

Certificate of Accreditation

IAJapan hereby accredits the following conformity assessment body as a calibration laboratory of Japan Calibration Service System (JCSS).

Accreditation Identification: JCSS 0039 Calibration Name of Conformity Assessment Body:

Japan Electric Meters Inspection Corporation Name of Legal Entity:

Japan Electric Meters Inspection Corporation Location of Conformity Assessment Body:

4-15-7, Shibaura, Minato-Ku, Tokyo 108-0023, Japan Scope of Accreditation:

Time & Frequency & Rotational speed, Pressure, Mass, Length, Electricity (Direct Current & Low Frequency),

Humidity, Temperature (as attached)

Accreditation Requirement:

ISO/IEC 17025:2017

Accreditation Requirements in the Section 6 of Accreditation Scheme(JCSS) 2nd Edition

Effective Date of Accreditation: 2020-07-09 Expiry Date of Accreditation: 2023-03-21 Date of Initial Accreditation: 1994-08-01

> KISHIMOTO Isao Chief Executive, IAJapan National Institute of Technology and Evaluation

⁻ International Accreditation Japan (IAJapan) is a laboratory accreditation body which has signed MRAs of ILAC (International Laboratory Accreditation Cooperation) and APAC (Asia Pacific Accreditation Cooperation). MRA requirements are, in addition to relevant international standards and guides, requirements for participation in proficiency testing programs, surveillance and reassessment, and the policy for the traceability of measurement for MRA ourpose.

This laboratory fulfills ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation means this laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

This accreditation information is the information as of the effective date of accreditation. The latest accreditation information can be found on the IAJapan website.

General Field of Calibration: Time & Frequency & Rotational speed

Date of Initial Accreditation of the Field: 2004-12-24

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
	Frequency Generator	From 1 H	Iz up to 100 MHz	3.0×10^{-10} (Relative expanded uncertainty)
	Frequency Counter	From 1 H	Iz up to 100 MHz	3.0×10^{-10} (Relative expanded uncertainty)
	Time-Interval	From 0.	1 s less than 1 s	0.003 0 s
	Source *1 Time-Interval	From 1	s less than 10 s	0.004 s
		From	10 s up to 60 s	0.01 s
Time & Frequency Counter, etc.		Calibration by Frequency Measurement (rate) *2	Up to 99.99 s	0.006 s
	Measuring	Calibration las	From 0.1 s less than 10 s	0.000 3 s
-	Equipment	Calibration by Time-Interval	From 10 s up to 60 s	0.003 s
		Measurement	More than 60 s up to 3600 s	0.09 s
	Took amotou	From 1 rpn	n up to 50 000 rpm	0.060 rpm
	Tachometer	More than 50 00	0 rpm up to 100 000 rpm	0.065 rpm

^{*1 :} Limited to Withstand Voltage tester.

Note: In the CMC column, the values of Frequency Generator and Frequency Counter exclude sources of uncertainty attributed to a unit under test, the values of Time-Interval Source, Time-Interval Measuring Equipment and Tachometer include sources of uncertainty attributed to a unit under test.

^{*2 :} Limited to the frequency of Crystal oscillator is 32.768 kHz.

Laboratory's permanent facility/On-site Calibration: On-site Calibration

Calibration and Measurement Capabilities

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Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
10 00 041	Frequency Generator	From 1	Hz up to 10 MHz	1.0 × 10 ⁻⁶ (Relative expanded uncertainty)
	Frequency Counter	From 1	Hz up to 10 MHz	1.0×10^{-6} (Relative expanded uncertainty)
	Time-Interval Source	From 0.1 s less than 1 s		0.003 0 s
		From 1 s less than 10 s		0.004 s
Time & Frequency		From 10 s up to 60 s		0.01 s
Counter, etc.	Time-Interval	Measuring Time-Interval	From 0.1 s less than 10 s	0.000 3 s
			From 10 s up to 60 s	0.003 s
	Equipment		More than 60 s up to 3600 s	0.09 s
	Tachometer	From 1 rpr	m up to 50 000 rpm	0.060 rpm
	Tachometer	More than 50 00	0 rpm up to 100 000 rpm	0.065 rpm

^{*1 :} Limited to Withstand Voltage tester.

Note: The values in the CMC column include sources of uncertainty attributed to a unit under test.

General Field of Calibration: Pressure

Date of Initial Accreditation of the Field: 2015-09-11

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

Calibration and Measurement Capabilities

Type of I	Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
			From -90 kPa up to -10 kPa	27 Pa
		Gas	From 10 kPa up to 100 kPa	29 Pa
Pressure Gauges (Digital Pressure Gauges) Pressure Gauge	Gauge Pressure	More than 100 kPa up to 700 kPa	73 Pa	
	Fressure	More than 700 kPa up to 7 MPa	0.52 kPa	
	Tressure Gauges)	Liquid	From 1 MPa up to 7 MPa	0.71 kPa
		Gauge Pressure	More than 7 MPa up to 70 MPa	5.3 kPa
	Con	From -90 kPa up to -10 kPa	0.2 kPa	
		Gas	From 10 kPa up to 100 kPa	0.5 kPa
Mechanical Type Pressure Gauges	- 1	Gauge Pressure	More than 100 kPa up to 700 kPa	2.0 kPa
	riessure Gauges		More than 700 kPa up to 7 MPa	11 kPa
		Liquid	From 1 MPa up to 10 MPa	12 kPa
	Gauge Pressure	More than 10 MPa up to 100 MPa	0.15 MPa	

[#]All Calibration Procedures are in-house procedures developed by this laboratory.

Laboratory's permanent facility/On-site Calibration: On-site Calibration

Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated			Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
			From -80 kPa up to -10 kPa	0.10 kPa
Pressure Gauges (Digital Pressure Gauges) Pressure Gauge Mechanical Type Pressure Gauges	Gas	From 10 kPa up to 150 kPa	0.08 kPa	
	Gas Gauge Pressure	More than 150 kPa up to 700 kPa	0.11 kPa	
	riessure	More than 700 kPa up to 2 MPa	0.52 kPa	
		From -80 kPa up to -10 kPa	0.2 kPa	
	Gas	From 10 kPa up to 100 kPa	0.5 kPa	
	Gauge Pressure	More than 100 kPa up to 700 kPa	2.0 kPa	
		More than 700 kPa up to 2 MPa	11 kPa	

[#]All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Mass

Date of Initial Accreditation of the Field: 2015-09-11

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility, On-site Calibration Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Type	to be calibrated	Kange	Convent	ional mass
	to be cambrated		Permanent Laboratory	On-site Calibration
		1 mg	0.004 mg	-
		2 mg	0.004 mg	-
		5 mg	0.004 mg	-
		10 mg	0.004 mg	-
		20 mg	0.005 mg	-
		50 mg	0.006 mg	-
		100 mg	0.007 mg	-
		200 mg	0.009 mg	7-
		500 mg	0.011 mg	-
		1 g	0.015 mg	-
		2 g	0.018 mg	_
	Weight	5 g	0.023 mg	-
		10 g	0.030 mg	-
		20 g	0.037 mg	-
		50 g	0.047 mg	-
		100 g	0.076 mg	_
X7 * 1 .		200 g	0.16 mg	-
Weight		500 g	0.42 mg	-
		1 kg	0.80 mg	-
		2 kg	1.6 mg	0.03 g
		5 kg	4.2 mg	0.08 g
		10 kg	8.0 mg	0.15 g
		20 kg	16 mg	0.30 g
		From 1 g less than 20 g	0.18 mg	-
		From 20 g less than 50 g	0.25 mg	-
		From 50 g less than 100 g	0.30 mg	_
		From 100 g less than 200 g	0.47 mg	-
		From 200 g less than 500 g	1.3 mg	-
	Deadweight	From 500 g less than 1 kg	2.3 mg	-
		From 1 kg less than 2 kg	4.6 mg	-
		From 2 kg less than 5 kg	13 mg	0.03 g
		From 5 kg less than 10 kg	24 mg	0.08 g
		From 10 kg less than 20 kg	46 mg	0.15 g
		From 20 kg up to 25 kg	59 mg	0.30 g

<u>Laboratory's permanent facility/On-site Calibration</u>: <u>Laboratory's permanent facility, On-site Calibration</u>

Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
			Permanent Laboratory	On-site Calibration
		From 1 g up to 50 g	0.074 mg	0.11 mg
		More than 50 g up to 80 g	0.12 mg	0.19 mg
		More than 80 g up to 220 g	0.25 mg	0.35 mg
		More than 220 g up to 320 g	0.33 mg	0.48 mg
		More than 320 g up to 500 g	1.9 mg	1.9 mg
		More than 500 g up to 2 200 g	0.013 g	0.016 g
	Non-Automatic Electronic	More than 2 200 g up to 3 200 g	0.018 g	0.020 g
Scale	Weighing Instruments	More than 3 200 g up to 8 100 g	0.025 g	0.034 g
		More than 8 100 g up to 12 kg	0.13 g	0.13 g
		More than 12 kg up to 21 kg	0.22 g	0.23 g
		More than 21 kg up to 32 kg	0.29 g	0.31 g
		More than 32 kg up to 60 kg	1.7 g	1.7 g

General Field of Calibration: Length

Date of Initial Accreditation of the Field: 2015-09-11

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

Calibration and Measurement Capabilities

Calibratio	on Procedures# and		Expanded Uncertainty
Type of Instruments/Materials to be calibrated		Range	(Level of Confidence Approximately 95 %)
		From 0.5 mm up to 100 mm	0.15 μm
	Gauge Blocks	More than 100 mm up to 150 mm	0.22 μm
	(Comparison method)	More than 150 mm up to 200 mm	0.27 μm
		More than 200 mm up to 250 mm	0.32 μm
		Up to 25 mm	2 μm
		More than 25 mm up to 50 mm	3 μm
Length Measuring	Micrometers	More than 50 mm up to 75 mm	3 μm
Instrument		More than 75 mm up to 100 mm	5 μm
	Calipers	Up to 600 mm	0.04 mm
	Height gauges	Up to 600 mm	0.03 mm
		Up to 5 mm	0.9 μm
	Dial gauges	More than 5 mm up to 25.4 mm	2 μm
		More than 25.4 mm up to 100 mm	4 μm
		Up to 0.14 mm	0.9 μm
	Dial test indicators	More than 0.14 mm Up to 0.8 mm	2 μm

#All Calibration Procedures are in-house procedures developed by this laboratory.

Laboratory's permanent facility/On-site Calibration: On-site Calibration

Calibration and Measurement Capabilities

	ation Procedures# and		Expanded Uncertainty
Type of Instruments/Materials to be calibrated		Range	(Level of Confidence Approximately 95 %)
	o be canorated	Up to 25 mm	3 μm
		More than 25 mm up to 50 mm	4 μm
Length	Micrometers	More than 50 mm up to 75 mm	6 μm
Measuring Instrument		More than 75 mm up to 100 mm	7 μm
mstrument	Calipers	Up to 600 mm	0.06 mm
	Height gauges	Up to 600 mm	0.05 mm
	Dial gauges	Up to 25 mm	3 μm
	Dial test indicators	Up to 0.8 mm	3 μm

General Field of Calibration: Electricity (Direct Current & Low Frequency)

Date of Initial Accreditation of the Field: 1995-06-21

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

Calibration and Measurement Capabilities

Type of Instru	rocedures# and ments/Materials alibrated	Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
		1 mΩ	3.1 ppm
		10 mΩ	1.8 ppm
		100 mΩ	0.9 ppm
		1 Ω	0.3 ppm
		10 Ω	0.8 ppm
		100 Ω	0.5 ppm
		1 kΩ	1.0 ppm
		10 kΩ	0.6 ppm
		$30 \text{ k}\Omega$, $40 \text{ k}\Omega$, $50 \text{ k}\Omega$, $60 \text{ k}\Omega$,	10 ppm
		70 kΩ, 80 kΩ, 90 kΩ	
		100 kΩ	1.5 ppm
		200 kΩ, 300 kΩ, 400 kΩ, 500 kΩ, 600 kΩ, 700 kΩ, 800 kΩ, 900 kΩ	10 ppm
		1 ΜΩ	1.7 ppm
		10 ΜΩ	4.2 ppm
		100 ΜΩ	6 ppm
		1 GΩ	10 ppm
	DC Resistor	10 GΩ	20 ppm
		100 GΩ	50 ppm
		1 ΤΩ	0.5 %
		More than 1 m Ω less than 2 m Ω	0.009 %
		From 2 m Ω less than 3 m Ω	0.008 %
Direct Current		From 3 m Ω less than 10 m Ω	0.007 % 0.004 %
& Low	-	More than 10 mΩ less than 1 Ω More than 1 Ω less than 6 Ω	20 ppm
Frequency		From 6 Ω less than 10 Ω	10 ppm
Measuring		More than 10Ω less than 20Ω	20 ppm
Equipment, etc.		From 20 Ω less than 10 $k\Omega$	10 ppm
		More than $10 \text{ k}\Omega$ up to $9 \text{ M}\Omega$	20 ppm
		More than 9 M Ω up to 120 M Ω	30 ppm
		More than 120 M Ω up to 600 M Ω	0.2 %
		More than 600 M Ω less than 1 G Ω	0.3 %
		More than 1 G Ω less than 100 G Ω	0.4 %
		More than $100 \text{ G}\Omega$ up to $700 \text{ G}\Omega$	0.7 %
		More than 700 G Ω less than 1 T Ω	0.8 %
		1 mΩ	80 ppm
		10 mΩ	25 ppm
		100 mΩ	10 ppm
		1 Ω	3.5 ppm
		10Ω , 100Ω , $1 k\Omega$	4.0 ppm
	DOD	10 kΩ	
	DC Resistance	$20 \text{ k}\Omega$, $30 \text{ k}\Omega$, $40 \text{ k}\Omega$, $50 \text{ k}\Omega$, $60 \text{ k}\Omega$,	3.5 ppm
	Measuring Equipment	$70 \text{ k}\Omega$, $80 \text{ k}\Omega$, $90 \text{ k}\Omega$	0.001 %
		100 kΩ	4.0 ppm
		200 kΩ, 300 kΩ, 400 kΩ, 500 kΩ, 600 kΩ, 700 kΩ, 800 kΩ, 900 kΩ	0.001 %
		1 ΜΩ	4.0 ppm
		1 GΩ, 10 GΩ	0.05 %
		100 GΩ	0.2 %

				Attachr
			1 ΤΩ	0.5 %
			ore than 1 Ω up to 6Ω	0.002 %
		More than 6Ω less than 10Ω		0.001 %
			re than 10 Ω up to 20 Ω	0.002 %
			than 20Ω less than $10 k\Omega$	0.001 %
			than 10 kΩ less than 1 MΩ	0.002 %
			than 1 M Ω less than 3 M Ω	0.02 %
			m 3 M Ω less than 4 M Ω	0.01 %
			m 4 MΩ less than 5 MΩ	0.008 %
	DC Resistance		m 5 MΩ less than 6 MΩ	0.006 %
	Measuring		om 6 M Ω up to 10 M Ω	0.005 %
	Equipment		an 10 MΩ less than 30 MΩ	0.02 %
			30 MΩ less than 40 MΩ	0.01 %
			$40 \text{ M}\Omega$ less than $50 \text{ M}\Omega$	0.008 %
			$50 \text{ M}\Omega$ less than $60 \text{ M}\Omega$	0.006 %
			m 60 MΩ up to 100 MΩ	0.005 %
	}		nan 100 MΩ up to 120 MΩ	0.02 %
	-		nan 120 M Ω up to 600 M Ω	0.2 %
	-		tan 600 M Ω less than 1 G Ω	0.3 %
	-		nan 1 GΩ less than 100 GΩ nn 100 GΩ less than 700 GΩ	0.4 %
			nan 700 G Ω less than 1 T Ω	0.7 %
			1 V (fixed terminal)	0.8 %
	DC Voltage Source			0.2 ppm
		1.018 V (fixed terminal) 10 V (fixed terminal)		0.2 ppm 0.02 ppm
		From 0 V less than 1 µV		
irect Current			0.7 μV	
Low		From More	0.3 μV	
equency		More	13 ppm	
easuring		More	9 ppm	
quipment, etc.		More	7 ppm 6 ppm	
		More	5 ppm	
		More t	4 ppm	
		More	3.0 ppm	
			0.05 %	
			than 1 kV up to 200 kV om 0 V less than 1 µV	0.5 μV
			om 1 µV up to 10 mV	0.3 μV
	-	More	13 ppm	
	-	More	9 ppm	
	DC Voltage		7 ppm	
	Measuring		than 30 mV up to 40 mV than 40 mV up to 50 mV	6 ppm
	Equipment		than 50 mV up to 60 mV	5 ppm
			than 60 mV up to 100 mV	4 ppm
			than 100 mV up to 1 kV	3.0 ppm
			than 1 kV up to 200 kV	0.05 %
	DC Voltage	Lightning impulse voltage	From 100 kV up to 500 kV (Front time 0.84 μs , 1.56 μs) (Time to half-value 60 μs)	Scale factor 0.7 %
	Measuring Equipment	Switching impulse voltage	From 180 kV up to 500 kV (Front time 200 μs, 300 μs) (Time to half-value 2 500 μs)	Scale factor 0.7 %

