



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

Internationale Norm: ISO/IEC 17025:2005
Schweizer Norm: SN EN ISO/IEC 17025:2005

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(Akkreditierte Stellen)

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Kalibrierlaboratorium für elektrische Messgrößen

Kalibrier- und Messmöglichkeiten (CMC)

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|------------------------|-----------------|---|-------------|
| Kalibrieren von Spannungsmessge- räten | 3 μ V ... < 0,22 V | | 4.7•10 ⁻⁶ + 0,7 μ V | |
| | 0,1 V | | 5.0•10 ⁻⁶ | |
| | 0,22 V ... < 2,2 V | | 3.5•10 ⁻⁶ + 1,2 μ V | |
| | 1 V | | 1,2•10 ⁻⁶ | |
| | 2,2 V ... < 11 V | | 1.8•10 ⁻⁶ + 6,0 μ V | |
| | 10 V | | 0,5•10 ⁻⁶ | |
| | 11 V ... < 22 V | | 1.8•10 ⁻⁶ + 9,5 μ V | |
| | 22 V ... < 275 V | | 3.0•10 ⁻⁶ + 120 μ V | |
| | 100 V | | 1,1•10 ⁻⁶ | |
| | 275 V ... 1100 V | | 3,0•10 ⁻⁶ + 465 μ V | |
| | 1000 V | | 1,1•10 ⁻⁶ | |



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|-------------------------------------|---------------------------------------|------------------------|---|---------------------------------|--|
| Gleichspannung | 3 μ V ... < 0,12 V | | $3,5 \cdot 10^{-6} + 0,6 \mu$ V | | |
| | 0,1 V | | $1,5 \cdot 10^{-6} + 0,4 \mu$ V | | |
| | 0,12 V ... < 1,2 V | | $2,0 \cdot 10^{-6} + 0,6 \mu$ V | | |
| | Kalibrieren von Spannungskalibratoren | 1 V | | $1,0 \cdot 10^{-6} + 0,4 \mu$ V | |
| | | 1,2 V ... < 12 V | | $1,0 \cdot 10^{-6} + 0,6 \mu$ V | |
| | | 10 V | | $0,5 \cdot 10^{-6}$ | |
| | | 12 V ... < 120 V | | $3,0 \cdot 10^{-6} + 70 \mu$ V | |
| | | 120 V ... 1050 V | | $3,5 \cdot 10^{-6} + 300 \mu$ V | |
| | 100 V | | $1,0 \cdot 10^{-6} + 55 \mu$ V | | |
| | 1000 V | | $2,0 \cdot 10^{-6} + 280 \mu$ V | | |
| Gleichstrom | 0,1 μ A ... 1 μ A | | $116 \cdot 10^{-6} + 1,2$ nA | | |
| | > 1 μ A ... 10 μ A | | $14 \cdot 10^{-6} + 1,2$ nA | | |
| | > 10 μ A ... 100 μ A | | $6,8 \cdot 10^{-6} + 1,2$ nA | | |
| | Kalibrieren von Strommessgeräten | > 100 μ A ... 1 mA | | $7,1 \cdot 10^{-6} + 8,2$ nA | |
| | | > 1 mA ... 10 mA | | $6,7 \cdot 10^{-6} + 58$ nA | |
| | | > 10 mA ... 100 mA | | $11 \cdot 10^{-6} + 350$ nA | |
| | | > 100 mA ... 2 A | | $21 \cdot 10^{-6} + 15 \mu$ A | |
| | | > 2 A ... 10 A | | $35 \cdot 10^{-6} + 120 \mu$ A | |
| | | > 10 A ... 20 A | | $65 \cdot 10^{-6} + 120 \mu$ A | |
| | | > 20 A ... 200 A | | $151 \cdot 10^{-6} + 2,32$ mA | |
| Kalibrieren von Zangenstromwandlern | 50 A ... 500 A | | 1.00 % | | |
| | 500 A ... 2500 A | | 0.90 % | | |
| Kalibrieren von Stromkalibratoren | 0,1 μ A ... 1 μ A | | $116 \cdot 10^{-6} + 0,52$ pA | | |
| | > 1 μ A ... 10 μ A | | $13 \cdot 10^{-6} + 5,7$ pA | | |
| | > 10 μ A ... 100 μ A | | $3,6 \cdot 10^{-6} + 52$ pA | | |
| | > 100 μ A ... 1 mA | | $4,2 \cdot 10^{-6} + 0,52$ nA | | |
| | > 1 mA ... 10 mA | | $3,4 \cdot 10^{-6} + 5,2$ nA | | |
| | > 10 mA ... 100 mA | | $4,7 \cdot 10^{-6} + 52$ nA | | |
| | > 100 mA ... 1 A | | $19 \cdot 10^{-6} + 0,52 \mu$ A | | |



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| Gleichstrom | > 1 A ... 3 A | | $18 \cdot 10^{-6} + 5,2 \mu\text{A}$ | |
| Kalibrieren von Stromkalibratoren | > 3 A ... 10 A | | $25 \cdot 10^{-6} + 52 \mu\text{A}$ | |
| | > 10 A ... 20 A | | $62 \cdot 10^{-6} + 52 \mu\text{A}$ | |
| | > 20 A ... 200 A | | $140 \cdot 10^{-6} + 520 \mu\text{A}$ | |
| | > 200 A ... 600 A | | $420 \cdot 10^{-6} + 5,2 \text{mA}$ | |
| | Gleichstromleis- tung | 0,22 μW ... 22 kW | 0,1 V ... 1100 V | |
| Kalibrieren von Leistungsmessge- räten | | 2,2 μA ... 10 μA | $540 \cdot 10^{-6}$ | |
| | | > 10 μA ... 22 μA | $130 \cdot 10^{-6}$ | |
| | | > 22 μA ... 100 μA | $62 \cdot 10^{-6}$ | |
| | | > 100 μA ... 220 μA | $91 \cdot 10^{-6}$ | |
| | | > 220 μA ... 1 mA | $47 \cdot 10^{-6}$ | |
| | | > 1 mA ... 2.2 mA | $67 \cdot 10^{-6}$ | |
| | | > 2.2 mA ... 10 mA | $37 \cdot 10^{-6}$ | |
| | | > 10 mA ... 22 mA | $48 \cdot 10^{-6}$ | |
| | | > 22 mA ... 100 mA | $31 \cdot 10^{-6}$ | |
| | | > 100 mA ... 220 mA | $154 \cdot 10^{-6}$ | |
| | | > 220 mA ... 1 A | $83 \cdot 10^{-6}$ | |
| | | > 1 A ... 2,2 A | $37 \cdot 10^{-6}$ | |
| | | > 2,2 A ... 20 A | $89 \cdot 10^{-6}$ | |
| | Kalibrieren von Leistungskalibrato- ren | 0,01 μW ... 22 kW | 0,1 V ... 1100 V | |
| 0,1 μA ... 1 μA | | | $125 \cdot 10^{-6}$ | |
| > 1 μA ... 10 μA | | | $20 \cdot 10^{-6}$ | |
| > 10 μA ... 100 mA | | | $15 \cdot 10^{-6}$ | |
| > 100 mA ... 3 A | | | $25 \cdot 10^{-6}$ | |
| > 3 A ... 10 A | | | $45 \cdot 10^{-6}$ | |
| | | > 10 A ... 20 A | $70 \cdot 10^{-6}$ | |



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|--|-------------------------------|----------------------|---|---|----------------------|
| Gleichstromwider- stand Kalibrieren von Wi- derstandsmessge- räten | 0,1 m Ω | Messspannung [V] | 19•10 ⁻⁶ | Die angegebenen Messunsicherheiten gelten für dekadi- sche Werte | |
| | 1 m Ω | | 19•10 ⁻⁶ | | |
| | 0,01 Ω | | 20•10 ⁻⁶ | | |
| | 0,1 Ω | | 7,2•10 ⁻⁶ | | |
| | 1 Ω | | 3,6•10 ⁻⁶ | | |
| | 10 Ω ; 100 Ω | | 2,5•10 ⁻⁶ | | |
| | 1 k Ω | | 2,0•10 ⁻⁶ | | |
| | 10 k Ω | | 1,3•10 ⁻⁶ | | |
| | 100 k Ω ; 1 M Ω | | 4,2•10 ⁻⁶ | | |
| | 10 M Ω | | 8,4•10 ⁻⁶ | | |
| | 100 M Ω | | 7,7•10 ⁻⁶ | | |
| | 1 G Ω | | 10 ... 100 | | 91•10 ⁻⁶ |
| | 10 G Ω | | 10 | | 160•10 ⁻⁶ |
| | 10 G Ω | | 100 ... 500 | | 120•10 ⁻⁶ |
| | 100 G Ω | | 10 | | 150•10 ⁻⁶ |
| | 100 G Ω | | 100 ... 500 | | 110•10 ⁻⁶ |
| | 1 T Ω | | 50 | | 190•10 ⁻⁶ |
| | 1 T Ω | | 100 ... 500 | | 190•10 ⁻⁶ |
| | 10 T Ω | | 100 | | 2,3•10 ⁻³ |
| 10 T Ω | 300 | 610•10 ⁻⁶ | | | |
| 10 T Ω | 500 | 610•10 ⁻⁶ | | | |
| 10 T Ω | 1000 | 320•10 ⁻⁶ | | | |
| 100 T Ω | 100 ... 900 | 2,6•10 ⁻³ | | | |
| Kalibrieren von Widerständen | 0,1 m Ω | | 77•10 ⁻⁶ | Die angegebenen Messunsicherheiten gelten für dekadi- sche Werte | |
| | 1 m Ω | | 33•10 ⁻⁶ | | |
| | 0,01 Ω | | 34•10 ⁻⁶ | | |
| | 0,1 Ω ; 1 Ω | | 20•10 ⁻⁶ | | |
| | 10 Ω | | 4,2•10 ⁻⁶ | | |
| | 100 Ω | | 1,7•10 ⁻⁶ | | |
| | 1 k Ω | | 2,3•10 ⁻⁶ | | |



