr} and I_{Cs} – Making and breaking conditions according to utilization category.....	44
Table 12 – Value of the prospective test current according to the rated operational current.....	45
Table 13 – Value of the prospective test current according to the rated operational current (harmonized table).....	46
Table 14 – Performance criteria when EM disturbances are present.....	47
Table 15 – EMC immunity tests.....	64
Table 16 – Test parameters for harmonics and interruptions.....	68
Table 17 – Terminal disturbance voltage limits for conducted radio-frequency emission (for mains ports).....	69
Table 18 – Radiated emission test limits.....	70
Table 19 – Test sequences.....	70
Table F.1 – Test voltage according to altitude.....	90
Table G.1 – Individual pole.....	91
Table K.1 – Failure mode of CPS.....	96
Table K.2 – Typical failure ratios for CPS.....	97
Table M.1 – AC monitoring indicators list.....	100
Table M.2 – Different possibilities authorized for verification of indicators.....	102
Table M.3 – Reference for verification conditions.....	103
Table M.4 – Harmonic levels.....	103

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**Part 6-2: Multiple function equipment –
Control and protective switching devices (or equipment) (CPS)**

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International Standard IEC 60947-6-2 has been prepared by subcommittee 121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low-voltage.

This third edition cancels and replaces the second edition published in 2002 and its Amendment 1:2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- editorial changes according to ISO/IEC directives Part 2,
- alignments with IEC 60947-1:2020:
 - markings ("s", "sol", "r" or "f");
 - constructional requirements including material requirements;
 - requirements for screwless terminals;

- measurement method of the pole impedance;
- EMC requirement and testing;
- procedure to determine data for electromechanical CPS's used in functional safety applications;
- harmonisation with IEC 60947-2:2016:
 - operation tests of under-voltage relays and shunt releases;
 - CPS for IT systems (Annex G);
 - coordination with other short-circuit protective devices;
- alignments with IEC 60947-4-1:2018:
 - test at the rated conditional short-circuit current I_q of protected switching devices;
 - short-circuit tests harmonisation with North America;
 - reliability data for functional safety applications (new Annex K);
 - safety aspects related to electronic circuits and protective impedance (new Annex N);
 - introduction of provisions covering the impact of higher locked rotor current to achieve high efficiency class;
 - mention of dedicated wiring accessories;
 - definitions and measurement method of the power consumption of the control circuit during holding and pick-up operations;
 - load monitoring indicators (new Annex M).

The text of this International Standard is based on the following documents:

FDIS	Report on voting
121A/384/FDIS	121A/392/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 60947 series, under the general title *Low-voltage switchgear and controlgear*, can be found on the IEC website.

This document shall be read in conjunction with IEC 60947-1, *Low voltage switchgear and controlgear – Part 1: General rules*.

The provisions of the general rules are applicable to this part of IEC 60947-6, where specifically called for. General rules clauses and subclauses thus applicable as well as tables, figures and annexes are identified by reference to IEC 60947-1, for example, 1.2.3, Table 4, or Annex A of IEC 60947-1:2020.

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 6-2: Multiple function equipment – Control and protective switching devices (or equipment) (CPS)

1 Scope

This document applies to control and protective switching devices (or equipment) (CPS), the main contacts of which are intended to be connected to circuits of rated voltage not exceeding 1 000 V AC or 1 500 V DC.

It covers control and protective switching device (CPS):

- which provides protective and control functions for circuits and motors;
- where its control function is operated exclusively otherwise than by hand;
- which provides continuity of service after over-current conditions; and
- which can have additional functions, such as isolation or communication.

This document does not apply to:

- auxiliary contacts, covered by IEC 60947-5-1;
- CPS used downstream to frequency drive¹;

NOTE Additional requirements for CPS used downstream to frequency drive are under consideration for the next maintenance cycle.

- the use of the product with additional measure within explosive atmospheres, covered by IEC 60079 (all parts);
- embedded software design rules, covered by IEC TR 63201;
- cyber security aspects, covered by IEC TS 63208.

The object of this document is to state:

- the characteristics of CPS's;
- the conditions with which CPS's are complying with reference to their operation and behaviour, their dielectric properties, the degree of protection provided by their enclosure where applicable, its construction including safety measures against electric shock, fire hazard and mechanical hazard;
- the tests intended to verify that these conditions have been met, and the methods to be adopted for these tests;
- the information to be marked on or given with the CPS's.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

¹ For this subject, the manufacturer is responsible to take additional safety measures.