# DC Bias Current Test System

## 6355/6356+6243
## 6355/6356+6223

### Features

- Frequency response 100Hz-500kHz (Option 6356)
- DC Bias Current Max.320A (Option 6243)
- DCR Measurement function
- Long-term consecutive maximum power output
- Provide an inductance verification magnetic saturation current test.
- Support meter mode and list mode

CE RS-232 | Handler

### Applications

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

Electric Vehicles: Electric supercharger system

### Accessories / Fixtures

**Standard**

- Power Cord
- Ethernet cable
- F6210 DIP (6243/ 6223)
- Black/Red thermoplastic sleeve

**Optional**

- PC Link software
- F6220 SMD
- F6240 SMD
- 6223connect plate (short/long)
- 6243connect plate (short/long)
- BNC+BNC cable

### DC Bias Fixture

**F6210**
Standerd Fixture

**F6220**
SMD Fixture

Standard fixture F6210 for measuring inductance, optional fixture F6220/ F6240 for measuring SMD inductance.

### Key Features

In order to ensure that magnetic components operate within a safe range during practical operation and to avoid magnetic saturation, which can have adverse effects on component performance and circuitry, inductor manufacturers generally set the magnetic saturation current value within a range of 20% to 30% decrease in inductance.

This ensures the use of magnetic components within their normal operating range while avoiding excessive magnetic saturation that could lead to performance degradation or component damage.

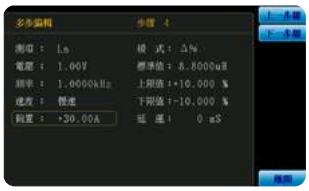
## Key Features

A DC bias current test is conducted to verify the saturation characteristics of magnetic materials in components like inductors or choke coils. This test involves applying a DC current to the component while measuring its inductance. By gradually increasing the DC bias current, the point of significant decrease or saturation in inductance is identified. This helps confirm the saturation behavior of the magnetic material used in the component.

### DC Bias Current Max.320A

By using the system, important parameters of the inductor can be measured: Ls (inductance) and Q (quality factor).

When a 30mA DC bias current is applied, the inductance value decreases from 11uH to 8uH.



### List Mode-up to 8 steps

In multi-step mode, the instrument allows you to set measurement conditions and parameters all at once, displaying multiple sets of measurement results simultaneously.

### DCR measurement functionality is supported

DC resistance (DCR) is an important parameter for magnetic components like inductors. It indicates the resistance the inductor offers to direct current flow. DCR is primarily influenced by the conductor material and coil structure of the inductor. Measuring DCR provides valuable information about energy consumption, power loss, circuit efficiency, and power dissipation in a DC circuit. It helps assess the inductor's response to changes in DC current and contributes to evaluating circuit stability.

## Specifications

| DC Bias | 6223 | | 6243 | |
|---|---|---|---|---|
| LCR+DC Bias Frequency | 100Hz~ 200kHz (6355) | 100Hz~ 500kHz (6356) | 100Hz~ 200kHz (6355) | 100Hz~ 500kHz (6356) |
| DC Bias Current Max | 120A | | 320A | |
| Output Current | 20A | | 40A | |
| Accuracy | 0.000A-1.000A 1%+5mA<br>1.001A-5.000A 2%<br>5.001A-20.000A 3% | | | |
| Power Consumption | 320W Max. | | 640W Max. | |
| Constant Power Output | ● | | ● | |
| DC Resistance | ● | | ● | |
| Current Switch | ● | | ● | |
| **LCR Meter / Impedance Analyzer** | **6355** | | **6356** | |
| Frequency | 10Hz~200kHz | | 10Hz~500kHz | |
| Frequency Resolution | 5 digits of setting | | | |
| Frequency Output Accuracy | ±0.01% | | | |
| Basic Accuracy | ±0.05% | | | |
| AC Drive Level | 10mV~2Vrms (1m Vrms Resolution) | | | |
| DC Drive Level | 10mV~2V (1mV Resolution) | | | |
| Output Impedance | 100Ω (fixed) | | | |
| Measurement Parameters and Ranges | \| Z \| , R, X | | 0.001mΩ~999.99GΩ | |
| | \| Y \| , G, B | | 0.1nS~99.999S | |
| | Cs Cp | | 0.01pF~9.9999F | |
| | Ls Lp | | 0.1nH~99.999kH | |
| | D | | 0.00001~9.9999 | |
| | Q | | 0.1~9999.9 | |
| | DCR | | 0.001mΩ~99.999MΩ | |
| | θ | | -180° ~+180° | |
| AC/DC Test Time | 5mS | | | |

## General

| | |
|---|---|
| Trigger Test | Auto, Manual, RS-232, GPIB, Handler, LAN |
| Built-in Storage | 128 sets |
| Interface | RS-232, GPIB, Handler, LAN, USB |
| Power Supply | Voltage 88~132Vac or 195~264Vac (switchable) |
| | Frequency 47~63Hz |
| Power Consumption | 300VA (6223), 600VA (6243) |
| Display | 7.0"TFT, 800*480 color screen |
| Environment | Temperature 10~40℃, Humidity 20~90%RH |
| Dimension (W*H*D) | 358x148x343 mm(6355/ 6356),<br>337×145×525mm(6223), 435×145×644mm(6243) |
| Weight | 3Kg(6355/6356), 15Kg (6223), 20Kg (6243) |