		N	Nore than 1 kV up to 200 kV	0.003 %
		1000 V	100:1	2.7 ppm
		100 V	10:1	1.6 ppm
		10.17	1:1	1 ppm
		10 V	From 1:0.000 000 1 up to 1:0.09	0.000 000 1
			1:1.0	0.000 001 1
	DC Voltage		1:0.9	0.000 001 0
	Resistive		1:0.8	0.000 000 9
	Divider		1:0.7	0.000 000 7
		110.17	1:0.6	0.000 000 6
		110 V	1:0.5	0.000 000 5
			1:0.4	0.000 000 4
			1:0.3	0.000 000 3
			1:0.2	0.000 000 2
			1:0.1	0.000 000 1
			0 A	0.001 0 μΑ
			From 1 pA up to 10 pA	0.07 pA
		N	fore than 10 pA up to 60 pA	0.3 pA
			ore than 60 pA up to 400 pA	0.4 pA
		Me	ore than 400 pA up to 600 pA	0.5 pA
		Me	ore than 600 pA up to 800 pA	0.6 pA
			ore than 800 pA up to 900 pA	0.7 pA
		Mo	0.8 pA	
			0.003 nA	
			0.004 nA	
S'			0.005 nA	
Direct Current			0.006 nA	
& Low Frequency			0.007 nA	
Measuring		N	0.008 nA	
Equipment, etc.		Mo	0.03 nA	
squipment, etc.		N	0.04 nA	
		N	0.05 nA	
			Iore than 10 μA up to 90 μA	0.4 nA
			ore than 90 μA up to 100 μA	0.5 nA
	Direct Current		ore than 0.1 mA up to 0.9 mA	0.004 μΑ
	Source	M	0.005 μΑ	
	Source	N	0.04 μΑ	
		N	fore than 8 mA up to 10 mA	0.05 μΑ
			ore than 10 mA up to 90 mA	0.4 μΑ
			ore than 90 mA up to 100 mA	0.5 μΑ
			fore than 0.1 A up to 0.7 A	0.004 mA
			More than 0.7 A up to 0.9 A	0.005 mA
			More than 0.9 A up to 1 A	0.006 mA
			More than 1 A up to 1.3 A	0.05 mA
		More than 1.3 A up to 1.9 A More than 1.9 A up to 2.3 A		0.06 mA
				0.07 mA
		N	More than 2.3 A up to 2.7 A	0.08 mA
			More than 2.7 A up to 3.1 A	0.09 mA
			More than 3.1 A up to 3.5 A	0.1 mA
			More than 3.5 A up to 7.2 A	0.2 mA
			More than 7.2 A up to 10 A	0.3 mA
			More than 10 A up to 11 A	0.4 mA
			More than 11 A up to 15 A	0.5 mA
			More than 15 A up to 19 A	0.6 mA
		M	ore than 19 A less than 20 A	0.7 mA
			20 A	0.6 mA

	Т	M 1 - 20 1 - 4 - 21 1	7
		More than 20 A up to 21 A	0.7 mA
		More than 21 A up to 25 A	0.8 mA
		More than 25 A up to 28 A	0.9 mA
	_	More than 28 A less than 30 A	1 mA
		30 A	0.9 mA
		More than 30 A up to 45 A	2 mA
		More than 45 A less than 50 A	3 mA
		50 A	2 mA
	Direct Current	More than 50 A up to 58 A	4 mA
	Source	More than 58 A up to 73 A	5 mA
		More than 73 A up to 88 A	6 mA
		More than 88 A less than 100 A	7 mA
		100 A	3 mA
		More than 100 A up to 300 A	0.02 A
		More than 300 A up to 500 A	0.03 A
		More than 500 A up to 900 A	0.3 A
		More than 900 A up to 1 000 A	0.4 A
		More than 1 000 A up to 5 000 A	2 A
		0 A	0.001 0 μΑ
		From 1 pA up to 10 pA	0.06 pA
		More than 10 pA up to 60 pA	0.2 pA
		More than 60 pA up to 400 pA	0.3 pA
		More than 400 pA up to 600 pA	0.4 pA
		More than 600 pA up to 800 pA	0.5 pA
		More than 800 pA up to 900 pA	0.6 pA
		More than 900 pA up to 1 000 pA	0.7 pA
irect Current		More than 1 nA up to 3 nA	0.002 nA
Low		More than 3 nA up to 4 nA	0.003 nA
requency		More than 4 nA up to 6 nA	0.004 nA
leasuring	х.	More than 6 nA up to 8 nA	0.005 nA
quipment, etc.		More than 8 nA up to 9 nA	0.006 nA
		More than 9 nA up to 100 nA	0.007 nA
		More than 100 nA up to 400 nA	0.02 nA
		More than 400 nA up to 600 nA	0.03 nA
		More than 600 nA up to 1 000 nA	0.04 nA
		More than 1 μA up to 10 μA	0.05 nA
	Direct Current	More than 10 μA up to 80 μA	0.4 nA
	Measuring	More than 80 μA up to 100 μA	0.5 nA
	Equipment	More than 0.1 mA up to 0.8 mA	0.004 μΑ
		More than 0.8 mA up to 1 mA	0.005 μΑ
		More than 1 mA up to 8 mA	0.04 μΑ
		More than 8 mA up to 10 mA	0.05 μΑ
		More than 10 mA up to 80 mA	0.4 μΑ
	4	More than 80 mA up to 100 mA	0.5 μΑ
		More than 0.1 A up to 0.6 A	0.004 mA
		More than 0.6 A up to 0.9 A	0.005 mA
		More than 0.9 A up to 1 A	0.006 mA
		More than 1 A up to 1.6 A	0.06 mA
		More than 1.6 A up to 2.1 A	0.07 mA
		More than 2.1 A up to 2.5 A	0.08 mA
		More than 2.5 A up to 2.9 A	0.09 mA
		More than 2.9 A up to 3.4 A	0.1 mA
		More than 3.4 A up to 7.2 A	0.2 mA
		More than 7.2 A up to 10 A	0.3 mA
		More than 10 A up to 11 A	0.5 mA
		More than 11 A up to 16 A	0.6 mA
	1	more man 11 A up to 10 A	U.U IIIA

	T	More than 20 A up to 23 A	0.8 mA
		More than 23 A up to 26 A	0.9 mA
		More than 26 A up to 30 A	1 mA
		More than 30 A up to 45 A	2 mA
		More than 45 A less than 50 A	3 mA
		50 A	2 mA
	Direct Current	More than 50 A up to 58 A	4 mA
	Measuring	More than 58 A up to 73 A	5 mA
Direct Current&	Equipment	More than 73 A up to 87 A	6 mA
Low		More than 87 A less than 100 A	7 mA
Frequency		100 A	3 mA
Measuring		More than 100 A up to 300 A	0.02 A
Equipment, etc.		More than 300 A up to 500 A	0.03 A
		More than 500 A up to 2 000 A	0.012 %
		More than 2 000 A up to 5 000 A	2 A
	Direct Current	From 10 μA up to 100 A	25 ppm
	Direct Current	More than 100 A up to 500 A	50 ppm
	standard Shunt	More than 500 A up to 5 000 A	0.06 %
	Direct Current	More than 50 A up to 500 A	50 ppm
	Direct Current	More than 500 A up to 2 000 A	0.012 %
	Transformer	More than 2 000 A up to 5 000 A	0.06 %

			0.3 V	0.025 %		
			0.6 V			
		10 Hz	1 V, 2 V, 6 V, 10 V, 20 V, 60 V 100 V, 200 V, 600 V, 1 000 V	0.022 %		
			0.3 V	95 ppm		
			0.6 V			
			1 V			
			2 V	0.025 % 0.023 % 0.022 % 95 ppm 88 ppm 77 ppm 76 ppm 75 ppm 81 ppm 80 ppm 83 ppm 81 ppm 0.012 % 0.050 % 0.024 % 0.023 % 0.022 % 0.014 % 0.013 % 0.011 % 97 ppm 96 ppm 59 ppm 48 ppm 44 ppm 39 ppm 49 ppm 49 ppm 49 ppm 49 ppm 49 ppm 49 ppm 50 ppm 50 ppm 50 ppm 50 ppm 50 ppm 50 ppm 51 ppm 52 ppm 63 ppm 62 ppm 63 ppm 63 ppm 64 ppm 65 ppm 65 ppm 66 ppm 67 ppm 68 ppm 69 ppm 69 ppm 69 ppm 60 ppm 60 ppm 61 ppm 61 ppm 62 ppm 63 ppm 65 ppm 66 ppm 66 ppm 67 ppm 68 ppm 69 ppm 69 ppm 69 ppm 60 no14 % 60 no13 % 60 no11 % 60 no11 % 60 ppm 61 ppm 62 ppm 63 ppm 64 ppm 65 ppm 65 ppm 66 ppm 67 ppm 68 ppm 69 ppm 99 ppm 99 ppm 99 ppm 99 ppm		
			6 V			
		20 Hz,	10 V, 20 V			
		30 Hz	60 V			
			100 V			
			200 V			
			600 V, 1 000 V			
			From 10 mV less than 20 mV			
			20 mV			
			More than 20 mV less than 30 mV			
			From 30 mV less than 40 mV			
			From 40 mV less than 60 mV			
			60 mV			
			More than 60 mV less than 100 mV			
			From 0.1 V less than 0.2 V			
			0.2 V	0.023 % 0.022 % 95 ppm 88 ppm 77 ppm 76 ppm 75 ppm 81 ppm 80 ppm 83 ppm 81 ppm 0.012 % 0.050 % 0.024 % 0.023 % 0.022 % 0.011 % 97 ppm 96 ppm 59 ppm 48 ppm 44 ppm 39 ppm 44 ppm 39 ppm 45 ppm 50 ppm 51 ppm 52 ppm 63 ppm 62 ppm 63 ppm 62 ppm 63 ppm 62 ppm 63 ppm 64 ppm 65 ppm 66 ppm 67 ppm 68 ppm 69 ppm 60 ppm 60 ppm 61 ppm 61 ppm 62 ppm 63 ppm 62 ppm 63 ppm 64 ppm 65 ppm 66 ppm 66 ppm 67 ppm 68 ppm 69 ppm		
Direct Current			More than 0.2 V less than 0.3 V			
& Low			From 0.3 V less than 0.6 V			
Frequency	AC Voltage	40 Hz	0.6 V			
Measuring	Source		More than 0.6 V less than 2 V			
Equipment,			From 2 V less than 6 V			
etc.			6 V			
			More than 6 V up to 10 V			
			More than 10 V up to 20 V			
			More than 20 V less than 30 V			
			From 30 V up to 60 V			
	_		More than 60 V up to 100 V			
	F3		More than 100 V up to 200 V			
			More than 200 V up to 600 V			
			More than 600 V up to 1 000 V			
			From 10 mV less than 20 mV			
			20 mV			
			More than 20 mV less than 30 mV			
			From 30 mV less than 40 mV			
			From 40 mV less than 60 mV	0.023 % 0.022 % 95 ppm 88 ppm 77 ppm 76 ppm 75 ppm 81 ppm 80 ppm 83 ppm 81 ppm 0.012 % 0.050 % 0.024 % 0.023 % 0.021 % 0.011 % 97 ppm 96 ppm 59 ppm 48 ppm 44 ppm 39 ppm 36 ppm 40 ppm 41 ppm 49 ppm 49 ppm 49 ppm 50 ppm		
			60 mV			
			More than 60 mV less than 100 mV			
		50 Hz,	From 0.1 V less than 0.2 V			
,		60 Hz	0.2 V			
			More than 0.2 V less than 0.3 V			
			From 0.3 V less than 0.4 V			
			From 0.4 V less than 0.6 V			
			0.6 V			
			More than 0.6 V less than 2 V			
			From 2 V less than 6 V			
			6 V			
			More than 6 V less than 20 V	40 ppm		

	T	Γ	20.77	1 22
			20 V	38 ppm
			More than 20 V up to 60 V	41 ppm
			More than 60 V up to 200 V	44 ppm
		50 XX	More than 200 V up to 600 V	55 ppm
		50 Hz,	More than 600 V up to 1 000 V	53 ppm
	n	60 Hz	More than 1 kV up to 1.5 kV	0.014 kV
			More than 1.5 kV up to 3.5 kV	0.02 kV
			More than 3.5 kV up to 6.5 kV	0.03 kV
			More than 6.5 kV up to 9 kV	0.04 kV
			More than 9 kV up to 10 kV	0.05 kV
			From 10 mV less than 20 mV	0.050 %
			20 mV	0.024 %
			More than 20 mV less than 30 mV	0.023 %
			From 30 mV less than 40 mV	0.022 %
			From 40 mV less than 60 mV	0.021 %
			60 mV	0.014 %
			More than 60 mV less than 100 mV	0.013 %
			From 0.1 V less than 0.2 V	0.011 %
			0.2 V	97 ppm
			More than 0.2 V less than 0.3 V	96 ppm
		400 Hz	From 0.3 V less than 0.4 V	57 ppm
		l i	From 0.4 V less than 0.6 V	56 ppm
			0.6 V	42 ppm
			More than 0.6 V less than 2 V	37 ppm
irect Current			More than 0.6 V less than 2 V From 2 V less than 6 V 6 V	35 ppm
Low				32 ppm
requency	AC Voltage		More than 6 V up to 20 V	35 ppm
easuring	Source		More than 20 V less than 30 V	40 ppm
quipment,			From 30 V up to 60 V	39 ppm
C.			More than 60 V up to 200 V	41 ppm
			More than 200 V up to 1 000 V	52 ppm
			From 10 mV less than 20 mV	0.050 %
			20 mV	0.024 %
			More than 20 mV less than 30 mV	0.023 %
			From 30 mV less than 40 mV	0.022 %
			From 40 mV less than 60 mV	0.021 %
			60 mV	0.014 %
			More than 60 mV less than 100 mV	0.013 %
			From 0.1 V less than 0.2 V	0.011 %
			0.2 V	97 ppm
		-	More than 0.2 V less than 0.3 V	96 ppm
		-	From 0.3 V less than 0.4 V	57 ppm
		500 Hz,	From 0.4 V less than 0.6 V	56 ppm
		1 kHz	0.6 V	
		-		41 ppm
			More than 0.6 V less than 2 V	36 ppm
			2 V	34 ppm
			More than 2 V less than 6 V	35 ppm
			6 V	31 ppm
			More than 6 V up to 20 V	34 ppm
			More than 20 V less than 30 V	40 ppm
			From 30 V up to 60 V	39 ppm
			More than 60 V up to 100 V	40 ppm
			More than 100 V up to 200 V	41 ppm
			More than 200 V up to 1 000 V	52 ppm

	,			Attachmer
			From 0.3 V less than 0.4 V	57 ppm
			From 0.4 V less than 0.6 V	56 ppm
			0.6 V	41 ppm
			More than 0.6 V less than 2 V	37 ppm
			From 2 V less than 6 V	36 ppm
		10 kHz	6 V	32 ppm
		10 KHZ	More than 6 V up to 20 V	34 ppm
			More than 20 V less than 30 V	40 ppm
			From 30 V up to 60 V	39 ppm
			More than 60 V up to 100 V	40 ppm
			More than 100 V up to 200 V	41 ppm
			More than 200 V up to 1 000 V	53 ppm
			From 0.3 V less than 0.4 V	57 ppm
			From 0.4 V less than 0.6 V	56 ppm
			0.6 V	41 ppm
			More than 0.6 V less than 6 V	38 ppm
			6 V	32 ppm
		20 kHz	More than 6 V up to 20 V	34 ppm
	59.		More than 20 V less than 30 V	40 ppm
			From 30 V up to 60 V	39 ppm
			More than 60 V up to 100 V	40 ppm
			More than 100 V up to 200 V	41 ppm
			More than 200 V up to 1 000 V	53 ppm
Direct Current			From 0.3 V less than 0.5 V	79 ppm
& Low			From 0.5 V less than 0.6 V	78 ppm
Frequency	AC Voltage		0.6 V	61 ppm
Measuring	Source		More than 0.6 V up to 2 V	63 ppm
Equipment,			More than 2 V less than 6 V	64 ppm
etc.			From 6 V less than 10 V	55 ppm
		50 kHz	From 10 V up to 20 V	54 ppm
			More than 20 V less than 40 V	67 ppm
			From 40 V up to 60 V	66 ppm
			More than 60 V up to 100 V	77 ppm
			More than 100 V up to 200 V	78 ppm
			More than 200 V up to 1 000 V	0.014 %
			0.3 V	0.014 %
			0.6 V	84 ppm
			1 V, 2 V	83 ppm
			6 V	79 ppm
		70 kHz	10 V, 20 V	78 ppm
			60 V	94 ppm
			100 V, 200 V	99 ppm
		-	600 V, 1 000 V	0.040 %
			0.3 V	0.014 %
		-	0.5 V 0.6 V	84 ppm
	-	-	1 V, 2 V	86 ppm
		-	6 V	80 ppm
		100 kHz	10 V, 20 V	
		-	60 V	78 ppm
				94 ppm
		<u> </u>	100 V, 200 V	99 ppm
			600 V, 1 000 V	0.041 %

Attachment

			0.3 V	0.024 %
			0.6 V	0.019 %
			1 V, 2 V	0.018 %
		200 kHz	6 V	0.019 %
			10 V	0.018 %
Direct Current			20 V	0.019 %
& Low			60 V, 100V	0.020 %
Frequency	AC Voltage	500 kHz	0.3 V	0.033 %
Measuring	Source		0.6 V	0.028 %
Equipment,			1 V	0.026 %
etc.			0.3 V	0.081 %
		700 kHz	0.6 V	0.077 %
			1 V	0.072 %
			0.3 V	0.081 %
		1 MHz	0.6 V	0.077 %
			1 V	0.073 %

