1. ELECTRICAL SPECIFICATIONS – LEAKAGE, AUX SECTION

Accuracy is indicated as ± (% readings + no. of digits*resolution) at 23°C ± 5°C, <80%RH

LEAKAGE - Leakage current (by HT96U optional clamp transducer)

FS clamp AC (A)	Resolution	Accuracy
1	0.1mA	±(1.0%rdg + 20dgt)
1 < FS <10	0.01A	
10 ≤ FS <100	0.1A	
100 ≤ FS <1000	1A	

AUX - Environmental parameters (with optional probes)

Parameter	Range	Resolution	Accuracy
Temperature [°C]	-20°C ÷ 80°C	0.1 °C	±(2.0%rdg+2dgt)
Temperature [°F]	-4°F ÷ 176°F	0.1 °F	
Relative humidity [%RH]	0 ÷ 100%RH	0.1%RH	
DC output voltage	0.1mV ÷ 1.0V	0.1mV	
Illuminance [Lux] (*) Accuracy of HT53 lux probe is according to Class AA	0.001Lux ÷ 20.00 Lux (*)	0.001 ÷ 0.02 Lux	
	0.1 Lux ÷ 2000 Lux (*)	0.1 ÷ 2 Lux	
	1 Lux ÷ 20 kLux (*)	1 ÷ 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 10.00 ÷ 99.99	0.001 0.01	±(2.0%rdg + 7dgt)
10A ≤ FS ≤ 200	0.00 ÷ 99.99 100.0 ÷ 999.9	0.01 0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9 1000 ÷ 9999	0.1 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 10.00 ÷ 99.99	0.001 0.01	±(2.0%rdg + 7dgt)
10A ≤ FS ≤ 200	0.00 ÷ 99.99 100.0 ÷ 999.9	0.01 0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9 1000 ÷ 9999	0.1 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 10.00 ÷ 99.99	0.001 0.01	±(2.0%rdg + 7dgt)
10A ≤ FS ≤ 200	0.00 ÷ 99.99 100.0 ÷ 999.9	0.01 0.1	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9 1000 ÷ 9999	0.1 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

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)