

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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**Power quality measurement in power supply systems –  
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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.....	39
6.4.3 Check swells in polyphase system.....	41
6.5 Supply voltage unbalance.....	42
6.5.1 General.....	42

6.5.2	Measurement method, measurement uncertainty and measuring range .....	43
6.5.3	Aggregation .....	43
6.6	Voltage harmonics .....	43
6.6.1	Measurement method.....	43
6.6.2	Measurement uncertainty and measuring range .....	44
6.6.3	Measurement evaluation .....	45
6.6.4	Measurement aggregation .....	45
6.7	Voltage interharmonics.....	47
6.7.1	Measurement method.....	47
6.7.2	Measurement uncertainty and measuring range .....	48
6.7.3	Measurement evaluation .....	49
6.7.4	Measurement aggregation .....	49
6.8	Mains signalling voltages on the supply voltage .....	51
6.8.1	Measurement method.....	51
6.8.2	Measurement uncertainty and measuring range .....	53
6.8.3	Aggregation .....	54
6.9	Measurement of underdeviation and overdeviation parameters .....	54
6.9.1	Measurement method.....	54
6.9.2	Measurement uncertainty and measuring range .....	56
6.9.3	Measurement evaluation .....	57
6.9.4	Measurement aggregation .....	57
6.10	Flagging.....	60
6.11	Clock uncertainty testing .....	62
6.12	Variations due to external influence quantities .....	62
6.12.1	General .....	62
6.12.2	Influence of temperature .....	63
6.12.3	Influence of power supply voltage.....	65
6.13	Rapid voltage changes (RVC) .....	66
6.13.1	RVC parameters and evaluation .....	66
6.13.2	General .....	67
6.13.3	"No RVC" tests .....	69
6.13.4	"RVC threshold and setup" test .....	78
6.13.5	"RVC parameters" test .....	81
6.13.6	"RVC pol. phase" tests .....	84
6.13.7	"Voltage is in steady-state condition" tests.....	87
6.14	Magnitude of current .....	92
6.15	Harmonic current .....	93
6.16	Interharmonic currents .....	93
6.17	Current unbalance.....	93
6.17.1	General .....	93
6.17.2	Measurement method, measurement uncertainty and measuring range .....	94
7	Functional testing procedure for instruments complying with class S according to IEC 61000-4-30 .....	94
7.1	Power frequency .....	94
7.1.1	General .....	94
7.1.2	Measurement method.....	95
7.1.3	Measurement uncertainty and measuring range .....	95
7.1.4	Measurement evaluation .....	96
7.1.5	Measurement aggregation .....	96

7.2	Magnitude of the supply voltage .....	96
7.2.1	Measurement method.....	96
7.2.2	Measurement uncertainty and measuring range .....	96
7.2.3	Measurement evaluation .....	97
7.2.4	Measurement aggregation .....	97
7.3	Flicker .....	99
7.4	Supply voltage interruptions, dips and swells .....	99
7.4.1	General requirements.....	99
7.4.2	Check dips / interruptions in polyphase system .....	105
7.4.3	Check swells in polyphase system.....	107
7.5	Supply voltage unbalance.....	108
7.5.1	General .....	108
7.5.2	Measurement method, measurement uncertainty and measuring range .....	109
7.5.3	Aggregation .....	109
7.6	Voltage harmonics .....	109
7.6.1	General .....	109
7.6.2	Measurement method.....	110
7.6.3	Measurement method, measurement uncertainty and measuring range .....	111
7.6.4	Measurement evaluation .....	112
7.6.5	Measurement aggregation .....	112
7.7	Voltage interharmonics.....	114
7.8	Mains signalling voltages on the supply voltage .....	114
7.8.1	General .....	114
7.8.2	Measurement method.....	115
7.8.3	Measurement uncertainty and measuring range .....	115
7.8.4	Aggregation .....	115
7.9	Measurement of underdeviation and overdeviation parameters.....	115
7.10	Flagging.....	115
7.11	Clock uncertainty testing .....	117
7.12	Variations due to external influence quantities .....	118
7.12.1	General .....	118
7.12.2	Influence of temperature .....	119
7.12.3	Influence of power supply voltage.....	121
7.13	Rapid voltage changes .....	122
7.14	Magnitude of current .....	122
7.15	Harmonic current .....	122
7.16	Interharmonic currents .....	122
7.17	Current unbalance.....	122
7.17.1	General .....	122
7.17.2	Measurement method, measurement uncertainty and measuring range .....	123
8	Calculation of measurement uncertainty and operating uncertainty .....	124
Annex A (normative)	Intrinsic uncertainty and operating uncertainty,.....	126
A.1	General.....	126
A.2	Measurement uncertainty .....	126
A.3	Operating uncertainty .....	127
Annex B (informative)	Overall system uncertainty .....	128
Annex C (normative)	Calculation of measurement and operating uncertainty for voltage magnitude and power frequency.....	129