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|--|------------------------------------|--|---|----------------------|
| Kalibrieren von nicht dekadischen Widerständen | 10 k Ω | | 2,2•10 ⁻⁶ | |
| | 100 k Ω | | 4,6•10 ⁻⁶ | |
| | 1 M Ω | | 3,3•10 ⁻⁶ | |
| | 10 M Ω | | 9,1•10 ⁻⁶ | |
| | 100 M Ω | | 21•10 ⁻⁶ | |
| | 1 G Ω | | 120•10 ⁻⁶ | |
| | 10 G Ω | | 980•10 ⁻⁶ | |
| | 0,01 Ω ... < 2 Ω | | 6,6•10 ⁻⁶ +3,0 $\mu\Omega$ | |
| | 2 Ω ... < 20 Ω | | 3,2•10 ⁻⁶ + 12 $\mu\Omega$ | |
| | 20 Ω ... < 200 Ω | | 1,7•10 ⁻⁶ + 110 $\mu\Omega$ | |
| | 0,2 k Ω ... < 2 k Ω | | 2,2•10 ⁻⁶ + 1,1 m Ω | |
| | 2 k Ω ... < 20 k Ω | | 2,2•10 ⁻⁶ +11 m Ω | |
| | 20 k Ω ... < 200 k Ω | | 4,3•10 ⁻⁶ + 110 m Ω | |
| | 0,2 M Ω ... < 2 M Ω | | 3,1•10 ⁻⁶ + 13 Ω | |
| | 2 M Ω ... < 20 M Ω | | 8,6•10 ⁻⁶ + 13 Ω | |
| 20 M Ω ... < 200 M Ω | | 21•10 ⁻⁶ + 410 Ω | | |
| 0,2 G Ω ... <2 G Ω | | 1,7•10 ⁻³ + 11,6 k Ω | | |
| 2 G Ω ... <20 G Ω | | 1,7•10 ⁻³ + 3,9 M Ω | | |
| Wechselspannung | 2 mV | 10 Hz | 2,8•10 ⁻³ | 2,8•10 ⁻³ |
| | | 20 Hz; 40 Hz;50 Hz; | | |
| | | 70 Hz; 100 Hz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 30 Hz; 500 Hz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 1 kHz; 10 kHz; | | |
| | | 20 kHz; 50 kHz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 70 kHz | 1,4•10 ⁻³ | 1,4•10 ⁻³ |
| | | 100 kHz | 2,4•10 ⁻³ | 2,4•10 ⁻³ |
| | | 200 kHz | 1,8•10 ⁻³ | 1,8•10 ⁻³ |
| | | 300 kHz | 3,5•10 ⁻³ | 3,5•10 ⁻³ |
| 500 kHz | 5,6•10 ⁻³ | 5,6•10 ⁻³ | | |
| ¹⁾ AC - DC Span- nungstransfer | | 10 Hz | 2,8•10 ⁻³ | 2,8•10 ⁻³ |
| | | 20 Hz; 40 Hz;50 Hz; | | |
| | | 70 Hz; 100 Hz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 30 Hz; 500 Hz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 1 kHz; 10 kHz; | | |
| | | 20 kHz; 50 kHz | 2,0•10 ⁻³ | 2,1•10 ⁻³ |
| | | 70 kHz | 1,4•10 ⁻³ | 1,4•10 ⁻³ |
| | | 100 kHz | 2,4•10 ⁻³ | 2,4•10 ⁻³ |
| | | 200 kHz | 1,8•10 ⁻³ | 1,8•10 ⁻³ |
| | | 300 kHz | 3,5•10 ⁻³ | 3,5•10 ⁻³ |
| 500 kHz | 5,6•10 ⁻³ | 5,6•10 ⁻³ | | |



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|--|--------------------------|-----------------------------------|---|----------------------|---------------------|---------------------|
| Kalibrieren von Spannungskalib- ratoren | 6 mV | 700 kHz | $3,5 \cdot 10^{-3}$ | $3,6 \cdot 10^{-3}$ | | |
| | | 800 kHz | $5,9 \cdot 10^{-3}$ | $5,9 \cdot 10^{-3}$ | | |
| | | 1 MHz | $6,3 \cdot 10^{-3}$ | $6,3 \cdot 10^{-3}$ | | |
| | | 10 Hz | $1,57 \cdot 10^{-3}$ | $1,57 \cdot 10^{-3}$ | | |
| | | 20 Hz; 30 Hz | $1,13 \cdot 10^{-3}$ | $1,14 \cdot 10^{-3}$ | | |
| | | 40 Hz | $1,13 \cdot 10^{-3}$ | $1,14 \cdot 10^{-3}$ | | |
| | | 50 Hz; 70 Hz; 100 Hz | $1,13 \cdot 10^{-3}$ | $1,14 \cdot 10^{-3}$ | | |
| | | 500 Hz; 1 kHz; 10 kHz; 20 kHz; | | | | |
| | | 50 kHz | $1,13 \cdot 10^{-3}$ | $1,14 \cdot 10^{-3}$ | | |
| | | 70 kHz; 100 kHz | $1,35 \cdot 10^{-3}$ | $1,36 \cdot 10^{-3}$ | | |
| | | 200 kHz | $1,75 \cdot 10^{-3}$ | $1,76 \cdot 10^{-3}$ | | |
| | | 300 kHz | $2,91 \cdot 10^{-3}$ | $2,91 \cdot 10^{-3}$ | | |
| | | 500 kHz | $3,11 \cdot 10^{-3}$ | $3,12 \cdot 10^{-3}$ | | |
| | | 700 kHz | $3,54 \cdot 10^{-3}$ | $3,54 \cdot 10^{-3}$ | | |
| | | 800 kHz | $3,61 \cdot 10^{-3}$ | $3,62 \cdot 10^{-3}$ | | |
| | | 1 MHz | $3,67 \cdot 10^{-3}$ | $3,67 \cdot 10^{-3}$ | | |
| | | Wechselspannung | 10 mV | 10 Hz | $410 \cdot 10^{-6}$ | $410 \cdot 10^{-6}$ |
| | | | | 20 Hz; 40 Hz | $360 \cdot 10^{-6}$ | $360 \cdot 10^{-6}$ |
| | | | | 30 Hz; 500 Hz | $271 \cdot 10^{-6}$ | $280 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | 50 Hz; 70 Hz; 100 Hz; | | | | | |
| | 1 kHz; 10 kHz; 20 kHz | | | $353 \cdot 10^{-6}$ | $360 \cdot 10^{-6}$ | |
| | 50 kHz | | | $378 \cdot 10^{-6}$ | $385 \cdot 10^{-6}$ | |
| | 70 kHz | | | $231 \cdot 10^{-6}$ | $245 \cdot 10^{-6}$ | |
| | 100 kHz | | | $626 \cdot 10^{-6}$ | $630 \cdot 10^{-6}$ | |
| | 200 kHz | | | $529 \cdot 10^{-6}$ | $535 \cdot 10^{-6}$ | |
| | 300 kHz | | | $963 \cdot 10^{-6}$ | $970 \cdot 10^{-6}$ | |



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|--|-------------|--|---|----------------------|---------------------|
| Kalibrieren von Spannungskalib- ratoren | 20 mV | 500 kHz | $1,5 \cdot 10^{-3}$ | $1,5 \cdot 10^{-3}$ | |
| | | 700 kHz | $1,2 \cdot 10^{-3}$ | $1,2 \cdot 10^{-3}$ | |
| | | 800 kHz | $1,8 \cdot 10^{-3}$ | $1,8 \cdot 10^{-3}$ | |
| | | 1 MHz | $1,9 \cdot 10^{-3}$ | $1,9 \cdot 10^{-3}$ | |
| | | 10 Hz | $361 \cdot 10^{-6}$ | $365 \cdot 10^{-6}$ | |
| | | 20 Hz | $251 \cdot 10^{-6}$ | $255 \cdot 10^{-6}$ | |
| | | 30 Hz; 500 Hz | $223 \cdot 10^{-6}$ | $230 \cdot 10^{-6}$ | |
| | | 40 Hz; 50 Hz, 70 Hz; 100 Hz; 1 kHz; | | | |
| | | 10 kHz; 20 kHz | $214 \cdot 10^{-6}$ | $220 \cdot 10^{-6}$ | |
| | | 50 kHz | $276 \cdot 10^{-6}$ | $280 \cdot 10^{-6}$ | |
| | | 70 kHz | $370 \cdot 10^{-6}$ | $375 \cdot 10^{-6}$ | |
| | | 100 kHz | $573 \cdot 10^{-6}$ | $575 \cdot 10^{-6}$ | |
| | | 200 kHz | $529 \cdot 10^{-6}$ | $530 \cdot 10^{-6}$ | |
| | | 300 kHz | $915 \cdot 10^{-6}$ | $920 \cdot 10^{-6}$ | |
| | | 500 kHz | $1,4 \cdot 10^{-3}$ | $1,4 \cdot 10^{-3}$ | |
| Wechselspannung | 20 mV | 700 kHz | $1,04 \cdot 10^{-3}$ | $1,04 \cdot 10^{-3}$ | |
| | | 800 kHz | $1,6 \cdot 10^{-3}$ | $1,6 \cdot 10^{-3}$ | |
| | | 1 MHz | $1,7 \cdot 10^{-3}$ | $1,7 \cdot 10^{-3}$ | |
| | | 60 mV | 10 Hz | $336 \cdot 10^{-6}$ | $340 \cdot 10^{-6}$ |
| | | | 20 Hz; 30 Hz | $206 \cdot 10^{-6}$ | $210 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | 60 mV | 40 Hz; 50 Hz; 70 Hz 100 Hz; 500 Hz | | | |
| | | 1 kHz; 10 kHz; 20 kHz | $151 \cdot 10^{-6}$ | $155 \cdot 10^{-6}$ | |
| | | 50 kHz | $206 \cdot 10^{-6}$ | $210 \cdot 10^{-6}$ | |
| | | 70 kHz | $342 \cdot 10^{-6}$ | $345 \cdot 10^{-6}$ | |



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| Kalibrieren von Spannungskalib- ratoren | 100 mV | 100 kHz; 200 kHz | $417 \cdot 10^{-6}$ | $420 \cdot 10^{-6}$ | |
| | | 500 kHz | $809 \cdot 10^{-6}$ | $810 \cdot 10^{-6}$ | |
| | | 700 kHz; 800 kHz | | | |
| | | 1 MHz | $1,35 \cdot 10^{-3}$ | $1,35 \cdot 10^{-3}$ | |
| | | 10 Hz | $263 \cdot 10^{-6}$ | $265 \cdot 10^{-6}$ | |
| | | 20 Hz | $115 \cdot 10^{-6}$ | $115 \cdot 10^{-6}$ | |
| | | 30 Hz | $125 \cdot 10^{-6}$ | $130 \cdot 10^{-6}$ | |
| | | 40 Hz; 50 Hz; 70 Hz; 100 Hz; 500 Hz; | | | |
| | | 1 kHz; 10 kHz; 20 kHz | $68 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ | |
| | | 50 kHz; 70 kHz | $127 \cdot 10^{-6}$ | $130 \cdot 10^{-6}$ | |
| | Wechselspannung | 200 mV | 100 kHz | $188 \cdot 10^{-6}$ | $190 \cdot 10^{-6}$ |
| | | | 200 kHz | $357 \cdot 10^{-6}$ | $360 \cdot 10^{-6}$ |
| | | | 300 kHz | $583 \cdot 10^{-6}$ | $585 \cdot 10^{-6}$ |
| | | | 500 kHz | $748 \cdot 10^{-6}$ | $750 \cdot 10^{-6}$ |
| | | | 700 kHz | $446 \cdot 10^{-6}$ | $450 \cdot 10^{-6}$ |
| | | | 800 kHz; 1 MHz | $752 \cdot 10^{-6}$ | $755 \cdot 10^{-6}$ |
| | | | 10 Hz | $249 \cdot 10^{-6}$ | $250 \cdot 10^{-6}$ |
| | | | 20 Hz | $102 \cdot 10^{-6}$ | $105 \cdot 10^{-6}$ |
| | | | 30 Hz | $123 \cdot 10^{-6}$ | $125 \cdot 10^{-6}$ |
| | | | 40 Hz; 50 Hz; 70 Hz; 100 Hz | $51 \cdot 10^{-6}$ | $55 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | | 500 Hz | $62 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ | |
| | | 1 kHz; 10 kHz; 20 kHz | $51 \cdot 10^{-6}$ | $55 \cdot 10^{-6}$ | |
| | | 50 kHz; 70 kHz | $135 \cdot 10^{-6}$ | $135 \cdot 10^{-6}$ | |
| | | 100 kHz | $187 \cdot 10^{-6}$ | $190 \cdot 10^{-6}$ | |
| | | 200 kHz | $352 \cdot 10^{-6}$ | $355 \cdot 10^{-6}$ | |
| | | 300 kHz | $579 \cdot 10^{-6}$ | $580 \cdot 10^{-6}$ | |



