

INTERNATIONAL STANDARD

NORME INTERNATIONALE



General requirements for arc fault detection and protection devices (AFDDs)

Exigences générales des dispositifs pour la détection et la protection de défaut d'arcs (DPDA)

IEC 62606:2013

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CONTENTS

FOREWORD	9
INTRODUCTION	11
1 Scope	12
2 Normative references	13
3 Terms and definitions	15
4 Classification	18
4.1 According to the method of construction	18
4.2 According to the method of mounting and connection	18
4.3 According to the number of poles and current paths	18
4.4 AFDD providing monitoring information	18
5 Characteristics of AFDDs	19
5.1 Summary of characteristics and conditions to mitigate the risk of fire	19
5.2 Rated quantities and other characteristics	19
5.2.1 Rated voltage	19
5.2.2 Rated current (I_n)	19
5.2.3 Rated frequency	19
5.2.4 Rated making and breaking capacity (I_m)	20
5.2.5 Rated making and breaking capacity on one pole (I_{m1})	20
5.3 Standard and preferred values	20
5.3.1 Preferred values of rated voltage (U_n)	20
5.3.2 Preferred values of rated current (I_n)	21
5.3.3 Preferred Standard values of rated frequency	21
5.3.4 Minimum value of the rated making and breaking capacity (I_m)	21
5.3.5 Minimum value of the rated making and breaking capacity on one pole (I_{m1})	21
5.3.6 Standard and preferred values of the rated conditional short-circuit current (I_{nc}) and standard and preferred values of the rated conditional short circuit current for one pole (I_{nc1})	21
5.3.7 Limiting values of operating criteria for AFDDs for low and high arc currents	22
5.4 Standard value of rated impulse withstand voltage (U_{imp})	22
5.5 Coordination with short-circuit protective devices (SCPDs)	23
5.5.1 General	23
5.5.2 Rated conditional short-circuit current (I_{nc}) and rated conditional short-circuit on one pole (I_{nc1})	23
5.5.3 Operating characteristics of opening means for AFDDs according to 4.1.1	23
6 Marking and other product information	24
6.1 Marking	24
6.2 Additional marking for AFDDs according to 4.1.1	25
6.2.1 Marking of AFDDs	25
6.2.2 Instructions for wiring and operation	26
7 Standard conditions for operation in service and for installation	26
7.1 Standard conditions	26
7.2 Conditions of installation	27
7.3 Pollution degree	27
8 Requirements for construction and operation	27

8.1	General	27
8.2	Mechanical design.....	28
8.2.1	General	28
8.2.2	Mechanism	29
8.2.3	Clearances and creepage distances (see Annex B)	30
8.2.4	Screws, current-carrying parts and connections.....	33
8.2.5	Terminals for external conductors	33
8.3	Protection against electric shock	35
8.4	Dielectric properties and isolating capability	36
8.5	Temperature rise	36
8.5.1	Temperature-rise limits	36
8.5.2	Ambient air temperature	37
8.6	Operating characteristics.....	37
8.6.1	Operating characteristics of the protective device part.....	37
8.6.2	Operating characteristics	37
8.7	Mechanical and electrical endurance	38
8.8	Performance at short-circuits currents	38
8.9	Resistance to mechanical shock and impact.....	38
8.10	Resistance to heat.....	38
8.11	Resistance to abnormal heat and to fire	38
8.12	Behaviour of AFDDs in case of overcurrents in the main circuit	38
8.13	Behaviour of AFDDs in case of current surges caused by impulse voltages	39
8.14	Reliability	39
8.15	Electromagnetic compatibility (EMC)	39
8.16	Masking test for correct operation behaviour in presence of various appliances connected to the load side	39
8.17	Performance of the AFD test device	39
8.18	Performance in case of partial loss of supply connections	40
9	Testing procedure	40
9.1	General	40
9.1.1	General testing procedure for the different type of AFDDs	40
9.1.2	The characteristics of AFDDs are checked by means of type tests	41
9.1.3	For certification purposes, type tests are carried out in test sequences	42
9.1.4	Routine tests to be carried out by the manufacturer on each device	42
9.2	Test conditions	42
9.3	Test of indelibility of marking	43
9.4	Test of reliability of screws, current-carrying parts and connections	44
9.5	Test of reliability of terminals for external conductors	45
9.6	Verification of protection against electric shock	46
9.7	Test of dielectric properties	47
9.7.1	General	47
9.7.2	Resistance to humidity	47
9.7.3	Insulation resistance of the main circuit	47
9.7.4	Dielectric strength of the main circuit	48
9.7.5	Insulation resistance and dielectric strength of auxiliary circuits	49
9.7.6	Capability of control circuits connected to the main circuit in respect of withstanding high d.c. voltages due to insulation measurements.....	49
9.7.7	Verification of impulse withstand voltages (across clearances and across solid insulation) and of leakage current across open contacts	50

