Korea Laboratory Accreditation Scheme

CERTIFICATE OF ACCREDITATION

TFNC Co., Ltd

Accreditation No. : KC24-442

Corporation Registration No. : 134111-0652350

Address of Laboratory : C-208, 54 Gwangjinmal-ro, Uiwang-si, Gyeonggi-do, Republic of Korea

Date of Initial Accreditation : September. 30, 2024

Validity of Accreditation : September. 30, 2024 ~ September. 29, 2028

Scope of Accreditation : Attached Annex

Date of issue : April. 15. 2026.

This Calibration laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025 : 2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to Joint ISO-ILAC-IAF Communiqué).

Kim daejin

Head

Korea Laboratory Accreditation Scheme

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017 & KS Q ISO/IEC 17025:2017

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CALIBRATION

Valid To : September. 29, 2028.

Accreditation No : KC24-442

In recognition of the successful completion of the KOLAS evaluation process,
accreditation is granted to this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site
301. Time/ frequency		
30102	Frequency standards	N
30103	General frequency sources	N
30104	Frequency meters/counters	Y
30106	Time interval meters/ Stop watches/Timers	Y
302. Velocity & revolution		
30201	Standard RPM generators	Y
30202	Contact type tachometers	N
30203	Photo tachometers/ strobosco	Y
401. DC Voltage & current		
40101	DC ammeters	Y
40102	Transconductance amplifier	Y
40103	DC voltage/current calibrators	Y
40104	Electrical temperature calibrators	Y
40105	DC current shunts	Y
40108	DC power supplies	Y
40112	DC voltmeters	Y
40113	Static/Ionic voltmeters	N
402. Resistance, Capacitance and Inductance		
40201	Capacitance bridges/indicators	Y
40205	Earth testers	Y
40206	Inductance bridges/indicators	Y
40210	Earth testers	Y
40213	Resistance bridges & similar instruments	N
40214	Resistance meters	Y
40215	Resistors	Y
40217	Impedance bridges/LCR meters	Y

Field Code	Item of Calibration	on-site
403. AC voltage, current & power		
40301	AC ammeters	Y
40302	Clamp ammeters/voltmeters	Y
40303	AC voltage/current calibrators	Y
40304	Wattmeter calibrators	Y
40305	AC current shunts	Y
40310	Power factor meters	Y
40311	AC power meters	Y
40312	AC power supplies	Y
40313	Puncture/safety testers	Y
40318	AC voltmeters	Y
40320	Pulsed high voltage & current meters/Welding current meters	Y
404. Other DC & LF Measurements		
40401	LF amplifiers	Y
40402	DC/LF attenuators	Y
40403	Multimeter calibrators	Y
40404	Oscilloscope calibrators	Y
40409	LF/Audio signal analyzers	Y
40410	Line frequency meters	Y
40411	Function generators	Y
40413	AC/DC high voltages volt meters	Y
40416	Leakage current testers	Y
40417	Electronic AC/DC loads	Y
40419	Analogue/Digital multimeters	Y
40421	Oscilloscopes	Y
40424	Volt/Current recorders	Y
40425	Relay test sets	Y
40430	Signal transducers	Y
40432	Transistor curve tracers	Y
40434	AC/DC high voltage generators	Y
40435	AC/DC high voltage probes	Y
40436	Logic analyzers	Y

Field Code	Item of Calibration	on-site
501. Contact thermometry		
50101	Temperature generators: ovens, furnaces, isothermal liquid baths,ice-point baths, dry-block calibrators	Y
50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y
50103	Glass thermometers; liquid-in-glass, Beckmann	N
50104	Resistance thermometers; SPRT, IPRT, thermistors,	Y
50105	Thermal expansion thermometers ; bimetal, or liquid type	Y
50106	Thermomecouples: noble base metal, pure metal, special type, etc.	Y
50107	Temperature transducers	Y
502. non contact thermometry		
50204	Standard radiation thermometers	N
50205	Thermal image apparatus	N
50206	Blackbody furnaces	N
503. Humidity		
50302	Relative humidity hygrometers; polimer thinfilm, hair, etc	N
50303	Psychrometers; assmann ventilated, PRT type, etc.	N
50304	Temperature humidity recorders ; Hygrothermograph, etc	N
50305	Transducers; dew-point/relative humidity	N
50306	Humidity generators; two-pressure, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y

Note

1. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.

2. Measurement uncertainty normally is quoted as an expanded uncertainty at a coverage probability of 95%, which usually requires the use of a coverage factor of K=2. It expresses the lowest uncertainty of measurement that can be provided by accredited calbration laboratories in normal conditions.

3.Due to the calibration environment such as reference standards or customers facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than measurement uncertainty on scope of accreditation in general

4. If continuous calibration range is divided, each divided range`s endpoint indicates inclusive.

* ex) If calibration range is divided to (0 ~ 25) mm and (25 ~ 100) mm, 25 mm in first range indicates inclusive and 25 mm in second range indicates exclusive.

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301. Time/ frequency

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Frequency standards Time base Frequency	30102	(1 ~ 10) MHz	6.0×10^{-12}	GPS Receiver, Frequency Counter/ TF-CP-30102
General frequency sources Time base Frequency	30103	(1 ~ 10) MHz	6.0×10^{-12}	GPS Receiver, Frequency Counter/ TF-CP-30103
Frequency meters/counters Time base Frequency Input Frequency	30104	(1 ~ 10) MHz 1 Hz ~ 20 GHz	6.0×10^{-12} 8.0×10^{-11}	GPS Receiver, Frequency Counter, Signal Generator/ TF-CP-30104
Time interval meter/ Stop watches/Times time time count	30106	 Day (1 ~ 10 000) s 1 ~ 100 000	 2.7×10^{-7} 5.8×10^{-6} 1	Stop watch Calibrator, GPS Receiver, Frequency Counter/ TF-CP-30106

302. Velocity & revolution

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Standard RPM generators Revolutions Revolutions (Centrifugal separator)	30201	(1 ~ 5 000) min^{-1} (30 ~ 1 000) min^{-1} (1 000 ~ 9 000) min^{-1} (9 000 ~ 50 000) min^{-1} (50 000 ~ 100 000) min^{-1}	0.058 min^{-1} 0.02 min^{-1} 0.11 min^{-1} 0.6 min^{-1} 2 min^{-1}	GPS Receiver, Function generrator/ TF-CP-30201
Contact type tachometers Revolutions	30202	(6 ~ 5 000) min^{-1}	0.12 min^{-1}	GPS Receiver, Revolutions system / TF-CP-30202
Photo tachometers/ stroboscopes Revolutions stroboscopes	30203	(6 ~ 900) min^{-1} (900 ~ 99 999) min^{-1} (30 ~ 9 000) min^{-1} (9 000 ~ 90 000) min^{-1} (90 000 ~ 500 000) min^{-1}	0.01 min^{-1} 0.1 min^{-1} 0.01 min^{-1} 0.1 min^{-1} 1 min^{-1}	GPS Receiver, Revolutions system, Frequency Counter, Signal Generator/ TF-CP-30203

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC ammeters	40101			Calibrator / TF-CP-40101
DC Current		(±)		
		1 nA	12 pA	
		(1 ~ 10) nA	68 pA	
		(10 ~ 100) nA	0.68 nA	
		100 nA ~ 1 μA	2.2 nA	
		(1 ~ 10) μA	2.4 nA	
		(10 ~ 100) μA	4.6 nA	
		100 μA ~ 1 mA	32 nA	
		(1 ~ 10) mA	0.32 μA	
		(10 ~ 100) mA	3.4 μA	
		100 mA ~ 1 A	48 μA	
		(1 ~ 10) A	1.4 mA	
		(10 ~ 20) A	3.0 mA	
		(20 ~ 40) A	10 mA	
		(40 ~ 100) A	16 mA	
Transconductance amplifier	40102			Shunt / TF-CP-40102
DC Current		(±)		
		100 μA	1.4 nA	
		100 μA ~ 1 mA	14 nA	
		(1 ~ 10) mA	0.16 μA	
		(10 ~ 100) mA	5.2 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	2.6 mA	
		(10 ~ 20) A	17 mA	
		(20 ~ 30) A	22 mA	
		(30 ~ 50) A	22 mA	
		(50 ~ 100) A	42 mA	
AC Current		50 Hz ~ 1 kHz		
		100 μA	38 nA	
		100 μA ~ 1 mA	0.36 μA	
		(1 ~ 10) mA	3.6 μA	
		(10 ~ 100) mA	36 μA	
		100 mA ~ 1 A	0.42 mA	
		(1 ~ 10) A	9.9 mA	
		(10 ~ 20) A	34 mA	
		(20 ~ 30) A	44 mA	
		(30 ~ 50) A	66 mA	
		(50 ~ 100) A	0.14 A	
DC voltage/current calibrators	40103			Calibrator, Reference Multimeter, Shunt/ TF-CP-40103
DC Voltage		(±)		
		1 mV	0.48 μV	
		(1 ~ 5) mV	0.48 μV	
		(5 ~ 10) mV	0.50 μV	
		(10 ~ 50) mV	0.58 μV	
		(50 ~ 100) mV	0.70 μV	
		(100 ~ 500) mV	2.2 μV	
		500 mV ~ 1 V	3.8 μV	
		(1 ~ 5) V	22 μV	
		(5 ~ 10) V	36 μV	
		(10 ~ 50) V	0.32 mV	
		(50 ~ 100) V	0.54 mV	
		(100 ~ 500) V	3.2 mV	
		(500 ~ 1 000) V	5.6 mV	

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401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC voltage/current calibrators	40103			Calibrator, Reference Multimeter, Shunt/ TF-CP-40103
DC Current		(±)		
		1 μA	0.6 nA	
		(1 ~ 10) μA	0.8 nA	
		(10 ~ 100) μA	1.4 nA	
		100 μA ~ 1 mA	14 nA	
		(1 ~ 10) mA	0.16 μA	
		(10 ~ 100) mA	5.2 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	2.6 mA	
		(10 ~ 20) A	17 mA	
		(20 ~ 30) A	22 mA	
		(30 ~ 50) A	22 mA	
		(50 ~ 100) A	42 mA	
Electricaltemperaturecalibrators	40104			Calibrator, Reference Multimeter / TF-CP-40104
DC VOLTAGE(SOURCE)		(±)		
		1 mV	0.8 μV	
		(1 ~ 10) mV	0.8 μV	
		(10 ~ 100) mV	1.0 μV	
		100 mV ~ 1 V	8 μV	
		(1 ~ 10) V	0.08 mV	
		(10 ~ 100) V	0.8 mV	
DC CURRENT(SOURCE)		(±)		
		1 mA	0.2 μA	
		(1 ~ 10) mA	0.2 μA	
		(10 ~ 100) mA	5 μA	
RESISTANCE(SOURCE)		1 Ω	0.06 mΩ	
		(1 ~ 10) Ω	0.6 mΩ	
		(10 ~ 100) Ω	1.0 mΩ	
		100 Ω ~ 1 kΩ	11 mΩ	
		(1 ~ 10) kΩ	0.1 Ω	
		(10 ~ 100) kΩ	1.0 Ω	
DC VOLTAGE(MEASURE)		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	10 μV	
		(1 ~ 10) V	0.08 mV	
		(10 ~ 100) V	1.0 mV	
		(100 ~ 300) V	4 mV	
DC CURRENT(MEASURE)		(±)		
		1 mA	0.08 μA	
		(1 ~ 10) mA	0.48 μA	
		(10 ~ 100) mA	6 μA	
RESISTANCE(MEASURE)		1 Ω	0.2 mΩ	
		(1 ~ 10) Ω	1 mΩ	
		(10 ~ 100) Ω	2 mΩ	
		100 Ω ~ 1 kΩ	0.06 Ω	
		(1 ~ 10) kΩ	0.6 Ω	
		(10 ~ 100) kΩ	2 Ω	