				T
			0.3 V	0.018 %
		10.77	0.6 V, 1 V	0.016 %
		10 Hz	2 V, 6 V	0.015 %
			10 V, 20 V, 60 V, 100 V, 200 V, 600 V, 1 000 V	0.016 %
			0.3 V	71 ppm
			0.6 V	63 ppm
			1 V	57 ppm
			2 V	55 ppm
			6 V	53 ppm
		20 Hz,	10 V	61 ppm
		30 Hz	20 V	62 ppm
			60 V	60 ppm
			100 V	63 ppm
			200 V	61 ppm
			600 V	84 ppm
			1 000 V	86 ppm
			10 mV	0.04 %
			More than 10 mV less than 20 mV	0.050 %
¥			20 mV	0.019 %
			More than 20 mV less than 30 mV	0.023 %
			From 30 mV less than 40 mV	0.022 %
			From 40 mV less than 60 mV	0.021 %
_ v 2		2	60 mV	0.012 %
Direct Current	AC		More than 60 mV less than 100 mV	
& Low	Voltage		0.1 V	0.010 %
Frequency	Measuring		More than 0.1 V less than 0.2 V	0.011 %
Measuring	Equipment		0.2 V	90 ppm
Equipment, etc.	1 1		More than 0.2 V less than 0.3 V	
			0.3 V	
			More than 0.3 V less than 0.6 V	
			0.6 V	
			More than 0.6 V less than 1 V	71 ppm 63 ppm 57 ppm 55 ppm 55 ppm 61 ppm 62 ppm 60 ppm 63 ppm 61 ppm 84 ppm 86 ppm 0.04 % 0.050 % 0.019 % 0.022 % 0.021 % 0.012 % 0.013 % 0.013 % 0.010 %
			1 V	
		40 Hz	More than 1 V less than 2 V	
			2 V	
		More than 2 V less t	More than 2 V less than 6 V	
			More than 6 V less than 10 V	
			10 V	
			More than 10 V less than 20 V	
			20 V	
			More than 20 V less than 60 V	
			60 V	
	.1		More than 60 V less than 100 V	
			100 V	
			More than 100 V less than 200 V	
			200 V	
			More than 200 V less than 600 V	
			600 V	
			More than 600 V less than 1 000 V	
			1 000 V	

			35 VEN 150V	7
			10 mV	0.04 %
			More than 10 mV less than 20 mV	
			20 mV	
			More than 20 mV less than 30 mV	
			From 30 mV less than 40 mV	
			From 40 mV less than 60 mV	
			60 mV	
			More than 60 mV less than 100 mV	
			0.1 V	
			More than 0.1 V less than 0.2 V	
			0.2 V	
			More than 0.2 V less than 0.3 V	
			0.3 V	
			More than 0.3 V less than 0.4 V	
			From 0.4 V less than 0.6 V	
			0.6 V	
		50 II	More than 0.6 V less than 1 V	
		50 Hz,	1 V	
		60 Hz	More than 1 V less than 2 V 2 V	
			More than 2 V less than 6 V	39 ppm
			6 V	
			More than 6 V less than 10 V	
			10 V	
			More than 10 V less than 20 V	
-1 -			20 V	
Direct Current	AC		More than 20 V less than 60 V	
& Low	Voltage		60 V More than 60 V less than 100 V	
Frequency Measuring	Measuring		100 V	
Equipment, etc.	Equipment		More than 100 V less than 200 V	
Equipment, etc.			200 V	
			More than 200 V less than 600 V	
			600 V	
			More than 600 V less than 1 000 V	
			1 000 V	0.019 % 0.023 % 0.022 % 0.021 % 0.012 % 0.013 % 0.010 % 0.011 % 90 ppm 96 ppm 48 ppm 57 ppm 56 ppm 35 ppm 42 ppm 37 ppm 42 ppm 34 ppm
			10 mV	
			More than 10 mV less than 20 mV	
			20 mV	
			More than 20 mV less than 30 mV	0.023 % 0.022 % 0.021 % 0.012 % 0.013 % 0.010 % 0.011 % 90 ppm 96 ppm 48 ppm 57 ppm 56 ppm 32 ppm 34 ppm 39 ppm 31 ppm 40 ppm 31 ppm 40 ppm 31 ppm 41 ppm 32 ppm 44 ppm 36 ppm 45 ppm 36 ppm 47 ppm 48 ppm 49 ppm 40 ppm 40 ppm 40 ppm 40 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 40 ppm 40 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 40 ppm 41 ppm 40 ppm 40 ppm 40 ppm 41 ppm 40 ppm
			From 30 mV less than 40 mV	
			From 40 mV less than 60 mV	
			60 mV	
			More than 60 mV less than 100 mV	
			0.1 V	
			More than 0.1 V less than 0.2 V	
		400 Hz	0.2 V	
		100 112	More than 0.2 V less than 0.3 V	
			0.3 V	
			More than 0.3 V less than 0.4 V	
			From 0.4 V less than 0.6 V	
			0.6 V	
			More than 0.6 V less than 1 V	
	-		1 V	
			More than 1 V less than 2 V	
			2 V	
			More than 2 V less than 6 V	

			•	Attachinen
			6 V	25 ppm
			More than 6 V less than 10 V	35 ppm
			10 V	27 ppm
			More than 10 V less than 20 V	35 ppm
			20 V	27 ppm
			More than 20 V less than 60 V	39 ppm
			60 V	30 ppm
		400 Hz	More than 60 V less than 100 V	41 ppm
			100 V	32 ppm
	2.		More than 100 V less than 200 V	41 ppm
			200 V	33 ppm
			More than 200 V less than 600 V	52 ppm
			600 V	41 ppm
			More than 600 V less than 1 000 V	52 ppm
			1 000 V	42 ppm
			10 mV	0.04 %
			More than 10 mV less than 20 mV	0.050 %
			20 mV	0.019 %
			More than 20 mV less than 30 mV	0.023 %
			From 30 mV less than 40 mV	0.022 %
			From 40 mV less than 60 mV	0.021 %
			60 mV	0.012 %
			More than 60 mV less than 100 mV 0.1 V	0.013 %
			More than 0.1 V less than 0.2 V	
			0.2 V	0.011 %
D:			More than 0.2 V less than 0.3 V	90 ppm
Direct Current	1.0		0.3 V	96 ppm
& Low Frequency	AC Voltage		More than 0.3 V less than 0.4 V	48 ppm 57 ppm
Measuring	Measuring		From 0.4 V less than 0.6 V	56 ppm
Equipment,	Equipment		0.6 V	30 ppm
etc.	Equipment		More than 0.6 V less than 1 V	36 ppm
ctc.			1 V	30 ppm
		500 Hz	More than 1 V less than 2 V	36 ppm
			2 V	28 ppm
			More than 2 V less than 6 V	35 ppm
			6 V	24 ppm
			More than 6 V less than 10 V	34 ppm
			10 V	26 ppm
			More than 10 V less than 20 V	34 ppm
			20 V	26 ppm
			More than 20 V less than 60 V	39 ppm
			60 V	30 ppm
			More than 60 V less than 100 V	40 ppm
			100 V	31 ppm
			More than 100 V less than 200 V	41 ppm
			200 V	33 ppm
			More than 200 V less than 600 V	52 ppm
			600 V	41 ppm
			More than 600 V less than 1 000 V	52 ppm
			1 000 V	42 ppm
			10 mV	0.04 %
			More than 10 mV less than 20 mV	0.050 %
			20 mV	0.019 %
		1 kHz	More than 20 mV less than 30 mV	0.023 %
			From 30 mV less than 40 mV	0.022 %
			From 40 mV less than 60 mV	0.021 %

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			More than 60 mV less than 100 mV	0.013 %
			0.1 V	0.010 %
			More than 0.1 V less than 0.2 V	0.011 %
			0.2 V	90 ppm
			More than 0.2 V less than 0.3 V	96 ppm
			0.3 V	48 ppm
			More than 0.3 V less than 0.4 V	57 ppm
			From 0.4 V less than 0.6 V	56 ppm
			0.6 V	30 ppm
			More than 0.6 V less than 1 V	36 ppm
			1 V	30 ppm
			More than 1 V less than 2 V	36 ppm
			2 V	28 ppm
			More than 2 V less than 6 V	35 ppm
		1 kHz	6 V	24 ppm
			More than 6 V less than 10 V	34 ppm
			10 V	26 ppm
			More than 10 V less than 20 V	34 ppm
			20 V	26 ppm
		l I	More than 20 V less than 60 V	39 ppm
			60 V	30 ppm
	-		More than 60 V less than 100 V	40 ppm
			100 V	31 ppm
			More than 100 V less than 200 V	41 ppm
			200 V	32 ppm
			More than 200 V less than 600 V	52 ppm
Direct Current			600 V	41 ppm
& Low	AC		More than 600 V less than 1 000 V	52 ppm
Frequency	Voltage		1 000 V	42 ppm
Measuring	Measuring		0.3 V	48 ppm
Equipment,	Equipment		More than 0.3 V less than 0.4 V	57 ppm
etc.			From 0.4 V less than 0.6 V	56 ppm
			0.6 V	30 ppm
			More than 0.6 V less than 1 V	37 ppm
			1 V	31 ppm
			More than 1 V less than 2 V	37 ppm
			2 V	30 ppm
			More than 2 V less than 6 V	36 ppm
			6 V	25 ppm
			More than 6 V less than 10 V	34 ppm
		101-11-	10 V	26 ppm
		10 kHz	More than 10 V less than 20 V	34 ppm
			20 V	26 ppm
			More than 20 V less than 60 V	39 ppm
			60 V	30 ppm
			More than 60 V less than 100 V	40 ppm
			100 V	31 ppm
			More than 100 V less than 200 V	41 ppm
			200 V	32 ppm
			More than 200 V less than 600 V	53 ppm
			600 V	42 ppm
			More than 600 V less than 1 000 V	53 ppm
			1 000 V	43 ppm
			0.3 V	48 ppm
			More than 0.3 V less than 0.4 V	57 ppm
		20 kHz	From 0.4 V less than 0.6 V	56 ppm
		20 MIL		
			0.6 V More than 0.6 V less than 1 V	30 ppm 38 ppm

			T	Attaciiiieii	
			1 V	33 ppm	
			More than 1 V less than 2 V		
			2 V		
			More than 2 V less than 6 V		
			6 V	s than 2 V 38 ppm 32 ppm 32 ppm s than 6 V 38 ppm 25 ppm 34 ppm 26 ppm 30 ppm 30 ppm 30 ppm 30 ppm 31 ppm 31 ppm 31 ppm 31 ppm 31 ppm 31 ppm 32 ppm 34 ppm 44 ppm 35 than 100 V 53 ppm 44 ppm 36 ppm 36 than 0.5 V 79 ppm 36 than 0.5 V 79 ppm 37 ppm 38 than 0.6 V 78 ppm 38 than 2 V 63 ppm 39 ppm 36 than 6 V 64 ppm 39 pp	
			More than 6 V less than 10 V		
			10 V		
			More than 10 V less than 20 V	aan 2 V 38 ppm 32 ppm 32 ppm aan 6 V 38 ppm 25 ppm 34 ppm 26 ppm 26 ppm aan 20 V 34 ppm aan 60 V 39 ppm aan 100 V 40 ppm aan 200 V 41 ppm aan 600 V 53 ppm aan 100 V 53 ppm aan 600 V 53 ppm aan 100 V 63 ppm aan 100 V 63 ppm aan 100 V 64 ppm aan 100 V 64 ppm aan 100 V 55 ppm <	
		20111	20 V		
		20 kHz	More than 20 V less than 60 V		
			60 V		
			More than 60 V less than 100 V		
			100 V		
				33 ppm 38 ppm 32 ppm 38 ppm 25 ppm 34 ppm 26 ppm 39 ppm 30 ppm 40 ppm 31 ppm 41 ppm 32 ppm 53 ppm 42 ppm 53 ppm 42 ppm 53 ppm 44 ppm 65 ppm 79 ppm 78 ppm 78 ppm 63 ppm 63 ppm 51 ppm 63 ppm 51 ppm 64 ppm 55 ppm 55 ppm	
				200 V 32 ppm 200 V less than 600 V 53 ppm 600 V 42 ppm 600 V less than 1 000 V 53 ppm 1 000 V 44 ppm 0.3 V 65 ppm n 0.3 V less than 0.5 V 79 ppm 0.5 V less than 0.6 V 78 ppm 0.6 V 44 ppm an 0.6 V less than 1 V 63 ppm 1 V 51 ppm an 1 V less than 2 V 63 ppm 2 V 51 ppm an 2 V less than 6 V 64 ppm 6 V 40 ppm an 6 V less than 10 V 55 ppm 10 V 39 ppm n 10 V less than 20 V 55 ppm 20 V 39 ppm n 20 V less than 40 V 67 ppm 40 V less than 60 V 66 ppm 60 V 49 ppm 100 V 55 ppm 100 V 55 ppm 100 V less than 200 V 77 ppm 100 V less than 200 V 78 ppm 200 V 56 ppm	
D:					
Direct Current & Low	AC Voltage Measuring				
Frequency					
Measuring					
Equipment,	Equipment				
etc.	Equipment	50 kHz			
cic.		30 KHZ			
			More than 60 V less than 100 V		
			More than 100 V less than 200 V		
			More than 200 V less than 600 V		
			600 V		
			More than 600 V less than 1 000 V	38 ppm 32 ppm 32 ppm 38 ppm 25 ppm 34 ppm 26 ppm 34 ppm 26 ppm 39 ppm 30 ppm 40 ppm 31 ppm 41 ppm 32 ppm 53 ppm 42 ppm 53 ppm 79 ppm 78 ppm 79 ppm 78 ppm 63 ppm 63 ppm 51 ppm 63 ppm 51 ppm 63 ppm 55 ppm 39 ppm 55 ppm 39 ppm 57 ppm 68 ppm 79 ppm 78 ppm 69 ppm 79 ppm 79 ppm 79 ppm 78 ppm 61 ppm 79 ppm 70 ppm 70 ppm 71 ppm 72 ppm 73 ppm 74 ppm 75 ppm 75 ppm 76 ppm 77 ppm 78 ppm 78 ppm 79 ppm 79 ppm 79 ppm 70 ppm 70 ppm 71 ppm 72 ppm 73 ppm 74 ppm 75 ppm 75 ppm 75 ppm 76 ppm 77 ppm 78 ppm 78 ppm 79 ppm 79 ppm 79 ppm 79 ppm 70 ppm 70 ppm 70 ppm 71 ppm 72 ppm 73 ppm 74 ppm 75 ppm 75 ppm 75 ppm 76 ppm 76 ppm 77 ppm 78 ppm 78 ppm 79 ppm	
			1 000 V		
			0.3 V		
			0.6 V		
			1 V, 2 V		
			6 V		
			10 V, 20 V		
		70 kHz	60 V		
			100 V		
		ŀ	200 V		
		ŀ	600 V		
		Ì	1 000 V		
	l		0.3 V		
			0.6 V		
		100 kHz	1 V, 2 V		
			6 V		

				Attacilile
			10 V, 20 V	46 ppm
			60 V	
		100 kHz	100 V	
		TOURIZ	200 V	59 ppm 62 ppm 63 ppm 99 ppm 0.011 % 0.018 % 0.011 % 0.013 % 0.012 % 0.020 % 0.016 % 0.024 % 0.013 % 0.013 % 0.013 % 0.018 % 0.025 % 0.013 % 0.020 % 0.4 % 0.3 % 0.2 % 0.1 % 0.08 % 0.04 kV 0.05 kV 0.06 kV 0.07 kV 0.08 kV 0.10 kV 0.11 kV 0.11 kV 0.12 kV 0.13 kV 0.14 kV 0.15 kV 0.16 kV 0.17 kV 0.18 kV 0.19 kV 0.22 kV 0.22 kV 0.23 kV 0.24 kV 0.25 kV 0.26 kV 0.27 kV 0.28 kV 0.29 kV 0.29 kV 0.29 kV 0.21 kV 0.21 kV 0.22 kV 0.22 kV 0.23 kV 0.24 kV 0.25 kV 0.26 kV 0.27 kV
		-	600 V	
			1 000 V	
		-	0.3 V	
			0.6 V	
		200 kHz	1 V, 2 V	
		-	6 V, 10 V, 20 V	
			60V, 100 V	
			0.3 V	
		500 kHz	0.6 V	
			1 V	
			0.3 V	
		700 kHz	0.6 V	0.020 % 0.012 % 0.016 % 0.024 % 0.013 % 0.018 % 0.025 % 0.013 % 0.020 % 0.4 % 0.3 % 0.2 % 0.1 % 0.08 % 0.04 kV 0.05 kV 0.06 kV 0.07 kV 0.08 kV 0.09 kV 0.10 kV
			1 V	
			0.3 V	
		1 MHz	0.6 V	0.025 % 0.013 % 0.020 % 0.4 % 0.3 % 0.2 % 0.1 % 0.08 % 0.04 kV
			1 V	
		-	More than 1 kV less than 1.1 kV	
		-	From 1.1 kV less than 1.6 kV	
			From 1.6 kV less than 5 kV	
			From 5 kV up to 9.5 kV	
Assettir in their		-	More than 9.5 kV up to 10 kV More than 10 kV less than 11.25 kV	
Direct Current				
& Low	AC	_	From 11.25 kV less than 13.75 kV	
Frequency	Voltage	-	From 13.75 kV less than 16.25 kV	
Measuring	Measuring		From 16.25 kV less than 18.75 kV	
Equipment, etc.	Equipment	-	From 18.75 kV less than 21.25 kV	
etc.		-	From 21.25 kV less than 23.75 kV	
	-	-	From 23.75 kV less than 26.25 kV	
		-	From 26.25 kV less than 28.75 kV From 28.75 kV less than 31.25 kV	
		-	From 31.25 kV less than 31.25 kV	
		-	From 33.75 kV less than 36.25 kV	
		-	From 36.25 kV less than 38.25 kV	
		50 11-	From 38.75 kV less than 41.25 kV	
		50 Hz, 60 Hz	From 41.25 kV less than 43.75 kV	
		00 HZ	From 43.75 kV less than 46.25 kV	
		-	From 46.25 kV less than 48.75 kV	63 ppm 99 ppm 0.011 % 0.018 % 0.011 % 0.013 % 0.011 % 0.012 % 0.020 % 0.012 % 0.016 % 0.024 % 0.013 % 0.013 % 0.013 % 0.018 % 0.025 % 0.013 % 0.020 % 0.4 % 0.3 % 0.2 % 0.1 % 0.08 % 0.04 kV 0.05 kV 0.06 kV 0.07 kV 0.08 kV 0.09 kV 0.11 kV 0.11 kV 0.11 kV 0.12 kV 0.13 kV 0.14 kV 0.15 kV 0.16 kV 0.17 kV 0.18 kV 0.19 kV 0.20 kV 0.21 kV 0.22 kV 0.23 kV 0.24 kV 0.25 kV 0.26 kV 0.27 kV 0.28 kV 0.29 kV 0.29 kV 0.30 kV 0.31 kV
		-	From 48.75 kV less than 51.25 kV	
		-	From 51.25 kV less than 53.75 kV	
		-	From 53.75 kV less than 56.25 kV	
		-		
		-	From 56.25 kV less than 58.75 kV From 58.75 kV less than 61.25 kV	
		-	From 38.73 kV less than 61.23 kV From 61.25 kV less than 63.75 kV	
		-		
		-	From 63.75 kV less than 66.25 kV From 66.25 kV less than 68.75 kV	
			From 68.75 kV less than 68.73 kV	
		-	From 71.25 kV less than 71.25 kV	
		-	From 73.75 kV less than 75.75 kV	
		-	From 76.25 kV less than 78.75 kV	
		-	From 78.75 kV less than 81.25 kV	
		-	From 81.25 kV less than 83.75 kV	
	1		From 83.75 kV less than 86.25 kV	

