MICROTEST

Automatic Testing Equipment

Single-Phase Power Meter

NEW

7110/7120

CE RS232 GPIB Option

Key Feature

AC / DC Dual amp / watt-hour meter

Wide range 0.001W ~ 16KW

Connection software attached

Standby Power D.P.I. of 0.001W

With crest factor ratio display

Up to the 50 levels harmonic wave analysis capability

1000 sets of measurement data storage space

Accessory

Standard

Power cord

User manual CD

RS-232 Cable

F71201 Test Box

Optional

GPIB Cable

PC Link Software

TL218 Alligator Clips

TL208 2mm Test Prob

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 level voltage and current V [n], A [n] 1-50 level voltage and current distortion percentage V [n%], A [n%] 1-50 level watts W [n] 1-50 level watts distortion percentage Watt W [n%] 1-50 level voltage and current angle DEG [n] Vrms，Irms，Watt，PF

Frequency

Model	7110	7120
Measuring Mode	Achieve stable fundamental frequency by voltage or current (non-inverter)	
Frequency Range	DC 15Hz - 10kHz	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	7110	7120
Power Supply	Voltage : 100 ~ 240Vac，Frequency : 50 / 60Hz	
Display	Seven-segment display	
Interface	RS-232	RS-232、GPIB
Flash Memory	6 sets	
Operation	Temperature：23℃ ±5℃，Humidity：20~80%	
Dimension (W*H*D)	227x101x300 mm	
Weight	1.85 Kg	
Measuring Bandwidth	DC 15Hz - 10kHz	DC 15Hz - 100kHz
Harmonic Function	Optional	Optional
Model	7110-10k-HARM 7110-10k	7120-100k-HARM 7120-100k
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

Automatic Testing Equipment

MICROTEST

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

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: 45Hz-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℃ ±5℃)

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℃ ±5℃)

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 45Hz-66Hz: Add 0.3% of reading Frequency out of 45Hz-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)