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401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC current shunts	40105			Calibrator, Reference Multimeter / TF-CP-40105
Resistance		0.1 mΩ	0.02 μΩ	
		(0.1 ~ 1) mΩ	0.16 μΩ	
		(1 ~ 10) mΩ	4.8 μΩ	
		(10 ~ 100) mΩ	12 μΩ	
		100 mΩ ~ 1 Ω	0.08 mΩ	
		(1 ~ 10) Ω	0.6 mΩ	
		(10 ~ 100) Ω	6 mΩ	
		100 Ω ~ 1 kΩ	0.12 Ω	
		(1 ~ 10) kΩ	7.6 Ω	
DC power supplies	40108			Electronics Load, Reference Multimeter, Shunt/ TF-CP-40108
DC Voltage		(±)		
		10 mV	0.8 μV	
		(10 ~ 100) mV	1.0 μV	
		100 mV ~ 1 V	7 μV	
		(1 ~ 10) V	0.08 mV	
		(10 ~ 100) V	0.8 mV	
		(100 ~ 500) V	8 mV	
		(500 ~ 1 000) V	0.01 V	
		(1 000 ~ 1 500) V	2.6 V	
		(1 500 ~ 2 000) V	3.2 V	
		(2 ~ 5) kV	9 V	
		(5 ~ 10) kV	16 V	
DC Current		1 mA	0.6 μA	
		(1 ~ 10) mA	1.4 μA	
		(10 ~ 100) mA	12 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	3.0 mA	
		(10 ~ 50) A	21 mA	
		(50 ~ 100) A	41 mA	
		(100 ~ 300) A	0.10 A	
		(300 ~ 500) A	0.16 A	
		(500 ~ 1 000) A	0.48 A	
Ripple		(1 ~ 100) mV	0.02 mV	
Load&Line Regulation		(1 ~ 1 000) mV	0.84 mV	
DC voltmeters	40112			Calibrator / TF-CP-40112
DC Voltage		(±)		
		1 mV	0.64 μV	
		(1 ~ 10) mV	0.74 μV	
		(10 ~ 100) mV	1.6 μV	
		100 mV ~ 1 V	6.8 μV	
		(1 ~ 10) V	48 μV	
		(10 ~ 100) V	0.68 mV	
		(100 ~ 500) V	4.6 mV	
		(500 ~ 1 000) V	8.6 mV	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Static/Ionic voltmeters	40113			High Voltage Supply / TF-CP-40112
DC Voltage		(±)		
		0.1 kV	1 V	
		(0.1 ~ 1) kV	6 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 20) kV	0.10 kV	
		(20 ~ 30) kV	0.16 kV	
		(30 ~ 40) kV	0.20 kV	
		(40 ~ 50) kV	0.24 kV	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence	Standard/Method of Measurement etc.
Capacitance bridges/ indicators	40201			Standard Capacitance / TF-CP-40201
Frequency		60 Hz ~ 100 MHz	8.0×10^{-7}	
Capacitance		1 kHz		
		1 nF	0.12 pF	
		10 nF	1.4 pF	
		100 nF	13 pF	
		1 μF	0.3 nF	
Earth testers	40205			Calibrator, Reference Multimeter
AC Voltage		(50 ~ 60) Hz		Standard Resistance / TF-CP-40205
		1 V	0.6 mV	
		(1 ~ 10) V	6 mV	
		(10 ~ 50) V	8 mV	
		(50 ~ 100) V	0.08 V	
		(100 ~ 500) V	0.10 V	
		(500 ~ 1 000) V	0.12 V	
Resistance		1 mΩ	12 μΩ	
		(1 ~ 10) mΩ	0.07 mΩ	
		(10 ~ 100) mΩ	0.42 mΩ	
		100 mΩ ~ 1 Ω	0.8 mΩ	
		(1 ~ 10) Ω	6 mΩ	
		(10 ~ 100) Ω	0.06 Ω	
		100 Ω ~ 1 kΩ	0.8 Ω	
		(1 ~ 10) kΩ	6 Ω	
		(10 ~ 100) kΩ	0.06 kΩ	
AC Current out		(50 ~ 60) Hz		
		1 A	1.4 mA	
		(1 ~ 10) A	14 mA	
		(10 ~ 20) A	28 mA	
		(20 ~ 40) A	54 mA	
		(40 ~ 60) A	80 mA	
DC Current		1 A	0.8 mA	
		(1 ~ 10) A	4 mA	
		(10 ~ 20) A	8 mA	
		(20 ~ 40) A	24 mA	
		(40 ~ 60) A	36 mA	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Inductance bridges/ indicators	40206			Standard Inductance / TF-CP-40206
Frequency		60 Hz ~ 100 MHz	8.0×10^{-7}	
Inductance		1 kHz		
		1 mH	0.26 µH	
		10 mH	2.6 µH	
		100 mH	29 µH	
		1 H	0.26 mH	
Insulation testers	40210			High Resistance Decade / TF-CP-40210
DC Voltage		1 V	1 mV	
		(1 ~ 10) V	6 mV	
		(10 ~ 100) V	0.01 V	
		(100 ~ 500) V	0.01 V	
		(500 ~ 1 000) V	0.1 V	
AC Voltage		(50 ~ 60) Hz		
		1 V	1 mV	
		(1 ~ 10) V	6 mV	
		(10 ~ 100) V	0.01 V	
		(100 ~ 500) V	0.05 V	
		(500 ~ 1 000) V	0.12 V	
Insulation Resistance		(1 ~ 5) kΩ	0.8 Ω	
		(5 ~ 10) kΩ	0.8 Ω	
		(10 ~ 50) kΩ	2 Ω	
		(50 ~ 100) kΩ	4 Ω	
		(100 ~ 500) kΩ	18 Ω	
		500 kΩ ~ 1 MΩ	0.8 kΩ	
		(1 ~ 5) MΩ	0.8 kΩ	
		(5 ~ 10) MΩ	1.2 kΩ	
		(10 ~ 50) MΩ	16 kΩ	
		(50 ~ 100) MΩ	22 kΩ	
		(100 ~ 500) MΩ	60 kΩ	
		500 MΩ ~ 1 GΩ	0.7 MΩ	
		(1 ~ 5) GΩ	5 MΩ	
		(5 ~ 10) GΩ	10 MΩ	
		(10 ~ 50) GΩ	60 MΩ	
		(50 ~ 100) GΩ	0.12 GΩ	
		(100 ~ 500) GΩ	0.86 GΩ	
		500 GΩ ~ 1 TΩ	6 GΩ	
Insulation Voltage		1 V	8 mV	
		(1 ~ 10) V	8 mV	
		(10 ~ 50) V	8 mV	
		(50 ~ 1 000) V	0.08 V	
		(1 000 ~ 2 500) V	18 V	
		(2 500 ~ 5 000) V	34 V	
		(5 000 ~ 10 000) V	64 V	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Resistance bridges & similar instruments	40213			Standard Resistance / TF-CP-40213
Resistance(Rheostat Arm)		10 mΩ	0.6 mΩ	
		(10 ~ 100) mΩ	0.6 mΩ	
		100 mΩ ~ 1 Ω	0.6 mΩ	
		(1 ~ 10) Ω	0.12 mΩ	
		(10 ~ 100) Ω	1.1 mΩ	
		100 Ω ~ 1 kΩ	11 mΩ	
		(1 ~ 10) kΩ	0.11 Ω	
		(10 ~ 100) kΩ	1.1 Ω	
		100 kΩ ~ 1 MΩ	12 Ω	
		(1 ~ 10) MΩ	0.26 kΩ	
		(10 ~ 100) MΩ	16 kΩ	
Resistance		1 mΩ	0.06 μΩ	
		(1 ~ 10) mΩ	0.6 μΩ	
		(10 ~ 100) mΩ	6 μΩ	
		100 mΩ ~ 1 Ω	26 μΩ	
		(1 ~ 10) Ω	0.12 mΩ	
		(10 ~ 100) Ω	1.2 mΩ	
		100 Ω ~ 1 kΩ	12 mΩ	
		(1 ~ 10) kΩ	0.12 Ω	
		(10 ~ 100) kΩ	1.2 Ω	
		100 kΩ ~ 1 MΩ	18 Ω	
		(1 ~ 10) MΩ	0.24 kΩ	
		(10 ~ 100) MΩ	3 kΩ	
Resistance(Ratio Arm)		1 mΩ	6.2×10^{-5}	
		(1 ~ 10) mΩ	6.2×10^{-5}	
		(10 ~ 100) mΩ	6.2×10^{-5}	
		100 mΩ ~ 1 Ω	2.6×10^{-5}	
		(1 ~ 10) Ω	1.2×10^{-5}	
		(10 ~ 100) Ω	1.2×10^{-5}	
		100 Ω ~ 1 kΩ	1.2×10^{-5}	
		(1 ~ 10) kΩ	1.2×10^{-5}	
		(10 ~ 100) kΩ	1.2×10^{-5}	
		100 kΩ ~ 1 MΩ	1.8×10^{-5}	
		(1 ~ 10) MΩ	2.4×10^{-5}	
		(10 ~ 100) MΩ	2.8×10^{-5}	
Resistance meters	40214			Standard Resistance / TF-CP-40214
DC Resistance		100 μΩ	0.58 μΩ	
		100 μΩ ~ 1 mΩ	0.10 μΩ	
		(1 ~ 10) mΩ	0.6 μΩ	
		(10 ~ 100) mΩ	6 μΩ	
		100 mΩ ~ 1 Ω	24 μΩ	
		(1 ~ 10) Ω	0.12 mΩ	
		(10 ~ 100) Ω	1.2 mΩ	
		100 Ω ~ 1 kΩ	12 mΩ	
		(1 ~ 10) kΩ	0.12 Ω	
		(10 ~ 100) kΩ	1.2 Ω	
		100 kΩ ~ 1 MΩ	18 Ω	
		(1 ~ 10) MΩ	0.24 kΩ	
		(10 ~ 100) MΩ	4 kΩ	
		100 MΩ ~ 1 GΩ	0.64 MΩ	
		(1 ~ 10) GΩ	9 MΩ	
		(10 ~ 100) GΩ	0.12 GΩ	
		(100 ~ 1 000) GΩ	1.8 GΩ	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Resistance meters	40214			Standard Resistance / TF-CP-40214
AC Resistance		1 mΩ		
		(60 ~ 100) Hz	6.8 μΩ	
		100 Hz ~ 1 kHz	5.4 μΩ	
		(1 ~ 10) mΩ		
		(60 ~ 100) Hz	10 μΩ	
		100 Hz ~ 1 kHz	9 μΩ	
		(10 ~ 100) mΩ		
		(60 ~ 100) Hz	50 μΩ	
		100 Hz ~ 1 kHz	50 μΩ	
		100 mΩ ~ 1 Ω		
		(60 ~ 100) Hz	0.46 mΩ	
		100 Hz ~ 1 kHz	0.46 mΩ	
		(1 ~ 10) Ω		
		(60 ~ 100) Hz	4.8 mΩ	
		100 Hz ~ 1 kHz	2.6 mΩ	
		(10 ~ 100) Ω		
		(60 ~ 100) Hz	48 mΩ	
		100 Hz ~ 1 kHz	26 mΩ	
		1 kHz		
		100 Ω ~ 1 kΩ	0.26 Ω	
		(1 ~ 10) kΩ	2.6 Ω	
		(10 ~ 100) kΩ	30 Ω	
		100 kΩ ~ 1 MΩ	0.44 kΩ	
Resistors	40215			Standard Resistance / TF-CP-40215
Decade Resistance		1 mΩ	6.0 μΩ	
		(1 ~ 10) mΩ	6.0 μΩ	
		(10 ~ 100) mΩ	60 μΩ	
		100 mΩ ~ 1 Ω	76 μΩ	
		(1 ~ 10) Ω	0.12 mΩ	
		(10 ~ 100) Ω	1.1 mΩ	
		100 Ω ~ 1 kΩ	11 mΩ	
		(1 ~ 10) kΩ	0.11 Ω	
		(10 ~ 100) kΩ	1.1 Ω	
		100 kΩ ~ 1 MΩ	12 Ω	
		(1 ~ 10) MΩ	0.26 kΩ	
		(10 ~ 100) MΩ	16 kΩ	
		100 MΩ ~ 1 GΩ	1.8 MΩ	
		(1 ~ 10) GΩ	18 MΩ	
DC Resistance		1 mΩ	0.08 μΩ	
		(1 ~ 10) mΩ	0.8 μΩ	
		(10 ~ 100) mΩ	6.4 μΩ	
		100 mΩ ~ 1 Ω	10 μΩ	
		(1 ~ 10) Ω	0.10 mΩ	
		(10 ~ 100) Ω	0.8 mΩ	
		100 Ω ~ 1 kΩ	8 mΩ	
		(1 ~ 10) kΩ	0.06 Ω	
		(10 ~ 100) kΩ	0.8 Ω	
		100 kΩ ~ 1 MΩ	10 Ω	
		(1 ~ 10) MΩ	0.12 kΩ	
		(10 ~ 100) MΩ	3.0 kΩ	
		100 MΩ ~ 1 GΩ	0.64 kΩ	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Resistors	40215			Standard Resistance / TF-CP-40215
AC Resistance		1 kHz		
		1 mΩ	5.6 μΩ	
		(1 ~ 10) mΩ	9.4 μΩ	
		(10 ~ 100) mΩ	58 μΩ	
		100 mΩ ~ 1 Ω	0.38 mΩ	
		(1 ~ 10) Ω	3.4 mΩ	
		(10 ~ 100) Ω	34 mΩ	
		100 Ω ~ 1 kΩ	0.34 Ω	
		(1 ~ 10) kΩ	3.4 Ω	
		(10 ~ 100) kΩ	38 Ω	
		100 kΩ ~ 1 MΩ	0.5 kΩ	
Impedance bridges/ LCR meters	40217			Standard Resistance, Capacitance, Inductance / TF-CP-40217
Frequency		60 Hz ~ 100 MHz	8.0×10^{-7}	
AC voltmeter		1 kHz		
		10 mV	4.4 μV	
		(10 ~ 100) mV	8 μV	
		100 mV ~ 1 V	0.08 mV	
		(1 ~ 10) V	0.8 mV	
		(10 ~ 100) V	8 mV	
Capacitance		1 kHz		
		1 nF	0.12 pF	
		(1 ~ 10) nF	1.4 pF	
		(10 ~ 100) nF	13 pF	
		100 nF ~ 1 μF	0.3 nF	
Resistance		1 kHz		
		10 mΩ	9.2 μΩ	
		(10 ~ 100) mΩ	52 μΩ	
		100 mΩ ~ 1 Ω	0.30 mΩ	
		(1 ~ 10) Ω	2.6 mΩ	
		(10 ~ 100) Ω	26 mΩ	
		100 Ω ~ 1 kΩ	0.26 Ω	
		(1 ~ 10) kΩ	2.6 Ω	
		(10 ~ 100) kΩ	30 Ω	
		100 kΩ ~ 1 MΩ	0.44 kΩ	
Inductance		1 kHz		
		1 mH	0.26 μH	
		(1 ~ 10) mH	2.6 μH	
		(10 ~ 100) mH	29 μH	
		100 mH ~ 1 H	26 mH	
DC Vias		(±)		
		10 mV	0.5 μV	
		(10 ~ 100) mV	1 μV	
		100 mV ~ 1 V	8 μV	
		(1 ~ 10) V	0.08 mV	
		(10 ~ 100) V	1 mV	
DC current		100 mA	16 μA	
		100 mA ~ 1 A	0.26 mA	
		(1 ~ 10) A	4 mA	
		(10 ~ 100) A	60 mA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC ammeters AC Current	40301	10 μA 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz (10 ~ 100) μA 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz 100 μA ~ 1 mA 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz (1 ~ 10) mA 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz (10 ~ 100) mA 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz 100 mA ~ 1 A 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz (1 ~ 10) A 10 Hz 10 Hz ~ 1 kHz (1 ~ 5) kHz (5 ~ 10) kHz (10 ~ 20) A 50 Hz (50 ~ 60) Hz (60 ~ 100) Hz 100 Hz ~ 1 kHz (20 ~ 30) A 50 Hz (50 ~ 60) Hz (60 ~ 100) Hz 100 Hz ~ 1 kHz (30 ~ 60) A 50 Hz (50 ~ 60) Hz (60 ~ 100) Hz 100 Hz ~ 1 kHz	 0.04 μA 0.04 μA 0.04 μA 0.10 μA 0.08 μA 0.06 μA 0.10 μA 0.22 μA 0.34 μA 0.18 μA 0.38 μA 2.2 μA 3.6 μA 1.8 μA 3.0 μA 20 μA 36 μA 16 μA 28 μA 0.14 mA 2.0 mA 0.34 mA 0.62 mA 8.4 mA 5.6 mA 5.6 mA 12 mA 44 mA 16 mA 16 mA 18 mA 30 mA 28 mA 28 mA 42 mA 0.14 A 32 mA 32 mA 50 mA 0.18 A	Calibrator / TF-CP-40301

