



SCS Directory

Accreditation number: SCS 0002

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Swiss standard: SN EN ISO/IEC 17025:2018

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Scope of accreditation see: www.sas.admin.ch
(Accredited bodies)

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Calibration laboratory for electrical quantities

Calibration and Measurement Capability (CMC)

Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
DC Voltage Calibration of voltage measurement instruments	0,0 μ V		0,09 μ V	U=Measured value
	> 0 μ V ... < 0,22 V		$4,7 \cdot 10^{-6} U + 0,7 \mu$ V	
	0,1 V		$4,9 \cdot 10^{-6} U$	
	0,22 V ... < 2,2 V		$3,5 \cdot 10^{-6} U + 1,2 \mu$ V	
	1 V		$1,1 \cdot 10^{-6} U$	
	2,2 V ... < 11 V		$1,8 \cdot 10^{-6} U + 6,0 \mu$ V	
	10 V		$0,35 \cdot 10^{-6} U$	
	11 V ... < 22 V		$1,8 \cdot 10^{-6} U + 9,5 \mu$ V	
	22 V ... < 275 V		$3,0 \cdot 10^{-6} U + 120 \mu$ V	
	100 V		$1,0 \cdot 10^{-6} U$	
275 V ... 1100 V		$3,0 \cdot 10^{-6} U + 465 \mu$ V		



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DC Voltage	1000 V		$1,0 \cdot 10^{-6} U$	I=Measured value	
	1050 V ... 10000 V		$0,6 \cdot 10^{-3} U + 60 \text{ mV}$		
	0 μ V ... < 0,12 V		$3,5 \cdot 10^{-6} U + 0,6 \mu\text{V}$		
	0,1 V		$1,5 \cdot 10^{-6} U + 0,4 \mu\text{V}$		
	0,12 V ... < 1,2 V		$2,0 \cdot 10^{-6} U + 0,6 \mu\text{V}$		
	Calibration of voltage calibrators	1 V			$1,0 \cdot 10^{-6} U + 0,4 \mu\text{V}$
		1,2 V ... < 12 V			$1,0 \cdot 10^{-6} U + 0,6 \mu\text{V}$
		10 V			$0,4 \cdot 10^{-6} U$
		12 V ... < 120 V			$3,0 \cdot 10^{-6} U + 70 \mu\text{V}$
		100 V			$1,0 \cdot 10^{-6} U + 55 \mu\text{V}$
120 V ... 1050 V			$3,5 \cdot 10^{-6} U + 300 \mu\text{V}$		
1000 V			$2,0 \cdot 10^{-6} U + 280 \mu\text{V}$		
1050 V ... 10000 V			$0,5 \cdot 10^{-3} U + 50 \text{ mV}$		
DC Current		1 pA ... < 20 pA			$684 \cdot 10^{-6} I + 62 \text{ aA}$
		20 pA ... < 200 pA			$247 \cdot 10^{-6} I + 0,8 \text{ fA}$
	200 pA ... < 2 nA		$126 \cdot 10^{-6} I + 5,9 \text{ fA}$		
	2 nA ... < 20 nA		$122 \cdot 10^{-6} I + 63 \text{ fA}$		
	20 nA ... < 200 nA		$105 \cdot 10^{-6} I + 0.6 \text{ nA}$		
	0,1 μ A ... 1 μ A		$116 \cdot 10^{-6} I + 1,2 \text{ nA}$		
	> 1 μ A ... 10 μ A		$14 \cdot 10^{-6} I + 1,2 \text{ nA}$		
	> 10 μ A ... 100 μ A		$6,8 \cdot 10^{-6} I + 1,2 \text{ nA}$		
	Calibration of ammeters	> 100 μ A ... 1 mA		$7,1 \cdot 10^{-6} I + 8.2 \text{ nA}$	
		> 1 mA ... 10 mA		$6,7 \cdot 10^{-6} I + 59 \text{ nA}$	
		> 10 mA ... 100 mA		$11 \cdot 10^{-6} I + 350 \text{ nA}$	
		> 100 mA ... 2 A		$21 \cdot 10^{-6} I + 15 \mu\text{A}$	
		> 2 A ... 10 A		$35 \cdot 10^{-6} I + 120 \mu\text{A}$	
		> 10 A ... 20 A		$65 \cdot 10^{-6} I + 120 \mu\text{A}$	
		> 20 A ... 200 A		$151 \cdot 10^{-6} I + 2,32 \text{ mA}$	



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Calibration of current clamps	50 A ... 500 A 500 A ... 2500 A		0,53 % 0,54 %	
DC Current	1 pA ... < 2 pA		0,58 % + 0,13 fA	
	2 pA ... < 20 pA		$660 \cdot 10^{-6} I + 0,48 \text{ fA}$	
	20 pA ... < 200 pA		$350 \cdot 10^{-6} I + 4,9 \text{ fA}$	
	200 pA ... < 2 nA		$310 \cdot 10^{-6} I + 47 \text{ fA}$	
	2 nA ... < 20 nA		$290 \cdot 10^{-6} I + 0,49 \text{ pA}$	
	20 nA ... < 200 nA		$290 \cdot 10^{-6} I + 4,7 \text{ pA}$	
	0,1 μA ... 1 μA		$116 \cdot 10^{-6} I + 0,52 \text{ pA}$	
	> 1 μA ... 10 μA		$13 \cdot 10^{-6} I + 5,7 \text{ pA}$	
Calibration of current calibrators	> 10 μA ... 100 μA		$3,6 \cdot 10^{-6} I + 52 \text{ pA}$	
	> 100 μA ... 1 mA		$4,2 \cdot 10^{-6} I + 0,52 \text{ nA}$	
	> 1 mA ... 10 mA		$3,4 \cdot 10^{-6} I + 5,2 \text{ nA}$	
	> 10 mA ... 100 mA		$4,7 \cdot 10^{-6} I + 52 \text{ nA}$	
	> 100 mA ... 1 A		$19 \cdot 10^{-6} I + 0,52 \mu\text{A}$	
	> 1 A ... 3 A		$18 \cdot 10^{-6} I + 5,2 \mu\text{A}$	
	> 3 A ... 10 A		$25 \cdot 10^{-6} I + 52 \mu\text{A}$	
	> 10 A ... 20 A		$62 \cdot 10^{-6} I + 52 \mu\text{A}$	
	> 20 A ... 50 A		$140 \cdot 10^{-6} I + 520 \mu\text{A}$	
	> 50 A ... 100 A		$93 \cdot 10^{-6} I + 75 \mu\text{A}$	
	> 100 A ... 200 A		$140 \cdot 10^{-6} I + 520 \mu\text{A}$	
	> 200 A ... 600 A		$420 \cdot 10^{-6} I + 5,2 \text{ mA}$	
DC Power	0,22 μW ... 22 kW	0,1 V ... 1100 V		
Calibration of power meters		2,2 μA ... 10 μA	$540 \cdot 10^{-6} P$	P=Measured value
		> 10 μA ... 22 μA	$130 \cdot 10^{-6} P$	
		> 22 μA ... 100 μA	$62 \cdot 10^{-6} P$	
		> 100 μA ... 220 μA	$91 \cdot 10^{-6} P$	
		> 220 μA ... 1 mA	$48 \cdot 10^{-6} P$	
		> 1 mA ... 2.2 mA	$67 \cdot 10^{-6} P$	



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Calibration of power calibrators	0,01 μ W ... 21 kW	> 2,2 mA ... 10 mA	$37 \cdot 10^{-6} P$	
		> 10 mA ... 22 mA	$48 \cdot 10^{-6} P$	
		> 22 mA ... 100 mA	$31 \cdot 10^{-6} P$	
		> 100 mA ... 220 mA	$154 \cdot 10^{-6} P$	
		> 220 mA ... 1 A	$83 \cdot 10^{-6} P$	
		> 1 A ... 2,2 A	$153 \cdot 10^{-6} P$	
		> 2,2 A ... 10 A	$89 \cdot 10^{-6} P$	
		> 10 A ... 20 A	$79 \cdot 10^{-6} P$	
		0,1 V ... 1100 V		
		0,1 μ A ... 1 μ A	$125 \cdot 10^{-6} P$	
> 1 μ A ... 10 μ A	$25 \cdot 10^{-6} P$			
> 10 μ A ... 100 mA	$15 \cdot 10^{-6} P$			
> 100 mA ... 1 A	$30 \cdot 10^{-6} P$			
> 1 A ... 3 A	$25 \cdot 10^{-6} P$			
> 3 A ... 10 A	$45 \cdot 10^{-6} P$			
> 10 A ... 20 A	$70 \cdot 10^{-6} P$			
DC Resistance		Measuring voltage	$70 \cdot 10^{-6} P$	Measurement uncertainties only valid for fixed values. R=Measured value
	0 m Ω	[V]	$12,3 \mu\Omega R$	
	0,1 m Ω		$19 \cdot 10^{-6} R$	
	1 m Ω		$19 \cdot 10^{-6} R$	
Calibration of resistance measurement instruments	0,01 Ω		$20 \cdot 10^{-6} R$	
	0,1 Ω		$7,4 \cdot 10^{-6} R$	
	1 Ω		$3,6 \cdot 10^{-6} R$	
	10 Ω		$2,5 \cdot 10^{-6} R$	
	25 Ω		$3,0 \cdot 10^{-6} R$	
	100 Ω		$1,3 \cdot 10^{-6} R$	
	1 k Ω		$2,0 \cdot 10^{-6} R$	
10 k Ω		$1,4 \cdot 10^{-6} R$		
	100 k Ω		$4,2 \cdot 10^{-6} R$	



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DC Resistance Calibration of resistance measurement instruments	1 M Ω		$2,6 \cdot 10^{-6} R$	
	10 M Ω		$8,2 \cdot 10^{-6} R$	
	100 M Ω		$7,7 \cdot 10^{-6} R$	
	1 G Ω	10 ... 100	$91 \cdot 10^{-6} R$	
	10 G Ω	10	$156 \cdot 10^{-6} R$	
	10 G Ω	100	$70 \cdot 10^{-6} R$	
	10 G Ω	500	$76 \cdot 10^{-6} R$	
	100 G Ω	10	$81 \cdot 10^{-6} R$	
	100 G Ω	100	$81 \cdot 10^{-6} R$	
	100 G Ω	500	$89 \cdot 10^{-6} R$	
	1 T Ω	50	$380 \cdot 10^{-6} R$	
	1 T Ω	100	$420 \cdot 10^{-6} R$	
	1 T Ω	500	$1,1 \cdot 10^{-3} R$	
	10 T Ω	100	$350 \cdot 10^{-6} R$	
	10 T Ω	500	$500 \cdot 10^{-6} R$	
	10 T Ω	1000	$1,1 \cdot 10^{-3} R$	
	100 T Ω	100	$4,2 \cdot 10^{-3} R$	
100 T Ω	500	$3,3 \cdot 10^{-3} R$		
100 T Ω	900	$1,4 \cdot 10^{-3} R$		
DC Resistance Calibration of resistors	0,1 m Ω		$77 \cdot 10^{-6} R$	Measurement uncertainties only valid for fixed values
	1 m Ω		$33 \cdot 10^{-6} R$	
	0,01 Ω		$34 \cdot 10^{-6} R$	
	0,1 Ω ; 1 Ω		$20 \cdot 10^{-6} R$	
	10 Ω		$4,2 \cdot 10^{-6} R$	
	25 Ω		$2,8 \cdot 10^{-6} R$	
	100 Ω		$1,7 \cdot 10^{-6} R$	
	1 k Ω		$2,4 \cdot 10^{-6} R$	
	10 k Ω		$2,2 \cdot 10^{-6} R$	
	100 k Ω		$4,6 \cdot 10^{-6} R$	
1 M Ω		$3,3 \cdot 10^{-6} R$		



