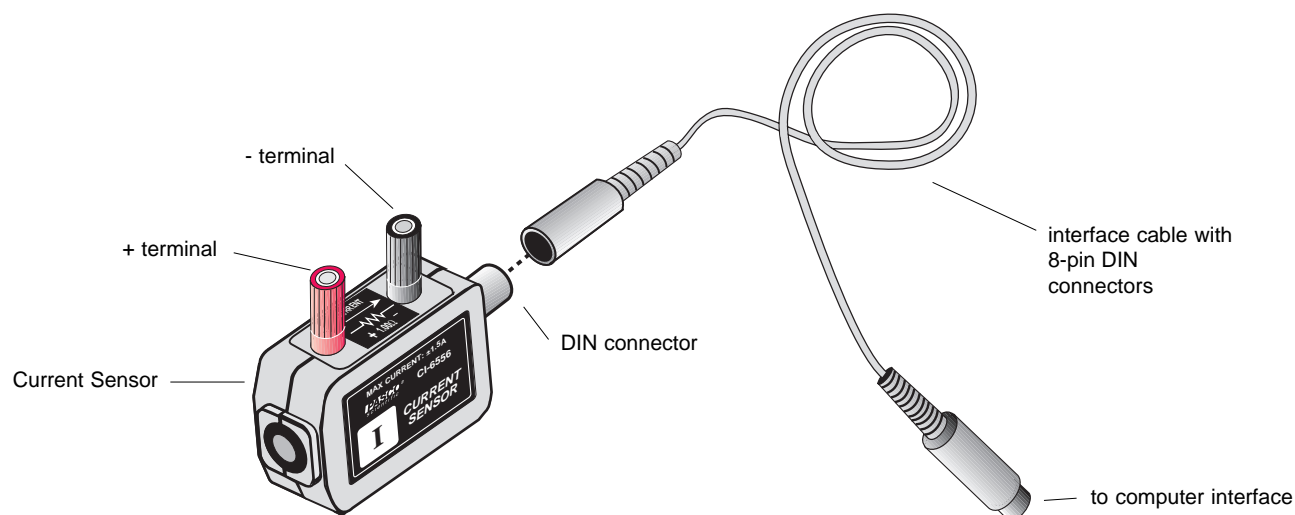


**Instruction Sheet
for the PASCO
Model CI-6556**

CURRENT SENSOR



Introduction

The PASCO CI-6556 Current Sensor is designed to be used with a PASCO computer interface to measure currents of ± 1.5 amperes.

The Current Sensor can be plugged directly into any analog channel (A,B, or C) on the PASCO 700i *Science Workshop*[™] interface or analog channel A on the 300i or 500i *Science Workshop* interface. This is because the Current Sensor should only be connected to a non-ground referenced, differential input.

Current passing through the two input connectors develops a voltage across the 1.00Ω , 2 W resistor in the Current Sensor. The voltage developed at the resistor is related to the current according to Ohm's Law:

$$V = I \times R$$

(where V = voltage in volts, I = current in amps, and R = resistance in ohms).

Since the Current Sensor utilizes a 1.00Ω resistor, the voltage seen across the resistor is equal to the current flowing through the resistor. The computer interface channels this voltage into *Science Workshop*, which reports the value in amperes (A) of current.

Equipment

Equipment Included:

- Current Sensor
- 6-foot cable with 8-pin DIN connectors

Additional Equipment Required:

- Any PASCO *Science Workshop*[™] computer interface (300, 500, or 700 series for Macintosh or Windows) or the 6500 series interface for DOS
- patch cords (SE-9415)



Do not connect to currents greater than 1.5 A. Connecting to a source that causes a current of greater than 1.5 A will permanently damage the Current Sensor.

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Setup Procedure

Science Workshop Setup

- 1 Connect the Current Sensor to any differential input analog channel on the computer interface box with interface cable (Figure 1a),
or
insert the DIN plug of the Current Sensor into the jack of any differential input analog channel on the computer interface box (Figure 1b).

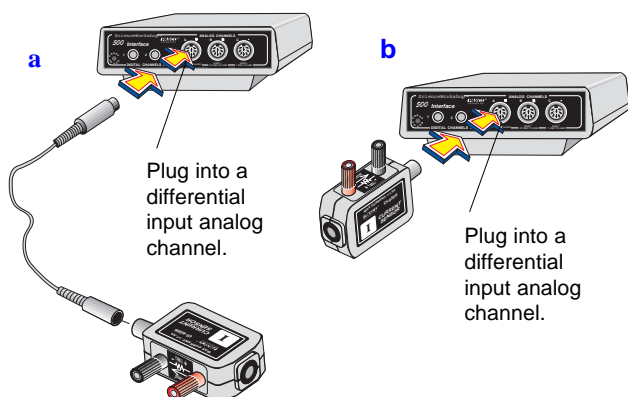


Figure 1. Connecting the Current Sensor into the computer interface.

