

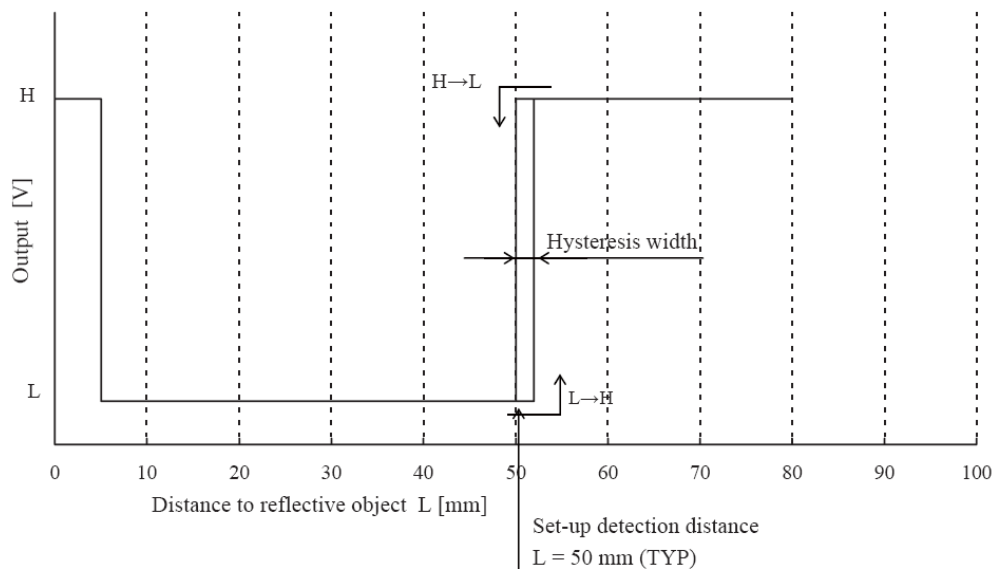
POLOLU CARRIER WITH SHARP GP2Y0D810Z0F

DIGITAL DISTANCE SENSOR 10CM

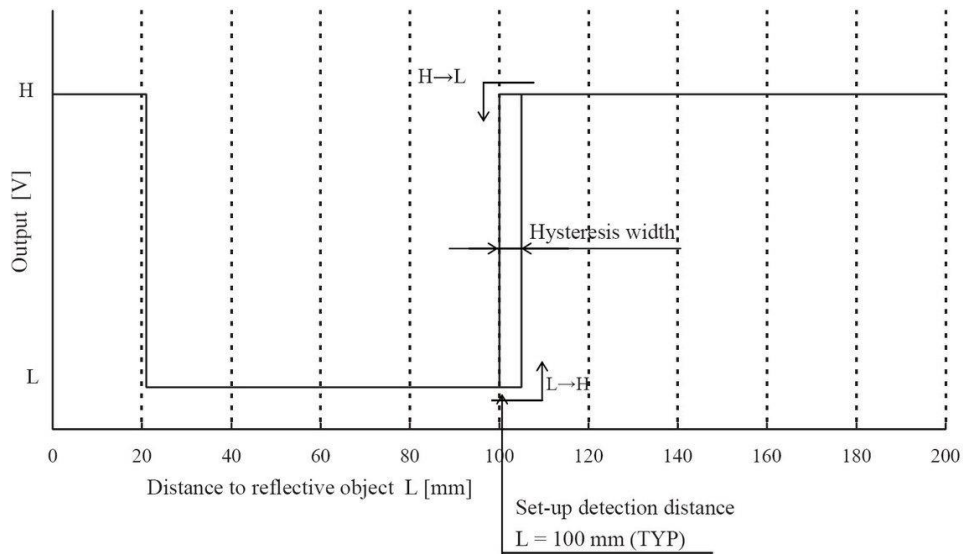
USER'S GUIDE

USING THE SENSOR

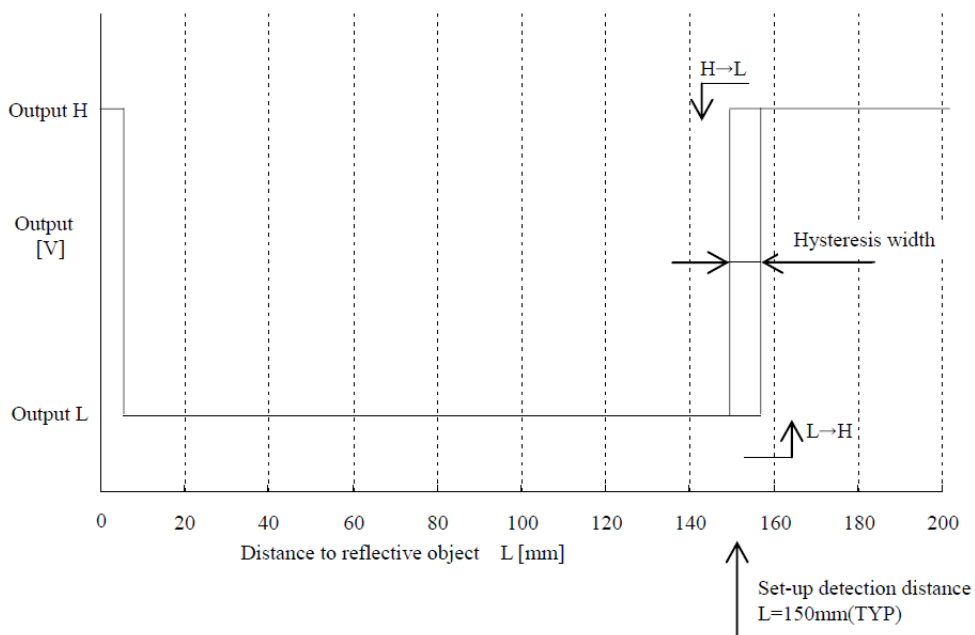
The Pololu carrier board lets you interface with the GP2Y0D805, GP2Y0D810, or GP2Y0D815 sensor using a three-pin 0.1" connector, such as the included 3×1 straight male header strip and 3×1 right-angle male header strip. You can connect to these pins with a servo cable or with a custom-made cable using pre-crimped wires and a 3×1 crimp connector housing.



**Sharp GP2Y0D805Z0F digital distance sensor 5 cm
measuring characteristics.**



Sharp GP2Y0D810Z0F digital distance sensor 10 cm measuring characteristics.



Sharp GP2Y0D815Z0F digital distance sensor 15 cm measuring characteristics

The square pad is ground, the middle pad is VIN (2.7 – 6.2 V), and the remaining pad is the sensor output, OUT. Depending on your power source, you might notice an increase

in performance by placing a large (>10 uF) capacitor between power and ground somewhere near the sensor.

A red LED on the back of the PCB lights when the output is low, indicating that the sensor is detecting something. With the LED in the circuit, the low output signal will be around 1 V. If so desired, you can disable this LED by cutting the trace between it and the OUT pin where it is marked on the silkscreen or by desoldering the LED, in which case the low voltage will be below 0.6 V.