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	10 M Ω		$8,9 \cdot 10^{-6} R$	
	100 M Ω		$14 \cdot 10^{-6} R$	
	1 G Ω		$120 \cdot 10^{-6} R$	
	10 G Ω	10 V	$160 \cdot 10^{-6} R$	
	10 G Ω	100 V	$70 \cdot 10^{-6} R$	
	10 G Ω	500 V	$77 \cdot 10^{-6} R$	
	100 G Ω	10 V	$93 \cdot 10^{-6} R$	
	100 G Ω	100 V	$81 \cdot 10^{-6} R$	
	100 G Ω	500 V	$90 \cdot 10^{-6} R$	
	1 T Ω	50 V	$380 \cdot 10^{-6} R$	
	1 T Ω	100 V	$440 \cdot 10^{-6} R$	
	1 T Ω	500 V	$1,1 \cdot 10^{-3} R$	
	10 T Ω	100 V	$1,5 \cdot 10^{-3} R$	
	10 T Ω	500 V	$610 \cdot 10^{-6} R$	
	10 T Ω	1000 V	$1,1 \cdot 10^{-3} R$	
	100 T Ω	100 V	$4,8 \cdot 10^{-3} R$	
	100 T Ω	500 V	$3,6 \cdot 10^{-3} R$	
	100 T Ω	1000 V	$2,3 \cdot 10^{-3} R$	
Calibration of non decadic resistors	0,0 Ω ... < 2 Ω		$6,6 \cdot 10^{-6} R + 3,0 \mu\Omega$	
	2 Ω ... < 20 Ω		$3,2 \cdot 10^{-6} R + 12 \mu\Omega$	
	20 Ω ... < 200 Ω		$1,7 \cdot 10^{-6} R + 110 \mu\Omega$	
	0,2 k Ω ... < 2 k Ω		$2,2 \cdot 10^{-6} R + 1,1 \text{ m}\Omega$	
	2 k Ω ... < 20 k Ω		$2,2 \cdot 10^{-6} R + 11 \text{ m}\Omega$	
	20 k Ω ... < 200 k Ω		$4,3 \cdot 10^{-6} R + 110 \text{ m}\Omega$	
	0,2 M Ω ... < 2 M Ω		$3,1 \cdot 10^{-6} R + 1,3 \Omega$	
	2 M Ω ... < 20 M Ω		$8,4 \cdot 10^{-6} R + 13 \Omega$	
	20 M Ω ... < 200 M Ω		$14 \cdot 10^{-6} R + 410 \Omega$	
	0,2 G Ω ... < 2 G Ω		$1,7 \cdot 10^{-3} R + 39 \text{ k}\Omega$	



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RTD electrically simulated	2 G Ω ... < 20 G Ω		$1,7 \cdot 10^{-3} R + 3,9 \text{ M}\Omega$	
	-200 °C ... -0 °C		0,059 °C	
	> 0 °C ... 100 °C		0,082 °C	
	> 100 °C ... 300 °C		0,10 °C	
	> 300 °C ... 400 °C		0,12 °C	
	> 400 °C ... 630 °C		0,14 °C	
	> 630 °C ... 800 °C		0,27 °C	
RTD electrically measured	-200 °C ... -0 °C		4,2 m°C	
	> 0 °C ... 800 °C		4,7 m°C	
AC Voltage	2 mV	10 Hz	$2,8 \cdot 10^{-3} U$	AC measure $2,8 \cdot 10^{-3} U$
		20 Hz; 40 Hz; 50 Hz; 70 Hz; 100 Hz	$2,0 \cdot 10^{-3} U$	$2,1 \cdot 10^{-3} U$
AC - DC Voltage transfer	2 mV	30 Hz; 500 Hz	$2,0 \cdot 10^{-3} U$	$2,1 \cdot 10^{-3} U$
		1 kHz; 10 kHz; 20 kHz; 50 kHz	$2,0 \cdot 10^{-3} U$	$2,1 \cdot 10^{-3} U$
²⁾ Determination of the AC/DC difference of AC/DC voltage sources. Calibration of voltage calibrators	6 mV	70 kHz	$1,4 \cdot 10^{-3} U$	$1,4 \cdot 10^{-3} U$
		100 kHz	$2,4 \cdot 10^{-3} U$	$2,4 \cdot 10^{-3} U$
		200 kHz	$1,8 \cdot 10^{-3} U$	$1,8 \cdot 10^{-3} U$
		300 kHz	$3,5 \cdot 10^{-3} U$	$3,5 \cdot 10^{-3} U$
		500 kHz	$5,6 \cdot 10^{-3} U$	$5,6 \cdot 10^{-3} U$
		700 kHz	$3,5 \cdot 10^{-3} U$	$3,6 \cdot 10^{-3} U$
		800 kHz	$5,9 \cdot 10^{-3} U$	$5,9 \cdot 10^{-3} U$
		1 MHz	$6,3 \cdot 10^{-3} U$	$6,3 \cdot 10^{-3} U$
		10 Hz	$1,57 \cdot 10^{-3} U$	$1,57 \cdot 10^{-3} U$
		20 Hz; 30 Hz	$1,13 \cdot 10^{-3} U$	$1,14 \cdot 10^{-3} U$
6 mV	40 Hz	$1,13 \cdot 10^{-3} U$	$1,14 \cdot 10^{-3} U$	
	50 Hz; 70 Hz; 100 Hz	$1,13 \cdot 10^{-3} U$	$1,14 \cdot 10^{-3} U$	



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AC Voltage	6 mV	500 Hz; 1 kHz;	AC/DC transfer ²⁾	AC measure		
		10 kHz; 20 kHz;				
		50 kHz			$1,13 \cdot 10^{-3} U$	$1,14 \cdot 10^{-3} U$
		70 kHz; 100 kHz			$1,35 \cdot 10^{-3} U$	$1,36 \cdot 10^{-3} U$
		200 kHz			$1,75 \cdot 10^{-3} U$	$1,76 \cdot 10^{-3} U$
		300 kHz			$2,91 \cdot 10^{-3} U$	$2,91 \cdot 10^{-3} U$
		500 kHz			$3,11 \cdot 10^{-3} U$	$3,12 \cdot 10^{-3} U$
		700 kHz			$3,54 \cdot 10^{-3} U$	$3,54 \cdot 10^{-3} U$
		1 MHz			$3,67 \cdot 10^{-3} U$	$3,67 \cdot 10^{-3} U$
		* Calibration of voltage calibrators			10 mV	10 Hz
20 Hz; 40 Hz	$360 \cdot 10^{-6} U$		$360 \cdot 10^{-6} U$			
30 Hz; 500 Hz	$271 \cdot 10^{-6} U$		$280 \cdot 10^{-6} U$			
50 Hz; 70 Hz;	$353 \cdot 10^{-6} U$		$360 \cdot 10^{-6} U$			
100 Hz; 1 kHz;						
10 kHz; 20 kHz						
50 kHz	$378 \cdot 10^{-6} U$		$385 \cdot 10^{-6} U$			
70 kHz	$231 \cdot 10^{-6} U$		$245 \cdot 10^{-6} U$			
100 kHz	$626 \cdot 10^{-6} U$		$630 \cdot 10^{-6} U$			
200 kHz	$529 \cdot 10^{-6} U$		$535 \cdot 10^{-6} U$			
300 kHz	$963 \cdot 10^{-6} U$		$970 \cdot 10^{-6} U$			
500 kHz	$1,5 \cdot 10^{-3} U$		$1,5 \cdot 10^{-3} U$			
700 kHz	$1,2 \cdot 10^{-3} U$		$1,2 \cdot 10^{-3} U$			
800 kHz	$1,8 \cdot 10^{-3} U$		$1,8 \cdot 10^{-3} U$			
1 MHz	$1,9 \cdot 10^{-3} U$		$1,9 \cdot 10^{-3} U$			
20 mV	10 Hz	$361 \cdot 10^{-6} U$	$365 \cdot 10^{-6} U$			
	20 Hz	$251 \cdot 10^{-6} U$	$255 \cdot 10^{-6} U$			
	30 Hz; 500 Hz	$223 \cdot 10^{-6} U$	$230 \cdot 10^{-6} U$			



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AC Voltage	20 mV	40 Hz; 50 Hz, 70 Hz; 100 Hz; 1 kHz; 10 kHz; 20 kHz	214•10 ⁻⁶ U	220•10 ⁻⁶ U
		50 kHz	276•10 ⁻⁶ U	280•10 ⁻⁶ U
		70 kHz	370•10 ⁻⁶ U	375•10 ⁻⁶ U
		100 kHz	573•10 ⁻⁶ U	575•10 ⁻⁶ U
		300 kHz	915•10 ⁻⁶ U	920•10 ⁻⁶ U
		500 kHz	1,4•10 ⁻³ U	1,4•10 ⁻³ U
		700 kHz	1,04•10 ⁻³ U	1,04•10 ⁻³ U
		800 kHz	1,6•10 ⁻³ U	1,6•10 ⁻³ U
		1 MHz	1,7•10 ⁻³ U	1,7•10 ⁻³ U
		Calibration of voltage calibrators	60 mV	10 Hz
20 Hz; 30 Hz	206•10 ⁻⁶ U			210•10 ⁻⁶ U
40 Hz; 50 Hz; 70 Hz 100 Hz; 500 Hz				
1 kHz; 10 kHz; 20 kHz	151•10 ⁻⁶ U			155•10 ⁻⁶ U
50 kHz	206•10 ⁻⁶ U			210•10 ⁻⁶ U
70 kHz	342•10 ⁻⁶ U			345•10 ⁻⁶ U
100 kHz; 200 kHz	417•10 ⁻⁶ U			420•10 ⁻⁶ U
500 kHz	809•10 ⁻⁶ U			810•10 ⁻⁶ U
700 kHz; 800 kHz				
1 MHz	1,35•10 ⁻³ U			1,35•10 ⁻³ U
	100 mV	10 Hz	263•10 ⁻⁶ U	265•10 ⁻⁶ U
		20 Hz	115•10 ⁻⁶ U	115•10 ⁻⁶ U
		30 Hz	125•10 ⁻⁶ U	130•10 ⁻⁶ U