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC ammeters	40301			Calibrator / TF-CP-40301
AC Current		(60 ~ 100) A		
		50 Hz	38 mA	
		(50 ~ 60) Hz	38 mA	
		(60 ~ 100) Hz	60 mA	
		100 Hz ~ 1 kHz	0.20 A	
Clamp ammeters/voltmeters	40302			Calibrator, Turn Coil / TF-CP-40302
DC Voltage		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.1 mV	
		(1 ~ 10) V	1 mV	
		(10 ~ 100) V	0.01 V	
		(100 ~ 500) V	0.01 V	
		(500 ~ 1 000) V	0.1 V	
AC Voltage		50 Hz ~ 10 kHz		
		1 mV	6 μV	
		(1 ~ 10) mV	8 μV	
		(10 ~ 100) mV	22 μV	
		100 mV ~ 1 V	0.2 mV	
		(1 ~ 10) V	2 mV	
		(10 ~ 100) V	0.02 V	
		(100 ~ 500) V	0.06 V	
		(500 ~ 1 000) V	0.2 V	
Resistance		1 Ω	0.6 mΩ	
		(1 ~ 10) Ω	0.8 mΩ	
		(10 ~ 100) Ω	8 mΩ	
		100 Ω ~ 1 kΩ	0.6 Ω	
		(1 ~ 10) kΩ	0.8 Ω	
		(10 ~ 100) kΩ	8 Ω	
		100 kΩ ~ 1 MΩ	0.6 kΩ	
		(1 ~ 10) MΩ	0.8 kΩ	
		(10 ~ 100) MΩ	0.02 MΩ	
DC Current		100 μA	0.02 μA	
		100 μA ~ 1 mA	1 μA	
		(1 ~ 10) mA	1 μA	
		(10 ~ 100) mA	4 μA	
		100 mA ~ 1 A	1 mA	
		(1 ~ 10) A	2 mA	
		(10 ~ 20) A	2 mA	
		(20 ~ 50) A	0.01 A	
		(50 ~ 100) A	0.01 A	
		(100 ~ 500) A	2.2 A	
		(500 ~ 1 000) A	3.2 A	
		(1 000 ~ 1 500) A	14 A	
		(1 500 ~ 2 000) A	18 A	
		(2 000 ~ 2 500) A	22 A	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Clamp ammeters/voltmeters	40302			Calibrator, Turn Coil / TF-CP-40302
AC Current		50 Hz ~ 1 kHz		
		1 mA	1 μA	
		(1 ~ 10) mA	2 μA	
		(10 ~ 100) mA	16 μA	
		100 mA ~ 1 A	1 mA	
		(1 ~ 10) A	6 mA	
		(10 ~ 20) A		
		(50 ~ 60) Hz	16 mA	
		(60 ~ 100) Hz	18 mA	
		100 Hz ~ 1 kHz	30 mA	
		(20 ~ 50) A		
		(50 ~ 60) Hz	0.04 A	
		(60 ~ 100) Hz	0.05 A	
		100 Hz ~ 1 kHz	0.16 A	
		(50 ~ 100) A		
		(50 ~ 60) Hz	0.04 A	
		(60 ~ 100) Hz	0.07 A	
		100 Hz ~ 1 kHz	0.20 A	
		(50 ~ 60) Hz		
		(100 ~ 500) A	2.4 A	
		(500 ~ 1 000) A	3.2 A	
		(1 000 ~ 2 000) A	18 A	
		(2 000 ~ 3 000) A	26 A	
		(3 000 ~ 4 000) A	34 A	
		(4 000 ~ 5 000) A	42 A	
		60 Hz		
		(5 000 ~ 6 000) A	52 A	
Frequency		10 Hz ~ 100 kHz	6.0×10^{-5}	
Turn Coil Ratio		DC		
		2 ~ 50	0.10 %	
		AC (50 ~ 60) Hz		
		2 ~ 50	0.10 %	
AC voltage/current calibrators	40303			Reference Multimeter, Shunt/ TF-CP-40303
AC Voltage		1 mV		
		50 Hz	2.6 μV	
		50 Hz ~ 1 kHz	2.6 μV	
		(1 ~ 10) kHz	2.8 μV	
		(10 ~ 100) kHz	5.4 μV	
		(100 ~ 300) kHz	18 μV	
		300 kHz ~ 1 MHz	38 μV	
		(1 ~ 10) mV		
		50 Hz	4.2 μV	
		50 Hz ~ 1 kHz	4.2 μV	
		(1 ~ 10) kHz	5.2 μV	
		(10 ~ 100) kHz	36 μV	
		(100 ~ 300) kHz	0.14 mV	
		300 kHz ~ 1 MHz	0.24 mV	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC voltage/current calibrators	40303			Reference Multimeter, Shunt/
AC Voltage		(10 ~ 100) mV		TF-CP-40303
		50 Hz	8.0 μV	
		50 Hz ~ 1 kHz	8.0 μV	
		(1 ~ 10) kHz	14 μV	
		(10 ~ 100) kHz	66 μV	
		(100 ~ 300) kHz	0.28 mV	
		300 kHz ~ 1 MHz	1.3 mV	
		100 mV ~ 1 V		
		50 Hz	0.08 mV	
		50 Hz ~ 1 kHz	0.08 mV	
		(1 ~ 10) kHz	0.14 mV	
		(10 ~ 100) kHz	0.66 mV	
		(100 ~ 300) kHz	2.8 mV	
		300 kHz ~ 1 MHz	13 mV	
		(1 ~ 10) V		
		50 Hz	0.80 mV	
		50 Hz ~ 1 kHz	0.80 mV	
		(1 ~ 10) kHz	1.4 mV	
		(10 ~ 100) kHz	6.6 mV	
		(100 ~ 300) kHz	28 mV	
		300 kHz ~ 1 MHz	0.14 V	
		(10 ~ 100) V		
		50 Hz	7.8 mV	
		50 Hz ~ 1 kHz	7.8 mV	
		(1 ~ 10) kHz	10 mV	
		(10 ~ 100) kHz	68 mV	
		(100 ~ 300) kHz	0.48 V	
		300 kHz ~ 1 MHz	1.8 V	
		(100 ~ 500) V		
		50 Hz	0.08 V	
		50 Hz ~ 1 kHz	0.08 V	
		(1 ~ 10) kHz	0.08 V	
		(500 ~ 1 000) V		
		50 Hz	0.14 V	
		50 Hz ~ 1 kHz	0.14 V	
		(1 ~ 10) kHz	0.14 V	
AC Current		10 μA		
		50 Hz ~ 1 kHz	28 nA	
		(1 ~ 10) kHz	28 nA	
		(10 ~ 100) μA		
		50 Hz ~ 1 kHz	38 nA	
		(1 ~ 10) kHz	66 nA	
		100 μA ~ 1 mA		
		50 Hz ~ 1 kHz	0.36 μA	
		(1 ~ 10) kHz	0.64 μA	
		(1 ~ 10) mA		
		50 Hz ~ 1 kHz	3.6 μA	
		(1 ~ 10) kHz	6.4 μA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC voltage/current calibrators	40303			Reference Multimeter, Shunt/
AC Current		(10 ~ 100) mA		TF-CP-40303
		50 Hz ~ 1 kHz	36 μA	
		(1 ~ 10) kHz	64 μA	
		100 mA ~ 1 A		
		50 Hz ~ 1 kHz	0.42 mA	
		(1 ~ 10) kHz	0.72 mA	
		(1 ~ 10) A		
		50 Hz ~ 1 kHz	9.9 mA	
		(1 ~ 10) kHz	9.9 mA	
		(10 ~ 20) A		
		50 Hz ~ 1 kHz	34 mA	
		(20 ~ 30) A		
		50 Hz ~ 1 kHz	44 mA	
		(30 ~ 50) A		
		50 Hz ~ 1 kHz	66 mA	
		(50 ~ 100) A		
		50 Hz ~ 1 kHz	0.14 A	
Frequency		50 Hz	0.8 mHz	
		(50 ~ 100) Hz	0.8 mHz	
		100 Hz ~ 1 kHz	0.08 Hz	
		(1 ~ 100) kHz	0.8 Hz	
		100 kHz ~ 1 MHz	0.8 kHz	
Wattmeter calibrators	40304			Reference Multimeter, Shunt, Power meter/
AC power		(50 ~ 60) Hz 0.24 mW (at 120 V, 2 mA / PF = ± 0.001)	0.12 mW	TF-CP-40304
		0.24 mW ~ 14.4 kW (at 120 V, 240 V, 480 V) (at 2 mA ~ 30 A)		
		PF = 1	8.3×10^{-4} W/VA	
		PF = ± 0.9	8.3×10^{-4} W/VA	
		PF = ± 0.8	8.3×10^{-4} W/VA	
		PF = ± 0.7	6.3×10^{-4} W/VA	
		PF = ± 0.6	6.3×10^{-4} W/VA	
		PF = ± 0.5	5.0×10^{-4} W/VA	
		PF = ± 0.4	6.3×10^{-4} W/VA	
		PF = ± 0.3	6.3×10^{-4} W/VA	
		PF = ± 0.2	5.0×10^{-4} W/VA	
		PF = ± 0.1	5.0×10^{-4} W/VA	
		PF = ± 0.001	5.0×10^{-4} W/VA	
Power factor		(50 ~ 60) Hz (±)		
		-1 ~ 1	0.000 32	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Wattmeter calibrators	40304			Reference Multimeter, Shunt, Power meter/
DC power		(at 120 V, 240 V, 480 V) (at 2 mA ~ 30 A)		TF-CP-40304
		(240 ~ 960) mW	3.6×10^{-3}	
		960 mW ~ 14.4 kW	2.5×10^{-3}	
DC Voltage		(±)		
		1 mV	0.48 μV	
		(1 ~ 5) mV	0.48 μV	
		(5 ~ 10) mV	0.50 μV	
		(10 ~ 50) mV	0.58 μV	
		(50 ~ 100) mV	0.70 μV	
		(100 ~ 500) mV	2.2 μV	
		500 mV ~ 1 V	3.8 μV	
		(1 ~ 5) V	22 μV	
		(5 ~ 10) V	36 μV	
		(10 ~ 50) V	0.32 mV	
		(50 ~ 100) V	0.54 mV	
		(100 ~ 500) V	3.2 mV	
		(500 ~ 1 000) V	5.6 mV	
DC Current		(±)		
		1 mA	14 nA	
		(1 ~ 10) mA	0.16 μA	
		(10 ~ 100) mA	5.2 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	2.6 mA	
		(10 ~ 20) A	17 mA	
		(20 ~ 30) A	22 mA	
AC Voltage		1 mV		
		50 Hz	2.6 μV	
		50 Hz ~ 1 kHz	2.6 μV	
		(1 ~ 10) kHz	2.8 μV	
		(10 ~ 100) kHz	5.4 μV	
		(100 ~ 300) kHz	18 μV	
		300 kHz ~ 1 MHz	38 μV	
		(1 ~ 10) mV		
		50 Hz	4.2 μV	
		50 Hz ~ 1 kHz	4.2 μV	
		(1 ~ 10) kHz	5.2 μV	
		(10 ~ 100) kHz	36 μV	
		(100 ~ 300) kHz	0.14 mV	
		300 kHz ~ 1 MHz	0.24 mV	
		(10 ~ 100) mV		
		50 Hz	8.0 μV	
		50 Hz ~ 1 kHz	8.0 μV	
		(1 ~ 10) kHz	14 μV	
		(10 ~ 100) kHz	66 μV	
		(100 ~ 300) kHz	0.28 mV	
		300 kHz ~ 1 MHz	1.3 mV	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Wattmeter calibrators	40304			Reference Multimeter, Shunt, Power meter/
AC Voltage		100 mV ~ 1 V		TF-CP-40304
		50 Hz	0.08 mV	
		50 Hz ~ 1 kHz	0.08 mV	
		(1 ~ 10) kHz	0.14 mV	
		(10 ~ 100) kHz	0.66 mV	
		(100 ~ 300) kHz	2.8 mV	
		300 kHz ~ 1 MHz	13 mV	
		(1 ~ 10) V		
		50 Hz	0.80 mV	
		50 Hz ~ 1 kHz	0.80 mV	
		(1 ~ 10) kHz	1.4 mV	
		(10 ~ 100) kHz	6.6 mV	
		(100 ~ 300) kHz	28 mV	
		300 kHz ~ 1 MHz	0.14 V	
		(10 ~ 100) V		
		50 Hz	7.8 mV	
		50 Hz ~ 1 kHz	7.8 mV	
		(1 ~ 10) kHz	10 mV	
		(10 ~ 100) kHz	68 mV	
		(100 ~ 300) kHz	0.48 V	
		300 kHz ~ 1 MHz	1.8 V	
		(100 ~ 500) V		
		50 Hz	0.08 V	
		50 Hz ~ 1 kHz	0.08 V	
		(1 ~ 10) kHz	0.08 V	
		(500 ~ 1 000) V		
		50 Hz	0.14 V	
		50 Hz ~ 1 kHz	0.14 V	
		(1 ~ 10) kHz	0.14 V	
AC Current		1 mA		
		50 Hz ~ 1 kHz	0.36 μA	
		(1 ~ 10) kHz	0.64 μA	
		(1 ~ 10) mA		
		50 Hz ~ 1 kHz	3.6 μA	
		(1 ~ 10) kHz	6.4 μA	
		(10 ~ 100) mA		
		50 Hz ~ 1 kHz	36 μA	
		(1 ~ 10) kHz	64 μA	
		100 mA ~ 1 A		
		50 Hz ~ 1 kHz	0.42 mA	
		(1 ~ 10) kHz	0.72 mA	
		(1 ~ 10) A		
		50 Hz ~ 1 kHz	9.9 mA	
		(1 ~ 10) kHz	9.9 mA	
		(10 ~ 20) A		
		50 Hz ~ 1 kHz	34 mA	
		(20 ~ 30) A		
		50 Hz ~ 1 kHz	44 mA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Wattmeter calibrators	40304			Reference Multimeter, Shunt, Power meter/
Frequency		50 Hz	0.8 mHz	TF-CP-40304
		(50 ~ 100) Hz	0.8 mHz	
		100 Hz ~ 1 kHz	0.08 Hz	
		(1 ~ 100) kHz	0.8 Hz	
		100 kHz ~ 1 MHz	0.8 kHz	
AC current shunts	40305			Reference Multimeter, Calibrator/
AC Resistance		1 mΩ		TF-CP-40305
		(50 ~ 60) Hz	0.4 μΩ	
		(60 ~ 100) Hz	0.8 μΩ	
		100 Hz ~ 1 kHz	2.0 μΩ	
		50 Hz ~ 1 kHz		
		(1 ~ 10) mΩ	6 μΩ	
		(10 ~ 100) mΩ	34 μΩ	
		100 mΩ ~ 1 Ω	0.18 mΩ	
		(1 ~ 10) Ω	2.0 mΩ	
		(10 ~ 100) Ω	20 mΩ	
		100 Ω ~ 1 kΩ	0.6 Ω	
		(1 ~ 10) kΩ	32 Ω	
Power factor meters	40310			Power calibrators /
Power Factor		(50 ~ 60) Hz		TF-CP-40310
		(±)		
		-1 ~ 1	0.000 32	
AC power meters	40311			power calibrators, Calibrator/
DC Voltage		10 mV	1 μV	TF-CP-40311
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.02 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 300) V	4 mV	
		(300 ~ 600) V	6 mV	
		(600 ~ 1 000) V	0.02 V	
AC Voltage		10 mV		
		50 Hz ~ 10 kHz	8 μV	
		(10 ~ 100) mV		
		50 Hz ~ 10 kHz	16 μV	
		100 mV ~ 1 V		
		50 Hz ~ 10 kHz	0.12 mV	
		(1 ~ 10) V		
		50 Hz ~ 10 kHz	0.6 mV	
		(10 ~ 100) V		
		50 Hz ~ 10 kHz	8 mV	
		(100 ~ 300) V		
		50 Hz ~ 1 kHz	36 mV	
		(1 ~ 10) kHz	68 mV	
		(300 ~ 600) V		
		50 Hz ~ 1 kHz	68 mV	
		(1 ~ 10) kHz	0.14 V	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC power meters	40311			power calibrators, Calibrator/
