

Specifications		
General	Display	¼ VGA Graphic Color transmissive
	Quality	Developed, designed and manufactured according to DIN ISO 9001
	Memory	4 MB Flash memory, 3.5 MB for measuring data
	Interface	RS-232 SUB-D socket; 115.2 k Baud, 8 data bits, no parity, 1 stop bit, firmware updates are possible with the RS-232 interface (9-pole extension cable)
	Sample rate	10.24 kHz
	Line frequency	50 Hz or 60 Hz, user-selectable, with automatic synchronization
	Power supply	NiMH battery-pack, with ac adapter (15 V to 20 V / 0.8 A)
	Operation time with	Typical > 12 hours without backlight
	Dimensions	240 x 180 x 110 mm
	Weight	1.7 kg, including battery
Ambient conditions	Working temperature	-10°C to +50°C
	Storage temperature	-20°C to +60°C
	Operating temperature	0°C to +40°C
	Reference temperature range	23°C ±2°C
The above terms are defined in European Standards. To calculate the specification at any point in the working temperature range, use the temperature coefficient below.		
	Temperature coefficient	±0.1% of the measured value per°C
	Intrinsic error	Refers to reference temperature,
	Operating error	Refers to operating temperature range,
	Climatic class	C1 (IEC 654-1) -5°C to +45°C, 5% to
	Housing	Cyclopy shock and scratch proof
EMC	Emission	IEC/EN 61326-1:1997 class B
	Immunity	IEC/EN 61326-1:1997
Safety	Safety	IEC 61010-1 600 V CAT III, double or reinforced insulation, pollution degree 2

	Protection	IP65; EN60529 (refers only to the main housing without the battery compartment) RMS values are measured with a 20 ms resolution.
V-rms wye measurement	Measuring range	57 V/66 V/110 V/120 V/127 V/220 V/230 V/240 V/260 V/277 V/347 V/380
	Intrinsic error	±(0.2% of measured value + 5 digits)
	Operating error	±(0.5% of m. v. + 10 digit)
	Resolution	0.1 V
V-rms delta measurement	Measuring range	100 V/115 V/190 V/208 V/220 V/380 V/400 V/415 V/450 V/480 V/600 V/660
	Intrinsic error	±(0.2% of m. v. + 5 digit)
	Operating error	±(0.5% of m. v. + 10 digit)
	Resolution	0.1 V
A-rms measurement	Flexi set I ranges	15 A/150 A/3000 A rms (at sine)
	Current clamp ranges	1 A/10 A
	Resolution	0.01 A
	Ranges	150 A/3000 A and 1 A/10 A
	Intrinsic error	±(0.5% of m. v. + 10 digit)
	Operating error	±(1% of m. v. + 10 digit)
	Ranges	15 A
	Intrinsic error	±(0.5% of m. v. + 20 digit)
	Operating error	±(1% of m. v. + 20 digit)
		The errors of the current probes are
By using Flexi-set	Flexi Set measuring	±(2% of m. v. + 10 digit)
	Position influence	±(3% of m. v. + 10 digit)
	CF (typical)	2.83
Power measurement (P - Active, S - Apparent, Q- Reactive, D -	Measuring range	When using Flexi Set please make sure to position the conductor opposite to the see V rms and A rms measurement Power errors are calculated by adding the errors of voltage and current Additional error due to power factor PF Specified error x (1-[PF])

Distorting

Maximum range with voltage range 830 V delta-connection and 3000 A current range is 2.490 MW, higher displayed values possible when using PTs and CTs with ratio feature

Intrinsic error	$\pm(0.7\% \text{ of m.v.} + 15 \text{ digit})$
Resolution	1 kW
Operating error	$\pm(1.5\% \text{ of m.v.} + 20 \text{ digit})$
Typical range with voltage range 230 V wye connection and 150 A current range is 34.50 KW.	
Intrinsic error	$\pm(0.7\% \text{ of m.v.} + 15 \text{ digit})$
Resolution	1 W to 10 W
Operating error	$\pm(1.5\% \text{ of m.v.} + 20 \text{ digit})$
The errors of the current sensors themselves have not been considered.	

Energy measurement (kWh, KVAh, kVARh)	Intrinsic error	$\pm(0.7\% \text{ of m.v.} + F \text{ variation error}^* + 15 \text{ digit})$
	Resolution	1 W to 10 W
	Operating error	$\pm(1.5\% \text{ of m.v.} + F \text{ variation error}^1 + 20 \text{ digit})$
		1. Frequency variation error
PF (Power factor)	Range	0.000 to 1.000
	Resolution	0.001
	Accuracy	$\pm 1\% \text{ of full scale}$
Frequency measurement	Measuring range	46 Hz to 54 Hz and 56 Hz to 64 Hz
	Intrinsic error	$\pm(0.2\% \text{ of m. v.} + 5 \text{ digit})$
	Operating error	$\pm(0.5\% \text{ of m. v.} + 10 \text{ digit})$
	Resolution	0.01 Hz
Harmonics	Measuring range	To 50th harmonic ($< 50\% \text{ of nom}$)
Accuracy	Vm, Im, THDV, THDI	IEC 61000-4-7:2002, Class II
	Vm $\geq 3\% V_n$	$\pm 5\% V_m$
	Vm $< 3\% V_{nom}$	$\pm 0.15\% V_{nom}$
	Im $\geq 10\% I_{nom}$	$\pm 5\% I_m$
	Im $< 10\% I_{nom}$	$\pm 0.5\% I_{nom}$
	THDV	for THD $< 3\% \pm 0.15\%$ at V_{nom} for THD $\geq 3\% \pm 5\%$ at V_{nom}

THDI	for THD < 10% $\pm 0.5\%$ at I_{nom} for THD $\geq 10\%$ $\pm 5\%$ at I_{nom}
V_{nom}	Normal voltage range
I_{nom}	Nominal current range
	V _m and I _m are measured values of harmonic m
Events	Detection of voltage dips, voltage swells and voltage interruptions with a 10 ms resolution and measuring error of the half period sine wave of rms.
Intrinsic error	$\pm(1\% \text{ of m.v.} + 10 \text{ digit})$
Operating error	$\pm(2\% \text{ of m.v.} + 10 \text{ digit})$
Resolution	0.1 V