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AC Voltage	100 mV	40 Hz; 50 Hz;70 Hz;	AC/DC transfer ²⁾	AC measure		
		100 Hz; 500 Hz;				
		1 kHz; 10 kHz;			$68 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		20 kHz				
		50 kHz; 70 kHz			$127 \cdot 10^{-6} U$	$130 \cdot 10^{-6} U$
		100 kHz			$188 \cdot 10^{-6} U$	$190 \cdot 10^{-6} U$
		200 kHz			$357 \cdot 10^{-6} U$	$360 \cdot 10^{-6} U$
		300 kHz			$583 \cdot 10^{-6} U$	$585 \cdot 10^{-6} U$
		500 kHz			$748 \cdot 10^{-6} U$	$750 \cdot 10^{-6} U$
	700 kHz	$446 \cdot 10^{-6} U$	$450 \cdot 10^{-6} U$			
	800 kHz; 1 MHz	$752 \cdot 10^{-6} U$	$755 \cdot 10^{-6} U$			
	200 mV	10 Hz	$249 \cdot 10^{-6} U$	$250 \cdot 10^{-6} U$		
		20 Hz	$102 \cdot 10^{-6} U$	$105 \cdot 10^{-6} U$		
		30 Hz	$123 \cdot 10^{-6} U$	$125 \cdot 10^{-6} U$		
		40 Hz; 50 Hz;70 Hz;				
		100 Hz	$51 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$		
		500 Hz	$62 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$		
		1 kHz; 10 kHz;	$51 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$		
		20 kHz				
50 kHz; 70 kHz		$135 \cdot 10^{-6} U$	$135 \cdot 10^{-6} U$			
100 kHz		$187 \cdot 10^{-6} U$	$190 \cdot 10^{-6} U$			
* Calibration of voltage calibrators	200 kHz	$352 \cdot 10^{-6} U$	$355 \cdot 10^{-6} U$			
	300 kHz	$579 \cdot 10^{-6} U$	$580 \cdot 10^{-6} U$			
	500 kHz	$744 \cdot 10^{-6} U$	$745 \cdot 10^{-6} U$			
	700 kHz	$492 \cdot 10^{-6} U$	$495 \cdot 10^{-6} U$			
	800 kHz	$707 \cdot 10^{-6} U$	$710 \cdot 10^{-6} U$			
	1 MHz	$752 \cdot 10^{-6} U$	$755 \cdot 10^{-6} U$			



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AC Voltage Calibration of voltage calibrators	400 mV	10 Hz	AC/DC transfer ²⁾ $210 \cdot 10^{-6} U$	AC measure $210 \cdot 10^{-6} U$
		20 Hz; 30 Hz;	$60 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
		40 Hz; 50 Hz; 70 Hz		
		100 Hz; 500 Hz		
		1 kHz; 10 kHz		
		20 kHz	$37 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		50 kHz	$74 \cdot 10^{-6} U$	$75 \cdot 10^{-6} U$
		70 kHz	$110 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		100 kHz	$110 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		200 kHz	$310 \cdot 10^{-6} U$	$315 \cdot 10^{-6} U$
		300 kHz	$391 \cdot 10^{-6} U$	$395 \cdot 10^{-6} U$
		500 kHz	$417 \cdot 10^{-6} U$	$420 \cdot 10^{-6} U$
		700 kHz	$422 \cdot 10^{-6} U$	$425 \cdot 10^{-6} U$
		800 kHz	$420 \cdot 10^{-6} U$	$420 \cdot 10^{-6} U$
		1 MHz	$417 \cdot 10^{-6} U$	$420 \cdot 10^{-6} U$
	600 mV	10 Hz	$248 \cdot 10^{-6} U$	$250 \cdot 10^{-6} U$
		20 Hz	$88 \cdot 10^{-6} U$	$90 \cdot 10^{-6} U$
		30 Hz	$57 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
		40 Hz	$38 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		50 Hz; 70 Hz	$36 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		100 Hz	$32 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		500 Hz	$22 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		1 kHz; 10 kHz, 20 kHz	$32 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		50 kHz	$57 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
		70 kHz	$54 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		100 kHz	$75 \cdot 10^{-6} U$	$75 \cdot 10^{-6} U$
		200 kHz	$103 \cdot 10^{-6} U$	$105 \cdot 10^{-6} U$



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage	600 mV	300 kHz	240•10 ⁻⁶ U	245•10 ⁻⁶ U	
		500 kHz	532•10 ⁻⁶ U	535•10 ⁻⁶ U	
		700 kHz; 800 kHz	648•10 ⁻⁶ U	650•10 ⁻⁶ U	
		1 MHz	683•10 ⁻⁶ U	685•10 ⁻⁶ U	
	700 mV	1 V	10 Hz	147•10 ⁻⁶ U	150•10 ⁻⁶ U
			20 Hz	72•10 ⁻⁶ U	75•10 ⁻⁶ U
			30 Hz	62•10 ⁻⁶ U	65•10 ⁻⁶ U
			40 Hz	33•10 ⁻⁶ U	35•10 ⁻⁶ U
			50 Hz; 70 Hz; 100 Hz	31•10 ⁻⁶ U	35•10 ⁻⁶ U
			500 Hz; 1 kHz		
10 kHz; 20 kHz			22•10 ⁻⁶ U	25•10 ⁻⁶ U	
50 kHz			41•10 ⁻⁶ U	45•10 ⁻⁶ U	
70 kHz			52•10 ⁻⁶ U	55•10 ⁻⁶ U	
100 kHz			54•10 ⁻⁶ U	55•10 ⁻⁶ U	
Calibration of voltage calibrators	1 V	200 kHz	103•10 ⁻⁶ U	105•10 ⁻⁶ U	
		300 kHz	275•10 ⁻⁶ U	280•10 ⁻⁶ U	
		500 kHz	295•10 ⁻⁶ U	295•10 ⁻⁶ U	
		700 kHz	396•10 ⁻⁶ U	400•10 ⁻⁶ U	
		800 kHz; 1 MHz	394•10 ⁻⁶ U	395•10 ⁻⁶ U	
		10 Hz	242•10 ⁻⁶ U	245•10 ⁻⁶ U	
		20 Hz	79•10 ⁻⁶ U	80•10 ⁻⁶ U	
		30 Hz	72•10 ⁻⁶ U	75•10 ⁻⁶ U	
		40 Hz	41•10 ⁻⁶ U	45•10 ⁻⁶ U	
		50 Hz; 70 Hz	38•10 ⁻⁶ U	40•10 ⁻⁶ U	
1 V	1 V	100 Hz; 500 Hz;			
		1 kHz; 10 kHz; 20 kHz	26•10 ⁻⁶ U	30•10 ⁻⁶ U	
		50 kHz	52•10 ⁻⁶ U	55•10 ⁻⁶ U	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	1 V	70 kHz	$49 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		100 kHz	$68 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		200 kHz	$109 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		300 kHz	$230 \cdot 10^{-6} U$	$230 \cdot 10^{-6} U$
		500 kHz	$536 \cdot 10^{-6} U$	$540 \cdot 10^{-6} U$
		700 kHz	$341 \cdot 10^{-6} U$	$345 \cdot 10^{-6} U$
		800 kHz	$535 \cdot 10^{-6} U$	$535 \cdot 10^{-6} U$
	2 V	1 MHz	$569 \cdot 10^{-6} U$	$570 \cdot 10^{-6} U$
		10 Hz	$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$
		20 Hz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
		30 Hz	$72 \cdot 10^{-6} U$	$75 \cdot 10^{-6} U$
		40 Hz	$35 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		50 Hz; 70 Hz	$33 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		100 Hz	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		500 Hz	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		1 kHz; 10 kHz; 20 kHz	$19 \cdot 10^{-6} U$	$20 \cdot 10^{-6} U$
		50 kHz	$52 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		70 kHz	$48 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		100 kHz	$68 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		200 kHz	$104 \cdot 10^{-6} U$	$105 \cdot 10^{-6} U$
		300 kHz	$230 \cdot 10^{-6} U$	$230 \cdot 10^{-6} U$
		500 kHz	$536 \cdot 10^{-6} U$	$540 \cdot 10^{-6} U$
		700 kHz	$341 \cdot 10^{-6} U$	$345 \cdot 10^{-6} U$
		800 kHz	$557 \cdot 10^{-6} U$	$560 \cdot 10^{-6} U$
	1 MHz	$569 \cdot 10^{-6} U$	$570 \cdot 10^{-6} U$	
	3 V	10 Hz	$186 \cdot 10^{-6} U$	$190 \cdot 10^{-6} U$
		20 Hz	$63 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$
Calibration of voltage calibrators				