			From 86.25 kV less than 88.75 kV	0.35 kV
			From 88.75 kV less than 91.25 kV	0.36 kV
			From 91.25 kV less than 93.75 kV	0.37 kV
			From 93.75 kV less than 96.25 kV	0.38 kV
			From 96.25 kV less than 98.75 kV	0.39 kV
			From 98.75 kV less than 101.25 kV	0.40 kV
			From 101.25 kV less than 103.75 kV	0.41 kV
			From 103.75 kV less than 106.25 kV	0.42 kV
			From 106.25 kV less than 108.75 kV	0.43 kV
			From 108.75 kV less than 111.25 kV	0.44 kV
			From 111.25 kV less than 113.75 kV	0.45 kV
			From 113.75 kV less than 116.25 kV	0.46 kV
			From 116.25 kV less than 118.75 kV	0.47 kV
			From 118.75 kV less than 121.25 kV	0.48 kV
			From 121.25 kV less than 123.75 kV	0.49 kV
			From 123.75 kV less than 126.25 kV	0.50 kV
			From 126.25 kV less than 128.75 kV	0.51 kV
			From 128.75 kV less than 131.25 kV	0.52 kV
Direct Current			From 131.25 kV less than 133.75 kV	0.53 kV
& Low	AC		From 133.75 kV less than 136.25 kV	0.54 kV
Frequency	Voltage	50 Hz,	From 136.25 kV less than 138.75 kV	0.55 kV
Measuring	Measuring	60 Hz	From 138.75 kV less than 141.25 kV	0.56 kV
Equipment,	Equipment		From 141.25 kV less than 143.75 kV	0.57 kV
etc.	-		From 143.75 kV less than 146.25 kV	0.58 kV
			From 146.25 kV less than 148.75 kV	0.59 kV
			From 148.75 kV less than 151.25 kV	0.60 kV
			From 151.25 kV less than 153.75 kV	0.61 kV
			From 153.75 kV less than 156.25 kV	0.62 kV
			From 156.25 kV less than 158.75 kV	0.63 kV
			From 158.75 kV less than 161.25 kV	0.64 kV
			From 161.25 kV less than 163.75 kV	0.65 kV
			From 163.75 kV less than 166.25 kV	0.66 kV
			From 166.25 kV less than 168.75 kV	0.36 kV 0.37 kV 0.38 kV 0.39 kV 0.40 kV 0.41 kV 0.42 kV 0.43 kV 0.44 kV 0.45 kV 0.46 kV 0.47 kV 0.48 kV 0.50 kV 0.51 kV 0.52 kV 0.53 kV 0.54 kV 0.55 kV 0.57 kV 0.58 kV 0.59 kV 0.60 kV 0.61 kV 0.62 kV 0.63 kV 0.64 kV
			From 168.75 kV less than 171.25 kV	0.68 kV
			From 171.25 kV less than 173.75 kV	0.69 kV
			From 173.75 kV less than 176.25 kV	0.70 kV
			From 176.25 kV less than 178.75 kV	
			From 178.75 kV less than 181.25 kV	
			From 181.25 kV less than 183.75 kV	
			From 183.75 kV less than 186.25 kV	
			From 186.25 kV less than 188.75 kV	
			From 188.75 kV up to 190.00 kV	

	-		10 Hz	37 ppm
9			20 Hz, 30 Hz	35 ppm
			40 Hz	33 ppm
			50 Hz, 60 Hz	28 ppm
		0.011	400 Hz	27 ppm
		0.3 V	500 Hz, 1 kHz, 10 kHz, 20 kHz,	26 ppm
			50 kHz, 70 kHz, 100 kHz	27 ppm
			200 kHz	46 ppm
			500 kHz	49 ppm
	-		700 kHz	84 ppm
			1 MHz	87 ppm
			10 Hz	35 ppm
	-		20 Hz, 30 Hz	33 ppm
			40 Hz	32 ppm
			50 Hz, 60 Hz	26 ppm
		0.6 V	400 Hz	25 ppm
			500 Hz, 1 kHz, 10 kHz, 20 kHz,	24 ppm
			50 kHz, 70 kHz, 100 kHz	25 ppm
			200 kHz	45 ppm
			500 kHz	48 ppm
			700 kHz, 1 MHz	82 ppm
			10 Hz	40 ppm
			20 Hz, 30 Hz	31 ppm
			40 Hz	28 ppm
Direct Current		1 V, 1.2 V	50 Hz, 60 Hz	25 ppm
& Low	AC-DC-		400 Hz	24 ppm
Frequency	Voltage		500 Hz, 1 kHz, 10 kHz, 20 kHz,	23 ppm
Measuring	Comparator		50 kHz, 70 kHz, 100 kHz	
Equipment, etc.			200 kHz	43 ppm
			500 kHz	47 ppm
			700 kHz	48 ppm
			1 MHz	50 ppm
			10 Hz	37 ppm
			20 Hz, 30 Hz	27 ppm
			40 Hz	24 ppm
		2 V	50 Hz, 60 Hz	25 ppm
			400 Hz	24 ppm
			500 Hz, 1 kHz, 10 kHz, 20 kHz, 50 kHz, 70 kHz, 100 kHz	23 ppm
			200 kHz	44 ppm
			500 kHz	48 ppm
			700 kHz, 1 MHz	45 ppm
			10 Hz	36 ppm
			20 Hz, 30 Hz	26 ppm
			40 Hz, 50 Hz, 60 Hz	24 ppm
			400 Hz	23 ppm
		6 V	500 Hz, 1 kHz, 10 kHz, 20 kHz,	
		egot 100	50 kHz, 70 kHz, 100 kHz	22 ppm
			200 kHz	43 ppm
			500 kHz	47 ppm
	7		700 kHz, 1 MHz	45 ppm
			10 Hz	48 ppm
	8	10 V	20 Hz, 30 Hz	41 ppm
			40 Hz	26 ppm

		-		Attachme
			50 Hz, 60 Hz	25 ppm
			400 Hz	24 ppm
			500 Hz, 1 kHz, 10 kHz, 20 kHz,	23 ppm
		10 V	50 kHz, 70 kHz, 100 kHz	
		10 7	200 kHz	43 ppm
			500 kHz	47 ppm
			700 kHz	49 ppm
			1 MHz	51 ppm
			10 Hz	49 ppm
			20 Hz, 30 Hz	42 ppm
			40 Hz	30 ppm
			50 Hz, 60 Hz	25 ppm
			400 Hz	24 ppm
		20 V	500 Hz, 1 kHz, 10 kHz, 20 kHz,	23 ppm
			50 kHz, 70 kHz, 100 kHz	
			200 kHz	44 ppm
			500 kHz	48 ppm
			700 kHz	56 ppm
			1 MHz	60 ppm
			10 Hz	49 ppm
			20 Hz, 30 Hz	42 ppm
			40 Hz	30 ppm
			50 Hz, 60 Hz	25 ppm
	AC-DC- Voltage Comparator	24 V	400 Hz	24 ppm
Direct Current			500 Hz, 1 kHz, 10 kHz, 20 kHz,	23 ppm
& Low			50 kHz, 70 kHz, 100 kHz	25 ppm
Frequency			200 kHz	45 ppm
Measuring			500 kHz	48 ppm
Equipment, etc.		48 V	10 Hz	43 ppm
-qaapaaan, eee			20 Hz, 30 Hz	35 ppm
			40 Hz	33 ppm
			50 Hz, 60 Hz	25 ppm
			400 Hz	24 ppm
			500 Hz, 1 kHz, 10 kHz, 20 kHz,	23 ppm
			50 kHz, 70 kHz, 100 kHz	26 ppm
			200 kHz	52 ppm
			10 Hz	46 ppm
			20 Hz, 30 Hz	39 ppm
			40 Hz	37 ppm
			50 Hz, 60 Hz	26 ppm
	_	60 V	400 Hz , 500 Hz, 1 kHz,	
			10 kHz, 20 kHz,	25 ppm
			50 kHz, 70 kHz, 100 kHz	29 ppm
			200 kHz	58 ppm
			10 Hz	46 ppm
			20 Hz, 30 Hz	39 ppm
			40 Hz	38 ppm
			50 Hz, 60 Hz, 400 Hz	30 ppm
		100 V	500 Hz, 1 kHz, 10 kHz, 20 kHz	29 ppm
			50 kHz	31 ppm
			70 kHz, 100 kHz	
			200 kHz	38 ppm
			10 Hz	57 ppm 48 ppm
		200 V	10 H7	40 000

		200 1/	50 Hz, 60 Hz, 400 Hz, 500 Hz, 1 kHz, 10 kHz, 20 kHz	31 ppm
		200 V	50 kHz	32 ppm
			70 kHz, 100 kHz	40 ppm
			10 Hz	50 ppm
			20 Hz, 30 Hz	45 ppm
			40 Hz	44 ppm
		300 V	50 Hz, 60 Hz, 400 Hz, 500 Hz, 1 kHz, 10 kHz, 20 kHz	32 ppm
			50 kHz	35 ppm
			70 kHz	42 ppm
			100 kHz	43 ppm
Direct Current	AC-DC- Voltage Comparator		10 Hz	54 ppm
& Low		600 V	20 Hz, 30 Hz	49 ppm
Frequency			40 Hz	48 ppm
Measuring Equipment, etc.			50 Hz, 60 Hz, 400 Hz, 500 Hz, 1 kHz, 10 kHz, 20 kHz	36 ppm
2005 20			50 kHz	75 ppm
			70 kHz	80 ppm
			100 kHz	89 ppm
			10 Hz	56 ppm
			20 Hz, 30 Hz	52 ppm
			40 Hz	51 ppm
	3	700 V,	50 Hz, 60 Hz	40 ppm
		1000 V,	400 Hz, 500 Hz, 1 kHz, 10 kHz,	39 ppm
		1000 1	20 kHz	40 ppm
-			50 kHz	73 ppm
			70 kHz	83 ppm
			100 kHz	0.011 %

	T	7 00014 4 00064	Γ	T 0.007.0/ + 0.1 +
	1	From 0.001 A up to 0.006 A	-	$0.025\% + 0.1 \mu A$
		More than 0.006 A less than 0.01 A		$0.025\% + 0.5 \mu A$
		0.01 A	_	0.004 %
		More than 0.01 A less than 0.011 A	_	0.000 000 8 A
		From 0.011 A less than 0.012 A		0.000 000 9 A
		From 0.012 A less than 0.013 A	1	0.000 001 0 A
		From 0.013 A less than 0.015 A		0.000 001 1 A
		From 0.015 A less than 0.016 A		0.000 001 2 A
		From 0.016 A less than 0.018 A		0.000 001 3 A
		From 0.018 A less than 0.02 A		0.000 001 4 A
		0.02 A		0.005 %
		More than 0.02 A less than 0.021 A		0.000 001 5 A
		From 0.021 A less than 0.022 A		0.000 001 6 A
		From 0.022 A less than 0.023 A		0.000 001 7 A
		From 0.023 A less than 0.025 A		0.000 001 8 A
		From 0.025 A less than 0.026 A]	0.000 001 9 A
		From 0.026 A less than 0.028 A		0.000 002 0 A
		From 0.028 A less than 0.03 A		0.000 002 1 A
		0.03 A		0.005 %
		More than 0.03 A less than 0.031 A		0.000 002 2 A
		From 0.031 A less than 0.032 A		0.000 002 3 A
		From 0.032 A less than 0.034 A		0.000 002 4 A
		From 0.034 A less than 0.035 A		0.000 002 5 A
		From 0.035 A less than 0.037 A		0.000 002 5 A
Direct Current		From 0.037 A less than 0.038 A		0.000 002 7 A
& Low	Alternating	From 0.038 A less than 0.04 A		0.000 002 7 A
Frequency	Current	From 0.04 A less than 0.041 A	50 Hz, 60 Hz	0.000 002 0 A
Measuring	Source	From 0.041 A less than 0.041 A	30 112, 00 112	0.000 002 9 A
Equipment, etc.	Source	From 0.041 A less than 0.043 A From 0.043 A less than 0.044 A		0.000 003 0 A
Equipment, etc.		From 0.044 A less than 0.046 A		0.000 003 1 A
		From 0.044 A less than 0.047 A		0.000 003 2 A
		From 0.047 A less than 0.047 A From 0.047 A less than 0.049 A		0.000 003 3 A
		From 0.047 A less than 0.049 A From 0.049 A less than 0.05 A		0.000 003 4 A
		0.05 A		0.005 %
		More than 0.05 A less than 0.051 A		0.000 003 6 A
		From 0.051 A less than 0.053 A		0.000 003 7 A
		From 0.053 A less than 0.054 A		0.000 003 8 A
		From 0.054 A less than 0.056 A		0.000 003 9 A
		From 0.056 A less than 0.057 A		0.000 004 0 A
		From 0.057 A less than 0.059 A		0.000 004 1 A
		From 0.059 A up to 0.06 A		0.000 004 2 A
		More than 0.06 A less than 0.069 A		0.000 006 A
		From 0.069 A less than 0.085 A		0.000 007 A
		From 0.085 A less than 0.1 A		0.000 008 A
		0.1 A		0.006 %
		More than 0.1 A less than 0.11 A		0.000 009 A
		From 0.11 A less than 0.12 A		0.000 010 A
		From 0.12 A less than 0.13 A		0.000 011 A
		From 0.13 A less than 0.15 A		0.000 012 A
		From 0.15 A less than 0.16 A		0.000 013 A
		From 0.16 A less than 0.17 A		0.000 014 A
-		From 0.17 A less than 0.19 A		0.000 015 A
I i	1	From 0.19 A less than 0.2 A		0.000 016 A

		0.2.4	T	1 00000
		0.2 A	-	0.006 %
		More than 0.2 A less than 0.21 A	-	0.000 019 A
		From 0.21 A less than 0.23 A	-	0.000 020 A
		From 0.23 A less than 0.24 A	-	0.000 021 A
		From 0.24 A less than 0.25 A		0.000 022 A
		From 0.25 A less than 0.26 A		0.000 023 A
		From 0.26 A less than 0.27 A		0.000 024 A
		From 0.27 A less than 0.29 A		0.000 025 A
		From 0.29 A less than 0.3 A		0.000 026 A
		0.3 A		0.007 %
		More than 0.3 A less than 0.31 A		0.000 027 A
		From 0.31 A less than 0.32 A		0.000 028 A
		From 0.32 A less than 0.33 A		0.000 029 A
		From 0.33 A less than 0.34 A		0.000 030A
		From 0.34 A less than 0.36 A		0.000 031 A
		From 0.36 A less than 0.37 A		0.000 032 A
		From 0.37 A less than 0.38 A		0.000 033 A
		From 0.38 A less than 0.39 A		0.000 034 A
		From 0.39 A less than 0.4 A		0.000 035 A
		From 0.4 A less than 0.42 A		0.000 036 A
		From 0.42 A less than 0.43 A		0.000 037 A
		From 0.43 A less than 0.44 A		0.000 038 A
		From 0.44 A less than 0.45 A		0.000 039 A
Direct Current		From 0.45 A less than 0.46 A		0.000 040 A
& Low	Alternating	From 0.46 A less than 0.47 A		0.000 041 A
Frequency	Current	From 0.47 A less than 0.49 A	50 Hz, 60 Hz	0.000 042A
Measuring	Source	From 0.49 A less than 0.5 A		0.000 043 A
Equipment, etc.		0.5 A		0.008 %
		More than 0.5 A less than 0.51 A	= ,	0.000 044 A
		From 0.51 A less than 0.52 A		0.000 045 A
		From 0.52 A less than 0.53 A		0.000 046 A
		From 0.53 A less than 0.55 A		0.000 047 A
		From 0.55 A less than 0.56 A		0.000 048 A
		From 0.56 A less than 0.57 A		0.000 049 A
		From 0.57 A less than 0.58 A		0.000 050 A
		From 0.58 A less than 0.59 A]	0.000 051 A
		From 0.59 A up to 0.6 A		0.000 052 A
		More than 0.6 A less than 0.69 A	1	0.000 07 A
	=	From 0.69 A less than 0.81 A		0.000 08 A
		From 0.81 A less than 1 A		0.000 09 A
		1 A		0.008 %
		More than 1 A less than 1.06 A		0.000 11 A
		From 1.06 A less than 1.2 A	1	0.000 12 A
		From 1.2 A less than 1.3 A	1	0.000 13 A
		From 1.3 A less than 1.4 A	1	0.000 14 A
		From 1.4 A less than 1.5 A	1	0.000 15 A
		From 1.5 A less than 1.6 A	1	0.000 16 A
		From 1.6 A less than 1.8 A	1	0.000 17 A
*		From 1.8 A less than 1.9 A	1	0.000 17 A
	1 1	From 1.9 A less than 2 A	1	0.000 19 A
	1	2 A	1	0.009 %
	L	211	L	0.007 /0

