

**1. ELECTRICAL SPECIFICATIONS – LEAKAGE, AUX SECTION**Accuracy is indicated as  $\pm$  (% readings + no. of digits\*resolution) at 23 °C  $\pm$  5 °C, <80%RH**LEAKAGE - Leakage current (by HT96U optional clamp transducer)**

FS clamp AC (A)	Resolution	Accuracy
1	0.1mA	$\pm(1.0\%rdg + 20dgt)$
1 < FS <10	0.01A	
10 $\leq$ FS <100	0.1A	
100 $\leq$ FS <1000	1A	

**AUX - Environmental parameters (with optional probes)**

Parameter	Range	Resolution	Accuracy
Temperature [°C]	-20°C $\div$ 80°C	0.1 °C	$\pm(2.0\%rdg+2dgt)$
Temperature [°F]	-4°F $\div$ 176°F	0.1 °F	
Relative humidity [%RH]	0 $\div$ 100%RH	0.1%RH	
DC output voltage	0.1mV $\div$ 1.0V	0.1mV	
Illuminance [Lux] (* Accuracy of HT53 lux probe is according to Class AA)	0.001Lux $\div$ 20.00 Lux (*)	0.001 $\div$ 0.02 Lux	
	0.1 Lux $\div$ 2000 Lux (*)	0.1 $\div$ 2 Lux	
	1 Lux $\div$ 20 kLux (*)	1 $\div$ 20 Lux	

## 2. ELECTRICAL SPECIFICATIONS – PQA SECTION

### AC TRMS Voltage (L-N)

Range [V]	Resolution [V]	Accuracy
15.0 ÷ 380.0	0.1V	±(1.0%rdg + 1dgt)

Allowed crest factor: ≤ 1,5 ; Frequency: 42 ÷ 69.0 Hz

### AC TRMS Voltage (L-L)

Range [V]	Resolution [V]	Accuracy
15.0 ÷ 660.0	0.1V	±(1.0%rdg + 1dgt)

Allowed crest factor: ≤ 1,5 ; Frequency: 42 ÷ 69.0 Hz

### Frequency

Range [Hz]	Resolution [Hz]	Accuracy
DC, 42 ÷ 69.0	0.01	±(2.0%rdg + 2dgt)

Allowed voltage: 15.0 ÷ 660V ; Allowed current: 5%FS clamp ÷ FS clamp

### DC/ AC TRMS Current (STD clamp)

FS clamp	Range [A]	Resolution [A]	Accuracy
≤ 10A	5% FS ÷ 9.99	0.01	±(1.0%rdg + 3 dgt)
10A ≤ FS ≤ 300	5% FS ÷ 299.9	0.1	
300A ≤ FS ≤ 3000	5% FS ÷ 2999	1	

Range: 5 ÷ 999.9 mV; Values under 5mV are zeroed

Allowed crest factor: ≤ 3; Frequency: 42 ÷ 69.0 Hz

### AC TRMS Current (FLEX clamp – 300A AC)

Range [mV]	Frequency [Hz]	Resolution	Accuracy	Overload protection
0.085 ÷ 85.0	42 ÷ 69.0	8.5µV	±(0.5%rdg+0.17%FS)	10V

Allowed crest factor ≤3, Values under 1A are zeroed

### AC TRMS Current (FLEX clamp – 3000A AC)

Range [mV]	Frequency [Hz]	Resolution	Accuracy	Overload protection
0.425 ÷ 255.0	42 ÷ 69.0	85µV	±(0.5%rdg+0.17%FS)	10V

Allowed crest factor ≤3, Values under 10A are zeroed

### DC Power

FS clamp	Range [kW]	Resolution [kW]	Accuracy
≤ 10A	0.000 ÷ 9.999	0.001	±(2.0%rdg + 7dgt)
	10.00 ÷ 99.99	0.01	
10A ≤ FS ≤ 200	0.00 ÷ 99.99	0.01	
	100.0 ÷ 999.9	0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9	0.1	
	1000 ÷ 9999	1	

### Active power (@ 230V, I > 5%FS, cosφ ≥ 0.5, f=50.0Hz)

FS clamp	Range [kW]	Resolution [kW]	Accuracy
≤ 10A	0.000 ÷ 9.999	0.001	±(2.0%rdg + 7dgt)
	10.00 ÷ 99.99	0.01	
10A ≤ FS ≤ 200	0.00 ÷ 99.99	0.01	
	100.0 ÷ 999.9	0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9	0.1	
	1000 ÷ 9999	1	
1000A ≤ FS ≤ 3000	0 ÷ 9999	1	