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage Calibration of voltage calibrators	3 V	30 Hz	$52 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		40 Hz; 50 Hz; 70 Hz	$27 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$
		100 Hz	$39 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		500 Hz; 1 kHz;	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		10 kHz; 20 kHz	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		50 kHz	$39 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		70 kHz	$50 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		100 kHz	$54 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		200 kHz	$94 \cdot 10^{-6} U$	$95 \cdot 10^{-6} U$
		300 kHz	$286 \cdot 10^{-6} U$	$290 \cdot 10^{-6} U$
		500 kHz	$306 \cdot 10^{-6} U$	$310 \cdot 10^{-6} U$
		700 kHz	$337 \cdot 10^{-6} U$	$340 \cdot 10^{-6} U$
		800 kHz	$345 \cdot 10^{-6} U$	$345 \cdot 10^{-6} U$
		1 MHz	$352 \cdot 10^{-6} U$	$355 \cdot 10^{-6} U$
	4 V	10 Hz	$228 \cdot 10^{-6} U$	$230 \cdot 10^{-6} U$
		20 Hz	$70 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		30 Hz	$54 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		40 Hz	$28 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$
		50 Hz; 70 Hz;	$27 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$
		100 Hz		
		1 kHz	$16 \cdot 10^{-6} U$	$20 \cdot 10^{-6} U$
		500 Hz; 10 kHz;	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		20 kHz		
		50 kHz	$39 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$
		70 kHz	$50 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		100 kHz	$54 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
		200 kHz	$94 \cdot 10^{-6} U$	$95 \cdot 10^{-6} U$
300 kHz	$286 \cdot 10^{-6} U$	$290 \cdot 10^{-6} U$		
500 kHz	$306 \cdot 10^{-6} U$	$310 \cdot 10^{-6} U$		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks			
Calibration of voltage calibrators	4 V	700 kHz	AC/DC transfer ²⁾ $337 \cdot 10^{-6} U$	<i>AC measure</i> $340 \cdot 10^{-6} U$			
		800 kHz	$345 \cdot 10^{-6} U$	$345 \cdot 10^{-6} U$			
		1 MHz	$352 \cdot 10^{-6} U$	$355 \cdot 10^{-6} U$			
	5 V	10 Hz	20 Hz	$283 \cdot 10^{-6} U$	$285 \cdot 10^{-6} U$		
			30 Hz	$80 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$		
			40 Hz	$56 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$		
			50 Hz	$30 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$		
			70 Hz; 100 Hz	$28 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$		
			500 Hz; 1 kHz;	$27 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$		
			10 kHz; 20 kHz				
			50 kHz	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$		
			70 kHz; 100 kHz	$35 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$		
			200 kHz	$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$		
			300 kHz	$94 \cdot 10^{-6} U$	$95 \cdot 10^{-6} U$		
			500 kHz	$286 \cdot 10^{-6} U$	$290 \cdot 10^{-6} U$		
			700 kHz	$306 \cdot 10^{-6} U$	$310 \cdot 10^{-6} U$		
			800 kHz	$337 \cdot 10^{-6} U$	$340 \cdot 10^{-6} U$		
			1 MHz	$345 \cdot 10^{-6} U$	$345 \cdot 10^{-6} U$		
			6 V	10 Hz	20 Hz	$352 \cdot 10^{-6} U$	$355 \cdot 10^{-6} U$
					30 Hz	$220 \cdot 10^{-6} U$	$220 \cdot 10^{-6} U$
	40 Hz	$70 \cdot 10^{-6} U$			$70 \cdot 10^{-6} U$		
	50 Hz; 70 Hz	$65 \cdot 10^{-6} U$			$65 \cdot 10^{-6} U$		
	100 Hz; 500 Hz	$29 \cdot 10^{-6} U$			$30 \cdot 10^{-6} U$		
	1 kHz; 10 kHz;	$28 \cdot 10^{-6} U$			$30 \cdot 10^{-6} U$		
	20 kHz						
					$15 \cdot 10^{-6} U$	$15 \cdot 10^{-6} U$	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	6 V	50 kHz	$47 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		70 kHz	$55 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
100 kHz		$60 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$	
200 kHz		$130 \cdot 10^{-6} U$	$130 \cdot 10^{-6} U$	
300 kHz		$140 \cdot 10^{-6} U$	$140 \cdot 10^{-6} U$	
500 kHz		$500 \cdot 10^{-6} U$	$500 \cdot 10^{-6} U$	
700 kHz; 800 kHz		$520 \cdot 10^{-6} U$	$520 \cdot 10^{-6} U$	
Calibration of voltage calibrators	7 V	1 MHz	$535 \cdot 10^{-6} U$	$535 \cdot 10^{-6} U$
		10 Hz	$404 \cdot 10^{-6} U$	$405 \cdot 10^{-6} U$
		20 Hz	$108 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		30 Hz	$63 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$
		40 Hz	$32 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		50 Hz	$28 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$
		70 Hz	$25 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		100 Hz	$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$
		500 Hz; 1 kHz		
		10 kHz; 20 kHz	$18 \cdot 10^{-6} U$	$20 \cdot 10^{-6} U$
		50 kHz	$32 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		70 kHz; 100 kHz	$42 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$
		200 kHz	$94 \cdot 10^{-6} U$	$95 \cdot 10^{-6} U$
	300 kHz	$286 \cdot 10^{-6} U$	$290 \cdot 10^{-6} U$	
	500 kHz	$306 \cdot 10^{-6} U$	$310 \cdot 10^{-6} U$	
	700 kHz; 800 kHz;			
	1 MHz	$337 \cdot 10^{-6} U$	$340 \cdot 10^{-6} U$	
	10 V	10 Hz	$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$
		20 Hz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
		30 Hz	$58 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
	40 Hz	$45 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage Calibration of voltage calibrators	10 V	50 Hz; 70 Hz	AC/DC transfer ²⁾ $44 \cdot 10^{-6} U$	AC measure $45 \cdot 10^{-6} U$	
		100 Hz	$37 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$	
		500 Hz	$27 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$	
		1 kHz; 10 kHz; 20 kHz	$29 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$	
		50 kHz	$52 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$	
		70 kHz	$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
		100 kHz	$64 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		200 kHz	$107 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$	
		300 kHz	$233 \cdot 10^{-6} U$	$235 \cdot 10^{-6} U$	
		500 kHz	$536 \cdot 10^{-6} U$	$540 \cdot 10^{-6} U$	
		700 kHz	$554 \cdot 10^{-6} U$	$555 \cdot 10^{-6} U$	
		800 kHz	$585 \cdot 10^{-6} U$	$585 \cdot 10^{-6} U$	
		1 MHz	$609 \cdot 10^{-6} U$	$610 \cdot 10^{-6} U$	
		20 V	10 Hz	$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$
	20 Hz		$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
	30 Hz		$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$	
	40 Hz		$40 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$	
	50 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
	70 Hz		$43 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
	100 Hz		$33 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$	
	500 Hz		$25 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$	
	1 kHz; 10 kHz; 20 kHz		$24 \cdot 10^{-6} U$	$25 \cdot 10^{-6} U$	
	50 kHz		$52 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$	
	20 V		70 kHz	$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$
			100 kHz	$64 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$
			200 kHz	$106 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		300 kHz	$233 \cdot 10^{-6} U$	$235 \cdot 10^{-6} U$	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	20 V	500 kHz	$536 \cdot 10^{-6} U$	$540 \cdot 10^{-6} U$
		700 kHz	$354 \cdot 10^{-6} U$	$355 \cdot 10^{-6} U$
800 kHz		$578 \cdot 10^{-6} U$	$580 \cdot 10^{-6} U$	
1 MHz		$617 \cdot 10^{-6} U$	$620 \cdot 10^{-6} U$	
Calibration of voltage calibrators	30 V	10 Hz	$187 \cdot 10^{-6} U$	$190 \cdot 10^{-6} U$
		20 Hz	$63 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$
		30 Hz	$59 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
		40 Hz; 50 Hz; 70 Hz		
	40 V	100 Hz	$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$
		500 Hz; 1 kHz;		
		10 kHz; 20 kHz	$30 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		50 kHz	$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
		70 kHz	$58 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
		100 kHz	$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		10 Hz	$270 \cdot 10^{-6} U$	$270 \cdot 10^{-6} U$
		20 Hz	$78 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
30 Hz		$62 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
40 Hz		$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$	
50 Hz; 70 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
100 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
500 Hz; 1 kHz;				
10 kHz; 20 kHz		$30 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$	
50 kHz		$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$	
70 kHz		$58 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$	
100 kHz	$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage	50 V	10 Hz	$286 \cdot 10^{-6} U$	$290 \cdot 10^{-6} U$	
		20 Hz	$82 \cdot 10^{-6} U$	$85 \cdot 10^{-6} U$	
30 Hz		$64 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$		
40 Hz		$46 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$		
50 Hz		$45 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
70 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
100 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
Calibration of voltage calibrators		60 V	500 Hz; 1 kHz; 10 kHz; 20 kHz	$30 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
			50 kHz	$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
			70 kHz	$58 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
	100 kHz		$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$	
	10 Hz		$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$	
	20 Hz		$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
	30 Hz		$68 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$	
	40 Hz		$40 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
	50 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
	70 Hz		$43 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
100 Hz	$36 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$			
500 Hz	$28 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$			
1 kHz; 10 kHz; 20 kHz	$29 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$			
50 kHz	$64 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$			
70 kHz	$55 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$			
100 kHz	$87 \cdot 10^{-6} U$	$90 \cdot 10^{-6} U$			



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	70 V	10 Hz	$416 \cdot 10^{-6} U$	$420 \cdot 10^{-6} U$
		20 Hz	$114 \cdot 10^{-6} U$	$115 \cdot 10^{-6} U$
30 Hz		$73 \cdot 10^{-6} U$	$75 \cdot 10^{-6} U$	
40 Hz		$51 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$	
50 Hz		$46 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$	
70 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
100 Hz		$43 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
500 Hz; 1 kHz;				
10 kHz; 20 kHz			$28 \cdot 10^{-6} U$	$30 \cdot 10^{-6} U$
Calibration of voltage calibrators		100 V	50 kHz	$43 \cdot 10^{-6} U$
	70 kHz		$55 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
	100 kHz		$66 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
	10 Hz		$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$
	20 Hz		$85 \cdot 10^{-6} U$	$85 \cdot 10^{-6} U$
	30 Hz		$60 \cdot 10^{-6} U$	$60 \cdot 10^{-6} U$
	40 Hz		$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
	50 Hz; 70 Hz		$44 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$
	100 Hz		$45 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$
	500 Hz		$32 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$
		1 kHz; 10 kHz;	$43 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$
		20 kHz		
		50 kHz	$85 \cdot 10^{-6} U$	$85 \cdot 10^{-6} U$
		70 kHz	$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$
		100 kHz	$96 \cdot 10^{-6} U$	$100 \cdot 10^{-6} U$



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks		
AC Voltage	200 V	10 Hz	$242 \cdot 10^{-6} U$	$245 \cdot 10^{-6} U$		
		20 Hz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$		
		30 Hz	$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$		
		40 Hz	$42 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
		50 Hz	$46 \cdot 10^{-6} U$	$50 \cdot 10^{-6} U$		
		70 Hz	$45 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
		100 Hz	$42 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$		
		500 Hz	$30 \cdot 10^{-6} U$	$35 \cdot 10^{-6} U$		
		1 kHz; 10 kHz; 20 kHz	$39 \cdot 10^{-6} U$	$40 \cdot 10^{-6} U$		
		50 kHz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$		
		70 kHz	$67 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$		
		100 kHz	$96 \cdot 10^{-6} U$	$100 \cdot 10^{-6} U$		
		Calibration of voltage calibrators	300 V	10 Hz	$164 \cdot 10^{-6} U$	$165 \cdot 10^{-6} U$
				20 Hz; 30 Hz	$77 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
40 Hz; 50 Hz; 70 Hz; 100 Hz; 500 Hz;						
1 kHz; 10 kHz; 20 kHz	$54 \cdot 10^{-6} U$			$55 \cdot 10^{-6} U$		
50 kHz	$65 \cdot 10^{-6} U$			$70 \cdot 10^{-6} U$		
70 kHz	$119 \cdot 10^{-6} U$			$120 \cdot 10^{-6} U$		
100 kHz	$145 \cdot 10^{-6} U$			$145 \cdot 10^{-6} U$		
500 V	10 Hz			$186 \cdot 10^{-6} U$	$190 \cdot 10^{-6} U$	
	20 Hz			$80 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
	30 Hz			$78 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	500 V	40 Hz; 50 Hz; 70 Hz	AC/DC transfer ²⁾	AC measure
		100 Hz; 500 Hz		
1 kHz; 10 kHz; 20 kHz		$42 \cdot 10^{-6} U$	$45 \cdot 10^{-6} U$	
50 kHz		$65 \cdot 10^{-6} U$	$70 \cdot 10^{-6} U$	
70 kHz		$119 \cdot 10^{-6} U$	$120 \cdot 10^{-6} U$	
100 kHz		$145 \cdot 10^{-6} U$	$145 \cdot 10^{-6} U$	
Calibration of voltage calibrators	600 V	10 Hz	$210 \cdot 10^{-6} U$	$210 \cdot 10^{-6} U$
		20 Hz	$83 \cdot 10^{-6} U$	$85 \cdot 10^{-6} U$
		30 Hz	$78 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
		40 Hz; 50 Hz; 70 Hz		
		100 Hz; 500 Hz		
		1 kHz; 10 kHz; 20 kHz	$55 \cdot 10^{-6} U$	$55 \cdot 10^{-6} U$
	700 V	50 kHz	$65 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$
		70 kHz	$119 \cdot 10^{-6} U$	$120 \cdot 10^{-6} U$
		100 kHz	$145 \cdot 10^{-6} U$	$145 \cdot 10^{-6} U$
		10 Hz	$240 \cdot 10^{-6} U$	$240 \cdot 10^{-6} U$
		20 Hz	$106 \cdot 10^{-6} U$	$110 \cdot 10^{-6} U$
		30 Hz	$100 \cdot 10^{-6} U$	$100 \cdot 10^{-6} U$
		40 Hz; 50 Hz; 70 Hz; 100 Hz		
		500 Hz; 1 kHz		
		10 kHz; 20 kHz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$
		50 kHz	$88 \cdot 10^{-6} U$	$90 \cdot 10^{-6} U$
		70 kHz	$119 \cdot 10^{-6} U$	$120 \cdot 10^{-6} U$
		100 kHz	$145 \cdot 10^{-6} U$	$145 \cdot 10^{-6} U$