- 2 Open the Experiment Setup window in *ScienceWorkshop*. Click and drag the analog plug icon to the analog channel icon that matches the analog port you are using for the Current Sensor (Figure 2).

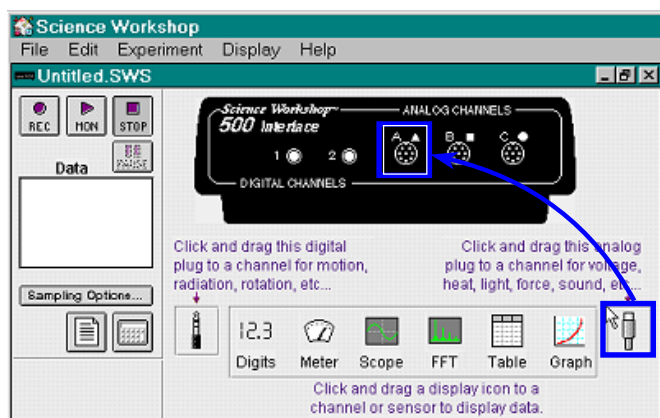


Figure 2. Activating the analog channel in *Science Workshop*.

- 3 Select "Current Sensor" from the drop-down menu (Figure 3).

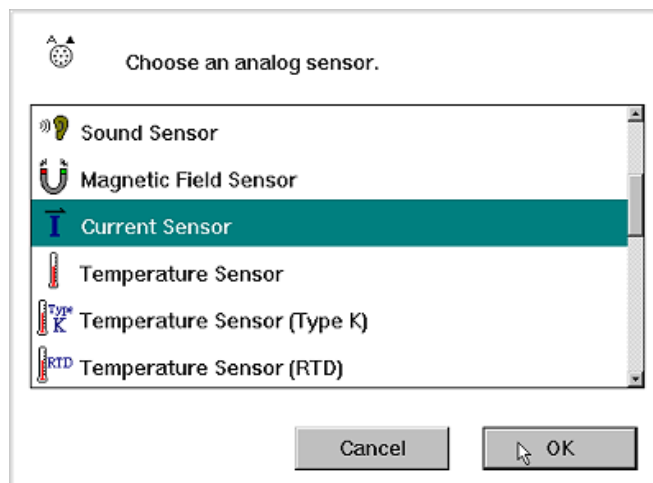


Figure 3. Setting up the Current Sensor in *Science Workshop*.

- 4 Open a display window, such as the Digits display, by dragging and dropping the appropriate display icon to the Current Sensor icon (Figure 4).

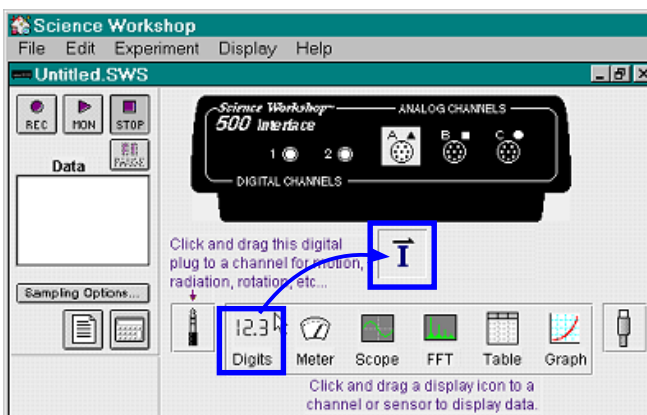


Figure 4. Opening a Display window in *Science Workshop*.

- 5 Additional display windows can be opened by following the procedure in step 4.

Equipment Setup

- ① Break the circuit at the point the current flow is to be measured and insert the Current Sensor using standard banana plug connectors or other suitable means (Figure 5).

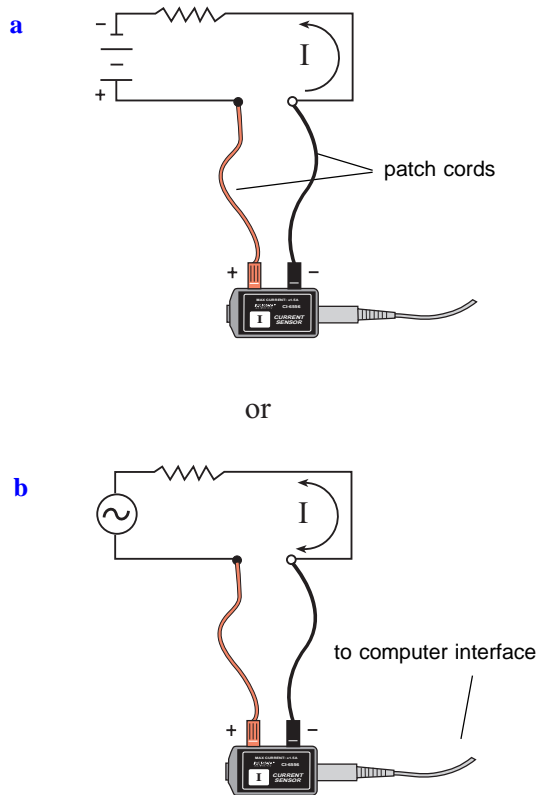
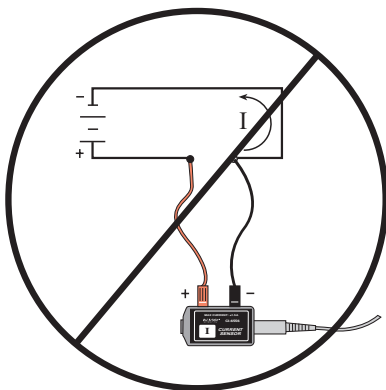