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| Kalibrieren von Spannungskalib- ratoren | 400 mV | 500 kHz | 744•10 ⁻⁶ | 745•10 ⁻⁶ | |
| | | 700 kHz | 492•10 ⁻⁶ | 495•10 ⁻⁶ | |
| | | 800 kHz | 707•10 ⁻⁶ | 710•10 ⁻⁶ | |
| | | 1 MHz | 752•10 ⁻⁶ | 755•10 ⁻⁶ | |
| | | 10 Hz | 210•10 ⁻⁶ | 210•10 ⁻⁶ | |
| | | 20 Hz; 30 Hz | 60•10 ⁻⁶ | 60•10 ⁻⁶ | |
| | | 40 Hz; 50 Hz; 70 Hz | | | |
| | | 100 Hz; 500 Hz | | | |
| | | 1 kHz; 10 kHz | | | |
| | | 20 kHz | 37•10 ⁻⁶ | 40•10 ⁻⁶ | |
| | | 50 kHz | 74•10 ⁻⁶ | 75•10 ⁻⁶ | |
| | | 70 kHz | 110•10 ⁻⁶ | 110•10 ⁻⁶ | |
| | | 100 kHz | 110•10 ⁻⁶ | 110•10 ⁻⁶ | |
| | | 200 kHz | 310•10 ⁻⁶ | 315•10 ⁻⁶ | |
| Wechselspannung | 400 mV | 300 kHz | 391•10 ⁻⁶ | 395•10 ⁻⁶ | |
| | | 500 kHz | 417•10 ⁻⁶ | 420•10 ⁻⁶ | |
| | | 700 kHz | 422•10 ⁻⁶ | 425•10 ⁻⁶ | |
| | | 800 kHz | 420•10 ⁻⁶ | 420•10 ⁻⁶ | |
| | | 1 MHz | 417•10 ⁻⁶ | 420•10 ⁻⁶ | |
| | | 600 mV | 10 Hz | 248•10 ⁻⁶ | 250•10 ⁻⁶ |
| | | | 20 Hz | 88•10 ⁻⁶ | 90•10 ⁻⁶ |
| | 30 Hz | | 57•10 ⁻⁶ | 60•10 ⁻⁶ | |
| | 40 Hz | | 38•10 ⁻⁶ | 40•10 ⁻⁶ | |
| | 50 Hz; 70 Hz | | 36•10 ⁻⁶ | 40•10 ⁻⁶ | |
| | 100 Hz | | 32•10 ⁻⁶ | 35•10 ⁻⁶ | |
| | 500 Hz | | 22•10 ⁻⁶ | 25•10 ⁻⁶ | |
| | ¹⁾ AC - DC Span- nungstransfer | | 1 kHz; 10 kHz, 20 kHz | 32•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | | 50 kHz | 57•10 ⁻⁶ | 60•10 ⁻⁶ |



