



Specifications

Basic electrical specifications are defined over the temperature range from 18°C to 28°C for a period of one year after calibration.

Accuracy is specified as \pm ([% of reading] + [number of units in least significant digit]).

Frequency Range, Fundamental

6-65 Hz and dc

Minimum Input Levels

5V rms or 1A rms

Volts Measurements (True-rms)

Input Range

5.0V to 600V rms (ac + dc)
5.0V to \pm 933V peak

Basic Accuracy*

rms (ac + dc): \pm (0.5% + 2 digits)
peak, dc: \pm (2% + 3 digits)

* $<$ 15V rms, add 2 digits

Input Impedance

1 M Ω , balanced

Crest Factor

$>$ 3.0 below 300V, 1.56 @ 600V

Amps Measurements (True-rms)

(1 mV/A) Isolated Input

Input Range

1.00 mV (A) to 1000 mV rms (A) (ac + dc)
1.0 mV (A) to \pm 2000 mV (A) peak

Basic Accuracy

rms (ac+dc): \pm (0.5% + 3 digits) + probe specs
peak, dc: \pm (2% + 4 digits) + probe specs

Input Impedance

1 M Ω || 47 pF

Crest Factor

$>$ 3.0 below 600 mV, 2.0 @ 1000 mV

Watts Measurements (Volt-Amps)

(1 mV/A) Isolated Input

Range

0W (VA) to 600 kW (kVA) average
0W (VA) to 2000 kW (kVA) peak

Accuracy (ac + dc)

Active W (VA): \pm (1% + 4 digits) + probe specs

Harmonics Measurement Accuracy (Cursor Data)

(Harmonic Level $>$ 5% Using Smooth \sim 20)

Volts

Fundamental to 13th Harmonic:
 \pm (2% + 2 digits)
13th to 31st Harmonic:
13th (\pm (2% + 2 digits)) –
– 31st (\pm (8% + 2 digits))

Amps* or Watts

Fundamental to 13th Harmonic:
 \pm (3% + 3 digits) + probe specs
13th to 31st Harmonic:
13th (\pm (3% + 3 digits) + probe specs) –
– 31st (\pm (8% + 3 digits) + probe specs)

* $<$ 20A, add 3 digits

Phase

Fundamental:
(\pm 2 degrees) + probe specs
2nd to 31st Harmonic:
2nd (\pm 5 degrees) – 31st (\pm 20 degrees)
+ probe specs

Frequency Measurement Accuracy

(Fundamental, 6.0 Hz - 99.9 Hz)
6.0 Hz-99.9 Hz: \pm 0.3 Hz

General Specifications

Size: 9.2 x 3.9 x 2.5 in (234 x 100 x 64 mm)

Weight: 2.0 lbs (1 kg)

Input Connectors

Voltage: 2 shrouded banana jacks (4 mm)
Current Probe: 1 shrouded BNC jack

Battery

Type: 4 Alkaline "C" Cells ANSI/NEDA-14A, IEC-LR14 (supplied)

Operating Time: 48 hours, typical (continuous, without backlight)

Alternate Battery

4 NiCad Cells, customer supplied and externally charged. The tester prevents battery reversal by turning itself off if battery voltage drops below 4.0V dc

Temperature

Operating: 0°C to 50°C (32°F to 122°F)
Storage: -20°C to 60°C (-4°C to 140°F)

Temperature Coefficient

0.1 x specified accuracy per °C (0°C to 18°C, 28°C to 50°C)

Humidity (noncondensing)

Operating: 0°C to 30°C, 90%
30°C to 40°C, 75%
40°C to 50°C, 45%

Storage: 90%

Altitude

Operating: 10,000 feet (3 km)
Storage: 40,000 feet (12 km)
Shock & Vibration: Per MIL-T-28800, class 3, sinusoidal, nonoperating

For a direct connection to a
Fluke Distributor near you

CALL

1-800-79-FLUKE in the U.S.
(1-800-793-5853)

Or your nearest
Fluke sales organization

Z2302A-01 U9508/SE EN

Other Measurement Specifications

Measurement Function	Range/Resolution	Accuracy
Input Bandwidth: (-0.5 dB)	DC 6 Hz to 2.1 kHz	
Crest Factor (CF): (Using Smooth 20)	1.00 to 5.00	±4%
Power Factor (PF)	0.00 to 1.00	±0.02
Displacement Power Factor (DPF)	0.00 to 0.29	Unspecified
Phase Measurement Range	0.30 to 0.69	±0.04
	0.70 to 0.89	±0.03
	0.90 to 1.00	±0.02
	-179 to 180°	
K-Factor (KF)	1.0 to 30.0	±10%
Total Harmonic Distortion (THD)		
%THD-F:	0.0 to 99.9	±(0.03 Reading + 2.0%)
%THD-R:	0.0 to 99.9	±(0.03 Reading + 2.0%)

Recording Measurements

AC Volts		AC Amps		Watts	
Range	Resolution	Range	Resolution	Range	Resolution
20V	0.1V	2A	0.01A	50W	1.0W
50V	0.1V	5A	0.01A	100W	1.0W
100V	0.1V	10A	0.01A	200W	1.0W
200V	0.1V	20A	0.01A	500W	1.0W
500V	1V	50A	0.1A	1 kW	0.01 kW
1 kV	1V	100A	0.1A	2 kW	0.01 kW
		200A	0.1A	5 kW	0.01 kW
		500A	1A	10 kW	0.1 kW
		1000A	1A	20 kW	0.1 kW
		2000A	1A	50 kW	0.1 kW
				100 kW	1 kW
				200 kW	1 kW
				500 kW	1 kW
				1 kW	1 kW
				2 kW	1 kW



Electro-Magnetic Compatibility

RF Emissions: EN 50081-1 Commercial Limits, VFG 243-1991

RF Susceptibility: EN 50082-1 Commercial Limits

Council Directive: Electromagnetic Compatibility Directive (89/336/EEC)

Drip Proof and Dust Proof Case: Per IEC 529, Section 3; IP 52
Dust-Protected, Drip Proof

Display

Type: Super Twisted Liquid Crystal

Size: 3.0 inch diagonal (76 mm)

Resolution: 160 W x 128 H pixels

Contrast: User adjustable

Backlight: Yellow-green LED

Safety

Designed for 600V measurements on industrial power distribution circuits.

Overload Protection

Voltage or Current Probe Input: 600V, maximum

Surge Protection: 6 kV per IEC 1010-1

Maximum Voltage Isolation to Earth: 600V from any terminal

Protection Levels

IEC 1010-1, Pollution Degree 2, Installation Category III, Material Group II, 600V

Protection Class

Protection Class II as described in IEC 1010-1, Annex H (Double or Reinforced Insulation)

Waveform Memory

Eight nonvolatile memories store 2048 sampled points of waveform data for both Voltage and Current inputs for later recall or sending to a computer.

EIA-232-E (RS-232) Interface

Optically-Isolated, 1.2, 9.6, or 19.2k baud rate. Printer graphical output in either Epson or HP format. Text data is sent in ASCII format (SEND). Waveform, Data, and Picture formats may be remotely accessed. Remote Trigger function.