			7	
		More than 2 A less than 2.1 A		0.000 28 A
		From 2.1 A less than 2.12 A		0.000 29 A
		From 2.12 A less than 2.2 A		0.000 30 A
		From 2.2 A less than 2.27 A		0.000 31 A
		From 2.27 A less than 2.4 A		0.000 32 A
		From 2.4 A less than 2.42 A		0.000 33 A
		From 2.42 A less than 2.5 A		0.000 34 A
		From 2.5 A less than 2.6 A		0.000 35 A
		From 2.6 A less than 2.65 A		0.000 36 A
		From 2.65 A less than 2.8 A		0.000 37 A
		From 2.8 A less than 2.81 A		0.000 38 A
		From 2.81 A less than 2.88 A		0.000 39 A
		From 2.88 A less than 3 A		0.000 40 A
		3 A		0.013 %
		More than 3 A less than 3.1 A	1	0.000 41 A
		From 3.1 A less than 3.11 A		0.000 42 A
		From 3.11 A less than 3.19 A		0.000 43 A
		From 3.19 A less than 3.3 A		0.000 44 A
		From 3.3 A less than 3.4 A		0.000 45 A
		From 3.4 A less than 3.41 A	1	0.000 46 A
		From 3.41 A less than 3.49 A	1	0.000 47 A
		From 3.49 A less than 3.6 A		0.000 48 A
		From 3.6 A less than 3.64 A		0.000 49 A
		From 3.64 A less than 3.72 A		0.000 50 A
		From 3.72 A less than 3.8 A		0.000 51 A
Direct Current		From 3.8 A less than 3.9 A	-	0.000 52 A
& Low	Alternating	From 3.9 A less than 4 A		0.000 53 A
Frequency	Current	From 4 A less than 4.02 A	50 Hz, 60 Hz	0.000 54 A
Measuring	Source	From 4.02 A less than 4.1 A	30 112, 00 112	0.000 55 A
Equipment, etc.	Source	From 4.1 A less than 4.2 A		0.000 56 A
1.1		From 4.2 A less than 4.3 A	-	0.000 57 A
		From 4.3 A less than 4.33 A		0.000 58 A
		From 4.33 A less than 4.4 A		0.000 59 A
		From 4.4 A less than 4.5 A		0.000 60 A
		From 4.5 A less than 4.56 A	-	0.000 61 A
		From 4.56 A less than 4.7 A		0.000 62 A
		From 4.7 A less than 4.71 A		0.000 63 A
		From 4.71 A less than 4.78 A		0.000 64 A
		From 4.78 A less than 4.9 A		0.000 65 A
		From 4.9 A less than 5 A		0.000 66 A
	20	5 A		0.013 %
		More than 5 A less than 5.01 A		0.000 67 A
		From 5.01 A less than 5.09 A		0.000 67 A
		From 5.09 A less than 5.09 A	-	0.000 69 A
		From 5.2 A less than 5.2 A	1	0.000 09 A 0.000 70 A
		From 5.3 A less than 5.3 A		0.000 70 A 0.000 71 A
		From 5.32 A less than 5.32 A	1	0.000 71 A 0.000 72 A
		From 5.39 A less than 5.47 A	1	0.000 72 A 0.000 73 A
		From 5.47 A less than 5.47 A	1	0.000 73 A 0.000 74 A
		From 5.47 A less than 5.62 A	1	0.000 74 A 0.000 75 A
		From 5.62 A less than 5.7 A	1	0.000 75 A 0.000 76 A
		From 5.7 A less than 5.7 A	1	0.000 76 A 0.000 77 A
		From 5.7 A less than 5.8 A From 5.8 A less than 5.9 A	-	0.000 77 A 0.000 78 A
		From 5.9 A less than 5.9 A	1	0.000 78 A 0.000 79 A
		From 5.93 A up to 6 A		0.000 79 A 0.000 80 A
	L	1 From 3.93 A up to 6 A	L	0.000 80 A

		More than 6 A less than 6.3 A		0.001 1 A
		From 6.3 A less than 7 A		0.001 2 A
		From 7 A less than 7.6 A		0.001 3 A
		From 7.6 A less than 8.3 A		0.001 4 A
		From 8.3 A less than 8.9 A		0.001 5 A
		From 8.9 A less than 10 A		0.001 6 A
		10 A		0.013 %
		More than 10 A less than 10.2 A	1	0.001 7 A
		From 10.2 A less than 10.9 A		0.001 8 A
		From 10.9 A less than 11.5 A	1	0.001 9 A
Direct Current		From 11.5 A less than 12.1 A	1	0.002 0 A
& Low	Alternating	From 12.1 A less than 12.8 A		0.002 1 A
Frequency	Current	From 12.8 A less than 13.4 A	50 Hz, 60 Hz	0.002 2 A
Measuring	Source	From 13.4 A less than 14.1 A		0.002 3 A
Equipment, etc.		From 14.1 A less than 14.7 A	1	0.002 4 A
		From 14.7 A less than 15.4 A		0.002 5 A
		From 15.4 A less than 16 A		0.002 6 A
		From 16 A less than 16.6 A		0.002 7 A
		From 16.6 A less than 17.3 A		0.002 8 A
		From 17.3 A less than 17.9 A		0.002 9 A
		From 17.9 A less than 18.6 A		0.003 0 A
		From 18.6 A less than 19.2 A		0.003 1 A
		From 19.2 A less than 20 A		0.003 2 A
		20 A	1	0.014 %
		More than 20 A up to 60 A		0.045 % + 1 mA

		From 0.001 A less than 0.01 A		$0.030 \% + 0.5 \mu A$
		0.01 A		0.005 %
		More than 0.01 A less than 0.010 1 A		0.000 001 8 A
		From 0.010 1 A less than 0.010 6 A		0.000 001 9 A
		From 0.010 6 A less than 0.012 A		0.000 002 0 A
		From 0.012 A less than 0.012 2 A		0.000 002 1 A
		From 0.012 2 A less than 0.013 A		0.000 002 2 A
		From 0.013 A less than 0.014 A		0.000 002 3 A
		From 0.014 A less than 0.015 A		0.000 002 4 A
		From 0.015 A less than 0.016 A		0.000 002 4 A
		From 0.016 A less than 0.016 1 A		0.000 002 5 A
		From 0.016 1 A less than 0.016 8 A		0.000 002 7 A
		From 0.016 8 A less than 0.018 A		0.000 002 8 A
		From 0.018 A less than 0.019 A		0.000 002 9 A
		From 0.019 A less than 0.019 1 A		0.000 003 0 A
		From 0.019 1 A less than 0.02 A		0.000 003 1 A
		0.02 A		0.006 %
		More than 0.02 A less than 0.021 A		0.000 003 2 A
		From 0.021 A less than 0.022 A		0.000 003 3 A
		From 0.022 A less than 0.03 A		0.000 008 A
		0.03 A		0.006 %
		More than 0.03 A less than 0.034 A		0.000 009 A
		From 0.034 A less than 0.041 A		0.000 010 A
		From 0.041 A less than 0.05 A		0.000 010 A
		0.05 A		0.006 %
		More than 0.05 A less than 0.054 A		0.000 76 0.000 012 A
D:				
Direct Current	Alternating	From 0.054 A less than 0.06 A		0.000 013 A
& Low	Current	From 0.06 A less than 0.067 A	50 II 60 II	0.000 014 A
Frequency	Measuring	From 0.067 A less than 0.073 A	50 Hz, 60 Hz	0.000 015 A
Measuring	Equipment	From 0.073 A less than 0.08 A		0.000 016 A
Equipment, etc.		From 0.08 A less than 0.087 A		0.000 017 A
		From 0.087 A less than 0.093 A		0.000 018 A
		From 0.093 A less than 0.1 A		0.000 019 A
		0.1 A		0.006 %
		More than 0.1 A less than 0.101 A		0.000 020 A
		From 0.101 A less than 0.108 A		0.000 021 A
		From 0.108 A less than 0.12 A		0.000 022 A
		From 0.12 A less than 0.121 A		0.000 023 A
		From 0.121 A less than 0.128 A		0.000 024 A
		From 0.128 A less than 0.14 A		0.000 025 A
		From 0.14 A less than 0.142 A		0.000 026 A
		From 0.142 A less than 0.148 A		0.000 027 A
		From 0.148 A less than 0.16 A		0.000 028 A
		From 0.16 A less than 0.162 A		0.000 020 A
		From 0.162 A less than 0.169 A		0.000 029 A
		From 0.169 A less than 0.18 A		0.000 031 A
		From 0.18 A less than 0.182 A		0.000 032 A
		From 0.182 A less than 0.189 A		0.000 033 A
		From 0.189 A less than 0.2 A		0.000 034 A
		0.2 A		0.007 %
		More than 0.2 A less than 0.201 A		0.000 035 A
		From 0.201 A less than 0.204 A		0.000 036 A
		From 0.204 A less than 0.21 A		0.000 037 A
		From 0.21 A less than 0.22 A		0.000 038 A
		From 0.22 A less than 0.23 A		0.000 17 A
		From 0.23 A less than 0.24 A		0.000 18 A
		From 0.24 A less than 0.26 A		0.000 19 A

	,			
		From 0.26 A less than 0.28 A		0.000 20 A
		From 0.28 A less than 0.3 A		0.000 21 A
		0.3 A		0.008 %
		More than 0.3 A less than 0.31 A		0.000 22 A
		From 0.31 A less than 0.33 A		0.000 23 A
		From 0.33 A less than 0.34 A		0.000 24 A
		From 0.34 A less than 0.36 A		0.000 25 A
		From 0.36 A less than 0.38 A		0.000 26 A
		From 0.38 A less than 0.4 A		0.000 27 A
		From 0.4 A less than 0.41 A		0.000 28 A
		From 0.41 A less than 0.43 A		0.000 29 A
		From 0.43 A less than 0.45 A		0.000 30 A
		From 0.45 A less than 0.46 A]	0.000 31 A
		From 0.46 A less than 0.48 A		0.000 32 A
		From 0.48 A less than 0.5 A		0.000 33 A
		0.5 A]	0.008 %
		More than 0.5 A less than 0.51 A]	0.000 34 A
		From 0.51 A less than 0.53 A		0.000 35 A
		From 0.53 A less than 0.55 A		0.000 36 A
		From 0.55 A less than 0.57 A		0.000 37 A
		From 0.57 A less than 0.58 A	-	0.000 38 A
		From 0.58 A less than 0.6 A	-	0.000 39 A
		From 0.6 A less than 0.62 A	-	0.000 40 A
		From 0.62 A less than 0.63 A	-	0.000 41 A
		From 0.63 A less than 0.65 A	-	0.000 42 A
D: (C)		From 0.65 A less than 0.67 A From 0.67 A less than 0.69 A	-	0.000 43 A 0.000 44 A
Direct Current	Alternating	From 0.69 A less than 0.7 A	-	0.000 44 A
& Low Frequency	Current	From 0.7 A less than 0.7 A	50 Hz, 60 Hz	0.000 45 A
Measuring	Measuring	From 0.72 A less than 0.72 A	30 112, 00 112	0.000 40 A
Equipment, etc.	Equipment	From 0.74 A less than 0.74 A		0.000 47 A
Equipment, etc.		From 0.75 A less than 0.77 A		0.000 49 A
		From 0.77 A less than 0.79 A		0.000 50 A
		From 0.79 A less than 0.80 A		0.000 51 A
		From 0.80 A less than 0.82 A		0.000 52 A
		From 0.82 A less than 0.84 A		0.000 53 A
		From 0.84 A less than 0.86 A		0.000 54 A
		From 0.86 A less than 0.87 A		0.000 55 A
		From 0.87 A less than 0.89 A		0.000 56 A
		From 0.89 A less than 0.91 A		0.000 57 A
		From 0.91 A less than 0.92 A		0.000 58 A
		From 0.92 A less than 0.94 A		0.000 59 A
		From 0.94 A less than 0.96 A		0.000 60 A
		From 0.96 A less than 0.97 A		0.000 61 A
		From 0.97 A less than 1 A		0.000 62 A
		1 A	_	0.008 %
		More than 1 A less than 1.01 A		0.000 63 A
		From 1.01 A less than 1.02 A] [0.000 64 A
		From 1.02 A less than 1.04 A		0.000 65 A
		From 1.04 A less than 1.05 A		0.000 66 A
		From 1.05 A less than 1.07 A		0.000 67 A
		From 1.07 A less than 1.09 A		0.000 68 A
		From 1.09 A less than 1.1 A		0.000 69 A
	×	From 1.1 A less than 1.12 A		0.000 70 A
		From 1.12 A less than 1.14 A		0.000 71 A
		From 1.14 A less than 1.16 A		0.000 72 A
		From 1.16 A less than 1.17 A		0.000 73 A

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More than 3 A less than 3.1 A From 3.1 A less than 3.4 A From 3.4 A less than 3.7 A From 3.7 A less than 3.9 A From 3.9 A less than 4.2 A From 4.2 A less than 4.5 A From 4.7 A less than 5.A From 5.3 A less than 5.3 A From 5.3 A less than 5.5 A From 5.4 A less than 5.8 A From 5.8 A less than 6.A From 6.3 A less than 6.8 A From 6.8 A less than 6.8 A From 7.1 A less than 7.4 A From 7.4 A less than 7.4 A From 7.4 A less than 7.4 A From 7.4 A less than 7.6 A O.001 4 A O.001 7 A O.001 8 A O.001 9 A O.001 9 A O.002 0 A O.002 1 A O.002 1 A O.002 2 A O.002 2 A O.002 3 A O.002 4 A O.002 5 A O.002 5 A O.002 6 A O.002 7 A O.002 9 A O.002 9 A O.002 9 A O.002 9 A O.003 1 A					0.013 %
From 3.1 A less than 3.4 A From 3.4 A less than 3.7 A From 3.7 A less than 3.9 A From 3.9 A less than 4.2 A From 4.2 A less than 4.5 A From 4.5 A less than 5.4 More than 5 A less than 5.3 A From 5.3 A less than 5.5 A From 5.8 A less than 6.3 A From 6.3 A less than 6.8 A From 6.8 A less than 7.1 A From 7.4 A less than 7.4 A From 7.4 A less than 7.6 A 0.001 5 A 0.001 6 A 0.001 7 A 0.001 9 A 0.001 9 A 0.002 0 A 0.002 1 A 0.002 1 A 0.002 2 A 0.002 2 A 0.002 2 A 0.002 2 A 0.002 3 A 0.002 3 A 0.002 4 A 0.002 5 A 0.002 5 A 0.002 6 A 0.002 7 A 0.002 7 A 0.002 9 A 0.002 9 A 0.002 9 A 0.003 0 A					
From 3.4 A less than 3.7 A From 3.7 A less than 3.9 A From 3.9 A less than 4.2 A From 4.2 A less than 4.5 A From 4.5 A less than 5.4 From 4.7 A less than 5.3 A From 5.3 A less than 5.5 A From 5.8 A less than 6.3 A From 6.3 A less than 6.8 A From 6.8 A less than 7.1 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A D.001 6 A D.001 7 A D.001 8 A D.001 9 A D.001 9 A D.002 0 A D.002 1 A D.002 1 A D.002 2 A D.002 3 A D.002 4 A D.002 5 A D.002 5 A D.002 6 A D.002 7 A D.002 7 A D.002 8 A D.002 9 A D.002 9 A D.002 9 A D.002 9 A D.003 0 A D.003 0 A D.003 1 A					
From 3.7 A less than 3.9 A From 3.9 A less than 4.2 A From 4.2 A less than 4.5 A From 4.5 A less than 4.7 A From 4.7 A less than 5 A More than 5 A less than 5.3 A From 5.3 A less than 5.5 A From 5.5 A less than 6.3 A From 6.3 A less than 6.3 A From 6.4 A less than 6.8 A From 6.8 A less than 6.8 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A O.001 7 A 0.001 8 A 0.001 9 A 0.002 0 A 0.002 1 A 0.002 1 A 0.002 2 A 0.002 2 A 0.002 2 A 0.002 2 A 0.002 3 A 0.002 3 A 0.002 4 A 0.002 5 A 0.002 5 A 0.002 6 A 0.002 7 A 0.002 8 A 0.002 9 A 0.002 9 A					
From 3.9 A less than 4.2 A From 4.2 A less than 4.5 A From 4.5 A less than 4.7 A From 4.7 A less than 5 A More than 5 A less than 5.3 A From 5.3 A less than 5.8 A From 5.8 A less than 6 A From 6.3 A less than 6.3 A From 6.3 A less than 6.8 A From 6.8 A less than 7.1 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A 0.001 8 A 0.001 9 A 0.002 0 A 0.002 1 A 0.002 2 A 0.002 2 A 0.002 2 A 0.002 3 A 0.002 3 A 0.002 4 A 0.002 5 A 0.002 5 A 0.002 6 A 0.002 7 A 0.002 7 A 0.002 7 A 0.002 7 A 0.002 8 A				1	
From 4.2 A less than 4.5 A From 4.5 A less than 4.7 A From 4.7 A less than 5 A 5 A More than 5 A less than 5.3 A From 5.3 A less than 5.5 A From 5.5 A less than 5.8 A From 5.8 A less than 6 A From 6 A less than 6.3 A From 6.3 A less than 6.8 A From 6.8 A less than 7.1 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A					
From 4.5 A less than 4.7 A From 4.7 A less than 5 A 5 A More than 5 A less than 5.3 A From 5.3 A less than 5.5 A From 5.5 A less than 5.8 A From 5.8 A less than 6 A From 6.3 A less than 6.3 A From 6.4 less than 6.8 A From 6.8 A less than 6.8 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A					
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5 A 0.013 % More than 5 A less than 5.3 A 0.002 2 A From 5.3 A less than 5.5 A 0.002 3 A From 5.5 A less than 5.8 A 0.002 4 A From 5.8 A less than 6 A 0.002 5 A From 6.3 A less than 6.3 A 0.002 6 A From 6.6 A less than 6.8 A 0.002 7 A From 6.8 A less than 7.1 A 0.002 9 A From 7.1 A less than 7.4 A 0.003 0 A From 7.4 A less than 7.6 A 0.003 1 A					
More than 5 A less than 5.3 A 0.002 2 A From 5.3 A less than 5.5 A 0.002 3 A From 5.5 A less than 5.8 A 0.002 4 A From 5.8 A less than 6 A 0.002 5 A From 6.3 A less than 6.3 A 0.002 6 A From 6.6 A less than 6.8 A 0.002 7 A From 6.8 A less than 7.1 A 0.002 9 A From 7.1 A less than 7.4 A 0.003 0 A From 7.4 A less than 7.6 A 0.003 1 A					
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From 5.5 A less than 5.8 A From 5.8 A less than 6 A From 6 A less than 6.3 A From 6.3 A less than 6.6 A From 6.6 A less than 6.8 A From 6.8 A less than 7.1 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A					
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From 6.8 A less than 7.1 A From 7.1 A less than 7.4 A From 7.4 A less than 7.6 A 0.002 9 A 0.003 0 A 0.003 1 A		1			
From 7.1 A less than 7.4 A 0.003 0 A From 7.4 A less than 7.6 A 0.003 1 A					
From 7.4 A less than 7.6 A 0.003 1 A					
From 7.6 A less than 7.9 A 0.003 2 A					
			From 7.6 A less than 7.9 A		0.003 2 A