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| Kalibrieren von Spannungskalib- ratoren | 700 mV | 70 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 100 kHz | 75•10 ⁻⁶ | 75•10 ⁻⁶ |
| | | 200 kHz | 103•10 ⁻⁶ | 105•10 ⁻⁶ |
| | | 300 kHz | 240•10 ⁻⁶ | 245•10 ⁻⁶ |
| | | 500 kHz | 532•10 ⁻⁶ | 535•10 ⁻⁶ |
| | | 700 kHz; 800 kHz | 648•10 ⁻⁶ | 650•10 ⁻⁶ |
| | | 1 MHz | 683•10 ⁻⁶ | 685•10 ⁻⁶ |
| | | 10 Hz | 147•10 ⁻⁶ | 150•10 ⁻⁶ |
| | | 20 Hz | 72•10 ⁻⁶ | 75•10 ⁻⁶ |
| | | 30 Hz | 62•10 ⁻⁶ | 65•10 ⁻⁶ |
| | | 40 Hz | 33•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | 50 Hz; 70 Hz; 100 Hz | 31•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | 500 Hz; 1 kHz | | |
| | | 10 kHz; 20 kHz | 22•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 50 kHz | 41•10 ⁻⁶ | 45•10 ⁻⁶ |
| Wechselspannung | 1 V | 70 kHz | 52•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 100 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 200 kHz | 103•10 ⁻⁶ | 105•10 ⁻⁶ |
| | | 300 kHz | 275•10 ⁻⁶ | 280•10 ⁻⁶ |
| | | 500 kHz | 295•10 ⁻⁶ | 295•10 ⁻⁶ |
| | | 700 kHz | 396•10 ⁻⁶ | 400•10 ⁻⁶ |
| | | 800 kHz; 1 MHz | 394•10 ⁻⁶ | 395•10 ⁻⁶ |
| | | 10 Hz | 242•10 ⁻⁶ | 245•10 ⁻⁶ |
| | | 20 Hz | 79•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | 30 Hz | 72•10 ⁻⁶ | 75•10 ⁻⁶ |
| ¹⁾ AC - DC Span- nungstransfer | 1 V | 40 Hz | 41•10 ⁻⁶ | 45•10 ⁻⁶ |
| | | 50 Hz; 70 Hz | 38•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 100 Hz; 500 Hz; | | |
| | | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|-------------|--------------------------|---|----------------------|
| Kalibrieren von Spannungskalib- ratoren | 2 V | 1 kHz; 10 kHz; 20 kHz | 26•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 50 kHz | 52•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 70 kHz | 49•10 ⁻⁶ | 50•10 ⁻⁶ |
| | | 100 kHz | 68•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | 200 kHz | 109•10 ⁻⁶ | 110•10 ⁻⁶ |
| | | 300 kHz | 230•10 ⁻⁶ | 230•10 ⁻⁶ |
| | | 500 kHz | 536•10 ⁻⁶ | 540•10 ⁻⁶ |
| | | 700 kHz | 341•10 ⁻⁶ | 345•10 ⁻⁶ |
| | | 800 kHz | 535•10 ⁻⁶ | 535•10 ⁻⁶ |
| | | 1 MHz | 569•10 ⁻⁶ | 570•10 ⁻⁶ |
| Wechselspannung | 2 V | 10 Hz | 242•10 ⁻⁶ | 245•10 ⁻⁶ |
| | | 20 Hz | 79•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | 30 Hz | 72•10 ⁻⁶ | 75•10 ⁻⁶ |
| | | 40 Hz | 35•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 50 Hz; 70 Hz | 33•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | 100 Hz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 500 Hz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 1 kHz; 10 kHz; 20 kHz | 19•10 ⁻⁶ | 20•10 ⁻⁶ |
| | | 50 kHz | 52•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 70 kHz | 48•10 ⁻⁶ | 50•10 ⁻⁶ |
| ¹⁾ AC - DC Span- nungstransfer | 2 V | 100 kHz | 68•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | 200 kHz | 104•10 ⁻⁶ | 105•10 ⁻⁶ |
| | | 300 kHz | 230•10 ⁻⁶ | 230•10 ⁻⁶ |
| | | 500 kHz | 536•10 ⁻⁶ | 540•10 ⁻⁶ |
| | | 700 kHz | 341•10 ⁻⁶ | 345•10 ⁻⁶ |
| | | 800 kHz | 557•10 ⁻⁶ | 560•10 ⁻⁶ |
| | | 1 MHz | 569•10 ⁻⁶ | 570•10 ⁻⁶ |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|-------------|-------------------------|---|----------------------|
| Kalibrieren von Spannungskalib- ratoren | 3 V | 10 Hz | 186•10 ⁻⁶ | 190•10 ⁻⁶ |
| | | 20 Hz | 63•10 ⁻⁶ | 65•10 ⁻⁶ |
| | | 30 Hz | 52•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 40 Hz; 50 Hz; 70 Hz | 27•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 100 Hz | 39•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 500 Hz; 1 kHz; | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 10 kHz; 20 kHz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 50 kHz | 39•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 70 kHz | 50•10 ⁻⁶ | 50•10 ⁻⁶ |
| | | 100 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 200 kHz | 94•10 ⁻⁶ | 95•10 ⁻⁶ |
| | | 300 kHz | 286•10 ⁻⁶ | 290•10 ⁻⁶ |
| | | 500 kHz | 306•10 ⁻⁶ | 310•10 ⁻⁶ |
| | | 700 kHz | 337•10 ⁻⁶ | 340•10 ⁻⁶ |
| Wechselspannung | 3 V | 800 kHz | 345•10 ⁻⁶ | 345•10 ⁻⁶ |
| | | 1 MHz | 352•10 ⁻⁶ | 355•10 ⁻⁶ |
| | 4 V | 10 Hz | 228•10 ⁻⁶ | 230•10 ⁻⁶ |
| | | 20 Hz | 70•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | 30 Hz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 40 Hz | 28•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 50 Hz; 70 Hz; 100 Hz | 27•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 1 kHz | 16•10 ⁻⁶ | 20•10 ⁻⁶ |
| | | 500Hz;10 kHz; 20 kHz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 50 kHz | 39•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 70 kHz | 50•10 ⁻⁶ | 50•10 ⁻⁶ |
| | | 100 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 200 kHz | 94•10 ⁻⁶ | 95•10 ⁻⁶ |
| | | 300 kHz | 286•10 ⁻⁶ | 290•10 ⁻⁶ |
| ¹⁾ AC - DC Span- nungstransfer | 3 V | 10 Hz | 186•10 ⁻⁶ | 190•10 ⁻⁶ |
| | | 20 Hz | 63•10 ⁻⁶ | 65•10 ⁻⁶ |
| | | 30 Hz | 52•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 40 Hz; 50 Hz; 70 Hz | 27•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 100 Hz | 39•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 500 Hz; 1 kHz; | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 10 kHz; 20 kHz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 50 kHz | 39•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | 70 kHz | 50•10 ⁻⁶ | 50•10 ⁻⁶ |
| | | 100 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 200 kHz | 94•10 ⁻⁶ | 95•10 ⁻⁶ |
| | | 300 kHz | 286•10 ⁻⁶ | 290•10 ⁻⁶ |
| | | 500 kHz | 306•10 ⁻⁶ | 310•10 ⁻⁶ |
| | | 700 kHz | 337•10 ⁻⁶ | 340•10 ⁻⁶ |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen | | |
|--|--------------------|--|---|---------------------|---------------------|---------------------|
| Kalibrieren von Spannungskalib- ratoren | | 500 kHz | $306 \cdot 10^{-6}$ | $210 \cdot 10^{-6}$ | | |
| | | 700 kHz | $337 \cdot 10^{-6}$ | $340 \cdot 10^{-6}$ | | |
| | | 800 kHz | $345 \cdot 10^{-6}$ | $345 \cdot 10^{-6}$ | | |
| | | 1 MHz | $352 \cdot 10^{-6}$ | $355 \cdot 10^{-6}$ | | |
| | | Wechselspannung | 5 V | 10 Hz | $283 \cdot 10^{-6}$ | $285 \cdot 10^{-6}$ |
| | | | | 20 Hz | $80 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | | | 30 Hz | $56 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| | | | | 40 Hz | $30 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| | | | | 50 Hz | $28 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| | | | | 70 Hz; 100 Hz | $27 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | | 500 Hz; 1 kHz; | | | | |
| | | 10 kHz; 20 kHz | $24 \cdot 10^{-6}$ | $25 \cdot 10^{-6}$ | | |
| | | 50 kHz | $35 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ | | |
| | | Wechselspannung | 5 V | 70 kHz; 100 kHz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | | | 200 kHz | $94 \cdot 10^{-6}$ | $95 \cdot 10^{-6}$ |
| | | | | 300 kHz | $286 \cdot 10^{-6}$ | $290 \cdot 10^{-6}$ |
| | | | | 500 kHz | $306 \cdot 10^{-6}$ | $310 \cdot 10^{-6}$ |
| | | | | 700 kHz | $337 \cdot 10^{-6}$ | $340 \cdot 10^{-6}$ |
| | | | | 800 kHz | $345 \cdot 10^{-6}$ | $345 \cdot 10^{-6}$ |
| | | ¹⁾ AC - DC Span- nungstransfer | | 1 MHz | $352 \cdot 10^{-6}$ | $355 \cdot 10^{-6}$ |
| 6 V | 10 Hz | | | $220 \cdot 10^{-6}$ | $220 \cdot 10^{-6}$ | |
| | 20 Hz | | | $70 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ | |
| | 30 Hz | | | $65 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ | |
| | 40 Hz | | | $29 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ | |
| | 50 Hz; 70 Hz | | | $28 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ | |
| | 100 Hz; 500 Hz | | | | | |
| 1 kHz; 10 kHz; | $15 \cdot 10^{-6}$ | | | $15 \cdot 10^{-6}$ | | |
| 20 kHz | | | | | | |
| 50 kHz | $47 \cdot 10^{-6}$ | | | $50 \cdot 10^{-6}$ | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit ± ¹⁾ | Bemerkungen |
|--|---------------------|--|---|----------------------|
| Kalibrieren von Spannungskalib- ratoren | | 70 kHz | 55•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 100 kHz | 60•10 ⁻⁶ | 60•10 ⁻⁶ |
| | | 200 kHz | 130•10 ⁻⁶ | 130•10 ⁻⁶ |
| | | 300 kHz | 140•10 ⁻⁶ | 140•10 ⁻⁶ |
| | | 500 kHz | 500•10 ⁻⁶ | 500•10 ⁻⁶ |
| | | 700 kHz; 800 kHz | 520•10 ⁻⁶ | 520•10 ⁻⁶ |
| | | 1 MHz | 535•10 ⁻⁶ | 535•10 ⁻⁶ |
| Wechselspannung | 7 V | 10 Hz | 404•10 ⁻⁶ | 405•10 ⁻⁶ |
| | | 20 Hz | 108•10 ⁻⁶ | 110•10 ⁻⁶ |
| | | 30 Hz | 63•10 ⁻⁶ | 65•10 ⁻⁶ |
| Wechselspannung | 7 V | 40 Hz | 32•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | 50 Hz | 28•10 ⁻⁶ | 30•10 ⁻⁶ |
| | | 70 Hz | 25•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 100 Hz | 24•10 ⁻⁶ | 25•10 ⁻⁶ |
| | | 500 Hz; 1 kHz | | |
| | | 10 kHz; 20 kHz | 18•10 ⁻⁶ | 20•10 ⁻⁶ |
| | | 50 kHz | 32•10 ⁻⁶ | 35•10 ⁻⁶ |
| | | 70 kHz; 100 kHz | 42•10 ⁻⁶ | 45•10 ⁻⁶ |
| | | 200 kHz | 94•10 ⁻⁶ | 95•10 ⁻⁶ |
| | | 300 kHz | 286•10 ⁻⁶ | 290•10 ⁻⁶ |
| | | 500 kHz | 306•10 ⁻⁶ | 310•10 ⁻⁶ |
| | | 700 kHz; 800 kHz; | | |
| | | 1 MHz | 337•10 ⁻⁶ | 340•10 ⁻⁶ |
| 1) AC - DC Span- nungstransfer | 10 V | 10 Hz | 242•10 ⁻⁶ | 245•10 ⁻⁶ |
| | | 20 Hz | 79•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | 30 Hz | 58•10 ⁻⁶ | 60•10 ⁻⁶ |
| | | 40 Hz | 45•10 ⁻⁶ | 45•10 ⁻⁶ |
| | | 50 Hz; 70 Hz | 44•10 ⁻⁶ | 45•10 ⁻⁶ |
| | | 100 Hz | 37•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | Kalibrieren von Spannungskalib- ratoren | | 30 Hz |
| 40 Hz | 45•10 ⁻⁶ | | | 45•10 ⁻⁶ |
| 50 Hz; 70 Hz | 44•10 ⁻⁶ | | | 45•10 ⁻⁶ |
| 100 Hz | 37•10 ⁻⁶ | | | 40•10 ⁻⁶ |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit ± ¹⁾ | Bemerkungen | | |
|--|--------------------------|--|---|----------------------|----------------------|----------------------|
| Wechselspannung | 10 V | 500 Hz | 27•10 ⁻⁶ | 30•10 ⁻⁶ | | |
| | | 1 kHz; 10 kHz; 20 kHz | 29•10 ⁻⁶ | 30•10 ⁻⁶ | | |
| | | 50 kHz | 52•10 ⁻⁶ | 55•10 ⁻⁶ | | |
| | | 70 kHz | 44•10 ⁻⁶ | 45•10 ⁻⁶ | | |
| | | 100 kHz | 64•10 ⁻⁶ | 65•10 ⁻⁶ | | |
| | | 200 kHz | 107•10 ⁻⁶ | 110•10 ⁻⁶ | | |
| | | 300 kHz | 233•10 ⁻⁶ | 235•10 ⁻⁶ | | |
| | | 500 kHz | 536•10 ⁻⁶ | 540•10 ⁻⁶ | | |
| | 20 V | 700 kHz | 554•10 ⁻⁶ | 555•10 ⁻⁶ | | |
| | | 800 kHz | 585•10 ⁻⁶ | 585•10 ⁻⁶ | | |
| | | 1 MHz | 609•10 ⁻⁶ | 610•10 ⁻⁶ | | |
| | | ¹⁾ AC - DC Span- nungstransfer | 10 Hz | 10 Hz | 242•10 ⁻⁶ | 245•10 ⁻⁶ |
| | | | | 20 Hz | 79•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | | | 30 Hz | 67•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | | | 40 Hz | 40•10 ⁻⁶ | 40•10 ⁻⁶ |
| | | | | 50 Hz | 44•10 ⁻⁶ | 45•10 ⁻⁶ |
| 70 Hz | 43•10 ⁻⁶ | | | 45•10 ⁻⁶ | | |
| 100 Hz | 33•10 ⁻⁶ | | | 35•10 ⁻⁶ | | |
| 500 Hz | 25•10 ⁻⁶ | | | 30•10 ⁻⁶ | | |
| 20 Hz | 1 kHz; 10 kHz; 20 kHz | | 24•10 ⁻⁶ | 25•10 ⁻⁶ | | |
| | 50 kHz | | 52•10 ⁻⁶ | 55•10 ⁻⁶ | | |
| | 70 kHz | | 44•10 ⁻⁶ | 45•10 ⁻⁶ | | |
| | 100 kHz | | 64•10 ⁻⁶ | 65•10 ⁻⁶ | | |
| | 200 kHz | | 106•10 ⁻⁶ | 110•10 ⁻⁶ | | |
| | 300 kHz | | 233•10 ⁻⁶ | 235•10 ⁻⁶ | | |
| | 500 kHz | | 536•10 ⁻⁶ | 540•10 ⁻⁶ | | |
| | 700 kHz | | 354•10 ⁻⁶ | 355•10 ⁻⁶ | | |
| Kalibrieren von Spannungskalib- ratoren | 800 kHz | 578•10 ⁻⁶ | 580•10 ⁻⁶ | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|-------------|---------------------|---|---------------------|
| Wechselspannung | 30 V | 1 MHz | $617 \cdot 10^{-6}$ | $620 \cdot 10^{-6}$ |
| | | 10 Hz | $187 \cdot 10^{-6}$ | $190 \cdot 10^{-6}$ |
| | | 20 Hz | $63 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ |
| | | 30 Hz | $59 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| | | 40 Hz; 50 Hz; 70 Hz | | |
| | 30 V | 100 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 500 Hz; 1 kHz; | | |
| | | 10 kHz; 20 kHz | $30 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ |
| | | 50 kHz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 70 kHz | $58 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | 40 V | 100 kHz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 10 Hz | $270 \cdot 10^{-6}$ | $270 \cdot 10^{-6}$ |
| | | 20 Hz | $78 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | 30 Hz | $62 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ |
| | | 40 Hz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | 40 V | 50 Hz; 70 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 500 Hz; 1 kHz; | | |
| | | 10 kHz; 20 kHz | $30 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ |
| | | 50 kHz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| Kalibrieren von Spannungskalib- ratoren | 50 V | 70 kHz | $58 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| | | 100 kHz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 10 Hz | $286 \cdot 10^{-6}$ | $290 \cdot 10^{-6}$ |
