

Optical distance sensors Arduino

The objective of the optical sensor to detect the object without engaging with him in physical contact. The detection area depends on the type of sensor a method of transmitting and receiving radiation settings. Optical electronic rangefinders are used to scan individual surfaces of objects, in whole or determining the position of a group of objects in the detection area. On the basis of optical sensors create an electronic tachometers. Photoelectric sensors are used in many industries. Sensors with discrete output signal used for calculating the detection and positioning of other tasks. Devices with analog output set to optical finders locators. A variety of sensors combined with data processing node represents a primitive model of a technical vision. The optical sensor senses the change of the luminous flux in the controlled area caused by moving parts of mechanisms and the lack of the appearance of objects. Or Vice versa, the sensor is on a movable object and determines its position relative to the surrounding space. The simplest case of application is the installation of the fact of presence near the sensor object without specifying the distance to him. The optical sensor is used in simple automation projects including using microcontroller. For example, for mobile robots or security systems to detect movement. The device includes two semiconductor photodevices led and photodiode or phototransistor. Led light is reflected off an object and is perceived by the photodetector. The article deals with optical distance sensors Arduino contains the led infrared IR radiation. Presented here are examples of optical distance sensors Arduino category belong to the class of diffuse sensors. The name of the class arose from the distribution reflected in many directions of diffusion of the radiation surface obstacles. The principle of operation consists in determining the illumination of photodiode infrared radiation reflected from the object. The electronics amplifies the current of the photosensitive element converting it into an output signal. If IR radiation is not returned then the output state will not change. Such sensors are inexpensive and easily installed solution. As they work with reflected light there is a measurement error of the distance of the reflection from objects of different colors made from different materials. High precision is only possible for relatively short distances. This shortage is deprived of sensor GP2Y0A21YK0F is given in the last article. The GP2Y0A21YK0F sensor uses the triangulation principle and not a measurement of level of illumination of the photodetector. So it is used

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