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IPC Irwin AC Magnetic Field Coil

Part Number: IPC-4924-W

User Instructions



INTRODUCTION.

The IPC Irwin AC Magnetic Field Coil is ideal for demonstrating the effect of electromagnetics, to use simply place a suitable Search Coil directly into the Field Coil Loop and observe the resulting pickup voltage on a Digital AC Voltage Meter or the actually pickup waveform on an Oscilloscope. We recommend using the IPC Irwin Search Coil (IPC-4915-W), this handheld device has been designed to work perfectly in conjunction with this AC Magnetic Field Coil.

DESCRIPTION.

The AC Magnetic Coil consists of a base unit and field coil loop mounted on the top. The base incorporates the field coil wire connections via two white 4mm sockets located at the front. The field coil loop contains 12 x wire coils which feed into the base unit.

The unit simply requires an AC voltage supply of approximately 2V AC, with a current capability of up to 8 Amps.

INSTRUCTIONS.

Simply connect a suitable AC Power Supply to the two white 4mm sockets, however it is important that the maximum voltage supplied to this unit is 2V AC and the frequency (sinewave) range is between 50Hz to 60Hz. A pair of high current supply leads will also be required which should be rated to a minimum of 8amps.

IPC Irwin

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Note: The unit should not be run for longer than 15 minutes at a time due to the supply requirements and allowed 15 minute intervals between operations, this is to prevent the overheating of the Field Coil Loop wires.

To demonstrate the effects of electromagnetics, power the unit as detailed above and then place a suitable pick-up Search Coil into the middle of the Field Coil Loop. The oscilloscope, once set correctly, will display a sinewave at a value, depending on the efficiency of the Search Coil, of between 0.4Vpk-pk to 0.7Vpk-pk.

To demonstrate the relationship of spatial distance involved with electromagnetics, move the Search Coil to one of the corners of the Field Coil Loop, this will now increase the sinewave value from between 0.7Vpk-pk to 1.2Vpk-pk.

Note: At 2V AC the approximate current consumption of the Field Coil Loop will be 8 Amps and therefore we recommend using our Multitap Transformer Power Supply (IPC-0484-P), as this has a 2V AC output capable of delivering up to 8 Amps.

SPECIFICATIONS.

Supply Voltage	= 2V AC Max.
Supply Current Consumption	= 8 Amps AC approx.
Supply Frequency Range	= 50Hz to 60Hz
Base Dimensions	= 50 x 78 x 115mm overall
Field Coil Loop Dimensions	= 100 x 118mm (internal)
Mass	= 0.15kg

Thank you for choosing this IPC Irwin product, which has specifically been designed for education and we know it will bring you good service long into the future. This is just one product of a wide range of UK designed and manufactured products to enhance a STEM education, please see www.ipcirwin.com website for more details on the products and service we provide to support teaching and learning in science and technology.

IPC Irwin also provide Portable Appliance Testers and a Calibration service, for more details please go to www.ipcirwin.com or call our sales and technical support line on 015395 58555.



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