| | | 20 Hz | $82 \cdot 10^{-6}$ | $85 \cdot 10^{-6}$ |
| | | 30 Hz | $64 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ |
| | 50 V | 40 Hz | $46 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 50 Hz | $45 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 70 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|-------------|--------------------------|---|---------------------|
| Wechselspannung | 60 V | 500 Hz; 1 kHz | | |
| | | 10 kHz; 20 kHz | $30 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ |
| | | 50 kHz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 70 kHz | $58 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| | | 100 kHz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 10 Hz | $242 \cdot 10^{-6}$ | $245 \cdot 10^{-6}$ |
| | | 20 Hz | $79 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | 30 Hz | $68 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 40 Hz | $40 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 50 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | 60 V | 70 Hz | $43 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $36 \cdot 10^{-6}$ | $40 \cdot 10^{-6}$ |
| | | 500 Hz | $28 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| | | 1 kHz; 10 kHz; 20 kHz | $29 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| | | 50 kHz | $64 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ |
| | | 70 kHz | $55 \cdot 10^{-6}$ | $55 \cdot 10^{-6}$ |
| | | 100 kHz | $87 \cdot 10^{-6}$ | $90 \cdot 10^{-6}$ |
| | | 10 Hz | $416 \cdot 10^{-6}$ | $420 \cdot 10^{-6}$ |
| | | 20 Hz | $114 \cdot 10^{-6}$ | $115 \cdot 10^{-6}$ |
| | | 30 Hz | $73 \cdot 10^{-6}$ | $75 \cdot 10^{-6}$ |
| Kalibrieren von Spannungskalib- ratoren | 70 V | 40 Hz | $51 \cdot 10^{-6}$ | $55 \cdot 10^{-6}$ |
| | | 50 Hz | $46 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 70 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $43 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 500 Hz; 1 kHz | | |
| | | 10 kHz; 20 kHz | $28 \cdot 10^{-6}$ | $30 \cdot 10^{-6}$ |
| | | 50 kHz | $43 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 70 kHz | $55 \cdot 10^{-6}$ | $55 \cdot 10^{-6}$ |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|-------------|--------------------------|---|---------------------|
| Wechselspannung | 100 V | 100 kHz | $66 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 10 Hz | $242 \cdot 10^{-6}$ | $245 \cdot 10^{-6}$ |
| | | 20 Hz | $85 \cdot 10^{-6}$ | $85 \cdot 10^{-6}$ |
| | | 30 Hz | $60 \cdot 10^{-6}$ | $60 \cdot 10^{-6}$ |
| | | 40 Hz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 50 Hz; 70 Hz | $44 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $45 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 500 Hz | $32 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ |
| | | 1 kHz; 10 kHz; 20 kHz | $43 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 50 kHz | $85 \cdot 10^{-6}$ | $85 \cdot 10^{-6}$ |
| ¹⁾ AC - DC Span- nungstransfer | 200 V | 50 kHz | $85 \cdot 10^{-6}$ | $85 \cdot 10^{-6}$ |
| | | 70 kHz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 100 kHz | $96 \cdot 10^{-6}$ | $100 \cdot 10^{-6}$ |
| | | 10 Hz | $242 \cdot 10^{-6}$ | $245 \cdot 10^{-6}$ |
| | | 20 Hz | $79 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | 30 Hz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 40 Hz | $42 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 50 Hz | $46 \cdot 10^{-6}$ | $50 \cdot 10^{-6}$ |
| | | 70 Hz | $45 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| | | 100 Hz | $42 \cdot 10^{-6}$ | $45 \cdot 10^{-6}$ |
| Kalibrieren von Spannungskalib- ratoren | 300 V | 500 Hz | $30 \cdot 10^{-6}$ | $35 \cdot 10^{-6}$ |
| | | 1 kHz; 10 kHz; 20 kHz | $39 \cdot 10^{-6}$ | $40 \cdot 10^{-6}$ |
| | | 50 kHz | $79 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | 70 kHz | $67 \cdot 10^{-6}$ | $70 \cdot 10^{-6}$ |
| | | 100 kHz | $96 \cdot 10^{-6}$ | $100 \cdot 10^{-6}$ |
| | | 10 Hz | $164 \cdot 10^{-6}$ | $165 \cdot 10^{-6}$ |
| | | 20 Hz; 30 Hz | $77 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ |
| | | 40 Hz; 50 Hz; 70 Hz; | | |
| | | 100 Hz; 500 Hz; | | |
| | | Wechselspannung | 300 V | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|---|---|--------------------------|---|----------------------|
| 1) AC - DC Span- nungstransfer Kalibrieren von Spannungskalib- ratoren | 500 V | 1 kHz; 10 kHz; 20 kHz | 54•10 ⁻⁶ | 55•10 ⁻⁶ |
| | | 50 kHz | 65•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | 70 kHz | 119•10 ⁻⁶ | 120•10 ⁻⁶ |
| | | 100 kHz | 145•10 ⁻⁶ | 145•10 ⁻⁶ |
| | | 10 Hz | 186•10 ⁻⁶ | 190•10 ⁻⁶ |
| | | 20 Hz | 80•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | 30 Hz | 78•10 ⁻⁶ | 80•10 ⁻⁶ |
| | | 40 Hz; 50 Hz; 70 Hz | | |
| | | 100 Hz; 500 Hz; | | |
| | | 1 kHz; 10 kHz; 20 kHz | 42•10 ⁻⁶ | 45•10 ⁻⁶ |
| | | 50 kHz | 65•10 ⁻⁶ | 70•10 ⁻⁶ |
| | | 70 kHz | 119•10 ⁻⁶ | 120•10 ⁻⁶ |
| | | 100 kHz | 145•10 ⁻⁶ | 145•10 ⁻⁶ |
| | | 10 Hz | 210•10 ⁻⁶ | 210•10 ⁻⁶ |
| | 20 Hz | 83•10 ⁻⁶ | 85•10 ⁻⁶ | |
| | 30 Hz | 78•10 ⁻⁶ | 80•10 ⁻⁶ | |
| | 40 Hz; 50 Hz; 70 Hz | | | |
| | 100 Hz; 500 Hz | | | |
| | 1 kHz; 10 kHz; 20 kHz | 55•10 ⁻⁶ | 55•10 ⁻⁶ | |
| | 50 kHz | 65•10 ⁻⁶ | 65•10 ⁻⁶ | |
| | 70 kHz | 119•10 ⁻⁶ | 120•10 ⁻⁶ | |
| | 100 kHz | 145•10 ⁻⁶ | 145•10 ⁻⁶ | |
| | 10 Hz | 240•10 ⁻⁶ | 240•10 ⁻⁶ | |
| | 20 Hz | 106•10 ⁻⁶ | 110•10 ⁻⁶ | |
| | 30 Hz | 100•10 ⁻⁶ | 100•10 ⁻⁶ | |
| | 40 Hz; 50 Hz; 70 Hz; 100 Hz; 500 Hz; 1 kHz; | | | |
| | 700 V | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen | | |
|---|-----------------|--------------------------|---|---------------------|--------------------------------------|--|
| Wechselspannung | 1000 V | 10 kHz; 20 kHz | $79 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ | | |
| | | 50 kHz | $88 \cdot 10^{-6}$ | $90 \cdot 10^{-6}$ | | |
| | | 70 kHz | $119 \cdot 10^{-6}$ | $120 \cdot 10^{-6}$ | | |
| | | 100 kHz | $145 \cdot 10^{-6}$ | $145 \cdot 10^{-6}$ | | |
| | | 10 Hz | $339 \cdot 10^{-6}$ | $340 \cdot 10^{-6}$ | | |
| | | 20 Hz | $124 \cdot 10^{-6}$ | $125 \cdot 10^{-6}$ | | |
| | | 30 Hz | $105 \cdot 10^{-6}$ | $105 \cdot 10^{-6}$ | | |
| | | 40 Hz | $60 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ | | |
| | | 50 Hz; 70 Hz | $80 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ | | |
| | | 100 Hz | $60 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ | | |
| ¹⁾ AC - DC Span- nungstransfer | | 500 Hz | $79 \cdot 10^{-6}$ | $80 \cdot 10^{-6}$ | | |
| | | 1 kHz; 10 kHz; 20 kHz | $60 \cdot 10^{-6}$ | $65 \cdot 10^{-6}$ | | |
| | | 50 kHz | $90 \cdot 10^{-6}$ | $90 \cdot 10^{-6}$ | | |
| | | 70 kHz | $119 \cdot 10^{-6}$ | $120 \cdot 10^{-6}$ | | |
| Kalibrieren von Spannungskalib- ratoren | | 100 kHz | $145 \cdot 10^{-6}$ | $145 \cdot 10^{-6}$ | | |
| | | Wechselspannung | 10 mV ... < 100 mV | 30 Hz | $387 \cdot 10^{-6} + 28 \mu\text{V}$ | |
| | | | | 400 Hz | $173 \cdot 10^{-6} + 4 \mu\text{V}$ | |
| Messen der RMS Spannung von nicht Sinusförmig- en Signalen | 0.1 V ... < 1 V | 1000 Hz | $174 \cdot 10^{-6} + 4 \mu\text{V}$ | | | |
| | | 20 kHz | $534 \cdot 10^{-6} + 4 \mu\text{V}$ | | | |
| | | 50 kHz | $1280 \cdot 10^{-6} + 4 \mu\text{V}$ | | | |
| | | 30 Hz | $326 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 400 Hz | $108 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | 1 V ... < 10 V | 1000 Hz | $110 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 20 kHz | $516 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 50 kHz | $1270 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 30 Hz | $292 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 400 Hz | $89 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |
| | | 1000 Hz | $91 \cdot 10^{-6} + 30 \mu\text{V}$ | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|--------------------|---------------------------------------|---|-------------|
| Wechselspannung | 10 V ... < 100 V | 20 kHz | $513 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 50 kHz | $1270 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 30 Hz | $377 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 400 Hz | $237 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 1000 Hz | $238 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 20 kHz | $539 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | 100 V ... 1000 V | 50 kHz | $1290 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 30 Hz | $599 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 400 Hz | $486 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 1000 Hz | $487 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 20 kHz | $859 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | | 50 kHz | $1850 \cdot 10^{-6} + 30 \mu\text{V}$ | |
| | 2,2 mV ... < 10 mV | 10 Hz ... 20 Hz | $2,75 \cdot 10^{-3} + 6 \mu\text{V}$ | |
| | | > 20 Hz ... 30 Hz | $1,19 \cdot 10^{-3} + 6 \mu\text{V}$ | |
| | | > 30 Hz ... 40 Hz | $2,02 \cdot 10^{-3} + 6 \mu\text{V}$ | |
| | | > 40 Hz ... 100 Hz | $2,02 \cdot 10^{-3} + 3 \mu\text{V}$ | |
| | | > 100 Hz ... 500 Hz | $1,19 \cdot 10^{-3} + 3 \mu\text{V}$ | |
| | | > 500 Hz ... 50 kHz | $2,02 \cdot 10^{-3} + 3 \mu\text{V}$ | |
| | | > 50 kHz ... 70 kHz | $1,4 \cdot 10^{-3} + 4 \mu\text{V}$ | |
| | | > 70 kHz ... 100 kHz | $2,39 \cdot 10^{-3} + 4 \mu\text{V}$ | |
| > 100 kHz...200 kHz | | $1,78 \cdot 10^{-3} + 6 \mu\text{V}$ | | |
| > 200 kHz...300 kHz | | $3,47 \cdot 10^{-3} + 6 \mu\text{V}$ | | |
| > 300 kHz...500 kHz | | $5,59 \cdot 10^{-3} + 12 \mu\text{V}$ | | |
| > 500 kHz...700 kHz | | $3,51 \cdot 10^{-3} + 18 \mu\text{V}$ | | |
| > 700 kHz...800 kHz | | $5,86 \cdot 10^{-3} + 18 \mu\text{V}$ | | |
| > 800 kHz ... 1 MHz | | $6,21 \cdot 10^{-3} + 18 \mu\text{V}$ | | |
| 10 mV ... < 22 mV | 10 Hz ... 20 Hz | $409 \cdot 10^{-6} + 6 \mu\text{V}$ | | |
| | > 20 Hz ... 30 Hz | $157 \cdot 10^{-6} + 6 \mu\text{V}$ | | |
| | > 30 Hz ... 40 Hz | $360 \cdot 10^{-6} + 6 \mu\text{V}$ | | |
| | | | | |
| Kalibrieren von Spannungsmessge- räten | | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit ± ¹⁾ | Bemerkungen |
|---|----------------------|----------------------|---|------------------------------|
| Wechselspannung Kalibrieren von Spannungsmessge- räten | 10 mV ... < 22 mV | > 40 Hz ... 100 Hz | 360•10 ⁻⁶ + 3 μV | |
| | | > 100 Hz ... 500 Hz | 279•10 ⁻⁶ + 3 μV | |
| | | > 500 Hz ... 20 kHz | 360•10 ⁻⁶ + 3 μV | |
| | | > 20 kHz ... 50 kHz | 384•10 ⁻⁶ + 3 μV | |
| | | > 50 kHz ... 70 kHz | 241•10 ⁻⁶ + 4 μV | |
| | | > 70 kHz ... 100 kHz | 630•10 ⁻⁶ + 4 μV | |
| | | >100 kHz ...200 kHz | 533•10 ⁻⁶ + 6 μV | |
| | | >200 kHz...300 kHz | 966•10 ⁻⁶ + 6 μV | |
| | | >300 kHz...500 kHz | 1,5•10 ⁻³ + 12 μV | |
| | | >500 kHz...700 kHz | 1,77•10 ⁻⁶ + 18 μV | |
| | | >700 kHz...800 kHz | 1,77•10 ⁻³ + 18 μV | |
| | | > 800 kHz ... 1 MHz | 1,88•10 ⁻³ + 18 μV | |
| | 22 mV ... < 100 mV | 10 Hz ... 20 Hz | 378•10 ⁻⁶ + 24 μV | |
| | | > 20 Hz ... 30 Hz | 226•10 ⁻⁶ + 18 μV | |
| | | > 30 Hz ... 40 Hz | 178•10 ⁻⁶ + 18 μV | |
| | | > 40 Hz ... 20 kHz | 152•10 ⁻⁶ + 3 μV | |
| | | > 20 kHz ... 50 kHz | 207•10 ⁻⁶ + 3 μV | |
| | | > 50 kHz ... 70 kHz | 343•10 ⁻⁶ + 3 μV | |
| | | > 70 kHz ... 100 kHz | 358•10 ⁻⁶ + 3 μV | |
| | | > 100 kHz...200 kHz | 418•10 ⁻⁶ + 5 μV | |
| | | > 200 kHz...300 kHz | 755•10 ⁻⁶ + 5 μV | |
| | | > 300 kHz...500 kHz | 817•10 ⁻⁶ + 12 μV | |
| | | > 500 kHz ... 1 MHz | 1,37•10 ⁻³ + 24 μV | |
| | | 100 mV ... < 220 mV | 10 Hz ... 20 Hz | 315•10 ⁻⁶ + 24 μV |
| | > 20 Hz ... 30 Hz | | 156•10 ⁻⁶ + 18 μV | |
| | > 30 Hz ... 40 Hz | | 115•10 ⁻⁶ + 18 μV | |
| | > 40 Hz ... 20 kHz | | 70•10 ⁻⁶ + 3 μV | |
| | > 20 kHz ... 70 kHz | | 128•10 ⁻⁶ + 3 μV | |
| | > 70 kHz ... 100 kHz | | 189•10 ⁻⁶ + 3 μV | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|---|----------------------|---------------------------------------|---|-------------|
| Wechselspannung Kalibrieren von Spannungsmessge- räten | 220 mV ... < 1 V | > 100 kHz...200 kHz | $359 \cdot 10^{-6} + 5 \mu\text{V}$ | |
| | | > 200 kHz...300 kHz | $583 \cdot 10^{-6} + 5 \mu\text{V}$ | |
| | | > 300 kHz...500 kHz | $757 \cdot 10^{-6} + 12 \mu\text{V}$ | |
| | | > 500 kHz...700 kHz | $502 \cdot 10^{-6} + 24 \mu\text{V}$ | |
| | | > 700 kHz ... 1 MHz | $786 \cdot 10^{-6} + 24 \mu\text{V}$ | |
| | | 10 Hz ... 20 Hz | $303 \cdot 10^{-6} + 24 \mu\text{V}$ | |
| | | > 20 Hz ... 30 Hz | $110 \cdot 10^{-6} + 18 \mu\text{V}$ | |