Figure 1 – Overview of test for dips according to test A4.1.1 .....	31
Figure 2 – Detail 1 of waveform for test of dips according to test A4.1.1 .....	32
Figure 3 – Detail 2 of waveform for tests of dips according to A4.1.1 .....	33
Figure 4 – Detail 3 of waveform for tests of dips according to test A4.1.1 .....	33
Figure 5 – Detail 1 of waveform for test of dips according to test A4.1.2 .....	34
Figure 6 – Detail 2 of waveform for tests of dips according to test A4.1.2 .....	35
Figure 7 – Detail 1 of waveform for test of swells according to test A4.1.2 .....	36
Figure 8 – Detail 2 of waveform for tests of swells according to test A4.1.2 .....	37
Figure 9 – Sliding reference voltage test .....	38
Figure 10 – Sliding reference start up condition .....	38
Figure 11 – Detail 1 of waveform for test of polyphase dips/interruptions .....	40
Figure 12 – Detail 2 of waveform for test of polyphase dips/interruptions .....	40
Figure 13 – Detail 3 of waveform for test of polyphase dips/interruptions .....	41
Figure 14 – Detail 1 of waveform for test of polyphase swells .....	42
Figure 15 – Detail 2 of waveform for test of polyphase swells .....	42
Figure 16 – Flagging test for class A .....	61
Figure 17 – Clock uncertainty testing .....	62
Figure 18 – Example of RVC event .....	67
Figure 19 – Test A13.1.1 waveform .....	70
Figure 20 – Test A13.1.1 waveform with RVC limits and arithmetic mean at 50 Hz .....	71
Figure 21 – Test A13.1.2 waveform .....	73
Figure 22 – Test A13.1.2 waveform with RVC limits and arithmetic means at 50 Hz .....	74
Figure 23 – Test A13.1.3 waveform .....	76
Figure 24 – Test A13.1.3 waveform with RVC limits and arithmetic mean at 50 Hz .....	77
Figure 25 – Test A13.2.1 waveform .....	79
Figure 26 – Test A13.2.1 waveform with RVC limits and arithmetic mean at 50 Hz .....	80
Figure 27 – Test A13.3.1 waveform .....	82
Figure 28 – Test A13.3.1 waveform with RVC limits and arithmetic mean at 50 Hz .....	83
Figure 29 – Test A13.4.1 waveform at 50 Hz .....	85
Figure 29 – Test A13.4.1 waveform with RVC limits and VSS at 50 Hz .....	86
Figure 30 – Test A13.5.1 waveform .....	88
Figure 31 – Test A13.5.1 waveform with RVC limits and arithmetic mean at 50 Hz .....	89
Figure 32 – Test A13.5.2 waveform .....	91
Figure 32 – Test A13.5.2 waveform with RVC limits and arithmetic mean at 50 Hz .....	92
Figure 34 – Detail 1 of waveform for test of dips according to test S4.1.2 .....	102
Figure 35 – Detail 2 of waveform for tests of dips according to test S4.1.2 .....	102
Figure 36 – Detail 1 of waveform for test of swells according to test S4.1.2 .....	103
Figure 37 – Detail 2 of waveform for tests of swells according to test S4.1.2 .....	103
Figure 38 – Sliding reference voltage test .....	104
Figure 39 – Sliding reference start-up condition .....	104
Figure 40 – Detail 1 of waveform for test of polyphase dips/interruptions .....	106
Figure 41 – Detail 2 of waveform for test of polyphase dips/interruptions .....	106
Figure 42 – Detail 3 of waveform for test of polyphase dips/interruptions .....	107

Figure 43 – Detail 1 of waveform for test of polyphase swells .....	108
Figure 44 – Detail 2 of waveform for test of polyphase swells .....	108
Figure 45 – Flagging test for class S .....	117
Figure 46 – Clock uncertainty testing.....	118
Figure A.1 – Different kinds of uncertainties .....	126
Figure D.1 – Phase-to-neutral testing on three-phase systems.....	132
Figure D.2 – Phase-to-phase testing on three-phase systems .....	132
Figure E.1 – Example for one phase of a typical $N$ cycle injection .....	134
Figure E.2 – Dip/interruption accuracy (amplitude and timing) test .....	135
Figure E.3 – Swell accuracy (amplitude and timing) test .....	136
Figure G.1 – Simulated signal under noisy conditions .....	140
Figure G.2 – Waveform for checking gapless RMS voltage measurement.....	141
Figure G.3 – 2,3 Hz frequency fluctuation.....	141
Figure G.4 – Spectral leakage effects for a missing sample .....	142
Figure G.5 – Illustration of $Q_{RMS}$ for missing samples.....	143
Figure G.6 – Detection of a single missing sample.....	143
Figure G.7 – $Q_{RMS}$ for an ideal signal, sampling error = $-300 \times 10^{-6}$ .....	144
Figure G.8 – $Q_{RMS}$ for an ideal signal, sampling error = $400 \times 10^{-6}$ .....	144
Figure G.9 – $Q_{RMS}$ for an ideal signal, sampling error = $200 \times 10^{-6}$ .....	145
Figure G.10 – $Q_H(5)$ with ideal test signal and perfect sampling frequency synchronization .....	146
Figure G.11 – $Q_H(5)$ with $300 \times 10^{-6}$ sampling frequency error and $100 \times 10^{-6}$ modulation frequency error .....	146
Figure G.12 – $Q_{RMS}$ with a 20/24-cycle sliding window with an output every 10/12 cycles.....	147
Figure G.13 – Amplitude test for fluctuating component .....	147
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 .....	69
Table 9 – Specification of test A13.1.2 .....	72
Table 10 – Specification of test A13.1.3 .....	75
Table 11 – Specification of test A13.2.1 .....	78
Table 12 – Specification of test A13.3.1 .....	81
Table 13 – Specification of test A13.4.1 .....	84
Table 14 – Specification of test A13.5.1 .....	87
Table 15 – Specification of test A13.5.2 .....	90
Table 16 – Uncertainty requirements.....	125
Table D.1 – Tests pattern.....	133

Table H.1 – Testing range.....	149
Table H.2 – Uncertainty of source and reference meter.....	150
Table H.3 – Stability of source .....	150
Table I.1 – Example of a DoC related to compliance with IEC 62586-1.....	153
Table I.2 – Example of DoC related to compliance with IEC 62586-2.....	155

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### POWER QUALITY MEASUREMENT IN POWER SUPPLY SYSTEMS –

#### Part 2: Functional tests and uncertainty requirements

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**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62586-2 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This second 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 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.

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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)*