

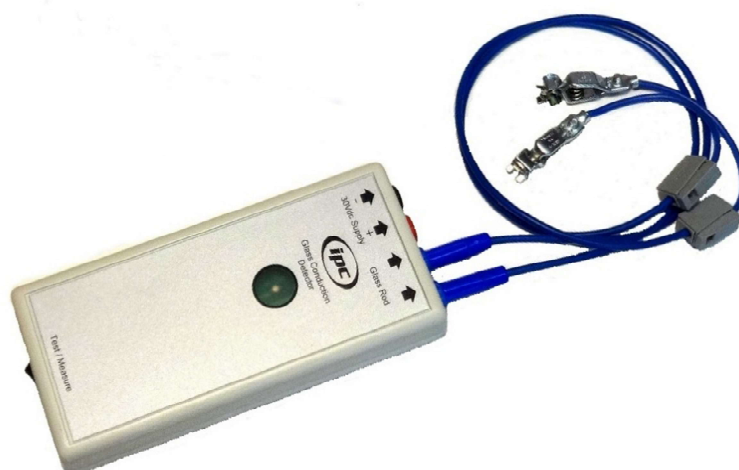


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IPC Irwin Glass Conduction Detector

Part Number: IPC-5025-X

User Instructions



INTRODUCTION.

When demonstrating the detection of electrical conduction through heated glass the IPC Irwin Glass Conduction Detector makes the process both simple, quick and safe. This detector has been specifically designed to work with 6mm diameter Borosilicate Glass Rods but can also be used in a number of other ways to demonstrate electrical conduction.

DESCRIPTION.

The IPC Irwin Glass Conduction Detector consists of the Detector unit, two short connection leads with 4mm blue plugs that connect to the two blue 4mm (Glass Rod) sockets on the unit, while attached to other ends of these leads are two quick release connectors. These quick release connectors allow the attachment of the replacement crocodile clips/leads. The two crocodile leads simply fit to the quick release connector and the supplied 6mm glass rod spring clips via the crocodile clips. The Detector unit requires an external power supply of between 25 to 30VDC, which connects to red and black 4mm (30Vdc Supply) sockets on the unit.

The detector also has the added feature of a Test Switch which allows you to check that the demonstration setup is correctly functioning.

Due to the effects of the heating process the IPC Irwin Glass Conduction Detector comes with quick release detachable crocodile clips leads, making it quick and easy to replace them as and when required, please contact IPC Irwin for replacements (IPC-5027-X).

Also supplied with the detector is a pack of 10 x 6mm glass rod circular spring clips, again allowing replacements as and when required, please contact IPC Irwin for replacements packs (IPC-5029-X). **Note:** upon request other sizes of spring clips are offered, ie. 8mm etc.

IPC Irwin

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INSTRUCTIONS.

You can demonstrate a current flowing through a solid electrolyte using hot glass, at room temperature glass is a good electrical insulator, however due to the resistivity of glass its conductivity increases as it becomes hot. You can demonstrate this change in conductivity by applying a voltage across a glass rod, say 30V, and measuring the current flowing through it as its temperature increase. The difficulty is that even at high temperature this current flow is very small and consequently very difficult to demonstrate, however the IPC Glass Conduction Detector features an efficient Light Emitting Diode which detects this very small current and provides a visual indication which both increases and decreases in illumination as the current increases and decreases.

To use the detector first check that the rocker switch at the bottom of the unit is set to 'Measure', now simply fit the two circular spring clips to the glass rod (approx. 10mm apart) and then attach the two detection leads to these spring clips using the crocodile clips, finally connect a 24 to 30VDC power supply to the unit. The detector is now ready to use, simply heat the glass rod between the spring clips using a Bunsen flame and as the glass heats up the Blue LED on the detector will begin to illuminate and will increase as the conduction (temperature) increases.

The detector also has the added feature of a Test Switch which allows you to check that the demonstration setup is correctly functioning. To operate select 'Test' on the rocker switch at the bottom of the unit, the Blue LED should then illuminate when touching the connectors together.

Note: Soda glass can also be used, but care must be taken as this type of glass melts more easily.

Note: the IPC Irwin High Tension PSU (IPC-0294-P) is ideal for providing the 30VDC required.

SPECIFICATIONS.

Supply Voltage	= 25 to 30VDC (min. 10mA)
Type of Glass	= Borosilicate Glass Rod, 6mm dia.
Detection Method	= Visible Blue LED
Connection Method	= Circular Spring Clips & Leads
Connection Spacing	= 10mm
Detector Connections	= 4mm Sockets (2 x Supply, 2 x Detector)
Detector Conduction Leads	= Blue Leads with Quick Release Connector (500mm overall)
Base Dimensions	= 37 x 65 x 140mm overall
Mass	= 0.13kg

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.



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