Figure 5. Equipment Setup for measuring current across a circuit with a DC (a) or AC (b) power source.



Warning! **Do not** connect the Current Sensor directly across a voltage source or unloaded circuit. Connecting to a source that causes a current of greater than 1.5 A to flow will permanently damage to the sensor.

Mounting on an Experimental Apparatus

- ① Use the 1/4–20 threaded screw connector located on the bottom of the sensor box to secure the Current Sensor to an experimental apparatus (Figure 6). The alignment hole fits over an alignment pin included on some PASCO apparatuses.

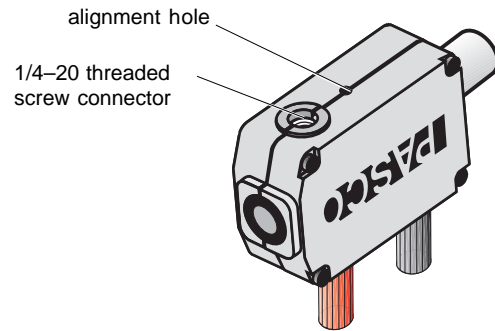
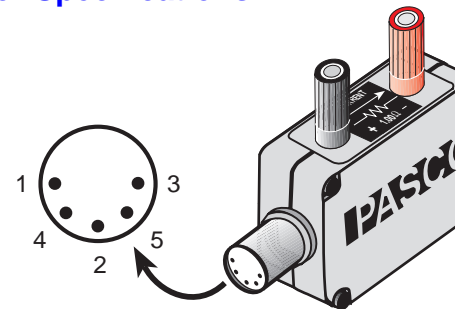


Figure 6. Connections for mounting on some PASCO experimental apparatuses.

DIN Connector Specifications

- 1: analog output (+), -1.5 to 1.5 V
- 2: analog output (-), signal ground
- 3: (no connection)
- 4: (no connection)
- 5: (no connection)



Specifications:

resolution: 5 mA (1X gain in *ScienceWorkshop*)
0.5 mA (10X gain in *ScienceWorkshop*)

maximum current input: 1.5 A*

maximum differential voltage: 1.5 V*

maximum common mode voltage: ± 10 V*

*DC or AC RMS (root mean square)



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the device.

Copyright, Warranty, and Equipment Return

Please—Feel free to duplicate this manual subject to the copyright restrictions below.

Copyright Notice

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Limited Warranty

PASCO scientific warrants the product to be free from defects in materials and workmanship for a period of one year from the date of shipment to the customer. PASCO will repair or replace, at its option, any part of the product which is deemed to be defective in material or workmanship. The warranty does not cover damage to the product caused by abuse or improper use. Determination of whether a product failure is the result of a manufacturing defect or improper use by the customer shall be made solely by PASCO scientific. Responsibility for the return of equipment for warranty repair belongs to the customer. Equipment must be properly packed to prevent damage and shipped postage or freight prepaid. (Damage caused by improper packing of the equipment for return shipment will not be covered by the warranty.) Shipping costs for returning the equipment after repair will be paid by PASCO scientific.



Warning



Application of electrical voltage and/or currents in excess of the values listed in the product specification section will damage this product, create a safety hazard, and may endanger the operator. This device does not use or produce voltages that exceed 42.4 VAC peak, 30 VAC RMS, or 60 VDC.

Equipment Return

Should the product have to be returned to PASCO scientific for any reason, notify PASCO scientific by letter, phone, or fax BEFORE returning the product. Upon notification, the return authorization and shipping instructions will be promptly issued.

► **NOTE:** NO EQUIPMENT WILL BE ACCEPTED FOR RETURN WITHOUT AN AUTHORIZATION FROM PASCO.

When returning equipment for repair, the units must be packed properly. Carriers will not accept responsibility for damage caused by improper packing. To be certain the unit will not be damaged in shipment, observe the following rules:

- ① The packing carton must be strong enough for the item shipped.
- ② Make certain there are at least two inches of packing material between any point on the apparatus and the inside walls of the carton.
- ③ Make certain that the packing material can not shift in the box, or become compressed, allowing the instrument come in contact with the packing carton.

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