

Moving Test – MT310

Portable Reference Meter, CAT III



Precise Measurement of Accuracy Class 0.1



System Concept	The MT310 is a portable Reference Meter based on newest technology in power and energy measurement. Various measuring features combined with its easy operation concept provide the greatest possible flexibility for a comprehensive testing of metering installations on site. Its double isolated plastic housing already reveals the high quality of the system. The equipment is offering optimal ergonomics and functionality combined with an excellent menu guided operation via built-in soft-keys and a 6.4" LCD-display.
Features	 Excellent user-guidance Many configuration possibilities by adding various measuring adapters Unique long-term and temperature stability of the measuring module Current measurement up to 120 A with error compensated Clip-on CTs Internal memory to store measurement results and customer data Windows based data management software MTVis for evaluation of the test results External system control via PC with windows based control software Current measurement up to 10000 A by using a required current sensor <u>No additional error</u> for reactive measurement Accuracy class 0.1
Functions	 Testing of electricity meter installations with 2-wire, 3-wire and 4-wire circuits Testing of energy and power registers Power and energy measurement of active, reactive and apparent energy 4 quadrant measurement Frequency-, phase angle- and power factor measurement Harmonic waveform analysis for voltage and current up to the 40th THD Distortion factor measurement Vector diagram display Waveform sampling Rotary field display Determination of the operating burden on instrument transformers for CT and PT Ratio test by simultaneous measurement of both primary and secondary currents in CT connected metering systems * Selective power measurement * External thermal-printer for presentation of the measuring results at customer site * Energy dosage * Operation via test voltage possible * optional function, not serially
Data Management	After measurement the stored data can be sent to an external PC. The data management software MTVis provides the ability to transfer data from the internal memory to an external PC where the data can be represented. The stored data can be summarized to a measuring report or be exported for further applications.



Actual Values Measurement	 All instantaneous values are displayed simulasummary: RMS values of all voltage and curren All phase angles between voltage an Phase angles between the voltages Currents for all 3 phases Active, reactive and apparent power Frequency and phase rotation Power factor (cos φ) 	t phases d current	27.02.2007 14:09 UR: IR: MM: Gctual Values 250 V Ct0 A 400 L1 L2 L3 Upp 229.97 229.99 V Upp 29.32 398.35 398.36 V 1 9.9460 9.9230 9.653 Å V 21 9.9460 9.9230 9.653 Å 21 0.359.64 239.65 119.65 210 0.327 2.28212 2.2919 Å 0 -0.014 0.0000 1.0000 1.0000 1.00001 0.0001 V 2.2873 2.28221 2.2919 Å V 0 -0.0145 -0.0066 -0.0014 Å 2.2873 2.2822 2.2919 Å V Funo. UR IR HH Start Stop X 1.0000 N Y
Vector Display	The vector diagram display makes it very easy faults in the voltage and current circuits of a m	-	Vector 250 U CIO A AHA Norw: DIN 410 U12 U12 U12 U12 U23 U23 U23 U23 U23 U23 U23 U2
Curve Display	The curve display for voltage and curre analysing the signal quality. Two channels ca and displayed simultaneously. The measured be stored in the internal memory of the system the customer information data.	n be measured waveform can	27.02.2007 14:15 UR: IR: HH: Curve 230 U CLO A Alia CH-1: ULL CH-2: ILL 100 - - - - 0 - - - - - -20 -60 100 240 300 360* -100 - - - - - - - -100 - 100 - - - - - Func. UR IR HH Start Stop
Harmonic Measurement	The MT310 can measure harmonics in voltage and current up to the 40 th THD (conform to the voltage quality norm DIN EN 50160) which is possible by the high scanning rate of the working standard. The measured harmonic spectrum can be displayed in a chart or in a diagram.		Harmonics 250 U CLO A 4HA CH: ULL Z _H :24.61 X 100 10 10 0.1 0.1 0.1 0.2 4 6 8 10
Error Measurement	By entering all relevant parameter like meter constant and the number of pulses, the system can perform the error measurement on electricity meters. The system is able to determine the percentage error and the operator can store it according to the customer information data. To be informed about the status of the measurement a bar		27.02.2007 14:19 UR: IR: MM: Error Measurement 250 U Cto A AHA Constant: 10000 × [1 / kHA Pulses: SC 000 × [1 / kHA Status FUS AUXIN E: 4.80 HA FUS F1: 0.988 % FUS Func. UR IR MM Stop
Optional Features	 Various mains cables for each country Quick connecting cable set Test cable set Pulse converter AC current clamps for 1000 A measuremen Flexible current sensor for 10000 A measuremen 	rement	unctions