| | | > 30 Hz ... 40 Hz | $101 \cdot 10^{-6} + 18 \mu\text{V}$ | |
| | | > 40 Hz ... 70 Hz | $41 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 70 Hz ... 100 Hz | $38 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 100 Hz ... 500 Hz | $30 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 500 Hz ... 20 kHz | $26 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 20 kHz ... 50 kHz | $66 \cdot 10^{-6} + 13 \mu\text{V}$ | |
| | | > 50 kHz ... 70 kHz | $148 \cdot 10^{-6} + 20 \mu\text{V}$ | |
| | > 70 kHz ... 100 kHz | $156 \cdot 10^{-6} + 20 \mu\text{V}$ | | |
| | > 100 kHz...200 kHz | $364 \cdot 10^{-6} + 12 \mu\text{V}$ | | |
| | > 200 kHz...300 kHz | $417 \cdot 10^{-6} + 12 \mu\text{V}$ | | |
| | > 300 kHz...500 kHz | $880 \cdot 10^{-6} + 24 \mu\text{V}$ | | |
| | > 500 kHz ... 1 MHz | $1,51 \cdot 10^{-3} + 58 \mu\text{V}$ | | |
| | 1 V ... < 2,2 V | 10 Hz ... 20 Hz | $298 \cdot 10^{-6} + 24 \mu\text{V}$ | |
| | | > 20 Hz ... 30 Hz | $118 \cdot 10^{-6} + 18 \mu\text{V}$ | |
| | | > 30 Hz ... 40 Hz | $100 \cdot 10^{-6} + 18 \mu\text{V}$ | |
| | | > 40 Hz ... 70 Hz | $38 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 70 Hz ... 100 Hz | $29 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 100 Hz ... 500 Hz | $29 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 500 Hz ... 20 kHz | $26 \cdot 10^{-6} + 7 \mu\text{V}$ | |
| | | > 20 kHz ... 50 kHz | $66 \cdot 10^{-6} + 13 \mu\text{V}$ | |
| | | > 50 kHz ... 70 kHz | $147 \cdot 10^{-6} + 20 \mu\text{V}$ | |
| > 70 kHz ... 100 kHz | | $156 \cdot 10^{-6} + 20 \mu\text{V}$ | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|---------------------------------------|---------------------------------------|---|-------------------------------------|
| Wechselspannung | 2,2 V ... < 10 V | > 100 kHz...200 kHz | $364 \cdot 10^{-6} + 12 \mu\text{V}$ | |
| | | > 200 kHz...300 kHz | $417 \cdot 10^{-6} + 12 \mu\text{V}$ | |
| > 300 kHz...500 kHz | | $880 \cdot 10^{-6} + 24 \mu\text{V}$ | | |
| > 500 kHz ... 1 MHz | | $1,51 \cdot 10^{-3} + 58 \mu\text{V}$ | | |
| 10 Hz ... 20 Hz | | $280 \cdot 10^{-6} + 33 \mu\text{V}$ | | |
| > 20 Hz ... 30 Hz | | $114 \cdot 10^{-6} + 29 \mu\text{V}$ | | |
| > 30 Hz ... 40 Hz | | $98 \cdot 10^{-6} + 29 \mu\text{V}$ | | |
| > 40 Hz ... 70 Hz | | $34 \cdot 10^{-6} + 36 \mu\text{V}$ | | |
| > 70 Hz ... 20 kHz | | $23 \cdot 10^{-6} + 36 \mu\text{V}$ | | |
| Kalibrieren von Spannungsmessge- räten | | 10 V ... < 22 V | > 20 kHz ... 50 kHz | $61 \cdot 10^{-6} + 59 \mu\text{V}$ |
| | > 50 kHz ... 70 kHz | | $109 \cdot 10^{-6} + 94 \mu\text{V}$ | |
| | > 70 kHz ... 100 kHz | | $111 \cdot 10^{-6} + 94 \mu\text{V}$ | |
| | > 100 kHz...200 kHz | | $177 \cdot 10^{-6} + 809 \mu\text{V}$ | |
| | > 200 kHz...300 kHz | | $184 \cdot 10^{-6} + 809 \mu\text{V}$ | |
| | > 300 kHz...500 kHz | | $554 \cdot 10^{-6} + 2 \text{ mV}$ | |
| | > 500 kHz ... 1 MHz | | $891 \cdot 10^{-6} + 4 \text{ mV}$ | |
| | 10 Hz ... 20 Hz | | $298 \cdot 10^{-6} + 33 \mu\text{V}$ | |
| | > 20 Hz ... 30 Hz | | $115 \cdot 10^{-6} + 29 \mu\text{V}$ | |
| | > 30 Hz ... 40 Hz | | $102 \cdot 10^{-6} + 29 \mu\text{V}$ | |
| | > 40 Hz ... 50 Hz | | $48 \cdot 10^{-6} + 36 \mu\text{V}$ | |
| | > 50 Hz ... 70 Hz | | $47 \cdot 10^{-6} + 36 \mu\text{V}$ | |
| > 70 Hz ... 100 Hz | $38 \cdot 10^{-6} + 36 \mu\text{V}$ | | | |
| > 100 Hz ... 500 Hz | $32 \cdot 10^{-6} + 36 \mu\text{V}$ | | | |
| > 500 Hz ... 20 kHz | $31 \cdot 10^{-6} + 36 \mu\text{V}$ | | | |
| > 20 kHz ... 50 kHz | $65 \cdot 10^{-6} + 59 \mu\text{V}$ | | | |
| > 50 kHz ... 70 kHz | $104 \cdot 10^{-6} + 94 \mu\text{V}$ | | | |
| > 70 kHz ... 100 kHz | $114 \cdot 10^{-6} + 94 \mu\text{V}$ | | | |
| > 100 kHz...200 kHz | $161 \cdot 10^{-6} + 809 \mu\text{V}$ | | | |
| > 200 kHz...300 kHz | $262 \cdot 10^{-6} + 809 \mu\text{V}$ | | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|---|-------------------------------|----------------------|---|-------------------------------|
| Wechselspannung Kalibrieren von Spannungsmessge- räten | 10 V ... < 22 V | > 300 kHz...500 kHz | 589•10 ⁻⁶ + 2 mV | |
| | | > 500 kHz...700 kHz | 798•10 ⁻⁶ + 4 mV | |
| | | > 700 kHz...800 kHz | 919•10 ⁻⁶ + 4 mV | |
| | | > 800 kHz ... 1 MHz | 944•10 ⁻⁶ + 4 mV | |
| | 22 V ... < 100 V | 10 Hz ... 20 Hz | 298•10 ⁻⁶ + 327 µV | |
| | | > 20 Hz ... 30 Hz | 116•10 ⁻⁶ + 289 µV | |
| | | > 30 Hz ... 40 Hz | 102•10 ⁻⁶ + 289 µV | |
| | | > 40 Hz ... 50 Hz | 49•10 ⁻⁶ + 359 µV | |
| | | > 50 Hz ... 70 Hz | 47•10 ⁻⁶ + 359 µV | |
| | | > 70 Hz ... 100 Hz | 41•10 ⁻⁶ + 359 µV | |
| | | > 100 Hz ... 500 Hz | 34•10 ⁻⁶ + 359 µV | |
| | | > 500 Hz ... 20 kHz | 35•10 ⁻⁶ + 359 µV | |
| | | > 20 kHz ... 50 kHz | 76•10 ⁻⁶ + 703 µV | |
| | | > 50 kHz ... 70 kHz | 109•10 ⁻⁶ + 4 mV | |
| | | > 70 kHz ... 100 kHz | 128•10 ⁻⁶ + 4 mV | |
| | | 100 V ... < 220 V | 10 Hz ... 20 Hz | 298•10 ⁻⁶ + 327 µV |
| > 20 Hz ... 30 Hz | 115•10 ⁻⁶ + 289 µV | | | |
| > 30 Hz ... 40 Hz | 103•10 ⁻⁶ + 289 µV | | | |
| > 40 Hz ... 50 Hz | 50•10 ⁻⁶ + 359 µV | | | |
| > 50 Hz ... 70 Hz | 49•10 ⁻⁶ + 359 µV | | | |
| > 70 Hz ... 100 Hz | 47•10 ⁻⁶ + 359 µV | | | |
| > 100 Hz ... 500 Hz | 36•10 ⁻⁶ + 359 µV | | | |
| > 500 Hz ... 20 kHz | 44•10 ⁻⁶ + 3359 µV | | | |
| > 20 kHz ... 50 kHz | 88•10 ⁻⁶ + 703 µV | | | |
| > 50 kHz ... 70 kHz | 116•10 ⁻⁶ + 4 mV | | | |
| Wechselspannung | 220 V ... < 500 V | > 70 kHz ... 100 kHz | 135•10 ⁻⁶ + 4 mV | |
| | | 10 Hz ... 20 Hz | 255•10 ⁻⁶ + 8 mV | |
| | | > 20 Hz ... 30 Hz | 150•10 ⁻⁶ + 8 mV | |
| | | > 30 Hz ... 50 Hz | 135•10 ⁻⁶ + 8 mV | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibriergegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--------------------------------------|---------------------|----------------------|---|-----------------|
| Kalibrieren von Spannungsmessgeräten | 500 V ... 1100 V | > 50 Hz ... 1 kHz | 61•10 ⁻⁶ + 1.5 mV | |
| | | > 1 kHz ... 20 kHz | 140•10 ⁻⁶ + 13 mV | |
| | | > 20 kHz ... 50 kHz | 155•10 ⁻⁶ + 13 mV | |
| | | > 50 kHz ... 70 kHz | 160•10 ⁻⁶ + 13 mV | |
| | | > 70 kHz ... 100 kHz | 166•10 ⁻⁶ + 13 mV | |
| | | 10 Hz ... 20 Hz | 380•10 ⁻⁶ + 9 mV | |
| | | > 20 Hz ... 30 Hz | 158•10 ⁻⁶ + 9 mV | |
| | | > 30 Hz ... 50 Hz | 150•10 ⁻⁶ + 9 mV | |
| | | > 50 Hz ... 1 kHz | 84•10 ⁻⁶ + 1.5 mV | |
| | | > 1 kHz ... 20 kHz | 150•10 ⁻⁶ + 9 mV | |
| | | > 20 kHz ... 50 kHz | 165•10 ⁻⁶ + 9 mV | |
| | | > 50 kHz ... 70 kHz | 205•10 ⁻⁶ + 9 mV | |
| | | > 70 kHz ... 100 kHz | 240•10 ⁻⁶ + 9 mV | |
| | | Wechselstrom | 0,01 mA ... 1 mA | 20 Hz ... 40 Hz |
| > 40 Hz ... 5 kHz | 70•10 ⁻⁶ | | | |
| > 5kHz ... 10kHz | 70•10 ⁻⁶ | | | |
| Kalibrieren von Stromkalibratoren | > 1 mA ... 10 mA | 20 Hz ... 10 kHz | 70•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 50•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 50•10 ⁻⁶ | |
| Wechselstrom | > 10 mA ... 20 mA | 20 Hz ... 10 kHz | 80•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 70•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 50•10 ⁻⁶ | |
| Kalibrieren von Stromkalibratoren | > 20 mA ... 50 mA | 20 Hz ... 40 Hz | 80•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 60•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 60•10 ⁻⁶ | |
| | > 50 mA ... 100 mA | 20 Hz ... 40 Hz | 300•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 290•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 50•10 ⁻⁶ | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|---|---------------------|----------------------|---|-------------|
| Wechselstrom Kalibrieren von Stromkalibratoren | > 100 mA ... 200 mA | 20 Hz ... 40 Hz | 170•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 160•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 160•10 ⁻⁶ | |
| | > 200 mA ... 500 mA | 20 Hz ... 40 Hz | 110•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 100•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 90•10 ⁻⁶ | |
| | > 500 mA ... 1 A | 20 Hz ... 40 Hz | 90•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 70•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 90•10 ⁻⁶ | |
| | > 1 A ... 2 A | 20 Hz ... 40 Hz | 80•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 60•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 60•10 ⁻⁶ | |
| | > 2 A ... 5 A | 20 Hz ... 40 Hz | 120•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 110•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 110•10 ⁻⁶ | |
| | > 5 A ... 10 A | 20 Hz ... 40 Hz | 90•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 80•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 80•10 ⁻⁶ | |
| | > 10 A ... 20 A | 20 Hz ... 40 Hz | 110•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 100•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 100•10 ⁻⁶ | |
| | > 20 A ... 50 A | 20 Hz ... 40 Hz | 280•10 ⁻⁶ | |
| | | > 40 Hz ... 5 kHz | 280•10 ⁻⁶ | |
| | | > 5kHz ... 10kHz | 280•10 ⁻⁶ | |
| > 50 A ... 100 A | 20 Hz ... 40 Hz | 210•10 ⁻⁶ | | |
| | > 40 Hz ... 5 kHz | 210•10 ⁻⁶ | | |
| | > 5kHz ... 10kHz | 210•10 ⁻⁶ | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit ± ¹⁾ | Bemerkungen |
|--|--------------------|----------------------|---|-------------|
| Kalibrieren von Strommessgeräten | 0,1 mA ... 0,2 mA | 20 Hz ... 40 Hz | 230•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 180•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 330•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 1,63•10 ⁻³ | |
| | > 0,2 mA ... 1 mA | 20 Hz ... 40 Hz | 150•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 90•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 190•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 1,05•10 ⁻³ | |
| | > 1 mA ... 2 mA | 20 Hz ... 40 Hz | 130•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 70•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 100•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 580•10 ⁻⁶ | |
| | > 2 mA ... 3 mA | 20 Hz ... 40 Hz | 170•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 120•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 370•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 1,05•10 ⁻³ | |
| > 3 mA ... 5 mA | 20 Hz ... 40 Hz | 160•10 ⁻⁶ | | |
| | > 40 Hz ... 1 kHz | 120•10 ⁻⁶ | | |
| | > 1 kHz ... 5 kHz | 270•10 ⁻⁶ | | |
| | > 5 kHz ... 10 kHz | 860•10 ⁻⁶ | | |
| Wechselstrom | > 5 mA ... 10 mA | 20 Hz ... 40 Hz | 130•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 70•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 180•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 700•10 ⁻⁶ | |
| Kalibrieren von Strommessgeräten | > 10 mA ... 20 mA | 20 Hz ... 40 Hz | 120•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 80•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 140•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 580•10 ⁻⁶ | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|---------------------|-----------------------|---|-------------|
| Wechselstrom Kalibrieren von Strommessgeräten | > 20 mA ... 30 mA | 20 Hz ... 40 Hz | 140•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 70•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 240•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 760•10 ⁻⁶ | |
| | > 30 mA ... 50 mA | 20 Hz ... 40 Hz | 140•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 80•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 190•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 660•10 ⁻⁶ | |
| | > 50 mA ... 100 mA | 20 Hz ... 40 Hz | 130•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 70•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 140•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 580•10 ⁻⁶ | |
| | > 100 mA ... 200 mA | 20 Hz ... 40 Hz | 310•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 300•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 310•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 550•10 ⁻⁶ | |
| | > 200 mA ... 300 mA | 20 Hz ... 40 Hz | 140•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 140•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 230•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 1,22•10 ⁻³ | |
| > 300 mA ... 500 mA | 20 Hz ... 40 Hz | 140•10 ⁻⁶ | | |
| | > 40 Hz ... 1 kHz | 130•10 ⁻⁶ | | |
| | > 1 kHz ... 5 kHz | 200•10 ⁻⁶ | | |
| | > 5 kHz ... 10 kHz | 1,12•10 ⁻³ | | |
| > 500 mA ... 1 A | 20 Hz ... 40 Hz | 110•10 ⁻⁶ | | |
| | > 40 Hz ... 1 kHz | 100•10 ⁻⁶ | | |
| | > 1 kHz ... 5 kHz | 160•10 ⁻⁶ | | |
| | > 5 kHz ... 10 kHz | 1,05•10 ⁻³ | | |