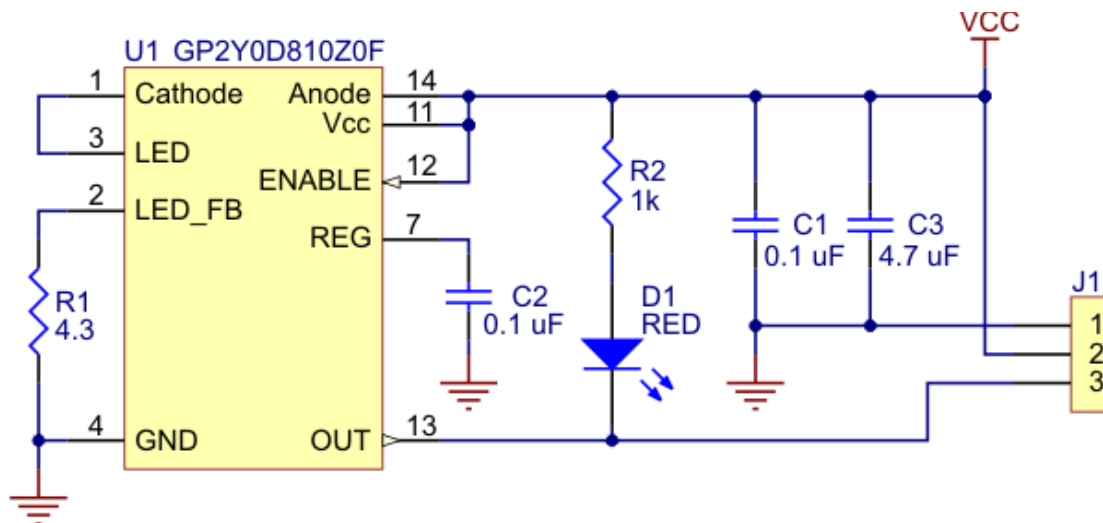
The GP2Y0D805, GP2Y0D810, and GP2Y0D815 have an optional enable input that can be used to put the sensor into low-power mode. The Pololu carrier board connects this input to Vcc so that the sensor is always enabled, but you can solder a wire to the pad labeled “enable” on the back of the PCB if you want control over this input. Note that you will need to cut the trace that connects the enable line to Vcc on the PCB if you want to be able to disable the sensor. This trace is marked on the silkscreen, and there is a caret that indicates where we suggest you make the cut.

The carrier board has a 0.086” mounting hole for a #2 or M2 screw. You can make the module more compact by cutting or grinding off this portion of the PCB if you do not need the mounting hole.

FEATURE SUMMARY

- Operating voltage: 2.7 V to 6.2 V
- Average current consumption: 5 mA (typical)
- Distance measuring range
 - GP2Y0D805Z0F: 0.5 cm to 5 cm (0.2” to 2”)
 - GP2Y0D810Z0F: 2 cm to 10 cm (0.8” to 4”)
 - GP2Y0D815Z0F: 0.5 cm to 5 cm (0.2” to 6”)
- Output type: digital signal (low when detecting an object, high otherwise)

- Steady state update period: 2.56 ms typical (3.77 ms max)
- Enable pad can optionally be used to disable the emitter and save power (this feature requires you to cut a trace first)
- Size without header pins: 21.6 mm × 8.9 mm × 10.4 mm (0.85" × 0.35" × 0.41")
- Weight without header pins: 1.5 g (0.05 oz)



Pololu carrier for Sharp GP2Y0D805Z0F, GP2Y0D810Z0F, and GP2Y0D815Z0F

sensors schematic diagram.

ALTERNATIVE SHARP DISTANCE SENSORS

We carry several analog Sharp distance sensors as well: the Sharp GP2Y0A51SK0F 2 – 15 cm, the Sharp GP2Y0A41SK0F 4 – 30 cm, the Sharp GP2Y0A21YK0F 10 – 80 cm, and the Sharp GP2Y0A02YK0F 20 – 150 cm. These analog distance sensors have longer minimum detection distances and much slower response times than the GP2Y0D805, GP2Y0D810, and GP2Y0D815, but they can see farther and report the distance to the detected object rather than simply *if* an object is detected.



A variety of Sharp distance sensors. From left to right: GP2Y0A02, GP2Y0A21 or GP2Y0A41, GP2Y0A51, and GP2Y0D8xx.

We also carry the newer Sharp GP2Y0A60SZ analog distance sensor (10 – 150 cm), which outperforms the other analog Sharp distance sensors in almost all respects, offering a low minimum detection distance, high maximum detection distance, wide 3 V output voltage differential, high 60 Hz sampling rate, operation down to 2.7 V, and optional enable control, all in a smaller package.



Sharp GP2Y0A02YK0F Sensor 20-150cm (left) next to Pololu Carrier with Sharp GP2Y0A60SZLF Sensor 10-150cm (right).

Note: This product comes with the GP2Y0D805Z0F, GP2Y0D810Z0F, or GP2Y0D815Z0F soldered into the carrier PCB. We sell the sensor modules by themselves, and we sell the carrier PCB without the sensor for those who already have the sensor or who want to solder the board together personally.