1. ELECTRICAL SPECIFICATIONS

Accuracy is calculated as ± [% readings + (no. of digits * resolution)] at 23°C ± 5°C, relative humidity <60%HR

TRMS AC/DC phase - neutral / phase - ground voltage, single / three phase systems

Range (V)	Crest factor	Resolution (V)	Accuracy	Input impedance
2.0 ÷ 600.0	≤ 2	0.1	± (0.5%rdg + 2dgt)	10MΩ

The meter can be connected to external VTs with selectable ratio from 1 to 3000

TRMS AC/DC phase - phase voltage, three phase systems

Range (V)	Crest factor	Resolution (V)	Accuracy	Input impedance
2.0 ÷ 1000.0	≤ 2	0.1	± (0.5%rdg + 2dgt)	10MΩ

The meter can be connected to external VTs with selectable ratio from 1 to 3000

Phase - neutral voltage anomalies, single / three phase systems

Range (V)	Voltage resolution (V)	Voltage accuracy	Time resolution (50/60Hz)	Time accuracy (50/60Hz)
2.0 ÷ 600.0	0.2	± (1.0%rdg + 2dgt)	10ms	± 10ms

Maximum crest factor: 2; the meter can be connected to external VTs with selectable ratio from 1 to 3000
The voltage threshold can be set from ±1 to ±30%

Phase - phase voltage anomalies, three phase systems

Range (V)	Voltage resolution (V)	Voltage accuracy	Time resolution (50/60Hz)	Time accuracy (50/60Hz)
2.0 ÷ 1000.0	0.2	± (1.0%rdg + 2dgt)	10ms	± 10ms

Maximum crest factor: 2; the meter can be connected to external VTs with selectable ratio from 1 to 3000
The voltage threshold can be set from ±1 to ±30%

AC TRMS current with standard STD transducer clamp

Range (mV)	Crest factor	Resolution (mV)	Accuracy (*)	Input impedance	Overload protection
0.0 ÷ 1000.0	≤ 3	0.1	± (0.5%rdg + 0.06%FS)	510kΩ	5V

(*) Accuracy of the transducer excluded ; FS = Full Scale clamp ; current values <0.1%FC are zeroed

TRMS AC current with flex FlexINT transducer – 300A full scale (**)

Range (A)	Crest factor	Resolution (A)	Accuracy (*)	Input impedance	Overload protection
0.0 ÷ 49.9	≤ 3	0.1	± (0.5%rdg+ 0.24%FS)	510kΩ	5V
50.0 ÷ 300.0			± (0.5%rdg + 0.06%FS)		

(*) Accuracy of the transducer excluded ; FS = Full Scale clamp ; current values <1A are zeroed
(**) The 300A range is selectable inside of the instrument

TRMS AC current with flex FlexINT transducer – 3000A full scale

Range (A)	Crest factor	Resolution (A)	Accuracy (*)	Input impedance	Overload protection
0.0 ÷ 3000.0	≤ 3	0.1	± (0.5% rdg + 0.06%FS)	510kΩ	5V

(*) Accuracy of the transducer excluded ; FS = Full Scale clamp ; current values <5A are zeroed

Frequency (voltmetric and amperometric inputs)

Range (Hz)	Resolution (Hz)	Accuracy
42.5 ÷ 69.0	0.1	± (0.2%rdg + 1dgt)

Voltage and current harmonics

Order	Resolution (*)	Accuracy
DC ÷ 25th	0.1V / 0.1A	± (5%rdg + 5dgt)
26th ÷ 33rd		
34th ÷ 49th (**)		

(*) Add to the error of correspondent TRMS parameters; (**) Up to 64° order in real time visualisation

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Power – Single phase and three phase systems (@cosφ>0.5, Vmis>60V, STD clamp)

Parameter [W, VAR, VA]	FS clamp	Range [W, VAR, VA]	Accuracy	Resolution [W, VAR, VA]
Active Power Reactive Power Apparent Power	FS ≤ 1A	0.0 – 999.9	± (1.0%rdg + 6dgt)	0.1
		1.000 – 9.999k		0.001k
	1A< FS ≤ 10A	0.000 – 9.999k		0.001k
		10.00 – 99.99k		0.01k
	10A< FS ≤ 100A	0.00 – 99.99k		0.01k
		100.0 – 999.9k		0.1k
	100A< FS ≤ 3000A	0.0 – 999.9k		0.1k
		1.000 – 9.999M		0.001M

FS = full scale clamp ; Vmis = voltage reference for power measurement

Energy – Single phase and three phase systems (@ cosφ>0.5, Vmis>60V, STD clamp)

Parameter [Wh, VARh, VAh]	FS clamp	Range [Wh, VARh, VAh]	Accuracy	Resolution [Wh, VARh, VAh]
Active Energy Reactive Energy Apparent Energy	FS ≤ 1A	0.0 – 999.9	± (1.0%rgd + 6dgt)	0.1
		1.000 – 9.999k		0.001k
	1A< FS ≤ 10A	0.000 – 9.999k		0.001k
		10.00 – 99.99k		0.01k
	10A< FS ≤ 100A	0.00 – 99.99k		0.01k
		100.0 – 999.9k		0.1k
	100A< FS ≤ 3000A	0.0 – 999.9k		0.1k
		1.000 – 9.999M		0.001M

FS = full scale clamp ; Vmis = voltage reference for power measurement

Power factor (cosφ)

Range	Resolution	Accuracy
0.20 ÷ 0.50	0.01	1.0
0.50 ÷ 0.80		0.7
0.80 ÷ 1.00		0.6

2. GENERAL SPECIFICATIONS

DISPLAY:

Features:	graphic TFT with backlight, ¼ VGA (320 x 240)
Touch screen:	present
Colours:	64K
Contrast:	adjustable

POWER SUPPLY:

Internal power supply:	Li-ION, 3.7V rechargeable battery
Battery life:	> 6 hours
External power supplier:	AC/DC adapter 100-240V 50/60Hz / 5VDC
Auto Power Off:	after 5 minutes of idleness (no external power)

MEMORY AND PC INTERFACE

Every parameter can be stored into the memory. The instrument saves the MIN, AVG and MAX values of the parameters each integration period which can be: 1, 2, 5, 10, 30 seconds, 1, 2, 5, 10, 15, 30, 60 minutes

Maximum parameters to be stored:	251
Memory:	> 3 months @ 251 parameters and integration period = 15 min
Internal memory:	15 Mbyte
External memory:	USB pen drive
External memory:	compact flash card
Operative system:	Windows CE
PC communication port:	USB

The instrument can store **SIMULTANEOUSLY** all the parameters like:

- voltages, currents, power factors, powers, energies, etc.
- ingoing and outgoing power
- voltage anomalies
- voltage and current harmonics
- voltage unbalance

MECHANICAL FEATURES

Dimensions (L x W x H):	235 x 165 x 75mm
Weight (batteries included):	1.0 kg

ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0°C ÷ 40°C
Working humidity:	<80%RH
Storage temperature (batt. not included):	-10°C ÷ 60°C
Storage humidity:	<80%RH

GENERAL REFERENCE STANDARDS:

Safety:	IEC/EN61010-1, IEC/EN61010-031, IEC/EN61010-2-032
EMC :	IEC/EN61326-1
Insulation:	double insulation
Pollution degree:	2
Overvoltage category:	CAT IV 600V to ground, max 1000V between inputs
Max height of use:	2000m
Harmonics:	IEC/EN61000-4-30 Class B, IEC/EN50160
Unbalance:	IEC/EN61000-4-30 Class B, IEC/EN50160