AC Voltage		(600 ~ 1 000) V		TF-CP-40311
		50 Hz ~ 1 kHz	0.10 V	
		(1 ~ 10) kHz	0.22 V	
DC Current		1 mA	0.1 μA	
		(1 ~ 10) mA	0.4 μA	
		(10 ~ 100) mA	4 μA	
		100 mA ~ 1 A	0.06 mA	
		(1 ~ 10) A	1.4 mA	
		(10 ~ 20) A	2.8 mA	
		(20 ~ 50) A	12 mA	
		(50 ~ 100) A	16 mA	
		(100 ~ 500) A	2.2 A	
		(500 ~ 1 000) A	3.2 A	
		(1 000 ~ 1 500) A	14 A	
		(1 500 ~ 2 000) A	18 A	
		(2 000 ~ 2 500) A	22 A	
AC Current		50 Hz ~ 1 kHz		
		1 mA	0.4 μA	
		(1 ~ 10) mA	1.8 μA	
		(10 ~ 100) mA	16 μA	
		100 mA ~ 1 A	0.34 mA	
		(1 ~ 10) A	5.6 mA	
		(10 ~ 20) A		
		(50 ~ 60) Hz	16 mA	
		(60 ~ 100) Hz	18 mA	
		100 Hz ~ 1 kHz	30 mA	
		(20 ~ 50) A		
		(50 ~ 60) Hz	32 mA	
		(60 ~ 100) Hz	46 mA	
		100 Hz ~ 1 kHz	0.16 A	
		(50 ~ 100) A		
		(50 ~ 60) Hz	38 mA	
		(60 ~ 100) Hz	60 mA	
		100 Hz ~ 1 kHz	0.20 A	
		(50 ~ 60) Hz		
		(100 ~ 500) A	2.4 A	
		(500 ~ 1 000) A	3.2 A	
		(1 000 ~ 2 000) A	17 A	
		(2 000 ~ 3 000) A	26 A	
		(3 000 ~ 4 000) A	34 A	
		(4 000 ~ 5 000) A	42 A	
		60 Hz		
		(5 000 ~ 6 000) A	52 A	
Frequency		50 Hz	0.6 mHz	
		(50 ~ 100) Hz	0.6 mHz	
		100 Hz ~ 1 kHz	6 mHz	
		(1 ~ 10) kHz	0.6 Hz	
		(10 ~ 100) kHz	0.6 Hz	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC power meters	40311			Wattmeter calibrators, Calibrator/
AC Power		(50 ~ 60) Hz		TF-CP-40311
		24 mW (at 120 V, 2 mA / PF = ± 0.001)	0.10 mW	
		24 mW ~ 48 kW (at 120 V, 240 V, 480 V) (at 2 mA ~ 100 A)		
		PF = ± (0.1 ~ 0.8)	4.2×10^{-4} W/VA	
		PF = ± (0.8 ~ 1.0)	4.7×10^{-4} W/VA	
Power Factor		(50 ~ 60) Hz (±)		
		-1 ~ 1	0.000 32	
DC Power		(at 1 V ~ 1 000 V) (at 1 mA ~ 30 A)		
		1 mW	0.16 μW	
		(1 ~ 10) mW	1.3 μW	
		(10 ~ 100) mW	17 μW	
		100 mW ~ 1 W	0.58 mW	
		(1 ~ 10) W	5.8 mW	
		(10 ~ 100) W	56 mW	
		100 W ~ 1 kW	0.56 W	
		(1 ~ 10) kW	4.6 W	
		(10 ~ 20) kW	44 W	
		(20 ~ 30) kW	66 W	
Harmonic Voltage		(50 ~ 60) Hz		
		0.5 %	0.026 %	
		(0.5 ~ 1) %	0.026 %	
		(1 ~ 3) %	0.026 %	
		(3 ~ 5) %	0.064 %	
		(5 ~ 10) %	0.066 %	
		(10 ~ 20) %	0.076 %	
Harmonic Current		(50 ~ 60) Hz		
		0.5 %	0.026 %	
		(0.5 ~ 1) %	0.026 %	
		(1 ~ 3) %	0.026 %	
		(3 ~ 5) %	0.056 %	
		(5 ~ 10) %	0.064 %	
		(10 ~ 20) %	0.080 %	
AC power supplies	40312			Electronics Load, Reference
AC Voltage		50 Hz ~ 1 kHz		Multimeter, Shunt/
		10 mV	8 μV	TF-CP-40312
		(10 ~ 100) mV	10 μV	
		100 mV ~ 1 V	0.08 mV	
		(1 ~ 10) V	0.8 mV	
		(10 ~ 100) V	8 mV	
		(100 ~ 500) V	78 mV	
		(500 ~ 1 000) V	0.14 V	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC power supplies	40312			Electronics Load, Reference Multimeter, Shunt/ TF-CP-40312
AC Current		50 Hz ~ 1 kHz		
		1 mA	1.4 μA	
		(1 ~ 10) mA	12 μA	
		(10 ~ 100) mA	0.12 mA	
		100 mA ~ 1 A	1.3 mA	
		(1 ~ 10) A	14 mA	
		(10 ~ 20) A	26 mA	
Frequency		(50 ~ 500) Hz	1.0 mHz	
		500 Hz ~ 1 kHz	1.4 mHz	
		(1 ~ 10) kHz	0.8 Hz	
Puncture/safety testers	40313			AC/DC Kilovoltmeter, Reference Multimeter / TF-CP-40313
DC Voltage		(±)		
		0.1 kV	6 V	
		(0.1 ~ 1) kV	6 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 50) kV	0.24 kV	
		(50 ~ 100) kV	0.48 kV	
		(100 ~ 150) kV	0.8 kV	
		(150 ~ 200) kV	1.0 kV	
AC Voltage		(50 ~ 60) Hz		
		0.1 kV	6 V	
		(0.1 ~ 1) kV	6 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 50) kV	0.24 kV	
		(50 ~ 100) kV	0.50 kV	
		(100 ~ 150) kV	0.8 kV	
		(150 ~ 200) kV	1.0 kV	
DC Cutoff Current		0.1 mA	2.1 μA	
		(0.1 ~ 0.5) mA	4.2 μA	
		(0.5 ~ 1) mA	7.2 μA	
		(1 ~ 2) mA	13 μA	
		(2 ~ 5) mA	30 μA	
		(5 ~ 10) mA	0.07 mA	
		(10 ~ 20) mA	0.13 mA	
		(20 ~ 50) mA	0.30 mA	
		(50 ~ 100) mA	0.7 mA	
AC Cutoff Current		(50 ~ 60) Hz		
		0.1 mA	2.1 μA	
		(0.1 ~ 0.5) mA	4.2 μA	
		(0.5 ~ 1) mA	7.2 μA	
		(1 ~ 2) mA	13 μA	
		(2 ~ 5) mA	30 μA	
		(5 ~ 10) mA	0.07 mA	
		(10 ~ 20) mA	0.13 mA	
		(20 ~ 50) mA	0.30 mA	
		(50 ~ 100) mA	0.7 mA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Puncture/safety testers	40313			AC/DC Kilovoltmeter,
Timer		DC - 60 Hz		Reference Multimeter /
		1 s	24 ms	TF-CP-40313
		(1 ~ 10) s	30 ms	
		(10 ~ 60) s	58 ms	
		(60 ~ 120) s	94 ms	
		(120 ~ 180) s	0.14 s	
		(180 ~ 600) s	0.38 s	
		(600 ~ 900) s	0.56 s	
		(900 ~ 1 200) s	0.72 s	
AC voltmeters	40318			Calibrator /
AC Voltage		1 mV		TF-CP-40318
		10 Hz	6 µV	
		10 Hz ~ 10 kHz	6 µV	
		(10 ~ 100) kHz	7 µV	
		(100 ~ 300) kHz	14 µV	
		(300 ~ 500) kHz	28 µV	
		500 kHz ~ 1 MHz	30 µV	
		(1 ~ 10) mV		
		10 Hz	8 µV	
		10 Hz ~ 10 kHz	8 µV	
		(10 ~ 100) kHz	14 µV	
		(100 ~ 300) kHz	26 µV	
		(300 ~ 500) kHz	42 µV	
		500 kHz ~ 1 MHz	62 µV	
		(10 ~ 100) mV		
		10 Hz	44 µV	
		10 Hz ~ 10 kHz	16 µV	
		(10 ~ 100) kHz	58 µV	
		(100 ~ 300) kHz	0.18 mV	
		(300 ~ 500) kHz	0.24 mV	
		500 kHz ~ 1 MHz	0.40 mV	
		100 mV ~ 1 V		
		10 Hz	0.34 mV	
		10 Hz ~ 10 kHz	0.12 mV	
		(10 ~ 100) kHz	0.16 mV	
		(100 ~ 300) kHz	1.4 mV	
		(300 ~ 500) kHz	1.8 mV	
		500 kHz ~ 1 MHz	2.6 mV	
		(1 ~ 10) V		
		10 Hz	3.4 mV	
		10 Hz ~ 10 kHz	0.62 mV	
		(10 ~ 20) kHz	0.94 mV	
		(20 ~ 100) kHz	1.6 mV	
		(100 ~ 300) kHz	16 mV	
		(300 ~ 500) kHz	20 mV	
		500 kHz ~ 1 MHz	26 mV	
		(10 ~ 100) V		
		10 Hz	34 mV	
		10 Hz ~ 10 kHz	7.6 mV	
		(10 ~ 20) kHz	8.4 mV	
		(20 ~ 50) kHz	12 mV	
		(20 ~ 100) kHz	22 mV	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC voltmeters	40318			Calibrator / TF-CP-40318
AC Voltage		(100 ~ 500) V		
		50 Hz	0.06 V	
		50 Hz ~ 1 kHz	0.06 V	
		(1 ~ 10) kHz	0.12 V	
		(500 ~ 1 000) V		
		50 Hz	0.10 V	
		50 Hz ~ 1 kHz	0.10 V	
		(1 ~ 10) kHz	0.22 V	
Pulsed high voltage & current meters/Welding current meters	40320			Welding current meters/ TF-CP-40320
DC Welding voltage(OUT)		1 V	0.01 V	
		(1 ~ 10) V	0.01 V	
		(10 ~ 100) V	0.01 V	
AC Welding voltage(OUT)		60 Hz		
		1 V	0.01 V	
		(1 ~ 10) V	0.01 V	
		(10 ~ 100) V	0.01 V	
DC Welding current(OUT)		50 A	2.6 A	
		(50 ~ 100) A	3.0 A	
		(100 ~ 300) A	8.0 A	
		(300 ~ 600) A	14 A	
		(600 ~ 900) A	22 A	
		900 A ~ 1 kA	0.04 kA	
		(1 ~ 5) kA	0.08 kA	
		(5 ~ 9) kA	0.14 kA	
AC Welding current(OUT)		60 Hz		
		50 A	2.6 A	
		(50 ~ 100) A	3.0 A	
		(100 ~ 300) A	8.0 A	
		(300 ~ 600) A	14 A	
		(600 ~ 900) A	22 A	
		900 A ~ 1 kA	0.04 kA	
		(1 ~ 5) kA	0.08 kA	
		(5 ~ 9) kA	0.14 kA	
		(9 ~ 15) kA	0.26 kA	
		(15 ~ 19) kA	0.32 kA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF amplifiers	40401			Reference Multimeter / TF-CP-40401
Amplifier DC		1 mV	1.2 μV	
		(1 ~ 20) mV	1.2×10^{-3}	
		(20 ~ 200) mV	3.5×10^{-4}	
		200 mV ~ 2 V	1.4×10^{-4}	
		(2 ~ 20) V	4.0×10^{-5}	
		(20 ~ 100) V	3.2×10^{-5}	
Amplifier AC		1 mV		
		10 Hz	6 μV	
		10 Hz ~ 10 kHz	6 μV	
		(10 ~ 100) kHz	6 μV	
		(1 ~ 20) mV		
		10 Hz	5.6×10^{-3}	
		10 Hz ~ 10 kHz	5.5×10^{-3}	
		(10 ~ 100) kHz	8.0×10^{-3}	
		(20 ~ 200) mV		
		10 Hz	9.0×10^{-4}	
		10 Hz ~ 10 kHz	6.8×10^{-4}	
		(10 ~ 100) kHz	1.7×10^{-3}	
		200 mV ~ 2 V		
		10 Hz	4.8×10^{-4}	
		10 Hz ~ 10 kHz	2.4×10^{-4}	
		(10 ~ 100) kHz	1.2×10^{-3}	
		(2 ~ 20) V		
		10 Hz	4.4×10^{-4}	
		10 Hz ~ 10 kHz	2.0×10^{-4}	
		(10 ~ 100) kHz	1.3×10^{-3}	
		(20 ~ 100) V		
		10 Hz	4.4×10^{-4}	
		10 Hz ~ 10 kHz	2.0×10^{-4}	
		(10 ~ 100) kHz	1.1×10^{-3}	
DC/LF attenuators	40402			Reference Multimeter / TF-CP-40402
Attenuation		(-)		
		(0 ~ 60) dB		
		40 Hz ~ 100 kHz	0.023 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Multimeter calibrators	40403			Reference Multimeter, Shunt/
DC Voltage		(±)		TF-CP-40403
		1 mV	0.48 μV	
		(1 ~ 5) mV	0.48 μV	
		(5 ~ 10) mV	0.50 μV	
		(10 ~ 50) mV	0.58 μV	
		(50 ~ 100) mV	0.70 μV	
		(100 ~ 500) mV	2.2 μV	
		500 mV ~ 1 V	3.8 μV	
		(1 ~ 5) V	22 μV	
		(5 ~ 10) V	36 μV	
		(10 ~ 50) V	0.32 mV	
		(50 ~ 100) V	0.54 mV	
		(100 ~ 500) V	3.2 mV	
		(500 ~ 1 000) V	5.6 mV	
DC Current		(±)		
		1 μA	0.6 nA	
		(1 ~ 10) μA	0.8 nA	
		(10 ~ 100) μA	1.4 nA	
		100 μA ~ 1 mA	14 nA	
		(1 ~ 10) mA	0.16 μA	
		(10 ~ 100) mA	5.2 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	2.6 mA	
		(10 ~ 20) A	17 mA	
		(20 ~ 30) A	22 mA	
		(30 ~ 50) A	22 mA	
		(50 ~ 100) A	42 mA	
AC Voltage		1 mV		
		50 Hz	2.6 μV	
		50 Hz ~ 1 kHz	2.6 μV	
		(1 ~ 10) kHz	2.8 μV	
		(10 ~ 100) kHz	5.4 μV	
		(100 ~ 300) kHz	18 μV	
		300 kHz ~ 1 MHz	38 μV	
		(1 ~ 10) mV		
		50 Hz	4.2 μV	
		50 Hz ~ 1 kHz	4.2 μV	
		(1 ~ 10) kHz	5.2 μV	
		(10 ~ 100) kHz	36 μV	
		(100 ~ 300) kHz	0.14 mV	
		300 kHz ~ 1 MHz	0.24 mV	
		(10 ~ 100) mV		
		50 Hz	8.0 μV	
		50 Hz ~ 1 kHz	8.0 μV	
		(1 ~ 10) kHz	14 μV	
		(10 ~ 100) kHz	66 μV	
		(100 ~ 300) kHz	0.28 mV	
		300 kHz ~ 1 MHz	1.3 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Multimeter calibrators	40403			Reference Multimeter, Shunt/
AC Voltage		100 mV ~ 1 V		TF-CP-40403
		50 Hz	0.08 mV	
		50 Hz ~ 1 kHz	0.08 mV	
		(1 ~ 10) kHz	0.14 mV	
		(10 ~ 100) kHz	0.66 mV	
		(100 ~ 300) kHz	2.8 mV	
		300 kHz ~ 1 MHz	13 mV	
		(1 ~ 10) V		
		50 Hz	0.80 mV	
		50 Hz ~ 1 kHz	0.80 mV	
		(1 ~ 10) kHz	1.4 mV	
		(10 ~ 100) kHz	6.6 mV	
		(100 ~ 300) kHz	28 mV	