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage	1000 V	10 Hz	$339 \cdot 10^{-6} U$	$340 \cdot 10^{-6} U$	
		20 Hz	$124 \cdot 10^{-6} U$	$125 \cdot 10^{-6} U$	
		30 Hz	$105 \cdot 10^{-6} U$	$105 \cdot 10^{-6} U$	
		40 Hz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		50 Hz; 70 Hz	$80 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
		100 Hz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		500 Hz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
		1 kHz; 10 kHz; 20 kHz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		50 kHz	$90 \cdot 10^{-6} U$	$90 \cdot 10^{-6} U$	
		70 kHz	$119 \cdot 10^{-6} U$	$120 \cdot 10^{-6} U$	
		100 kHz	$145 \cdot 10^{-6} U$	$145 \cdot 10^{-6} U$	
AC Voltage	1050 V ... 10000 V	50 Hz ... 60 Hz	$1,6 \cdot 10^{-3} U + 130 \text{ mV}$	AC measure	
	10 mV ... < 100 mV	30 Hz	$387 \cdot 10^{-6} U + 28 \mu\text{V}$		
400 Hz		$173 \cdot 10^{-6} U + 4 \mu\text{V}$			
1000 Hz		$174 \cdot 10^{-6} U + 4 \mu\text{V}$			
20 kHz		$534 \cdot 10^{-6} U + 4 \mu\text{V}$			
50 kHz		$1280 \cdot 10^{-6} U + 4 \mu\text{V}$			
0.1 V ... < 1 V		30 Hz	$326 \cdot 10^{-6} U + 30 \mu\text{V}$		
		400 Hz	$108 \cdot 10^{-6} U + 30 \mu\text{V}$		
		1000 Hz	$110 \cdot 10^{-6} U + 30 \mu\text{V}$		
		20 kHz	$516 \cdot 10^{-6} U + 30 \mu\text{V}$		
		50 kHz	$1270 \cdot 10^{-6} U + 30 \mu\text{V}$		
1 V ... < 10 V	30 Hz	$292 \cdot 10^{-6} U + 30 \mu\text{V}$			
	400 Hz	$89 \cdot 10^{-6} U + 30 \mu\text{V}$			
	1000 Hz	$91 \cdot 10^{-6} U + 30 \mu\text{V}$			
	20 kHz	$513 \cdot 10^{-6} U + 30 \mu\text{V}$			
	50 kHz	$1270 \cdot 10^{-6} U + 30 \mu\text{V}$			
Calibration of voltage calibrators	1000 V	10 Hz	$339 \cdot 10^{-6} U$	$340 \cdot 10^{-6} U$	
		20 Hz	$124 \cdot 10^{-6} U$	$125 \cdot 10^{-6} U$	
		30 Hz	$105 \cdot 10^{-6} U$	$105 \cdot 10^{-6} U$	
		40 Hz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		50 Hz; 70 Hz	$80 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
		100 Hz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		500 Hz	$79 \cdot 10^{-6} U$	$80 \cdot 10^{-6} U$	
		1 kHz; 10 kHz; 20 kHz	$60 \cdot 10^{-6} U$	$65 \cdot 10^{-6} U$	
		50 kHz	$90 \cdot 10^{-6} U$	$90 \cdot 10^{-6} U$	
		70 kHz	$119 \cdot 10^{-6} U$	$120 \cdot 10^{-6} U$	
Calibration of non-sinusoidal voltage (rms value)	10 mV ... < 100 mV	30 Hz	$387 \cdot 10^{-6} U + 28 \mu\text{V}$		
		400 Hz	$173 \cdot 10^{-6} U + 4 \mu\text{V}$		
		1000 Hz	$174 \cdot 10^{-6} U + 4 \mu\text{V}$		
		20 kHz	$534 \cdot 10^{-6} U + 4 \mu\text{V}$		
		50 kHz	$1280 \cdot 10^{-6} U + 4 \mu\text{V}$		
		0.1 V ... < 1 V	30 Hz	$326 \cdot 10^{-6} U + 30 \mu\text{V}$	
			400 Hz	$108 \cdot 10^{-6} U + 30 \mu\text{V}$	
			1000 Hz	$110 \cdot 10^{-6} U + 30 \mu\text{V}$	
			20 kHz	$516 \cdot 10^{-6} U + 30 \mu\text{V}$	
			50 kHz	$1270 \cdot 10^{-6} U + 30 \mu\text{V}$	
1 V ... < 10 V	30 Hz	$292 \cdot 10^{-6} U + 30 \mu\text{V}$			
	400 Hz	$89 \cdot 10^{-6} U + 30 \mu\text{V}$			
	1000 Hz	$91 \cdot 10^{-6} U + 30 \mu\text{V}$			
	20 kHz	$513 \cdot 10^{-6} U + 30 \mu\text{V}$			
	50 kHz	$1270 \cdot 10^{-6} U + 30 \mu\text{V}$			



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage Calibration of voltage measurement instruments	10 V ... < 100 V	30 Hz	$377 \cdot 10^{-6} U + 30 \mu\text{V}$		
		400 Hz	$237 \cdot 10^{-6} U + 30 \mu\text{V}$		
		1000 Hz	$238 \cdot 10^{-6} U + 30 \mu\text{V}$		
		20 kHz	$539 \cdot 10^{-6} U + 30 \mu\text{V}$		
		50 kHz	$1290 \cdot 10^{-6} U + 30 \mu\text{V}$		
	100 V ... 1000 V	30 Hz	$599 \cdot 10^{-6} U + 30 \mu\text{V}$		
		400 Hz	$486 \cdot 10^{-6} U + 30 \mu\text{V}$		
		1000 Hz	$487 \cdot 10^{-6} U + 30 \mu\text{V}$		
		20 kHz	$859 \cdot 10^{-6} U + 30 \mu\text{V}$		
		50 kHz	$1850 \cdot 10^{-6} U + 30 \mu\text{V}$		
	2,2 mV ... < 10 mV	10 Hz ... 20 Hz	$2,75 \cdot 10^{-3} U + 6 \mu\text{V}$		
		> 20 Hz ... 30 Hz	$1,19 \cdot 10^{-3} U + 6 \mu\text{V}$		
		> 30 Hz ... 40 Hz	$2,02 \cdot 10^{-3} U + 6 \mu\text{V}$		
		> 40 Hz ... 100 Hz	$2,02 \cdot 10^{-3} U + 3 \mu\text{V}$		
		> 100 Hz ... 500 Hz	$1,19 \cdot 10^{-3} U + 3 \mu\text{V}$		
		> 500 Hz ... 50 kHz	$2,02 \cdot 10^{-3} U + 3 \mu\text{V}$		
		> 50 kHz ... 70 kHz	$1,4 \cdot 10^{-3} U + 4 \mu\text{V}$		
		> 70 kHz ... 100 kHz	$2,39 \cdot 10^{-3} U + 4 \mu\text{V}$		
		> 100 kHz ... 200 kHz	$1,78 \cdot 10^{-3} U + 6 \mu\text{V}$		
		> 200 kHz ... 300 kHz	$3,47 \cdot 10^{-3} U + 6 \mu\text{V}$		
		> 300 kHz ... 500 kHz	$5,59 \cdot 10^{-3} U + 12 \mu\text{V}$		
		> 500 kHz ... 700 kHz	$3,51 \cdot 10^{-3} U + 18 \mu\text{V}$		
		> 700 kHz ... 800 kHz	$5,86 \cdot 10^{-3} U + 18 \mu\text{V}$		
		> 800 kHz ... 1 MHz	$6,21 \cdot 10^{-3} U + 18 \mu\text{V}$		
		10 mV ... < 22 mV	10 Hz ... 20 Hz	$409 \cdot 10^{-6} U + 6 \mu\text{V}$	
			> 20 Hz ... 30 Hz	$157 \cdot 10^{-6} U + 6 \mu\text{V}$	
			> 30 Hz ... 40 Hz	$360 \cdot 10^{-6} U + 6 \mu\text{V}$	
> 40 Hz ... 100 Hz	$360 \cdot 10^{-6} U + 3 \mu\text{V}$				
> 100 Hz ... 500 Hz	$279 \cdot 10^{-6} U + 3 \mu\text{V}$				



