

# DC Bias Current Test System

**NEW** 6210/6220/6240 + 6632

## Features

- Current and frequency graphic scanning analysis
- Temperature-rising scan function can solve the problems of overheating a DUT to burn
- DCR Measurement function
- Long-term consecutive maximum power output
- Interchangeable bi-direction current function
- Up to 6 units of the 6210/6220 DC Current Source Series can be overlapped to provide a maximum voltage of 20Vdc, maximum power output 25W, Scalable current output up to 120A
- Up to 8 units of the 6240 DC Current Source Series can be overlapped to provide a maximum voltage of 12Vdc, maximum power output 50W
- Direct Handler interfaces control through LCR power meter

## Applications

**Components:** High current power inductor, common mode choke, mini molding choke, high power components of EV charging connector

**Electric Vehicles:** Electric supercharger system

## Specifications

DC Bias Model Name	6210	6220	6240
Output Current	0.000A-10.000A	0.000A-20.000A	0.000A-40.000A
Accuracy	0.000A-1.000A 1%+5mA		
	1.001A-5.000A 2%		
	5.001A-20.000A 3%		
Power Consumption	320W max.		640W max.
LCR Meter / Impedance Analyzer	6632		
Frequency (Hz)	10-1/3/5/10/20/30M		
AC Drive Level	10mV-2Vrms		
DC Drive Level	1V (Fixed)		
Output Impedance	25Ω, 100Ω (switchable)		
Measurement Parameters and Ranges	R, X	± 0.000mΩ-9999.99MΩ	
	Y	0.00000μS-999.999kS	
	G, B	± 0.00000μS-999.999kS	
	θRAD	± 0.00000-3.14159	
	θDEG	± 0.000°-180.000°	
	Cs, Cp	± 0.00000pF-9999.99F	
	Ls, Lp	± 0.00nH-9999.99kH	
	D	0.00000-9999.99	
	Q	0.00-9999.99	
	Δ	± 0.00%-9999.99%	
	Rdc	0.00mΩ-99.9999MΩ	
	εr' εr''	0-100000	
	μr' μr''	0-100000	
Output Current (Max.)	60AMP/120AMP		320AMP
LCR+DC BIAS	100-3M		100-1M
Frequency Response			
Constant Power Output	●		
Current Switch	●		
DC Resistance	●		
Current Graphic Scanning Analysis	●		
Frequency Graphic Scanning Analysis	●		
Temperature Rise	●		



CE RS-232 Handler

## Accessories / Fixtures

### Standard

- Power Cord
- User Manual (CD)
- Ethernet cable
- Black thermoplastic sleeve (6210)
- Red thermoplastic sleeve (6210)
- F6210 (DIP)

### Optional

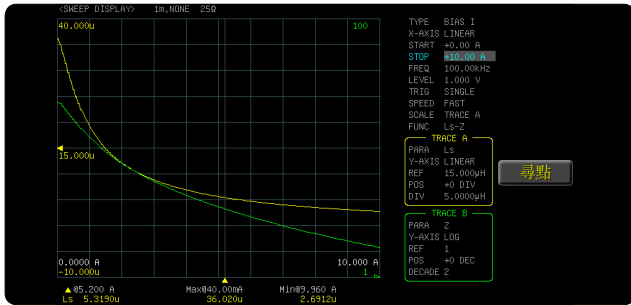
- PC Link software
- F6220 (SMD)
- 6210/6220/6240 connect plate (short/long)
- BNC+BNC cable

## General

Power Supply	Voltage 88-264Vac
	Frequency 47-63Hz
Interface	RS-232, Handler
Trigger Test	Auto, Manual, RS-232, GPIB, Handler
Environment	Temperature: 10-40°C, Humidity: 20-90%RH
Dimension (W*H*D)	337×145×525mm (6210/6220)
	435×132×525mm (6240)
Weight	15kg (6210/6220), 20kg (6240)

## Key Features

### A Accurately Test Magnetics Carrying DC Bias Current



I sat (Magnetic saturation current curve)



The value of the inductance is 36.4uH.

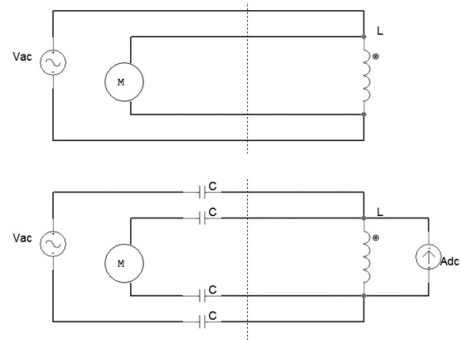


Using a DC Bias current source to apply a 10A bias current to the inductor, the inductance decreased from 36.4uH to 2.65uH.



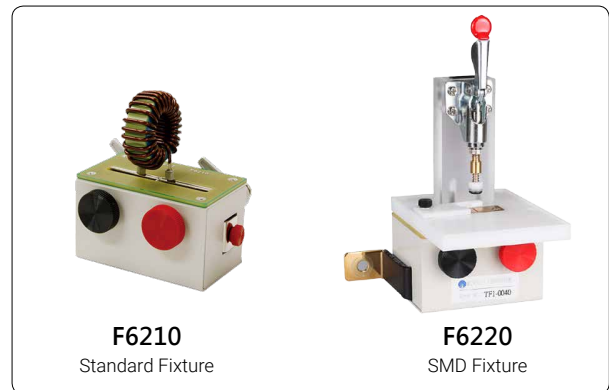
Magnetic saturation current is called I sat, and the temperature rise current is called I rms. When the transformer and the inductor pass a large current in the actual circuit operation, the magnetic field of the magnetic core will produce magnetic saturation, which will cause the inductance characteristic to decline. Therefore, the R&D engineer will set the current value of the inductance reduction allowable range.

### B DC Bias Measurement Principle



The above figure is a diagram of a general LCR test instrument, and the figure below is a diagram after carrying DC bias current. In addition to superimposing the DC source required for the measurement, an isolation capacitor is added to isolate the DC flowing into the instrument.

### C DC Bias Fixtures



Standard fixture F6210 for measuring inductance, optional fixture F6220 for measuring SMD inductance.