		300 kHz ~ 1 MHz	0.14 V	
		(10 ~ 100) V		
		50 Hz	7.8 mV	
		50 Hz ~ 1 kHz	7.8 mV	
		(1 ~ 10) kHz	10 mV	
		(10 ~ 100) kHz	68 mV	
		(100 ~ 300) kHz	0.48 V	
		300 kHz ~ 1 MHz	1.8 V	
		(100 ~ 500) V		
		50 Hz	0.08 V	
		50 Hz ~ 1 kHz	0.08 V	
		(1 ~ 10) kHz	0.08 V	
		(500 ~ 1 000) V		
		50 Hz	0.14 V	
		50 Hz ~ 1 kHz	0.14 V	
		(1 ~ 10) kHz	0.14 V	
AC Current		10 µA		
		50 Hz ~ 1 kHz	28 nA	
		(1 ~ 10) kHz	28 nA	
		(10 ~ 100) µA		
		50 Hz ~ 1 kHz	38 nA	
		(1 ~ 10) kHz	66 nA	
		100 µA ~ 1 mA		
		50 Hz ~ 1 kHz	0.36 µA	
		(1 ~ 10) kHz	0.64 µA	
		(1 ~ 10) mA		
		50 Hz ~ 1 kHz	3.6 µA	
		(1 ~ 10) kHz	6.4 µA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Multimeter calibrators	40403			Reference Multimeter, Shunt/ TF-CP-40403
AC Current		(10 ~ 100) mA		
		50 Hz ~ 1 kHz	36 μA	
		(1 ~ 10) kHz	64 μA	
		100 mA ~ 1 A		
		50 Hz ~ 1 kHz	0.42 mA	
		(1 ~ 10) kHz	0.72 mA	
		(1 ~ 10) A		
		50 Hz ~ 1 kHz	9.9 mA	
		(1 ~ 10) kHz	9.9 mA	
		(10 ~ 20) A		
		50 Hz ~ 1 kHz	34 mA	
		(20 ~ 30) A		
		50 Hz ~ 1 kHz	44 mA	
		(30 ~ 50) A		
		50 Hz ~ 1 kHz	66 mA	
		(50 ~ 100) A		
		50 Hz ~ 1 kHz	0.14 A	
Resistance		1 Ω	10 μΩ	
		(1 ~ 10) Ω	0.10 mΩ	
		(10 ~ 100) Ω	0.8 mΩ	
		100 Ω ~ 1 kΩ	8 mΩ	
		(1 ~ 10) kΩ	0.06 Ω	
		(10 ~ 100) kΩ	0.8 Ω	
		100 kΩ ~ 1 MΩ	10 Ω	
		(1 ~ 10) MΩ	0.12 kΩ	
		(10 ~ 100) MΩ	3.0 kΩ	
Frequency		50 Hz	0.8 mHz	
		(50 ~ 100) Hz	0.8 mHz	
		100 Hz ~ 1 kHz	0.08 Hz	
		(1 ~ 100) kHz	0.8 Hz	
		100 kHz ~ 1 MHz	0.8 kHz	
Oscilloscope calibrators	40404			Frequency meters, Reference Multimeter RF Powermeter/ TF-CP-40404
Impedance Measure		50 Ω	9 mΩ	
		(50 ~ 75) Ω	12 mΩ	
		75 Ω ~ 1 MΩ	0.14 kΩ	
DC Voltage		(±)		
		1 mV	0.8 μV	
		(1 ~ 10) mV	0.8 μV	
		(10 ~ 100) mV	6 μV	
		100 mV ~ 1 V	0.06 mV	
		(1 ~ 10) V	0.6 mV	
		(10 ~ 100) V	6 mV	
		(100 ~ 200) V	6 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Oscilloscope calibrators	40404			Frequency meters, Reference Multimeter RF Powermeter/ TF-CP-40404
AC Voltage		100 Hz ~ 10 kHz		
		1 mV	1.0 μV	
		(1 ~ 10) mV	1.0 μV	
		(10 ~ 100) mV	6 μV	
		100 mV ~ 1 V	0.06 mV	
		(1 ~ 10) V	0.6 mV	
		(10 ~ 100) V	6 mV	
		(100 ~ 200) V	8 mV	
Sine Wave Signal Generator Level		600 mV		
		50 kHz	16 mV	
		50 kHz ~ 2 GHz	16 mV	
		(2 ~ 6) GHz	19 mV	
Time Marker		(0.1 ~ 0.5) ns	0.6 fs	
		(0.5 ~ 5) ns	0.6 fs	
		(5 ~ 50) ns	6 fs	
		(50 ~ 500) ns	0.06 ps	
		500 ns ~ 5 μs	0.6 ps	
		(5 ~ 50) μs	6 ps	
		(50 ~ 500) μs	0.06 ns	
		500 μs ~ 5 ms	0.6 ns	
		(5 ~ 50) ms	6 ns	
		(50 ~ 500) ms	0.06 μs	
		500 ms ~ 5 s	0.6 μs	
LF/Audio signal analyzers	40409			Calibrator, Reference Multimeter/ TF-CP-40409
Output Frequency		1 Hz ~ 200 kHz	6.0×10^{-6}	
AC Output Level		40 Hz ~ 1 kHz		
		10 mV	6 μV	
		(10 ~ 100) mV	0.01 mV	
		100 mV ~ 1 V	0.1 mV	
		(1 ~ 10) V	1 mV	
		(10 ~ 30) V	4 mV	
		(1 ~ 10) kHz		
		10 mV	6 μV	
		(10 ~ 100) mV	0.02 mV	
		100 mV ~ 1 V	0.2 mV	
		(1 ~ 10) V	2 mV	
		(10 ~ 30) V	4 mV	
		(10 ~ 100) kHz		
		10 mV	36 μV	
		(10 ~ 100) mV	0.07 mV	
		100 mV ~ 1 V	0.7 mV	
		(1 ~ 10) V	7 mV	
		(10 ~ 30) V	24 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF/Audio signal analyzers	40409			Calibrator, Reference Multimeter/ TF-CP-40409
AC Output Level Flatness		40 Hz ~ 1 00 kHz	0.008 dB	
DC Voltage(Output)		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	8 μV	
		100 mV ~ 1 V	0.1 mV	
		(1 ~ 10) V	1 mV	
		(10 ~ 50) V	1 mV	
Input Frequency		1 Hz ~ 200 kHz	6.0×10^{-6}	
AC Input Level		10 mV		
		40 Hz ~ 10 kHz	7 μV	
		(10 ~ 100) kHz	13 μV	
		(10 ~ 100) mV		
		40 Hz ~ 10 kHz	0.02 mV	
		(10 ~ 100) kHz	0.06 mV	
		100 mV ~ 1 V		
		40 Hz ~ 10 kHz	0.13 mV	
		(10 ~ 100) kHz	0.18 mV	
		(1 ~ 10) V		
		40 Hz ~ 10 kHz	0.9 mV	
		(10 ~ 100) kHz	1.6 mV	
		(10 ~ 100) V		
		40 Hz ~ 10 kHz	10 mV	
		(10 ~ 100) kHz	22 mV	
		(100 ~ 300) V		
		40 Hz ~ 1 kHz	0.07 V	
AC Input Level Flatness		40 Hz ~ 1 00 kHz	0.006 dB	
DC Voltage(Input)		(±)		
		1 mV	8 μV	
		(1 ~ 10) mV	8 μV	
		(10 ~ 100) mV	0.06 mV	
		100 mV ~ 10 V	0.7 mV	
		(10 ~ 100) V	0.06 V	
		(100 ~ 300) V	0.06 V	
Line frequency meters	40410			Calibrator / TF-CP-40410
Frequency		45 Hz	12 mHz	
		(45 ~ 100) Hz	12 mHz	
		100 Hz ~ 1 kHz	0.12 Hz	
		(1 ~ 10) kHz	1.2 Hz	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Function generators	40411			Frequency counters, Reference Multimeter/ TF-CP-40411
Frequency		1 Hz ~ 1 GHz	8.0×10^{-8}	
Output Level		1 mV		
		40 Hz	2.8 μV	
		40 Hz ~ 1 kHz	2.8 μV	
		(1 ~ 10) kHz	2.8 μV	
		(10 ~ 100) kHz	5.4 μV	
		(1 ~ 10) mV		
		40 Hz	4.2 μV	
		40 Hz ~ 1 kHz	4.2 μV	
		(1 ~ 10) kHz	5.4 μV	
		(10 ~ 100) kHz	36 μV	
Output Level		(10 ~ 100) mV		
		40 Hz	8 μV	
		40 Hz ~ 1 kHz	8 μV	
		(1 ~ 10) kHz	14 μV	
		(10 ~ 100) kHz	66 μV	
		100 mV ~ 1 V		
		40 Hz	0.08 mV	
		40 Hz ~ 1 kHz	0.08 mV	
		(1 ~ 10) kHz	0.14 mV	
		(10 ~ 100) kHz	0.66 mV	
		(1 ~ 10) V		
		40 Hz	0.8 mV	
		40 Hz ~ 1 kHz	0.8 mV	
		(1 ~ 10) kHz	1.4 mV	
		(10 ~ 100) kHz	6.6 mV	
		(10 ~ 100) V		
		40 Hz	7.8 mV	
		40 Hz ~ 1 kHz	7.8 mV	
		(1 ~ 10) kHz	10 mV	
		(10 ~ 100) kHz	68 mV	
DC Offset		(±)		
		10 mV	0.8 μV	
		(10 ~ 100) mV	1.0 μV	
		100 mV ~ 1 V	0.06 mV	
		(1 ~ 10) V	0.6 mV	
		(10 ~ 20) V	0.8 mV	
Sine Wave Flatness		100 mV ~ 30 V		
		40 Hz ~ 10 kHz	0.001 4 dB	
		(10 ~ 100) kHz	0.005 8 dB	
Rise Fall Time		100 ps	0.08 ps	
		100 ps ~ 1 ns	0.8 ps	
		(1 ~ 10) ns	8 ps	
		(10 ~ 100) ns	0.08 ns	
		100 ns ~ 1 μs	0.8 ns	
		(1 ~ 10) μs	8 ns	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC/DC high voltages meters	40413			High Volt Supply / TF-CP-40413
DC Voltage		(±)		
		0.1 kV	1 V	
		(0.1 ~ 1) kV	6 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 30) kV	0.16 kV	
		(30 ~ 50) kV	0.24 kV	
		(50 ~ 70) kV	0.34 kV	
		(70 ~ 100) kV	0.48 kV	
AC Voltage		60 Hz		
		0.1 kV	1 V	
		(0.1 ~ 1) kV	6 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	50 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 30) kV	0.16 kV	
		(30 ~ 50) kV	0.24 kV	
		(50 ~ 70) kV	0.34 kV	
		(70 ~ 100) kV	0.50 kV	
Leakage current testers	40416			Calibrator / TF-CP-40416
DC Voltage		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.02 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 500) V	0.01 V	
		(500 ~ 1 000) V	0.02 V	
AC Voltage		50 Hz ~ 1 kHz		
		1 mV	6 μV	
		(1 ~ 10) mV	6 μV	
		(10 ~ 100) mV	16 μV	
		100 mV ~ 1 V	0.12 mV	
		(1 ~ 10) V	0.6 mV	
		(10 ~ 100) V	8 mV	
		(100 ~ 500) V	0.05 V	
		(500 ~ 1 000) V	0.10 V	
DC Current		(±)		
		1 μA	4 nA	
		(1 ~ 10) μA	4 nA	
		(10 ~ 100) μA	8 nA	
		100 μA ~ 1 mA	0.1 μA	
		(1 ~ 10) mA	1 μA	
		(10 ~ 100) mA	8 μA	
AC Current		50 Hz ~ 1 kHz		
		10 μA	0.03 μA	
		(10 ~ 100) μA	0.05 μA	
		100 μA ~ 1 mA	0.2 μA	
		(1 ~ 10) mA	2 μA	
		(10 ~ 100) mA	17 μA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Leakage current testers	40416			Calibrator / TF-CP-40416
Resistance		1 Ω	0.07 mΩ	
		(1 ~ 10) Ω	0.7 mΩ	
		(10 ~ 100) Ω	7 mΩ	
		100 Ω ~ 1 kΩ	0.07 Ω	
		(1 ~ 10) kΩ	0.7 Ω	
Electronic AC/DC loads	40417			Calibrator / TF-CP-40417
DC Voltage		100 mV	7 μV	
		100 mV ~ 1 V	0.1 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 500) V	9 mV	
		(500 ~ 1 000) V	0.08 V	
DC Current		100 mA	14 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	3.0 mA	
		(10 ~ 50) A	21 mA	
		(50 ~ 100) A	41 mA	
		(100 ~ 200) A	0.08 A	
		(200 ~ 300) A	0.10 A	
AC Voltage		(50 ~ 60) Hz		
		1 V	0.1 mV	
		(1 ~ 10) V	0.6 mV	
		(10 ~ 100) V	8 mV	
		(100 ~ 500) V	0.05 V	
		(500 ~ 1 000) V	0.12 V	
AC Current		(50 ~ 60) Hz		
		100 mA	0.12 mA	
		100 mA ~ 1 A	1.2 mA	
		(1 ~ 10) A	14 mA	
		(10 ~ 20) A	28 mA	
Charge & Discharge tester		(±)		
Sense Voltage(METER)		10 mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.01 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 500) V	0.01 V	
		(500 ~ 1 000) V	0.02 V	
DC Voltage(Source)		(±)		
		10 mV	1 μV	
		(10 ~ 100) mV	1 μV	
		100 mV ~ 1 V	0.01 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 500) V	0.01 V	
		(500 ~ 1 000) V	0.02 V	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electronic AC/DC loads	40417			Calibrator /
Charge & Discharge DC Current		(±)		TF-CP-40417
		1 mA	0.6 µA	
		(1 ~ 10) mA	1.4 µA	
		(10 ~ 100) mA	12 µA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	3.0 mA	
		(10 ~ 50) A	21 mA	
		(50 ~ 100) A	41 mA	
		(100 ~ 200) A	0.08 A	
		(200 ~ 300) A	0.10 A	
		(300 ~ 500) A	0.16 A	
		(500 ~ 1 000) A	0.48 A	
		(1 000 ~ 1 500) A	0.68 A	
Analogue/Digital multimeters	40419			Calibrator /
				TF-CP-40419
DC Voltage		(±)		
		1 mV	0.64 µV	
		(1 ~ 10) mV	0.74 µV	
		(10 ~ 100) mV	1.6 µV	
		100 mV ~ 1 V	6.8 µV	
		(1 ~ 10) V	48 µV	
		(10 ~ 100) V	0.68 mV	
		(100 ~ 500) V	4.6 mV	
		(500 ~ 1 000) V	8.6 mV	
AC Voltage		1 mV		
		10 Hz	6 µV	
		10 Hz ~ 10 kHz	6 µV	
		(10 ~ 100) kHz	7 µV	
		(100 ~ 300) kHz	14 µV	
		(300 ~ 500) kHz	28 µV	
		500 kHz ~ 1 MHz	30 µV	
