### What is SPSumoEyes

SPSumoEyes is a Obstacle Sensor designed for SPIKE Prime. This can be used to detect obstacle on left, right or in front of robot up to 8 inches away. It also has two distance ranges to detect obstacle in.

Overview of Operation

SPSumoEyes is pre-calibrated and does not need any calibration. IR beam on the Left and Right side of IR led spans as shown in figure below. The Short range zone is about 6 inches (15 cm), and Long Range zone is about 12 inches (about 30 cm).
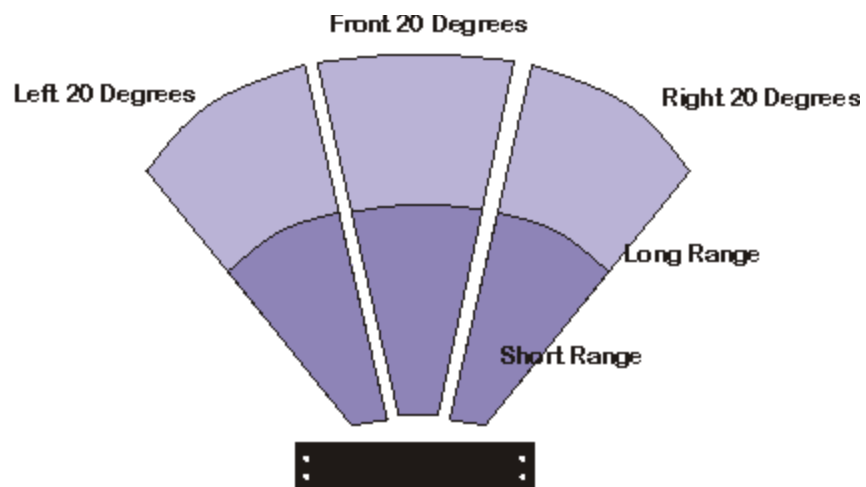
⚠️ **NOTE**
This distance of the Ranges changes based reflectivity of the obstacle, e.g. a white paper obstacle is detectable at a farther distance than a dark object. Detection range of very dark objects is reduced considerably (to half or third).

Values returned by SPSumoEyes

- Obstacle detected on left side: 33.
- Obstacle detected on right side: 66.
- Obstacle detected in front: 99.

Electrical Connections

Connect to any port of SPIKE Prime using the attached cable.
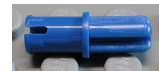
Mounting SPSumoEyes on your contraption

The holes on the SPSumoEyes enclosure are designed for tight fit of Technic pins (or axles) with '✚' cross section. The holes however are not designed for repeated insertions/removals of these pins.

To mount SPSumoEyes on your contraption we suggest that you use two dark gray 'Technic Axle 3 with Stud' as shown.
Insert axles from the top of the SPSumoEyes and secure with a bushing on the back or mount it on your contraption directly.
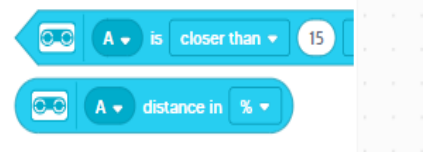Alternately, you may use blue 'Technic Axle Pin with Friction', as shown.
While disassembling contraption, leave the pins on SPSumoEyes.

Programming Techniques for reading

SPIKE Prime Graphical software:
To use capabilities of the sensor, please use Lego Ultrasonic sesnor block. Readings will be as below

- Obstacle detected on left side: 33.
- Obstacle detected on right side: 66.
- Obstacle detected in front: 99.

SPIKE Prime Python software:
To use capabilities of the sensor, please use mindsensors python library.

```
from mindsensors import SUMOEYES
```

You will need to copy mindsensor.py on your brick.

Download from
https://github.com/mindsensors/SPIKEPrime

Physical Specs

Weight: 0.39 oz (11.0 grams)
Foot-print: 16.4 mm x 72. mm
Height: 25 mm

Current Consumption

Average measured current profile is as follows:

Current Consumption	Duration
2.6mA	Continuous