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**Power quality measurement in power supply systems –
Part 2: Functional tests and uncertainty requirements**

**Mesure de la qualité de l'alimentation dans les réseaux d'alimentation –
Partie 2: Essais fonctionnels et exigences d'incertitude**



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CONTENTS

FOREWORD.....	9
INTRODUCTION.....	11
1 Scope.....	12
2 Normative references	12
3 Terms, definitions, abbreviated terms, notations and symbols	13
3.1 General terms and definitions	13
3.2 Terms and definitions related to uncertainty.....	13
3.3 Notations	14
3.3.1 Functions.....	14
3.3.2 Symbols and abbreviated terms.....	14
3.3.3 Indices.....	14
4 Requirements	14
4.1 Requirements for products complying with class A.....	14
4.2 Requirements for products complying with class S.....	15
5 Functional type tests common requirements	17
5.1 General philosophy for testing	17
5.1.1 System topology.....	17
5.1.2 Stabilization time	17
5.1.3 Measuring ranges	17
5.1.4 Single "power-system influence quantities".....	19
5.1.5 "External influence quantities"	21
5.1.6 Test criteria	21
5.2 Testing procedure.....	22
5.2.1 Device under test.....	22
5.2.2 Testing conditions	22
5.2.3 Testing equipment.....	22
6 Functional testing procedure for instruments complying with class A according to IEC 61000-4-30	22
6.1 Power frequency.....	22
6.1.1 General	22
6.1.2 Measurement method	23
6.1.3 Measurement uncertainty and measuring range.....	23
6.1.4 Measurement evaluation.....	24
6.1.5 Measurement aggregation	24
6.2 Magnitude of supply voltage.....	24
6.2.1 Measurement method	24
6.2.2 Measurement uncertainty and measuring range.....	24
6.2.3 Measurement evaluation.....	25
6.2.4 Measurement aggregation	25
6.3 Flicker.....	27
6.4 Supply voltage interruptions, dips and swells	27
6.4.1 General	27
6.4.2 Check dips / interruptions in polyphase system.....	35
6.4.3 Check swells in polyphase system	37
6.5 Supply voltage unbalance	38
6.5.1 General	38

6.5.2	Measurement method, measurement uncertainty and measuring range	39
6.5.3	Aggregation	39
6.6	Voltage harmonics	39
6.6.1	Measurement method	39
6.6.2	Measurement uncertainty and measuring range	40
6.6.3	Measurement evaluation	41
6.6.4	Measurement aggregation	41
6.7	Voltage interharmonics	43
6.7.1	Measurement method	43
6.7.2	Measurement uncertainty and measuring range	44
6.7.3	Measurement evaluation	45
6.7.4	Measurement aggregation	45
6.8	Mains signalling voltages on the supply voltage	47
6.8.1	Measurement method	47
6.8.2	Measurement uncertainty and measuring range	49
6.8.3	Aggregation	50
6.9	Measurement of underdeviation and overdeviation parameters	50
6.9.1	Measurement method	50
6.9.2	Measurement uncertainty and measuring range	52
6.9.3	Measurement evaluation	53
6.9.4	Measurement aggregation	53
6.10	Flagging	56
6.11	Clock uncertainty testing	58
6.12	Variations due to external influence quantities	58
6.12.1	General	58
6.12.2	Influence of temperature	59
6.12.3	Influence of power supply voltage	61
6.13	Rapid voltage changes (RVC)	62
6.13.1	RVC parameters and evaluation	62
6.13.2	General	62
6.13.3	"No RVC" tests	64
6.13.4	"RVC threshold and setup" test	68
6.13.5	"RVC parameters" test	70
6.13.6	"RVC polyphase" tests	72
6.13.7	"Voltage is in steady-state condition" tests	74
6.14	Magnitude of current	77
6.15	Harmonic current	77
6.16	Interharmonic currents	77
6.17	Current unbalance	77
6.17.1	General	77
6.17.2	Measurement method, measurement uncertainty and measuring range	78
7	Functional testing procedure for instruments complying with class S according to IEC 61000-4-30	78
7.1	Power frequency	78
7.1.1	General	78
7.1.2	Measurement method	79
7.1.3	Measurement uncertainty and measuring range	79
7.1.4	Measurement evaluation	80
7.1.5	Measurement aggregation	80