		(1 ~ 10) mV		
		10 Hz	8 µV	
		10 Hz ~ 10 kHz	8 µV	
		(10 ~ 100) kHz	14 µV	
		(100 ~ 300) kHz	26 µV	
		(300 ~ 500) kHz	42 µV	
		500 kHz ~ 1 MHz	62 µV	
		(10 ~ 100) mV		
		10 Hz	44 µV	
		10 Hz ~ 10 kHz	16 µV	
		(10 ~ 100) kHz	58 µV	
		(100 ~ 300) kHz	0.18 mV	
		(300 ~ 500) kHz	0.24 mV	
		500 kHz ~ 1 MHz	0.40 mV	
		100 mV ~ 1 V		
		10 Hz	0.34 mV	
		10 Hz ~ 10 kHz	0.12 mV	
		(10 ~ 100) kHz	0.16 mV	
		(100 ~ 300) kHz	1.4 mV	
		(300 ~ 500) kHz	1.8 mV	
		500 kHz ~ 1 MHz	2.6 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Analogue/Digital multimeters	40419			Calibrator /
AC Voltage		1 ~ 10 V		TF-CP-40419
		10 Hz	3.4 mV	
		10 Hz ~ 10 kHz	0.62 mV	
		(10 ~ 20) kHz	0.94 mV	
		(20 ~ 100) kHz	1.6 mV	
		(100 ~ 300) kHz	16 mV	
		(300 ~ 500) kHz	20 mV	
		500 kHz ~ 1 MHz	26 mV	
		(10 ~ 100) V		
		10 Hz	34 mV	
		10 Hz ~ 10 kHz	7.6 mV	
		(10 ~ 20) kHz	8.4 mV	
		(20 ~ 50) kHz	12 mV	
		(50 ~ 100) kHz	22 mV	
		(100 ~ 500) V		
		50 Hz	0.06 V	
		50 Hz ~ 1 kHz	0.06 V	
		(1 ~ 10) kHz	0.12 V	
		(500 ~ 1 000) V		
		50 Hz	0.10 V	
		50 Hz ~ 1 kHz	0.10 V	
		(1 ~ 10) kHz	0.22 V	
DC Current		(±)		
		1 µA	2.2 nA	
		(1 ~ 10) µA	2.4 nA	
		(10 ~ 100) µA	4.6 nA	
		100 µA ~ 1 mA	32 nA	
		(1 ~ 10) mA	0.32 µA	
		(10 ~ 100) mA	3.4 µA	
		100 mA ~ 1 A	48 µA	
		(1 ~ 10) A	1.4 mA	
		(10 ~ 20) A	3.0 mA	
		(20 ~ 30) A	10 mA	
AC Current		10 µA		
		10 Hz	0.04 µA	
		10 Hz ~ 1 kHz	0.04 µA	
		(1 ~ 5) kHz	0.04 µA	
		(5 ~ 10) kHz	0.10 µA	
		(10 ~ 100) µA		
		10 Hz	0.08 µA	
		10 Hz ~ 1 kHz	0.06 µA	
		(1 ~ 5) kHz	0.10 µA	
		(5 ~ 10) kHz	0.22 µA	
		100 µA ~ 1 mA		
		10 Hz	0.34 µA	
		10 Hz ~ 1 kHz	0.18 µA	
		(1 ~ 5) kHz	0.38 µA	
		(5 ~ 10) kHz	2.2 µA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Analogue/Digital multimeters	40419			Calibrator /
AC Current		(1 ~ 10) mA		TF-CP-40419
		10 Hz	3.6 μA	
		10 Hz ~ 1 kHz	1.8 μA	
		(1 ~ 5) kHz	3.0 μA	
		(5 ~ 10) kHz	20 μA	
		(10 ~ 100) mA		
		10 Hz	36 μA	
		10 Hz ~ 1 kHz	16 μA	
		(1 ~ 5) kHz	28 μA	
		(5 ~ 10) kHz	0.14 mA	
		100 mA ~ 1 A		
		10 Hz	2.0 mA	
		10 Hz ~ 1 kHz	0.34 mA	
		(1 ~ 5) kHz	0.62 mA	
		(5 ~ 10) kHz	8.4 mA	
		(1 ~ 10) A		
		50 Hz	5.6 mA	
		50 Hz ~ 1 kHz	5.6 mA	
		(1 ~ 5) kHz	12 mA	
		(5 ~ 10) kHz	44 mA	
		(10 ~ 20) A		
		50 Hz	16 mA	
		50 Hz ~ 60 Hz	16 mA	
		60 Hz ~ 100 Hz	18 mA	
		100 Hz ~ 1 kHz	30 mA	
		(20 ~ 30) A		
		50 Hz	28 mA	
		50 Hz ~ 60 Hz	28 mA	
		60 Hz ~ 100 Hz	42 mA	
		100 Hz ~ 1 kHz	0.14 A	
Resistance		1 mΩ	0.10 μΩ	
		(1 ~ 10) mΩ	0.60 μΩ	
		(10 ~ 100) mΩ	5.8 μΩ	
		100 mΩ ~ 1 Ω	10 μΩ	
		(1 ~ 10) Ω	0.10 mΩ	
		(10 ~ 100) Ω	0.70 mΩ	
		100 Ω ~ 1 kΩ	7.0 mΩ	
		(1 ~ 10) kΩ	0.07 Ω	
		(10 ~ 100) kΩ	0.7 Ω	
		100 kΩ ~ 1 MΩ	10 Ω	
		(1 ~ 10) MΩ	0.12 kΩ	
		(10 ~ 100) MΩ	2.8 kΩ	
		100 MΩ ~ 1 GΩ	0.64 MΩ	
Frequency		10 Hz ~ 10 MHz	1.0×10^{-6}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Oscilloscopes	40421			Calibrator / TF-CP-40421
Impedance Measure		50 Ω	1 mΩ	
		(50 ~ 75) Ω	1 mΩ	
		75 Ω ~ 1 MΩ	0.1 kΩ	
DC Voltage		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.1 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 200) V	0.01 V	
AC Voltage		at 1 kHz		
		1 mV	48 μV	
		(1 ~ 2) mV	50 μV	
		(2 ~ 3) mV	50 μV	
		(3 ~ 5) mV	52 μV	
		(5 ~ 6) mV	52 μV	
		(6 ~ 10) mV	56 μV	
		(10 ~ 12) mV	58 μV	
		(12 ~ 20) mV	66 μV	
		(20 ~ 30) mV	0.08 mV	
		(30 ~ 50) mV	0.10 mV	
		(50 ~ 60) mV	0.12 mV	
		(60 ~ 100) mV	0.14 mV	
		(100 ~ 120) mV	0.2 mV	
		(120 ~ 200) mV	0.3 mV	
		(200 ~ 300) mV	0.4 mV	
		(300 ~ 500) mV	0.6 mV	
		(500 ~ 600) mV	0.8 mV	
		600 mV ~ 1 V	1.0 mV	
		(1 ~ 1.2) V	1.2 mV	
		(1.2 ~ 2) V	2 mV	
		(2 ~ 3) V	3 mV	
		(3 ~ 5) V	5 mV	
		(5 ~ 6) V	6 mV	
		(6 ~ 10) V	10 mV	
		(10 ~ 12) V	14 mV	
		(12 ~ 20) V	20 mV	
		(20 ~ 30) V	30 mV	
		(30 ~ 50) V	48 mV	
		(50 ~ 60) V	58 mV	
		(60 ~ 100) V	0.10 V	
		(100 ~ 200) V	0.12 V	
Sine Wave Signal Generator Level		50 kHz	18 mV	
		50 kHz ~ 100 MHz	18 mV	
		100 MHz ~ 15 GHz	19 mV	
		(15 ~ 18) GHz	20 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Oscilloscopes	40421			Calibrator / TF-CP-40421
Time Marker		(1 ~ 5) ns	0.07 ps	
		(5 ~ 50) ns	0.7 ps	
		(50 ~ 500) ns	7 ps	
		500 ns ~ 5 µs	0.07 ns	
		(5 ~ 50) µs	0.7 ns	
		(50 ~ 500) µs	7 ns	
		500 µs ~ 5 ms	0.07 µs	
		(5 ~ 50) ms	0.9 µs	
		(50 ~ 500) ms	9 µs	
		500 ms ~ 5 s	0.10 ms	
CAL Output Amplitude				
DC Voltage		100 mV	1.0 µV	
		100 mV ~ 1 V	0.7 mV	
		(1 ~ 10) V	0.8 mV	
AC Voltage		100 Hz ~ 10 kHz		
		100 mV	17 µV	
		100 mV ~ 1 V	1.4 mV	
		(1 ~ 10) V	2.2 mV	
CAL Output Frequency		100 Hz	0.7 mHz	
		100 Hz ~ 1 kHz	0.07 Hz	
		(1 ~ 10) kHz	0.7 Hz	
		(10 ~ 100) kHz	0.7 Hz	
		100 kHz ~ 1 MHz	0.07 kHz	
		(1 ~ 10) MHz	0.7 kHz	
Volt/Current recorders	40424			Calibrator / TF-CP-40424
DC Voltage		(±)		
		1 mV	0.64 µV	
		(1 ~ 10) mV	0.74 µV	
		(10 ~ 100) mV	1.6 µV	
		100 mV ~ 1 V	6.8 µV	
		(1 ~ 10) V	48 µV	
		(10 ~ 100) V	0.68 mV	
		(100 ~ 500) V	4.6 mV	
		(500 ~ 1 000) V	8.6 mV	
DC Current		(±)		
		1 µA	2.2 nA	
		(1 ~ 10) µA	2.4 nA	
		(10 ~ 100) µA	4.6 nA	
		100 µA ~ 1 mA	32 nA	
		(1 ~ 10) mA	0.32 µA	
		(10 ~ 100) mA	3.4 µA	
		100 mA ~ 1 A	48 µA	
		(1 ~ 10) A	1.4 mA	
		(10 ~ 20) A	3.0 mA	
		(20 ~ 40) A	10 mA	
		(40 ~ 100) A	16 mA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Relay test sets	40425			Reference Multimeter, Shunt/ TF-CP-40425
DC Voltage		(±)		
		10 mV	0.8 μV	
		(10 ~ 100) mV	1.0 μV	
		100 mV ~ 1 V	7 μV	
		(1 ~ 10) V	0.08 mV	
		10 ~ 100) V	0.8 mV	
		(100 ~ 500) V	8 mV	
		(500 ~ 1 000) V	10 mV	
AC Voltage		50 Hz ~ 10 kHz		
		10 mV	8 μV	
		(10 ~ 100) mV	10 μV	
		100 mV ~ 1 V	0.08 mV	
		(1 ~ 10) V	0.8 mV	
		(10 ~ 100) V	8 mV	
		(100 ~ 500) V	78 mV	
		(500 ~ 1 000) V	0.14 V	
DC Current		(±)		
		1 mA	0.6 μA	
		(1 ~ 10) mA	1.4 μA	
		(10 ~ 100) mA	12 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	3.0 mA	
		(10 ~ 50) A	21 mA	
		(50 ~ 100) A	41 mA	
		(100 ~ 300) A	0.10 A	
		(300 ~ 500) A	0.16 A	
AC Current		50 Hz ~ 1 kHz		
		1 mA	1.4 μA	
		(1 ~ 10) mA	12 μA	
		(10 ~ 100) mA	0.12 mA	
		200 mA ~ 1 A	1.4 mA	
		(1 ~ 10) A	14 mA	
		(10 ~ 20) A	28 mA	
		(20 ~ 50) A	66 mA	
		(50 ~ 100) A	0.14 A	
Frequency		(50 ~ 500) Hz	1.0 mHz	
		500 Hz ~ 1 kHz	1.4 mHz	
		(1 ~ 100) kHz	0.8 Hz	
Timer		(1 ~ 100) ms	6 μs	
		100 ms ~ 100 s	6 ms	
Signal transducers	40430			Reference Multimeter / TF-CP-40430
Voltage		(1 ~ 20) mV	1.2×10^{-3}	
		(20 ~ 200) mV	3.5×10^{-4}	
		200 mV ~ 2 V	1.4×10^{-4}	
		(2 ~ 20) V	4.0×10^{-5}	
		(20 ~ 100) V	3.2×10^{-5}	
Current		(1 ~ 20) mA	7.0×10^{-4}	
		(20 ~ 200) mA	7.6×10^{-5}	
		200 mA ~ 2 A	4.0×10^{-4}	
		(2 ~ 30) A	8.0×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Transistor curve tracers	40432			Reference Multimete, Calibrator/
DC Voltage(Source)		(±)		TF-CP-40432
		1 mV	0.5 μV	
		(1 ~ 10) mV	0.5 μV	
		(10 ~ 100) mV	0.7 μV	
		100 mV ~ 1 V	0.01 mV	
		(1 ~ 10) V	0.1 mV	
		(10 ~ 100) V	1 mV	
		(100 ~ 500) V	0.02 V	
		(500 ~ 1 000) V	0.02 V	
DC Current(Source)		(±)		
		1 nA	5.2 pA	
		(1 ~ 10) nA	50 pA	
		(10 ~ 100) nA	0.26 nA	
		100 nA ~ 1 μA	0.6 nA	
		(1 ~ 10) μA	0.8 nA	
		(10 ~ 100) μA	1.6 nA	
		100 μA ~ 1 mA	0.02 μA	
		(1 ~ 10) mA	0.2 μA	
		(10 ~ 100) mA	6 μA	
		100 mA ~ 1 A	0.24 mA	
		(1 ~ 10) A	2.5 mA	
DC Voltage(Measure)		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.07 mV	
		(1 ~ 10) V	0.7 mV	
		(10 ~ 100) V	7 mV	
		(100 ~ 500) V	0.01 V	
		(100 ~ 1 000) V	0.02 V	
AC/DC high voltage generators	40434			High Voltage Digital Meter /
DC Voltage		(±)		TF-CP-40434
		0.1 kV	6 V	
		(0.1 ~ 1) kV	10 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 50) kV	0.24 kV	
		(50 ~ 100) kV	0.48 kV	
		(100 ~ 150) kV	0.8 kV	
		(150 ~ 200) kV	1.0 kV	
AC Voltage		50 ~ 60 Hz		
		0.1 kV	6 V	
		(0.1 ~ 1) kV	10 V	
		(1 ~ 5) kV	26 V	
		(5 ~ 10) kV	50 V	
		(10 ~ 15) kV	74 V	
		(15 ~ 50) kV	0.24 kV	
		(50 ~ 100) kV	0.50 kV	
		(100 ~ 150) kV	0.8 kV	
		(150 ~ 200) kV	1.0 kV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC/DC high voltage probes	40435			High Volt Supply/ TF-CP-40435
DC Voltage		(±)		
		0.1 kV	2 V	
		(0.1 ~ 1) kV	8 V	
		(1 ~ 2) kV	12 V	
		(2 ~ 5) kV	26 V	
		(5 ~ 10) kV	48 V	
		(10 ~ 15) kV	72 V	
		(15 ~ 20) kV	0.10 kV	
		(20 ~ 50) kV	0.24 kV	
		(50 ~ 80) kV	0.38 kV	
		(80 ~ 100) kV	0.48 kV	
AC Voltage		60 Hz		
		0.1 kV	2 V	
		(0.1 ~ 1) kV	10 V	
		(1 ~ 2) kV	14 V	
		(2 ~ 5) kV	26 V	
		(5 ~ 10) kV	50 V	
		(10 ~ 15) kV	74 V	
		(15 ~ 20) kV	0.10 kV	
		(20 ~ 50) kV	0.24 kV	
		(50 ~ 80) kV	0.40 kV	
		(80 ~ 100) kV	0.50 kV	
Ratio (DC)		(±)		
		1 kV		
		(100 ~ 100 000 : 1)	0.9 %	
		(1 ~ 100) kV		
		(100 ~ 100 000 : 1)	0.7 %	
Ratio (AC)		60 Hz		
		1 kV		
		(100 ~ 100 000 : 1)	0.9 %	
		(1 ~ 100) kV		
		(100 ~ 100 000 : 1)	0.7 %	
Logic analyzers	40436			Calibartor / TF-CP-40436
DC Voltage		(±)		
		1 mV	1 μV	
		(1 ~ 10) mV	1 μV	
		(10 ~ 100) mV	2 μV	
		100 mV ~ 1 V	0.01 mV	
		(1 ~ 10) V	0.1 mV	