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage	10 mV ... < 22 mV	> 500 Hz ... 20 kHz	$360 \cdot 10^{-6} U + 3 \mu V$	
		> 20 kHz ... 50 kHz	$384 \cdot 10^{-6} U + 3 \mu V$	
> 50 kHz ... 70 kHz		$241 \cdot 10^{-6} U + 4 \mu V$		
> 70 kHz ... 100 kHz		$630 \cdot 10^{-6} U + 4 \mu V$		
> 100 kHz ... 200 kHz		$533 \cdot 10^{-6} U + 6 \mu V$		
> 200 kHz ... 300 kHz		$966 \cdot 10^{-6} U + 6 \mu V$		
> 300 kHz ... 500 kHz		$1,5 \cdot 10^{-3} U + 12 \mu V$		
> 500 kHz ... 700 kHz		$1,77 \cdot 10^{-6} U + 18 \mu V$		
> 700 kHz ... 800 kHz		$1,77 \cdot 10^{-3} U + 18 \mu V$		
> 800 kHz ... 1 MHz		$1,88 \cdot 10^{-3} U + 18 \mu V$		
Calibration of voltage measurement instruments	22 mV ... < 100 mV	10 Hz ... 20 Hz	$378 \cdot 10^{-6} U + 24 \mu V$	
		> 20 Hz ... 30 Hz	$226 \cdot 10^{-6} U + 18 \mu V$	
		> 30 Hz ... 40 Hz	$178 \cdot 10^{-6} U + 18 \mu V$	
		> 40 Hz ... 20 kHz	$152 \cdot 10^{-6} U + 3 \mu V$	
		> 20 kHz ... 50 kHz	$207 \cdot 10^{-6} U + 3 \mu V$	
		> 50 kHz ... 70 kHz	$343 \cdot 10^{-6} U + 3 \mu V$	
		> 70 kHz ... 100 kHz	$358 \cdot 10^{-6} U + 3 \mu V$	
		> 100 kHz ... 200 kHz	$418 \cdot 10^{-6} U + 5 \mu V$	
		> 200 kHz ... 300 kHz	$755 \cdot 10^{-6} U + 5 \mu V$	
		> 300 kHz ... 500 kHz	$817 \cdot 10^{-6} U + 12 \mu V$	
	> 500 kHz ... 1 MHz	$1,37 \cdot 10^{-3} U + 24 \mu V$		
	100 mV ... < 220 mV	10 Hz ... 20 Hz	$315 \cdot 10^{-6} U + 24 \mu V$	
		> 20 Hz ... 30 Hz	$156 \cdot 10^{-6} U + 18 \mu V$	
		> 30 Hz ... 40 Hz	$115 \cdot 10^{-6} U + 18 \mu V$	
		> 40 Hz ... 20 kHz	$70 \cdot 10^{-6} U + 3 \mu V$	
		> 20 kHz ... 70 kHz	$128 \cdot 10^{-6} U + 3 \mu V$	
		> 70 kHz ... 100 kHz	$189 \cdot 10^{-6} U + 3 \mu V$	
		> 100 kHz ... 200 kHz	$359 \cdot 10^{-6} U + 5 \mu V$	
> 200 kHz ... 300 kHz		$583 \cdot 10^{-6} U + 5 \mu V$		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage Calibration of voltage measurement instruments	100 mV ... < 220 mV	> 300 kHz...500 kHz	$757 \cdot 10^{-6} U + 12 \mu V$	
		> 500 kHz...700 kHz	$502 \cdot 10^{-6} U + 24 \mu V$	
		> 700 kHz ... 1 MHz	$786 \cdot 10^{-6} U + 24 \mu V$	
	220 mV ... < 1 V	10 Hz ... 20 Hz	$303 \cdot 10^{-6} U + 24 \mu V$	
		> 20 Hz ... 30 Hz	$110 \cdot 10^{-6} U + 18 \mu V$	
		> 30 Hz ... 40 Hz	$101 \cdot 10^{-6} U + 18 \mu V$	
		> 40 Hz ... 70 Hz	$41 \cdot 10^{-6} U + 7 \mu V$	
		> 70 Hz ... 100 Hz	$38 \cdot 10^{-6} U + 7 \mu V$	
		> 100 Hz ... 500 Hz	$30 \cdot 10^{-6} U + 7 \mu V$	
		> 500 Hz ... 20 kHz	$26 \cdot 10^{-6} U + 7 \mu V$	
		> 20 kHz ... 50 kHz	$66 \cdot 10^{-6} U + 13 \mu V$	
		> 50 kHz ... 70 kHz	$148 \cdot 10^{-6} U + 20 \mu V$	
		> 70 kHz ... 100 kHz	$156 \cdot 10^{-6} U + 20 \mu V$	
		> 100 kHz...200 kHz	$364 \cdot 10^{-6} U + 12 \mu V$	
		> 200 kHz...300 kHz	$417 \cdot 10^{-6} U + 12 \mu V$	
		> 300 kHz...500 kHz	$880 \cdot 10^{-6} U + 24 \mu V$	
		> 500 kHz ... 1 MHz	$1,51 \cdot 10^{-3} U + 58 \mu V$	
	1 V ... < 2,2 V	10 Hz ... 20 Hz	$298 \cdot 10^{-6} U + 24 \mu V$	
		> 20 Hz ... 30 Hz	$118 \cdot 10^{-6} U + 18 \mu V$	
		> 30 Hz ... 40 Hz	$100 \cdot 10^{-6} U + 18 \mu V$	
		> 40 Hz ... 70 Hz	$38 \cdot 10^{-6} U + 7 \mu V$	
		> 70 Hz ... 100 Hz	$29 \cdot 10^{-6} U + 7 \mu V$	
		> 100 Hz ... 500 Hz	$29 \cdot 10^{-6} U + 7 \mu V$	
		> 500 Hz ... 20 kHz	$26 \cdot 10^{-6} U + 7 \mu V$	
		> 20 kHz ... 50 kHz	$66 \cdot 10^{-6} U + 13 \mu V$	
		> 50 kHz ... 70 kHz	$147 \cdot 10^{-6} U + 20 \mu V$	
		> 70 kHz ... 100 kHz	$156 \cdot 10^{-6} U + 20 \mu V$	
> 100 kHz...200 kHz		$364 \cdot 10^{-6} U + 12 \mu V$		
> 200 kHz...300 kHz		$417 \cdot 10^{-6} U + 12 \mu V$		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage Calibration of voltage measurement instruments	1 V ... < 2,2 V	> 300 kHz...500 kHz	$880 \cdot 10^{-6} U + 24 \mu\text{V}$	
		> 500 kHz ... 1 MHz	$1,51 \cdot 10^{-3} U + 58 \mu\text{V}$	
	2,2 V ... < 10 V	10 Hz ... 20 Hz	$280 \cdot 10^{-6} U + 33 \mu\text{V}$	
		> 20 Hz ... 30 Hz	$114 \cdot 10^{-6} U + 29 \mu\text{V}$	
		> 30 Hz ... 40 Hz	$98 \cdot 10^{-6} U + 29 \mu\text{V}$	
		> 40 Hz ... 70 Hz	$34 \cdot 10^{-6} U + 36 \mu\text{V}$	
		> 70 Hz ... 20 kHz	$23 \cdot 10^{-6} U + 36 \mu\text{V}$	
		> 20 kHz ... 50 kHz	$61 \cdot 10^{-6} U + 59 \mu\text{V}$	
		> 50 kHz ... 70 kHz	$109 \cdot 10^{-6} U + 94 \mu\text{V}$	
		> 70 kHz ... 100 kHz	$111 \cdot 10^{-6} U + 94 \mu\text{V}$	
		> 100 kHz...200 kHz	$177 \cdot 10^{-6} U + 809 \mu\text{V}$	
		> 200 kHz...300 kHz	$184 \cdot 10^{-6} U + 809 \mu\text{V}$	
		> 300 kHz...500 kHz	$554 \cdot 10^{-6} U + 2 \text{ mV}$	
		> 500 kHz ... 1 MHz	$891 \cdot 10^{-6} U + 4 \text{ mV}$	
		10 V ... < 22 V	10 Hz ... 20 Hz	$298 \cdot 10^{-6} U + 33 \mu\text{V}$
	> 20 Hz ... 30 Hz		$115 \cdot 10^{-6} U + 29 \mu\text{V}$	
	> 30 Hz ... 40 Hz		$102 \cdot 10^{-6} U + 29 \mu\text{V}$	
	> 40 Hz ... 50 Hz		$48 \cdot 10^{-6} U + 36 \mu\text{V}$	
	> 50 Hz ... 70 Hz		$47 \cdot 10^{-6} U + 36 \mu\text{V}$	
	> 70 Hz ... 100 Hz		$38 \cdot 10^{-6} U + 36 \mu\text{V}$	
	> 100 Hz ... 500 Hz		$32 \cdot 10^{-6} U + 36 \mu\text{V}$	
	> 500 Hz ... 20 kHz		$31 \cdot 10^{-6} U + 36 \mu\text{V}$	
	> 20 kHz ... 50 kHz		$65 \cdot 10^{-6} U + 59 \mu\text{V}$	
	> 50 kHz ... 70 kHz		$104 \cdot 10^{-6} U + 94 \mu\text{V}$	
	> 70 kHz ... 100 kHz		$114 \cdot 10^{-6} U + 94 \mu\text{V}$	
	> 100 kHz...200 kHz		$161 \cdot 10^{-6} U + 809 \mu\text{V}$	
	> 200 kHz...300 kHz		$262 \cdot 10^{-6} U + 809 \mu\text{V}$	
> 300 kHz...500 kHz	$589 \cdot 10^{-6} U + 2 \text{ mV}$			
> 500 kHz...700 kHz	$798 \cdot 10^{-6} U + 4 \text{ mV}$			



