Inductive Proximity Sensor

An **Inductive Proximity Sensor** is an **electronic sensor** that detects **metal objects** without touching them.
It works using **electromagnetic fields —** so it only detects **conductive (metallic)** materials like **iron, steel, aluminum, copper**, etc.

How It Works

1. Inside the sensor, there is:
    - A **coil** that creates an **oscillating magnetic field**.
    - A **detector circuit** that senses changes in that field.
2. When a **metal object** comes near the sensor's face:
    - The magnetic field changes (disturbed by the metal).
    - The oscillator's amplitude reduces or stops.
    - The circuit detects this change and **switches the output** (ON/OFF).

So basically —

No metal = output OFF

Metal near = output ON