



Single-Phase Power Meter 7120



Key Feature

- For AC / DC power measurement
- Wide range 0.001W ~ 16KW
- Connection software attached
- Current CF3 / CF9
- Standby Power D.P.I. of 0.001W
- With crest factor ratio display
- Up to 50 orders of harmonic analysis capability
- 1000 sets of measurement data storage space

Accessory

Standard

- Power cord
- User manual CD
- RS-232 Cable
- F71201 Test Box

Optional

- With HARM function
- GPIB Cable
- TL218 Alligator Clips
- TL208 2mm Test Probe

Measuring Range

Vrms	0.1V - 600V	PF	0.000 - ±1.000
Vdc	0.1V - 600V	Deg	-180° - +180°
Irms	0.1mA - 20A	THD	0.01% - 999.99%
Idc	0.1mA - 20A	Hz	15Hz - 100kHz
W	0.01W - 16kW		

Harmonics

Analysis Base	Achieve stable fundamental frequency by voltage or current (non-inverter)
Frequency Range	45Hz-440Hz
FFT Data Length	1024
FFT Data Format	32 bits
Measurement Item	1-50 THD, 1-50 orders voltage and current V [n], A [n] 1-50 orders voltage and current distortion percentage V [n%], A [n%] 1-50 orders watts W [n] 1-50 orders watts distortion percentage Watt W [n%] 1-50 orders voltage and current angle DEG [n] Vrms · Irms · Watt · PF

Frequency

Model	7120
Measuring Method	Achieve stable fundamental frequency by voltage or current (non-inverter)
Frequency Range	DC 15Hz-100kHz
Data Length	Dual 4096x16 RAM for voltage & current
ADC Resolution	16 bits
Sampling Rate	AC 50 / 60Hz basic sampling rate 100KSPS/120KSPS
Arithmetic Precision	Watt / VRMS / IRMS / MEAN / PF / Deg / Line filter 32bits
Frequency Filter	500Hz cut off · digital chip filter based on 25MHz
Signal Filter	500Hz-3db digital filter based on Butterworth 50Hz-0.03% reading, 60Hz-0.05% reading
Frequency Acquisition	Voltage / current 100MHz baseband digital dynamic meter chip
Phase Lead Detection	Subject to the current, analog / digital hybrid detecting (error less than 5 degrees)

General

Model	7120
Power Supply	Voltage: 100-240Vac, Frequency: 50 / 60Hz
Display	Seven-segment display
Interface	RS-232, GPIB
Flash Memory	6 sets
Operation	Temperature: 23°C ± 5°C, Humidity: 20 ~ 80%RH
Dimension (W*H*D)	227x101x300 mm
Weight	1.85 Kg
Measuring Bandwidth	DC 15Hz-100kHz
Harmonic Function	Optional
Fixture	F71201 TEST BOX

Range

Current (fixed / auto)	0.01A, 0.03A, 0.1A, 0.3A, 1A, 3A, 10A, 20A
Voltage (fixed / auto)	10V, 30V, 100V, 300V, 600V

RMS/MEAN Mode Voltage & Current Accuracy (23°C±5°C)

15 Hz ≤ f < 45 Hz	±(0.1% of reading + 0.4% of range)
45 Hz ≤ f ≤ 66 Hz	±(0.1% of reading + 0.1 % of range)
66 Hz < f ≤ 1 kHz	±(0.1% of reading + 0.2 % of range)
1 kHz < f ≤ 10 kHz	±(0.07*f % of reading + 0.3% of range)
10 kHz < f ≤ 100 kHz	±(0.5% of reading + 0.5% of range) ±[{0.04×(f-10)}% of reading]

F unit is 1kHz

When the L-FILTER sets as ON: 45-66Hz frequency range allowable error Add 0.5% of reading

When the AC is measured, if the fundamental frequency exceeds 200Hz, the F-Filter is required to be turned off in order to measure the most accurate value

**When the frequency range is more than 10kHz, the 7120 starts to support

DC Mode Voltage & Current Accuracy (23°C±5°C)

10V-600V	±0.2% reading ± 0.2% of range	0.01A-20A	±(0.2% of reading + 0.2% of range) ±offset
To add up the OFFSET errors of various files during measuring the DC current			

Power (W) Accuracy (23°C±5°C)

AC power ranges (Auto or Manual) (40 ranges) range up to 16kW
Maximum Power (W) value is determined by the highest range of voltage profile

DC ±0.2% reading ± 0.5% of range

15 Hz ≤ f < 45 Hz ±(0.3% of reading + 0.2 % of range)

45 Hz ≤ f ≤ 66 Hz ±(0.1% of reading + 0.1 % of range)

66 Hz < f ≤ 1 kHz ±(0.2% of reading + 0.2 % of range)

1 kHz < f ≤ 10 kHz ±(0.4% of reading + 0.3 % of range)± [{0.06×(f)}% of reading]

10 kHz < f ≤ 100 kHz ±(0.5 % of reading + 0.5 % of range)±[{0.09×(f-10)}% of reading]

Incidental allowable error conditions

Signal filter error (AC)	Frequencies between 45-66Hz: Add 0.3% of reading Frequency out of 45-66Hz: Add 1% of reading beyond
CF9 error (DC)	Add range tolerance * 3

Accuracy effect of the phase error of the power

When the power factor PF is 0, the error range of Watt is

Situation 1: for 45 Hz < f · Add±1.0% of VA

Situation 2: for 45 Hz > f or f > 66 Hz

Add ±{(3.5 + 0.5×f) % of VA} for up to 100 kHz as reference data

The unit for frequency f is kHz.

When the power factor is 0 < PF ≤ error range

When 0 < PF ≤ 1 (θ: phase angle of the voltage and current)

for 45 Hz ≤ f ≤ 66 Hz. Add ± power reading *{tan(θ)*(0.5)}%

for f < 45 Hz, f > 66 Hz. Add ± power reading *{ tanθ* (0.5×f+0.2) }%

Error within 12 months	Add ±(0.5% of reading)
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