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Voltage Calibration of voltage measurement instruments	10 V ... < 22 V	> 700 kHz...800 kHz	$919 \cdot 10^{-6} U + 4 \text{ mV}$	
		> 800 kHz ... 1 MHz	$944 \cdot 10^{-6} U + 4 \text{ mV}$	
	22 V ... < 100 V	10 Hz ... 20 Hz	$298 \cdot 10^{-6} U + 327 \mu\text{V}$	
		> 20 Hz ... 30 Hz	$116 \cdot 10^{-6} U + 289 \mu\text{V}$	
		> 30 Hz ... 40 Hz	$102 \cdot 10^{-6} U + 289 \mu\text{V}$	
		> 40 Hz ... 50 Hz	$49 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 50 Hz ... 70 Hz	$47 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 70 Hz ... 100 Hz	$41 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 100 Hz ... 500 Hz	$34 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 500 Hz ... 20 kHz	$35 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 20 kHz ... 50 kHz	$76 \cdot 10^{-6} U + 703 \mu\text{V}$	
		> 50 kHz ... 70 kHz	$109 \cdot 10^{-6} U + 4 \text{ mV}$	
	100 V ... < 220 V	> 70 kHz ... 100 kHz	$128 \cdot 10^{-6} U + 4 \text{ mV}$	
		10 Hz ... 20 Hz	$298 \cdot 10^{-6} U + 327 \mu\text{V}$	
		> 20 Hz ... 30 Hz	$115 \cdot 10^{-6} U + 289 \mu\text{V}$	
		> 30 Hz ... 40 Hz	$103 \cdot 10^{-6} U + 289 \mu\text{V}$	
		> 40 Hz ... 50 Hz	$50 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 50 Hz ... 70 Hz	$49 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 70 Hz ... 100 Hz	$47 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 100 Hz ... 500 Hz	$36 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 500 Hz ... 20 kHz	$44 \cdot 10^{-6} U + 359 \mu\text{V}$	
		> 20 kHz ... 50 kHz	$88 \cdot 10^{-6} U + 703 \mu\text{V}$	
	220 V ... < 500 V	> 50 kHz ... 70 kHz	$116 \cdot 10^{-6} U + 4 \text{ mV}$	
		> 70 kHz ... 100 kHz	$135 \cdot 10^{-6} U + 4 \text{ mV}$	
		10 Hz ... 20 Hz	$255 \cdot 10^{-6} U + 8 \text{ mV}$	
		> 20 Hz ... 30 Hz	$150 \cdot 10^{-6} U + 8 \text{ mV}$	
		> 30 Hz ... 50 Hz	$135 \cdot 10^{-6} U + 8 \text{ mV}$	
> 50 Hz ... 1 kHz		$61 \cdot 10^{-6} U + 1.5 \text{ mV}$		
> 1 kHz ... 20 kHz		$140 \cdot 10^{-6} U + 13 \text{ mV}$		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks	
AC Voltage Calibration of voltage measurement instruments	220 V ... < 500 V	> 20 kHz ... 50 kHz	$155 \cdot 10^{-6} U + 13 \text{ mV}$		
		> 50 kHz ... 70 kHz	$160 \cdot 10^{-6} U + 13 \text{ mV}$		
		> 70 kHz ... 100 kHz	$166 \cdot 10^{-6} U + 13 \text{ mV}$		
	500 V ... 1100 V	10 Hz ... 20 Hz	$380 \cdot 10^{-6} U + 9 \text{ mV}$		
		> 20 Hz ... 30 Hz	$158 \cdot 10^{-6} U + 9 \text{ mV}$		
		> 30 Hz ... 50 Hz	$150 \cdot 10^{-6} U + 9 \text{ mV}$		
		> 50 Hz ... 1 kHz	$84 \cdot 10^{-6} \cdot U + 1.5 \text{ mV}$		
		> 1 kHz ... 20 kHz	$150 \cdot 10^{-6} U + 9 \text{ mV}$		
		> 20 kHz ... 50 kHz	$165 \cdot 10^{-6} U + 9 \text{ mV}$		
		> 50 kHz ... 70 kHz	$205 \cdot 10^{-6} U + 9 \text{ mV}$		
1050 V – 10000 V	> 70 kHz ... 100 kHz	$240 \cdot 10^{-6} U + 9 \text{ mV}$			
AC Current Calibration of current calibrators	0,01 mA ... 1 mA	50 Hz ... 60 Hz	$1,7 \cdot 10^{-3} U + 140 \text{ mV}$	I=Measured value	
		> 20 Hz ... 40 Hz	20 Hz ... 40 Hz		$80 \cdot 10^{-6} I$
			> 40 Hz ... 5 kHz		$70 \cdot 10^{-6} I$
	> 5kHz ... 10kHz		$70 \cdot 10^{-6} I$		
	> 1 mA ... 10 mA	20 Hz ... 10 kHz	$70 \cdot 10^{-6} I$		
		> 40 Hz ... 5 kHz	$50 \cdot 10^{-6} I$		
		> 5kHz ... 10kHz	$50 \cdot 10^{-6} I$		
	> 10 mA ... 20 mA	20 Hz ... 10 kHz	$80 \cdot 10^{-6} I$		
		> 40 Hz ... 5 kHz	$70 \cdot 10^{-6} I$		
		> 5kHz ... 10kHz	$50 \cdot 10^{-6} I$		
	> 20 mA ... 50 mA	20 Hz ... 40 Hz	$80 \cdot 10^{-6} I$		
		> 40 Hz ... 5 kHz	$60 \cdot 10^{-6} I$		
		> 5kHz ... 10kHz	$60 \cdot 10^{-6} I$		
	> 50 mA ... 100 mA	20 Hz ... 40 Hz	$300 \cdot 10^{-6} I$		
		> 40 Hz ... 5 kHz	$290 \cdot 10^{-6} I$		
> 5kHz ... 10kHz		$50 \cdot 10^{-6} I$			



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Current Calibration of current calibrators	> 100 mA ... 200 mA	20 Hz ... 40 Hz	$170 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$160 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$160 \cdot 10^{-6}$ /	
	> 200 mA ... 500 mA	20 Hz ... 40 Hz	$110 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$100 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$90 \cdot 10^{-6}$ /	
	> 500 mA ... 1 A	20 Hz ... 40 Hz	$90 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$70 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$90 \cdot 10^{-6}$ /	
	> 1 A ... 2 A	20 Hz ... 40 Hz	$80 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$60 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$60 \cdot 10^{-6}$ /	
	> 2 A ... 5 A	20 Hz ... 40 Hz	$120 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$110 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$110 \cdot 10^{-6}$ /	
	> 5 A ... 10 A	20 Hz ... 40 Hz	$90 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$80 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$80 \cdot 10^{-6}$ /	
	> 10 A ... 20 A	20 Hz ... 40 Hz	$110 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$100 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$100 \cdot 10^{-6}$ /	
	> 20 A ... 50 A	20 Hz ... 40 Hz	$280 \cdot 10^{-6}$ /	
		> 40 Hz ... 5 kHz	$280 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$280 \cdot 10^{-6}$ /	
> 50 A ... 100 A	20 Hz ... 40 Hz	$210 \cdot 10^{-6}$ /		
	> 40 Hz ... 5 kHz	$210 \cdot 10^{-6}$ /		
	> 5 kHz ... 10 kHz	$210 \cdot 10^{-6}$ /		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Current	> 20 mA ... 30 mA	20 Hz ... 40 Hz	$140 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$70 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$240 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$760 \cdot 10^{-6}$ /	
	> 30 mA ... 50 mA	20 Hz ... 40 Hz	$140 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$80 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$190 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$660 \cdot 10^{-6}$ /	
	> 50 mA ... 100 mA	20 Hz ... 40 Hz	$130 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$70 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$140 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$580 \cdot 10^{-6}$ /	
	> 100 mA ... 200 mA	20 Hz ... 40 Hz	$310 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$300 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$310 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$550 \cdot 10^{-6}$ /	
	> 200 mA ... 300 mA	20 Hz ... 40 Hz	$140 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$140 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$230 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$1,22 \cdot 10^{-3}$ /	
Calibration of current measurement instruments	> 300 mA ... 500 mA	20 Hz ... 40 Hz	$140 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$130 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$200 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$1,12 \cdot 10^{-3}$ /	
	> 500 mA ... 1 A	20 Hz ... 40 Hz	$110 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$100 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$160 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$1,05 \cdot 10^{-3}$ /	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Current Calibration of current measurement instruments	> 1 A ... 2,2 A	20 Hz ... 40 Hz	$100 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$90 \cdot 10^{-6}$ /	
		> 1 kHz ... 5 kHz	$130 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$990 \cdot 10^{-6}$ /	
	> 2,2 A ... 3 A	20 Hz ... 5 kHz	$320 \cdot 10^{-6}$ /	
		> 5 kHz ... 10 kHz	$260 \cdot 10^{-6}$ /	
	> 3 A ... 5 A	20 Hz ... 40 Hz	$160 \cdot 10^{-6}$ /	
		> 40 Hz ... 10 kHz	$150 \cdot 10^{-6}$ /	
	> 5 A ... 10 A	20 Hz ... 40 Hz	$120 \cdot 10^{-6}$ /	
		> 40 Hz ... 1 kHz	$110 \cdot 10^{-6}$ /	
	> 10 A ... 20 A	> 1 kHz ... 10 kHz	$120 \cdot 10^{-6}$ /	
		20 Hz ... 40 Hz	$130 \cdot 10^{-6}$ /	
		> 40 Hz ... 10 kHz	$120 \cdot 10^{-6}$ /	
	> 20 A ... 100 A	10 Hz ... 850 Hz	$310 \cdot 10^{-6}$ /	
		> 850 Hz ... 3 kHz	$330 \cdot 10^{-6}$ /	
		> 3 kHz ... 9 kHz	$380 \cdot 10^{-6}$ /	
> 6 kHz ... 9 kHz		5,6 %		
> 100 A ... 240 A	10 Hz ... 850 Hz	$310 \cdot 10^{-6}$ /		
	> 850 Hz ... 6 kHz	$320 \cdot 10^{-6}$ /		
AC Current	> 50 A ... 500 A	10 Hz ... 1 kHz	0,55 %	
Calibration of current clamps	> 50 A ... 300 A	> 1 kHz ... 3 kHz	0,55 %	
	> 500 A ... 3000 A	10 Hz ... 300 Hz	0,55 %	
	> 500 A ... 1000 A	300 Hz ... 1 kHz	0,55 %	
Calibration of rogowski coils	100 A ... 1000 A	10 Hz ... 850 Hz	0,55 %	
		> 850 Hz ... 3 kHz	0,55 %	
		> 3 kHz ... 6 kHz	0,55 %	
	100 A ... 650 A	> 6 kHz ... 10 kHz	10,7 %	
	> 1 kA ... 6 kA	10 Hz ... 600 Hz	0,65 %	
	> 1 kA ... 5,75 kA	> 600 Hz ... 1 kHz	0,65 %	
	> 1 kA ... 4,6 kA	> 1 kHz ... 3 kHz	0,65 %	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
AC Current	> 1 kA ... 1,25 kA	> 3 kHz ... 6 kHz	0,65 %	
AC Power		cos φ (c, i)		
50 ... 60 Hz		[°]		
Calibration of power measurement instruments	10 mW ... 50,4 kW	0	$613 \cdot 10^{-6} P$	Uncertainty related to active power P=Measured value
	1 V ... 1008 V	15	$615 \cdot 10^{-6} P$	
	0,01 A ... 50 A	30	$622 \cdot 10^{-6} P$	
		45	$638 \cdot 10^{-6} P$	
		60	$684 \cdot 10^{-6} P$	
		75	$895 \cdot 10^{-6} P$	
		85	$2087 \cdot 10^{-6} P$	
	0,08 W ... 50,4 kW	0	$118 \cdot 10^{-6} P$	
	9,2 V ... 1008 V	15	$118 \cdot 10^{-6} P$	
	0,1 A ... 50 A	30	$120 \cdot 10^{-6} P$	
		45	$125 \cdot 10^{-6} P$	
		60	$137 \cdot 10^{-6} P$	
		75	$191 \cdot 10^{-6} P$	
		85	$474 \cdot 10^{-6} P$	
Phase angle	φ	U_{AC}:10 V... 1008 V I_{AC} :0.05 A ... 5 A Frequency:		
	0,00° ... 360°	16 ... <45 Hz	0,0033°	
	0,00° ... 360°	45 ... 65 Hz	0,0026°	
Calibration of phase meters	0,00° ... 360°	>65 ... 69 Hz	0,0033°	
	0,00° ... 360°	> 69 ... 180 Hz	0,0071°	
	0,00° ... 360°	> 180 ... 450 Hz	0,018°	
	0,00° ... 360°	> 450 ... 850 Hz	0,033°	
	0,00° ... 360°	> 0,85 ... 3 kHz	0,120°	
	0,00° ... 360°	> 3 kHz ... 6kHz	0,230°	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
Phase angle Calibration of phase meters	φ	U_{AC}: 0.115 V... 1008 V I_{AC}: 1.25 mA ... 50 A Frequency:		
	0,00° ... 360°	16 ... 69	0,010°	
	0,00° ... 360°	> 69 ... 180	0,017°	
	0,00° ... 360°	> 180 ... 450	0,050°	
	0,00° ... 360°	> 450 ... 850	0,070°	
	0,00° ... 360°	> 850 ... 3 kHz	0,20°	
Phase angle Calibration of phase meters	φ	U_{AC1}: 10 V... 1008 V U_{AC2} : 50 mV ... 10 V Frequency:		
	0,00° ... 360°	16 Hz ... < 45 Hz	0,0033°	
	0,00° ... 360°	45 Hz ... 65 Hz	0,0026°	
	0,00° ... 360°	> 65 Hz ... 69 Hz	0,0033°	
	0,00° ... 360°	> 69 ... 180	0,0071°	
	0,00° ... 360°	> 180 ... 450	0,018°	
Phase angle Calibration of phase meters	φ	U_{AC1}: 0.115 V... 1008 V U_{AC2} : 1.25 mV ... 10 V Frequency:		
	0,00° ... 360°	16 Hz ... < 69 Hz	0,010°	
	0,00° ... 360°	> 69 ... 180	0,017°	
	0,00° ... 360°	> 180 ... 450	0,050°	
	0,00° ... 360°	> 450 ... 850	0,070°	
	0,00° ... 360°	> 850 ... 3 kHz	0,20°	
0,00° ... 360°	> 3 kHz ... 6 kHz	0,45°		