				Attachment
		From 7.9 A less than 8.2 A		0.003 3 A
		From 8.2 A less than 8.4 A		0.003 4 A
		From 8.4 A less than 8.7 A		0.003 5 A
		From 8.7 A less than 8.9 A		0.003 6 A
		From 8.9 A less than 9.2 A		0.003 7 A
		From 9.2 A less than 9.5 A		0.003 8 A
		From 9.5 A less than 9.7 A		0.003 9 A
		From 9.7 A less than 10 A		0.004 0 A
		10 A		0.014 %
		More than 10 A less than 10.1 A		0.005 0 A
		From 10.1 A less than 10.3 A		0.005 1 A
		From 10.3 A less than 10.6 A		0.005 2 A
		From 10.6 A less than 10.8 A		0.005 3 A
		From 10.8 A less than 11 A	-	0.005 4 A
		From 11 A less than 11.3 A		0.005 5 A
		From 11.3 A less than 11.5 A		0.005 6 A
		From 11.5 A less than 11.8 A		0.005 7 A
		From 11.8 A less than 12 A		0.005 8 A
		From 12 A less than 12.3 A		0.005 9 A
		From 12.3 A less than 12.5 A		0.006 0 A
		From 12.5 A less than 12.8 A		0.006 1 A
		From 12.8 A less than 13 A		0.006 2 A
		From 13 A less than 13.2 A		0.006 3 A
		From 13.2 A less than 13.5 A		0.006 4 A
		From 13.5 A less than 13.7 A		0.006 5 A
Direct Current		From 13.7 A less than 14 A		0.006 6 A
& Low	Alternating	From 14 A less than 14.2 A		0.006 7 A
Frequency	Current	From 14.2 A less than 14.5 A	50 Hz, 60 Hz	0.006 8 A
Measuring	Measuring	From 14.5 A less than 14.7 A	30 112, 00 112	0.006 9 A
Equipment, etc.	Equipment	From 14.7 A less than 15 A		0.007 0 A
1 1		From 15 A less than 15.2 A		0.007 1 A
		From 15.2 A less than 15.4 A		0.007 2 A
		From 15.4 A less than 15.7 A		0.007 3 A
		From 15.7 A less than 15.9 A		0.007 4 A
		From 15.9 A less than 16.2 A		0.007 5 A
		From 16.2 A less than 16.4 A		0.007 6 A
		From 16.4 A less than 16.7 A		0.007 7 A
		From 16.7 A less than 16.9 A		0.007 8 A
4		From 16.9 A less than 17.1 A		0.007 9 A
		From 17.1 A less than 17.4 A		0.008 0 A
		From 17.4 A less than 17.6 A		0.008 1 A
		From 17.6 A less than 17.9 A		0.008 2 A
		From 17.9 A less than 18.1 A		0.008 3 A
		From 18.1 A less than 18.4 A		0.008 4 A
		From 18.4 A less than 18.6 A		0.008 5 A
		From 18.6 A less than 18.8 A		0.008 6 A
		From 18.8 A less than 19.1 A		0.008 7 A
		From 19.1 A less than 19.3 A		0.008 8 A
		From 19.3 A less than 19.6 A		0.008 9 A
		From 19.6 A less than 20 A		0.009 0 A
		20 A		0.014 %
		More than 20 A up to 27 A		0.18 % + 0.01 A
		More than 27 A up to 30 A		0.06A
		More than 30 A up to 60 A		0.18 % + 0.01 A
		More than 60 A up to 100 A		0.3A
		More than 100 A up to 3 000 A		0.5 %

		,			
		10 mA, 20 m			0.004 %
		30 mA, 50 m			0.005 %
	AC-DC-	100 mA, 200 mA,	300 mA		0.006 %
	Current	500 mA, 1 A	A	50 Hz, 60 Hz	0.007 %
	Comparator	2 A, 3 A			0.008 %
		5 A, 10 A			0.009 %
		20 A		-	0.010 %
		Thermocouple R, with Reference Junction		up to 21101 μV up to 1768 °C)	5 μV
		Thermocouple S, with Reference Junction	From -236 μV	up to 18693 μV Cup to 1768 °C)	5 μV
		Thermocouple N,	From -4345 μ	V up to 47513 μV	21 μV
		with Reference Junction Thermocouple K,	From -6458 μ	C up to 1300 °C) V up to 54886 μV	22 μV
		with Reference Junction Thermocouple E,	From -9835 μ	C up to 1372 °C) V up to 76373 μV	27 μV
		with Reference Junction Thermocouple J, with Reference Junction	From -8095 μ	C up to 1000 °C) V up to 69553 μV C up to 1200 °C)	25 μV
Direct Current & Low	Temperature Indicator	Thermocouple T, with Reference Junction	From -6258 μ\	V up to 20872 μV C up to 400 °C)	24 μV
Frequency Measuring Equipment,		Thermocouple R, without Reference Junction	From -226 μV	Tup to 21101 μV Cup to 1768 °C)	4 μV
etc.		Thermocouple S, without Reference Junction		up to 18693 μV Cup to 1768 °C)	4 μV
		Thermocouple N, without Reference Junction		V up to 47513 μV C up to 1300 °C)	9 μV
		Thermocouple K, without Reference Junction		V up to 54886 μV C up to 1372 °C)	10 μV
		Thermocouple E, without Reference Junction		V up to 76373 μV C up to 1000 °C)	18 μV
		Thermocouple J, without Reference Junction		V up to 69553 μV C up to 1200 °C)	14 μV
		Thermocouple T, without Reference Junction		V up to 20872 μV C up to 400 °C)	14 μV
		Resistance thermometer Sensor		2 up to 390.48 Ω C up to 850 °C)	0.011 Ω

Direct Current & Low Frequency Measuring Equipment, etc.	Temperature Indicator calibration equipment	Thermocouple R, with Reference Junction		From -226 μV up to 21101 μV (From -50 °C up to 1768 °C)	3 μV
		Thermocouple S, with Reference Junction		From -236 μV up to 18693 μV (From -50 °C up to 1768 °C)	3 μV
		Thermocouple N, with Reference Junction		From -4345 µV up to 47513 µV (From -270 °C up to 1300 °C)	19 μV
		Thermocouple K, with Reference Junction		From -6458 µV up to 54886 µV (From -270 °C up to 1372 °C)	20 μV
		Thermocouple E, with Reference Junction		From -9835 μV up to 76373 μV (From -270 °C up to 1000 °C)	23 μV
		Thermocouple J, with Reference Junction		From -8095 μV up to 69553 μV (From -210 °C up to 1200 °C)	21 μV
		Thermocouple T, with Reference Junction		From -6258 μ V up to 20872 μ V (From -270 °C up to 400 °C)	20 μV
		Thermocouple R, without Reference Junction		From -226 μ V up to 21101 μ V (From -50 °C up to 1768 °C)	1.4 μV
		Thermocouple S, without Reference Junction		From -236 μ V up to 18693 μ V (From -50 °C up to 1768 °C)	1.4 μV
		Thermocouple N, without Reference Junction		From -4345 μ V up to 47513 μ V (From -270 °C up to 1300 °C)	1.5 μV
		Thermocouple K, without Reference Junction		From -6458 μ V up to 54886 μ V (From -270 °C up to 1372 °C)	1.6 μV
		Thermocouple E, without Reference Junction		From -9835 μ V up to 76373 μ V (From -270 °C up to 1000 °C)	1.7 μV
		Thermocouple J, without Reference Junction		From -8095 μV up to 69553 μV (From -210 °C up to 1200 °C)	1.7 μV
		Thermocouple T, without Reference Junction		From -6258 μ V up to 20872 μ V (From -270 °C up to 400 °C)	1.4 μV
	DC Voltage Ratio Measuring Equipment	From 0 mV/V up to 10 mV/V			0.000 17 mV/V
	AC Voltage Ratio Measuring Equipment	225 11	From 0 mV/V up to 2.5 mV/V		0.000 050 mV/V
		225 Hz	More than 2.5 mV/V up to 5 mV/V		0.000 060 mV/V

Electric	Power Converter	From 10 V up to 300 V From 50 mA up to 200 A From 45 Hz up to 66 Hz Power factor, whole range	0.04 mV/V ~ 1.4 mV/V (Appendix 1-1)
Power Measuring Equipment, etc.	Power Measuring Equipment,	100 V, 5 A More than 66 Hz up to 1000 Hz Power factor, whole range	0.25 mV/V (Appendix 1-1)
	Power Meter	From 10 V up to 1 000 V From 5 mA up to 200 A From 45 Hz up to 66 Hz Power factor, whole range	0.04 mW/VA ~ 0.16 mW/VA (Appendix 1-2)
	ivieter	100 V, 5 A More than 66 Hz up to 1000 Hz Power factor, whole range	0.25 mW/VA (Appendix 1-2)
	Reactive Power Meter	From 10 V up to 1 000 V From 5 mA up to 200 A From 45 Hz up to 66 Hz Power factor, whole range	0.04 mvar/VA ~ 0.16 mvar/VA (Appendix 1-3)

	Energy Meter	From 10 V up to 300 V From 50 mA up to 50 A From 45 Hz up to 66 Hz The absolute of Power facto	0.009 % ~ 0.011 % (Appendix 1-4)			
	Reactive Energy Meter	factor is form +0.9 lag to +0.9 lag to -0.9 lead against -1	0.009 % ~ 0.011 % (Appendix 1-5)			
Electric Power Measuring Equipment, etc.	Power Source	From 50 V up to 100 V From 2.5 A up to 5 A From 45 Hz up to 66 Hz Power factor, whole range	From 2.5 A up to 5 A From 45 Hz up to 66 Hz			
			Rated primary voltage From 100 V up to 33 kV	Ratio error 5×10 ⁻⁵ Phase angle 0.3'		
		50 Hz, 60 Hz	Rated primary voltage More than 33 kV up to 77 kV	Ratio error 8×10 ⁻⁵ Phase angle 0.3'		
	AC Voltage Transformer	(Testing voltage is from 5 % to 120 % of rated primary voltage and	Rated primary voltage More than 77 kV up to 275/√3 kV	Ratio error 13×10 ⁻⁵ Phase angle 0.5'		
		from 5 % up to 110 % at more than 275/√3 kV)	Rated primary voltage More than 275/√3 kV up to 550/√3 kV	Ratio error 14×10 ⁻⁵ Phase angle 0.5'		
	Alternating	50 11 (0.11	Rated primary current From 5 mA up to 1.5 kA	Ratio error 60 ppm Phase angle 0.2'		
	Current Transformer	50 Hz, 60 Hz	Rated primary current More than 1.5 kA up to 12 kA	Ratio error 70 ppm Phase angle 0.3'		
	Alternating Current Standard Shunt	From 50 A up to 3 000 A	50 Hz、60 Hz	0.4 %		

[#]All Calibration Procedures are in-house procedures developed by this laboratory.

Appendix 1-1

_			Range		Expanded Uncertainty
Category	Frequency	Voltage	Current	Power factor	(Level of Confidence Approximately 95 %)
			200 A	1	0.08 mV/V
				1	0.05 mV/V
		100 V		0.5 lag	0.05 mV/V
	50 Hz	100 V	5 A	0.5 lead	0.05 mV/V
	30 HZ			0 lag	0.04 mV/V
				0 lead	0.04 mV/V
		10 V	5 A	1	0.14 mV/V
		100 V	50 mA	1	1.4 mV/V
		100 V		1	0.05 mV/V
				0.5 lag	0.05 mV/V
~	60 Hz		5 A	0.5 lead	0.05 mV/V
Power Converter				0 lag	0.04 mV/V
Converter				0 lead	0.04 mV/V
				1	0.25 mV/V
				0.5 lag	0.25 mV/V
	400 Hz	100 V	5 A	0.5 lead	0.25 mV/V
				0 lag	0.25 mV/V
				0 lead	0.25 mV/V
				1	0.25 mV/V
				0.5 lag	0.25 mV/V
	1 kHz	100 V	5 A	0.5 lead	0.25 mV/V
				0 lag	0.25 mV/V
				0 lead	0.25 mV/V

				Expanded Uncertainty				
Category	Туре	Phase wire	Frequency	Voltage	Current	Power factor	(Level of Confidence Approximately 95 %)	
				200 A	1	0.08 mW/VA		
						1	0.05 mW/VA	
				100 17		0.5 lag	0.04 mW/VA	
			50.11-	100 V	5 A	0.5 lead	0.04 mW/VA	
			50 Hz			0 lag	0.04 mW/VA	
						0 lead	0.04 mW/VA	
				1000 V	5 A	1	0.14 mW/VA	
				100 V	5 mA	1	0.16 mW/VA	
						1	0.05 mW/VA	
				100 V	5 A	0.5	0.5 lag	0.04 mW/VA
			60 Hz			0.5 lead	0.04 mW/VA	
						0 lag	0.04 mW/VA	
Power	Active					0 lead	0.04 mW/VA	
Meter	Power		400 Hz	100 V		1	0.25 mW/VA	
					100 V 5 A	0.5 lag	0.25 mW/VA	
						0.5 lead	0.25 mW/VA	
						0 lag	0.25 mW/VA	
						0 lead	0.25 mW/VA	
				27		1	0.25 mW/VA	
						0.5 lag	0.25 mW/VA	
			1 kHz	100 V	5 A	0.5 lead	0.25 mW/VA	
						0 lag	0.25 mW/VA	
						0 lead	0.25 mW/VA	
		Single phase three wire	50 Hz	100 V	5 A	1	0.05 mW/VA	
		Three phase three wire	50 Hz	100 V	5 A	1	0.05 mW/VA	
		Three phase four wire	50 Hz	100 V	5 A	1	0.05 mW/VA	

Appendix 1-3

			Expanded Uncertainty				
Category	Туре	Phase wire	Frequency	requency Voltage Current Power		Power factor	(Level of Confidence Approximately 95 %)
					200 A	0 lag	0.08 mvar/VA
						0 lag	0.05 mvar/VA
				100 37		0 lead	0.05 mvar/VA
			50.11-	100 V	5 A	0.866 lag	0.05 mvar/VA
			50 Hz			0.866 lead	0.05 mvar/VA
						1	0.04 mvar/VA
				1000 V	5 A	0 lag	0.14 mvar/VA
Reactive	Reactive			100 V	5 mA	0 lag	0.16 mvar/VA
Power Meter	power		60 Hz	100 V		0 lag	0.05 mvar/VA
						0 lead	0.05 mvar/VA
					100 V	5 A	0.866 lag
						0.866 lead	0.05 mvar/VA
						1	0.04 mvar/VA
		Single phase three wire	50 Hz	100 V	5 A	0 lag	0.05 mvar/VA
		Three phase three wire	50 Hz	100 V	5 A	0 lag	0.05 mvar/VA
		Three phase four wire	50 Hz	100 V	5 A	0 lag	0.05 mvar/VA

Appendix 1-4

		Expanded					
Category	Туре	Phase wire	Frequency	Voltage	Current	Power factor	Uncertainty (Level of Confidence Approximately 95 %)
						1	0.009 %
				100 V	5 A	0.5 lag	0.011 %
			50 Hz			0.5 lead	0.011 %
		Three phase		10 V	5 A	1	0.009 %
		three wire		100 V	50 mA	1	0.009 %
						1	0.009 %
			60 Hz	100 V	5 A	0.5 lag	0.011 %
						0.5 lead	0.011 %
			50 Hz	300 V	5 A	1	0.009 %
					50 A	1	0.011 %
Energy Meter	Active Energy			100 V		1	0.009 %
					5 A	0.5 lag	0.011 %
						0.5 lead	0.011 %
		two wire			50 mA	1	0.011 %
				10 V	5 A	1	0.010 %
						1	0.009 %
			60 Hz	100 V	5 A	0.5 lag	0.011 %
						0.5 lead	0.011 %
		Single phase three wire	50 Hz	100 V	5 A	1	0.009 %
		Three phase four wire	50 Hz	100 V	5 A	1	0.009 %

