

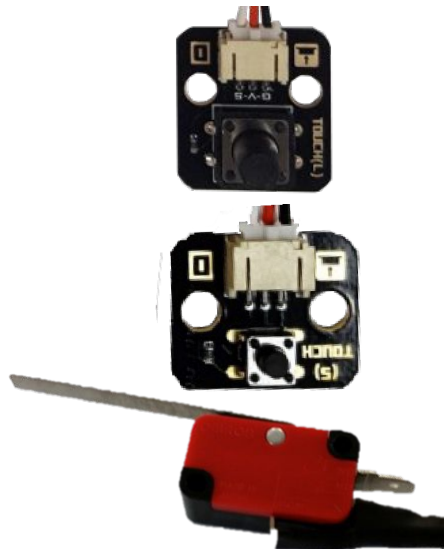
Digital Touch Sensors

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- You might have realized how difficult it is to be consistent with just “driving blind”.
- By adding sensors to our robots, we can allow them to detect things in their environment and make decisions about them!
- Robot sensors are like human senses!
 - What senses does a human have?
 - What sensors should a robot have?

Digital Sensors

- Range of values:
0 (not pressed) or 1 (pressed)
- Ports: 0 to 9
- Function: digital (port #)
- Sensors:
 - Large touch
 - Small touch
 - Lever touch



Analog Sensors

- Range of values:
0 to 4095
- Ports: 0 to 5
- Function: analog (port #)
- Sensors:
 - Light
 - Rangefinder
 - Small reflectance
 - Large reflectance
 - Slide sensor



Remember Your Sensor Functions

You call for the analog sensor value with a function

- You have 6 analog ports (0 through 5)

`analog(Port#) analog(1)`

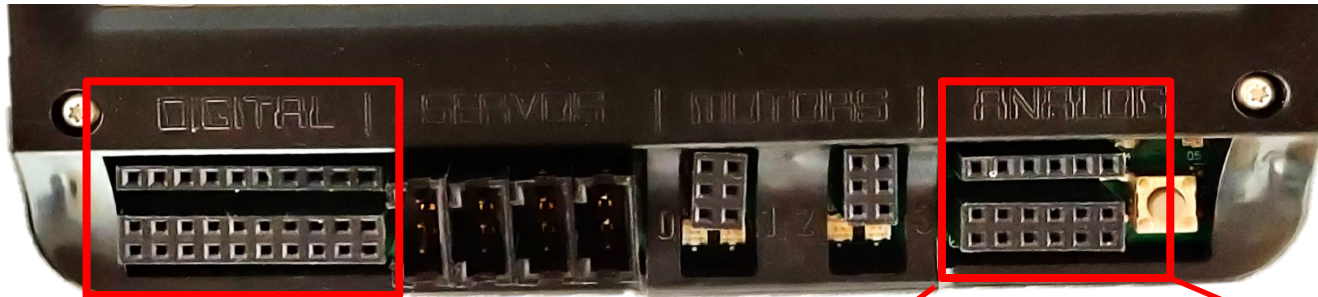
You call for the digital sensor value with a function

- You have 10 digital ports (0 through 9)

`digital(Port#) digital(8)`

NOTE: when you call these functions they ***“read the sensor”*** ***at that instant in time*** and return a single INTEGER value into the “code” where they were called.

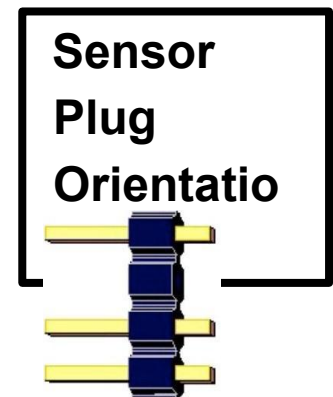
Sensor Ports



Digital Sensors
Ports # 0 to 9



Analog Sensors
Ports # 0 to 5



Detecting Touch

There are many digital sensors in your kit that can detect touch...