9.8	Test of temperature-rise	53
9.8.1	Ambient air temperature	53
9.8.2	Test procedure	54
9.8.3	Measurement of the temperature of parts	54
9.8.4	Temperature-rise of a part	54
9.9	Verification of the operating characteristics	54
9.9.1	General	54
9.9.2	Series arc fault tests	54
9.9.3	Parallel arc fault tests	58
9.9.4	Masking test, verification of correct operation	60
9.9.5	Unwanted tripping test	62
9.10	Verification of mechanical and electrical endurance	64
9.10.1	General test conditions	64
9.10.2	Test procedure	64
9.10.3	Condition of the AFDD after test	65
9.11	Verification of the behaviour of the AFDD under short-circuit conditions	65
9.11.1	General	65
9.11.2	Short-circuit tests for AFDDs according to 4.1.1	65
9.12	Verification of resistance to mechanical shock and impact	73
9.12.1	Mechanical shock	73
9.12.2	Mechanical impact	74
9.13	Test of resistance to heat	76
9.14	Test of resistance to abnormal heat and to fire	77
9.15	Verification of the trip-free mechanism	78
9.15.1	General test conditions	78
9.15.2	Test procedure	78
9.16	Test of resistance to rusting	78
9.17	Verification of limiting values of the non-operating current under overcurrent conditions	79
9.18	Verification of behaviour of AFDDs in case of current surges caused by impulse voltages	79
9.18.1	General	79
9.18.2	Verification of behaviour at surge currents up to 3 000 A (8/20 µs surge current test)	79
9.19	Verification of reliability	80
9.19.1	General	80
9.19.2	Climatic test	80
9.19.3	Test with temperature of 40 °C	81
9.20	Verification of ageing of electronic components	82
9.21	Electromagnetic compatibility (EMC)	82
9.21.1	General	82
	9.21.2 EMC tests covered by other clauses of the present standard	
	9.21.3 EMC tests to be performed	
	9.21.4 AFDDs Performance criteria	
	9.21.2 Electromagnetic emission of AFDDs	85
	9.21.3 Electromagnetic immunity of AFDDs	85
9.22	Verification of protection due to overvoltage due to a broken neutral in a three phase system	88
9.23	Verification of the behaviour in case of partial loss of supply connections	88

Annex A (normative) Test sequence and number of samples to be submitted for certification purposes	116
Annex B (normative) Determination of clearances and creepage distances	125
Annex C (normative) Arrangement for the detection of the emission of ionized gases during short-circuit tests	130
Annex D (normative) Additional requirements and tests for AFDDs according to the classification 4.1.3 designed to be assembled on site together with a main protective device (circuit-breaker or RCCB or RCBO)	133
Annex E (normative) Routine tests	138
Annex F (informative) Description of the shaker arc test in 9.10.2	139
Annex IA (informative) Methods of determination of short-circuit power-factor	141
Annex IB (informative) Examples of terminal designs	143
Annex IC (informative) Correspondence between ISO and AWG copper conductors	146
Annex ID (informative) Follow-up testing program for AFDDs	147
Annex IE (informative) SCPDs for short-circuit tests	151
Annex J (normative) Particular requirements for AFDDs with screwless type terminals for external copper conductors	153
Annex K (normative) Particular requirements for AFDDs with flat quick-connect terminations	161
Annex L (normative) Specific requirements for AFDDs with screw-type terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors	168
Bibliography	178
Figure 1 – Thread forming tapping screw	89
Figure 2 – Thread cutting tapping screw	89
Figure 3 – Standard test finger (9.6)	90
Figure 4 – Test circuit for series arc fault tests	91
Figure 5 – Arc generator	91
Figure 6 – Test circuit for parallel arc fault tests	91
Figure 7 – Test circuit for parallel arc cable cutting test	92
Figure 8 – Test apparatus	92
Figure 9 – Test for verification of correct operation in case of parallel arc to ground	92
Figure 10 – Test circuit for masking tests (inhibition and disturbing loads)	92
Figure 11 – Test configuration for masking tests	93
Figure 12 – EMI filter 1 for masking tests	93
Figure 13 – EMI filter 2 for masking tests	94
Figure 14 – EMI filter description installed in Figure 13	94
Figure 15 – Test circuit for masking tests with line impedance	94
Figure 16 – Cross talk test	95
Figure 17 – Controlled current test circuit Void	96
Figure 18 – Controlled current with delay angle 45°, 90° and 135° Void	96
Figure 19 – Typical diagram for all short circuit tests except for 9.11.2.4 c)	99
Figure 20 – Typical diagram for short circuit tests (9.11.2.4.c)	101
Figure 21 – Detail of impedance Z, Z ₁ and Z ₂	102
Figure 22 – Example of calibration record for short-circuit test (9.11.2.2 j)	102