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501. Contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Temperature generators: ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	50101	0 ℃ (-196 ~ -90) ℃ (-90 ~ 550) ℃ (550 ~ 660) ℃ (660 ~ 1 100) ℃ (1 100 ~ 1 200) ℃	0.018 ℃ 0.065 ℃ 0.030 ℃ 0.09 ℃ 1.2 ℃ 3.3 ℃	S.P.R.T S-Type Thermocouple Temperature Recorder / TF-CP-50101
Temperature indicators/recorders /controllers, temperature calibrators	50102			S.P.R.T S-Type Thermocouple Temperature Recorder / TF-CP-50102
Temperature indicators/ recorders/ controllers (with OUT Sensors)				
Thermometric type				
E-Type		(-196 ~ 1 000) ℃	0.16 ℃	
J-Type		(-196 ~ 1 200) ℃	0.18 ℃	
K-Type		(-196 ~ 1 200) ℃	0.20 ℃	
N-Type		(-196 ~ 1 200) ℃	0.28 ℃	
T-Type		(-196 ~ 400) ℃	0.20 ℃	
B-Type		(600 ~ 1 200) ℃	0.42 ℃	
R-Type		(0 ~ 1 200) ℃	0.46 ℃	
S-Type		(0 ~ 1 200) ℃	0.51 ℃	
Resistance type		(-196 ~ 500) ℃	0.07 ℃	
Temperature indicators/ recorders/ controllers (with Sensors)				
Thermometric type		(-196 ~ 500) ℃	0.30 ℃	
		(500 ~ 1 100) ℃	1.4 ℃	
		(1 100 ~ 1 200) ℃	3.4 ℃	
Resistance type		(-196 ~ 500) ℃	0.024 ℃	
Electric temp. calibrator (Source/Measure)				
Thermometric type				
E-TYPE		(-196 ~ 1 000) ℃	0.16 ℃	
J-TYPE		(-196 ~ 1 200) ℃	0.18 ℃	
K-TYPE		(-196 ~ 1 200) ℃	0.21 ℃	
N-TYPE		(-196 ~ 1 200) ℃	0.29 ℃	
T-TYPE		(-196 ~ 400) ℃	0.21 ℃	
B-TYPE		(600 ~ 1 200) ℃	0.44 ℃	
R-TYPE		(0 ~ 1 200) ℃	0.55 ℃	
S-TYPE		(0 ~ 1 200) ℃	0.52 ℃	
Resistance type		(-196 ~ 500) ℃	0.08 ℃	
Glass thermometers; liquid-in-glass, Beckmann	50103			S.P.R.T TF-CP-50103
Glass thermometers		(-80 ~ -50) ℃ (-50 ~ 250) ℃	0.15 ℃ 0.04 ℃	
Resistance thermometers; SPRT, IPRT, thermistors, etc.	50104	(-196 ~ 500) ℃	0.039 ℃	S.P.R.T TF-CP-50104
Thermal expansion thermometers; bimetal, gas or liquid type	50105			S.P.R.T TF-CP-50105
bimetal		(-80 ~ 200) ℃ (200 ~ 250) ℃	0.5 ℃ 1.2 ℃	
Thermomecoules: noble metal, base metal, pure metal, special type, etc.	50106			S.P.R.T S-Type Thermocouple
base metal		(-196 ~ 500) ℃ (500 ~ 1 100) ℃ (1 100 ~ 1 200) ℃	0.4 ℃ 1.5 ℃ 3.4 ℃	TF-CP-50106
Temperature transducers	50107	(-196 ~ 500) ℃ (500 ~ 1 100) ℃ (1 100 ~ 1 200) ℃	0.07 ℃ 1.2 ℃ 3.3 ℃	S.P.R.T S-Type Thermocouple TF-CP-50107

