Sharp Distance Sensor 2Y0A02 (20-150cm)

This popular sensor made by Sharp produces an analog output that varies from 2.5V at 20cm to 0.4V at 150cm.

Based on “”typical values”” from Sharp, the formula to translate output voltage into Distance (the formula is only valid for a SensorValue between 0.4V to 2.45) is:

Distance (cm) = 9462/(Vout*200 – 16.92)

This sensor can find the distance to objects that present a very narrow edge such as a wall at a very sharp angle.

Note: The output of this sensor will vary from unit to unit, and based on the characteristics of the target (reflectance, size, direction of motion, and object alignment). Our formula is based on the data provided by Sharp. If you find that you are not getting good results with the standard formulas, you may want to derive your own formula to better characterize your situation.

Connection

The sensor plugs in the 1101 – IR Distance Adapter. See the “Compatible Products” tab for details.

Product Specifications

Sensor Properties	
Sensor Type	Distance (Infrared)
Controlled By	Sharp Adapter
Sensor Output Type	Ratiometric

Measurement Distance Min	200 mm
Measurement Distance Max	1.5 m
Response Time Max	50 ms
Electrical Properties	
Supply Voltage Min	4.5 V DC
Supply Voltage Max	5.5 V DC
Current Consumption Max	50 mA
Physical Properties	
Weight	6 g
Operating Temperature Min	-10 °C
Operating Temperature Max	60 °C