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
Phase angle	φ	U_{AC}		
Calibration of phase meters. Same signal on both inputs.	0°	0,01 V ... 0,1 V 10 Hz ... 50 kHz	0,0020°	
	0°	0,01 V ... 0,1 V 50 kHz ... 100 kHz	0,0022°	
	0°	>0,1 V ... 1000 V 10 Hz ... 50 kHz	0,0012°	
	0°	>0,1 V ... 1000 V 50 kHz ... 100 kHz	0,0020°	
Measurement of phase	0° ... 360°	0,1 V ... 10 V 50 Hz ... 60 Hz	0,065°	Same signals
Capacitance				
Calibration of capacitances and measurement instruments	10 pF; 100 pF; 1000 pF	1 kHz	105•10 ⁻⁶ C	Only fix values
	10 nF; 100 nF; 1 μF; 10 μF	1 kHz	370•10 ⁻⁶ C	C=Measured value
	10 pF ... < 100 pF	1 kHz	2,55•10 ⁻³ C	
	100 pF ... < 1 nF	1 kHz	520•10 ⁻⁶ C	
	1 nF ... < 6.4 nF	1 kHz	310•10 ⁻⁶ C	
	6.4 nF ... < 100 nF	1 kHz	700•10 ⁻⁶ C	
	100 nF ... < 1.6 μF	1 kHz	760•10 ⁻⁶ C	
	1,6 μF ... < 100 μF	1 kHz	580•10 ⁻⁶ C	
Calibration of capacitances.	220 μF ... 110 mF		845•10 ⁻⁶ C	Constant current charging/discharging method.
Inductance				
Calibration of inductances	50 μH	1 kHz	2,2•10 ⁻³ L	Only fix values
	100 μH	1 kHz	1,4•10 ⁻³ L	
	500 μH	1 kHz	425•10 ⁻⁶ L	L=Measured value
	1 mH	1 kHz	380•10 ⁻⁶ L	
	5 mH	1 kHz	300•10 ⁻⁶ L	
Calibration of inductances	10 mH	1 kHz	290•10 ⁻⁶ L	
	50 mH; 100 mH; 500 mH; 1 H; 5 H; 10 H	1 kHz	280•10 ⁻⁶ L	
	50 μH	1 kHz	2,51•10 ⁻³ L	Only fix values



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
Calibration of inductance measurement instruments	100 μ H	1 kHz	$1,2 \cdot 10^{-3} L$	
	500 μ H	1 kHz	$520 \cdot 10^{-6} L$	
	1 mH	1 kHz	$380 \cdot 10^{-6} L$	
	5 mH	1 kHz	$300 \cdot 10^{-6} L$	
Inductance	10 mH	1 kHz	$210 \cdot 10^{-6} L$	
Calibration of inductance measurement instruments	50 mH; 100 mH; 500 mH; 1 H; 5 H; 10 H	1 kHz	$285 \cdot 10^{-6} L$	
Frequency				
Calibration of frequency counters	10 Hz ... 4 GHz		$2,1 \cdot 10^{-12} f$	Measurement duration 24 h Amplitude 100 mV ... 1 V
Calibration of frequency generators	10 MHz		$1,16 \cdot 10^{-12} f$	Measurement duration 24 h Amplitude 30 mV ... 5 V
	100 kHz ... < 1 MHz		$13 \cdot 10^{-12} f + 10 \mu\text{Hz}$	
	1 MHz ... < 10 MHz		$13 \cdot 10^{-12} f + 100 \mu\text{Hz}$	
	10 MHz ... < 100 MHz		$13 \cdot 10^{-12} f + 1 \text{ mHz}$	
	100 MHz ... < 2,7 GHz		$13 \cdot 10^{-12} f + 10 \text{ mHz}$	
Time interval				
	10 μ s ... < 100 μ s		$12 \cdot 10^{-12} f + 587 \text{ ps}$	Amplitude 30 mV ... 5 V
	100 μ s ... < 1 ms		$12 \cdot 10^{-12} f + 587 \text{ ps}$	
	1 ms ... < 10 ms		$12 \cdot 10^{-12} f + 587 \text{ ps}$	
	10 ms ... < 100 ms		$12 \cdot 10^{-12} f + 587 \text{ ps}$	
	100 ms ... 1 s		$12 \cdot 10^{-12} f + 587 \text{ ps}$	
Revolution				
	0,6 ... 100 min^{-1}		$1,0 \cdot 10^{-6} n + 0,03 \text{ min}^{-1}$	Optical n=Measured value
	100 ... 1000 min^{-1}		$1,0 \cdot 10^{-6} n + 0,11 \text{ min}^{-1}$	
	1000 ... 10000 min^{-1}		$1,0 \cdot 10^{-6} n + 0,34 \text{ min}^{-1}$	
	10 ... 100 kmin^{-1}		$1,0 \cdot 10^{-6} n + 1,1 \text{ min}^{-1}$	
Calibration of oscilloscopes				
Square wave signal amplitude	1 mV ... 25 mV	1 kHz	$0,3 \cdot 10^{-3} U + 30 \mu\text{V}$	Into 1 M Ω
	> 25 mV ... 110 mV	1 kHz	$0,3 \cdot 10^{-3} U + 30 \mu\text{V}$	
	> 110 mV ... 2,2 V	1 kHz	$0,3 \cdot 10^{-3} U + 30 \mu\text{V}$	
	> 2,2 V ... 11 V	1 kHz	$0,3 \cdot 10^{-3} U + 31 \mu\text{V}$	
	> 11 V ... 130 V	1 kHz	$0,3 \cdot 10^{-3} U + 302 \mu\text{V}$	



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
Time marker	1 mV ... 25 mV	1 kHz	$2,9 \cdot 10^{-3} U + 47 \mu V$	Into 50 Ω
	> 25 mV ... 110 mV	1 kHz	$2,9 \cdot 10^{-3} U + 47 \mu V$	
	> 110 mV ... 2,2 V	1 kHz	$2,9 \cdot 10^{-3} U + 47 \mu V$	
	> 2,2 V ... 6,6 V	1 kHz	$2,9 \cdot 10^{-3} U + 47 \mu V$	
	0,5 ns ... 10 μs		$0,38 \cdot 10^{-6} t + 29 ps$	t=Measured value
	20 μs ... 1 ms		$0,38 \cdot 10^{-6} t + 0,69 ns$	
	2 ms ... 10 ms		$0,38 \cdot 10^{-6} t + 1,9 ns$	
	20 ms		$0,38 \cdot 10^{-6} t + 3,5 ns$	
Risettime of oscilloscopes	150 ... < 300 ps		33,5 % + 23 ps	Calibrator: tr=12.8 ps \pm 17,3ps
	0.3 ... 1000 ns		4,5 % + 23 ps	
Risettime of pulsgenerators	150 ... <300 ps 0.3 ... 1000 ns	50 mVpp ... 3,5 Vpp 50 mVpp ... 3,5 Vpp	6,09 % + 16 ps 2,84 % + 16 ps	Oszilloscope: tr = 78.6 ps \pm 3,3 ps
Calibration of flatness of oscilloscopes	5 mVpp ... 5 Vpp	50 kHz ... 100 MHz	4,9 % + 300 μV	Unit under test: 50 Ω : VSWR \leq 1,5 calibrated to U _{INC}
		>100MHz...300MHz	5,4 % + 300 μV	
		>300MHz...500MHz	6,6 % + 300 μV	
	5 mVpp ... 3.5 Vpp	>500MHz...600MHz	7,0 % + 300 μV	
		>600MHz...1,6GHz	8,5 % + 300 μV	
		>1,6 GHz...2,1 GHz	9,5 % + 300 μV	
Calibration of flatness of oscilloscopes	5 mVpp ... 5 Vpp	50 kHz ... 100 MHz	7,0 % + 300 μV	Unit under test: 1 M Ω : C _{IN} \leq 10 pF calibrated to U _{Last}
		>100MHz...200MHz	13,5 % + 300 μV	
RF Amplitude Calibration of oscilloscope Calibrators	2 mVrms ... 5 Vrms	9 kHz ... 4 GHz	2,8 % + 210 pV	VSWR < 1,2 N Connector
	2 mVrms ... 5 Vrms	9 kHz ... 4 GHz	3,7 % + 210 pV	VSWR < 1,35 BNC Connector



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Measured Quantity / Instrument or Gauge	Measurement Range	Measurement Conditions	Best Measurement Uncertainty \pm ¹⁾	Remarks
RF Power	10 nW ... 63 mW	9 kHz ... 4 GHz	5,04 % + 130 pW	VSWR < 1,2 N Stecker
RF Power	1 μ W ... 100 mW	9 kHz ... 4 GHz	1,9 % + 37 nW	VSWR < 2
Calibration of RF Sources		> 4 GHz ... 9 GHz	2,7 % ... 37 nW	9kHz ... 33 GHz: 3,5 mm Connector
		> 9 GHz ... 25 GHz	5,2 % + 37 nW	
		> 25 GHz ...35 GHz	8,8 % + 37 nW	9kHz ... 40 GHz: 2,92 mm Connector
	> 35 GHz ...40 GHz	5,3 % ... 37 nW		
RF Power	1,26 μ W...50,12mW	9 kHz ... 2 GHz	2,4 % + 37 nW	VSWR < 1,25 2,92 mm Stecker oder 3,5 mm Stecker
Calibration of RF Power Sensors		> 2 GHz ... 8 GHz	2,5 % + 37 nW	
		> 8 GHz ... 12 GHz	2,9 % + 37 nW	
		> 12 GHz ...17 GHz	3,0 % + 37 nW	
		> 17 GHz ...24 GHz	2,8 % + 37 nW	
		> 24 GHz ...27 GHz	3,2 % + 37 nW	
Calibration of Flickemeter	P _{st} : 1, 2, 3	120 V / 230 V 50 Hz / 60 Hz 1 – 4800 CPM	0,29%	IEC 61000-4-15, Tab. 5 Ed. 2.0, 2010

The dimensionless parts of the measurement uncertainty are relative values, referred to the measured value.

In case of contradictions in the language versions of the directories, the German version shall apply.

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