- High current stick for 2000 A primary measurement
- Error compensated AC current clamps for 120 A measurement

Technical Data

MT310 Portable Reference Meter

Conoral	
General	
Power supply	85 265 V, 47 63 Hz
Power consumption	~ 22 VA
Temperature range, operation	-10° + 50° C
Temperature range, storage	-15° + 65° C
Relative humidity (not condensing)	max. 95 %
Dimensions (DxWxH)	220 x 290 x 80 mm
Weight	2.7 kg
Safety	
IP class according to DIN EN 60529	IP30
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	II
Overvoltage category voltage measurement 16)	CAT III 300 V
Overvoltage category current measurement	CAT III 300 V
Reference meter	
Measuring modes	2WA / 2WR / 2WAP
	3WA / 3WR / 3WAP / 3WRCA / 3WRCB
	4WA / 4WAb / 4WR / 4WRb / 4 WAP / 4 WAPb / 4WRC
Fundamental frequency	15 70 Hz
Bandwidth	3000 Hz
Sampling	16 bit 504 samples/period
Accuracy class for measuring of power / energy	0.1
Angle measurement accuracy 3) 4)	< 0.015°
	[< 0.1°]
Frequency measurement deviation	± 0.01 Hz
Voltage Measurement	
Voltage measurement	100 mV 300 V
Voltage range(s)	250 V, 5 V
Voltage channels input impedance (@ range)	245 kΩ @ 250 V
• • • • • • • • •	10 MΩ @ 5 V
Voltage measurement accuracy 5)	< 0.05 % @ 30V 300 V
	< 0.2 % @ 0,5 V < 30 V
	< 1 % @ 0.1 V < 0.5 V
Voltage measurement temperature drift 3)	< 15 x 10 E-6 / K
Voltage measurement stability 1)	< 50 x 10 E-6
Voltage measurement long term stability 2) 3)	< 100 x 10 E-6 / Year
Current measurement	direct or [with MT3430]
Current measurement	1 mA 12 A
	[5 mA 120 A]
	[5 mA 120 A]
Current range(s)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A
Current range(s)	[5 mA 120 A]
Current range(s) Usage of ranges	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 %
Current range(s)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A]
Current range(s) Usage of ranges Current channels input impedance (@ range)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A
Current range(s) Usage of ranges Current channels input impedance (@ range)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A < 0.05 % @ 10 mA 12 A < 0.2 % @ 5 mA < 10 mA [< 0.15 % @ 500 mA 120 A]
Current range(s) Usage of ranges Current channels input impedance (@ range)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \dots 120 \% \\ \sim 0.04 \Omega @ 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% @ 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% @ 5 \text{ mA} \dots < 10 \text{ mA} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A < 0.05 % @ 10 mA 12 A < 0.2 % @ 5 mA < 10 mA [< 0.15 % @ 500 mA 120 A]
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \dots 120 \% \\ \sim 0.04 \Omega @ 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% @ 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% @ 5 \text{ mA} \dots < 10 \text{ mA} \\ \begin{bmatrix} < 0.15 \% @ 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \% @ 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A < 0.05 % @ 10 mA 12 A < 0.2 % @ 5 mA < 10 mA [< 0.15 % @ 500 mA 120 A] [< 0.3 % @ 100 mA < 500 mA] < 15 x 10 E-6 / K
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A < 0.05 % @ 10 mA 12 A < 0.2 % @ 5 mA < 10 mA [< 0.15 % @ 500 mA 120 A] [< 0.3 % @ 100 mA < 500 mA] < 15 x 10 E-6 / K [< 50 x 10 E-6 / K]
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4)	[5 mA 120 A] 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 0.05 A [100 A, 50 A, 10 A, 5 A, 1 A, 0.5 A, 0.1 A, 0.05 A] 10 120 % ~ 0.04 Ω @ 0.05 A 10 A < 0.05 % @ 10 mA 12 A < 0.2 % @ 5 mA < 10 mA [< 0.15 % @ 500 mA 120 A] [< 0.3 % @ 100 mA < 500 mA] < 15 x 10 E-6 / K [< 50 x 10 E-6 / K] < 70 x 10 E-6
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \dots 120 \% \\ \sim 0.04 \Omega @ 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% @ 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% @ 5 \text{ mA} \dots < 10 \text{ mA} \\ \begin{bmatrix} < 0.15 \% @ 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} \\ \begin{bmatrix} < 0.3 \% @ 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \\ \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \\ \end{bmatrix} $ $ \begin{bmatrix} < 150 \times 10 \text{ E-6} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 0.04 \Omega & 0.05 \text{ A} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.05 \text{ \%} & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \text{ \%} & 0 \text{ 500 mA} \dots \text{ 120 A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \text{ \%} & 0 \text{ 100 mA} \dots \text{ 500 mA} \end{bmatrix} $ $ \begin{bmatrix} < 15 \text{ x} 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 150 \text{ x} 10 \text{ E-6} \end{bmatrix} $ $ \begin{bmatrix} < 100 \text{ x} 10 \text{ E-6} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \dots 120 \% \\ \sim 0.04 \Omega @ 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% @ 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% @ 5 \text{ mA} \dots < 10 \text{ mA} \\ \begin{bmatrix} < 0.15 \% @ 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} \\ \begin{bmatrix} < 0.3 \% @ 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \\ \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \end{bmatrix} $ $ \begin{bmatrix} < 100 \times 10 \text{ E-6} / \text{Year} \\ \begin{bmatrix} < 600 \times 10 \text{ E-6} / \text{Year} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \dots 120 \% \\ \sim 0.04 \Omega @ 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% @ 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% @ 5 \text{ mA} \dots < 10 \text{ mA} \\ \begin{bmatrix} < 0.15 \% @ 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} \\ \begin{bmatrix} < 0.3 \% @ 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \\ \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \end{bmatrix} $ $ \begin{bmatrix} < 100 \times 10 \text{ E-6} / \text{Year} \\ \begin{bmatrix} < 600 \times 10 \text{ E-6} / \text{Year} \\ \end{bmatrix} $ $ \begin{bmatrix} \\ 12 \text{ mm} \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 0.04 \Omega \oplus 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% \oplus 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% \oplus 5 \text{ mA} \dots < 10 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% \oplus 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% \oplus 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \% \oplus 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \% \oplus 100 \text{ mA} \dots < 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \\ \hline \\ < 50 \times 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 100 \times 10 \text{ E-6} / \text{ Year} \\ \\ \hline $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 0.04 \Omega \oplus 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% \oplus 10 \text{ mA} \dots 12 \text{ A} \\ < 0.2 \% \oplus 5 \text{ mA} \dots < 10 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% \oplus 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \% \oplus 100 \text{ mA} \dots 4 \text{ S00 mA} \end{bmatrix} $ $ \begin{bmatrix} < 15 \text{ x} 10 \text{ E-6} \text{ / K} \\ \hline \\ \hline \\ < 50 \text{ x} 10 \text{ E-6} \text{ / K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} \text{ / K} \\ \hline \\ \hline \\ < 100 \text{ x} 10 \text{ E-6} \text{ / Year} \\ \hline \\ $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} -0.04 \Omega & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.05 \% & 0 \text{ I} 0 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 50 mA} \dots \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \% & 0 \text{ 100 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{K} \\ \\ \hline $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 200 \text{ M} \text{ C}, 0.5 \text{ A}, \dots 10 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.05 \text{ W} \text{ @}, 0.05 \text{ A} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \text{ W} \text{ @}, 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \text{ W} \text{ @}, 100 \text{ mA} \dots 4 \text{ S}, 500 \text{ mA} \end{bmatrix} $ $ \hline \begin{bmatrix} < 50 \text{ x}, 10 \text{ E-6} \text{ / K} \end{bmatrix} $ $ \hline \begin{bmatrix} < 150 \text{ x}, 10 \text{ E-6} \text{ / K} \end{bmatrix} $ $ \hline \begin{bmatrix} < 600 \text{ x}, 10 \text{ E-6} \text{ / Year} \\ \\ \begin{bmatrix} < 600 \text{ x}, 10 \text{ E-6} \text{ / Year} \end{bmatrix} $ $ \hline \begin{bmatrix} < 600 \text{ x}, 10 \text{ E-6} \text{ / Year} \\ \\ \end{bmatrix} $ $ \hline \begin{bmatrix} < 0.1 \text{ W} \text{ @}, 10 \text{ mA} \dots 12 \text{ A} \\ \\ \\ \begin{bmatrix} < 0.2 \text{ W} \text{ @}, 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \hline \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 25 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 200 \text{ M} \text{ C}, 0.05 \text{ A} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \text{ W} \text{ @} 