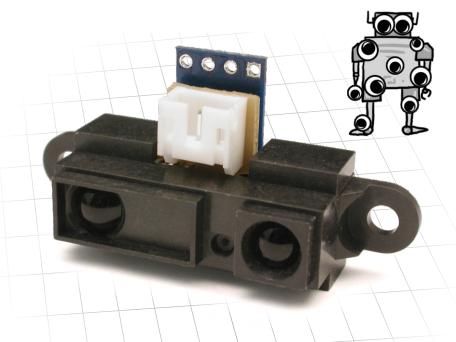


Analog Infrared Ranging System with I2C Networking Multiple eyes for your device is easy!



□35080 Sharp GP2Y0A21YK0F Sensor (10~80cm range) □35086 Sharp GP2Y0A02YK0F Sensor (20~150cm range)

Infrared Distance Measurement

featuring:

- Software-configurable I²C sensor address
- I²C Compatible, with 8 devices per chain
- Use more sensors per I/O line than a standard port
- Let the sensors on-board processor do all the work!
- Request units in inches, centimeters or raw output



Technical Data

The I²C/TWI networking standard works really well, and is supported by many microcontrollers. A single pin can talk with 127 devices! We've integrated I²C with the popular Sharp GP2Y0A21YK0F sensor, so you can add reliable distance sensors to your project, with a minimum of muss and fuss!

Excess cable length can adversely affect the I²C bus response. Experiment with lower bus speeds and weaker pull-up resistors for longer cable lengths.

*faster speeds are possible

Recommended Operating Conditions:

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Parameter	Symbol	Rating	Unit
Operating Voltage	Vcc	4.5 - 5.5	V+
Operating Temperature	T opr	-10 - +40	С
Maximum Cable Length	CLmax*	35/14	cm/in
I2C Clock Frequency	SCL	100k	Hz
Bus pull-up REsistance	Rline	1.2k - 10k	ohms
Required Current	Icc	35 - 55	mA

We no longer use solder-jumpers to set the address. By default, the I2C address is DEC 32 (0x20).

Each sensor supports four basic commands. To receive the distance reading from the specified sensor, you need to send 1, 2 or 3 (DEC code) to the spec address. The sensor will respond with distance in inches, cm or RAW code accordingly. Also you can change the default address to any address from: 32 (0x20), 34 (0x22), 36 (0x24), 38 (0x24), 40 (0x28), 42 (0x2A), 44 (0x2C) or 46 (0x2E) by sending 5 (DEC code) + new address (2 bytes) to the target sensor.

I.e. To change the address from 32 to 42 using Arduino, your sketch would use:

Wire.beginTransmission(32); Wire.write(byte(5)); Wire.write(byte(42)); Wire.endTransmission();

Device Pin-Out:

The square pad denotes "Pin 1" Pin1 - Ground (signal ground)

Pin2 - SCL (I²C clock line)

Pin3 - SDA (I²C data line)

Pin4 - Vcc (+4.5 to +5.5V)



Simply call your device by address, with a "datamode" parameter, being 1 for inches, 2 for centimeters, and 3 for raw 0-254 output

The I2C-It requires the proper powering up of the sensor and the onboard microcontroller to establish I2C/TWI communications with your microcontroller. If your particular micro has issues getting communication at power-on , you may need to set a delay in your code for proper operation.

We've put together some sample snippets of code showing how to interface the I^2C -It to Atmel, Arduino, PIC, and PICAxe micros - check them out on the product page!

http://www.solarbotics.com/product/35080/http://www.solarbotics.com/product/35086/

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