**Large
Touch**

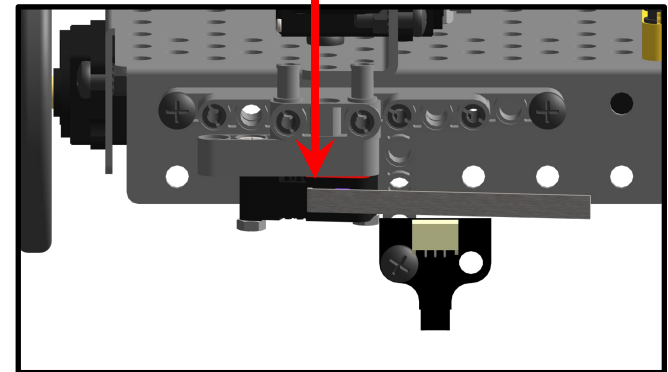
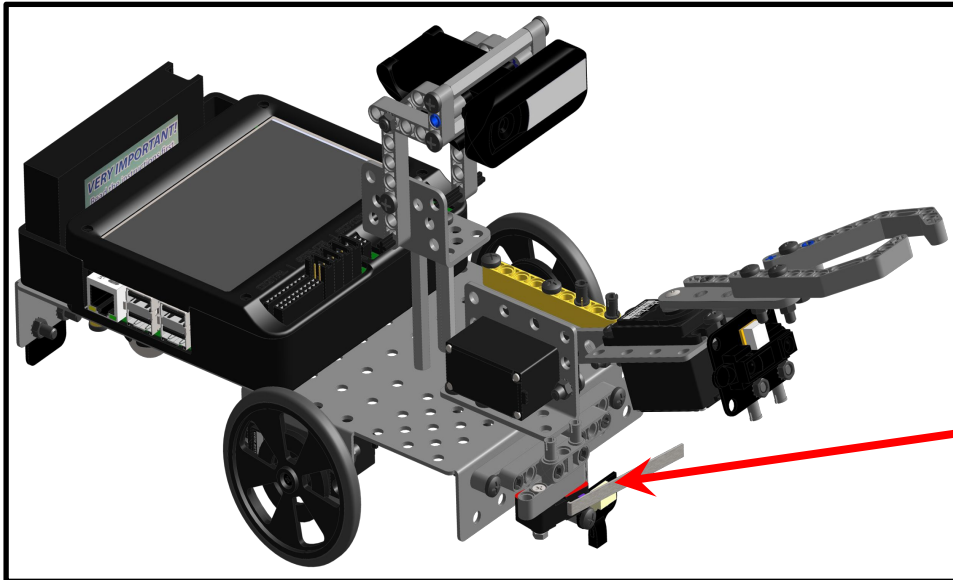


**Small
Touch**



**Lever
Touch**

Mounted Lever Touch Sensor

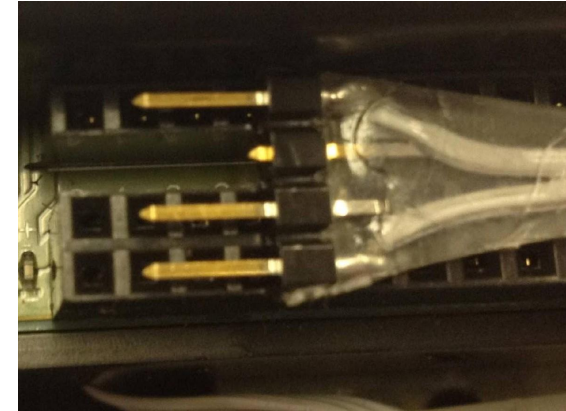
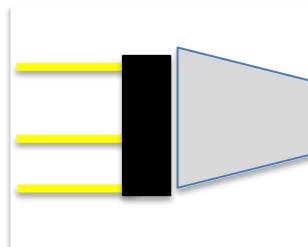