7.2	Magnitude of the supply voltage.....	80
7.2.1	Measurement method	80
7.2.2	Measurement uncertainty and measuring range.....	80
7.2.3	Measurement evaluation.....	81
7.2.4	Measurement aggregation	81
7.3	Flicker.....	83
7.4	Supply voltage interruptions, dips and swells	83
7.4.1	General requirements	84
7.4.2	Check dips / interruptions in polyphase system.....	89
7.4.3	Check swells in polyphase system	91
7.5	Supply voltage unbalance	92
7.5.1	General	92
7.5.2	Measurement method, measurement uncertainty and measuring range	93
7.5.3	Aggregation.....	93
7.6	Voltage harmonics	93
7.6.1	General	93
7.6.2	Measurement method	94
7.6.3	Measurement method, measurement uncertainty and measuring range	95
7.6.4	Measurement evaluation.....	96
7.6.5	Measurement aggregation	96
7.7	Voltage interharmonics	98
7.8	Mains signalling voltages on the supply voltage	98
7.8.1	General	98
7.8.2	Measurement method	99
7.8.3	Measurement uncertainty and measuring range.....	99
7.8.4	Aggregation.....	99
7.9	Measurement of underdeviation and overdeviation parameters	99
7.10	Flagging.....	99
7.11	Clock uncertainty testing.....	101
7.12	Variations due to external influence quantities	102
7.12.1	General	102
7.12.2	Influence of temperature.....	103
7.12.3	Influence of power supply voltage.....	105
7.13	Rapid voltage changes.....	106
7.14	Magnitude of current.....	106
7.15	Harmonic current	106
7.16	Interharmonic currents	106
7.17	Current unbalance	106
7.17.1	General	106
7.17.2	Measurement method, measurement uncertainty and measuring range	107
8	Calculation of measurement uncertainty and operating uncertainty.....	108
Annex A (normative)	Intrinsic uncertainty and operating uncertainty,	110
A.1	General.....	110
A.2	Measurement uncertainty.....	110
A.3	Operating uncertainty.....	111
Annex B (informative)	Overall system uncertainty	112
Annex C (normative)	Calculation of measurement and operating uncertainty for voltage magnitude and power frequency	113

C.1	Selection of test points to verify operating uncertainty and uncertainty under reference conditions	113
C.2	Class A calculation examples.....	113
C.2.1	General	113
C.2.2	Parameter: magnitude of supply voltage, $U_{din} = 230$ V, 50/60Hz, rated range of temperature -25 °C to $+55$ °C.....	113
C.2.3	Parameter: power frequency 50/60 Hz, rated range of temperature -25 °C to $+55$ °C	114
Annex D (informative)	Further test on dips (amplitude and phase angles changes).....	116
D.1	Phase-to-phase or phase-to-neutral testing.....	116
D.2	Test method.....	116
Annex E (informative)	Further tests on dips (polyphase): test procedure	118
E.1	General.....	118
E.2	Phase voltage dips and interruptions	119
E.3	Phase swells.....	119
Annex F (normative)	Gapless measurements of voltage amplitude and harmonics test	121
F.1	Purpose of the test.....	121
F.2	Test set up.....	121
F.3	Voltage amplitude	121
F.3.1	Test signal.....	121
F.3.2	Result evaluation	121
F.4	Harmonics	122
F.4.1	Test signal.....	122
F.4.2	Result evaluation	122
F.5	Inter-harmonics.....	123
F.5.1	Test signal.....	123
F.5.2	Result evaluation	123
Annex G (informative)	Gapless measurements of voltage amplitude and harmonics.....	124
Annex H (informative)	Testing equipment recommendations	133
H.1	Testing range.....	133
H.2	Uncertainty and stability of source and reference meter	133
H.2.1	Uncertainty of source and reference meter	133
H.2.2	Stability of the source	134
H.3	Time synchronisation	134
H.4	Power quality functions of source and reference meter	134
H.5	Traceability	135
Annex I (informative)	Recommendations related to a declaration of conformity (DoC) and a test report	136
I.1	Definitions.....	136
I.2	Recommendations	136
I.3	Example of IEC 62586-1 declaration of conformity	136
I.4	Example of IEC 62586-2 declaration	138
I.4.1	General	138
I.4.2	Recommendation for IEC 62586-2 test report	139
I.4.3	Recommendation for IEC 62586-2 test summary	140
I.4.4	Recommendation for IEC 62586-2 test equipment information	140
I.4.5	Recommendation for IEC 62586-2 tested functions.....	140
Bibliography.....		141