502. non contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Radiation thermometers	50204	(0 ~ 300) ℃ (300 ~ 500) ℃	1.0 ℃ 1.5 ℃	Standard radiation Thermometers / TF-CP-50204
Thermal image apparatus	50205	(0 ~ 300) ℃ (300 ~ 500) ℃	1.2 ℃ 1.7 ℃	Standard radiation Thermometers / TF-CP-50205
Blackbody furnaces	50206	(0 ~ 300) ℃ (300 ~ 500) ℃	1.2 ℃ 1.6 ℃	Standard radiation Thermometers / TF-CP-50206

503. Humidity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Relative humidity hygrometers; Humidity	50302	(10 ~ 70) % R.H. (70 ~ 98) % R.H.	1.4 % R.H. 1.9 % R.H.	Dewpoint Meter / Resistance thermometers TF-CP-50302
Temperature		(-40 ~ -20) ℃ (-20 ~ 90) ℃ (90 ~ 180) ℃	0.7 ℃ 0.5 ℃ 1.1 ℃	
Psychrometers; assmann ventilated, PRT type Humidity	50303	(10 ~ 70) % R.H. (70 ~ 98) % R.H.	1.5 % R.H. 1.9 % R.H.	Dewpoint Meter / Resistance thermometers TF-CP-50303
Temperature		(0 ~ 90) ℃	0.5 ℃	
Temperature humidity recorders ; Humidity	50304	(10 ~ 70) % R.H. (70 ~ 95) % R.H.	1.8 % R.H. 2.1 % R.H.	Dewpoint Meter / Resistance thermometers TF-CP-50304
Temperature		(-20 ~ 50) ℃	0.8 ℃	
Transducers; dew-point/relative humidity Humidity	50305	(10 ~ 70) % R.H. (70 ~ 98) % R.H.	1.5 % R.H. 1.9 % R.H.	Dewpoint Meter / Resistance thermometers TF-CP-50305
Temperature		(-40 ~ 90) ℃ (90 ~ 180) ℃	0.8 ℃ 1.2 ℃	
Humidity generators; two-pressure, two-temperature, flow mixing humidity gererator, constant temperature and humidity chamber constant temperature and humidity chamber Humidity	50306	(10 ~ 70) % R.H. (70 ~ 98) % R.H.	2.0 % R.H. 2.5 % R.H.	Dewpoint Meter / Resistance thermometers TF-CP-50306
Temperature		(-70 ~ -20) ℃ (-20 ~ 150) ℃ (150 ~ 180) ℃	0.8 ℃ 0.6 ℃ 0.9 ℃	