Distanz Sensore Sharp 2Y0A Familie

see cpp code in Githubhttps://github.com/zoubworldArduino/ZSharpIR

Sharp 2Y0A710K0F 100-500cm

Python code at
https://tutorials-raspberrypi.de/infrarot-abstandsmessung-mit-dem-raspberry-pi-sharp-gp2y0a02yk0f/

Model: „100500“ [100cm to 500cm]

Based on the SHARP datasheet we can calculate the linear function:

```
 y = 137500x + 1125 which gives us: 1 / ((Volt - 1125) / 137500) =
distance_in_cm (For distance > 100cm)
```

Python code

```
#!/usr/bin/python

import spidev

spi = spidev.SpiDev()
spi.open(0,0)


def readChannel(channel):
  val = spi.xfer2([1,(8+channel)<<4,0])
  data = ((val[1]&3) << 8) + val[2]
  return data
if __name__ == "__main__":
  v=(readChannel(0)/1023.0)*3.3
  dist = 16.2537 * v**4 - 129.893 * v**3 + 382.268 * v**2 - 512.611 * v +
301.439
  print "Distanz: %.2f cm" % dist
```

Sharp 2Y0A21YK 10-80cm

Formel

Model: „1080“ [10cm to 80cm]

Volt	Distance
2,6	10

Volt	Distance
2,1	12
1,85	14
1,65	15
1,5	18
1,39	20
1,15	25
0,98	30
0,85	35
0,75	40
0,67	45
0,61	50
0,59	55
0,55	60
0,5	65
0,48	70
0,45	75
0,42	80

Using MS Excel, we can calculate function (For distance > 10cm) :

```
Distance = 29.988 X POW(Volt , -1.173)
```