Figure 23 – Mechanical shock test apparatus (9.12.1)	103
Figure 24 – Mechanical impact test apparatus (9.12.2.2)	104
Figure 25 – Striking element for pendulum impact test apparatus (9.12.2.2).....	105
Figure 26 – Mounting support for sample for mechanical impact test (9.12.2.2).....	106
Figure 27 – Example of mounting of unenclosed AFDD for mechanical impact test (9.12.2.2)	107
Figure 28 – Example of mounting of panel mounting type AFDD for the mechanical impact test (9.12.2.2)	108
Figure 29 – Application of force for mechanical test of rail mounted AFDD (9.12.2.3).....	109
Figure 30 – Ball-pressure test apparatus (9.13.2)	109
Figure 31 – Surge current impulse 8/20 μ s.....	110
Figure 32 – Test circuit for the surge current test at AFDDs	110
Figure 33 – Stabilizing period for reliability test (9.19.2.3).....	111
Figure 34 – Reliability test cycle (9.19.2.3)	112
Figure 35 – Example for test circuit for verification of ageing of electronic components (9.20).....	113
Figure 36 – Preparation of the cable specimens (9.9.2.6)	114
Figure 37 – Example of arc voltage and current waveform obtained with cable specimen	114
Figure 38 – Test circuit for series arc in a three-phase system with balanced and unbalanced load	115
Figure 39 – Test configuration for masking tests for three-pole and four-pole AFDDs.....	115
Figure C.1 – Test arrangement	131
Figure C.2 – Grid	132
Figure C.3 – Grid circuit.....	132
Figure F.1 – Gap Measurement.....	139
Figure F.2 – Shaker arc test table with Loose Terminals	139
Figure F.3 – AFDD connected to the shaker arc table during test.....	140
Figure IB.1 – Examples of pillar terminals	143
Figure IB.2 – Examples of screw terminals and stud terminals	144
Figure IB.3 – Examples of saddle terminals	145
Figure IB.4 – Examples of lug terminals	145
Figure IE-1 – Test apparatus for the verification of the minimum I^2t and I_p values to be withstood by the AFDD	152
Figure J.1 – Connecting samples	158
Figure J.2 – Examples of screwless-type terminals	160
Figure K.1 – Example of position of the thermocouple for measurement of the temperature-rise	164
Figure K.2 – Dimensions of male tabs.....	165
Figure K.3 – Dimensions of round dimple detents (see Figure K.2)	166
Figure K.4 – Dimensions of rectangular dimple detents (see Figure K.2).....	166
Figure K.5 – Dimensions of hole detents.....	166
Figure K.6 – Dimensions of female connectors	167
Figure L.1 – General arrangement for the test.....	176
Figure L.2 – Example for the use of the terminals in the AFDD	176

