

QUICK REFERENCE GUIDE



VEGA74



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VEGA74

Three-phase quality analyser

VEGA74 is a single-phase/three-phase network analyzer capable of acquiring and recording 600 electrical parameters simultaneously. **The use of VEGA74 is very simple and intuitive, thanks to the interface with color touchscreen display with icon structure. VEGA74 is ideal for solving problems deriving from low network quality, voltage anomalies, harmonics and high energy consumption which can then become much more harmful and complex phenomena to keep under control if neglected for too long. The measurements taken can be transferred to a PC with USB or WiFi connection with a dedicated software in order to analyze the data and create printed reports.**

Functions

9 types of electrical systems	1 Φ -2 wires, 1 Φ -center tap, 3 Φ -3 wires, 3 Φ -Aron, 3 Φ - Δ Open, 3 Φ -Y Open, 3 Φ -2 el. 1/2, 3 Φ -4 Y-wire, 3 Φ -High Leg.
Integration with programmable period	2s, 5s, 10s, 30s, 1min, 2min, 5min, 10min, 15min, 30min
Three-phase Power quality and Energy consumption analysis:	Single-phase/Three-phase
AC/DC voltage in single-phase/three-phase systems	up to 600V
AC/DC current in single-phase/three-phase systems	up to 3000A
Voltage/current waveforms	
Active, reactive, apparent power/energy and DC power	

Voltage and current harmonics up to the 49th with THD	
Cosphi, Power Factor	
Voltage/current vector diagram	
Voltage unbalance (NEG%, ZERO%)	
Voltage Anomalies (dips and peaks) with a resolution of 20ms	
Summary table of main electric parameters	
Leakage Currents recording	
Recording Temperature and Relative Humidity	°C, °F, HR%
Recording of the Illuminance value	LUX
Indication of recording duration for mains analysis	
Touchscreen colour display	
Help on line on the display	
Measurement category	CAT IV 300, CAT III 350, MAX 600V between inputs
Size (LxWx H) (mm)	225 x 165 x 75mm
Weight	1.2kg

Guidelines

- IEC/EN61010-031
- IEC/EN61010-1
- IEC/EN61010-2-032
- IEC/EN61187
- IEC/EN61326-1
- IEC/EN61557-1

**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)