

Induced e.m.f.

Introduction

A voltage is induced when a conductor cuts magnetic field lines or when the magnetic field through a coil changes. This is called induced e.m.f. (electromotive force).

Apparatus

Datadisc Au
Voltage sensor ($\pm 1V$)
Logbook XD
A serial lead or USB-serial lead



A coil
A magnet
2 wires

Duration

15 minutes

Method

1. Plug the Logbook into the PC using a serial lead or USB-serial lead.



2. Plug the Voltage sensor into port 1.

3. Join the coil and the Voltage sensor with the two wires.

4. Start Datadisc Au.

5. Click on "Measure".

6. Click on "Fast". Then the Recording window will open.

7. Choose 200ms.

8. Choose trigger on Ch1: 20% approx. (or 50% according to the coil you are using).

9. To make the recording:



a. Click on the green recording icon on the toolbar: this starts the recording.

b. Start the experiment: drop the magnet through the coil.

c. Repeat operations a. and b. to do several recordings.

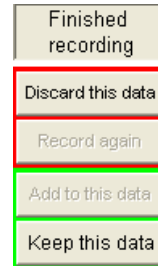


DatadiscAu.exe



d. Stop recording by clicking on the red hand.

10. Click on “Keep this data”.




How to save your recording

1. Click on “File”.
2. Click on “Save as...”.
3. Choose the directory you want to save in and the name of your file.
4. Click on “Save”.

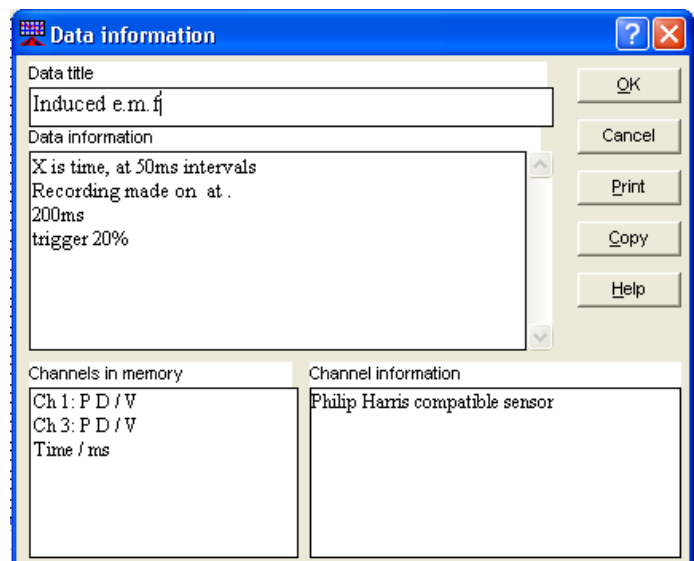
How to delete certain graphs

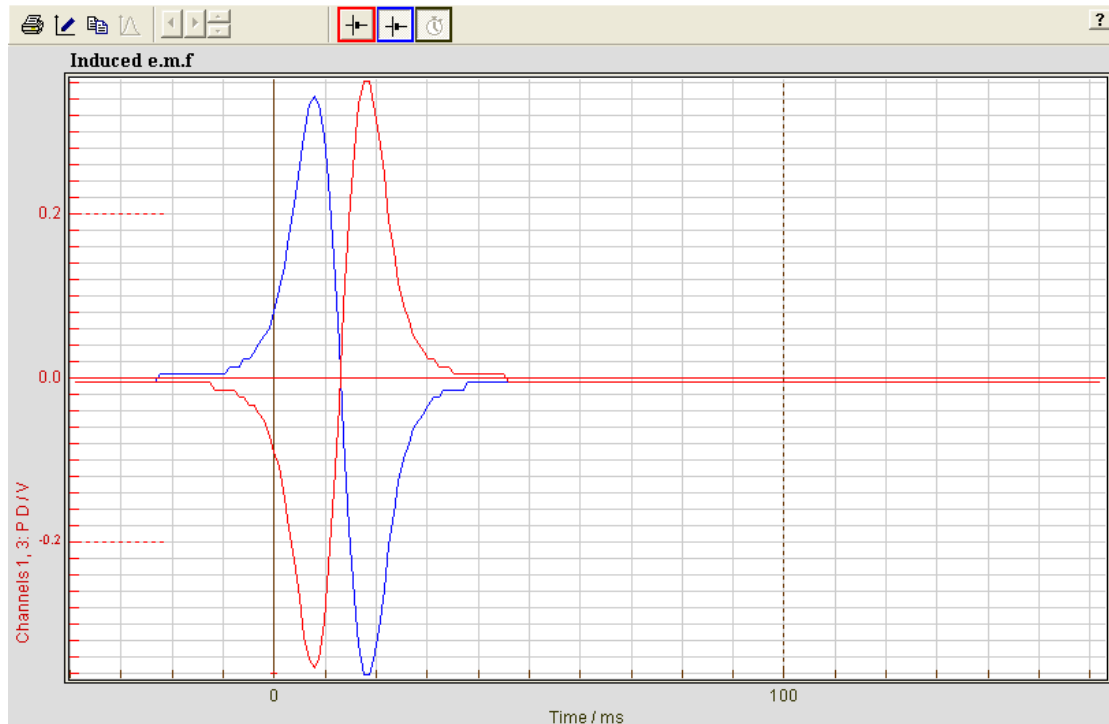
As you recorded several graphs for one measurement, you can delete the worst of them.

1. Select the Table window.
2. Select the column you want to delete by clicking on “Ch ..” at the top of the table.
3. Click on .
4. You will have a message from Datadisc Au. Click on “OK”.

How to store information about your recording

1. Click on “Data”.
2. Click on “Data information”.
3. Type all the information you want in “Data title” and “Data information”.
4. Click on “OK”.





There are two different lines because the magnet was dropped pointing in two different directions.

How to save your file and exit

1. Click on "File".
2. Click on "Save".
3. Click on "File".
4. Click on "Exit".