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Akkreditierungsnummer: SCS 0002

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|---|--------------------|----------------------|---|-------------|
| | > 1 A ... 2,2 A | 20 Hz ... 40 Hz | 100•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 90•10 ⁻⁶ | |
| | | > 1 kHz ... 5 kHz | 130•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 990•10 ⁻⁶ | |
| | > 2,2 A ... 3 A | 20 Hz ... 5 kHz | 320•10 ⁻⁶ | |
| | | > 5 kHz ... 10 kHz | 260•10 ⁻⁶ | |
| | > 3 A ... 5 A | 20 Hz ... 40 Hz | 160•10 ⁻⁶ | |
| | | > 40 Hz ... 10 kHz | 150•10 ⁻⁶ | |
| | > 5 A ... 10 A | 20 Hz ... 40 Hz | 120•10 ⁻⁶ | |
| | | > 40 Hz ... 1 kHz | 110•10 ⁻⁶ | |
| | | > 1 kHz ... 10 kHz | 120•10 ⁻⁶ | |
| | > 10 A ... 20 A | 20 Hz ... 40 Hz | 130•10 ⁻⁶ | |
| | | > 40 Hz ... 10 kHz | 120•10 ⁻⁶ | |
| | > 20 A ... 100 A | 10 Hz ... 850 Hz | 310•10 ⁻⁶ | |
| > 850 Hz ... 3 kHz | | 330•10 ⁻⁶ | | |
| > 3 kHz ... 9 kHz | | 380•10 ⁻⁶ | | |
| Wechselstrom | > 100 A ... 240 A | 10 Hz ... 850 Hz | 310•10 ⁻⁶ | |
| Kalibrieren von Strommessgeräten | | > 850 Hz ... 6 kHz | 320•10 ⁻⁶ | |
| | | > 6 kHz ... 9 kHz | 5.6 % | |
| Wechselstrom | > 50 A ... 500 A | 10 Hz ... 1 kHz | 1.00 % | |
| Kalibrieren von Zangenstromwand- lern | | > 1 kHz ... 3 kHz | 1.25 % | |
| | > 500 A ... 1000 A | 300 Hz ... 1 kHz | 0.90 % | |
| | > 500 A ... 3000 A | 10 Hz ... 300 Hz | 0.90 % | |
| Kalibrieren von Rogowskispulen | 100 A ... 1000 A | 10 Hz ... 850 Hz | 0.85 % | |
| | | > 850 Hz ... 3 kHz | 1.00 % | |
| | | > 3 kHz ... 6 kHz | 1.65 % | |
| | 100 A ... 650 A | > 6 kHz ... 10 kHz | 11.75 % | |
| | > 1 kA ... 6 kA | 10 Hz ... 600 Hz | 0.80 % | |
| | > 1 kA ... 5.75 kA | > 600 Hz ... 1 kHz | 0.80 % | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen |
|--|--------------------|--|---|---|
| Wechselstromleis- tung | > 1 kA ... 4.6 kA | > 1 kHz ... 3 kHz | 0.90 % | Messunsicherheit bezogen auf Wirkleistung |
| | > 1 kA ... 1.25 kA | > 3 kHz ... 6 kHz | 1.60 % | |
| 50 ... 60 Hz | | cos φ (c, i) | | |
| Kalibrieren von Leistungsmessge- räten | 0,01 W ... 2.3 W | [°] | | |
| | | 0 | 842 ppm | |
| | 1 V ... 23 V | 15 | 842 ppm | |
| | | 30 | 842 ppm | |
| | 0,01 A ... 0,1 A | 45 | 843 ppm | |
| | | 60 | 846 ppm | |
| | | 75 | 862 ppm | |
| | | 85 | 1023 ppm | |
| | 0,1 W ... 1,15 kW | 0 | 537 ppm | |
| | | 15 | 537 ppm | |
| | 1 V ... 23 V | 30 | 538 ppm | |
| | | 45 | 539 ppm | |
| | 0,1 A ... 50 A | 60 | 544 ppm | |
| | | 75 | 570 ppm | |
| | 85 | 792 ppm | | |
| | 0 | 683 ppm | | |
| 0,23 W ... 100,8 W | 15 | 683 ppm | | |
| | 30 | 684 ppm | | |
| 23 V ... 1008 V | 45 | 685 ppm | | |
| | 60 | 689 ppm | | |
| 0,01 ... 0,1 A | 75 | 709 ppm | | |
| | 85 | 897 ppm | | |
| Wechselstromleis- tung | | cos φ (c, i) | | |
| 50 ... 60 Hz | | [°] | | |
| Kalibrieren von Leistungsmessge- räten | 2,3 W ... 50,4 kW | 0 | 217 ppm | |
| | | 15 | 217 ppm | |
| | 0,1 A ... 50 A | 30 | 219 ppm | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit \pm ¹⁾ | Bemerkungen | |
|---|--|--|---|-----------------|-------|
| Phasenwinkel | φ | 45 | 223 ppm | | |
| | | 60 | 234 ppm | | |
| | | 75 | 288 ppm | | |
| | | 85 | 621 ppm | | |
| | | U_{AC}: 16 V ... 1008 V | | | |
| | | I_{AC}: 0.25 A ... 5 A | | | |
| | | Frequenz: | | | |
| | | 0.00° ... 360° | 16 Hz ... 69 Hz | | 0,01° |
| | | 0.00° ... 360° | > 69 ... 180 | | 0,01° |
| | | 0.00° ... 360° | > 180 ... 450 | | 0,02° |
| Kalibrieren von Phasenmessgerä- ten | 0.00° ... 360° | > 450 ... 850 | 0,04° | | |
| | 0.00° ... 360° | > 850 ... 2,85 k | 0,175° | | |
| | 0.00° ... 360° | > 2,85 k ... 6 k | 0,35° | | |
| | U_{AC}: 16 V ... 1008 V | | | | |
| | I_{AC}: 5 A ... 21.5 A | | | | |
| | Frequenz: | | | | |
| | 0.00° ... 360° | 16 ... 69 | 0,01° | | |
| | 0.00° ... 360° | > 69 ... 180 | 0,015° | | |
| | 0.00° ... 360° | > 180 ... 450 | 0,025° | | |
| | 0.00° ... 360° | > 450 ... 850 | 0,05° | | |
| 0.00° ... 360° | > 850 ... 2,85 k | 0,235° | | | |
| Phasenwinkel | φ | U_{AC} | | Gleiche Signale | |
| Phasenwinkel mes- sen | 0° ... 360° | 0,1 V ... 10 V 50 Hz ... 60 Hz | 0,065° | | |
| Kapazität Kalibrierung von Kapazitäten und Messgeräten | 10 pF; 100 pF; 1000 pF | 1 kHz 1 kHz | 105•10 ⁻⁶ 370•10 ⁻⁶ | Nur Festwerte | |
| | 10 nF; 100 nF; 1 μF | | | | |
| | 10 pF ... < 100 pF | 1 kHz | 2,55•10 ⁻³ | | |
| | 100 pF ... < 1 nF | 1 kHz | 520•10 ⁻⁶ | | |
| | 1 nF ... < 6.4 nF | 1 kHz | 310•10 ⁻⁶ | | |
| | 100 nF ... < 1.6 μF | 1 kHz | 760•10 ⁻⁶ | | |