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \text{ W} \text{ @} 100 \text{ mA} \dots 4 \text{ 500 mA} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} / \text{ K} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 0.1 \text{ W} \text{ @} 10 \text{ mA} \dots 12 \text{ A} \\ \\ \begin{bmatrix} < 0.2 \text{ W} \text{ @} 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \end{bmatrix} $ $ \hline $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 25 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 20 \text{ C} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.05 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.10 \text{ K} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.10 \text{ K} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ M} & 0 \\ 0 \text{ C} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15$
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement stability 1)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 0.04 \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ \hline & < 0.05 \text{ \%} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.05 \text{ M} & 0 \text{ OD} \text{ A} \dots 12 \text{ A} \\ \hline & < 0.2 \text{ \%} & 0 \end{bmatrix} $ $ \begin{bmatrix} 0.15 \text{ \%} & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ x} 10 \text{ E-6} \text{ / K} \\ \hline & < 50 \text{ x} 10 \text{ E-6} \text{ / Year} \\ \hline & \\ \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} \text{ / Year} \\ \hline & \\ \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} \text{ / Year} \\ \hline & \\ \end{bmatrix} $ $ \begin{bmatrix} < 0.1 \text{ \%} & 0 \text{ 10 mA} \dots 12 \text{ A} \\ \hline & \\ \end{bmatrix} $ $ \begin{bmatrix} < 0.2 \text{ \%} & 0 \text{ 0mA} \dots 120 \text{ A} \end{bmatrix} $ $ \\ \hline \\ $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement stability 1) Power/energy measurement long term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 10 \text{ A}, 5 \text{ A}, 2.5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.25 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \\ \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 000 \text{ M} \text{ C}, 000 \text{ M} \text{ A}, 0.05 \text{ M} \end{bmatrix} $ $ \begin{bmatrix} 0.05 \text{ M} \text{ O} & 0.05 \text{ A} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \text{ M} \text{ O} & 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.3 \text{ W} \text{ O} & 100 \text{ mA} \dots 4 \text{ S} 500 \text{ mA} \end{bmatrix} $ $ \begin{bmatrix} < 15 \text{ X}, 10 \text{ E-6} \text{ / K} \end{bmatrix} $ $ \begin{bmatrix} < 50 \text{ X}, 10 \text{ E-6} \text{ / K} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ X}, 10 \text{ E-6} \text{ / Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ X}, 10 \text{ E-6} \text{ / Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ X}, 10 \text{ E-6} \text{ / Year} \end{bmatrix} $ $ \begin{bmatrix} < 0.1 \text{ W} \text{ O} & 10 \text{ mA} \dots 12 \text{ A} \\ \\ \begin{bmatrix} < 0.2 \text{ W} \text{ O} & 500 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \end{bmatrix} $ $ \begin{bmatrix} < 0.1 \text{ W} \text{ O} & 10 \text{ mA} \dots 12 \text{ A} \\ \\ \end{bmatrix} $ $ \begin{bmatrix} < 65 \text{ X}, 10 \text{ E-6} \text{ / K} \\ \\ \end{bmatrix} $ $ \begin{bmatrix} < 65 \text{ X}, 10 \text{ E-6} \text{ / K} \\ \\ \end{bmatrix} $ $ \begin{bmatrix} < 200 \text{ X}, 10 \text{ E-6} \text{ / K} \\ \\ \end{bmatrix} $ $ \begin{bmatrix} < 200 \text{ X}, 10 \text{ E-6} \text{ / K} \\ \\ \end{bmatrix} $ $ \begin{bmatrix} < 200 \text{ X}, 10 \text{ E-6} \text{ / K} \\ \\ \end{bmatrix} $ $ \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement stability 1) Power/energy measurement stability 1) Power/energy measurement stability 1) Power/energy measurement long term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s) 2: Stability over 1 year (every month one measurement over one hour)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ M} \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \text{ 0} & 0.05 \text{ A} \dots 12 \text{ A} \\ < 0.2 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \text{ [< 50 \times 10 \text{ E-6} / \text{ K]} \\ < 100 \times 10 \text{ E-6} / \text{ Year} \\ \text{ [< 600 \times 10 \text{ E-6}] / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \\ \text{ [< 200 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ < 30 \text{ x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement stability 1) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement stability 1) Power/energy measurement long term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s)	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ M} \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \text{ 0} & 0.05 \text{ A} \dots 12 \text{ A} \\ < 0.2 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \text{ [< 50 \times 10 \text{ E-6} / \text{ K]} \\ < 100 \times 10 \text{ E-6} / \text{ Year} \\ \text{ [< 600 \times 10 \text{ E-6}] / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \\ \text{ [< 200 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ < 30 \text{ x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement temperature drift 4) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement temperature drift 3) 4) Power/energy measurement long term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s) 2: Stability over 1 hour (every minute one measurement over one hour) 3: From 30 V 300 V 4: From 10 mA 12A [500 mA 120 A] 5: Related to the read value at optimum range selection	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ M} \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \text{ 0} & 0.05 \text{ A} \dots 12 \text{ A} \\ < 0.2 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \text{ [< 50 \times 10 \text{ E-6} / \text{ K]} \\ < 100 \times 10 \text{ E-6} / \text{ Year} \\ \text{ [< 600 \times 10 \text{ E-6}] / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \\ \text{ [< 200 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ < 30 \text{ x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement temperature drift 4) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement temperature drift 3) 4) Power/energy measurement tong term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s) 2: Stability over 1 hour (every minute one measurement over one hour) 3: From 30 V 300 V 4: From 10 mA 12 A [500 mA 120 A] 5: Related to the read value at optimum range selection 6: Related of apparent power	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ M} \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \text{ 0} & 0.05 \text{ A} \dots 12 \text{ A} \\ < 0.2 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \text{ [< 50 \times 10 \text{ E-6} / \text{ K]} \\ < 100 \times 10 \text{ E-6} / \text{ Year} \\ \text{ [< 600 \times 10 \text{ E-6}] / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \\ \text{ [< 200 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ < 30 \text{ x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ \end{bmatrix} $
Current range(s) Usage of ranges Current channels input impedance (@ range) Current measurement accuracy 5) Current measurement temperature drift 4) Current measurement temperature drift 4) Current measurement long term stability 2) 4) Clamp for max. Ø Power Measurement Power/energy measurement accuracy 3) 5) 6) Power/energy measurement temperature drift 3) 4) Power/energy measurement temperature drift 3) 4) Power/energy measurement long term stability 2) 1: Stability over 1 hour (every minute one measurement with ti = 60 s) 2: Stability over 1 hour (every minute one measurement over one hour) 3: From 30 V 300 V 4: From 10 mA 12A [500 mA 120 A] 5: Related to the read value at optimum range selection	$ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 5 \text{ mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ A}, 50 \text{ A}, 10 \text{ A}, 5 \text{ A}, 1 \text{ A}, 0.5 \text{ A}, 0.1 \text{ A}, 0.05 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} 100 \text{ M} \text{ Q} & 0.05 \text{ A} \dots 10 \text{ A} \\ < 0.05 \% & 0 \text{ 0} & 0.05 \text{ A} \dots 12 \text{ A} \\ < 0.2 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 0.15 \% & 0 \text{ 500 mA} \dots 120 \text{ A} \end{bmatrix} $ $ \begin{bmatrix} < 50 \times 10 \text{ E-6} / \text{ K} \\ \text{ [< 50 \times 10 \text{ E-6} / \text{ K]} \\ < 100 \times 10 \text{ E-6} / \text{ Year} \\ \text{ [< 600 \times 10 \text{ E-6}] / \text{ Year} \end{bmatrix} $ $ \begin{bmatrix} < 600 \text{ x} 10 \text{ E-6} / \text{ Year} \\ \text{ [< 200 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ < 30 \text{ x} 10 \text{ E-6} / \text{ K} \\ \text{ [< 65 x} 10 \text{ E-6}] \\ \end{bmatrix} $

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Subjects to alteration.

MT310-CATIII_Pros_EXT_GB_V407