			Range	3			Expanded
Category	Туре	Phase wire	Frequency	Voltage	Current	Power factor	Uncertainty (Level of Confidence Approximately 95 %)
						0 lag	0.009 %
				100 V	5 A	0 lead	0.009 %
			50 Hz	100 V	J A	0.866 lag	0.011 %
			30 Hz			0.866 lead	0.011 %
		Three phase		10 V	5 A	0 lag	0.009 %
		three wire		100 V	50 mA	0 lag	0.009 %
Reactive	D					0 lag	0.009 %
Energy	Reactive energy		60 Hz	100 V	5 A	0 lead	0.009 %
Meter	chergy		60 Hz	100 V	J A	0.866 lag	0.011 %
						0.866 lead	0.011 %
		Single phase two wire	50 Hz	100 V	5 A	0 lag	0.009 %
		Single phase three wire	50 Hz	100 V	5 A	0 lag	0.009 %
		Three phase four wire	50 Hz	100 V	5 A	0 lag	0.009 %
					1	0.06 mW/VA	
		Single phase	50 Hz	100 V	5 A	0.5 lag	0.06 mW/VA
						0.5 lead	0.06 mW/VA
						0 lag	0.06 mW/VA
٨						0 lead	0.06 mW/VA
					2.5 A	1	0.12 mW/VA
		two wire		50 V	5 A	1	0.12 mW/VA
Power Source	Active Power					1	0.06 mW/VA
						0.5 lag	0.06 mW/VA
			60 Hz	100 V	5 A	0.5 lead	0.06 mW/VA
						0 lag	0.06 mW/VA
						0 lead	0.06 mW/VA
		Single phase three wire	50 Hz	100 V	5 A	1	0.06 mW/VA
		Three phase three wire	50 Hz	100 V	5 A	1	0.06 mW/VA
		Three phase four wire	50 Hz	100 V	5 A	1	0.06 mW/VA

General Field of Calibration: Electricity (Direct Current & Low Frequency)

Date of Initial Accreditation of the Field: 1995-06-21
Laboratory's permanent facility/On-site Calibration: On-site Calibration

Calibration Procedures# and Type of Instruments/Materials		Range	Expanded Uncertainty (Level of Confidence
to be cal		3	Approximately 95 %)
		1 mΩ	0.03 %
		10 mΩ	0.03 %
		100 mΩ	0.01 %
		1 Ω	0.01 %
		2Ω , 3Ω , 4Ω , 5Ω , 6Ω ,	
		$7 \Omega, 8 \Omega, 9 \Omega, 10 \Omega$	0.001 Ω
		20Ω , 30Ω , 40Ω , 50Ω , 60Ω ,	
		70Ω , 80Ω , 90Ω , 100Ω	0.003 Ω
		$200 \Omega, 300 \Omega, 400 \Omega, 500 \Omega, 600 \Omega,$	2702
		700Ω , 800Ω , 900Ω , 1000Ω	0.02 Ω
	l	$2 \text{ k}\Omega$, $3 \text{ k}\Omega$, $4 \text{ k}\Omega$, $5 \text{ k}\Omega$, $6 \text{ k}\Omega$,	
	DC Resister	$7 \text{ k}\Omega$, $8 \text{ k}\Omega$, $9 \text{ k}\Omega$, $10 \text{ k}\Omega$	$0.0002~\mathrm{k}\Omega$
		20 kΩ, 30 kΩ, 40 kΩ, 50 kΩ, 60 kΩ,	
		$70 \text{ k}\Omega$, $80 \text{ k}\Omega$, $90 \text{ k}\Omega$, $100 \text{ k}\Omega$	0.002 kΩ
		200 kΩ, 300 kΩ, 400 kΩ, 500 kΩ, 600 kΩ,	
		700 kΩ, $800 kΩ$, $900 kΩ$, $1 MΩ$	0.03 kΩ
		1.1 ΜΩ	0.40 kΩ
		$2 \text{ M}\Omega$, $3 \text{ M}\Omega$, $4 \text{ M}\Omega$, $5 \text{ M}\Omega$, $6 \text{ M}\Omega$,	0.40 K22
		$7 \text{ M}\Omega$, $8 \text{ M}\Omega$, $9 \text{ M}\Omega$, $10 \text{ M}\Omega$	0.001 MΩ
		20 ΜΩ, 30 ΜΩ, 40 ΜΩ, 50 ΜΩ, 60 ΜΩ	0.1 %
		$70 \text{ M}\Omega, 80 \text{ M}\Omega, 90 \text{ M}\Omega$	0.06 ΜΩ
		100 MΩ	0.05 ΜΩ
		100 10122	0.050 %
	DC Resistance Measuring Equipment	From 1 Ω up to 10 k Ω	(lower limit 10 m Ω)
irect Current		Mora than 10 kO up to 1 MO	0.10 %
Low		More than $10 \text{ k}\Omega$ up to $1 \text{ M}\Omega$	0.20 %
equency		More than 1 M Ω up to 10 M Ω	1.0 %
leasuring		More than $10 \text{ M}\Omega$ up to $100 \text{ M}\Omega$	
quipment, etc.	-	More than 100 M Ω up to 2000 M Ω	2.0 %
		From 0 V up to 1000 V	0.010 %
	-		(lower limit 0.010 mV
	DC Voltage	More than 1 kV up to 1.5 kV	0.014 kV
	Source	More than 1.5 kV up to 3.5 kV	0.02 kV
		More than 3.5 kV up to 6.5 kV	0.03 kV
		More than 6.5 kV up to 9 kV	0.04 kV
		More than 9 kV up to 10 kV	0.05 kV
	DC Voltage	From 0 V up to 1000 V	0.050 % (lower limit 5 μV)
	Measuring Equipment	More than 1 kV up to 180 kV	0.005 V/V
	Direct Current Source	From 0 A up to 30 A	0.10 % (lower limit 0.05 μA)
	Direct Current	From 0 A up to 10 A	0.10 % (lower limit 0.10 μA)
	Measuring	More than 10 A up to 25 A	0.04 A
	Equipment –	More than 25 A up to 30 A	0.05 A
	Equipment	More than 30 A up to 40 A	0.40 A

				- Tittaeinnen
	Direct		More than 40 A up to 50 A	0.50 A
	Current Measuring Equipment		More than 50 A up to 500 A	1.0 %
			From 10 mV up to 40 mV	0.10 mV
			More than 40 mV up to 1000 V	0.30 %
		50 U.	More than 1 kV up to 1.5 kV	0.014 kV
	A.C. Voltago	50 Hz, 60 Hz	More than 1.5 kV up to 3.5 kV	0.02 kV
	AC Voltage Source	00 HZ	More than 3.5 kV up to 6.5 kV	0.03 kV
	Source		More than 6.5 kV up to 9 kV	0.04 kV
			More than 9 kV up to 10 kV	0.05 kV
		400 Hz,	From 10 mV up to 40 mV	0.10 mV
		1 kHz	More than 40 mV up to 1000 V	0.30 %
	AC Voltage	50 Hz, 60 Hz 400 Hz, 1 kHz	From 10 mV up to 1000 V	0.10 % (lower limit 0.10 mV)
Direct Current	Measuring Equipment	50 Hz, 60 Hz	From 5 kV up to 190 kV	0.005 V/V
& Low Frequency Measuring	Alternating Current Source	50 Hz, 60 Hz	From 1 mA up to 60 A	0.50 %
Equipment, etc.	33475		From 1 mA up to 43 mA	0.30 %
1 1			More than 43 mA up to 50 mA	0.13 mA
			More than 50 mA up to 0.2 A	0.30 %
			More than 0.2 A up to 0.3 A	0.000 6 A
			More than 0.3 A up to 0.43 A	0.30 %
			More than 0.43 A up to 0.5 A	0.001 3 A
			More than 0.5 A up to 0.75 A	0.001 4 A
			More than 0.75 A up to 1.3 A	0.30 %
	1.17		Moe than 1.3 A up to 1.5 A	0.004 A
	Alternating	50.11	More than 1.5 A up to 2 A	0.30 %
	Current	50 Hz, 60 Hz	More than 2 A up to 3 A	0.006 A
	Measuring	00 HZ	More than 3 A up to 4.3 A	0.30 %
	Equipment		More than 4.3 A up to 5 A	0.013 A
			More than 5 A up to 7.5 A	0.014 A
			More than 7.5 A up to 10 A	0.30 %
			More than 10 A up to 15 A	0.03 A
			More than 15 A up 30 A	0.06 A
			More than 30 A up to 50 A	0.13 A
			More than 50 A up to 60 A	0.50 %
			More than 60 A up to 100 A	0.3 A
			More than 100 A up to 500 A	1.5 %

		Thermocouple R, with Reference Junction	From -226 μV up to 21101 μV (From -50 °C up to 1768 °C)	5 μV								
		Thermocouple S, with Reference Junction	From -236 μV up to 18693 μV (From -50 °C up to 1768 °C)	5 μV								
		Thermocouple N, with Reference Junction	From -4345 μV up to 47513 μV (From -270 °C up to 1300 °C)	21 μV								
		Thermocouple K, with Reference Junction	From -6458 μV up to 54886 μV (From -270 °C up to 1372 °C)	22 μV								
		Thermocouple E, with Reference Junction	From -9835 μV up to 76373 μV (From -270 °C up to 1000 °C)	27 μV								
		Thermocouple J, with Reference Junction	From -8095 μV up to 69553 μV (From -210 °C up to 1200 °C)	25 μV								
Direct Current		Thermocouple T, with Reference Junction	From -6258 μ V up to 20872 μ V (From -270 °C up to 400 °C)	24 μV								
& Low Frequency	Temperature Indicator	Thermocouple R, without Reference Junction	From -226 μ V up to 21101 μ V (From -50 °C up to 1768 °C)	4 μV								
Measuring Equipment, etc.		Thermocouple S, without Reference Junction	From -236 μV up to 18693 μV (From -50 °C up to 1768 °C)	4 μV								
		Thermocouple N, without Reference Junction	From -4345 μV up to 47513 μV (From -270 °C up to 1300 °C)	9 μV								
										Thermocouple K, without Reference Junction	From -6458 μV up to 54886 μV (From -270 °C up to 1372 °C)	10 μV
		Thermocouple E, without Reference Junction	From -9835 μV up to 76373 μV (From -270 °C up to 1000 °C)	18 μV								
		Thermocouple J, without Reference Junction	From -8095 μV up to 69553 μV (From -210 °C up to 1200 °C)	14 μV								
		Thermocouple T, without Reference Junction	From -6258 μ V up to 20872 μ V (From -270 $^{\circ}$ C up to 400 $^{\circ}$ C)	14 μV								
		Resistance thermometer Sensor	From 18.52 Ω up to 390.48 Ω (From -200 °C up to 850 °C)	0.07 Ω								

T	Thormogouple P	From 226 uV up to 21101 uV	I		
			5 μV		
			5 μV		
			19 μV		
	with Reference Junction	(From -270 °C up to 1300 °C)	17μν		
	Thermocouple K,	From -6458 μV up to 54886 μV	20		
	with Reference Junction	(From -270 °C up to 1372 °C)	20 μV		
	Thermocouple E,	From -9835 μV up to 76373 μV	24 17		
	with Reference Junction	(From -270 °C up to 1000 °C)	24 μV		
	Thermocouple J,	From -8095 μV up to 69553 μV	22 1/		
	with Reference Junction	(From -210 °C up to 1200 °C)	22 μV		
Temperature	Thermocouple T,	From -6258 μV up to 20872 μV	21		
Indicator	with Reference Junction	(From -270 °C up to 400 °C)	21 μV		
calibration	Thermocouple R,	From -226 μV up to 21101 μV	201/		
equipment	without Reference Junction	(From -50 °C up to 1768 °C)	3.0 μV		
NO 8008	Thermocouple S,	From -236 μV up to 18693 μV	20.1		
	without Reference Junction	(From -50 °C up to 1768 °C)	3.0 μV		
			Thermocouple N,	From -4345 μV up to 47513 μV	20 1/
	without Reference Junction	(From -270 °C up to 1300 °C)	3.2 μV		
	Thermocouple K,	From -6458 μV up to 54886 μV	22 11		
	without Reference Junction	(From -270 °C up to 1372 °C)	3.3 μV		
	Thermocouple E.	From -9835 μV up to 76373 μV	0.4.77		
	without Reference Junction	(From -270 °C up to 1000 °C)	3.4 μV		
	Thermocouple J.	From -8095 μV up to 69553 μV	22 17		
	without Reference Junction	(From -210 °C up to 1200 °C)	3.3 μV		
	Thermocouple T,	From -6258 μV up to 20872 μV	20 17		
	without Reference Junction	(From -270 °C up to 400 °C)	3.0 μV		
	calibration	with Reference Junction Thermocouple E, with Reference Junction Thermocouple J, with Reference Junction Temperature Indicator calibration equipment Thermocouple R, without Reference Junction Thermocouple S, without Reference Junction Thermocouple N, without Reference Junction Thermocouple K, without Reference Junction Thermocouple E, without Reference Junction Thermocouple E, without Reference Junction Thermocouple J, without Reference Junction Thermocouple J, without Reference Junction Thermocouple J, without Reference Junction	with Reference Junction Thermocouple S, with Reference Junction Thermocouple N, with Reference Junction Thermocouple N, with Reference Junction Thermocouple K, with Reference Junction Thermocouple K, with Reference Junction Thermocouple E, with Reference Junction Thermocouple J, with Reference Junction Thermocouple J, with Reference Junction Thermocouple J, with Reference Junction Thermocouple T, with Reference Junction Thermocouple R, with Reference Junction Thermocouple R, with Reference Junction Thermocouple R, without Reference Junction Thermocouple S, without Reference Junction Thermocouple N, without Reference Junction Thermocouple N, without Reference Junction Thermocouple K, without Reference Junction Thermocouple J, Without Reference Junction Thermocouple T, From -6258 µV up to 69553 µV (From -210 °C up to 1200 °C)		

Electric Power	Power	Single phase two wire From 30 V up to 300 V From 0.2 A up to 33 A 50 Hz, 60 Hz Power factor 0 lag ~1~0 lead Single phase three	0.050 W~8 W (Appendix 2-1)
Measuring Equipment, etc.	Meter	wire, Three phase three wire From 50 V up to 300 V From 0.2 A up to 33 A 50 Hz, 60 Hz Power factor 0 lag ~1~0 lead	0.075 W~12 W (Appendix 2-2)

#All Calibration Procedures are in-house procedures developed by this laboratory.

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Appendix 2-				Range			Expanded						
Category Typ	Туре	Phase wire	Frequency	Voltage	Current	Power factor	Uncertainty (Level of Confidence Approximately 95 %)						
					More than 20 A up to 33 A	0 lag~1~0 lead	8 W						
					More than 10 A up to 20 A	0 lag~1~0 lead	5.1 W						
				More	More than 5 A up to 10 A	0 lag~1~0 lead	2.6 W						
			than 150 V up to	More than 2 A up to 5 A	0 lag~1~0 lead	1.3 W							
					300 V		More than 1 A up to 2 A	0 lag~1~0 lead	0.51 W				
													1 A
Power	Active	Single phase	50 Hz		0.2 A	0 lag~1~0 lead	0.48 W						
Meter	Power	Two wire	60 Hz	60 Hz	More than 20 A up to 33 A	0 lag~1~0 lead	4 W						
			More than 10 A up to 20 A	0 lag~1~0 lead	2.6 W								
				More	More than 5 A up to 10 A	0 lag~1~0 lead	1.3 W						
		than 100 V	7	More than 2 A up to 5 A	0 lag~1~0 lead	0.7 W							
				150 V	More than 1 A up to 2 A	0 lag~1~0 lead	0.26 W						
					1 A	0 lag~1~0 lead	0.13 W						
					0.2 A	0 lag~1~0 lead	0.24 W						

Appendix 2-1(continued)

					More than 20 A up to 33 A	0 lag~1~0 lead	2.6 W
					More than 10 A up to 20 A	0 lag~1~0 lead	1.7 W
				More than 60 V	More than 5 A up to 10 A	0 lag~1~0 lead	0.9 W
				Up to 100 V	More than 2 A up to 5 A	0 lag~1~0 lead	0.42 W
					More than 1 A up to 2 A	0 lag~1~0 lead	0.17 W
					1 A	0 lag~1~0 lead	0.09 W
					More than 20 A up to 33 A	0 lag~1~0 lead	1.7 W
				More than 10 A up to 20 A	0 lag~1~0 lead	1.1 W	
Power	Active	Single phase	50 Hz		More than 5 A up to 10 A	0 lag~1~0 lead	0.51 W
Meter	Power	Two wire	60 Hz	From 50 V up to 60 V	More than 2 A up to 5 A	0 lag~1~0 lead	0.26 W
				975	More than 1 A up to 2 A	0 lag~1~0 lead	0.10 W
					1 A	0 lag~1~0 lead	0.050W
					0.2 A	0 lag~1~0 lead	0.12 W
					10 A	0 lag~1~0 lead	1.5 W
					5 A	0 lag~1~0 lead	0.8 W
				30 V	2.5 A	0 lag~1~0 lead	0.38 W
					1 A	0 lag~1~0 lead	0.15 W
					0.2 A	0 lag~1~0 lead	0.060 W