Plug in the Lever Touch Sensor



Sensor Plug
Orientation

Plug your
touch
sensor into
digital port
0



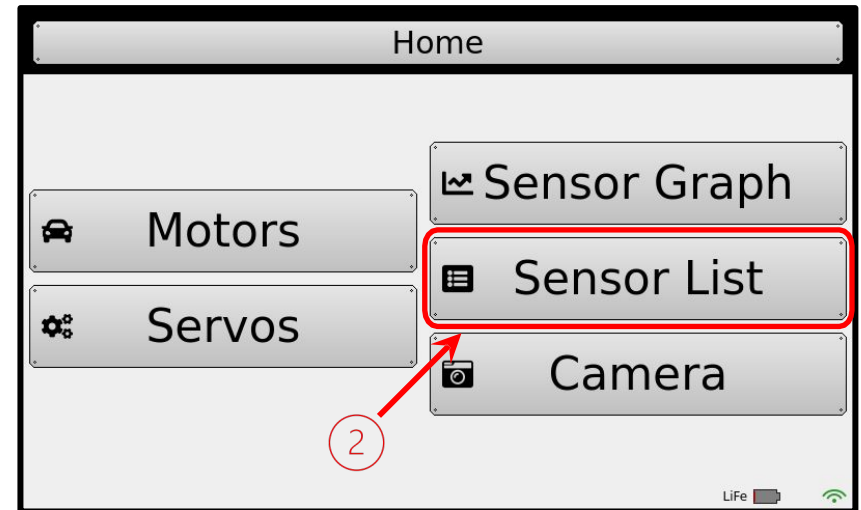
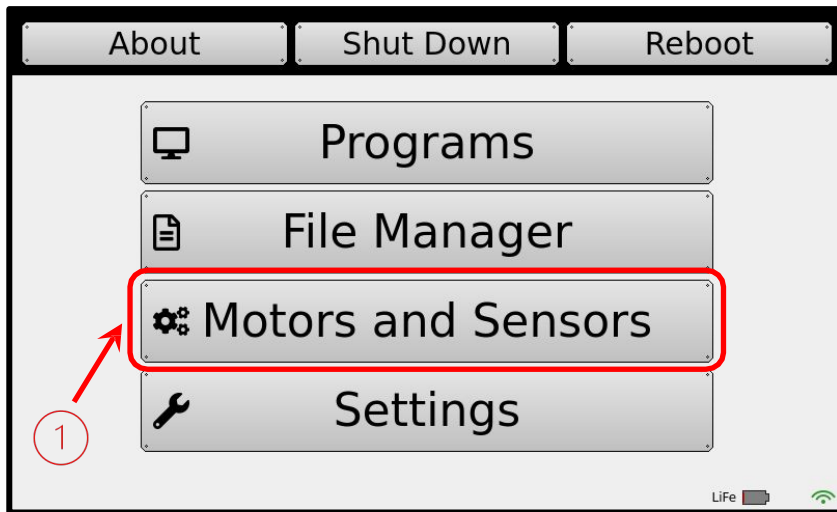
Close-up of sensor plug
orientation



Reading Sensor Values From the Robot

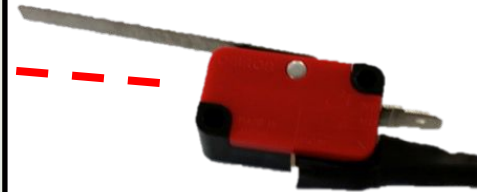
You can access the Sensor Values from the Sensor List.

- This is very helpful to get readings from all of the sensors you are using, and then you can then use the values in your code



Reading Sensor Values From the Robot

| Home | | Back | |
|-----------------|----------|------|--|
| Analog | Sensor 0 | 1297 | |
| Analog | Sensor 1 | 1066 | |
| Analog | Sensor 2 | 1122 | |
| Analog | Sensor 3 | 1139 | |
| Analog | Sensor 4 | 1234 | |
| Analog | Sensor 5 | 1195 | |
| Digital | Sensor 0 | 0 | |
| Digital | Sensor 1 | 0 | |
| Digital | Sensor 2 | 0 | |
| Digital | Sensor 3 | 0 | |
| Digital | Sensor 4 | 0 | |
| Digital | Sensor 5 | 0 | |
| Digital | Sensor 6 | 0 | |
| Digital | Sensor 7 | 0 | |
| Digital | Sensor 8 | 0 | |
| Digital | Sensor 9 | 0 | |
| Accelerometer X | | 3 | |



Scroll down to the digital sensor and read the value when your touch sensor is pressed and when it is not pressed

Use the Sensor Graph