Figure L.3 – Example for the use of the terminals in the AFDD	177
Figure L.4 – Example for the use of the terminals in the AFDD	177
Figure L.5 – Example for the use of the terminals in the AFDD	177
Figure L.6 – Example for the use of the terminals in the AFDD	177
Table 1 – Limit values of break time for $U_n = 230\text{ V}$ and 400 V AFDDs	22
Table 2 – Limit values of break time for $U_n = 120\text{ V}$ AFDDs	22
Table 3 – Maximum allowed number of arcing half-cycles within 0,5 s for $U_n = 230\text{ V}$ AFDDs and $U_n = 120\text{ V}$ AFDDs	22
Table 4 – Rated impulse withstand voltage as a function of the nominal voltage of the installation	23
Table 5 – Marking and position of marking	24
Table 6 – Standard conditions for operation in service	27
Table 7 – Minimum clearances and creepage distances (1 of 2)	31
Table 8 – Connectable cross-sections of copper conductors for screw-type terminals	34
Table 9 – Temperature-rise values	37
Table 10 – List of type tests	42
Table 11 – Test copper conductors corresponding to the rated currents	43
Table 12 – Screw thread diameters and applied torques	44
Table 13 – Pulling forces	45
Table 14 – Test voltage of auxiliary circuits	49
Table 15 – Test voltage for verification of impulse withstand voltage	51
Table 16 – Test voltage for verifying the suitability for isolation, referred to the rated impulse withstand voltage of the AFDD and the altitude where the test is carried out	52
Table 17 – Tests to be made to verify the behaviour of AFDDs under short-circuit conditions	66
Table 18 – Minimum values of I^2t and I_p	67
Table 19 – Power factors for short-circuit tests	68
Table 20 – Tests already covered in this standard	68
Table 21 – Tests to be applied for EMC	68
Table 21 – Immunity tests	85
Table 22 – Preferred values of rated voltage	20
Table A.1 – Test sequences for AFDDs classified according to 4.1.1	117
Table A.2 – Test sequences for AFDDs classified according to 4.1.2	119
Table A.3 – Test sequences for AFDDs classified according to 4.1.3	121
Table A.4 – Number of samples for full test procedure	123
Table A.5 – Number of samples for simplified test procedure	124
Table ID.1 – Test sequences during follow-up inspections	147
Table ID.2 – Number of samples to be tested	150
Table IE.1 – Indication of silver wire diameters as a function of rated currents and short-circuit currents	151
Table J.1 – Connectable conductors	155
Table J.2 – Cross-sections of copper conductors connectable to screwless-type terminals	156
Table J.3 – Pull forces	157

Table K.1 – Informative table on colour code of female connectors in relationship with the cross section of the conductor.....	162
Table K.2 – Overload test forces.....	163
Table K.3 – Dimensions of tabs	164
Table K.4 – Dimensions of female connectors.....	167
Table L.1 – Marking for terminals.....	169
Table L.2 – Connectable cross-sections of aluminium conductors for screw-type terminals.....	170
Table L.3 – List of tests according to the material of conductors and terminals	171
Table L.4 – Connectable conductors and their theoretical diameters	171
Table L.5 – Cross sections (S) of aluminium test conductors corresponding to the rated currents	172
Table L.6 – Test conductor length	173
Table L.7 – Equalizer and busbar dimensions	173
Table L.8 – Test current as a function of rated current	175
Table L.9 – Example of calculation for determining the average temperature deviation <i>D</i>	175

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GENERAL REQUIREMENTS FOR ARC FAULT DETECTION AND PROTECTION DEVICES (AFDDs)

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INTRODUCTION

This International Standard aims to provide necessary requirements and testing procedures for devices to be installed by skilled people in households and similar uses to mitigate the risk of igniting an electrical fire downstream of the device.

Residual Current Devices (RCDs) are recognised as efficient to reduce the risk of fire by detection of leakage current and arcing to ground as a consequence of tracking currents within an electrical installation. However, RCDs as fuses or circuit-breakers are not able to reduce the risk of electrical fire due to series or parallel arcing between live conductors.

During a series arc fault, there is no leakage to ground therefore RCDs cannot detect such a fault. Moreover, the impedance of the series arc fault reduces the load current, which will keep the current below the tripping threshold of the circuit-breaker and the fuse. In the case of a parallel arc between phase and neutral conductor, the current is only limited by the impedance of the installation. In the worst cases of sporadic arcs, the conventional circuit breakers were not designed for that purpose.

Experience and information available confirmed that the r.m.s. current value of an earth fault current caused by an arcing fault, which is able to ignite a fire, is not limited to the rated power supply frequency of 50/60 Hz, but may contain a much higher frequency spectrum that is not taken into account for the testing of RCDs.

It has been recognised that the risk of igniting a fire within an electrical installation can also be a consequence of an overvoltage due to a broken neutral in a three phase installation.

This ~~standard~~ document covers devices designed to be installed in a distribution board at the origin of one ~~or several~~ final circuits of a fixed installation.

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