**Reactive power (@ 230V, I >5%FS, cosφ<0.9, f=50.0Hz)**

FS clamp	Range [kVAr]	Resolution [kVAr]	Accuracy
≤ 10A	0.000 ÷ 9.999	0.001	±(2.0%rdg + 7dgt)
	10.00 ÷ 99.99	0.01	
10A ≤ FS ≤ 200	0.00 ÷ 99.99	0.01	
	100.0 ÷ 999.9	0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9	0.1	
	1000 ÷ 9999	1	
1000A ≤ FS ≤ 3000	0 ÷ 9999	1	

**Power factor / cosφ (@ 230V, I >5%FS)**

Range	Resolution	Accuracy
0.70c ÷ 1.00 ÷ 0.70i	0.01	±(2.0%rdg + 3dgt)

**Voltage harmonics (@ 230V in 1Ph systems, 400V in 3Ph systems)**

Range [%]	Resolution [%]	Order	Accuracy
0.1 ÷ 100.0	0.1	DC, 01 ÷ 49	±(5.0%rdg + 5dgt)

Frequency of fundamental: 42 ÷ 69.0 Hz

Harmonics are zeroed at the below conditions:

- DC : DC value <0.5% fundamental value or DC value < 1.0V
- 1° Harmonic: value of 1° Harmonic < 15V
- 2nd ÷ 49th Harmonics: harmonic value <0.5% fundamental value or if value < 1.0V

**Current harmonics**

Range [%]	Resolution [%]	Order	Accuracy
0.1 ÷ 100.0	0.1	DC, 01 ÷ 49	±(5.0%rdg + 5dgt)

Frequency of fundamental: 42 ÷ 69.0 Hz

Harmonics are zeroed at the below conditions:

- DC : DC value <0.5% fundamental value or DC value < 0.5%FS clamp
- 1° Harmonic: value of 1° Harmonic < 0.5%FS clamp
- 2nd ÷ 49th Harmonics: harmonic value <0.5% fundamental value or if value < 0.5%FS clamp

**Voltage anomalies (L-N, L-PE)**

Range [V]	Resolution [V]	Resolution [ms]	Accuracy [V]	Accuracy [ms]
15.0 ÷ 380	0.2	20ms	±(1.0%rdg + 2dgt)	± 1cycle

**Voltage anomalies (L-L)**

Range [V]	Resolution [V]	Resolution [ms]	Accuracy [V]	Accuracy [ms]
15.0 ÷ 660	0.2	20ms	±(1.0%rdg + 2dgt)	± 1cycle



### 3. GENERAL SPECIFICATIONS

**DISPLAY AND MEMORY:**

Features:	TFT, touch screen, color graphic LCD, 320x240mm
Memory AUX, LEAKAGE section:	999 locations, 3 marker levels
Memory PQA section:	8MB (not expanded)
Communication:	Optical-USB and built-in WiFi
Aggregation time (IP) PQA feature:	2s ÷ 30min selectable
Parameters saved PQA feature:	approx. 600
Recording autonomy PQA feature:	approx. 30days (@IP=10min, all parameters)

**POWER SUPPLY:**

Batteries:	6 x 1.2V(rechargeable) type AA or 6 x 1.5V type AA
Battery life:	> 500 test for each function > 6 hours in recording
Recharging time:	approx. 12 hours
External charger:	100-240VAC, 50/60Hz / 15VDC, CAT IV 300V
Auto Power OFF:	after 5 min of idleness (disabled)

**MECHANICAL FEATURES:**

Dimensions (L x W x H):	225 x 165 x 75mm
Weight (included batteries):	1.2kg
Mechanical protection:	IP40

**WORKING ENVIRONMENTAL CONDITIONS:**

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Allowed relative humidity:	<80%RH
Storage temperature:	-10 ÷ 60°C
Storage humidity:	<80%RH
Max height of use:	2000m

**GENERAL REFERENCE STANDARDS:**

Safety of measuring instruments:	IEC/EN61010-1, IEC/EN61010-031, IEC/EN61010-2-032
Product type standard :	IEC/EN61557-1
EMC :	IEC/EN61326-1
Technical documentation :	IEC/EN61187
Insulation :	double insulation
Pollution degree:	2
Measurement category:	CAT IV 300V to ground, CAT III 350V to ground max 600V among inputs

**TEST VERIFIES REFERENCE STANDARDS:**

Power quality:	EN50160
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**This instrument complies with the requirements of the European Low Voltage Directives 2014/35/EU (LVD) and EMC 2014/30/EU**

**This instrument complies with the requirements of the European 2011/65/EU (RoHS) and with the requirements of the European 2012/19/EU (WEEE)**