Figure 1 – Overview of test for dips according to test A4.1.1	30
Figure 2 – Detail 1 of waveform for test of dips according to test A4.1.1	31
Figure 3 – Detail 2 of waveform for tests of dips according to A4.1.1	31
Figure 4 – Detail 3 of waveform for tests of dips according to test A4.1.1.....	32
Figure 5 – Detail 1 of waveform for test of dips according to test A4.1.2	32
Figure 6 – Detail 2 of waveform for tests of dips according to test A4.1.2.....	33
Figure 7 – Detail 1 of waveform for test of swells according to test A4.1.2	33
Figure 8 – Detail 2 of waveform for tests of swells according to test A4.1.2	34
Figure 9 – Sliding reference voltage test	34
Figure 10 – Sliding reference start up condition	35
Figure 11 – Detail 1 of waveform for test of polyphase dips/interruptions	36
Figure 12 – Detail 2 of waveform for test of polyphase dips/interruptions	36
Figure 13 – Detail 3 of waveform for test of polyphase dips/interruptions	37
Figure 14 – Detail 1 of waveform for test of polyphase swells	38
Figure 15 – Detail 2 of waveform for test of polyphase swells	38
Figure 16 – Flagging test for class A.....	57
Figure 17 – Clock uncertainty testing	58
Figure 18 – Example of RVC event	62
Figure 19 – A13.1.1 waveform	65
Figure 20 – A13.1.1 waveform with RVC limits and arithmetic mean	65
Figure 21 – A13.1.2 waveform	66
Figure 22 – A13.1.2 waveform with RVC limits and arithmetic means.....	67
Figure 23 – A13.1.3 waveform	68
Figure 24 – A13.1.3 waveform with RVC limits and arithmetic mean	68
Figure 25 – A13.2.1 waveform	69
Figure 26 – A13.2.1 waveform with RVC limits and arithmetic mean	70
Figure 27 – A13.3.1 waveform	71
Figure 28 – A13.3.1 waveform with RVC limits and arithmetic mean	72
Figure 29 – A13.4.1 waveform	73
Figure 30 – A13.5.1 waveform	75
Figure 31 –A13.5.1 waveform with RVC limits and arithmetic mean	75
Figure 32 – A13.5.2 waveform	76
Figure 33 – A13.5.2 waveform with RVC limits and arithmetic mean	77
Figure 34 – Detail 1 of waveform for test of dips according to test S4.1.2	86
Figure 35 – Detail 2 of waveform for tests of dips according to test S4.1.2.....	87
Figure 36 – Detail 1 of waveform for test of swells according to test S4.1.2	87
Figure 37 – Detail 2 of waveform for tests of swells according to test S4.1.2.....	88
Figure 38 – Sliding reference voltage test	88
Figure 39 – Sliding reference start-up condition	89
Figure 40 – Detail 1 of waveform for test of polyphase dips/interruptions	90
Figure 41 – Detail 2 of waveform for test of polyphase dips/interruptions	90
Figure 42 – Detail 3 of waveform for test of polyphase dips/interruptions	91

