A photo interrupter is a devise that is made up of a infrared led and a photo transistor with a gap between the two of them, When something is placed between the gap the light is cut and the current flow through the photo transistor is reduced or stopped. The picture above shows three photo interrupters

You can use the photointerrupter for controlling the position of a moving part (check if the part is in the desired position or not) or you can count pulses from a rotating index disc to measure the rpm of your motor (aka rotary encoder) or whatever you want.

A Photointerrupter is a transmission-type photosensor, which typically consists of a light emitting elements and light receiving elements aligned facing each other in a single package, that works by detecting light blockage when a target object comes between both elements, acting as an optical switch.

At ROHM, we refer to optical-type photosensors as photointerrupters.

Unlike mechanical switches, photointerrupters are non-contact (optical) switches, improving reliability by preventing wear-and-tear due to abrasion (contact).

Current flows to the LED, causing it to light up. This light enters the phototransistor, resulting in current flow.

Object detection is enabled by detecting the change in transistor current due to the presence/absence of a screen.