Appendix 2-2

Appendix 2	2			Range			Expanded
Category	Туре	Phase wire	Frequency	Voltage	Current	Power factor	Uncertainty (Level of Confidence Approximately 95 %)
					More than 20 A up to 33 A	0 lag~1~0 lead	12 W
					More than 10 A up to 20 A	0 lag∼1∼0 lead	7.6 W
				More than 150 V	More than 5 A up to 10 A	0 lag~1~0 lead	3.9 W
				up to 300 V	More than 2 A up to 5 A	0 lag~1~0 lead	1.9 W
	Single phase			More than 1 A up to 2 A	0 lag~1~0 lead	0.76 W	
		three wire			1 A	0 lag~1~0 lead	0.38 W
Power Meter	Active Power	Three	50 Hz 60 Hz		0.2 A	0 lag~1~0 lead	0.96 W
		phase three			More than 20 A up to 33 A	0 lag~1~0 lead	6 W
		wire			More than 10 A up to 20 A	0 lag~1~0 lead	3.9 W
				More than	More than 5 A up to 10 A	0 lag~1~0 lead	2.0 W
			100 V up to	More than 2 A up to 5 A	0 lag~1~0 lead	1.0 W	
				150 V	More than 1 A up to 2 A	0 lag~1~0 lead	0.38 W
					1 A	0 lag~1~0 lead	0.19 W
					0.2 A	0 lag~1~0 lead	0.48 W

Appendix 2-2(continued)

					More than 20 A up to 33 A	0 lag~1~0 lead	3.7 W
				More	More than 10 A up to 20 A	0 lag~1~0 lead	2.5 W
				than 60 V	More than 5 A up to 10 A	0 lag~1~0 lead	1.3 W
		Single phase		up to 100 V	More than 2 A up to 5 A	0 lag~1~0 lead	0.63 W
		three			More than 1 A up to 2 A	0 lag~1~0 lead	0.25 W
Power	Active		50 Hz		1 A	0 lag~1~0 lead	0.13 W
Meter	Power	er Three 60 Hz phase three wire	60 Hz		More than 20 A	0 lag~1~0 lead	2.2 W
			T.	More than 10 A up to 20 A	0 lag∼1~0 lead	1.5 W	
				From 50 V	More than 5 A up to 10 A	0 lag~1~0 lead	0.75 W
				up to 60 V	More than 2 A up to 5 A	0 lag~1~0 lead	0.38 W
					More than 1 A up to 2 A	0 lag~1~0 lead	0.15 W
					1 A	0 lag~1~0 lead	0.075 W

General Field of Calibration: Electricity (Direct Current & Low Frequency)

Date of Initial Accreditation of the Field: 1995-06-21

<u>Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility</u>

Calibration Procedures# and Type of Instruments/Materials to be calibrated			Rai	nge	Expanded Uncertainty (Level of Confidence Approximately 95 %)			
		50 I	I.a.	10 V	Real	0.20 ×10 ⁻⁶		
		30 1	ΠZ	10 V	Imag	3.0 ×10 ⁻⁶		
		60.1	T-	10 37	Real	0.20 ×10 ⁻⁶		
		60 I	1Z	10 V	Imag	3.0 ×10 ⁻⁶		
		50.1	т.	More than 10 V	Real	5 ×10 ⁻⁶		
		50 I	ΠZ	up to 300 V	Imag	10 ×10 ⁻⁶		
		(0.1	T	More than 10 V	Real	5 ×10 ⁻⁶		
		60 H	1Z	up to 300 V	Imag	10 ×10 ⁻⁶		
		120	I I.e.	10 1/ 20 1/	Real	0.15 ×10 ⁻⁶		
	AC Voltage	120	HZ	10 V, 20 V	Imag	3.0 ×10 ⁻⁶		
	Inductive	225	11-	10.37	Real	0.15 ×10 ⁻⁶		
	Voltage-Divider	225	HZ	10 V	Imag	3.0 ×10 ⁻⁶		
		100	T.T	From 10 V	Real	0.10 ×10 ⁻⁶		
		400	HZ	up to 100 V	Imag	1.0 ×10 ⁻⁶		
		1.1.7	τ	From 1 V	Real	0.10 ×10 ⁻⁶		
		1 kF	1Z	up to 150 V	Imag	1.0 ×10 ⁻⁶		
				10 1/ 20 1/	Real	2.0 ×10 ⁻⁶		
		5 kHz	Z	10 V, 20 V	Imag	1.2 ×10 ⁻⁵		
		10.1	I.I.	10 1/ 20 1/	Real	1.7 ×10 ⁻⁵		
		10 k	HZ	10 V, 20 V	Imag	2.9 ×10 ⁻⁵		
				1 pF	1.1 μF/F			
Low				More than 1 pF	0.002.0	0/		
				less than 10 pF	0.002 %			
Frequency Impedance				10 pF	0.80 μF/F			
Measuring				More than 10 pF	0.002 %			
Equipment,				less than 100 pF	0.002	/0		
etc.				100 pF	0.002 % 0.73 μF/F			
				More than 100 pF				
	Capacitor	citor 1 kF		less than 1 000	0.002	0.002 %		
				pF				
				1 000 pF	0.79 μF	F/F		
				More than 1 000				
				pF	0.007	%		
				up to 0.1 μF				
				More than 0.1 μF	0.008 %			
				up to 1 μF	0.000.0	1/		
				10 μF	0.008			
				100 pF	0.006			
	Capacitance			1 000 pF	0.006			
	Measuring	1 kF	Ιz	0.01 μF	0.007			
	Equipment			0.1 μF	0.007			
	(A) (A)			1 μF	0.008			
			1	10 μF	0.008 9			
				From 10 μΩ	AC Resistance	0.09 %		
		1 kHz		less than 100 μΩ	Phase angle	0.004 rad		
	AC Resister	Coaxial	Up to	From 100 μΩ	AC Resistance	0.06 %		
	No. 2 (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990)	Shunt	10 A	less than 1 mΩ	Phase angle	0.004 rad		
		450 674 9FC (CS)		From 1 mΩ	AC Resistance	0.06 %		
	1		1	less than 10 mΩ	Phase angle	0.004 rad		

				×		Attaciiii
		1 kHz	Up to	From 10 mΩ	AC Resistance	0.009 %
		Coaxial	10 A	less than 0.1 Ω	Phase angle	0.000 4 rad
		Shunt	Up to	0.1 Ω	AC Resistance	0.006 %
		Shant	1 A	0.1 52	Phase angle	0.000 12 rad
				10 Ω	AC Resistance	0.007 %
				10.52	Phase angle	5 ×10 ⁻⁵ rad
				100 Ω	AC Resistance	0.003 %
				100 22	Phase angle	3 ×10 ⁻⁵ rad
		1.1	11_	11.0	AC Resistance	0.003 %
		1 K	Hz	1 kΩ	Phase angle	3 ×10 ⁻⁵ rad
				101-0	AC Resistance	0.003 %
	AC Desistan			10 kΩ	Phase angle	3 ×10 ⁻⁵ rad
	AC Resister			10010	AC Resistance	0.003 %
				100 kΩ	Phase angle	5 ×10 ⁻⁵ rad
				From 10 μΩ	AC Resistance	0.4 %
				less than 100 $\mu\Omega$	Phase angle	0.04 rad
				From 100 μΩ	AC Resistance	0.4 %
			Up to	less than 1 m Ω	Phase angle	0.04 rad
		10 kHz	10 A	From 1 mΩ	AC Resistance	0.4 %
		Coaxial	1011	less than $10 \text{ m}\Omega$	Phase angle	0.04 rad
		Shunt		From 10 mΩ	AC Resistance	0.04 %
Low				less than 0.1Ω	Phase angle	0.004 rad
			Up to 1	1035 tildii 0.1 22	AC Resistance	0.008 %
			A	0.1 Ω	Phase angle	0.000 5 rad
			A	1	0Ω	0.000 3 140
requency	AC Resistance Measuring Equipment	l kHz			100 Ω	
npedance						0.004 %
feasuring					kΩ	0.004 %
quipment,) kΩ	0.004 %
ic.					0 kΩ	0.002 %
				100 µH		0.04 %
				More than 100 μH up to 300 μH		0.2 %
				More than 300 μH less than 600 μH		0.1 %
				600 μΗ		0.09 %
				More than 600 μH less than 1 mH		0.08 %
				1 mH		0.02 %
				More than 1 mH less than 2 mH		0.08 %
				2	0.07 %	
	Inductor	1 k	Н7	More than 2 mH less than 10 mH		0.06 %
	muuctoi	l K	112	10	0.010 %	
					H less than 100 mH	0.06 %
				100) mH	0.010 %
				More than 100	mH less than 1 H	0.06 %
				1	Н	0.011 %
				More than 1	H less than 2 H	0.06 %
					2 H	0.1 %
				More than 2 H	H less than 10 H	0.2 %
					0 H	0.05 %
					0 μΗ	0.2 %
					mH	0.03 %
	Inductance	2 10 1			mH	0.02 %
	Measuring	1 k	Hz) mH	0.02 %
	Equipment				Н	0.02 %
	1	1			0 H	0.2 %

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Humidity

Date of Initial Accreditation of the Field: 2015-09-11

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

	iu ivicasurement				
The state of the s	Calibration Procedures# and Type of Instruments/Materials to be calibrated			Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Humidity Measuring	Dew point hygrometers	Optical Dew point		Dew point 0 °C up to 50 °C	Dew point 0.17 °C
Instrument, etc.		hygrometers	D	Dew point 50 °C up to 85 °C	Dew point 0.27 °C
			Calibration temperature	Relative humidity From 10 % up to 50 % Dew point above -10 °C	Relative humidity 1.0 %
			From 5 °C less than 20 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.5 %
			Calibration temperature	Relative humidity From 10 % up to 50 % Dew point above -10 °C	Relative humidity 0.8 %
	-		From 20 °C up to 30 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.2 %
			Calibration temperature	Relative humidity From 10 % up to 50 %	Relative humidity 0.8 %
			More than 30 °C up to 50 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.2 %
			Calibration temperature	Relative humidity From 10 % up to 50 %	Relative humidity 1.4 %
			More than 50 °C up to 85 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 2.5 %
		Capacitive hygrometers	From -1	ew point 0 °C up to 48 °C	Dew point 0.21 °C
				ew point 48 °C up to 83 °C	Dew point 0.51 °C

General Field of Calibration: Humidity

Date of Initial Accreditation of the Field: 2015-09-11
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility

	id ivieasurement				
	ration Procedure				Expanded Uncertainty
Type o	of Instruments/N			Range	(Level of Confidence
	to be calibrated				Approximately 95 %)
Humidity	Dew point	Optical	Dew point		Dew point
Measuring	hygrometers	Dew point	From -10 °C up to	50 °C	0.17 °C
Instrument,	00-300	hygrometers	Dew point		Dew point
etc.			More than 50 °C u	p to 85 °C	0.27 °C
			Calibration temperature	Relative humidity From 10 % up to 50 % Dew point above -10 °C	Relative humidity 1.0 %
			From 5 °C less than 20 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.5 %
			Calibration temperature	Relative humidity From 10 % up to 50 % Dew point above -10 °C	Relative humidity 0.8 %
			From 20 °C up to 30 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.2 %
			Calibration temperature	Relative humidity From 10 % up to 50 %	Relative humidity 0.8 %
			More than 30 °C up to 50 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 1.2 %
			Calibration temperature	Relative humidity From 10 % up to 50 %	Relative humidity 1.4 %
			More than 50 °C up to 85 °C	Relative humidity More than 50 % up to 90 %	Relative humidity 2.5 %
		Capacitive hygrometers	Dew point From -10 °C up to	48 °C	Dew point 0.21 °C
		≫ [™]	Dew point More than 48 °C u	p to 83 °C	Dew point 0.51 °C

Humidity	Electronic	Dew point From -1	0 °C up to 48 °C	
Measuring	hygrometers	Calibration temper		Dew point
Instrument,		From 5 °C up to 55	°C	0.21 °C
etc.		Relative humidity l	From 10 % up to 90 %	
		Dew point From -1	0 °C up to 48 °C	
		Calibration tempera		Dew point
		More than 55 °C up	o to 85 °C	0.33 °C
		Relative humidity I	From 10 % up to 90 %	
			an 48 °C up to 83 °C	
		Calibration tempe		Dew point
		More than 50 °C up		0.51 °C
		Relative humidity I	From 10 % up to 90 %	
			Relative humidity	Relative humidity
		Calibration	From 10 % up to 50 %	1.0 %
		temperature	Dew point above -10 °C	1.0 78
		From 5 °C	Relative humidity	Relative humidity
		less than 20 °C	More than 50 %	1.5 %
			up to 90 %	1.5 70
	*		Relative humidity	Relative humidity
		Calibration	From 10 % up to 50 %	0.8 %
		temperature	Dew point above -10 °C	0.0 70
		From 20 °C	Relative humidity	Relative humidity
		up to 30 °C	More than 50 %	1.2 %
			up to 90 %	0.0000.00000000000000000000000000000000
		Calibration	Relative humidity	Relative humidity
		temperature	From 10 % up to 50 %	0.8 %
		More than 30 °C	Relative humidity	Relative humidity
		up to 50 °C	More than 50 %	1.2 %
		-	up to 90 %	21.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
		Calibration	Relative humidity	Relative humidity
		temperature	From 10 % up to 50 %	1.4 %
		More than 50 °C	Relative humidity More than 50 %	Relative humidity
		up to 85 °C		2.5 %
			up to 90 %	The second second

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Temperature

Date of Initial Accreditation of the Field: 1994-08-01

Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

	d Measurement Capabilities	T	T		
	ibration Procedures# and e of Instruments/Materials to be calibrated	Range	(Level o	Uncertainty f Confidence nately 95 %)	
		Triple point of Water		mK	
		Triple point of Mercury	1.2	2 mK	
		Melting point of Gallium	1.0) mK	
	Fixed point apparatus	Freezing point of Indium	2.4	mK	
		Freezing point of Tin	2.3	mK	
		Freezing point of Zinc	3.3	mK	
		Freezing point of Aluminum	6.0	mK	
			W(T ₉₀) (*1)	$R(T_{90})$ (*2)	
		Triple point of Water	_	1.0 mK	
		Triple point of Mercury	2.0 mK	2.0 mK	
	Resistance thermometer	Melting point of Gallium	2.0 mK	2.0 mK	
	(Fixed point calibration)	Freezing point of Indium	3.0 mK	3.0 mK	
		Freezing point of Tin	3.0 mK	3.0 mK	
		Freezing point of Zinc	4.0 mK	4.0 mK	
		Freezing point of Aluminum	7.0 mK	7.0 mK	
		Vicinity of -196 °C, -186 °C or -183 °C	6 mK	6 mK	
	Resistance thermometer	From -80 °C up to 80 °C	7 mK	7 mK	
	(Comparison Calibration)	More than 80 °C up to 250 °C	8 mK	8 mK	
ontact pe		More than 250 °C up to 420 °C	30 mK	30 mK	
nermometer		Freezing point of Indium	0.10	00 (+2)	
		Freezing point of Tin	0.10 °C (*3)		
	Thermocouple	Freezing point of Zinc	0.15.00 (40)		
	(Fixed point calibration)	Freezing point of Aluminum	0.15 °C (*3)		
	(for noble metal thermocouple)	Freezing point of Silver	0.05.00 (†0)		
		Freezing point of Copper	0.25 °C (*3)		
		Melting point of Palladium	1.0 °C (*3)		
		From 0 °C up to 150 °C	0.2 °C (*3)		
	Thermocouple	More than 150 °C up to 400 °C	0.5 °C (*3)		
	(Comparison Calibration)	More than 400 °C up to 1100 °C	0.7 °	C (*3)	
		More than 1100 °C up to 1554 °C	1.8 °C (*3)		
		Vicinity of -196 °C, -186 °C or -183 °C	10	mK	
		From -80 °C up to 80 °C	7	mK	
	Temperature sensors with	More than 80 °C up to 250 °C	8	mK	
	display unit (Comparison calibration)	More than 250 °C up to 420 °C	30	mK	
	(Comparison canoration)	More than 420 °C up to 1100 °C	0.3	8 °C	
		More than 1100 °C up to 1554 °C	2.0	0 °C	
	Thermometer calibration	From -80 °C up to 420 °C	0.0	80 °C	
	equipment	More than 420 °C up to 700 °C	0.60 °C		

		Freezing point of Zinc	
	First and the second	Freezing point of Aluminum	0.30.00
	Fixed point apparatus	Freezing point of Silver	0.30 °C
		Freezing point of Copper	
	Near-infrared radiation	Freezing point of Zinc	
	thermometer / Visible radiation thermometer	Freezing point of Aluminum	
	(Fixed-point calibration) (for 0.9 μm radiation thermometer)	Freezing point of Silver	0.30 °C
Radiation thermometer		Freezing point of Copper	
	Near-infrared radiation thermometer / Visible radiation thermometer (Comparison Calibration)	From 400 °C up to 700 °C	0.7 °C
		More than 700 °C up to 1000 °C	0.5 °C
		More than 1000 °C up to 1200 °C	0.9 °C
		More than 1200 °C up to 1400 °C	1.2 °C
		More than 1400 °C up to 1600 °C	1.5 °C
		More than 1600 °C up to 1800 °C	2.5 °C
		More than 1800 °C up to 2000 °C	3.0 °C

^(*1) Temperature converted from the ratio of the resistance $R(T_{90})$ to R(273.16K), $W(T_{90})$

<u>Laboratory's permanent facility/On-site Calibration</u>: On-site Calibration

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Contact type thermometer	Temperature sensors with display unit (Comparison calibration)	From -40 °C up to 150 °C		0.20 °C
		More than 150 °C up to 400 °C		0.70 °C
		Equipped within temperature	From -40 °C up to 150 °C	0.30 °C
		controlled enclosures	More than 150 °C up to 200 °C	0.70 °C

[#]All Calibration Procedures are in-house procedures developed by this laboratory.

^(*2) Temperature converted from resistance $R(T_{90})$

^(*3) Temperature converted from Electromotive Force(EMF)

[#]All Calibration Procedures are in-house procedures developed by this laboratory.