

Sensors

When using sensors or motors it is helpful to rename them to variable name that stands out and is easy to type. For Example: Default name for a Touch Sensor maybe S1. Changing the variable name to Touch instead of S1 can be helpful when trying to debug the program.

Click on the **Motor Sensor Setup Icon** at the top part of the screen

The image shows the 'Motor and Sensor Setup' window in a software application. At the top, a toolbar contains icons for 'New File', 'Open File', 'Save', 'Fix Formatting', 'Motor and Sensor Setup', 'Firmware Download', 'Compile Program', and 'Download to Robot'. The 'Motor and Sensor Setup' icon is highlighted with a double-headed arrow.

The main window is titled 'Motors and Sensors Setup' and has three tabs: 'Standard Models', 'Motors', and 'Sensors'. The 'Sensors' tab is active, showing a table with four sensor slots (S1-S4). Each slot has a 'Name' field, a 'Sensor Type' dropdown menu (all set to 'No Sensor'), and a 'Sensor Mode' dropdown menu (all set to 'Not Applicable').

Two callout boxes provide instructions:

- A box pointing to the 'Name' fields says: "Assign Names to the different Sensor and Motor Ports".
- A box pointing to the 'Sensor Type' dropdowns says: "Assign the type of sensor/motor that will be used".

Below the main window, a zoomed-in view of the 'Motors' tab is shown. It displays a table with four motor slots (motorA-D). Each slot has a 'Name' field, a 'Type' dropdown menu (all set to 'EV3 Motor (Large)'), a 'Reversed' checkbox, an 'Encoder' checkbox (checked), a 'PID Control' checkbox (checked), and a 'Drive Motor Side' dropdown menu (all set to 'None').

Robot C Programming Tutorial

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Coding: When coding with a sensor the syntax **SensorValue [SensorName]** will be used.

Example of If Statement for Touch Sensor is touched to turn off motors:

```
If (SensorValue [Touch] == 1)
{
motor [motorB] = 0;
motor [motorC] = 0;
}
```

Sensors Values

Port View on the EV3 Brick can be used to see what values are returned for the sensor or the following code can be typed in the program to display data on the brick

Example is for Color Sensor (Code is in Bold; all other type are comments about the code)

```
// Write the amount of reflected light to the screen
// This is a value between 0 and 100, where 0 means no reflected
// light and 100 means all light is being reflected
displayBigTextLine(4, "Reflected: %d", SensorValue[Colour]);
Sleep (20); // Wait 20 ms to get 50 readings per second
```

Touch: 0 = Not Pressed

1= Pressed

Ultrasonic: Units cm distance

Color: Solid Colors or Light Reflected Percentage