Figure 43 – Detail 1 of waveform for test of polyphase swells	92
Figure 44 – Detail 2 of waveform for test of polyphase swells	92
Figure 45 – Flagging test for class S	101
Figure 46 – Clock uncertainty testing	102
Figure A.1 – Different kinds of uncertainties	110
Figure D.1 – Phase-to-neutral testing on three-phase systems	116
Figure D.2 – Phase-to-phase testing on three-phase systems	116
Figure E.1 – Example for one phase of a typical N cycle injection	118
Figure E.2 – Dip/interruption accuracy (amplitude and timing) test	119
Figure E.3 – Swell accuracy (amplitude and timing) test	120
Figure G.1 – Simulated signal under noisy conditions	124
Figure G.2 – Waveform for checking gapless RMS voltage measurement	125
Figure G.3 – 2,3 Hz frequency fluctuation	125
Figure G.4 – Spectral leakage effects for a missing sample	126
Figure G.5 – Illustration of Q_{RMS} for missing samples	127
Figure G.6 – Detection of a single missing sample	127
Figure G.7 – Q_{RMS} for an ideal signal, sampling error = -300×10^{-6}	128
Figure G.8 – Q_{RMS} for an ideal signal, sampling error = 400×10^{-6}	128
Figure G.9 – Q_{RMS} for an ideal signal, sampling error = 200×10^{-6}	129
Figure G.10 – $Q_H(5)$ with ideal test signal and perfect sampling frequency synchronization	130
Figure G.11 – $Q_H(5)$ with 300×10^{-6} sampling frequency error and 100×10^{-6} modulation frequency error	130
Figure G.12 – Q_{RMS} with a 20/24-cycle sliding window with an output every 10/12 cycles	131
Figure G.13 – Amplitude test for fluctuating component	131
Table 1 – Summary of type tests for class A	15
Table 2 – Summary of type tests for class S	16
Table 3 – Testing points for each measured parameter	18
Table 4 – List of single "power-system influence quantities"	20
Table 5 – Influence of temperature	21
Table 6 – Influence of auxiliary power supply voltage	21
Table 7 – List of generic test criteria	22
Table 8 – Specification of test A13.1.1	64
Table 9 – Specification of test A13.1.2	66
Table 10 – Specification of test A13.1.3	67
Table 11 – Specification of test A13.2.1	69
Table 12 – Specification of test A13.3.1	71
Table 13 – Specification of test A13.4.1	73
Table 14 – Specification of test A13.5.1	74
Table 15 – Specification of test A13.5.2	76
Table 16 – Uncertainty requirements	109
Table D.1 – Tests pattern	117

Table H.1 – Testing range.....	133
Table H.2 – Uncertainty of source and reference meter.....	134
Table H.3 – Stability of source	134
Table I.1 – Example of a DoC related to compliance with IEC 62586-1	137
Table I.2 – Example of DoC related to compliance with IEC 62586-2	139

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POWER QUALITY MEASUREMENT IN POWER SUPPLY SYSTEMS –**Part 2: Functional tests and uncertainty requirements**

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This second edition cancels and replaces the first edition published in 2013. This edition constitutes a technical revision.

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

- a) test procedures for RVC and current have been added;
- b) mistakes have been fixed.

This bilingual version (2017-11) corresponds to the monolingual English version, published in 2017-03.

The text of this standard is based on the following documents:

CDV	Report on voting
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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The French version of this standard has not been voted upon.

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

A list of all parts of the IEC 62586 series, published under the general title *Power quality measurement in power supply systems*, can be found on the IEC website.

The contents of the corrigendum of November 2014 have been included in this copy.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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INTRODUCTION

Power quality is more and more important worldwide in power supply systems and is generally assessed by power quality instruments.

This part of IEC 62586 specifies functional and uncertainty tests intended to verify the compliance of a product to class A and class S measurement methods defined in IEC 61000-4-30.

This document therefore complements IEC 61000-4-30.

POWER QUALITY MEASUREMENT IN POWER SUPPLY SYSTEMS –

Part 2: Functional tests and uncertainty requirements

1 Scope

This part of IEC 62586 specifies functional tests and uncertainty requirements for instruments whose functions include measuring, recording, and possibly monitoring power quality parameters in power supply systems, and whose measuring methods (class A or class S) are defined in IEC 61000-4-30.

This document applies to power quality instruments complying with IEC 62586-1.

This document can also be referred to by other product standards (e.g. digital fault recorders, revenue meters, MV or HV protection relays) specifying devices embedding class A or class S power quality functions according to IEC 61000-4-30.

These requirements are applicable in single-, dual- (split phase) and 3-phase AC power supply systems at 50 Hz or 60 Hz.

It is not the intent of this document to address user interface or topics unrelated to device measurement performance.

The document does not cover post-processing and interpretation of the data, for example with dedicated software.

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.

IEC 61000-2-4, *Electromagnetic compatibility (EMC) – Part 2-4: Environment – Compatibility levels in industrial plants for low-frequency conducted disturbances*

IEC 61000-4-7, *Electromagnetic compatibility (EMC) – Part 4-7: Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto*

IEC 61000-4-15, *Electromagnetic compatibility (EMC) – Part 4-15: Testing and measurement techniques – Flickermeter – Functional and design specifications*

IEC 61000-4-30:2015, *Electromagnetic compatibility (EMC) – Part 4-30: Testing and measurement techniques – Power quality measurement methods*

IEC 62586-1:2013, *Power quality measurement in power supply systems – Part 1: Power quality instruments (PQI)*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*