SCS-Verzeichnis

Akkreditierungsnummer: SCS 0002

| Messgrösse / Kalibrier- gegenstand | Messbereich | Messbedingungen | Bestmögliche Messunsicherheit ± ¹⁾ | Bemerkungen |
|---|--|-----------------|---|-----------------------------|
| Kalibration von Ka- pazitäten mit DC Lade-/Entlade-ver- fahren | 220 µF ... 110 mF | | 845•10 ⁻⁶ | |
| Induktivität | 50 µH | 1 kHz | 2,2•10 ⁻³ | Nur Festwerte |
| | 100 µH | 1 kHz | 1,4•10 ⁻³ | |
| | 500 µH | 1 kHz | 425•10 ⁻⁶ | |
| Kalibrierung von In- duktivitäten | 1 mH | 1 kHz | 380•10 ⁻⁶ | |
| | 5 mH | 1 kHz | 300•10 ⁻⁶ | |
| | 10 mH | 1 kHz | 290•10 ⁻⁶ | |
| | 50 mH; 100 mH; 500 mH; 1 H; 5 H; 10 H | 1 kHz | 280•10 ⁻⁶ | |
| Kalibrierung von In- duktivitätsmessge- räten | 50 µH | 1 kHz | 2,51•10 ⁻³ | Nur Festwerte |
| | 100 µH | 1 kHz | 1,2•10 ⁻³ | |
| | 500 µH | 1 kHz | 520•10 ⁻⁶ | |
| | 1 mH | 1 kHz | 380•10 ⁻⁶ | |
| | 5 mH | 1 kHz | 300•10 ⁻⁶ | |
| | 10 mH | 1 kHz | 210•10 ⁻⁶ | |
| | 50 mH; 100 mH; 500 mH; 1 H; 5 H; 10 H | 1 kHz | 285•10 ⁻⁶ | |
| Frequenz | | | | Messung über 24 h |
| Kalibrieren von Fre- quenzzählern | 10 Hz ... 4 GHz | | 2,1•10 ⁻¹² | Amplitude 100 mV ... 1 V |
| Kalibrieren von Fre- quenzgeneratoren | 10 MHz | | 1,16•10 ⁻¹² | Messung über 24 h |
| | 100 kHz ... < 1 MHz | | 13•10 ⁻¹² + 10 µHz | Amplitude 30 mV ... 5 V |
| | 1 MHz ... < 10 MHz | | 13•10 ⁻¹² + 100 µHz | |
| | 10 MHz...<100 MHz | | 13•10 ⁻¹² + 1 mHz | |
| | 100 MHz...<2,7GHz | | 13•10 ⁻¹² + 10 mHz | |
| Zeitintervall | 10 µs ... < 100 µs | | 12•10 ⁻¹² + 587 ps | Amplitude 30 mV ... 5 V |
| | 100 µs ... < 1 ms | | 12•10 ⁻¹² + 587 ps | |
| | 1 ms ... < 10 ms | | 12•10 ⁻¹² + 587 ps | |



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Akkreditierungsnummer: SCS 0002

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|---|------------------------------------|-------------------------------|---|---|---------------------|
| Drehzahl | 10 ms ... < 100 ms | | 12•10 ⁻¹² + 587 ps | Optisch | |
| | 100 ms ... 1 s | | 12•10 ⁻¹² + 587 ps | | |
| Kalibrierung von Oszilloskopen | 600 ... 100'000 U/min | | 1,0•10 ⁻⁴ | An 1 M Ω | |
| | 1 mV ... 25 mV | 1 kHz | 0,3•10 ⁻³ + 30 μ V | | |
| Rechteck Spannungs-Amplitude | > 25 mV ... 110 mV | 1 kHz | 0,3•10 ⁻³ + 30 μ V | An 50 Ω | |
| | > 110 mV ... 2,2 V | 1 kHz | 0,3•10 ⁻³ + 30 μ V | | |
| | > 2,2 V ... 11 V | 1 kHz | 0,3•10 ⁻³ + 31 μ V | | |
| | > 11 V ... 130 V | 1 kHz | 0,3•10 ⁻³ + 302 μ V | | |
| | 1 mV ... 25 mV | 1 kHz | 2,9•10 ⁻³ + 47 μ V | | |
| | > 25 mV ... 110 mV | 1 kHz | 2,9•10 ⁻³ + 47 μ V | | |
| Zeitmarker | > 110 mV ... 2,2 V | 1 kHz | 2,9•10 ⁻³ + 47 μ V | | |
| | > 2,2 V ... 6,6 V | 1 kHz | 2,9•10 ⁻³ + 47 μ V | | |
| | 0.5 ns ... 10 μ s | | 0,38•10 ⁻⁶ + 29 ps | | |
| | 20 μ s ... 1 ms | | 0,38•10 ⁻⁶ + 0,69 ns | | |
| | 2 ms ... 10 ms | | 0,38•10 ⁻⁶ + 1,9 ns | | |
| | 20 ms | | 0,38•10 ⁻⁶ + 3,5 ns | | |
| Risetime von Oszilloskopen | 50 ms ... 0,1 s | | 2,9•10 ⁻⁶ + 18 ns | Kalibrator: tr=12.8 ps \pm 17,3ps | |
| | 0,2 s ... 5 s | | 2,9•10 ⁻⁶ + 1,2 μ s | | |
| Risetime von Puls- generatoren | 150 ... <300 ps | | 33,5 % + 23 ps | Oszilloskop: tr = 78.6 ps \pm 3,3 ps | |
| | 0.3 ... 1000 ns | | 4,5 % + 23 ps | | |
| Kalibrierung der Flatness von Oszilloskopen | 150 ... <300 ps 0.3 ... 1000 ns | 50 mVpp ... 3,5 Vpp | 6.09 % + 16 ps | Prüfling: 50 Ω : VSWR \leq 1,5 kalibriert auf U _{INC} | |
| | | 50 mVpp ... 3,5 Vpp | 2.84 % + 16 ps | | |
| | | 50 Ω | | | |
| | | 5 mVpp ... 5 Vpp | 50 kHz ... 100 MHz | | 4,9 % + 300 μ V |
| | | >100MHz...300MHz | 5,4 % + 300 μ V | | |
| | | >300MHz...500MHz | 6,6 % + 300 μ V | | |
| 5 mVpp ... 3.5 Vpp | >500MHz...600MHz | 7,0 % + 300 μ V | | | |
| | >600MHz...1,6GHz | 8,5 % + 300 μ V | | | |
| | >1,6GHz...2,1 GHz | 9,5 % + 300 μ V | | | |



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|---|---------------------------|--|--|--|
| Kalibrierung der Flatness von Oszil- loskopen | 5 mVpp ... 5 Vpp | 50 kHz ... 100 MHz >100MHz...200MHz | 1 MΩ 7 pF 7,0 % + 300 μV 13,5 % + 300 μV | Prüfling: 1 MΩ: C _{IN} ≤ 10 pF kalibriert auf U _{Last} |
| RF Amplitude | 0,7 mVrms ... 2.2 Vrms | 9 kHz ... 2 GHz | 1.28 % | VSWR < 1,5 |
| Kalibrieren von Flickermetern | 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. 1.1, 2003 Ed. 2.0, 2010 |

Die dimensionslosen Anteile der Messunsicherheit sind Relativwerte, bezogen auf den Messwert

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